

40
YEARS
1978 - 2018

INNOVATING SAFETY



Cilindri molla ad azoto
Nitrogen gas cylinders
Stickstoffgasdruckfedern
Cylindres-ressort à l'azote
Cilindros resorte de nitrógeno
Cilindros com mola ao azoto

2020



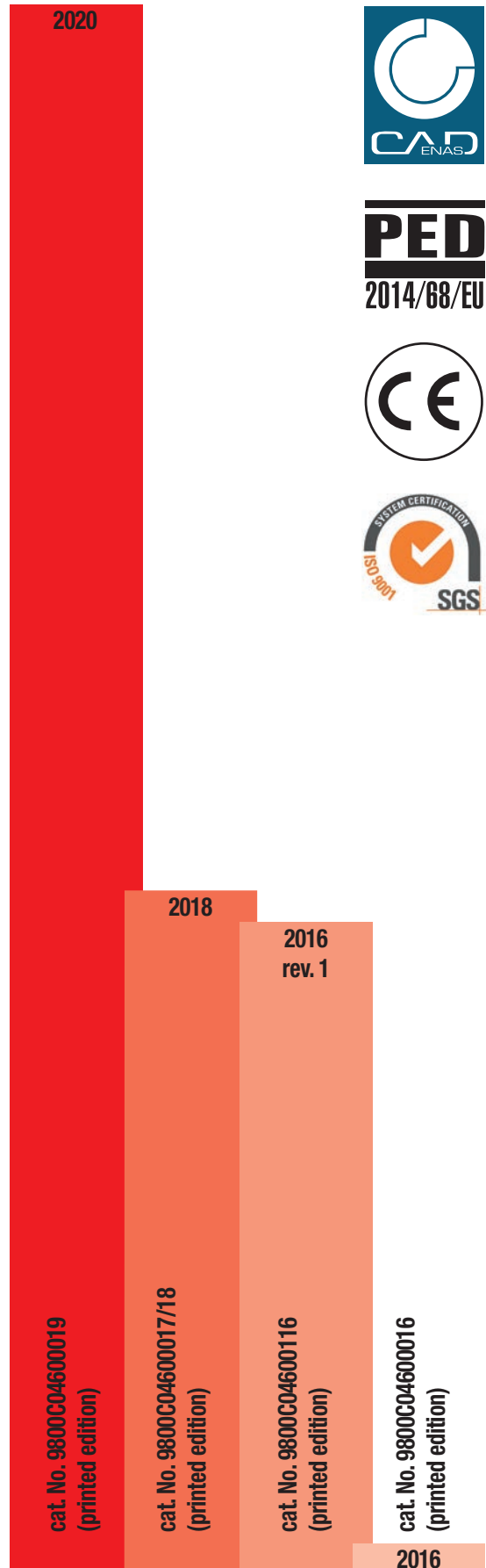
WHAT'S NEW?

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Changes and additions to previous catalogs

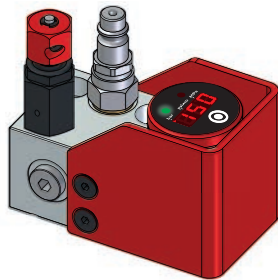
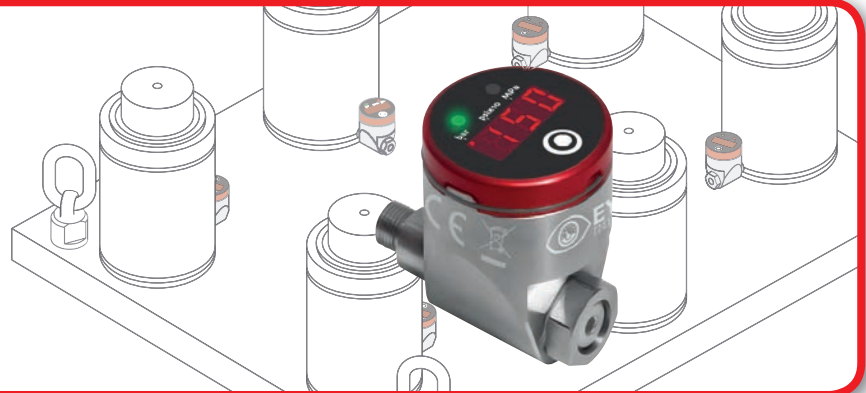
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EYE PRESSURE SENSOR

Digital system for quick control of the pressure of self-contained gas cylinders, battery-powered

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CP23A

control panel with EYE pressure sensor

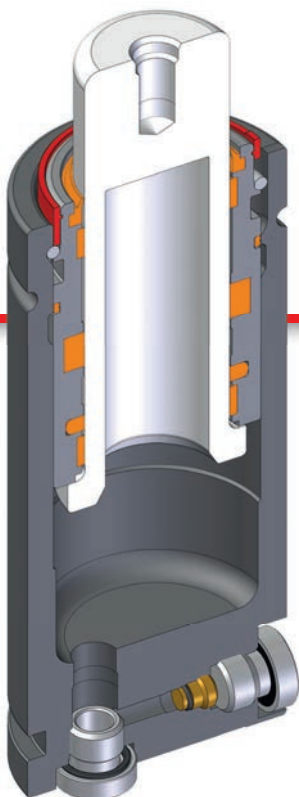
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CP17A

control panel TOYOTA STANDARD

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For high temperature, ISO standard high force

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DYBO4.0 DYNAMIC BOOSTER

Equipment for checking the operating parameters of nitrogen cylinders systems installed in stamping dies

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HT

For high temperature,
ISO standard, high force



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Zero force on contact



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ML

Max. force, rod seal



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MP

Max. force, rod seal



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MQ

Max. force, rod seal



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Max. force, piston seal



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MANIFOLD

Standard manifold
systems



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SW

Secondary rod wiper



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Hosed system



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DYBO 4.0 - EYE
CONTROL DELAY SYSTEM
NITRO STRIP
NITRO PUNCH



p. 330



SW

Raschiatore secondario
Secondary rod wiper
Zweitabstreifer
Racleur de tige secondaire
Rascador de vástago secundario
Anillo raspador secundario

More info:

p. 260



Benefits

IT

- Eccellente protezione da contaminanti liquidi e solidi.
- Poliuretano ad alte prestazioni per massima resistenza chimica ai lubrificanti.
- Aumentata durata di vita di guida e tenute dinamiche.
- Minima perdita di corsa nominale.
- Facile inserimento.
- Nessuna limitazione al libero posizionamento del cilindro.

DE

- Ausgezeichneter Schutz gegen feste und flüssige Verunreinigungen.
- Maximale chemische Beständigkeit gegen Schmierstoffe durch das Hochleistungs-Polyurethan.
- Längere Lebensdauer für Führungselemente und dynamische Dichtungen.
- Minimaler Verlust des Nennhubes.
- Einfaches Einsetzen.
- Keine Einschränkungen für die Positionierung der Gasdruckfeder.

ES

- Protección óptima contra los contaminantes líquidos y sólidos.
- Máxima resistencia química a lubricantes gracias al poliuretano de alto rendimiento.
- Mayor vida útil para elementos de guía y juntas dinámicas.
- Pérdida mínima de carrera nominal.
- Fácil de colocar.
- Ninguna limitación para el posicionamiento del cilindro.

EN

- Excellent protection from liquid and solid contaminants.
- Maximum chemical resistance to lubricants thanks to high-performance polyurethane.
- Longer lifetime for guiding elements and dynamic seals.
- Minimal loss of nominal stroke.
- Easy to insert.
- No restrictions when positioning the cylinder.

FR

- Excellente protection contre contaminants liquides et solides.
- Résistance chimique maximale aux lubrifiants grâce au polyuréthane de haute performance.
- Plus longue durée de vie pour les éléments de guidage et les joints dynamiques.
- Perte minimale de la course nominale.
- Facile à insérer.
- Pas de limitations dans le positionnement du ressort-gaz.

PT

- Excelente proteção contra contaminantes líquidos e sólidos.
- Máxima resistência química aos lubrificantes graças ao poliuretano de alto desempenho.
- Tempo de vida mais longo para os elementos de guiamento e vedações dinâmicas.
- Perda mínima de curso nominal.
- Fácil de inserir.
- Não há restrições ao posicionar o cilindro.



SKUDO

Protezione Attiva da Contaminanti
Active Protection from Contaminants
Aktiver Schutz vor Verunreinigungen
Protection Active contre les Contaminants
Protección Activa contra Contaminantes
Capa Protetora Contra Resíduos

Standard on: KE-RS-MS

Upon request for other models



Benefits

IT

- Elimina qualsiasi danno da contaminanti ai componenti di guida e tenuta.
- Aumenta significativamente la vita del cilindro in presenza di contaminanti liquidi e solidi.
- Non aumenta l'altezza del cilindro.
- È una protezione non soggetta ad usura alcuna.

DE

- Schützt vor Verunreinigungen, die Schäden an den Führungs- und Dichtungselementen hervorrufen.
- Steigert erheblich die Lebenszeit der Gasdruckfeder bei erschwerten Arbeitsbedingungen.
- Verändert die Gesamthöhe der Gasdruckfeder nicht.
- Ist ein Schutz, der nicht verschleißt.

ES

- Elimina daños de contaminantes a los componentes de guiado y sellado.
- Aumenta significativamente la vida del cilindro en presencia de contaminantes líquidos y sólidos.
- No aumenta la altura del cilindro.
- Es una protección que no sufre desgaste.

EN

- Eliminates damages to guiding and sealing components caused by contaminants.
- Significantly increases the life of cylinders used in severe working environments.
- Does not alter the height of the cylinder.
- Does not wear out.

FR

- Élimine tout endommagement du joint et des éléments de guidage du fait de contaminants.
- Augmente de manière significative la vie du ressort en présence de contaminants liquides et solides.
- Ne change pas la hauteur du ressort à gaz.
- Est une protection qui n'est pas soumise à aucune usure.

PT


- Elimina danos causados por resíduos nos anéis de vedação e guiamento.
- Aumenta significativamente a vida dos cilindros usados em ambientes de trabalho com resíduos.
- Não altera a altura do cilindro.
- É uma proteção que não desgasta.




VDI 3003


OSAS

Sicurezza Attiva Oltre Corsa
Over Stroke Active Safety
Aktive Überhubsicherung
Sécurité Active pour Surcourse
Seguridad Activa de Fin de Carrera
Segurança para Sobre Curso



VDI 3003


USAS

Sicurezza Attiva Ritorno Incontrollato
Uncontrolled Speed Active Safety
Aktiver Schutz bei unkontrolliertem Rückhub
Sécurité Active pour Retour Incontrôlé
Seguridad Activa de Retorno Incontrolado
Segurança para Retorno Descontrolado



VDI 3003


OPAS

Sicurezza Attiva Oltre Pressione
Over Pressure Active Safety
Aktive Überdruck-Sicherheitsvorrichtung
Sécurité Active Surpression
Seguridad Activa por Sobrepresión
Segurança Sobre Pressão

How it works

IT

- Scarica in modo controllato e completo la pressione interna del cilindro quando ha subito un oltre corsa.

EN

- Exhausts pressure in a controlled and complete manner, when the cylinder has been overstroked.

DE

- Ermöglicht das kontrollierte und komplette Entladen des Innendrucks der Gasdruckfeder bei Überhub.

FR

- Décharge la pression du ressort en mode contrôlé et complet dans le cas d'une surcourse.

ES

- Descarga la presión de manera controlada y completa en caso de que el cilindro sobrepase su carrera máxima.

PT

- Esvazia a pressão do cilindro de forma controlada e completa quando ele sofre sobre-curso.

IT

- Scarica in modo controllato e completo la pressione del cilindro quando soggetto a ritorni incontrollati.

EN

- Exhausts pressure in a controlled and complete manner when the cylinder has been stressed by uncontrolled returns.

DE

- ermöglicht das kontrollierte und komplette Entladen des Innendrucks der Gasdruckfeder bei unkontrolliertem Rückhub.

FR

- Décharge la pression du ressort en mode contrôlé et complet dans de cas des retours non contrôlés.

ES

- Descarga la presión de manera controlada y completa en caso de que el cilindro sufra un retorno incontrolado.

PT

- Quando o cilindro sofrer retornos descontrolados, o mesmo se esvazia de uma maneira controlada e completa.

IT

- Scarica in modo controllato e completo la pressione del cilindro quando viene superato il valore massimo consentito.

EN

- Exhausts the pressure in a controlled and complete manner when it exceeds the maximum allowed value.

DE

- kontrollierte und vollständige Entladung des Innendrucks des Zylinders bei Überschreiten des maximal zulässigen Werts.

FR

- Décharge la pression du ressort en mode contrôlé et complet lorsque la valeur maximale admissible est dépassée.

ES

- Descarga la presión de manera controlada y completa cuando se supera el valor máximo permitido.

PT

- Esvazia a pressão do cilindro de forma controlada e completa quando ele excede o valor máximo permitido.

Benefits

IT

- Riduce il rischio di danni e pericoli dovuti alla proiezione di parti in pressione.
- Si attiva automaticamente senza intervento dell'operatore.
- Non aumenta il prezzo del cilindro.

EN

- Reduces the risk of tool damage or injury due to ejection of parts under pressure.
- Self activates automatically regardless of users' intervention.
- Does not increase the price of cylinders.

DE

- Reduziert das Risiko von Schäden und Gefahren durch wegschleudernde, unter Druck stehende Teile.
- Aktiviert sich automatisch ohne Zutun des Nutzers.
- Erhöht die Kosten der Gasdruckfeder nicht.

FR

- Réduit le risque d'endommagement de l'outil ou le risque de blessure en cas d'éjection de pièces ou composants sous pression.
- S'auto-active sans intervention de l'opérateur.
- N'augmente pas le prix du ressort.

ES

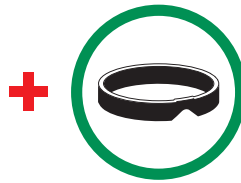
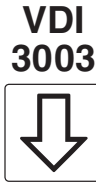
- Reduce el riesgo de daños y peligros consecuencia de la proyección de partes bajo presión.
- Se activa automáticamente sin intervención del usuario.
- No aumenta el precio del cilindro.

PT

- Reduz o risco de danos para a ferramenta e ferimentos para o operador por estilhaços.
- Ativa-se automaticamente independentemente de intervenção dos usuários.
- Não aumenta o preço dos cilindros.



**Over
Stroke
Active
Safety**



**Over
Stroke
Marker**

Standard on:

**RV - RF - RS
RG - RT - S
SC - H - HF
HT - LS**

IT OSAS è la combinazione di un prolungamento verso l'esterno della boccola con delle discontinuità sulla parete di contatto della guarnizione boccola-corpo. OSAS si attiva senza deformazione del corpo.

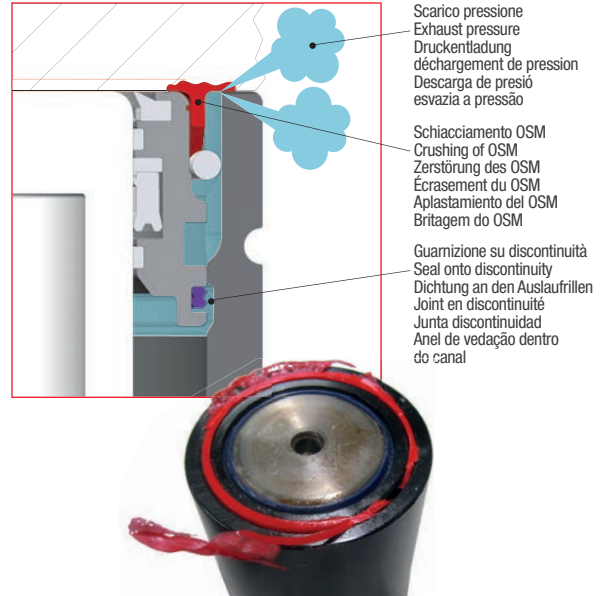
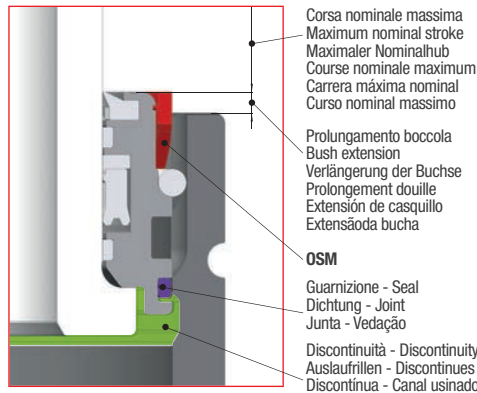
FR OSAS est la combinaison d'un prolongement vers l'extérieur de la douille avec gorges discontinues sur la paroi de contact du joint douille-corps. OSAS s'auto-active sans déformer le corps du ressort.

EN OSAS is the combination of an outward extension of the bush with discontinuity groove on the body-bush sealing wall. OSAS self activates without deforming the body of the cylinder.

ES OSAS es la combinación de una extensión del casquillo con ranuras discontinuas en la pared de contacto cuerpo-casquillo. OSAS se activa sin deformaciones del cuerpo.

DE OSAS ist eine Kombination aus der Verlängerung der Buchse nach oben und der Auslaufrille an der Kontaktfläche der Dichtung Körper-Buchse. OSAS aktiviert sich ohne Deformation des Körpers.

PT OSAS é composto de dois pontos: uma extensão da bucha localizada para fora do corpo, e canais usinados na parte interna do corpo do cilindro onde acontece a vedação. O sistema OSAS é ativado sem deformar o corpo do cilindro.



IT Il Marcatore Oltre Corsa OSM:
- permette di vedere immediatamente che il cilindro è stato utilizzato oltre la corsa nominale massima.
- conferma che la sicurezza oltre corsa OSAS è stata attivata.
- permette di intervenire tempestivamente sullo stampo eliminando la causa di oltre corsa.
- non limita il libero posizionamento del cilindro.
- aumenta la sicurezza di utilizzo dei cilindri ad azoto Special Springs.

EN The Over Stroke Marker OSM:
- enables you to see immediately that the cylinder has been used over its maximum nominal stroke.
- confirms that the Over Stroke Safety Feature OSAS has been activated.
- allows you to act promptly on the die to remove the cause of the over stroke.
- doesn't restrict the free positioning of the cylinder.
- improves user safety for Special Springs' nitrogen cylinders.

DE Der Überhubmarker OSM:
- ermöglicht es sofort zu sehen, dass die Gasdruckfeder über den maximalen Nennhub verwendet wurde.
- bestätigt, dass die OSAS Überhubsicherung aktiviert wurde.
- ermöglicht Ihnen, direkt die Ursache des Überhubes im Werkzeug zu beseitigen.
- schränkt die freie Positionierung der Gasdruckfeder nicht ein.
- verbessert die Anwendersicherheit für die Gasdruckfedern von Special Springs

FR Le Marqueur Surcourse OSM:
- vous permet de voir immédiatement que le ressort à gaz a été utilisé au-delà de la course nominale maximale.
- vous confirme que le dispositif de sécurité contre les surcours OSAS a été activé.
- vous permet d'agir rapidement sur le moule afin d'éliminer la cause de la surcourse.
- ne limite pas un positionnement libre du ressort à gaz.
- améliore la sécurité des utilisateurs des ressorts à gaz Special Springs.

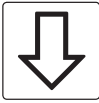
ES El Marcador de Sobrecarrera OSM:
- permite ver inmediatamente que el cilindro ha sido utilizado por encima de la carrera nominal máxima.
- confirma que el dispositivo de seguridad contra sobrecarreras OSAS ha sido activado.
- permite actuar con rapidez en el molde para eliminar la causa de la sobrecarrera.
- no limita el posicionamiento libre del cilindro.
- aumenta la seguridad del usuario de los cilindros de nitrógeno Special Springs.

PT O Marcador do Sobre Curso OSM:
- permite ver imediatamente que o cilindro tem sido utilizado mais do curso nominal máximo.
- confirma que o dispositivo de segurança contra sobre curso OSAS foi activado.
- permite agir rapidamente no troquel para remover a causa do sobre curso.
- não limita o posicionamento livre do cilindro.
- aumenta a segurança do utilizador dos cilindros Special Springs.



Over
Stroke
Active
Safety

VDI
3003



Standard on: **ML - MP - MQ**

IT OSAS è la combinazione di una zona deformabile del corpo con delle discontinuità sulla parete di contatto della guarnizione fondello-corpo. OSAS si attiva senza pericolo strutturale per il cilindro, aumentando ulteriormente la sicurezza per l'utilizzatore.

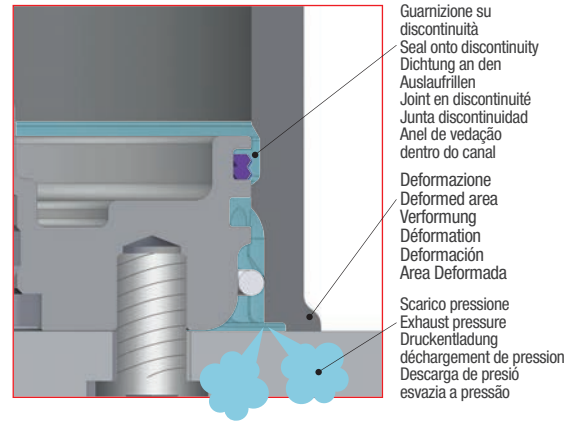
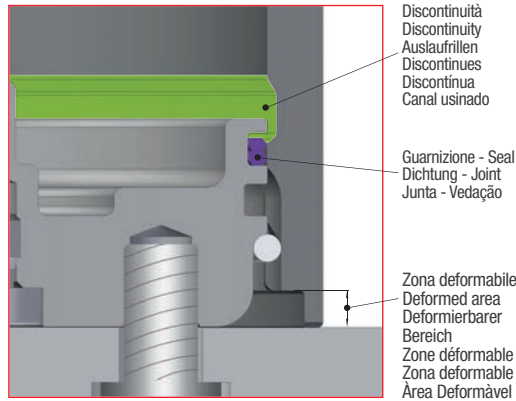
EN OSAS is the combination of a deformable body skirt with discontinuity groove on the body-bottom plate sealing wall. OSAS self activates without causing structural damages to the cylinder, further improving safety for users.

DE OSAS ist die Kombination einer deformierbaren Zone des Körpers mit Auslaufrillen an der Kontaktwand der Dichtung Körper-Boden. OSAS aktiviert sich ohne Strukturschäden am Zylinder, wodurch die Sicherheit für den Anwender verbessert wird.

FR OSAS est la combinaison d'une zone déformable du corps avec des gorges discontinues sur la paroi de contact du joint corps-plaque inférieure. OSAS s'auto-active sans provoquer de détériorations structurelles du vérin, améliorant ainsi la sécurité des opérateurs.

ES OSAS es la combinación de una zona deformable del cuerpo con ranuras discontinuas en la pared de contacto cuerpo-placa inferior. OSAS se activa sin peligro estructural para el cilindro, aumentando de manera importante la seguridad para el usuario.

PT OSAS é a combinação de uma área do corpo deformável com ranhura na parede de vedação inferior corpo-placa. OSAS ativa sem causar danos estruturais ao cilindro, melhorando ainda mais a segurança para os usuários.



Standard on: **KE**

IT OSAS è realizzata con delle discontinuità sulla parete di contatto della guarnizione pistone. OSAS si attiva senza deformazione del corpo, aumentando ulteriormente la sicurezza per l'utilizzatore.

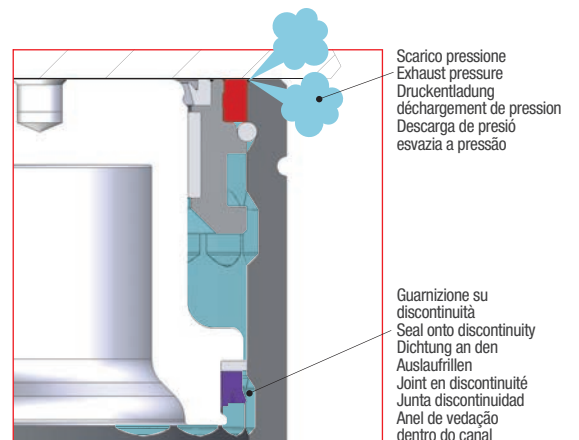
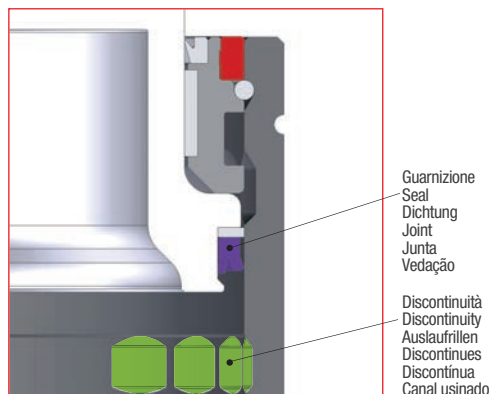
EN OSAS are discontinuity grooves on the body-piston sealing wall. OSAS self activates without deforming the body of the cylinder, further improving safety for users.

DE OSAS besteht aus Auslaufrillen an den Kontaktflächen der Kolbendichtung. OSAS aktiviert sich ohne eine Verformung des Körpers, wodurch die Sicherheit für den Anwender verbessert wird.

FR OSAS sont des gorges discontinues sur la paroi de contact du joint corps-piston. OSAS s'auto-active sans provoquer de déformation du vérin, améliorant ainsi la sécurité des opérateurs.

ES OSAS consiste en ranuras discontinuas en la pared de contacto cuerpo-pistón. OSAS se activa sin deformaciones del cuerpo, aumentando de manera importante la seguridad para el usuario.

PT OSAS é ativado com canais na parede de vedação do pistão. A OSAS é ativada sem deformação do corpo, aumentando ainda mais a segurança do usuário.





Uncontrolled
Speed
Active
Safety

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Standard on:
RV - RF - RS
RG - RT - S
SC - H - HF
HT - LS

IT USAS è la combinazione di una zona deformabile della boccia in contatto con l'anello di ritegno a C e delle discontinuità sulla parete di contatto della guarnizione. USAS si attiva senza pericolo strutturale per il cilindro.

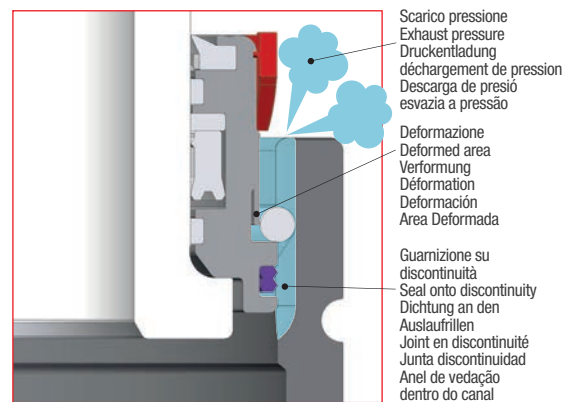
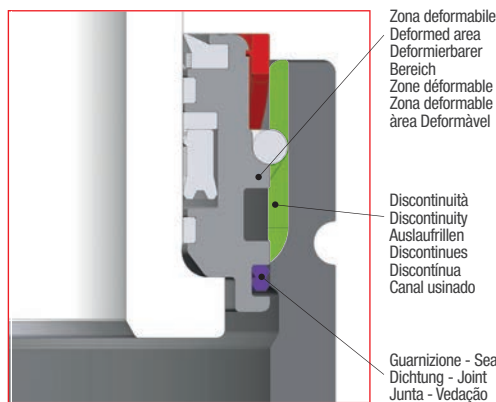
EN USAS is the combination of a deformable part of the bushing in contact with the retaining C-ring and the discontinuities on the wall of contact of the seal. USAS self activates without causing structural damages to the cylinder.

DE USAS besteht aus der Kombination eines verformbaren Bereichs der Buchse in Kontakt mit dem Sprengring und den Auslaufrillen auf der Kontaktwand der Dichtung. USAS aktiviert sich ohne die Gefahr von Strukturschäden am Zylinder.

FR USAS est la combinaison d'une zone déformable de la douille en contact avec le joint de retenue à C et des gorges discontinues sur la paroi de contact du joint. USAS s'auto-active sans déformer le corps du ressort-gaz.

ES USAS es la combinación de una zona deformable del casquillo en contacto con el anillo de sujeción y ranuras discontinuas en la pared. USAS se activa sin deformaciones del cuerpo.

PT USAS é a combinação de uma parte deformável da bucha em contato com o anel de retenção em C. Com o trabalho incorreto da haste sobre a bucha rompe-se o selo liberando a pressão do cilindro. USAS é ativado, sem causar danos estruturais ao cilindro.



Standard on: ML - MP - MQ

IT USAS è la combinazione di una zona deformabile del fondello in contatto con l'anello di ritegno a C e delle discontinuità sulla parete di contatto della guarnizione. USAS si attiva senza pericolo strutturale per il cilindro.

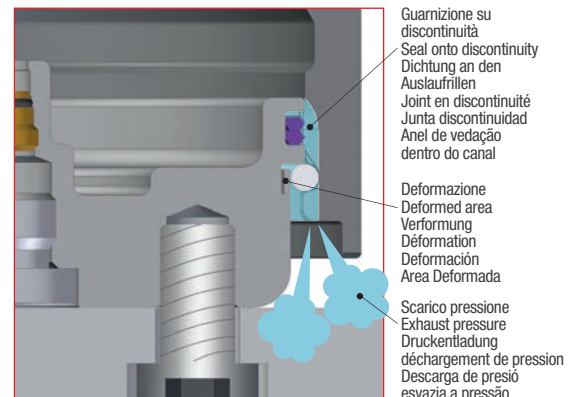
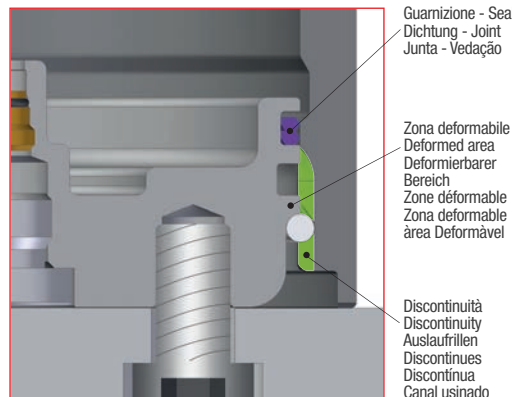
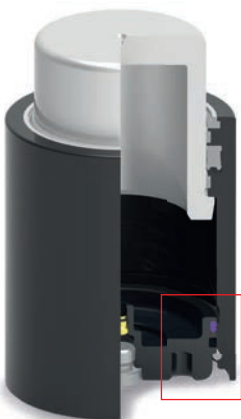
EN USAS is the combination of a deformable part of the bottom plate in contact with the retaining C-ring and the discontinuities on the wall of contact. USAS self activates without causing structural damages to the cylinder.

DE USAS ist die Kombination eines deformierbaren Bereichs am Boden in Kontakt mit dem Sprengring und den Auslaufrillen an den Kontaktwänden der Dichtung. USAS aktiviert sich ohne die Gefahr von Strukturschäden am Zylinder.

FR USAS est la combinaison d'une zone déformable de la douille en contact avec la bague de retenue à C et des gorges discontinues sur la paroi de contact du joint. USAS s'auto-active sans provoquer des détériorations structurelles du ressort-gaz.

ES USAS es la combinación de una zona deformable de la placa inferior en contacto con el anillo de sujeción y ranuras discontinuas en la pared de contacto. USAS se activa sin peligro estructural para el cilindro.

PT USAS é a combinação de uma area deformável da placa base em contacto com o anel de retenção em C, e as ranhuras na parede de vedação corpo-placa base. USAS é ativado para não causar danos estruturais ao cilindro.



Standard on: KE

IT USAS è la combinazione di una zona deformabile della boccola in contatto con l'anello di ritegno a C e delle discontinuità sulla parete di contatto della guarnizione pistone. USAS si attiva senza pericolo strutturale per il cilindro.

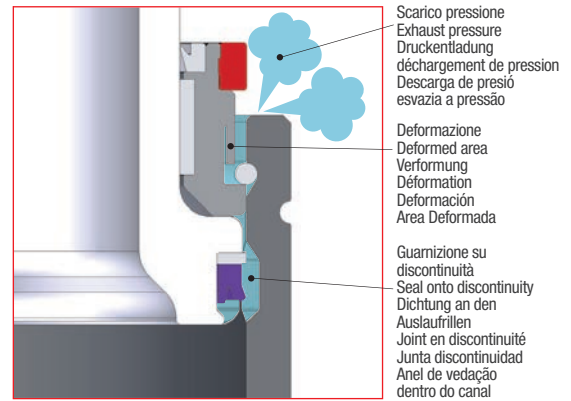
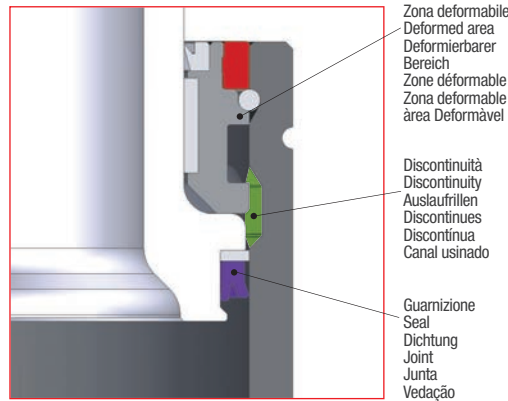
FR USAS est la combinaison d'une zone déformable de la douille en contact avec le joint de retenue à C et des gorges discontinues sur la paroi de contact du joint corps-piston. USAS s'active sans déformer le corps du ressort-gaz.

EN USAS is the combination of a deformable part of the bushing in contact with the retaining C-ring and the discontinuities on the wall of contact of the piston seal. USAS self activates without causing structural damages to the cylinder.

ES USAS consiste en la combinación de una zona deformable del casquillo en contacto con el anillo de sujeción y ranuras discontinuas en la pared de contacto cuerpo-pistón. USAS se activa sin deformaciones del cuerpo.

DE USAS besteht aus der Kombination eines deformierbaren Bereichs der Buchse in Kontakt mit dem Sprengring und den Auslaufrillen an den Kontaktflächen der Kolbdichtung. USAS aktiviert sich ohne die Gefahr von Struktur-schäden am Zylinder.

PT USAS é a combinação de uma parte deformável da bucha em contato com o anel de retenção em C, ao se deformar o pistão entra em uma área rebaxada do corpo. USAS é ativada descarregando a pressão evitando danos estruturais ao cilindro.



**Over
Pressure
Active
Safety**

**VDI
3003**



Standard on:

**M - MS - RV - RS
RF - RG - RT - S
SC - H - HF - HT
LS - ML - MP - KE**

IT OPAS è la combinazione di un setto di rottura calibrato integrale sul fondello o un tappo di rottura montato sul corpo del cilindro, con una fresatura di scarico sulla base di appoggio.

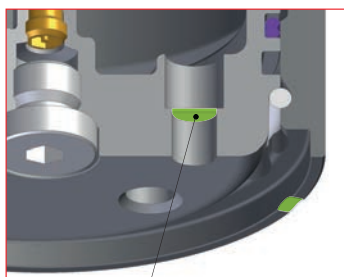
FR OPAS est un cloison de rupture calibré intégral sur la plaque inférieure ou un bouchon de rupture monté sur le plateau du cylindre, avec une fraisure de déchargement sur la base d'appui.

EN OPAS is either the combination of a rupture septum or a rupture plug positioned in the bottom of the cylinders, with an exhaust milling on the bottom contact surface.

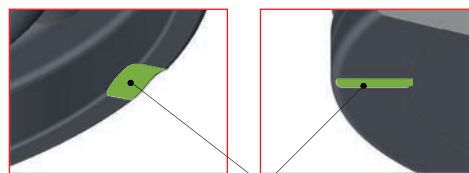
ES OPAS es la combinación de un septo de rotura o bien de un tapón de rotura posicionados en la base del cilindro, con un fresado de descarga en la base de apoyo.

DE Je nach Bauweise der Gdf. ist OPAS die Kombination aus einer kalibrierten, im Boden integrierten Sollbruchstelle oder einem im Zylinderkörper eingesetzten Sollbruchstopfen und der Auslaufrille in der Auflagefläche.

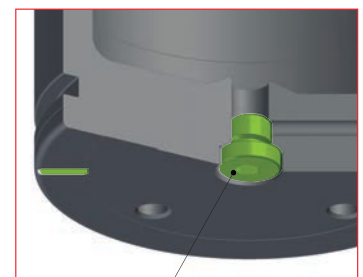
PT OPAS é a combinação de um septo calibrado ou uma plugue de ruptura posicionado na parte inferior dos cilindros, com uma saída de escape na superfície inferior de contacto.



Setto di rottura - Rupture septum - Sollbruchstelle
Cloison de rupture - Septo de ruptura - Septo de ruptura



Fresatura di scarico - Exhaust milling - Auslaufrille
Fraisage de déchargement - Fresado de descarga - Área de saída de pressão



Tappo di rottura - Rupture plug - Sollbruchstopfen
Bouchon de rupture - Tapón de ruptura - Plugue de ruptura

Se si sono attivate le sicurezze, verificare e scaricare eventuali residui di pressione, eliminare le cause del danno e sostituire sempre il cilindro danneggiato.

If the safeguard devices are activated, verify and exhaust the possible pressure leftovers, remove the causes of the damage and replace always the damaged cylinder.

Wenn die sicherungen aktiviert werden, prüfen und entladen Sie die eventuelle Restdruck, beseitigen Sie die Ursachen des Schadens und ersetzen Sie immer die beschädigte Gasdruckfeder.

Quand les sécurités sont activées, vérifier et décharger les éventuels résidus de pression, éliminer les causes du endommagement et substituer toujours les ressort à gaz endommagés.

Si se activan los dispositivos de seguridad, verificar y descargar toda la presión residual, eliminar las causas de los daños y reemplazar siempre el cilindro dañado.

Se os dispositivos de segurança são ativados, verificar e descarregar qualquer pressão residual, eliminar as causas dos danos e substituir sempre o cilindro danificado.



1381



PED 2014/68/EU

IT

- La progettazione e la produzione dei cilindri a gas Special Springs sono realizzate nel pieno rispetto delle normative vigenti per i recipienti in pressione come stabilito dalla direttiva PED 2014/68/EU e EN 13445:2015.

EN

- The design and manufacturing of Special Springs gas cylinders are in full compliance with the European regulations for high pressure vessels, in accordance with directive PED 2014/68/EU and EN 13445:2015.

DE

- Die Konstruktion und Herstellung der Gasdruckfedern Special Springs erfolgt in Übereinstimmung mit den geltenden Normen für Druckbehälter, wie in der PED Richtlinie 2014/68/EU und EN 13445:2015 festgelegt.

FR

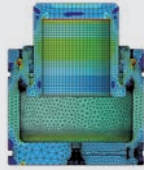
- La conception et la fabrication des ressorts à gaz Special Springs sont en totale conformité avec les législations européennes en matière de composants caractérisés haute pression et notamment avec la directive PED 2014/68/EU et EN 13445:2015.

ES

- La proyectación y producción de los cilindros de nitrógeno Special Springs se realizan con pleno respeto de las normativas vigentes para elementos de presión como establece la directiva PED 2014/68/EU y EN 13445:2015).

PT

- O projeto e fabricação de cilindros de Nitrogênio Special Springs estão em total conformidade com as regras Europeias para Cilindros de alta pressão, em conformidade com a directiva PED 2014/68/EU e EN 13445:2015.



FEM - CAE

IT

- Tutti i prodotti Special Springs sono sviluppati e validati con l'utilizzo dei più avanzati sistemi di analisi FEM (finite element method) e CAE (computer aided engineering).

EN

- All Special Springs products are developed and validated via the use of the most advanced FEM (finite element method) and CAE (computer aided engineering) analysis systems.

DE

- Alle Produkte von Special Springs werden durch die Verwendung der fortschrittlichsten Analysensysteme FEM (finite element method) und CAE (computer aided engineering) entwickelt und validiert.

FR

- Tous les produits Special Springs sont développés et certifiés selon les méthodes FEM (finite element method) et CAE (Computer aided engineering).

ES

- Todos los productos Special Springs son desarrollados y validados con la utilización de los más avanzados sistemas de análisis FEM (finite element method) y CAE (computer aided engineering).

PT

- Todos os produtos Special Springs são desenvolvidos e validados através da utilização das Técnicas mais avançadas FEM (método de elementos finitos) e sistemas de análise do CAE (Engenharia assistida por computador).

> 2.000.000

STRUCTURE OF THE GAS CYLINDER

IT

- Tutti i componenti strutturali delle molle a gas Special Springs sono progettati e costruiti per sopportare minimo 2.000.000 di cicli completi alla massima pressione, temperatura e per ogni tipo di fissaggio.

EN

- All structural components of Special Springs nitrogen cylinders are designed and built to withstand a minimum of 2,000,000 complete cycles at maximum pressure, temperature and for all types of fixings.

DE

- Alle Strukturkomponenten der Special Springs Gasdruckfedern sind konstruiert und hergestellt, um mindestens 2.000.000 komplette Zyklen bei maximalem Druck und Temperatur zu erreichen, unter Verwendung jeder für das jeweilige Modell empfohlener Befestigungsart.

FR

- Tous les composants structureaux des ressorts gaz Special Springs sont conçus et construits pour supporter un minimum de 2 million des cycles complètes à la pression et température maximale pour chaque type de fixation.

ES

- Tutti i componenti strutturali delle molle a gas Special Springs sono progettati e costruiti per sopportare minimo 2.000.000 di cicli completi alla massima pressione, temperatura e per ogni tipo di fissaggio.

PT

- Todos os componentes estruturais dos cilindros Special Springs, são projetados e construídos para suportar no mínimo 2.000.000 ciclos com máxima pressão, temperatura e para todos os tipos de dispositivos de fixação.

Benefits

IT

- Maggiore garanzia di prodotti e componenti sicuri per il cliente.

EN

- Greater assurance of safe products and components for customers.

DE

- verbesserte Sicherheit für den Kunden durch sichere Produkte und Komponenten.

FR

- Plus grande assurance de produits et composants sûrs pour les clients.

ES

- Mayor garantía de productos y componentes seguros para los clientes.

PT

- Maior garantia de produtos e componentes seguros para os clientes.



KNOWLEDGE

IT

- La conoscenza è un elemento fondamentale per azioni quotidiane di successo, più conosciamo meglio facciamo. Questo concetto è da sempre presente nella filosofia del lavoro di Special Springs. Da molti anni Special Springs è impegnata per aumentare la conoscenza dei prodotti e delle loro caratteristiche unitamente alle migliori tecniche di utilizzo attraverso formazioni teoriche e pratiche.

EN

- Knowledge is an essential element for successful daily actions; the more we know, the better we perform. This concept has always been one of Special Springs' core values. For many years the company has committed to increase knowledge of products along with their characteristics and their best utilisations techniques, through theoretical and practical training.

DE

- Fachkenntnis ist ein grundlegendes Element für tagtägliche Tätigkeiten mit Erfolg, je mehr wir wissen, desto besser können wir handeln. Dieses Konzept ist schon immer die Arbeitsphilosophie von Special Springs. Seit vielen Jahren ist Special Springs bestrebt, die Fachkenntnisse rund um die Produkte und ihre technischen Eigenschaften zusammen mit den neuesten Anwendungstechniken durch theoretische und praktische Schulungen zu vertiefen.

FR

- La connaissance est un élément fondamental pour les actions quotidienne de succès, le plus on connait, le mieux on fait. Ce concept a été toujours présent dans la philosophie de travail de Special Spring. Depuis plusieurs années Special Spring s'est engagé à augmenter la connaissance des produits et de ses caractéristiques mais aussi aux meilleures techniques d'usage à travers formations théoriques et pratiques.

ES

- El conocimiento es un elemento fundamental para acciones cotidianas que lleven al éxito, cuanto más se conoce mejor se hace. Este concepto ha estado siempre en la filosofía de trabajo de Special Springs. Special Springs se dedica desde hace muchos años a aumentar su conocimiento sobre los productos y sus características, así como a mejorar las técnicas de uso a través de formaciones teóricas y prácticas.

PT

- O conhecimento é um elemento essencial para o sucesso das ações diárias; Quanto mais soubermos, melhor nós executamos. Este conceito sempre foi um dos valores da Special Springs. Por muitos anos a empresa se comprometeu a aumentar os conhecimentos dos produtos juntamente com suas características e suas melhores técnicas de utilizações através de formação teórica e prática.



TECHNICAL SUPPORT

IT

- Special Springs, da sempre impegnata per migliorare il supporto tecnico agli utilizzatori, fornisce con ogni cilindro o suo componente un completo foglio di istruzioni multilingua.

EN

- Special Springs has always been committed to provide technical support for users; we provide a thorough multilingual instruction sheet with each cylinder or component.

DE

- Special Springs ist schon immer bestrebt, den technischen Support der Anwender zu verbessern, für jede Gasdruckfeder und deren Komponenten ist eine mehrsprachige Betriebsanleitung verfügbar.

FR

- Special Springs s'est engagée depuis longtemps pour améliorer le support technique aux utilisateurs, elle fournit avec chaque ressort ou composant un papier d'instruction multilingue complet.

ES

- Es prioridad desde siempre para Special Springs la mejora del soporte técnico al usuario, para lo que entrega un completo manual en varios idiomas con el cilindro o componente.

PT

- A Special Springs é empenhada em fornecer suporte técnico para usuários; Nós fornecemos uma folha de instruções multilingue completa com cada cilindro ou componente.

Benefits

IT

- Maggiore conoscenza degli utilizzatori sui reali vantaggi offerti dai cilindri a gas Special Springs.
- Maggiore conoscenza degli utilizzatori sui più corretti metodi di utilizzo con vantaggi economici e di sicurezza.
- Maggiore sensibilità e coscienza sull'importanza delle sicurezze attive sui cilindri a gas.

EN

- Increased knowledge of users, in regards to the real benefits given by Special Springs gas cylinders.
- Increased knowledge of users on how to appropriately use the products, hence benefit from cost and production efficiency.
- Increased knowledge of users on the importance of our gas cylinders safety features.

DE

- größeres Wissen der Anwender über die effektiven Vorteile der Special Springs Gasdruckfedern.
- größeres Wissen der Anwender über die am besten geeigneten Anwendungsverfahren mit wirtschaftlichen und sicherheitsrelevanten Vorteilen.
- besseres Verständnis bzw. Bewusstsein der Wichtigkeit der aktiven Sicherheitselemente an Gasdruckfedern.

FR

- Majeure connaissance des utilisateurs sur les avantages réels offert par les ressorts à gaz Special Springs.
- Majeure connaissance des utilisateurs sur les méthodes de usage plus correctes avec avantages économiques et de sécurité.
- Majeure sensibilité et conscience sur l'importance des sécurités actives dans les ressorts à gaz.

ES

- Mayor conocimiento por parte del usuario de las ventajas ofrecidas por los cilindros Special Springs.
- Mayor conocimiento por parte del usuario de los métodos correctos para aumentar la seguridad de uso.
- Mayor sensibilidad y conciencia de la importancia de la seguridad activa en los cilindros de nitrógeno.

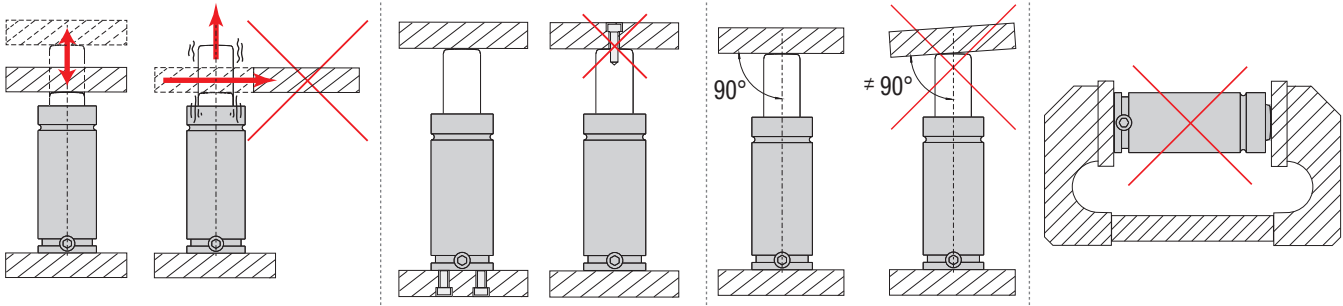
PT

- Aumento do conhecimento dos usuários, no que diz respeito aos benefícios reais dados pelo Cilindro de Nitrogênio Special Springs.
- Aumento do conhecimento dos usuários sobre como usar adequadamente os produtos, portanto, aumentando a eficiência de custo e produção.
- Aumento do conhecimento dos usuários sobre a importância de nossas características de segurança do cilindros de Nitrogênio.

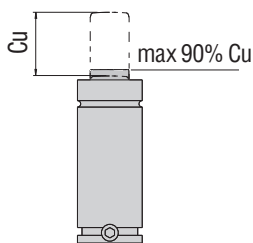
OPERATING INSTRUCTION



- IT** Caricare soltanto con GAS AZOTO (N₂).
- EN** Charge only with NITROGEN GAS (N₂).
- DE** Gasdruckfedern dürfen nur mit STICKSTOFF GAS (N₂) gefüllt werden.
- FR** Charge seulement avec du GAZ AZOTE (N₂).
- ES** Cargar únicamente con GAS NITROGENO (N₂).
- PT** Carregar somente com GÁS de NITROGÊNIO (N₂).



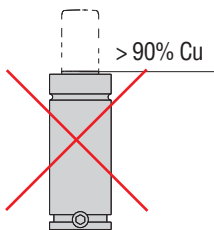
IT Tutti i cilindri Special Springs sono dotati di riserva corsa da 1 a 3 mm (escluso M90/TBM-TBI-TEM). Quindi il valore nominale Cu è completamente utilizzabile. Si raccomanda comunque di non eccedere il 90% di Cu nell'uso pratico per prevenire eventuali extra-corse, causate da modifiche o errori sugli stampi, con danni irreparabili ai cilindri e gravi rischi per la sicurezza.



EN All Special Springs nitrogen cylinders are designed with a stroke reserve from 1 to 3 mm (except M90/TBM-TBI-TEM). Therefore, the nominal value (Cu) is fully applicable. However, it is recommended not to exceed 90% of Cu in practical use in order to avoid the risk of any extra stroke caused by changes or errors in tools. This would result in irreparable damages to the cylinders and serious danger to personnel.

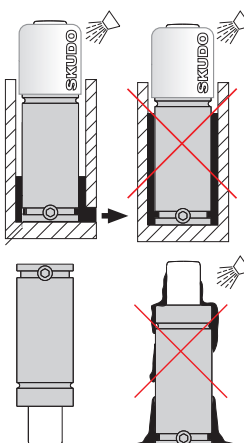
DE Alle Gasdruckfedern von Special Springs verfügen über eine Hubreserve von 1 ÷ 3mm (Ausnahme: M90/TBM-TBI-TEM). Daher kann der Nennwert Cu zu 100% verwendet werden. Wir empfehlen jedoch, im praktischen Einsatz nur 90% des angegebenen Cu-Wertes zu verwenden, um einen eventuellen Überhub zu vermeiden, der durch Änderung oder Fehlfunktion des Werkzeuges verursacht werden kann und zu irreparablen Schäden an der Gasdruckfeder und an dem Werkzeug führen kann, sowie ein schwerwiegendes Sicherheitsrisiko für den Anwender darstellt.

FR Tous les cylindres Special Springs sont munis d'une course de réserve de 1 ÷ 3 mm (sauf M90/TBM-TBI-TEM). Donc, la valeur nominale Cu peut être utilisée complètement. Il est en tout cas conseillé de ne pas dépasser 90% de Cu lors de l'utilisation normale, pour éviter toute course supplémentaire engendrée par des modifications ou des erreurs sur les moules; ce qui entraînerait des dommages irréparables aux cylindres et de graves risques pour la sécurité.



ES Todos los cilindros Special Springs están dotados de un margen adicional de carrera de 1 ÷ 3 mm (excepto M90/TBM-TBI-TEM). Esto significa que el valor nominal Cu es completamente utilizable. De todos modos, no deja de ser aconsejable no superar el 90% de Cu en el uso práctico, para así prevenir posibles sobre carreras, causadas por modificaciones o errores en los moldes, con daños irreparables a los cilindros y graves riesgos de seguridad.

PT Todos os cilindros Special Springs dispõem de reserva para pressões súbitas de 1 ÷ 3 mm (excluindo o M90/TBM-TBI-TEM). Assim, o valor nominal Cu é completamente utilizável. Recomenda-se no entanto que não se excedam os 90% de Cu na utilização prática para prevenir eventuais pressões súbitas mais fortes, causadas por modificações ou erros nas estampagens, com danos irreparáveis nos cilindros e graves riscos para a segurança.



IT In presenza di contaminanti liquidi o solidi utilizzare cilindri con SKUDO. In mancanza di cilindri con SKUDO, un miglioramento significativo si ottiene installando i cilindri capovolti.

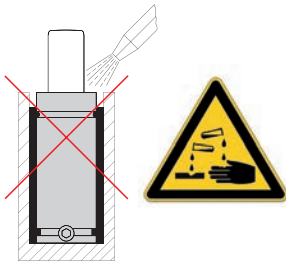
EN In presence of liquid or solid contaminants, use cylinders with SKUDO. In absence of cylinders with SKUDO protection, a significant improvement could be obtained by mounting the cylinders in upside-down position.

DE Verwenden Sie in Bereichen, in denen die Gasdruckfeder dem Einwirken von Flüssigkeiten oder Schmutzpartikeln ausgesetzt ist, Gasdruckfedern mit SKUDO. Wenn SKUDO nicht eingesetzt werden kann, empfehlen wir, die Gasdruckfeder mit nach unten stehendem Kolben zu montieren, um das Eindringen der Flüssigkeit oder der Schmutzpartikel in die Gasdruckfeder zu vermeiden.

FR En presence de contaminants liquides ou solides, utiliser les ressorts avec SKUDO. En absence de ressorts avec SKUDO, une amélioration importante peut s'obtenir en montant les cylindres renversés.

ES En presencia de contaminantes líquidos o sólidos, utilice cilindros con SKUDO. A falta de cilindros con SKUDO, una notable mejora se obtiene montando los cilindros volcados.

PT Em presença de contaminadores líquidos o sólidos, usar cilindro com SKUDO. Na falta de cilindro com protecção SKUDO, obtém-se uma significativa melhoria montando os cilindros de cabeça para baixo.



IT Evitare il contatto di fluidi aggressivi (soda e cloruri) con i cilindri. Se utilizzati per la pulizia dello stampo, si raccomanda di rimuovere dai cilindri ogni residuo.

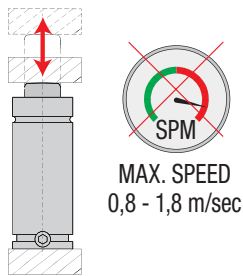
EN Avoid any contact of cylinders with aggressive fluids (soda or chlorites). If they are used for cleaning the tools, we recommend to carefully remove any residue from cylinders.

DE Werden aggressive Flüssigkeiten (Soda oder Chloride) zur Reinigung des Werkzeugs verwendet, dürfen sie nicht mit den Gasdruckfedern in Kontakt kommen bzw. jeglicher Rückstand davon muss von den Gasdruckfedern entfernt werden.

FR Éviter le contact des liquides agressifs (soda ou chlorites) avec les cylindres. S'ils sont utilisés pour le nettoyage des moules, il est recommandé d'enlever tous résidus sur les cylindres.

ES Evite el contacto de fluidos agresivos (soda o cloruro) con los cilindros. Si se utilizan para la limpieza de herramientas, recomendamos eliminar cualquier residuo de los cilindros.

PT Evitar qualquer contacto dos cilindros com fluidos agressivos (soda ou cloretos). Se forem usados para limpar ferramentas, recomendamos remover todos os resíduos dos cilindros.



IT Non confondere la velocità massima con il numero massimo di cicli al minuto, come raccomandato per ogni modello.

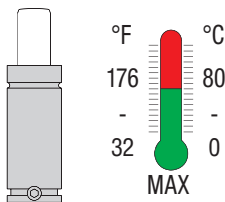
EN Do not confuse the maximum speed with the maximum number of strokes per minute, as recommended for each model.

DE Die maximale Geschwindigkeit darf nicht mit der maximalen Hubzahl pro Minute verwechselt werden, wie dies für jedes Modell empfohlen wird.

FR Ne confondez pas la vitesse maximale avec le nombre maximal de coups par minute, comme recommandé pour chaque modèle.

ES No debe confundirse la velocidad máxima con el número máximo de golpes por minuto, tal como se recomienda para cada modelo.

PT Não confunda a velocidade máxima com o número máximo de golpes por minuto, conforme o recomendado para cada modelo.



IT Temperatura di funzionamento.

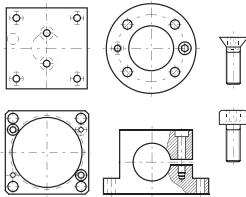
EN Operating temperature.

DE Arbeitstemperatur.

FR Température de fonctionnement.

ES Temperatura de funcionamiento.

PT Temperatura de operação.



IT Si raccomanda di installare sempre i cilindri con gli appositi elementi di fissaggio.

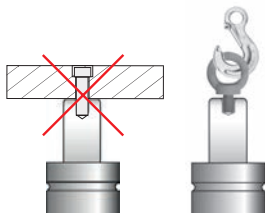
EN It is always recommended to install the gas springs with the suitable fixing elements.

DE Es wird immer empfohlen, die Gasdruckfedern mit den geeigneten Befestigungselementen zu fixieren.

FR Il est toujours recommandé de fixer les cylindres avec les éléments de fixation appropriés.

ES Se recomienda fijar siempre los cilindros con los elementos de fijación apropiados.

PT É aconselhável fixar sempre os cilindros com os elementos de fixação adequados.



IT Utilizzare il foro filettato sullo stelo solo per la movimentazione dei cilindri.

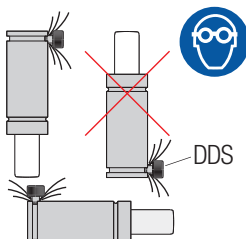
EN Use the threaded hole on the rod only for gas springs' handling.

DE Die Gewindebohrung an der Kolbenstange ist ausschließlich für die Handhabung der Gasdruckfedern zu verwenden.

FR Utiliser le trou fileté sur la tige uniquement pour la manipulation des cylindres.

ES Utilizar el orificio roscado en el vástago solo para la manipulación de los cilindros.

PT Utilizar o furo roscado na haste só para o manuseio dos cilindros.



IT Durante lo scaricamento con l'uso del dispositivo DDS, orientare il flusso del gas in direzione opposta all'operatore.

EN When discharging by using a DDS device, direct the gas flow away from operator.

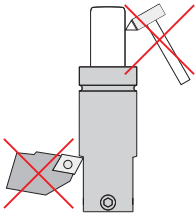
DE Während der Entladung mit Hilfe der DDS-Vorrichtung, richten Sie den Gasfluss in die dem Bediener entgegengesetzte Richtung.

FR Pendant le déchargement à l'aide du dispositif DDS, orientez le flux du gaz dans la direction opposée à l'opérateur.

ES Durante la descarga mediante el dispositivo DDS, orientar el flujo del gas en dirección contraria al operador.

PT Durante a descarga com a utilização do dispositivo DDS, orientar o fluxo de gás na direção oposta à do operador.

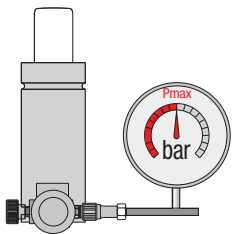
OPERATING INSTRUCTION



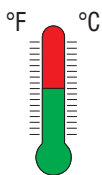
- IT** Evitare qualsiasi lavorazione meccanica o impatto su corpo e stelo.
- EN** Avoid any mechanical tooling or impact on the body and the rod.
- DE** Vermeiden Sie mechanische Bearbeitungen jeder Art oder sonstige Einwirkungen auf Körper und Kolbenstange.
- FR** Éviter toute opération mécanique ou impact sur le corps et la tige.
- ES** Evitar toda clase de elaboraciones mecánicas o de impactos en el cuerpo y en el vástago del cilindro.
- PT** Evitar qualquer trabalho mecânico ou impacto sobre o corpo e haste.



- IT** Se un cilindro ha la struttura danneggiata, prima di qualsiasi manipolazione, scaricare completamente la pressione.
- EN** If a cylinder has structural damage, fully exhaust all pressure before any form of handling.
- DE** Weist die Gasdruckfeder Beschädigungen auf, muss vor dem Eingriff der Druck vollständig abgelassen werden.
- FR** Si la structure d'un cylindre est endommagée, décharger complètement la pression, avant d'effectuer toute opération.
- ES** Si un cilindro presenta desperfectos en su estructura, descargar completamente la presión antes de proceder a revisarlo.
- PT** Se um cilindro tiver a estrutura danificada, antes de qualquer manipulação, descarregar completamente a pressão.

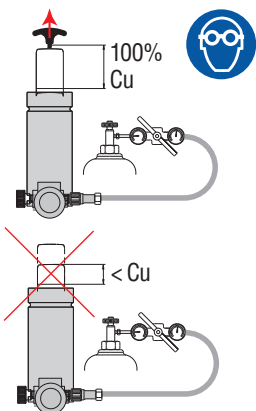


- IT** Durante il caricamento non eccedere la pressione massima raccomandata per ogni modello.
- EN** When charging do NOT exceed the maximum recommended pressure for each model.
- DE** Überschreiten Sie während der Ladung den für jedes Modell angegebenen Druckwert nicht.
- FR** Durant le chargement, il est conseillé de ne pas dépasser la pression maximum recommandée pour chaque modèle.
- ES** Durante la carga, no superar nunca la presión máxima aconsejada para cada modelo.
- PT** Durante a carga, não exceder a pressão máxima recomendada para cada modelo.



± 1 °C = ?
⇓
approx. ± 0,33 % P

- IT** Ogni variazione della temperatura, rispetto al valore nominale di calcolo di 20°C, determina una variazione della pressione del gas (P).
- EN** Any variation in temperature, respect to the nominal calculation value of 20°C, causes a change in gas pressure (P).
- DE** Jede Temperatur, die vom berechneten Nennwert (20°C) abweicht, bewirkt eine Änderung des Gasdrucks (P).
- FR** Chaque modification de la température, par rapport à la valeur nominale de calcul de 20°C, détermine une modification de la pression du gaz (P).
- ES** Toda variación de la temperatura con respecto al valor nominal de cálculo de 20°C, determina una variación de la presión del gas (P).
- PT** Qualquer variação da temperatura, no que respeita ao valor nominal de cálculo de 20°C, determina uma variação da pressão do gás (P).



- IT** Durante il caricamento assicurarsi che lo stelo sia estratto al 100%. Per cilindri privi di foro filettato sullo stelo, caricare inizialmente con 5 bar (75 psi) per estrarre completamente lo stelo, quindi procedere fino alla pressione desiderata.
- EN** Ensure that the rod is 100% extracted when charging. For cylinders without a threaded hole on the rod, initially charge to 5 bar (75 psi) to extract the rod completely, then charge to the required.
- DE** Stellen Sie vor der Befüllung der Gasdruckfeder sicher, dass die Kolbenstange ganz ausgefahren ist. Befüllen Sie Gasdruckfedern ohne Gewinde am Ende der Kolbenstange anfangs nur mit 5 bar (75 psi), um die Kolbenstange vollständig in die ausgefahrene Position zu drücken. Steigern Sie anschließend den Befülldruck auf den gewünschten Wert.
- FR** Durant le chargement, s'assurer que la tige soit complètement sortie. Les cylindres sans trou fileté sur la tige doivent être chargés initialement sous 5 bars (75 psi) pour extraire complètement la tige; procéder ensuite jusqu'à la pression désirée.
- ES** Durante la carga, asegurarse de que el vástago sea extraído al 100%. En cilindros con vástago sin orificio roscado, comenzar con una carga de 5 bar (75 psi) a fin de extraer completamente el vástago. Sólo entonces proseguir cargando hasta alcanzar la presión deseada.
- PT** Durante a carga, assegure-se de que o haste esteja totalmente extraído. Para cilindros sem orifício roscado no haste, carregar inicialmente com 5 bar (75 psi) para extrair completamente haste, depois, proceder até à pressão desejada.



- IT** Prima di gettare qualsiasi cilindro a gas scaricare completamente la pressione.
- EN** Before disposing of a gas spring ensure that all residual pressure is fully exhausted.
- DE** Vor der Entsorgung muss jede Gasdruckfeder vollständig entleert werden.
- FR** Décharger complètement la pression, avant de jeter tout cylindre à gaz.
- ES** Nunca tirar un cilindro de gas sin antes haber descargado por completo la presión.
- PT** Antes de deitar fora qualquer cilindro a gás, descarregar completamente a pressão.



IT Tutti i cilindri collegabili a sistema e specificatamente codificati sono forniti senza valvola unidirezionale, senza pressione e con il solo tappo di chiusura del foro di collegamento (escluso M90, M200, RV170, RV320). Nel caso si desideri trasformare dei cilindri autonomi in cilindri collegabili a sistema è sufficiente ordinare i raccordi e i tubi necessari e seguire le istruzioni specifiche per ogni serie pubblicate nel sito www.specialsprings.com.

EN All cylinders which can be connected to the system and are specifically coded are supplied without the one-way valve, without pressure and with only the closure plug of the connection hole (excluding M90, M200, RV170, RV320). If you wish to convert independent cylinders into system-connectable cylinders, order the necessary hoses and connections, and follow the specific instructions for every series published on site www.specialsprings.com.

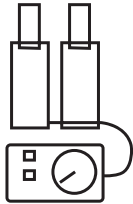
DE Alle Gasdruckfedern, die in ein Verbundsystem integrierbar sind und mit entsprechenden Zusatzangaben bestellt werden, werden ohne Rückschlagventil, unbefüllt und nur mit der in der Anschlussöffnung montierten Verschlusschraube geliefert (Ausnahmen: M90, M200, RV170, RV320). Sollen eigenständig arbeitende Gasdruckfedern für die Nutzung in einem Verbundsystem umgebaut werden, genügt es, die erforderlichen Anschlüsse und Leitungen zu bestellen, sowie die für die jeweilige Serie auf der Internetseite www.specialsprings.com veröffentlichten Hinweise zu beachten.

FR Tous les cylindres qui peuvent être raccordés au système et qui possèdent un code d'identification spécifique sont fournis sans valve unidirectionnelle ni pression. Seul le bouchon de fermeture de l'orifice de raccordement est fourni (sauf M90, M200, RV170, RV320). Au cas où l'on souhaiterait transformer des cylindres autonomes en cylindres à système raccordables, il suffira de commander les raccords et les tubes nécessaires puis de suivre les instructions spécifiques de chaque série, publiées sur le site www.specialsprings.com.

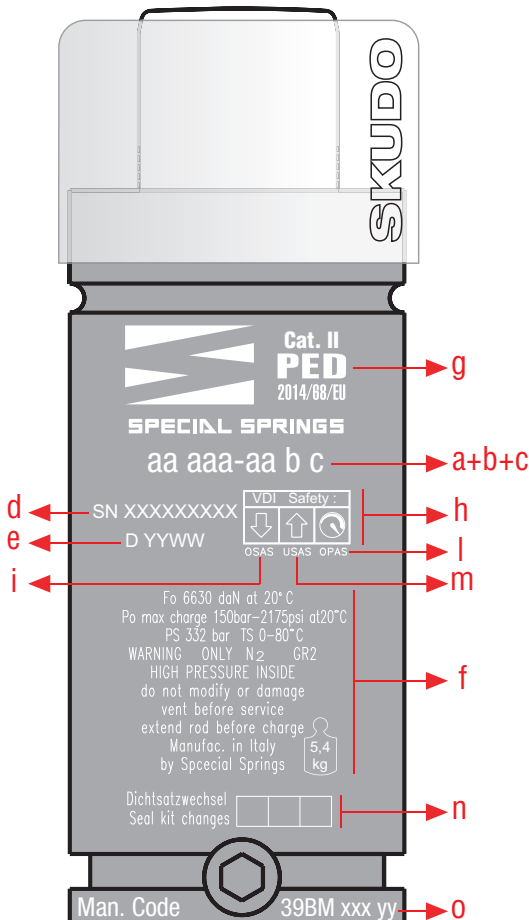
ES Todos los cilindros que se pueden conectar al sistema, específicamente codificados, se suministran sin válvula unidireccional y sin presión, sólo con el tapón de cierre del orificio de conexión (menos M90, M200, RV170, RV320). Si se desea transformar cilindros autónomos en cilindros conectables a sistema, es suficiente pedir los empalmes y los tubos necesarios y seguir las instrucciones específicas para cada serie publicadas en el sitio www.specialsprings.com.

PT Todos os cilindros que podem ser ligados ao sistema e especificamente codificados são fornecidos sem válvula unidireccional, sem pressão e somente com a tampa de fechamento do furo de ligação (Não incluída M90, M200, RV170, RV320). Caso queira-se transformar cilindros autónomos em cilindros acopláveis ao sistema, basta encomendar as conexões e tubos necessários e seguir as instruções específicas para cada série, publicadas no site www.specialsprings.com.

LINKABLE



LASER MARKING



- IT**
- a) Codice modello
 - b) Indice revisione
 - c) Versione collegabile a sistema
 - d) Lotto di produzione
 - e) Data di produzione
 - f) Info generali
 - g) Categoria PED
 - h) Pittogrammi sicurezza
 - i) Sicurezza attiva oltre corsa
 - l) Sicurezza attiva oltre pressione
 - m) Sicurezza attiva ritorno incontrollato
 - n) Numero cambi guarnizione
 - o) Kit manutenzione

- EN**
- a) Model code
 - b) Revision indicator
 - c) Hosed-system version
 - d) Batch number
 - e) Production date
 - f) General info
 - g) PED Category
 - h) Safety pictograms
 - i) Over stroke active safety
 - l) Over pressure active safety
 - m) Uncontrolled speed active safety
 - n) Number of seal replacements
 - o) Maintenance kit

- DE**
- a) Modellcode
 - b) Revisionsindex
 - c) Version kann an das System angeschlossen werden
 - d) Produktionsposten
 - e) Herstellungsdatum
 - f) Allgemeine Informationen
 - g) PED Kategorie
 - h) Sicherheitspiktogramme
 - i) Aktiven überhubsicherung
 - l) Aktive überdruck-sicherheitsvorrichtung
 - m) Aktiver Schutz bei Unkontrolliertem Rückhub
 - n) Anzahl der Dichtungswechsel
 - o) Wartung set

- FR**
- a) Référence modèle
 - b) N de révision
 - c) Version pouvant être reliée à un système
 - d) Lot de production
 - e) Date de fabrication
 - f) Information générales
 - g) Catégorie PED
 - h) Pictogrammes de sécurité
 - i) Sécurité active outre-course
 - l) Sécurité active outre-pression
 - m) Sécurité Active pour Retour Incontrôlé
 - n) Nombre de remplacements du joints
 - o) Set manutention

- ES**
- a) Código de modelo
 - b) Indicador de revisión
 - c) Versión conectable a sistema
 - d) Lote de producción
 - e) Fecha de fabricación
 - f) Información general
 - g) Categoría PED
 - h) Pictogramas de seguridad
 - i) Seguridad activa de fin de carrera
 - l) Seguridad activa ultra presión
 - m) Seguridad Activa de Retorno Incontrolado
 - n) Número dos cambios de la junta
 - o) Set mantenimiento

- PT**
- a) Código do modelo
 - b) Índice de revisão
 - c) Versão que pode ser ligada em sistema
 - d) Lote de produção
 - e) Data de produção
 - f) Informações gerais
 - g) Classe de risco PED
 - h) Pictogramas de segurança
 - i) Segurança ativa mecânica
 - l) Segurança ativa sobrepressão
 - m) Segurança para Retorno da Haste
 - n) Número das substituições da vedação
 - o) Manutenção de conjunto

IT Per tutti i modelli è indicata nel catalogo sia la forza finale isoteramica che politropica.

La forza finale isoteramica con 100% Cu, è un valore calcolato in condizioni statiche e può essere considerato sufficiente nell'uso normale dei cilindri.

La forza finale politropica con 100% Cu, è un valore più realistico quando il cilindro è in lavoro. Essendo però la temperatura del gas all'interno del cilindro non costante e dipendente da corsa nominale, corsa di lavoro, velocità della pressa, no. di cicli al minuto, volume del gas, temperatura dell'ambiente e di lavoro, etc. la forza finale politropica dovrebbe essere calcolata caso per caso.

Special Springs, comunque a titolo informativo, indica anche i valori approssimati di forza politropica calcolati a regime termico, 100% Cu, 30 SPM, velocità pressa costante e temperatura ambiente 20°C. Per maggiori informazioni contattare Special Springs.

EN For all models, both the isothermal and polytropic end force are indicated in the catalog.

The isothermal end force with 100% Cu, is a value calculated on static conditions and can be considered sufficient for a normal use of cylinders.

The Polytropic end force, with 100% Cu, is a more realistic value when the cylinder is working. Though, being the temperature of the gas inside the cylinder not constant, and depending from several factors, the Polytropic end force should be calculated case by case. The influencing factors are, for example: nominal stroke, working stroke, press speed, number of cycles per minutes, gas volume, working and environment temperature etc.

Special Springs, for user information, indicates the approximated values of polytropic force calculated at thermal regime, 100% Cu, ca 30 SPM constant press speed and room temperature at around 20°C. For further details please contact Special Springs.

DE In unserem Katalog ist für alle Gasdruckfedern sowohl die isotherme als auch die polytrope Endkraft angegeben.

Die isotherme Endkraft bei 100 % Cu ist ein Wert, der unter beinahe statischen Bedingungen ermittelt worden ist und der unter normalen Einsatzbedingungen der Gasdruckfeder als ausreichend genau betrachtet werden kann.

Die polytrope Endkraft bei 100 % Cu ist ein realistischer Wert wenn die Gasdruckfeder in Betrieb ist. Da jedoch die Temperatur des Stickstoffs im Inneren der Gasdruckfeder nicht konstant ist und abhängig ist vom Nominalhub, vom Arbeitshub, der Pressengeschwindigkeit, der Anzahl Zyklen pro Minute, dem Volumen des Stickstoffgases, der Raum- und Arbeitstemperatur, etc. müsste die polytrope Endkraft für jede Anwendung berechnet werden.

Special Springs gibt jedoch zur Information auch den annähernde Wert der polytropen Kraft an, der bei stabiler Betriebstemperatur, 100 % Cu, ca. 30 Hübe pro Minute, konstanter Pressengeschwindigkeit und ca. 20°C Raumtemperatur ermittelt worden ist. Für weitere Informationen wenden Sie sich bitte direkt an Special Springs.

FR Pour tous les modèles, on indique sur le catalogue, soit la force finale isothermique, que celle polytrophique.

La force finale isothermique, avec 100% de Cu, est une valeur calculée en conditions statiques et peut être considérée suffisante en l'usage normal des cylindres.

La force finale polytrophique, avec 100% de Cu, est une valeur plus réaliste lorsque le cylindre est en travail. Toutefois, étant donné que la température du gaz à l'intérieur du cylindre n'est pas constante et dépend de différents facteurs, tels que: course nominale, course de travail, vitesse de la presse, nombre de cycles par minute, volume du gaz, température de travail et de l'environnement etc., la force polytrophique finale doit être calculé au cas par cas.

Special Springs, cependant, à des buts d'information, indique aussi les valeurs approximés de la force polytrophique calculés au régime thermique, 100% Cu, environ. 30 SPM, presse à vitesse constante et température ambiante 20 °C. Pour tous renseignements complémentaires, contactez Special Springs.

ES Para todos los modelos, se indica en el catálogo, tanto la fuerza final isotérmica, como la politrópica.

La fuerza final isotérmica con 100% de Cu, es un valor calculado en condiciones estáticas y puede considerarse suficiente en el uso normal de los cilindros.

La fuerza politrópica finale con 100% de Cu, es un valor más realista cuando el cilindro está en trabajo. Dado que, sin embargo, la temperatura del gas dentro del cilindro no es constante y depende de varios factores, tales como: carrera nominal, la carrera de trabajo, la velocidad de la prensa, el número de ciclos por minuto, el volumen del gas, la temperatura del medio ambiente y trabajo, etc., la fuerza politrópica final debe calcularse caso por caso.

Special Springs, sin embargo, a título informativo, indica los valores aproximados de fuerza politrópica calculados a régimen térmico, 100% Cu, ca. 30 SPM, velocidad constante de prensas y temperatura ambiente a 20 °C. Para más informaciones póngase en contacto con Special Springs.

PT Para todos os modelos, é indicada no catálogo tanto a força final isotérmica, que a politrópica.

A força final isotérmica com 100% de Cu, é um valor calculado em condições estáticas e pode ser considerada suficiente, em utilização normal dos cilindros.

A força politrópica finale com 100% de Cu, é um valor mais realista quando o cilindro estiver em trabalho. Uma vez que, no entanto, a temperatura do gás no interior do cilindro não é constante e depende de vários factores, tais como: curso nominal, o curso de trabalho, a velocidade de impressão, o número de ciclos por minuto, o volume do gás, a temperatura do ambiente e trabalhar etc., o a força politrópica final deve ser calculado caso a caso.

Special Springs, no entanto, para fins de informação, indica os valores aproximados da força politrópica calculados a regime térmico 100% Cu, ca. 30 SPM, velocidade constante de prensas e temperatura ambiente a 20 °C. Para mais informações contacte Special Springs.

F_{1i}
isothermal
end force

F_{1p}
Polytropic
end force



$$F_0 = P \cdot S$$

- IT** Per calcolare la forza iniziale (Fo) di un cilindro a gas è sufficiente moltiplicare la pressione di caricamento massima (P) per l'area di tenuta, stelo o pistone, della guarnizione (S).
- EN** To calculate the initial force (Fo) of each gas cylinder, multiply the maximum charging pressure (P) to the area of sealing (S), rod or piston, of the gasket seal.
- DE** Zur Berechnung der Anfangskraft (Fo) einer Gasdruckfeder, muss der angegebene maximale Befülldruck (P) mit der von der Dichtung abgedichteten Fläche an der Kolbenstange oder Kolben (S) multipliziert werden.
- FR** Pour calculer la force initiale (Fo) d'un cylindre à gaz, il suffit de multiplier la pression maximum de chargement (P) pour la surface de retenue, tige ou piston, du joint (S).
- ES** Para calcular la fuerza inicial (Fo) de un cilindro de gas, se multiplica la presión máxima de carga (P) por el área de junta, vástago o pistón, de la guarnición(S).
- PT** Para calcular a força inicial (Fo) de um cilindro a gás, basta multiplicar a pressão de carga máxima (P) pela área de estanquidade do haste/pistão, da guarnição.

Isothermal force

Metric units

$$F_{x_i} = P \cdot S \cdot \left(\frac{1}{1 - \frac{S}{V_0} \cdot C_x} \right)^n$$

Imperial units

$$F_{x_i} = P \cdot S \cdot \left(\frac{1}{1 - \frac{S}{V_0} \cdot C_x} \right)^n$$

Tab. 1

| P | n |
|----------|------|
| ≤100 bar | 1,09 |
| 150 bar | 1,19 |
| 200 bar | 1,31 |

- IT** Per calcolare la forza intermedia isoterma (Fx_i) ad una determinata corsa di lavoro (Cx) applicare la formula sostituendo i relativi valori numerici. L'esponente (n) varia in funzione della pressione di caricamento (P) come indicato nella Tab.1. Per valori intermedi di pressione è possibile calcolare il valore di (n) proporzionalmente.
- EN** To calculate the intermediate isothermal force (Fx_i) to a specific working stroke (Cx), use the formula by replacing the relative numeric values. The exponent (n) varies in function of the charging pressure (P) as indicated in Tab.1. For intermediate pressure values, it is possible to calculate the (n) value proportionally.
- DE** Zur Berechnung der isothermischen Zwischenkraft (Fx_i) bei einem bestimmten Arbeitshub (Cx) verwenden Sie die nebenstehende Formel und setzen Sie entsprechend die im Katalog angegebenen Werte ein. Der Exponent (n) ist abhängig von dem Befülldruck (P). Mit Hilfe der Angaben in der Tab.1 können Zwischenwerte des Druckes proportional berechnet werden.
- FR** Pour calculer la force intermédiaire isothermique (Fx_i) d'un ressort à gaz à une course de travail saisie (Cx), vous devez utiliser cette formule en substituant les chiffres relatifs aux valeurs numériques. L'Exposant (n) varie en fonction de la pression de chargement (P), comme montré dans le Tab.1. Pour les valeurs intermédiaires de pression, il est possible de calculer la valeur (n) de façon proportionnelle.
- ES** Para calcular la fuerza isoterma intermedia (Fx_i) para una carrera de trabajo determinada (Cx) aplicar la fórmula mediante la sustitución de los valores numéricos correspondientes. El exponente (n) varia en función de la presión de carga (P) como se muestra en Tab.1. Para valores intermedios de presión, es posible calcular el valor de (n) de manera proporcional.
- PT** Para calcular a força isotérmica intermediária (Fx_i) para um determinado curso de trabalho (Cx) aplicar a fórmula através da substituição dos valores numéricos relevantes. O expoente (n) varia em função da pressão de carga (P), como mostrado na Tab.1. Para os valores intermédios de pressão, é possível calcular o valor de (n) proporcionalmente.

Polytropic force

Metric units

$$F_{x_p} = P \cdot S \cdot \left(\frac{1}{1 - \frac{S}{V_0} \cdot C_x} \right)^{1,58}$$

Imperial units

$$F_{x_p} = P \cdot S \cdot \left(\frac{1}{1 - \frac{S}{V_0} \cdot C_x} \right)^{1,58}$$

- IT** Per calcolare un valore approssimato di forza intermedia politropica (Fx_p) ad una determinata corsa di lavoro (Cx) applicare la formula sostituendo i relativi valori numerici. L'esponente (n) per la forza politropica può essere assunto pari a 1,58 per la maggior parte delle normali applicazioni.
- EN** To calculate the approximated value of polytropic intermediate force (Fx_p) to a specific working stroke (Cx), use the formula by replacing the relative numeric values. The exponent (n) for the polytropic force shall be assumed to be equal to 1,58 for the majority of normal applications.
- DE** Zur Berechnung der ungefähren polytropischen Zwischenkraft (Fx_p) bei einem bestimmten Arbeitshub (Cx) verwenden Sie die nebenstehende Formel und setzen Sie entsprechend die im Katalog angegebenen Werte ein. Der Exponent (n) beträgt im Normalfall 1,58.
- FR** Pour calculer la valeur de force polytrophique intermédiaire (Fx_p) d'un ressort à gaz à une course de travail saisie (Cx), vous devez utiliser cette formule en substituant les chiffres relatifs aux valeurs numériques. L'Exposant (n) peut être assumé comme 1,58 pour la majorité d'utilisations courantes.
- ES** Para calcular un valor aproximado de la fuerza intermedia politrópica (Fx_p) para una carrera de trabajo determinada (Cx), aplicar la fórmula mediante la sustitución de los valores numéricos correspondientes. El exponente (n) para la fuerza de politrópico puede suponerse como igual a 1,58 para la mayoría de las aplicaciones normales.
- PT** Para calcular um valor aproximado da força intermediária politrópica (Fx_p) para um determinado curso de trabalho (Cx), aplicar a fórmula através da substituição dos valores numéricos relevantes. O expoente (n) para a força politrópica pode ser assumido como sendo igual a 1,58 para a maioria das aplicações normais.

$$P_n = \frac{F_n}{S}$$

- IT** Per determinare la pressione di caricamento necessaria per ottenere una forza (Fn) diversa dalla nominale (Fo) è sufficiente dividere la forza richiesta (Fn) per l'area di tenuta, stelo o pistone, della guarnizione.
- EN** To determine the pressure level required to achieve a force (Fn) different from the nominal one (Fo), divide the required force (Fn) by the area of sealing, rod or piston, of the gasket seal.
- DE** Zur Berechnung des benötigten Befülldruckes (Pn) für eine spezifische Anfangskraft (Fn), die von der im Katalog angegebenen Anfangskraft abweicht, muss die gewünschte Anfangskraft (Fn) durch die von der Dichtung abgedichteten Fläche an der Kolbenstange oder Kolben dividiert werden.
- FR** Pour calculer la pression de chargement nécessaire pour obtenir une force (Fn) différente de la force nominale (Fo) il suffit de diviser la force requise (Fn) par la surface d'étanchéité (tige ou piston) du joint.
- ES** Para calcular la presión de carga necesaria a fin de obtener una fuerza (Fn) distinta de la nominal (Fo), se divide la fuerza pedida (Fn) por el área de estanquidad, vástago o pistón, de la guarnición.
- PT** Para determinar a pressão de carga necessária para obter uma força (Fn) diferente da nominal (Fo), basta dividir a força necessária (Fn) pela área de estanquidade do embolo/pistão, da guarnição.

Max Speed

SPM Strokes per Minute

- IT** Non superare la velocità massima dello stelo indicata. Velocità superiori possono ridurre la durata dei cilindri.
- EN** Do not exceed the maximum rod speed indicated. Exceeding speeds can reduce the cylinder's life.
- DE** Die angegebene max. Geschwindigkeit der Kolbenstange darf nicht überschritten werden. Höhere Geschwindigkeiten können die Lebensdauer der Gasdruckfedern reduzieren.
- FR** Ne pas excéder la vitesse maximale de la tige indiquée pour chaque modèle. Vitesses supérieures a peuvent réduire la durée des vérins.
- ES** No exceder la velocidad máxima del vástago indicada para cada modelo. Velocidades mas altas pueden reducir la duracion del cilindro.
- PT** Não exceda a velocidade máxima da haste indicada para cada modelo. Velocidades mais elevadas podem reduzir a vida útil do cilindro.

- IT** Per ogni modello è indicato il campo di frequenza massima di utilizzo raccomandata al 100% Cu. Il valore inferiore è riferito alla corsa più lunga, quello superiore alla corsa più breve. Frequenze superiori possono ridurre la durata dei cilindri.
- EN** The maximum frequency range of use recommended to 100 % Cu is indicated for every model. The lower value is referred to the longer stroke, the higher value refers to the shorter stroke. Higher frequencies can reduce the cylinder duration.
- DE** Für jeden Typ ist eine empfohlene max. Hubzahl (SPM) unter Berücksichtigung des max. Hubes (Cu) angegeben. Der kleine Wert bezieht sich auf den größten auswählbaren Hub, während der größere Wert sich auf den kleinsten auswählbaren Hub bezieht. Höhere Hubzahlen reduzieren die Lebensdauer der Gasdruckfedern.
- FR** Pour chaque modèle, on indique le champ de fréquence maximale d'usage recommandé au 100% de Cu. La valeur inférieure se réfère à la course plus longue, tandis que la valeur inférieure à la course plus courte. Fréquences supérieures peuvent réduire la durée des vérins.
- ES** Para cada modelo, se indica el rango frecuencia máxima de uso recomendada al 100%. El valor inferior indicado es válido para carrera mas larga, mientras que el valor superior se refiere a carrera mas corta. frecuencias más altas pueden reducir la duración de los cilindros.
- PT** Para cada modelo se indica o intervalo de frequência máxima do uso recomendada al 100% Cu. O valor mais baixo é relatado para o curso mais longo, o mais elevado para o curso mais curto. frequências mais elevadas podem reduzir a duração dos cilindros.

- IT** Se correttamente installati e in normali condizioni di lavoro, i cilindri ad azoto Special Springs sono garantiti per una durata di **200.000 metri lineari** di corsa (o 100.000 metri lineari per la serie HT). Condizioni di lavoro critiche o cause esterne che provochino mal funzionamenti possono ridurre, anche significativamente, la durata. La garanzia è valida per la durata indicata entro **2 anni** dalla data di acquisto. Utilizzi difformi dalle prescrizioni e dalle linee guida specificate e fornite con i prodotti o danni meccanici saranno causa di immediata decadenza della garanzia.

Termini legali di garanzia su www.specialsprings.com

- EN** If correctly installed and under normal working conditions, Special Springs nitrogen cylinders can guarantee a life of **200.000 linear meters** of stroke (or 100.000 linear meters for the series HT). Heavy working conditions or external causes that would cause malfunctioning may reduce the life significantly. The warranty is valid for the indicated life within **2 years** from the purchase date. Warranty will not be applied to mechanical damages or damages caused by negligence, misuse and noncompliance with the warning and indications contained in the instruction sheet.

Warranty legal terms on www.specialsprings.com

- DE** Bei korrektem Einbau und unter normalen Betriebsbedingungen, ist für die Special Springs Gasdruckfedern eine Lebensdauer von 200.000 m Gesamthub (oder 100.000 m Gesamthub für die Baureihe HT) gewährleistet. Kritische Betriebsbedingungen oder äußere Einflüsse, die zu Störungen führen, können die Lebensdauer wesentlich verringern. Die Garantie gilt für die angegebene Dauer innerhalb von zwei Jahren ab Kaufdatum. Die Garantie erlischt mit sofortiger Wirkung bei von den Vorschriften und Richtlinien, die zusammen mit den Produkten geliefert werden, abweichendem Einsatz bzw. mechanischer Beschädigung. **Garantiebedingungen siehe www.specialsprings.com**

- FR** Si correctement installées et avec des normales conditions d'usage, les ressorts à l'azote Special Spring sont garantis pour une durée de **200.000 mètres linéaires** des course (ou 100.000 mètres linéaires pour la série HT). Des conditions de travail critiques ou d'autres cause externes qui provoquent des mal fonctionnements pourraient réduire, même significativement, la durée. La garantie est valable pour la durée indiquée entre **2 ans** de la date d'achat. Des utilisations différentes des prescriptions des lignes-guide spécifiées et fournies avec les produits, ou encore des endommagements mécaniques causeront l'immédiate décadence de la garantie. **Termes juridiques de garantie sur www.specialsprings.com**

- ES** Con una instalación correcta y en condiciones normales de trabajo, los cilindros resorte de nitrógeno de Special Springs están garantizados para una duración de **200.000 metros lineales** de carrera (o 100.000 metros lineales para la serie HT). Condiciones de trabajo críticas o causas externas cheprovoquen funcionamientos incorrectos pueden reducir, incluso de manera significativa, la vida útil. La garantía es válida para la duración indicada, máximo **2 años** desde fecha de compra. Usos diferentes a los prescritos y a las líneas guía especificadas y suministradas con el producto o daños mecánicos serán causa inmediata decadenza de la garantía. **Términos legales de garantía en www.specialsprings.com**

- PT** Se correctamente instalados e em condições normais de trabalho, os cilindros de nitrogênio Special Springs podem garantir uma duração de **200.000 metros lineares** de curso (o 100.000 metros lineares para a linha HT). Condições críticas ou causas externas que possam causar mau funcionamento de trabalho pode reduzir a duração de uma forma significativa. A garantia é válida durante o período indicado dentro de **2 anos** até a data de compra. Ou qualquer uso diferente respeito das prescrições e orientações fornecidas e especificada com os produtos, ou danos mecânicos causaria a decadenza garantia imediata. **Termos legais de garantia em www.specialsprings.com**



IT TUTTI i cilindri ad azoto SPECIAL SPRINGS soddisfano i requisiti previsti dalla Direttiva Europea sulle attrezzature a pressione 2014/68/EU, che si applica nell'Unione Europea dal 19 Luglio 2016. Questa Direttiva regola e definisce come attrezzature a pressione i recipienti, le tubazioni e gli accessori sottoposti a una pressione massima ammissibile PS superiore a 0,5 bar. Più specificatamente, la Direttiva 2014/68/EU prevede la classificazione in categorie e l'obbligo di marcatura CE con il numero identificativo del produttore per le attrezzature il cui risultato della pressione P (bar) x il volume del fluido Vo (dm³) sia pari o superiore a 50. La marcatura CE è obbligatoria per le Categorie II e III, ma facoltativa per la Categoria I. Per tutti i cilindri a gas il cui prodotto P x Vo è inferiore a 50 si applica l'Articolo 4.3 della Direttiva e non sono marcati CE.

EN ALL Special Springs nitrogen cylinders fulfill the requirements of the European directive concerning pressure equipment (2014/68/EU), applied in the European Union from 19th July 2016. This directive sets out the standards for pressure equipment and defines them as vessels, piping and accessories subject to a maximum allowable pressure PS greater than 0,5 bar. In particular, according to the directive 2014/68/EU, pressure equipments are classified by category and they shall bear the CE marking with the identification number of the manufacturer when the result of pressure P(bar) X fluid volume Vo(dm³) is 50 or more. The CE marking is mandatory for Categories II and III, but discretionary for Category I. All gas cylinders which result of P x Vo is less than 50 are subject to Article 4.3 of the same directive and they do not bear the CE marking.

DE Alle Stickstoff-Gasdruckfedern von Special Springs erfüllen die Forderungen der ab dem 19. Juli 2016 in der Europäischen Union anzuwendenden Richtlinie 2014/68/EU über die Druckgeräte. Diese Richtlinie legt die Anforderungen an die Druckgeräte fest und definiert diese als Behälter, Rohrleitungen und Ausrüstungsteile mit einem max. zulässigen inneren Überdruck (PS) von mehr als 0,5 bar. Im Einzelnen werden Druckgeräte gemäß der Richtlinie 2014/68/EU in Kategorien eingestuft und müssen mit der CE-Kennzeichnung und der Identifikationsnummer des Herstellers beschriftet werden, wenn der errechnete Wert des Produktes von Druck (P) multipliziert mit dem Befüllungsvolumen Vo (dm³) größer als 50 ist. Die CE-Kennzeichnung ist für die Kategorien II und III zwingend, jedoch nicht für die Kategorie I. Die Gasdruckfedern, bei denen der errechnete Wert des Produktes von Druck (P) multipliziert mit dem Befüllungsvolumen Vo (dm³) kleiner als 50 ist, tragen gemäß dem Artikel 4.3 der genannten Richtlinie keine CE-Kennzeichnung.

FR TOUS les cylindres-ressorts à l'azote de SPECIAL SPRINGS satisfont aux prescriptions de la Directive Européenne sur les équipements sous pression 2014/68/EU, qui s'applique dans l'Union Européenne à partir du 19 juillet 2016. Cette Directive fixe les exigences envers les équipements sous pression et les définit comme les récipients, les tuyauteries et les accessoires soumis à une pression maximale admissible PS supérieure à 0,5 bar. Plus spécifiquement, la Directive 2014/68/EU prévoit la classification en catégories et l'obligation du marquage CE avec le numéro d'identification du fabricant pour les équipements dont le résultat de la pression P (bar) X le volume du fluide Vo (dm³) est de 50 ou plus. Le marquage CE est obligatoire pour les catégories II et III, mais facultatif pour la catégorie I. Tous les cylindres-ressorts à l'azote dont le produit de P X Vo est moins de 50 sont réglementés par l'article 4.3 de la même directive et ne portent pas le marquage CE.

ES TODOS los cilindros de nitrógeno SPECIAL SPRINGS cumplen con los requerimientos de la Directiva Europea sobre los equipos a presión 2014/68/EU, que se aplica en toda la Unión Europea a partir del 19 de julio de 2016. Esta Directiva reglamenta y define como equipos a presión los recipientes, las tuberías y los accesorios sometidos a una presión máxima admisible PS superior a 0,5 bar. Más concretamente, la directiva 2014/68/EU prevé la clasificación en categorías y la obligación del marcado CE con el número identificativo del fabricante para los equipos cuyo resultado de la presión P (bar) x el volumen del fluido Vo (dm³) sea de 50 o más. El marcado CE es obligatorio para las categorías II y III, pero facultativa para la categoría I. Todos los cilindros de nitrógeno cuyo resultado P x V es menor de 50 están sujetos al artículo 4.3 de la directiva y no llevan el marcado CE.

PT TODOS os cilindros de nitrogénio Special Springs satisfazem os requisitos da Diretiva Europeia para equipamentos sob pressão 2014/68/EU, que se aplica na União Europeia a partir de 19 de julho de 2016. Esa Diretiva regulamenta os equipamentos sob pressão e os define como os recipientes, os tubagens e os acessórios sujeitos a uma pressão máxima admissível PS superior a 0,5 bar. Em particular, a directiva 2014/68/EU prevê a classificação em categorias e a obrigação da marcação CE com o número de identificação do fabricante para os equipamentos cujo o resultado de pressão P (bar) X volume fluido Vo(dm³) é igual ou superior a 50. A marcação CE é obrigatória para as categorias II e III, mas discricionária para a categoria I. Todos os cilindros de nitrogénio, através da qual resultam P x Vo é inferior a 50 estão sujeitos ao artigo 4.3 da mesma directiva e não ostentam a marcação CE.

CE
PED
2014/68/EU

IT Qualora, dopo un lungo funzionamento o per applicazioni particolarmente gravose, si verificassero delle perdite di pressione, significa che le tenute hanno iniziato ad usurarsi o sono state danneggiate. E' quindi possibile, con l'uso di appositi utensili e kits ed il supporto di specifici video e dettagliate istruzioni, ripristinare le condizioni originarie di tenuta e guida. Solo personale qualificato dovrebbe eseguire la manutenzione. Eventuali errori possono essere causa di gravi rischi per la sicurezza o limitare la durata dei cilindri. Prima di eseguire qualsiasi intervento scaricare completamente la pressione e assicurare che lo stelo sia completamente compresso nel corpo.

EN If pressure losses occur after extended use or particularly heavy applications, this indicates that the sealing gaskets are worn or damaged. Using special tools and kits, and with the support of videos and detailed instructions, it is possible to restore the original seal and guide conditions. Maintenance must only be conducted by qualified personnel. Errors would cause serious injury or reduce the working life of the cylinders. Before carrying out any work on the system, fully exhaust all pressure and ensure that the rod is fully retracted into the body.

DE Wird nach langer Betriebstätigkeit oder besonders beanspruchender Verwendung ein Druckverlust festgestellt, bedeutet dies, dass die Dichtungen allmählich abgenutzt sind oder beschädigt wurden. Es ist mit Hilfe von zweckmäßigem Werkzeug oder Sets sowie spezifischen Videos und detaillierten Anweisungen möglich, die Ausgangsbedingungen von Dichtung und Führung wiederherzustellen. Die Wartung sollte nur von qualifiziertem Personal vorgenommen werden. Etwaige Fehler können schwerwiegende Sicherheitsrisiken hervorrufen oder die Lebensdauer der Zylinder einschränken. Entladen Sie den Druck und stellen Sie sicher, dass der Schaft komplett in den Körper eingeführt ist, bevor Sie Eingriffe vornehmen.

FR Si des pertes de pression se produisent après un long fonctionnement ou avec des applications particulièrement lourdes, cela signifie que les joints de retenue ont commencé à s'usurer ou qu'ils sont endommagés. L'utilisation d'outils et de kits appropriés, ainsi que le support de vidéos spécifiques et d'instructions détaillées permettront de rétablir les conditions d'origine de retenue et de guidage. La maintenance doit être effectuée uniquement par du personnel qualifié. Les éventuelles erreurs peuvent engendrer de graves risques pour la sécurité ou limiter la durée de vie des cylindres. Avant d'effectuer toute opération, décharger complètement la pression et s'assurer que la tige soit complètement comprimée dans le corps.

ES Si, después de mucho tiempo funcionando, o en caso de aplicaciones muy pesadas, se produjesen pérdidas de presión, significa que las guarniciones han comenzado a desgastarse o han sufrido algún desperfecto. En esos casos es perfectamente posible restablecer las condiciones originales de la guarnición o la guía mediante kits de herramientas especiales y vídeos de instrucciones específicas. El mantenimiento debe ser efectuado única y exclusivamente por personal cualificado. Cualquier error podría causar graves riesgos de seguridad o limitar la vida útil de los cilindros. Antes de cualquier reparación, descargar completamente la presión y asegurarse de que el vástago quede completamente.

PT No caso em que, após um longo funcionamento ou por aplicações particularmente gravosas, se verificarem perdas de pressão, isso significa que os vedantes começaram a desgastar-se ou foram danificadas. Portanto, com a utilização dos utensílios e dos conjuntos, com o apoio de vídeos específicos e de instruções detalhadas é possível restabelecer as condições originais de estanquidade e guiamento. A manutenção só deve ser executada por pessoal qualificado. Erros eventuais podem ser a causa de riscos graves para a segurança ou limitar a duração dos cilindros. Antes de executar qualquer intervenção, descarregar completamente a pressão e assegurar-se de que o embolo recolhido.

Download step-by-step guide instructions at: <http://www.specialsprings.com>

IT Come previsto dalle linee guida della direttiva PED 2014/68/EU l'azienda che provvede alla manutenzione dei cilindri marchiati CE dal fabbricante (P x Vo \geq 50) si assume la completa responsabilità di far riesaminare gli stessi da un ente di certificazione accreditato. Diversamente tali manutenzioni potranno essere effettuate esclusivamente da Special Springs.

EN As prescribed by the guidelines of PED 2014/68/EU, the company taking care of the maintenance for cylinders laser marked CE by the producer (P x Vo \geq 50), must get them checked by a certified body. Otherwise, the maintenance can be carried out exclusively by Special Springs.

DE Wie in der Richtlinie PED 2014/68/EU vorgeschrieben übernimmt die Firma, die die Instandhaltung von Gasdruckfedern durchführt, die vom Hersteller mit CE-Kennzeichnung versehen worden sind (P x Vo \geq 50), die volle Verantwortung dafür, diese von einer zugelassenen Zertifizierungsanstalt nachprüfen zu lassen. Andernfalls können diese Instandhaltungsarbeiten ausschließlich von Special Springs durchgeführt werden.

FR Selon le mode prévu par les indications de la directive PED 2014/68/EU, l'entreprise qui s'occupe de l'entretien des cylindres marqués CE par le producteur (P x Vo \geq 50), assume la responsabilité de les faire réexaminer par un institut de certification qualifié. Autrement, les entretiens peuvent être effectués exclusivement par Special Springs.

ES Como las indicaciones de la directiva PED 2014/68/EU estipulan, la empresa que provee al mantenimiento de los cilindros grabado CE por el productor (P x Vo \geq 50), se hace cargo de que una empresa certificada y capacitada les controle. De otra manera los mantenimientos pueden ser llevado exclusivamente por Special Springs.

PT De acordo com as diretrizes PED 2014/68/EU a fabrica que fornece a manutenção dos cilindros com a marca CE do fabricante (P x Vo \geq 50) assume a responsabilidade de reexaminar os mesmos por uma entidade de certificação creditada. De outra forma tais manutenções poderão ser efectuadas exclusivamente pela Special Springs.

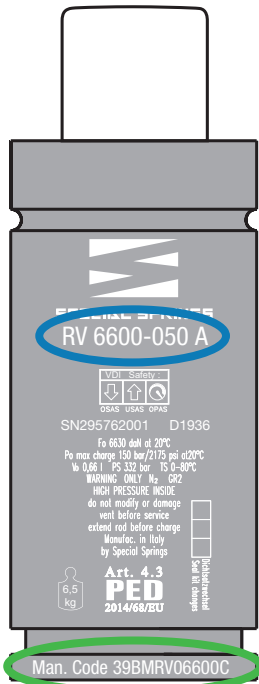


PED
2014/68/EU





How to Order



Maintenance kits

- IT** Se il codice Man. Code non è riportato sul cilindro: 39BM + Codice cilindro completo.
- EN** If Man. Code is not indicated on the cylinder, order: 39BM + complete Part Number.
- DE** Wenn Man. Code auf der Gasdruckfeder nicht vorhanden, bestellen Sie 39BM + vollständige Artikelnummer.
- FR** Si le Man. Code n'est pas indiqué en le cylindre, ordonnez 39BM + Numéro d'Article complet.
- ES** Si el Man. Código no está indicado en el cilindro, ordenar 39BM + Código completo del Producto.
- PT** Se a referencia Man Code não estiver escrita no cilindro, favor solicitar 39BM + Código do Produto completo.

EXAMPLE: 39BMRV6600-050 A

- IT** Se presente nel cilindro, riportare il codice Man. Code in fase di ordinazione.
- EN** If Man. Code is indicated on the cylinder, specify it on the order.
- DE** Wenn Man. Code auf der Gasdruckfeder vorhanden, bitte in der Bestellung angeben.
- FR** Si le Man. Code est indiqué en le cylindre, précisez-le dans l'ordre.
- ES** Si el Man. Code está indicado en el cilindro, especificarlo en el orden.
- PT** Se indicado no cilindro, indique o Man. Code na ordem.

EXAMPLE: 39BMRV06600C

- IT** Kit include: Boccola assemblata, Valvola unidirezionale, lubrificante e grasso, Istruzioni di montaggio.
- EN** Kit contains: Assembled bushing, one way valve, lubricant and grease, instructions sheet.
- DE** Das Set beinhaltet: montierte Buchse, Rückschlagventil, Schmieröl und Schmierfett, Montageanleitung.
- FR** Leditcomprend: Douilleassemblée, Soupape à sens unique, lubrifiant et graisse, Instructions pour le montage.
- ES** El Kit contiene: casquillo ensamblado, Válvula unidireccional, lubricante y grasa, Instrucciones de montaje.
- PT** O Kit contém: Bucha ensamblada, Válvula unidireccional, lubrificante e graxa, Instruções de montagem.



- IT** Per una maggiore sicurezza di utilizzo, consegnare sempre i fogli di istruzioni e uso allegati ai cilindri e agli accessori Special Springs insieme alle attrezzature.
- EN** For a safer use, always provide all tools together with the instruction sheets included with Special Springs cylinders and accessories.
- DE** Für eine sicherere Verwendung, bitte liefern Sie immer zusammen mit dem Werkzeug die Betriebsanleitung, die den Gasdruckfedern und Zubehörteile von Special Springs beiliegt, mit.
- FR** Pour une majeure sécurité d'utilisation, veuillez fournir toujours avec les outils la fiche d'instructions livrée avec les ressorts gaz et les accessoires de Special Springs.
- ES** Para una utilización más segura, por favor entregue siempre todas las herramientas con la hoja de instrucciones suministrada con los cilindros de nitrógeno y los accesorios de Special Springs.
- PT** Para uma utilização mais segura, por favor entregue sempre todas as ferramentas com a folha de instruções fornecida com os cilindros e os acessórios de Special Springs.

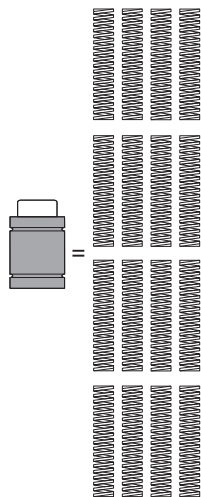




BENEFITS

RESULT

Less Space



Notevole riduzione della superficie, dello spazio in altezza e del volume occupato. Eliminazione dispositivi di precarico e guidaggio.

Considerable reduction of the required surface, height and volume. No need for retaining and pre-load devices.

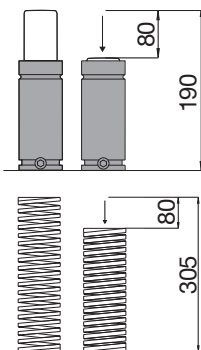
Deutliche Reduzierung des Platzbedarfs. Vorrichtungen zum Vorspannen und Führen werden nicht benötigt.

Réduction importante de la surface, de la hauteur et du volume occupés. Élimination de dispositifs de pré-charge et guidage.

Notable reducción de la superficie, de la altura y del volumen ocupados. Eliminación de dispositivos de precarga y guía.

Redução notável da superfície, da altura e do volume ocupados. Eliminação de dispositivos de pré-carga e guidamento.

Lower Height



Notevole riduzione degli ingombri in altezza a parità di forza e corsa. Costruzione dello stampo più compatta.

Considerable height reduction for the same working deflection and force. Compact tool construction.

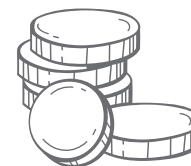
Wesentliche Reduzierung des Höhenbedarfs bei gleichem Hub und gleicher Kraft. Kompaktere Werkzeugkonstruktion.

Réduction importante des encombrements en hauteur avec une course et une force équivalente. Construction plus compacte du moule.

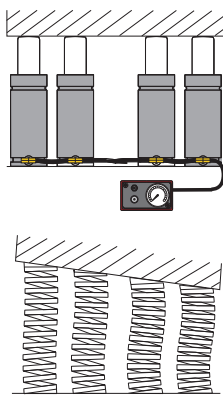
Notable reducción de la altura con igual fuerza y carrera. Construcción más compacta del molde.

Redução notável em altura com igual força e curso. Construção mais compacta da Ferramenta.

Save Money



Controlled Force



Forza bilanciata e posizionata dove richiesto. Visualizzazione continua della pressione e costante qualità dei pezzi stampati. Maggiore durata degli utensili.

The force is balanced and positioned where required. Pressure is always visible and quality of molded parts is constant. Longer life for tools.

Die Kraft ist stets ausgeglichen und positionierbar an den erforderlichen Stellen. Ständige Anzeige des Betriebsdrucks und konstante Qualität der zu fertigenden Teile. Längere Lebensdauer der Werkzeuge.

La force est équilibrée et positionnée là où elle est exigée. Visualisation continue de la pression et qualité constante des pièces moulées. Durée de vie majeure des outils.

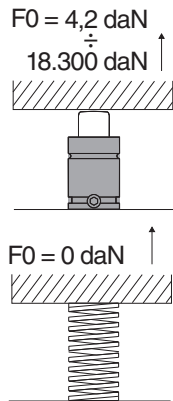
Fuerza equilibrada y posicionable donde se precisa. Visualización continua de la presión y calidad constante de las piezas moldeadas. Mayor duración de las herramientas.

Força equilibrada e posicionável onde é necessária. Visualização contínua da pressão e constante qualidade das peças estampadas. Maior duração das ferramentas.

BENEFITS

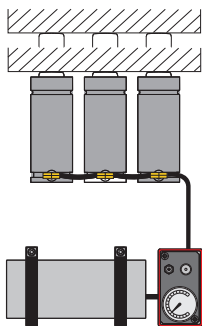
RESULT

Large initial Force



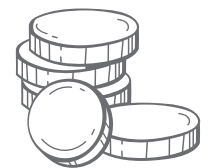
Nessun precarico e maggiore facilità di applicazione.
No pre-loading needed. Easier and quicker fitting.
Einfacher Einbau, da externe Vorspannung nicht benötigt wird.
Elimination de la pré-charge et application plus facile.
Eliminación de la precarga y mayor facilidad de aplicación.
Eliminação da pré-carga e maior facilidade de aplicação.

Almost Steady Force

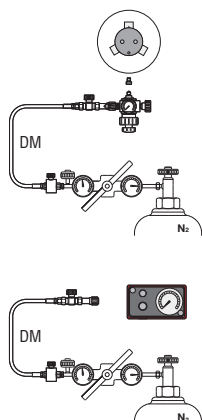


Migliore controllo e riduzione dell'incremento della forza. Migliore qualità dei pezzi stampati e minori scarti di produzione.
Better control and reduction of force increase. Better quality of molded parts and lower rejection rate in production.
Bessere Kontrolle und Reduzierung der Krafterhöhung. Bessere Qualität der fertigen Werkstücke und weniger Ausschuss bei der Produktion.
Meilleur contrôle et réduction de l'augmentation de la force. Une meilleure qualité des pièces moulées et une quantité inférieure de pièces rejetées en production.
Mejor control y reducción del aumento de la fuerza. Mejor calidad de las piezas moldeadas y menos piezas rechazadas en producción.
Melhor controle e redução do incremento da força. Melhor qualidade das peças estampadas e menos peças rejeitadas na produção.

Save Money



Adjustable Force



Forze regolabili e flessibilità d'uso.
Adjustable forces and flexible use.
Einstellbare Kräfte und flexibler Einsatz.
Forces réglables et flexibilité d'utilisation.
Fuerzas regulables y flexibilidad de utilización.
Forças reguláveis e flexibilidade de utilização.

HOW TO READ THE CATALOG



SAMPLE PAGE

1

SC 150

| | | | |
|------------------------------------------|--------------------------------|------------------------------------------|-------------------------------|
| ISO 11901 - 1 B8 3180 220 000 001(MB) | VDI 3003 E24.54.815.G (PSA) | 075.90.55 (FCA) EM24.54.700 (Renault) | B2 4006 (BMW) 39D 878 (VW) |
|------------------------------------------|--------------------------------|------------------------------------------|-------------------------------|

2

4

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytropic end force at 100% Cu

OSAS

USAS

OPAS

7

8

9

10

11

12

| | | | | | | | | | | |
|----------|--|------------------|----------------|------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|--------------------------------|
| 6 | | °F 32 -176 | °C 0 -80 | ΔP ± 0,33%/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 1,13 cm ² 0,175 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS00150E |
|----------|--|------------------|----------------|------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|--------------------------------|

14

15

16

17

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | |
|------------------|------|------|------|-------|-------|------|----------------------------------------------------|-----|-------------------|-----|--------------------|-----|-----------------|-----------------|-------------------|------|-----|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | -Kg | -lb |
| SC 150 - 010 - D | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 170 ±5% 150 bar 2175 psi +20 °C +68 °F | 382 | 191 | 429 | 207 | 466 | 12,0 | 0.73 | 0,28 | 0,62 | ✓ |
| SC 150 - 013 - D | 12,7 | 0.51 | 75,4 | 2.97 | 62,7 | 2.47 | | | 194 | 435 | 212 | 476 | 14,0 | 0,85 | 0,29 | 0,64 | ✓ |
| SC 150 - 016 - D | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 197 | 442 | 216 | 486 | 16,0 | 0,98 | 0,30 | 0,66 | ✓ |
| SC 150 - 025 - D | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 202 | 455 | 224 | 504 | 21,0 | 1,28 | 0,33 | 0,73 | ✓ |
| SC 150 - 038 - D | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 207 | 465 | 231 | 519 | 28,0 | 1,71 | 0,36 | 0,79 | ✓ |
| SC 150 - 050 - D | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 209 | 471 | 235 | 528 | 35,0 | 2,14 | 0,40 | 0,88 | ✓ |
| SC 150 - 063 - D | 63,5 | 2.48 | 177 | 6.97 | 113,5 | 4.47 | | | 211 | 475 | 238 | 535 | 43,0 | 2,62 | 0,44 | 0,97 | ✓ |
| SC 150 - 080 - D | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 213 | 479 | 240 | 540 | 52,0 | 3.17 | 0,49 | 1.08 | ✓ |
| SC 150 - 100 - D | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 214 | 482 | 242 | 545 | 63,0 | 3.84 | 0,55 | 1.21 | ✓ |
| SC 150 - 125 - D | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 216 | 485 | 244 | 549 | 78,0 | 4.76 | 0,64 | 1.41 | ✓ |

19

HOW TO ORDER
p. 121

INSTALLATION GUIDELINE
p. 203

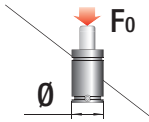
122 - 019

Special Springs

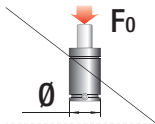
20

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Modello di cilindro ad azoto Gas spring model Gasdruckfeder Modell Modèle de Ressorts Gaz Modelo de cilindro de nitrógeno Modelo de cilindro de nitrogênio</p> | <p>2 Standard internazionali / costruttori auto (ISO, VDI, ecc.) International / Automotive Standards (ISO, VDI, ecc.) Internationale / Automobil-Standards (ISO, VDI, ecc.) Standards internationaux / automobiles (ISO, VDI, ecc.) Estándares internacionales / automóvil (ISO, VDI, ecc.) Padrões internacionais / automóvel (ISO, VDI, ecc.)</p> | |
| <p>3 Modifica rispetto al catalogo precedente > see page 2 Modification respect to the former catalog > see page 2 Modification restet au catalogue précédent > voir page 2 Veränderungen gegenüber den alte Katalog > Siehe Seite 2 Cambios en comparación con el catálogo anterior > ver página 2 Alterações em comparação com o catálogo anterior > ver página 2</p> | <p>4 Raschiatore secondario applicabile Secondary Wiper can be mounted Sekundärabstreifer montierbar Joint racleur secondaire peut être monté Rascador secundario montable Raspador secundário montável</p> | |
| <p>5 Dispositivi di sicurezza presenti nel modello Safety devices provided on the model Anwesende Sicherheitseinrichtungen am Modell Dispositifs de sécurités présents sur le modèle Dispositivos de seguridad disponibles en el modelo Dispositivos de segurança disponíveis no modelo</p> | <p>6 Gas di caricamento Pressure medium Druckgas Gaz de chargement Gas de carga Gás de carga</p> | |
| <p>7 Temperatura di esercizio Working temperature Betriebstemperatur Température de fonctionnement Temperatura de funcionamiento Temperatura de funcionamento</p> | <p>8 $\Delta P / \Delta t$</p> | |
| <p>9 Pressione max di caricamento Max charging pressure Maximaler Ladedruck Pression de chargement maximum Presión máx de carga Pressão máxima de carga</p> | <p>10 Pressione min. di caricamento Min charging pressure Minimaler Ladedruck Pression de chargement minimum Presión mín de carga Pressão mínima de carga</p> | |
| <p>11 Area di tenuta stelo/pistone Rod/piston seal area Dichtungsbereich Kolbenstange/Kolben Zone d'étanchéité tige/piston Área de estanqueidad vástago/pistón Área de estanquidade do embolo/pistão</p> | <p>12 Cicli / minuto Strokes / minute Hube / Minute Cycles / minute Cyclos / minuto Pancadas / minuto</p> | <p>13 Codice Code Bestell-Nummer Référence Código Codigo</p> |
| <p>14 Forza iniziale a 20°C Initial force at 20°C Ausgangsleistung bei 20°C Force initiale a 20°C Fuerza inicial a 20°C Força inicial a 20°C</p> | <p>15 Forza finale isoterma Isothermal end force Isothermische Endfestigkeit Force finale isothermique fuerza finale isotérmica força final isotérmica</p> | |
| <p>16 Forza finale politropica Polytropic end force polytropische Endfestigkeit force finale polytrophique fuerza finale politrópica força finale politrópica</p> | <p>17 Volume iniziale Initial gas volume Ausgangswert Gasvolumen Volumen inicial de gas Volume de gaz initial Volume de gás inicial</p> | |
| <p>18 Classificazione PED PED classification PED Einstufung Classification PED Clasificación PED Classificação PED</p> | <p>19 Fissaggi Flange mounts Befestigungen Brides de fixation Bridas Fixação com flange</p> | <p>20 Indice di revisione pagina Page review index Index der Seiteüberprüfung Index de revue de page Índice de revisión de página Índice de revisão de página</p> |
| <p> Tutte le dimensioni senza tolleranza si intendono nominali. All dimensions are nominal unless tolerance is stated. Alle Massgängen ohne Toleranzen sind Nennmasse.</p> | | <p>Sauf specifications de tolerances, totes le dimensions sont des valeurs nominales. Todas las dimensiones son nominales excepto cuando se indica la tolerancia. Todas as medidas são nominais excepto quando a tolerancia é mencionada.</p> |

SELECTION TAB



| | 42 50 | 70 90 | 150 200 | 260 320 | 360 480 | 490 680 | 740 780 | 900 1000 | 1060 1410 | 1530 2000 |
|-------------------|----------------------------|----------------------|----------------------------|--------------------------------------|--------------------------------------------------|----------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------|
| 12 | M 50 | | | | | | | | | |
| 15 | | M 70 | | | | | | | | |
| M 16 x 1,5 | NG 16 x 1,5 NE 16 x 1,5 | | | | | | | | | |
| M 16 x 2 | NE 16 x 2 | | | | | | | | | |
| 19 | | M 90 MS 90 | MP 150 RV 170 RS 170 | | | | | | | |
| M 24 x 1,5 | | M 90 TBM M 90 TEM | NG 24 x 1,5 NE 24 X 1,5 | | | | | | | |
| 1"- 8 THD | | M 90 TBI | | | | | | | | |
| 25 | | | M 200 MS 200 | MP 300 ML 300 RV 320 RS 320 | KE 400 | | | | | |
| 32 | | | SC 150 | M 300 H 300 | RV 350 RS 350 RT 350 | ML 500 MP 500 MQ 700 | KE 750 | | | |
| 38 | | | | SC 250 | H 500 HT 500 T2 RV 500 RS 500 RT 500 | HT 500 T1 | | ML 1000 MP 1000 | KE 1000 | |
| M 38 x 1,5 | | | | SCF 250 | HF 500 | | | | | |
| 45 | | | | | S 500 SC 500 | H 700 | HT 700 T1 HT 700 T2 RV 750 RS 750 RF 750 RT 750 RG 750 | | | |
| 50 | | | | | | | SC 750 S 750 | H 1000 HT 1000 T1 HT 1000 T2 RV 1000 RS 1000 RF 1000 RT 1000 RG 1000 | RV 1200 RS 1200 RF 1200 RT 1200 | KE 1800 ML 1800 MP 2000 |
| 63 | | | | | | | | | | RV 1500 RS 1500 RF 1500 RT 1500 RG 1500 H 1500 |
| 75 | | | | | | | | | | S 1500 SC 1500 LS 1500 |



| | 2035 2385 | 2830 3000 | 3180 | 4240 | 4418 4980 | 6630 | 7540 7700 | 9540 | 10600 12720 | 18400 19910 |
|------------|--------------------------------------------------------------------------|------------------------------|---------|---------------------------------------------------------------|--------------------|---------------------------------------------------------------|--------------------|----------------------------------------------------|----------------------|---------------------|
| 63 | | KE 3000 MP 3000 | ML 3000 | | | | | | | |
| 75 | H 2400 LS 2400 RV 2400 RS 2400 RF 2400 RT 2400 RG 2400 | | | | KE 4700 ML 4700 | | | | | |
| 95 | | LS 3000 S 3000 SC 3000 | | H 4200 LS 4200 RV 4200 RS 4200 RT 4200 RG 4200 | | | KE 7500 ML 7500 | | | |
| 120 | | | | | LS 5000 SC 5000 | H 6600 LS 6600 RV 6600 RS 6600 RT 6600 RG 6600 | | | KE 12000 ML 12000 | |
| 150 | | | | | | | SC 7500 LS 7500 | H 9500 LS 9500 RV 9500 RS 9500 RT 9500 | RV 12000 | KE 18500 |
| 195 | | | | | | | | | SC 10000 | RV 20000 H 18500 |

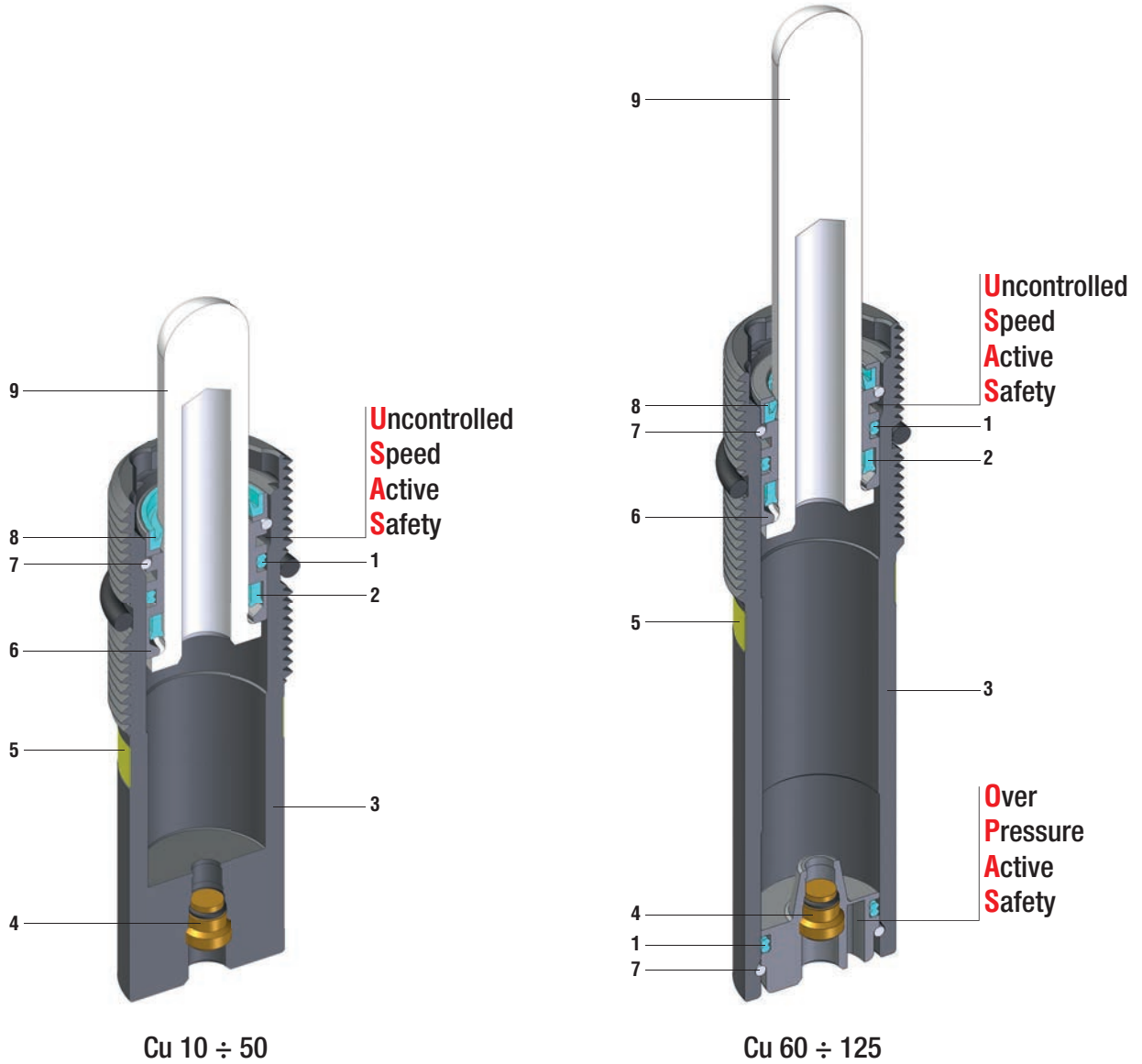


NE SERIES**NG SERIES**

| | | |
|-----|-----|------|
| VDI | BMW | Ford |
| VW | | |



| | | |
|-----|----|-----|
| VDI | GM | FCA |
|-----|----|-----|







Espulsori a gas - Gas ejectors - Federnde Druckstücke
 Ejectores de gaz - Eyectores de gas - Eyectores a gás

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | |
|----------|------------------|----------|------------------------------|
| 1 | Dual ring seal | 6 | Bush |
| 2 | Rod seal | 7 | Retaining ring |
| 3 | Body | 8 | Rod wiper |
| 4 | Valve | 9 | Rod (nitrited superfinished) |
| 5 | Force color code | | |

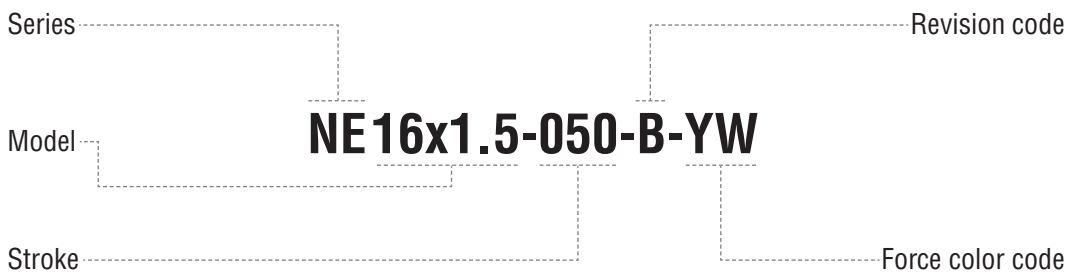
RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | |  OSAS |  USAS |  OPAS |  SKUDO |
|-------------|------------|------------|-----------|-------------|------------------|----------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| | mm | inch | mm | inch | daN | lb | | | | |
| NE 16 x 1,5 | M 16 x 1,5 | M 16 x 1,5 | 10 - 125 | 0.39 - 4.92 | 3 - 42 | 7 - 95 | - | ✓ | - | - |
| NE 16 x 2 | M 16 x 2 | M 16 x 2 | 10 - 125 | 0.39 - 4.92 | 3 - 42 | 7 - 95 | - | ✓ | - | - |
| NG 16 x 1,5 | M 16 x 1,5 | M 16 x 1,5 | 10 - 100 | 0.39 - 3.94 | 3 - 42 | 7 - 95 | - | ✓ | - | - |
| NE 24 x 1,5 | M 24 x 1,5 | M 24 x 1,5 | 10 - 50 | 0.39 - 1.97 | 11 - 170 | 25 - 382 | - | ✓ | - | - |
| NE 24 x 1,5 | M 24 x 1,5 | M 24 x 1,5 | 60 - 125 | 2.36 - 4.92 | 11 - 170 | 25 - 382 | - | ✓ | ✓ | - |
| NG 24 x 1,5 | M 24 x 1,5 | M 24 x 1,5 | 10 - 50 | 0.39 - 1.97 | 11 - 170 | 25 - 382 | - | ✓ | - | - |
| NG 24 x 1,5 | M 24 x 1,5 | M 24 x 1,5 | 60 - 100 | 2.36 - 3.94 | 11 - 170 | 25 - 382 | - | ✓ | ✓ | - |

NE
NG



HOW TO ORDER



Available versions



NE 16x1.5-050-B-YW

Standard code



Self contained

NE 16 x 1.5

VDI 3004

W-DX35-60M (Ford)

39D 549 (VW)



ACTIVE SAFETY



USAS

* $F_{1i} =$

Isothermal end force at 100% Cu

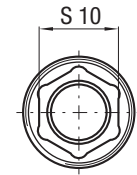
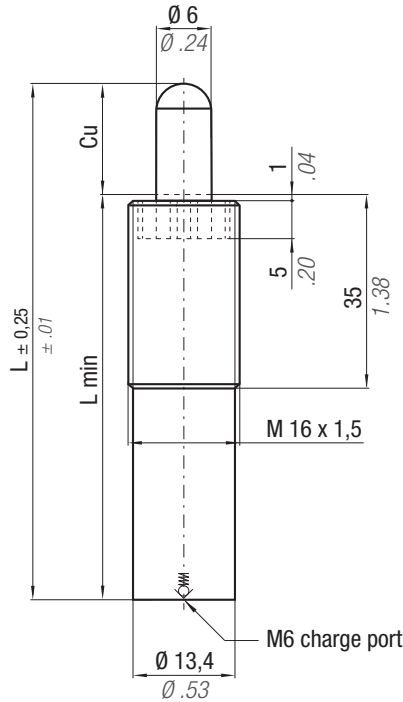


p. 18

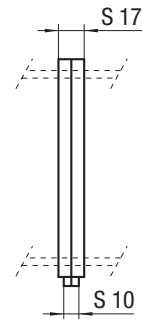


** $F_{1p} =$

Polytropic end force at 100% Cu

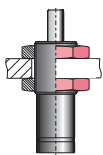


cod. 39CM01A (optional)



| CODE | Cu | | L | | L min | | ~Kg | | ~lb | PED 2014/68/EU | Force color code | P | | F ₀ Initial force ± 5% | | F _{1i} End force* | F _{1p} End force** |
|-----------------------|-----|------|-----|-------|-------|------|------|------|-----|----------------|------------------|-----|----|-----------------------------------|-------|----------------------------|-----------------------------|
| | mm | inch | mm | inch | mm | inch | bar | psi | | | | daN | lb | +20°C | +68°F | | |
| NE 16 x 1,5-010-B-... | 10 | 0.39 | 65 | 2.56 | 55 | 2.17 | 0,05 | 0.11 | ✓ | | | | | | | | |
| NE 16 x 1,5-020-B-... | 20 | 0.79 | 85 | 3.35 | 65 | 2.56 | 0,06 | 0.13 | ✓ | | | | | | | | |
| NE 16 x 1,5-030-B-... | 30 | 1.18 | 105 | 4.13 | 75 | 2.95 | 0,07 | 0.15 | ✓ | | | | | | | | |
| NE 16 x 1,5-040-B-... | 40 | 1.57 | 125 | 4.92 | 85 | 3.35 | 0,07 | 0.15 | ✓ | | | | | | | | |
| NE 16 x 1,5-050-B-... | 50 | 1.97 | 145 | 5.71 | 95 | 3.74 | 0,08 | 0.18 | ✓ | | | | | | | | |
| NE 16 x 1,5-060-B-... | 60 | 2.36 | 165 | 6.50 | 105 | 4.13 | 0,08 | 0.18 | ✓ | | | | | | | | |
| NE 16 x 1,5-070-B-... | 70 | 2.76 | 185 | 7.28 | 115 | 4.53 | 0,09 | 0.20 | ✓ | | | | | | | | |
| NE 16 x 1,5-080-B-... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 0,10 | 0.22 | ✓ | | | | | | | | |
| NE 16 x 1,5-100-B-... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 0,11 | 0.24 | ✓ | | | | | | | | |
| NE 16 x 1,5-125-B-... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 0,12 | 0.26 | ✓ | | | | | | | | |

P = nominal charging pressure



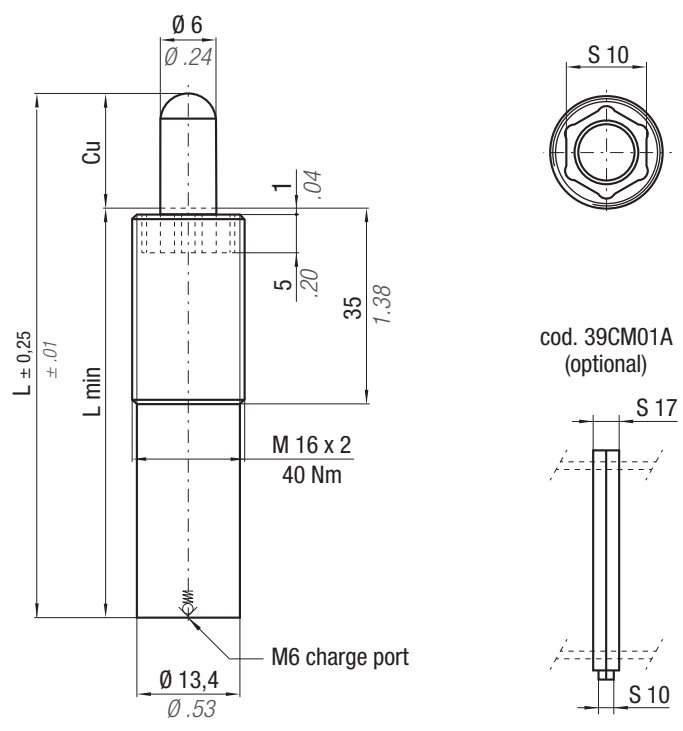
DM 16

HOW TO ORDER

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INSTALLATION GUIDELINE

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* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu

ACTIVE SAFETY

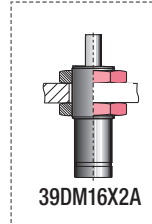


NE
NG

| CODE | Cu | | L | | L min | | S | | SPM | Max Speed | Maintenance kit |
|---------------------|-----|------|-----|-------|-------|------|------|------|----------------------|-----------|-----------------|
| | mm | inch | mm | inch | mm | inch | ~Kg | ~lb | | | |
| NE 16 x 2-010-B-... | 10 | 0.39 | 65 | 2.56 | 55 | 2.17 | 0,05 | 0.11 | ~ 50 - 100 (at 20°C) | 1,8 m/s | Disposable |
| NE 16 x 2-020-B-... | 20 | 0.79 | 85 | 3.35 | 65 | 2.56 | 0,06 | 0.13 | | | |
| NE 16 x 2-030-B-... | 30 | 1.18 | 105 | 4.13 | 75 | 2.95 | 0,07 | 0.15 | ~ 50 - 100 (at 20°C) | 1,8 m/s | Disposable |
| NE 16 x 2-040-B-... | 40 | 1.57 | 125 | 4.92 | 85 | 3.35 | 0,07 | 0.15 | | | |
| NE 16 x 2-050-B-... | 50 | 1.97 | 145 | 5.71 | 95 | 3.74 | 0,08 | 0.18 | ~ 50 - 100 (at 20°C) | 1,8 m/s | Disposable |
| NE 16 x 2-060-B-... | 60 | 2.36 | 165 | 6.50 | 105 | 4.13 | 0,08 | 0.18 | | | |
| NE 16 x 2-070-B-... | 70 | 2.76 | 185 | 7.28 | 115 | 4.53 | 0,09 | 0.20 | ~ 50 - 100 (at 20°C) | 1,8 m/s | Disposable |
| NE 16 x 2-080-B-... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 0,10 | 0.22 | | | |
| NE 16 x 2-100-B-... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 0,11 | 0.24 | ~ 50 - 100 (at 20°C) | 1,8 m/s | Disposable |
| NE 16 x 2-125-B-... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 0,12 | 0.26 | | | |

| Force color code | P | | F ₀ Initial force ± 5% | | F _{1i} End force* | F _{1p} End force** |
|------------------|--------|----------|-----------------------------------|------|----------------------------|-----------------------------|
| | bar | psi | daN | lb | | |
| PR | 12 | 174 | 4 | 9 | 1,56 x F ₀ | 2,03 x F ₀ |
| GR | 20 | 290 | 6 | 14 | 1,56 x F ₀ | 2,03 x F ₀ |
| BU | 40 | 580 | 11 | 25 | 1,56 x F ₀ | 2,03 x F ₀ |
| RD | 75 | 1088 | 21 | 47 | 1,56 x F ₀ | 2,03 x F ₀ |
| YW | 150 | 2175 | 42 | 95 | 1,56 x F ₀ | 2,03 x F ₀ |
| BK | 10-150 | 145-2175 | 3-42 | 7-95 | 1,56 x F ₀ | 2,03 x F ₀ |

P = nominal charging pressure



HOW TO ORDER p. 31

INSTALLATION GUIDELINE p. 203

NE 24 x 1.5

VDI 3004

W-DX35-60M (Ford)

39D 549 (VW)



ACTIVE SAFETY



USAS



OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu

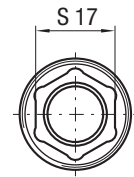
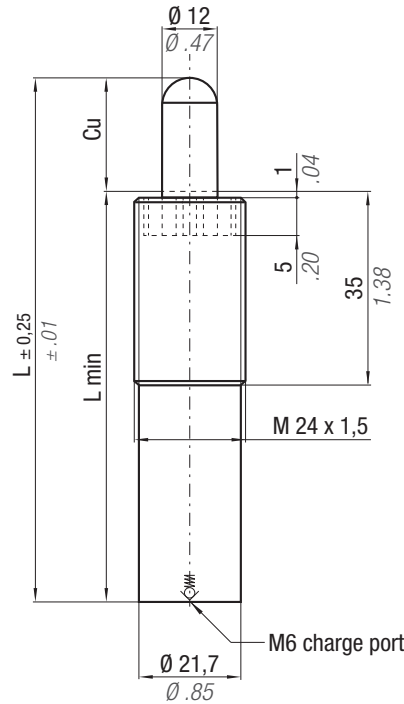


p. 18

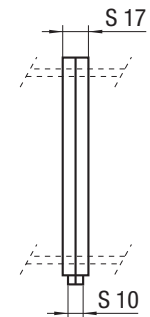


** $F_{1p} =$

Polytropic end force at 100% Cu

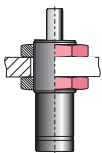


cod. 39CM01A (optional)



| CODE | Cu | | L | | L min | | ~Kg | | ~lb | | PED 2014/68/EU | Force color code | P | | F ₀ Initial force ± 5% | | F _{1i} End force* | F _{1p} End force** | |
|-----------------------|-----|------|-----|-------|-------|------|------|------|-----|-----|----------------|------------------|-----|----|-----------------------------------|-------|----------------------------|-----------------------------|--|
| | mm | inch | mm | inch | mm | inch | | | bar | psi | | | daN | lb | +20°C | +68°F | | | |
| NE 24 x 1,5-010-B-... | 10 | 0.39 | 65 | 2.56 | 55 | 2.17 | 0,16 | 0.35 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-020-B-... | 20 | 0.79 | 85 | 3.35 | 65 | 2.56 | 0,18 | 0.40 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-030-B-... | 30 | 1.18 | 105 | 4.13 | 75 | 2.95 | 0,20 | 0.44 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-040-B-... | 40 | 1.57 | 125 | 4.92 | 85 | 3.35 | 0,23 | 0.51 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-050-B-... | 50 | 1.97 | 145 | 5.71 | 95 | 3.74 | 0,25 | 0.55 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-060-B-... | 60 | 2.36 | 165 | 6.50 | 105 | 4.13 | 0,27 | 0.59 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-070-B-... | 70 | 2.76 | 185 | 7.28 | 115 | 4.53 | 0,29 | 0.64 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-080-B-... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 0,30 | 0.66 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-100-B-... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 0,33 | 0.73 | ✓ | | | | | | | | | | |
| NE 24 x 1,5-125-B-... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 0,35 | 0.77 | ✓ | | | | | | | | | | |

P = nominal charging pressure



DM 24

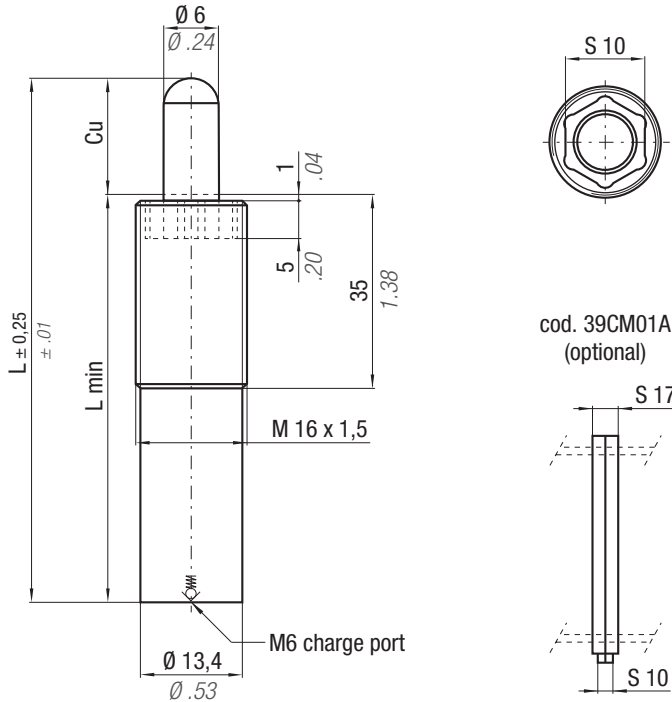
HOW TO ORDER

p. 31

INSTALLATION GUIDELINE

p. 203

| | | | |
|---------------------------|--------------------------------|---------------------------------|-------------------|
| VDI 3004 90.25.97 (GM) | B2 4036 (BMW) 90.25.28 (GM) | 075.90.40 (FCA) 39D 549 (VW) | W-DX35-60M (Ford) |
|---------------------------|--------------------------------|---------------------------------|-------------------|



* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu

ACTIVE SAFETY

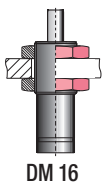


NE
NG

| CODE | Cu | | L | | L min | | S | | SPM ~ 50 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|-----------------------|-----|------|-----|-------|-------|------|------|------|-----------------------------------------------|----------------------|-------------------------------|
| | mm | inch | mm | inch | mm | inch | ~Kg | ~lb | | | |
| NG 16 x 1,5-010-A-... | 10 | 0.39 | 80 | 3.15 | 70 | 2.76 | 0,05 | 0.11 | 0,28 cm ² 0.043 in ² | | |
| NG 16 x 1,5-020-A-... | 20 | 0.79 | 100 | 3.94 | 80 | 3.15 | 0,06 | 0.13 | | | |
| NG 16 x 1,5-030-A-... | 30 | 1.18 | 120 | 4.72 | 90 | 3.54 | 0,07 | 0.15 | | | |
| NG 16 x 1,5-040-A-... | 40 | 1.57 | 140 | 5.51 | 100 | 3.94 | 0,07 | 0.15 | | | |
| NG 16 x 1,5-050-A-... | 50 | 1.97 | 160 | 6.30 | 110 | 4.33 | 0,08 | 0.18 | | | |
| NG 16 x 1,5-060-A-... | 60 | 2.36 | 180 | 7.09 | 120 | 4.72 | 0,08 | 0.18 | | | |
| NG 16 x 1,5-070-A-... | 70 | 2.76 | 200 | 7.87 | 130 | 5.12 | 0,09 | 0.20 | | | |
| NG 16 x 1,5-080-A-... | 80 | 3.15 | 220 | 8.66 | 140 | 5.51 | 0,10 | 0.22 | | | |
| NG 16 x 1,5-100-A-... | 100 | 3.94 | 260 | 10.24 | 160 | 6.30 | 0,11 | 0.24 | | | |

| Force color code | P | | F ₀ Initial force ± 5% | | F _{1i} End force* | F _{1p} End force** |
|------------------|--------|----------|-----------------------------------------|------|-------------------------------|--------------------------------|
| | bar | psi | daN | lb | | |
| GR | 20 | 290 | 6 | 13 | 1,39 x F ₀ | 1,67 x F ₀ |
| BU | 40 | 580 | 11 | 25 | 1,39 x F ₀ | 1,67 x F ₀ |
| RD | 75 | 1088 | 21 | 47 | 1,39 x F ₀ | 1,67 x F ₀ |
| YW | 150 | 2175 | 42 | 94 | 1,39 x F ₀ | 1,67 x F ₀ |
| BK | 10-150 | 145-2175 | 3-42 | 7-95 | 1,39 x F ₀ | 1,67 x F ₀ |

P = nominal charging pressure



HOW TO ORDER

p. 31

INSTALLATION GUIDELINE

p. 203

NG 24 x 1.5

| | | | |
|---------------------------|---------------------------------|-------------------|---------------|
| VDI 3004 90.25.96 (GM) | 075.90.40 (FCA) 39D 549 (VW) | W-DX35-60M (Ford) | 90.25.95 (GM) |
|---------------------------|---------------------------------|-------------------|---------------|



ACTIVE SAFETY



USAS



OPAS

* $F_{1i} =$

Isothermal
end force
at 100% Cu

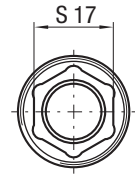
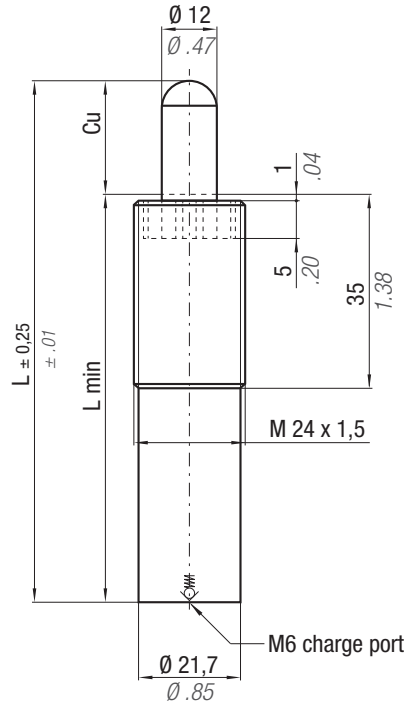


p. 18

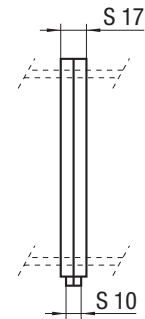


** $F_{1p} =$

Polytropic
end force
at 100% Cu

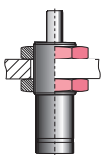


cod. 39CM01A
(optional)



| CODE | Cu | | L | | L min | | ~Kg | | ~lb | PED 2014/68/EU | Force color code | P | | F ₀ Initial force ± 5% | | F _{1i} End force* | F _{1p} End force** |
|-----------------------|-----|------|-----|-------|-------|------|------|------|-----|-------------------|------------------------|--------|----------|-----------------------------------------|--------|-------------------------------|--------------------------------|
| | mm | inch | mm | inch | mm | inch | bar | psi | | | | daN | lb | | | | |
| NG 24 x 1,5-010-A-... | 10 | 0.39 | 80 | 3.15 | 70 | 2.76 | 0,15 | 0.33 | ✓ | | GR | 20 | 290 | 23 | 52 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-020-A-... | 20 | 0.79 | 100 | 3.94 | 80 | 3.15 | 0,17 | 0.37 | ✓ | | BU | 40 | 580 | 45 | 101 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-030-A-... | 30 | 1.18 | 120 | 4.72 | 90 | 3.54 | 0,19 | 0.42 | ✓ | | BR | 60 | 870 | 67 | 151 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-040-A-... | 40 | 1.57 | 140 | 5.51 | 100 | 3.94 | 0,22 | 0.49 | ✓ | | RD | 75 | 1088 | 85 | 191 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-050-A-... | 50 | 1.97 | 160 | 6.30 | 110 | 4.33 | 0,24 | 0.53 | ✓ | | YW | 150 | 2175 | 170 | 382 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-060-A-... | 60 | 2.36 | 180 | 7.09 | 120 | 4.72 | 0,26 | 0.57 | ✓ | | BK | 10-150 | 145-2175 | 11-170 | 25-382 | 1,55 x F ₀ | 2,02 x F ₀ |
| NG 24 x 1,5-070-A-... | 70 | 2.76 | 200 | 7.87 | 130 | 5.12 | 0,28 | 0.62 | ✓ | | | | | | | | |
| NG 24 x 1,5-080-A-... | 80 | 3.15 | 220 | 8.66 | 140 | 5.51 | 0,29 | 0.64 | ✓ | | | | | | | | |
| NG 24 x 1,5-100-A-... | 100 | 3.94 | 260 | 10.24 | 160 | 6.30 | 0,31 | 0.68 | ✓ | | | | | | | | |

P = nominal charging pressure



DM 24

HOW TO ORDER

p. 31

INSTALLATION GUIDELINE

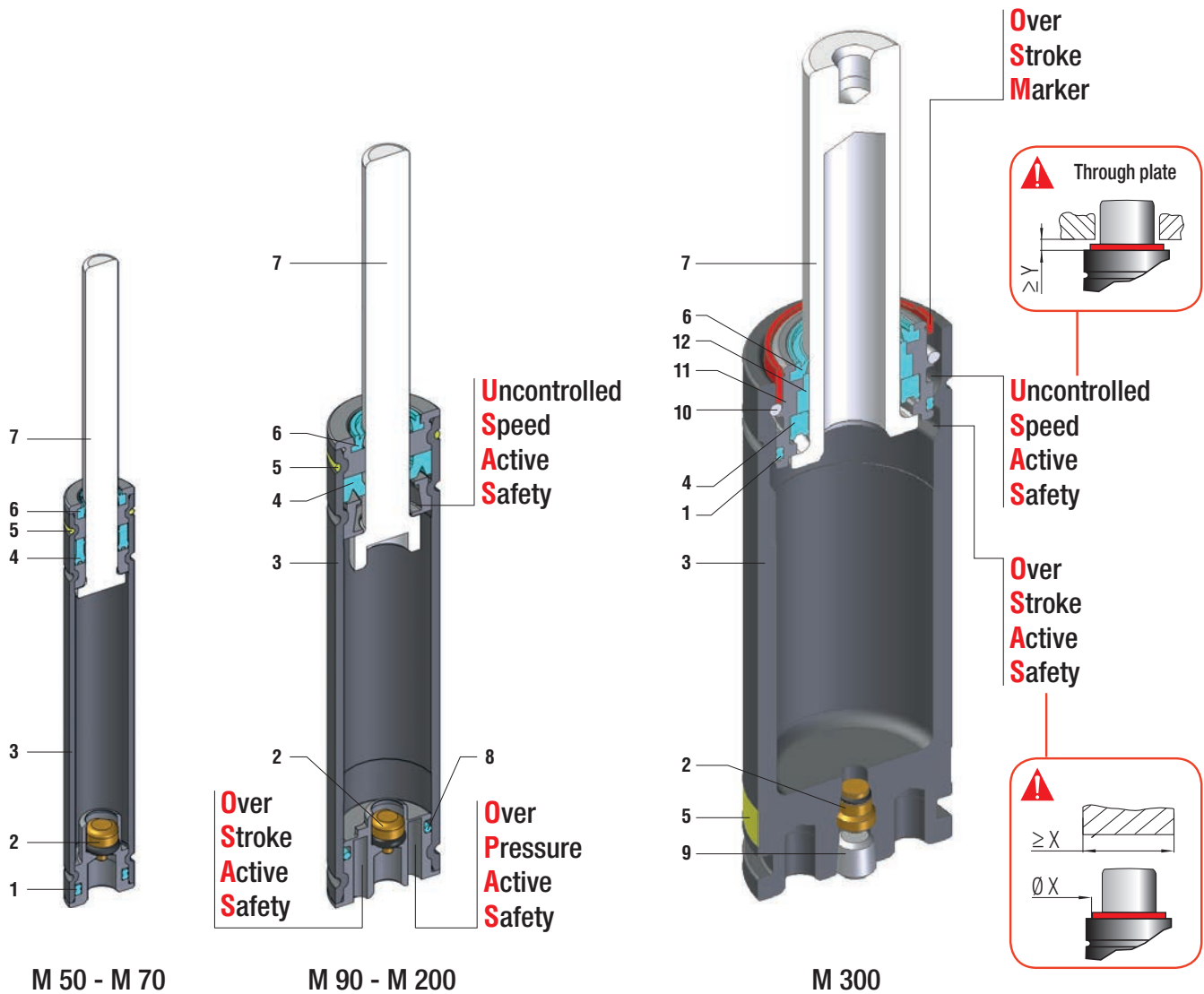
p. 203



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| | | |
|------|-----|--------|
| VDI | BMW | FCA |
| Ford | MB | Nissan |
| PSA | VW | |



Mini cilindri - Mini cylinders - Mini Gasdruckfedern
 Mini-ressorts - Mini cilindros - Mini-cilindros

| | | |
|----------------|-------------------------|------------------------------|
| SEALING | ROD SEAL | |
| DESIGN | RETAINING GROOVE DESIGN | BUSH-BODY DESIGN (M300 only) |

| | | | | | |
|----------|----------------|----------|------------------------------|-----------|----------------|
| 1 | Dual ring seal | 5 | Force color code | 9 | Stopper |
| 2 | Valve | 6 | Rod wiper | 10 | Retaining ring |
| 3 | Body | 7 | Rod (Nitrited Superfinished) | 11 | Bush |
| 4 | Rod seal | 8 | O-ring | 12 | Guide ring |

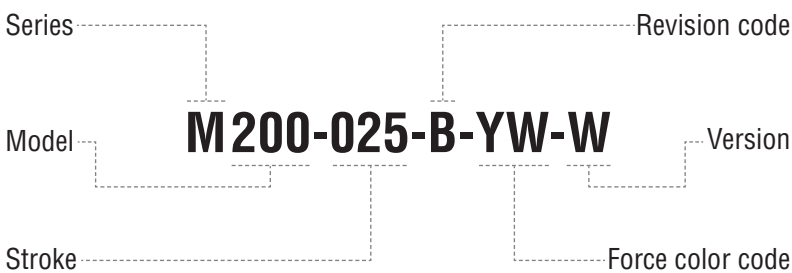
RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|-----------|-------------|------|-----------|-------------|------------------|-----------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| M 50 | 12 | 0.47 | 7 - 125 | 0.28 - 4.92 | 6 - 50 | 13 - 112 | - | - | - | - | ✓ |
| M 50 TBI | 5/8" 11 UNC | | 7 - 125 | 0.28 - 4.92 | 6 - 50 | 13 - 112 | - | - | - | - | - |
| M 50 TBM1 | M 16 X 1,5 | | 7 - 125 | 0.28 - 4.92 | 6 - 50 | 13 - 112 | - | - | - | - | - |
| M 50 TBM2 | M 16 X 2 | | 7 - 125 | 0.28 - 4.92 | 6 - 50 | 13 - 112 | - | - | - | - | - |
| M 50 TEM | M 16 X 2 | | 7 - 125 | 0.28 - 4.92 | 6 - 50 | 13 - 112 | - | - | - | - | - |
| M 70 | 15 | 0.59 | 7 - 125 | 0.28 - 4.92 | 8 - 70 | 18 - 157 | - | - | - | - | ✓ |
| M 90 | 19 | 0.75 | 7 - 125 | 0.28 - 4.92 | 5 - 90 | 11 - 202 | ✓ | ✓ | ✓ | - | ✓ |
| M 90 TBM | M 24 X 1,5 | | 7 - 125 | 0.28 - 4.92 | 5 - 90 | 11 - 202 | ✓ | ✓ | ✓ | - | - |
| M 90 TEM | M 24 X 1,5 | | 7 - 125 | 0.28 - 4.92 | 5 - 90 | 11 - 202 | ✓ | ✓ | ✓ | - | - |
| M 90 TBI | 1" 8 THD | | 7 - 125 | 0.28 - 4.92 | 5 - 90 | 11 - 202 | ✓ | ✓ | ✓ | - | - |
| M 200 | 25 | 0.98 | 7 - 125 | 0.28 - 4.92 | 17 - 200 | 38 - 450 | ✓ | ✓ | ✓ | - | ✓ |
| M 300 | 32 | 1.26 | 7 - 125 | 0.28 - 4.92 | 80 - 320 | 180 - 719 | ✓ | ✓ | - | - | ✓ |

✓ Built-in as standard

✓ Optional upon request

HOW TO ORDER



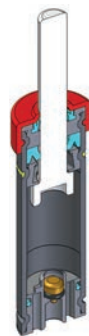
Available versions



M 200-025-B-YW
Standard code



Self contained



M 200-025-B-YW-W
Add "-W" to standard code



Self contained

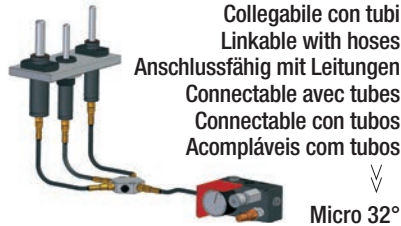
+
Secondary wiper





ACTIVE SAFETY

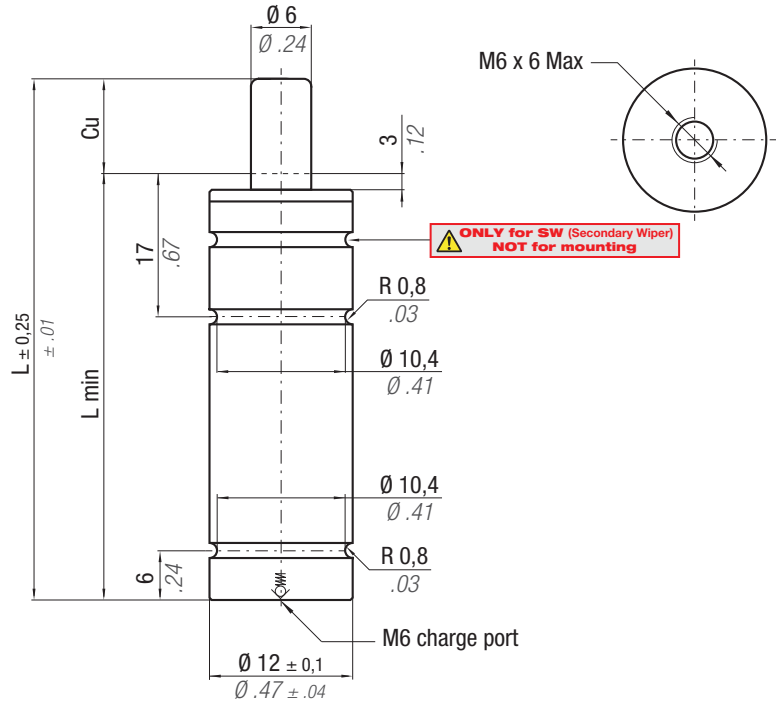
* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 ** $F_{1p} =$ Polytrophic end force at 100% Cu



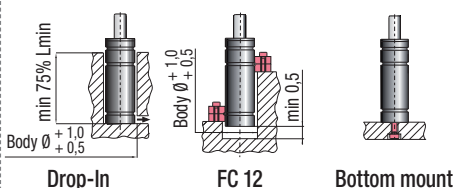
Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°

| Force color code | P | | Fo Initial force $\pm 5\%$ at $+20^{\circ}\text{C} / +68^{\circ}\text{F}$ | |
|------------------|--------|----------|---------------------------------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| GR | 45 | 653 | 13 | 29 |
| BU | 90 | 1305 | 25 | 56 |
| RD | 135 | 1958 | 38 | 85 |
| YW | 180 | 2610 | 50 | 112 |
| BK | 20-180 | 290-2610 | 6-50 | 13-112 |



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,28 cm ² 0,043 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable | Cu | L | L min | F _{1i} * | | F _{1p} ** | | Vo | ~Kg | ~lb | PED 2014/68/EU |
|---------------|----------------|----------------------|--------------------|-----------------------------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|------|------|-------|-------------------|------|--------------------|------|----|-----|-----|-------------------|
| | | | | | | | | | | | | | | mm | inch | mm | inch | | | | |
| M50-007-A-... | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,34 x FO | 1,56 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-010-A-... | 10 | 0.39 | 62 | 2.441 | 52 | 2.05 | 1,41 x FO | 1,67 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-013-A-... | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,44 x FO | 1,72 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-015-A-... | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,48 x FO | 1,79 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-019-A-... | 19 | 0.75 | 80 | 3.15 | 61 | 2.40 | 1,52 x FO | 1,85 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-025-A-... | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,56 x FO | 1,92 x FO | - | - | 0,03 | 0,07 | ✓ | | | | | | | | |
| M50-038-A-... | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | 1,61 x FO | 2,01 x FO | - | - | 0,04 | 0,09 | ✓ | | | | | | | | |
| M50-050-A-... | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,63 x FO | 2,05 x FO | - | - | 0,05 | 0,11 | ✓ | | | | | | | | |
| M50-063-A-... | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,61 x FO | 2,01 x FO | - | - | 0,06 | 0,13 | ✓ | | | | | | | | |
| M50-075-A-... | 75 | 2.95 | 195 | 7.68 | 120 | 4.72 | 1,63 x FO | 2,04 x FO | - | - | 0,06 | 0,13 | ✓ | | | | | | | | |
| M50-080-A-... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,63 x FO | 2,05 x FO | - | - | 0,07 | 0,15 | ✓ | | | | | | | | |
| M50-100-A-... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,65 x FO | 2,08 x FO | - | - | 0,08 | 0,18 | ✓ | | | | | | | | |
| M50-125-A-... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,67 x FO | 2,11 x FO | - | - | 0,09 | 0,20 | ✓ | | | | | | | | |

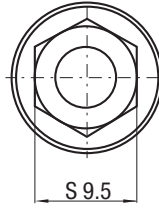
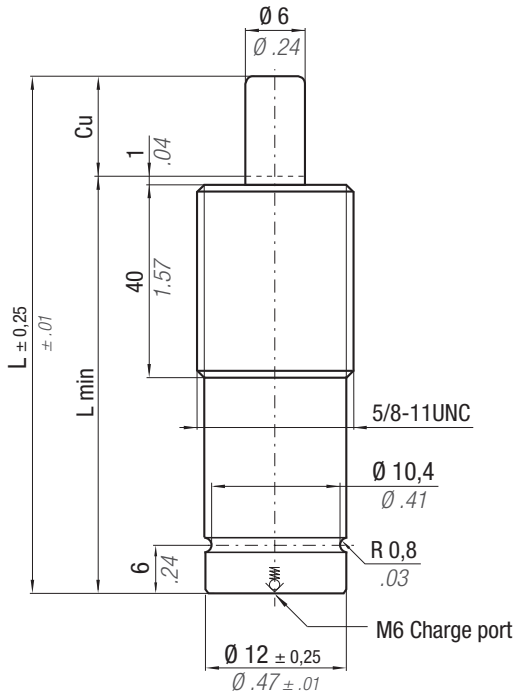


HOW TO ORDER

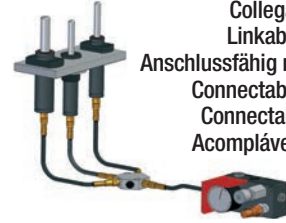
p. 39

INSTALLATION GUIDELINE

p. 203



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 $F_{1p} =$ Polytrophic end force at 100% Cu



Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

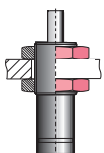
ACTIVE SAFETY

Micro 32°

| Force color code | P | | Fo | |
|------------------|--------|----------|----------------------------------------|--------|
| | bar | psi | Initial force $\pm 5\%$ at +20°C +68°F | |
| | | | daN | lb |
| GR | 45 | 653 | 13 | 29 |
| BU | 90 | 1305 | 25 | 56 |
| RD | 135 | 1958 | 38 | 85 |
| YW | 180 | 2610 | 50 | 112 |
| BK | 20-180 | 290-2610 | 6-50 | 13-112 |

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,28 cm ² 0.043 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------------------|

| CODE | Cu | | L | | L min | | F_{1i} * | | F_{1p} ** | | Vo | | | | |
|---------------------------|------|------|------|-------|-------|------|------------|----|-------------|----|-----------------|-----------------|------|------|-----|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| M50 - 007 - A - ... - TBI | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,34 x F0 | | 1,56 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 010 - A - ... - TBI | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,41 x F0 | | 1,67 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 013 - A - ... - TBI | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,44 x F0 | | 1,72 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 015 - A - ... - TBI | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,48 x F0 | | 1,79 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 019 - A - ... - TBI | 19 | 0.75 | 80 | 3.15 | 61 | 2.40 | 1,52 x F0 | | 1,85 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 025 - A - ... - TBI | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,56 x F0 | | 1,92 x F0 | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 038 - A - ... - TBI | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | 1,61 x F0 | | 2,01 x F0 | | - | - | 0,04 | 0.09 | ✓ |
| M50 - 050 - A - ... - TBI | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,63 x F0 | | 2,05 x F0 | | - | - | 0,05 | 0.11 | ✓ |
| M50 - 063 - A - ... - TBI | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,61 x F0 | | 2,01 x F0 | | - | - | 0,06 | 0.13 | ✓ |
| M50 - 075 - A - ... - TBI | 75 | 2.95 | 195 | 7.68 | 120 | 4.72 | 1,63 x F0 | | 2,04 x F0 | | - | - | 0,06 | 0.13 | ✓ |
| M50 - 080 - A - ... - TBI | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,63 x F0 | | 2,05 x F0 | | - | - | 0,07 | 0.15 | ✓ |
| M50 - 100 - A - ... - TBI | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,65 x F0 | | 2,08 x F0 | | - | - | 0,08 | 0.18 | ✓ |
| M50 - 125 - A - ... - TBI | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,67 x F0 | | 2,11 x F0 | | - | - | 0,09 | 0.20 | ✓ |



39DI5/8-11A

HOW TO ORDER

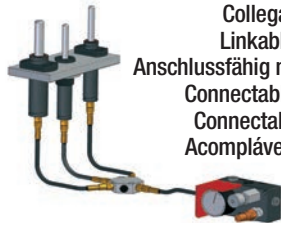
p. 39

INSTALLATION GUIDELINE

p. 203

ACTIVE SAFETY

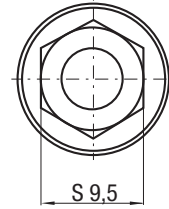
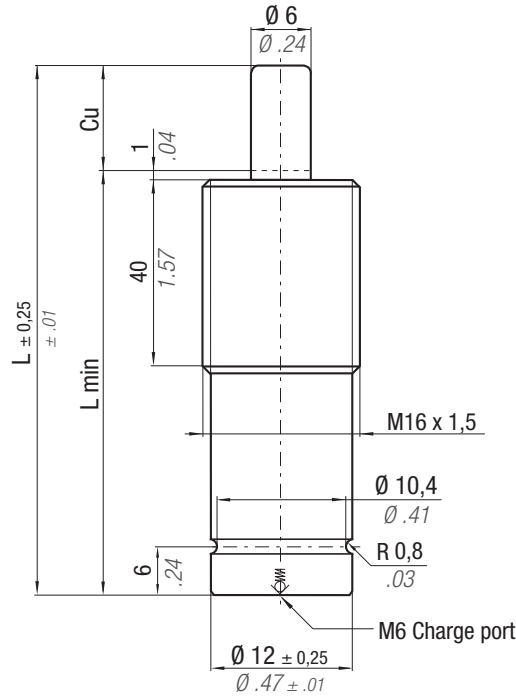
* F_{1i} = Isothermal end force at 100% Cu p. 18 Polytrophic end force at 100% Cu



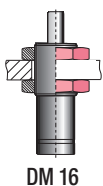
Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°

| Force color code | P | | Fo Initial force $\pm 5\%$ at $+20^{\circ}\text{C} + 68^{\circ}\text{F}$ | |
|------------------|--------|----------|--------------------------------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| GR | 45 | 653 | 13 | 29 |
| BU | 90 | 1305 | 25 | 56 |
| RD | 135 | 1958 | 38 | 85 |
| YW | 180 | 2610 | 50 | 112 |
| BK | 20-180 | 290-2610 | 6-50 | 13-112 |



| CODE | | °F 32 176 | °C 0 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,28 cm ² 0,043 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable | Vo cm ³ in ³ | PED 2014/68/EU | | |
|----------------------------|--|-----------------|---------------|-----------------------------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|---------------------------------------|-------------------|------|---|
| | | | | | | | | | | | | ~Kg | ~lb | |
| M50 - 007 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 010 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 013 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 015 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 019 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 025 - A - ... - TBM1 | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 038 - A - ... - TBM1 | | | | | | | | | | | | 0,04 | 0,09 | ✓ |
| M50 - 050 - A - ... - TBM1 | | | | | | | | | | | | 0,05 | 0,11 | ✓ |
| M50 - 063 - A - ... - TBM1 | | | | | | | | | | | | 0,06 | 0,13 | ✓ |
| M50 - 075 - A - ... - TBM1 | | | | | | | | | | | | 0,06 | 0,13 | ✓ |
| M50 - 080 - A - ... - TBM1 | | | | | | | | | | | | 0,07 | 0,15 | ✓ |
| M50 - 100 - A - ... - TBM1 | | | | | | | | | | | | 0,08 | 0,18 | ✓ |
| M50 - 125 - A - ... - TBM1 | | | | | | | | | | | | 0,09 | 0,20 | ✓ |

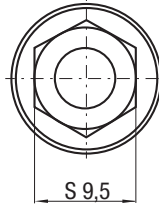
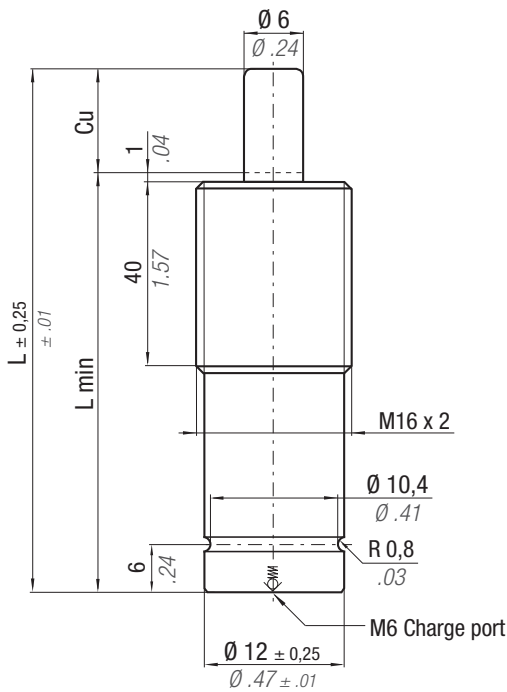


HOW TO ORDER

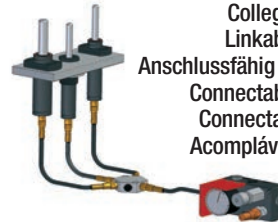
p. 39

INSTALLATION GUIDELINE

p. 203



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 $F_{1p} =$ Polytropic end force at 100% Cu



Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

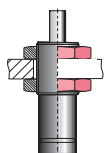
Micro 32°

ACTIVE SAFETY

| Force color code | P | | Fo Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------|--------|
| | bar | psi | daN | lb |
| GR | 45 | 653 | 13 | 29 |
| BU | 90 | 1305 | 25 | 56 |
| RD | 135 | 1958 | 38 | 85 |
| YW | 180 | 2610 | 50 | 112 |
| BK | 20-180 | 290-2610 | 6-50 | 13-112 |

| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,28 cm ² 0.043 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg | ~lb | |
|----------------------------|------|------|------|-------|-------|------|----------------------------------|----|------------------------------------|----|-----------------|-----------------|------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | | |
| M50 - 007 - A - ... - TBM2 | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,34 x F ₀ | | 1,56 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 010 - A - ... - TBM2 | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,41 x F ₀ | | 1,67 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 013 - A - ... - TBM2 | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,44 x F ₀ | | 1,72 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 015 - A - ... - TBM2 | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,48 x F ₀ | | 1,79 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 019 - A - ... - TBM2 | 19 | 0.75 | 80 | 3.15 | 61 | 2.40 | 1,52 x F ₀ | | 1,85 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 025 - A - ... - TBM2 | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,56 x F ₀ | | 1,92 x F ₀ | | - | - | 0,03 | 0.07 | ✓ |
| M50 - 038 - A - ... - TBM2 | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | 1,61 x F ₀ | | 2,01 x F ₀ | | - | - | 0,04 | 0.09 | ✓ |
| M50 - 050 - A - ... - TBM2 | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,63 x F ₀ | | 2,05 x F ₀ | | - | - | 0,05 | 0.11 | ✓ |
| M50 - 063 - A - ... - TBM2 | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,61 x F ₀ | | 2,01 x F ₀ | | - | - | 0,06 | 0.13 | ✓ |
| M50 - 075 - A - ... - TBM2 | 75 | 2.95 | 195 | 7.68 | 120 | 4.72 | 1,63 x F ₀ | | 2,04 x F ₀ | | - | - | 0,06 | 0.13 | ✓ |
| M50 - 080 - A - ... - TBM2 | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,63 x F ₀ | | 2,05 x F ₀ | | - | - | 0,07 | 0.15 | ✓ |
| M50 - 100 - A - ... - TBM2 | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,65 x F ₀ | | 2,08 x F ₀ | | - | - | 0,08 | 0.18 | ✓ |
| M50 - 125 - A - ... - TBM2 | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,67 x F ₀ | | 2,11 x F ₀ | | - | - | 0,09 | 0.20 | ✓ |



39DM16X2A

HOW TO ORDER

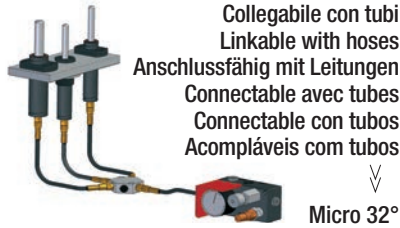
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INSTALLATION GUIDELINE

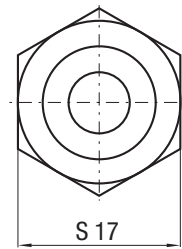
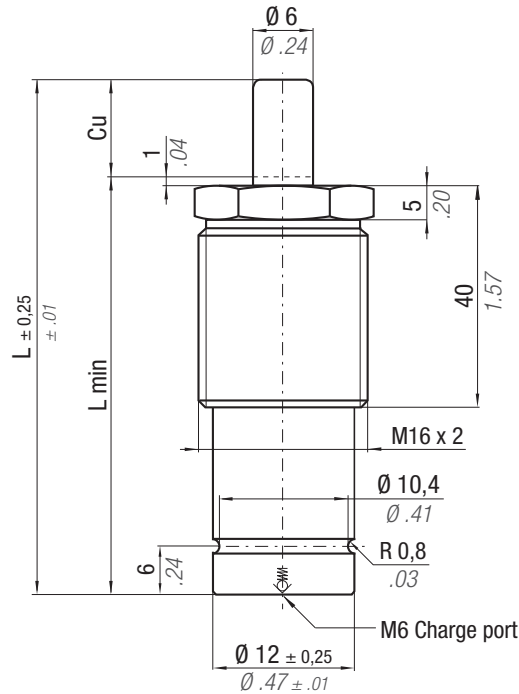
p. 203

ACTIVE SAFETY

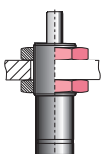
* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



| Force color code | P | | Fo Initial force $\pm 5\%$ at +20°C / +68°F | |
|------------------|--------|----------|---------------------------------------------------|--------|
| | bar | psi | daN | lb |
| GR | 45 | 653 | 13 | 29 |
| BU | 90 | 1305 | 25 | 56 |
| RD | 135 | 1958 | 38 | 85 |
| YW | 180 | 2610 | 50 | 112 |
| BK | 20-180 | 290-2610 | 6-50 | 13-112 |



| CODE | | °F 32 - 176 | °C 0 - 80 | ΔP $\pm 0,33\% / ^\circ C$ | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,28 cm ² 0,043 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable | Vo cm ³ in ³ | Weight | | PED 2014/68/EU |
|---------------------------|--|----------------------|--------------------|---------------------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|---------------------------------------|--------|------|-------------------|
| | | | | | | | | | | | | ~Kg | ~lb | |
| M50 - 007 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 010 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 013 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 015 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 019 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 025 - A - ... - TEM | | | | | | | | | | | | 0,03 | 0,07 | ✓ |
| M50 - 038 - A - ... - TEM | | | | | | | | | | | | 0,04 | 0,09 | ✓ |
| M50 - 050 - A - ... - TEM | | | | | | | | | | | | 0,05 | 0,11 | ✓ |
| M50 - 063 - A - ... - TEM | | | | | | | | | | | | 0,06 | 0,13 | ✓ |
| M50 - 075 - A - ... - TEM | | | | | | | | | | | | 0,06 | 0,13 | ✓ |
| M50 - 080 - A - ... - TEM | | | | | | | | | | | | 0,07 | 0,15 | ✓ |
| M50 - 100 - A - ... - TEM | | | | | | | | | | | | 0,08 | 0,18 | ✓ |
| M50 - 125 - A - ... - TEM | | | | | | | | | | | | 0,09 | 0,20 | ✓ |



39DM16X2A

HOW TO ORDER

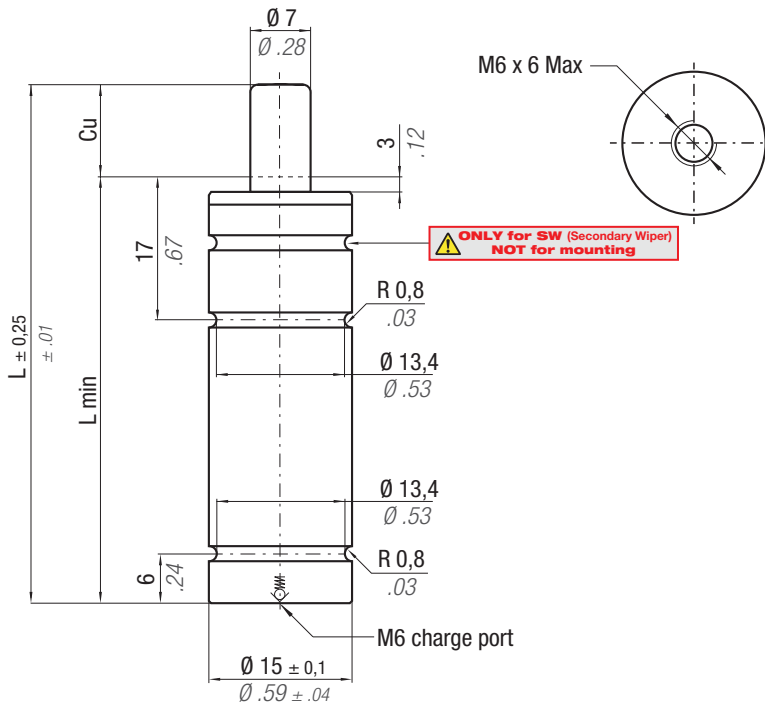
p. 39

INSTALLATION GUIDELINE

p. 203



ACTIVE SAFETY



* F_{1i} =

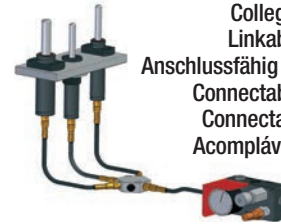
Isothermal end force at 100% Cu



p. 18

** F_{1p} =

Polytropic end force at 100% Cu



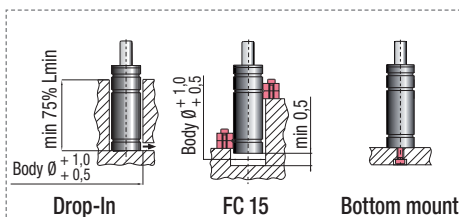
Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°

| Force color code | P | | F ₀ Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| GR | 45 | 653 | 18 | 40 |
| BU | 90 | 1305 | 35 | 79 |
| RD | 135 | 1958 | 50 | 112 |
| YW | 180 | 2610 | 70 | 157 |
| BK | 20-180 | 290-2610 | 8-70 | 18-157 |

| | | | | | | | | | |
|--|-----------------|---------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,38 cm ² 0.059 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|-----------------|---------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE | | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | | | |
|---------------------|--|------|------|------|-------|-------|------|----------------------------------|----|------------------------------------|----|-----------------|-----------------|------|------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | | ~Kg |
| M70 - 007 - A - ... | | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,28 x F ₀ | | 1,47 x F ₀ | | - | - | 0,04 | 0.09 | ✓ |
| M70 - 010 - A - ... | | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,34 x F ₀ | | 1,56 x F ₀ | | - | - | 0,05 | 0.11 | ✓ |
| M70 - 013 - A - ... | | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,37 x F ₀ | | 1,61 x F ₀ | | - | - | 0,05 | 0.11 | ✓ |
| M70 - 015 - A - ... | | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,40 x F ₀ | | 1,66 x F ₀ | | - | - | 0,05 | 0.11 | ✓ |
| M70 - 019 - A - ... | | 19 | 0.75 | 80 | 3.15 | 61 | 2.40 | 1,43 x F ₀ | | 1,72 x F ₀ | | - | - | 0,05 | 0.11 | ✓ |
| M70 - 025 - A - ... | | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,47 x F ₀ | | 1,78 x F ₀ | | - | - | 0,06 | 0.13 | ✓ |
| M70 - 038 - A - ... | | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | 1,51 x F ₀ | | 1,85 x F ₀ | | - | - | 0,07 | 0.15 | ✓ |
| M70 - 050 - A - ... | | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,54 x F ₀ | | 1,89 x F ₀ | | - | - | 0,08 | 0.18 | ✓ |
| M70 - 063 - A - ... | | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,52 x F ₀ | | 1,87 x F ₀ | | - | - | 0,09 | 0.20 | ✓ |
| M70 - 075 - A - ... | | 75 | 2.95 | 195 | 7.68 | 120 | 4.72 | 1,54 x F ₀ | | 1,89 x F ₀ | | - | - | 0,10 | 0.22 | ✓ |
| M70 - 080 - A - ... | | 80 | 3.15 | 205 | 8.071 | 125 | 4.92 | 1,54 x F ₀ | | 1,90 x F ₀ | | - | - | 0,10 | 0.22 | ✓ |
| M70 - 100 - A - ... | | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,56 x F ₀ | | 1,93 x F ₀ | | - | - | 0,12 | 0.26 | ✓ |
| M70 - 125 - A - ... | | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,57 x F ₀ | | 1,95 x F ₀ | | - | - | 0,14 | 0.31 | ✓ |



HOW TO ORDER

p. 39

INSTALLATION GUIDELINE

p. 203



ACTIVE SAFETY

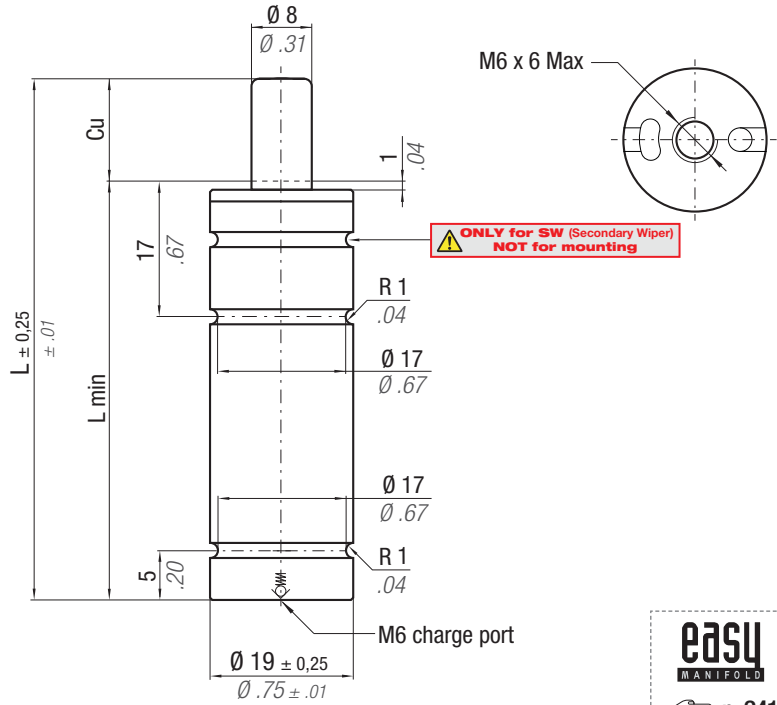


Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 ** $F_{1p} =$ Polytrophic end force at 100% Cu

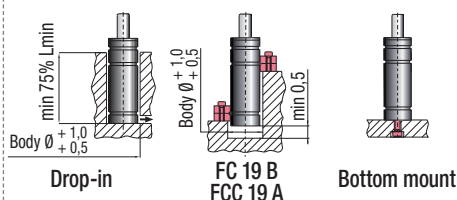
Collegabile con tubi - Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes - Connectable con tubos
Acompláveis com tubos
Micro 32°

| Force color code | P | | F ₀ Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| OR | 10 | 145 | 5 | 11 |
| PR | 20 | 290 | 10 | 22 |
| GR | 60 | 870 | 30 | 67 |
| BU | 100 | 1450 | 50 | 112 |
| RD | 140 | 2030 | 70 | 157 |
| YW | 180 | 2610 | 90 | 202 |
| BK | 10-180 | 145-2610 | 5-90 | 11-202 |



| | | | | | | | | | |
|----------------|------------------|----------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 0,50 cm ² 0,078 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|------------------|----------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg ~lb | PED 2014/68/EU |
|-------------------------------------|---------------------|------|------|-------|-------|-------|------|----------------------------------|-----------------------|------------------------------------|----|-----------------|-----------------|------------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | |
| M90 - 007 - A - ... | M90 - 007 - B - ... | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,21 x F ₀ | 1,39 x F ₀ | - | - | 0,07 | 0.15 | ✓ | |
| M90 - 010 - A - ... | M90 - 010 - B - ... | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,25 x F ₀ | 1,44 x F ₀ | - | - | 0,07 | 0.15 | ✓ | |
| M90 - 013 - A - ... | M90 - 013 - B - ... | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,27 x F ₀ | 1,48 x F ₀ | - | - | 0,08 | 0.18 | ✓ | |
| M90 - 015 - A - ... | M90 - 015 - B - ... | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,28 x F ₀ | 1,5 x F ₀ | - | - | 0,08 | 0.18 | ✓ | |
| M90 - 025 - A - ... | M90 - 025 - B - ... | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,32 x F ₀ | 1,57 x F ₀ | - | - | 0,09 | 0.20 | ✓ | |
| M90 - 038 - A - ... | M90 - 038 - B - ... | 38,1 | 1.50 | 118,2 | 4.65 | 80,1 | 3.15 | 1,35 x F ₀ | 1,6 x F ₀ | - | - | 0,11 | 0.24 | ✓ | |
| M90 - 050 - A - ... | M90 - 050 - B - ... | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,36 x F ₀ | 1,62 x F ₀ | - | - | 0,12 | 0.26 | ✓ | |
| M90 - 063 - A - ... | M90 - 063 - B - ... | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,36 x F ₀ | 1,62 x F ₀ | - | - | 0,14 | 0.31 | ✓ | |
| M90 - 080 - A - ... | M90 - 080 - B - ... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,37 x F ₀ | 1,64 x F ₀ | - | - | 0,15 | 0.33 | ✓ | |
| M90 - 100 - A - ... | M90 - 100 - B - ... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,37 x F ₀ | 1,65 x F ₀ | - | - | 0,17 | 0.37 | ✓ | |
| M90 - 125 - A - ... | M90 - 125 - B - ... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,38 x F ₀ | 1,66 x F ₀ | - | - | 0,20 | 0.44 | ✓ | |

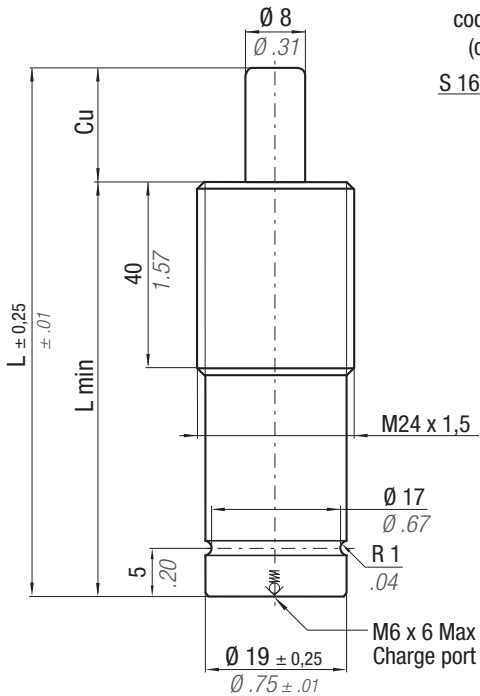


HOW TO ORDER

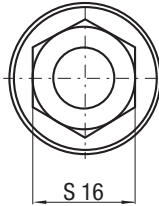
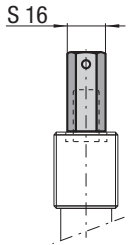
p. 39

INSTALLATION GUIDELINE

p. 203



cod. 39 TBT
(optional)



Senza riserva corsa
Without reserve of stroke
Ohne Hubreserve
Sans course de réserve
Sin margen de Carrera
Sem reserva de curso

NON superare 90% Cu
DO NOT exceed 90% Cu
NICHT überschreiten die 90% Cu
NE PAS dépasser 90% Cu
NO superar el 90% Cu
NÃO se excedam os 90% Cu

Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

*** F_{1i} =** Isothermal end force at 100% Cu **p. 18**
**** F_{1p} =** Polythropic end force at 100% Cu

Collegabile con tubi - Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes - Connectable con tubos
Acompláveis com tubos
Micro 32°

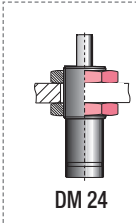
| Force color code | P | | F ₀ | |
|------------------|--------|----------|-----------------------------------|--------|
| | bar | psi | Initial force ± 5% at +20°C +68°F | daN lb |
| OR | 10 | 145 | 5 | 11 |
| PR | 20 | 290 | 10 | 22 |
| GR | 60 | 870 | 30 | 67 |
| BU | 100 | 1450 | 50 | 112 |
| RD | 140 | 2030 | 70 | 157 |
| YW | 180 | 2610 | 90 | 202 |
| BK | 10-180 | 145-2610 | 5-90 | 11-202 |

ACTIVE SAFETY



| | | | | | | | | | |
|--|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 0,50 cm ² 0.078 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|----------------------------------------|-----------------------------|--------------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | |
|-------------------------------------|-------------------|------|------|-------|-------|-------|------|-----------------------|-----------------------|--------------------|----|-----------------|-----------------|-----|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb |
| M90-007-A-...-TBM | M90-007-B-...-TBM | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,21 x F ₀ | 1,39 x F ₀ | - | - | 0,07 | 0.15 | ✓ | |
| M90-010-A-...-TBM | M90-010-B-...-TBM | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,25 x F ₀ | 1,44 x F ₀ | - | - | 0,07 | 0.15 | ✓ | |
| M90-013-A-...-TBM | M90-013-B-...-TBM | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,27 x F ₀ | 1,48 x F ₀ | - | - | 0,08 | 0.18 | ✓ | |
| M90-015-A-...-TBM | M90-015-B-...-TBM | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,28 x F ₀ | 1,5 x F ₀ | - | - | 0,08 | 0.18 | ✓ | |
| M90-025-A-...-TBM | M90-025-B-...-TBM | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,32 x F ₀ | 1,57 x F ₀ | - | - | 0,09 | 0.20 | ✓ | |
| M90-038-A-...-TBM | M90-038-B-...-TBM | 38,1 | 1.50 | 118,2 | 4.65 | 80,1 | 3.15 | 1,35 x F ₀ | 1,6 x F ₀ | - | - | 0,11 | 0.24 | ✓ | |
| M90-050-A-...-TBM | M90-050-B-...-TBM | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,36 x F ₀ | 1,62 x F ₀ | - | - | 0,12 | 0.26 | ✓ | |
| M90-063-A-...-TBM | M90-063-B-...-TBM | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,36 x F ₀ | 1,62 x F ₀ | - | - | 0,14 | 0.31 | ✓ | |
| M90-080-A-...-TBM | M90-080-B-...-TBM | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,37 x F ₀ | 1,64 x F ₀ | - | - | 0,15 | 0.33 | ✓ | |
| M90-100-A-...-TBM | M90-100-B-...-TBM | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,37 x F ₀ | 1,65 x F ₀ | - | - | 0,17 | 0.37 | ✓ | |
| M90-125-A-...-TBM | M90-125-B-...-TBM | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,38 x F ₀ | 1,66 x F ₀ | - | - | 0,20 | 0.44 | ✓ | |



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Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18

** $F_{1p} =$

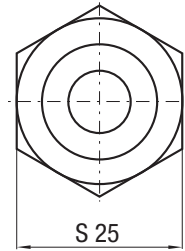
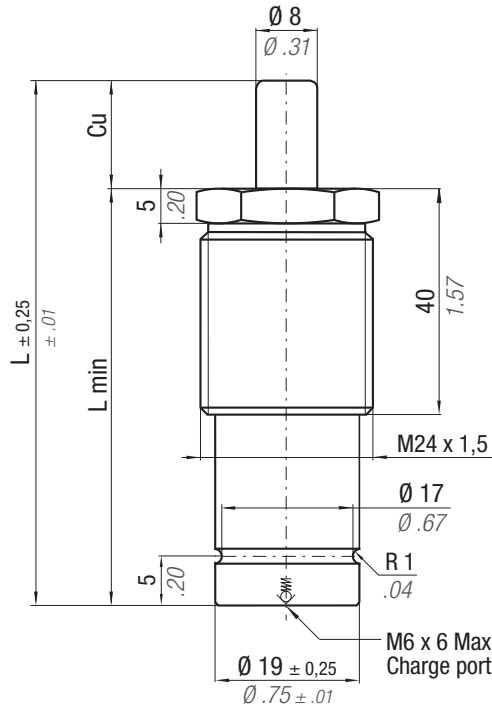
Polytrophic end force at 100% Cu



Collegabile con tubi - Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes - Connectable con tubos
Acompláveis com tubos

Micro 32°

| Force color code | P | | F0 | |
|------------------|--------|----------|------|--------|
| | bar | psi | daN | lb |
| OR | 10 | 145 | 5 | 11 |
| PR | 20 | 290 | 10 | 22 |
| GR | 60 | 870 | 30 | 67 |
| BU | 100 | 1450 | 50 | 112 |
| RD | 140 | 2030 | 70 | 157 |
| YW | 180 | 2610 | 90 | 202 |
| BK | 10-180 | 145-2610 | 5-90 | 11-202 |

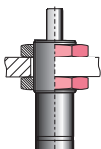


!
Senza riserva corsa
Without reserve of stroke
Ohne Hubreserve
Sans course de réserve
Sin margen de Carrera
Sem reserva de curso

!
NON superare 90% Cu
DO NOT exceed 90% Cu
NICHT überschreiten die 90% Cu
NE PAS dépasser 90% Cu
NO superar el 90% Cu
NÃO se excedam os 90% Cu

| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 0,50 cm ² 0,078 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * | | F _{1p} ** | | Vo | | ~Kg | ~lb | PED 2014/68/EU |
|-------------------------------------|-------------------|------|------|-------|-------|-------|------|-------------------|-----------|--------------------|----|-----------------|-----------------|-----|-----|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | | |
| M90-007-A-...-TEM | M90-007-B-...-TEM | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,21 x F0 | 1,39 x F0 | - | - | 0,07 | 0.15 | ✓ | | |
| M90-010-A-...-TEM | M90-010-B-...-TEM | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,25 x F0 | 1,44 x F0 | - | - | 0,07 | 0.15 | ✓ | | |
| M90-013-A-...-TEM | M90-013-B-...-TEM | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,27 x F0 | 1,48 x F0 | - | - | 0,08 | 0.18 | ✓ | | |
| M90-015-A-...-TEM | M90-015-B-...-TEM | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,28 x F0 | 1,5 x F0 | - | - | 0,08 | 0.18 | ✓ | | |
| M90-025-A-...-TEM | M90-025-B-...-TEM | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,32 x F0 | 1,57 x F0 | - | - | 0,09 | 0.20 | ✓ | | |
| M90-038-A-...-TEM | M90-038-B-...-TEM | 38,1 | 1.50 | 118,2 | 4.65 | 80,1 | 3.15 | 1,35 x F0 | 1,6 x F0 | - | - | 0,11 | 0.24 | ✓ | | |
| M90-050-A-...-TEM | M90-050-B-...-TEM | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,36 x F0 | 1,62 x F0 | - | - | 0,12 | 0.26 | ✓ | | |
| M90-063-A-...-TEM | M90-063-B-...-TEM | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,36 x F0 | 1,62 x F0 | - | - | 0,14 | 0.31 | ✓ | | |
| M90-080-A-...-TEM | M90-080-B-...-TEM | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,37 x F0 | 1,64 x F0 | - | - | 0,15 | 0.33 | ✓ | | |
| M90-100-A-...-TEM | M90-100-B-...-TEM | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,37 x F0 | 1,65 x F0 | - | - | 0,17 | 0.37 | ✓ | | |
| M90-125-A-...-TEM | M90-125-B-...-TEM | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,38 x F0 | 1,66 x F0 | - | - | 0,20 | 0.44 | ✓ | | |



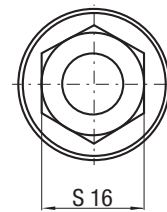
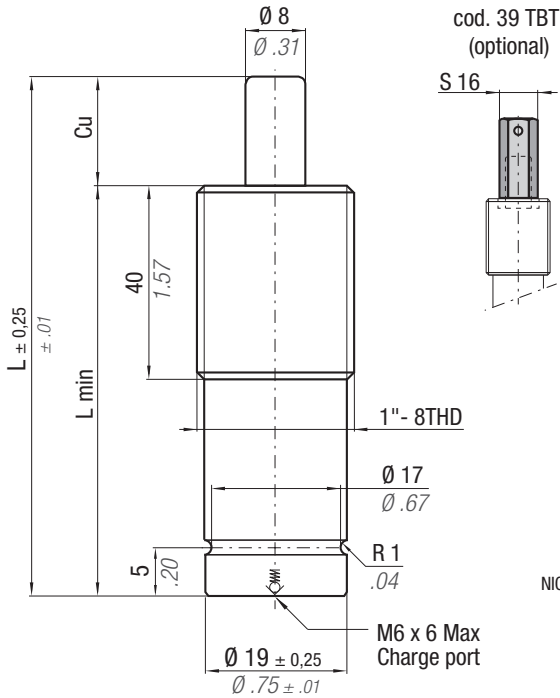
DM 24

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cod. 39 TBT (optional)

Senza riserva corsa
Without reserve of stroke
Ohne Hubreserve
Sans course de réserve
Sin margen de Carrera
Sem reserva de curso

NON superare 90% Cu
DO NOT exceed 90% Cu
NICHT überschreiten die 90% Cu
NE PAS dépasser 90% Cu
NO superar el 90% Cu
NÃO se excedam os 90% Cu

Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 ** $F_{1p} =$ Polythropic end force at 100% Cu

Collegabile con tubi - Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes - Connectable con tubos
Acompláveis com tubos
Micro 32°

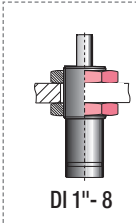
| Force color code | P | | F ₀ Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| OR | 10 | 145 | 5 | 11 |
| PR | 20 | 290 | 10 | 22 |
| GR | 60 | 870 | 30 | 67 |
| BU | 100 | 1450 | 50 | 112 |
| RD | 140 | 2030 | 70 | 157 |
| YW | 180 | 2610 | 90 | 202 |
| BK | 10-180 | 145-2610 | 5-90 | 11-202 |

ACTIVE SAFETY



| | | | | | | | | | |
|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 0,50 cm ² 0.078 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|-------------------|------|------|-------|-------|-------|------|----------------------------------|----|------------------------------------|----|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| M90-007-A-...-TBI | M90-007-B-...-TBI | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,21 x F ₀ | | 1,39 x F ₀ | | - | - | 0,07 | 0.15 | ✓ |
| M90-010-A-...-TBI | M90-010-B-...-TBI | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,25 x F ₀ | | 1,44 x F ₀ | | - | - | 0,07 | 0.15 | ✓ |
| M90-013-A-...-TBI | M90-013-B-...-TBI | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,27 x F ₀ | | 1,48 x F ₀ | | - | - | 0,08 | 0.18 | ✓ |
| M90-015-A-...-TBI | M90-015-B-...-TBI | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,28 x F ₀ | | 1,5 x F ₀ | | - | - | 0,08 | 0.18 | ✓ |
| M90-025-A-...-TBI | M90-025-B-...-TBI | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,32 x F ₀ | | 1,57 x F ₀ | | - | - | 0,09 | 0.20 | ✓ |
| M90-038-A-...-TBI | M90-038-B-...-TBI | 38,1 | 1.50 | 118,2 | 4.65 | 80,1 | 3.15 | 1,35 x F ₀ | | 1,6 x F ₀ | | - | - | 0,11 | 0.24 | ✓ |
| M90-050-A-...-TBI | M90-050-B-...-TBI | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,36 x F ₀ | | 1,62 x F ₀ | | - | - | 0,12 | 0.26 | ✓ |
| M90-063-A-...-TBI | M90-063-B-...-TBI | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,36 x F ₀ | | 1,62 x F ₀ | | - | - | 0,14 | 0.31 | ✓ |
| M90-080-A-...-TBI | M90-080-B-...-TBI | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,37 x F ₀ | | 1,64 x F ₀ | | - | - | 0,15 | 0.33 | ✓ |
| M90-100-A-...-TBI | M90-100-B-...-TBI | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,37 x F ₀ | | 1,65 x F ₀ | | - | - | 0,17 | 0.37 | ✓ |
| M90-125-A-...-TBI | M90-125-B-...-TBI | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,38 x F ₀ | | 1,66 x F ₀ | | - | - | 0,20 | 0.44 | ✓ |



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| | | | |
|------------------------------------------|----------------------------------------------|-------------------------------------|---------------------------------|
| ISO 11901 - 1 B8 3180 220 000 002(MB) | VDI 3003 - Blatt 2 K32D2-2400-50 (Nissan) | B2 4007 (BMW) E24.54.815.G (PSA) | 075.90.50 (FCA) 39D 878 (VW) |
|------------------------------------------|----------------------------------------------|-------------------------------------|---------------------------------|



ACTIVE SAFETY

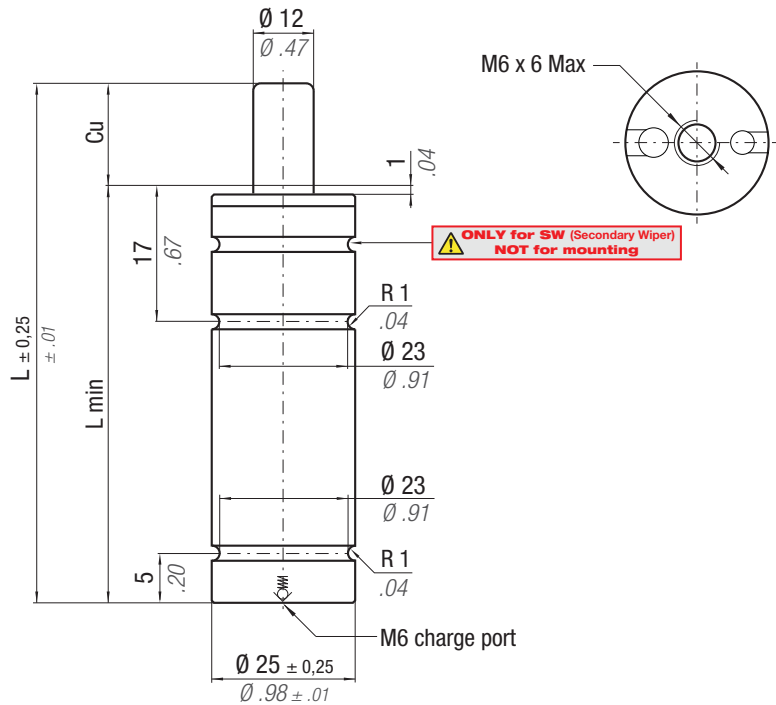


Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu

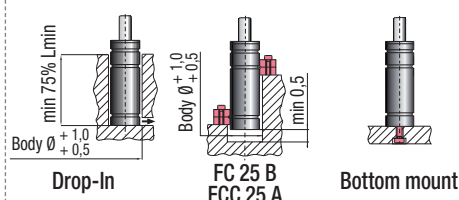
Collegabile con tubi - Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes - Connectable con tubos
Acompláveis com tubos
Micro 32°

| Force color code | P | | F0 Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------|--------|
| | bar | psi | daN | lb |
| OR | 15 | 218 | 17 | 38 |
| PR | 25 | 363 | 28 | 63 |
| GR | 45 | 653 | 50 | 112 |
| BU | 90 | 1305 | 100 | 225 |
| RD | 135 | 1958 | 150 | 337 |
| YW | 180 | 2610 | 200 | 450 |
| BK | 10-180 | 145-2610 | 11-200 | 25-450 |



| | | | | | | | | | |
|----------------|---------------------------------|-------------------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|-------------------------------|
| N ₂ | $^{\circ}\text{F}$ 32 176 | $^{\circ}\text{C}$ 0 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 1,13 cm ² 0,175 in ² | SPM ~ 50 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|---------------------------------|-------------------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | Vo | | PED 2014/68/EU |
|-------------------------------------|----------------|------|------|-------|-------|-------|------|----------------------------------|-----------|------------------------------------|----|-----------------|-----------------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | |
| M200-007-A-... | M200-007-B-... | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,30 x F0 | 1,50 x F0 | - | - | 0,12 | 0.26 | ✓ |
| M200-010-A-... | M200-010-B-... | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,34 x F0 | 1,57 x F0 | - | - | 0,13 | 0.29 | ✓ |
| M200-013-A-... | M200-013-B-... | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,37 x F0 | 1,62 x F0 | - | - | 0,13 | 0.29 | ✓ |
| M200-015-A-... | M200-015-B-... | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,38 x F0 | 1,64 x F0 | - | - | 0,14 | 0.31 | ✓ |
| M200-016-A-... | M200-016-B-... | 16 | 0.63 | 74 | 2.91 | 58 | 2.28 | 1,39 x F0 | 1,65 x F0 | - | - | 0,14 | 0.31 | ✓ |
| M200-025-A-... | M200-025-B-... | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,43 x F0 | 1,72 x F0 | - | - | 0,16 | 0.35 | ✓ |
| M200-038-A-... | M200-038-B-... | 38,1 | 1.50 | 118,2 | 4.65 | 80,1 | 3.15 | 1,46 x F0 | 1,77 x F0 | - | - | 0,19 | 0.42 | ✓ |
| M200-050-A-... | M200-050-B-... | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,47 x F0 | 1,79 x F0 | - | - | 0,20 | 0.44 | ✓ |
| M200-063-A-... | M200-063-B-... | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,48 x F0 | 1,81 x F0 | - | - | 0,23 | 0.51 | ✓ |
| M200-080-A-... | M200-080-B-... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,49 x F0 | 1,83 x F0 | - | - | 0,26 | 0.57 | ✓ |
| M200-100-A-... | M200-100-B-... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,50 x F0 | 1,83 x F0 | - | - | 0,30 | 0.66 | ✓ |
| M200-125-A-... | M200-125-B-... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,50 x F0 | 1,84 x F0 | - | - | 0,34 | 0.75 | ✓ |

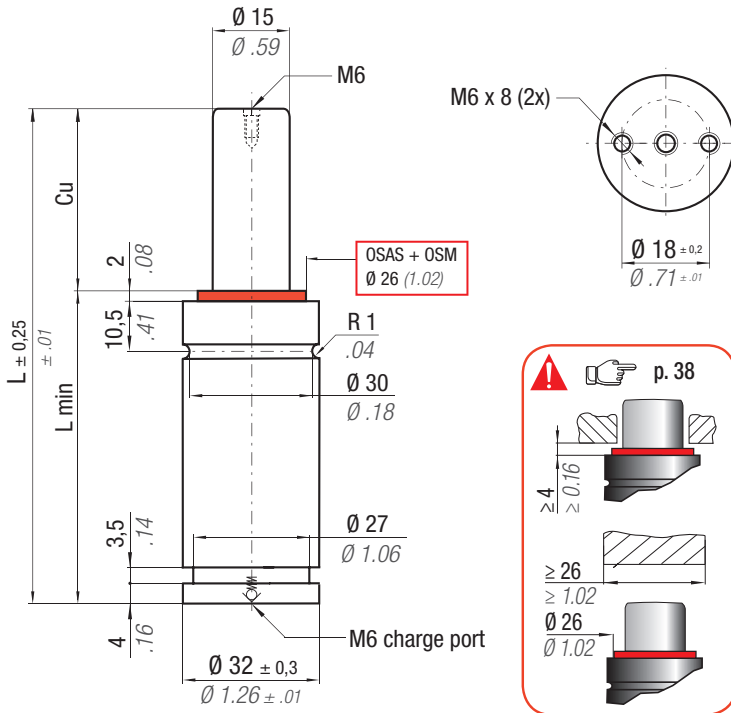


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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

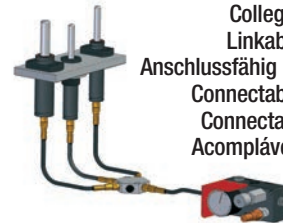
* F_{1i} =

Isothermal end force at 100% Cu

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** F_{1p} =

Polytropic end force at 100% Cu



Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°

| Force color code | P | | Fo | |
|------------------|--------|----------|-----------------------------------|--------|
| | bar | psi | Initial force ± 5% at +20°C +68°F | |
| GR | 45 | 653 | 80 | 180 |
| BU | 90 | 1305 | 160 | 360 |
| RD | 135 | 1958 | 240 | 540 |
| YW | 180 | 2610 | 320 | 719 |
| BK | 10-180 | 145-2610 | 18-320 | 40-719 |



ACTIVE SAFETY



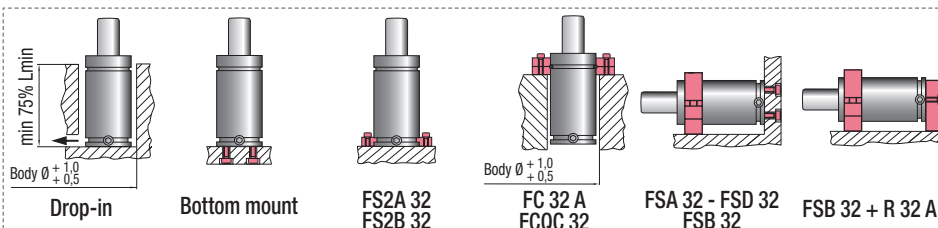
OSAS



USAS

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 1,77 cm ² 0.274 in ² | SPM ~ 50 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMMCI32A |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------|

| CODE | Cu | | L | | L min | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | |
|----------------------|------|------|------|-------|-------|------|-----------------------|----|-----------------------|----|-----------------|-----------------|------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | | |
| M300 - 007 - A - ... | 7 | 0.28 | 56 | 2.20 | 49 | 1.93 | 1,17 x F ₀ | | 1,30 x F ₀ | | - | - | 0,21 | 0.01 | ✓ |
| M300 - 010 - A - ... | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 1,21 x F ₀ | | 1,37 x F ₀ | | - | - | 0,22 | 0.01 | ✓ |
| M300 - 013 - A - ... | 12,7 | 0.50 | 67,4 | 2.65 | 54,7 | 2.15 | 1,24 x F ₀ | | 1,41 x F ₀ | | - | - | 0,23 | 0.01 | ✓ |
| M300 - 015 - A - ... | 15 | 0.59 | 72 | 2.83 | 57 | 2.24 | 1,26 x F ₀ | | 1,44 x F ₀ | | - | - | 0,24 | 0.01 | ✓ |
| M300 - 025 - A - ... | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | 1,32 x F ₀ | | 1,53 x F ₀ | | - | - | 0,26 | 0.01 | ✓ |
| M300 - 038 - A - ... | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | 1,36 x F ₀ | | 1,60 x F ₀ | | - | - | 0,30 | 0.01 | ✓ |
| M300 - 050 - A - ... | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | 1,38 x F ₀ | | 1,64 x F ₀ | | - | - | 0,34 | 0.01 | ✓ |
| M300 - 063 - A - ... | 63,5 | 2.50 | 172 | 6.77 | 108,5 | 4.27 | 1,38 x F ₀ | | 1,63 x F ₀ | | - | - | 0,39 | 0.02 | ✓ |
| M300 - 080 - A - ... | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | 1,40 x F ₀ | | 1,66 x F ₀ | | - | - | 0,44 | 0.02 | ✓ |
| M300 - 100 - A - ... | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | 1,41 x F ₀ | | 1,68 x F ₀ | | - | - | 0,50 | 0.02 | ✓ |
| M300 - 125 - A - ... | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | 1,42 x F ₀ | | 1,70 x F ₀ | | - | - | 0,57 | 0.02 | ✓ |

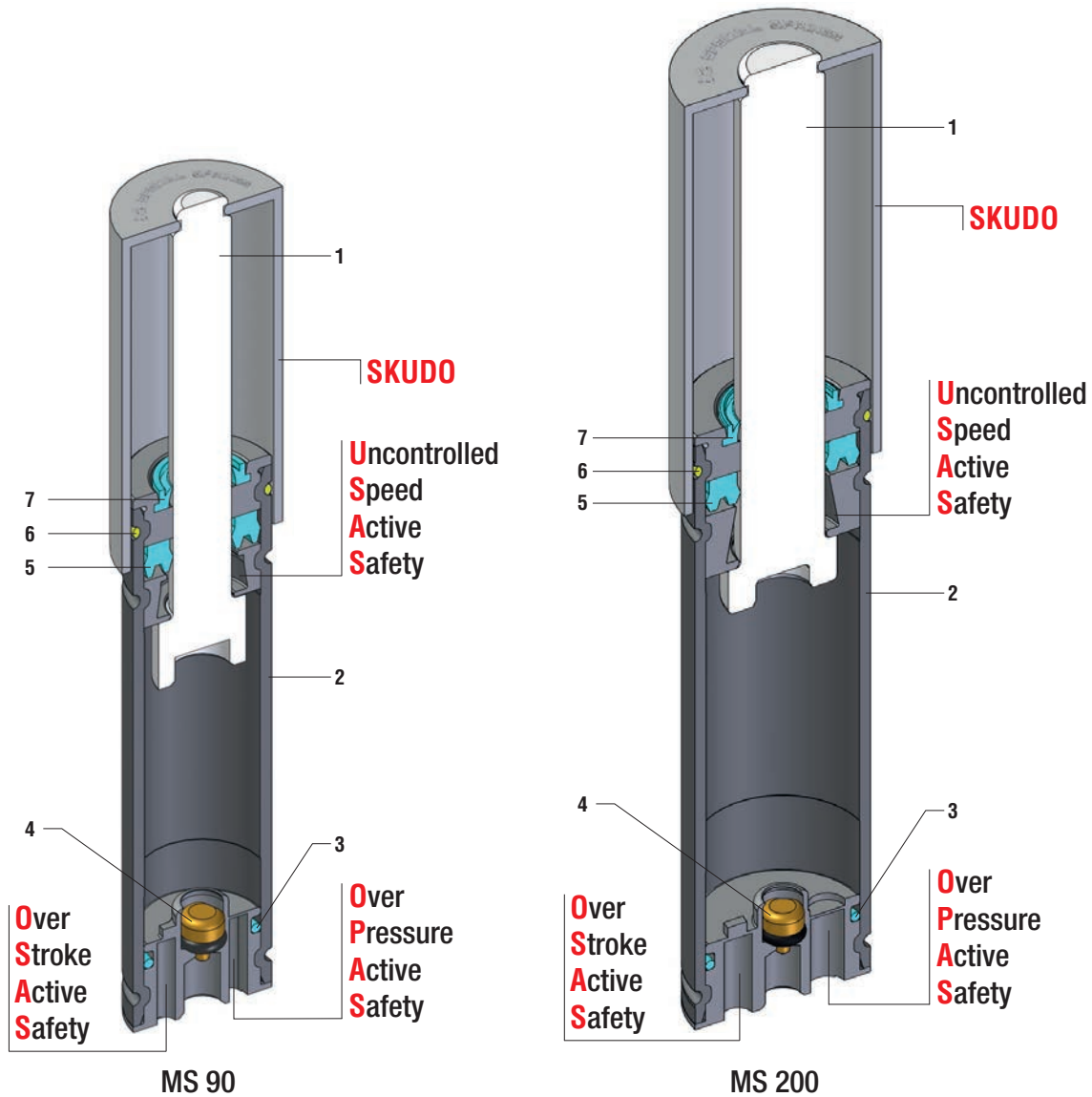


HOW TO ORDER

p. 39

INSTALLATION GUIDELINE

p. 203







Mini cilindri - Mini cylinders - Mini Gasdruckfedern
 Mini-ressorts - Mini cilindros - Mini-cilindros

| | |
|----------------|-------------------------|
| SEALING | ROD SEAL |
| DESIGN | RETAINING GROOVE DESIGN |

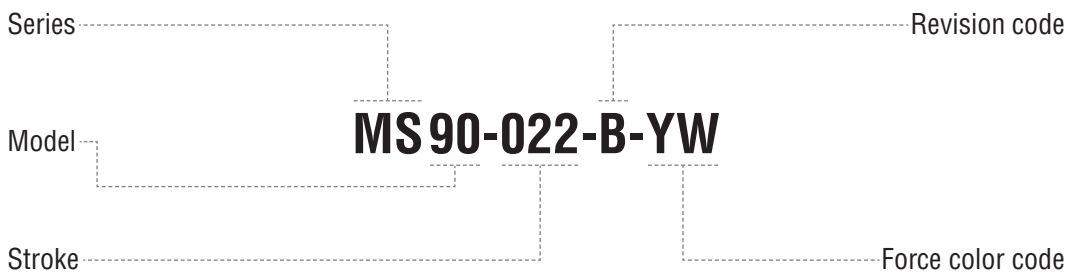
| | | | |
|----------|------------------------------|----------|------------------|
| 1 | Rod (nitrited superfinished) | 5 | Rod seal |
| 2 | Body | 6 | Force color code |
| 3 | O-ring | 7 | Rod wiper |
| 4 | Valve | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | |  OSAS |  USAS |  OPAS |  SKUDO |
|----------|--------|------|-----------|-------------|------------------|----------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| | mm | inch | mm | inch | daN | lb | | | | |
| ■ MS 90 | 19 | 0.75 | 7 - 122 | 0.28 - 4.80 | 5 - 90 | 11 - 202 | ✓ | ✓ | ✓ | ✓ |
| ■ MS 200 | 25 | 0.98 | 7 - 122 | 0.28 - 4.80 | 17 - 200 | 38 - 450 | ✓ | ✓ | ✓ | ✓ |

MS

HOW TO ORDER



Available versions



MS 90-022-B-YW

Standard code



Self contained

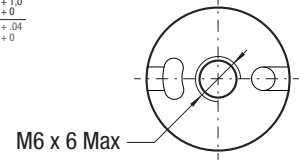
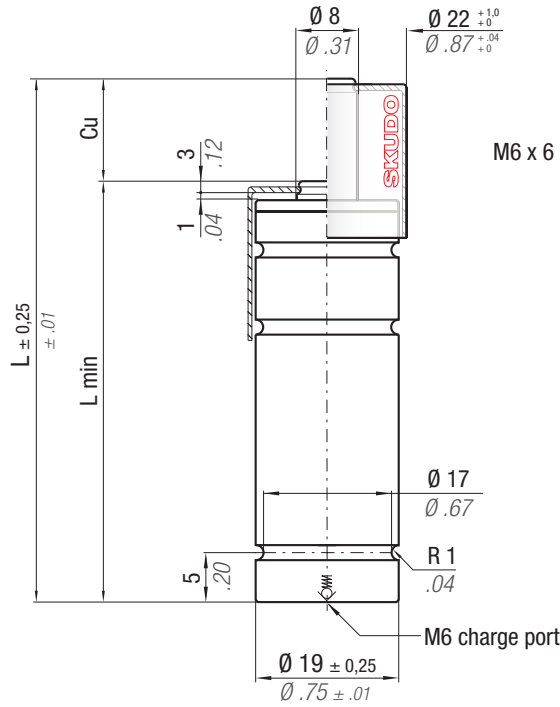
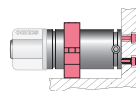
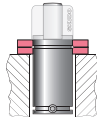
Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytropic end force at 100% Cu

| Force color code | P | | F ₀ Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------------------|--------|
| | bar | psi | daN | lb |
| OR | 10 | 145 | 5 | 11 |
| PR | 20 | 290 | 10 | 22 |
| GR | 60 | 870 | 30 | 67 |
| BU | 100 | 1450 | 50 | 112 |
| RD | 140 | 2030 | 70 | 157 |
| YW | 180 | 2610 | 90 | 202 |
| BK | 10-180 | 145-2610 | 5-90 | 11-202 |



| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 0,50 cm ² 0,078 in ² | SPM ~ 100 - 150 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|----------------|------|------|-------|-------|-------|------|----------------------------------|----|------------------------------------|----|-----------------|-----------------|-------------------|------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| MS90-007-A-... | MS90-007-B-... | 7 | 0.28 | 62 | 2.44 | 55 | 2.17 | 1,19 x F ₀ | | 1,35 x F ₀ | | - | - | 0,07 | 0,15 | ✓ |
| MS90-010-A-... | MS90-010-B-... | 9,7 | 0.38 | 67,4 | 2.65 | 57,7 | 2.27 | 1,22 x F ₀ | | 1,40 x F ₀ | | - | - | 0,08 | 0,18 | ✓ |
| MS90-012-A-... | MS90-012-B-... | 12 | 0.47 | 72 | 2.83 | 60 | 2.36 | 1,24 x F ₀ | | 1,44 x F ₀ | | - | - | 0,08 | 0,18 | ✓ |
| MS90-022-A-... | MS90-022-B-... | 22 | 0.87 | 92 | 3.62 | 70 | 2.76 | 1,30 x F ₀ | | 1,52 x F ₀ | | - | - | 0,09 | 0,20 | ✓ |
| MS90-035-A-... | MS90-035-B-... | 35,1 | 1.38 | 118,2 | 4.65 | 83,1 | 3.27 | 1,33 x F ₀ | | 1,57 x F ₀ | | - | - | 0,11 | 0,24 | ✓ |
| MS90-047-A-... | MS90-047-B-... | 47 | 1.85 | 142 | 5.59 | 95 | 3.74 | 1,34 x F ₀ | | 1,60 x F ₀ | | - | - | 0,12 | 0,26 | ✓ |
| MS90-060-A-... | MS90-060-B-... | 60,5 | 2.38 | 172 | 6.77 | 111,5 | 4.39 | 1,35 x F ₀ | | 1,61 x F ₀ | | - | - | 0,14 | 0,31 | ✓ |
| MS90-077-A-... | MS90-077-B-... | 77 | 3.03 | 205 | 8.07 | 128 | 5.04 | 1,36 x F ₀ | | 1,62 x F ₀ | | - | - | 0,15 | 0,33 | ✓ |
| MS90-097-A-... | MS90-097-B-... | 97 | 3.82 | 245 | 9.65 | 148 | 5.83 | 1,37 x F ₀ | | 1,64 x F ₀ | | - | - | 0,17 | 0,37 | ✓ |
| MS90-122-A-... | MS90-122-B-... | 122 | 4.80 | 295 | 11.61 | 173 | 6.81 | 1,37 x F ₀ | | 1,65 x F ₀ | | - | - | 0,20 | 0,44 | ✓ |

WARNING REMOVE SKUDO

Upside down mounting

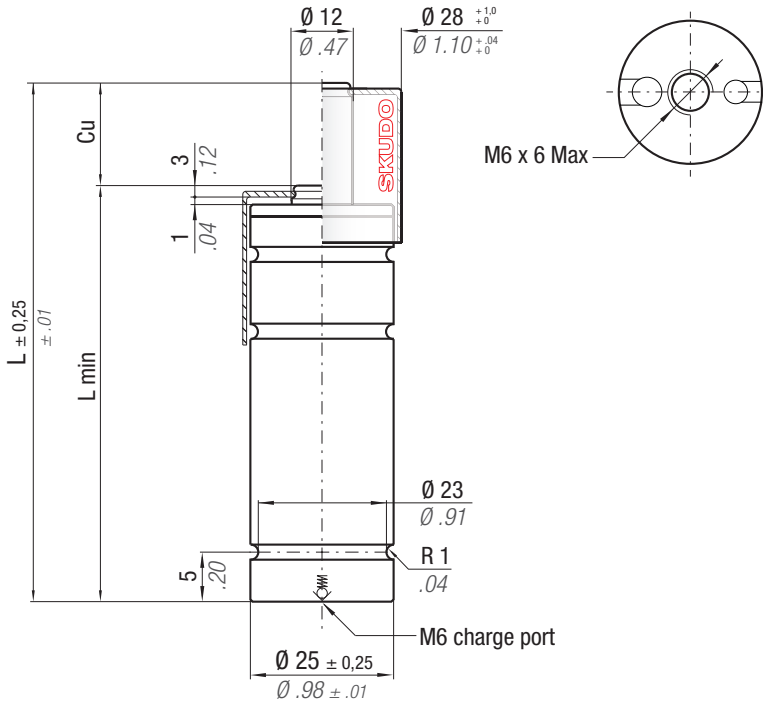


HOW TO ORDER

p. 53

INSTALLATION GUIDELINE

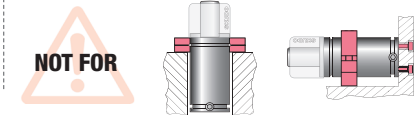
p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| Force color code | P | | Fo Initial force ± 5% at +20°C +68°F | |
|------------------|--------|----------|--------------------------------------------|--------|
| | bar | psi | daN | lb |
| OR | 15 | 218 | 17 | 38 |
| PR | 25 | 363 | 28 | 63 |
| GR | 45 | 653 | 50 | 112 |
| BU | 90 | 1305 | 100 | 225 |
| RD | 135 | 1958 | 150 | 337 |
| YW | 180 | 2610 | 200 | 450 |
| BK | 10-180 | 145-2610 | 11-200 | 25-450 |



ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

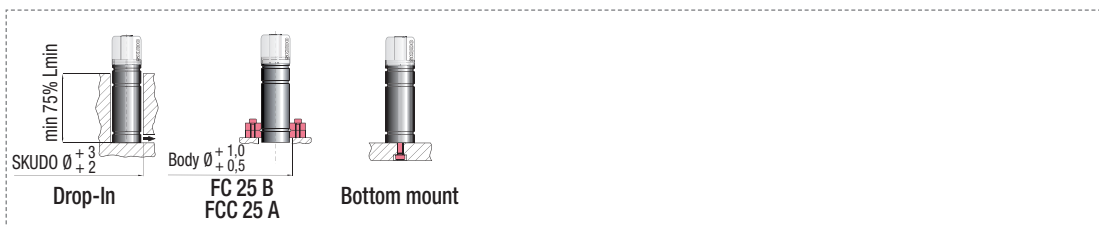
MS

| | | | | | | | | | |
|----------------|--------------------------------|------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------|
| N ₂ | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 10 bar 145 psi | S 1,13 cm ² 0.175 in ² | SPM ~ 50 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|--------------------------------|------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F_{1i} * End force * | | F_{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|-----------------------|------|------|-------|-------|-------|------|---------------------------|----|-----------------------------|----|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| MS200 - 007 - A - ... | MS200 - 007 - B - ... | 7 | 0.28 | 62 | 2.44 | 55 | 2.17 | 1,25 x F ₀ | | 1,43 x F ₀ | | - | - | 0,13 | 0.29 | ✓ |
| MS200 - 010 - A - ... | MS200 - 010 - B - ... | 9,7 | 0.38 | 67,4 | 2.65 | 57,7 | 2.27 | 1,30 x F ₀ | | 1,50 x F ₀ | | - | - | 0,13 | 0.29 | ✓ |
| MS200 - 012 - A - ... | MS200 - 012 - B - ... | 12 | 0.47 | 72 | 2.83 | 60 | 2.36 | 1,32 x F ₀ | | 1,54 x F ₀ | | - | - | 0,14 | 0.31 | ✓ |
| MS200 - 022 - A - ... | MS200 - 022 - B - ... | 22 | 0.87 | 92 | 3.62 | 70 | 2.76 | 1,39 x F ₀ | | 1,65 x F ₀ | | - | - | 0,16 | 0.35 | ✓ |
| MS200 - 035 - A - ... | MS200 - 035 - B - ... | 35,1 | 1.38 | 118,2 | 4.65 | 83,1 | 3.27 | 1,43 x F ₀ | | 1,72 x F ₀ | | - | - | 0,19 | 0.42 | ✓ |
| MS200 - 047 - A - ... | MS200 - 047 - B - ... | 47 | 1.85 | 142 | 5.59 | 95 | 3.74 | 1,45 x F ₀ | | 1,75 x F ₀ | | - | - | 0,20 | 0.44 | ✓ |
| MS200 - 060 - A - ... | MS200 - 060 - B - ... | 60,5 | 2.38 | 172 | 6.77 | 111,5 | 4.39 | 1,46 x F ₀ | | 1,78 x F ₀ | | - | - | 0,23 | 0.51 | ✓ |
| MS200 - 077 - A - ... | MS200 - 077 - B - ... | 77 | 3.03 | 205 | 8.07 | 128 | 5.04 | 1,47 x F ₀ | | 1,80 x F ₀ | | - | - | 0,26 | 0.57 | ✓ |
| MS200 - 097 - A - ... | MS200 - 097 - B - ... | 97 | 3.82 | 245 | 9.65 | 148 | 5.83 | 1,48 x F ₀ | | 1,81 x F ₀ | | - | - | 0,30 | 0.66 | ✓ |
| MS200 - 122 - A - ... | MS200 - 122 - B - ... | 122 | 4.80 | 295 | 11.61 | 173 | 6.81 | 1,49 x F ₀ | | 1,82 x F ₀ | | - | - | 0,34 | 0.75 | ✓ |

WARNING REMOVE SKUDO

Upside down mounting



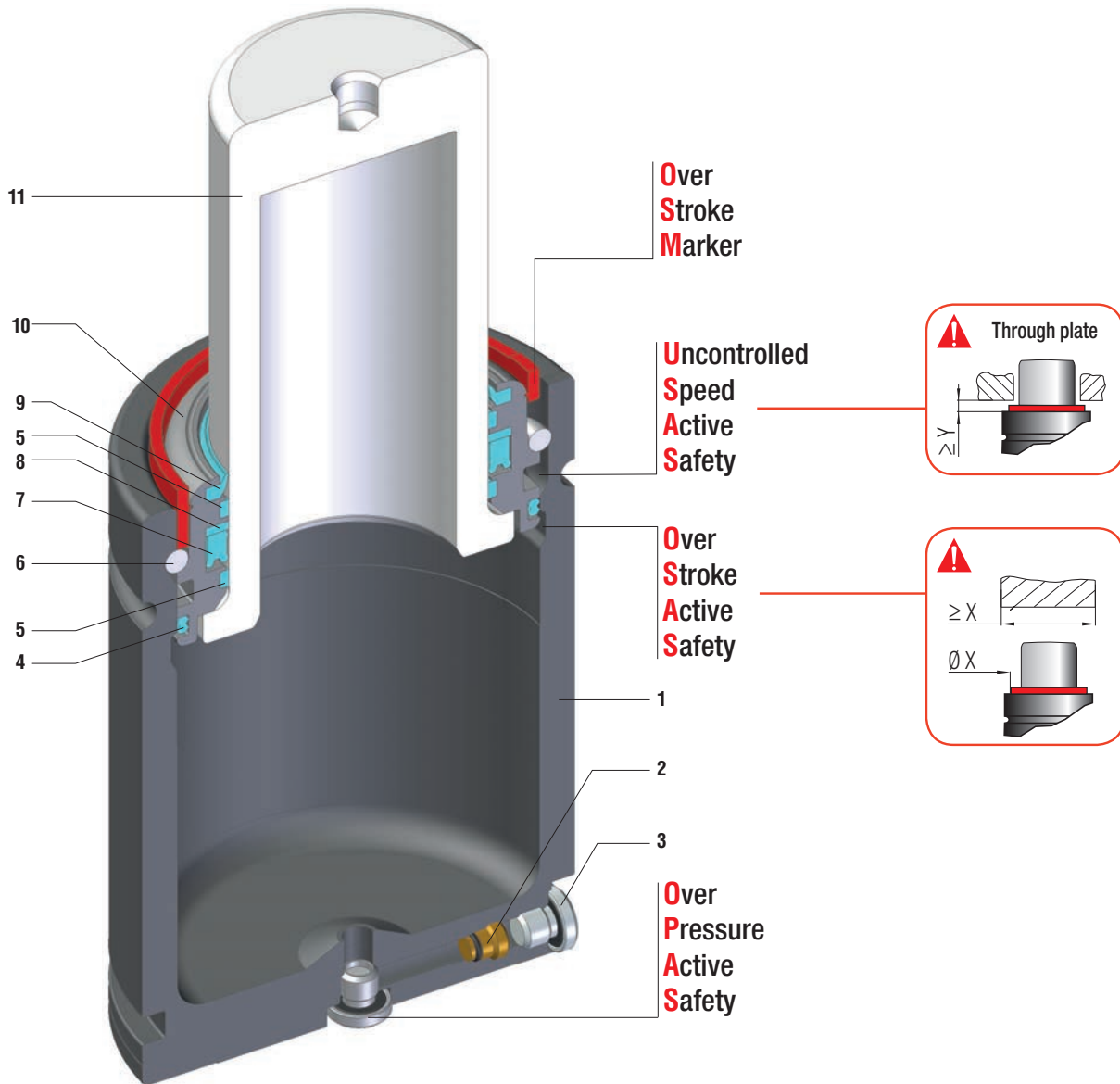
HOW TO ORDER

p. 53

INSTALLATION GUIDELINE

p. 203

| | | | |
|------|---------|-----|--------|
| ISO | VDI | BMW | FCA |
| Ford | Mazda | MB | Nissan |
| PSA | Renault | VW | |



Minima altezza, massima forza - Minimum height, maximum force - Minimale Höhe, maximale Kraft
 Hauteur minimale, force maximale - Mínima altura, máxima fuerza - Altura mínima, força máxima

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Guide ring | 9 | Rod wiper |
| 2 | Valve | 6 | Retaining ring | 10 | Bush |
| 3 | Plug | 7 | Rod seal | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Back-up ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|----------|--------|------|-----------|-------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| RV 170 | 19 | 0.75 | 7 - 125 | 0.28 - 4.92 | 170 | 382 | ✓ | ✓ | ✓ | - | ✓ |
| RV 320 | 25 | 0.98 | 7 - 125 | 0.28 - 4.92 | 320 | 719 | ✓ | ✓ | ✓ | - | ✓ |
| RV 350 | 32 | 1.26 | 10 - 125 | 0.39 - 4.92 | 360 | 809 | ✓ | ✓ | ✓ | - | ✓ |
| RV 500 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 470 | 1057 | ✓ | ✓ | ✓ | - | ✓ |
| RV 750 | 45 | 1.77 | 10 - 125 | 0.39 - 4.92 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ |
| RV 1000 | 50 | 1.97 | 10 - 125 | 0.39 - 4.92 | 920 | 2068 | ✓ | ✓ | ✓ | - | ✓ |
| RV 1200 | 50 | 1.97 | 10 - 125 | 0.39 - 4.92 | 1060 | 2383 | ✓ | ✓ | ✓ | - | ✓ |
| RV 1500 | 63 | 2.48 | 10 - 125 | 0.39 - 4.92 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ |
| RV 2400 | 75 | 2.95 | 10 - 125 | 0.39 - 4.92 | 2385 | 5362 | ✓ | ✓ | ✓ | - | ✓ |
| RV 4200 | 95 | 3.74 | 16 - 125 | 0.63 - 4.92 | 4240 | 9532 | ✓ | ✓ | ✓ | - | ✓ |
| RV 6600 | 120 | 4.72 | 16 - 125 | 0.63 - 4.92 | 6630 | 14905 | ✓ | ✓ | ✓ | - | ✓ |
| RV 9500 | 150 | 5.91 | 19 - 125 | 0.75 - 4.92 | 9540 | 21447 | ✓ | ✓ | ✓ | - | ✓ |
| RV 12000 | 150 | 5.91 | 19 - 125 | 0.75 - 4.92 | 11780 | 26470 | ✓ | ✓ | ✓ | - | ✓ |
| RV 20000 | 195 | 7.68 | 19 - 125 | 0.75 - 4.92 | 19910 | 44738 | ✓ | ✓ | ✓ | - | ✓ |

✓ Built-in as standard

✓ Optional upon request

HOW TO ORDER

Series _____ Revision code _____

Model **RV2400-050-A-E-W**

Stroke _____ Version _____

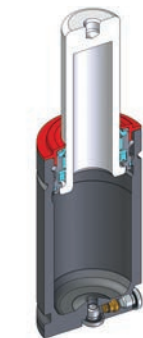
Available versions



RV 2400-050-A
Standard code



Self contained



RV 2400-050-A-W
Add "-W" to standard code

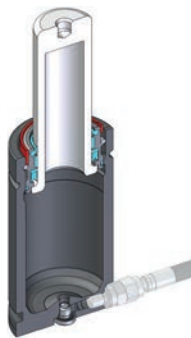


Self contained

+



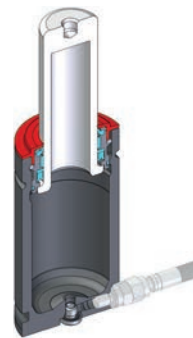
Secondary wiper



RV 2400-050-A-N
Add "-N" to standard code



Linkable



RV 2400-050-A-N-W
Add "-N-W" to standard code

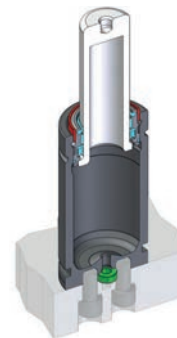


Linkable

+



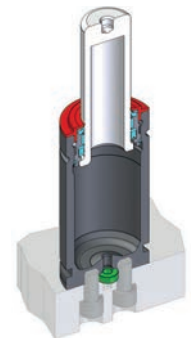
Secondary wiper



RV 2400-050-A-E
Add "-E" to standard code



Easy Manifold



RV 2400-050-A-E-W
Add "-E-W" to standard code



Easy Manifold

+



Secondary wiper

RV 170

| | | | |
|-------------------------|--------------------|---------------|-----------------|
| ISO 11901 - 3 | VDI 3003 - Blatt 3 | B2 4005 (BMW) | 075.90.60 (FCA) |
| B8 3180 220 000 004(MB) | 39D 997 (VW) | | |



Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



easu MANIFOLD p. 241



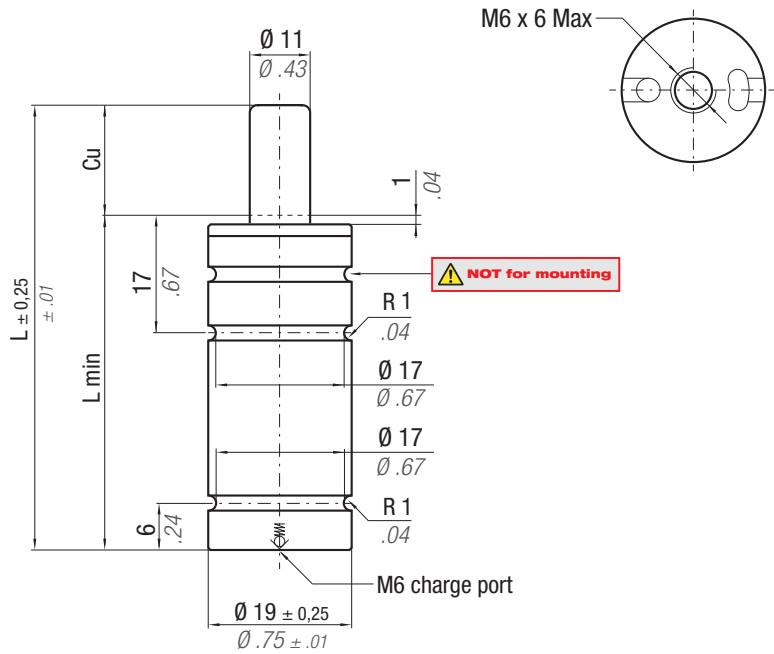
* $F_{1i} =$ Isothermal end force at 100% Cu p. 18

** $F_{1p} =$ Polytropic end force at 100% Cu



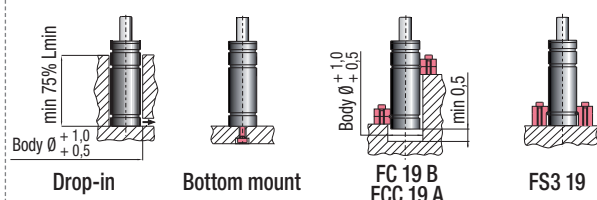
Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°



| | | | | | | | | | |
|--|-----------------|---------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|-------------------------------|
| | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,95 cm ² 0,147 in ² | SPM ~ 40 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|-----------------|---------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|------------------|-----|------|-----|-------|-------|------|----------------------------------------------------------|-----|----------------------------------|-----|------------------------------------|-----|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RV 170 - 007 - B | RV 170 - 007 - C | 7 | 0.28 | 44 | 1.73 | 37 | 1.46 | 170 ± 5% 180 bar 2610 psi + 20 °C +68 °F | 382 | 274 | 616 | 320 | 719 | 2,0 | 0.12 | 0,06 | 0.13 | ✓ |
| RV 170 - 010 - B | RV 170 - 010 - C | 10 | 0.39 | 50 | 1.97 | 40 | 1.57 | | | 285 | 641 | 337 | 758 | 3,0 | 0.18 | 0,06 | 0.13 | ✓ |
| RV 170 - 013 - B | RV 170 - 013 - C | 13 | 0.51 | 56 | 2.20 | 43 | 1.69 | | | 292 | 656 | 348 | 782 | 4,0 | 0.24 | 0,07 | 0.15 | ✓ |
| RV 170 - 015 - B | RV 170 - 015 - C | 15 | 0.59 | 60 | 2.36 | 45 | 1.77 | | | 296 | 665 | 353 | 794 | 4,0 | 0.24 | 0,07 | 0.15 | ✓ |
| RV 170 - 019 - B | RV 170 - 019 - C | 19 | 0.75 | 68 | 2.68 | 49 | 1.93 | | | 301 | 677 | 361 | 812 | 5,0 | 0.31 | 0,07 | 0.16 | ✓ |
| RV 170 - 025 - B | RV 170 - 025 - C | 25 | 0.98 | 80 | 3.15 | 55 | 2.17 | | | 306 | 688 | 369 | 830 | 7,0 | 0.43 | 0,08 | 0.17 | ✓ |
| RV 170 - 032 - B | RV 170 - 032 - C | 32 | 1.26 | 94 | 3.7 | 62 | 2.44 | | | 310 | 697 | 374 | 841 | 8,0 | 0.49 | 0,09 | 0.19 | ✓ |
| RV 170 - 038 - B | RV 170 - 038 - C | 38 | 1.5 | 106 | 4.17 | 68 | 2.68 | | | 312 | 701 | 378 | 850 | 10,0 | 0.61 | 0,09 | 0.20 | ✓ |
| RV 170 - 050 - B | RV 170 - 050 - C | 50 | 1.97 | 130 | 5.12 | 80 | 3.15 | | | 315 | 708 | 382 | 859 | 13,0 | 0.79 | 0,11 | 0.23 | ✓ |
| RV 170 - 063 - B | RV 170 - 063 - C | 63 | 2.48 | 156 | 6.14 | 93 | 3.66 | | | 317 | 713 | 385 | 866 | 16,0 | 0.98 | 0,12 | 0.26 | ✓ |
| RV 170 - 075 - B | RV 170 - 075 - C | 75 | 2.95 | 185 | 7.28 | 110 | 4.33 | | | 318 | 715 | 387 | 870 | 19,0 | 1.16 | 0,14 | 0.30 | ✓ |
| RV 170 - 080 - B | RV 170 - 080 - C | 80 | 3.15 | 195 | 7.68 | 115 | 4.53 | | | 319 | 717 | 388 | 872 | 21,0 | 1.28 | 0,14 | 0.31 | ✓ |
| RV 170 - 100 - B | RV 170 - 100 - C | 100 | 3.94 | 235 | 9.25 | 135 | 5.31 | | | 320 | 719 | 390 | 877 | 25,0 | 1.55 | 0,16 | 0.36 | ✓ |
| RV 170 - 125 - B | RV 170 - 125 - C | 125 | 4.92 | 285 | 11.22 | 160 | 6.3 | | | 321 | 722 | 391 | 879 | 31,0 | 1.91 | 0,19 | 0.42 | ✓ |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203



SW

ACTIVE SAFETY



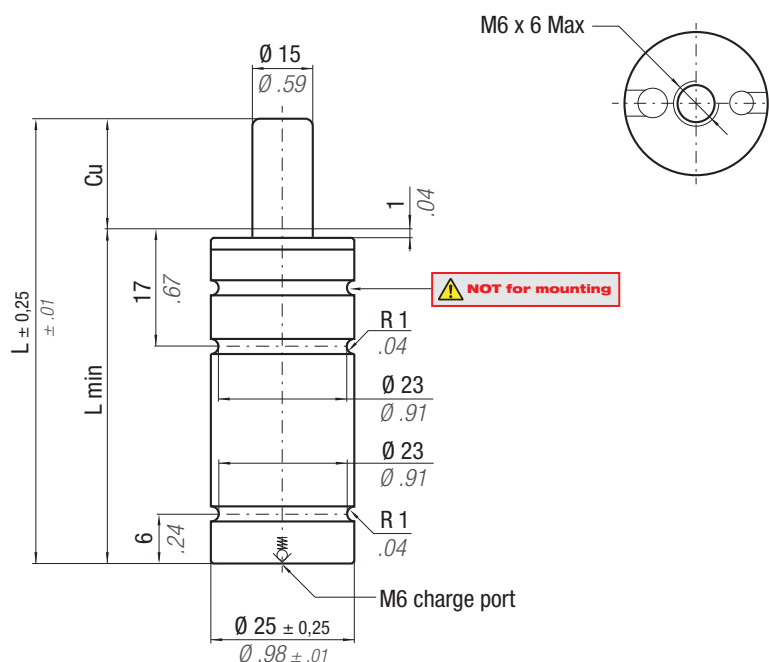
OSAS



USAS



OPAS



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu

p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu

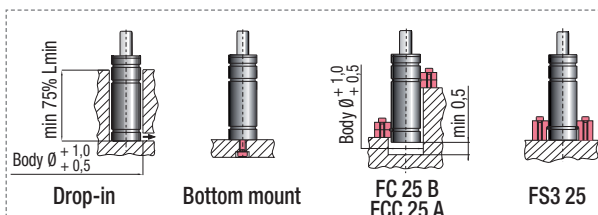


Collegabile con tubi
Linkable with hoses
Anschlussfähig mit Leitungen
Connectable avec tubes
Connectable con tubos
Acompláveis com tubos

Micro 32°

| | | | | | | | | | | |
|--|----------------------|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------|---------------------------------------|-----------------------------|--------------------------------------|
| | N₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 1,77 cm ² 0.27 in ² | SPM ~ 40 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|--|----------------------|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------|---------------------------------------|-----------------------------|--------------------------------------|

| CODE PHASING OUT from 01/2020 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg ~lb | | PED 2014/68/EU |
|-------------------------------------|------------------|-----|------|-----|-------|-------|------|-------------------------------------------------------------|----|----------------------------------|------|------------------------------------|------|-----------------|-----------------|---------|------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| RV 320 - 007 - B | RV 320 - 007 - C | 7 | 0.28 | 44 | 1.73 | 37 | 1.46 | 320 719 ± 5% 180 bar 2610psi + 20 °C +68 °F | | 467 | 1050 | 535 | 1203 | 5,0 | 0.31 | 0,10 | 0.22 | ✓ |
| RV 320 - 010 - B | RV 320 - 010 - C | 10 | 0.39 | 50 | 1.97 | 40 | 1.57 | | | 491 | 1104 | 569 | 1279 | 6,0 | 0.37 | 0,10 | 0.23 | ✓ |
| RV 320 - 013 - B | RV 320 - 013 - C | 13 | 0.51 | 56 | 2.20 | 43 | 1.69 | | | 508 | 1142 | 593 | 1333 | 7,0 | 0.43 | 0,11 | 0.24 | ✓ |
| RV 320 - 015 - B | RV 320 - 015 - C | 15 | 0.59 | 60 | 2.36 | 45 | 1.77 | | | 516 | 1160 | 606 | 1362 | 8,0 | 0.49 | 0,11 | 0.24 | ✓ |
| RV 320 - 019 - B | RV 320 - 019 - C | 19 | 0.75 | 68 | 2.68 | 49 | 1.93 | | | 529 | 1189 | 624 | 1403 | 10,0 | 0.61 | 0,12 | 0.26 | ✓ |
| RV 320 - 025 - B | RV 320 - 025 - C | 25 | 0.98 | 80 | 3.15 | 55 | 2.17 | | | 542 | 1218 | 643 | 1446 | 13,0 | 0.79 | 0,13 | 0.28 | ✓ |
| RV 320 - 032 - B | RV 320 - 032 - C | 32 | 1.26 | 94 | 3.70 | 62 | 2.44 | | | 551 | 1239 | 658 | 1479 | 16,0 | 0.98 | 0,14 | 0.31 | ✓ |
| RV 320 - 038 - B | RV 320 - 038 - C | 38 | 1.50 | 106 | 4.17 | 68 | 2.68 | | | 557 | 1252 | 667 | 1499 | 19,0 | 1.16 | 0,15 | 0.33 | ✓ |
| RV 320 - 050 - B | RV 320 - 050 - C | 50 | 1.97 | 130 | 5.12 | 80 | 3.15 | | | 565 | 1270 | 679 | 1526 | 24,0 | 1.46 | 0,17 | 0.37 | ✓ |
| RV 320 - 063 - B | RV 320 - 063 - C | 63 | 2.48 | 156 | 6.14 | 93 | 3.66 | | | 571 | 1284 | 687 | 1544 | 30,0 | 1.83 | 0,19 | 0.42 | ✓ |
| RV 320 - 075 - B | RV 320 - 075 - C | 75 | 2.95 | 185 | 7.28 | 110 | 4.33 | | | 567 | 1275 | 681 | 1531 | 36,0 | 2.20 | 0,22 | 0.48 | ✓ |
| RV 320 - 080 - B | RV 320 - 080 - C | 80 | 3.15 | 195 | 7.68 | 115 | 4.53 | | | 568 | 1277 | 683 | 1535 | 38,0 | 2.32 | 0,23 | 0.50 | ✓ |
| RV 320 - 100 - B | RV 320 - 100 - C | 100 | 3.94 | 235 | 9.25 | 135 | 5.31 | | | 573 | 1288 | 691 | 1553 | 47,0 | 2.87 | 0,26 | 0.57 | ✓ |
| RV 320 - 125 - B | RV 320 - 125 - C | 125 | 4.92 | 285 | 11.22 | 160 | 6.30 | | | 577 | 1297 | 697 | 1567 | 59,0 | 3.60 | 0,30 | 0.66 | ✓ |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203

RV 350

| | | | |
|--------------------|-------------------------|---------------|-----------------|
| ISO 11901 - 3 | VDI 3003 - Blatt 3 | B2 4005 (BMW) | 075.90.60 (FCA) |
| W-DX35-6204 (Ford) | B8 3180 220 000 004(MB) | 39D 997 (VW) | |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

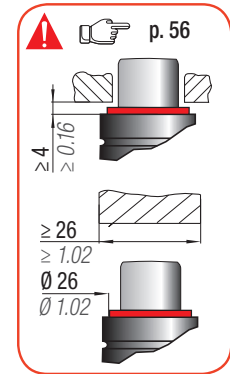
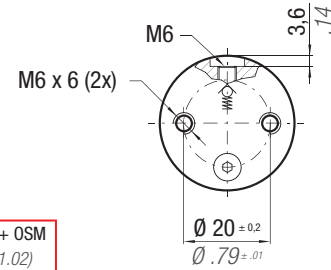
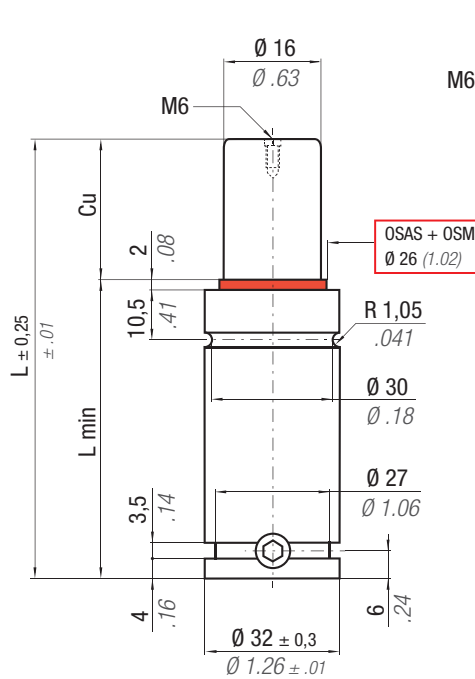
** F_{1p} = Polytropic end force at 100% Cu



USAS

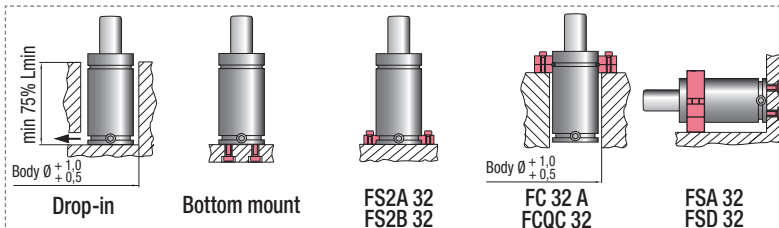


OPAS



| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 2,01 cm ² 0,312 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00350C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|-----|------|-----|-------|-------|------|--------------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 350 - 010 - A | 10 | 0.39 | 50 | 1.97 | 40 | 1.57 | 360 809 ± 5% | | 524 | 1179 | 598 | 1345 | 8,0 | 0.49 | 0,17 | 0.36 | ✓ |
| RV 350 - 013 - A | 13 | 0.51 | 56 | 2.20 | 43 | 1.69 | | | 538 | 1209 | 617 | 1388 | 10,0 | 0.61 | 0,18 | 0.39 | ✓ |
| RV 350 - 016 - A | 16 | 0.63 | 62 | 2.44 | 46 | 1.81 | | | 547 | 1231 | 631 | 1419 | 12,0 | 0.73 | 0,19 | 0.41 | ✓ |
| RV 350 - 019 - A | 19 | 0.75 | 68 | 2.68 | 49 | 1.93 | | | 555 | 1247 | 642 | 1442 | 13,0 | 0.79 | 0,19 | 0.43 | ✓ |
| RV 350 - 025 - A | 25 | 0.98 | 80 | 3.15 | 55 | 2.17 | | | 565 | 1269 | 656 | 1475 | 17,0 | 1.04 | 0,21 | 0.47 | ✓ |
| RV 350 - 032 - A | 32 | 1.26 | 94 | 3.70 | 62 | 2.44 | | | 572 | 1286 | 667 | 1500 | 21,0 | 1.28 | 0,24 | 0.52 | ✓ |
| RV 350 - 038 - A | 38 | 1.50 | 106 | 4.17 | 68 | 2.68 | | | 577 | 1297 | 674 | 1515 | 25,0 | 1.53 | 0,26 | 0.56 | ✓ |
| RV 350 - 050 - A | 50 | 1.97 | 130 | 5.12 | 80 | 3.15 | | | 583 | 1310 | 683 | 1535 | 32,0 | 1.95 | 0,30 | 0.65 | ✓ |
| RV 350 - 063 - A | 63 | 2.48 | 156 | 6.14 | 93 | 3.66 | | | 587 | 1320 | 689 | 1549 | 40,0 | 2.44 | 0,34 | 0.74 | ✓ |
| RV 350 - 075 - A | 75 | 2.95 | 180 | 7.09 | 105 | 4.13 | | | 590 | 1326 | 693 | 1557 | 47,0 | 2.87 | 0,38 | 0.83 | ✓ |
| RV 350 - 080 - A | 80 | 3.15 | 190 | 7.48 | 110 | 4.33 | 591 | 1328 | 694 | 1560 | 50,0 | 3.05 | 0,39 | 0.86 | ✓ | | |
| RV 350 - 100 - A | 100 | 3.94 | 230 | 9.06 | 130 | 5.12 | 593 | 1334 | 698 | 1569 | 62,0 | 3.78 | 0,46 | 1.01 | ✓ | | |
| RV 350 - 125 - A | 125 | 4.92 | 280 | 11.02 | 155 | 6.10 | 595 | 1338 | 701 | 1576 | 77,0 | 4.70 | 0,54 | 1.18 | ✓ | | |



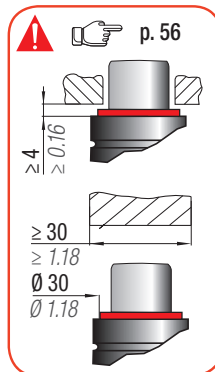
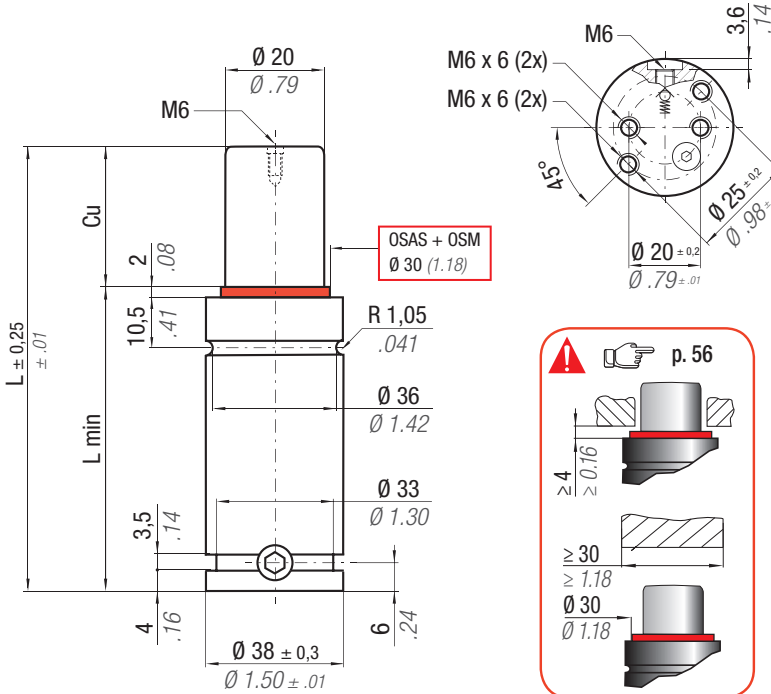
HOW TO ORDER p. 57

INSTALLATION GUIDELINE p. 203

| | | | |
|-----------------------|-------------------------|-----------------|--------------------|
| ISO 11901 - 3 | VDI 3003 - Blatt 3 | B2 4005 (BMW) | 075.90.60 (FCA) |
| W-DX35-6204 (Ford) | B8 3180 220 000 004(MB) | K 32 H (Nissan) | E24.54.815.G (PSA) |
| EM24.54.700 (Renault) | 39D 997 (VW) | | |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easyl MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

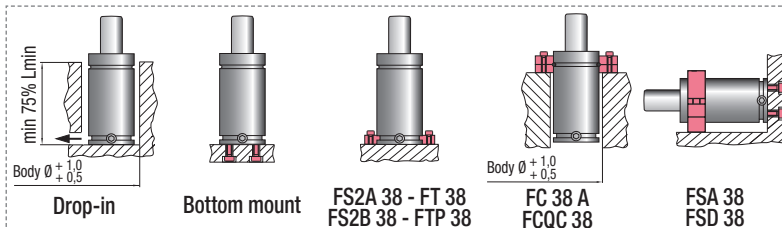
ACTIVE SAFETY



RV

| | | | | | | | | |
|--|--------------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 3,14 cm ² 0.487 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00500C |
|--|--------------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|------------------|-----|------|-----|-------|-------|------|---------------------------------|---------|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 500 - 010 - A | 10 | 0.39 | 50 | 1.97 | 40 | 1.57 | | | 693 | 1559 | 824 | 1852 | 11,0 | 0.67 | 0,27 | 0.60 | ✓ |
| RV 500 - 013 - A | 13 | 0.51 | 56 | 2.20 | 43 | 1.69 | | | 713 | 1602 | 854 | 1920 | 14,0 | 0.85 | 0,25 | 0.55 | ✓ |
| RV 500 - 016 - A | 16 | 0.63 | 62 | 2.44 | 46 | 1.81 | | | 726 | 1633 | 876 | 1969 | 17,0 | 1.04 | 0,26 | 0.57 | ✓ |
| RV 500 - 019 - A | 19 | 0.75 | 68 | 2.68 | 49 | 1.93 | | | 736 | 1656 | 892 | 2005 | 19,0 | 1.16 | 0,28 | 0.62 | ✓ |
| RV 500 - 025 - A | 25 | 0.98 | 80 | 3.15 | 55 | 2.17 | | | 751 | 1688 | 916 | 2059 | 24,0 | 1.46 | 0,31 | 0.68 | ✓ |
| RV 500 - 032 - A | 32 | 1.26 | 94 | 3.70 | 62 | 2.44 | 470 | 1057 | 762 | 1713 | 933 | 2097 | 30,0 | 1.83 | 0,34 | 0.75 | ✓ |
| RV 500 - 038 - A | 38 | 1.50 | 106 | 4.17 | 68 | 2.68 | ± 5% | | 768 | 1727 | 944 | 2122 | 35,0 | 2.14 | 0,37 | 0.82 | ✓ |
| RV 500 - 050 - A | 50 | 1.97 | 130 | 5.12 | 80 | 3.15 | | | 777 | 1747 | 958 | 2154 | 46,0 | 2.81 | 0,43 | 0.95 | ✓ |
| RV 500 - 063 - A | 63 | 2.48 | 156 | 6.14 | 93 | 3.66 | 150 bar | 2175psi | 783 | 1761 | 968 | 2176 | 57,0 | 3.48 | 0,49 | 1.08 | ✓ |
| RV 500 - 075 - A | 75 | 2.95 | 180 | 7.09 | 105 | 4.13 | | | 787 | 1769 | 975 | 2192 | 67,0 | 4.09 | 0,54 | 1.19 | ✓ |
| RV 500 - 080 - A | 80 | 3.15 | 190 | 7.48 | 110 | 4.33 | + 20 °C | +68 °F | 788 | 1772 | 977 | 2196 | 72,0 | 4.39 | 0,57 | 1.26 | ✓ |
| RV 500 - 100 - A | 100 | 3.94 | 230 | 9.06 | 130 | 5.12 | | | 792 | 1781 | 983 | 2210 | 89,0 | 5.43 | 0,66 | 1.46 | ✓ |
| RV 500 - 125 - A | 125 | 4.92 | 280 | 11.02 | 155 | 6.10 | | | 795 | 1788 | 989 | 2223 | 110,0 | 6.71 | 0,78 | 1.72 | ✓ |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203

RV 750

| | | | |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|
| ISO 11901 - 3 B8 3180 220 000 004(MB) | VDI 3003 - Blatt 3 E24.54.815.G (PSA) | B2 4005 (BMW) 39D 997 (VW) | W-DX35-6204 (Ford) |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

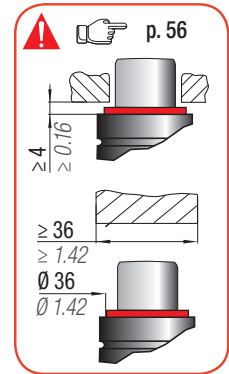
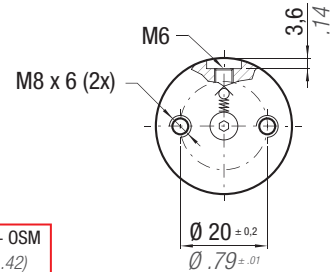
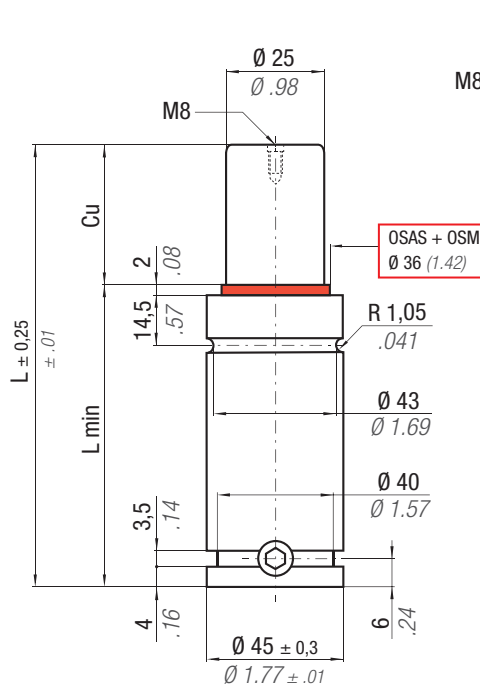
** F_{1p} = Polytrophic end force at 100% Cu



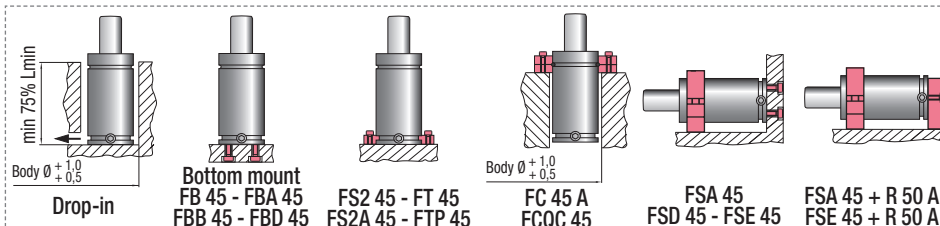
USAS



OPAS



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00750C | PED | | | | | | | | | | |
|------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-------------------------------------------------------------|--------------------------------|----------------------|---------------------------------|------------|------------|------|------|------|------|-------|-------|------|------|---|
| | | | | | | | | | | | 2014/68/EU | 2014/68/EU | | | | | | | | | |
| RV 750 - 010 - A | 10 | 0.39 | 52 | 2.05 | 42 | 1.65 | 740 ± 5% 1664 150 bar 2175psi + 20 °C +68 °F | | | | | ✓ | | | | | | | | | |
| RV 750 - 013 - A | 13 | 0.51 | 58 | 2.28 | 45 | 1.77 | | | | | | | 1091 | 2452 | 1298 | 2918 | 18,0 | 1.10 | 0,36 | 0,79 | ✓ |
| RV 750 - 016 - A | 16 | 0.63 | 64 | 2.52 | 48 | 1.89 | | | | | | | 1125 | 2530 | 1354 | 3044 | 21,0 | 1.28 | 0,38 | 0,84 | ✓ |
| RV 750 - 019 - A | 19 | 0.75 | 70 | 2.76 | 51 | 2.01 | | | | | | | 1151 | 2587 | 1395 | 3136 | 25,0 | 1.53 | 0,40 | 0,88 | ✓ |
| RV 750 - 025 - A | 25 | 0.98 | 82 | 3.23 | 57 | 2.24 | | | | | | | 1170 | 2631 | 1426 | 3206 | 29,0 | 1.77 | 0,42 | 0,93 | ✓ |
| RV 750 - 032 - A | 32 | 1.26 | 96 | 3.78 | 64 | 2.52 | | | | | | | 1198 | 2694 | 1471 | 3307 | 37,0 | 2.26 | 0,45 | 0,99 | ✓ |
| RV 750 - 038 - A | 38 | 1.50 | 108 | 4.25 | 70 | 2.76 | | | | | | | 1220 | 2742 | 1506 | 3386 | 46,0 | 2.81 | 0,50 | 1,10 | ✓ |
| RV 750 - 050 - A | 50 | 1.97 | 132 | 5.20 | 82 | 3.23 | | | | | | | 1232 | 2771 | 1527 | 3433 | 53,0 | 3.23 | 0,54 | 1,19 | ✓ |
| RV 750 - 063 - A | 63 | 2.48 | 158 | 6.22 | 95 | 3.74 | | | | | | | 1250 | 2810 | 1556 | 3498 | 68,0 | 4.15 | 0,61 | 1,34 | ✓ |
| RV 750 - 075 - A | 75 | 2.95 | 182 | 7.17 | 107 | 4.21 | | | | | | | 1262 | 2838 | 1577 | 3545 | 85,0 | 5.19 | 0,70 | 1,54 | ✓ |
| RV 750 - 080 - A | 80 | 3.15 | 192 | 7.56 | 112 | 4.41 | | | | | | | 1270 | 2855 | 1590 | 3574 | 100,0 | 6.10 | 0,78 | 1,72 | ✓ |
| RV 750 - 100 - A | 100 | 3.94 | 232 | 9.13 | 132 | 5.20 | | | | | | | 1281 | 2879 | 1607 | 3613 | 132,0 | 8.05 | 0,94 | 2,07 | ✓ |
| RV 750 - 125 - A | 125 | 4.92 | 282 | 11.10 | 157 | 6.18 | | | | | | | 1287 | 2894 | 1618 | 3637 | 164,0 | 10.00 | 1,10 | 2,43 | ✓ |



HOW TO ORDER p. 57

INSTALLATION GUIDELINE p. 203

| | | | |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|
| ISO 11901 - 3 B8 3180 220 000 004(MB) | VDI 3003 - Blatt 3 E24.54.815.G (PSA) | B2 4005 (BMW) 39D 997 (VW) | W-DX35-6204 (Ford) |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|



ACTIVE SAFETY



OSAS

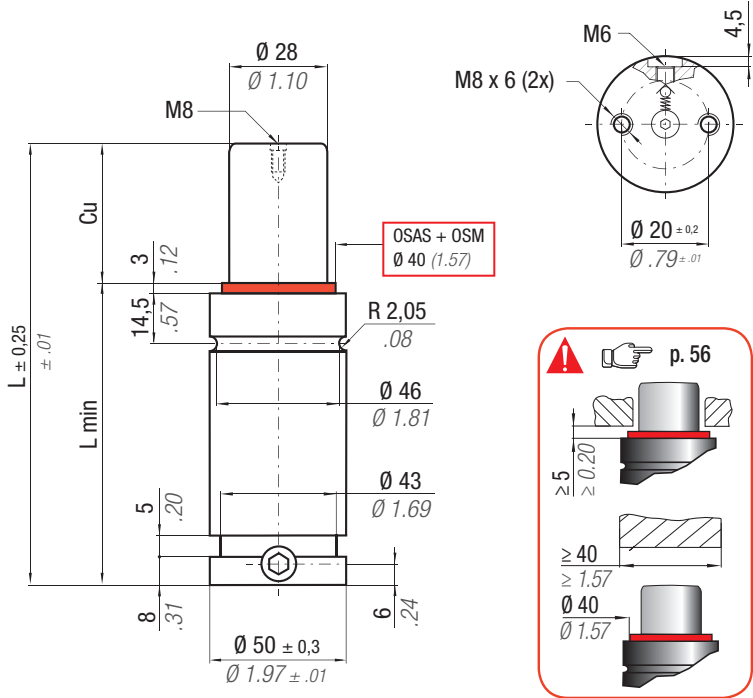


USAS



OPAS

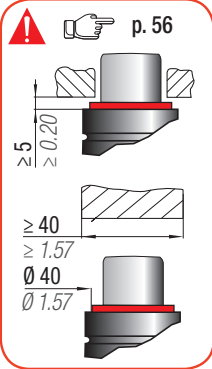
RV



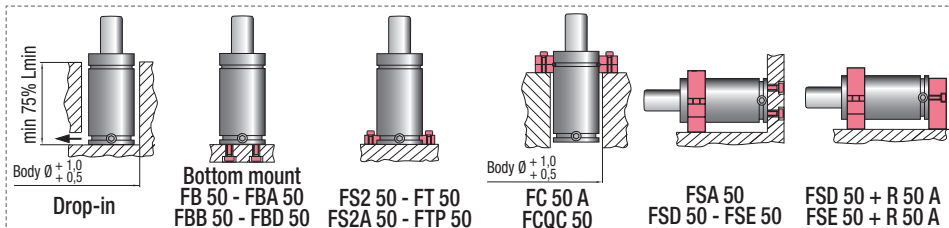
OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easyl MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu



| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|-------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|-------|-----------------|-----------------|-----------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 1000 - 010 - A | 10 | 0.39 | 58 | 2.28 | 48 | 1.89 | 920 ± 5% | 2068 | 1300 | 2923 | 1523 | 3424 | 25,0 | 1.53 | 0,49 | 1.08 | ✓ |
| RV 1000 - 013 - A | 13 | 0.51 | 64 | 2.52 | 51 | 2.01 | | | 1349 | 3033 | 1599 | 3595 | 29,0 | 1.77 | 0,51 | 1.12 | ✓ |
| RV 1000 - 016 - A | 16 | 0.63 | 70 | 2.76 | 54 | 2.13 | | | 1386 | 3117 | 1658 | 3727 | 34,0 | 2.07 | 0,54 | 1.19 | ✓ |
| RV 1000 - 019 - A | 19 | 0.75 | 76 | 2.99 | 57 | 2.24 | | | 1416 | 3183 | 1705 | 3833 | 39,0 | 2.38 | 0,56 | 1.23 | ✓ |
| RV 1000 - 025 - A | 25 | 0.98 | 88 | 3.46 | 63 | 2.48 | | | 1460 | 3282 | 1775 | 3990 | 48,0 | 2.93 | 0,61 | 1.34 | ✓ |
| RV 1000 - 032 - A | 32 | 1.26 | 102 | 4.02 | 70 | 2.76 | | | 1495 | 3361 | 1832 | 4118 | 59,0 | 3.60 | 0,67 | 1.48 | ✓ |
| RV 1000 - 038 - A | 38 | 1.50 | 114 | 4.49 | 76 | 2.99 | | | 1517 | 3410 | 1868 | 4199 | 69,0 | 4.21 | 0,72 | 1.59 | ✓ |
| RV 1000 - 050 - A | 50 | 1.97 | 138 | 5.43 | 88 | 3.46 | | | 1548 | 3479 | 1919 | 4314 | 88,0 | 5.37 | 0,81 | 1.79 | ✓ |
| RV 1000 - 063 - A | 63 | 2.48 | 164 | 6.46 | 101 | 3.98 | | | 1570 | 3528 | 1955 | 4395 | 108,0 | 6.59 | 0,92 | 2.03 | ✓ |
| RV 1000 - 075 - A | 75 | 2.95 | 188 | 7.40 | 113 | 4.45 | | | 1584 | 3560 | 1978 | 4447 | 127,0 | 7.75 | 1,01 | 2.23 | ✓ |
| RV 1000 - 080 - A | 80 | 3.15 | 198 | 7.80 | 118 | 4.65 | 1589 | 3571 | 1986 | 4465 | 135,0 | 8.24 | 1,05 | 2.31 | ✓ | | |
| RV 1000 - 100 - A | 100 | 3.94 | 238 | 9.37 | 138 | 5.43 | 1603 | 3604 | 2011 | 4521 | 166,0 | 10.13 | 1,21 | 2.67 | ✓ | | |
| RV 1000 - 125 - A | 125 | 4.92 | 288 | 11.34 | 163 | 6.42 | 1616 | 3632 | 2031 | 4566 | 205,0 | 12.51 | 1,41 | 3.11 | ✓ | | |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

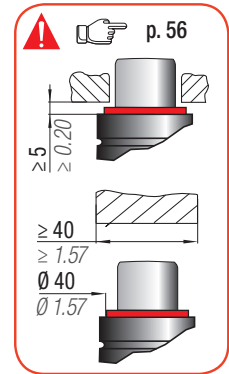
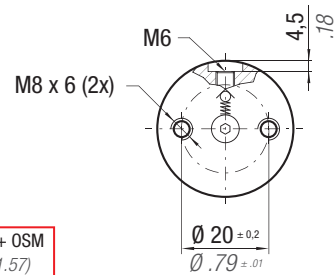
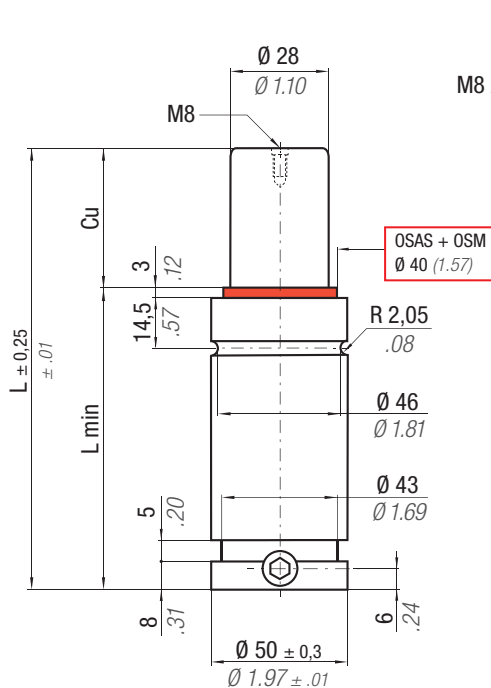
** F_{1p} = Polytrophic end force at 100% Cu



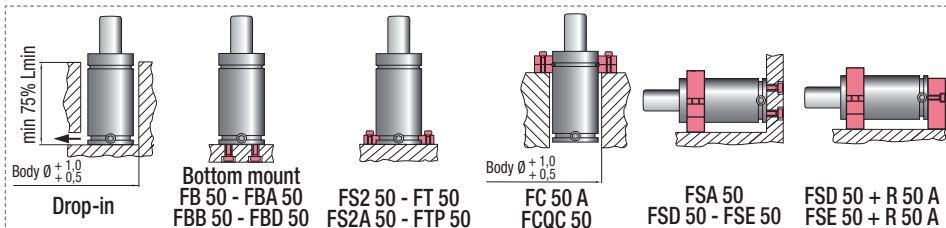
USAS



OPAS

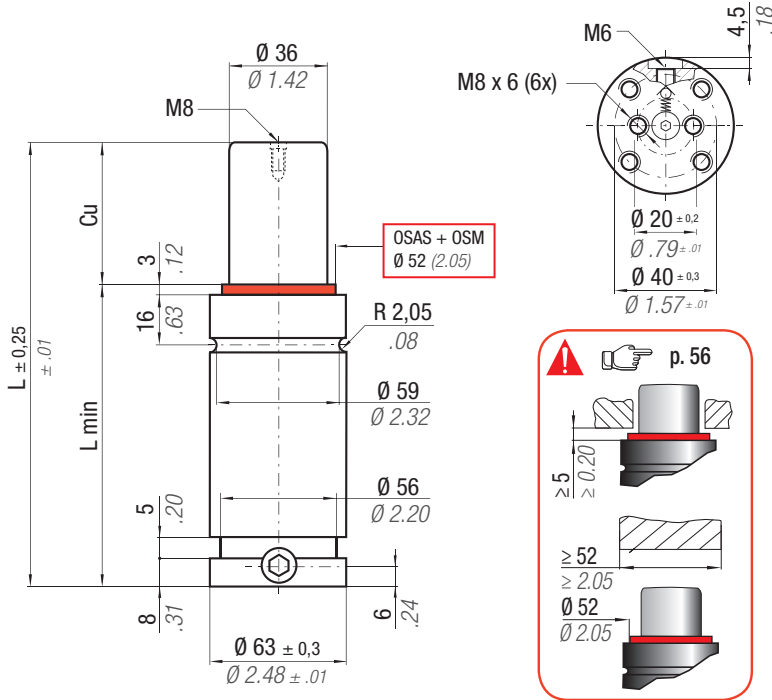


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 170 bar 2465 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|-------------------|------|---|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | ✓ |
| RV 1200 - 010 - A | | | | | | | | | | | 10 | 0.39 | 58 | 2.28 | 48 | 1.89 | 1060 ± 5% | 2383 | 1494 | 3359 | 1717 | 3859 | 25,0 | 1,53 | 0,49 | 1,08 | ✓ | ✓ |
| RV 1200 - 013 - A | | | | | | | | | | | 13 | 0.51 | 64 | 2.52 | 51 | 2.01 | | | 1553 | 3490 | 1802 | 4052 | 30,0 | 1,83 | 0,51 | 1,12 | ✓ | ✓ |
| RV 1200 - 016 - A | | | | | | | | | | | 16 | 0.63 | 70 | 2.76 | 54 | 2.13 | | | 1597 | 3591 | 1869 | 4202 | 34,0 | 2,07 | 0,54 | 1,19 | ✓ | ✓ |
| RV 1200 - 019 - A | | | | | | | | | | | 19 | 0.75 | 76 | 2.99 | 57 | 2.24 | | | 1633 | 3671 | 1922 | 4321 | 39,0 | 2,38 | 0,56 | 1,23 | ✓ | ✓ |
| RV 1200 - 025 - A | | | | | | | | | | | 25 | 0.98 | 88 | 3.46 | 63 | 2.48 | | | 1685 | 3789 | 2001 | 4500 | 48,0 | 2,93 | 0,61 | 1,34 | ✓ | ✓ |
| RV 1200 - 032 - A | | | | | | | | | | | 32 | 1.26 | 102 | 4.02 | 70 | 2.76 | | | 1728 | 3884 | 2066 | 4644 | 59,0 | 3,60 | 0,67 | 1,48 | ✓ | ✓ |
| RV 1200 - 038 - A | | | | | | | | | | | 38 | 1.50 | 114 | 4.49 | 76 | 2.99 | | | 1754 | 3943 | 2106 | 4735 | 69,0 | 4,21 | 0,72 | 1,59 | ✓ | ✓ |
| RV 1200 - 050 - A | | | | | | | | | | | 50 | 1.97 | 138 | 5.43 | 88 | 3.46 | | | 1791 | 4026 | 2163 | 4863 | 88,0 | 5,37 | 0,81 | 1,79 | ✓ | ✓ |
| RV 1200 - 063 - A | | | | | | | | | | | 63 | 2.48 | 164 | 6.46 | 101 | 3.98 | | | 1817 | 4085 | 2204 | 4954 | 108,0 | 6,59 | 0,92 | 2,03 | ✓ | ✓ |
| RV 1200 - 075 - A | | | | | | | | | | | 75 | 2.95 | 188 | 7.40 | 113 | 4.45 | | | 1834 | 4124 | 2230 | 5013 | 127,0 | 7,75 | 1,01 | 2,23 | ✓ | ✓ |
| RV 1200 - 080 - A | | | | | | | | | | | 80 | 3.15 | 198 | 7.80 | 118 | 4.65 | | | 1840 | 4137 | 2239 | 5033 | 135,0 | 8,24 | 1,05 | 2,31 | ✓ | ✓ |
| RV 1200 - 100 - A | | | | | | | | | | | 100 | 3.94 | 238 | 9.37 | 138 | 5.43 | | | 1858 | 4177 | 2267 | 5096 | 166,0 | 10,13 | 1,21 | 2,67 | ✓ | ✓ |
| RV 1200 - 125 - A | | | | | | | | | | | 125 | 4.92 | 288 | 11.34 | 163 | 6.42 | | | 1873 | 4210 | 2290 | 5148 | 205,0 | 12,51 | 1,41 | 3,11 | ✓ | ✓ |



HOW TO ORDER p. 57

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



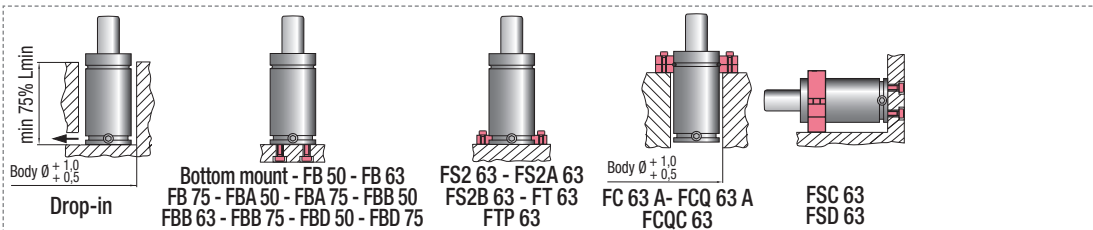
OPAS

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1.578 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01500C |
|--|--------------------------------------|------------------------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE PHASING OUT from 11/2019 | NEW | Cu | | L | | L min | | F0 Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V0 | | PED 2014/68/EU | | |
|-------------------------------------|-------------------|-----|------|-----|-------|-------|------|---------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RV 1500 - 010 - A | RV 1500 - 010 - B | 10 | 0.39 | 64 | 2.52 | 54 | 2.13 | 1530 ± 5% | 3440 | 2074 | 4663 | 2400 | 5395 | 45,0 | 2.75 | 0,88 | 1.94 | ✓ |
| RV 1500 - 013 - A | RV 1500 - 013 - B | 13 | 0.51 | 70 | 2.76 | 57 | 2.24 | | | 2152 | 4838 | 2521 | 5667 | 53,0 | 3.23 | 0,91 | 2.01 | ✓ |
| RV 1500 - 016 - A | RV 1500 - 016 - B | 16 | 0.63 | 76 | 2.99 | 60 | 2.36 | | | 2213 | 4975 | 2616 | 5881 | 61,0 | 3.72 | 0,96 | 2.12 | ✓ |
| RV 1500 - 019 - A | RV 1500 - 019 - B | 19 | 0.75 | 82 | 3.23 | 63 | 2.48 | | | 2262 | 5085 | 2693 | 6054 | 69,0 | 4.21 | 0,99 | 2.18 | ✓ |
| RV 1500 - 025 - A | RV 1500 - 025 - B | 25 | 0.98 | 94 | 3.70 | 69 | 2.72 | | | 2336 | 5252 | 2811 | 6319 | 85,0 | 5.19 | 1,06 | 2.34 | ✓ |
| RV 1500 - 032 - A | RV 1500 - 032 - B | 32 | 1.26 | 108 | 4.25 | 76 | 2.99 | | | 2397 | 5389 | 2908 | 6537 | 103,0 | 6.28 | 1,14 | 2.51 | ✓ |
| RV 1500 - 038 - A | RV 1500 - 038 - B | 38 | 1.50 | 120 | 4.72 | 82 | 3.23 | | | 2435 | 5475 | 2971 | 6679 | 119,0 | 7.26 | 1,21 | 2.67 | ✓ |
| RV 1500 - 050 - A | RV 1500 - 050 - B | 50 | 1.97 | 144 | 5.67 | 94 | 3.70 | | | 2490 | 5597 | 3059 | 6877 | 151,0 | 9.21 | 1,36 | 3.00 | ✓ |
| RV 1500 - 063 - A | RV 1500 - 063 - B | 63 | 2.48 | 170 | 6.69 | 107 | 4.21 | | | 2529 | 5685 | 3123 | 7021 | 186,0 | 11.35 | 1,52 | 3.35 | ✓ |
| RV 1500 - 075 - A | RV 1500 - 075 - B | 75 | 2.95 | 194 | 7.64 | 119 | 4.69 | | | 2555 | 5743 | 3165 | 7115 | 217,0 | 13.24 | 1,66 | 3.66 | ✓ |
| RV 1500 - 080 - A | RV 1500 - 080 - B | 80 | 3.15 | 204 | 8.03 | 124 | 4.88 | 2563 | 5763 | 3180 | 7149 | 231,0 | 14.09 | 1,72 | 3.79 | ✓ | | |
| RV 1500 - 100 - A | RV 1500 - 100 - B | 100 | 3.94 | 244 | 9.61 | 144 | 5.67 | 2590 | 5824 | 3224 | 7248 | 284,0 | 17.32 | 1,95 | 4.30 | ✓ | | |
| RV 1500 - 125 - A | RV 1500 - 125 - B | 125 | 4.92 | 294 | 11.57 | 169 | 6.65 | 2613 | 5875 | 3262 | 7333 | 350,0 | 21.36 | 2,24 | 4.94 | ✓ | | |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203

RV 2400

| | | | |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|
| ISO 11901 - 3 B8 3180 220 000 004(MB) | VDI 3003 - Blatt 3 E24.54.815.G (PSA) | B2 4005 (BMW) 39D 997 (VW) | W-DX35-6204 (Ford) |
|------------------------------------------|------------------------------------------|-------------------------------|--------------------|



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

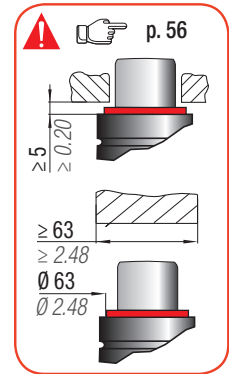
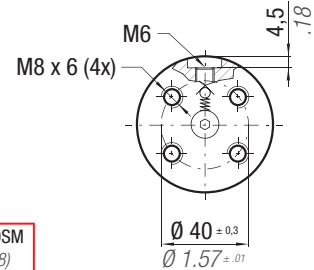
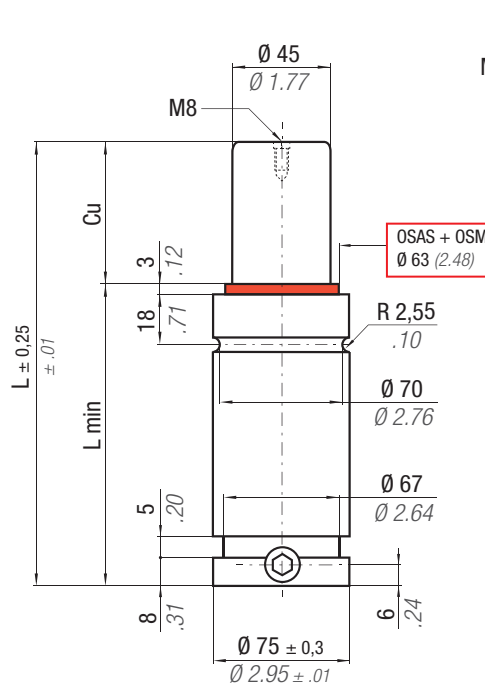
** F_{1p} = Polytrophic end force at 100% Cu



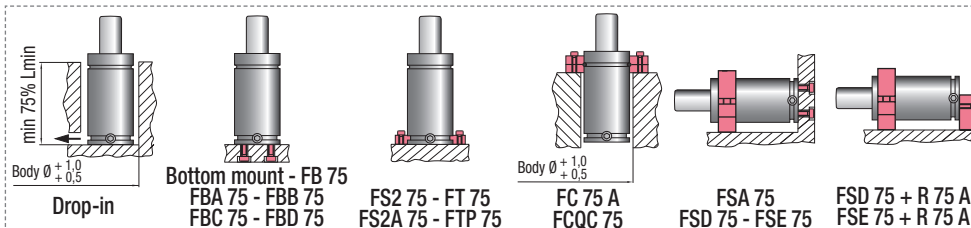
USAS



OPAS



| CODE | N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2,465 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV02400D | PED | | | | | | | | |
|-------------------|----------------|------------------|----------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|------------|------------|------|-------|-------|-------|------|------|---|
| | | | | | | | | | | | 2014/68/EU | 2014/68/EU | | | | | | | |
| RV 2400 - 010 - A | 10 | 0.39 | 65 | 2.56 | 55 | 2.17 | 2385 ± 5% | 5362 | 150 bar 2175 psi | + 20 °C +68 °F | 3264 | 7338 | 3786 | 8511 | 69,0 | 4,21 | 1,25 | 2,76 | ✓ |
| RV 2400 - 013 - A | 13 | 0.51 | 71 | 2.80 | 58 | 2.28 | | | | | 3392 | 7626 | 3984 | 8956 | 81,0 | 4,94 | 1,30 | 2,87 | ✓ |
| RV 2400 - 016 - A | 16 | 0.63 | 77 | 3.03 | 61 | 2.40 | | | | | 3493 | 7852 | 4142 | 9312 | 93,0 | 5,67 | 1,35 | 2,98 | ✓ |
| RV 2400 - 019 - A | 19 | 0.75 | 83 | 3.27 | 64 | 2.52 | | | | | 3574 | 8035 | 4271 | 9602 | 105,0 | 6,41 | 1,40 | 3,09 | ✓ |
| RV 2400 - 025 - A | 25 | 0.98 | 95 | 3.74 | 70 | 2.76 | | | | | 3698 | 8313 | 4468 | 10044 | 129,0 | 7,87 | 1,50 | 3,31 | ✓ |
| RV 2400 - 032 - A | 32 | 1.26 | 109 | 4.29 | 77 | 3.03 | | | | | 3800 | 8542 | 4632 | 10413 | 157,0 | 9,58 | 1,61 | 3,55 | ✓ |
| RV 2400 - 038 - A | 38 | 1.50 | 121 | 4.76 | 83 | 3.27 | | | | | 3864 | 8687 | 4737 | 10649 | 181,0 | 11,04 | 1,70 | 3,75 | ✓ |
| RV 2400 - 050 - A | 50 | 1.97 | 145 | 5.71 | 95 | 3.74 | | | | | 3956 | 8893 | 4887 | 10986 | 230,0 | 14,03 | 1,89 | 4,17 | ✓ |
| RV 2400 - 063 - A | 63 | 2.48 | 171 | 6.73 | 108 | 4.25 | | | | | 4022 | 9042 | 4996 | 11231 | 282,0 | 17,20 | 2,10 | 4,63 | ✓ |
| RV 2400 - 075 - A | 75 | 2.95 | 195 | 7.68 | 120 | 4.72 | | | | | 4066 | 9140 | 5068 | 11393 | 330,0 | 20,13 | 2,29 | 5,05 | ✓ |
| RV 2400 - 080 - A | 80 | 3.15 | 205 | 8.07 | 125 | 4.92 | | | | | 4081 | 9174 | 5093 | 11450 | 350,0 | 21,35 | 2,37 | 5,22 | ✓ |
| RV 2400 - 100 - A | 100 | 3.94 | 245 | 9.65 | 145 | 5.71 | | | | | 4127 | 9278 | 5169 | 11620 | 431,0 | 26,29 | 2,68 | 5,91 | ✓ |
| RV 2400 - 125 - A | 125 | 4.92 | 295 | 11.61 | 170 | 6.69 | | | | | 4166 | 9365 | 5234 | 11767 | 532,0 | 32,45 | 3,07 | 6,77 | ✓ |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203

| | | | |
|--------------------|--------------------|-------------------------|--------------------|
| ISO 11901 - 3 | VDI 3003 - Blatt 3 | B2 4005 (BMW) | 075.90.60 (FCA) |
| W-DX35-6204 (Ford) | PG 24D (Mazda) | B8 3180 220 000 004(MB) | E24.54.815.G (PSA) |
| 39D 997 (VW) | | | |

RV 4200



ACTIVE SAFETY



OSAS

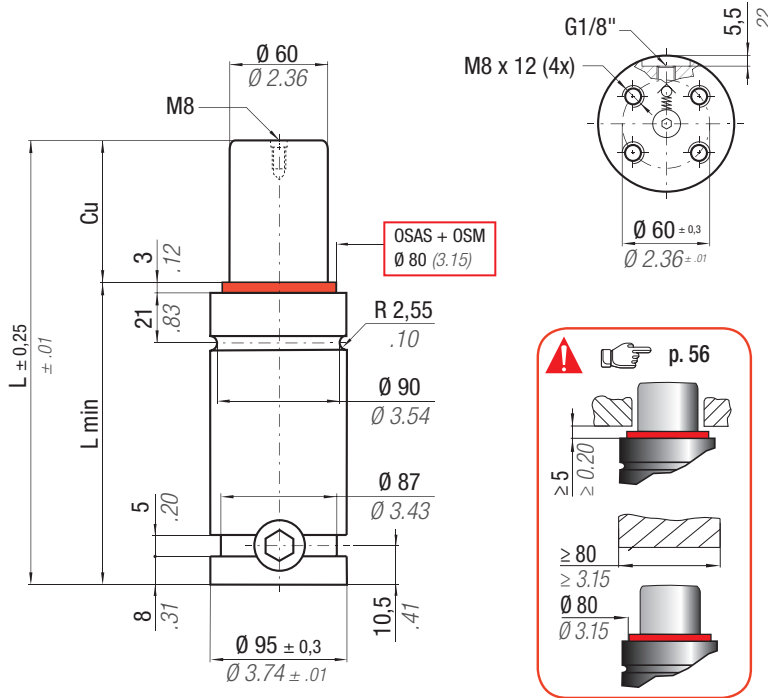


USAS



OPAS

RV



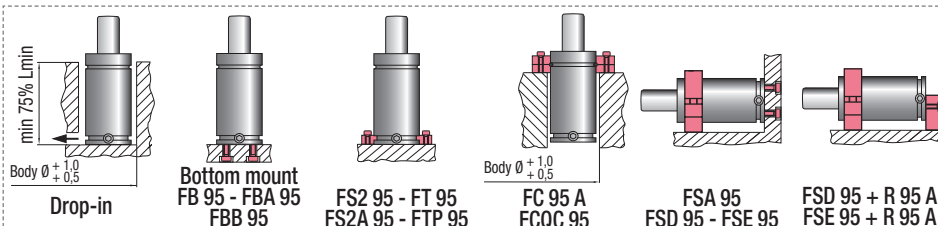
OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 28,27 cm ² 4.382 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV04200C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|-------------------------------------------------------|-------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 4200 - 016 - A | 16 | 0.63 | 90 | 3.54 | 74 | 2.91 | 4240 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 9532 | 6080 | 13669 | 7162 | 16101 | 173,0 | 10.55 | 2,76 | 6.08 | ✓ |
| RV 4200 - 019 - A | 19 | 0.75 | 96 | 3.78 | 77 | 3.03 | | | 6246 | 14041 | 7421 | 16683 | 193,0 | 11.77 | 2,84 | 6.26 | ✓ |
| RV 4200 - 025 - A | 25 | 0.98 | 108 | 4.25 | 83 | 3.27 | | | 6506 | 14626 | 7834 | 17612 | 234,0 | 14.27 | 2,99 | 6.59 | ✓ |
| RV 4200 - 032 - A | 32 | 1.26 | 122 | 4.80 | 90 | 3.54 | | | 6729 | 15128 | 8194 | 18421 | 281,0 | 17.14 | 3,16 | 6.97 | ✓ |
| RV 4200 - 038 - A | 38 | 1.50 | 134 | 5.28 | 96 | 3.78 | | | 6876 | 15458 | 8432 | 18956 | 322,0 | 19.64 | 3,31 | 7.30 | ✓ |
| RV 4200 - 050 - A | 50 | 1.97 | 158 | 6.22 | 108 | 4.25 | | | 7091 | 15940 | 8783 | 19745 | 403,0 | 24.58 | 3,61 | 7.96 | ✓ |
| RV 4200 - 063 - A | 63 | 2.48 | 184 | 7.24 | 121 | 4.76 | | | 7251 | 16301 | 9048 | 20341 | 491,0 | 29.95 | 3,94 | 8.69 | ✓ |
| RV 4200 - 075 - A | 75 | 2.95 | 208 | 8.19 | 133 | 5.24 | | | 7359 | 16543 | 9227 | 20743 | 572,0 | 34.89 | 4,24 | 9.35 | ✓ |
| RV 4200 - 080 - A | 80 | 3.15 | 218 | 8.58 | 138 | 5.43 | | | 7396 | 16626 | 9288 | 20880 | 606,0 | 36.97 | 4,36 | 9.61 | ✓ |
| RV 4200 - 100 - A | 100 | 3.94 | 258 | 10.16 | 158 | 6.22 | | | 7512 | 16888 | 9483 | 21319 | 741,0 | 45.20 | 4,86 | 10.71 | ✓ |
| RV 4200 - 125 - A | 125 | 4.92 | 308 | 12.13 | 183 | 7.20 | 7612 | 17113 | 9651 | 21696 | 910,0 | 55.51 | 5,48 | 12.08 | ✓ | | |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203

RV 6600

| | | | |
|--------------------|-------------------------|---------------|-----------------|
| ISO 11901 - 3 | VDI 3003 - Blatt 3 | B2 4005 (BMW) | 075.90.60 (FCA) |
| W-DX35-6204 (Ford) | B8 3180 220 000 004(MB) | 39D 997 (VW) | |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

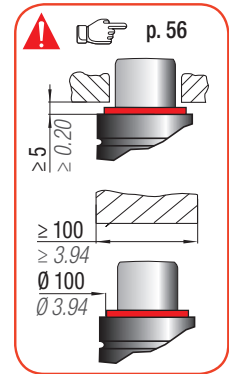
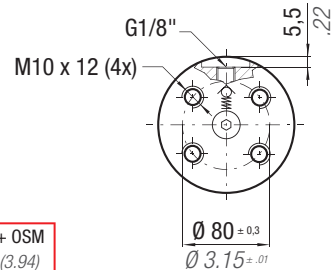
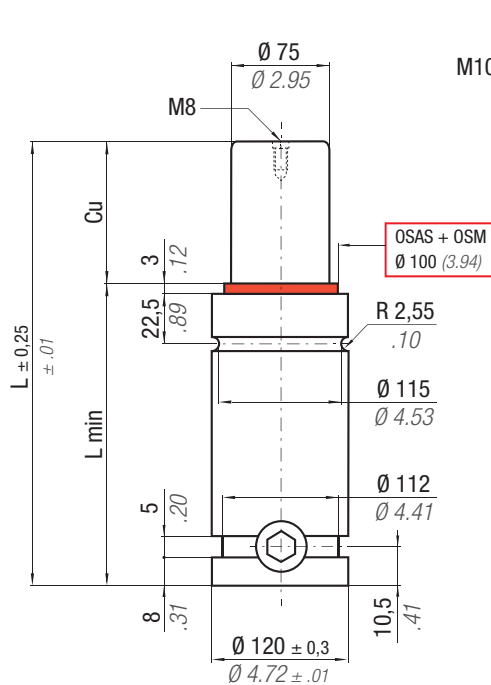
** F_{1p} = Polytrophic end force at 100% Cu



USAS

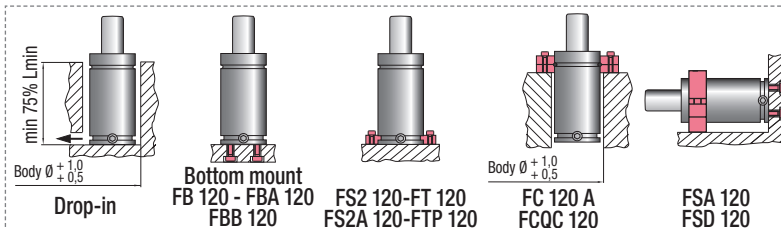


OPAS



| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 44,18 cm ² 6.848 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV06600C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-------------------|-----|------|-----|-------|-------|------|----------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|------|-------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RV 6600 - 016 - A | 16 | 0.63 | 100 | 3.94 | 84 | 3.31 | 6630 ± 5% | 14904 | 9125 | 20515 | 10607 | 23845 | 300,0 | 18.30 | 5,12 | 11.29 | ✓ |
| RV 6600 - 019 - A | 19 | 0.75 | 106 | 4.17 | 87 | 3.43 | | | 9376 | 21077 | 10995 | 24718 | 332,0 | 20.25 | 5,23 | 11.53 | ✓ |
| RV 6600 - 025 - A | 25 | 0.98 | 118 | 4.65 | 93 | 3.66 | | | 9779 | 21985 | 11628 | 26141 | 396,0 | 24.16 | 5,47 | 12.06 | ✓ |
| RV 6600 - 032 - A | 32 | 1.26 | 132 | 5.20 | 100 | 3.94 | | | 10136 | 22787 | 12195 | 27415 | 471,0 | 28.73 | 5,75 | 12.68 | ✓ |
| RV 6600 - 038 - A | 38 | 1.50 | 144 | 5.67 | 106 | 4.17 | | | 10375 | 23325 | 12578 | 28276 | 535,0 | 32.64 | 5,99 | 13.21 | ✓ |
| RV 6600 - 050 - A | 50 | 1.97 | 168 | 6.61 | 118 | 4.65 | | | 10733 | 24129 | 13157 | 29578 | 663,0 | 40.44 | 6,47 | 14.26 | ✓ |
| RV 6600 - 063 - A | 63 | 2.48 | 194 | 7.64 | 131 | 5.16 | | | 11006 | 24743 | 13604 | 30583 | 801,0 | 48.86 | 6,99 | 15.41 | ✓ |
| RV 6600 - 075 - A | 75 | 2.95 | 218 | 8.58 | 143 | 5.63 | | | 11193 | 25163 | 13911 | 31273 | 930,0 | 56.73 | 7,47 | 16.47 | ✓ |
| RV 6600 - 080 - A | 80 | 3.15 | 228 | 8.98 | 148 | 5.83 | | | 11258 | 25308 | 14018 | 31514 | 983,0 | 59.96 | 7,67 | 16.91 | ✓ |
| RV 6600 - 100 - A | 100 | 3.94 | 268 | 10.55 | 168 | 6.61 | | | 11463 | 25771 | 14359 | 32280 | 1197,0 | 73.02 | 8,46 | 18.65 | ✓ |
| RV 6600 - 125 - A | 125 | 4.92 | 318 | 12.52 | 193 | 7.60 | 11642 | 26171 | 14656 | 32948 | 1464,0 | 89.30 | 9,46 | 20.86 | ✓ | | |

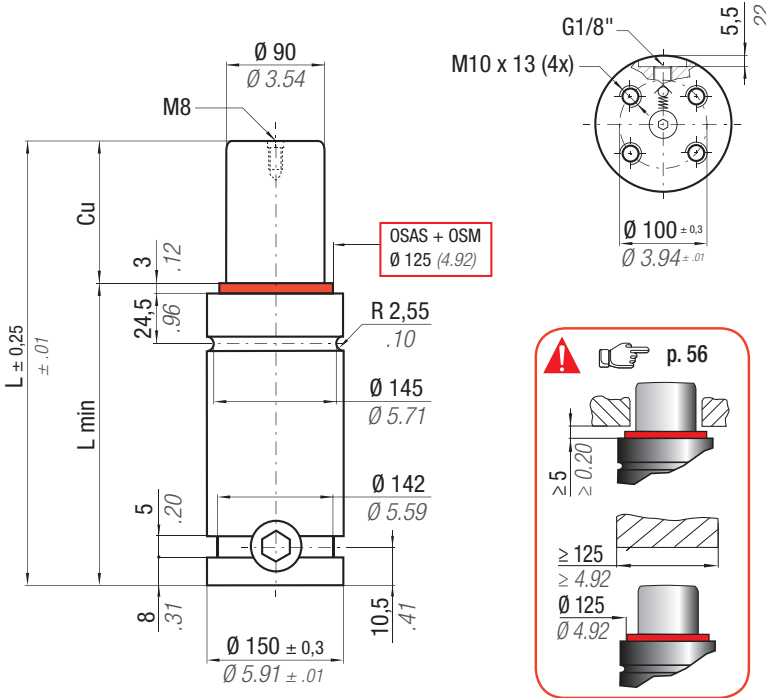


HOW TO ORDER p. 57

INSTALLATION GUIDELINE p. 203

| | | | |
|-------------------------------------|--------------------------------------|------------------------------------------|---------------------------------|
| ISO 11901 - 3 W-DX35-6204 (Ford) | VDI 3003 - Blatt 3 PG 24D (Mazda) | B2 4005 (BMW) B8 3180 220 000 004(MB) | 075.90.60 (FCA) 39D 997 (VW) |
|-------------------------------------|--------------------------------------|------------------------------------------|---------------------------------|

RV 9500



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

ACTIVE SAFETY



OSAS



USAS

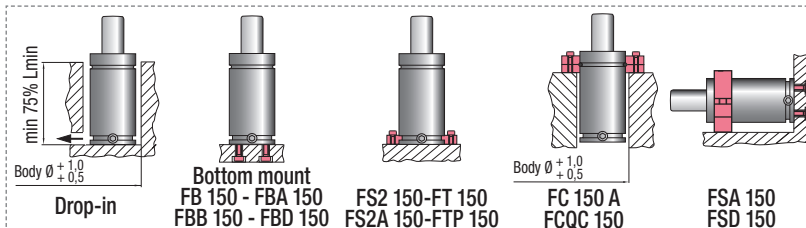


OPAS

RV

| | | | | | | | | | |
|--|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|---------------------------------|
| | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 63,62 cm ² 9.864 in ² | SPM ~ 20 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV09500C |
|--|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|---------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|-------------------------------------------------------|-------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 9500 - 019 - A | 19 | 0.75 | 116 | 4.57 | 97 | 3.82 | 9540 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 21446 | 13101 | 29453 | 15214 | 34202 | 517,0 | 31.54 | 9,56 | 21.08 | ✓ |
| RV 9500 - 025 - A | 25 | 0.98 | 128 | 5.04 | 103 | 4.06 | | | 13637 | 30656 | 16044 | 36068 | 614,0 | 37.45 | 9,93 | 21.89 | ✓ |
| RV 9500 - 032 - A | 32 | 1.26 | 142 | 5.59 | 110 | 4.33 | | | 14112 | 31726 | 16792 | 37750 | 727,0 | 44.35 | 10,37 | 22.86 | ✓ |
| RV 9500 - 038 - A | 38 | 1.50 | 154 | 6.06 | 116 | 4.57 | | | 14432 | 32445 | 17299 | 38890 | 823,0 | 50.20 | 10,74 | 23.68 | ✓ |
| RV 9500 - 050 - A | 50 | 1.97 | 178 | 7.01 | 128 | 5.04 | | | 14914 | 33528 | 18070 | 40623 | 1017,0 | 62.04 | 11,49 | 25.33 | ✓ |
| RV 9500 - 063 - A | 63 | 2.48 | 204 | 8.03 | 141 | 5.55 | | | 15283 | 34358 | 18666 | 41963 | 1226,0 | 74.79 | 12,30 | 27.12 | ✓ |
| RV 9500 - 075 - A | 75 | 2.95 | 228 | 8.98 | 153 | 6.02 | | | 15536 | 34927 | 19078 | 42889 | 1420,0 | 86.62 | 13,05 | 28.77 | ✓ |
| RV 9500 - 080 - A | 80 | 3.15 | 238 | 9.37 | 158 | 6.22 | | | 15625 | 35125 | 19222 | 43213 | 1500,0 | 91.50 | 13,37 | 29.48 | ✓ |
| RV 9500 - 100 - A | 100 | 3.94 | 278 | 10.94 | 178 | 7.01 | | | 15905 | 35756 | 19681 | 44245 | 1823,0 | 111.20 | 14,61 | 32.21 | ✓ |
| RV 9500 - 125 - A | 125 | 4.92 | 328 | 12.91 | 203 | 7.99 | | | 16148 | 36303 | 20082 | 45146 | 2226,0 | 135.79 | 16,18 | 35.67 | ✓ |



HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

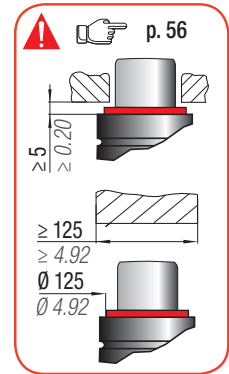
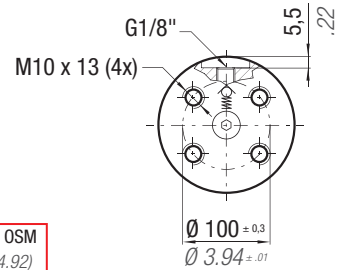
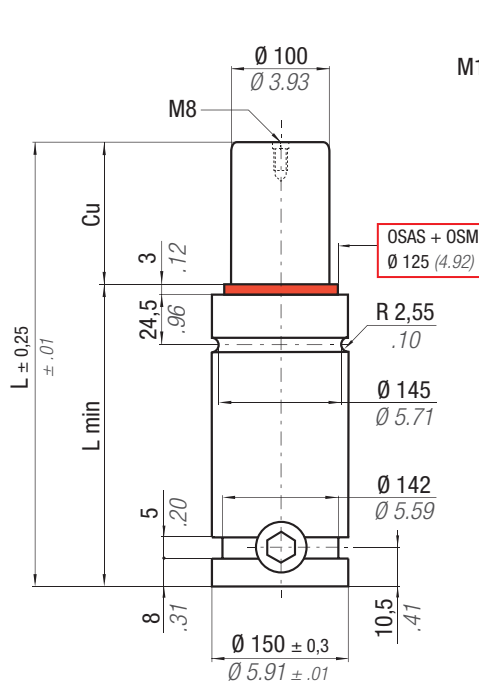
** F_{1p} = Polytrophic end force at 100% Cu



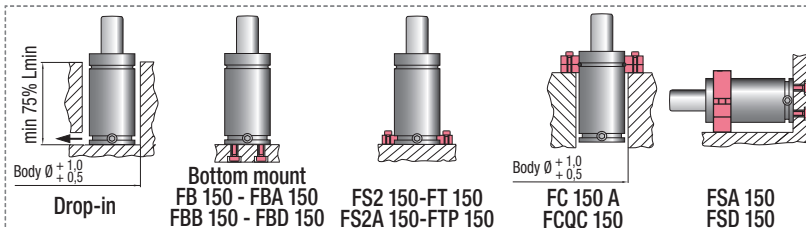
USAS



OPAS



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 78,54 cm ² 12.173 in ² | SPM ~ 20 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV12000A | Vo | | PED | | | | | | | | | | | | |
|--------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|------------------------------------------------------|-------------------------------|----------------------|---------------------------------|-----|------|-----|-------|------------|------|-------|-------|-------|-------|--------|--------|-------|-------|---|
| | | | | | | | | | | | mm | inch | ~Kg | ~lb | 2014/68/EU | | | | | | | | | | |
| RV 12000 - 019 - A | | | | | | | | | | | 19 | 0.75 | 116 | 4.57 | 97 | 3.82 | 16891 | 37973 | 19896 | 44728 | 571,0 | 34.83 | 9,34 | 20.59 | ✓ |
| RV 12000 - 025 - A | | | | | | | | | | | 25 | 0.98 | 128 | 5.04 | 103 | 4.06 | 17735 | 39870 | 21225 | 47716 | 675,0 | 41.18 | 9,73 | 21.45 | ✓ |
| RV 12000 - 032 - A | | | | | | | | | | | 32 | 1.26 | 142 | 5.59 | 110 | 4.33 | 18503 | 41596 | 22454 | 50479 | 796,0 | 48.56 | 10,18 | 22.44 | ✓ |
| RV 12000 - 038 - A | | | | | | | | | | | 38 | 1.50 | 154 | 6.06 | 116 | 4.57 | 19030 | 42780 | 23307 | 52396 | 900,0 | 54.90 | 10,57 | 23.30 | ✓ |
| RV 12000 - 050 - A | | | | | | | | | | | 50 | 1.97 | 178 | 7.01 | 128 | 5.04 | 19837 | 44596 | 24629 | 55368 | 1108,0 | 67.59 | 11,35 | 25.02 | ✓ |
| RV 12000 - 063 - A | | | | | | | | | | | 63 | 2.48 | 204 | 8.03 | 141 | 5.55 | 20469 | 46016 | 25676 | 57722 | 1332,0 | 81.25 | 12,20 | 26.90 | ✓ |
| RV 12000 - 075 - A | | | | | | | | | | | 75 | 2.95 | 228 | 8.98 | 153 | 6.02 | 20909 | 47006 | 26412 | 59377 | 1540,0 | 93.94 | 12,97 | 28.59 | ✓ |
| RV 12000 - 080 - A | | | | | | | | | | | 80 | 3.15 | 238 | 9.37 | 158 | 6.22 | 21063 | 47353 | 26671 | 59959 | 1626,0 | 99.19 | 13,30 | 29.32 | ✓ |
| RV 12000 - 100 - A | | | | | | | | | | | 100 | 3.94 | 278 | 10.94 | 178 | 7.01 | 21559 | 48467 | 27507 | 61838 | 1972,0 | 120.29 | 14,60 | 32.19 | ✓ |
| RV 12000 - 125 - A | | | | | | | | | | | 125 | 4.92 | 328 | 12.91 | 203 | 7.99 | 21995 | 49447 | 28249 | 63506 | 2405,0 | 146.71 | 16,22 | 35.76 | ✓ |



HOW TO ORDER p. 57

INSTALLATION GUIDELINE p. 203



SW

ACTIVE SAFETY


OSAS

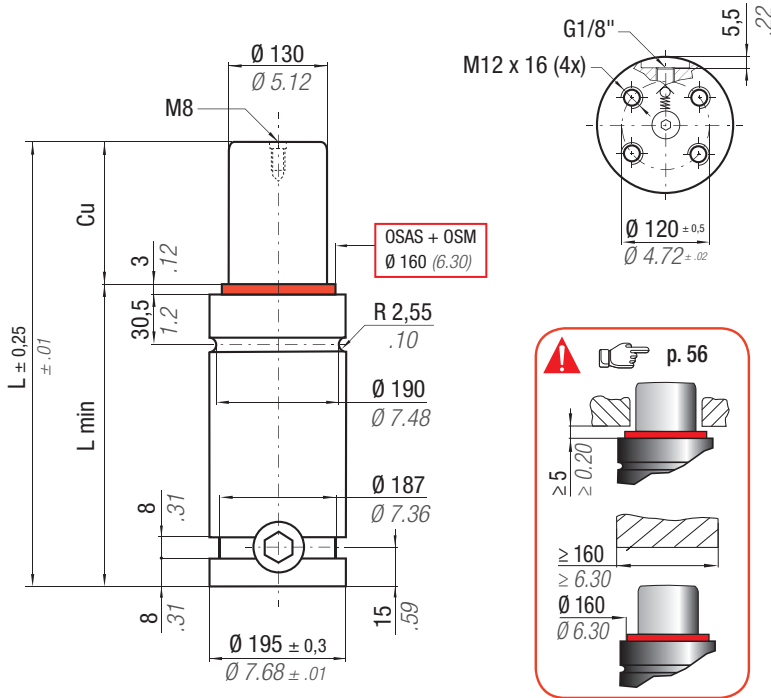


USAS



OPAS

RV



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

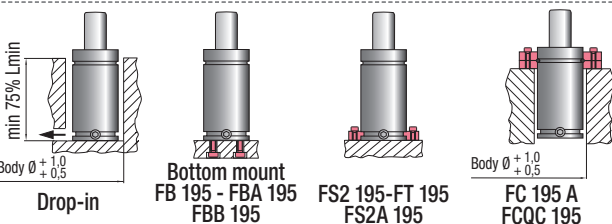
easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polyphropic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------------------------------|--------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 132,73 cm ² 20.573 in ² | SPM ~ 20 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV20000A |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------------------------------|--------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|--------------------|-----|------|-----|-------|-------|------|---------------------------------|-------|--------------------------------|-------|---------------------------------|--------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RV 20000 - 019 - A | 19 | 0.75 | 148 | 5.83 | 129 | 5.08 | | | 26987 | 60669 | 31207 | 70156 | 1118,0 | 68.20 | 21,58 | 47.58 | ✓ |
| RV 20000 - 025 - A | 25 | 0.98 | 160 | 6.30 | 135 | 5.32 | | | 28383 | 63807 | 33368 | 75014 | 1288,0 | 78.57 | 22,29 | 49.14 | ✓ |
| RV 20000 - 032 - A | 32 | 1.26 | 174 | 6.85 | 142 | 5.59 | 19910 | 44738 | 29722 | 66817 | 35474 | 79749 | 1486,0 | 90.65 | 23,12 | 50.97 | ✓ |
| RV 20000 - 038 - A | 38 | 1.50 | 186 | 7.32 | 148 | 5.83 | $\pm 5\%$ | | 30681 | 68973 | 37002 | 83184 | 1656,0 | 101.02 | 23,84 | 52.56 | ✓ |
| RV 20000 - 050 - A | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | | | 32220 | 72433 | 39486 | 88768 | 1995,0 | 121.70 | 25,26 | 55.69 | ✓ |
| RV 20000 - 063 - A | 63 | 2.48 | 236 | 9.29 | 173 | 6.81 | 150 bar 2175 psi | | 33486 | 75280 | 41560 | 93431 | 2362,0 | 144.08 | 26,80 | 59.08 | ✓ |
| RV 20000 - 075 - A | 75 | 2.95 | 260 | 10.24 | 185 | 7.28 | | | 34403 | 77341 | 43077 | 96841 | 2702,0 | 164.82 | 28,22 | 62.21 | ✓ |
| RV 20000 - 080 - A | 80 | 3.15 | 270 | 10.63 | 190 | 7.48 | + 20 °C +68 °F | | 34731 | 78079 | 43624 | 98071 | 2843,0 | 173.42 | 28,81 | 63.52 | ✓ |
| RV 20000 - 100 - A | 100 | 3.94 | 310 | 12.21 | 210 | 8.27 | | | 35811 | 80506 | 45434 | 102140 | 3409,0 | 207.95 | 31,19 | 68.76 | ✓ |
| RV 20000 - 125 - A | 125 | 4.92 | 360 | 14.17 | 235 | 9.25 | | | 36794 | 82716 | 47097 | 105878 | 4116,0 | 251.08 | 34,16 | 75.31 | ✓ |

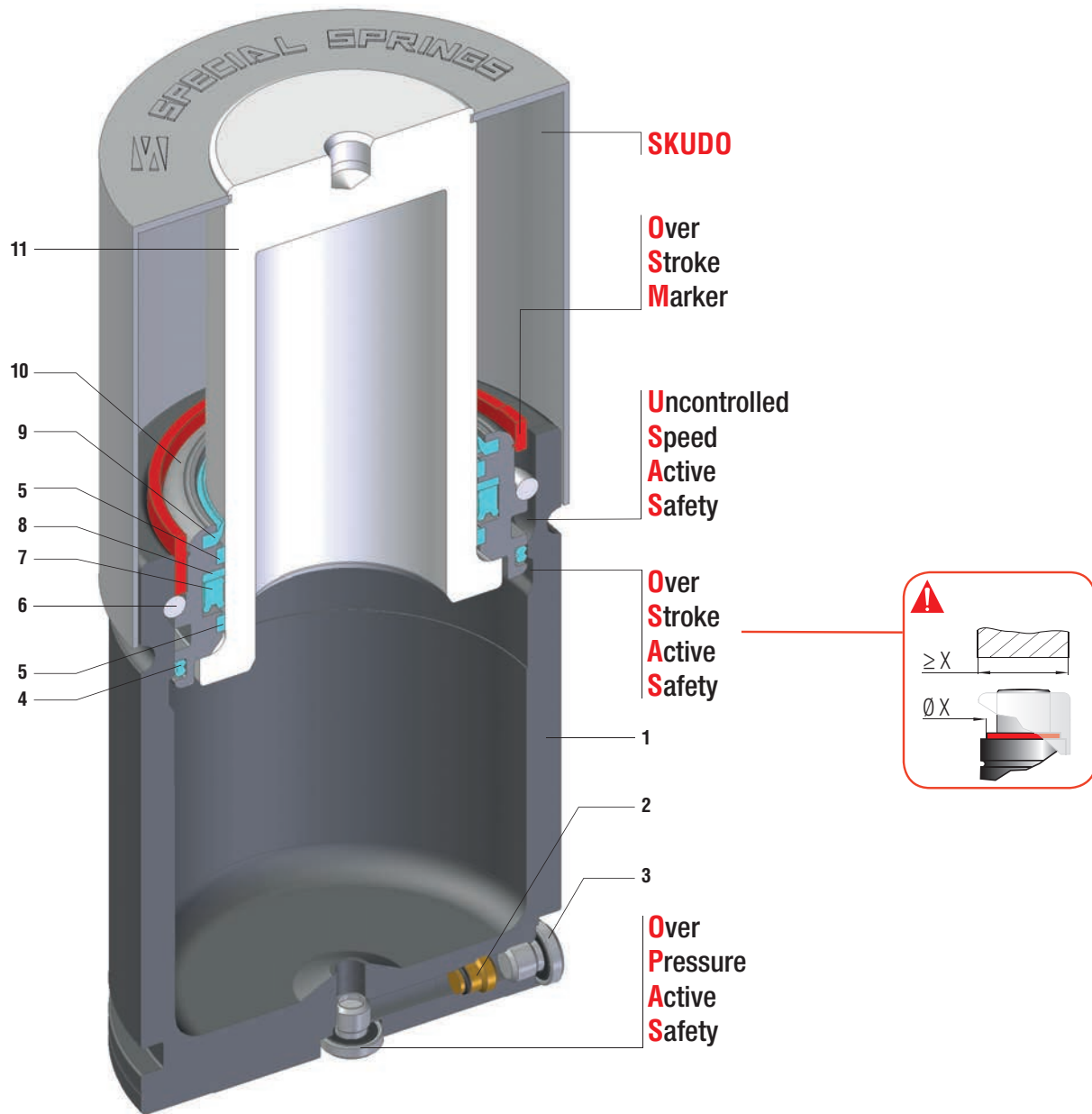


HOW TO ORDER

p. 57

INSTALLATION GUIDELINE

p. 203



Minima altezza, massima forza + SKUDO - Minimum height, maximum force + SKUDO - Minimale Höhe, maximale Kraft + SKUDO
 Hauteur minimale, force maximale + SKUDO - Mínima altura, máxima fuerza + SKUDO - Altura mínima, força máxima + SKUDO

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Guide ring | 9 | Rod wiper |
| 2 | Valve | 6 | Retaining ring | 10 | Bush |
| 3 | Plug | 7 | Rod seal | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Back-up ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | OSAS | USAS | OPAS | SKUDO |
|---------|--------|------|-----------|-------------|------------------|-------|------|------|------|-------|
| | mm | inch | mm | inch | daN | lb | | | | |
| RS 170 | 19 | 0.75 | 7 - 122 | 0.28 - 4.80 | 170 | 382 | ✓ | ✓ | ✓ | ✓ |
| RS 320 | 25 | 0.98 | 7 - 122 | 0.28 - 4.80 | 320 | 719 | ✓ | ✓ | ✓ | ✓ |
| RS 350 | 32 | 1.26 | 7 - 122 | 0.28 - 4.80 | 360 | 809 | ✓ | ✓ | ✓ | ✓ |
| RS 500 | 38 | 1.50 | 7 - 122 | 0.28 - 4.80 | 470 | 1057 | ✓ | ✓ | ✓ | ✓ |
| RS 750 | 45 | 1.77 | 7 - 122 | 0.28 - 4.80 | 740 | 1664 | ✓ | ✓ | ✓ | ✓ |
| RS 1000 | 50 | 1.97 | 10 - 122 | 0.39 - 4.80 | 920 | 2068 | ✓ | ✓ | ✓ | ✓ |
| RS 1200 | 50 | 1.97 | 10 - 122 | 0.39 - 4.80 | 1060 | 2383 | ✓ | ✓ | ✓ | ✓ |
| RS 1500 | 63 | 2.48 | 10 - 122 | 0.39 - 4.80 | 1530 | 3440 | ✓ | ✓ | ✓ | ✓ |
| RS 2400 | 75 | 2.95 | 13 - 122 | 0.51 - 4.80 | 2385 | 5362 | ✓ | ✓ | ✓ | ✓ |
| RS 4200 | 95 | 3.74 | 13 - 122 | 0.51 - 4.80 | 4240 | 9532 | ✓ | ✓ | ✓ | ✓ |
| RS 6600 | 120 | 4.72 | 13 - 122 | 0.51 - 4.80 | 6630 | 14905 | ✓ | ✓ | ✓ | ✓ |
| RS 9500 | 150 | 5.91 | 16 - 122 | 0.63 - 4.80 | 9540 | 21447 | ✓ | ✓ | ✓ | ✓ |

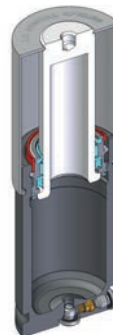
RS



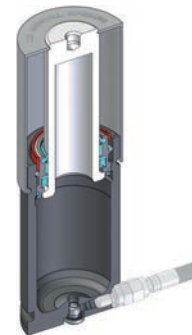
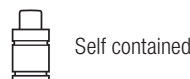
HOW TO ORDER



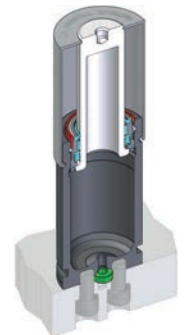
Available versions



RS 2400-047-A
Standard code



RS2400-047-A-N
Add "-N" to standard code



RS 2400-047-A-E
Add "-E" to standard code



Il nuovo codice sarà fornito solo ad esaurimento del vecchio - The new code will be supplied only when the old will be out of stock - Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist - Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé - El nuevo código será suministrado sólo cuando el viejo está fuera de stock - O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO



p. 241

* $F_{1i} =$

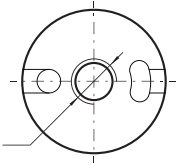
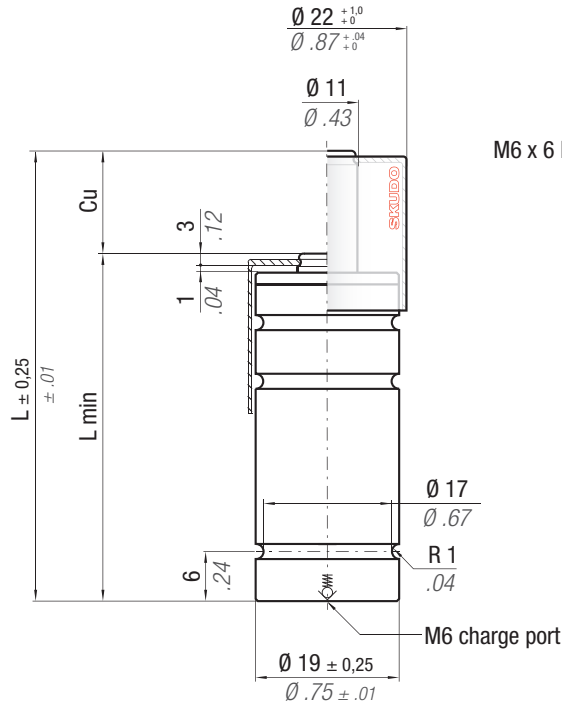
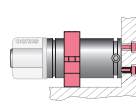
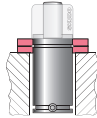
Isothermal end force at 100% Cu



p. 18

** $F_{1p} =$

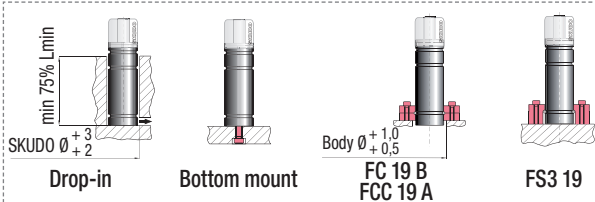
Polytropic end force at 100% Cu



| | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 0,95 cm ² 0,147 in ² | SPM ~ 40 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable | | | | | | | |
|-----------------------------|------------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------------------------------------|-----------------------|-------------------------------|--------------------|-----------------|----------------|------|------------|------|---|
| CODE | NEW | Cu | | L | | L min | | F ₀ | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
| PHASING OUT from 05/2019 | | mm | inch | mm | inch | mm | inch | Initial force daN lb | End force * daN lb | End force ** daN lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | | |
| RS 170 - 007 - B | RS 170 - 007 - C | 7 | 0.28 | 50 | 1.97 | 43 | 1.69 | 170 382 ± 5% 180 bar 2610psi + 20 °C +68 °F | 239 | 537 | 271 | 609 | 3,0 | 0.18 | 0,06 | 0.13 | ✓ |
| RS 170 - 010 - B | RS 170 - 010 - C | 10 | 0.39 | 56 | 2.20 | 46 | 1.81 | | 253 | 569 | 290 | 652 | 4,0 | 0.24 | 0,07 | 0.14 | ✓ |
| RS 170 - 012 - B | RS 170 - 012 - C | 12 | 0.47 | 60 | 2.36 | 48 | 1.89 | | 260 | 585 | 300 | 674 | 4,0 | 0.24 | 0,07 | 0.15 | ✓ |
| RS 170 - 016 - B | RS 170 - 016 - C | 16 | 0.63 | 68 | 2.68 | 52 | 2.05 | | 271 | 609 | 316 | 710 | 5,0 | 0.31 | 0,07 | 0.16 | ✓ |
| RS 170 - 022 - B | RS 170 - 022 - C | 22 | 0.87 | 80 | 3.15 | 58 | 2.28 | | 281 | 632 | 331 | 744 | 7,0 | 0.43 | 0,08 | 0.17 | ✓ |
| RS 170 - 029 - B | RS 170 - 029 - C | 29 | 1.14 | 94 | 3.70 | 65 | 2.56 | | 290 | 652 | 344 | 773 | 8,0 | 0.49 | 0,09 | 0.19 | ✓ |
| RS 170 - 035 - B | RS 170 - 035 - C | 35 | 1.38 | 106 | 4.17 | 71 | 2.80 | | 295 | 663 | 351 | 789 | 10,0 | 0.61 | 0,09 | 0.21 | ✓ |
| RS 170 - 047 - B | RS 170 - 047 - C | 47 | 1.85 | 130 | 5.12 | 83 | 3.27 | | 301 | 677 | 361 | 812 | 13,0 | 0.79 | 0,11 | 0.24 | ✓ |
| RS 170 - 060 - B | RS 170 - 060 - C | 60 | 2.36 | 156 | 6.14 | 96 | 3.78 | | 306 | 688 | 368 | 827 | 16,0 | 0.98 | 0,12 | 0.27 | ✓ |
| RS 170 - 072 - B | RS 170 - 072 - C | 72 | 2.83 | 185 | 7.28 | 113 | 4.45 | | 309 | 695 | 372 | 836 | 19,0 | 1.16 | 0,14 | 0.31 | ✓ |
| RS 170 - 077 - B | RS 170 - 077 - C | 77 | 3.03 | 195 | 7.68 | 118 | 4.65 | | 310 | 697 | 374 | 841 | 21,0 | 1.28 | 0,15 | 0.32 | ✓ |
| RS 170 - 097 - B | RS 170 - 097 - C | 97 | 3.82 | 235 | 9.25 | 138 | 5.43 | | 313 | 704 | 378 | 850 | 25,0 | 1.53 | 0,17 | 0.37 | ✓ |
| RS 170 - 122 - B | RS 170 - 122 - C | 122 | 4.80 | 285 | 11.22 | 163 | 6.42 | | 315 | 708 | 382 | 859 | 31,0 | 1.89 | 0,19 | 0.43 | ✓ |

WARNING REMOVE SKUDO

Upside down mounting

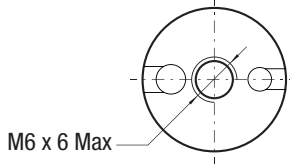
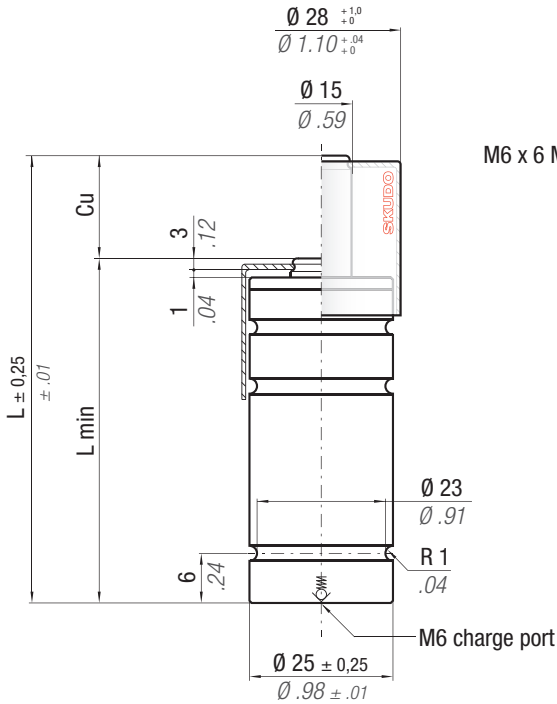


HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu

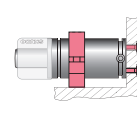
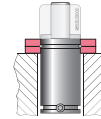


p. 18



** $F_{1p} =$

Polytropic end force at 100% Cu



ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

RS

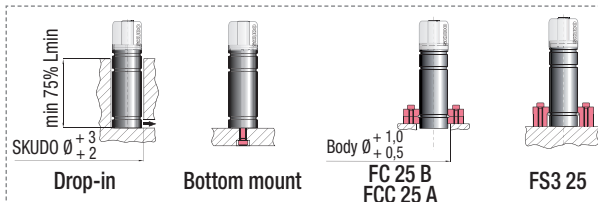
| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|---------------------------------------------------|--------------------------------|----------------------|-------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 1,77 cm ² 0.27 in ² | SPM ~ 40 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit Disposable |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|---------------------------------------------------|--------------------------------|----------------------|-------------------------------|

| CODE PHASING OUT from 01/2020 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|------------------|-----|------|-----|-------|-------|------|---------------------------------|--------------------|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RS 320 - 007 - B | RS 320 - 007 - C | 7 | 0.28 | 50 | 1.97 | 43 | 1.69 | 320 719 ± 5% | 180 bar 2610psi | 424 | 953 | 474 | 1066 | 6,0 | 0.37 | 0,10 | 0.23 | ✓ |
| RS 320 - 010 - B | RS 320 - 010 - C | 10 | 0.39 | 56 | 2.20 | 46 | 1.81 | | | 448 | 1007 | 508 | 1142 | 7,0 | 0.43 | 0,11 | 0.24 | ✓ |
| RS 320 - 012 - B | RS 320 - 012 - C | 12 | 0.47 | 60 | 2.36 | 48 | 1.89 | | | 461 | 1036 | 526 | 1182 | 8,0 | 0.49 | 0,11 | 0.25 | ✓ |
| RS 320 - 016 - B | RS 320 - 016 - C | 16 | 0.63 | 68 | 2.68 | 52 | 2.05 | | | 481 | 1081 | 554 | 1245 | 10,0 | 0.61 | 0,12 | 0.26 | ✓ |
| RS 320 - 022 - B | RS 320 - 022 - C | 22 | 0.87 | 80 | 3.15 | 58 | 2.28 | | | 501 | 1126 | 584 | 1313 | 13,0 | 0.79 | 0,13 | 0.29 | ✓ |
| RS 320 - 029 - B | RS 320 - 029 - C | 29 | 1.14 | 94 | 3.70 | 65 | 2.56 | | | 518 | 1165 | 608 | 1367 | 16,0 | 0.98 | 0,14 | 0.31 | ✓ |
| RS 320 - 035 - B | RS 320 - 035 - C | 35 | 1.38 | 106 | 4.17 | 71 | 2.80 | | | 528 | 1187 | 623 | 1401 | 19,0 | 1.16 | 0,15 | 0.33 | ✓ |
| RS 320 - 047 - B | RS 320 - 047 - C | 47 | 1.85 | 130 | 5.12 | 83 | 3.27 | | | 542 | 1218 | 643 | 1446 | 24,0 | 1.46 | 0,17 | 0.38 | ✓ |
| RS 320 - 060 - B | RS 320 - 060 - C | 60 | 2.36 | 156 | 6.14 | 96 | 3.78 | | | 551 | 1239 | 658 | 1479 | 30,0 | 1.83 | 0,19 | 0.43 | ✓ |
| RS 320 - 072 - B | RS 320 - 072 - C | 72 | 2.83 | 185 | 7.28 | 113 | 4.45 | | | 550 | 1236 | 656 | 1475 | 36,0 | 2.20 | 0,22 | 0.48 | ✓ |
| RS 320 - 077 - B | RS 320 - 077 - C | 77 | 3.03 | 195 | 7.68 | 118 | 4.65 | 553 | 1243 | 660 | 1484 | 38,0 | 2.32 | 0,23 | 0.50 | ✓ | | |
| RS 320 - 097 - B | RS 320 - 097 - C | 97 | 3.82 | 235 | 9.25 | 138 | 5.43 | 560 | 1259 | 672 | 1511 | 47,0 | 2.87 | 0,26 | 0.57 | ✓ | | |
| RS 320 - 122 - B | RS 320 - 122 - C | 122 | 4.80 | 285 | 11.22 | 163 | 6.42 | 567 | 1275 | 681 | 1531 | 59,0 | 3.60 | 0,30 | 0.66 | ✓ | | |

WARNING REMOVE SKUDO

Upside down mounting

FC / FCC fixings



HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

p. 203

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easu MANIFOLD p. 241



OSAS



USAS



OPAS



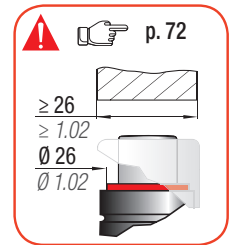
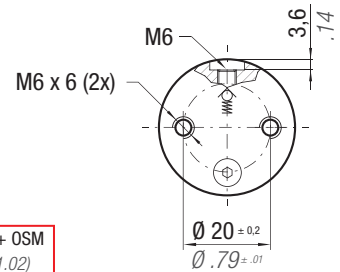
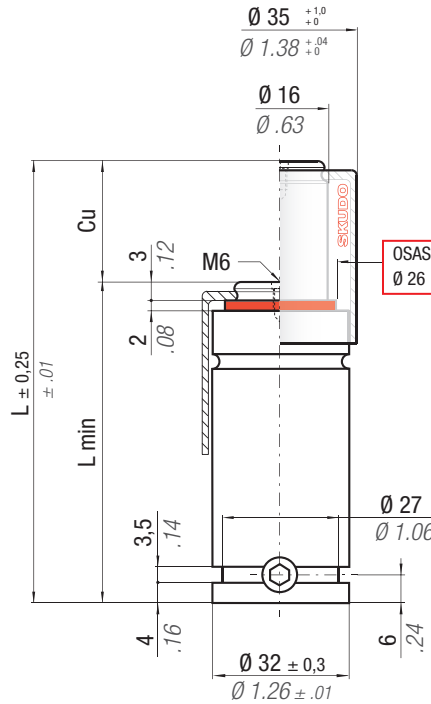
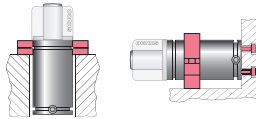
SKUDO

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytropic end force at 100% Cu

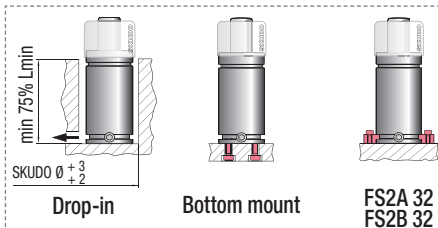


| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 2,01 cm ² 0,312 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00350C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | | ~lb | | PED 2014/68/EU |
|------------------|-----|------|-----|-------|-------|------|----------------|-----|-------------------|------|--------------------|------|-----------------|-----------------|------|------|-----|--|-------------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | | | |
| RS 350 - 007 - A | 7 | 0.28 | 50 | 1.97 | 43 | 1.69 | 360 ± 5% | 809 | 458 | 1030 | 505 | 1136 | 8,0 | 0.49 | 0,16 | 0,36 | ✓ | | |
| RS 350 - 010 - A | 10 | 0.39 | 56 | 2.20 | 46 | 1.81 | | | 478 | 1075 | 533 | 1199 | 10,0 | 0.61 | 0,17 | 0,38 | ✓ | | |
| RS 350 - 013 - A | 13 | 0.51 | 62 | 2.44 | 49 | 1.93 | | | 493 | 1109 | 554 | 1245 | 12,0 | 0.73 | 0,18 | 0,40 | ✓ | | |
| RS 350 - 016 - A | 16 | 0.63 | 68 | 2.68 | 52 | 2.05 | | | 505 | 1134 | 570 | 1282 | 14,0 | 0.85 | 0,19 | 0,42 | ✓ | | |
| RS 350 - 022 - A | 22 | 0.87 | 80 | 3.15 | 58 | 2.28 | | | 521 | 1171 | 593 | 1333 | 18,0 | 1.10 | 0,21 | 0,46 | ✓ | | |
| RS 350 - 029 - A | 29 | 1.14 | 94 | 3.70 | 65 | 2.56 | | | 533 | 1199 | 611 | 1374 | 22,0 | 1.34 | 0,23 | 0,51 | ✓ | | |
| RS 350 - 035 - A | 35 | 1.38 | 106 | 4.17 | 71 | 2.80 | | | 541 | 1216 | 622 | 1399 | 26,0 | 1.59 | 0,25 | 0,55 | ✓ | | |
| RS 350 - 047 - A | 47 | 1.85 | 130 | 5.12 | 83 | 3.27 | | | 552 | 1240 | 637 | 1432 | 33,0 | 2.01 | 0,29 | 0,63 | ✓ | | |
| RS 350 - 060 - A | 60 | 2.36 | 156 | 6.14 | 96 | 3.78 | | | 559 | 1256 | 648 | 1456 | 41,0 | 2.50 | 0,33 | 0,72 | ✓ | | |
| RS 350 - 072 - A | 72 | 2.83 | 180 | 7.09 | 108 | 4.25 | | | 563 | 1266 | 654 | 1471 | 49,0 | 2.99 | 0,36 | 0,80 | ✓ | | |
| RS 350 - 077 - A | 77 | 3.03 | 190 | 7.48 | 113 | 4.45 | | | 565 | 1270 | 657 | 1476 | 52,0 | 3.17 | 0,38 | 0,83 | ✓ | | |
| RS 350 - 097 - A | 97 | 3.82 | 230 | 9.06 | 133 | 5.24 | | | 570 | 1281 | 663 | 1492 | 65,0 | 3.97 | 0,44 | 0,96 | ✓ | | |
| RS 350 - 122 - A | 122 | 4.80 | 280 | 11.02 | 158 | 6.22 | | | 574 | 1289 | 669 | 1504 | 80,0 | 4.88 | 0,51 | 1,13 | ✓ | | |

WARNING REMOVE SKUDO

Upside down mounting

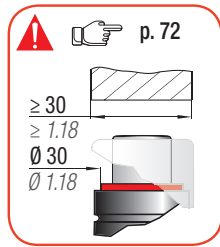
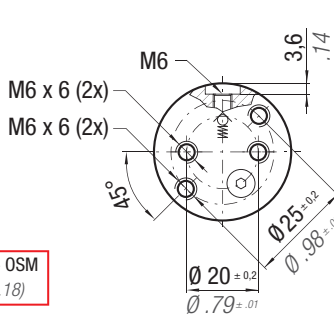
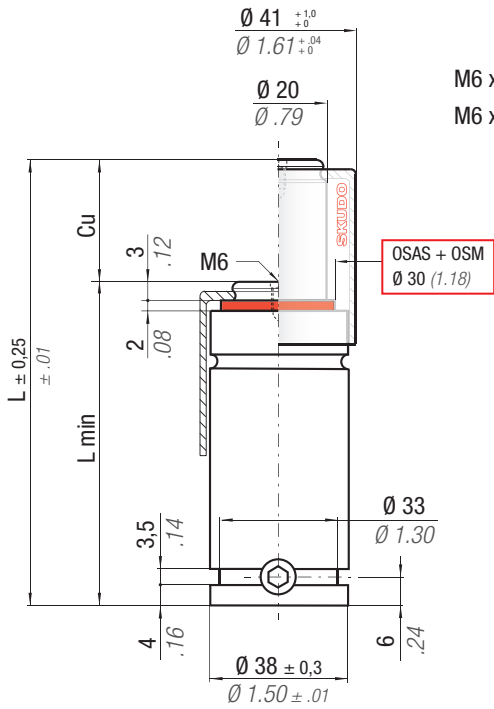


HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

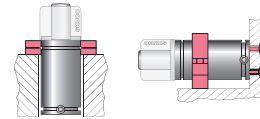
easu MANIFOLD p. 241

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu



ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

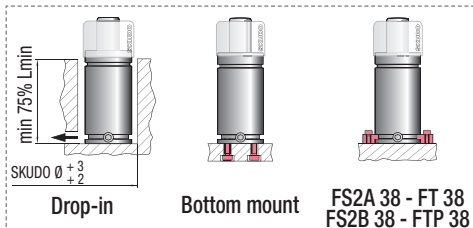
RS

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 3,14 cm ² 0.487 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00500C |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|------------------|-----|------|-----|-------|-------|------|--------------------------------------------------------------|----|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RS 500 - 007 - A | 7 | 0.28 | 50 | 1.97 | 43 | 1.69 | 470 1057 ± 5% 150 bar 2175psi + 20 °C +68 °F | | 609 | 1370 | 694 | 1560 | 11,0 | 0.67 | 0,24 | 0.53 | ✓ |
| RS 500 - 010 - A | 10 | 0.39 | 56 | 2.20 | 46 | 1.81 | | | 639 | 1437 | 739 | 1661 | 14,0 | 0.85 | 0,25 | 0.55 | ✓ |
| RS 500 - 013 - A | 13 | 0.51 | 62 | 2.44 | 49 | 1.93 | | | 661 | 1486 | 773 | 1738 | 17,0 | 1.04 | 0,26 | 0.57 | ✓ |
| RS 500 - 016 - A | 16 | 0.63 | 68 | 2.68 | 52 | 2.05 | | | 678 | 1524 | 800 | 1798 | 19,0 | 1.16 | 0,28 | 0.62 | ✓ |
| RS 500 - 022 - A | 22 | 0.87 | 80 | 3.15 | 58 | 2.28 | | | 703 | 1579 | 838 | 1884 | 24,0 | 1.46 | 0,31 | 0.68 | ✓ |
| RS 500 - 029 - A | 29 | 1.14 | 94 | 3.70 | 65 | 2.56 | | | 722 | 1622 | 868 | 1951 | 30,0 | 1.83 | 0,34 | 0.75 | ✓ |
| RS 500 - 035 - A | 35 | 1.38 | 106 | 4.17 | 71 | 2.80 | | | 733 | 1648 | 887 | 1994 | 35,0 | 2.14 | 0,37 | 0.82 | ✓ |
| RS 500 - 047 - A | 47 | 1.85 | 130 | 5.12 | 83 | 3.27 | | | 749 | 1684 | 913 | 2053 | 46,0 | 2.81 | 0,42 | 0.93 | ✓ |
| RS 500 - 060 - A | 60 | 2.36 | 156 | 6.14 | 96 | 3.78 | | | 760 | 1709 | 931 | 2093 | 57,0 | 3.48 | 0,48 | 1.06 | ✓ |
| RS 500 - 072 - A | 72 | 2.83 | 180 | 7.09 | 108 | 4.25 | | | 767 | 1725 | 942 | 2118 | 67,0 | 4.09 | 0,54 | 1.19 | ✓ |
| RS 500 - 077 - A | 77 | 3.03 | 190 | 7.48 | 113 | 4.45 | | | 770 | 1730 | 946 | 2127 | 72,0 | 4.39 | 0,56 | 1.23 | ✓ |
| RS 500 - 097 - A | 97 | 3.82 | 230 | 9.06 | 133 | 5.24 | | | 777 | 1747 | 958 | 2154 | 89,0 | 5.43 | 0,66 | 1.46 | ✓ |
| RS 500 - 122 - A | 122 | 4.80 | 280 | 11.02 | 158 | 6.22 | | | 783 | 1760 | 968 | 2176 | 110,0 | 6.71 | 0,77 | 1.70 | ✓ |

WARNING REMOVE SKUDO

Upside down mounting



HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

p. 203

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easu MANIFOLD p. 241



OSAS



USAS



OPAS



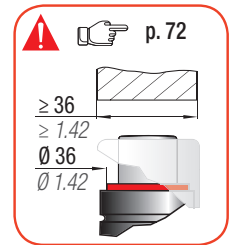
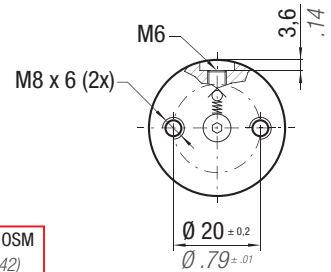
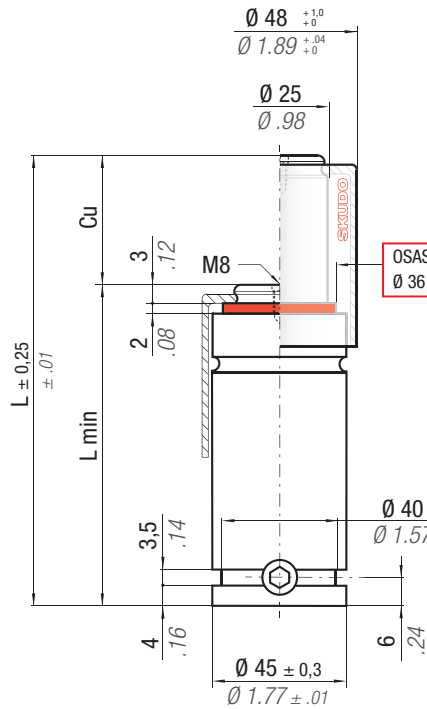
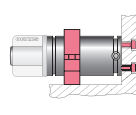
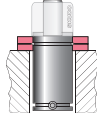
SKUDO

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytropic end force at 100% Cu

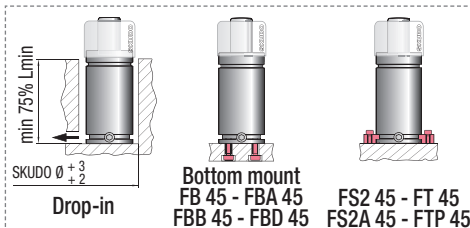


| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00750C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|-----|------|-----|-------|-------|------|---------------------|--------------------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RS 750 - 007 - A | 7 | 0.28 | 52 | 2.05 | 45 | 1.77 | 740 1664 ± 5% | 150 bar 2175psi | 956 | 2148 | 1090 | 2450 | 18,0 | 1.10 | 0,36 | 0.79 | ✓ |
| RS 750 - 010 - A | 10 | 0.39 | 58 | 2.28 | 48 | 1.89 | | | 1006 | 2262 | 1166 | 2621 | 21,0 | 1.28 | 0,38 | 0.84 | ✓ |
| RS 750 - 013 - A | 13 | 0.51 | 64 | 2.52 | 51 | 2.01 | | | 1044 | 2347 | 1225 | 2754 | 25,0 | 1.53 | 0,39 | 0.86 | ✓ |
| RS 750 - 016 - A | 16 | 0.63 | 70 | 2.76 | 54 | 2.13 | | | 1074 | 2414 | 1272 | 2860 | 29,0 | 1.77 | 0,41 | 0.90 | ✓ |
| RS 750 - 022 - A | 22 | 0.87 | 82 | 3.23 | 60 | 2.36 | | | 1117 | 2511 | 1340 | 3012 | 37,0 | 2.26 | 0,45 | 0.99 | ✓ |
| RS 750 - 029 - A | 29 | 1.14 | 96 | 3.78 | 67 | 2.64 | | | 1151 | 2588 | 1395 | 3136 | 46,0 | 2.81 | 0,50 | 1.10 | ✓ |
| RS 750 - 035 - A | 35 | 1.38 | 108 | 4.25 | 73 | 2.87 | | | 1173 | 2636 | 1429 | 3213 | 53,0 | 3.23 | 0,54 | 1.19 | ✓ |
| RS 750 - 047 - A | 47 | 1.85 | 132 | 5.20 | 85 | 3.35 | | | 1202 | 2702 | 1477 | 3320 | 68,0 | 4.15 | 0,61 | 1.34 | ✓ |
| RS 750 - 060 - A | 60 | 2.36 | 158 | 6.22 | 98 | 3.86 | | | 1223 | 2748 | 1511 | 3397 | 85,0 | 5.19 | 0,70 | 1.54 | ✓ |
| RS 750 - 072 - A | 72 | 2.83 | 182 | 7.17 | 110 | 4.33 | | | 1236 | 2778 | 1533 | 3446 | 100,0 | 6.10 | 0,77 | 1.70 | ✓ |
| RS 750 - 077 - A | 77 | 3.03 | 192 | 7.56 | 115 | 4.53 | | | 1240 | 2788 | 1540 | 3462 | 107,0 | 6.53 | 0,81 | 1.79 | ✓ |
| RS 750 - 097 - A | 97 | 3.82 | 232 | 9.13 | 135 | 5.31 | | | 1254 | 2819 | 1563 | 3514 | 132,0 | 8.05 | 0,93 | 2.05 | ✓ |
| RS 750 - 122 - A | 122 | 4.80 | 282 | 11.10 | 160 | 6.30 | | | 1266 | 2845 | 1582 | 3556 | 164,0 | 10.00 | 1,10 | 2.43 | ✓ |

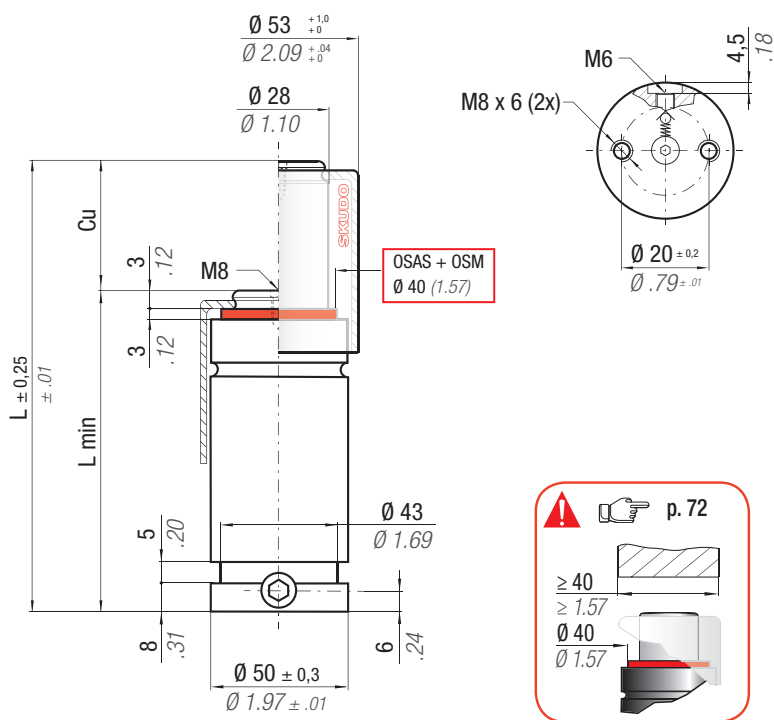
WARNING REMOVE SKUDO

Upside down mounting



HOW TO ORDER p. 73

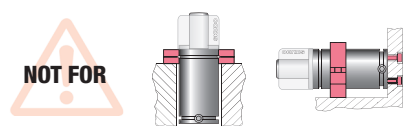
INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polyphotic end force at 100% Cu



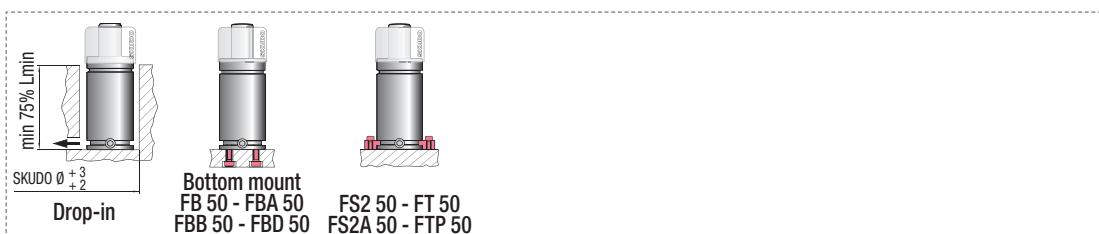
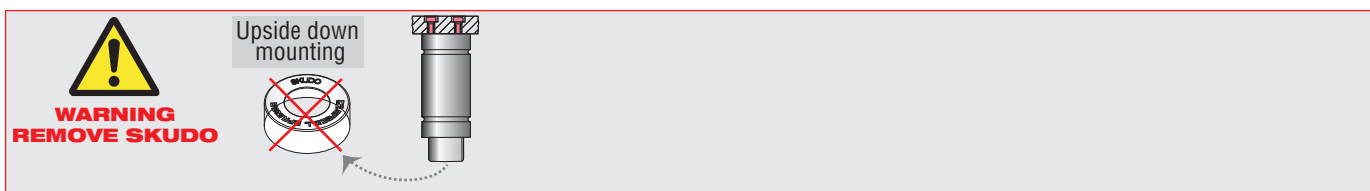
ACTIVE SAFETY

- OSAS
- USAS
- OPAS
- SKUDO

RS

| | | | | | | | | | |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 6,15 cm ² 0.953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|-----------------------------------------------------------------------|----|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RS 1000 - 010 - A | 10 | 0.39 | 64 | 2.52 | 54 | 2.13 | 920 2068 $\pm 5\%$ 150 bar 2175 psi + 20 °C +68 °F | | 1222 | 2748 | 1402 | 3152 | 29,0 | 1.77 | 0,51 | 1.12 | ✓ |
| RS 1000 - 013 - A | 13 | 0.51 | 70 | 2.76 | 57 | 2.24 | | | 1270 | 2856 | 1476 | 3318 | 34,0 | 2.07 | 0,54 | 1.19 | ✓ |
| RS 1000 - 016 - A | 16 | 0.63 | 76 | 2.99 | 60 | 2.36 | | | 1309 | 2943 | 1536 | 3453 | 39,0 | 2.38 | 0,56 | 1.23 | ✓ |
| RS 1000 - 022 - A | 22 | 0.87 | 88 | 3.46 | 66 | 2.60 | | | 1368 | 3075 | 1628 | 3660 | 48,0 | 2.93 | 0,61 | 1.34 | ✓ |
| RS 1000 - 029 - A | 29 | 1.14 | 102 | 4.02 | 73 | 2.87 | | | 1416 | 3183 | 1705 | 3833 | 59,0 | 3.60 | 0,67 | 1.48 | ✓ |
| RS 1000 - 035 - A | 35 | 1.38 | 114 | 4.49 | 79 | 3.11 | | | 1446 | 3252 | 1754 | 3943 | 69,0 | 4.21 | 0,71 | 1.57 | ✓ |
| RS 1000 - 047 - A | 47 | 1.85 | 138 | 5.43 | 91 | 3.58 | | | 1490 | 3349 | 1824 | 4101 | 88,0 | 5.37 | 0,81 | 1.79 | ✓ |
| RS 1000 - 060 - A | 60 | 2.36 | 164 | 6.46 | 104 | 4.09 | | | 1521 | 3419 | 1875 | 4215 | 108,0 | 6.59 | 0,91 | 2.01 | ✓ |
| RS 1000 - 072 - A | 72 | 2.83 | 188 | 7.40 | 116 | 4.57 | | | 1542 | 3466 | 1908 | 4289 | 127,0 | 7.75 | 1,05 | 2.31 | ✓ |
| RS 1000 - 077 - A | 77 | 3.03 | 198 | 7.80 | 121 | 4.76 | | | 1549 | 3481 | 1920 | 4316 | 135,0 | 8.24 | 1,09 | 2.40 | ✓ |
| RS 1000 - 097 - A | 97 | 3.82 | 238 | 9.37 | 141 | 5.55 | | | 1570 | 3530 | 1956 | 4397 | 166,0 | 10.13 | 1,21 | 2.67 | ✓ |
| RS 1000 - 122 - A | 122 | 4.80 | 288 | 11.34 | 166 | 6.54 | | | 1588 | 3571 | 1986 | 4465 | 205,0 | 12.51 | 1,41 | 3.11 | ✓ |



HOW TO ORDER p. 73

INSTALLATION GUIDELINE p. 203

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easu MANIFOLD p. 241



OSAS



USAS



OPAS



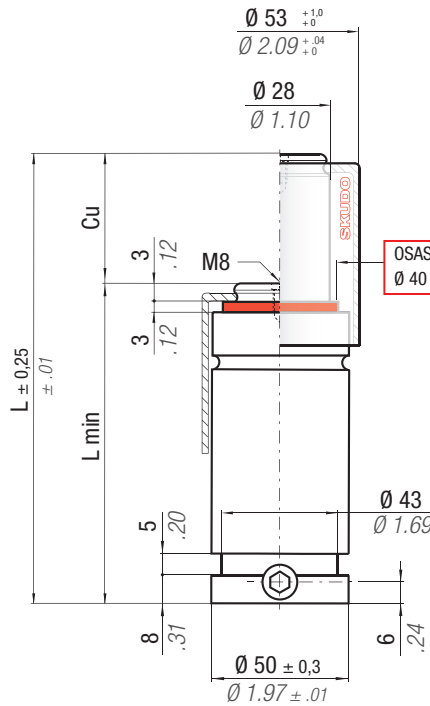
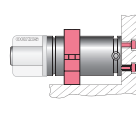
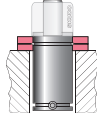
SKUDO

* $F_{1i} =$

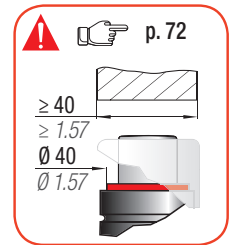
Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytropic end force at 100% Cu



OSAS + OSM
Ø 40 (1.57)

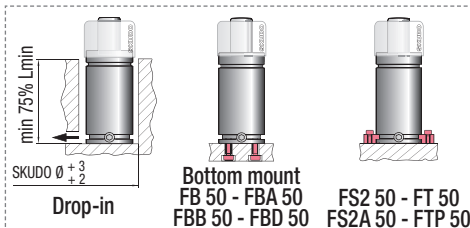


| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 170 bar 2465 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|-------|-----------------|-----------------|------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RS 1200 - 010 - A | 10 | 0.39 | 64 | 2.52 | 54 | 2.13 | 1060 ± 5% | 2383 | 1401 | 3150 | 1581 | 3554 | 29,0 | 1.77 | 0,51 | 1.12 | ✓ |
| RS 1200 - 013 - A | 13 | 0.51 | 70 | 2.76 | 57 | 2.24 | | | 1458 | 3278 | 1664 | 3741 | 34,0 | 2.07 | 0,54 | 1.19 | ✓ |
| RS 1200 - 016 - A | 16 | 0.63 | 76 | 2.99 | 60 | 2.36 | | | 1505 | 3383 | 1732 | 3893 | 39,0 | 2.38 | 0,56 | 1.23 | ✓ |
| RS 1200 - 022 - A | 22 | 0.87 | 88 | 3.46 | 66 | 2.60 | | | 1575 | 3540 | 1836 | 4127 | 48,0 | 2.93 | 0,61 | 1.34 | ✓ |
| RS 1200 - 029 - A | 29 | 1.14 | 102 | 4.02 | 73 | 2.87 | | | 1633 | 3670 | 1922 | 4321 | 59,0 | 3.60 | 0,67 | 1.48 | ✓ |
| RS 1200 - 035 - A | 35 | 1.38 | 114 | 4.49 | 79 | 3.11 | | | 1669 | 3753 | 1977 | 4445 | 69,0 | 4.21 | 0,71 | 1.57 | ✓ |
| RS 1200 - 047 - A | 47 | 1.85 | 138 | 5.43 | 91 | 3.58 | | | 1721 | 3870 | 2056 | 4622 | 88,0 | 5.37 | 0,81 | 1.79 | ✓ |
| RS 1200 - 060 - A | 60 | 2.36 | 164 | 6.46 | 104 | 4.09 | | | 1759 | 3954 | 2114 | 4752 | 108,0 | 6.59 | 0,91 | 2.01 | ✓ |
| RS 1200 - 072 - A | 72 | 2.83 | 188 | 7.40 | 116 | 4.57 | | | 1784 | 4010 | 2152 | 4837 | 127,0 | 7.75 | 1,05 | 2.31 | ✓ |
| RS 1200 - 077 - A | 77 | 3.03 | 198 | 7.80 | 121 | 4.76 | | | 1792 | 4029 | 2165 | 4866 | 135,0 | 8.24 | 1,09 | 2.40 | ✓ |
| RS 1200 - 097 - A | 97 | 3.82 | 238 | 9.37 | 141 | 5.55 | 1818 | 4087 | 2205 | 4957 | 166,0 | 10.13 | 1,21 | 2.67 | ✓ | | |
| RS 1200 - 122 - A | 122 | 4.80 | 288 | 11.34 | 166 | 6.54 | 1840 | 4136 | 2239 | 5033 | 205,0 | 12.51 | 1,41 | 3.11 | ✓ | | |

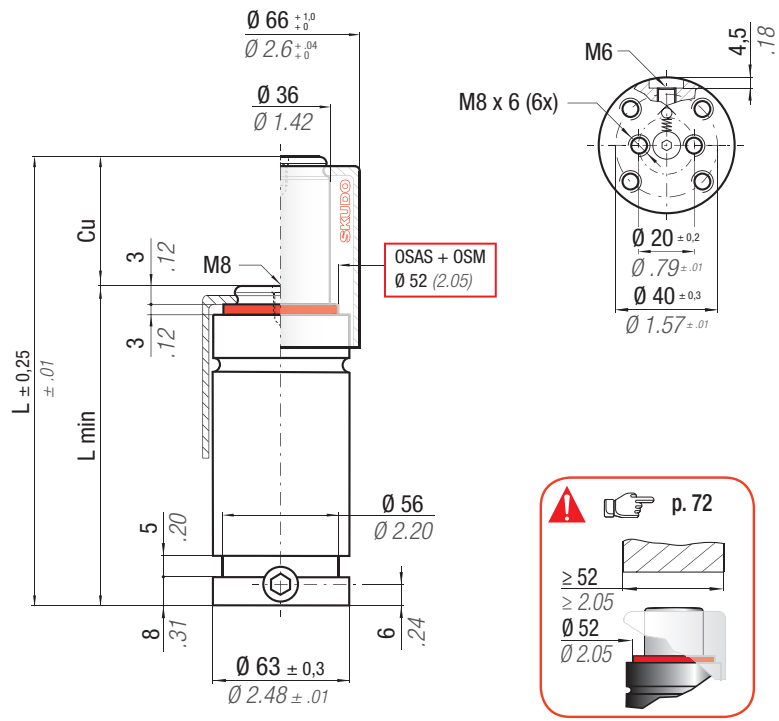
WARNING REMOVE SKUDO

Upside down mounting



HOW TO ORDER p. 73

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



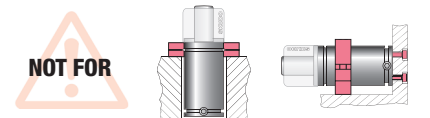
OPAS



SKUDO

easu MANIFOLD p. 241

* F_{i1} = Isothermal end force at 100% Cu p. 18
 ** F_{p1} = Polytrophic end force at 100% Cu



RS

| | | | | | | | | | |
|--|-------------------------------|-----------------------------|----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1.578 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01500C |
|--|-------------------------------|-----------------------------|----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE PHASING OUT from 11/2019 | NEW | Cu | | L | | L min | | F0 Initial force | | F _{i1} * End force * | | F _{p1} ** End force ** | | V0 | | PED 2014/68/EU | | |
|-------------------------------------|-------------------|-----|------|-----|-------|-------|------|---------------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RS 1500 - 010 - A | RS 1500 - 010 - B | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 1530 3440 $\pm 5\%$ | 1970 | 4428 | 2241 | 5038 | 53,0 | 3.23 | 0,92 | 2,03 | ✓ | |
| RS 1500 - 013 - A | RS 1500 - 013 - B | 13 | 0.51 | 76 | 2.99 | 63 | 2.48 | | | 2045 | 4597 | 2355 | 5294 | 61,0 | 3.72 | 0,96 | 2,12 | ✓ |
| RS 1500 - 016 - A | RS 1500 - 016 - B | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 2106 | 4735 | 2450 | 5508 | 69,0 | 4.21 | 0,99 | 2,18 | ✓ |
| RS 1500 - 022 - A | RS 1500 - 022 - B | 22 | 0.87 | 94 | 3.70 | 72 | 2.83 | | | 2201 | 4947 | 2596 | 5836 | 85,0 | 5.19 | 1,06 | 2,34 | ✓ |
| RS 1500 - 029 - A | RS 1500 - 029 - B | 29 | 1.14 | 108 | 4.25 | 79 | 3.11 | | | 2279 | 5124 | 2720 | 6115 | 103,0 | 6.28 | 1,14 | 2,51 | ✓ |
| RS 1500 - 035 - A | RS 1500 - 035 - B | 35 | 1.38 | 120 | 4.72 | 85 | 3.35 | | | 2330 | 5238 | 2801 | 6297 | 119,0 | 7.26 | 1,21 | 2,67 | ✓ |
| RS 1500 - 047 - A | RS 1500 - 047 - B | 47 | 1.85 | 144 | 5.67 | 97 | 3.82 | | | 2402 | 5401 | 2917 | 6558 | 151,0 | 9.21 | 1,35 | 2,98 | ✓ |
| RS 1500 - 060 - A | RS 1500 - 060 - B | 60 | 2.36 | 170 | 6.69 | 110 | 4.33 | | | 2455 | 5520 | 3003 | 6751 | 186,0 | 11.35 | 1,51 | 3,33 | ✓ |
| RS 1500 - 072 - A | RS 1500 - 072 - B | 72 | 2.83 | 194 | 7.64 | 122 | 4.80 | | | 2490 | 5599 | 3060 | 6879 | 217,0 | 13.24 | 1,65 | 3,64 | ✓ |
| RS 1500 - 077 - A | RS 1500 - 077 - B | 77 | 3.03 | 204 | 8.03 | 127 | 5.00 | | | 2502 | 5625 | 3079 | 6922 | 231,0 | 14.09 | 1,71 | 3,77 | ✓ |
| RS 1500 - 097 - A | RS 1500 - 097 - B | 97 | 3.82 | 244 | 9.61 | 147 | 5.79 | 2540 | 5709 | 3141 | 7061 | 284,0 | 17.32 | 1,94 | 4,28 | ✓ | | |
| RS 1500 - 122 - A | RS 1500 - 122 - B | 122 | 4.80 | 294 | 11.57 | 172 | 6.77 | 2571 | 5780 | 3193 | 7178 | 350,0 | 21.35 | 2,23 | 4,92 | ✓ | | |

WARNING REMOVE SKUDO

Upside down mounting

Drop-in

Bottom mount - FB 50 - FB 63
 FB 75 - FBA 50 - FBA 75 - FBB 50
 FBB 63 - FBB 75 - FBD 50 - FBD 75

FS2 63 - FS2A 63
 FS2B 63 - FT 63
 FTP 63

HOW TO ORDER p. 73

INSTALLATION GUIDELINE p. 203

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



OSAS



USAS



OPAS



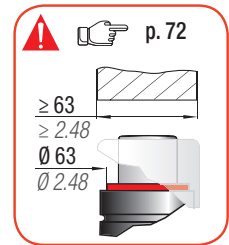
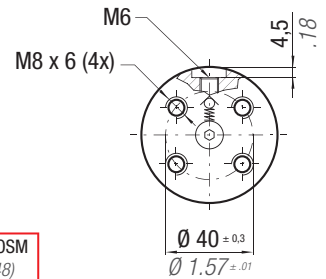
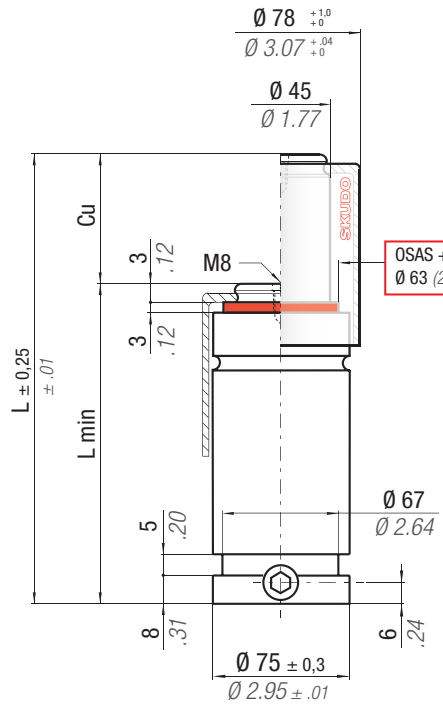
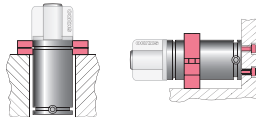
SKUDO

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

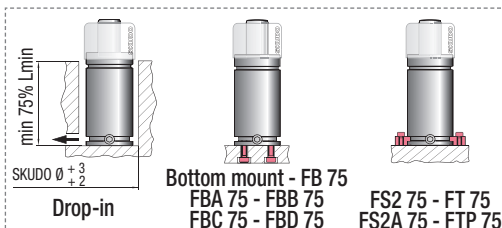
Polytropic end force at 100% Cu



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2,465 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV02400D | PED | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|------|------|---|
| | | | | | | | | | | | ~Kg | ~lb | |
| RS 2400 - 013 - A | | | | | | | | | | | 1,36 | 3,00 | ✓ |
| RS 2400 - 016 - A | | | | | | | | | | | 1,40 | 3,09 | ✓ |
| RS 2400 - 022 - A | | | | | | | | | | | 1,50 | 3,31 | ✓ |
| RS 2400 - 029 - A | | | | | | | | | | | 1,61 | 3,55 | ✓ |
| RS 2400 - 035 - A | | | | | | | | | | | 1,70 | 3,75 | ✓ |
| RS 2400 - 047 - A | | | | | | | | | | | 1,89 | 4,17 | ✓ |
| RS 2400 - 060 - A | | | | | | | | | | | 2,09 | 4,61 | ✓ |
| RS 2400 - 072 - A | | | | | | | | | | | 2,28 | 5,03 | ✓ |
| RS 2400 - 077 - A | | | | | | | | | | | 2,36 | 5,20 | ✓ |
| RS 2400 - 097 - A | | | | | | | | | | | 2,67 | 5,89 | ✓ |
| RS 2400 - 122 - A | | | | | | | | | | | 3,07 | 6,77 | ✓ |

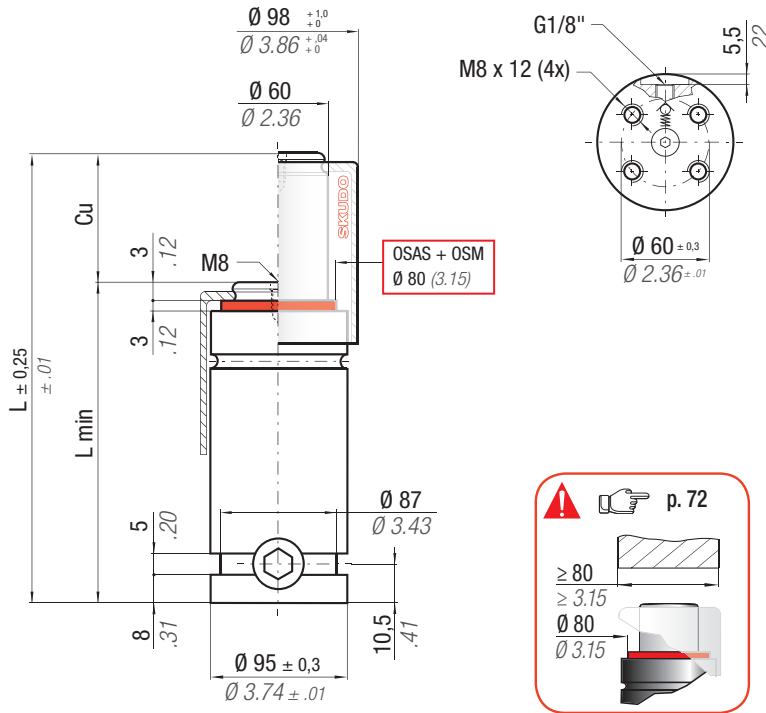
WARNING REMOVE SKUDO

Upside down mounting



HOW TO ORDER p. 73

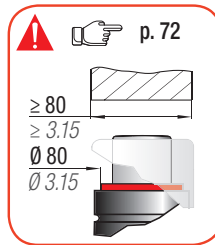
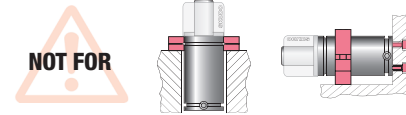
INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu



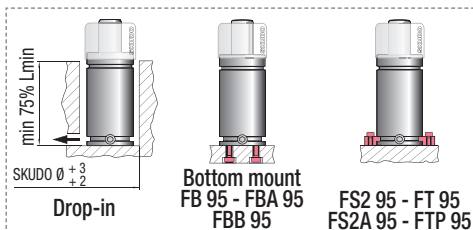
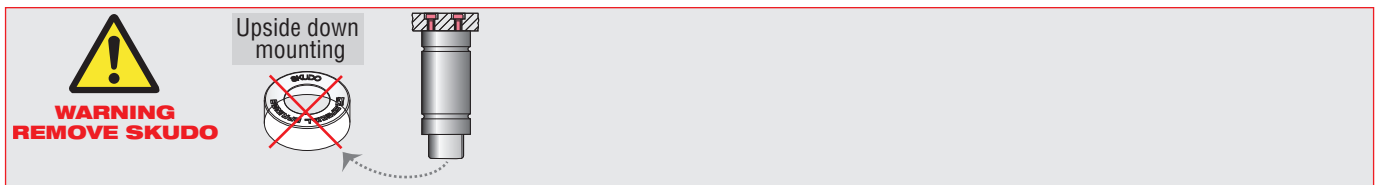
ACTIVE SAFETY



RS

| | | | | | | | | | |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 28,27 cm ² 4.382 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV04200C |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|----------------------------------------------------------------|-------|----------------------------------|-------|------------------------------------|-------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RS 4200 - 013 - A | 13 | 0.51 | 90 | 3.54 | 77 | 3.03 | 4240 $\pm 5\%$ 150 bar 2175 psi + 20 °C +68 °F | 9532 | 5633 | 12664 | 6471 | 14547 | 173,0 | 10.55 | 2,76 | 6.08 | ✓ |
| RS 4200 - 016 - A | 16 | 0.63 | 96 | 3.78 | 80 | 3.15 | | | 5823 | 13090 | 6761 | 15199 | 194,0 | 11.83 | 2,83 | 6.24 | ✓ |
| RS 4200 - 022 - A | 22 | 0.87 | 108 | 4.25 | 86 | 3.39 | | | 6125 | 13771 | 7232 | 16258 | 234,0 | 14.27 | 2,98 | 6.57 | ✓ |
| RS 4200 - 029 - A | 29 | 1.14 | 122 | 4.80 | 93 | 3.66 | | | 6390 | 14365 | 7650 | 17198 | 281,0 | 17.14 | 3,16 | 6.97 | ✓ |
| RS 4200 - 035 - A | 35 | 1.38 | 134 | 5.28 | 99 | 3.90 | | | 6566 | 14761 | 7931 | 17830 | 322,0 | 19.64 | 3,30 | 7.28 | ✓ |
| RS 4200 - 047 - A | 47 | 1.85 | 158 | 6.22 | 111 | 4.37 | | | 6827 | 15347 | 8351 | 18774 | 403,0 | 24.58 | 3,60 | 7.94 | ✓ |
| RS 4200 - 060 - A | 60 | 2.36 | 184 | 7.24 | 124 | 4.88 | | | 7024 | 15790 | 8673 | 19498 | 491,0 | 29.95 | 3,93 | 8.66 | ✓ |
| RS 4200 - 072 - A | 72 | 2.83 | 208 | 8.19 | 136 | 5.35 | | | 7158 | 16091 | 8893 | 19992 | 572,0 | 34.89 | 4,20 | 9.26 | ✓ |
| RS 4200 - 077 - A | 77 | 3.03 | 218 | 8.58 | 141 | 5.55 | | | 7204 | 16195 | 8970 | 20165 | 606,0 | 36.97 | 4,35 | 9.59 | ✓ |
| RS 4200 - 097 - A | 97 | 3.82 | 258 | 10.16 | 161 | 6.34 | | | 7350 | 16524 | 9212 | 20709 | 741,0 | 45.20 | 4,85 | 10.69 | ✓ |
| RS 4200 - 122 - A | 122 | 4.80 | 308 | 12.13 | 186 | 7.32 | 7476 | 16807 | 9423 | 21184 | 910,0 | 55.51 | 5,47 | 12.06 | ✓ | | |



HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

p. 203

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easu MANIFOLD p. 241



OSAS



USAS



OPAS



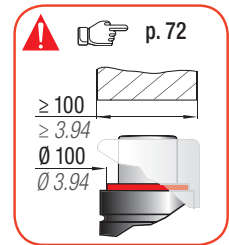
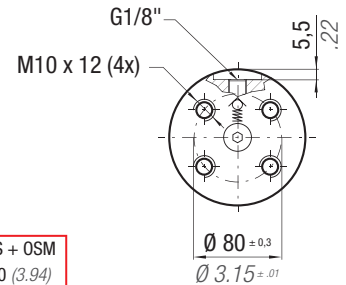
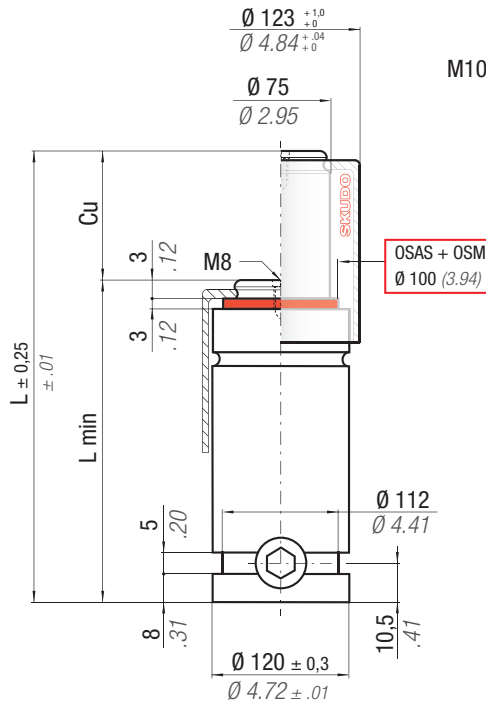
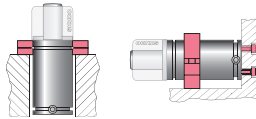
SKUDO

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu

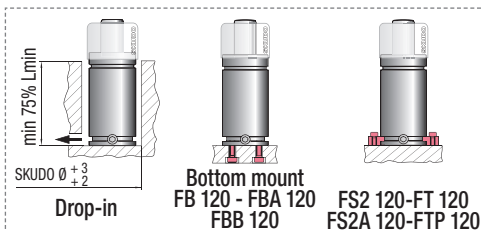


| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 44,18 cm ² 6.848 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV06600C |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | | |
|-------------------|--|-----|------|-----|-------|-------|------|----------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|------|-------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RS 6600 - 013 - A | | 13 | 0.51 | 100 | 3.94 | 87 | 3.43 | 6630 ± 5% | 14904 | 8535 | 19187 | 9705 | 21818 | 300,0 | 18.30 | 5,06 | 11.16 | ✓ |
| RS 6600 - 016 - A | | 16 | 0.63 | 106 | 4.17 | 90 | 3.54 | | | 8812 | 19811 | 10127 | 22766 | 332,0 | 20.25 | 5,17 | 11.40 | ✓ |
| RS 6600 - 022 - A | | 22 | 0.87 | 118 | 4.65 | 96 | 3.78 | | | 9265 | 20829 | 10824 | 24333 | 396,0 | 24.16 | 5,42 | 11.95 | ✓ |
| RS 6600 - 029 - A | | 29 | 1.14 | 132 | 5.20 | 103 | 4.06 | | | 9671 | 21742 | 11458 | 25759 | 471,0 | 28.73 | 5,69 | 12.54 | ✓ |
| RS 6600 - 035 - A | | 35 | 1.38 | 144 | 5.67 | 109 | 4.29 | | | 9946 | 22360 | 11892 | 26734 | 535,0 | 32.64 | 5,93 | 13.07 | ✓ |
| RS 6600 - 047 - A | | 47 | 1.85 | 168 | 6.61 | 121 | 4.76 | | | 10362 | 23296 | 12557 | 28229 | 663,0 | 40.44 | 6,40 | 14.11 | ✓ |
| RS 6600 - 060 - A | | 60 | 2.36 | 194 | 7.64 | 134 | 5.28 | | | 10684 | 24018 | 13077 | 29398 | 802,0 | 48.92 | 6,90 | 15.21 | ✓ |
| RS 6600 - 072 - A | | 72 | 2.83 | 218 | 8.58 | 146 | 5.75 | | | 10905 | 24515 | 13438 | 30210 | 930,0 | 56.73 | 7,40 | 16.31 | ✓ |
| RS 6600 - 077 - A | | 77 | 3.03 | 228 | 8.98 | 151 | 5.94 | | | 10982 | 24689 | 13564 | 30493 | 983,0 | 59.96 | 7,60 | 16.76 | ✓ |
| RS 6600 - 097 - A | | 97 | 3.82 | 268 | 10.55 | 171 | 6.73 | | | 11229 | 25243 | 13970 | 31406 | 1197,0 | 73.02 | 8,40 | 18.52 | ✓ |
| RS 6600 - 122 - A | | 122 | 4.80 | 318 | 12.52 | 196 | 7.72 | 11443 | 25726 | 14326 | 32206 | 1464,0 | 89.30 | 9,40 | 20.72 | ✓ | | |

WARNING REMOVE SKUDO

Upside down mounting

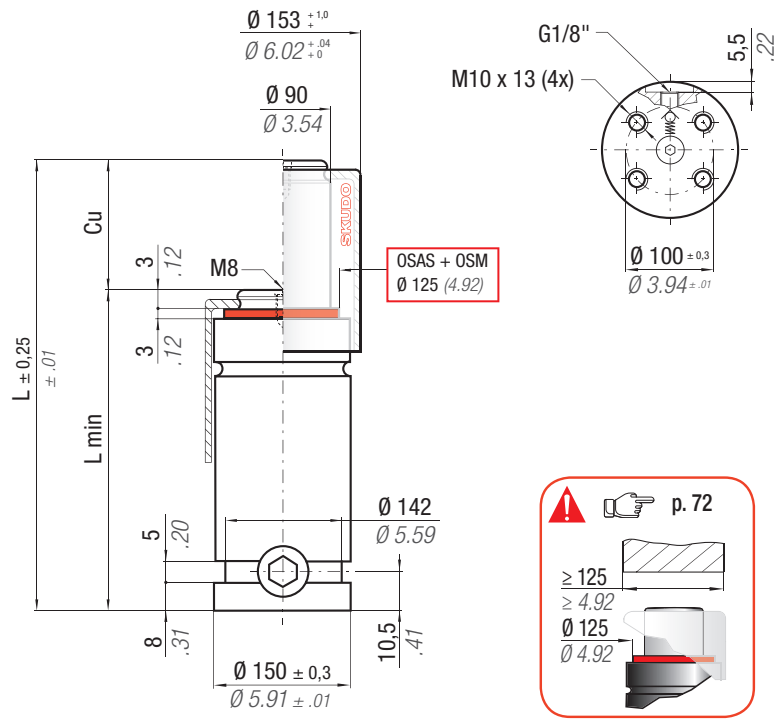


HOW TO ORDER

p. 73

INSTALLATION GUIDELINE

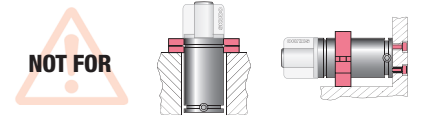
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu



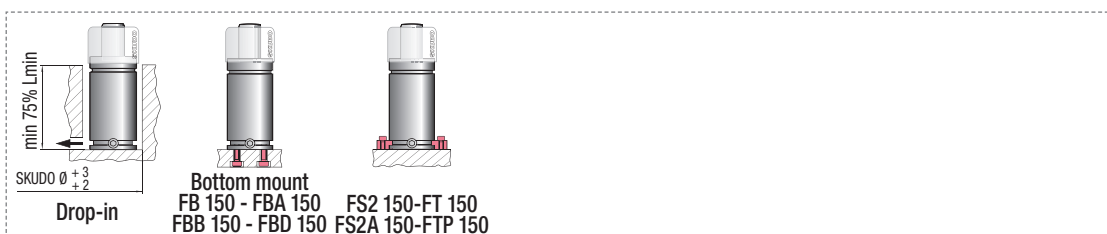
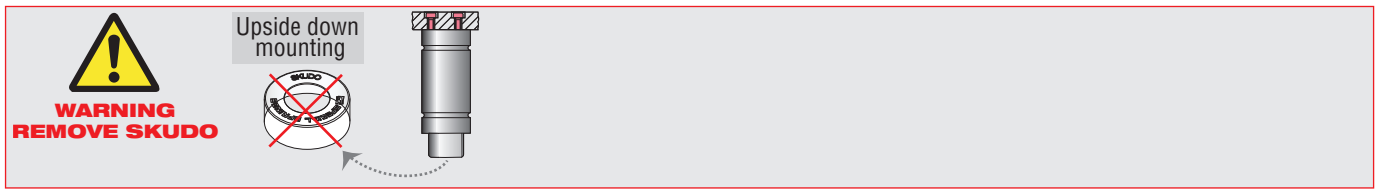
ACTIVE SAFETY

- OSAS
- USAS
- OPAS
- SKUDO

RS

| | | | | | | | | | |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 63,62 cm ² 9.864 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV09500C |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

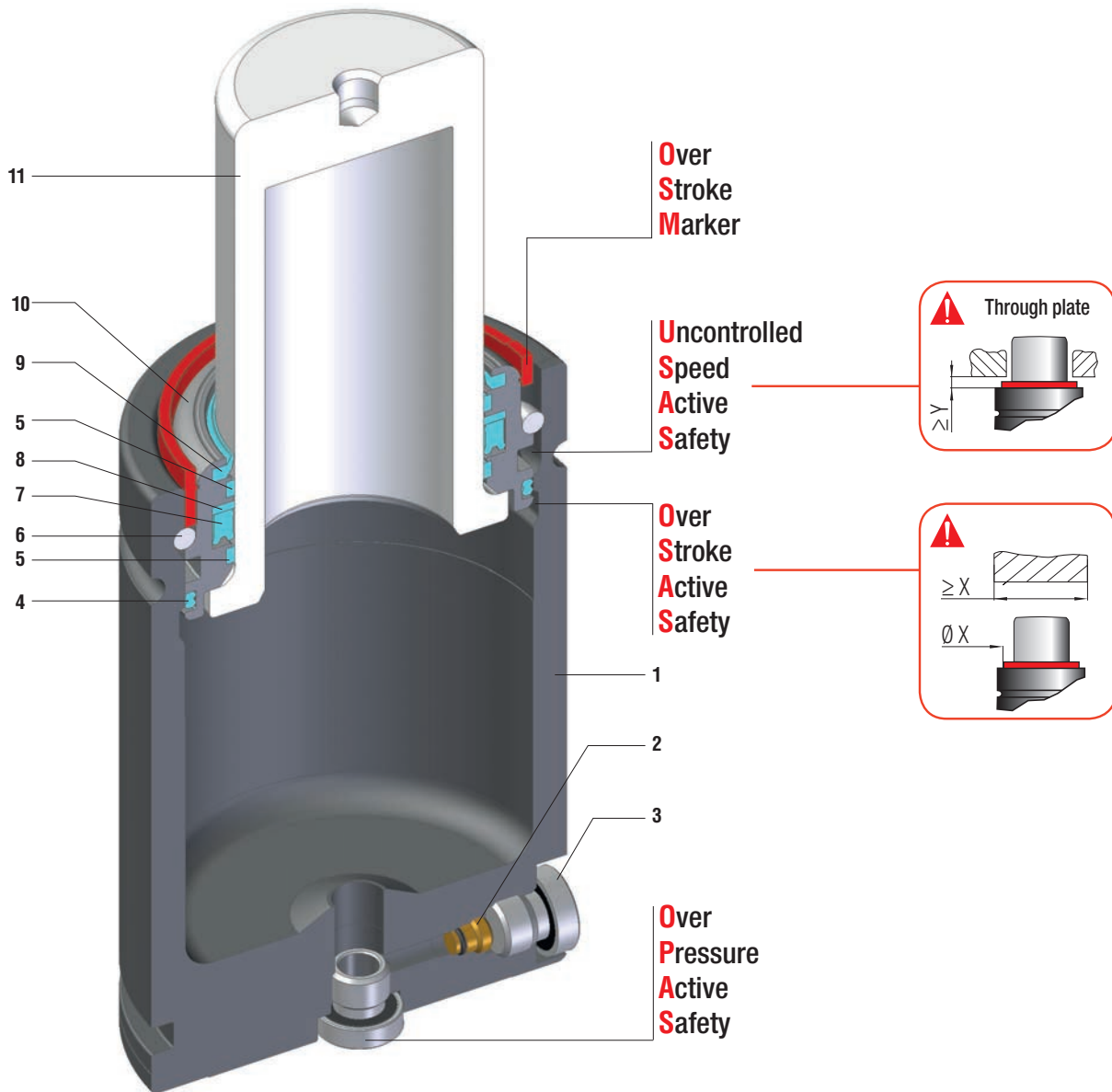
| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | Maintenance kit | | |
|-------------------|-----|------|-----|-------|-------|------|-------------------------------------------------------------------------|----|----------------------------------|-------|------------------------------------|-------|-----------------|-----------------|-----------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RS 9500 - 016 - A | 16 | 0.63 | 116 | 4.57 | 100 | 3.94 | 9540 21446 $\pm 5\%$ 150 bar 2175 psi + 20 °C +68 °F | | 12388 | 27849 | 14124 | 31752 | 517,0 | 31.54 | 9,51 | 20.97 | ✓ |
| RS 9500 - 022 - A | 22 | 0.87 | 128 | 5.04 | 106 | 4.17 | | | 12985 | 29192 | 15035 | 33800 | 614,0 | 37.45 | 9,90 | 21.83 | ✓ |
| RS 9500 - 029 - A | 29 | 1.14 | 142 | 5.59 | 113 | 4.45 | | | 13523 | 30401 | 15867 | 35670 | 727,0 | 44.35 | 10,30 | 22.71 | ✓ |
| RS 9500 - 035 - A | 35 | 1.38 | 154 | 6.06 | 119 | 4.69 | | | 13888 | 31222 | 16439 | 36956 | 823,0 | 50.20 | 10,70 | 23.59 | ✓ |
| RS 9500 - 047 - A | 47 | 1.85 | 178 | 7.01 | 131 | 5.16 | | | 14443 | 32470 | 17317 | 38930 | 1017,0 | 62.04 | 11,40 | 25.13 | ✓ |
| RS 9500 - 060 - A | 60 | 2.36 | 204 | 8.03 | 144 | 5.67 | | | 14873 | 33436 | 18004 | 40475 | 1226,0 | 74.79 | 12,20 | 26.90 | ✓ |
| RS 9500 - 072 - A | 72 | 2.83 | 228 | 8.98 | 156 | 6.14 | | | 15170 | 34104 | 18483 | 41551 | 1420,0 | 86.62 | 13,00 | 28.66 | ✓ |
| RS 9500 - 077 - A | 77 | 3.03 | 238 | 9.37 | 161 | 6.34 | | | 15274 | 34337 | 18651 | 41929 | 1500,3 | 91.52 | 13,30 | 29.32 | ✓ |
| RS 9500 - 097 - A | 97 | 3.82 | 278 | 10.94 | 181 | 7.13 | | | 15606 | 35083 | 19191 | 43143 | 1823,0 | 111.20 | 14,60 | 32.19 | ✓ |
| RS 9500 - 122 - A | 122 | 4.80 | 328 | 12.91 | 206 | 8.11 | | | 15896 | 35735 | 19666 | 44211 | 2226,0 | 135.79 | 16,10 | 35.49 | ✓ |



HOW TO ORDER p. 73

INSTALLATION GUIDELINE p. 203

| | | |
|-----|--|--|
| FCA | | |
| | | |



Minima altezza, massima forza, collegabili G1/8 - Minimum height, maximum force, hose cylinders with G1/8 charging port
 Minimale Höhe, maximale Kraft, Gdf. mit G1/8 Öffnung verbindbar - Hauteur minimale, force maximale, cylindres raccordés avec trou G1/8 gaz
 Mínima altura, máxima fuerza, cilindros conectados con agujero G1/8 gas - Altura mínima, força máxima, cilindros conectados com furo G1/8 gás

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Guide ring | 9 | Rod wiper |
| 2 | Valve | 6 | Retaining ring | 10 | Bush |
| 3 | Plug | 7 | Rod seal | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Back-up ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | | | |
|---------|--------|------|------------------|-------------|------------------|------|------|------|------|-------|----|---|---|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW | | |
| RF 750 | 45 | 1.77 | 10 - 125 | 0.39 - 4.92 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ | | |
| RF 1000 | 50 | 1.97 | 13 - 125 | 0.51 - 4.92 | 920 | 2068 | ✓ | ✓ | ✓ | - | ✓ | | |
| RF 1200 | 50 | 1.97 | 13 - 125 | 0.51 - 4.92 | 1060 | 2383 | ✓ | ✓ | ✓ | - | ✓ | | |
| RF 1500 | 63 | 2.48 | 13 - 125 | 0.51 - 4.92 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ | | |
| RF 2400 | 75 | 2.95 | 16 - 125 | 0.63 - 4.92 | 2385 | 5362 | ✓ | ✓ | ✓ | - | ✓ | | |
| | 95 | 3.74 | RV series | | | | | | | | | ✓ | ✓ |
| | 120 | 4.72 | | | | | | | | | | ✓ | ✓ |
| | 150 | 5.91 | | | | | | | | | | ✓ | ✓ |
| | 150 | 5.91 | | | | | | | | | | ✓ | ✓ |
| | 195 | 7.68 | | | | | | | | | | ✓ | ✓ |

Built-in as standard
 Optional upon request

HOW TO ORDER



Available versions

| | | | | | |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <p>RF 2400-050-A Standard code</p> <p> Self contained</p> | <p>RF 2400-050-A-W Add "-W" to standard code</p> <p> Self contained + Secondary wiper</p> | <p>RF 2400-050-A-N Add "-N" to standard code</p> <p> Linkable</p> | <p>RF 2400-050-A-N-W Add "-N-W" to standard code</p> <p> Linkable + Secondary wiper</p> | <p>RF 2400-050-A-E Add "-E" to standard code</p> <p> Easy Manifold</p> | <p>RF 2400-050-A-E-W Add "-E-W" to standard code</p> <p> Easy Manifold + Secondary wiper</p> |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|

RF 750

linkable G1/8"

075.90.60 (FCA)



OSAS + OSM

OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* F_{1i} =

Isothermal end force at 100% Cu



p. 18



** F_{1p} =

Polytrophic end force at 100% Cu



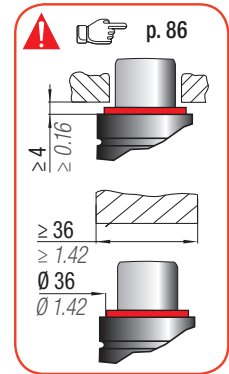
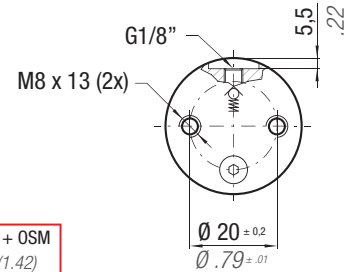
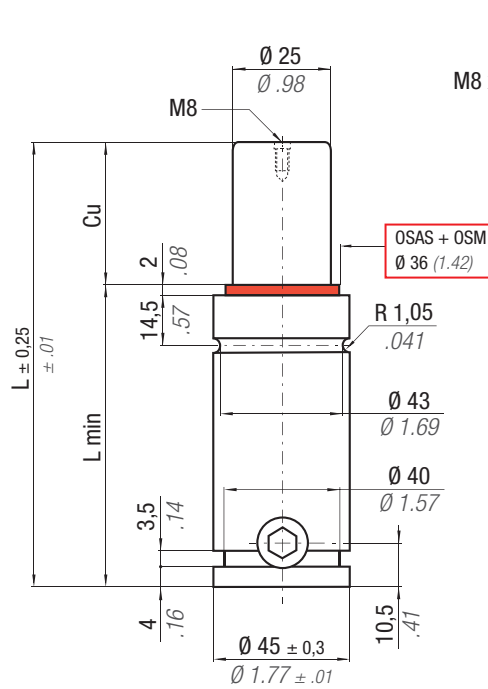
OSAS



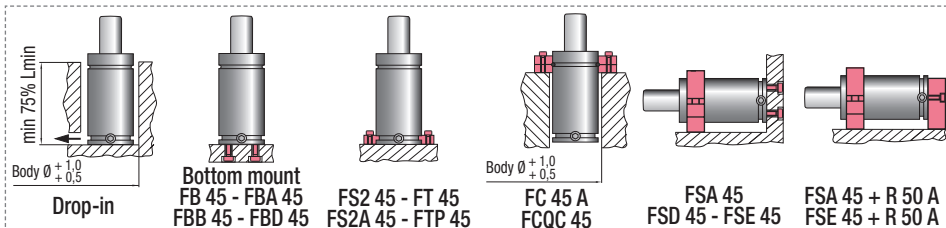
USAS



OPAS



| CODE | N ₂ | | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00750C | | | | | | | | |
|------------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------------------------------------|----------------------|---------------------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| | °F 32 - 176 | °C 0 - 80 | | | | | | | | | | | | | | | |
| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RF 750 - 010 - A | 10 | 0.39 | 62 | 2.44 | 52 | 2.05 | 740 ± 5% 1664 150 bar 2175psi + 20 °C +68 °F | | 1091 | 2452 | 1298 | 2918 | 18,0 | 1.10 | 0,47 | 1.04 | ✓ |
| RF 750 - 013 - A | 13 | 0.51 | 68 | 2.68 | 55 | 2.17 | | | 1125 | 2530 | 1354 | 3044 | 21,0 | 1.28 | 0,48 | 1.06 | ✓ |
| RF 750 - 016 - A | 16 | 0.63 | 74 | 2.91 | 58 | 2.28 | | | 1151 | 2587 | 1395 | 3136 | 25,0 | 1.53 | 0,50 | 1.10 | ✓ |
| RF 750 - 019 - A | 19 | 0.75 | 80 | 3.15 | 61 | 2.40 | | | 1170 | 2631 | 1426 | 3206 | 29,0 | 1.77 | 0,52 | 1.15 | ✓ |
| RF 750 - 025 - A | 25 | 0.98 | 92 | 3.62 | 67 | 2.64 | | | 1198 | 2694 | 1471 | 3307 | 37,0 | 2.26 | 0,56 | 1.23 | ✓ |
| RF 750 - 032 - A | 32 | 1.26 | 106 | 4.17 | 74 | 2.91 | | | 1220 | 2742 | 1506 | 3386 | 46,0 | 2.81 | 0,61 | 1.34 | ✓ |
| RF 750 - 038 - A | 38 | 1.50 | 118 | 4.65 | 80 | 3.15 | | | 1232 | 2771 | 1527 | 3433 | 53,0 | 3.23 | 0,65 | 1.43 | ✓ |
| RF 750 - 050 - A | 50 | 1.97 | 142 | 5.59 | 92 | 3.62 | | | 1250 | 2810 | 1556 | 3498 | 68,0 | 4.15 | 0,72 | 1.59 | ✓ |
| RF 750 - 063 - A | 63 | 2.48 | 168 | 6.61 | 105 | 4.13 | | | 1262 | 2838 | 1577 | 3545 | 85,0 | 5.19 | 0,81 | 1.79 | ✓ |
| RF 750 - 075 - A | 75 | 2.95 | 192 | 7.56 | 117 | 4.61 | | | 1270 | 2855 | 1590 | 3574 | 100,0 | 6.10 | 0,88 | 1.94 | ✓ |
| RF 750 - 080 - A | 80 | 3.15 | 202 | 7.95 | 122 | 4.80 | | | 1273 | 2861 | 1594 | 3583 | 107,0 | 6.53 | 0,92 | 2.03 | ✓ |
| RF 750 - 100 - A | 100 | 3.94 | 242 | 9.53 | 142 | 5.59 | | | 1281 | 2879 | 1607 | 3613 | 132,0 | 8.05 | 1,04 | 2.29 | ✓ |
| RF 750 - 125 - A | 125 | 4.92 | 292 | 11.50 | 167 | 6.57 | | | 1287 | 2894 | 1618 | 3637 | 164,0 | 10.00 | 1,21 | 2.67 | ✓ |



HOW TO ORDER

Hand icon p. 87

INSTALLATION GUIDELINE

Hand icon p. 203



SW

ACTIVE SAFETY


OSAS

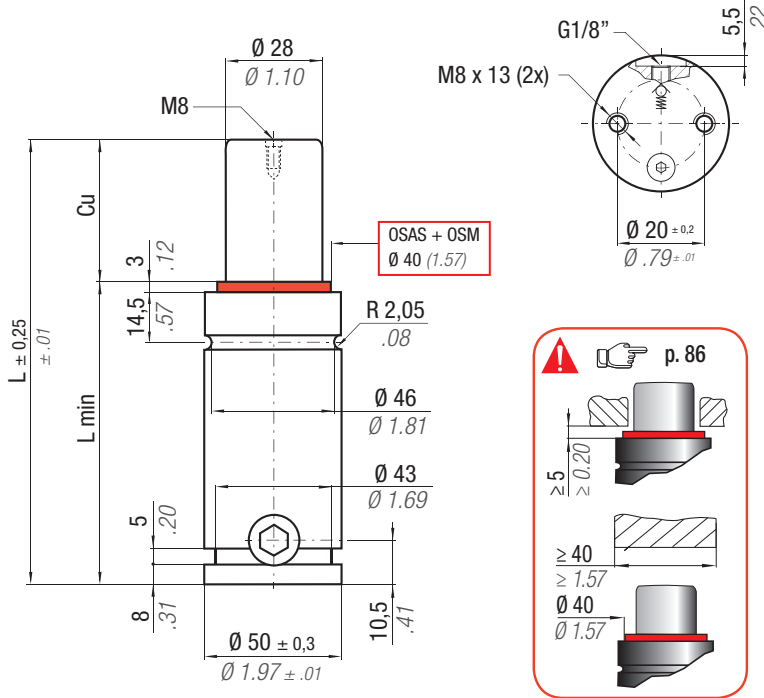


USAS



OPAS

RF



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

* F_{1i} =

Isothermal end force at 100% Cu

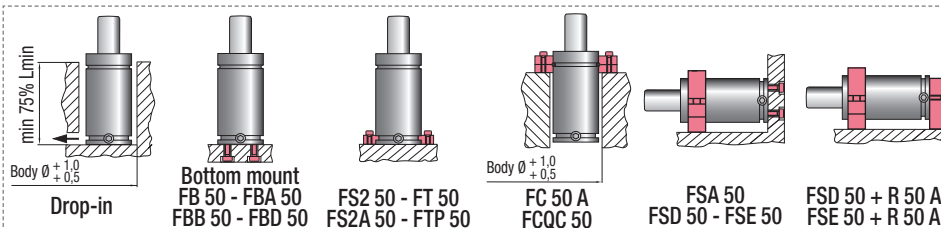
p. 18

** F_{1p} =

Polytropic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 6,15 cm ² 0.953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C |
|--|--------------------------------------|------------------------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | | ~lb | | PED 2014/68/EU |
|-------------------|-----|------|-----|-------|-------|------|-----------------------------------------------------------|----|-------------------|------|--------------------|------|-----------------|-----------------|------|------|-----|--|-------------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | | | |
| RF 1000 - 013 - A | 13 | 0.51 | 74 | 2.91 | 61 | 2.40 | 920 2068 ± 5% 150 bar 2175 psi + 20 °C +68 °F | | 1349 | 3033 | 1599 | 3595 | 29,0 | 1.77 | 0,65 | 1,43 | ✓ | | |
| RF 1000 - 016 - A | 16 | 0.63 | 80 | 3.15 | 64 | 2.52 | | | 1386 | 3117 | 1658 | 3727 | 34,0 | 2.07 | 0,68 | 1.50 | ✓ | | |
| RF 1000 - 019 - A | 19 | 0.75 | 86 | 3.39 | 67 | 2.64 | | | 1416 | 3183 | 1705 | 3833 | 39,0 | 2.38 | 0,70 | 1.54 | ✓ | | |
| RF 1000 - 025 - A | 25 | 0.98 | 98 | 3.86 | 73 | 2.87 | | | 1460 | 3282 | 1775 | 3990 | 48,0 | 2.93 | 0,75 | 1.65 | ✓ | | |
| RF 1000 - 032 - A | 32 | 1.26 | 112 | 4.41 | 80 | 3.15 | | | 1495 | 3361 | 1832 | 4118 | 59,0 | 3.60 | 0,81 | 1.79 | ✓ | | |
| RF 1000 - 038 - A | 38 | 1.50 | 124 | 4.88 | 86 | 3.39 | | | 1517 | 3410 | 1868 | 4199 | 69,0 | 4.21 | 0,85 | 1.87 | ✓ | | |
| RF 1000 - 050 - A | 50 | 1.97 | 148 | 5.83 | 98 | 3.86 | | | 1548 | 3479 | 1919 | 4314 | 88,0 | 5.37 | 0,95 | 2.09 | ✓ | | |
| RF 1000 - 063 - A | 63 | 2.48 | 174 | 6.85 | 111 | 4.37 | | | 1570 | 3528 | 1955 | 4395 | 108,0 | 6.59 | 1,05 | 2.31 | ✓ | | |
| RF 1000 - 075 - A | 75 | 2.95 | 198 | 7.80 | 123 | 4.84 | | | 1584 | 3560 | 1978 | 4447 | 127,0 | 7.75 | 1,15 | 2.54 | ✓ | | |
| RF 1000 - 080 - A | 80 | 3.15 | 208 | 8.19 | 128 | 5.04 | | | 1589 | 3571 | 1986 | 4465 | 135,0 | 8.24 | 1,19 | 2.62 | ✓ | | |
| RF 1000 - 100 - A | 100 | 3.94 | 248 | 9.76 | 148 | 5.83 | | | 1603 | 3604 | 2011 | 4521 | 166,0 | 10.13 | 1,35 | 2.98 | ✓ | | |
| RF 1000 - 125 - A | 125 | 4.92 | 298 | 11.73 | 173 | 6.81 | | | 1616 | 3632 | 2031 | 4566 | 205,0 | 12.51 | 1,55 | 3.42 | ✓ | | |



HOW TO ORDER

p. 87

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



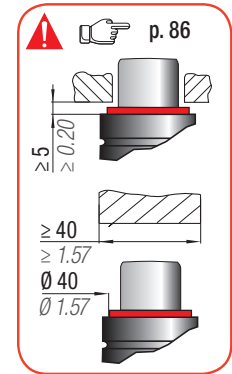
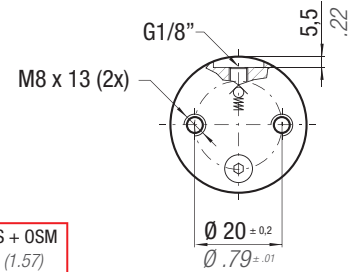
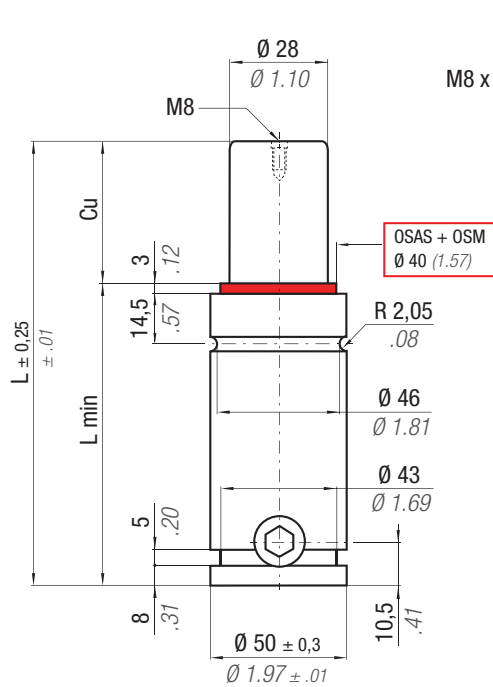
OSAS



USAS

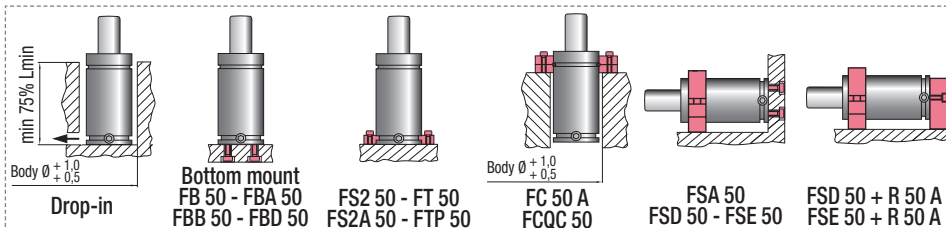


OPAS



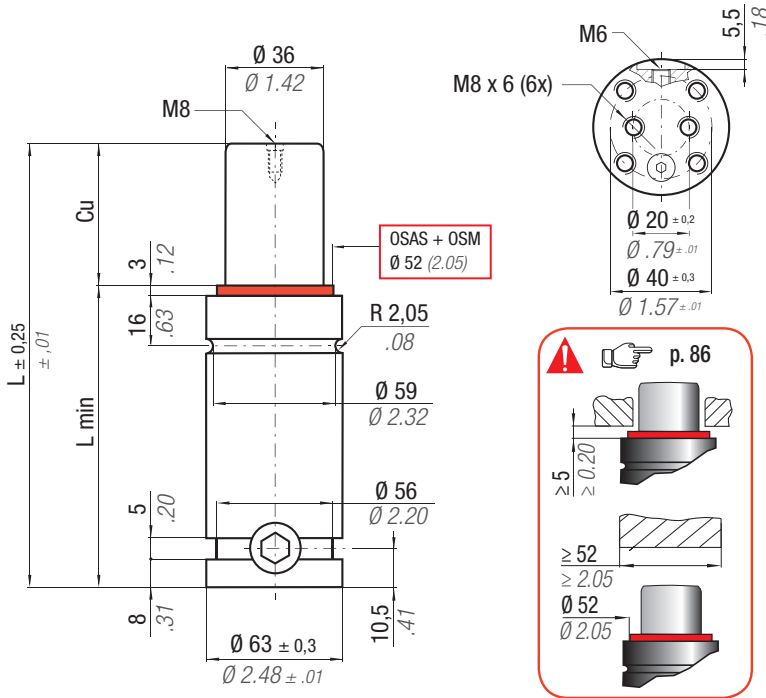
| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 170 bar 2465 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-------------------|-----|------|-----|-------|-------|------|----------------------------------------------------------------|----|-------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RF 1200 - 013 - A | 13 | 0.51 | 74 | 2.91 | 61 | 2.40 | 1060 ± 5% 2383 170 bar 2465 psi + 20 °C +68 °F | | 1553 | 3490 | 1802 | 4052 | 29,0 | 1.77 | 0,65 | 1.43 | ✓ |
| RF 1200 - 016 - A | 16 | 0.63 | 80 | 3.15 | 64 | 2.52 | | | 1597 | 3591 | 1869 | 4202 | 34,0 | 2.07 | 0,68 | 1.50 | ✓ |
| RF 1200 - 019 - A | 19 | 0.75 | 86 | 3.39 | 67 | 2.64 | | | 1633 | 3671 | 1922 | 4321 | 39,0 | 2.38 | 0,70 | 1.54 | ✓ |
| RF 1200 - 025 - A | 25 | 0.98 | 98 | 3.86 | 73 | 2.87 | | | 1685 | 3789 | 2001 | 4500 | 48,0 | 2.93 | 0,75 | 1.65 | ✓ |
| RF 1200 - 032 - A | 32 | 1.26 | 112 | 4.41 | 80 | 3.15 | | | 1728 | 3884 | 2066 | 4644 | 59,0 | 3.60 | 0,81 | 1.79 | ✓ |
| RF 1200 - 038 - A | 38 | 1.50 | 124 | 4.88 | 86 | 3.39 | | | 1754 | 3943 | 2106 | 4735 | 69,0 | 4.21 | 0,85 | 1.87 | ✓ |
| RF 1200 - 050 - A | 50 | 1.97 | 148 | 5.83 | 98 | 3.86 | | | 1791 | 4026 | 2163 | 4863 | 88,0 | 5.37 | 0,95 | 2.09 | ✓ |
| RF 1200 - 063 - A | 63 | 2.48 | 174 | 6.85 | 111 | 4.37 | | | 1817 | 4085 | 2204 | 4954 | 108,0 | 6.59 | 1,05 | 2.31 | ✓ |
| RF 1200 - 075 - A | 75 | 2.95 | 198 | 7.80 | 123 | 4.84 | | | 1834 | 4124 | 2230 | 5013 | 127,0 | 7.75 | 1,15 | 2.54 | ✓ |
| RF 1200 - 080 - A | 80 | 3.15 | 208 | 8.19 | 128 | 5.04 | | | 1840 | 4137 | 2239 | 5033 | 135,0 | 8.24 | 1,19 | 2.62 | ✓ |
| RF 1200 - 100 - A | 100 | 3.94 | 248 | 9.76 | 148 | 5.83 | | | 1858 | 4177 | 2267 | 5096 | 166,0 | 10.13 | 1,35 | 2.98 | ✓ |
| RF 1200 - 125 - A | 125 | 4.92 | 298 | 11.73 | 173 | 6.81 | | | 1873 | 4210 | 2290 | 5148 | 205,0 | 12.51 | 1,55 | 3.42 | ✓ |



HOW TO ORDER
 p. 87

INSTALLATION GUIDELINE
 p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} =

Isothermal end force at 100% Cu



p. 18

** F_{1p} =

Polytrophic end force at 100% Cu



ACTIVE SAFETY



OSAS



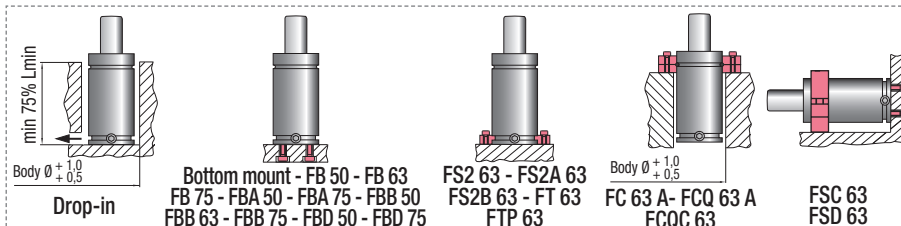
USAS



OPAS

RF

| | | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33 \% / ^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1.578 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01500C | | | | | | |
|--------------------------|-------------------|-------------------------------|-----------------------------|-----------------------------------------|-----------------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|----------------------|-----------------|-------|------|------------|---|
| CODE | NEW | Cu | L | L min | F₀ | | F_{1i} * | | F_{1p} ** | | V₀ | | | | | |
| PHASING OUT from 11/2019 | | mm inch | mm inch | mm inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | |
| RF 1500 - 013 - A | RF 1500 - 013 - B | 13 0.51 | 80 3.15 | 67 2.64 | 1530 3440 $\pm 5\%$ 150 bar 2175 psi | | 2152 | 4838 | 2521 | 5667 | 53,0 | 3.23 | 1,15 | 2.54 | ✓ | |
| RF 1500 - 016 - A | RF 1500 - 016 - B | 16 0.63 | 86 3.39 | 70 2.76 | | | 2213 | 4975 | 2616 | 5881 | 61,0 | 3.72 | 1,18 | 2.60 | ✓ | |
| RF 1500 - 019 - A | RF 1500 - 019 - B | 19 0.75 | 92 3.62 | 73 2.87 | | | 2262 | 5085 | 2693 | 6054 | 69,0 | 4.21 | 1,22 | 2.69 | ✓ | |
| RF 1500 - 025 - A | RF 1500 - 025 - B | 25 0.98 | 104 4.09 | 79 3.11 | | | 2336 | 5252 | 2811 | 6319 | 85,0 | 5.19 | 1,29 | 2.84 | ✓ | |
| RF 1500 - 032 - A | RF 1500 - 032 - B | 32 1.26 | 118 4.65 | 86 3.39 | | | 2397 | 5389 | 2908 | 6537 | 103,0 | 6.28 | 1,37 | 3.02 | ✓ | |
| RF 1500 - 038 - A | RF 1500 - 038 - B | 38 1.50 | 130 5.12 | 92 3.62 | | | 2435 | 5475 | 2971 | 6679 | 119,0 | 7.26 | 1,44 | 3.17 | ✓ | |
| RF 1500 - 050 - A | RF 1500 - 050 - B | 50 1.97 | 154 6.06 | 104 4.09 | | | 2490 | 5597 | 3059 | 6877 | 151,0 | 9.21 | 1,58 | 3.48 | ✓ | |
| RF 1500 - 063 - A | RF 1500 - 063 - B | 63 2.48 | 180 7.09 | 117 4.61 | | | 2529 | 5685 | 3123 | 7021 | 186,0 | 11.35 | 1,74 | 3.84 | ✓ | |
| RF 1500 - 075 - A | RF 1500 - 075 - B | 75 2.95 | 204 8.03 | 129 5.08 | | | + 20 °C +68 °F | 2555 | 5743 | 3165 | 7115 | 217,0 | 13.24 | 1,88 | 4.14 | ✓ |
| RF 1500 - 080 - A | RF 1500 - 080 - B | 80 3.15 | 214 8.43 | 134 5.28 | | | 2563 | 5763 | 3180 | 7149 | 231,0 | 14.09 | 1,94 | 4.28 | ✓ | |
| RF 1500 - 100 - A | RF 1500 - 100 - B | 100 3.94 | 254 10.00 | 154 6.06 | 2590 | 5824 | 3224 | 7248 | 284,0 | 17.32 | 2,18 | 4.81 | ✓ | | | |
| RF 1500 - 125 - A | RF 1500 - 125 - B | 125 4.92 | 304 11.97 | 179 7.05 | 2613 | 5875 | 3262 | 7333 | 350,0 | 21.35 | 2,47 | 5.45 | ✓ | | | |



HOW TO ORDER

p. 87

INSTALLATION GUIDELINE

p. 203

RF 2400

linkable G1/8"

075.90.60 (FCA)



OSAS + OSM =

OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

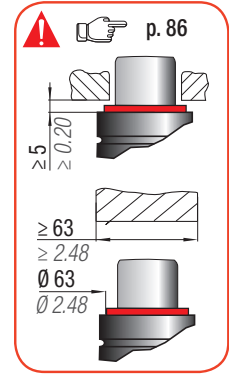
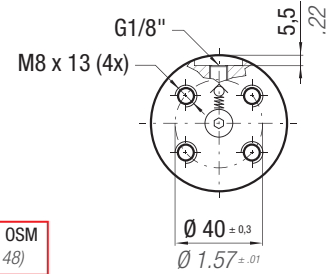
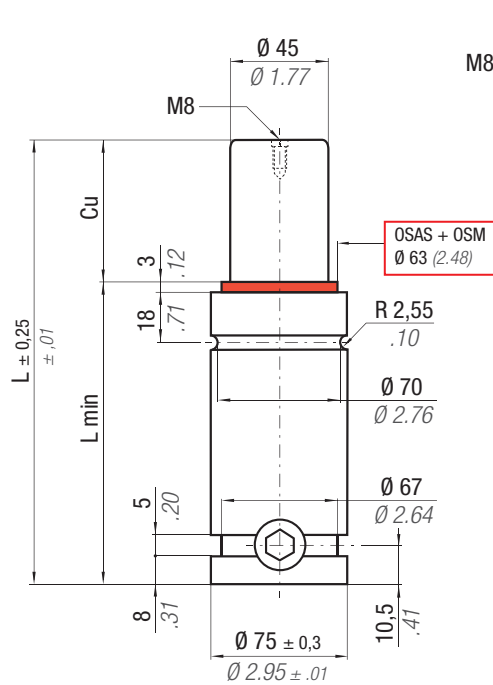
ACTIVE SAFETY

easyl MANIFOLD p. 241

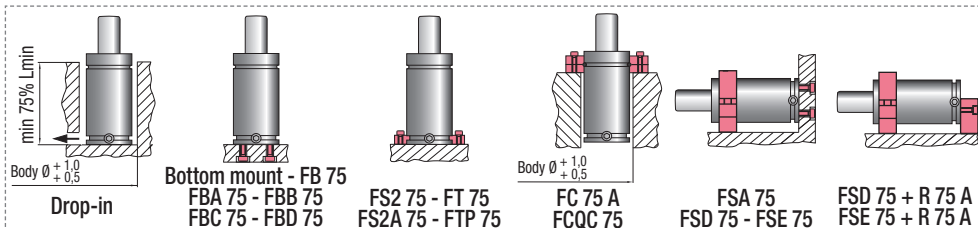


* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytropic end force at 100% Cu



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2,465 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV02400D | Vo | | PED | | | | | | | | | | | | | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|------------|------|----------------|------|------|------|------|-------|-------|-------|------|------|---|
| | | | | | | | | | | | mm | inch | ~Kg | ~lb | 2014/68/EU | | | | | | | | | | | | |
| RF 2400 - 016 - A | | | | | | | | | | | 16 | 0.63 | 87 | 3.43 | 71 | 2.80 | 2385 | 5362 | 3493 | 7852 | 4142 | 9312 | 93,0 | 5.67 | 1,68 | 3.70 | ✓ |
| RF 2400 - 019 - A | | | | | | | | | | | 19 | 0.75 | 93 | 3.66 | 74 | 2.91 | ± 5% | | 3574 | 8035 | 4271 | 9602 | 105,0 | 6.41 | 1,73 | 3.81 | ✓ |
| RF 2400 - 025 - A | | | | | | | | | | | 25 | 0.98 | 105 | 4.13 | 80 | 3.15 | 150 bar | | 3698 | 8313 | 4468 | 10044 | 129,0 | 7.87 | 1,82 | 4.01 | ✓ |
| RF 2400 - 032 - A | | | | | | | | | | | 32 | 1.26 | 119 | 4.69 | 87 | 3.43 | 2175 psi | | 3800 | 8542 | 4632 | 10413 | 157,0 | 9.58 | 1,93 | 4.25 | ✓ |
| RF 2400 - 038 - A | | | | | | | | | | | 38 | 1.50 | 131 | 5.16 | 93 | 3.66 | + 20 °C +68 °F | | 3864 | 8687 | 4737 | 10649 | 181,0 | 11.04 | 2,03 | 4.48 | ✓ |
| RF 2400 - 050 - A | | | | | | | | | | | 50 | 1.97 | 155 | 6.10 | 105 | 4.13 | | | 3956 | 8893 | 4887 | 10986 | 230,0 | 14.03 | 2,21 | 4.87 | ✓ |
| RF 2400 - 063 - A | | | | | | | | | | | 63 | 2.48 | 181 | 7.13 | 118 | 4.65 | | | 4022 | 9042 | 4996 | 11231 | 282,0 | 17.20 | 2,42 | 5.34 | ✓ |
| RF 2400 - 075 - A | | | | | | | | | | | 75 | 2.95 | 205 | 8.07 | 130 | 5.12 | | | 4066 | 9140 | 5068 | 11393 | 330,0 | 20.13 | 2,61 | 5.75 | ✓ |
| RF 2400 - 080 - A | | | | | | | | | | | 80 | 3.15 | 215 | 8.46 | 135 | 5.31 | | | 4081 | 9174 | 5093 | 11450 | 350,0 | 21.35 | 2,69 | 5.93 | ✓ |
| RF 2400 - 100 - A | | | | | | | | | | | 100 | 3.94 | 255 | 10.04 | 155 | 6.10 | | | 4127 | 9278 | 5169 | 11620 | 431,0 | 26.29 | 3,00 | 6.61 | ✓ |
| RF 2400 - 125 - A | | | | | | | | | | | 125 | 4.92 | 305 | 12.01 | 180 | 7.09 | | | 4166 | 9365 | 5234 | 11767 | 532,0 | 32.45 | 3,40 | 7.50 | ✓ |



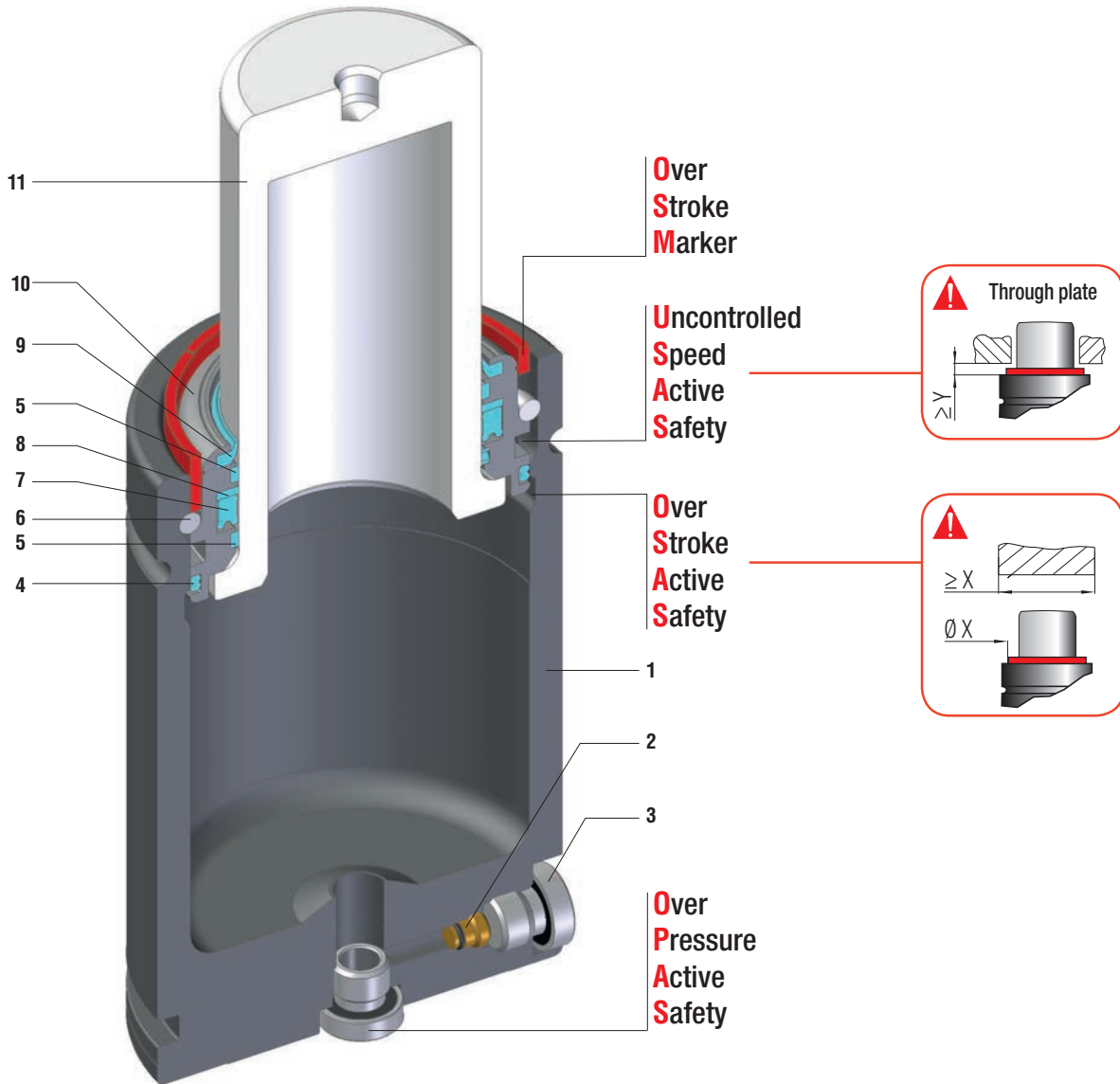
HOW TO ORDER p. 87

INSTALLATION GUIDELINE p. 203



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Minima altezza, massima forza, collegabili G1/8 - Minimum height, maximum force, hose cylinders with G1/8 charging port - Minimale Höhe, maximale Kraft, Gdf. mit G1/8 Öffnung verbindbar - Hauteur minimale, force maximale, cylindres raccordés avec trou G1/8 gaz - Mínima altura, máxima fuerza, cilindros conectados con agujero G1/8 gas - Altura mínima, força máxima, cilindros conectados com furo G1/8 gás

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Guide ring | 9 | Rod wiper |
| 2 | Valve | 6 | Retaining ring | 10 | Bush |
| 3 | Plug | 7 | Rod seal | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Back-up ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|---------|--------|------|-----------|-------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| RG 750 | 45 | 1.77 | 10 - 125 | 0.39 - 4.92 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ |
| RG 1000 | 50 | 1.97 | 10 - 125 | 0.39 - 4.92 | 920 | 2068 | ✓ | ✓ | ✓ | - | ✓ |
| RG 1500 | 63 | 2.48 | 10 - 125 | 0.39 - 4.92 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ |
| RG 2400 | 75 | 2.95 | 10 - 125 | 0.39 - 4.92 | 2385 | 5362 | ✓ | ✓ | ✓ | - | ✓ |
| RG 4200 | 95 | 3.74 | 16 - 125 | 0.63 - 4.92 | 4240 | 9532 | ✓ | ✓ | ✓ | - | ✓ |
| RG 6600 | 120 | 4.72 | 16 - 125 | 0.63 - 4.92 | 6630 | 14905 | ✓ | ✓ | ✓ | - | ✓ |

✓ Built-in as standard ✓ Optional upon request

RG

HOW TO ORDER



Available versions

| | | | | | |
|---------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| | | | | | |
| RG 2400-050-A Standard code | RG 2400-050-A-W Add "-W" to standard code | RG 2400-050-A-N Add "-N" to standard code | RG 2400-050-A-N-W Add "-N-W" to standard code | RG 2400-050-A-E Add "-E" to standard code | RG 2400-050-A-E-W Add "-E-W" to standard code |
| Self contained | Self contained + Secondary wiper | Linkable | Linkable + Secondary wiper | Easy Manifold | Easy Manifold + Secondary wiper |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



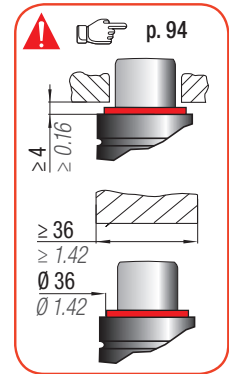
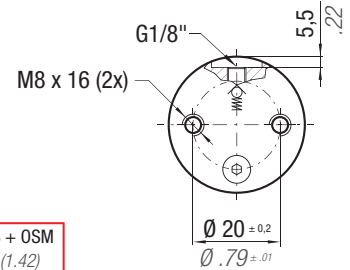
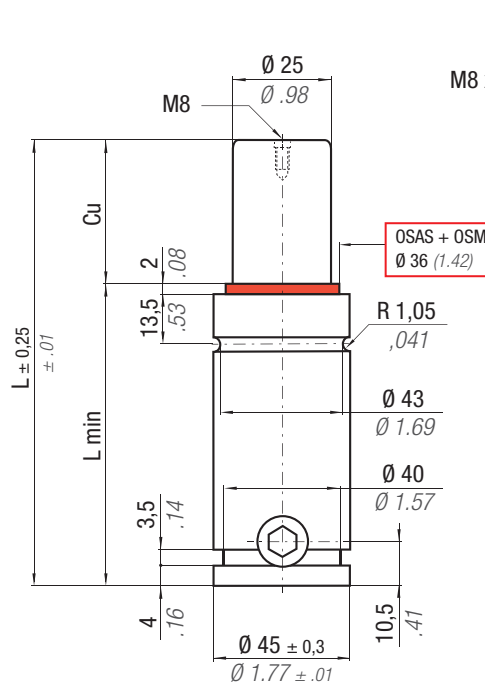
OSAS



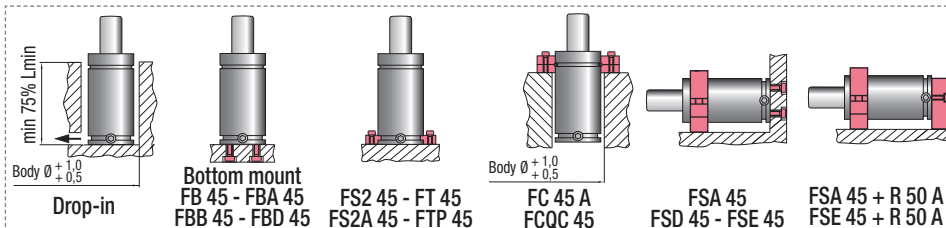
USAS



OPAS

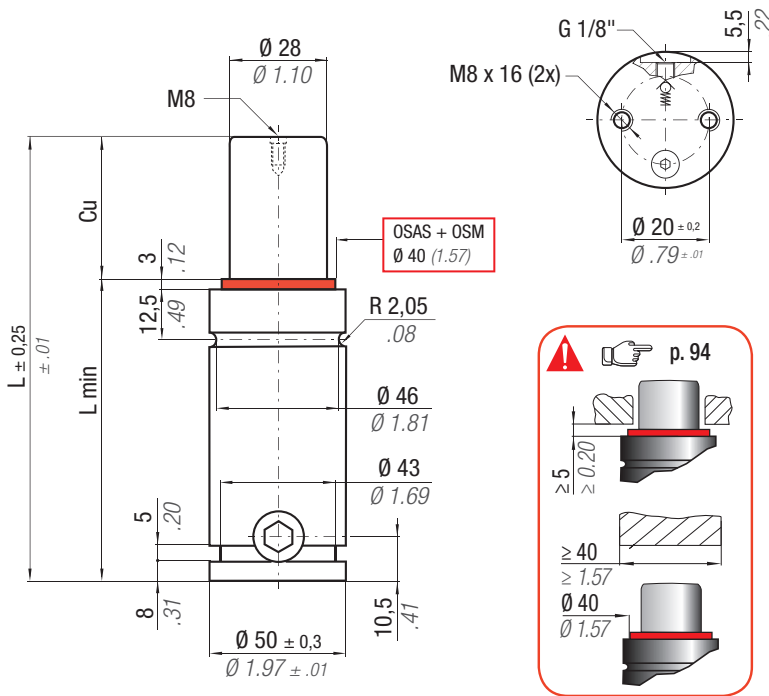


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00750C | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | | |
|------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|-------------------|------|---|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | ✓ |
| RG 750 - 010 - A | | | | | | | | | | | 10 | 0.39 | 67 | 2.64 | 57 | 2.24 | 740 ± 5% | 1664 | 1018 | 2288 | 1184 | 2662 | 21,0 | 1,28 | 0,50 | 1,10 | ✓ | ✓ |
| RG 750 - 013 - A | | | | | | | | | | | 13 | 0.51 | 73 | 2.87 | 60 | 2.36 | | | 1056 | 2373 | 1243 | 2795 | 24,0 | 1,46 | 0,52 | 1,15 | ✓ | ✓ |
| RG 750 - 016 - A | | | | | | | | | | | 16 | 0.63 | 79 | 3.11 | 63 | 2.48 | | | 1085 | 2439 | 1289 | 2899 | 28,0 | 1,71 | 0,54 | 1,19 | ✓ | ✓ |
| RG 750 - 019 - A | | | | | | | | | | | 19 | 0.75 | 85 | 3.35 | 66 | 2.60 | | | 1108 | 2492 | 1326 | 2982 | 32,0 | 1,95 | 0,56 | 1,23 | ✓ | ✓ |
| RG 750 - 025 - A | | | | | | | | | | | 25 | 0.98 | 97 | 3.82 | 72 | 2.83 | | | 1143 | 2570 | 1382 | 3107 | 40,0 | 2,44 | 0,60 | 1,32 | ✓ | ✓ |
| RG 750 - 032 - A | | | | | | | | | | | 32 | 1.26 | 111 | 4.37 | 79 | 3.11 | | | 1172 | 2634 | 1428 | 3210 | 49,0 | 2,99 | 0,64 | 1,41 | ✓ | ✓ |
| RG 750 - 038 - A | | | | | | | | | | | 38 | 1.50 | 123 | 4.84 | 85 | 3.35 | | | 1189 | 2674 | 1457 | 3275 | 56,0 | 3,42 | 0,68 | 1,50 | ✓ | ✓ |
| RG 750 - 050 - A | | | | | | | | | | | 50 | 1.97 | 147 | 5.79 | 97 | 3.82 | | | 1214 | 2730 | 1497 | 3366 | 72,0 | 4,39 | 0,76 | 1,68 | ✓ | ✓ |
| RG 750 - 063 - A | | | | | | | | | | | 63 | 2.48 | 173 | 6.81 | 110 | 4.33 | | | 1232 | 2770 | 1527 | 3432 | 88,0 | 5,37 | 0,84 | 1,85 | ✓ | ✓ |
| RG 750 - 075 - A | | | | | | | | | | | 75 | 2.95 | 197 | 7.76 | 122 | 4.80 | | | 1244 | 2796 | 1546 | 3475 | 103,0 | 6,28 | 0,92 | 2,03 | ✓ | ✓ |
| RG 750 - 080 - A | | | | | | | | | | | 80 | 3.15 | 207 | 8.15 | 127 | 5.00 | | | 1248 | 2805 | 1552 | 3490 | 110,0 | 6,71 | 0,95 | 2,09 | ✓ | ✓ |
| RG 750 - 100 - A | | | | | | | | | | | 100 | 3.94 | 247 | 9.72 | 147 | 5.79 | | | 1260 | 2832 | 1573 | 3535 | 135,0 | 8,24 | 1,08 | 2,38 | ✓ | ✓ |
| RG 750 - 125 - A | | | | | | | | | | | 125 | 4.92 | 297 | 11.69 | 172 | 6.77 | | | 1270 | 2855 | 1589 | 3573 | 167,0 | 10,19 | 1,24 | 2,73 | ✓ | ✓ |



HOW TO ORDER
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INSTALLATION GUIDELINE
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

* F_{1i} =

Isothermal end force at 100% Cu

p. 18

** F_{1p} = Polythropic end force at 100% Cu



ACTIVE SAFETY



OSAS



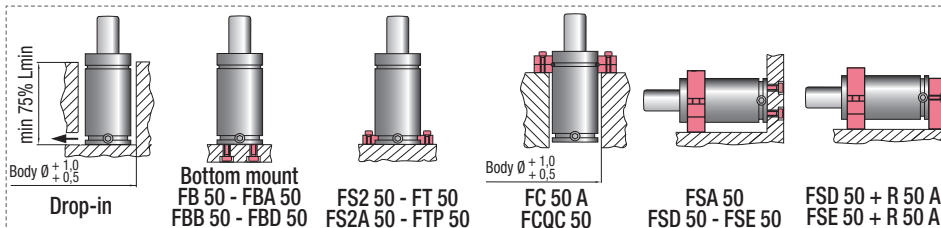
USAS



OPAS

RG

| CODE | N ₂ | | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 6,15 cm ² 0.953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C | | | | | | | | |
|-------------------|----------------|--------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|
| | °F 32 - 176 | °C 0 - 80 | | | | | | | ~Kg | ~lb | | | | | | | |
| | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RG 1000 - 010 - A | 10 | 0.39 | 72 | 2.83 | 62 | 2.44 | 920 ± 5% | 2068 | 1274 | 2863 | 1481 | 3329 | 26,0 | 1.59 | 0,67 | 1.48 | ✓ |
| RG 1000 - 013 - A | 13 | 0.51 | 78 | 3.07 | 65 | 2.56 | | | 1323 | 2973 | 1557 | 3500 | 31,0 | 1.89 | 0,70 | 1.54 | ✓ |
| RG 1000 - 016 - A | 16 | 0.63 | 84 | 3.31 | 68 | 2.68 | | | 1361 | 3059 | 1617 | 3635 | 35,0 | 2.14 | 0,72 | 1.59 | ✓ |
| RG 1000 - 019 - A | 19 | 0.75 | 90 | 3.54 | 71 | 2.80 | | | 1391 | 3128 | 1666 | 3745 | 40,0 | 2.44 | 0,75 | 1.65 | ✓ |
| RG 1000 - 025 - A | 25 | 0.98 | 102 | 4.02 | 77 | 3.03 | | | 1437 | 3232 | 1739 | 3909 | 50,0 | 3.05 | 0,79 | 1.74 | ✓ |
| RG 1000 - 032 - A | 32 | 1.26 | 116 | 4.57 | 84 | 3.31 | | | 1475 | 3316 | 1800 | 4047 | 61,0 | 3.72 | 0,85 | 1.87 | ✓ |
| RG 1000 - 038 - A | 38 | 1.50 | 128 | 5.04 | 90 | 3.54 | | | 1499 | 3369 | 1838 | 4132 | 70,0 | 4.27 | 0,90 | 1.98 | ✓ |
| RG 1000 - 050 - A | 50 | 1.97 | 152 | 5.98 | 102 | 4.02 | | | 1532 | 3445 | 1893 | 4256 | 89,0 | 5.43 | 0,99 | 2.18 | ✓ |
| RG 1000 - 063 - A | 63 | 2.48 | 178 | 7.01 | 115 | 4.53 | | | 1556 | 3499 | 1933 | 4346 | 109,0 | 6.65 | 1,10 | 2.43 | ✓ |
| RG 1000 - 075 - A | 75 | 2.95 | 202 | 7.95 | 127 | 5.00 | | | 1572 | 3534 | 1959 | 4404 | 128,0 | 7.81 | 1,19 | 2.62 | ✓ |
| RG 1000 - 080 - A | 80 | 3.15 | 212 | 8.35 | 132 | 5.20 | 1578 | 3546 | 1968 | 4424 | 136,0 | 8.30 | 1,23 | 2.71 | ✓ | | |
| RG 1000 - 100 - A | 100 | 3.94 | 252 | 9.92 | 152 | 5.98 | 1594 | 3584 | 1995 | 4485 | 167,0 | 10.19 | 1,39 | 3.06 | ✓ | | |
| RG 1000 - 125 - A | 125 | 4.92 | 302 | 11.89 | 177 | 6.97 | 1608 | 3615 | 2018 | 4537 | 207,0 | 12.63 | 1,60 | 3.53 | ✓ | | |



HOW TO ORDER

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INSTALLATION GUIDELINE

p. 203



OSAS + OSM = **OVER STROKE ACTIVE SAFETY** + **OVER STROKE MARKER**

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



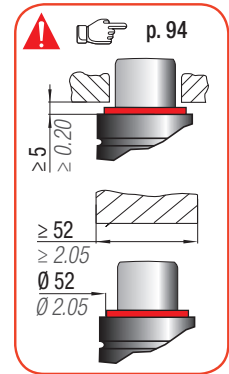
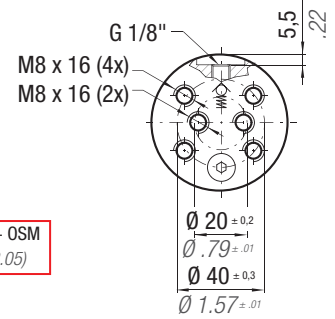
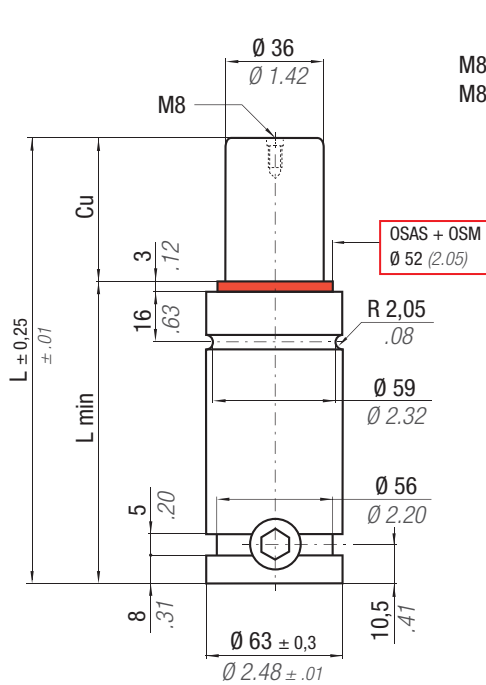
OSAS



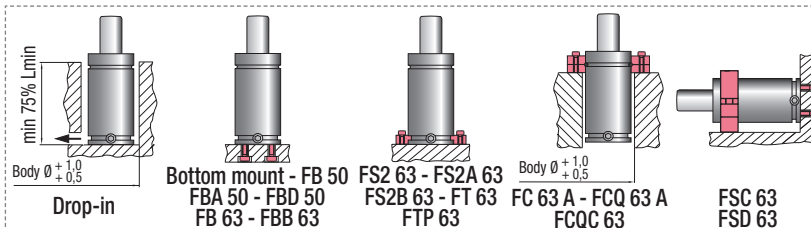
USAS



OPAS

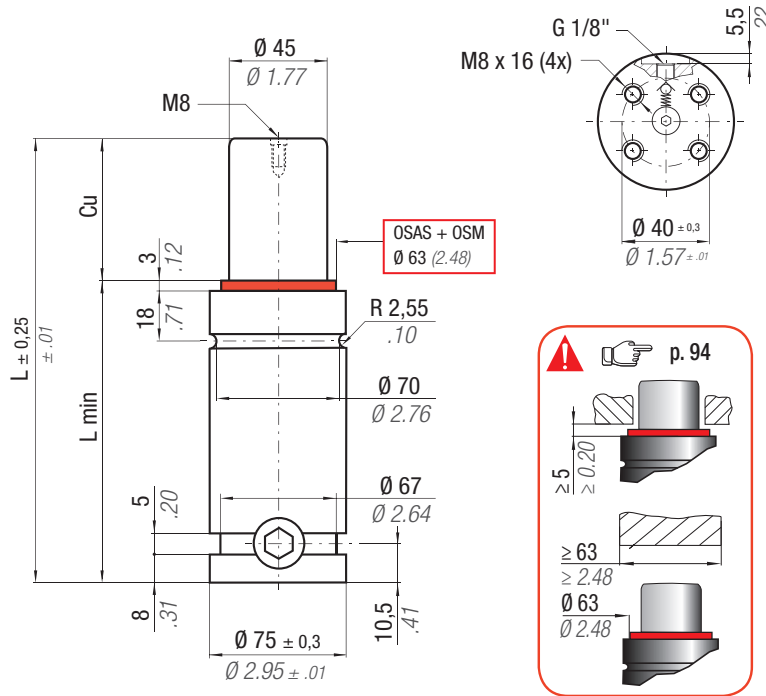


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1,578 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01500C | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|------|------|-------|------|-------|------|---------------------------------|------|----------------------------------|-------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | ✓ |
| RG 1500 - 010 - A | | | | | | | | | | | 10 | 0.39 | 72 | 2.83 | 62 | 2.44 | 1530 ± 5% | 3440 | 2071 | 4655 | 2395 | 5384 | 45,0 | 2,75 | 1,04 | 2,29 | ✓ | ✓ |
| RG 1500 - 013 - A | | | | | | | | | | 13 | 0.51 | 78 | 3.07 | 65 | 2.56 | 2149 | | | 4830 | 2515 | 5654 | 53,0 | 3,23 | 1,08 | 2,38 | ✓ | ✓ | |
| RG 1500 - 016 - A | | | | | | | | | | 16 | 0.63 | 84 | 3.31 | 68 | 2.68 | 2210 | | | 4967 | 2611 | 5870 | 61,0 | 3,72 | 1,11 | 2,45 | ✓ | ✓ | |
| RG 1500 - 019 - A | | | | | | | | | | 19 | 0.75 | 90 | 3.54 | 71 | 2.80 | 2259 | | | 5078 | 2688 | 6043 | 69,0 | 4,21 | 1,15 | 2,54 | ✓ | ✓ | |
| RG 1500 - 025 - A | | | | | | | | | | 25 | 0.98 | 102 | 4.02 | 77 | 3.03 | 2333 | | | 5245 | 2806 | 6308 | 85,0 | 5,19 | 1,22 | 2,69 | ✓ | ✓ | |
| RG 1500 - 032 - A | | | | | | | | | | 32 | 1.26 | 116 | 4.57 | 84 | 3.31 | 2394 | | | 5382 | 2904 | 6528 | 104,0 | 6,34 | 1,30 | 2,87 | ✓ | ✓ | |
| RG 1500 - 038 - A | | | | | | | | | | 38 | 1.50 | 128 | 5.04 | 90 | 3.54 | 2433 | | | 5469 | 2966 | 6668 | 119,0 | 7,26 | 1,37 | 3,02 | ✓ | ✓ | |
| RG 1500 - 050 - A | | | | | | | | | | 50 | 1.97 | 152 | 5.98 | 102 | 4.02 | 2488 | | | 5592 | 3055 | 6868 | 151,0 | 9,21 | 1,51 | 3,33 | ✓ | ✓ | |
| RG 1500 - 063 - A | | | | | | | | | | 63 | 2.48 | 178 | 7.01 | 115 | 4.53 | 2527 | | | 5681 | 3120 | 7014 | 186,0 | 11,35 | 1,67 | 3,68 | ✓ | ✓ | |
| RG 1500 - 075 - A | | | | | | | | | | 75 | 2.95 | 202 | 7.95 | 127 | 5.00 | 2553 | | | 5739 | 3163 | 7111 | 218,0 | 13,30 | 1,81 | 3,99 | ✓ | ✓ | |
| RG 1500 - 080 - A | | | | | | | | | | 80 | 3.15 | 212 | 8.35 | 132 | 5.20 | 2562 | 5759 | 3177 | 7142 | 231,0 | 14,09 | 1,87 | 4,12 | ✓ | ✓ | | | |
| RG 1500 - 100 - A | | | | | | | | | | 100 | 3.94 | 252 | 9.92 | 152 | 5.98 | 2589 | 5821 | 3222 | 7243 | 284,0 | 17,32 | 2,11 | 4,65 | ✓ | ✓ | | | |
| RG 1500 - 125 - A | | | | | | | | | | 125 | 4.92 | 302 | 11.89 | 177 | 6.97 | 2612 | 5872 | 3260 | 7329 | 350,0 | 21,35 | 2,40 | 5,29 | ✓ | ✓ | | | |



HOW TO ORDER
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INSTALLATION GUIDELINE
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easu MANIFOLD p. 241

ACTIVE SAFETY

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu



OSAS



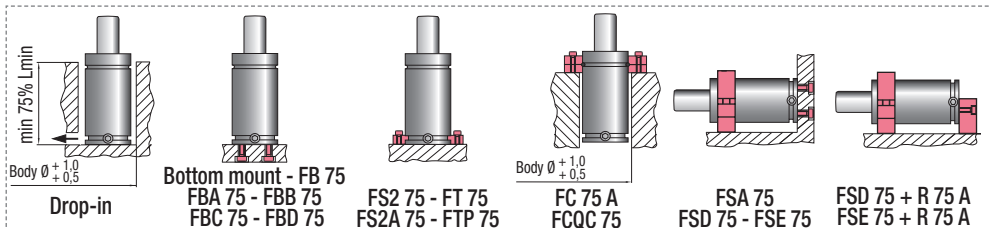
USAS



OPAS

RG

| CODE | N ₂ | | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2.465 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV02400D | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | |
|-------------------|-----------------|---------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|------|------|-------|------|-------|------|---------------------------------|------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|-----|
| | °F 32 176 | °C 0 80 | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb |
| RG 2400 - 010 - A | | | | | | | | | | 10 | 0.39 | 79 | 3.11 | 69 | 2.72 | 2385 ± 5% 5362 | 3125 | 7026 | 3574 | 8035 | 78,0 | 4.76 | 1,65 | 3.64 | ✓ |
| RG 2400 - 013 - A | | | | | | | | | 13 | 0.51 | 85 | 3.35 | 72 | 2.83 | 3249 | | 7305 | 3763 | 8460 | 90,0 | 5.49 | 1,70 | 3.75 | ✓ | |
| RG 2400 - 016 - A | | | | | | | | | 16 | 0.63 | 91 | 3.58 | 75 | 2.95 | 3350 | | 7532 | 3920 | 8813 | 103,0 | 6.28 | 1,75 | 3.86 | ✓ | |
| RG 2400 - 019 - A | | | | | | | | | 19 | 0.75 | 97 | 3.82 | 78 | 3.07 | 3434 | | 7721 | 4051 | 9107 | 115,0 | 7.02 | 1,79 | 3.95 | ✓ | |
| RG 2400 - 025 - A | | | | | | | | | 25 | 0.98 | 109 | 4.29 | 84 | 3.31 | 3566 | | 8016 | 4258 | 9572 | 139,0 | 8.48 | 1,89 | 4.17 | ✓ | |
| RG 2400 - 032 - A | | | | | | | | | 32 | 1.26 | 123 | 4.84 | 91 | 3.58 | 3678 | | 8268 | 4436 | 9973 | 167,0 | 10.19 | 1,99 | 4.39 | ✓ | |
| RG 2400 - 038 - A | | | | | | | | | 38 | 1.50 | 135 | 5.31 | 97 | 3.82 | 3751 | | 8433 | 4554 | 10238 | 191,0 | 11.65 | 2,09 | 4.61 | ✓ | |
| RG 2400 - 050 - A | | | | | | | | | 50 | 1.97 | 159 | 6.26 | 109 | 4.29 | 3858 | | 8672 | 4726 | 10624 | 239,0 | 14.58 | 2,28 | 5.03 | ✓ | |
| RG 2400 - 063 - A | | | | | | | | | 63 | 2.48 | 185 | 7.28 | 122 | 4.80 | 3937 | | 8850 | 4855 | 10914 | 292,0 | 17.81 | 2,49 | 5.49 | ✓ | |
| RG 2400 - 075 - A | | | | | | | | | 75 | 2.95 | 209 | 8.23 | 134 | 5.28 | 3989 | | 8969 | 4942 | 11110 | 340,0 | 20.74 | 2,68 | 5.91 | ✓ | |
| RG 2400 - 080 - A | | | | | | | | | 80 | 3.15 | 219 | 8.62 | 139 | 5.47 | 4008 | 9010 | 4972 | 11178 | 360,1 | 21.97 | 2,75 | 6.06 | ✓ | | |
| RG 2400 - 100 - A | | | | | | | | | 100 | 3.94 | 259 | 10.20 | 159 | 6.26 | 4065 | 9138 | 5066 | 11389 | 441,0 | 26.90 | 3,07 | 6.77 | ✓ | | |
| RG 2400 - 125 - A | | | | | | | | | 125 | 4.92 | 309 | 12.17 | 184 | 7.24 | 4113 | 9247 | 5147 | 11571 | 541,0 | 33.00 | 3,46 | 7.63 | ✓ | | |



HOW TO ORDER

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INSTALLATION GUIDELINE

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OSAS + OSM = **OVER STROKE ACTIVE SAFETY** + **OVER STROKE MARKER**

ACTIVE SAFETY

easu MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

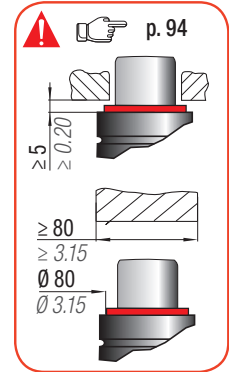
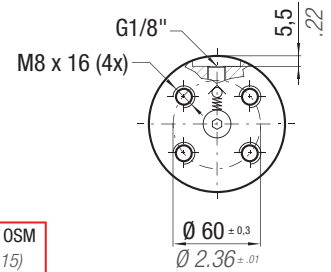
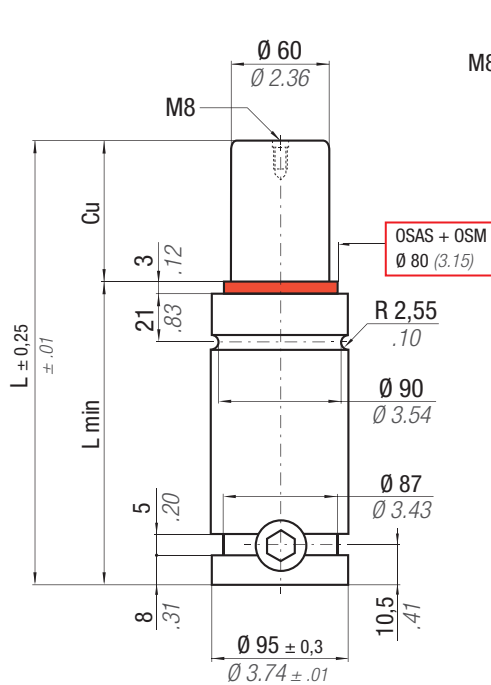
** F_{1p} = Polytrophic end force at 100% Cu



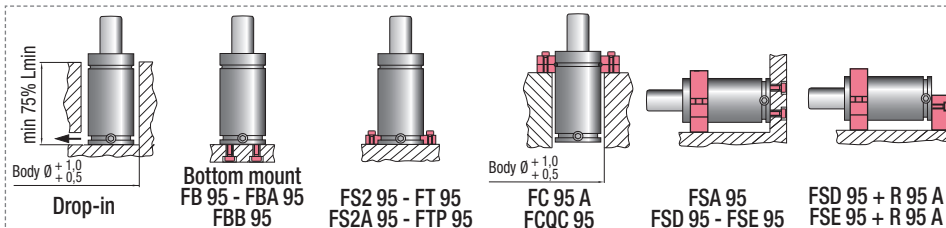
USAS



OPAS



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 28,27 cm ² 4.382 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV04200C | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|-------|------|----------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|-------------------|-------|---|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | ✓ |
| RG 4200 - 016 - A | | | | | | | | | | | 16 | 0.63 | 94 | 3.70 | 78 | 3.07 | 4240 ± 5% | 9532 | 6073 | 13653 | 7150 | 16074 | 174,0 | 10.61 | 2,98 | 6.57 | ✓ | ✓ |
| RG 4200 - 019 - A | | | | | | | | | | | 19 | 0.75 | 100 | 3.94 | 81 | 3.19 | | | 6238 | 14024 | 7409 | 16656 | 194,0 | 11.83 | 3,05 | 6.72 | ✓ | ✓ |
| RG 4200 - 025 - A | | | | | | | | | | | 25 | 0.98 | 112 | 4.41 | 87 | 3.43 | | | 6499 | 14609 | 7823 | 17587 | 235,0 | 14.34 | 3,20 | 7.05 | ✓ | ✓ |
| RG 4200 - 032 - A | | | | | | | | | | | 32 | 1.26 | 126 | 4.96 | 94 | 3.70 | | | 6723 | 15113 | 8183 | 18396 | 282,0 | 17.20 | 3,38 | 7.45 | ✓ | ✓ |
| RG 4200 - 038 - A | | | | | | | | | | | 38 | 1.50 | 138 | 5.43 | 100 | 3.94 | | | 6870 | 15443 | 8421 | 18931 | 323,0 | 19.70 | 3,52 | 7.76 | ✓ | ✓ |
| RG 4200 - 050 - A | | | | | | | | | | | 50 | 1.97 | 162 | 6.38 | 112 | 4.41 | | | 7085 | 15928 | 8774 | 19725 | 404,0 | 24.64 | 3,82 | 8.42 | ✓ | ✓ |
| RG 4200 - 063 - A | | | | | | | | | | | 63 | 2.48 | 188 | 7.40 | 125 | 4.92 | | | 7246 | 16289 | 9039 | 20320 | 492,0 | 30.01 | 4,15 | 9.15 | ✓ | ✓ |
| RG 4200 - 075 - A | | | | | | | | | | | 75 | 2.95 | 212 | 8.35 | 137 | 5.39 | | | 7354 | 16533 | 9219 | 20725 | 573,0 | 34.95 | 4,45 | 9.81 | ✓ | ✓ |
| RG 4200 - 080 - A | | | | | | | | | | | 80 | 3.15 | 222 | 8.74 | 142 | 5.59 | | | 7391 | 16616 | 9281 | 20865 | 606,0 | 36.97 | 4,57 | 10.08 | ✓ | ✓ |
| RG 4200 - 100 - A | | | | | | | | | | | 100 | 3.94 | 262 | 10.31 | 162 | 6.38 | | | 7509 | 16880 | 9477 | 21305 | 742,0 | 45.26 | 5,07 | 11.18 | ✓ | ✓ |
| RG 4200 - 125 - A | | | | | | | | | | | 125 | 4.92 | 312 | 12.28 | 187 | 7.36 | 7609 | 17105 | 9645 | 21683 | 911,0 | 55.57 | 5,69 | 12.54 | ✓ | ✓ | | |



HOW TO ORDER p. 95

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS

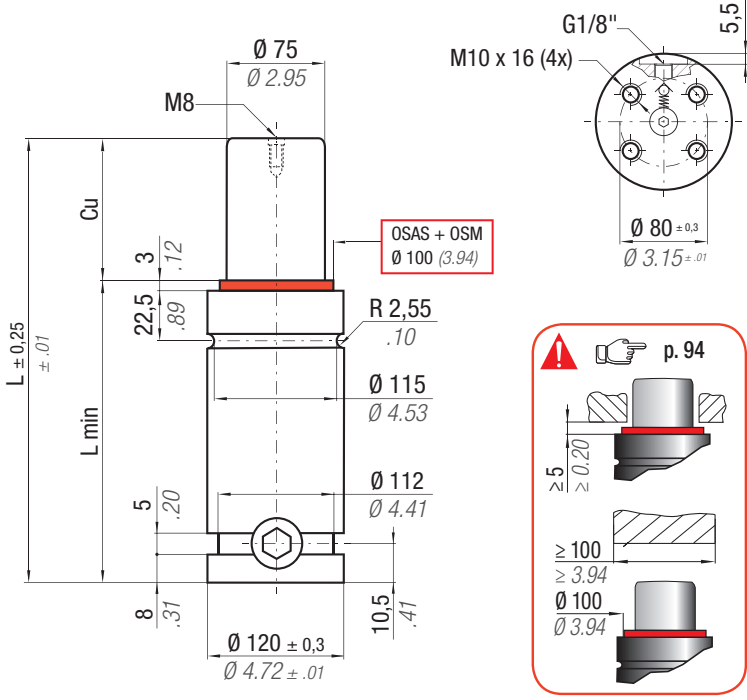


OPAS

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

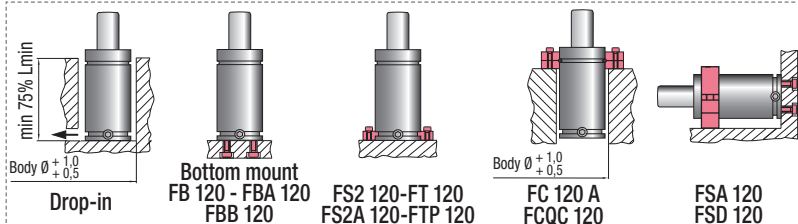
** F_{1p} = Polytrophic end force at 100% Cu



RG

| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 44,18 cm ² 6.848 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV06600C |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|

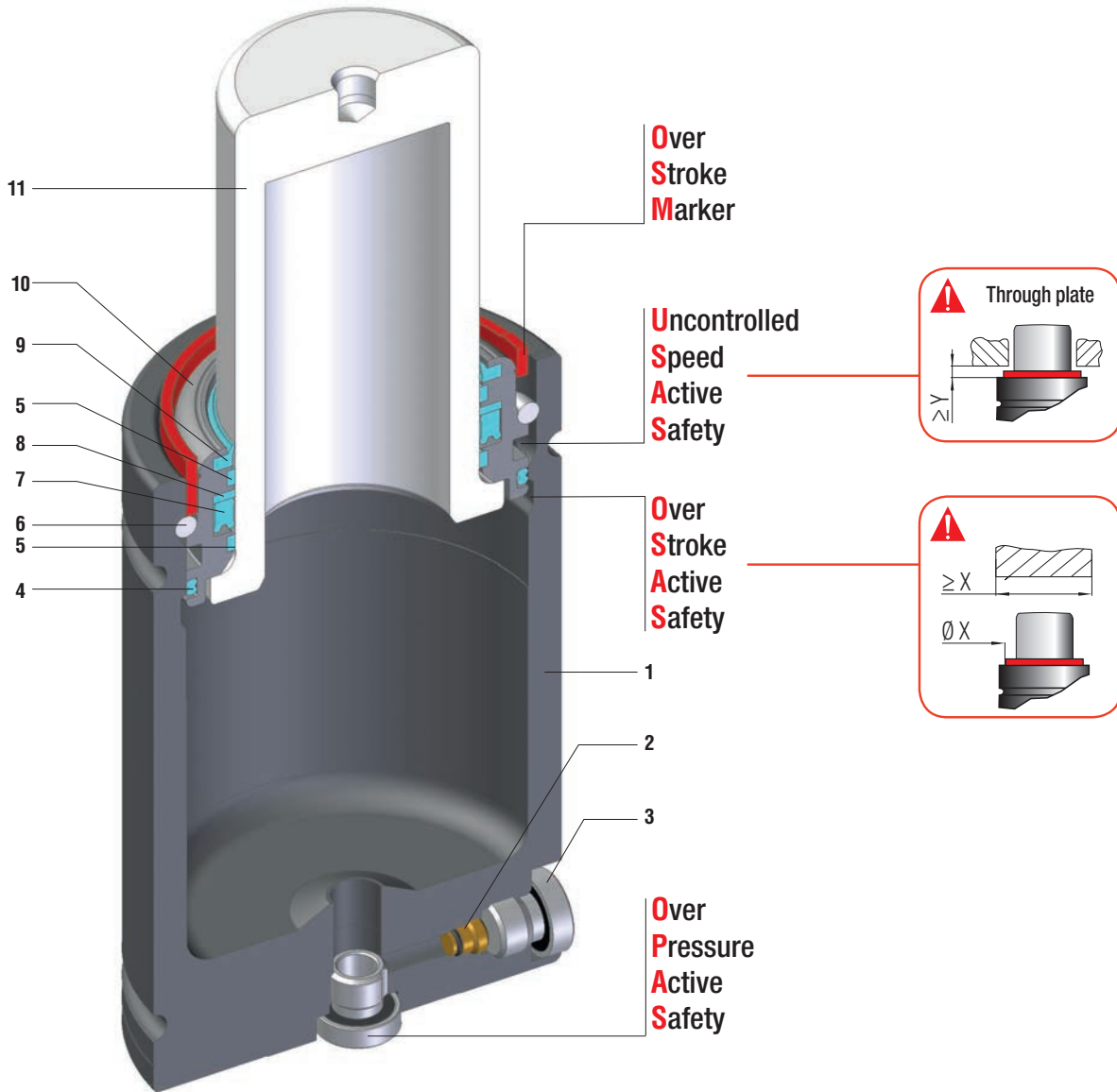
| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|----------------------------------------------------------------|-------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RG 6600 - 016 - A | 16 | 0.63 | 104 | 4.09 | 88 | 3.46 | 6630 ± 5% 14904 150 bar 2175 psi + 20 °C +68 °F | | 9032 | 20306 | 10464 | 23524 | 309,0 | 18.85 | 5,40 | 11.90 | ✓ |
| RG 6600 - 019 - A | 19 | 0.75 | 110 | 4.33 | 91 | 3.58 | | | 9281 | 20864 | 10847 | 24385 | 341,0 | 20.80 | 5,52 | 12.17 | ✓ |
| RG 6600 - 025 - A | 25 | 0.98 | 122 | 4.80 | 97 | 3.82 | | | 9684 | 21771 | 11478 | 25804 | 405,0 | 24.71 | 5,76 | 12.70 | ✓ |
| RG 6600 - 032 - A | 32 | 1.26 | 136 | 5.35 | 104 | 4.09 | | | 10044 | 22579 | 12047 | 27083 | 479,0 | 29.22 | 6,04 | 13.32 | ✓ |
| RG 6600 - 038 - A | 38 | 1.50 | 148 | 5.83 | 110 | 4.33 | | | 10286 | 23124 | 12435 | 27955 | 544,0 | 33.18 | 6,28 | 13.85 | ✓ |
| RG 6600 - 050 - A | 50 | 1.97 | 172 | 6.77 | 122 | 4.80 | | | 10652 | 23946 | 13025 | 29281 | 672,0 | 40.99 | 6,76 | 14.90 | ✓ |
| RG 6600 - 063 - A | 63 | 2.48 | 198 | 7.80 | 135 | 5.31 | | | 10932 | 24577 | 13483 | 30311 | 811,0 | 49.47 | 7,28 | 16.05 | ✓ |
| RG 6600 - 075 - A | 75 | 2.95 | 222 | 8.74 | 147 | 5.79 | | | 11125 | 25011 | 13800 | 31024 | 939,0 | 57.28 | 7,75 | 17.09 | ✓ |
| RG 6600 - 080 - A | 80 | 3.15 | 232 | 9.13 | 152 | 5.98 | | | 11193 | 25162 | 13910 | 31271 | 992,0 | 60.51 | 7,95 | 17.53 | ✓ |
| RG 6600 - 100 - A | 100 | 3.94 | 272 | 10.71 | 172 | 6.77 | | | 11407 | 25643 | 14264 | 32067 | 1206,0 | 73.57 | 8,75 | 19.29 | ✓ |
| RG 6600 - 125 - A | 125 | 4.92 | 322 | 12.68 | 197 | 7.76 | 11593 | 26061 | 14574 | 32764 | 1473,0 | 89.85 | 9,75 | 21.50 | ✓ | | |



HOW TO ORDER
p. 95

INSTALLATION GUIDELINE
p. 203

| | | |
|---------|--------|-----|
| Mazda | Nissan | PSA |
| Renault | Toyota | |



Minima altezza, massima forza, collegabili G1/8 - Minimum height, maximum force, hose cylinders with G1/8 charging port
 Minimale Höhe, maximale Kraft, Gdf. mit G1/8 Öffnung verbindbar - Hauteur minimale, force maximale, cylindres raccordés avec trou G1/8 gaz
 Mínima altura, máxima fuerza, cilindros conectados con agujero G1/8 gas - Altura mínima, força máxima, cilindros conectados com furo G1/8 gás

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Guide ring | 9 | Rod wiper |
| 2 | Valve | 6 | Retaining ring | 10 | Bush |
| 3 | Plug | 7 | Rod seal | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Back-up ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|---------|--------|------|-----------|-------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| RT 350 | 32 | 1.26 | 10 - 125 | 0.39 - 4.92 | 360 | 809 | ✓ | ✓ | ✓ | - | ✓ |
| RT 500 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 470 | 1057 | ✓ | ✓ | ✓ | - | ✓ |
| RT 750 | 45 | 1.77 | 10 - 125 | 0.39 - 4.92 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ |
| RT 1000 | 50 | 1.97 | 10 - 125 | 0.39 - 4.92 | 920 | 2068 | ✓ | ✓ | ✓ | - | ✓ |
| RT 1200 | 50 | 1.97 | 10 - 125 | 0.39 - 4.92 | 1060 | 2383 | ✓ | ✓ | ✓ | - | ✓ |
| RT 1500 | 63 | 2.48 | 10 - 125 | 0.39 - 4.92 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ |
| RT 2400 | 75 | 2.95 | 10 - 125 | 0.39 - 4.92 | 2385 | 5362 | ✓ | ✓ | ✓ | - | ✓ |
| RT 4200 | 95 | 3.74 | 16 - 125 | 0.63 - 4.92 | 4240 | 9532 | ✓ | ✓ | ✓ | - | ✓ |
| RT 6600 | 120 | 4.72 | 16 - 125 | 0.63 - 4.92 | 6630 | 14905 | ✓ | ✓ | ✓ | - | ✓ |
| RT 9500 | 150 | 5.91 | 19 - 125 | 0.75 - 4.92 | 9540 | 21447 | ✓ | ✓ | ✓ | - | ✓ |

Built-in as standard
 Optional upon request

RT

HOW TO ORDER



Available versions

| | | | | | |
|---------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| | | | | | |
| RT 2400-050-A Standard code | RT 2400-050-A-W Add "-W" to standard code | RT 2400-050-A-N Add "-N" to standard code | RT 2400-050-A-N-W Add "-N-W" to standard code | RT 2400-050-A-E Add "-E" to standard code | RT 2400-050-A-E-W Add "-E-W" to standard code |
| Self contained | Self contained + Secondary wiper | Linkable | Linkable + Secondary wiper | Easy Manifold | Easy Manifold + Secondary wiper |



OSAS + OSM

OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



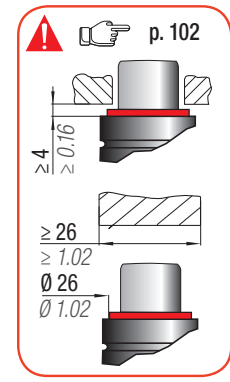
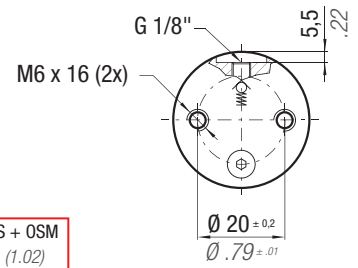
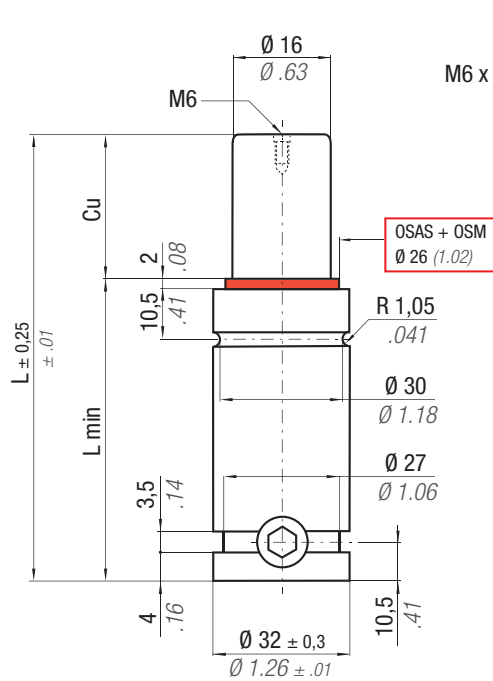
OSAS



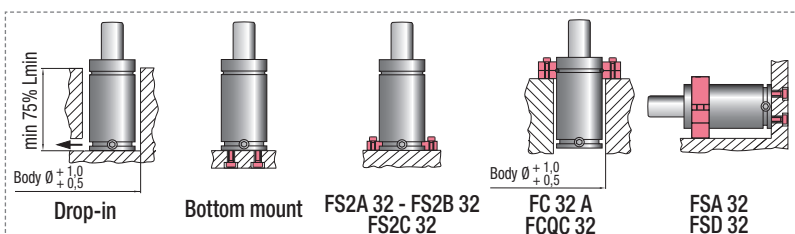
USAS



OPAS

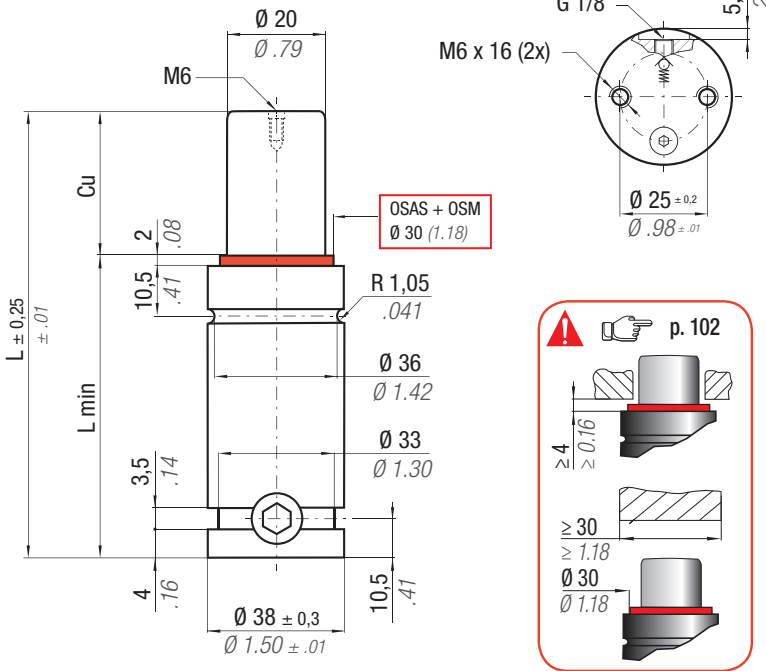


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 180 bar 2610 psi | P min 20 bar 290 psi | S 2,01 cm ² 0,312 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00350C | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | |
|------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|-------|------|----------------|-----|-------------------|------|--------------------|------|-----------------|-----------------|-------------------|------|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RT 350 - 010 - A | | | | | | | | | | | 10 | 0.39 | 60 | 2.36 | 50 | 1.97 | 360 ± 5% | 809 | 523 | 1176 | 596 | 1340 | 8,0 | 0.49 | 0,22 | 0.48 | ✓ |
| RT 350 - 013 - A | | | | | | | | | | | 13 | 0.51 | 66 | 2.60 | 53 | 2.09 | | | 536 | 1206 | 615 | 1384 | 10,0 | 0.61 | 0,23 | 0.50 | ✓ |
| RT 350 - 016 - A | | | | | | | | | | | 16 | 0.63 | 72 | 2.83 | 56 | 2.20 | | | 546 | 1228 | 629 | 1415 | 12,0 | 0.73 | 0,24 | 0.52 | ✓ |
| RT 350 - 019 - A | | | | | | | | | | | 19 | 0.75 | 78 | 3.07 | 59 | 2.32 | | | 553 | 1244 | 640 | 1439 | 13,0 | 0.79 | 0,25 | 0.54 | ✓ |
| RT 350 - 025 - A | | | | | | | | | | | 25 | 0.98 | 90 | 3.54 | 65 | 2.56 | | | 564 | 1267 | 655 | 1472 | 17,0 | 1.04 | 0,27 | 0.60 | ✓ |
| RT 350 - 032 - A | | | | | | | | | | | 32 | 1.26 | 104 | 4.09 | 72 | 2.83 | | | 571 | 1285 | 666 | 1497 | 21,0 | 1.28 | 0,29 | 0.64 | ✓ |
| RT 350 - 038 - A | | | | | | | | | | | 38 | 1.50 | 116 | 4.57 | 78 | 3.07 | | | 576 | 1295 | 673 | 1513 | 25,0 | 1.53 | 0,31 | 0.68 | ✓ |
| RT 350 - 050 - A | | | | | | | | | | | 50 | 1.97 | 140 | 5.51 | 90 | 3.54 | | | 582 | 1309 | 682 | 1533 | 32,0 | 1.95 | 0,35 | 0.77 | ✓ |
| RT 350 - 063 - A | | | | | | | | | | | 63 | 2.48 | 166 | 6.54 | 103 | 4.06 | | | 587 | 1319 | 688 | 1547 | 40,0 | 2.44 | 0,39 | 0.86 | ✓ |
| RT 350 - 075 - A | | | | | | | | | | | 75 | 2.95 | 190 | 7.48 | 115 | 4.53 | | | 589 | 1325 | 692 | 1556 | 47,0 | 2.87 | 0,43 | 0.95 | ✓ |
| RT 350 - 080 - A | | | | | | | | | | | 80 | 3.15 | 200 | 7.87 | 120 | 4.72 | | | 590 | 1327 | 693 | 1559 | 50,0 | 3.05 | 0,45 | 0.99 | ✓ |
| RT 350 - 100 - A | | | | | | | | | | | 100 | 3.94 | 240 | 9.45 | 140 | 5.51 | | | 593 | 1333 | 698 | 1568 | 62,0 | 3.79 | 0,51 | 1.12 | ✓ |
| RT 350 - 125 - A | | | | | | | | | | | 125 | 4.92 | 290 | 11.42 | 165 | 6.50 | | | 595 | 1338 | 701 | 1576 | 77,0 | 4.71 | 0,59 | 1.30 | ✓ |



HOW TO ORDER
p. 103

INSTALLATION GUIDELINE
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

* F_{1i} =

Isothermal end force at 100% Cu

p. 18

** F_{1p} =

Polytropic end force at 100% Cu



ACTIVE SAFETY



OSAS



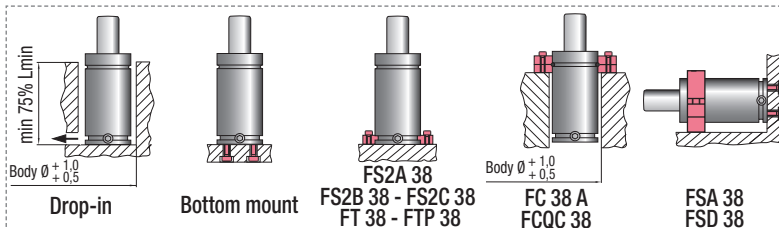
USAS



OPAS

RT

| CODE | N ₂ | | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 3,14 cm ² 0.487 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00500C | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | |
|------------------|----------------|------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|------|-------|------|------|-------|------|---------------------------------|----|----------------------------------|----|------------------------------------|-----------------|----------------|-----|-------------------|--|
| | mm | inch | | | | | | | | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | |
| RT 500 - 010 - A | 10 | 0.39 | 60 | 2.36 | 50 | 1.97 | 470 ± 5% 1057 | 150 bar 2175psi | 692 | 1555 | 821 | 1845 | 11,0 | 0.67 | 0,32 | 0.71 | ✓ | | | | | | | | |
| RT 500 - 013 - A | 13 | 0.51 | 66 | 2.60 | 53 | 2.09 | | | 711 | 1598 | 851 | 1914 | 14,0 | 0.85 | 0,34 | 0.75 | ✓ | | | | | | | | |
| RT 500 - 016 - A | 16 | 0.63 | 72 | 2.83 | 56 | 2.20 | | | 725 | 1629 | 873 | 1963 | 17,0 | 1.04 | 0,36 | 0.79 | ✓ | | | | | | | | |
| RT 500 - 019 - A | 19 | 0.75 | 78 | 3.07 | 59 | 2.32 | | | 735 | 1652 | 890 | 2001 | 19,0 | 1.16 | 0,37 | 0.82 | ✓ | | | | | | | | |
| RT 500 - 025 - A | 25 | 0.98 | 90 | 3.54 | 65 | 2.56 | | | 750 | 1685 | 914 | 2054 | 24,0 | 1.46 | 0,40 | 0.88 | ✓ | | | | | | | | |
| RT 500 - 032 - A | 32 | 1.26 | 104 | 4.09 | 72 | 2.83 | | | 761 | 1710 | 932 | 2094 | 30,0 | 1.83 | 0,43 | 0.95 | ✓ | | | | | | | | |
| RT 500 - 038 - A | 38 | 1.50 | 116 | 4.57 | 78 | 3.07 | | | 767 | 1725 | 942 | 2119 | 36,0 | 2.20 | 0,46 | 1.01 | ✓ | | | | | | | | |
| RT 500 - 050 - A | 50 | 1.97 | 140 | 5.51 | 90 | 3.54 | | | 776 | 1746 | 957 | 2152 | 46,0 | 2.81 | 0,52 | 1.15 | ✓ | | | | | | | | |
| RT 500 - 063 - A | 63 | 2.48 | 166 | 6.54 | 103 | 4.06 | | | 783 | 1759 | 967 | 2175 | 57,0 | 3.48 | 0,58 | 1.28 | ✓ | | | | | | | | |
| RT 500 - 075 - A | 75 | 2.95 | 190 | 7.48 | 115 | 4.53 | | | 787 | 1768 | 974 | 2189 | 67,0 | 4.09 | 0,63 | 1.39 | ✓ | | | | | | | | |
| RT 500 - 080 - A | 80 | 3.15 | 200 | 7.87 | 120 | 4.72 | 788 | 1771 | 976 | 2194 | 72,0 | 4.39 | 0,66 | 1.46 | ✓ | | | | | | | | | | |
| RT 500 - 100 - A | 100 | 3.94 | 240 | 9.45 | 140 | 5.51 | 792 | 1780 | 983 | 2209 | 89,0 | 5.43 | 0,75 | 1.65 | ✓ | | | | | | | | | | |
| RT 500 - 125 - A | 125 | 4.92 | 290 | 11.42 | 165 | 6.50 | 795 | 1788 | 988 | 2221 | 110,0 | 6.71 | 0,87 | 1.92 | ✓ | | | | | | | | | | |



HOW TO ORDER

p. 103

INSTALLATION GUIDELINE

p. 203

RT 750

PG24D (Mazda)

K 32 R (Nissan)

EM24.54.700 (Renault)



OSAS + OSM

OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18



** $F_{1p} =$

Polytrophic end force at 100% Cu



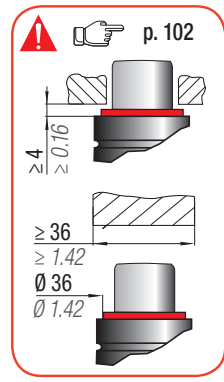
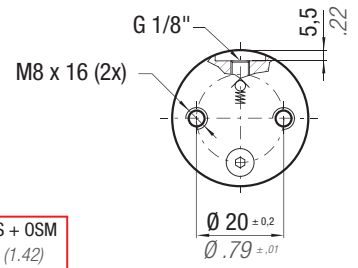
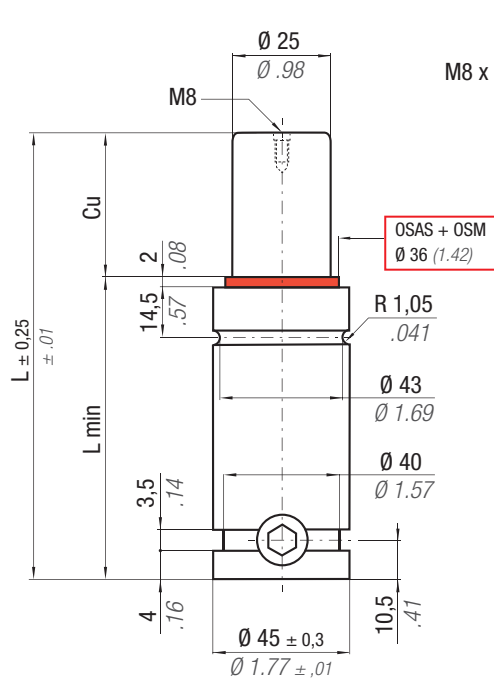
OSAS



USAS

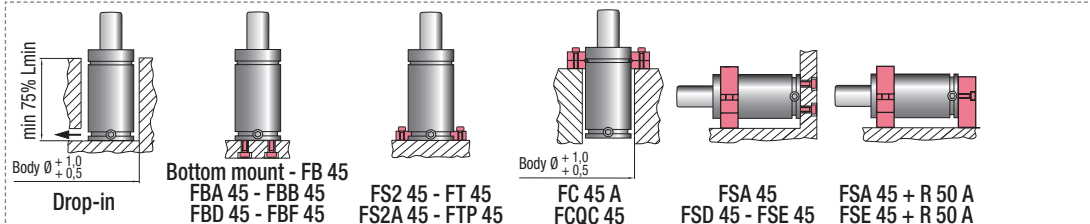


OPAS



| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00750C |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|-------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RT 750 - 010 - A | 10 | 0.39 | 67 | 2.64 | 57 | 2.24 | 740 ± 5% | 1664 | 1018 | 2288 | 1184 | 2662 | 21,0 | 1.28 | 0,50 | 1.10 | ✓ |
| RT 750 - 013 - A | 13 | 0.51 | 73 | 2.87 | 60 | 2.36 | | | 1056 | 2373 | 1243 | 2794 | 24,0 | 1.46 | 0,52 | 1.15 | ✓ |
| RT 750 - 016 - A | 16 | 0.63 | 79 | 3.11 | 63 | 2.48 | | | 1085 | 2439 | 1289 | 2898 | 28,0 | 1.71 | 0,54 | 1.19 | ✓ |
| RT 750 - 019 - A | 19 | 0.75 | 85 | 3.35 | 66 | 2.60 | | | 1108 | 2492 | 1326 | 2981 | 32,0 | 1.95 | 0,56 | 1.23 | ✓ |
| RT 750 - 025 - A | 25 | 0.98 | 97 | 3.82 | 72 | 2.83 | | | 1143 | 2570 | 1382 | 3107 | 40,0 | 2.44 | 0,60 | 1.32 | ✓ |
| RT 750 - 032 - A | 32 | 1.26 | 111 | 4.37 | 79 | 3.11 | | | 1172 | 2634 | 1428 | 3210 | 49,0 | 2.99 | 0,64 | 1.41 | ✓ |
| RT 750 - 038 - A | 38 | 1.50 | 123 | 4.84 | 85 | 3.35 | | | 1189 | 2674 | 1457 | 3275 | 56,0 | 3.42 | 0,68 | 1.50 | ✓ |
| RT 750 - 050 - A | 50 | 1.97 | 147 | 5.79 | 97 | 3.82 | | | 1214 | 2730 | 1497 | 3365 | 72,0 | 4.39 | 0,76 | 1.68 | ✓ |
| RT 750 - 063 - A | 63 | 2.48 | 173 | 6.81 | 110 | 4.33 | | | 1232 | 2770 | 1527 | 3433 | 88,0 | 5.37 | 0,84 | 1.85 | ✓ |
| RT 750 - 075 - A | 75 | 2.95 | 197 | 7.76 | 122 | 4.80 | | | 1244 | 2796 | 1546 | 3476 | 103,0 | 6.28 | 0,92 | 2.03 | ✓ |
| RT 750 - 080 - A | 80 | 3.15 | 207 | 8.15 | 127 | 5.00 | 1248 | 2805 | 1552 | 3489 | 110,0 | 6.71 | 0,95 | 2.09 | ✓ | | |
| RT 750 - 100 - A | 100 | 3.94 | 247 | 9.72 | 147 | 5.79 | 1260 | 2832 | 1573 | 3536 | 135,0 | 8.24 | 1,08 | 2.38 | ✓ | | |
| RT 750 - 125 - A | 125 | 4.92 | 297 | 11.69 | 172 | 6.77 | 1270 | 2855 | 1589 | 3572 | 167,0 | 10.19 | 1,24 | 2.73 | ✓ | | |

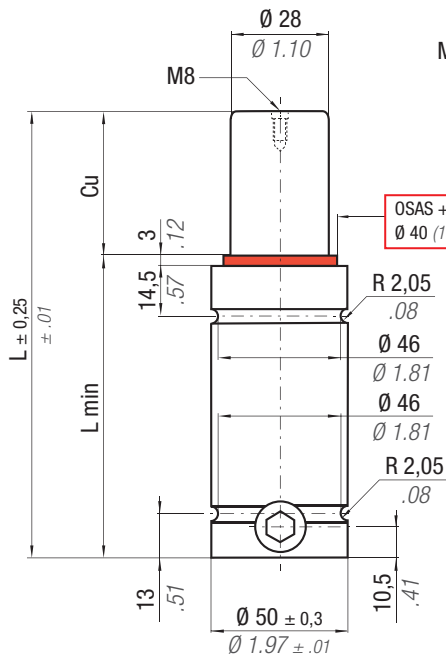


HOW TO ORDER
p. 103

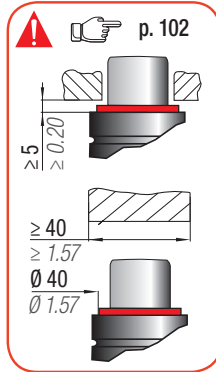
INSTALLATION GUIDELINE
p. 203

| | | |
|------------------------------|--------------------|-----------------------|
| K 32 R (Nissan) | E24.54.815.G (PSA) | EM24.54.700 (Renault) |
| SMS DNH 3203n Rev.3 (TOYOTA) | | |

RT 1000



OSAS + OSM
Ø 40 (1.57)



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

* F_{1i} =

Isothermal end force at 100% Cu

** F_{1p} =

Polytropic end force at 100% Cu

p. 18



ACTIVE SAFETY



OSAS



USAS

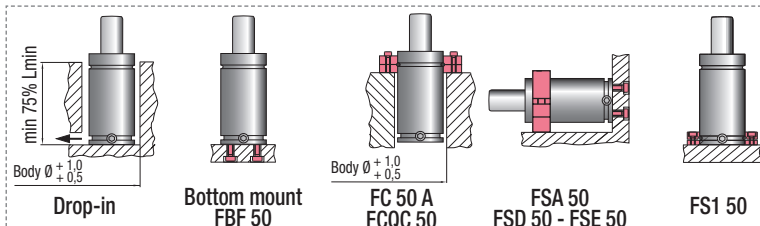


OPAS

RT

| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 6,15 cm ² 0.953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C |
|--|----------------------|--------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|---------------------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RT 1000 - 010 - A | 10 | 0.39 | 72 | 2.83 | 62 | 2.44 | 920 ± 5% | 2068 | 1274 | 2863 | 1481 | 3329 | 26,0 | 1.59 | 0,68 | 1.50 | ✓ |
| RT 1000 - 013 - A | 13 | 0.51 | 78 | 3.07 | 65 | 2.56 | | | 1323 | 2973 | 1557 | 3500 | 31,0 | 1.89 | 0,70 | 1.54 | ✓ |
| RT 1000 - 016 - A | 16 | 0.63 | 84 | 3.31 | 68 | 2.68 | | | 1361 | 3059 | 1617 | 3635 | 35,0 | 2.14 | 0,73 | 1.61 | ✓ |
| RT 1000 - 019 - A | 19 | 0.75 | 90 | 3.54 | 71 | 2.80 | | | 1391 | 3128 | 1666 | 3745 | 40,0 | 2.44 | 0,75 | 1.65 | ✓ |
| RT 1000 - 025 - A | 25 | 0.98 | 102 | 4.02 | 77 | 3.03 | | | 1437 | 3232 | 1739 | 3909 | 50,0 | 3.05 | 0,80 | 1.76 | ✓ |
| RT 1000 - 032 - A | 32 | 1.26 | 116 | 4.57 | 84 | 3.31 | 1475 | 3316 | 1800 | 4047 | 61,0 | 3.72 | 0,86 | 1.90 | ✓ | | |
| RT 1000 - 038 - A | 38 | 1.50 | 128 | 5.04 | 90 | 3.54 | 150 bar | 1499 | 3369 | 1838 | 4132 | 70,0 | 4.27 | 0,90 | 1.98 | ✓ | |
| RT 1000 - 050 - A | 50 | 1.97 | 152 | 5.98 | 102 | 4.02 | 2175 psi | 1532 | 3445 | 1893 | 4256 | 89,0 | 5.43 | 1,00 | 2.20 | ✓ | |
| RT 1000 - 063 - A | 63 | 2.48 | 178 | 7.01 | 115 | 4.53 | + 20 °C +68 °F | 1556 | 3499 | 1933 | 4346 | 109,0 | 6.65 | 1,10 | 2.43 | ✓ | |
| RT 1000 - 075 - A | 75 | 2.95 | 202 | 7.95 | 127 | 5.00 | 1572 | 3534 | 1959 | 4404 | 128,0 | 7.81 | 1,20 | 2.65 | ✓ | | |
| RT 1000 - 080 - A | 80 | 3.15 | 212 | 8.35 | 132 | 5.20 | 1578 | 3546 | 1968 | 4424 | 136,0 | 8.30 | 1,24 | 2.73 | ✓ | | |
| RT 1000 - 100 - A | 100 | 3.94 | 252 | 9.92 | 152 | 5.98 | 1594 | 3584 | 1995 | 4485 | 167,0 | 10.19 | 1,40 | 3.09 | ✓ | | |
| RT 1000 - 125 - A | 125 | 4.92 | 302 | 11.89 | 177 | 6.97 | 1608 | 3615 | 2018 | 4537 | 207,0 | 12.63 | 1,60 | 3.53 | ✓ | | |



HOW TO ORDER

p. 103

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytrophic end force at 100% Cu



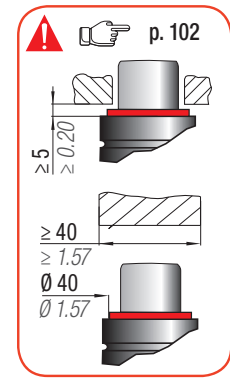
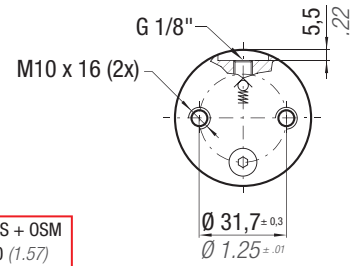
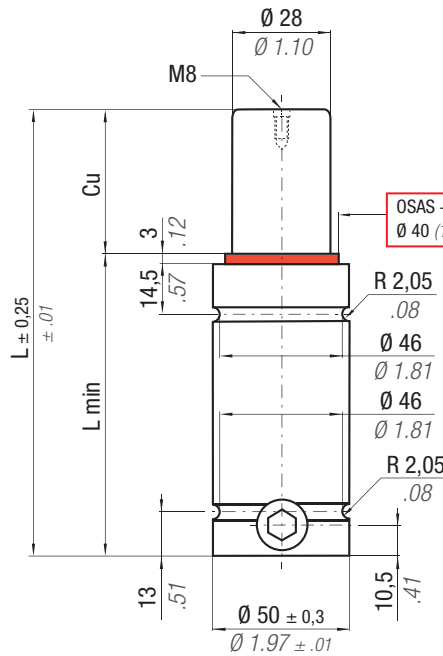
OSAS



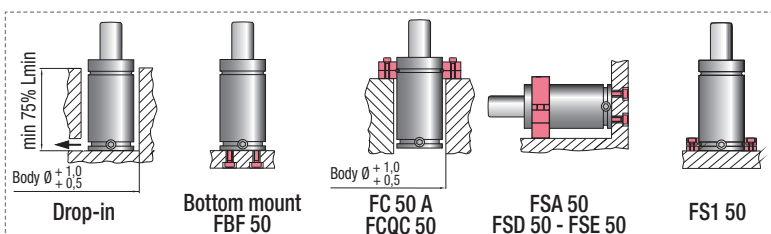
USAS



OPAS

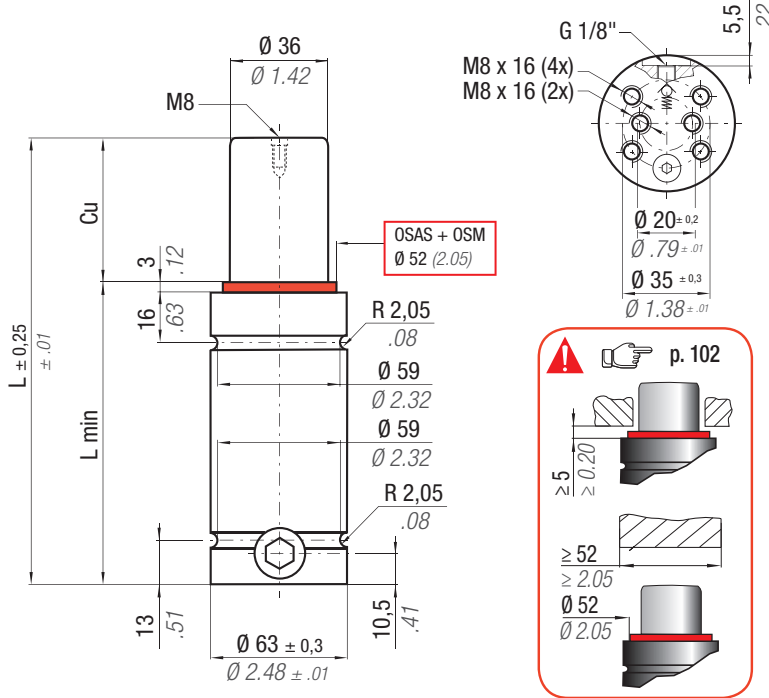


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 170 bar 2465 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01000C | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|-------|-----------------|-----------------|-------------------|------|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| RT 1200 - 010 - A | | | | | | | | | | | 10 | 0.39 | 72 | 2.83 | 62 | 2.44 | 1060 ± 5% | 2383 | 1462 | 3287 | 1670 | 3754 | 26,0 | 1,59 | 0,68 | 1,50 | ✓ |
| RT 1200 - 013 - A | | | | | | | | | | | 13 | 0.51 | 78 | 3.07 | 65 | 2.56 | | | 1521 | 3419 | 1755 | 3946 | 31,0 | 1,89 | 0,70 | 1,54 | ✓ |
| RT 1200 - 016 - A | | | | | | | | | | | 16 | 0.63 | 84 | 3.31 | 68 | 2.68 | | | 1566 | 3522 | 1823 | 4098 | 35,0 | 2,14 | 0,73 | 1,61 | ✓ |
| RT 1200 - 019 - A | | | | | | | | | | | 19 | 0.75 | 90 | 3.54 | 71 | 2.80 | | | 1603 | 3604 | 1878 | 4221 | 40,0 | 2,44 | 0,75 | 1,65 | ✓ |
| RT 1200 - 025 - A | | | | | | | | | | | 25 | 0.98 | 102 | 4.02 | 77 | 3.03 | | | 1658 | 3728 | 1961 | 4408 | 50,0 | 3,05 | 0,80 | 1,76 | ✓ |
| RT 1200 - 032 - A | | | | | | | | | | | 32 | 1.26 | 116 | 4.57 | 84 | 3.31 | | | 1704 | 3830 | 2029 | 4562 | 61,0 | 3,72 | 0,86 | 1,90 | ✓ |
| RT 1200 - 038 - A | | | | | | | | | | | 38 | 1.50 | 128 | 5.04 | 90 | 3.54 | | | 1732 | 3894 | 2073 | 4660 | 70,0 | 4,27 | 0,90 | 1,98 | ✓ |
| RT 1200 - 050 - A | | | | | | | | | | | 50 | 1.97 | 152 | 5.98 | 102 | 4.02 | | | 1772 | 3985 | 2134 | 4798 | 89,0 | 5,43 | 1,00 | 2,20 | ✓ |
| RT 1200 - 063 - A | | | | | | | | | | | 63 | 2.48 | 178 | 7.01 | 115 | 4.53 | | | 1801 | 4050 | 2179 | 4899 | 109,0 | 6,65 | 1,10 | 2,43 | ✓ |
| RT 1200 - 075 - A | | | | | | | | | | | 75 | 2.95 | 202 | 7.95 | 127 | 5.00 | | | 1820 | 4092 | 2208 | 4965 | 128,0 | 7,81 | 1,20 | 2,65 | ✓ |
| RT 1200 - 080 - A | | | | | | | | | | | 80 | 3.15 | 212 | 8.35 | 132 | 5.20 | 1827 | 4107 | 2218 | 4987 | 136,0 | 8,30 | 1,24 | 2,73 | ✓ | | |
| RT 1200 - 100 - A | | | | | | | | | | | 100 | 3.94 | 252 | 9.92 | 152 | 5.98 | 1847 | 4152 | 2249 | 5057 | 167,0 | 10,19 | 1,40 | 3,09 | ✓ | | |
| RT 1200 - 125 - A | | | | | | | | | | | 125 | 4.92 | 302 | 11.89 | 177 | 6.97 | 1864 | 4190 | 2275 | 5115 | 207,0 | 12,63 | 1,60 | 3,53 | ✓ | | |



HOW TO ORDER
p. 103

INSTALLATION GUIDELINE
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

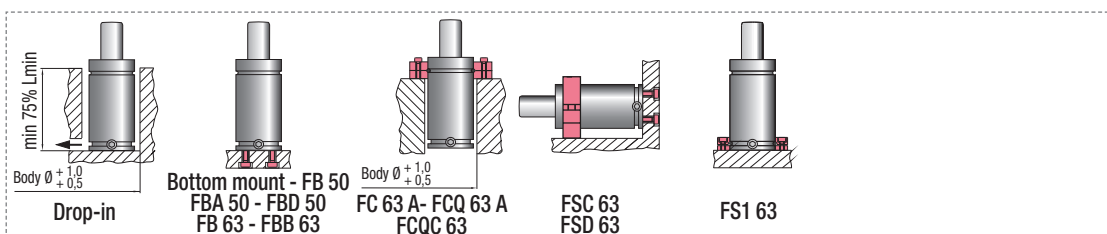
* F_{1i} = Isothermal end force at 100% Cu
 ** F_{1p} = Polytrophic end force at 100% Cu



RT

| | | | | | | | | | |
|--|-------------------------|-----------------------|-----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33 \% / ^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1.578 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV01500C |
|--|-------------------------|-----------------------|-----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|---------------------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RT 1500 - 010 - A | 10 | 0.39 | 72 | 2.83 | 62 | 2.44 | 1530 ± 5% | 3440 | 2071 | 4655 | 2395 | 5384 | 45,0 | 2.75 | 1,05 | 2,31 | ✓ |
| RT 1500 - 013 - A | 13 | 0.51 | 78 | 3.07 | 65 | 2.56 | | | 2149 | 4830 | 2515 | 5654 | 53,0 | 3.23 | 1,09 | 2,40 | ✓ |
| RT 1500 - 016 - A | 16 | 0.63 | 84 | 3.31 | 68 | 2.68 | | | 2210 | 4967 | 2611 | 5870 | 61,0 | 3.72 | 1,13 | 2,49 | ✓ |
| RT 1500 - 019 - A | 19 | 0.75 | 90 | 3.54 | 71 | 2.80 | | | 2258 | 5076 | 2687 | 6041 | 69,0 | 4.21 | 1,16 | 2.56 | ✓ |
| RT 1500 - 025 - A | 25 | 0.98 | 102 | 4.02 | 77 | 3.03 | | | 2333 | 5245 | 2806 | 6308 | 85,0 | 5.19 | 1,23 | 2.71 | ✓ |
| RT 1500 - 032 - A | 32 | 1.26 | 116 | 4.57 | 84 | 3.31 | 2394 | 5382 | 2904 | 6528 | 104,0 | 6.34 | 1,31 | 2.89 | ✓ | | |
| RT 1500 - 038 - A | 38 | 1.50 | 128 | 5.04 | 90 | 3.54 | 150 bar | 2433 | 5469 | 2966 | 6668 | 119,0 | 7.26 | 1,38 | 3.04 | ✓ | |
| RT 1500 - 050 - A | 50 | 1.97 | 152 | 5.98 | 102 | 4.02 | 2175 psi | 2488 | 5592 | 3055 | 6868 | 151,0 | 9.21 | 1,53 | 3.37 | ✓ | |
| RT 1500 - 063 - A | 63 | 2.48 | 178 | 7.01 | 115 | 4.53 | + 20 °C +68 °F | 2527 | 5681 | 3120 | 7014 | 186,0 | 11.35 | 1,69 | 3.73 | ✓ | |
| RT 1500 - 075 - A | 75 | 2.95 | 202 | 7.95 | 127 | 5.00 | 2553 | 5739 | 3163 | 7111 | 218,0 | 13.30 | 1,83 | 4.03 | ✓ | | |
| RT 1500 - 080 - A | 80 | 3.15 | 212 | 8.35 | 132 | 5.20 | 2562 | 5759 | 3177 | 7142 | 231,0 | 14.09 | 1,89 | 4.17 | ✓ | | |
| RT 1500 - 100 - A | 100 | 3.94 | 252 | 9.92 | 152 | 5.98 | 2589 | 5821 | 3222 | 7243 | 284,0 | 17.32 | 2,12 | 4.67 | ✓ | | |
| RT 1500 - 125 - A | 125 | 4.92 | 302 | 11.89 | 177 | 6.97 | 2612 | 5872 | 3260 | 7329 | 350,0 | 21.35 | 2,41 | 5.31 | ✓ | | |



HOW TO ORDER
 p. 103

INSTALLATION GUIDELINE
 p. 203

RT 2400

K 32 R (Nissan)
SMS DNH 3203n Rev.3 (TOYOTA)

E24.54.815.G (PSA)

EM24.54.700 (Renault)



OSAS + OSM

OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

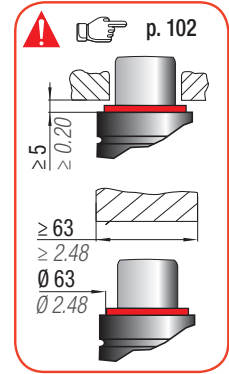
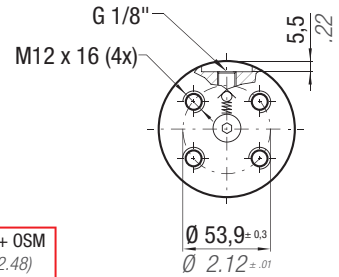
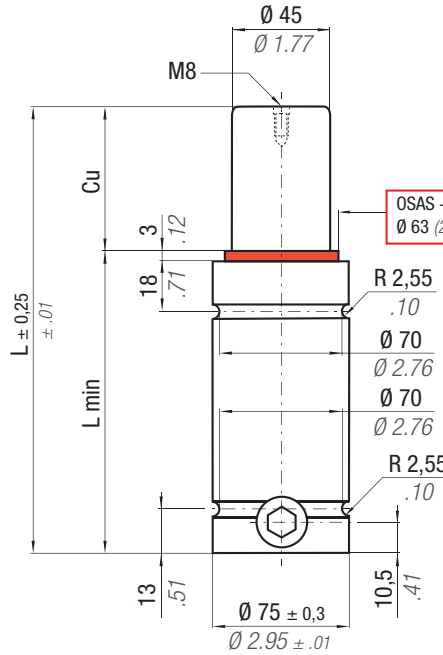
ACTIVE SAFETY

easu MANIFOLD p. 241

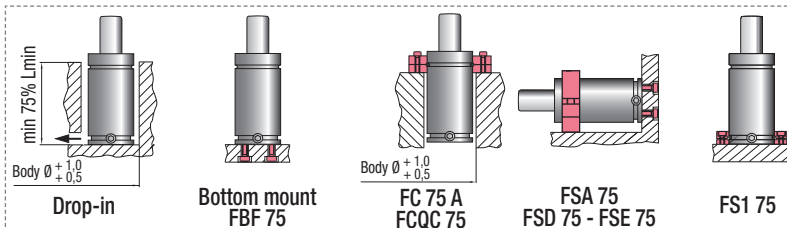


* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytropic end force at 100% Cu

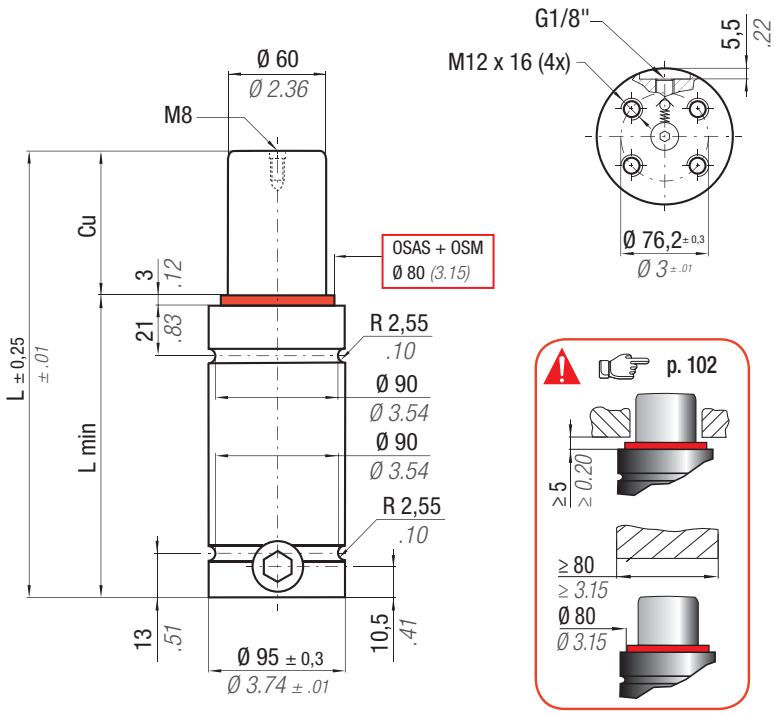


| CODE | N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2,465 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV02400D | Vo | | PED | | |
|-------------------|----------------|------------------|----------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----------------|-----------------|------|------|------------|
| | | | | | | | | | | | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RT 2400 - 010 - A | | | | | | | | | | | 78,0 | 4,76 | 1,44 | 3,17 | ✓ |
| RT 2400 - 013 - A | | | | | | | | | | | 90,0 | 5,49 | 1,64 | 3,62 | ✓ |
| RT 2400 - 016 - A | | | | | | | | | | | 103,0 | 6,28 | 1,74 | 3,84 | ✓ |
| RT 2400 - 019 - A | | | | | | | | | | | 115,0 | 7,02 | 1,78 | 3,92 | ✓ |
| RT 2400 - 025 - A | | | | | | | | | | | 139,0 | 8,48 | 1,88 | 4,14 | ✓ |
| RT 2400 - 032 - A | | | | | | | | | | | 170,0 | 10,37 | 1,99 | 4,39 | ✓ |
| RT 2400 - 038 - A | | | | | | | | | | | 191,0 | 11,65 | 2,08 | 4,59 | ✓ |
| RT 2400 - 050 - A | | | | | | | | | | | 239,0 | 14,58 | 2,27 | 5,00 | ✓ |
| RT 2400 - 063 - A | | | | | | | | | | | 292,0 | 17,81 | 2,48 | 5,47 | ✓ |
| RT 2400 - 075 - A | | | | | | | | | | | 340,0 | 20,74 | 2,67 | 5,89 | ✓ |
| RT 2400 - 080 - A | | | | | | | | | | | 360,0 | 21,96 | 2,74 | 6,04 | ✓ |
| RT 2400 - 100 - A | | | | | | | | | | | 441,0 | 26,90 | 3,06 | 6,75 | ✓ |
| RT 2400 - 125 - A | | | | | | | | | | | 541,0 | 33,00 | 3,45 | 7,61 | ✓ |



HOW TO ORDER p. 103

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easu MANIFOLD p. 241

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18

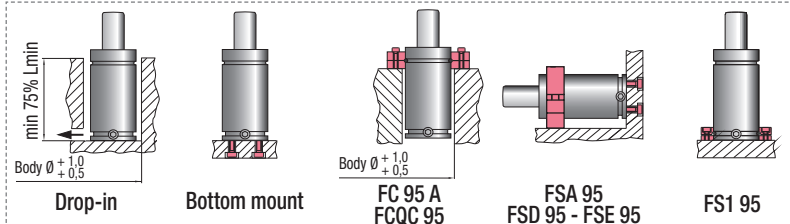
** F_{1p} = Polythropic end force at 100% Cu



RT

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 28,27 cm ² 4.382 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV04200C |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | | |
|-------------------|-----|------|-----|-------|-------|------|---------------------------------|-------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | | |
| RT 4200 - 016 - A | 16 | 0.63 | 94 | 3.70 | 78 | 3.07 | 4240 ± 5% | 9532 | 6073 | 13653 | 7150 | 16074 | 174,0 | 10.61 | 2,97 | 6.55 | ✓ | |
| RT 4200 - 019 - A | 19 | 0.75 | 100 | 3.94 | 81 | 3.19 | | | 6238 | 14024 | 7409 | 16656 | 194,0 | 11.83 | 3,05 | 6.72 | ✓ | |
| RT 4200 - 025 - A | 25 | 0.98 | 112 | 4.41 | 87 | 3.43 | | | 6499 | 14609 | 7823 | 17587 | 235,0 | 14.34 | 3,20 | 7.05 | ✓ | |
| RT 4200 - 032 - A | 32 | 1.26 | 126 | 4.96 | 94 | 3.70 | | | 6723 | 15113 | 8183 | 18396 | 282,0 | 17.20 | 3,37 | 7.43 | ✓ | |
| RT 4200 - 038 - A | 38 | 1.50 | 138 | 5.43 | 100 | 3.94 | | | 6870 | 15443 | 8421 | 18931 | 323,0 | 19.70 | 3,52 | 7.76 | ✓ | |
| RT 4200 - 050 - A | 50 | 1.97 | 162 | 6.38 | 112 | 4.41 | | | 150 bar | 7085 | 15928 | 8774 | 19725 | 404,0 | 24.64 | 3,82 | 8.42 | ✓ |
| RT 4200 - 063 - A | 63 | 2.48 | 188 | 7.40 | 125 | 4.92 | | | 2175 psi | 7246 | 16289 | 9039 | 20320 | 492,0 | 30.01 | 4,14 | 9.13 | ✓ |
| RT 4200 - 075 - A | 75 | 2.95 | 212 | 8.35 | 137 | 5.39 | | | + 20 °C +68 °F | 7354 | 16533 | 9219 | 20725 | 573,0 | 34.95 | 4,44 | 9.79 | ✓ |
| RT 4200 - 080 - A | 80 | 3.15 | 222 | 8.74 | 142 | 5.59 | | | | 7391 | 16616 | 9281 | 20865 | 606,0 | 36.97 | 4,57 | 10.08 | ✓ |
| RT 4200 - 100 - A | 100 | 3.94 | 262 | 10.31 | 162 | 6.38 | | | | 7509 | 16880 | 9477 | 21305 | 742,0 | 45.26 | 5,07 | 11.18 | ✓ |
| RT 4200 - 125 - A | 125 | 4.92 | 312 | 12.28 | 187 | 7.36 | 7609 | 17105 | 9645 | 21683 | 911,0 | 55.57 | 5,69 | 12.54 | ✓ | | | |



HOW TO ORDER p. 103

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

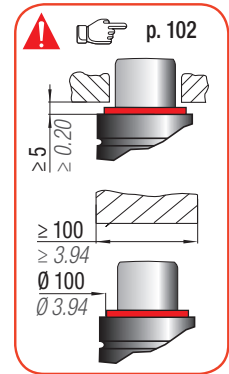
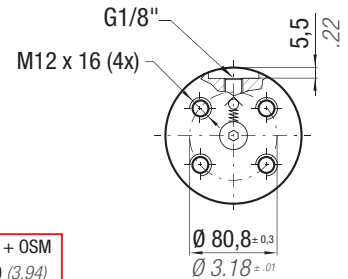
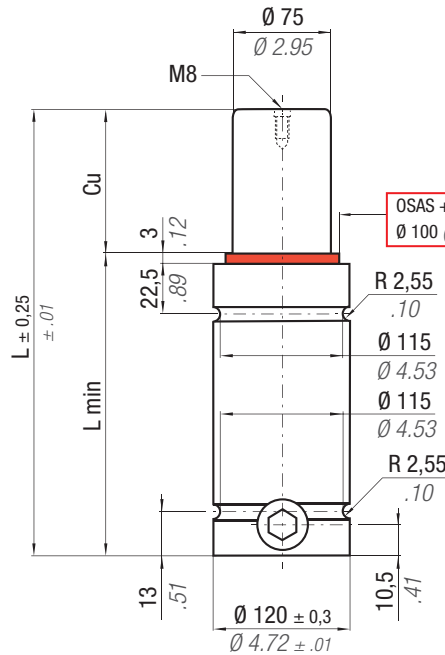
** F_{1p} = Polytrophic end force at 100% Cu



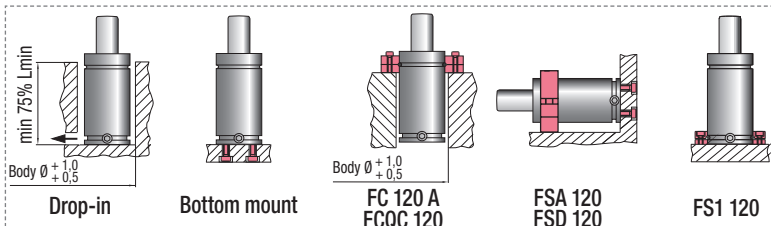
USAS



OPAS

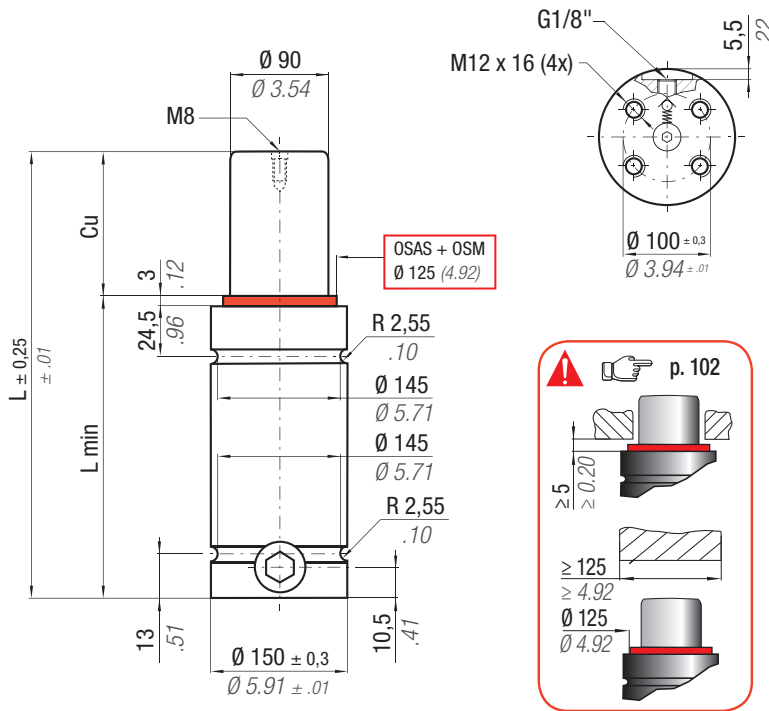


| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 44,18 cm ² 6.848 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV06600C | Vo | | PED | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|-----------------|-----------------|------|-------|------------|
| | | | | | | | | | | | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| RT 6600 - 016 - A | | | | | | | | | | | 309,0 | 18.85 | 5,41 | 11.93 | ✓ |
| RT 6600 - 019 - A | | | | | | | | | | | 341,0 | 20.80 | 5,53 | 12.19 | ✓ |
| RT 6600 - 025 - A | | | | | | | | | | | 405,0 | 24.71 | 5,77 | 12.72 | ✓ |
| RT 6600 - 032 - A | | | | | | | | | | | 479,0 | 29.22 | 6,05 | 13.34 | ✓ |
| RT 6600 - 038 - A | | | | | | | | | | | 544,0 | 33.18 | 6,25 | 13.78 | ✓ |
| RT 6600 - 050 - A | | | | | | | | | | | 672,0 | 40.99 | 6,77 | 14.93 | ✓ |
| RT 6600 - 063 - A | | | | | | | | | | | 811,0 | 49.47 | 7,25 | 15.98 | ✓ |
| RT 6600 - 075 - A | | | | | | | | | | | 939,0 | 57.28 | 7,77 | 17.13 | ✓ |
| RT 6600 - 080 - A | | | | | | | | | | | 992,0 | 60.51 | 7,97 | 17.57 | ✓ |
| RT 6600 - 100 - A | | | | | | | | | | | 1206,0 | 73.57 | 8,76 | 19.31 | ✓ |
| RT 6600 - 125 - A | | | | | | | | | | | 1473,0 | 89.85 | 9,76 | 21.52 | ✓ |



HOW TO ORDER p. 103

INSTALLATION GUIDELINE p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easu MANIFOLD p. 241

ACTIVE SAFETY

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu



OSAS



USAS

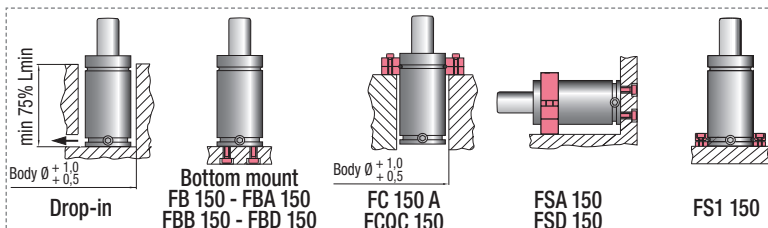


OPAS

RT

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 63,62 cm ² 9.864 in ² | SPM ~ 20 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV09500C |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|-------------------|-----|------|-----|-------|-------|------|-------------------------------------------------------|-------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| RT 9500 - 019 - A | 19 | 0.75 | 116 | 4.57 | 97 | 3.82 | 9540 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 21446 | 13206 | 29688 | 15375 | 34564 | 506,0 | 30.87 | 9,58 | 21.12 | ✓ |
| RT 9500 - 025 - A | 25 | 0.98 | 128 | 5.04 | 103 | 4.06 | | | 13741 | 30892 | 16208 | 36437 | 603,0 | 36.78 | 9,95 | 21.94 | ✓ |
| RT 9500 - 032 - A | 32 | 1.26 | 142 | 5.59 | 110 | 4.33 | | | 14214 | 31954 | 16952 | 38110 | 716,0 | 43.68 | 10,39 | 22.91 | ✓ |
| RT 9500 - 038 - A | 38 | 1.50 | 154 | 6.06 | 116 | 4.57 | | | 14530 | 32665 | 17455 | 39240 | 812,0 | 49.53 | 10,76 | 23.72 | ✓ |
| RT 9500 - 050 - A | 50 | 1.97 | 178 | 7.01 | 128 | 5.04 | | | 15003 | 33729 | 18214 | 40947 | 1006,0 | 61.37 | 11,51 | 25.38 | ✓ |
| RT 9500 - 063 - A | 63 | 2.48 | 204 | 8.03 | 141 | 5.55 | | | 15364 | 34539 | 18797 | 42257 | 1215,0 | 74.12 | 12,32 | 27.16 | ✓ |
| RT 9500 - 075 - A | 75 | 2.95 | 228 | 8.98 | 153 | 6.02 | | | 15610 | 35093 | 19198 | 43159 | 1409,0 | 85.95 | 13,07 | 28.81 | ✓ |
| RT 9500 - 080 - A | 80 | 3.15 | 238 | 9.37 | 158 | 6.22 | | | 15696 | 35285 | 19338 | 43474 | 1489,0 | 90.83 | 13,38 | 29.50 | ✓ |
| RT 9500 - 100 - A | 100 | 3.94 | 278 | 10.94 | 178 | 7.01 | | | 15967 | 35895 | 19783 | 44474 | 1812,0 | 110.53 | 14,63 | 32.25 | ✓ |
| RT 9500 - 125 - A | 125 | 4.92 | 328 | 12.91 | 203 | 7.99 | | | 16202 | 36423 | 20170 | 45344 | 2215,0 | 135.12 | 16,19 | 35.69 | ✓ |



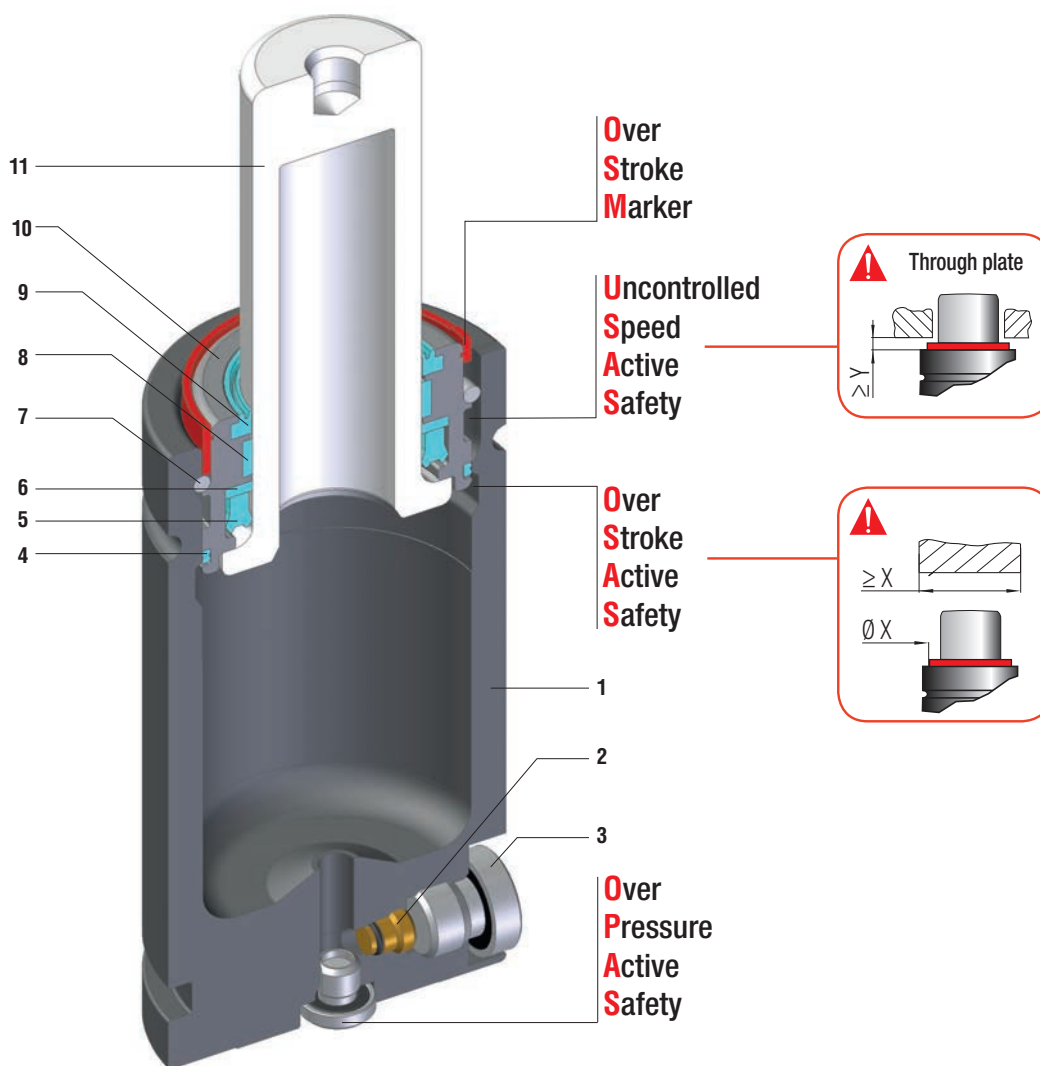
HOW TO ORDER

p. 103

INSTALLATION GUIDELINE

p. 203

| | | |
|----|---------|--------|
| MB | Renault | Suzuki |
| | | |
| | | |



Forze ISO, altezza ridotta - ISO forces, reduced height - ISO Kräfte, Reduzierte Höhe
 Forces ISO, Hauteur réduite - ISO fuerzas, altura reducida - Forças ISO, altura reduzida

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Rod seal | 9 | Rod wiper |
| 2 | Valve | 6 | Back-up ring | 10 | Bush |
| 3 | Plug | 7 | Retaining ring | 11 | Rod (nitrited superfinished) |
| 4 | Dual ring seal | 8 | Guide ring | | |

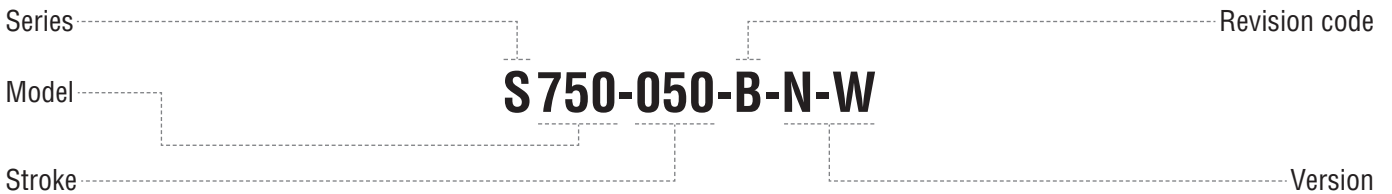
RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|--------|--------|------|-----------|-------------|------------------|------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| S 500 | 45 | 1.77 | 6 - 125 | 0.24 - 4.92 | 470 | 1057 | - | - | - | - | - |
| S 750 | 50 | 1.97 | 6 - 125 | 0.24 - 4.92 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ |
| S 1500 | 75 | 2.95 | 25 - 100 | 0.98 - 3.94 | 1530 | 3440 | - | - | ✓ | - | - |
| S 3000 | 95 | 3.74 | 25 - 100 | 0.98 - 3.94 | 2945 | 6621 | - | - | ✓ | - | - |

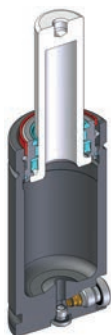
✓ Built-in as standard

✓ Optional upon request

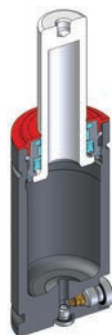
HOW TO ORDER



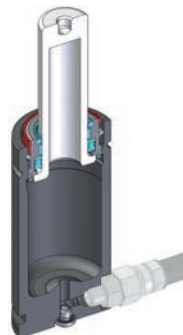
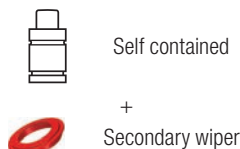
Available versions



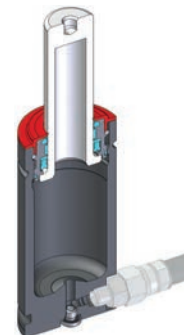
S 750-050-B
Standard code



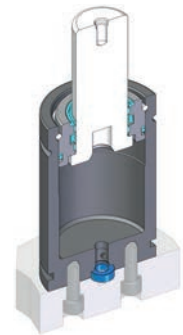
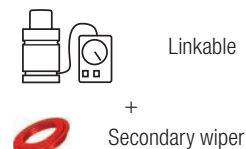
S 750-050-B-W
Add "-W" to standard code



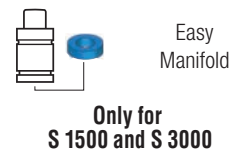
S 750-050-B-N
Add "-N" to standard code



S 750-050-B-N-W
Add "-N-W" to standard code



S 1500-050-A-E
Add "-E" to standard code



ACTIVE SAFETY

* $F_{1i} =$

Isothermal end force at 100% Cu

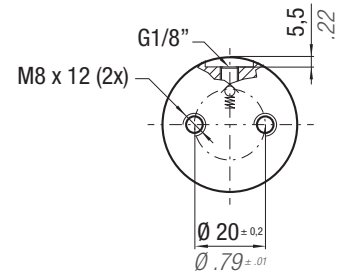
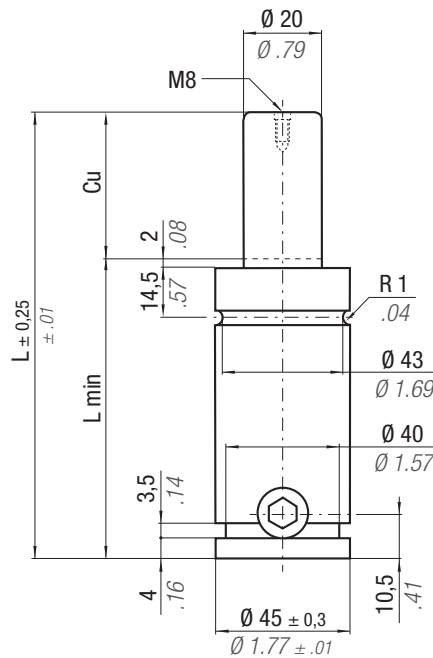


p. 18

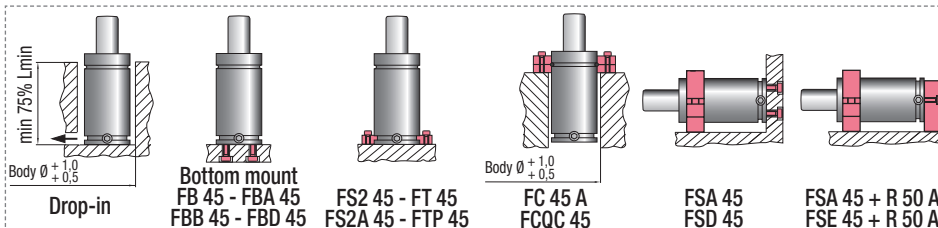


** $F_{1p} =$

Polytropic end force at 100% Cu



| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|-----------------|-----|------|-----|-------|-------|------|------------------------------------------------------|------|-------------------|------|--------------------|------|-----------------|-----------------|-----------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| S 500 - 006 - A | 6 | 0.24 | 62 | 2.44 | 56 | 2.20 | 470 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 1057 | 579 | 1301 | 648 | 1457 | 12,0 | 0.73 | 0,54 | 1.19 | ✓ |
| S 500 - 013 - A | 13 | 0.51 | 76 | 2.99 | 63 | 2.48 | | | 622 | 1399 | 714 | 1604 | 20,0 | 1.22 | 0,58 | 1.28 | ✓ |
| S 500 - 019 - A | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 645 | 1451 | 749 | 1683 | 26,0 | 1.59 | 0,62 | 1.37 | ✓ |
| S 500 - 025 - A | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 660 | 1485 | 772 | 1736 | 32,0 | 1.95 | 0,67 | 1.48 | ✓ |
| S 500 - 038 - A | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 680 | 1528 | 802 | 1804 | 45,0 | 2.75 | 0,77 | 1.70 | ✓ |
| S 500 - 050 - A | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 690 | 1552 | 819 | 1840 | 57,0 | 3.48 | 0,85 | 1.87 | ✓ |
| S 500 - 063 - A | 63 | 2.48 | 176 | 6.93 | 113 | 4.45 | | | 669 | 1505 | 786 | 1767 | 78,0 | 4.76 | 0,90 | 1.98 | ✓ |
| S 500 - 080 - A | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 678 | 1524 | 799 | 1797 | 96,0 | 5.86 | 1,01 | 2.23 | ✓ |
| S 500 - 100 - A | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 687 | 1544 | 813 | 1828 | 116,0 | 7.08 | 1,16 | 2.56 | ✓ |
| S 500 - 125 - A | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 694 | 1561 | 825 | 1855 | 141,0 | 8.60 | 1,35 | 2.98 | ✓ |

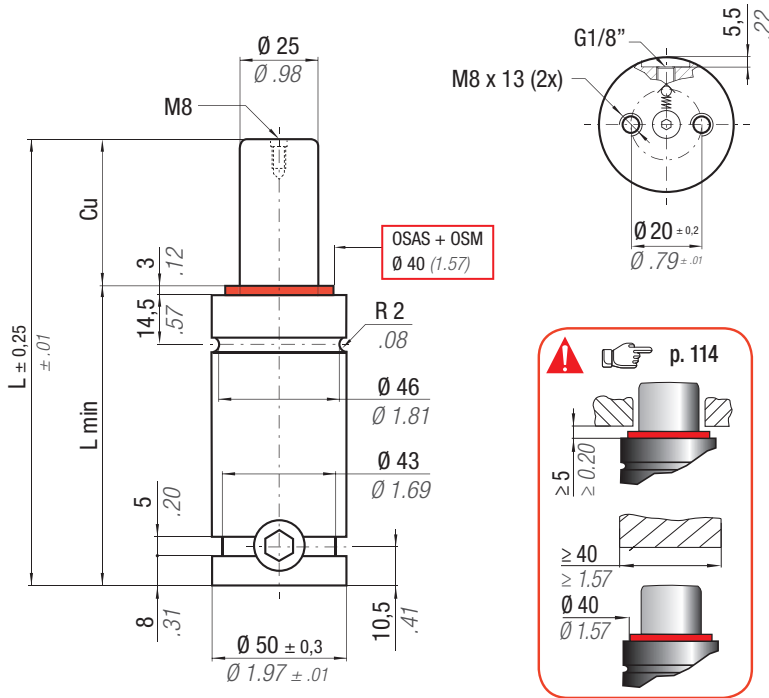


HOW TO ORDER

p. 115

INSTALLATION GUIDELINE

p. 203



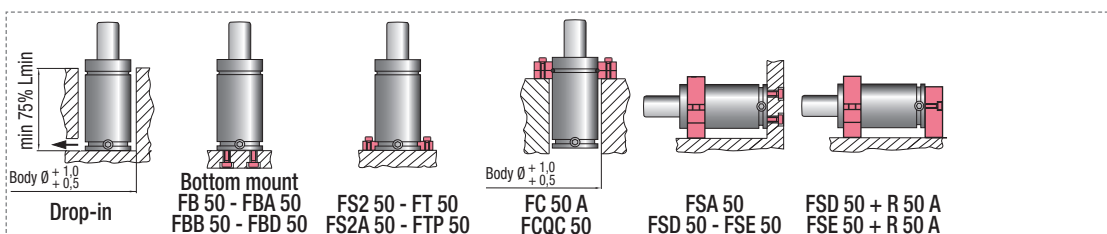
OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytropic end force at 100% Cu



| | | | | | | | | | |
|--|--------------------------------|------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 30 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS00750B |
|--|--------------------------------|------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg ~lb | | PED 2014/68/EU |
|-------------------------------------|-----------------|-----|------|-----|-------|-------|------|-----------------------------------------------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|---------|---|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| S 750 - 006 - A | S 750 - 006 - B | 6 | 0.24 | 62 | 2.44 | 56 | 2.20 | 740 1664 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 909 | 2044 | 1019 | 2291 | 18,0 | 1.10 | 0,60 | 1.32 | ✓ | |
| S 750 - 013 - A | S 750 - 013 - B | 13 | 0.51 | 76 | 2.99 | 63 | 2.48 | | 995 | 2237 | 1149 | 2583 | 29,0 | 1.77 | 0,66 | 1.46 | ✓ | |
| S 750 - 019 - A | S 750 - 019 - B | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | 1035 | 2327 | 1212 | 2725 | 38,0 | 2.32 | 0,71 | 1.57 | ✓ | |
| S 750 - 025 - A | S 750 - 025 - B | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | 1062 | 2387 | 1253 | 2817 | 46,0 | 2.81 | 0,75 | 1.65 | ✓ | |
| S 750 - 038 - A | S 750 - 038 - B | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | 1096 | 2464 | 1307 | 2938 | 66,0 | 4.03 | 0,85 | 1.87 | ✓ | |
| S 750 - 050 - A | S 750 - 050 - B | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | 1114 | 2504 | 1336 | 3003 | 84,0 | 5.12 | 0,95 | 2.09 | ✓ | |
| S 750 - 063 - A | S 750 - 063 - B | 63 | 2.48 | 176 | 6.93 | 113 | 4.45 | | 1128 | 2536 | 1357 | 3051 | 103,0 | 6.28 | 1,05 | 2.31 | ✓ | |
| S 750 - 080 - A | S 750 - 080 - B | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | 1139 | 2561 | 1375 | 3091 | 128,0 | 7.81 | 1,18 | 2.60 | ✓ | |
| S 750 - 100 - A | S 750 - 100 - B | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | 1148 | 2581 | 1390 | 3125 | 158,0 | 9.64 | 1,33 | 2.93 | ✓ | |
| S 750 - 125 - A | S 750 - 125 - B | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | 1155 | 2597 | 1401 | 3150 | 195,0 | 11.90 | 1,52 | 3.35 | ✓ | |



HOW TO ORDER
 p. 115

INSTALLATION GUIDELINE
 p. 203



p. 241

ACTIVE SAFETY

* $F_{1i} =$

Isothermal end force at 100% Cu

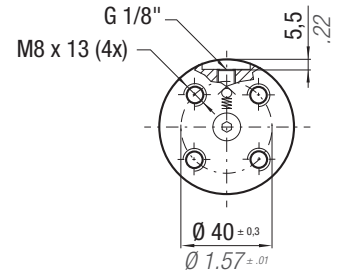
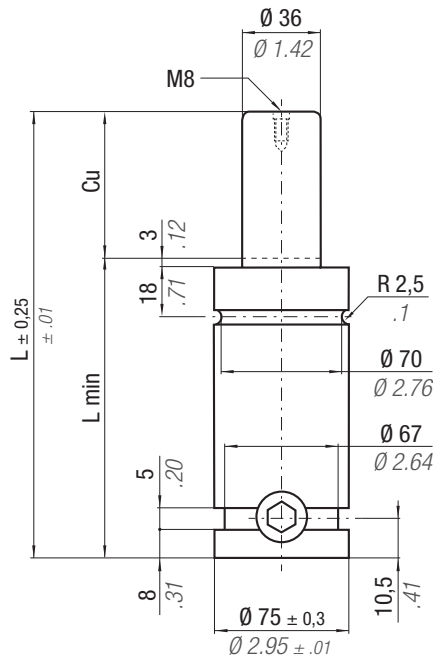
p. 18

** $F_{1p} =$

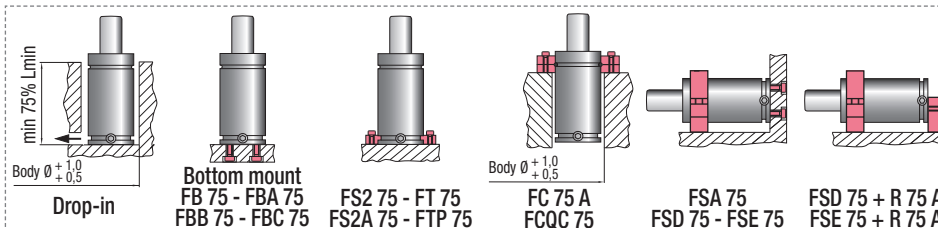
Polytropic end force at 100% Cu



OPAS



| CODE | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1,578 in ² | SPM ~ 20 - 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS01500A | Vo | | PED | | | |
|------------------|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|--------------------------------|-----------------|-----------------|-------|------|------------|---|
| | | | | | | | | | | | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | |
| S 1500 - 025 - A | | | | | | | | | | | | 93,0 | 5,67 | 2,25 | 4,96 | ✓ |
| S 1500 - 038 - A | | | | | | | | | | | | 130,0 | 7,93 | 2,53 | 5,58 | ✓ |
| S 1500 - 050 - A | | | | | | | | | | | | 164,0 | 10,00 | 2,78 | 6,13 | ✓ |
| S 1500 - 063 - A | | | | | | | | | | | | 200,0 | 12,20 | 3,06 | 6,75 | ✓ |
| S 1500 - 080 - A | | | | | | | | | | | | 248,0 | 15,13 | 3,42 | 7,54 | ✓ |
| S 1500 - 100 - A | | | | | | | | | | | | 305,0 | 18,61 | 3,84 | 8,47 | ✓ |

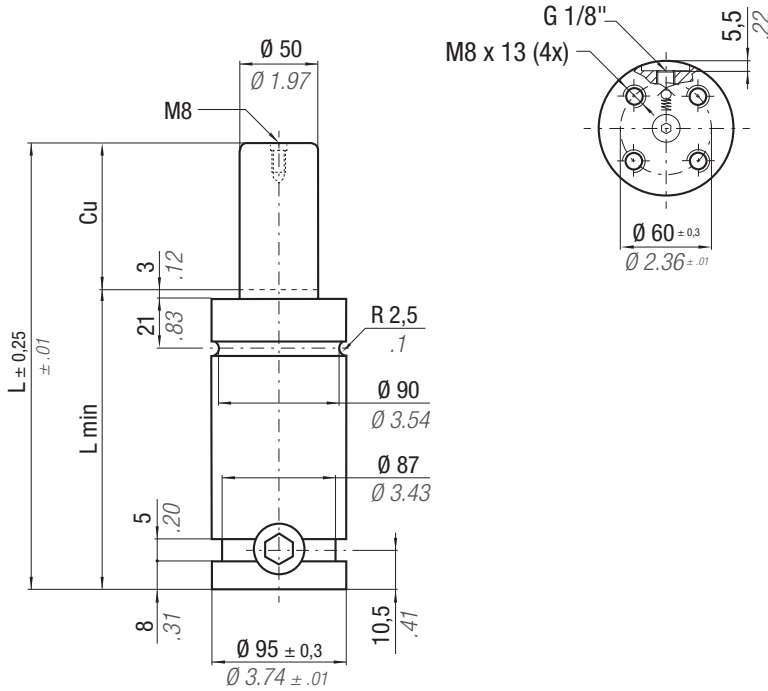


HOW TO ORDER

p. 115

INSTALLATION GUIDELINE

p. 203



easu MANIFOLD p. 241

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

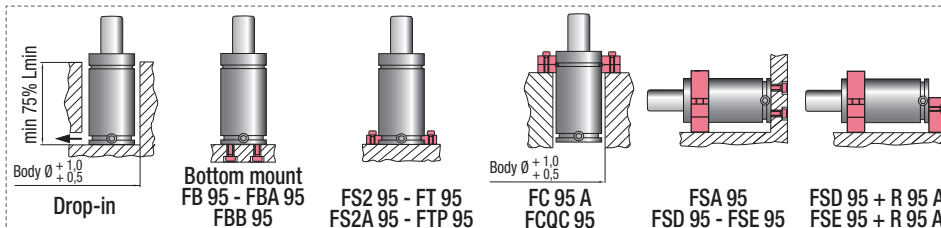
Polytropic end force at 100% Cu

ACTIVE SAFETY



| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 19,63 cm ² 3.043 in ² | SPM ~ 15 - 60 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS03000A |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | ~Kg ~lb | | 2014/68/EU |
|------------------|-----|------|-----|-------|-------|------|---------------------------------|------|--------------------------------|-------|---------------------------------|-------|-----------------|-----------------|---------|-------|----------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| S 3000 - 025 - A | 25 | 0.98 | 120 | 4.72 | 95 | 3.74 | 2945 | 6621 | 4860 | 10927 | 5995 | 13477 | 143,0 | 8.72 | 4,13 | 9.11 | ✓ |
| S 3000 - 038 - A | 38 | 1.50 | 146 | 5.75 | 108 | 4.25 | $\pm 5\%$ | | 5101 | 11467 | 6391 | 14368 | 202,0 | 12.32 | 4,61 | 10.16 | ✓ |
| S 3000 - 050 - A | 50 | 1.97 | 170 | 6.69 | 120 | 4.72 | 150 bar 2175 psi | | 5233 | 11764 | 6612 | 14865 | 256,0 | 15.62 | 5,04 | 11.11 | ✓ |
| S 3000 - 063 - A | 63 | 2.48 | 196 | 7.72 | 133 | 5.24 | | | 5328 | 11979 | 6773 | 15227 | 315,0 | 19.22 | 5,51 | 12.15 | ✓ |
| S 3000 - 080 - A | 80 | 3.15 | 230 | 9.06 | 150 | 5.91 | | | 5413 | 12168 | 6916 | 15547 | 392,0 | 23.91 | 6,13 | 13.51 | ✓ |
| S 3000 - 100 - A | 100 | 3.94 | 270 | 10.63 | 170 | 6.69 | + 20 °C +68 °F | | 5479 | 12317 | 7028 | 15800 | 483,0 | 29.46 | 6,86 | 15.12 | ✓ |



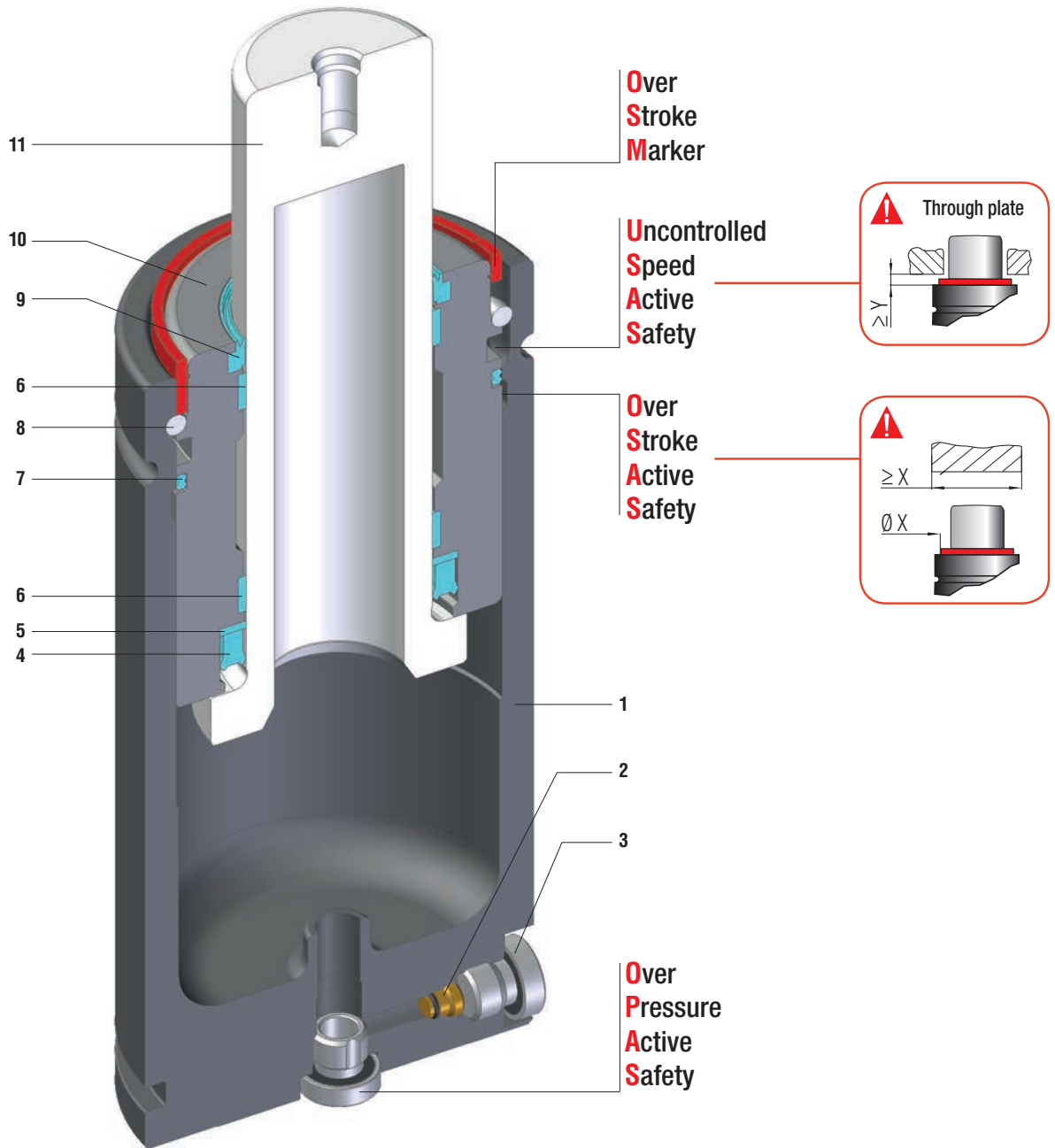
HOW TO ORDER

p. 115

INSTALLATION GUIDELINE

p. 203

| | | |
|---------|--------|-------|
| ISO | VDI | BMW |
| FCA | Ford | Mazda |
| MB | Nissan | PSA |
| Renault | Suzuki | VW |



ISO 11901 standard - ISO 11901 standard - ISO 11901 standard
 Conforme ISO 11901 - ISO 11901 standard - Norma ISO 11901

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Back-up ring | 9 | Rod wiper |
| 2 | Valve | 6 | Guide ring | 10 | Bush |
| 3 | Plug | 7 | Dual ring seal | 11 | Rod (nitrited superfinished) |
| 4 | Rod seal | 8 | Retaining ring | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|----------|------------|------|-----------|--------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| SC 150 | 32 | 1.26 | 10 - 125 | 0.39 - 4.92 | 170 | 382 | ✓ | ✓ | ✓ | - | ✓ |
| SC 250 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 260 | 585 | ✓ | ✓ | ✓ | - | ✓ |
| SCF 250 | M 38 X 1,5 | | 10 - 125 | 0.39 - 4.92 | 260 | 585 | ✓ | ✓ | ✓ | - | ✓ |
| SC 500 | 45 | 1.77 | 10 - 200 | 0.39 - 6.30 | 470 | 1057 | ✓ | ✓ | ✓ | - | ✓ |
| SC 750 | 50 | 1.97 | 13 - 300 | 0.51 - 11.81 | 740 | 1664 | ✓ | ✓ | ✓ | - | ✓ |
| SC 1500 | 75 | 2.95 | 13 - 300 | 0.51 - 11.81 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ |
| SC 3000 | 95 | 3.74 | 13 - 300 | 0.51 - 11.81 | 2945 | 6621 | ✓ | ✓ | ✓ | - | ✓ |
| SC 5000 | 120 | 4.72 | 25 - 300 | 0.98 - 11.81 | 4980 | 11195 | ✓ | ✓ | ✓ | - | ✓ |
| SC 7500 | 150 | 5.91 | 25 - 300 | 0.98 - 11.81 | 7540 | 16950 | ✓ | ✓ | ✓ | - | ✓ |
| SC 10000 | 195 | 7.68 | 25 - 300 | 0.98 - 11.81 | 10600 | 23830 | ✓ | ✓ | ✓ | - | ✓ |

Built-in as standard
 Optional upon request

HOW TO ORDER

Series _____ Revision code _____

Model **SC 1500-050-D-E-W**

Stroke _____ Version _____

SC
SCF

Available versions

| | | | | | |
|---------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| | | | | | |
| SC 1500-050-D Standard code | SC 1500-050-D-W Add "-W" to standard code | SC 1500-050-D-N Add "-N" to standard code | SC 1500-050-D-N-W Add "-N-W" to standard code | SC 1500-050-D-E Add "-E" to standard code | SC 1500-050-D-E-W Add "-E-W" to standard code |
| Self contained | Self contained + Secondary wiper | Linkable | Linkable + Secondary wiper | Easy Manifold | Easy Manifold + Secondary wiper |

| | | | |
|------------------------------------------|--------------------------------|------------------------------------------|-------------------------------|
| ISO 11901 - 1 B8 3180 220 000 001(MB) | VDI 3003 E24.54.815.G (PSA) | 075.90.55 (FCA) EM24.54.700 (Renault) | B2 4006 (BMW) 39D 878 (VW) |
|------------------------------------------|--------------------------------|------------------------------------------|-------------------------------|



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

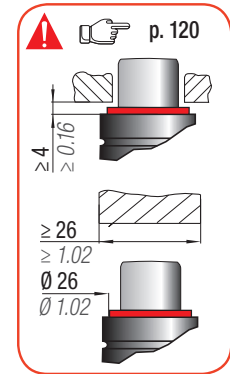
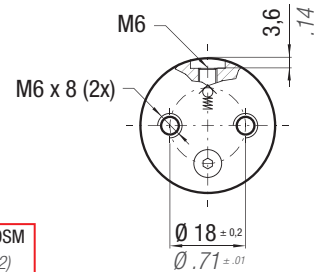
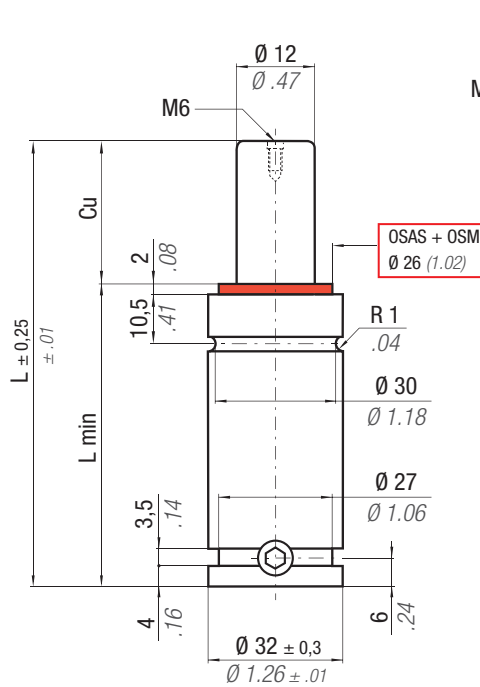
ACTIVE SAFETY

easyl MANIFOLD p. 241



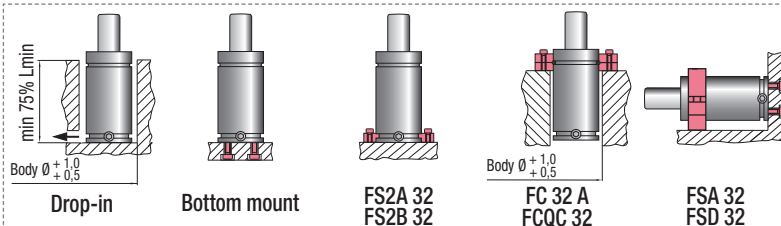
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu



| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 1,13 cm ² 0.175 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSC00150E |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|------|------|------|-------|-------|------|------------------------------------------------------|-----|-------------------|-----|--------------------|-----|-----------------|-----------------|------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| SC 150 - 010 - D | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 170 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 382 | 191 | 429 | 207 | 466 | 12,0 | 0.73 | 0,28 | 0,62 | ✓ |
| SC 150 - 013 - D | 12,7 | 0.51 | 75,4 | 2.97 | 62,7 | 2.47 | | | 194 | 435 | 212 | 476 | 14,0 | 0.85 | 0,29 | 0,64 | ✓ |
| SC 150 - 016 - D | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 197 | 442 | 216 | 486 | 16,0 | 0.98 | 0,30 | 0,66 | ✓ |
| SC 150 - 025 - D | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 202 | 455 | 224 | 504 | 21,0 | 1.28 | 0,33 | 0,73 | ✓ |
| SC 150 - 038 - D | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 207 | 465 | 231 | 519 | 28,0 | 1.71 | 0,36 | 0,79 | ✓ |
| SC 150 - 050 - D | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 209 | 471 | 235 | 528 | 35,0 | 2.14 | 0,40 | 0,88 | ✓ |
| SC 150 - 063 - D | 63,5 | 2.48 | 177 | 6.97 | 113,5 | 4.47 | | | 211 | 475 | 238 | 535 | 43,0 | 2.62 | 0,44 | 0,97 | ✓ |
| SC 150 - 080 - D | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 213 | 479 | 240 | 540 | 52,0 | 3.17 | 0,49 | 1.08 | ✓ |
| SC 150 - 100 - D | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 214 | 482 | 242 | 545 | 63,0 | 3.84 | 0,55 | 1.21 | ✓ |
| SC 150 - 125 - D | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 216 | 485 | 244 | 549 | 78,0 | 4.76 | 0,64 | 1.41 | ✓ |



HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203

| | | | |
|-------------------------|-----------------|--------------------|-----------------------|
| ISO 11901 - 1 | VDI 3003 | B2 4006 (BMW) | 075.90.55 (FCA) |
| B8 3180 220 000 001(MB) | K 32 S (Nissan) | E24.54.815.G (PSA) | EM24.54.700 (Renault) |
| SES-K 5404e (Suzuki) | 39D 878 (VW) | | |

SC 250



ACTIVE SAFETY



OSAS



USAS

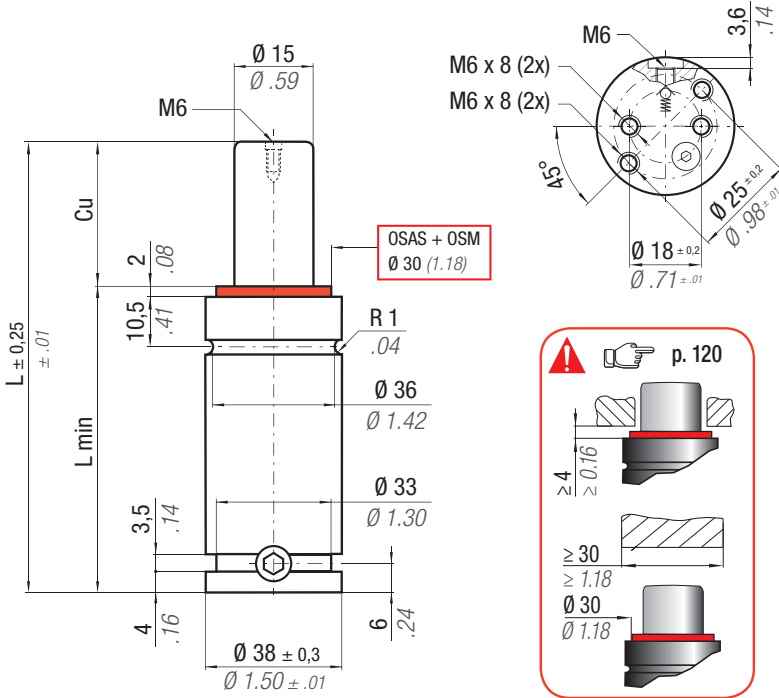


OPAS

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easyl MANIFOLD p. 241

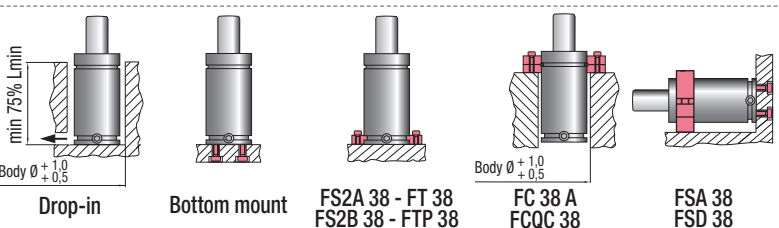
* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polyphotic end force at 100% Cu



| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 1,77 cm ² 0.274 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSC00250E |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|------|------|------|-------|-------|------|-------------------------------------------------------------|-----|-------------------|-----|--------------------|------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| SC 250 - 010 - D | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 260 585 ± 5% 150 bar 2175 psi + 20 °C +68 °F | | 303 | 682 | 332 | 746 | 16,0 | 0.98 | 0,40 | 0.88 | ✓ |
| SC 250 - 013 - D | 12,7 | 0.50 | 75,4 | 2.97 | 62,7 | 2.47 | | | 309 | 695 | 340 | 765 | 19,0 | 1.16 | 0,41 | 0.90 | ✓ |
| SC 250 - 016 - D | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 315 | 707 | 348 | 783 | 21,0 | 1.28 | 0,43 | 0.95 | ✓ |
| SC 250 - 019 - D | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 319 | 717 | 354 | 797 | 23,0 | 1.40 | 0,45 | 0.99 | ✓ |
| SC 250 - 025 - D | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 325 | 731 | 364 | 818 | 28,0 | 1.71 | 0,48 | 1.06 | ✓ |
| SC 250 - 038 - D | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 334 | 751 | 377 | 848 | 38,0 | 2.32 | 0,54 | 1.19 | ✓ |
| SC 250 - 050 - D | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 339 | 762 | 385 | 865 | 47,0 | 2.87 | 0,60 | 1.32 | ✓ |
| SC 250 - 063 - D | 63,5 | 2.50 | 177 | 6.97 | 113,5 | 4.47 | | | 343 | 771 | 391 | 878 | 58,0 | 3.54 | 0,66 | 1.46 | ✓ |
| SC 250 - 080 - D | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 346 | 778 | 395 | 889 | 70,0 | 4.27 | 0,74 | 1.63 | ✓ |
| SC 250 - 100 - D | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 349 | 784 | 399 | 898 | 85,0 | 5.19 | 0,81 | 1.79 | ✓ |
| SC 250 - 125 - D | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | 351 | 789 | 403 | 906 | 105,0 | 6.41 | 0,98 | 2.16 | ✓ | | |

SC SCF



HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

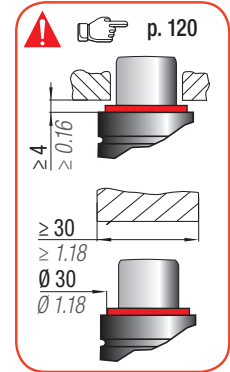
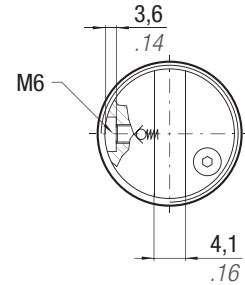
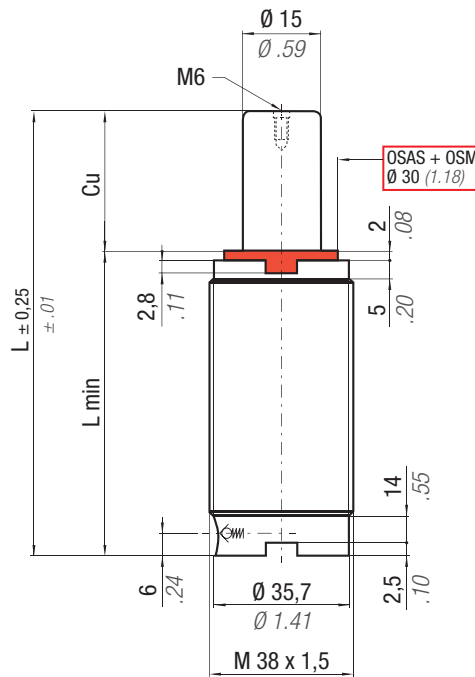
O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} =

Isothermal end force at 100% Cu p. 18

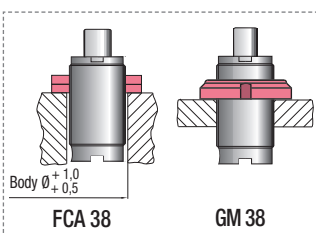
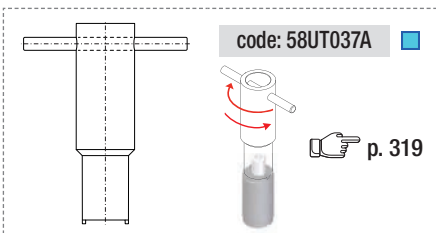
** F_{1p} =

Polytropic end force at 100% Cu



| | | | | | | | | | |
|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|--------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 1,77 cm ² 0,274 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS00250E |
|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|--------------------------------|

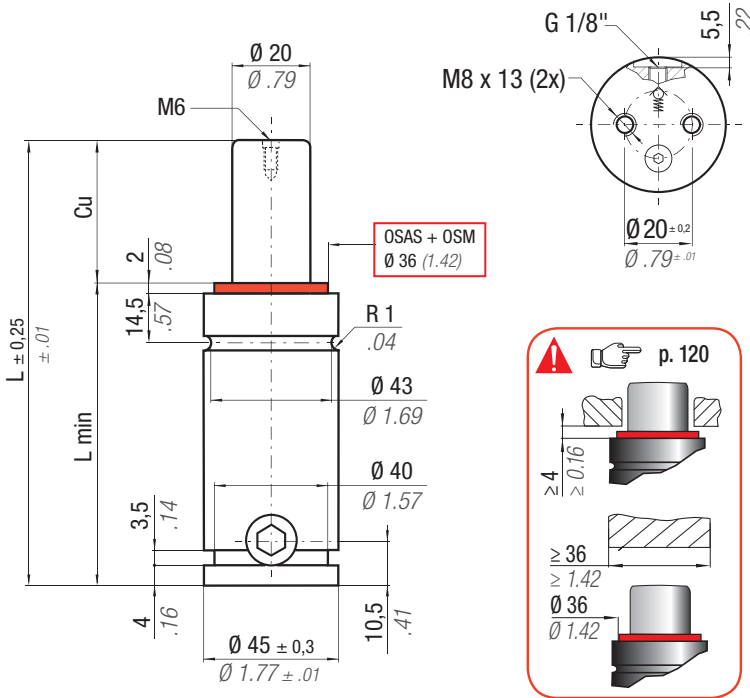
| CODE PHASING OUT from 09/2009 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|-------------------|------|------|------|-------|-------|------|---------------------------------|----|----------------------------------|-----|------------------------------------|-----|-----------------|-----------------|-------------------|------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| SCF 250 - 010 - A | SCF 250 - 010 - D | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 260 585 ± 5% | | 303 | 682 | 332 | 746 | 16,0 | 0.98 | 0,37 | 0.81 | ✓ |
| SCF 250 - 013 - A | SCF 250 - 013 - D | 12,7 | 0.50 | 75,4 | 2.97 | 62,7 | 2.47 | | | 309 | 695 | 340 | 765 | 19,0 | 1.16 | 0,38 | 0.84 | ✓ |
| SCF 250 - 016 - A | SCF 250 - 016 - D | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 315 | 707 | 348 | 783 | 21,0 | 1.28 | 0,39 | 0.86 | ✓ |
| - | SCF 250 - 019 - D | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 319 | 717 | 354 | 797 | 23,0 | 1.40 | 0,42 | 0.92 | ✓ |
| SCF 250 - 025 - A | SCF 250 - 025 - D | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | 150 bar 2175 psi | | 325 | 731 | 364 | 818 | 28,0 | 1.71 | 0,44 | 0.97 | ✓ |
| SCF 250 - 038 - A | SCF 250 - 038 - D | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 334 | 751 | 377 | 848 | 38,0 | 2.32 | 0,50 | 1.10 | ✓ |
| SCF 250 - 050 - A | SCF 250 - 050 - D | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | + 20 °C + 68 °F | | 339 | 762 | 385 | 865 | 47,0 | 2.87 | 0,55 | 1.21 | ✓ |
| SCF 250 - 063 - A | SCF 250 - 063 - D | 63,5 | 2.50 | 177 | 6.97 | 113,5 | 4.47 | | | 343 | 771 | 391 | 878 | 58,0 | 3.54 | 0,63 | 1.39 | ✓ |
| SCF 250 - 080 - A | SCF 250 - 080 - D | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 346 | 778 | 395 | 889 | 70,0 | 4.27 | 0,70 | 1.54 | ✓ |
| SCF 250 - 100 - A | SCF 250 - 100 - D | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 349 | 784 | 399 | 898 | 86,0 | 5.25 | 0,75 | 1.65 | ✓ |
| SCF 250 - 125 - A | SCF 250 - 125 - D | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 351 | 789 | 403 | 906 | 105,0 | 6.41 | 0,93 | 2.05 | ✓ |



HOW TO ORDER
 p. 121

INSTALLATION GUIDELINE
 p. 203

| | | | |
|-----------------------|-------------------------|-----------------|--------------------|
| ISO 11901 - 1 | VDI 3003 | B2 4006 (BMW) | 075.90.55 (FCA) |
| PG23D (Mazda) | B8 3180 220 000 001(MB) | K 32 S (Nissan) | E24.54.815.G (PSA) |
| EM24.54.700 (Renault) | SES-K 5404e (Suzuki) | 39D 878 (VW) | |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

ACTIVE SAFETY

The new code will be supplied only when the old will be out of stock



Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé



El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock



easu MANIFOLD p. 241

* $F_{1i} =$

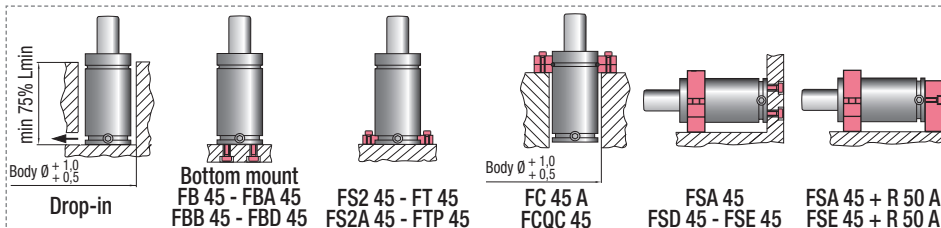
Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu

| CODE | PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|------------------|--------------------------|------------------|------|------|-------|-------|-------|-------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|-----------------|------|--------------|
| | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 39BMSC00500D |
| - | SC 500 - 010 - D | SC 500 - 010 - D | 10 | 0.39 | 105 | 4.13 | 95 | 3.74 | | | 595 | 1338 | 673 | 1512 | 18,0 | 1.10 | 0,90 | 1.98 | ✓ |
| SC 500 - 013 - B | SC 500 - 013 - D | SC 500 - 013 - D | 12,7 | 0.50 | 110,4 | 4.35 | 97,7 | 3.85 | | | 611 | 1373 | 696 | 1565 | 20,0 | 1.22 | 1,00 | 2.20 | ✓ |
| SC 500 - 025 - B | SC 500 - 025 - D | SC 500 - 025 - D | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | | | 652 | 1466 | 759 | 1707 | 33,0 | 2.01 | 1,09 | 2.40 | ✓ |
| SC 500 - 038 - B | SC 500 - 038 - D | SC 500 - 038 - D | 38 | 1.50 | 161 | 6.34 | 123 | 4.84 | 470 | 1057 | 673 | 1513 | 792 | 1780 | 46,0 | 2.81 | 1,20 | 2.65 | ✓ |
| SC 500 - 050 - B | SC 500 - 050 - D | SC 500 - 050 - D | 50 | 1.97 | 185 | 7.28 | 135 | 5.31 | | | 685 | 1539 | 810 | 1820 | 58,0 | 3.54 | 1,29 | 2.84 | ✓ |
| SC 500 - 063 - B | SC 500 - 063 - D | SC 500 - 063 - D | 63,5 | 2.50 | 212 | 8.35 | 148,5 | 5.85 | | | 693 | 1558 | 823 | 1850 | 72,0 | 4.39 | 1,38 | 3.04 | ✓ |
| SC 500 - 080 - B | SC 500 - 080 - D | SC 500 - 080 - D | 80 | 3.15 | 245 | 9.65 | 165 | 6.50 | | | 700 | 1573 | 834 | 1875 | 89,0 | 5.43 | 1,50 | 3.31 | ✓ |
| SC 500 - 100 - B | SC 500 - 100 - D | SC 500 - 100 - D | 100 | 3.94 | 285 | 11.22 | 185 | 7.28 | | | 706 | 1586 | 843 | 1895 | 109,0 | 6.65 | 1,64 | 3.62 | ✓ |
| SC 500 - 125 - B | SC 500 - 125 - D | SC 500 - 125 - D | 125 | 4.92 | 335 | 13.19 | 210 | 8.27 | | | 710 | 1597 | 850 | 1912 | 135,0 | 8.24 | 1,85 | 4.08 | ✓ |
| SC 500 - 160 - B | SC 500 - 160 - D | SC 500 - 160 - D | 160 | 6.30 | 405 | 15.94 | 245 | 9.65 | | | 715 | 1606 | 857 | 1927 | 170,0 | 10.37 | 2,10 | 4.63 | ✓ |
| - | SC 500 - 200 - D | SC 500 - 200 - D | 200 | 7.87 | 485 | 19.09 | 285 | 11.22 | | | 728 | 1637 | 878 | 1974 | 205,0 | 12.51 | 2,36 | 5.20 | ✓ |

SC SCF



HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203

| | | | |
|--------------------|-----------------------|-------------------------|-----------------|
| ISO 11901 - 1 | VDI 3003 | B2 4006 (BMW) | 075.90.55 (FCA) |
| W-DX35-6203 (Ford) | PG23D (Mazda) | B8 3180 220 000 001(MB) | K 32 S (Nissan) |
| E24.54.815.G (PSA) | EM24.54.700 (Renault) | SES-K 5404e (Suzuki) | 39D 878 (VW) |

SC 1500



ACTIVE SAFETY



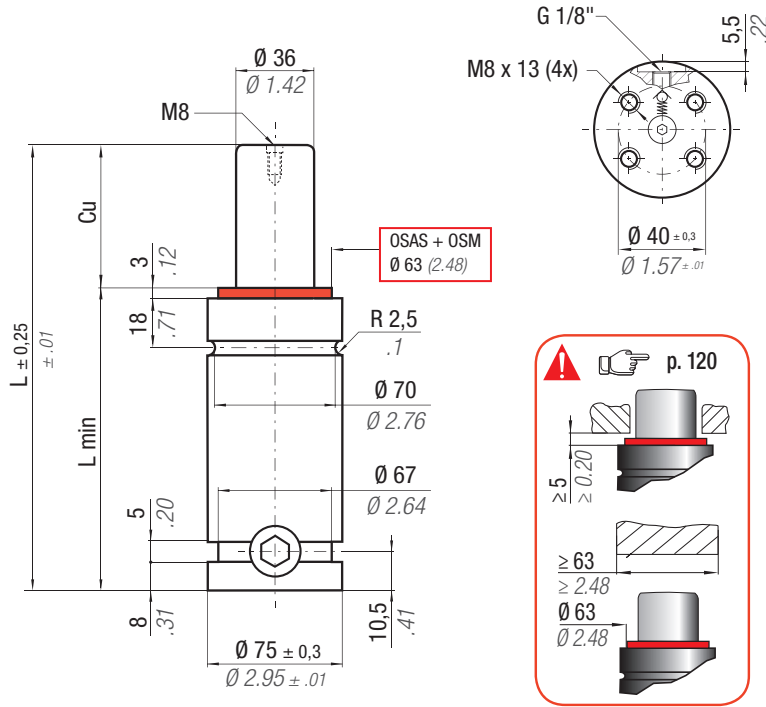
OSAS



USAS



OPAS



OSAS + OSM = OVER STROKE SAFETY + OVER STROKE MARKER

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

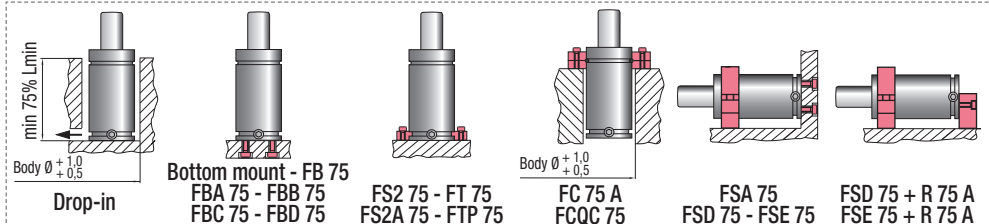
easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------------------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,18 cm ² 1.578 in ² | SPM ~ 15 - 50 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSC01500D Cu 13 ÷ 80 39BMSC01500DH Cu 88 ÷ 300 |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------------------------------------------------|

| CODE | PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F0 | | F _{1i} * | | F _{1p} ** | | V0 | | | 2014/68/EU |
|-------------------|--------------------------|------|-------|------|-------|-------|-------|----------------------|------|------|-------------------|--------|--------------------|-------|-----------------|-----------------|-------|------------|
| | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | |
| - | SC 1500 - 013 - D | 13 | 0.51 | 135 | 5.31 | 122 | 4.80 | 1530 3440 ± 5% | 1819 | 4089 | 2016 | 4532 | 97,0 | 5.92 | 3,26 | 7.19 | ✓ | |
| SC 1500 - 025 - B | SC 1500 - 025 - D | 25 | 0.98 | 160 | 6.30 | 135 | 5.31 | | | 1925 | 4329 | 2174 | 4888 | 144,0 | 8.78 | 3,47 | 7.65 | ✓ |
| SC 1500 - 038 - B | SC 1500 - 038 - D | 38 | 1.50 | 186 | 7.32 | 148 | 5.83 | | | 2000 | 4496 | 2287 | 5141 | 191,0 | 11.65 | 3,67 | 8.09 | ✓ |
| SC 1500 - 050 - B | SC 1500 - 050 - D | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | | | 2045 | 4596 | 2355 | 5294 | 234,0 | 14.27 | 3,85 | 8.49 | ✓ |
| SC 1500 - 063 - B | SC 1500 - 063 - D | 63,5 | 2.50 | 237 | 9.33 | 173,5 | 6.83 | | | 2080 | 4675 | 2409 | 5415 | 283,0 | 17.26 | 4,05 | 8.93 | ✓ |
| - | SC 1500 - 075 - D | 75 | 2.95 | 260 | 10.24 | 185 | 7.28 | | | 2102 | 4725 | 2443 | 5492 | 324,0 | 19.76 | 4,23 | 9.33 | ✓ |
| SC 1500 - 080 - B | SC 1500 - 080 - D | 80 | 3.15 | 270 | 10.63 | 190 | 7.48 | | | 2110 | 4743 | 2455 | 5519 | 342,0 | 20.86 | 4,30 | 9.48 | ✓ |
| - | SC 1500 - 088 - D | 88 | 3.46 | 285 | 11.22 | 197 | 7.76 | | | 2130 | 4788 | 2486 | 5589 | 367,0 | 22.39 | 4,42 | 9.74 | ✓ |
| SC 1500 - 100 - B | SC 1500 - 100 - D | 100 | 3.94 | 310 | 12.20 | 210 | 8.27 | | | 2136 | 4802 | 2495 | 5609 | 414,0 | 25.25 | 4,60 | 10.14 | ✓ |
| - | SC 1500 - 113 - D | 113 | 4.45 | 335 | 13.19 | 222 | 8.74 | | | 2151 | 4836 | 2520 | 5665 | 459,0 | 28.00 | 4,78 | 10.54 | ✓ |
| SC 1500 - 125 - B | SC 1500 - 125 - D | 125 | 4.92 | 360 | 14.17 | 235 | 9.25 | | | 2158 | 4851 | 2529 | 5685 | 505,0 | 30.81 | 4,97 | 10.96 | ✓ |
| - | SC 1500 - 138 - D | 138 | 5.43 | 385 | 15.16 | 247 | 9.72 | | | 2169 | 4876 | 2548 | 5728 | 550,0 | 33.55 | 5,16 | 11.38 | ✓ |
| - | SC 1500 - 150 - D | 150 | 5.91 | 410 | 16.14 | 260 | 10.24 | | | 2173 | 4885 | 2554 | 5742 | 595,0 | 36.30 | 5,35 | 11.79 | ✓ |
| SC 1500 - 160 - B | SC 1500 - 160 - D | 160 | 6.30 | 430 | 16.93 | 270 | 10.63 | | | 2178 | 4896 | 2562 | 5760 | 631,0 | 38.49 | 5,50 | 12.13 | ✓ |
| - | SC 1500 - 175 - D | 175 | 6.89 | 460 | 18.11 | 285 | 11.22 | | | 2185 | 4912 | 2572 | 5782 | 685,0 | 41.79 | 5,73 | 12.63 | ✓ |
| SC 1500 - 200 - B | SC 1500 - 200 - D | 200 | 7.87 | 510 | 20.08 | 310 | 12.20 | 2198 | 4941 | 2592 | 5828 | 772,0 | 47.09 | 6,13 | 13.51 | ✓ | | |
| - | SC 1500 - 225 - D | 225 | 8.86 | 560 | 22.05 | 335 | 13.19 | 2219 | 4989 | 2625 | 5901 | 850,0 | 51.85 | 6,60 | 14.55 | ✓ | | |
| SC 1500 - 250 - B | SC 1500 - 250 - D | 250 | 9.84 | 610 | 24.02 | 360 | 14.17 | 2236 | 5027 | 2652 | 5962 | 928,0 | 56.61 | 7,08 | 15.61 | ✓ | | |
| - | SC 1500 - 275 - D | 275 | 10.83 | 660 | 22.05 | 385 | 15.16 | 2251 | 5060 | 2676 | 6016 | 1006,0 | 61.37 | 7,55 | 16.64 | ✓ | | |
| SC 1500 - 300 - B | SC 1500 - 300 - D | 300 | 11.81 | 710 | 27.95 | 410 | 16.14 | 2264 | 5089 | 2696 | 6061 | 1084,0 | 66.12 | 8,02 | 17.68 | ✓ | | |

SC SCF



HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203

SC 3000

| | | | |
|--------------------|-----------------------|-------------------------|-----------------|
| ISO 11901 - 1 | VDI 3003 | B2 4006 (BMW) | 075.90.55 (FCA) |
| W-DX35-6203 (Ford) | PG23D (Mazda) | B8 3180 220 000 001(MB) | K 32 S (Nissan) |
| E24.54.815.G (PSA) | EM24.54.700 (Renault) | SES-K 5404e (Suzuki) | 39D 878 (VW) |



OSAS + OSM = OVER STROKE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



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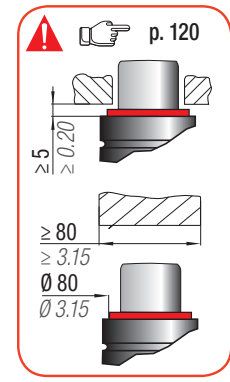
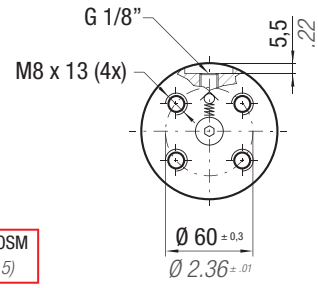
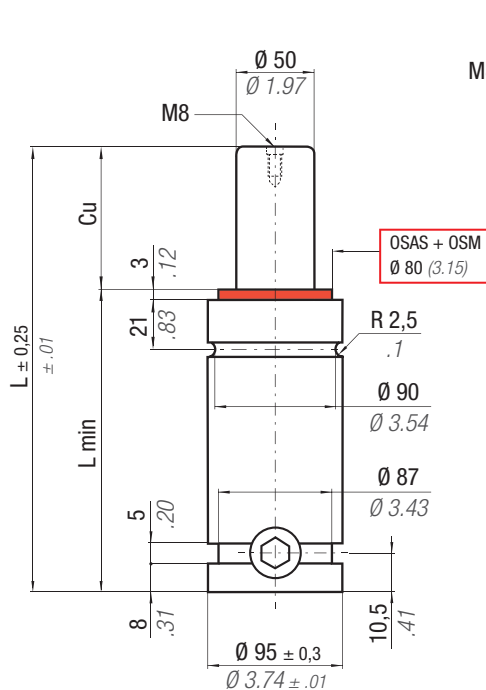
O novo código irá ser fornecido apenas quando o antigo esgotar stock



easu MANIFOLD p. 241

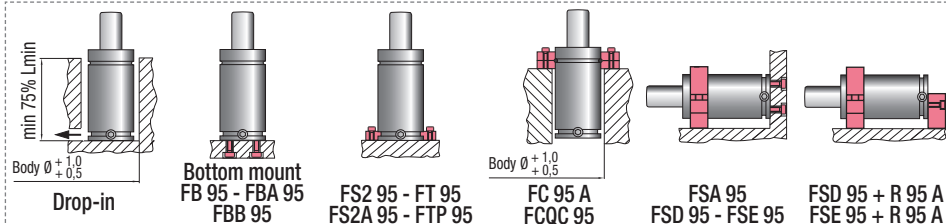
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polyphropic end force at 100% Cu



| | | | | | | | | |
|----------------|----------------------------|----------------|---------------------------|-------------------------|--------------------------------------------------|----------------------------|-------------------|-------------------------------------------------------------------------|
| N ₂ | °F 32 °C 0 176 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 19,63 cm ² 3.043 in ² | SPM ~ 15 - 50 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSC03000D Cu 13 ÷ 80 39BMSC03000DH Cu 88 ÷ 300 |
|----------------|----------------------------|----------------|---------------------------|-------------------------|--------------------------------------------------|----------------------------|-------------------|-------------------------------------------------------------------------|

| CODE PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|-------------------|------|-------|-----|-------|-------|-------|---------------------------------|---------------------|----------------------------------|-------|------------------------------------|--------|-----------------|-----------------|-------------------|-------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| - | SC 3000 - 013 - D | 13 | 0.51 | 145 | 5.71 | 132 | 5.20 | 2945 6621 ± 5% | 150 bar 2175 psi | 3528 | 7931 | 3917 | 8806 | 181,0 | 11.04 | 5,57 | 12,28 | ✓ |
| SC 3000 - 025 - B | SC 3000 - 025 - D | 25 | 0.98 | 170 | 6.69 | 145 | 5.71 | | | 3775 | 8487 | 4286 | 9636 | 261,0 | 15.92 | 5,90 | 13,01 | ✓ |
| SC 3000 - 038 - B | SC 3000 - 038 - D | 38 | 1.50 | 196 | 7.72 | 158 | 6.22 | | | 3955 | 8891 | 4559 | 10250 | 340,0 | 20.74 | 6,21 | 13,69 | ✓ |
| SC 3000 - 050 - B | SC 3000 - 050 - D | 50 | 1.97 | 220 | 8.66 | 170 | 6.69 | | | 4067 | 9143 | 4732 | 10638 | 413,0 | 25.19 | 6,50 | 14,33 | ✓ |
| SC 3000 - 063 - B | SC 3000 - 063 - D | 63,5 | 2.50 | 247 | 9.72 | 183,5 | 7.22 | | | 4158 | 9347 | 4873 | 10954 | 496,0 | 30.26 | 6,83 | 15,06 | ✓ |
| - | SC 3000 - 075 - D | 75 | 2.95 | 270 | 10.63 | 195 | 7.68 | | | 4216 | 9478 | 4964 | 11160 | 566,0 | 34.53 | 7,10 | 15,65 | ✓ |
| SC 3000 - 080 - B | SC 3000 - 080 - D | 80 | 3.15 | 280 | 11.02 | 200 | 7.87 | | | 4238 | 9527 | 4997 | 11234 | 596,0 | 36.36 | 7,22 | 15,92 | ✓ |
| - | SC 3000 - 088 - D | 88 | 3.46 | 295 | 11.61 | 207 | 8.15 | | | 4277 | 9615 | 5059 | 11373 | 642,0 | 39.16 | 7,41 | 16,34 | ✓ |
| SC 3000 - 100 - B | SC 3000 - 100 - D | 100 | 3.94 | 320 | 12.60 | 220 | 8.66 | | | 4307 | 9683 | 5105 | 11476 | 718,0 | 43.80 | 7,67 | 16,91 | ✓ |
| - | SC 3000 - 113 - D | 113 | 4.45 | 345 | 13.58 | 232 | 9.13 | | | 4348 | 9775 | 5171 | 11625 | 795,0 | 48.50 | 7,97 | 17,57 | ✓ |
| SC 3000 - 125 - B | SC 3000 - 125 - D | 125 | 4.92 | 370 | 14.57 | 245 | 9.65 | | | 4367 | 9817 | 5201 | 11692 | 871,0 | 53.13 | 8,27 | 18,23 | ✓ |
| - | SC 3000 - 138 - D | 138 | 5.43 | 395 | 15.55 | 257 | 10.12 | | | 4398 | 9887 | 5250 | 11802 | 947,0 | 57.77 | 8,57 | 18,89 | ✓ |
| - | SC 3000 - 150 - D | 150 | 5.91 | 420 | 16.54 | 270 | 10.63 | | | 4411 | 9916 | 5270 | 11847 | 1023,0 | 62.40 | 8,87 | 19,56 | ✓ |
| SC 3000 - 160 - B | SC 3000 - 160 - D | 160 | 6.30 | 440 | 17.32 | 280 | 11.02 | | | 4425 | 9948 | 5292 | 11897 | 1085,0 | 66.19 | 9,11 | 20,08 | ✓ |
| - | SC 3000 - 175 - D | 175 | 6.89 | 470 | 18.50 | 295 | 11.61 | 4443 | 9988 | 5322 | 11964 | 1176,0 | 71.74 | 9,47 | 20,88 | ✓ | | |
| SC 3000 - 200 - B | SC 3000 - 200 - D | 200 | 7.87 | 520 | 20.47 | 320 | 12.60 | 4469 | 10047 | 5362 | 12055 | 1329,0 | 81.07 | 10,08 | 22,22 | ✓ | | |
| - | SC 3000 - 225 - D | 225 | 8.86 | 570 | 22.44 | 345 | 13.58 | 4489 | 10092 | 5395 | 12128 | 1481,0 | 90.34 | 10,68 | 23,55 | ✓ | | |
| SC 3000 - 250 - B | SC 3000 - 250 - D | 250 | 9.84 | 620 | 24.41 | 370 | 14.57 | 4506 | 10130 | 5422 | 12189 | 1634,0 | 99.67 | 11,28 | 24,87 | ✓ | | |
| - | SC 3000 - 275 - D | 275 | 10.83 | 670 | 26.38 | 395 | 15.55 | 4520 | 10161 | 5444 | 12239 | 1786,0 | 108.95 | 11,88 | 26,19 | ✓ | | |
| SC 3000 - 300 - B | SC 3000 - 300 - D | 300 | 11.81 | 720 | 28.35 | 420 | 16.54 | 4532 | 10188 | 5463 | 12282 | 1939,0 | 118.28 | 12,49 | 27,54 | ✓ | | |



HOW TO ORDER p. 121

INSTALLATION GUIDELINE p. 203

| | | | |
|----------------------|-----------------|-------------------------|-----------------------|
| ISO 11901 - 1 | 075.90.55 (FCA) | W-DX35-6203 (Ford) | EM24.54.700 (Renault) |
| PG23D (Mazda) | VDI 3003 | B8 3180 220 000 001(MB) | 39D 878 (VW) |
| SES-K 5404e (Suzuki) | B2 4006 (BMW) | E24.54.815.G (PSA) | K 32 S (Nissan) |



ACTIVE SAFETY



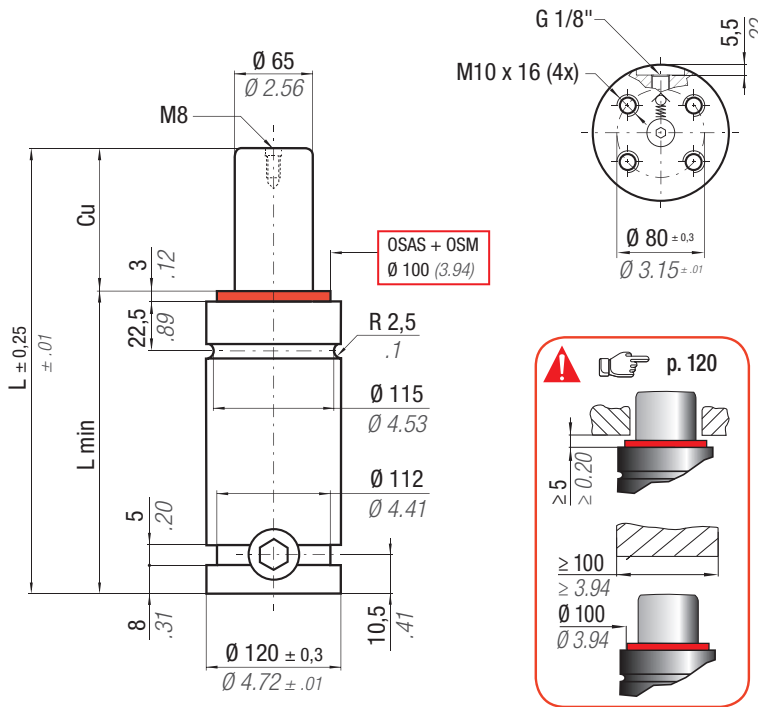
OSAS



USAS



OPAS



OSAS + OSM = OVER STROKE SAFETY + OVER STROKE MARKER

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

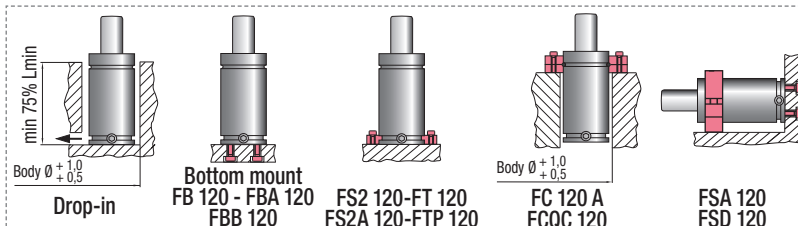
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polythropic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------------------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 33,18 cm ² 5.143 in ² | SPM ~ 15 - 50 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSCO5000D Cu 25 ÷ 80 39BMSCO5000DH Cu 88 ÷ 300 |
|--|--------------------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|--------------------------------------------------------------------------------|

| CODE PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F0 Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V0 | | | PED 2014/68/EU | |
|-------------------------------------|-------------------|------|-------|-----|-------|-------|-------|---------------------|-------|----------------------------------|-------|------------------------------------|--------|-----------------|-----------------|-------|--------------------------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | ~Kg |
| SC 5000 - 025 - B | SC 5000 - 025 - D | 25 | 0.98 | 190 | 7.48 | 165 | 6.50 | 4980 ± 5% | 11195 | 6316 | 14199 | 7148 | 16068 | 457,0 | 27.88 | 10,94 | 24.12 | ✓ |
| SC 5000 - 038 - B | SC 5000 - 038 - D | 38 | 1.50 | 216 | 8.50 | 178 | 7.01 | | | 6652 | 14955 | 7657 | 17214 | 583,0 | 35.56 | 11,46 | 25.26 | ✓ |
| SC 5000 - 050 - B | SC 5000 - 050 - D | 50 | 1.97 | 240 | 9.45 | 190 | 7.48 | | | 6872 | 15448 | 7994 | 17972 | 699,0 | 42.64 | 11,94 | 26.32 | ✓ |
| SC 5000 - 063 - B | SC 5000 - 063 - D | 63,5 | 2.50 | 267 | 10.51 | 203,5 | 8.01 | | | 7077 | 15910 | 8313 | 18688 | 823,0 | 50.20 | 12,56 | 27.69 | ✓ |
| - | SC 5000 - 075 - D | 75 | 2.95 | 290 | 11.42 | 215 | 8.46 | | | 7176 | 16132 | 8467 | 19035 | 941,0 | 57.40 | 12,94 | 28.53 | ✓ |
| SC 5000 - 080 - B | SC 5000 - 080 - D | 80 | 3.15 | 300 | 11.81 | 220 | 8.66 | | | 7221 | 16232 | 8537 | 19193 | 989,0 | 60.33 | 13,15 | 28.99 | ✓ |
| - | SC 5000 - 088 - D | 88 | 3.46 | 315 | 12.40 | 227 | 8.94 | | | 7300 | 16411 | 8662 | 19473 | 1061,0 | 64.72 | 13,39 | 29.52 | ✓ |
| SC 5000 - 100 - B | SC 5000 - 100 - D | 100 | 3.94 | 340 | 13.39 | 240 | 9.45 | | | 7367 | 16562 | 8768 | 19712 | 1182,0 | 72.10 | 13,89 | 30.62 | ✓ |
| - | SC 5000 - 113 - D | 113 | 4.45 | 365 | 14.37 | 252 | 9.92 | | | 7454 | 16757 | 8906 | 20021 | 1303,0 | 79.48 | 14,40 | 31.75 | ✓ |
| SC 5000 - 125 - B | SC 5000 - 125 - D | 125 | 4.92 | 390 | 15.35 | 265 | 10.43 | | | 7499 | 16858 | 8977 | 20181 | 1424,0 | 86.86 | 14,90 | 32.85 | ✓ |
| - | SC 5000 - 138 - D | 138 | 5.43 | 415 | 16.34 | 277 | 10.91 | 7564 | 17005 | 9081 | 20415 | 1545,0 | 94.25 | 15,40 | 33.95 | ✓ | | |
| - | SC 5000 - 150 - D | 150 | 5.91 | 440 | 17.32 | 290 | 11.42 | 7595 | 17074 | 9130 | 20525 | 1665,0 | 101.57 | 15,90 | 35.05 | ✓ | | |
| SC 5000 - 160 - B | SC 5000 - 160 - D | 160 | 6.30 | 460 | 18.11 | 300 | 11.81 | 7627 | 17145 | 9181 | 20639 | 1762,0 | 107.48 | 16,30 | 35.94 | ✓ | | |
| - | SC 5000 - 175 - D | 175 | 6.89 | 490 | 19.29 | 315 | 12.40 | 7668 | 17238 | 9247 | 20788 | 1907,0 | 116.33 | 16,90 | 37.26 | ✓ | | |
| SC 5000 - 200 - B | SC 5000 - 200 - D | 200 | 7.87 | 540 | 21.26 | 340 | 13.39 | 7726 | 17369 | 9340 | 20997 | 2148,0 | 131.03 | 17,91 | 39.48 | ✓ | | |
| - | SC 5000 - 225 - D | 225 | 8.86 | 590 | 23.23 | 365 | 14.37 | 7773 | 17474 | 9415 | 21166 | 2390,0 | 145.79 | 18,91 | 41.69 | ✓ | | |
| SC 5000 - 250 - B | SC 5000 - 250 - D | 250 | 9.84 | 640 | 25.20 | 390 | 15.35 | 7811 | 17560 | 9477 | 21305 | 2632,0 | 160.55 | 19,91 | 43.89 | ✓ | | |
| - | SC 5000 - 275 - D | 275 | 10.83 | 690 | 27.17 | 415 | 16.34 | 7843 | 17632 | 9529 | 21422 | 2873,0 | 175.25 | 20,92 | 46.12 | ✓ | | |
| SC 5000 - 300 - B | SC 5000 - 300 - D | 300 | 11.81 | 740 | 29.13 | 440 | 17.32 | 7871 | 17694 | 9573 | 21521 | 3115,0 | 190.02 | 21,92 | 48.33 | ✓ | | |

SC
SCF



HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203

SC 7500

| | | | |
|-----------------------|---------------|-------------------------|--------------------|
| ISO 11901 - 1 | VDI 3003 | B2 4006 (BMW) | 075.90.55 (FCA) |
| W-DX35-6203 (Ford) | PG23D (Mazda) | B8 3180 220 000 001(MB) | E24.54.815.G (PSA) |
| EM24.54.700 (Renault) | 39D 878 (VW) | | |



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
The new code will be supplied only when the old will be out of stock



Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist



Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé



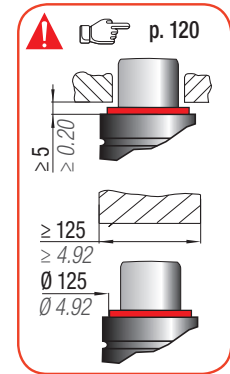
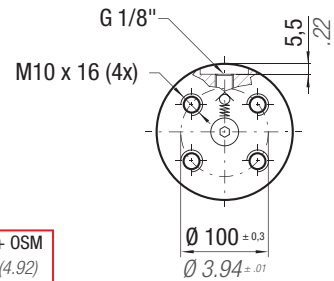
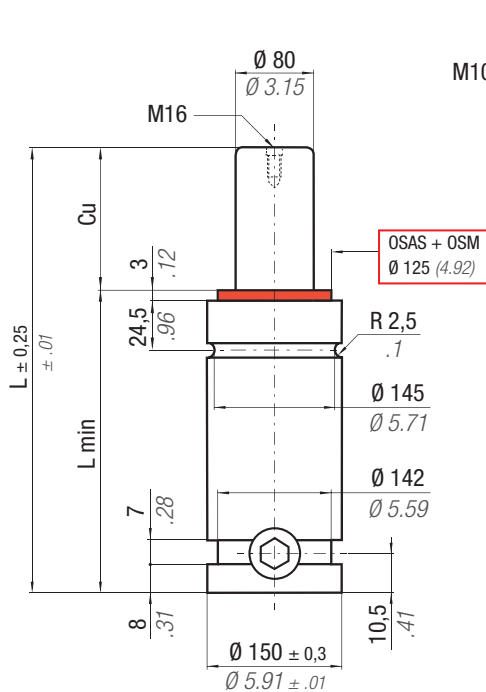
El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

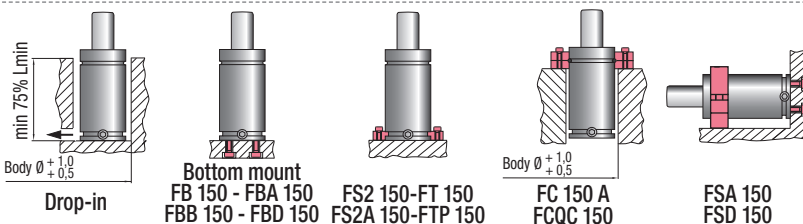
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu



| | | | | | | | | | |
|----------------|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|-------------------------------------------------------------------------|
| N ₂ | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 50,27 cm ² 7.792 in ² | SPM ~ 15 - 50 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMSOC7500D Cu 25 ÷ 80 39BMSOC7500DH Cu 88 ÷ 300 |
|----------------|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|-------------------------------------------------------------------------|

| CODE PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU |
|-------------------------------------|-------------------|------|-------|-----|-------|-------|-------|-------------------------------------------------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|-------|-------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| SC 7500 - 025 - B | SC 7500 - 025 - D | 25 | 0.98 | 205 | 8.07 | 180 | 7.09 | 7540 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 16950 | 9330 | 20975 | 10472 | 23543 | 767,0 | 46.79 | 18,71 | 41.25 | ✓ |
| SC 7500 - 038 - B | SC 7500 - 038 - D | 38 | 1.50 | 231 | 9.09 | 193 | 7.60 | | | 9809 | 22052 | 11192 | 25161 | 963,0 | 58.74 | 19,50 | 42.99 | ✓ |
| SC 7500 - 050 - B | SC 7500 - 050 - D | 50 | 1.97 | 255 | 10.04 | 205 | 8.07 | | | 10129 | 22771 | 11679 | 26255 | 1144,0 | 69.78 | 20,24 | 44.62 | ✓ |
| SC 7500 - 063 - B | SC 7500 - 063 - D | 63,5 | 2.50 | 282 | 11.10 | 218,5 | 8.60 | | | 10400 | 23380 | 12095 | 27191 | 1348,0 | 82.23 | 21,06 | 46.43 | ✓ |
| - | SC 7500 - 075 - D | 75 | 2.95 | 305 | 12.10 | 230 | 9.06 | | | 10581 | 23787 | 12375 | 27820 | 1522,0 | 92.84 | 21,76 | 47.97 | ✓ |
| SC 7500 - 080 - B | SC 7500 - 080 - D | 80 | 3.15 | 315 | 12.40 | 235 | 9.25 | | | 10648 | 23938 | 12480 | 28057 | 1597,0 | 97.42 | 22,07 | 48.66 | ✓ |
| - | SC 7500 - 088 - D | 88 | 3.46 | 330 | 12.99 | 242 | 9.53 | | | 10778 | 24230 | 12682 | 28510 | 1706,0 | 104.07 | 22,45 | 49.49 | ✓ |
| SC 7500 - 100 - B | SC 7500 - 100 - D | 100 | 3.94 | 355 | 13.98 | 255 | 10.04 | | | 10871 | 24439 | 12828 | 28838 | 1899,0 | 115.84 | 23,23 | 51.21 | ✓ |
| - | SC 7500 - 113 - D | 113 | 4.45 | 380 | 14.96 | 267 | 10.51 | | | 11013 | 24758 | 13051 | 29340 | 2083,0 | 127.06 | 23,98 | 52.87 | ✓ |
| SC 7500 - 125 - B | SC 7500 - 125 - D | 125 | 4.92 | 405 | 15.94 | 280 | 11.02 | | | 11073 | 24893 | 13146 | 29553 | 2276,0 | 138.84 | 24,76 | 54.59 | ✓ |
| - | SC 7500 - 138 - D | 138 | 5.43 | 430 | 16.93 | 292 | 11.50 | | | 11182 | 25138 | 13318 | 29940 | 2460,0 | 150.06 | 25,51 | 56.24 | ✓ |
| - | SC 7500 - 150 - D | 150 | 5.91 | 455 | 17.91 | 305 | 12.10 | | | 11222 | 25228 | 13382 | 30084 | 2654,0 | 161.89 | 26,28 | 57.94 | ✓ |
| SC 7500 - 160 - B | SC 7500 - 160 - D | 160 | 6.30 | 475 | 18.70 | 315 | 12.40 | | | 11272 | 25340 | 13459 | 30258 | 2805,0 | 171.11 | 26,90 | 59.30 | ✓ |
| - | SC 7500 - 175 - D | 175 | 6.89 | 505 | 19.88 | 330 | 12.99 | | | 11337 | 25487 | 13563 | 30491 | 3031,0 | 184.89 | 27,81 | 61.31 | ✓ |
| SC 7500 - 200 - B | SC 7500 - 200 - D | 200 | 7.87 | 555 | 21.85 | 355 | 13.98 | | | 11427 | 25689 | 13707 | 30815 | 3409,0 | 207.95 | 29,34 | 64.68 | ✓ |
| - | SC 7500 - 225 - D | 225 | 8.86 | 605 | 23.82 | 380 | 14.96 | | | 11501 | 25855 | 13824 | 31078 | 3786,0 | 230.95 | 30,87 | 68.06 | ✓ |
| SC 7500 - 250 - B | SC 7500 - 250 - D | 250 | 9.84 | 655 | 25.79 | 405 | 15.94 | | | 11562 | 25992 | 13921 | 31296 | 4164,0 | 254.00 | 32,39 | 71.41 | ✓ |
| - | SC 7500 - 275 - D | 275 | 10.83 | 705 | 27.76 | 430 | 16.93 | | | 11613 | 26107 | 14003 | 31480 | 4541,0 | 277.00 | 33,92 | 74.78 | ✓ |
| SC 7500 - 300 - B | SC 7500 - 300 - D | 300 | 11.81 | 755 | 29.72 | 455 | 17.91 | | | 11657 | 26206 | 14073 | 31637 | 4919,0 | 300.06 | 35,45 | 78.15 | ✓ |

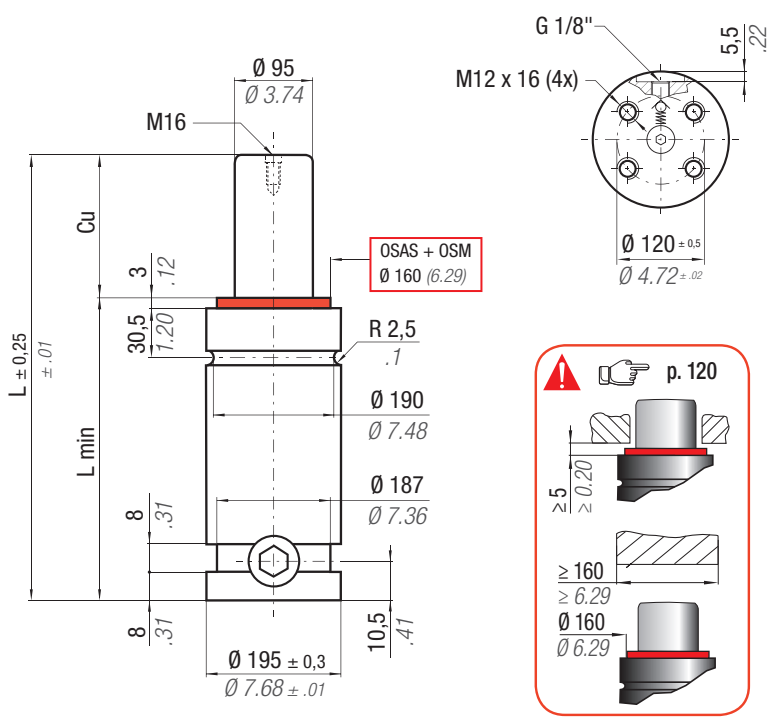


HOW TO ORDER

p. 121

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

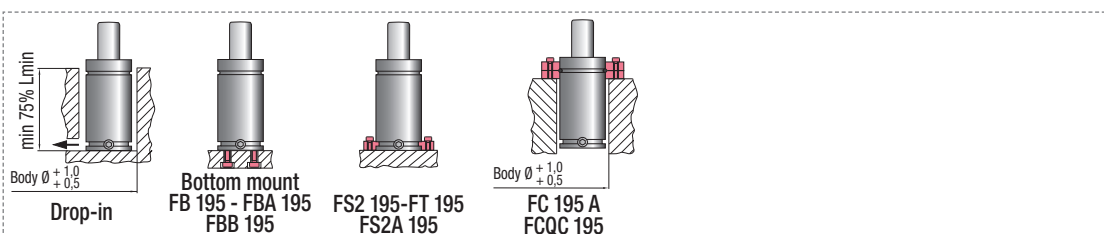
easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polythropic end force at 100% Cu



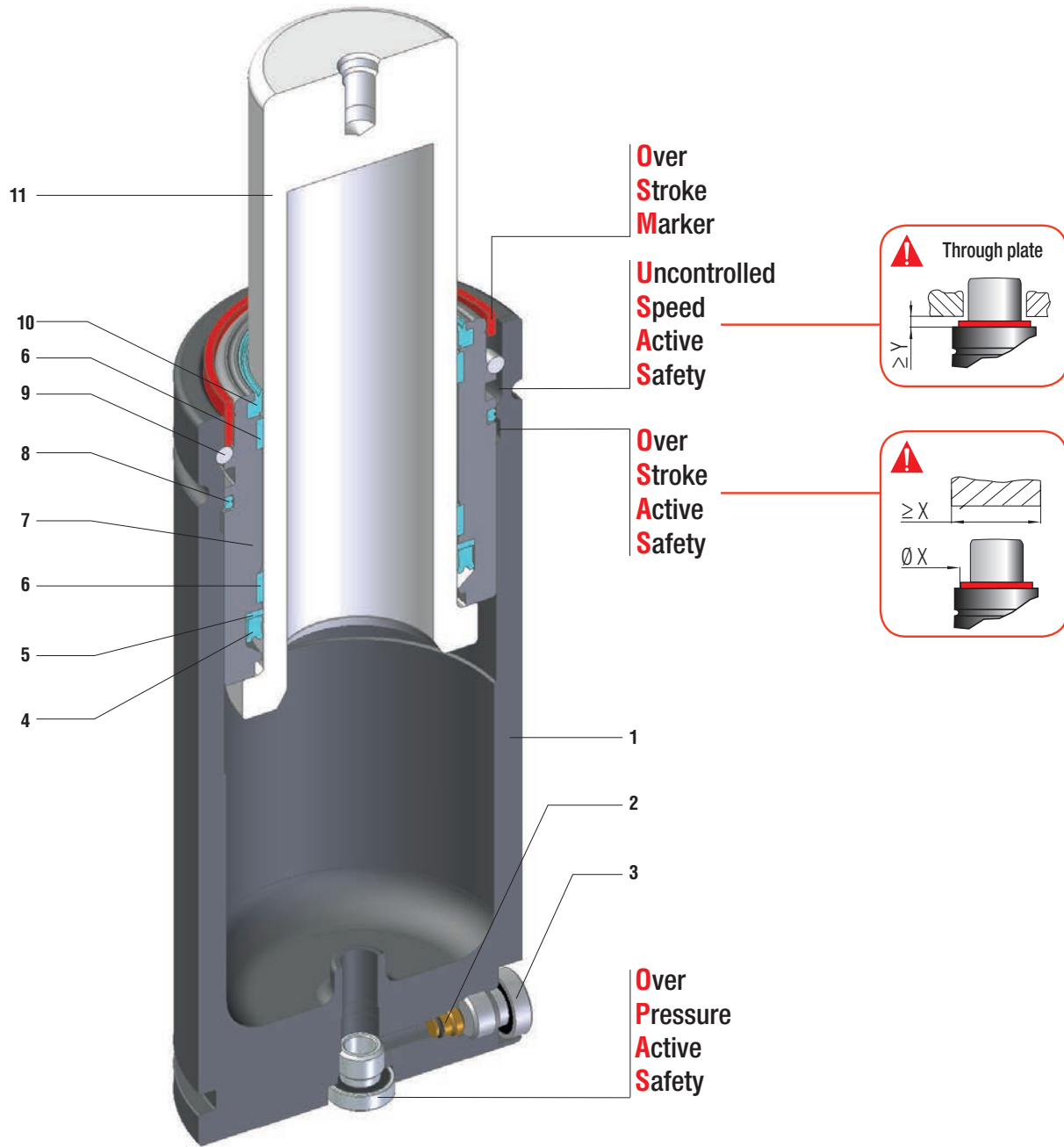
| | | | | | | | | | |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 70,88 cm ² 10.986 in ² | SPM ~ 15 - 50 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMS10000D |
|--|-------------------------------|-----------------------------|--------------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|

| CODE PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F0 Initial force | | F1i * End force * | | F1p ** End force ** | | V0 | | PED 2014/68/EU | | |
|-------------------------------------|--------------------|------|-------|-----|-------|-------|-------|---------------------|-------|----------------------|-------|------------------------|--------|-----------------|-----------------|-------------------|--------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | -Kg | -lb | ✓ |
| SC 10000 - 025 - C | SC 10000 - 025 - D | 25 | 0.98 | 210 | 8.27 | 185 | 7.28 | 10600 ± 5% | 23830 | 12892 | 28981 | 14373 | 32311 | 1186,0 | 72.35 | 33,73 | 74.36 | ✓ |
| SC 10000 - 038 - C | SC 10000 - 038 - D | 38 | 1.50 | 236 | 9.29 | 198 | 7.80 | | | 13463 | 30267 | 15225 | 34228 | 1497,0 | 91.32 | 35,08 | 77.34 | ✓ |
| SC 10000 - 050 - C | SC 10000 - 050 - D | 50 | 1.97 | 260 | 10.24 | 210 | 8.27 | | | 13838 | 31108 | 15790 | 35497 | 1784,0 | 108.82 | 36,32 | 80.07 | ✓ |
| SC 10000 - 063 - C | SC 10000 - 063 - D | 63,5 | 2.50 | 287 | 11.30 | 223,5 | 8.80 | | | 14151 | 31812 | 16266 | 36567 | 2108,0 | 128.59 | 37,72 | 83.16 | ✓ |
| SC 10000 - 080 - C | SC 10000 - 080 - D | 80 | 3.15 | 320 | 12.60 | 240 | 9.45 | | | 14434 | 32450 | 16700 | 37543 | 2503,0 | 152.68 | 39,44 | 86.95 | ✓ |
| SC 10000 - 100 - C | SC 10000 - 100 - D | 100 | 3.94 | 360 | 14.17 | 260 | 10.24 | | | 14686 | 33015 | 17087 | 38414 | 2982,0 | 181.90 | 41,51 | 91.51 | ✓ |
| SC 10000 - 125 - C | SC 10000 - 125 - D | 125 | 4.92 | 410 | 16.14 | 285 | 11.22 | | | 14912 | 33524 | 17438 | 39202 | 3581,0 | 218.44 | 44,11 | 97.25 | ✓ |
| SC 10000 - 160 - C | SC 10000 - 160 - D | 160 | 6.30 | 480 | 18.90 | 320 | 12.60 | | | 15132 | 34018 | 17780 | 39971 | 4419,0 | 269.56 | 47,74 | 105.25 | ✓ |
| SC 10000 - 200 - C | SC 10000 - 200 - D | 200 | 7.87 | 560 | 22.05 | 360 | 14.17 | | | 15345 | 34498 | 18114 | 40722 | 5343,0 | 325.92 | 52,17 | 115.02 | ✓ |
| SC 10000 - 250 - C | SC 10000 - 250 - D | 250 | 9.84 | 660 | 25.98 | 410 | 16.14 | | | 15696 | 35286 | 18665 | 41961 | 6348,0 | 387.23 | 58,87 | 129.79 | ✓ |
| SC 10000 - 300 - C | SC 10000 - 300 - D | 300 | 11.81 | 760 | 29.92 | 460 | 18.11 | 15960 | 35879 | 19083 | 42901 | 7354,0 | 448.59 | 65,57 | 144.56 | ✓ | | |



HOW TO ORDER p. 121
INSTALLATION GUIDELINE p. 203

| | | |
|-----|-----|-----|
| ISO | VDI | BMW |
| FCA | VW | |



ISO standard, forza potenziata - ISO standard, high force - ISO Standard, erhöhte Kraft
 Standard ISO, force majorée - ISO standard, fuerza potenciada - Norma ISO, forța permitida

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|----------|----------|----------------|-----------|------------------------------|
| 1 | Body | 5 | Back-up ring | 9 | Retaining ring |
| 2 | Valve | 6 | Guide ring | 10 | Rod wiper |
| 3 | Plug | 7 | Bush | 11 | Rod (nitrited superfinished) |
| 4 | Rod seal | 8 | Dual ring seal | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|---------|------------|------|-----------|--------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| H 300 | 32 | 1.26 | 10 - 125 | 0.39 - 4.92 | 300 | 674 | ✓ | ✓ | ✓ | - | ✓ |
| H 500 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 470 | 1057 | ✓ | ✓ | ✓ | - | ✓ |
| HF 500 | M 38 X 1,5 | | 10 - 125 | 0.39 - 4.92 | 470 | 1057 | ✓ | ✓ | ✓ | - | ✓ |
| H 700 | 45 | 1.77 | 10 - 160 | 0.51 - 6.30 | 680 | 1529 | ✓ | ✓ | ✓ | - | ✓ |
| H 1000 | 50 | 1.97 | 13 - 300 | 0.51 - 11.81 | 920 | 2383 | ✓ | ✓ | ✓ | - | ✓ |
| H 1500 | 63 | 2.48 | 13 - 300 | 0.51 - 11.81 | 1530 | 3440 | ✓ | ✓ | ✓ | - | ✓ |
| H 2400 | 75 | 2.95 | 25 - 300 | 0.98 - 11.81 | 2385 | 5362 | ✓ | ✓ | ✓ | - | ✓ |
| H 4200 | 95 | 3.74 | 25 - 300 | 0.98 - 11.81 | 4240 | 9532 | ✓ | ✓ | ✓ | - | ✓ |
| H 6600 | 120 | 4.72 | 25 - 300 | 0.98 - 11.81 | 6630 | 14905 | ✓ | ✓ | ✓ | - | ✓ |
| H 9500 | 150 | 5.91 | 25 - 300 | 0.98 - 11.81 | 9540 | 21446 | ✓ | ✓ | ✓ | - | ✓ |
| H 18500 | 195 | 7.68 | 25 - 300 | 0.98 - 11.81 | 18400 | 41365 | ✓ | ✓ | ✓ | - | ✓ |

✓ Built-in as standard

✓ Optional upon request

HOW TO ORDER

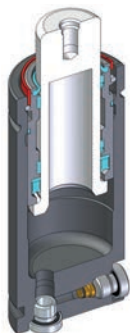
Series _____ Revision code _____

Model **H2400-050-D-E-W**

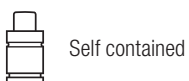
Stroke _____ Version _____

H
HF

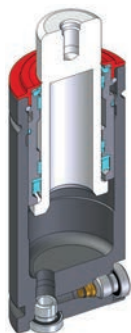
Available versions



H 2400-050-D
Standard code



Self contained



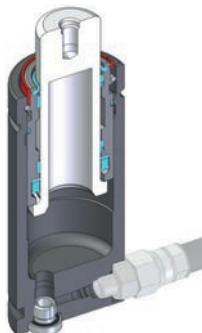
H 2400-050-D-W
Add "-W" to standard code



Self contained



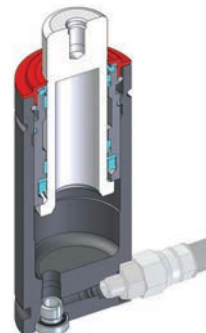
+
Secondary wiper



H 2400-050-D-N
Add "-N" to standard code



Linkable



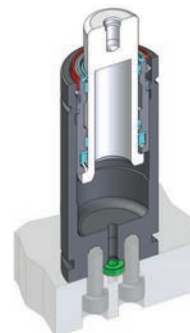
H 2400-050-D-N-W
Add "-N-W" to standard code



Linkable



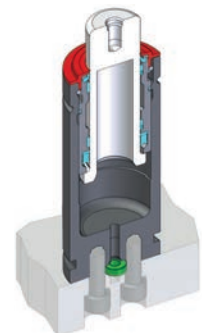
+
Secondary wiper



H 2400-050-D-E
Add "-E" to standard code



Easy
Manifold



H 2400-050-D-E-W
Add "-E-W" to standard code



Easy
Manifold



+
Secondary wiper



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY

easyl MANIFOLD p. 241



* F_{1i} = Isothermal end force at 100% Cu p. 18

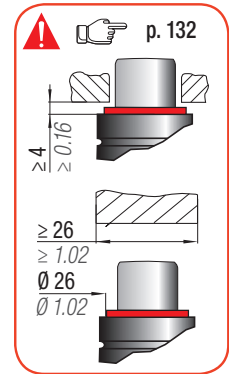
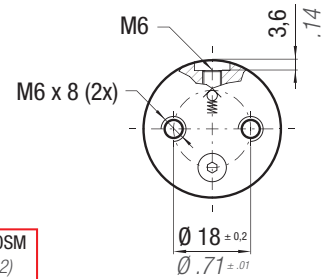
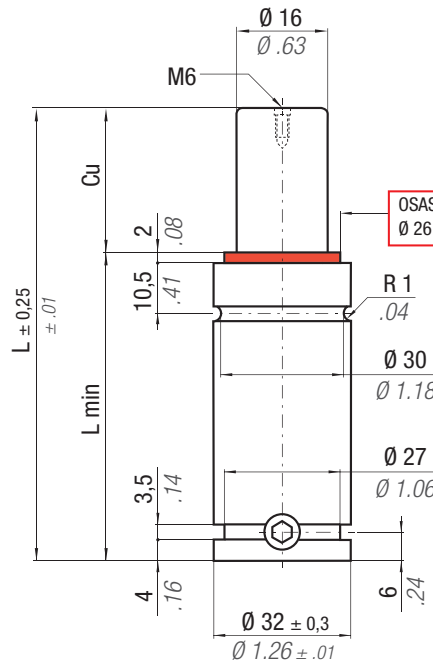
** F_{1p} = Polytropic end force at 100% Cu



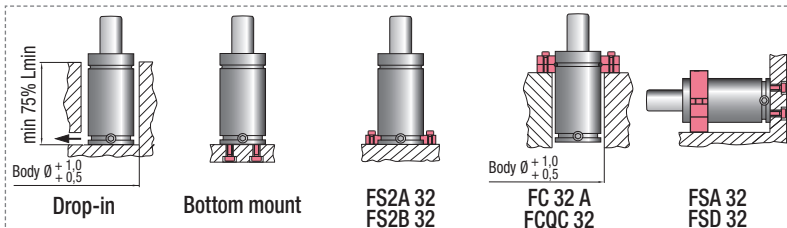
USAS



OPAS



| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 2,01 cm ² 0.312 in ² | SPM ~ 30 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00350C | | | | | | | | |
|-----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------------------------------------|----------------------|---------------------------------|-----|--------------------------|------|-----------------|-----------------|------|-----|--|
| CODE | | | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | | PED 2014/68/EU | | | | | | |
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| H 300 - 010 - C | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 300 ± 5% 150 bar 2175 psi + 20 °C +68 °F | 350 | 787 | 385 | 865 | 17,0 | 1.04 | 0,22 | 0.49 | ✓ | |
| H 300 - 013 - C | 13 | 0.51 | 75,7 | 2.98 | 62,7 | 2.47 | | 361 | 811 | 400 | 900 | 19,0 | 1.16 | 0,23 | 0.51 | ✓ | |
| H 300 - 016 - C | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | 369 | 829 | 412 | 927 | 21,0 | 1.28 | 0,24 | 0.53 | ✓ | |
| H 300 - 025 - C | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | 389 | 875 | 443 | 995 | 26,0 | 1.59 | 0,26 | 0.57 | ✓ | |
| H 300 - 038 - C | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | 409 | 919 | 473 | 1062 | 34,0 | 2.07 | 0,31 | 0.68 | ✓ | |
| H 300 - 050 - C | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | 421 | 947 | 492 | 1105 | 41,0 | 2.50 | 0,35 | 0.77 | ✓ | |
| H 300 - 063 - C | 63 | 2.48 | 176,5 | 6.95 | 113,5 | 4.47 | | 430 | 966 | 505 | 1136 | 49,0 | 2.99 | 0,39 | 0.86 | ✓ | |
| H 300 - 080 - C | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | 440 | 989 | 521 | 1171 | 59,0 | 3.60 | 0,44 | 0.97 | ✓ | |
| H 300 - 100 - C | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | 448 | 1006 | 533 | 1199 | 71,0 | 4.33 | 0,51 | 1.12 | ✓ | |
| H 300 - 125 - C | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | 454 | 1022 | 544 | 1223 | 86,0 | 5.25 | 0,59 | 1.30 | ✓ | |

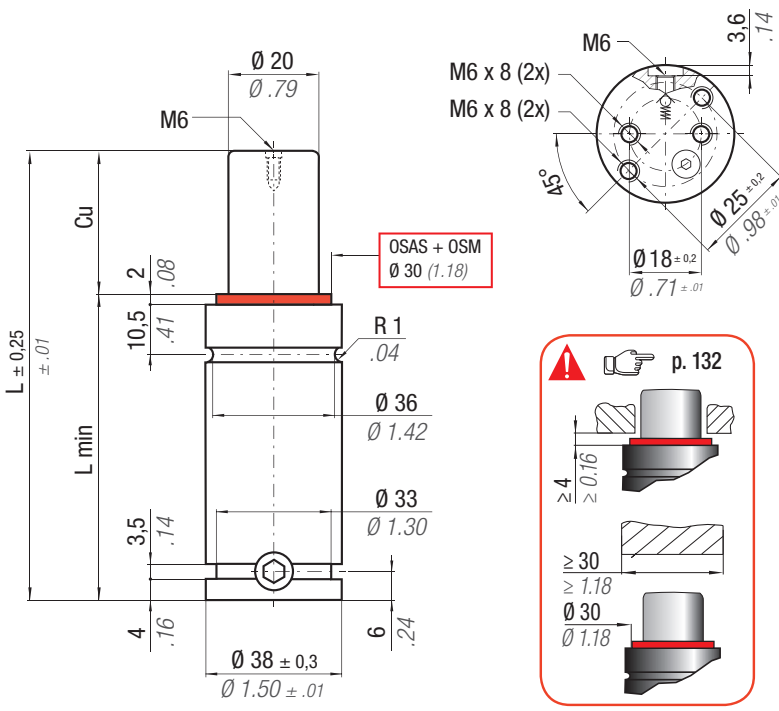


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INSTALLATION GUIDELINE p. 203



ACTIVE SAFETY



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

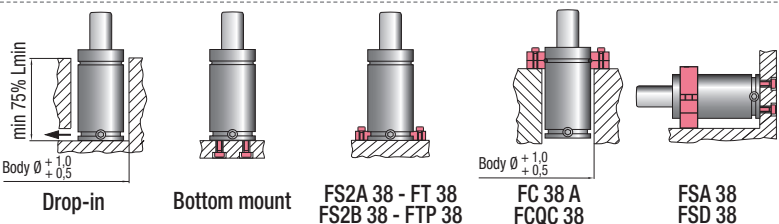
easyl MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polyphoric end force at 100% Cu

| | | | | | | | | | |
|--|-------------------------|-----------------------|----------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 3,14 cm ² 0.487 in ² | SPM ~ 30 - 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00500C |
|--|-------------------------|-----------------------|----------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | Maintenance kit | | PED 2014/68/EU |
|-----------------|-----|------|-------|-------|-------|------|-----------------------------------------------------------|----|--------------------------------|------|---------------------------------|------|-----------------|-----------------|-----------------|------|-------------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| H 500 - 010 - C | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 470 1057 ± 5% 150 bar 2175 psi + 20 °C +68 °F | | 559 | 1257 | 619 | 1391 | 24,0 | 1.46 | 0,32 | 0.71 | ✓ |
| H 500 - 013 - C | 13 | 0.51 | 75,7 | 2.98 | 62,7 | 2.47 | | | 578 | 1300 | 647 | 1455 | 26,0 | 1.59 | 0,33 | 0.73 | ✓ |
| H 500 - 016 - C | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 593 | 1333 | 669 | 1504 | 29,0 | 1.77 | 0,34 | 0.75 | ✓ |
| H 500 - 019 - C | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 606 | 1363 | 690 | 1550 | 31,0 | 1.89 | 0,36 | 0.79 | ✓ |
| H 500 - 025 - C | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 629 | 1415 | 724 | 1628 | 36,0 | 2.20 | 0,39 | 0.86 | ✓ |
| H 500 - 038 - C | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 664 | 1494 | 778 | 1750 | 48,0 | 2.93 | 0,45 | 0.99 | ✓ |
| H 500 - 050 - C | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 687 | 1544 | 813 | 1828 | 58,0 | 3.54 | 0,50 | 1.10 | ✓ |
| H 500 - 063 - C | 63 | 2.48 | 176,5 | 6.95 | 113,5 | 4.47 | | | 702 | 1579 | 838 | 1883 | 70,0 | 4.27 | 0,57 | 1.26 | ✓ |
| H 500 - 080 - C | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 721 | 1620 | 867 | 1948 | 84,0 | 5.12 | 0,64 | 1.41 | ✓ |
| H 500 - 100 - C | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 734 | 1651 | 889 | 1998 | 101,0 | 6.16 | 0,74 | 1.63 | ✓ |
| H 500 - 125 - C | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 746 | 1678 | 908 | 2042 | 123,0 | 7.50 | 0,86 | 1.90 | ✓ |

H
HF



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INSTALLATION GUIDELINE
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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

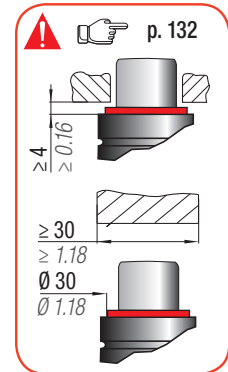
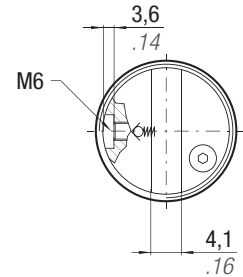
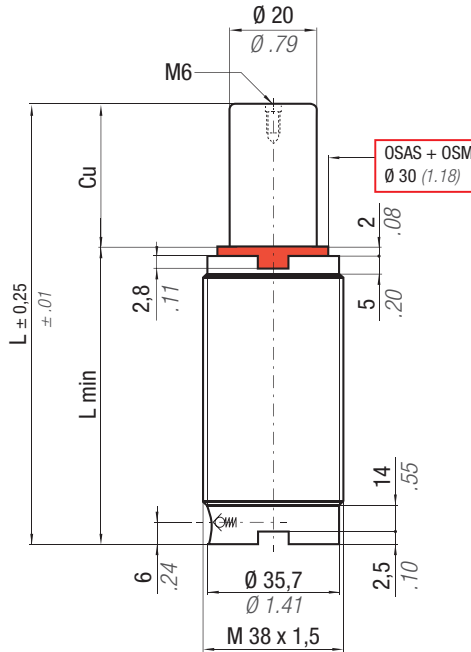
Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

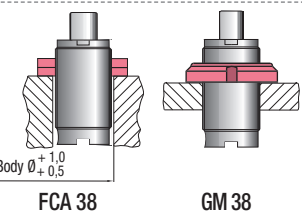
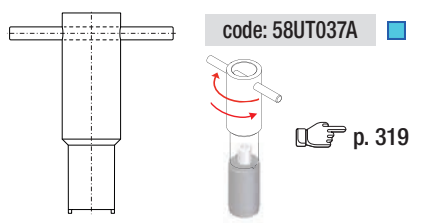
O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} = Isothermal end force at 100% Cu p. 18 ** F_{1p} = Polytropic end force at 100% Cu



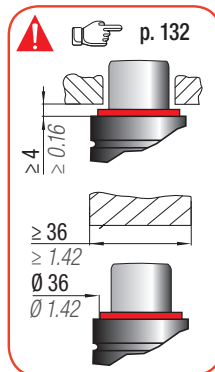
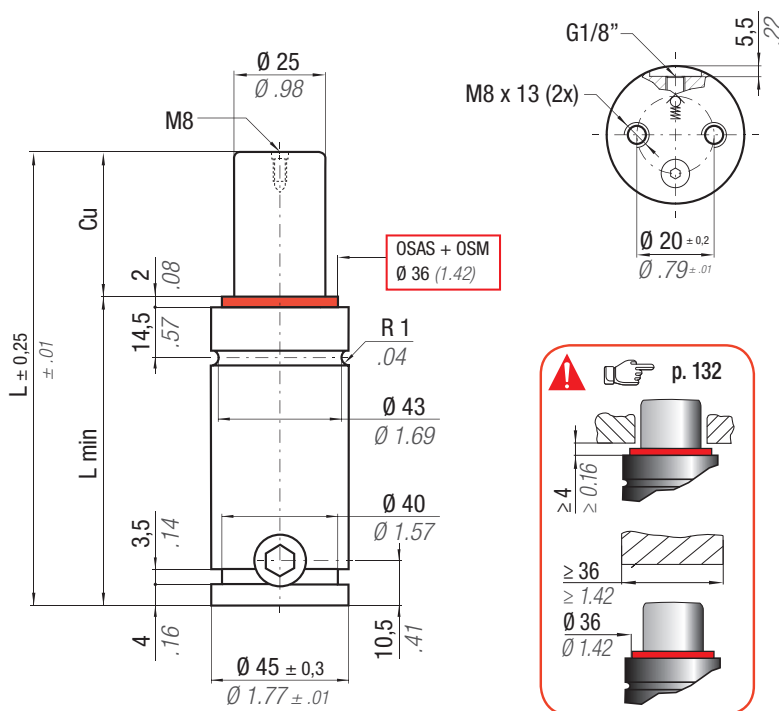
| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 3,14 cm ² 0,487 in ² | SPM ~ 30 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMRV00500C |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|

| CODE PHASING OUT from 09/2009 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|------------------|-----|------|-------|-------|-------|------|--------------------------------------------------------------|------|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| HF 500 - 010 - A | HF 500 - 010 - C | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 470 ± 5% 1057 150 bar 2175 psi + 20 °C +68 °F | | 559 | 1257 | 619 | 1391 | 24,0 | 1.46 | 0,31 | 0,68 | ✓ |
| HF 500 - 013 - A | HF 500 - 013 - C | 13 | 0.51 | 75,7 | 2.98 | 62,7 | 2.47 | | | 578 | 1300 | 647 | 1455 | 26,0 | 1.59 | 0,32 | 0,71 | ✓ |
| HF 500 - 016 - A | HF 500 - 016 - C | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 593 | 1333 | 669 | 1504 | 29,0 | 1.77 | 0,34 | 0,75 | ✓ |
| - | HF 500 - 019 - C | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 606 | 1363 | 690 | 1550 | 31,0 | 1.89 | 0,35 | 0,77 | ✓ |
| HF 500 - 025 - A | HF 500 - 025 - C | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 629 | 1415 | 724 | 1628 | 36,0 | 2.20 | 0,38 | 0,84 | ✓ |
| HF 500 - 038 - A | HF 500 - 038 - C | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 664 | 1494 | 778 | 1750 | 48,0 | 2.93 | 0,44 | 0,97 | ✓ |
| HF 500 - 050 - A | HF 500 - 050 - C | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 687 | 1544 | 813 | 1828 | 58,0 | 3.54 | 0,50 | 1.10 | ✓ |
| HF 500 - 063 - A | HF 500 - 063 - C | 63 | 2.48 | 176,5 | 6.95 | 113,5 | 4.47 | | | 702 | 1579 | 838 | 1883 | 70,0 | 4.27 | 0,56 | 1.23 | ✓ |
| HF 500 - 080 - A | HF 500 - 080 - C | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 721 | 1620 | 867 | 1948 | 84,0 | 5.12 | 0,64 | 1.41 | ✓ |
| HF 500 - 100 - A | HF 500 - 100 - C | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 734 | 1651 | 889 | 1998 | 101,0 | 6.16 | 0,73 | 1.61 | ✓ |
| HF 500 - 125 - A | HF 500 - 125 - C | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | 746 | 1678 | 908 | 2042 | 123,0 | 7.50 | 0,85 | 1.87 | ✓ | | |



HOW TO ORDER
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INSTALLATION GUIDELINE
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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



OPAS

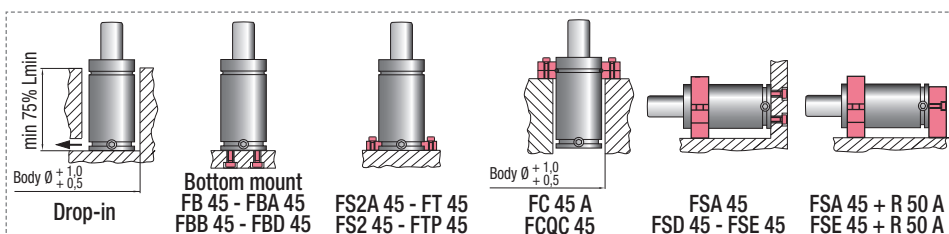
easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP $\pm 0,33\% / ^{\circ}\text{C}$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0.761 in ² | SPM ~ 20 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit See Tab below |
|--|--------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F0 Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V0 | | PED 2014/68/EU | |
|-------------------------------------|-----------------|-----|------|-------|-------|-------|------|---------------------|------|----------------------------------|------|------------------------------------|-------|-----------------|-----------------|-------------------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb |
| H 700 - 010 - C | H 700 - 010 - D | 10 | 0.39 | 105 | 4.13 | 95 | 3.74 | 740 1664 ± 5% | 945 | 2124 | 1074 | 2414 | 26,0 | 1.59 | 0,90 | 1.98 | ✓ |
| H 700 - 013 - C | H 700 - 013 - D | 13 | 0.50 | 110,7 | 4.35 | 97,7 | 3.85 | | 985 | 2214 | 1134 | 2549 | 29,0 | 1.77 | 0,91 | 2.01 | ✓ |
| H 700 - 025 - C | H 700 - 025 - D | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | | 1075 | 2417 | 1274 | 2864 | 45,0 | 2.75 | 1,00 | 2.20 | ✓ |
| H 700 - 038 - C | H 700 - 038 - D | 38 | 1.50 | 161 | 6.34 | 123 | 4.84 | | 1132 | 2545 | 1363 | 3064 | 62,0 | 3.78 | 1,09 | 2.40 | ✓ |
| H 700 - 050 - C | H 700 - 050 - D | 50 | 1.97 | 185 | 7.28 | 135 | 5.31 | | 1164 | 2617 | 1416 | 3183 | 77,0 | 4.70 | 1,17 | 2.58 | ✓ |
| H 700 - 063 - C | H 700 - 063 - D | 63 | 2.48 | 211,5 | 8.33 | 148,5 | 5.85 | | 1184 | 2662 | 1448 | 3255 | 94,0 | 5.73 | 1,26 | 2.78 | ✓ |
| H 700 - 080 - C | H 700 - 080 - D | 80 | 3.15 | 245 | 9.65 | 165 | 6.50 | | 1211 | 2722 | 1491 | 3352 | 115,0 | 7.02 | 1,37 | 3.02 | ✓ |
| H 700 - 100 - C | H 700 - 100 - D | 100 | 3.94 | 285 | 11.22 | 185 | 7.28 | | 1228 | 2761 | 1520 | 3417 | 140,0 | 8.54 | 1,51 | 3.33 | ✓ |
| H 700 - 125 - C | H 700 - 125 - D | 125 | 4.92 | 335 | 13.19 | 210 | 8.27 | | 1244 | 2797 | 1546 | 3476 | 172,0 | 10.49 | 1,67 | 3.68 | ✓ |
| H 700 - 160 - C | H 700 - 160 - D | 160 | 6.30 | 405 | 15.94 | 245 | 9.65 | | 1258 | 2828 | 1569 | 3527 | 217,0 | 13.24 | 1,91 | 4.21 | ✓ |

| Model (Cu) | Rev. | Maintenance kit |
|-------------------|------|-----------------|
| H 700 (010 ÷ 080) | C | 39BMRV00750C |
| H 700 (100 ÷ 160) | C | 39BMH00700C |
| H 700 (010 ÷ 160) | D | 39BMH00700D |



HOW TO ORDER

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INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS

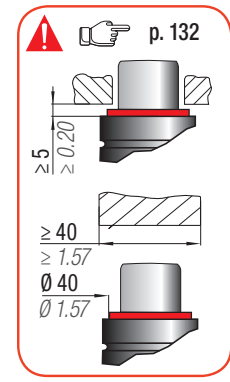
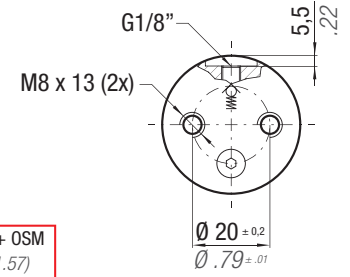
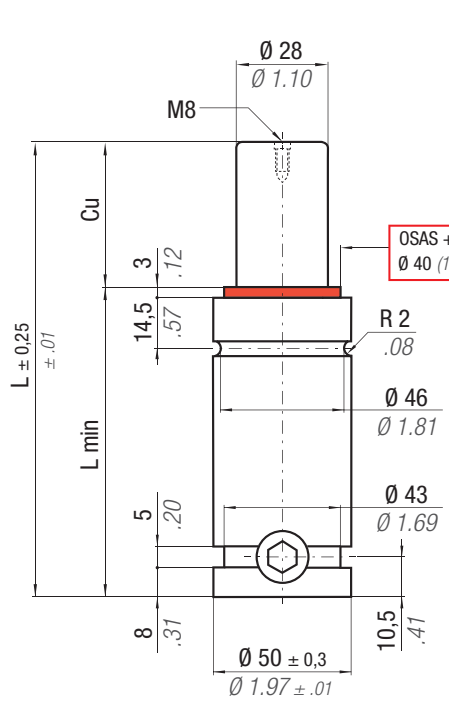


OPAS

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O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

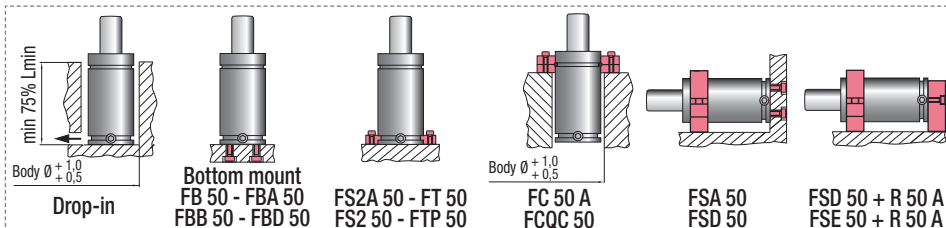
* F_{1i} = Isothermal end force at 100% Cu p. 18
** F_{1p} = Polytrophic end force at 100% Cu



| | | | | | | | | | |
|----------------------|----------------------|--------------------|--------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|
| N₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 15 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit See Tab below |
|----------------------|----------------------|--------------------|--------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|------------------|-----|-------|-------|-------|-------|-------|---------------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|-----|-------------------|------|------|------|------|------|------|------|---|------|------|------|------|------|------|------|------|---|------|------|------|------|-------|------|------|------|---|------|------|------|------|-------|------|------|------|---|------|------|------|------|-------|------|------|------|---|------|------|------|------|-------|------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|------|------|------|------|-------|-------|------|------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 013 - C | H 1000 - 013 - D | 13 | 0.50 | 120,7 | 4.74 | 107,7 | 4.24 | 920 2068 ± 5% | 1181 | 2655 | 1340 | 3012 | 43,0 | 2.62 | 1,21 | 2,67 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 025 - C | H 1000 - 025 - D | 25 | 0.98 | 145 | 5.71 | 120 | 4.72 | | | | | | | | | | | 1297 | 2916 | 1517 | 3410 | 62,0 | 3.78 | 1,32 | 2,91 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 038 - C | H 1000 - 038 - D | 38 | 1.50 | 171 | 6.73 | 133 | 5.24 | | | | | | | | | | | | | | | | | | | | 1374 | 3089 | 1638 | 3682 | 83,0 | 5.06 | 1,43 | 3,15 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 050 - C | H 1000 - 050 - D | 50 | 1.97 | 195 | 7.68 | 145 | 5.71 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1421 | 3195 | 1713 | 3851 | 101,0 | 6.16 | 1,53 | 3,37 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 063 - C | H 1000 - 063 - D | 63 | 2.48 | 221 | 8.74 | 158 | 6.22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1458 | 3278 | 1772 | 3984 | 122,0 | 7.44 | 1,64 | 3,62 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 075 - C | H 1000 - 075 - D | 75 | 2.95 | 245 | 9.65 | 170 | 6.69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1483 | 3334 | 1814 | 4078 | 141,0 | 8.60 | 1,74 | 3,84 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 080 - C | H 1000 - 080 - D | 80 | 3.15 | 255 | 10.04 | 175 | 6.89 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1492 | 3354 | 1828 | 4110 | 149,0 | 9.09 | 1,78 | 3,92 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 100 - C | H 1000 - 100 - D | 100 | 3.94 | 295 | 11.61 | 195 | 7.68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1521 | 3419 | 1874 | 4214 | 180,0 | 10.98 | 1,96 | 4.32 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 125 - C | H 1000 - 125 - D | 125 | 4.92 | 345 | 13.58 | 220 | 8.66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1546 | 3475 | 1915 | 4305 | 219,0 | 13.36 | 2,17 | 4.78 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 150 - C | H 1000 - 150 - D | 150 | 5.91 | 395 | 15.55 | 245 | 9.65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1563 | 3515 | 1944 | 4371 | 258,0 | 15.74 | 2,38 | 5.25 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 160 - C | H 1000 - 160 - D | 160 | 6.30 | 415 | 16.34 | 255 | 10.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1569 | 3528 | 1954 | 4393 | 274,0 | 16.71 | 2,46 | 5.42 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 175 - C | H 1000 - 175 - D | 175 | 6.89 | 445 | 17.52 | 270 | 10.63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1577 | 3545 | 1966 | 4421 | 298,0 | 18.18 | 2,59 | 5.71 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 1000 - 200 - C | H 1000 - 200 - D | 200 | 7.87 | 495 | 19.49 | 295 | 11.61 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1587 | 3568 | 1984 | 4459 | 337,0 | 20.56 | 2,79 | 6.15 | ✓ | | | | | | | | | | | | | | | | | | |
| H 1000 - 250 - C | H 1000 - 250 - D | 250 | 9.84 | 595 | 23.43 | 345 | 13.58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1602 | 3602 | 2009 | 4515 | 416,0 | 25.38 | 3,21 | 7.08 | ✓ | | | | | | | | | |
| H 1000 - 300 - C | H 1000 - 300 - D | 300 | 11.81 | 695 | 27.36 | 395 | 15.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1613 | 3625 | 2026 | 4554 | 494,0 | 30.13 | 3,63 | 8.00 | ✓ |

| Model (Cu) | Rev. | Maintenance kit |
|--------------------|------|-----------------|
| H 1000 (013 ÷ 080) | C | 39BMRV01000C |
| H 1000 (100 ÷ 300) | C | 39BMH01000D |
| H 1000 (013 ÷ 300) | D | 39BMH01000D |



HOW TO ORDER

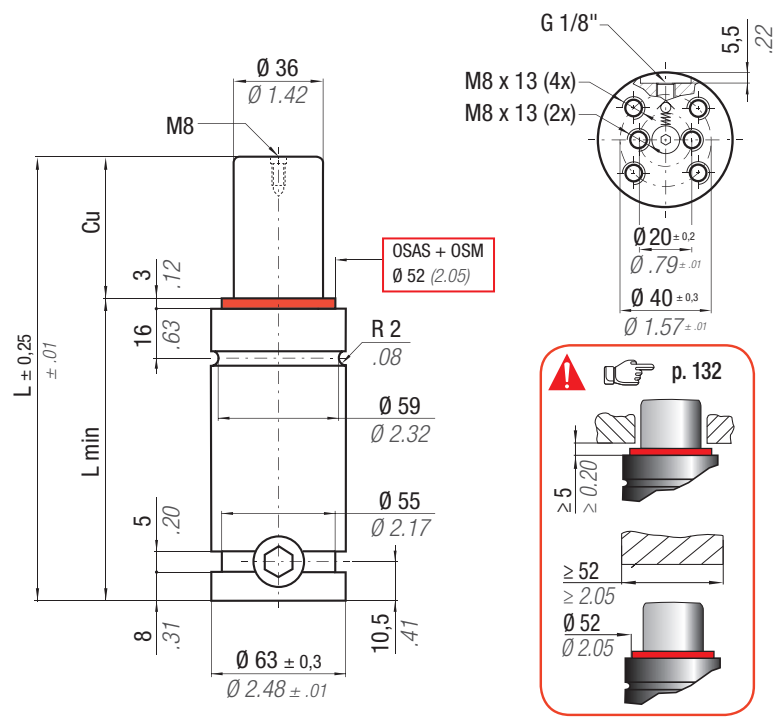
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ACTIVE SAFETY



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

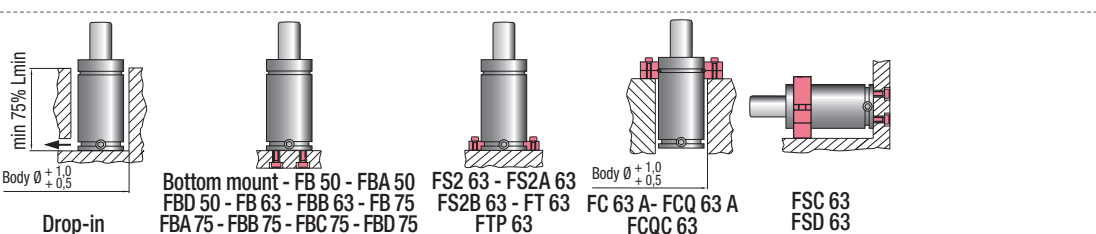
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* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | | |
|--|-------------------------|-----------------------|-----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|-------------------------------------------------------------------------------|
| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33 \% / ^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 10,17 cm ² 1.576 in ² | SPM ~ 15 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMH01500C Cu 13 ÷ 80 39BMH01500CH Cu 100 ÷ 300 |
|--|-------------------------|-----------------------|-----------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|-------------------------------------------------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force | | F _{1p} ** End force | | V ₀ | | PED 2014/68/EU | | |
|------------------|-----|-------|-------|-------|-------|-------|---------------------------------|------|--------------------------------|------|---------------------------------|------|-----------------|-----------------|-------------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| H 1500 - 013 - C | 13 | 0,51 | 120,7 | 4.75 | 107,7 | 4.24 | | | 1954 | 4393 | 2217 | 4984 | 71,0 | 4.33 | 1,98 | 4.37 | ✓ |
| H 1500 - 025 - C | 25 | 0,98 | 145 | 5.71 | 120 | 4.72 | | | 2139 | 4809 | 2500 | 5620 | 103,0 | 6.28 | 2,13 | 4.70 | ✓ |
| H 1500 - 038 - C | 38 | 1,50 | 171 | 6.73 | 133 | 5.24 | | | 2261 | 5083 | 2691 | 6050 | 138,0 | 8.42 | 2,29 | 5.05 | ✓ |
| H 1500 - 050 - C | 50 | 1,97 | 195 | 7.68 | 145 | 5.71 | | | 2335 | 5249 | 2809 | 6315 | 170,0 | 10.37 | 2,44 | 5.38 | ✓ |
| H 1500 - 063 - C | 63 | 2,48 | 221 | 8.70 | 158 | 6.22 | | | 2392 | 5377 | 2900 | 6519 | 204,0 | 12.44 | 2,60 | 5.73 | ✓ |
| H 1500 - 075 - C | 75 | 2,95 | 245 | 9.65 | 170 | 6.69 | 1530 | 3440 | 2431 | 5465 | 2964 | 6663 | 236,0 | 14.40 | 2,75 | 6.06 | ✓ |
| H 1500 - 080 - C | 80 | 3,15 | 255 | 10.04 | 175 | 6.89 | $\pm 5\%$ | | 2445 | 5497 | 2986 | 6713 | 249,0 | 15.19 | 2,81 | 6.19 | ✓ |
| H 1500 - 100 - C | 100 | 3,94 | 295 | 11.61 | 195 | 7.68 | 150 bar | | 2489 | 5595 | 3057 | 6872 | 302,0 | 18.42 | 3,03 | 6.68 | ✓ |
| H 1500 - 125 - C | 125 | 4,92 | 345 | 13.58 | 220 | 8.66 | 2175 psi | | 2527 | 5681 | 3119 | 7012 | 369,0 | 22.51 | 3,34 | 7.36 | ✓ |
| H 1500 - 150 - C | 150 | 5,91 | 395 | 15.55 | 245 | 9.65 | | | 2554 | 5742 | 3164 | 7113 | 435,0 | 26.54 | 3,64 | 8.02 | ✓ |
| H 1500 - 160 - C | 160 | 6,30 | 415 | 16.34 | 255 | 10.04 | + 20 °C +68 °F | | 2563 | 5762 | 3178 | 7144 | 462,0 | 28.18 | 3,77 | 8.31 | ✓ |
| H 1500 - 175 - C | 175 | 6,89 | 445 | 17.52 | 270 | 10.63 | | | 2574 | 5787 | 3197 | 7187 | 501,0 | 30.56 | 3,95 | 8.71 | ✓ |
| H 1500 - 200 - C | 200 | 7,87 | 495 | 19.49 | 295 | 11.61 | | | 2590 | 5823 | 3223 | 7246 | 568,0 | 34.65 | 4,26 | 9.39 | ✓ |
| H 1500 - 250 - C | 250 | 9,84 | 595 | 23.43 | 345 | 13.58 | | | 2656 | 5971 | 3333 | 7493 | 684,0 | 41.72 | 4,99 | 11.00 | ✓ |
| H 1500 - 300 - C | 300 | 11,81 | 695 | 27.36 | 395 | 15.55 | | | 2731 | 6140 | 3458 | 7774 | 790,0 | 48.19 | 5,81 | 12.81 | ✓ |

H HF



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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS

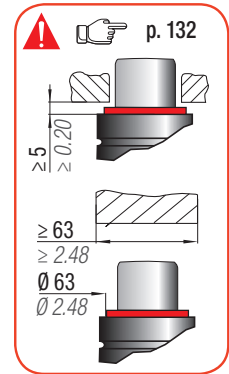
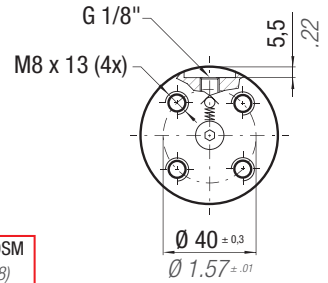
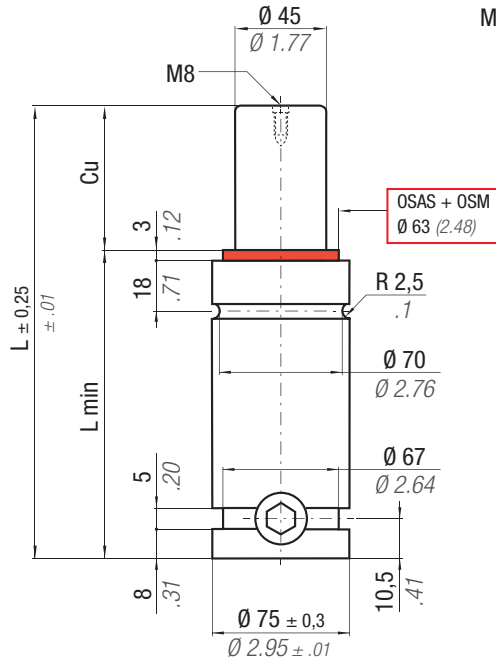


OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
The new code will be supplied only when the old will be out of stock
Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
El nuevo código será suministrado sólo cuando el viejo está fuera de stock
O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

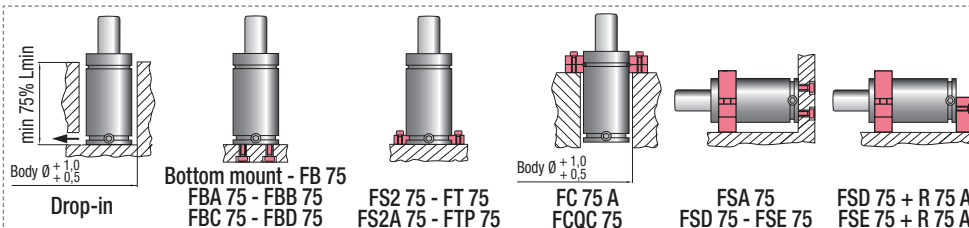
* F_{1i} = Isothermal end force at 100% Cu p. 18
** F_{1p} = Polytrophic end force at 100% Cu



| | | | | | | | | | |
|----------------|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|----------------------------------|
| N ₂ | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 15,90 cm ² 2,465 in ² | SPM ~ 15 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit See Tab below |
|----------------|-----------------|---------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|----------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg ~lb | PED 2014/68/EU | |
|-------------------------------------|------------------|-----|-------|-----|-------|-------|-------|---------------------------------|---------------------|----------------------------------|-------|------------------------------------|-------|-----------------|-----------------|------------|-------------------|---|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| H 2400 - 025 - C | H 2400 - 025 - D | 25 | 0.98 | 160 | 6.30 | 135 | 5.31 | 2385 5362 ± 5% | 150 bar 2175 psi | 3238 | 7279 | 3745 | 8419 | 176,0 | 10.74 | 3,34 | 7.36 | ✓ |
| H 2400 - 038 - C | H 2400 - 038 - D | 38 | 1.50 | 186 | 7.32 | 148 | 5.83 | | | 3442 | 7738 | 4062 | 9132 | 228,0 | 13.91 | 3,55 | 7.83 | ✓ |
| H 2400 - 050 - C | H 2400 - 050 - D | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | | | 3573 | 8032 | 4269 | 9597 | 276,0 | 16.84 | 3,75 | 8.27 | ✓ |
| H 2400 - 063 - C | H 2400 - 063 - D | 63 | 2.48 | 236 | 9.31 | 173 | 6.81 | | | 3678 | 8268 | 4436 | 9973 | 329,0 | 20.07 | 3,96 | 8.73 | ✓ |
| H 2400 - 075 - C | H 2400 - 075 - D | 75 | 2.95 | 260 | 10.24 | 185 | 7.28 | | | 3752 | 8435 | 4555 | 10240 | 377,0 | 23.00 | 4,15 | 9.15 | ✓ |
| H 2400 - 080 - C | H 2400 - 080 - D | 80 | 3.15 | 270 | 10.63 | 190 | 7.48 | | | 3778 | 8493 | 4597 | 10334 | 397,0 | 24.22 | 4,23 | 9.33 | ✓ |
| H 2400 - 100 - C | H 2400 - 100 - D | 100 | 3.94 | 310 | 12.20 | 210 | 8.27 | | | 3863 | 8684 | 4735 | 10645 | 478,0 | 29.16 | 4,51 | 9.94 | ✓ |
| H 2400 - 125 - C | H 2400 - 125 - D | 125 | 4.92 | 360 | 14.17 | 235 | 9.25 | | | 3939 | 8855 | 4859 | 10923 | 578,0 | 35.26 | 4,91 | 10.82 | ✓ |
| H 2400 - 150 - C | H 2400 - 150 - D | 150 | 5.91 | 410 | 16.14 | 260 | 10.24 | | | 3994 | 8979 | 4949 | 11126 | 679,0 | 41.42 | 5,32 | 11.73 | ✓ |
| H 2400 - 160 - C | H 2400 - 160 - D | 160 | 6.30 | 430 | 16.93 | 270 | 10.63 | | | 4012 | 9019 | 4979 | 11193 | 719,0 | 43.86 | 5,49 | 12.10 | ✓ |
| H 2400 - 175 - C | H 2400 - 175 - D | 175 | 6.89 | 460 | 18.11 | 285 | 11.22 | 4036 | 9073 | 5018 | 11281 | 779,0 | 47.52 | 5,73 | 12.63 | ✓ | | |
| H 2400 - 200 - C | H 2400 - 200 - D | 200 | 7.87 | 510 | 20.08 | 310 | 12.20 | 4068 | 9145 | 5072 | 11403 | 880,0 | 53.68 | 6,14 | 13.54 | ✓ | | |
| H 2400 - 250 - C | H 2400 - 250 - D | 250 | 9.84 | 610 | 24.02 | 360 | 14.17 | 4116 | 9253 | 5152 | 11582 | 1081,0 | 65.94 | 6,95 | 15.32 | ✓ | | |
| H 2400 - 275 - C | H 2400 - 275 - D | 275 | 10.83 | 660 | 25.98 | 385 | 15.16 | 4135 | 9296 | 5182 | 11650 | 1182,0 | 72.10 | 7,36 | 16.23 | ✓ | | |
| H 2400 - 300 - C | H 2400 - 300 - D | 300 | 11.81 | 710 | 27.95 | 410 | 16.14 | 4150 | 9330 | 5208 | 11707 | 1283,0 | 78.26 | 7,77 | 17.13 | ✓ | | |

| Model (Cu) | Rev. | Maintenance kit |
|--------------------|-------|-----------------|
| H 2400 (025 ÷ 080) | C | 39BMRV02400C |
| H 2400 (025 ÷ 080) | D | 39BMH02400D |
| H 2400 (100 ÷ 300) | C - D | 39BMH02400DH |

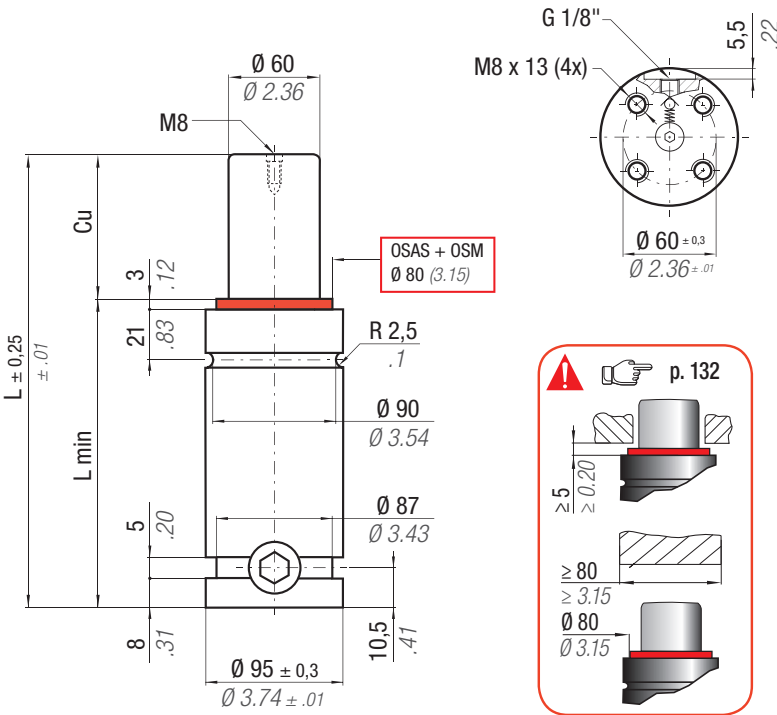


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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

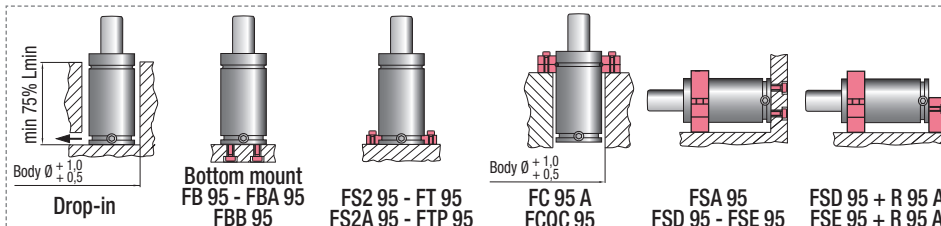
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* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu

| | | | | | | | | |
|----------------|--------------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|
| N ₂ | °F 32 - 176 °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 28,27 cm ² 4.382 in ² | SPM ~ 15 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit See Tab below |
|----------------|--------------------------|---------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | Maintenance kit | | 2014/68/EU |
|-------------------------------------|------------------|-----|-------|-----|-------|-------|-------|---------------------------------|---------------------|----------------------------------|-------|------------------------------------|--------|-----------------|-----------------|-----------------|-------|------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| H 4200 - 025 - C | H 4200 - 025 - D | 25 | 0.98 | 170 | 6.69 | 145 | 5.71 | 4240 9532 ± 5% | 150 bar 2175 psi | 5817 | 13077 | 6753 | 15181 | 303,0 | 18.48 | 5,76 | 12.70 | ✓ |
| H 4200 - 038 - C | H 4200 - 038 - D | 38 | 1.50 | 196 | 7.72 | 158 | 6.22 | | | 6236 | 14019 | 7407 | 16652 | 388,0 | 23.67 | 6,12 | 13.49 | ✓ |
| H 4200 - 050 - C | H 4200 - 050 - D | 50 | 1.97 | 220 | 8.66 | 170 | 6.69 | | | 6515 | 14646 | 7850 | 17648 | 467,0 | 28.49 | 6,45 | 14.22 | ✓ |
| H 4200 - 063 - C | H 4200 - 063 - D | 63 | 2.48 | 246 | 9.70 | 183 | 7.20 | | | 6744 | 15161 | 8217 | 18473 | 552,0 | 33.67 | 6,80 | 14.99 | ✓ |
| H 4200 - 075 - C | H 4200 - 075 - D | 75 | 2.95 | 270 | 10.63 | 195 | 7.68 | | | 6908 | 15530 | 8484 | 19073 | 631,0 | 38.49 | 7,13 | 15.72 | ✓ |
| H 4200 - 080 - C | H 4200 - 080 - D | 80 | 3.15 | 280 | 11.02 | 200 | 7.87 | | | 6967 | 15662 | 8581 | 19291 | 663,0 | 40.44 | 7,27 | 16.03 | ✓ |
| H 4200 - 100 - C | H 4200 - 100 - D | 100 | 3.94 | 320 | 12.60 | 220 | 8.66 | | | 7160 | 16097 | 8898 | 20003 | 794,0 | 48.43 | 7,76 | 17.11 | ✓ |
| H 4200 - 125 - C | H 4200 - 125 - D | 125 | 4.92 | 370 | 14.57 | 245 | 9.65 | | | 7336 | 16491 | 9188 | 20656 | 958,0 | 58.44 | 8,45 | 18.63 | ✓ |
| H 4200 - 150 - C | H 4200 - 150 - D | 150 | 5.91 | 420 | 16.54 | 270 | 10.63 | | | 7465 | 16781 | 9403 | 21140 | 1122,0 | 68.44 | 9,13 | 20.13 | ✓ |
| H 4200 - 160 - C | H 4200 - 160 - D | 160 | 6.30 | 440 | 17.32 | 280 | 11.02 | | | 7507 | 16877 | 9475 | 21300 | 1187,0 | 72.41 | 9,40 | 20.72 | ✓ |
| H 4200 - 175 - C | H 4200 - 175 - D | 175 | 6.89 | 470 | 18.50 | 295 | 11.61 | 7564 | 17004 | 9569 | 21512 | 1285,0 | 78.39 | 9,82 | 21.65 | ✓ | | |
| H 4200 - 200 - C | H 4200 - 200 - D | 200 | 7.87 | 520 | 20.47 | 320 | 12.60 | 7642 | 17179 | 9701 | 21808 | 1449,0 | 88.39 | 10,50 | 23.15 | ✓ | | |
| H 4200 - 250 - C | H 4200 - 250 - D | 250 | 9.84 | 620 | 24.41 | 370 | 14.57 | 7758 | 17440 | 9897 | 22248 | 1776,0 | 108.34 | 11,87 | 26.17 | ✓ | | |
| H 4200 - 300 - C | H 4200 - 300 - D | 300 | 11.81 | 720 | 28.35 | 420 | 16.54 | 7890 | 17737 | 10122 | 22755 | 2104,0 | 128.34 | 13,24 | 29.19 | ✓ | | |

| Model (Cu) | Rev. | Maintenance kit |
|--------------------|-------|-----------------|
| H 4200 (025 ÷ 080) | C | 39BMRV04200C |
| H 4200 (025 ÷ 080) | D | 39BMH04200D |
| H 4200 (100 ÷ 300) | C - D | 39BMH04200DH |



HOW TO ORDER

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INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

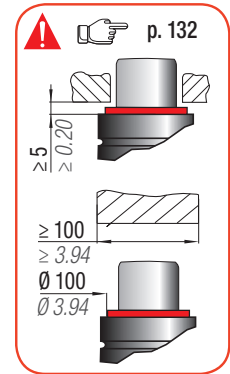
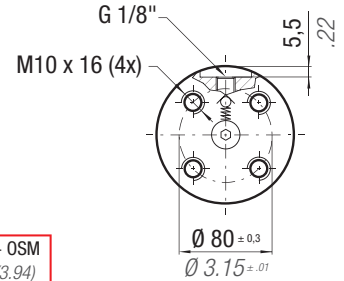
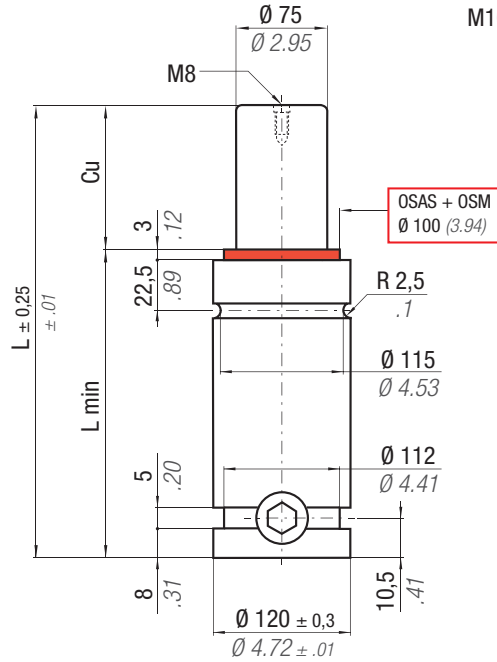
El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

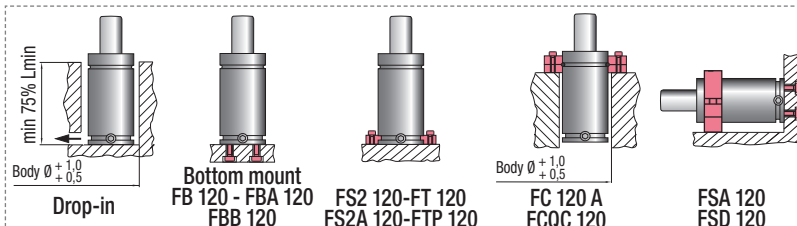
** F_{1p} = Polytropic end force at 100% Cu



| | | | | | | | | | |
|----------------|------------------|----------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|----------------------------------|
| N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 44,18 cm ² 6.848 in ² | SPM ~ 15 ÷ 100 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit See Tab below |
|----------------|------------------|----------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|----------------------------------|

| CODE PHASING OUT from 01/2018 | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU |
|-------------------------------------|------------------|-----|-------|-----|-------|-------|-------|----------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|-------|-------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| H 6600 - 025 - C | H 6600 - 025 - D | 25 | 0.98 | 190 | 7.48 | 165 | 6.50 | 6630 ± 5% | 14904 | 8601 | 19336 | 9806 | 22045 | 561,0 | 34.22 | 10,35 | 22.82 | ✓ |
| H 6600 - 038 - C | H 6600 - 038 - D | 38 | 1.50 | 216 | 8.50 | 178 | 7.01 | | | 9183 | 20644 | 10696 | 24046 | 700,0 | 42.70 | 10,89 | 24.01 | ✓ |
| H 6600 - 050 - C | H 6600 - 050 - D | 50 | 1.97 | 240 | 9.45 | 190 | 7.48 | | | 9585 | 21548 | 11323 | 25455 | 828,0 | 50.51 | 11,37 | 25.07 | ✓ |
| H 6600 - 063 - C | H 6600 - 063 - D | 63 | 2.48 | 266 | 10.47 | 203 | 7.99 | | | 9924 | 22310 | 11857 | 26656 | 967,0 | 58.99 | 11,93 | 26.30 | ✓ |
| H 6600 - 075 - C | H 6600 - 075 - D | 75 | 2.95 | 290 | 11.42 | 215 | 8.46 | | | 10174 | 22872 | 12255 | 27550 | 1095,0 | 66.80 | 12,39 | 27.32 | ✓ |
| H 6600 - 080 - C | H 6600 - 080 - D | 80 | 3.15 | 300 | 11.81 | 220 | 8.66 | | | 10264 | 23074 | 12400 | 27876 | 1149,0 | 70.09 | 12,60 | 27.78 | ✓ |
| H 6600 - 100 - C | H 6600 - 100 - D | 100 | 3.94 | 340 | 13.39 | 240 | 9.45 | | | 10565 | 23751 | 12885 | 28967 | 1362,0 | 83.08 | 13,30 | 29.32 | ✓ |
| H 6600 - 125 - C | H 6600 - 125 - D | 125 | 4.92 | 390 | 15.35 | 265 | 10.43 | | | 10844 | 24378 | 13339 | 29987 | 1629,0 | 99.37 | 14,33 | 31.59 | ✓ |
| H 6600 - 150 - C | H 6600 - 150 - D | 150 | 5.91 | 440 | 17.32 | 290 | 11.42 | | | 11053 | 24848 | 13681 | 30756 | 1864,0 | 113.70 | 15,35 | 33.84 | ✓ |
| H 6600 - 160 - C | H 6600 - 160 - D | 160 | 6.30 | 460 | 18.11 | 300 | 11.81 | | | 11123 | 25005 | 13975 | 31417 | 2003,0 | 122.18 | 15,75 | 34.72 | ✓ |
| H 6600 - 175 - C | H 6600 - 175 - D | 175 | 6.89 | 490 | 19.29 | 315 | 12.40 | | | 11215 | 25212 | 13948 | 31356 | 2164,0 | 132.00 | 16,36 | 36.07 | ✓ |
| H 6600 - 200 - C | H 6600 - 200 - D | 200 | 7.87 | 540 | 21.26 | 340 | 13.39 | | | 11345 | 25505 | 14163 | 31840 | 2431,0 | 148.29 | 17,38 | 38.32 | ✓ |
| H 6600 - 250 - C | H 6600 - 250 - D | 250 | 9.84 | 640 | 25.20 | 390 | 15.35 | | | 11540 | 25943 | 14486 | 32566 | 2965,0 | 180.87 | 19,42 | 42.81 | ✓ |
| H 6600 - 300 - C | H 6600 - 300 - D | 300 | 11.81 | 740 | 29.13 | 440 | 17.32 | | | 11713 | 26332 | 14775 | 33216 | 3485,0 | 212.59 | 21,57 | 47.55 | ✓ |

| Model (Cu) | Rev. | Maintenance kit |
|--------------------|-------|-----------------|
| H 6600 (025 ÷ 080) | C | 39BMRV06600C |
| H 6600 (025 ÷ 080) | D | 39BMH06600D |
| H 6600 (100 ÷ 300) | C - D | 39BMH06600DH |

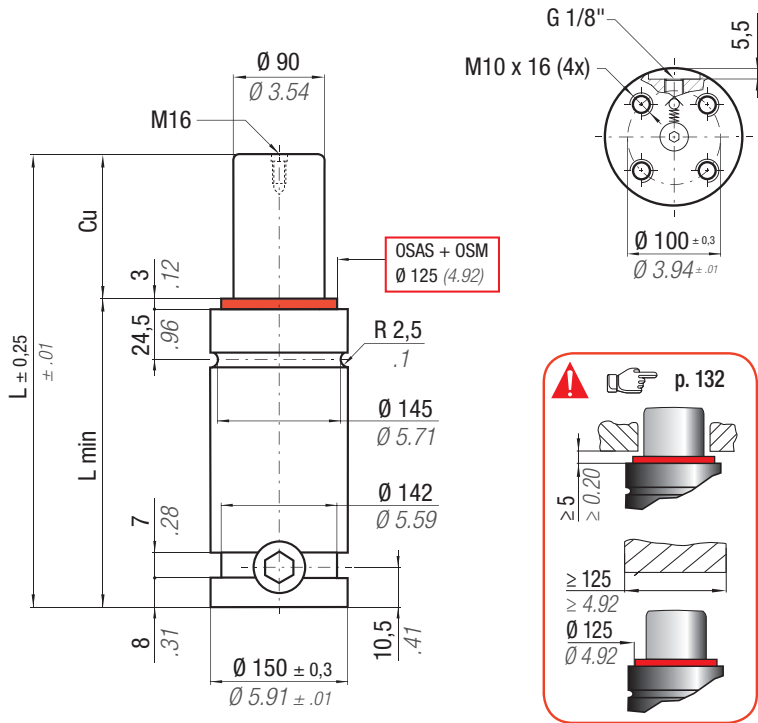


HOW TO ORDER

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INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easyl MANIFOLD p. 241

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polyphropic end force at 100% Cu



OSAS



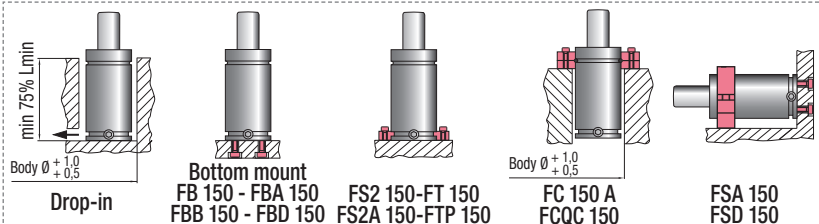
USAS



OPAS

| | | | | | | | | | |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|
| | $^{\circ}\text{F}$ 32 - 176 | $^{\circ}\text{C}$ 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 63,62 cm ² 9.861 in ² | SPM ~ 15 ÷ 80 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMH09500C |
|--|--------------------------------------|------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|--------------------------------------|-----------------------------|---------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|------------------|-----|-------|-----|-------|-------|-------|----------------|----|-------------------|-------|--------------------|-------|-----------------|-----------------|-------|-------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| H 9500 - 025 - C | 25 | 0.98 | 205 | 8.07 | 180 | 7.09 | | | 12101 | 27204 | 13691 | 30779 | 879,0 | 53.62 | 18,00 | 39.68 | ✓ |
| H 9500 - 038 - C | 38 | 1.50 | 231 | 9.09 | 193 | 7.60 | | | 12866 | 28925 | 14853 | 33390 | 1089,0 | 66.43 | 18,82 | 41.49 | ✓ |
| H 9500 - 050 - C | 50 | 1.97 | 255 | 10.04 | 205 | 8.07 | | | 13398 | 30121 | 15673 | 35235 | 1282,0 | 78.20 | 19,58 | 43.17 | ✓ |
| H 9500 - 063 - C | 63 | 2.48 | 281 | 11.06 | 218 | 8.58 | | | 13848 | 31132 | 16376 | 36815 | 1492,0 | 91.01 | 20,41 | 45.00 | ✓ |
| H 9500 - 075 - C | 75 | 2.95 | 305 | 12.01 | 230 | 9.06 | | | 14181 | 31881 | 16901 | 37995 | 1685,0 | 102.79 | 21,17 | 46.67 | ✓ |
| H 9500 - 080 - C | 80 | 3.15 | 315 | 12.40 | 235 | 9.25 | | | 14302 | 32152 | 17092 | 38425 | 1766,0 | 107.73 | 21,49 | 47.38 | ✓ |
| H 9500 - 100 - C | 100 | 3.94 | 355 | 13.98 | 255 | 10.04 | | | 14705 | 33058 | 17735 | 39869 | 2088,0 | 127.37 | 22,76 | 50.18 | ✓ |
| H 9500 - 125 - C | 125 | 4.92 | 405 | 15.94 | 280 | 11.02 | | | 15080 | 33901 | 18337 | 41224 | 2491,0 | 151.95 | 24,35 | 53.68 | ✓ |
| H 9500 - 150 - C | 150 | 5.91 | 455 | 17.91 | 305 | 12.01 | | | 15361 | 34534 | 18793 | 42249 | 2894,0 | 176.53 | 25,94 | 57.19 | ✓ |
| H 9500 - 160 - C | 160 | 6.30 | 475 | 18.70 | 315 | 12.40 | | | 15455 | 34745 | 18946 | 42593 | 3055,0 | 186.36 | 26,58 | 58.60 | ✓ |
| H 9500 - 175 - C | 175 | 6.89 | 505 | 19.88 | 330 | 12.99 | | | 15581 | 35027 | 19150 | 43052 | 3297,0 | 201.12 | 27,53 | 60.69 | ✓ |
| H 9500 - 200 - C | 200 | 7.87 | 555 | 21.85 | 355 | 13.98 | | | 15756 | 35421 | 19437 | 43697 | 3700,0 | 225.70 | 29,12 | 64.20 | ✓ |
| H 9500 - 250 - C | 250 | 9.84 | 655 | 25.79 | 405 | 15.94 | | | 16020 | 36014 | 19870 | 44670 | 4506,0 | 274.87 | 32,30 | 71.21 | ✓ |
| H 9500 - 300 - C | 300 | 11.81 | 755 | 29.72 | 455 | 17.91 | | | 16208 | 36437 | 20181 | 45368 | 5312,0 | 324.03 | 35,47 | 78.20 | ✓ |



HOW TO ORDER

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INSTALLATION GUIDELINE

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OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

ACTIVE SAFETY



OSAS



USAS

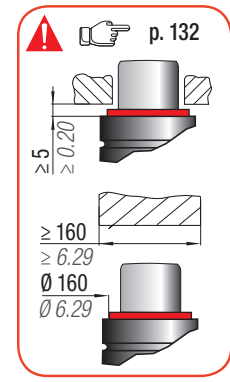
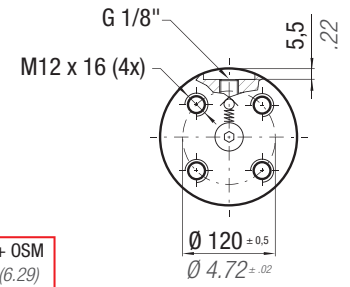
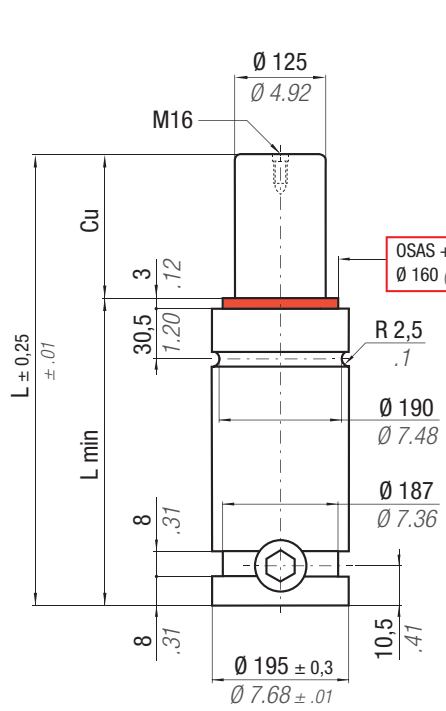


OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

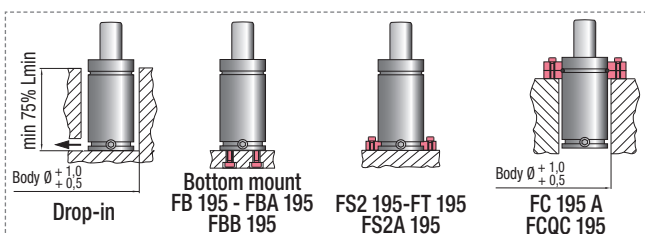
easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytropic end force at 100% Cu



| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-------------------------------------------------------|-------------------------------|----------------------|--------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 122,70 cm ² 19.019 in ² | SPM ~ 10 ÷ 70 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMH18500C |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-------------------------------------------------------|-------------------------------|----------------------|--------------------------------|

| CODE PHASING OUT from 01/2014 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-------------------|-----|-------|-----|-------|-------|-------|---------------------------------|-------|----------------------------------|-------|------------------------------------|--------|-----------------|-----------------|-------------------|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|--------|-------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 025 - A | H 18500 - 025 - C | 25 | 0.98 | 210 | 8.27 | 185 | 7.28 | 18400 ± 5% | 41363 | 23812 | 53532 | 27117 | 60961 | 1577,0 | 96.20 | 31,06 | 68.48 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 038 - A | H 18500 - 038 - C | 38 | 1.50 | 236 | 9.29 | 198 | 7.80 | | | | | | | | | | | 25529 | 57391 | 29743 | 66865 | 1941,0 | 118.40 | 32,53 | 71.72 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 050 - A | H 18500 - 050 - C | 50 | 1.97 | 260 | 10.24 | 210 | 8.27 | | | | | | | | | | | | | | | | | | | 26751 | 60139 | 31649 | 71150 | 2276,0 | 138.84 | 33,89 | 74.71 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 063 - A | H 18500 - 063 - C | 63 | 2.50 | 286 | 11.30 | 223 | 8.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | 27804 | 62506 | 33313 | 74891 | 2640,0 | 161.04 | 35,36 | 77.96 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 080 - A | H 18500 - 080 - C | 80 | 3.15 | 320 | 12.60 | 240 | 9.45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 28884 | 64934 | 35042 | 78778 | 3115,0 | 190.02 | 37,28 | 82.19 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 100 - A | H 18500 - 100 - C | 100 | 3.94 | 360 | 14.17 | 260 | 10.24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 29859 | 67126 | 36620 | 82325 | 3674,0 | 224.11 | 39,54 | 87.17 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 125 - A | H 18500 - 125 - C | 125 | 4.92 | 410 | 16.14 | 285 | 11.22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30778 | 69192 | 38126 | 85711 | 4373,0 | 266.75 | 42,37 | 93.41 | ✓ | | | | | | | | | | | | | | | | |
| - | H 18500 - 150 - C | 150 | 5.91 | 460 | 18.11 | 310 | 12.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31478 | 70765 | 39281 | 88307 | 5072,0 | 309.39 | 45,19 | 99.63 | ✓ | | | | | | | | |
| H 18500 - 160 - A | H 18500 - 160 - C | 160 | 6.30 | 480 | 18.90 | 320 | 12.60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 31713 | 71294 | 39671 | 89184 | 5352,0 | 326.47 | 46,33 | 102.14 | ✓ |
| H 18500 - 200 - A | H 18500 - 200 - C | 200 | 7.87 | 560 | 22.05 | 360 | 14.17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 32471 |
| H 18500 - 250 - A | H 18500 - 250 - C | 250 | 9.84 | 660 | 25.98 | 410 | 16.14 | 33143 | 74508 | 42063 | 94561 | 7868,0 | 479.95 | 56,51 | 124.58 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H 18500 - 300 - A | H 18500 - 300 - C | 300 | 11.81 | 760 | 29.92 | 460 | 18.11 | | | | | | | | | 33627 | 75597 | 42881 | 96400 | 9266,0 | 565.23 | 62,16 | 137.04 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

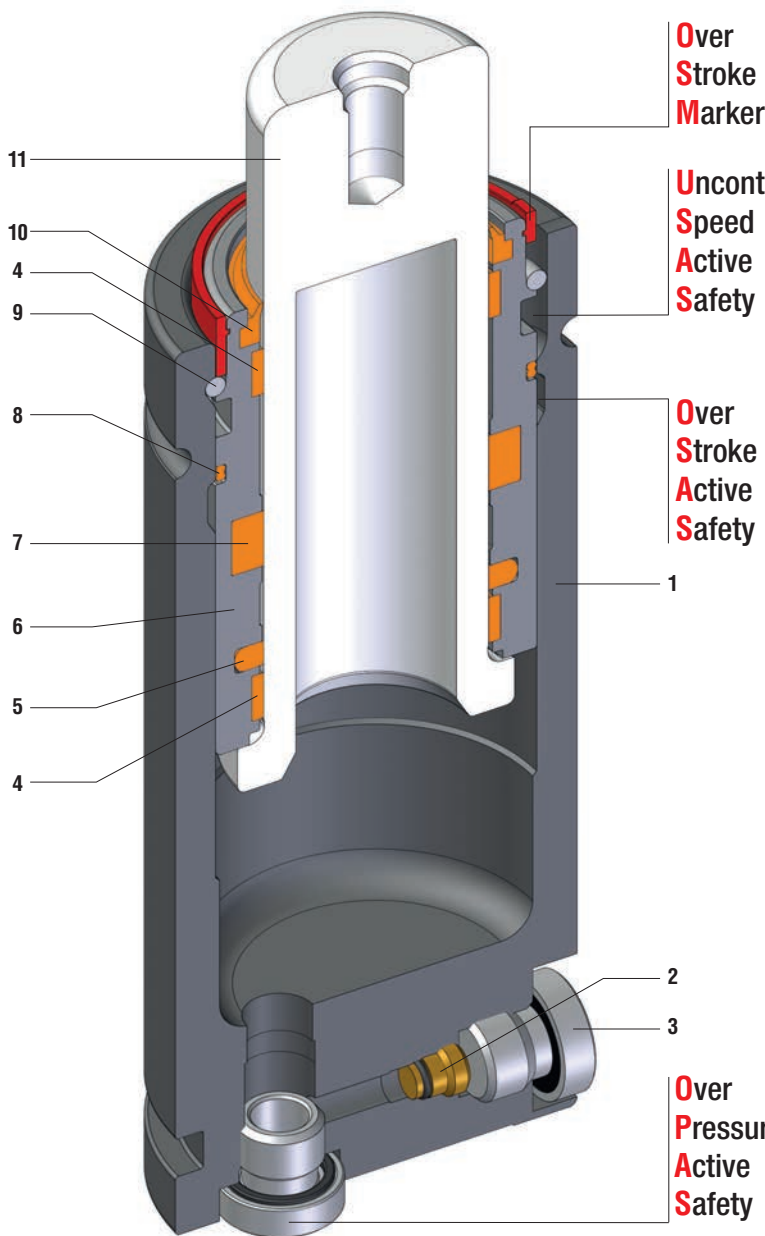


HOW TO ORDER
 p. 133

INSTALLATION GUIDELINE
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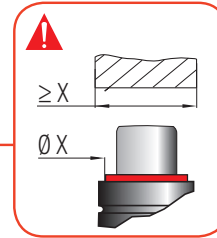
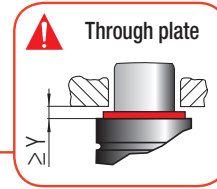


Over Stroke Marker

Uncontrolled Speed Active Safety

Over Stroke Active Safety

Over Pressure Active Safety



UP to 120°C / 248°F

**LONG LIFE
thanks to special seals
and guides
for High Temperature**

Per alta temperatura, ISO standard, forza potenziata, - For high temperature, ISO standard, high force
Für Hochtemperatur, ISO Standard, erhöhte Kraft - Pour haute température, standard ISO, force majorée
Para alta temperatura, ISO standard, fuerza potenciada - De alta temperatura, norma ISO, força permitida

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|-------------|----------|-----------------|-----------|------------------------------|
| 1 | Body | 5 | Rod seal* | 9 | Retaining ring |
| 2 | Valve | 6 | Bush | 10 | Rod wiper* |
| 3 | Plug | 7 | Rod seal* | 11 | Rod (nitrited superfinished) |
| 4 | Guide ring* | 8 | Dual ring seal* | | |

*special design and materials for high temperature.

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force FO | | | | | | | | |
|------------|--------|------|-----------|--------------|------------------|------|------------------|---|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | HIGH TEMPERATURE | | OSAS | USAS | OPAS | SKUDO | SW |
| HT 500 T1 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 495 | 1113 | ✓ | - | ✓ | ✓ | ✓ | - | ✓ |
| HT 700 T1 | 45 | 1.77 | 10 - 200 | 0.39 - 7.87 | 775 | 1742 | ✓ | - | ✓ | ✓ | ✓ | - | ✓ |
| HT 1000 T1 | 50 | 1.97 | 13 - 300 | 0.51 - 11.81 | 970 | 2181 | ✓ | - | ✓ | ✓ | ✓ | - | ✓ |
| HT 500 T2 | 38 | 1.50 | 10 - 125 | 0.39 - 4.92 | 480 | 1079 | - | ✓ | ✓ | ✓ | ✓ | - | ✓ |
| HT 700 T2 | 45 | 1.77 | 10 - 200 | 0.39 - 7.87 | 750 | 1686 | - | ✓ | ✓ | ✓ | ✓ | - | ✓ |
| HT 1000 T2 | 50 | 1.97 | 13 - 300 | 0.51 - 11.81 | 940 | 2113 | - | ✓ | ✓ | ✓ | ✓ | - | ✓ |

✓ Built-in as standard

✓ Optional upon request

T1

Temperatura di esercizio
Working temperature
Betriebstemperatur
Température de fonctionnement
Temperatura de funcionamiento
Temperatura de funcionamiento

80 ÷ 100°C
176 ÷ 212°F

P max

125 bar
1813 psi

T2

Temperatura di esercizio
Working temperature
Betriebstemperatur
Température de fonctionnement
Temperatura de funcionamiento
Temperatura de funcionamiento

100 ÷ 120°C
212 ÷ 248°F

P max

115 bar
1668 psi



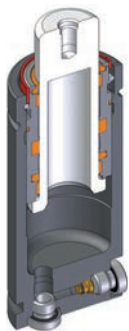
HOW TO ORDER

Series _____ Revision code _____

Model **HT500-010-A-T1-E-W** Version **HT**

Stroke _____ Working temperature _____

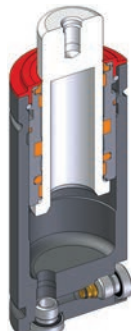
Available versions



HT 500-010-A-T1-T2
Standard code



Self contained



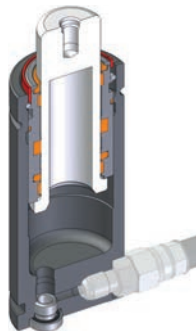
HT 500-010-A-T1-T2-W
Add "-W" to standard code



Self contained



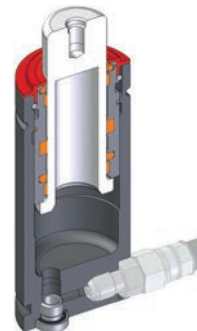
+
Secondary wiper



HT 500-010-A-T1-T2-N
Add "-N" to standard code



Linkable



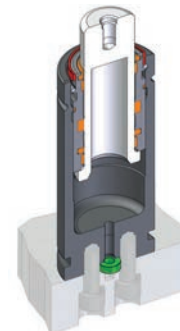
HT 500-010-A-T1-T2-N-W
Add "-N-W" to standard code



Linkable



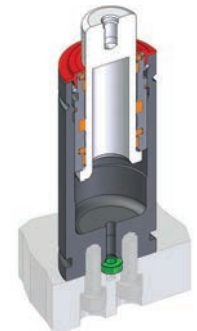
+
Secondary wiper



HT 500-010-A-T1-T2-E
Add "-E" to standard code



Easy
Manifold



HT 500-010-A-T1-T2-E-W
Add "-E-W" to standard code



Easy
Manifold



+
Secondary wiper

HT 500 T1

80 ÷ 100°C / 176 ÷ 212°F



HIGH TEMP.

ACTIVE SAFETY



OSAS



USAS

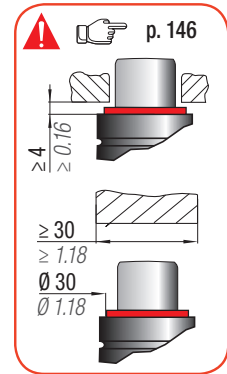
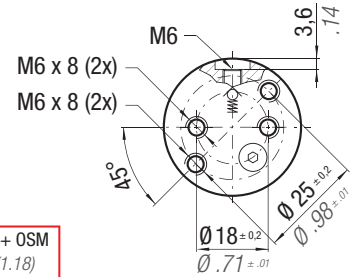
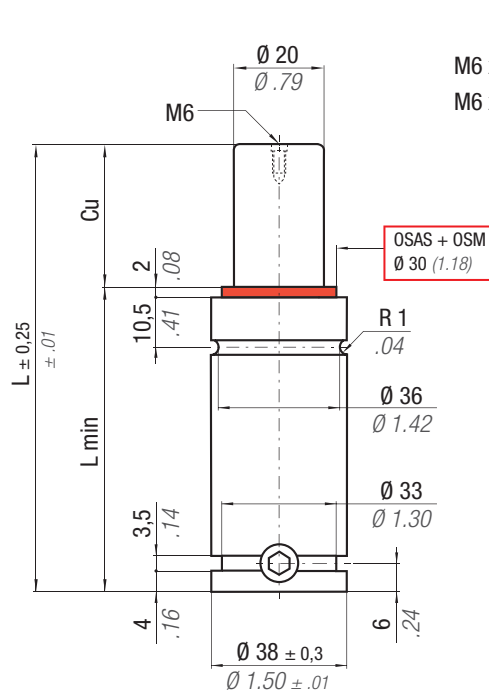


OPAS

OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

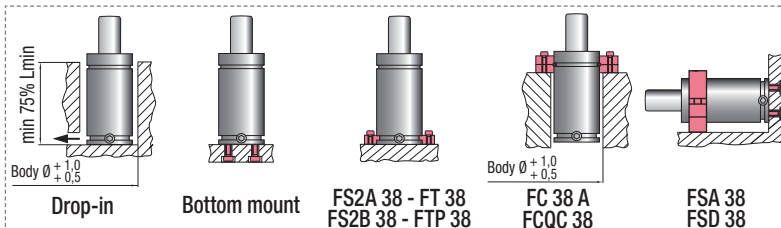
* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polytrophic end force at 100% Cu



| | | | | | | | | | |
|----------------|-----------------------|----------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-----------------|--------------------|-----------------------------------|
| N ₂ | °F 176 - 212 | °C 80 - 100 | ΔP ± 0,33 %/°C | P max 125 bar 1813 psi | P min 20 bar 290 psi | S 3,14 cm ² 0,478 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMMMGS00038B |
|----------------|-----------------------|----------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-----------------|--------------------|-----------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU | |
|-----------------------|-----|------|-------|-------|-------|------|-----------------------------|------|--------------------------------|------|--------------------|------|-----------------|-----------------|------|------|-------------------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | | |
| HT 500 - 010 - A - T1 | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | 390 877 + 20°C + 68°F | | 653 | 1469 | 756 | 1699 | 13,5 | 0.82 | 0,31 | 0.68 | ✓ | |
| HT 500 - 013 - A - T1 | 13 | 0.51 | 75,7 | 2.98 | 62,7 | 2.47 | | | 678 | 1525 | 796 | 1789 | 15,8 | 0.96 | 0,32 | 0.71 | ✓ | |
| HT 500 - 016 - A - T1 | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | | | 692 | 1557 | 819 | 1841 | 18,6 | 1.13 | 0,34 | 0.75 | ✓ | |
| HT 500 - 019 - A - T1 | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | | | 689 | 1550 | 814 | 1830 | 21,2 | 1.29 | 0,35 | 0.77 | ✓ | |
| HT 500 - 025 - A - T1 | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | | | 727 | 1634 | 876 | 1970 | 26,4 | 1.61 | 0,38 | 0.84 | ✓ | |
| HT 500 - 038 - A - T1 | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 755 | 1697 | 923 | 2075 | 37,6 | 2.29 | 0,44 | 0.97 | ✓ | |
| HT 500 - 050 - A - T1 | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | | | 770 | 1731 | 949 | 2133 | 47,9 | 2.92 | 0,50 | 1.10 | ✓ | |
| HT 500 - 063 - A - T1 | 63 | 2.48 | 176,5 | 6.95 | 113,5 | 4.47 | | | 495 1113 + 100°C + 212°F | 778 | 1750 | 963 | 2165 | 59,4 | 3.62 | 0,56 | 1.23 | ✓ |
| HT 500 - 080 - A - T1 | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | | | 791 | 1777 | 984 | 2212 | 73,7 | 4.50 | 0,64 | 1.41 | ✓ | |
| HT 500 - 100 - A - T1 | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 798 | 1794 | 997 | 2242 | 90,9 | 5.54 | 0,73 | 1.61 | ✓ | |
| HT 500 - 125 - A - T1 | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | 805 | 1809 | 1008 | 2267 | 112,4 | 6.86 | 0,85 | 1.87 | ✓ | | | |

End force at 100°C / 212°F

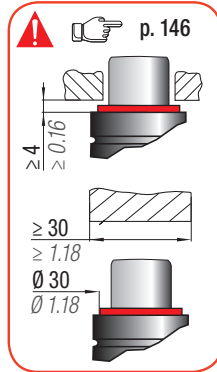
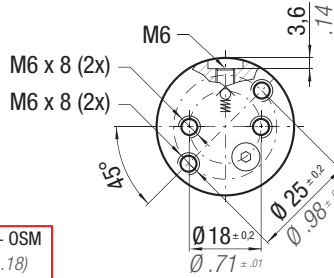
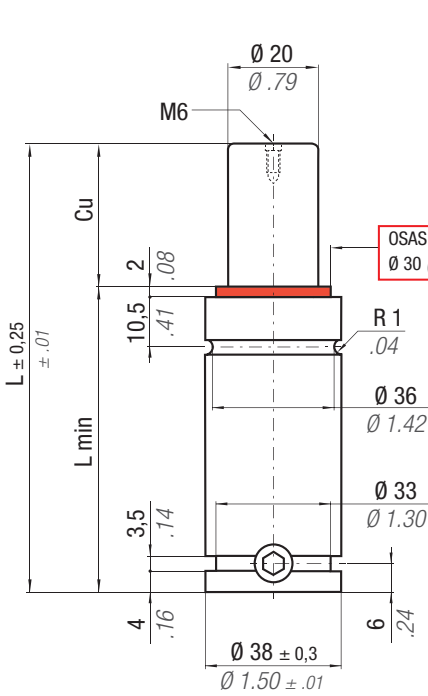


HOW TO ORDER

p. 147

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polyphoric end force at 100% Cu



HIGH TEMP.

ACTIVE SAFETY



OSAS



USAS



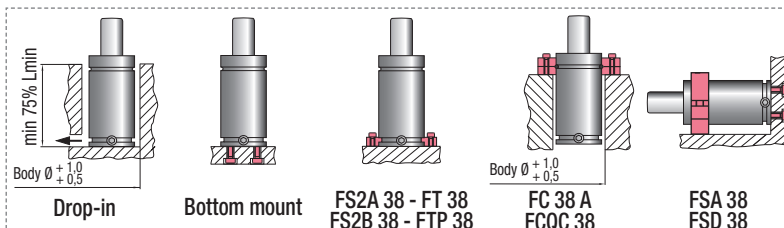
OPAS

| | | | | | | | | | |
|--|-----------------------|-----------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|------------------------------------------|
| | °F 212 - 248 | °C 100 - 120 | ΔP ± 0,33 %/°C | P max 115 bar 1668 psi | P min 20 bar 290 psi | S 3,14 cm ² 0.487 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMMMGS00038B |
|--|-----------------------|-----------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|------------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-----------------------|-----|------|-------|-------|-------|------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| HT 500 - 010 - A - T2 | 10 | 0.39 | 70 | 2.76 | 60 | 2.36 | | | 630 | 1415 | 734 | 1650 | 13,5 | 0.82 | 0,31 | 0.68 | ✓ |
| HT 500 - 013 - A - T2 | 13 | 0.51 | 75,7 | 2.98 | 62,7 | 2.47 | | | 653 | 1468 | 773 | 1738 | 15,8 | 0.96 | 0,32 | 0.71 | ✓ |
| HT 500 - 016 - A - T2 | 16 | 0.63 | 82 | 3.23 | 66 | 2.60 | 360 | 809 | 666 | 1498 | 795 | 1788 | 18,6 | 1.13 | 0,34 | 0.75 | ✓ |
| HT 500 - 019 - A - T2 | 19 | 0.75 | 88 | 3.46 | 69 | 2.72 | + 20°C | | 664 | 1492 | 791 | 1777 | 21,2 | 1.29 | 0,35 | 0.77 | ✓ |
| HT 500 - 025 - A - T2 | 25 | 0.98 | 100 | 3.94 | 75 | 2.95 | + 68°F | | 699 | 1572 | 851 | 1913 | 26,4 | 1.61 | 0,38 | 0.84 | ✓ |
| HT 500 - 038 - A - T2 | 38 | 1.50 | 126 | 4.96 | 88 | 3.46 | | | 725 | 1631 | 896 | 2015 | 37,6 | 2.29 | 0,44 | 0.97 | ✓ |
| HT 500 - 050 - A - T2 | 50 | 1.97 | 150 | 5.91 | 100 | 3.94 | 480 | 1079 | 740 | 1663 | 921 | 2072 | 47,9 | 2.92 | 0,50 | 1.10 | ✓ |
| HT 500 - 063 - A - T2 | 63 | 2.48 | 176,5 | 6.95 | 113,5 | 4.47 | + 120°C | | 748 | 1681 | 936 | 2103 | 59,4 | 3.62 | 0,56 | 1.23 | ✓ |
| HT 500 - 080 - A - T2 | 80 | 3.15 | 210 | 8.27 | 130 | 5.12 | + 248°F | | 759 | 1707 | 956 | 2149 | 73,7 | 4.50 | 0,64 | 1.41 | ✓ |
| HT 500 - 100 - A - T2 | 100 | 3.94 | 250 | 9.84 | 150 | 5.91 | | | 766 | 1723 | 969 | 2177 | 90,9 | 5.54 | 0,73 | 1.61 | ✓ |
| HT 500 - 125 - A - T2 | 125 | 4.92 | 300 | 11.81 | 175 | 6.89 | | | 772 | 1736 | 979 | 2202 | 112,4 | 6.86 | 0,85 | 1.87 | ✓ |

End force at 120°C / 248°F

HT



HOW TO ORDER

p. 147

INSTALLATION GUIDELINE

p. 203

HT 700 T1

80 ÷ 100°C / 176 ÷ 212°F



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



easu MANIFOLD p. 241

HIGH TEMP.

ACTIVE SAFETY

* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu



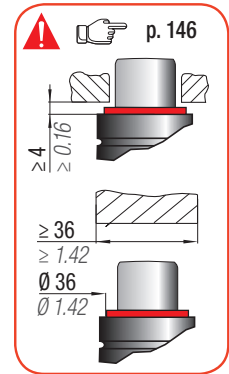
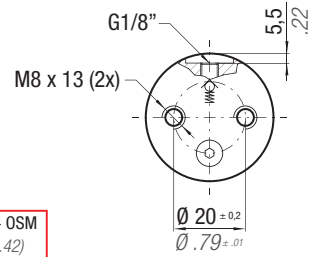
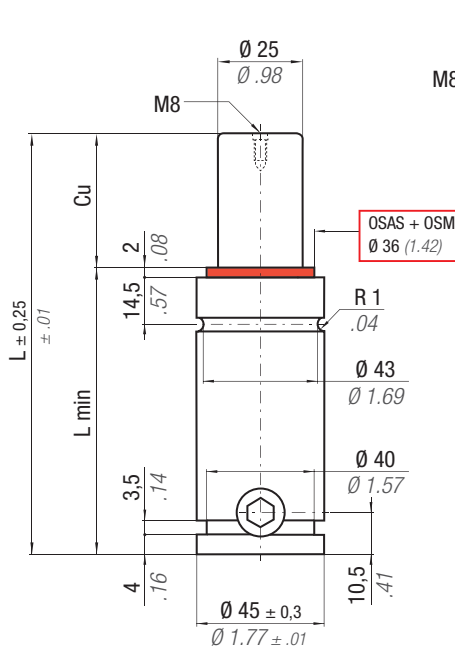
OSAS



USAS

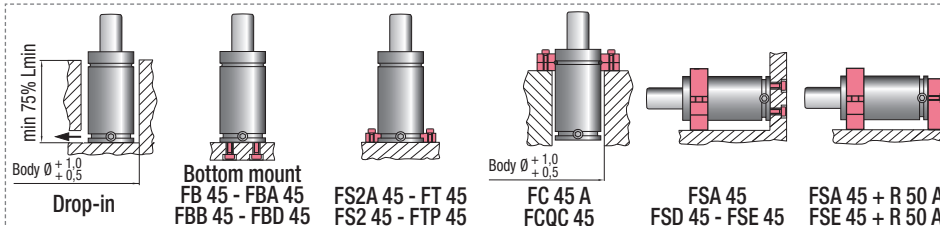


OPAS



| CODE | N ₂ | °F 176 - 212 | °C 80 - 100 | ΔP ± 0,33 %/°C | P max 125 bar 1813 psi | P min 20 bar 290 psi | S 4,91 cm ² 0,761 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMMMGS00045B | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-----------------------|----------------|-----------------------|----------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-----------------|--------------------|-----------------------------------|-----|------|-------|-------|-------|-------|----------------|------|-------------------|------|--------------------|-------|-----------------|-----------------|------|------|------------|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| HT 700 - 010 - A - T1 | | | | | | | | | | | 10 | 0.39 | 105 | 4.13 | 95 | 3.74 | 615 | 1383 | 988 | 2221 | 1128 | 2536 | 25,9 | 1,58 | 0,90 | 1,98 | ✓ |
| HT 700 - 013 - A - T1 | | | | | | | | | | | 13 | 0.50 | 110,7 | 4.35 | 97,7 | 3.85 | | | 1027 | 2309 | 1191 | 2677 | 29,4 | 1,79 | 0,91 | 2,01 | ✓ |
| HT 700 - 025 - A - T1 | | | | | | | | | | | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | | | 1117 | 2511 | 1337 | 3006 | 45,0 | 2,75 | 1,00 | 2,20 | ✓ |
| HT 700 - 038 - A - T1 | | | | | | | | | | | 38 | 1.50 | 161 | 6.34 | 123 | 4.84 | | | 1172 | 2635 | 1430 | 3214 | 61,5 | 3,75 | 1,09 | 2,40 | ✓ |
| HT 700 - 050 - A - T1 | | | | | | | | | | | 50 | 1.97 | 185 | 7.28 | 135 | 5.31 | | | 1204 | 2707 | 1484 | 3336 | 76,8 | 4,68 | 1,17 | 2,58 | ✓ |
| HT 700 - 063 - A - T1 | | | | | | | | | | | 63 | 2.48 | 211,5 | 8.33 | 148,5 | 5.85 | | | 1224 | 2752 | 1519 | 3414 | 93,9 | 5,73 | 1,26 | 2,78 | ✓ |
| HT 700 - 080 - A - T1 | | | | | | | | | | | 80 | 3.15 | 245 | 9.65 | 165 | 6.50 | | | 1250 | 2809 | 1562 | 3512 | 115,0 | 7,02 | 1,37 | 3,02 | ✓ |
| HT 700 - 100 - A - T1 | | | | | | | | | | | 100 | 3.94 | 285 | 11.22 | 185 | 7.28 | | | 1267 | 2849 | 1593 | 3581 | 140,4 | 8,56 | 1,51 | 3,33 | ✓ |
| HT 700 - 125 - A - T1 | | | | | | | | | | | 125 | 4.92 | 335 | 13.19 | 210 | 8.27 | | | 1282 | 2882 | 1619 | 3639 | 172,2 | 10,50 | 1,67 | 3,68 | ✓ |
| HT 700 - 160 - A - T1 | | | | | | | | | | | 160 | 6.30 | 405 | 15.94 | 245 | 9.65 | | | 1296 | 2913 | 1643 | 3693 | 216,8 | 13,22 | 1,91 | 4,21 | ✓ |
| HT 700 - 200 - A - T1 | | | | | | | | | | | 200 | 7.87 | 485 | 19.09 | 285 | 11.22 | 1306 | 2936 | 1661 | 3734 | 267,7 | 16,33 | 2,20 | 4,85 | ✓ | | |

End force at 100°C / 212°F

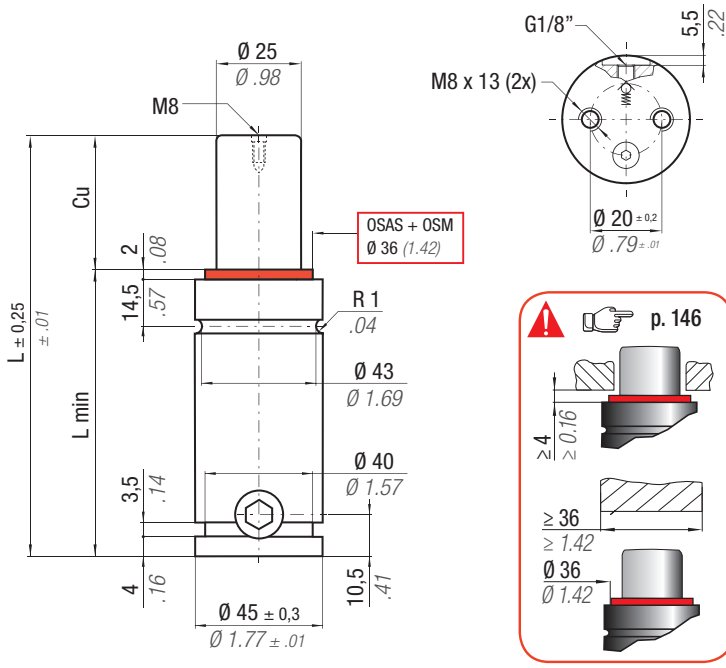


HOW TO ORDER

p. 147

INSTALLATION GUIDELINE

p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

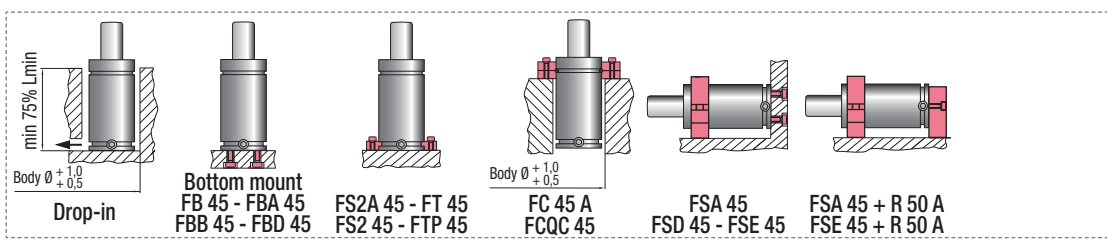
** F_{1p} = Polytrophic end force at 100% Cu

- SW
- HIGH TEMP.
- ACTIVE SAFETY**
- OSAS
- USAS
- OPAS

| | | | | | | | | | |
|--|------------------|------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|------------------------------------------|
| | °F 212 248 | °C 100 120 | ΔP ± 0,33 %/°C | P max 115 bar 1668 psi | P min 20 bar 290 psi | S 4,91 cm ² 0.761 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMMMGS00045B |
|--|------------------|------------------|---------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|------------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
|-----------------------|-----|------|-------|-------|-------|-------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| HT 700 - 010 - A - T2 | 10 | 0.39 | 105 | 4.13 | 95 | 3.74 | | | 952 | 2141 | 1096 | 2463 | 25,9 | 1.58 | 0,90 | 1.98 | ✓ |
| HT 700 - 013 - A - T2 | 13 | 0.50 | 110,7 | 4.35 | 97,7 | 3.85 | | | 989 | 2224 | 1156 | 2600 | 29,4 | 1.79 | 0,91 | 2.01 | ✓ |
| HT 700 - 025 - A - T2 | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | 565 | 1270 | 1074 | 2415 | 1299 | 2919 | 45,0 | 2.75 | 1,00 | 2.20 | ✓ |
| HT 700 - 038 - A - T2 | 38 | 1.50 | 161 | 6.34 | 123 | 4.84 | + 20°C | | 1126 | 2532 | 1388 | 3121 | 61,5 | 3.75 | 1,09 | 2.40 | ✓ |
| HT 700 - 050 - A - T2 | 50 | 1.97 | 185 | 7.28 | 135 | 5.31 | + 68°F | | 1157 | 2600 | 1441 | 3240 | 76,8 | 4.68 | 1,17 | 2.58 | ✓ |
| HT 700 - 063 - A - T2 | 63 | 2.48 | 211,5 | 8.33 | 148,5 | 5.85 | | | 1176 | 2643 | 1475 | 3316 | 93,9 | 5.73 | 1,26 | 2.78 | ✓ |
| HT 700 - 080 - A - T2 | 80 | 3.15 | 245 | 9.65 | 165 | 6.50 | 750 | 1686 | 1200 | 2697 | 1518 | 3412 | 115,0 | 7.02 | 1,37 | 3.02 | ✓ |
| HT 700 - 100 - A - T2 | 100 | 3.94 | 285 | 11.22 | 185 | 7.28 | + 120°C | | 1216 | 2734 | 1547 | 3478 | 140,4 | 8.56 | 1,51 | 3.33 | ✓ |
| HT 700 - 125 - A - T2 | 125 | 4.92 | 335 | 13.19 | 210 | 8.27 | + 248°F | | 1230 | 2766 | 1572 | 3535 | 172,2 | 10.50 | 1,67 | 3.68 | ✓ |
| HT 700 - 160 - A - T2 | 160 | 6.30 | 405 | 15.94 | 245 | 9.65 | | | 1243 | 2795 | 1596 | 3587 | 216,8 | 13.22 | 1,91 | 4.21 | ✓ |
| HT 700 - 200 - A - T2 | 200 | 7.87 | 485 | 19.09 | 285 | 11.22 | | | 1253 | 2817 | 1613 | 3627 | 267,7 | 16.33 | 2,20 | 4.85 | ✓ |

End force at 120°C / 248°F



HOW TO ORDER p. 147

INSTALLATION GUIDELINE p. 203

HT 1000 T1

80 ÷ 100°C / 176 ÷ 212°F



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER



HIGH TEMP.

ACTIVE SAFETY



OSAS



USAS

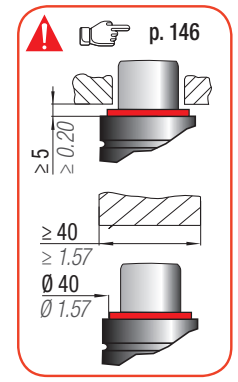
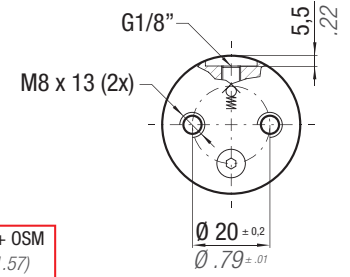
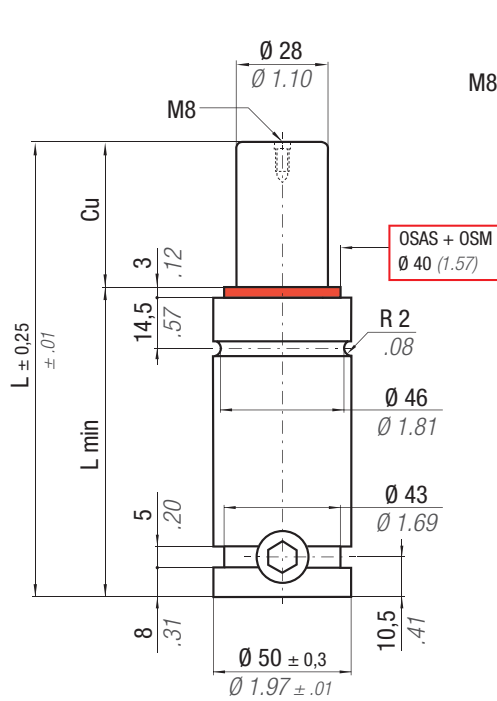


OPAS

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18

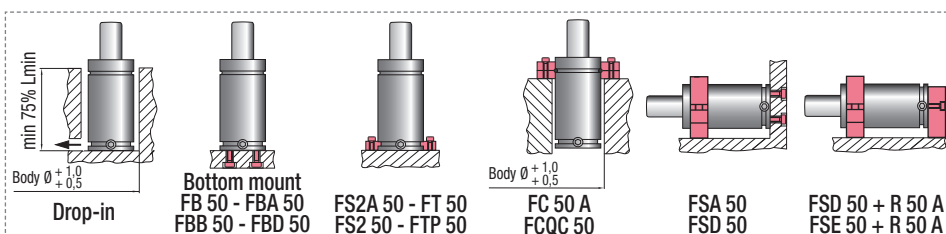
** F_{1p} = Polytropic end force at 100% Cu



| | | | | | | | | | |
|----------------|-----------------------|----------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-----------------|--------------------|---------------------------------|
| N ₂ | °F 176 - 212 | °C 80 - 100 | ΔP ± 0,33 %/°C | P max 125 bar 1813 psi | P min 20 bar 290 psi | S 6,15 cm ² 0,953 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMHT01000A |
|----------------|-----------------------|----------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-----------------|--------------------|---------------------------------|

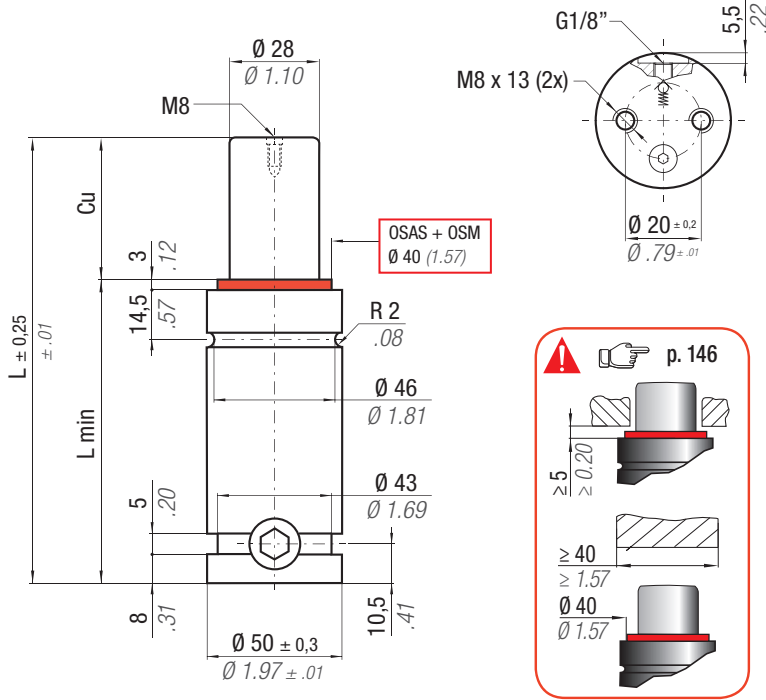
| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU |
|------------------------|-----|-------|-------|-------|-------|-------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|-------------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| HT 1000 - 013 - A - T1 | 13 | 0.50 | 120,7 | 4.74 | 107,7 | 4.24 | | | 1234 | 2774 | 1407 | 3163 | 42,8 | 2.61 | 1,21 | 2.67 | ✓ |
| HT 1000 - 025 - A - T1 | 25 | 0.98 | 145 | 5.71 | 120 | 4.72 | | | 1349 | 3032 | 1591 | 3576 | 62,1 | 3.79 | 1,32 | 2.91 | ✓ |
| HT 1000 - 038 - A - T1 | 38 | 1.50 | 171 | 6.73 | 133 | 5.24 | | | 1425 | 3203 | 1717 | 3860 | 82,5 | 5.03 | 1,43 | 3.15 | ✓ |
| HT 1000 - 050 - A - T1 | 50 | 1.97 | 195 | 7.68 | 145 | 5.71 | | | 1472 | 3308 | 1796 | 4037 | 101,3 | 6.18 | 1,53 | 3.37 | ✓ |
| HT 1000 - 063 - A - T1 | 63 | 2.48 | 221 | 8.74 | 158 | 6.22 | 770 | 1731 | 1508 | 3390 | 1857 | 4175 | 121,8 | 7.43 | 1,64 | 3.62 | ✓ |
| HT 1000 - 075 - A - T1 | 75 | 2.95 | 245 | 9.65 | 170 | 6.69 | + 20°C | | 1533 | 3446 | 1900 | 4272 | 140,6 | 8.58 | 1,74 | 3.84 | ✓ |
| HT 1000 - 080 - A - T1 | 80 | 3.15 | 255 | 10.04 | 175 | 6.89 | + 68°F | | 1542 | 3466 | 1915 | 4305 | 148,5 | 9.06 | 1,78 | 3.92 | ✓ |
| HT 1000 - 100 - A - T1 | 100 | 3.94 | 295 | 11.61 | 195 | 7.68 | | | 1570 | 3529 | 1963 | 4414 | 179,9 | 10.97 | 1,96 | 4.32 | ✓ |
| HT 1000 - 125 - A - T1 | 125 | 4.92 | 345 | 13.58 | 220 | 8.66 | 970 | 2181 | 1594 | 3584 | 2006 | 4509 | 219,1 | 13.37 | 2,17 | 4.78 | ✓ |
| HT 1000 - 150 - A - T1 | 150 | 5.91 | 395 | 15.55 | 245 | 9.65 | + 100°C | | 1611 | 3623 | 2036 | 4578 | 258,4 | 15.76 | 2,38 | 5.25 | ✓ |
| HT 1000 - 160 - A - T1 | 160 | 6.30 | 415 | 16.34 | 255 | 10.04 | + 212°F | | 1617 | 3635 | 2046 | 4600 | 274,1 | 16.72 | 2,46 | 5.42 | ✓ |
| HT 1000 - 175 - A - T1 | 175 | 6.89 | 445 | 17.52 | 270 | 10.63 | | | 1624 | 3652 | 2059 | 4629 | 297,7 | 18.16 | 2,59 | 5.71 | ✓ |
| HT 1000 - 200 - A - T1 | 200 | 7.87 | 495 | 19.49 | 295 | 11.61 | | | 1635 | 3675 | 2077 | 4669 | 337 | 20.56 | 2,79 | 6.15 | ✓ |
| HT 1000 - 250 - A - T1 | 250 | 9.84 | 595 | 23.43 | 345 | 13.58 | | | 1649 | 3708 | 2103 | 4728 | 415,5 | 25.35 | 3,21 | 7.08 | ✓ |
| HT 1000 - 300 - A - T1 | 300 | 11.81 | 695 | 27.36 | 395 | 15.55 | | | 1660 | 3731 | 2121 | 4768 | 494 | 30.13 | 3,63 | 8.00 | ✓ |

End force at 100°C / 212°F



HOW TO ORDER
p. 147

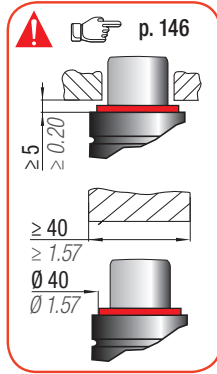
INSTALLATION GUIDELINE
p. 203



OSAS + OSM = OVER STROKE ACTIVE SAFETY + OVER STROKE MARKER

easu MANIFOLD p. 241

* F_{1i} = Isothermal end force at 100% Cu p. 18
 ** F_{1p} = Polyphotic end force at 100% Cu



HIGH TEMP.

ACTIVE SAFETY



OSAS



USAS

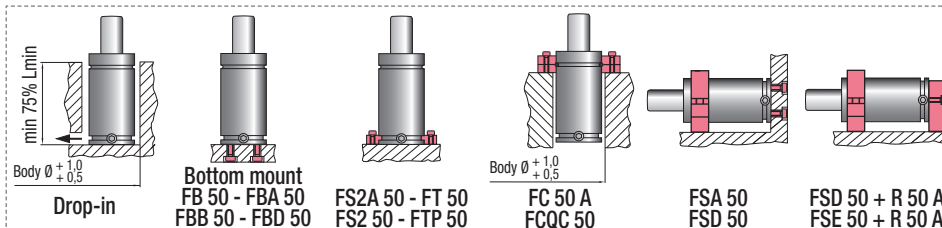


OPAS

| | | | | | | | | | |
|--|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|----------------------------------------|
| | $^{\circ}\text{F}$ 212 - 248 | $^{\circ}\text{C}$ 100 - 120 | ΔP ± 0,33 %/°C | P max 115 bar 1668 psi | P min 20 bar 290 psi | S 6,15 cm ² 0.953 in ² | SPM ~ 5 ÷ 20 | Max Speed 1 m/s | Maintenance kit 39BMHT01000A |
|--|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|------------------------|---------------------------|----------------------------------------|

| CODE | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|------------------------|-----|-------|-------|-------|-------|-------|---------------------------------|------|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ |
| HT 1000 - 013 - A - T2 | 13 | 0.50 | 120,7 | 4.74 | 107,7 | 4.24 | | | 1190 | 2675 | 1366 | 3072 | 42,8 | 2.61 | 1,21 | 2.67 | ✓ |
| HT 1000 - 025 - A - T2 | 25 | 0.98 | 145 | 5.71 | 120 | 4.72 | | | 1298 | 2918 | 1545 | 3474 | 62,1 | 3.79 | 1,32 | 2.91 | ✓ |
| HT 1000 - 038 - A - T2 | 38 | 1.50 | 171 | 6.73 | 133 | 5.24 | | | 1370 | 3080 | 1668 | 3749 | 82,5 | 5.03 | 1,43 | 3.15 | ✓ |
| HT 1000 - 050 - A - T2 | 50 | 1.97 | 195 | 7.68 | 145 | 5.71 | | | 1414 | 3179 | 1744 | 3921 | 101,3 | 6.18 | 1,53 | 3.37 | ✓ |
| HT 1000 - 063 - A - T2 | 63 | 2.48 | 221 | 8.74 | 158 | 6.22 | 705 | 1585 | 1449 | 3256 | 1804 | 4055 | 121,8 | 7.43 | 1,64 | 3.62 | ✓ |
| HT 1000 - 075 - A - T2 | 75 | 2.95 | 245 | 9.65 | 170 | 6.69 | + 20°C | | 1472 | 3310 | 1845 | 4149 | 140,6 | 8.58 | 1,74 | 3.84 | ✓ |
| HT 1000 - 080 - A - T2 | 80 | 3.15 | 255 | 10.04 | 175 | 6.89 | + 68°F | | 1480 | 3328 | 1860 | 4182 | 148,5 | 9.06 | 1,78 | 3.92 | ✓ |
| HT 1000 - 100 - A - T2 | 100 | 3.94 | 295 | 11.61 | 195 | 7.68 | | | 1507 | 3387 | 1907 | 4287 | 179,9 | 10.97 | 1,96 | 4.32 | ✓ |
| HT 1000 - 125 - A - T2 | 125 | 4.92 | 345 | 13.58 | 220 | 8.66 | 940 | 2113 | 1530 | 3439 | 1948 | 4380 | 219,1 | 13.37 | 2,17 | 4.78 | ✓ |
| HT 1000 - 150 - A - T2 | 150 | 5.91 | 395 | 15.55 | 245 | 9.65 | + 120°C | | 1546 | 3476 | 1978 | 4446 | 258,4 | 15.76 | 2,38 | 5.25 | ✓ |
| HT 1000 - 160 - A - T2 | 160 | 6.30 | 415 | 16.34 | 255 | 10.04 | + 248°F | | 1552 | 3488 | 1987 | 4468 | 274,1 | 16.72 | 2,46 | 5.42 | ✓ |
| HT 1000 - 175 - A - T2 | 175 | 6.89 | 445 | 17.52 | 270 | 10.63 | | | 1558 | 3504 | 2000 | 4496 | 297,7 | 18.16 | 2,59 | 5.71 | ✓ |
| HT 1000 - 200 - A - T2 | 200 | 7.87 | 495 | 19.49 | 295 | 11.61 | | | 1568 | 3525 | 2017 | 4535 | 337 | 20.56 | 2,79 | 6.15 | ✓ |
| HT 1000 - 250 - A - T2 | 250 | 9.84 | 595 | 23.43 | 345 | 13.58 | | | 1582 | 3556 | 2043 | 4592 | 415,5 | 25.35 | 3,21 | 7.08 | ✓ |
| HT 1000 - 300 - A - T2 | 300 | 11.81 | 695 | 27.36 | 395 | 15.55 | | | 1592 | 3578 | 2060 | 4631 | 494 | 30.13 | 3,63 | 8.00 | ✓ |

End force at 120°C / 248°F



HOW TO ORDER

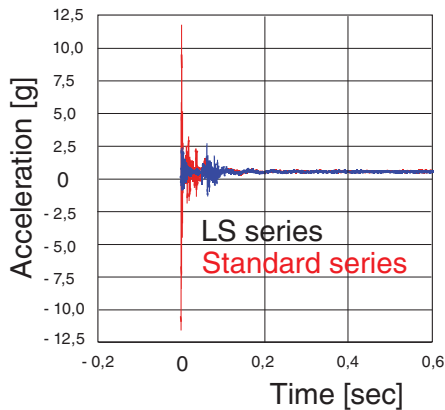
p. 147

INSTALLATION GUIDELINE

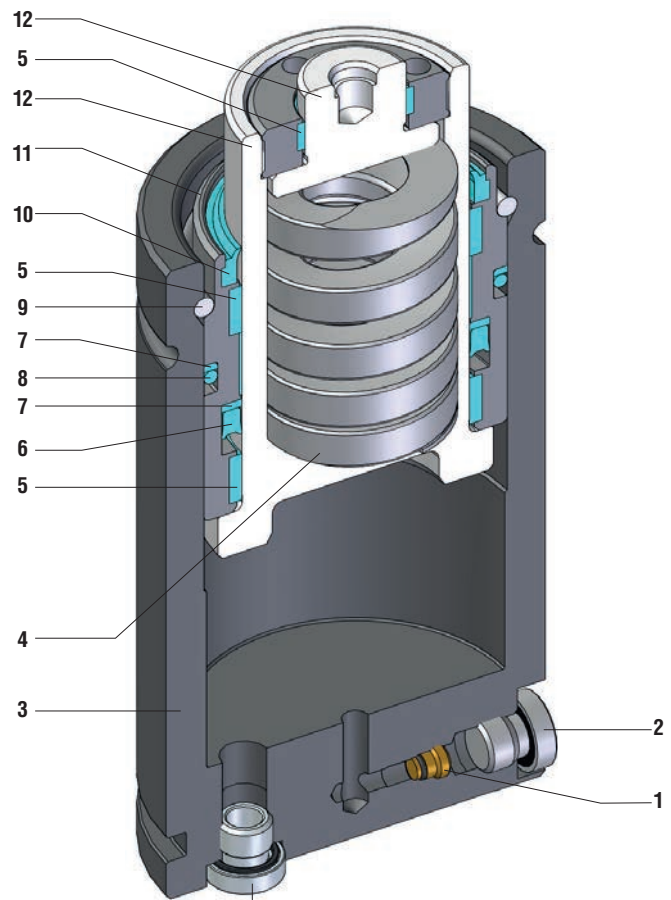
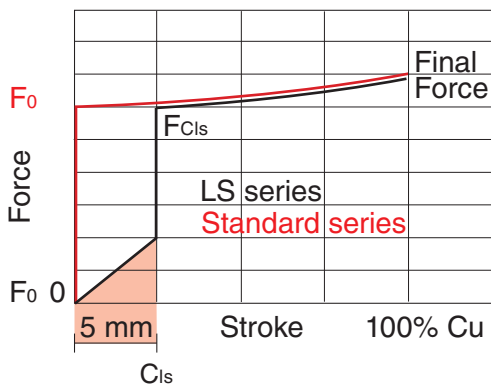
p. 203

- **55 % noise**
- **50 % vibrations**

INITIAL IMPACT VIBRATIONS



FORCE CURVE



**Over
Pressure
Active
Safety**

Forza iniziale nulla - Zero force on contact - Ausgangsleistung null
 Force iniziale nulle - Fuerza inicial cero - Força inicial nula

| | |
|----------------|--------------------|
| SEALING | ROD SEAL |
| DESIGN | BUSH - BODY DESIGN |

| | | | | | |
|----------|--------|----------|--------------|-----------|------------------------------|
| 1 | Valve | 5 | Guide ring | 9 | Retaining ring |
| 2 | Plug | 6 | Rod seal | 10 | Rod wiper |
| 3 | Body | 7 | Back-up ring | 11 | Bush |
| 4 | Spring | 8 | O-ring | 12 | Rod (nitrited superfinished) |

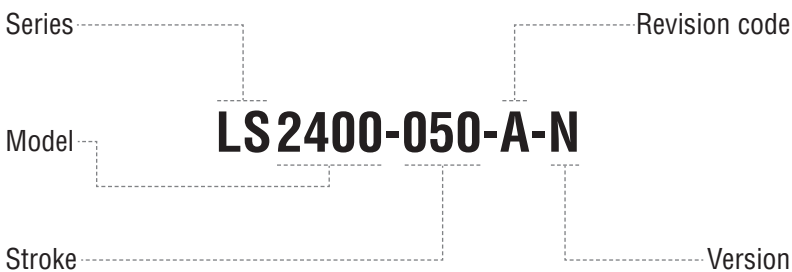
RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|---------|--------|------|-----------|--------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| LS 1500 | 75 | 2.95 | 25 - 300 | 0.98 - 11.81 | 1590 | 3574 | - | - | ✓ | - | - |
| LS 2400 | 75 | 2.95 | 25 - 300 | 0.98 - 11.81 | 2385 | 5362 | - | - | ✓ | - | - |
| LS 3000 | 95 | 3.74 | 25 - 300 | 0.98 - 11.81 | 2830 | 6362 | - | - | ✓ | - | - |
| LS 4200 | 95 | 3.74 | 25 - 300 | 0.98 - 11.81 | 4240 | 9532 | - | - | ✓ | - | - |
| LS 5000 | 120 | 4.72 | 25 - 300 | 0.98 - 11.81 | 4418 | 9932 | - | - | ✓ | - | - |
| LS 6600 | 120 | 4.72 | 25 - 300 | 0.98 - 11.81 | 6630 | 14905 | - | - | ✓ | - | - |
| LS 7500 | 150 | 5.91 | 25 - 300 | 0.98 - 11.81 | 7630 | 17152 | ✓ | ✓ | ✓ | - | - |
| LS 9500 | 150 | 5.91 | 25 - 300 | 0.98 - 11.81 | 9540 | 21446 | ✓ | ✓ | ✓ | - | - |

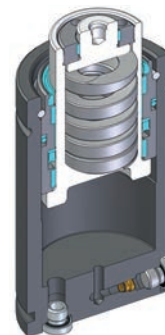
✓ Built-in as standard

✓ Optional upon request

HOW TO ORDER



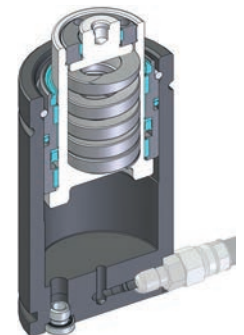
Available versions



LS 2400-050-A
Standard code



Self contained



LS 2400-050-A-N
Add "-N" to standard code

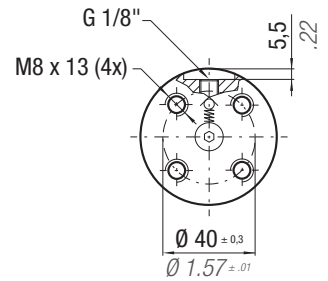
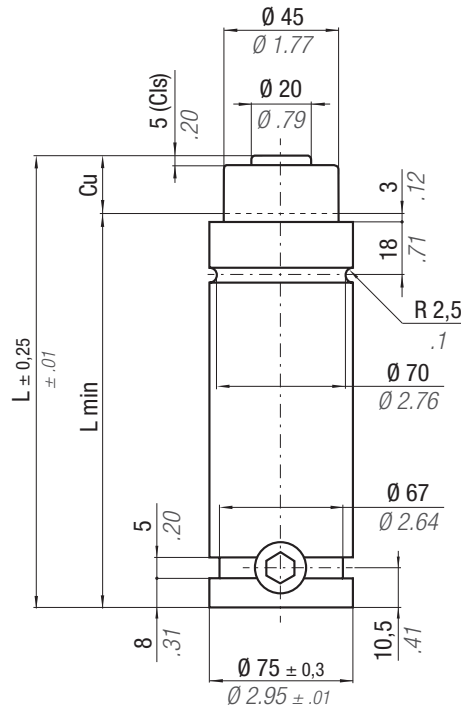


Linkable

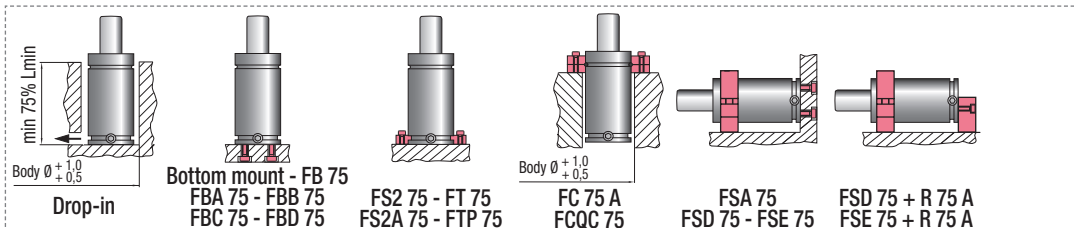
ACTIVE SAFETY



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 Polytropic end force at 100% Cu $F_{1p} =$

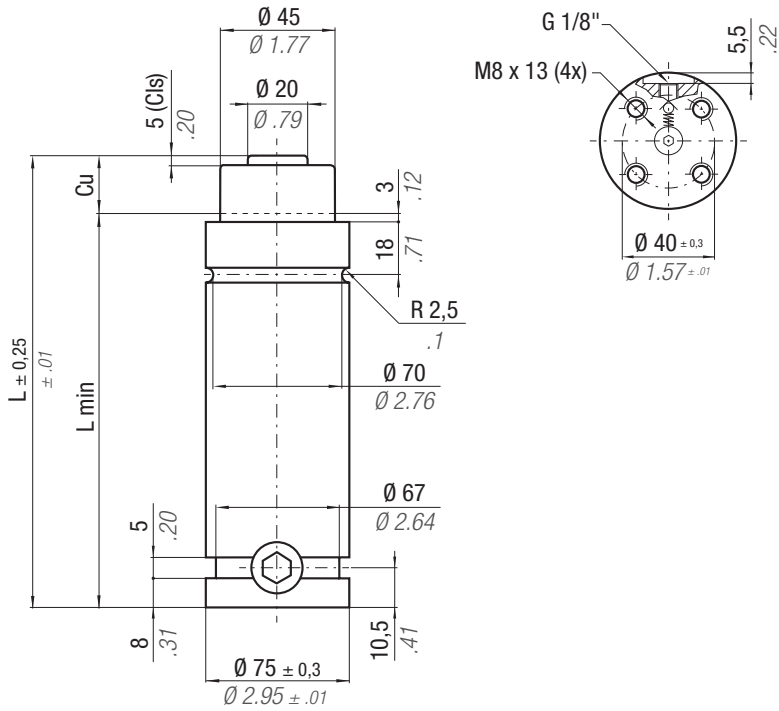


| CODE | Cu | | L | | L min | | F0 | | F Cls | | F1i * | | F1p ** | | Vo | | Maintenance kit | | |
|-------------------|------|-------|-----|-------|-------|-------|-----------|------|-------|------|--------|-------|--------|-------|-----------------|-----------------|-----------------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| LS 1500 - 025 - A | 25 | 0.98 | 160 | 6.30 | 135 | 5.31 | 0 ± 5% | 0 | 1590 | 3574 | 2377 | 5344 | 2990 | 6722 | 129,0 | 7.87 | 3,71 | 8.18 | ✓ |
| LS 1500 - 038 - A | 38 | 1.50 | 186 | 7.32 | 148 | 5.83 | | | | | 2519 | 5663 | 3252 | 7311 | 176,0 | 10.74 | 3,79 | 8.36 | ✓ |
| LS 1500 - 050 - A | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | | | | | 2603 | 5852 | 3411 | 7668 | 219,0 | 13.36 | 3,89 | 8.58 | ✓ |
| LS 1500 - 063 - A | 63,5 | 2.50 | 237 | 9.33 | 173,5 | 6.83 | | | | | 2681 | 6027 | 3560 | 8002 | 265,0 | 16.17 | 4,48 | 9.88 | ✓ |
| LS 1500 - 080 - A | 80 | 3.15 | 270 | 10.63 | 190 | 7.48 | | | | | 2725 | 6126 | 3645 | 8195 | 326,0 | 19.89 | 4,73 | 10.43 | ✓ |
| LS 1500 - 100 - A | 100 | 3.94 | 310 | 12.20 | 210 | 8.27 | | | | | 2773 | 6234 | 3738 | 8403 | 398,0 | 24.28 | 4,89 | 10.78 | ✓ |
| LS 1500 - 125 - A | 125 | 4.92 | 360 | 14.17 | 235 | 9.25 | | | | | 2814 | 6326 | 3818 | 8583 | 488,0 | 29.77 | 5,57 | 12.28 | ✓ |
| LS 1500 - 160 - A | 160 | 6.30 | 430 | 16.93 | 270 | 10.63 | | | | | 2852 | 6412 | 3894 | 8753 | 614,0 | 37.45 | 6,33 | 13.96 | ✓ |
| LS 1500 - 200 - A | 200 | 7.87 | 510 | 20.08 | 310 | 12.20 | | | | | 2881 | 6477 | 3951 | 8881 | 757,0 | 46.18 | 7,19 | 15.85 | ✓ |
| LS 1500 - 250 - A | 250 | 9.84 | 610 | 24.02 | 360 | 14.17 | | | | | 2905 | 6531 | 3998 | 8989 | 937,0 | 57.16 | 9,19 | 20.26 | ✓ |
| LS 1500 - 300 - A | 300 | 11.81 | 710 | 27.95 | 410 | 16.14 | 2921 | 6567 | 4031 | 9063 | 1116,0 | 68.08 | 11,04 | 24.34 | ✓ | | | | |



HOW TO ORDER
 p. 155

INSTALLATION GUIDELINE
 p. 203



* $F_{1i} =$

Isothermal
end force
at 100% Cu

p. 18

** $F_{1p} =$

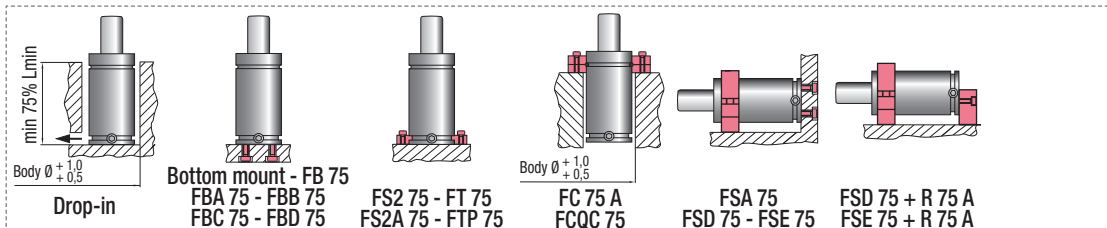
Polytrophic
end force
at 100% Cu

**ACTIVE
SAFETY**



| CODE | Cu | | L | | L min | | F ₀ | | F Cls | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | | | | | | | | | |
|-------------------|------|-------|-----|-------|-------|-------|----------------|------|-------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|-----------------|------|--------------|------|------|-------|-------|-------|------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 39BMLS01500A | | | | | | | | |
| LS 2400 - 025 - A | 25 | 0.98 | 160 | 6.30 | 135 | 5.31 | 0 ± 5% | 0 | 2385 | 5362 | 3699 | 7754 | 4471 | 10051 | 129,0 | 7.87 | 3,71 | 8.18 | ✓ | | | | | | | | |
| LS 2400 - 038 - A | 38 | 1.50 | 186 | 7.32 | 148 | 5.83 | | | | | | | | | | | | | 3941 | 8177 | 4863 | 10932 | 176,0 | 10.74 | 3,79 | 8.36 | ✓ |
| LS 2400 - 050 - A | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | | | | | | | | | | | | | 4085 | 8428 | 5100 | 11465 | 219,0 | 13.36 | 3,89 | 8.58 | ✓ |
| LS 2400 - 063 - A | 63,5 | 2.50 | 237 | 9.33 | 173,5 | 6.83 | | | | | | | | | | | | | 4219 | 8617 | 5323 | 11875 | 265,0 | 16.17 | 4,48 | 9.88 | ✓ |
| LS 2400 - 080 - A | 80 | 3.15 | 270 | 10.63 | 190 | 7.48 | | | | | | | | | | | | | 4295 | 8790 | 5451 | 12253 | 326,0 | 19.89 | 4,73 | 10.43 | ✓ |
| LS 2400 - 100 - A | 100 | 3.94 | 310 | 12.20 | 210 | 8.27 | | | | | | | | | | | | | 4377 | 8931 | 5589 | 12564 | 398,0 | 24.28 | 4,89 | 10.78 | ✓ |
| LS 2400 - 125 - A | 125 | 4.92 | 360 | 14.17 | 235 | 9.25 | | | | | | | | | | | | | 4447 | 9052 | 5709 | 12834 | 488,0 | 29.77 | 5,57 | 12.28 | ✓ |
| LS 2400 - 160 - A | 160 | 6.30 | 430 | 16.93 | 270 | 10.63 | | | | | | | | | | | | | 4513 | 9164 | 5822 | 13088 | 614,0 | 37.45 | 6,33 | 13.96 | ✓ |
| LS 2400 - 200 - A | 200 | 7.87 | 510 | 20.08 | 310 | 12.20 | | | | | | | | | | | | | 4563 | 9249 | 5907 | 13280 | 757,0 | 46.18 | 7,19 | 15.85 | ✓ |
| LS 2400 - 250 - A | 250 | 9.84 | 610 | 24.02 | 360 | 14.17 | | | | | | | | | | | | | 4605 | 9320 | 5979 | 13441 | 937,0 | 57.16 | 9,19 | 20.26 | ✓ |
| LS 2400 - 300 - A | 300 | 11.81 | 710 | 27.95 | 410 | 16.14 | 4633 | 9369 | 6028 | 13551 | 1116,0 | 68.08 | 11,04 | 24.34 | ✓ | | | | | | | | | | | | |

LS



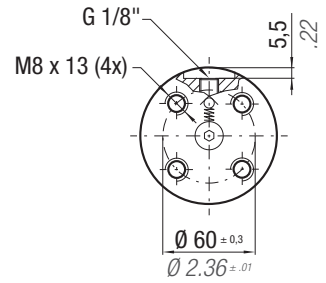
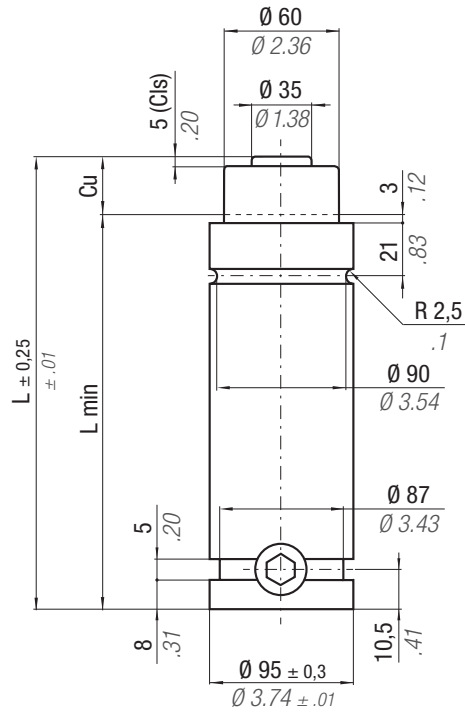
HOW TO ORDER
p. 155

INSTALLATION GUIDELINE
p. 203

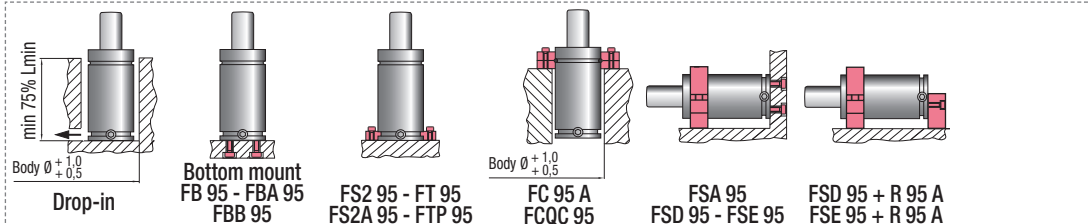
ACTIVE SAFETY



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 Polytropic end force at 100% Cu $F_{1p} =$

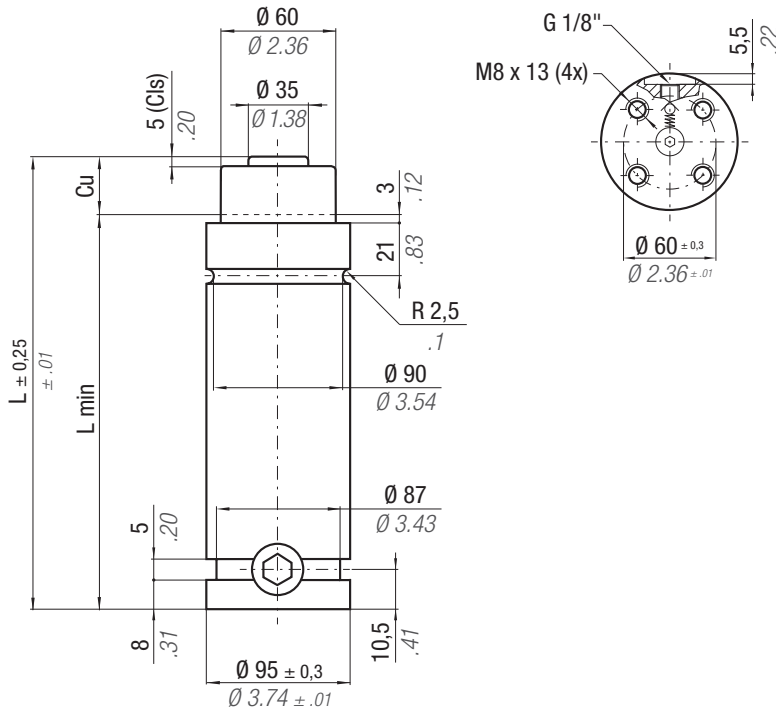


| CODE | Cu | | L | | L min | | F0 | | F Cis | | F1i * | | F1p ** | | Vo | | Maintenance kit | | |
|-------------------|------|-------|-----|-------|-------|-------|-----------|-------|-------|-------|--------|--------|--------|-------|-----------------|-----------------|-----------------|-------|--------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| LS 3000 - 025 - A | 25 | 0.98 | 170 | 6.69 | 145 | 5.71 | 0 ± 5% | 0 | 2830 | 6362 | 4179 | 9395 | 5231 | 11759 | 235,0 | 14.34 | 5,69 | 12.54 | 39BMLS03000A |
| LS 3000 - 038 - A | 38 | 1.50 | 196 | 7.72 | 158 | 6.22 | | | | | 4510 | 10138 | 5841 | 13131 | 308,0 | 18.79 | 6,48 | 14.29 | ✓ |
| LS 3000 - 050 - A | 50 | 1.97 | 220 | 8.66 | 170 | 6.69 | | | | | 4723 | 10619 | 6246 | 14042 | 377,0 | 23.00 | 6,77 | 14.93 | ✓ |
| LS 3000 - 063 - A | 63,5 | 2.50 | 247 | 9.72 | 183,5 | 7.22 | | | | | 4923 | 11067 | 6632 | 14910 | 450,0 | 27.45 | 6,84 | 15.08 | ✓ |
| LS 3000 - 080 - A | 80 | 3.15 | 280 | 11.02 | 200 | 7.87 | | | | | 5060 | 11376 | 6902 | 15516 | 547,0 | 33.37 | 7,23 | 15.94 | ✓ |
| LS 3000 - 100 - A | 100 | 3.94 | 320 | 12.60 | 220 | 8.66 | | | | | 5200 | 11691 | 7181 | 16144 | 660,0 | 40.26 | 7,95 | 17.53 | ✓ |
| LS 3000 - 125 - A | 125 | 4.92 | 370 | 14.57 | 245 | 9.65 | | | | | 5326 | 11973 | 7434 | 16712 | 802,0 | 48.92 | 9,58 | 21.12 | ✓ |
| LS 3000 - 160 - A | 160 | 6.30 | 440 | 17.32 | 280 | 11.02 | | | | | 5447 | 12246 | 7681 | 17267 | 1001,0 | 61.06 | 10,89 | 24.01 | ✓ |
| LS 3000 - 200 - A | 200 | 7.87 | 520 | 20.47 | 320 | 12.60 | | | | | 5541 | 12458 | 7874 | 17701 | 1228,0 | 74.91 | 11,03 | 24.32 | ✓ |
| LS 3000 - 250 - A | 250 | 9.84 | 620 | 24.41 | 370 | 14.57 | | | | | 5622 | 12638 | 8040 | 18074 | 1511,0 | 92.17 | 12,06 | 26.59 | ✓ |
| LS 3000 - 300 - A | 300 | 11.81 | 720 | 28.35 | 420 | 16.54 | 5678 | 12764 | 8156 | 18336 | 1795,0 | 109.50 | 13,02 | 28.70 | ✓ | | | | |



HOW TO ORDER
 p. 155

INSTALLATION GUIDELINE
 p. 203



* F_{1i} = Isothermal end force at 100% Cu
 ** F_{1p} = Polytrophic end force at 100% Cu

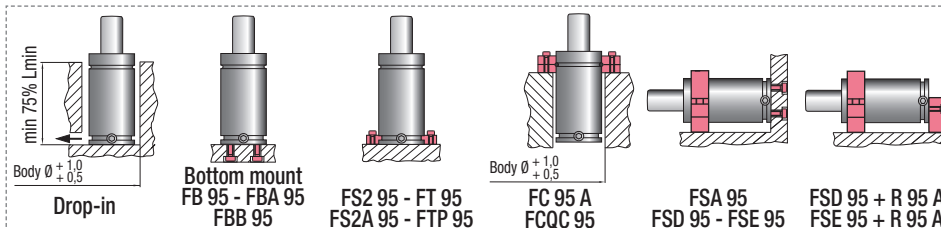
p. 18

ACTIVE SAFETY



| CODE | Cu | | L | | L min | | F ₀ | | F Cls | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|------|-------|-----|-------|-------|-------|-----------------|-----------------|-------|-------|-------------------|-------|--------------------|--------|-----------------|-----------------|-----------------|-------|--------------|---------------------|---------------------|------|-------|------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|-------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|-------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|-------|-------|-------|-------|------|-------|---|-----------------|-----------------|------|-------|-------|-------|--------|-------|-------|-------|---|-----------------|-----------------|------|-------|-------|-------|--------|-------|-------|-------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 39BMLS03000A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 025 - A | 25 | 0.98 | 170 | 6.69 | 145 | 5.71 | 0 ± 5% | 0 | 4240 | 9532 | 6498 | 14607 | 7821 | 17583 | 235,0 | 14.34 | 5,69 | 12.54 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 038 - A | 38 | 1.50 | 196 | 7.72 | 158 | 6.22 | | | | | | | | | | | | | | 150 bar 2175 psi | 150 bar 2175 psi | 7060 | 15873 | 8733 | 19633 | 308,0 | 18.79 | 6,48 | 14.29 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 050 - A | 50 | 1.97 | 220 | 8.66 | 170 | 6.69 | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 7427 | 16696 | 9340 | 20997 | 377,0 | 23.00 | 6,77 | 14.93 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 063 - A | 63,5 | 2.50 | 247 | 9.72 | 183,5 | 7.22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 7770 | 17467 | 9917 | 22294 | 450,0 | 27.45 | 6,84 | 15.08 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 080 - A | 80 | 3.15 | 280 | 11.02 | 200 | 7.87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 8006 | 17999 | 10320 | 23201 | 547,0 | 33.37 | 7,23 | 15.94 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 100 - A | 100 | 3.94 | 320 | 12.60 | 220 | 8.66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 8249 | 18545 | 10738 | 24139 | 660,0 | 40.26 | 7,95 | 17.53 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 125 - A | 125 | 4.92 | 370 | 14.57 | 245 | 9.65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 8467 | 19035 | 11116 | 24989 | 802,0 | 48.92 | 9,58 | 21.12 | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 160 - A | 160 | 6.30 | 440 | 17.32 | 280 | 11.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 8678 | 19508 | 11485 | 25818 | 1001,0 | 61.06 | 10,89 | 24.01 | ✓ | | | | | | | | | | | |
| LS 4200 - 200 - A | 200 | 7.87 | 520 | 20.47 | 320 | 12.60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | + 20 °C + 68 °F | + 20 °C + 68 °F | 8841 | 19876 | 11773 | 26467 | 1228,0 | 74.91 | 11,03 | 24.32 | ✓ |
| LS 4200 - 250 - A | 250 | 9.84 | 620 | 24.41 | 370 | 14.57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 4200 - 300 - A | 300 | 11.81 | 720 | 28.35 | 420 | 16.54 | + 20 °C + 68 °F | + 20 °C + 68 °F | 9079 | 20411 | 12196 | 27417 | 1795,0 | 109.50 | 13,02 | 28.70 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LS



HOW TO ORDER

p. 155

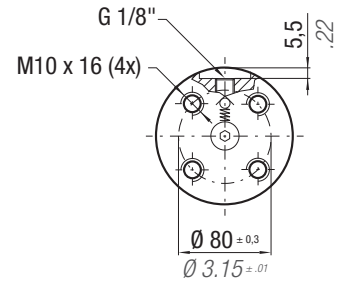
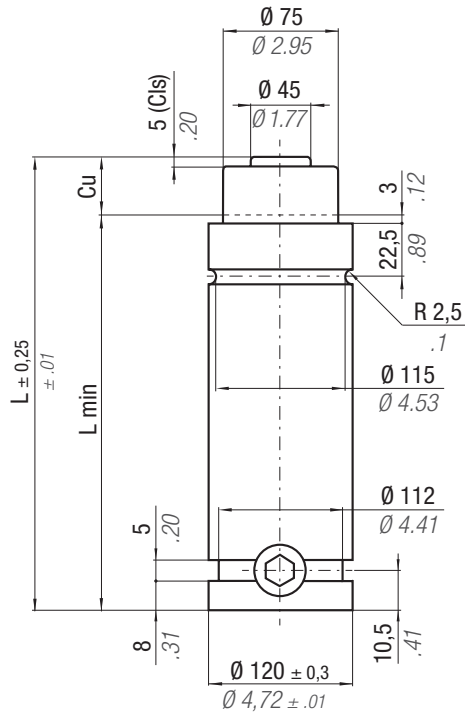
INSTALLATION GUIDELINE

p. 203

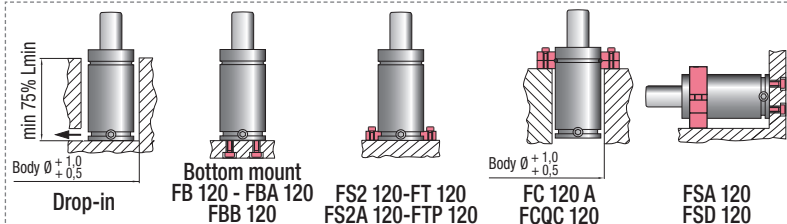
ACTIVE SAFETY



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 Polytropic end force at 100% Cu

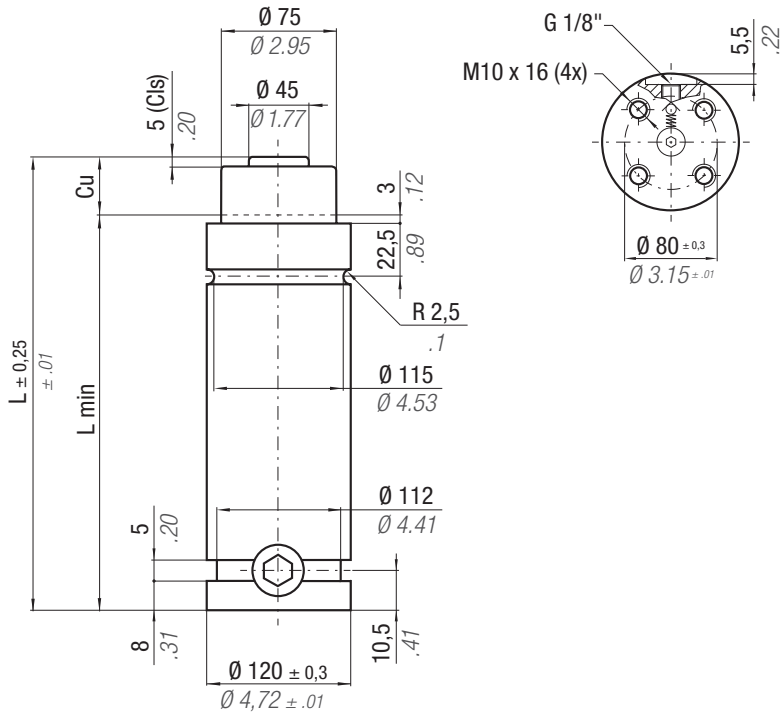


| CODE | Cu | | L | | L min | | F0 | | F Cis | | F1i * | | F1p ** | | Vo | | Maintenance kit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|------|-------|-----|-------|-------|-------|-----------|----|-------|------|-------|-------|--------|-------|-----------------|-----------------|-----------------|-------|---------------------|---------------------|------|-------|-------|-------|--------|-------|-------|-------|----------------|----------------|------|-------|-------|-------|--------|-------|-------|-------|------|-------|-------|-------|--------|-------|-------|-------|------|-------|-------|-------|--------|--------|-------|-------|------|-------|-------|-------|--------|--------|-------|-------|------|-------|-------|-------|--------|--------|-------|-------|--|--|--|--|--|--|--|--|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 025 - A | 25 | 0.98 | 190 | 7.48 | 165 | 6.50 | 0 ± 5% | 0 | 4418 | 9932 | 6654 | 14958 | 8399 | 19241 | 353,0 | 21.53 | 10,60 | 23.37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 038 - A | 38 | 1.50 | 216 | 8.50 | 178 | 7.01 | | | | | | | | | | | | | 100 bar 1450 psi | 100 bar 1450 psi | 8199 | 18433 | 11368 | 26044 | 1020,0 | 62.22 | 15,40 | 33.95 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 050 - A | 50 | 1.97 | 240 | 9.45 | 190 | 7.48 | | | | | | | | | | | | | | | | | | | | | | | + 20 °C +68 °F | + 20 °C +68 °F | 8382 | 18843 | 11737 | 26887 | 1243,0 | 75.82 | 16,90 | 37.26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 063 - A | 63,5 | 2.50 | 267 | 10.51 | 203,5 | 8.01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8556 | 19235 | 12092 | 27703 | 1555,0 | 94.86 | 18,70 | 41.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 080 - A | 80 | 3.15 | 300 | 11.81 | 220 | 8.66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8690 | 19537 | 12369 | 28335 | 1911,0 | 116.57 | 21,70 | 47.84 | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 100 - A | 100 | 3.94 | 340 | 13.39 | 240 | 9.45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8804 | 19793 | 12604 | 28875 | 2356,0 | 143.72 | 24,80 | 54.67 | | | | | | | | | | | | | | | | |
| LS 5000 - 125 - A | 125 | 4.92 | 390 | 15.35 | 265 | 10.43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8884 | 19971 | 12769 | 29253 | 2801,0 | 170.86 | 28,00 | 61.73 | | | | | | | | |
| LS 5000 - 160 - A | 160 | 6.30 | 460 | 18.11 | 300 | 11.81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 200 - A | 200 | 7.87 | 540 | 21.26 | 340 | 13.39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 250 - A | 250 | 9.84 | 640 | 25.20 | 390 | 15.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 5000 - 300 - A | 300 | 11.81 | 740 | 29.13 | 440 | 17.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



HOW TO ORDER
 p. 155

INSTALLATION GUIDELINE
 p. 203



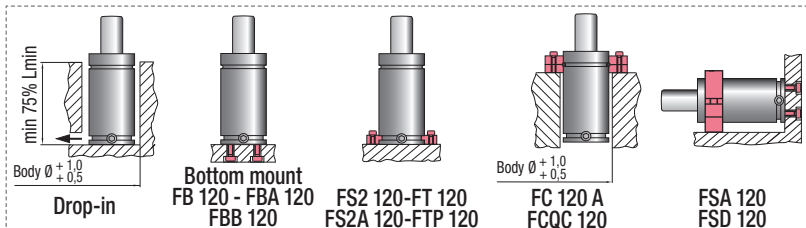
* $F_{1i} =$ Isothermal end force at 100% Cu p. 18
 ** $F_{1p} =$ Polytrophic end force at 100% Cu

ACTIVE SAFETY



| CODE | Cu | | L | | L min | | F ₀ | | F Cls | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|-------------------|------|-------|-----|-------|-------|-------|----------------|-------|-------|-------|-------------------|--------|--------------------|-------|-----------------|-----------------|-----------------|-------|--------------|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 39BMLS05000A |
| LS 6600 - 025 - A | 25 | 0.98 | 190 | 7.48 | 165 | 6.50 | 0 ± 5% | 0 | 6630 | 14905 | 10363 | 23297 | 12558 | 28232 | 353,0 | 21.53 | 10,60 | 23.37 | ✓ |
| LS 6600 - 038 - A | 38 | 1.50 | 216 | 8.50 | 178 | 7.01 | | | | | 11238 | 25264 | 13985 | 31440 | 468,0 | 28.55 | 12,00 | 26.46 | ✓ |
| LS 6600 - 050 - A | 50 | 1.97 | 240 | 9.45 | 190 | 7.48 | | | | | 11796 | 26517 | 14914 | 33528 | 575,0 | 35.08 | 13,20 | 29.10 | ✓ |
| LS 6600 - 063 - A | 63,5 | 2.50 | 267 | 10.51 | 203.5 | 8.01 | | | | | 12317 | 27690 | 15796 | 35510 | 691,0 | 42.15 | 13,60 | 29.98 | ✓ |
| LS 6600 - 080 - A | 80 | 3.15 | 300 | 11.81 | 220 | 8.66 | | | | | 12661 | 28463 | 16384 | 36832 | 842,0 | 51.36 | 14,10 | 31.09 | ✓ |
| LS 6600 - 100 - A | 100 | 3.94 | 340 | 13.39 | 240 | 9.45 | | | | | 13017 | 29263 | 16998 | 38214 | 1020,0 | 62.22 | 15,40 | 33.95 | ✓ |
| LS 6600 - 125 - A | 125 | 4.92 | 390 | 15.35 | 265 | 10.43 | | | | | 13333 | 29974 | 17549 | 39452 | 1243,0 | 75.82 | 16,90 | 37.26 | ✓ |
| LS 6600 - 160 - A | 160 | 6.30 | 460 | 18.11 | 300 | 11.81 | | | | | 13637 | 30656 | 18081 | 40648 | 1555,0 | 94.86 | 18,70 | 41.23 | ✓ |
| LS 6600 - 200 - A | 200 | 7.87 | 540 | 21.26 | 340 | 13.39 | | | | | 13870 | 31182 | 18494 | 41576 | 1911,0 | 116.57 | 21,70 | 47.84 | ✓ |
| LS 6600 - 250 - A | 250 | 9.84 | 640 | 25.20 | 390 | 15.35 | | | | | 14069 | 31628 | 18846 | 42368 | 2356,0 | 143.72 | 24,80 | 54.67 | ✓ |
| LS 6600 - 300 - A | 300 | 11.81 | 740 | 29.13 | 440 | 17.32 | 14207 | 31939 | 19093 | 42922 | 2801,0 | 170.86 | 28,00 | 61.73 | ✓ | | | | |

LS



HOW TO ORDER

p. 155

INSTALLATION GUIDELINE

p. 203

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu

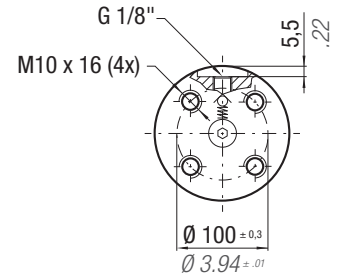
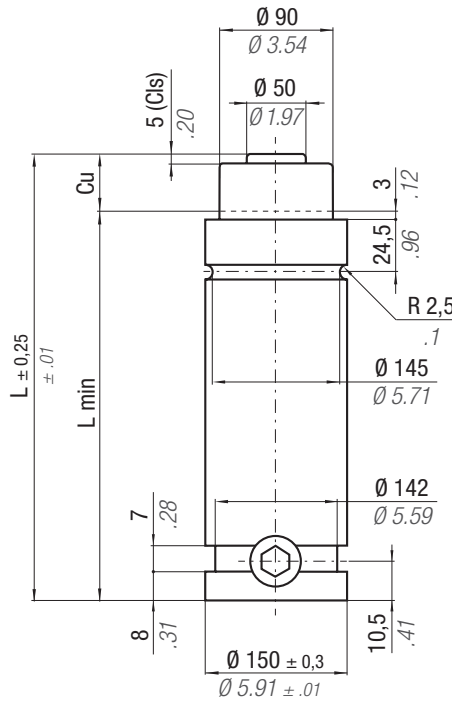


p. 18

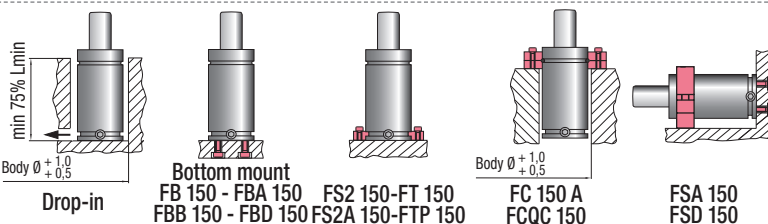


** $F_{1p} =$

Polytropic end force at 100% Cu

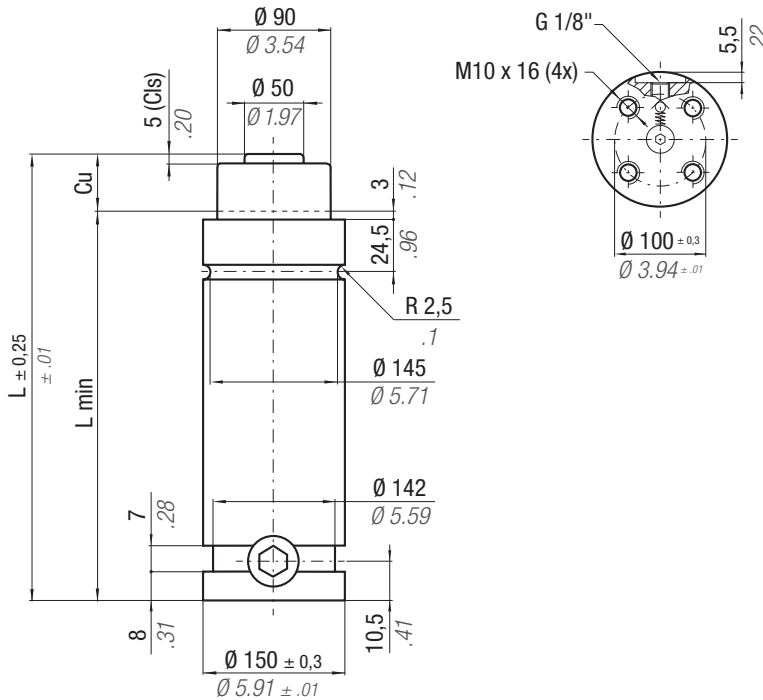


| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 120 bar 1740 psi | P min 20 bar 290 psi | S 63,61 cm ² 9.860 in ² | SPM ~ 15 - 60 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMLS07500A | |
|------------------|---------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|---------------------------------|---------------------------------|------------|
| CODE PHASING OUT | NEW | Cu | L | L min | F ₀ | F Cls | F _{1i} * | F _{1p} ** | V ₀ | PED | |
| | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | 2014/68/EU |
| LS 7500-025-A | LS 7500-025-B | 25 0.98 | 205 8.07 | 180 7.09 | | | 10207 22946 | 11937 26835 | 594,0 36.23 | 19,95 43.98 | ✓ |
| LS 7500-038-A | LS 7500-038-B | 38 1.50 | 231 9.09 | 193 7.60 | | | 10950 24617 | 13169 29605 | 797,0 48.62 | 21,15 46.63 | ✓ |
| LS 7500-050-A | LS 7500-050-B | 50 1.97 | 255 10.04 | 205 8.07 | 0 0 | 7630 17152 | 11460 25763 | 14034 31550 | 784,0 47.82 | 21,95 48.39 | ✓ |
| LS 7500-063-A | LS 7500-063-B | 63,5 2.50 | 282 11.10 | 218,5 8.60 | ± 5% | ± 5% | 11901 26755 | 14795 33260 | 1195,0 72.90 | 22,75 50.16 | ✓ |
| LS 7500-080-A | LS 7500-080-B | 80 3.15 | 315 12.40 | 235 9.25 | | | 12313 27681 | 15515 34879 | 1452,0 88.57 | 24,55 54.12 | ✓ |
| LS 7500-100-A | LS 7500-100-B | 100 3.94 | 355 13.98 | 255 10.04 | 120 bar 1740 psi | 120 bar 1740 psi | 12688 28524 | 16181 36376 | 1764,0 107.60 | 26,25 57.87 | ✓ |
| LS 7500-125-A | LS 7500-125-B | 125 4.92 | 405 15.94 | 280 11.02 | | | 13034 29302 | 16801 37770 | 2153,0 131.33 | 28,15 62.06 | ✓ |
| LS 7500-160-A | LS 7500-160-B | 160 6.30 | 475 18.70 | 315 12.40 | + 20 °C +68 °F | + 20 °C +68 °F | 13379 30077 | 17425 39173 | 2699,0 164.64 | 31,55 69.56 | ✓ |
| LS 7500-200-A | LS 7500-200-B | 200 7.87 | 555 21.85 | 355 13.98 | | | 13653 30693 | 14926 33555 | 3323,0 202.70 | 35,15 77.49 | ✓ |
| LS 7500-250-A | LS 7500-250-B | 250 9.84 | 655 25.79 | 405 15.94 | | | 13891 31228 | 18365 41286 | 4102,0 250.22 | 38,65 85.21 | ✓ |
| LS 7500-300-A | LS 7500-300-B | 300 11.81 | 755 29.72 | 455 17.91 | | | 14061 31610 | 18680 41994 | 4882,0 297.80 | 42,55 93.81 | ✓ |



HOW TO ORDER
Hand icon p. 155

INSTALLATION GUIDELINE
Hand icon p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} =

Isothermal end force at 100% Cu

** F_{1p} =

Polytrophic end force at 100% Cu

p. 18

ACTIVE SAFETY



OSAS



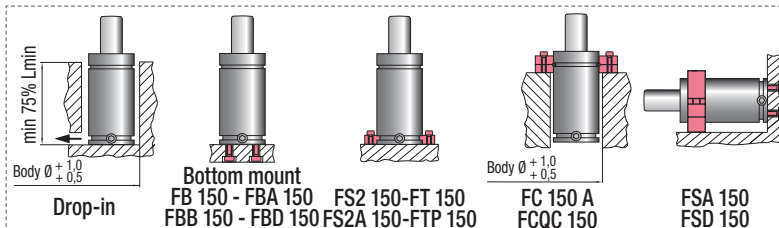
USAS



OPAS

| | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 63,61 cm ² 9.860 in ² | SPM ~ 15 - 60 (at 20°C) | Max Speed 1,8 m/s | Maintenance kit 39BMLS07500A | | | | | | | | | | | | | |
|---------------------|-------------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|---------------------------------|-----------------------|---------------------------------|--------------------|----------------|----------------|-------|-------|-----------------|-----------------|-------|--------|------------|-------|-------|---|
| CODE PHASING OUT | NEW | Cu | | L | | L min | | F ₀ Initial force | F Cis | F _{1i} * | F _{1p} ** | V ₀ | | | | | | | | | | | |
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | | | |
| LS 9500 - 025 - A | LS 9500 - 025 - B | 25 | 0.98 | 205 | 8.07 | 180 | 7.09 | 0 ± 5% | 9540 21446 ± 5% | 13835 31102 | 16355 36768 | 594,0 36.23 | 19,95 43.98 | ✓ | | | | | | | | | |
| LS 9500 - 038 - A | LS 9500 - 038 - B | 38 | 1.50 | 231 | 9.09 | 193 | 7.60 | | | | | | | | 14682 | 33006 | 17697 | 39784 | 797,0 | 48.62 | 21,15 | 46.63 | ✓ |
| LS 9500 - 050 - A | LS 9500 - 050 - B | 50 | 1.97 | 255 | 10.04 | 205 | 8.07 | | | | | | | | 15196 | 34162 | 18525 | 41646 | 784,0 | 47.82 | 21,95 | 48.39 | ✓ |
| LS 9500 - 063 - A | LS 9500 - 063 - B | 63,5 | 2.50 | 282 | 11.10 | 218,5 | 8.60 | | | | | | | | 15604 | 35079 | 19188 | 43136 | 1195,0 | 72.90 | 22,75 | 50.16 | ✓ |
| LS 9500 - 080 - A | LS 9500 - 080 - B | 80 | 3.15 | 315 | 12.40 | 235 | 9.25 | | | | | | | | 15958 | 35875 | 19768 | 44440 | 1452,0 | 88.57 | 24,55 | 54.12 | ✓ |
| LS 9500 - 100 - A | LS 9500 - 100 - B | 100 | 3.94 | 355 | 13.98 | 255 | 10.04 | | | | | | | | 16259 | 36552 | 20265 | 45558 | 1764,0 | 107.60 | 26,25 | 57.87 | ✓ |
| LS 9500 - 125 - A | LS 9500 - 125 - B | 125 | 4.92 | 405 | 15.94 | 280 | 11.02 | | | | | | | | 16521 | 37141 | 20700 | 46535 | 2153,0 | 131.33 | 28,15 | 62.06 | ✓ |
| LS 9500 - 160 - A | LS 9500 - 160 - B | 160 | 6.30 | 475 | 18.70 | 315 | 12.40 | | | | | | | | 16767 | 37694 | 21111 | 47459 | 2699,0 | 164.64 | 31,55 | 69.56 | ✓ |
| LS 9500 - 200 - A | LS 9500 - 200 - B | 200 | 7.87 | 555 | 21.85 | 355 | 13.98 | | | | | | | | 16954 | 38114 | 21424 | 48163 | 3323,0 | 202.70 | 35,15 | 77.49 | ✓ |
| LS 9500 - 250 - A | LS 9500 - 250 - B | 250 | 9.84 | 655 | 25.79 | 405 | 15.94 | | | | | | | | 17111 | 38467 | 21687 | 48754 | 4102,0 | 250.22 | 38,65 | 85.21 | ✓ |
| LS 9500 - 300 - A | LS 9500 - 300 - B | 300 | 11.81 | 755 | 29.72 | 455 | 17.91 | 17219 | 38710 | 21869 | 49163 | 4882,0 | 297.80 | 42,55 | 93.81 | ✓ | | | | | | | |

LS

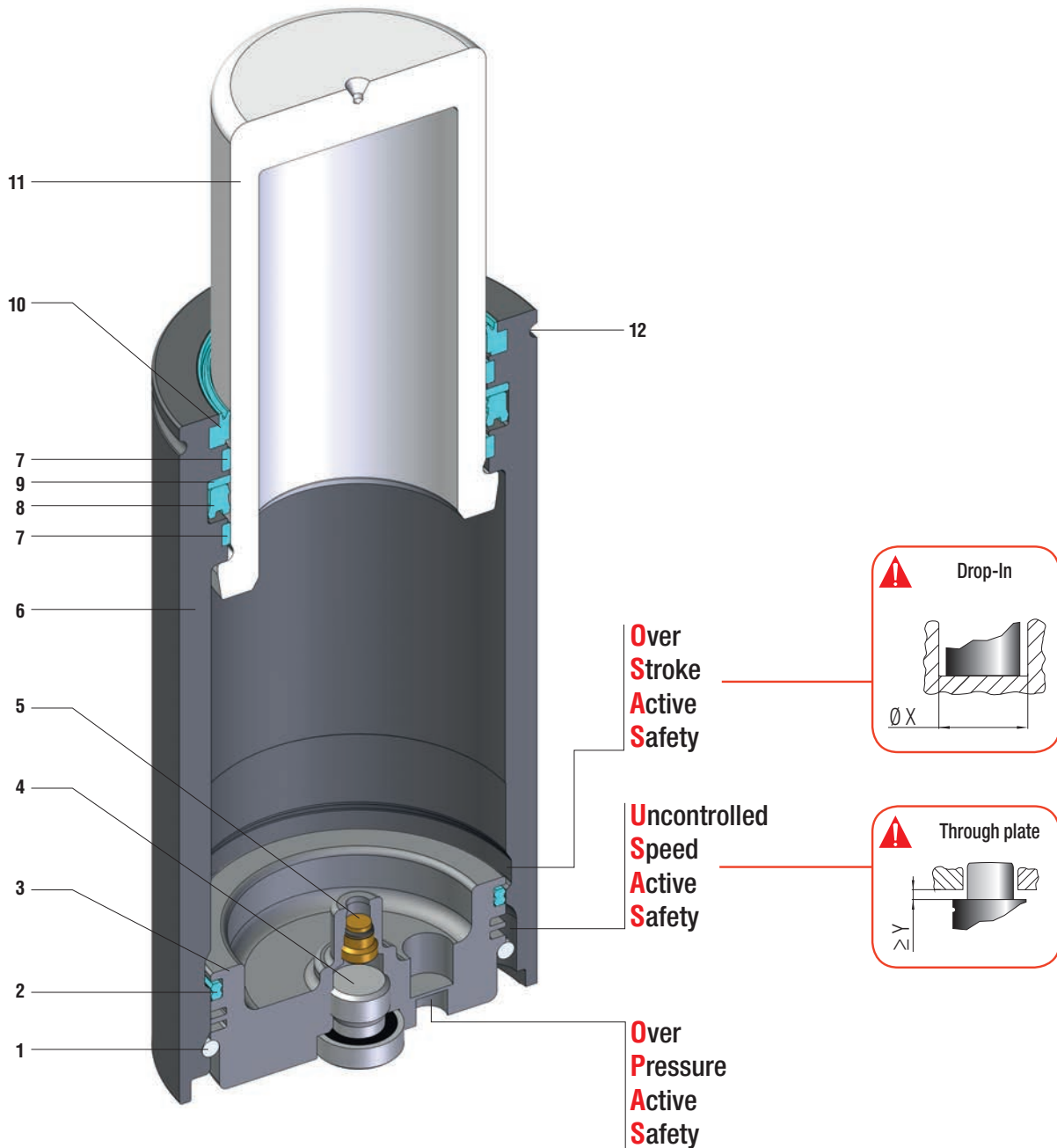


HOW TO ORDER

p. 155

INSTALLATION GUIDELINE

p. 203



Massima forza, tenuta stelo - Maximum force, rod seal - Maximale Kraft, Kolbenstange dichtung
 Forces maximale, joint de tige - Máxima fuerza, estanqueidad vástago - Força máxima, estanquidade na haste

| | |
|----------------|---------------------------|
| SEALING | ROD SEAL |
| DESIGN | BOTTOM BASE - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|------------|-----------|------------------------------|
| 1 | Retaining ring | 5 | Valve | 9 | Back-up ring |
| 2 | Dual ring seal | 6 | Body | 10 | Rod wiper |
| 3 | Bottom base | 7 | Guide ring | 11 | Rod (nitrited superfinished) |
| 4 | Plug | 8 | Rod seal | 12 | Groove for secondary wiper |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|------------|--------|------|-----------|-------------|------------------|-------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| ML 300 | 25 | 0.98 | 10 - 80 | 0.39 - 3.15 | 310 | 697 | ✓ | ✓ | - | - | ✓ |
| ML 500 | 32 | 1.26 | 10 - 80 | 0.39 - 3.15 | 510 | 1147 | ✓ | ✓ | - | - | ✓ |
| ML 1000 | 38 | 1.50 | 10 - 80 | 0.39 - 3.15 | 980 | 2203 | ✓ | ✓ | ✓ | - | ✓ |
| ML 1000 N | 38 | 1.50 | 10 - 80 | 0.39 - 3.15 | 980 | 2203 | ✓ | ✓ | ✓ | - | ✓ |
| ML 1800 | 50 | 1.97 | 15 - 80 | 0.59 - 3.15 | 1925 | 4327 | ✓ | ✓ | ✓ | - | ✓ |
| ML 1800 N | 50 | 1.97 | 15 - 80 | 0.59 - 3.15 | 1925 | 4327 | ✓ | ✓ | ✓ | - | ✓ |
| ML 3000 | 63 | 2.48 | 15 - 80 | 0.59 - 3.15 | 3180 | 7149 | ✓ | ✓ | ✓ | - | ✓ |
| ML 3000 N | 63 | 2.48 | 15 - 80 | 0.59 - 3.15 | 3180 | 7149 | ✓ | ✓ | ✓ | - | ✓ |
| ML 4700 | 75 | 2.95 | 15 - 80 | 0.59 - 3.15 | 4925 | 11701 | ✓ | ✓ | ✓ | - | ✓ |
| ML 4700 N | 75 | 2.95 | 15 - 80 | 0.59 - 3.15 | 4925 | 11701 | ✓ | ✓ | ✓ | - | ✓ |
| ML 7500 | 95 | 3.74 | 15 - 80 | 0.59 - 3.15 | 7700 | 17310 | ✓ | ✓ | ✓ | - | ✓ |
| ML 7500 N | 95 | 3.74 | 15 - 80 | 0.59 - 3.15 | 7700 | 17310 | ✓ | ✓ | ✓ | - | ✓ |
| ML 12000 | 120 | 4.72 | 15 - 80 | 0.59 - 3.15 | 12720 | 28595 | ✓ | ✓ | ✓ | - | ✓ |
| ML 12000 N | 120 | 4.72 | 15 - 80 | 0.59 - 3.15 | 12720 | 28595 | ✓ | ✓ | ✓ | - | ✓ |

✓ Built-in as standard

✓ Optional upon request

HOW TO ORDER

Series _____ Revision code _____

Model **ML 1800-050-D-E-W**

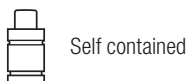
Stroke _____ Version _____

Available versions

ML



ML 1800-050-D
Standard code



Self contained



ML 1800-050-D-W
Add "-W" to standard code



Self contained



+
Secondary wiper



ML 1800-050-D-N
Add "-N" to standard code



Linkable



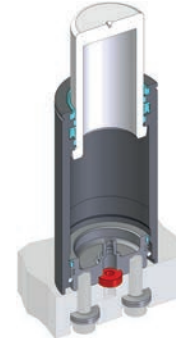
ML 1800-050-D-N-W
Add "-N-W" to standard code



Linkable



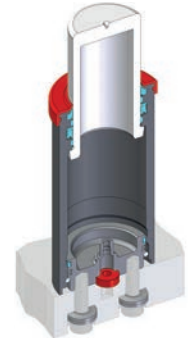
+
Secondary wiper



ML 1800-050-D-E
Add "-E" to standard code



Easy
Manifold



ML 1800-050-D-E-W
Add "-E-W" to standard code



Easy
Manifold



+
Secondary wiper



SW

ACTIVE SAFETY



OSAS



USAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

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O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu

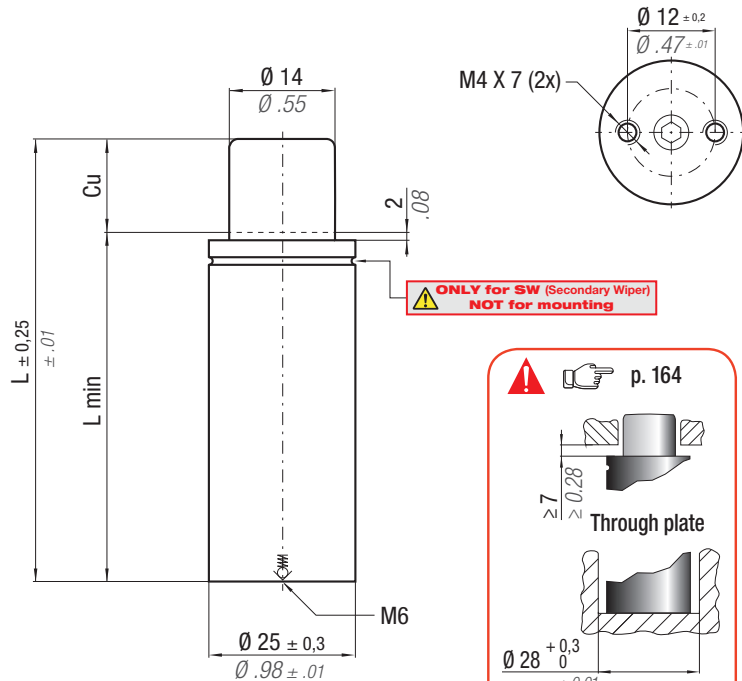


p. 18

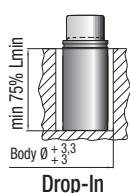


** $F_{1p} =$

Polytropic end force at 100% Cu



| CODE PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F ₀ Initial force daN lb | S | | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit Disposable | | | | |
|-------------------------------------|------------------|----|------|-----|------|-------|------|-------------------------------------------|-----------------------------------------------|-------------|-------------------------------|----------------------|-------------------------------|------------------------------|----------------------------|------|---|
| | | mm | inch | mm | inch | mm | inch | | 1,54 cm ² 0.239 in ² | ± 0,33 %/°C | | | | P max 200 bar 2900 psi | P min 20 bar 290 psi | | |
| ML 300 - 010 - C | ML 300 - 010 - D | 10 | 0.39 | 75 | 2.95 | 65 | 2.56 | 310 697 ± 5% | 424 | 954 | 476 | 1070 | 7,0 | 0.43 | 0,17 | 0.37 | ✓ |
| ML 300 - 015 - C | ML 300 - 015 - D | 15 | 0.59 | 85 | 3.35 | 70 | 2.76 | | 460 | 1034 | 524 | 1178 | 9,0 | 0.55 | 0,18 | 0.40 | ✓ |
| ML 300 - 025 - C | ML 300 - 025 - D | 25 | 0.98 | 105 | 4.13 | 80 | 3.15 | 200 bar 2900 psi | 509 | 1143 | 592 | 1331 | 12,0 | 0.73 | 0,21 | 0.46 | ✓ |
| ML 300 - 038 - C | ML 300 - 038 - D | 38 | 1.50 | 130 | 5.12 | 92 | 3.62 | | 555 | 1248 | 658 | 1479 | 16,0 | 0.98 | 0,24 | 0.53 | ✓ |
| ML 300 - 050 - C | ML 300 - 050 - D | 50 | 1.97 | 155 | 6.10 | 105 | 4.13 | +20 °C +68 °F | 572 | 1286 | 682 | 1533 | 20,0 | 1.22 | 0,27 | 0.60 | ✓ |
| ML 300 - 063 - C | ML 300 - 063 - D | 63 | 2.48 | 185 | 7.28 | 122 | 4.80 | | 569 | 1279 | 678 | 1524 | 26,0 | 1.59 | 0,31 | 0.68 | ✓ |
| ML 300 - 080 - C | ML 300 - 080 - D | 80 | 3.15 | 220 | 8.66 | 140 | 5.51 | 584 | 1313 | 699 | 1571 | 32,0 | 1.95 | 0,35 | 0.77 | ✓ | |



Drop-In



Bottom mount



HOW TO ORDER

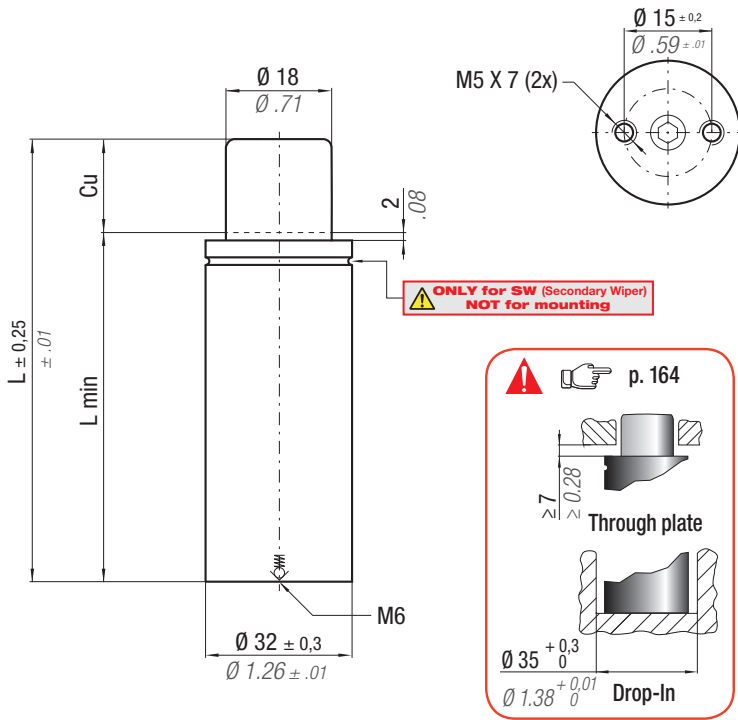


p. 165

INSTALLATION GUIDELINE



p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

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El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock



SW

ACTIVE SAFETY



OSAS



USAS

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18

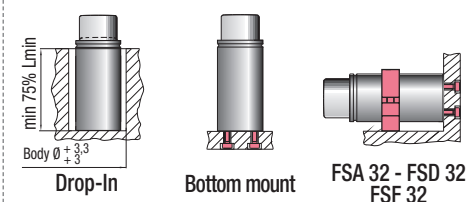


** $F_{1p} =$

Polytrophic end force at 100% Cu

| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33%/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 2,54 cm ² 0.394 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit Disposabile |
|-----------------------------|------------------|----------------------|--------------------|------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|--------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | PED 2014/68/EU | |
| PHASING OUT from 05/2019 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| ML 500 - 010 - C | ML 500 - 010 - D | 10 0.39 | 75 2.95 | 65 2.56 | 510 1147 | 708 1592 | 796 1789 | 11,0 0.67 | 0,28 0.62 | ✓ |
| ML 500 - 015 - C | ML 500 - 015 - D | 15 0.59 | 85 3.35 | 70 2.76 | ± 5% | 763 1715 | 871 1958 | 14,0 0.85 | 0,30 0.66 | ✓ |
| ML 500 - 025 - C | ML 500 - 025 - D | 25 0.98 | 105 4.13 | 80 3.15 | | 835 1877 | 971 2183 | 20,0 1.22 | 0,34 0.75 | ✓ |
| ML 500 - 038 - C | ML 500 - 038 - D | 38 1.50 | 130 5.12 | 92 3.62 | 200 bar 2900 psi | 902 2028 | 1065 2394 | 27,0 1.65 | 0,39 0.86 | ✓ |
| ML 500 - 050 - C | ML 500 - 050 - D | 50 1.97 | 155 6.10 | 105 4.13 | | 923 2075 | 1095 2462 | 35,0 2.14 | 0,43 0.95 | ✓ |
| ML 500 - 063 - C | ML 500 - 063 - D | 63 2.48 | 190 7.48 | 127 5.00 | | 881 1981 | 1035 2327 | 47,0 2.87 | 0,51 1.12 | ✓ |
| ML 500 - 080 - C | ML 500 - 080 - D | 80 3.15 | 225 8.86 | 145 5.71 | +20 °C +68 °F | 904 2032 | 1069 2403 | 57,0 3.48 | 0,57 1.26 | ✓ |

ML



HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

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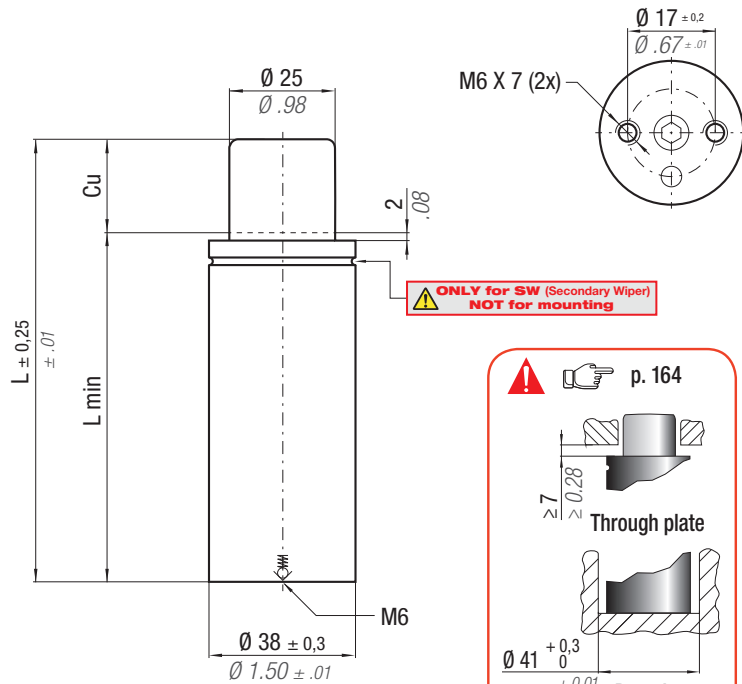
O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

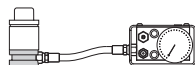
** $F_{1p} =$

Polytropic end force at 100% Cu



| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 4,91 cm ² 0.761 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMML01000C |
|--------------------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|---------------------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | |
| PHASING OUT from 05/2019 | NEW | mm inch | mm inch | mm inch | Initial force daN lb | End force * daN lb | End force ** daN lb | cm ³ in ³ | ~Kg ~lb |
| ML 1000 - 010 - C | ML 1000 - 010 - D | 10 0.39 | 75 2.95 | 65 2.56 | 980 2203 ± 5% | 1371 3081 | 1542 3467 | 22,0 1.34 | 0,37 0,82 |
| ML 1000 - 015 - C | ML 1000 - 015 - D | 15 0.59 | 85 3.35 | 70 2.76 | | 1500 3372 | 1719 3864 | 27,0 1.65 | 0,39 0,86 |
| ML 1000 - 025 - C | ML 1000 - 025 - D | 25 0.98 | 105 4.13 | 80 3.15 | 200 bar 2900 psi | 1687 3793 | 1981 4453 | 36,0 2.20 | 0,45 0,99 |
| ML 1000 - 038 - C | ML 1000 - 038 - D | 38 1.50 | 135 5.31 | 97 3.82 | | 1768 3974 | 2095 4710 | 52,0 3.17 | 0,53 1,17 |
| ML 1000 - 050 - C | ML 1000 - 050 - D | 50 1.97 | 160 6.30 | 110 4.33 | +20 °C +68 °F | 1854 4169 | 2220 4991 | 64,0 3.90 | 0,60 1,32 |
| ML 1000 - 063 - C | ML 1000 - 063 - D | 63 2.48 | 205 8.07 | 142 5.59 | | 1708 3839 | 2010 4519 | 90,0 5.49 | 0,73 1,61 |
| ML 1000 - 080 - C | ML 1000 - 080 - D | 80 3.15 | 240 9.45 | 160 6.30 | | 1790 4024 | 2127 4782 | 107,0 6.53 | 0,82 1,81 |

KIT FOR LINKING



code: 39FML01000C



Seal (1x)



Washer (4x)



Screw (2x)



Bottom base (1x)

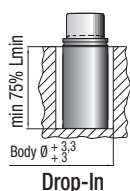
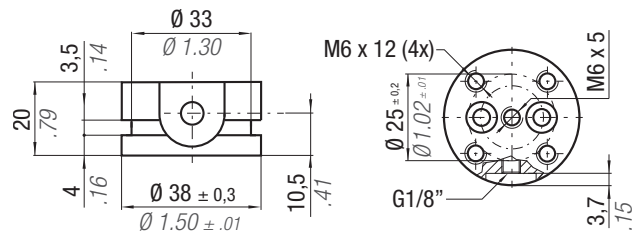


Instructions

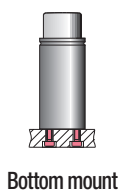


Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Remplacez à chaque million de cycles. Reemplazar cada 1 millón de ciclos. Substituir a cada 1 milhão de ciclos.

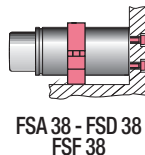
Bottom base dimension



Drop-In



Bottom mount



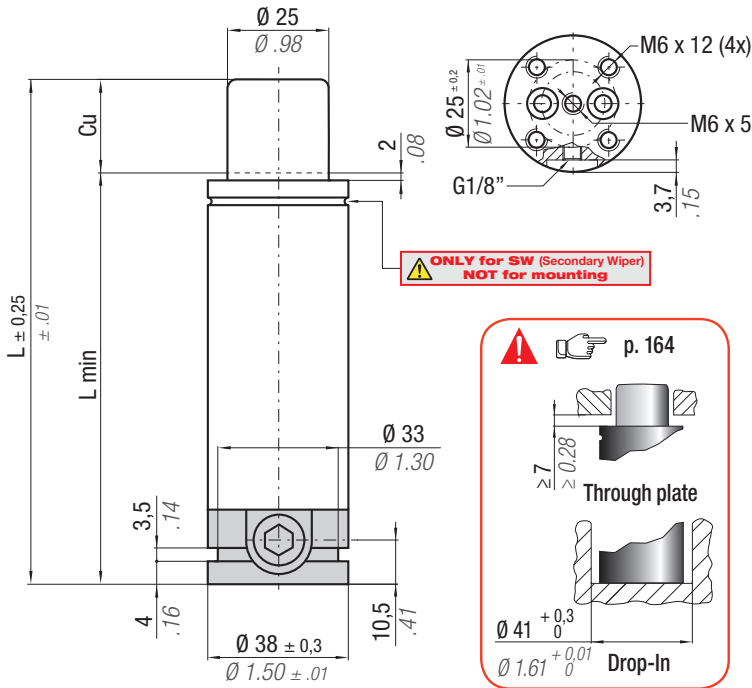
FSA 38 - FSD 38
FSF 38

HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18



** $F_{1p} =$

Polytrophic end force at 100% Cu



ACTIVE SAFETY



OSAS



USAS



OPAS

| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 4,91 cm ² 0.761 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMLO1000C | | | | | | | | |
|-----------------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|---------------------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|
| CODE | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | |
| PHASING OUT from 05/2019 | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| ML1000-010-C-N | ML1000-010-D-N | 10 | 0.39 | 95 | 3.74 | 85 | 3.35 | 980 | 2203 | 1371 | 3081 | 1542 | 3467 | 22,0 | 1.34 | 0,52 | 1.15 | ✓ |
| ML1000-015-C-N | ML1000-015-D-N | 15 | 0.59 | 105 | 4.13 | 90 | 3.54 | ± 5% | | 1500 | 3372 | 1719 | 3864 | 27,0 | 1.65 | 0,55 | 1.21 | ✓ |
| ML1000-025-C-N | ML1000-025-D-N | 25 | 0.98 | 125 | 4.92 | 100 | 3.94 | | | 1687 | 3793 | 1981 | 4453 | 36,0 | 2.20 | 0,60 | 1.32 | ✓ |
| ML1000-038-C-N | ML1000-038-D-N | 38 | 1.50 | 155 | 6.10 | 117 | 4.61 | 200 bar | | 1768 | 3974 | 2095 | 4710 | 52,0 | 3.17 | 0,68 | 1.50 | ✓ |
| ML1000-050-C-N | ML1000-050-D-N | 50 | 1.97 | 180 | 7.09 | 130 | 5.12 | 2900 psi | | 1854 | 4169 | 2220 | 4991 | 64,0 | 3.90 | 0,75 | 1.65 | ✓ |
| ML1000-063-C-N | ML1000-063-D-N | 63 | 2.48 | 225 | 8.86 | 162 | 6.38 | | | 1708 | 3839 | 2010 | 4519 | 90,0 | 5.49 | 0,88 | 1.94 | ✓ |
| ML1000-080-C-N | ML1000-080-D-N | 80 | 3.15 | 260 | 10.24 | 180 | 7.09 | +20 °C +68 °F | | 1790 | 4024 | 2127 | 4782 | 107,0 | 6.53 | 0,98 | 2.16 | ✓ |

SERVICE BOX

code: 39SKML01000A



Seal (1x)



Washer (4x)



Screw (2x)

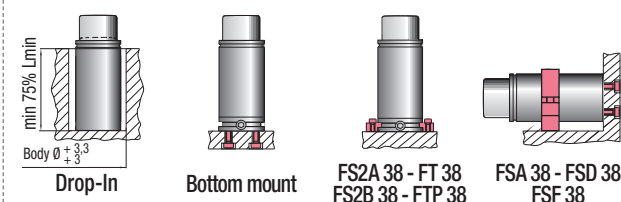


Instructions



Sostituire ogni 1.000.000 di cicli.
Replace every 1 million cycles.
Nach 1 Mio. Hübe austauschen.

Remplacez à chaque million de cycles.
Reemplazar cada 1 millón de ciclos.
Substituir a cada 1 milhão de ciclos.



HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



SW

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock

ACTIVE SAFETY



OSAS

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist



USAS

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé



OPAS

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O novo código irá ser fornecido apenas quando o antigo esgotar stock

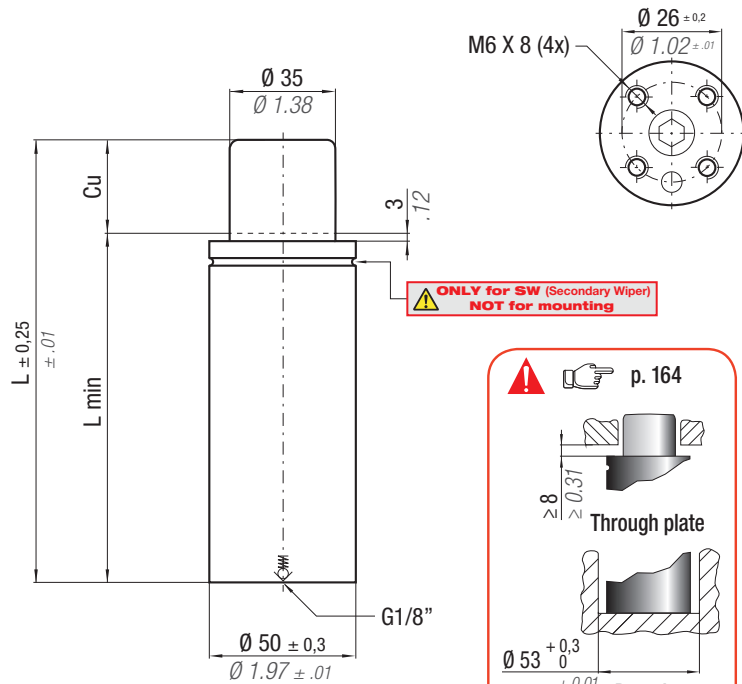
easu MANIFOLD p. 241

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

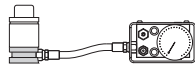
Polytrophic end force at 100% Cu



| | | | | | | | | | |
|----------------|------------------|----------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|---------------------------------|
| N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 9,62 cm ² 1.491 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMLO1800C |
|----------------|------------------|----------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|---------------------------------|

| CODE PHASING OUT from 05/2019 | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | PED 2014/68/EU | | | | | | | | | |
|-------------------------------|-------------------|----|------|-------|----------------|-------------------|--------------------|----------------|----------------|------|------|-----------------|-----------------|-------|-------|------|------|---|
| mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | ✓ | | |
| ML 1800 - 015 - C | ML 1800 - 015 - D | 15 | 0.59 | 95 | 3.74 | 80 | 3.15 | 1925 | 4327 | 2818 | 6334 | 3200 | 7194 | 57,0 | 3.48 | 0,76 | 1.68 | ✓ |
| ML 1800 - 025 - C | ML 1800 - 025 - D | 25 | 0.98 | 115 | 4.53 | 90 | 3.54 | ± 5% | | 3182 | 7154 | 3706 | 8331 | 75,0 | 4.58 | 0,85 | 1.87 | ✓ |
| ML 1800 - 038 - C | ML 1800 - 038 - D | 38 | 1.50 | 150 | 5.91 | 112 | 4.41 | 200 bar | | 3257 | 7321 | 3811 | 8567 | 111,0 | 6.77 | 1,01 | 2.23 | ✓ |
| ML 1800 - 050 - C | ML 1800 - 050 - D | 50 | 1.97 | 175 | 6.89 | 125 | 4.92 | 2900 psi | | 3451 | 7758 | 4087 | 9188 | 134,0 | 8.17 | 1,12 | 2.47 | ✓ |
| ML 1800 - 063 - C | ML 1800 - 063 - D | 63 | 2.48 | 205 | 8.07 | 142 | 5.59 | | | 3546 | 7972 | 4224 | 9496 | 163,0 | 9.94 | 1,26 | 2.78 | ✓ |
| ML 1800 - 080 - C | ML 1800 - 080 - D | 80 | 3.15 | 245 | 9.65 | 165 | 6.50 | +20 °C | +68 °F | 3619 | 8136 | 4329 | 9732 | 201,0 | 12.26 | 1,44 | 3.17 | ✓ |

KIT FOR LINKING



code: 39FML01800B



Seal (1x)



Washer (4x)



Screw (2x)



Bottom base (1x)

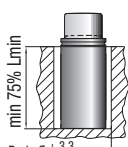
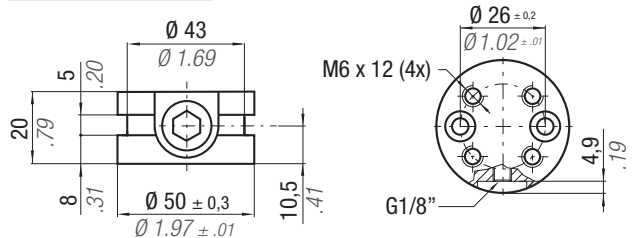


Instructions



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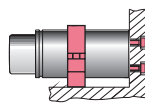
Bottom base dimension



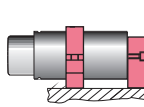
Drop-In



Bottom mount



FSA 50 - FSD 50
FSE 50



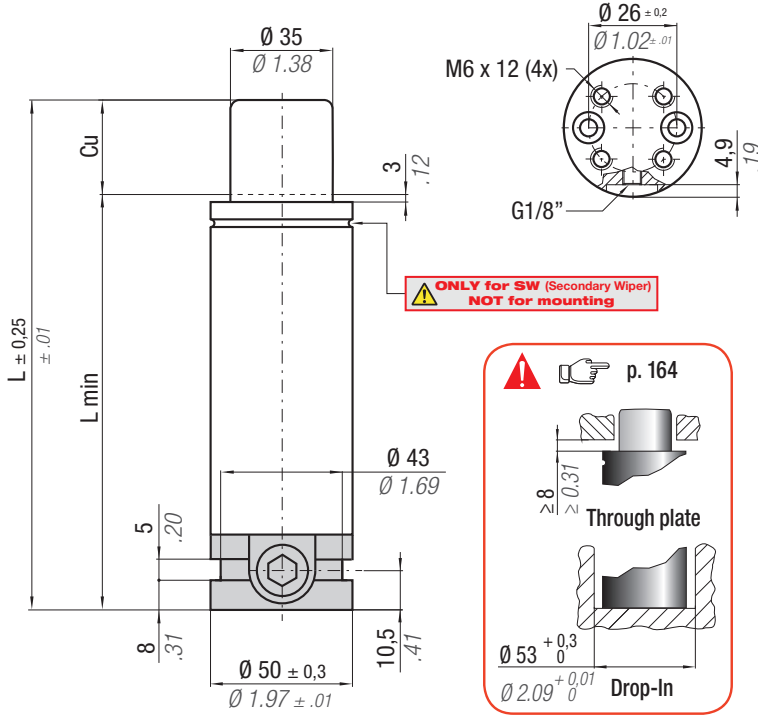
FSD 50 + R 50 A
FSE 50 + R 50 A

HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



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* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18



** $F_{1p} =$

Polytrophic end force at 100% Cu



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 9,62 cm ² 1.491 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMLO1800C | | | | | | | | |
|-----------------------------|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|---------------------------------|-----------------|------|------|------------|-------|------|------|---|
| CODE | NEW | Cu | | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | | | | | | | | | |
| PHASING OUT from 05/2019 | | mm | inch | mm | inch | mm | inch | mm | inch | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | | | | |
| ML1800-015-C-N | ML1800-015-D-N | 15 | 0.59 | 115 | 4.53 | 100 | 3.94 | 1925 | 4327 | 2818 | 6334 | 3200 | 7194 | 57,0 | 3.48 | 1,03 | 2.27 | ✓ |
| ML1800-025-C-N | ML1800-025-D-N | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | ± 5% | | 3182 | 7154 | 3706 | 8331 | 75,0 | 4.58 | 1,12 | 2.47 | ✓ |
| ML1800-038-C-N | ML1800-038-D-N | 38 | 1.50 | 170 | 6.69 | 132 | 5.20 | 200 bar 2900 psi | | 3257 | 7321 | 3811 | 8567 | 111,0 | 6.77 | 1,28 | 2.82 | ✓ |
| ML1800-050-C-N | ML1800-050-D-N | 50 | 1.97 | 195 | 7.68 | 145 | 5.71 | | | 3451 | 7758 | 4087 | 9188 | 134,0 | 8.17 | 1,39 | 3.06 | ✓ |
| ML1800-063-C-N | ML1800-063-D-N | 63 | 2.48 | 225 | 8.86 | 162 | 6.38 | | | 3546 | 7972 | 4224 | 9496 | 163,0 | 9.94 | 1,53 | 3.37 | ✓ |
| ML1800-080-C-N | ML1800-080-D-N | 80 | 3.15 | 265 | 10.43 | 185 | 7.28 | +20 °C +68 °F | | 3619 | 8136 | 4329 | 9732 | 201,0 | 12.26 | 1,71 | 3.77 | ✓ |

SERVICE BOX

code: 39SKML01800A



Seal (1x)



Washer (4x)



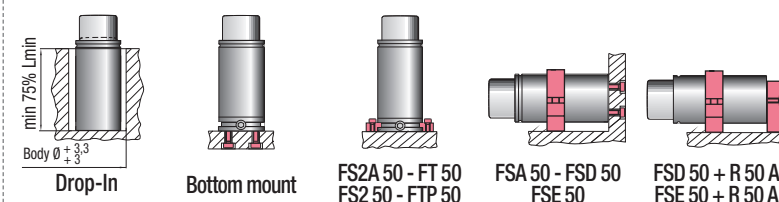
Screw (2x)



Instructions



Sostituire ogni 1.000.000 di cicli. REMPLACEZ À CHAQUE MILLION DE CYCLES.
 Replace every 1 million cycles. REEMPLAZAR CADA 1 MILLÓN DE CICLOS.
 Nach 1 Mio. Hübe austauschen. Substituir a cada 1 milhão de ciclos.



HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



SW

Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock

ACTIVE SAFETY



OSAS

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock



USAS

easu MANIFOLD p. 241



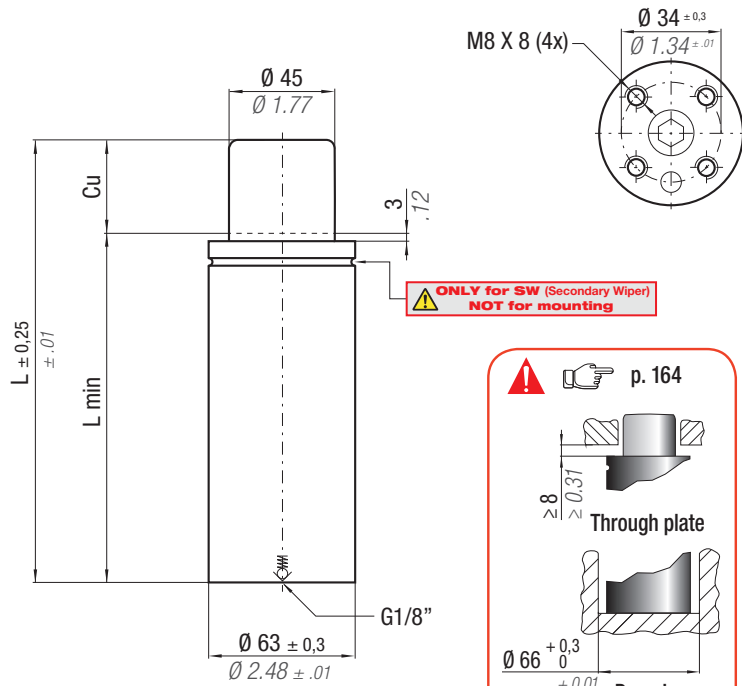
OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

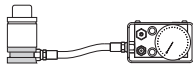
** $F_{1p} =$

Polytrophic end force at 100% Cu



| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 15,90 cm ² 2.464 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMML03000B |
|--------------------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|---------------------------------|----------------------------------|
| CODE | | Cu | L | L min | F₀ | F_{1i} * | F_{1p} ** | V₀ | |
| PHASING OUT from 05/2019 | NEW | mm inch | mm inch | mm inch | Initial force daN lb | End force * daN lb | End force ** daN lb | cm ³ in ³ | ~Kg ~lb |
| ML 3000 - 015 - C | ML 3000 - 015 - D | 15 0.59 | 100 3.94 | 85 3.35 | 3180 7149 | 4450 10003 | 5007 11256 | 106,0 6.47 | 1,25 2.76 |
| ML 3000 - 025 - C | ML 3000 - 025 - D | 25 0.98 | 120 4.72 | 95 3.74 | ± 5% | 4996 11231 | 5757 12942 | 136,0 8.30 | 1,38 3.04 |
| ML 3000 - 038 - C | ML 3000 - 038 - D | 38 1.50 | 150 5.91 | 112 4.41 | 200 bar | 5340 12005 | 6239 14026 | 185,0 11.29 | 1,57 3.46 |
| ML 3000 - 050 - C | ML 3000 - 050 - D | 50 1.97 | 180 7.09 | 130 5.12 | 2900 psi | 5468 12292 | 6419 14430 | 235,0 14.34 | 1,78 3.92 |
| ML 3000 - 063 - C | ML 3000 - 063 - D | 63 2.48 | 210 8.27 | 147 5.79 | | 5633 12664 | 6654 14959 | 283,0 17.26 | 1,98 4.37 |
| ML 3000 - 080 - C | ML 3000 - 080 - D | 80 3.15 | 250 9.84 | 170 6.69 | +20 °C +68 °F | 5766 12963 | 6844 15386 | 349,0 21.29 | 2,24 4.94 |

KIT FOR LINKING



code: 39FML03000B



Seal (1x)



Washer (6x)



Screw (3x)



Bottom base (1x)

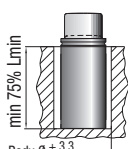
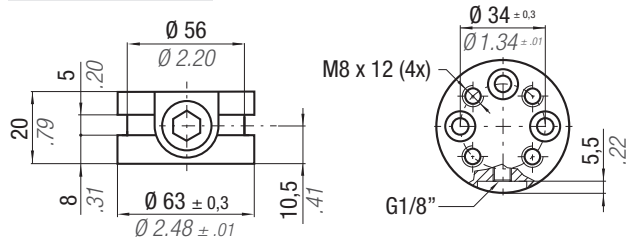


Instructions



Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Remplacez à chaque million de cycles. Reemplazar cada 1 millón de ciclos. Substituir a cada 1 milhão de ciclos.

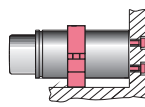
Bottom base dimension



Drop-In



Bottom mount



FSC 63 - FSD 63

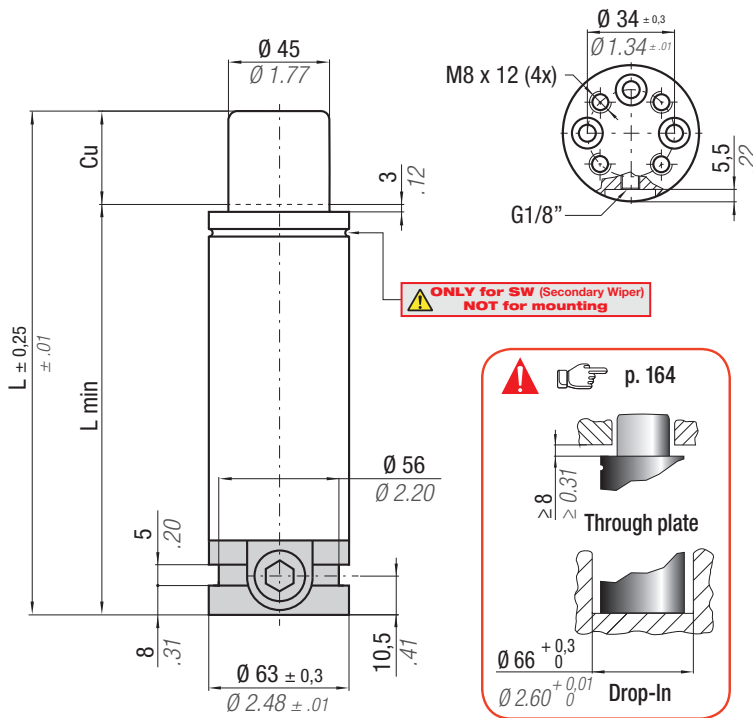


HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 15,90 cm ² 2.464 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMLO3000B |
|-----------------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|---------------------------------|----------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | PED 2014/68/EU | |
| PHASING OUT from 05/2019 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| ML3000-015-C-N | ML3000-015-D-N | 15 0.59 | 120 4.72 | 105 4.13 | 3180 7149 | 4450 10003 | 5007 11256 | 106,0 6.47 | 1,67 3.68 | ✓ |
| ML3000-025-C-N | ML3000-025-D-N | 25 0.98 | 140 5.51 | 115 4.53 | ± 5% | 4996 11231 | 5757 12942 | 136,0 8.30 | 1,80 3.97 | ✓ |
| ML3000-038-C-N | ML3000-038-D-N | 38 1.50 | 170 6.69 | 132 5.20 | 200 bar 2900 psi | 5340 12005 | 6239 14026 | 185,0 11.29 | 2,00 4.41 | ✓ |
| ML3000-050-C-N | ML3000-050-D-N | 50 1.97 | 200 7.87 | 150 5.91 | | 5468 12292 | 6419 14430 | 235,0 14.34 | 2,20 4.85 | ✓ |
| ML3000-063-C-N | ML3000-063-D-N | 63 2.48 | 230 9.06 | 167 6.57 | | 5633 12664 | 6654 14959 | 283,0 17.26 | 2,40 5.29 | ✓ |
| ML3000-080-C-N | ML3000-080-D-N | 80 3.15 | 270 10.63 | 190 7.48 | +20 °C +68 °F | 5766 12963 | 6844 15386 | 349,0 21.29 | 2,66 5.86 | ✓ |

SERVICE BOX

code: 39SKML03000A



Seal (1x)



Washer (6x)



Screw (3x)



Instructions



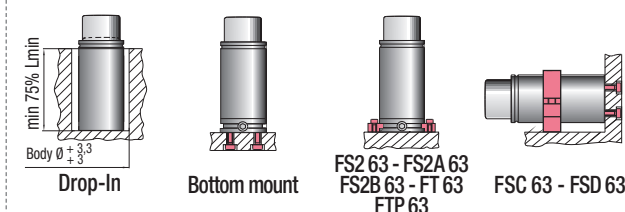
Sostituire ogni 1.000.000 di cicli. REMPLACEZ À CHAQUE MILLION DE CYCLES.
 Replace every 1 million cycles. REEMPLAZAR CADA 1 MILLÓN DE CICLOS.
 Nach 1 Mio. Hübe austauschen. SUBSTITUIR A CADA 1 MILHÃO DE CICLOS.

HOW TO ORDER

Hand icon p. 165

INSTALLATION GUIDELINE

Hand icon p. 203





SW

ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

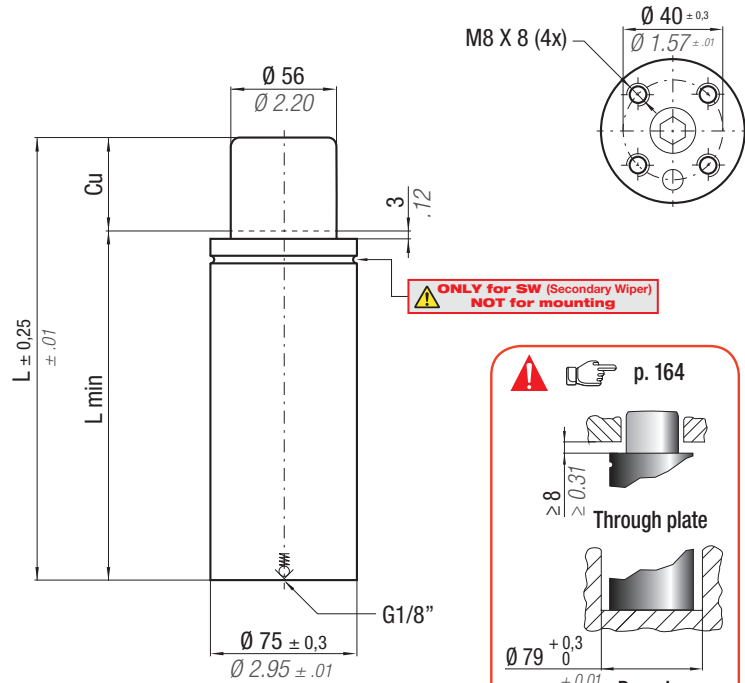
El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

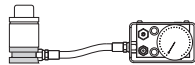
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu



| N ₂ | | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 24,63 cm ² 3.817 in ² | SPM ~ 30 - 70 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMLO4700C |
|--------------------------|-------------------|------------------|----------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|---------------------------------|----------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | 2014/68/EU | |
| PHASING OUT from 05/2019 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | |
| ML 4700 - 015 - C | ML 4700 - 015 - D | 15 0.59 | 100 3.94 | 85 3.35 | 4925 11071 | 6966 15660 | 7856 17661 | 159,0 9.70 | 1,72 3.79 | ✓ |
| ML 4700 - 025 - C | ML 4700 - 025 - D | 25 0.98 | 120 4.72 | 95 3.74 | ± 5% | 7858 17665 | 9085 20424 | 205,0 12.51 | 1,90 4.19 | ✓ |
| ML 4700 - 038 - C | ML 4700 - 038 - D | 38 1.50 | 150 5.91 | 112 4.41 | 200 bar 2900 psi | 8432 18956 | 9891 22236 | 278,0 16.96 | 2,17 4.78 | ✓ |
| ML 4700 - 050 - C | ML 4700 - 050 - D | 50 1.97 | 180 7.09 | 130 5.12 | | 8651 19448 | 10201 22933 | 353,0 21.53 | 2,44 5.38 | ✓ |
| ML 4700 - 063 - C | ML 4700 - 063 - D | 63 2.48 | 210 8.27 | 147 5.79 | | 8929 20073 | 10598 23825 | 425,0 25.93 | 2,72 6.00 | ✓ |
| ML 4700 - 080 - C | ML 4700 - 080 - D | 80 3.15 | 250 9.84 | 170 6.69 | +20 °C +68 °F | 9155 20581 | 10922 24554 | 523,0 31.90 | 3,08 6.79 | ✓ |

KIT FOR LINKING



code: 39FML04700B



Seal (1x)



Washer (6x)



Screw (3x)



Bottom base (1x)

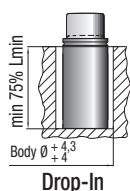
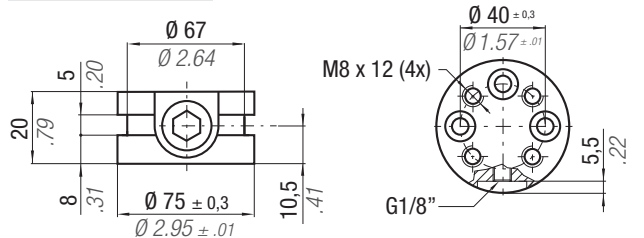


Instructions

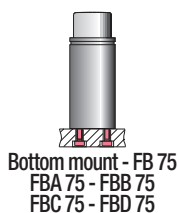


Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Remplacer à chaque million de cycles. Reemplazar cada 1 millón de ciclos. Substituir a cada 1 milhão de ciclos.

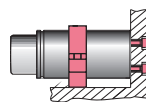
Bottom base dimension



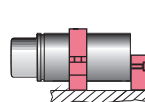
Drop-In



Bottom mount - FB 75
FBA 75 - FBB 75
FBC 75 - FBD 75



FSA 75 - FSD 75
FSE 75



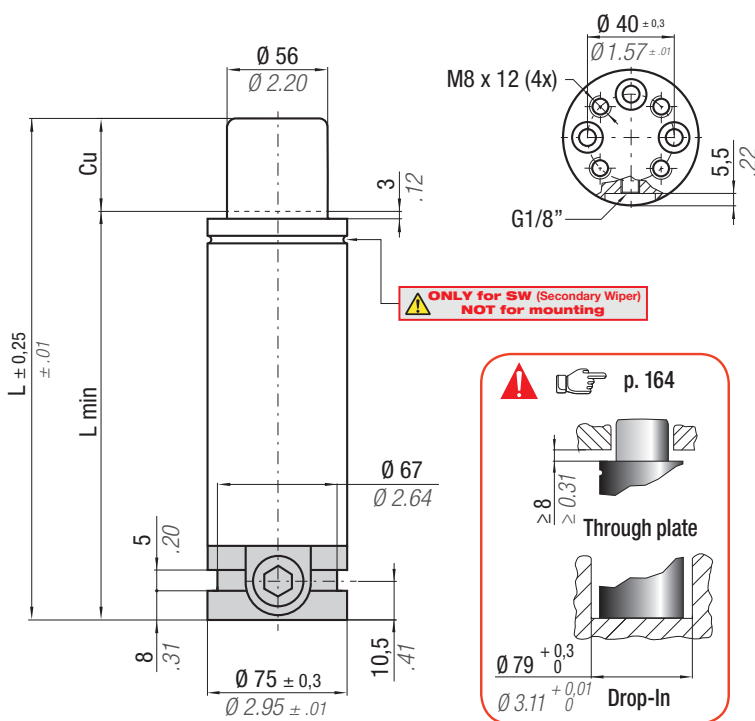
FSD 75 + R 75 A
FSE 75 + R 75 A

HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio
 The new code will be supplied only when the old will be out of stock
 Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist
 Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé
 El nuevo código será suministrado sólo cuando el viejo está fuera de stock
 O novo código irá ser fornecido apenas quando o antigo esgotar stock

* F_{1i} = Isothermal end force at 100% Cu
 ** F_{1p} = Polytrophic end force at 100% Cu
 p. 18



ACTIVE SAFETY



| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 24,63 cm ² 3.817 in ² | SPM ~ 30 - 70 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMML04700C |
|-----------------------------|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|---------------------------------|----------------------|----------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | PED 2014/68/EU | |
| PHASING OUT from 05/2019 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| ML4700-015-C-N | ML4700-015-D-N | 15 0.59 | 120 4.72 | 105 4.13 | 4925 11071 | 6966 15660 | 7856 17661 | 159,0 9.70 | 2,34 5.16 | ✓ |
| ML4700-025-C-N | ML4700-025-D-N | 25 0.98 | 140 5.51 | 115 4.53 | ± 5% | 7858 17665 | 9085 20424 | 205,0 12.51 | 2,51 5.53 | ✓ |
| ML4700-038-C-N | ML4700-038-D-N | 38 1.50 | 170 6.69 | 132 5.20 | 200 bar 2900 psi | 8432 18956 | 9891 22236 | 278,0 16.96 | 2,75 6.06 | ✓ |
| ML4700-050-C-N | ML4700-050-D-N | 50 1.97 | 200 7.87 | 150 5.91 | | 8651 19448 | 10201 22933 | 353,0 21.53 | 3,06 6.75 | ✓ |
| ML4700-063-C-N | ML4700-063-D-N | 63 2.48 | 230 9.06 | 167 6.57 | | 8929 20073 | 10598 23825 | 425,0 25.93 | 3,33 7.34 | ✓ |
| ML4700-080-C-N | ML4700-080-D-N | 80 3.15 | 270 10.63 | 190 7.48 | +20 °C +68 °F | 9155 20581 | 10922 24554 | 523,0 31.90 | 3,70 8.16 | ✓ |

SERVICE BOX

code: 39SKML04700A

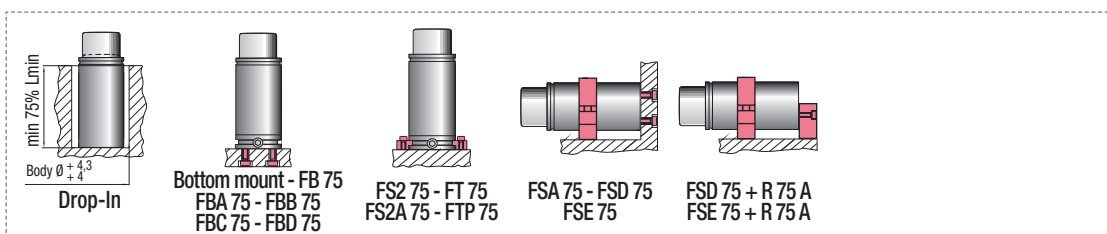
Seal (1x)

Washer (6x)

Screw (3x)

Instructions

! Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Reemplazar a cada 1 millón de ciclos. Reemplazar a cada 1 milhão de ciclos.



HOW TO ORDER
 p. 165

INSTALLATION GUIDELINE
 p. 203



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

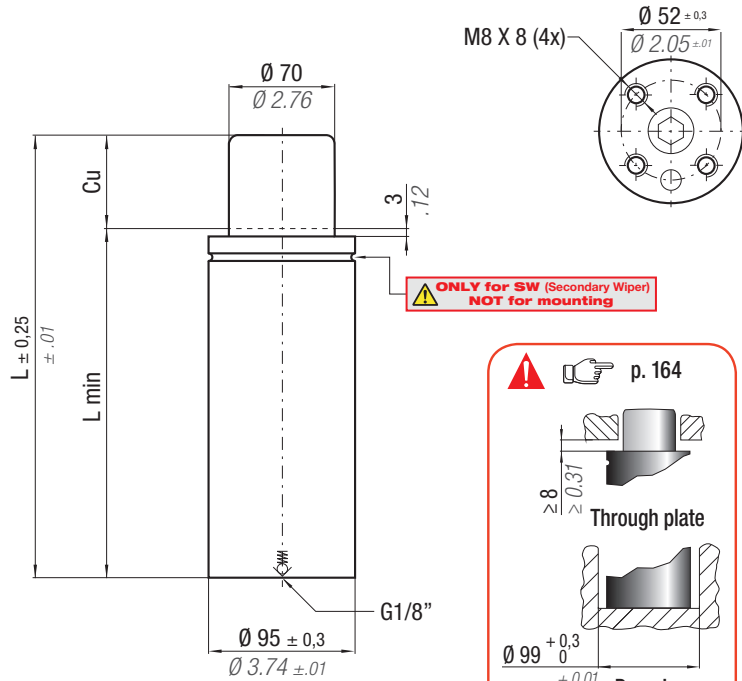
El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

easu MANIFOLD p. 241

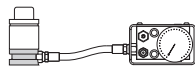
* F_{1i} = Isothermal end force at 100% Cu p. 18

** F_{1p} = Polytrophic end force at 100% Cu



| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 38,48 cm ² 5.964 in ² | SPM ~ 20 - 60 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMML07500C | | |
|--------------------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|--------------------------|---------------------------------|---------|--------------------------|
| CODE | | NEW | Cu | L | L min | F₀ | F_{1i} * | F_{1p} ** | V₀ | | PED 2014/68/EU |
| PHASING OUT from 05/2019 | | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| ML 7500 - 015 - C | ML 7500 - 015 - D | 15 0.59 | 115 4.53 | 100 3.94 | 7700 17310 | 10289 23131 | 11469 25783 | 291,0 17.75 | 3,30 7.28 | ✓ | |
| ML 7500 - 025 - C | ML 7500 - 025 - D | 25 0.98 | 135 5.31 | 110 4.33 | ± 5% | 11499 25851 | 13116 29486 | 365,0 22.27 | 3,58 7.89 | ✓ | |
| ML 7500 - 038 - C | ML 7500 - 038 - D | 38 1.50 | 165 6.50 | 127 5.00 | 200 bar | 12377 27825 | 14333 32222 | 481,0 29.34 | 4,01 8.84 | ✓ | |
| ML 7500 - 050 - C | ML 7500 - 050 - D | 50 1.97 | 190 7.48 | 140 5.51 | 2900 psi | 13130 29517 | 15391 34600 | 575,0 35.08 | 4,36 9.61 | ✓ | |
| ML 7500 - 063 - C | ML 7500 - 063 - D | 63 2.48 | 220 8.66 | 157 6.18 | | 13557 30477 | 15996 35960 | 691,0 42.15 | 4,75 10.47 | ✓ | |
| ML 7500 - 080 - C | ML 7500 - 080 - D | 80 3.15 | 260 10.24 | 180 7.09 | +20 °C +68 °F | 13910 31271 | 16500 37093 | 874,0 53.31 | 5,36 11.82 | ✓ | |

KIT FOR LINKING



code: 39FML07500B



Seal (1x)



Washer (6x)



Screw (3x)



Bottom base (1x)

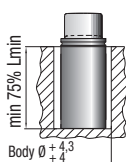
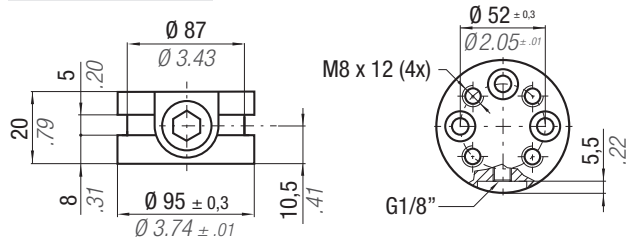


Instructions

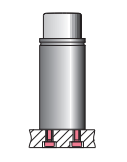


Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Reemplazar a cada 1 millón de ciclos. Reemplazar a cada 1 milhão de ciclos.

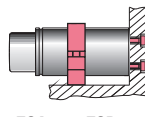
Bottom base dimension



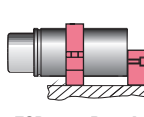
Drop-In



Bottom mount



FSA 95 - FSD 95
FSE 95



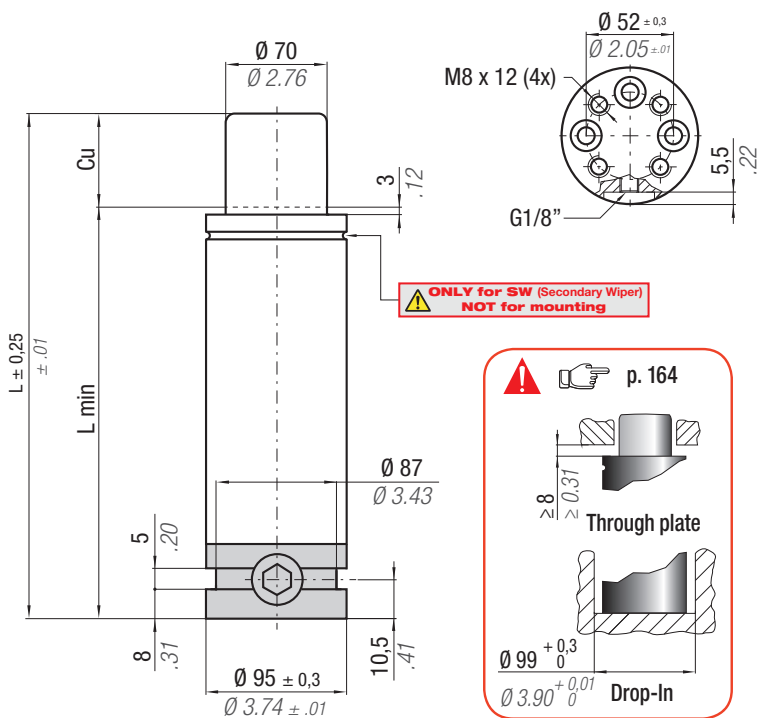
FSD 95 + R 95 A
FSE 95 + R 95 A

HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu

p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

| CODE | PHASING OUT from 05/2019 | NEW | Cu | | L | | L min | | F0 | | F _{1i} * | | F _{1p} ** | | V0 | | Maintenance kit | | |
|----------------|--------------------------|-----|----|------|-----|-------|-------|------|---------------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|-----------------|-------|---------------|
| | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 39BMMML07500C |
| ML7500-015-C-N | ML7500-015-D-N | | 15 | 0.59 | 135 | 5.31 | 120 | 4.72 | 7700 | 17310 | 10289 | 23131 | 11469 | 25783 | 291,0 | 17.75 | 4,32 | 9.52 | ✓ |
| ML7500-025-C-N | ML7500-025-D-N | | 25 | 0.98 | 155 | 6.10 | 130 | 5.12 | ± 5% | | 11499 | 25851 | 13116 | 29486 | 365,0 | 22.27 | 4,60 | 10.14 | ✓ |
| ML7500-038-C-N | ML7500-038-D-N | | 38 | 1.50 | 185 | 7.28 | 147 | 5.79 | | | 12377 | 27825 | 14333 | 32222 | 481,0 | 29.34 | 5,03 | 11.09 | ✓ |
| ML7500-050-C-N | ML7500-050-D-N | | 50 | 1.97 | 210 | 8.27 | 160 | 6.30 | 200 bar 2900 psi | | 13130 | 29517 | 15391 | 34600 | 575,0 | 35.08 | 5,38 | 11.86 | ✓ |
| ML7500-063-C-N | ML7500-063-D-N | | 63 | 2.48 | 240 | 9.45 | 177 | 6.97 | | | 13557 | 30477 | 15996 | 35960 | 691,0 | 42.15 | 5,81 | 12.81 | ✓ |
| ML7500-080-C-N | ML7500-080-D-N | | 80 | 3.15 | 280 | 11.02 | 200 | 7.87 | +20 °C +68 °F | | 13910 | 31271 | 16500 | 37093 | 874,0 | 53.31 | 6,39 | 14.09 | ✓ |

SERVICE BOX

code: 39SKML07500A



Seal (1x)



Washer (6x)



Screw (3x)



Instructions



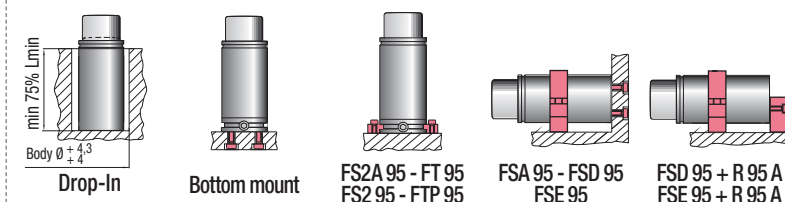
Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Remplacez à chaque million de cycles. Reemplazar cada 1 millón de ciclos. Substituir a cada 1 milhão de ciclos.

HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203





SW

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

ACTIVE SAFETY



OSAS

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock



USAS

easu MANIFOLD p. 241



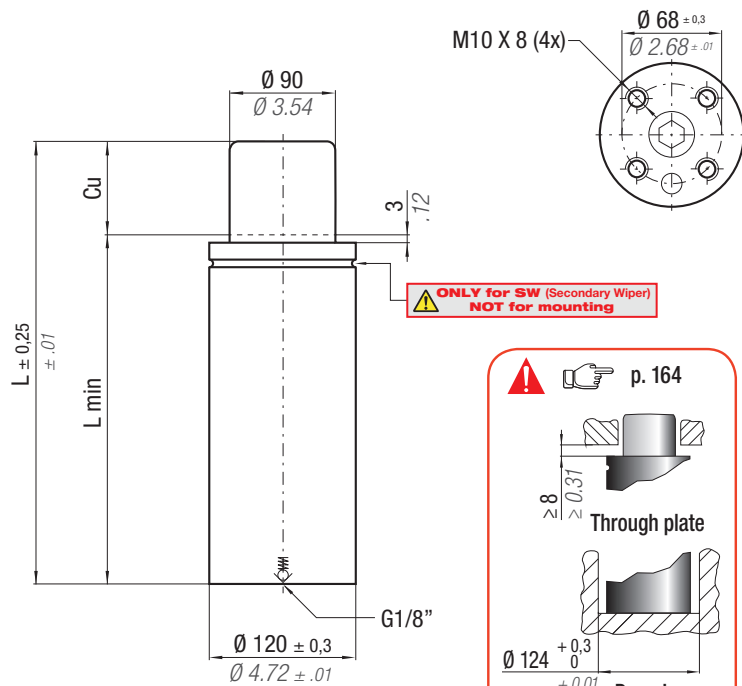
OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

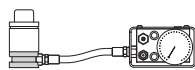
** $F_{1p} =$

Polytrophic end force at 100% Cu



| N ₂ | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 63,62 cm ² 9.861 in ² | SPM ~ 20 - 50 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMML12000C | | | |
|---------------------------------------|------------------|----------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|-------------------------------|----------------------|---------------------------------|---------------------------------|------------|--------------------------|
| CODE | NEW | | | | | | | | | | | |
| PHASING OUT from 05/2019 | | | | | | | | | | | | |
| | | | | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | | |
| | | | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | PED 2014/68/EU |
| ML 12000 - 015 - C:ML 12000 - 015 - D | | | | 15 0.59 | 115 4.53 | 100 3.94 | 12720 28595 | 17877 40189 | 20134 45263 | 417,0 25.44 | 5,82 12.83 | ✓ |
| ML 12000 - 025 - C:ML 12000 - 025 - D | | | | 25 0.98 | 135 5.31 | 110 4.33 | ± 5% | 20211 45436 | 23346 52484 | 534,0 32.57 | 6,29 13.87 | ✓ |
| ML 12000 - 038 - C:ML 12000 - 038 - D | | | | 38 1.50 | 165 6.50 | 127 5.00 | 200 bar | 21787 48979 | 25558 57457 | 718,0 43.80 | 7,01 15.45 | ✓ |
| ML 12000 - 050 - C:ML 12000 - 050 - D | | | | 50 1.97 | 195 7.68 | 145 5.71 | 2900 psi | 22429 50422 | 26470 59507 | 906,0 55.27 | 7,74 17.06 | ✓ |
| ML 12000 - 063 - C:ML 12000 - 063 - D | | | | 63 2.48 | 225 8.86 | 162 6.38 | | 23211 52180 | 27586 62016 | 1089,0 66.43 | 8,46 18.65 | ✓ |
| ML 12000 - 080 - C:ML 12000 - 080 - D | | | | 80 3.15 | 265 10.43 | 185 7.28 | +20 °C +68 °F | 23860 53639 | 28520 64116 | 1335,0 81.44 | 9,43 20.79 | ✓ |

KIT FOR LINKING



code: 39FML12000B



Seal (1x)



Washer (8x)



Screw (4x)



Bottom base (1x)

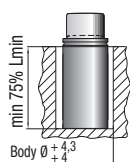
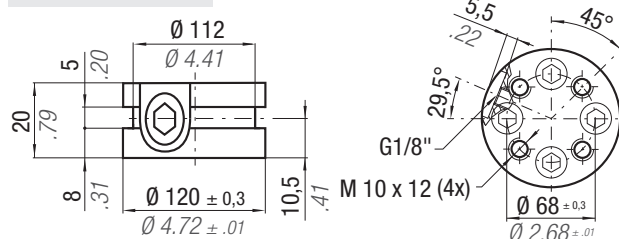


Instructions



Sostituire ogni 1.000.000 di cicli. Replace every 1 million cycles. Nach 1 Mio. Hübe austauschen. Reemplazar a cada 1 millón de ciclos. Substituir a cada 1 milhão de ciclos.

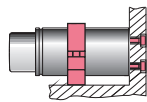
Bottom base dimension



Drop-In



Bottom mount



FSA 120 - FSD 120

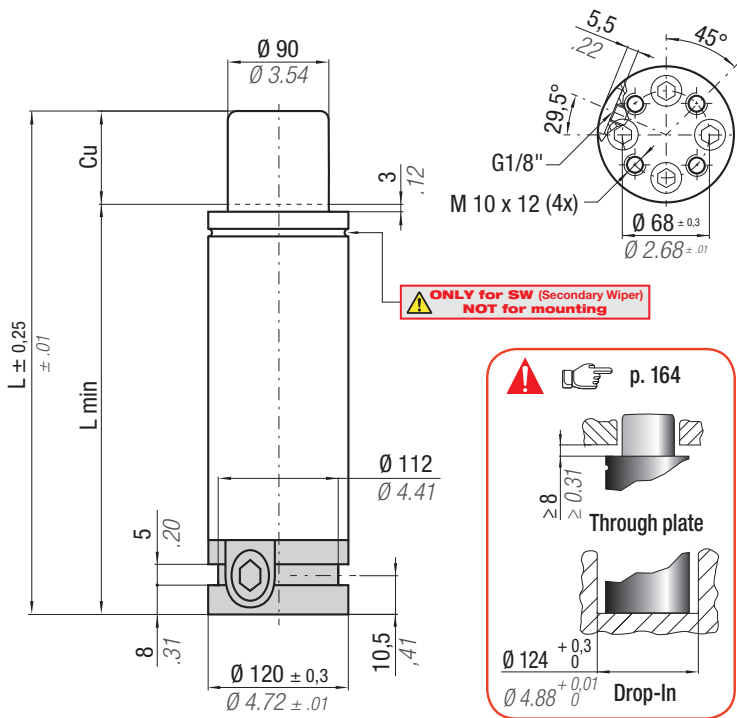


HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

* $F_{1i} =$

Isothermal end force at 100% Cu



p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu



SW

ACTIVE SAFETY



OSAS



USAS



OPAS

| N ₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 200 bar 2900 psi | P min 20 bar 290 psi | S 63,62 cm ² 9,861 in ² | SPM ~ 20 - 50 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMML12000C |
|-----------------------------|-----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|-----------------------------------------------------|---------------------------------|----------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | PED 2014/68/EU | |
| PHASING OUT from 05/2019 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| ML12000-015-C-N | ML12000-015-D-N | 15 0.59 | 135 5.31 | 120 4.72 | 12720 28595 | 17877 40189 | 20134 45263 | 417,0 25.44 | 7,45 16.42 | ✓ |
| ML12000-025-C-N | ML12000-025-D-N | 25 0.98 | 155 6.10 | 130 5.12 | ± 5% | 20211 45436 | 23346 52484 | 534,0 32.57 | 7,92 17.46 | ✓ |
| ML12000-038-C-N | ML12000-038-D-N | 38 1.50 | 185 7.28 | 147 5.79 | 200 bar 2900 psi | 21787 48979 | 25558 57457 | 718,0 43.80 | 8,64 19.05 | ✓ |
| ML12000-050-C-N | ML12000-050-D-N | 50 1.97 | 215 8.46 | 165 6.50 | | 22429 50422 | 26470 59507 | 906,0 55.27 | 9,37 20.66 | ✓ |
| ML12000-063-C-N | ML12000-063-D-N | 63 2.48 | 245 9.65 | 182 7.17 | | 23211 52180 | 27586 62016 | 1089,0 66.43 | 10,09 22.24 | ✓ |
| ML12000-080-C-N | ML12000-080-D-N | 80 3.15 | 285 11.22 | 205 8.07 | +20 °C +68 °F | 23860 53639 | 28520 64116 | 1335,0 81.44 | 11,06 24.38 | ✓ |

SERVICE BOX

code: 39SKML12000A



Seal (1x)



Washer (8x)



Screw (4x)



Instructions



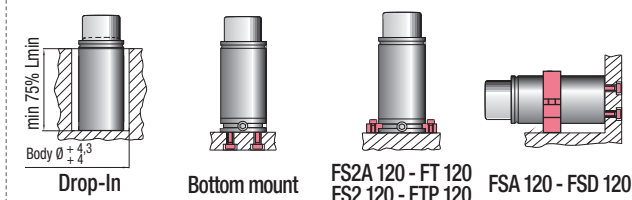
Sostituire ogni 1.000.000 di cicli. REMPLACEZ À CHAQUE MILLION DE CYCLES.
 Replace every 1 million cycles. REEMPLAZAR CADA 1 MILLÓN DE CICLOS.
 Nach 1 Mio. Hübe austauschen. SUBSTITUIR A CADA 1 MILHÃO DE CICLOS.

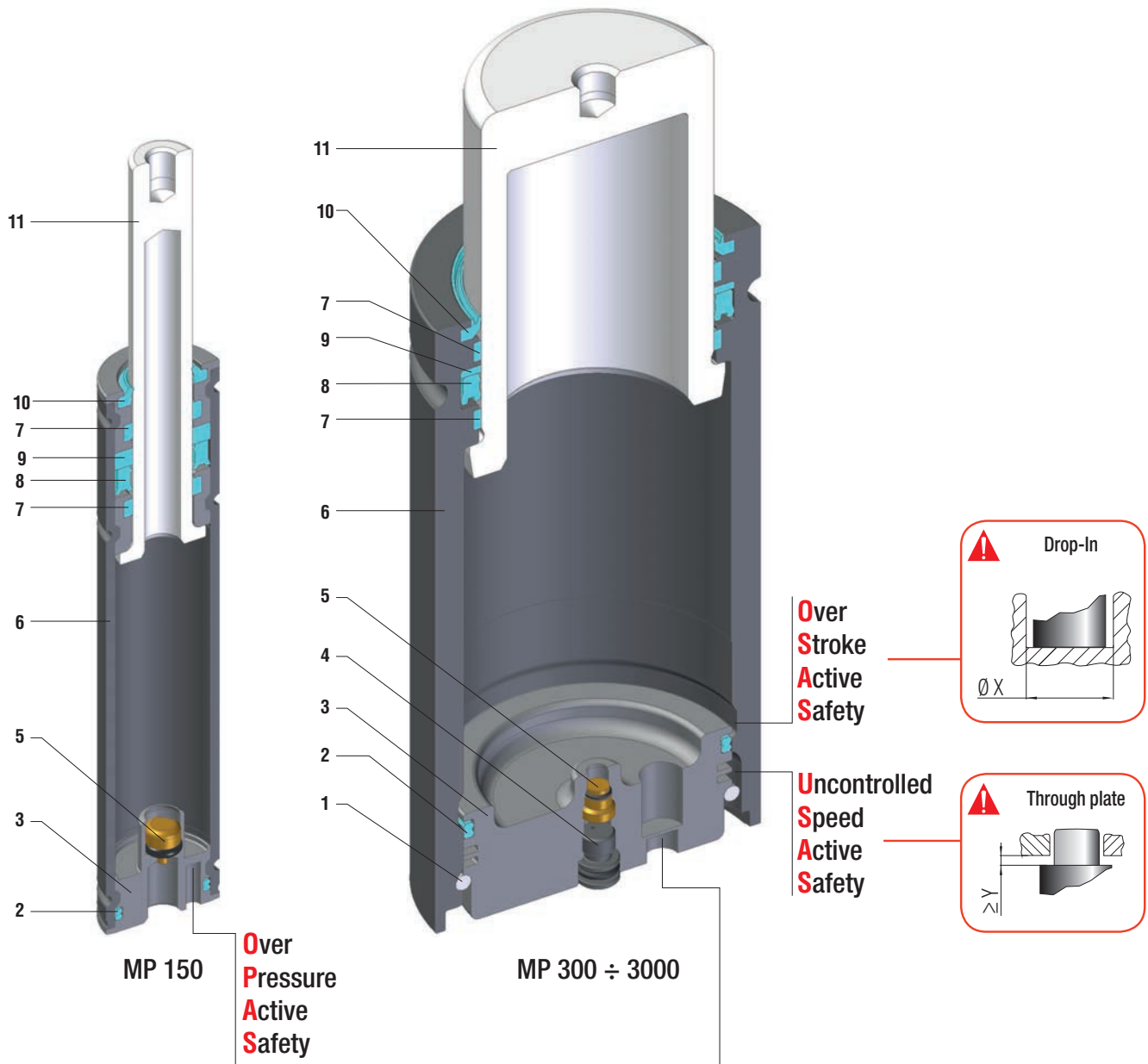
HOW TO ORDER

p. 165

INSTALLATION GUIDELINE

p. 203





Massima forza, tenuta stelo - Maximum force, rod seal - Maximale Kraft, Kolbenstange dichtung
 Forces maximale, joint de tige - Máxima fuerza, estanqueidad vástago - Força máxima, estanquidade na haste

| | |
|----------------|---------------------------|
| SEALING | ROD SEAL |
| DESIGN | BOTTOM BASE - BODY DESIGN |

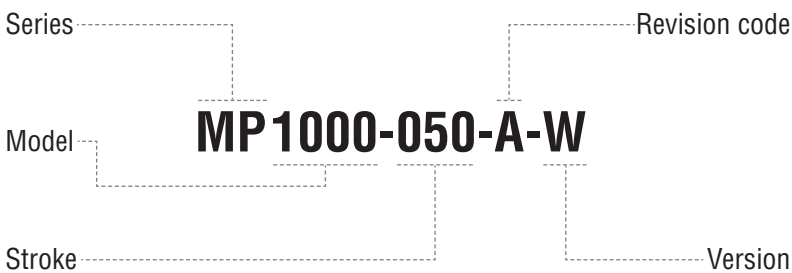
| | | | | | |
|----------|----------------|----------|------------|-----------|------------------------------|
| 1 | Retaining ring | 5 | Valve | 9 | Back-up ring |
| 2 | Dual ring seal | 6 | Body | 10 | Rod wiper |
| 3 | Bottom base | 7 | Guide ring | 11 | Rod (nitrited superfinished) |
| 4 | Plug | 8 | Rod seal | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | | |
|---------|--------|------|-----------|-------------|------------------|------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | OSAS | USAS | OPAS | SKUDO | SW |
| MP 150 | 19 | 0.75 | 15 - 80 | 0.59 - 3.15 | 150 | 337 | - | - | ✓ | - | - |
| MP 300 | 25 | 0.98 | 15 - 80 | 0.59 - 3.15 | 300 | 674 | ✓ | ✓ | - | - | - |
| MP 500 | 32 | 1.26 | 10 - 80 | 0.59 - 3.15 | 500 | 1124 | ✓ | ✓ | - | - | ✓ |
| MP 1000 | 38 | 1.50 | 10 - 80 | 0.39 - 3.15 | 1000 | 2248 | ✓ | ✓ | ✓ | - | ✓ |
| MP 2000 | 50 | 1.97 | 10 - 80 | 0.39 - 3.15 | 2000 | 4496 | ✓ | ✓ | ✓ | - | - |
| MP 3000 | 63 | 2.48 | 10 - 80 | 0.39 - 3.15 | 3000 | 6744 | ✓ | ✓ | ✓ | - | - |

Built-in as standard
 Optional upon request

HOW TO ORDER



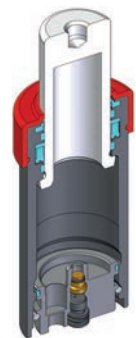
Available versions



MP 1000-050-A
Standard code



Self contained



MP 1000-050-A-W
Add "-W" to standard code



Self contained

+

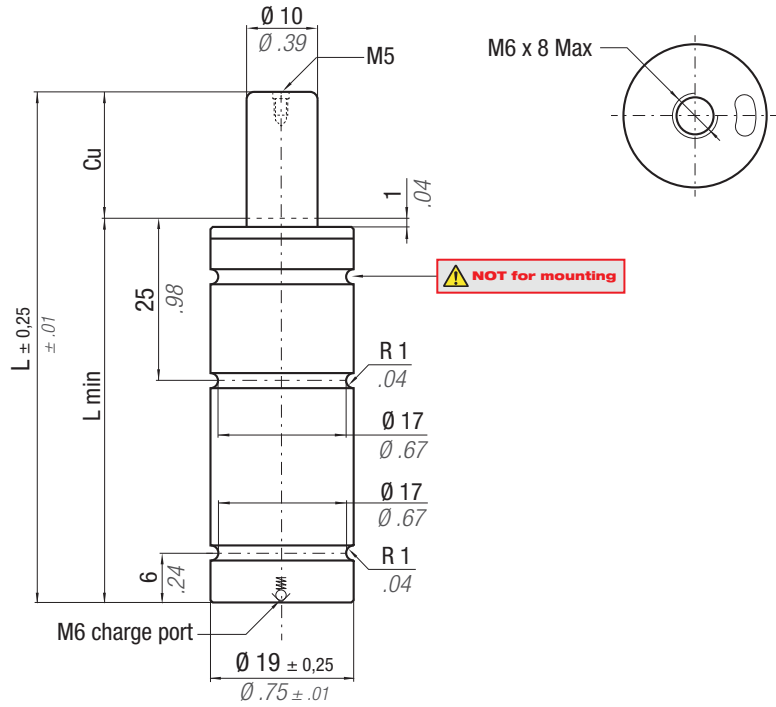


Secondary wiper

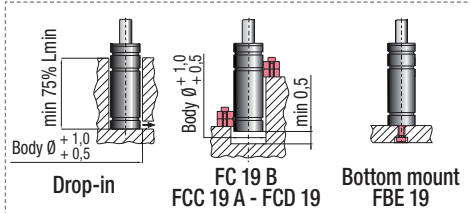
ACTIVE SAFETY



* F_{1i} = Isothermal end force at 100% Cu p. 18 **** F_{1p} = Polytropic end force at 100% Cu**

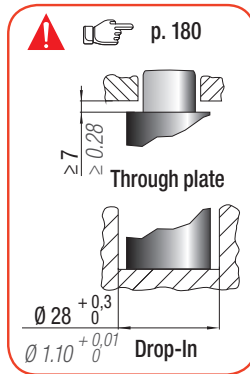
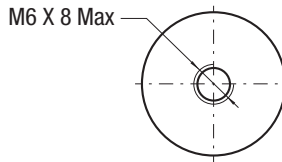
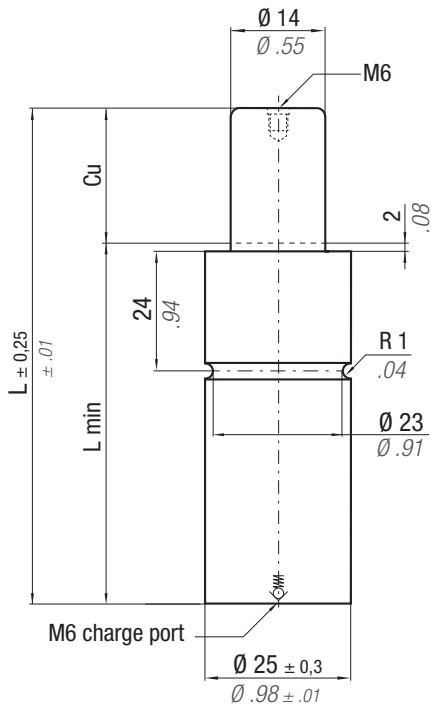


| CODE | Cu | L | L min | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | |
|------------------|----|-----|-------|----------------|-------------|-------------------|-----------------|--------------------|------|----------------|------|-----------------|--|
| | | | | Initial force | End force * | End force ** | cm ³ | in ³ | ~Kg | ~lb | | | |
| MP 150 - 010 - A | 10 | 75 | 65 | 150 ± 5% | 337 | 185 | 201 | 5,2 | 0,09 | 0,32 | 0,20 | ✓ | |
| MP 150 - 015 - A | 15 | 85 | 70 | | | 195 | 214 | 6,4 | 0,09 | 0,20 | ✓ | | |
| MP 150 - 020 - A | 20 | 95 | 75 | | | 203 | 225 | 7,5 | 0,10 | 0,22 | ✓ | | |
| MP 150 - 025 - A | 25 | 105 | 80 | | | 209 | 234 | 8,6 | 0,11 | 0,24 | ✓ | | |
| MP 150 - 032 - A | 32 | 120 | 88 | | | 214 | 241 | 10,4 | 0,11 | 0,24 | ✓ | | |
| MP 150 - 038 - A | 38 | 135 | 97 | | | 214 | 241 | 12,4 | 0,12 | 0,26 | ✓ | | |
| MP 150 - 045 - A | 45 | 150 | 105 | | | 217 | 245 | 14,1 | 0,13 | 0,29 | ✓ | | |
| MP 150 - 050 - A | 50 | 160 | 110 | | | 220 | 249 | 15,3 | 0,14 | 0,31 | ✓ | | |
| MP 150 - 056 - A | 56 | 175 | 119 | | | 219 | 248 | 17,2 | 0,14 | 0,31 | ✓ | | |
| MP 150 - 063 - A | 63 | 190 | 127 | | | 221 | 251 | 19,0 | 0,15 | 0,33 | ✓ | | |
| MP 150 - 080 - A | 80 | 220 | 140 | 231 | 264 | 22,0 | 0,17 | 0,37 | ✓ | | | | |



HOW TO ORDER
 p. 181

INSTALLATION GUIDELINE
 p. 203



* F_{1i} =
Isothermal
end force
at 100% Cu

p. 18

** F_{1p} =
Polytropic
end force
at 100% Cu

ACTIVE SAFETY

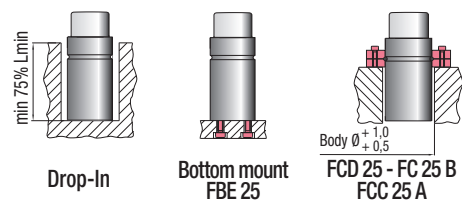


OSAS



USAS

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|------------------|----|------|-----|------|-------|------|-----------------|----------|-------------------|------|--------------------|------|-----------------|-----------------|-----------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| MP 300 - 010 - A | 10 | 0.39 | 75 | 2.95 | 65 | 2.56 | 150 337 ± 5% | 2770 psi | 430 | 967 | 481 | 1081 | 6,4 | 0,39 | 0,17 | 0,37 | ✓ |
| MP 300 - 015 - A | 15 | 0.59 | 85 | 3.35 | 70 | 2.76 | | | 462 | 1039 | 526 | 1182 | 8,2 | 0.50 | 0,18 | 0.40 | ✓ |
| MP 300 - 020 - A | 20 | 0.79 | 95 | 3.74 | 75 | 2.95 | | | 489 | 1099 | 563 | 1266 | 9,8 | 0.60 | 0,20 | 0.44 | ✓ |
| MP 300 - 025 - A | 25 | 0.98 | 105 | 4.13 | 80 | 3.15 | | | 510 | 1147 | 592 | 1331 | 11,5 | 0.70 | 0,21 | 0.46 | ✓ |
| MP 300 - 032 - A | 32 | 1.26 | 120 | 4.72 | 88 | 3.46 | | | 524 | 1178 | 613 | 1378 | 14,1 | 0.86 | 0,23 | 0.51 | ✓ |
| MP 300 - 038 - A | 38 | 1.50 | 135 | 5.31 | 97 | 3.82 | | | 520 | 1169 | 606 | 1362 | 17,0 | 1.04 | 0,25 | 0.55 | ✓ |
| MP 300 - 045 - A | 45 | 1.77 | 150 | 5.91 | 105 | 4.13 | | | 529 | 1189 | 620 | 1394 | 19,6 | 1.20 | 0,27 | 0.60 | ✓ |
| MP 300 - 050 - A | 50 | 1.97 | 160 | 6.30 | 110 | 4.33 | | | 538 | 1209 | 633 | 1423 | 21,3 | 1.30 | 0,28 | 0.62 | ✓ |
| MP 300 - 056 - A | 56 | 2.20 | 175 | 6.89 | 119 | 4.69 | | | 533 | 1198 | 626 | 1407 | 24,1 | 1.47 | 0,30 | 0.66 | ✓ |
| MP 300 - 063 - A | 63 | 2.48 | 190 | 7.48 | 127 | 5.00 | | | 539 | 1212 | 634 | 1425 | 26,7 | 1.63 | 0,32 | 0.71 | ✓ |
| MP 300 - 080 - A | 80 | 3.15 | 225 | 8.86 | 145 | 5.71 | 555 | 1248 | 656 | 1475 | 32,7 | 1.99 | 0,36 | 0.79 | ✓ | | |



HOW TO ORDER

p. 181

INSTALLATION GUIDELINE

p. 203



SW

ACTIVE SAFETY



OSAS



USAS

* $F_{1i} =$

Isothermal end force at 100% Cu

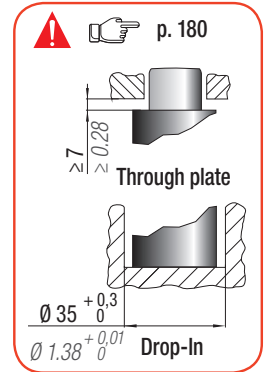
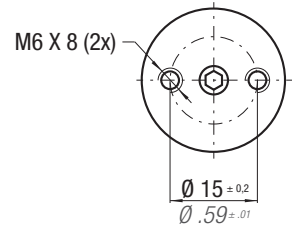
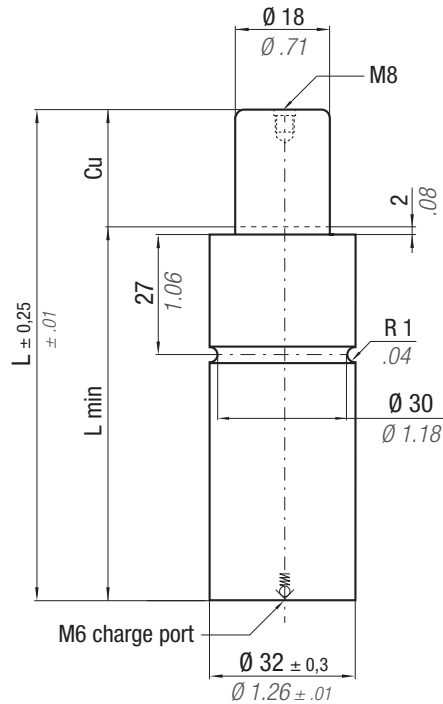


p. 18

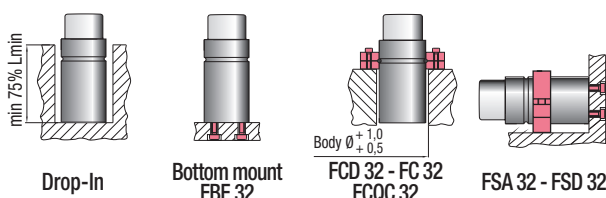


** $F_{1p} =$

Polytropic end force at 100% Cu



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 197 bar 2857 psi | P min 20 bar 290 psi | S 2,54 cm ² 0,394 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit Disposable | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | | |
|------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|-------------------------------|----|------|-----|------|-------|------|----------------|------|---------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | |
| MP 500 - 010 - A | | | | | | | | | | | 10 | 0.39 | 75 | 2.95 | 65 | 2.56 | 500 ± 5% | 1124 | 197 bar 2857 psi | 659 | 1481 | 723 | 1625 | 13,4 | 0.82 | 0,29 | 0,64 | ✓ |
| MP 500 - 015 - A | | | | | | | | | | | 15 | 0.59 | 85 | 3.35 | 70 | 2.76 | | | | 709 | 1594 | 790 | 1776 | 16,4 | 1.00 | 0,31 | 0,68 | ✓ |
| MP 500 - 020 - A | | | | | | | | | | | 20 | 0.79 | 95 | 3.74 | 75 | 2.95 | | | | 747 | 1679 | 842 | 1893 | 19,3 | 1.18 | 0,33 | 0,73 | ✓ |
| MP 500 - 025 - A | | | | | | | | | | | 25 | 0.98 | 105 | 4.13 | 80 | 3.15 | | | | 778 | 1749 | 884 | 1987 | 22,2 | 1.35 | 0,34 | 0,75 | ✓ |
| MP 500 - 032 - A | | | | | | | | | | | 32 | 1.26 | 120 | 4.72 | 88 | 3.46 | | | | 803 | 1805 | 919 | 2066 | 26,8 | 1.63 | 0,37 | 0,82 | ✓ |
| MP 500 - 038 - A | | | | | | | | | | | 38 | 1.50 | 135 | 5.31 | 97 | 3.82 | | | | 804 | 1807 | 920 | 2068 | 31,8 | 1.94 | 0,40 | 0,88 | ✓ |
| MP 500 - 045 - A | | | | | | | | | | | 45 | 1.77 | 150 | 5.91 | 105 | 4.13 | | | | 820 | 1843 | 943 | 2120 | 36,4 | 2.22 | 0,43 | 0,95 | ✓ |
| MP 500 - 050 - A | | | | | | | | | | | 50 | 1.97 | 160 | 6.30 | 110 | 4.33 | | | | 834 | 1875 | 963 | 2165 | 39,3 | 2.40 | 0,45 | 0,99 | ✓ |
| MP 500 - 056 - A | | | | | | | | | | | 56 | 2.20 | 175 | 6.89 | 119 | 4.69 | | | | 831 | 1868 | 958 | 2154 | 44,3 | 2.70 | 0,48 | 1.06 | ✓ |
| MP 500 - 063 - A | | | | | | | | | | | 63 | 2.48 | 195 | 7.68 | 132 | 5.20 | | | | 816 | 1834 | 937 | 2106 | 51,4 | 3.14 | 0,52 | 1.15 | ✓ |
| MP 500 - 080 - A | | | | | | | | | | | 80 | 3.15 | 230 | 9.06 | 150 | 5.91 | 844 | 1897 | 976 | 2194 | 61,8 | 3.77 | 0,59 | 1.30 | ✓ | | | |



HOW TO ORDER

p. 181

INSTALLATION GUIDELINE

p. 203



SW

ACTIVE SAFETY



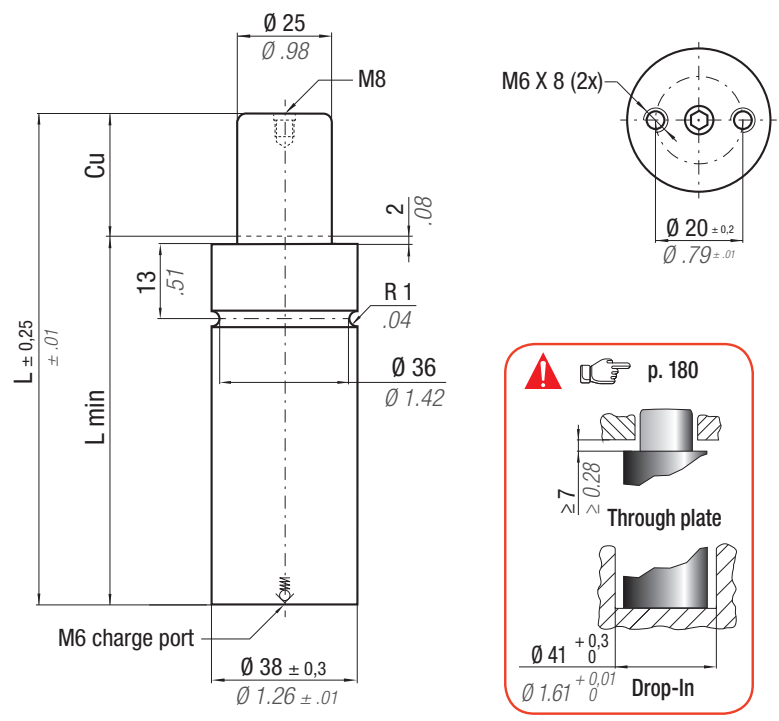
OSAS



USAS



OPAS

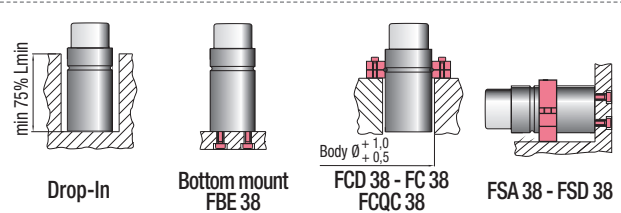


* F_{1i} =
Isothermal
end force
at 100% Cu

p. 18

** F_{1p} =
Polytrophic
end force
at 100% Cu

| CODE | Cu | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|-------------------|----|------|------|-------|------|----------------|--------------|-------------------|------|--------------------|-------|----------------|------|-----------------|-----------------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg |
| MP 1000 - 010 - A | 10 | 0.39 | 75 | 2.95 | 65 | 2.56 | 1000 ± 5% | 1417 | 3186 | 1588 | 3570 | 21,5 | 1.31 | 0,37 | 0.82 | ✓ |
| MP 1000 - 015 - A | 15 | 0.59 | 85 | 3.35 | 70 | 2.76 | | 1545 | 3473 | 1762 | 3961 | 26,6 | 1.62 | 0,39 | 0.86 | ✓ |
| MP 1000 - 020 - A | 20 | 0.79 | 95 | 3.74 | 75 | 2.95 | | 1645 | 3698 | 1898 | 4267 | 31,6 | 1.93 | 0,41 | 0.90 | ✓ |
| MP 1000 - 025 - A | 25 | 0.98 | 105 | 4.13 | 80 | 3.15 | | 1724 | 3876 | 2009 | 4516 | 36,7 | 2.24 | 0,44 | 0.97 | ✓ |
| MP 1000 - 032 - A | 32 | 1.26 | 120 | 4.72 | 88 | 3.46 | | 1789 | 4022 | 2100 | 4721 | 44,5 | 2.71 | 0,48 | 1.06 | ✓ |
| MP 1000 - 038 - A | 38 | 1.50 | 135 | 5.31 | 97 | 3.82 | | 1790 | 4024 | 2101 | 4723 | 52,8 | 3.22 | 0,51 | 1.12 | ✓ |
| MP 1000 - 045 - A | 45 | 1.77 | 150 | 5.91 | 105 | 4.13 | | 1832 | 4118 | 2159 | 4854 | 60,6 | 3.70 | 0,55 | 1.21 | ✓ |
| MP 1000 - 050 - A | 50 | 1.97 | 160 | 6.3 | 110 | 4.33 | | 1868 | 4199 | 2210 | 4968 | 65,7 | 4.01 | 0,58 | 1.28 | ✓ |
| MP 1000 - 056 - A | 56 | 2.20 | 175 | 6.89 | 119 | 4.69 | | 1859 | 4179 | 2198 | 4941 | 74,0 | 4.51 | 0,62 | 1.37 | ✓ |
| MP 1000 - 063 - A | 63 | 2.48 | 205 | 8.07 | 142 | 5.59 | | 1716 | 3858 | 1997 | 4489 | 93,1 | 5.68 | 0,70 | 1.54 | ✓ |
| MP 1000 - 080 - A | 80 | 3.15 | 240 | 9.45 | 160 | 6.30 | 1792 | 4029 | 2103 | 4728 | 111,1 | 6.78 | 0,79 | 1.74 | ✓ | |



HOW TO ORDER

p. 181

INSTALLATION GUIDELINE

p. 203

ACTIVE SAFETY



OSAS



USAS



OPAS

* $F_{1i} =$

Isothermal end force at 100% Cu

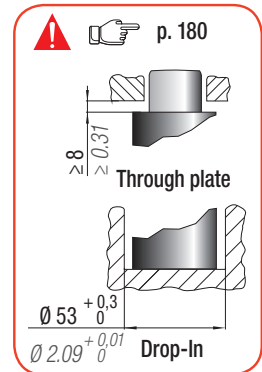
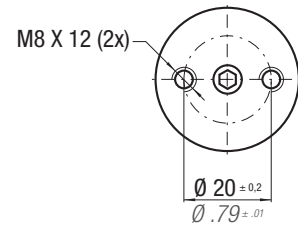
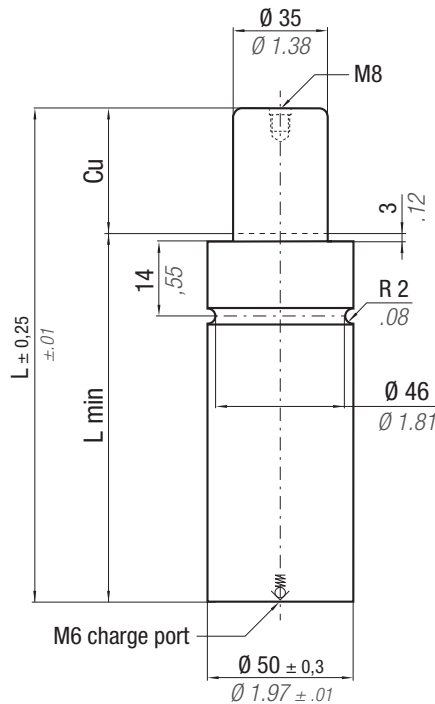


p. 18

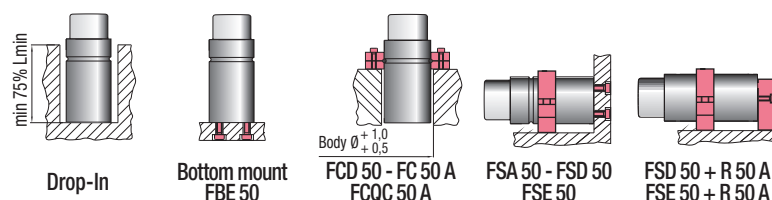


** $F_{1p} =$

Polytropic end force at 100% Cu



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 209 bar 3031 psi | P min 20 bar 290 psi | S 9,62 cm ² 1.491 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit 39BMMP02000A | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | PED | | | | | | | | | | |
|-------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|---------------------------------|----|------|-----|-------|-------|------|----------------|------|-------------------|------|--------------------|------|-----------------|-----------------|------|------|------------|------|------|------|-------|-------|------|------|---|
| | | | | | | | | | | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | | | | | | | | |
| MP 2000 - 010 - A | | | | | | | | | | | 10 | 0.39 | 90 | 3.54 | 80 | 3.15 | 2000 ± 5% | 4496 | 2641 | 5937 | 2911 | 6544 | 52,0 | 3.17 | 0,76 | 1,68 | ✓ | | | | | | | | |
| MP 2000 - 015 - A | | | | | | | | | | | 15 | 0.59 | 115 | 4.53 | 100 | 3.94 | | | | | | | | | | | 2621 | 5892 | 2885 | 6486 | 80,0 | 4.88 | 0,89 | 1,96 | ✓ |
| MP 2000 - 020 - A | | | | | | | | | | | 20 | 0.79 | 125 | 4.92 | 105 | 4.13 | | | | | | | | | | | 2780 | 6250 | 3094 | 6956 | 89,1 | 5.44 | 0,93 | 2,05 | ✓ |
| MP 2000 - 025 - A | | | | | | | | | | | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | | | | | | | | | | | 2922 | 6569 | 3283 | 7380 | 98,3 | 6.00 | 0,98 | 2,16 | ✓ |
| MP 2000 - 032 - A | | | | | | | | | | | 32 | 1.26 | 150 | 5.91 | 118 | 4.65 | | | | | | | | | | | 3080 | 6924 | 3495 | 7857 | 112,3 | 6.85 | 1,04 | 2,29 | ✓ |
| MP 2000 - 038 - A | | | | | | | | | | | 38 | 1.50 | 165 | 6.50 | 127 | 5.00 | | | | | | | | | | | 3159 | 7102 | 3601 | 8095 | 127,1 | 7.75 | 1,11 | 2,45 | ✓ |
| MP 2000 - 045 - A | | | | | | | | | | | 45 | 1.77 | 180 | 7.09 | 135 | 5.31 | | | | | | | | | | | 3275 | 7362 | 3759 | 8451 | 141,1 | 8.61 | 1,18 | 2,60 | ✓ |
| MP 2000 - 050 - A | | | | | | | | | | | 50 | 1.97 | 190 | 7.48 | 140 | 5.51 | | | | | | | | | | | 3361 | 7556 | 3876 | 8714 | 150,3 | 9.17 | 1,22 | 2,69 | ✓ |
| MP 2000 - 056 - A | | | | | | | | | | | 56 | 2.20 | 205 | 8.07 | 149 | 5.87 | | | | | | | | | | | 3403 | 7650 | 3934 | 8844 | 165,0 | 10.07 | 1,29 | 2,84 | ✓ |
| MP 2000 - 063 - A | | | | | | | | | | | 63 | 2.48 | 220 | 8.66 | 157 | 6.18 | | | | | | | | | | | 3485 | 7835 | 4047 | 9098 | 179,1 | 10.93 | 1,36 | 3,00 | ✓ |
| MP 2000 - 080 - A | | | | | | | | | | | 80 | 3.15 | 255 | 10.04 | 175 | 6.89 | 3673 | 8257 | 4308 | 9685 | 211,4 | 12.9 | 1,51 | 3,33 | ✓ | | | | | | | | | | |

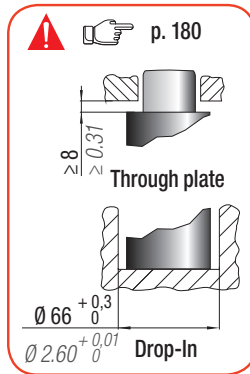
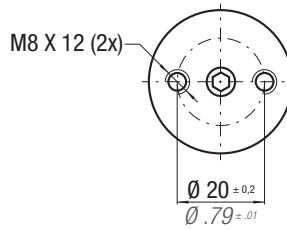
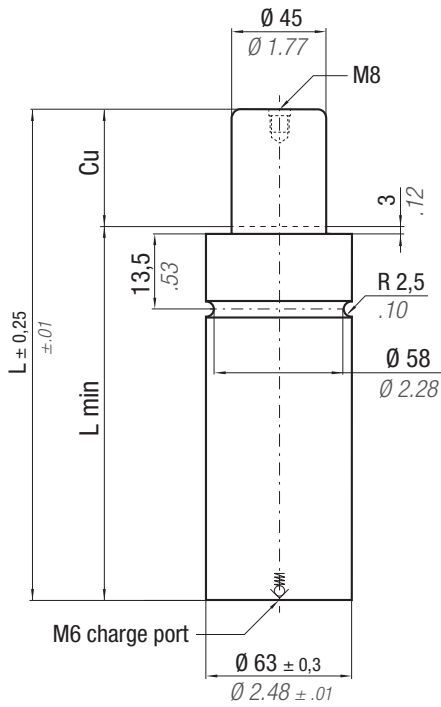


HOW TO ORDER

p. 181

INSTALLATION GUIDELINE

p. 203



* F_{1i} =
Isothermal
end force
at 100% Cu

** F_{1p} =
Polytrophic
end force
at 100% Cu

p. 18

ACTIVE SAFETY



OSAS



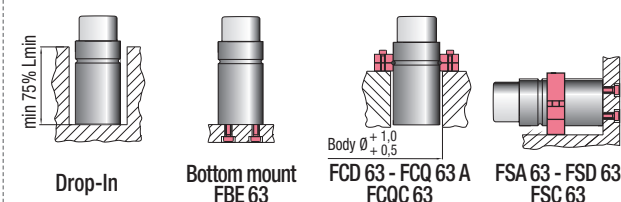
USAS



OPAS

| CODE | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|-------------------|----|------|-----|-------|-------|------|-----------------------------------------------------------|------|-------------------|-------|--------------------|-------|-----------------|-----------------|-----------------|------|---|
| | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | |
| MP 3000 - 010 - A | 10 | 0.39 | 95 | 3.74 | 85 | 3.35 | 3000 ± 5% 189 bar 2741 psi + 20 °C +68 °F | 6744 | 3862 | 8682 | 4243 | 9539 | 89,7 | 5.47 | 1,25 | 2.76 | ✓ |
| MP 3000 - 015 - A | 15 | 0.59 | 115 | 4.53 | 100 | 3.94 | | | 3932 | 8839 | 4339 | 9754 | 126,4 | 7.71 | 1,40 | 3.09 | ✓ |
| MP 3000 - 020 - A | 20 | 0.79 | 125 | 4.92 | 105 | 4.13 | | | 4165 | 9363 | 4657 | 10469 | 141,8 | 8.65 | 1,46 | 3.22 | ✓ |
| MP 3000 - 025 - A | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | | | 4370 | 9824 | 4941 | 11108 | 157,2 | 9.59 | 1,52 | 3.35 | ✓ |
| MP 3000 - 032 - A | 32 | 1.26 | 150 | 5.91 | 118 | 4.65 | | | 4593 | 10325 | 5253 | 11809 | 180,9 | 11.03 | 1,62 | 3.57 | ✓ |
| MP 3000 - 038 - A | 38 | 1.50 | 165 | 6.50 | 127 | 5.00 | | | 4696 | 10557 | 5399 | 12137 | 205,8 | 12.55 | 1,72 | 3.79 | ✓ |
| MP 3000 - 045 - A | 45 | 1.77 | 180 | 7.09 | 135 | 5.31 | | | 4856 | 10917 | 5626 | 12648 | 229,6 | 14.01 | 1,82 | 4.01 | ✓ |
| MP 3000 - 050 - A | 50 | 1.97 | 190 | 7.48 | 140 | 5.51 | | | 4975 | 11184 | 5795 | 13028 | 245,0 | 14.95 | 1,89 | 4.17 | ✓ |
| MP 3000 - 063 - A | 63 | 2.48 | 220 | 8.66 | 157 | 6.18 | | | 5137 | 11548 | 6029 | 13554 | 293,6 | 17.91 | 2,08 | 4.59 | ✓ |
| MP 3000 - 080 - A | 80 | 3.15 | 255 | 10.04 | 175 | 6.89 | | | 5389 | 12115 | 6395 | 14377 | 348,2 | 21.24 | 2,31 | 5.09 | ✓ |

MP

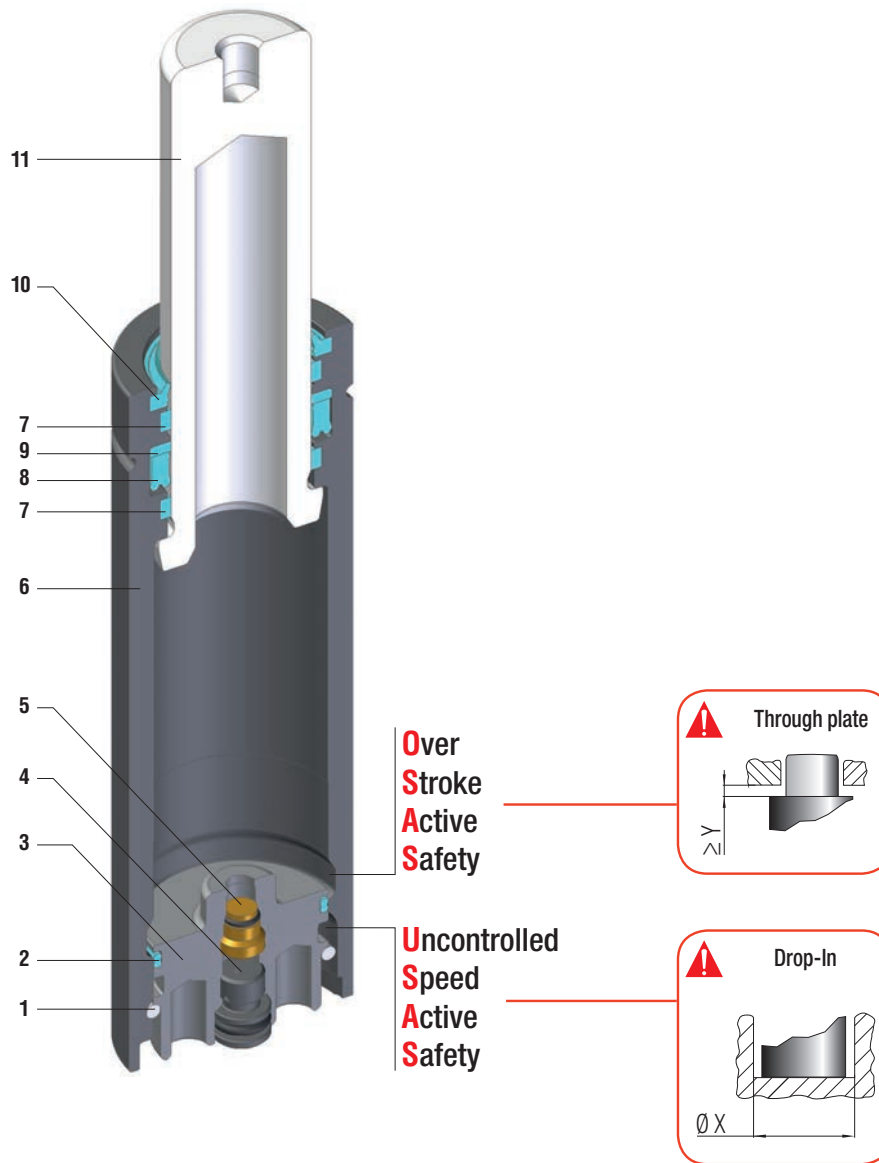


HOW TO ORDER

p. 181

INSTALLATION GUIDELINE

p. 203



$\varnothing 32$ | Massima forza, tenuta stelo - Maximum force, rod seal - Maximale Kraft, Kolbenstange dichtung
 Forces maximale, joint de tige - Máxima fuerza, estanqueidad vástago - Força máxima, estanquidade na haste

| | |
|----------------|---------------------------|
| SEALING | ROD SEAL |
| DESIGN | BOTTOM BASE - BODY DESIGN |

| | | | | | |
|----------|----------------|----------|------------|-----------|------------------------------|
| 1 | Retaining ring | 5 | Valve | 9 | Back-up ring |
| 2 | Dual ring seal | 6 | Body | 10 | Rod wiper |
| 3 | Bottom base | 7 | Guide ring | 11 | Rod (nitrited superfinished) |
| 4 | Plug | 8 | Rod seal | | |

RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | OSAS | USAS | OPAS | SKUDO | SW |
|--------|--------|------|-----------|-------------|------------------|------|------|------|------|-------|----|
| | mm | inch | mm | inch | daN | lb | | | | | |
| MQ 700 | 32 | 1.26 | 10 - 80 | 0.39 - 3.15 | 660 | 1484 | ✓ | ✓ | - | - | - |

✓ Built-in as standard ✓ Optional upon request

HOW TO ORDER



Available version



MQ 700-050-A
Standard code



Self contained

MQ

ACTIVE SAFETY



OSAS



USAS

* $F_{1i} =$

Isothermal end force at 100% Cu

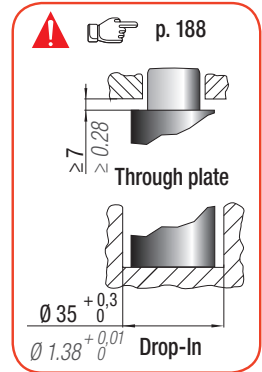
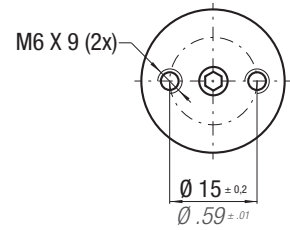
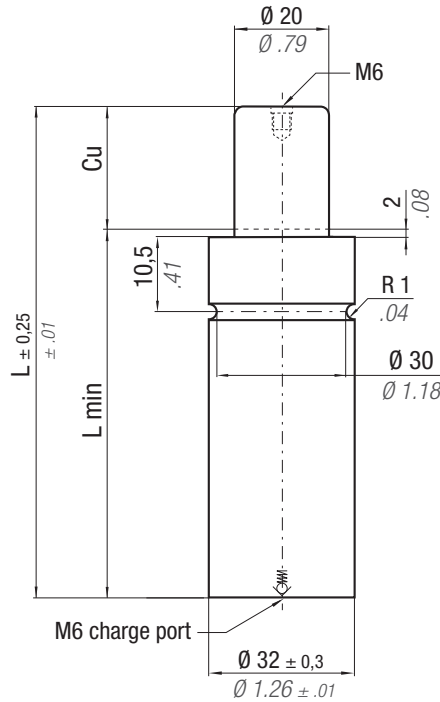


p. 18

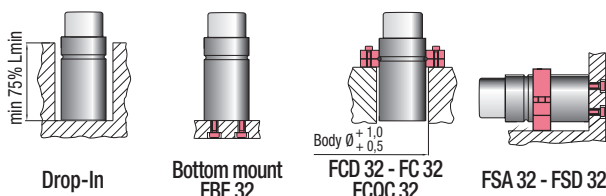


** $F_{1p} =$

Polytropic end force at 100% Cu



| CODE | N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 210 bar 3045 psi | P min 20 bar 290 psi | S 3,14 cm ² 0,487 in ² | SPM ~ 40 - 80 (at 20°C) | Max Speed 1,6 m/s | Maintenance kit Disposable | Vo | | PED | | |
|------------------|----------------|----------------------|--------------------|-------------------|------------------------------|----------------------------|----------------------------------------------------|-------------------------------|----------------------|-------------------------------|-----------------|-----------------|------|------|------------|
| | | | | | | | | | | | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| MQ 700 - 010 - A | | | | | | | | | | | 12,0 | 0,73 | 0,29 | 0,64 | ✓ |
| MQ 700 - 015 - A | | | | | | | | | | | 15,0 | 0,92 | 0,31 | 0,68 | ✓ |
| MQ 700 - 020 - A | | | | | | | | | | | 18,0 | 1,10 | 0,33 | 0,73 | ✓ |
| MQ 700 - 025 - A | | | | | | | | | | | 21,0 | 1,28 | 0,35 | 0,77 | ✓ |
| MQ 700 - 032 - A | | | | | | | | | | | 26,0 | 1,59 | 0,38 | 0,84 | ✓ |
| MQ 700 - 038 - A | | | | | | | | | | | 32,0 | 1,95 | 0,41 | 0,90 | ✓ |
| MQ 700 - 045 - A | | | | | | | | | | | 36,0 | 2,20 | 0,44 | 0,97 | ✓ |
| MQ 700 - 050 - A | | | | | | | | | | | 39,0 | 2,38 | 0,46 | 1,01 | ✓ |
| MQ 700 - 056 - A | | | | | | | | | | | 45,0 | 2,75 | 0,49 | 1,08 | ✓ |
| MQ 700 - 063 - A | | | | | | | | | | | 52,0 | 3,17 | 0,53 | 1,17 | ✓ |
| MQ 700 - 080 - A | | | | | | | | | | | 63,0 | 3,84 | 0,60 | 1,32 | ✓ |



HOW TO ORDER

p. 189

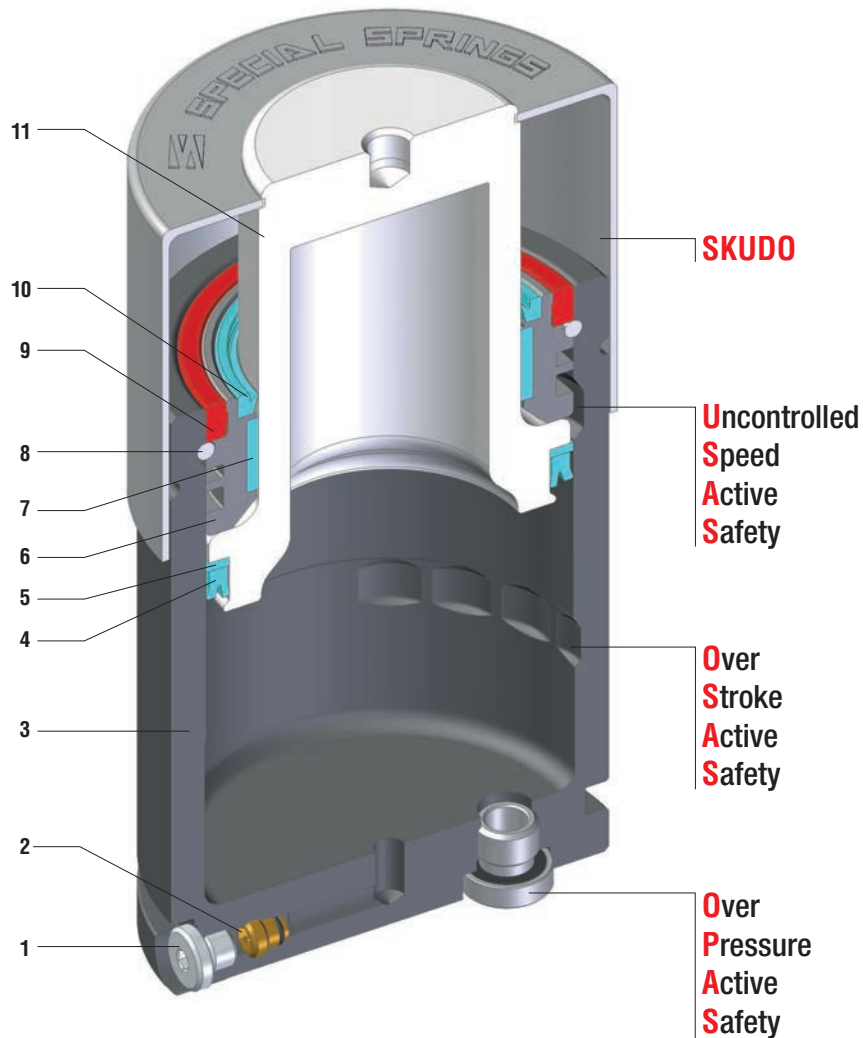
INSTALLATION GUIDELINE

p. 203



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Massima forza, tenuta pistone + SKUDO - Maximum force, piston seal + SKUDO - Maximale Kraft, Kolbendichtung + SKUDO - Force maximale, piston étanche + SKUDO - Máxima fuerza, estanqueidad pistón + SKUDO - Força máxima, estanquidade no pistão + SKUDO

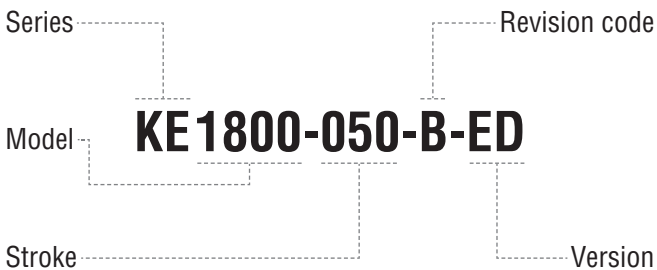
| | |
|----------------|----------------------|
| SEALING | PISTON SEAL |
| DESIGN | PISTON - BODY DESIGN |

| | | | | | |
|----------|-------------|----------|----------------|-----------|------------------------------|
| 1 | Plug | 5 | Back-up ring | 9 | Outer seal |
| 2 | Valve | 6 | Bush | 10 | Rod wiper |
| 3 | Body | 7 | Guide ring | 11 | Rod (nitrited superfinished) |
| 4 | Piston seal | 8 | Retaining ring | | |

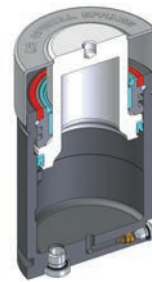
RANGE CHART

| Model | Body Ø | | Stroke Cu | | Initial force F0 | | | | | |
|----------|--------|------|-----------|-------------|------------------|-------|---|---|---|---|
| | mm | inch | mm | inch | daN | lb | | | | |
| KE 400 | 25 | 0.98 | 6 - 50 | 0.39 - 1.97 | 425 | 955 | - | - | - | ✓ |
| KE 750 | 32 | 1.26 | 6 - 50 | 0.39 - 1.97 | 740 | 1664 | ✓ | ✓ | ✓ | ✓ |
| KE 1000 | 38 | 1.50 | 6 - 50 | 0.24 - 1.97 | 1060 | 2383 | ✓ | ✓ | ✓ | ✓ |
| KE 1800 | 50 | 1.97 | 6 - 65 | 0.24 - 1.97 | 1885 | 4238 | ✓ | ✓ | ✓ | ✓ |
| KE 3000 | 63 | 2.48 | 10 - 65 | 0.39 - 1.97 | 2945 | 6620 | ✓ | ✓ | ✓ | ✓ |
| KE 4700 | 75 | 2.95 | 10 - 65 | 0.39 - 1.97 | 4675 | 10510 | ✓ | ✓ | ✓ | ✓ |
| KE 7500 | 95 | 3.74 | 10 - 65 | 0.39 - 1.97 | 7540 | 16950 | ✓ | ✓ | ✓ | ✓ |
| KE 12000 | 120 | 4.72 | 10 - 65 | 0.39 - 1.97 | 11780 | 26481 | ✓ | ✓ | ✓ | ✓ |
| KE 18500 | 150 | 5.91 | 10 - 65 | 0.39 - 1.97 | 18410 | 41386 | ✓ | ✓ | ✓ | ✓ |

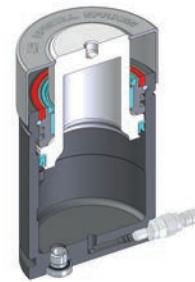
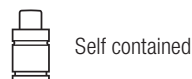
HOW TO ORDER



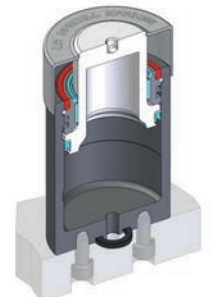
Available versions



KE 1800-050-B
Standard code



KE 1800-050-B-N
Add "-N" to standard code



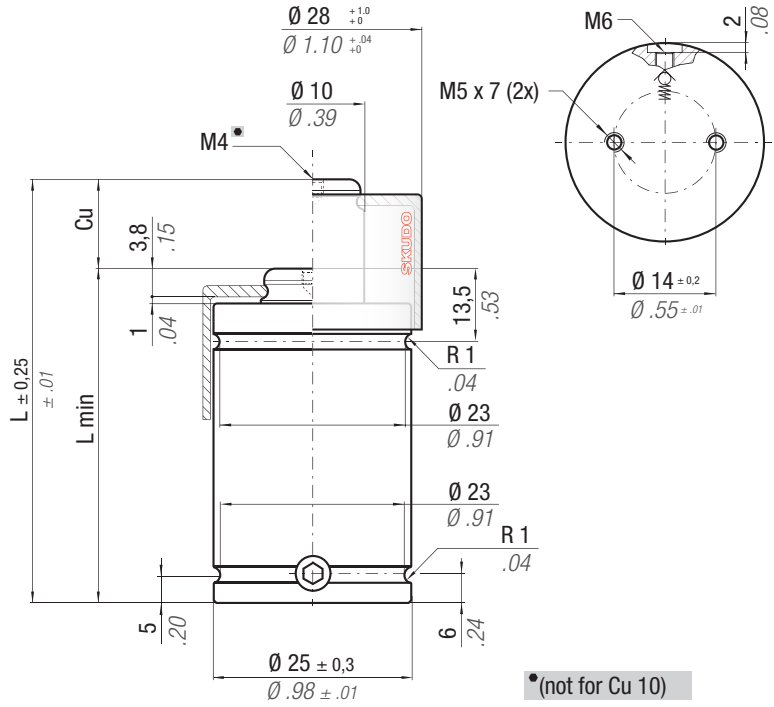
KE 1800-050-B-ED
Add "-ED" to standard code



ACTIVE SAFETY



* $F_{1i} =$ Isothermal end force at 100% Cu p. 18 **** $F_{1p} =$ Polytrophic end force at 100% Cu**



| CODE | Cu | L | L min | F ₀ Initial force | F _{1i} * | | F _{1p} ** | | V ₀ | | Maintenance kit | | |
|------------------|----|-----|-------|------------------------------------------------------------|-------------------|------|--------------------|------|----------------|------|-----------------|-----------------|-----|
| | | | | | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg |
| KE 400 - 006 - A | 6 | 56 | 50 | 425 955 ± 5% 150 bar 2175psi + 20 °C +68 °F | 789 | 1774 | 1011 | 2273 | 4,0 | 0,24 | 0,13 | 0,29 | ✓ |
| KE 400 - 010 - A | 10 | 70 | 60 | | 871 | 1958 | 1153 | 2592 | 6,0 | 0,37 | 0,16 | 0,35 | ✓ |
| KE 400 - 016 - A | 16 | 91 | 75 | | 881 | 1981 | 1171 | 2633 | 10,0 | 0,61 | 0,18 | 0,40 | ✓ |
| KE 400 - 025 - A | 25 | 120 | 95 | | 876 | 1969 | 1162 | 2612 | 16,0 | 0,98 | 0,23 | 0,51 | ✓ |
| KE 400 - 032 - A | 32 | 140 | 108 | | 907 | 2040 | 1217 | 2736 | 19,0 | 1,16 | 0,24 | 0,53 | ✓ |
| KE 400 - 040 - A | 40 | 165 | 125 | | 907 | 2039 | 1217 | 2736 | 24,0 | 1,46 | 0,28 | 0,62 | ✓ |
| KE 400 - 050 - A | 50 | 195 | 145 | | 919 | 2065 | 1238 | 2783 | 30,0 | 1,83 | 0,31 | 0,68 | ✓ |

WARNING REMOVE SKUDO

Upside down mounting

FC / FCC fixings

Drop-in

Bottom mount

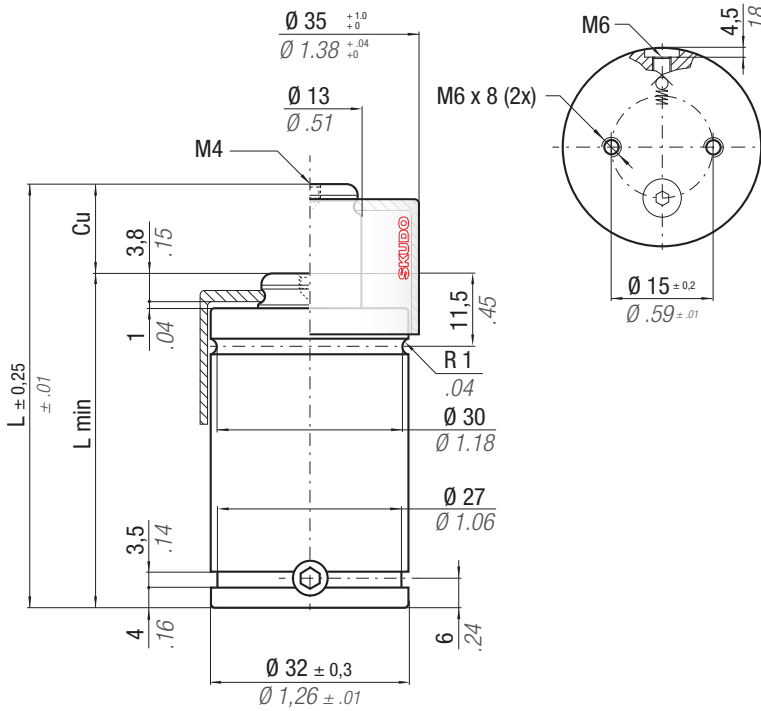
FC 25 B
FCC 25 A

HOW TO ORDER

p. 193

INSTALLATION GUIDELINE

p. 203



Il nuovo codice sarà fornito solo ad esaurimento del vecchio

The new code will be supplied only when the old will be out of stock

Der neue Kode wird geliefert nur wenn der alte nicht mehr im Lager ist

Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

El nuevo código será suministrado sólo cuando el viejo está fuera de stock

O novo código irá ser fornecido apenas quando o antigo esgotar stock

ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

easu MANIFOLD p. 241

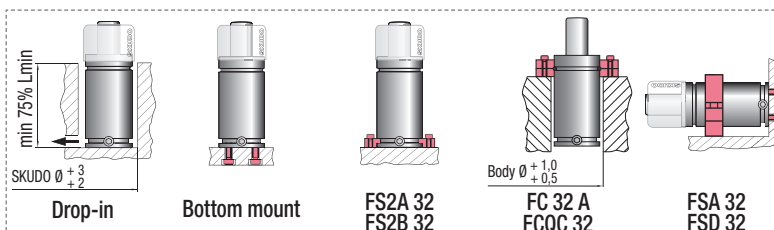
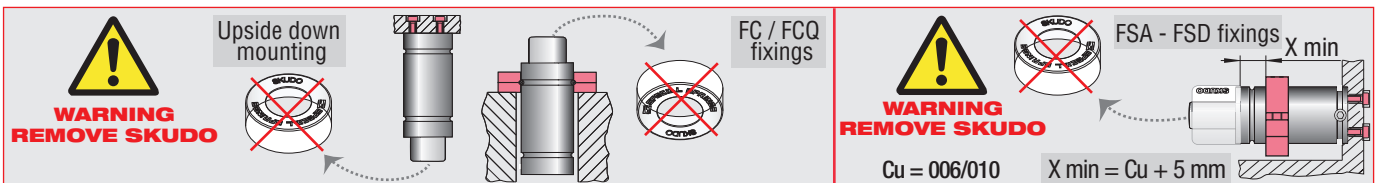
* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu p. 18

| | | °F 32 176 | °C 0 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 4,91 cm ² 0.761 in ² | SPM ~ 50 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE00750B |
|-----------------------------|------------------|-----------------|---------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F0 | F _{1i} * | F _{1p} ** | V0 | | |
| PHASING OUT from 08/2012 | | mm inch | mm inch | mm inch | Initial force daN lb | End force * daN lb | End force ** daN lb | cm ³ in ³ | ~Kg ~lb | 2014/68/EU |
| KE 750 - 006 - A | KE 750 - 006 - B | 6 0.24 | 63 2.48 | 57 2.24 | 740 1664 | 1207 2714 | 1486 3341 | 9,0 0.55 | 0,23 0.51 | ✓ |
| KE 750 - 010 - A | KE 750 - 010 - B | 10 0.39 | 75 2.95 | 65 2.56 | ± 5% | 1310 2945 | 1656 3723 | 13,0 0.79 | 0,25 0.55 | ✓ |
| KE 750 - 016 - A | KE 750 - 016 - B | 16 0.63 | 93 3.66 | 77 3.03 | | 1390 3125 | 1792 4029 | 19,0 1.16 | 0,29 0.64 | ✓ |
| KE 750 - 025 - A | KE 750 - 025 - B | 25 0.98 | 120 4.72 | 95 3.74 | 150 bar 2175psi | 1450 3259 | 1895 4260 | 28,0 1.71 | 0,33 0.73 | ✓ |
| KE 750 - 032 - A | KE 750 - 032 - B | 32 1.26 | 140 5.51 | 108 4.25 | | 1496 3363 | 1975 4440 | 35,0 2.14 | 0,37 0.82 | ✓ |
| KE 750 - 040 - A | KE 750 - 040 - B | 40 1.57 | 165 6.50 | 125 4.92 | | 1496 3363 | 1975 4440 | 44,0 2.68 | 0,42 0.92 | ✓ |
| KE 750 - 050 - A | KE 750 - 050 - B | 50 1.97 | 195 7.68 | 145 5.71 | + 20 °C +68 °F | 1513 3400 | 2004 4505 | 54,0 3.29 | 0,47 1.04 | ✓ |



HOW TO ORDER

p. 193

INSTALLATION GUIDELINE

p. 203

Il nuovo codice sarà fornito solo ad esaurimento del vecchio

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Le nouveau code sera fourni uniquement lorsque le vieux stock sera écoulé

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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

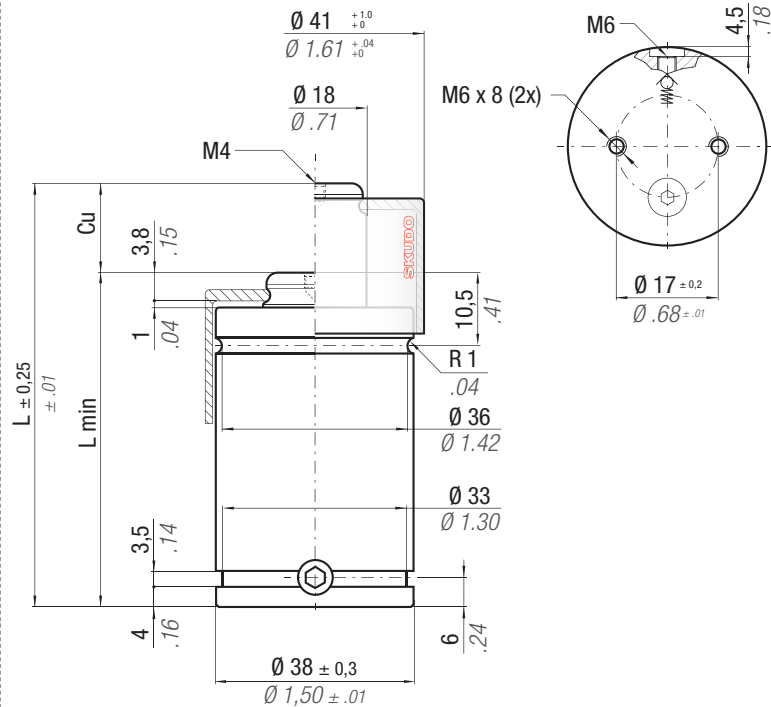
easu MANIFOLD p. 241

* F_{1i} =

Isothermal end force at 100% Cu p. 18

** F_{1p} =

Polytropic end force at 100% Cu



| | | | | | | | | | |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|
| N ₂ | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 7,07 cm ² 1.096 in ² | SPM ~ 50 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE01000B |
|----------------|----------------------|--------------------|---------------------------|------------------------------|----------------------------|----------------------------------------------------|--------------------------------|----------------------|---------------------------------|

| CODE PHASING OUT from 08/2012 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | PED 2014/68/EU | | |
|-------------------------------------|---------------------|----|------|-----|------|-------|------|---------------------------------|------|----------------------------------|------|------------------------------------|------|-----------------|-----------------|-------------------|------|-----|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | ~Kg | ~lb |
| KE 1000 - 006 - A | ◆ KE 1000 - 006 - B | 6 | 0.24 | 61 | 2.40 | 55 | 2.17 | 1060 | 2383 | 1902 | 4277 | 2412 | 5422 | 11,0 | 0.67 | 0,33 | 0.72 | ✓ |
| KE 1000 - 010 - A | KE 1000 - 010 - B | 10 | 0.39 | 78 | 3.07 | 68 | 2.68 | ± 5% | | 1834 | 4123 | 2297 | 5164 | 19,0 | 1.16 | 0,38 | 0.84 | ✓ |
| KE 1000 - 016 - A | KE 1000 - 016 - B | 16 | 0.63 | 100 | 3.94 | 84 | 3.31 | 150 bar | | 1814 | 4078 | 2264 | 5090 | 31,0 | 1.89 | 0,44 | 0.97 | ✓ |
| KE 1000 - 025 - A | KE 1000 - 025 - B | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | 2175psi | | 1769 | 3977 | 2190 | 4923 | 51,0 | 3.11 | 0,53 | 1.17 | ✓ |
| KE 1000 - 032 - A | KE 1000 - 032 - B | 32 | 1.26 | 167 | 6.57 | 135 | 5.31 | + 20 °C +68 °F | | 1701 | 3824 | 2079 | 4674 | 69,0 | 4.21 | 0,63 | 1.39 | ✓ |
| KE 1000 - 040 - A | KE 1000 - 040 - B | 40 | 1.57 | 195 | 7.68 | 155 | 6.10 | | | 1727 | 3883 | 2121 | 4768 | 84,0 | 5.12 | 0,70 | 1.54 | ✓ |
| KE 1000 - 050 - A | KE 1000 - 050 - B | 50 | 1.97 | 230 | 9.06 | 180 | 7.09 | | | 1750 | 3934 | 2159 | 4854 | 103,0 | 6.28 | 0,79 | 1.74 | ✓ |

◆ Disposable

WARNING REMOVE SKUDO

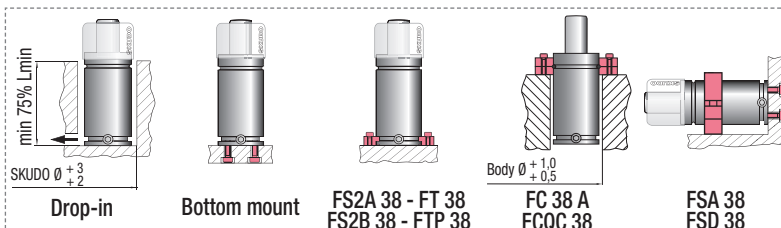
Upside down mounting

FC / FCQ fixings

WARNING REMOVE SKUDO

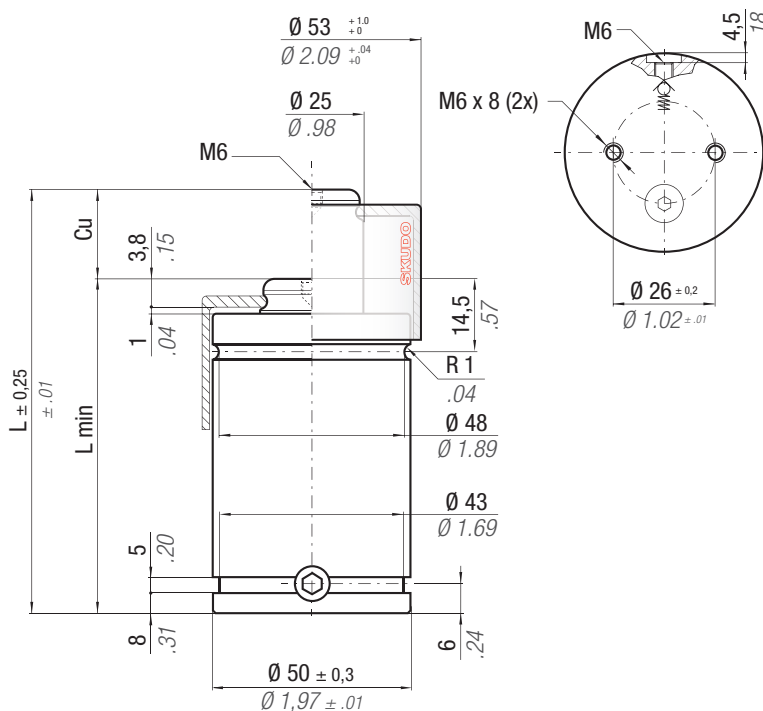
FSA - FSD fixings X min

Cu = 006 / 010 X min = Cu + 5 mm



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INSTALLATION GUIDELINE p. 203



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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

easu MANIFOLD p. 241

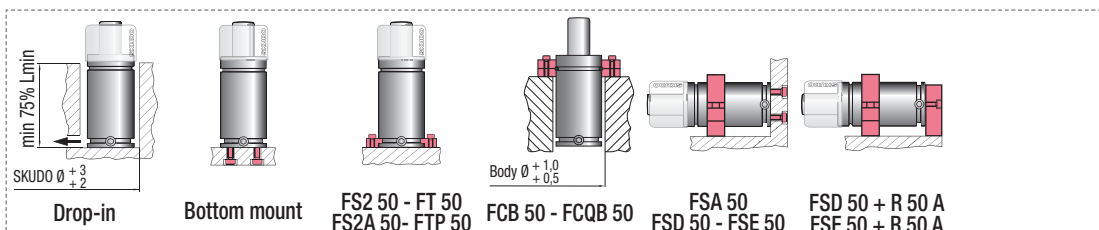
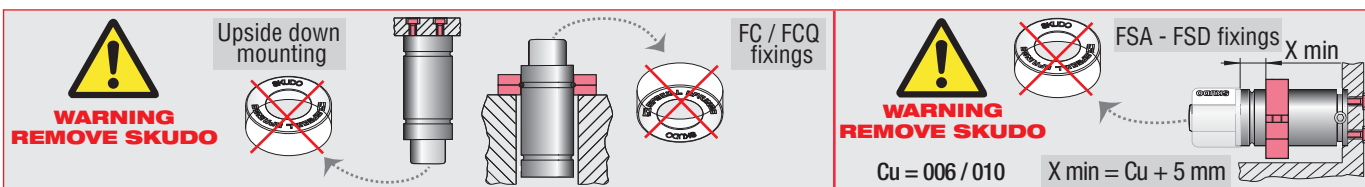
* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu

| N₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 12,57 cm ² 1.948 in ² | SPM ~ 50 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE01800B |
|-----------------------------|-------------------|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| CODE | NEW | Cu | L | L min | F₀ | F_{1i} * | F_{1p} ** | V₀ | | PED 2014/68/EU |
| PHASING OUT from 08/2012 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | ✓ |
| KE 1800 - 006 - A | KE 1800 - 006 - B | 6 0.24 | 66 2.60 | 60 2.36 | 1885 4238 ± 5% | 3046 6847 | 3731 8388 | 23,0 1.40 | 0,63 1.39 | ✓ |
| KE 1800 - 010 - A | KE 1800 - 010 - B | 10 0.39 | 80 3.15 | 70 2.76 | | 3125 7026 | 3860 8678 | 36,0 2.20 | 0,69 1.52 | ✓ |
| KE 1800 - 016 - A | KE 1800 - 016 - B | 16 0.63 | 106 4.17 | 90 3.54 | 150 bar 2175psi | 2979 6698 | 3623 8145 | 63,0 3.84 | 0,81 1.79 | ✓ |
| KE 1800 - 025 - A | KE 1800 - 025 - B | 25 0.98 | 135 5.31 | 110 4.33 | | 3133 7044 | 3874 8709 | 90,0 5.49 | 0,94 2.07 | ✓ |
| KE 1800 - 032 - A | KE 1800 - 032 - B | 32 1.26 | 162 6.38 | 130 5.12 | + 20 °C +68 °F | 3106 6983 | 3830 8610 | 117,0 7.14 | 1,06 2.34 | ✓ |
| KE 1800 - 040 - A | KE 1800 - 040 - B | 40 1.57 | 190 7.48 | 150 5.91 | | 3135 7049 | 3877 8716 | 145,0 8.85 | 1,19 2.62 | ✓ |
| KE 1800 - 050 - A | KE 1800 - 050 - B | 50 1.97 | 220 8.66 | 170 6.69 | 3236 7275 | 4043 9089 | 172,0 10.49 | 1,31 2.89 | ✓ | |
| - | KE 1800 - 065 - B | 65 2.56 | 271 10.67 | 206 8.11 | 3262 7333 | 4086 9186 | 221,0 13.48 | 1,53 3.37 | ✓ | |



HOW TO ORDER

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INSTALLATION GUIDELINE

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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

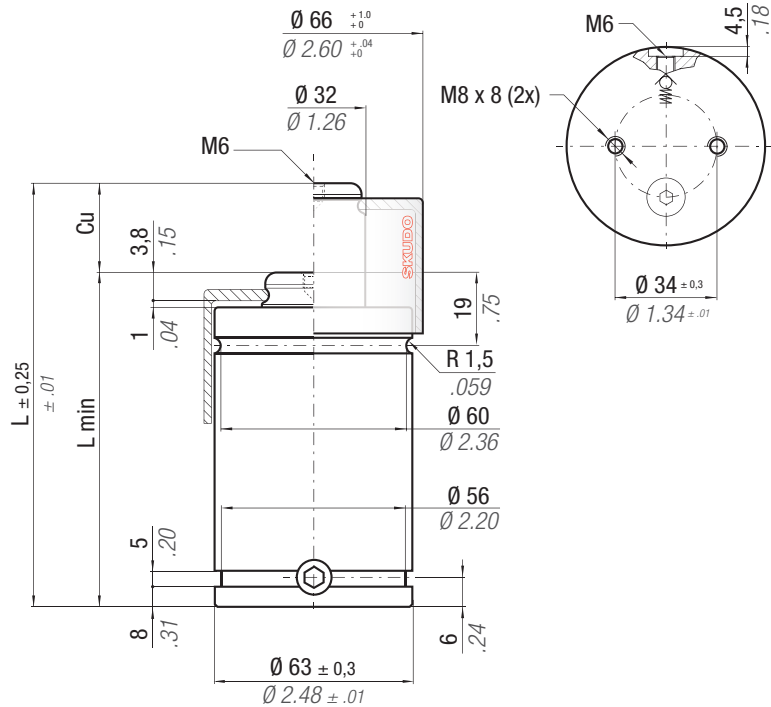
easu MANIFOLD p. 241

* F_{1i} =

Isothermal end force at 100% Cu p. 18

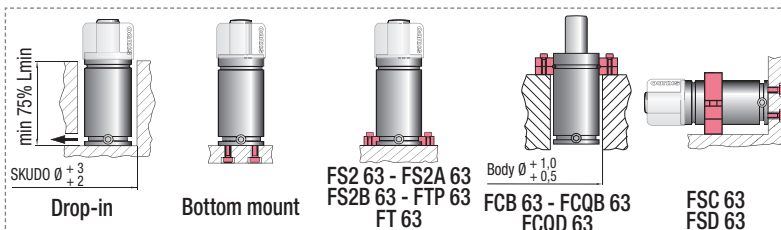
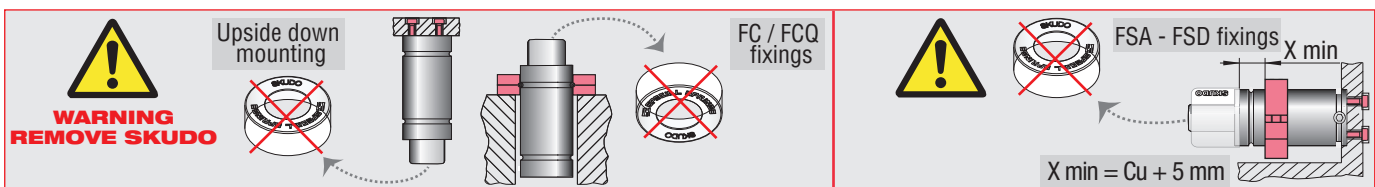
** F_{1p} =

Polytropic end force at 100% Cu



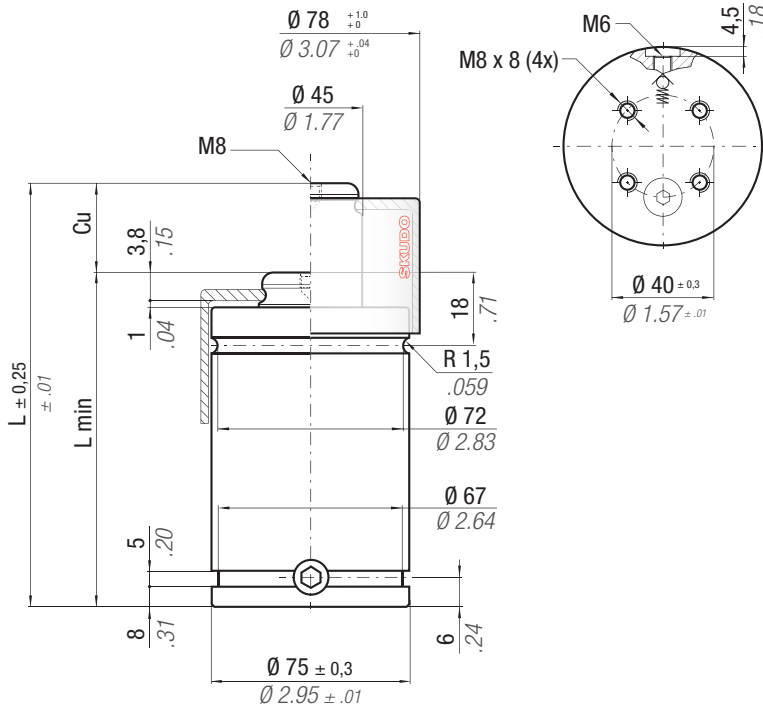
| | | | | | | | | | |
|----------------|-------------------------------|-----------------------------|---------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|
| N ₂ | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33 \%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 19,63 cm ² 3.043 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE03000B |
|----------------|-------------------------------|-----------------------------|---------------------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|

| CODE PHASING OUT from 08/2012 | NEW | Cu | | L | | L min | | F ₀ | | F _{1i} * | | F _{1p} ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU |
|-------------------------------------|-------------------|----|------|-----|-------|-------|------|---------------------------------------------------------------------------------|-------|-------------------|-------|--------------------|-------|-----------------|-----------------|------|-----|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| KE 3000 - 010 - A | KE 3000 - 010 - B | 10 | 0.39 | 85 | 3.35 | 75 | 2.95 | 2945 6620 $\pm 5\%$ 150 bar 2175psi $+ 20^{\circ}C +68^{\circ}F$ | 5084 | 11429 | 6363 | 14305 | 53,0 | 3.23 | 1,23 | 2.71 | ✓ | |
| KE 3000 - 016 - A | KE 3000 - 016 - B | 16 | 0.63 | 103 | 4.06 | 87 | 3.43 | | 5362 | 12053 | 6829 | 15352 | 79,0 | 4.82 | 1,36 | 3.00 | ✓ | |
| KE 3000 - 025 - A | KE 3000 - 025 - B | 25 | 0.98 | 130 | 5.12 | 105 | 4.13 | | 5566 | 12512 | 7176 | 16132 | 119,0 | 7.26 | 1,55 | 3.42 | ✓ | |
| KE 3000 - 032 - A | KE 3000 - 032 - B | 32 | 1.26 | 150 | 5.91 | 118 | 4.65 | | 5721 | 12861 | 7443 | 16733 | 147,0 | 8.97 | 1,69 | 3.73 | ✓ | |
| KE 3000 - 040 - A | KE 3000 - 040 - B | 40 | 1.57 | 175 | 6.89 | 135 | 5.31 | | 5722 | 12863 | 7445 | 16737 | 184,0 | 11.22 | 1,86 | 4.10 | ✓ | |
| KE 3000 - 050 - A | KE 3000 - 050 - B | 50 | 1.97 | 205 | 8.07 | 155 | 6.10 | 5778 | 12989 | 7542 | 16955 | 227,0 | 13.85 | 2,07 | 4.56 | ✓ | | |
| - | KE 3000 - 065 - B | 65 | 2.56 | 256 | 10.08 | 191 | 7.52 | 5630 | 12657 | 7287 | 16382 | 304,0 | 18.54 | 2,44 | 5.38 | ✓ | | |



HOW TO ORDER
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INSTALLATION GUIDELINE
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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

easu MANIFOLD p. 241

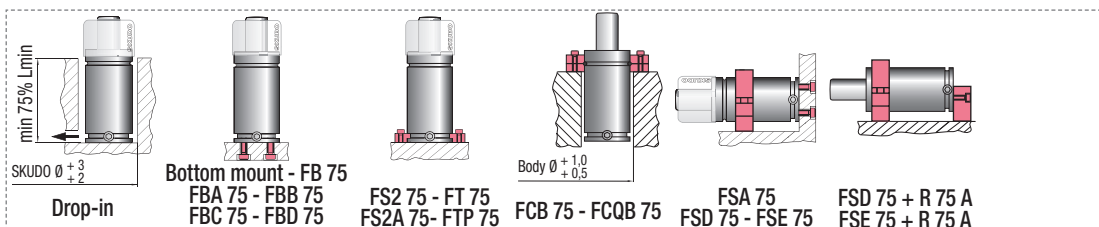
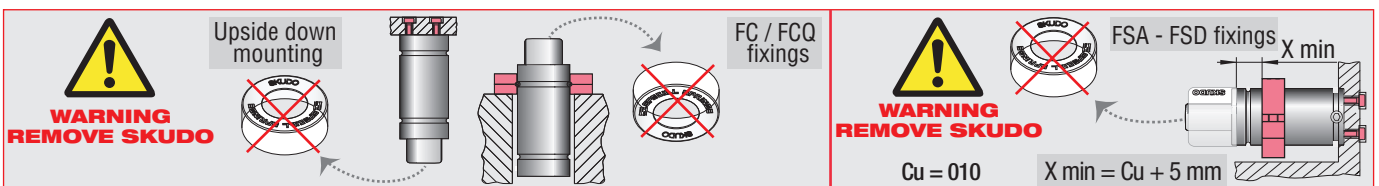
* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytrophic end force at 100% Cu

| N₂ | | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 31,17 cm ² 4.831 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE04700B | | | | | | | | |
|-----------------------------|-------------------|-----------------------------|---------------------------|--------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------|-------|--------------------------|-------|----------------------|-----------------|------------|------|------------|
| CODE | NEW | Cu | | L | | L min | | F₀ | | F_{1i} * | | F_{1p} ** | | V₀ | | PED | | |
| PHASING OUT from 08/2012 | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU |
| KE 4700 - 010 - A | KE 4700 - 010 - B | 10 | 0.39 | 80 | 3.15 | 70 | 2.76 | 4675 | 10510 | 8017 | 18023 | 10013 | 22510 | 86,0 | 5.25 | 1,62 | 3.57 | ✓ |
| KE 4700 - 016 - A | KE 4700 - 016 - B | 16 | 0.63 | 106 | 4.17 | 90 | 3.54 | | | 7467 | 16788 | 9112 | 20485 | 153,0 | 9.33 | 1,85 | 4.08 | ✓ |
| KE 4700 - 025 - A | KE 4700 - 025 - B | 25 | 0.98 | 135 | 5.31 | 110 | 4.33 | 150 bar 2175psi | | 7780 | 17491 | 9622 | 21631 | 224,0 | 13.66 | 2,10 | 4.63 | ✓ |
| KE 4700 - 032 - A | KE 4700 - 032 - B | 32 | 1.26 | 167 | 6.57 | 135 | 5.31 | | | 7447 | 16742 | 9079 | 20410 | 308,0 | 18.79 | 2,39 | 5.27 | ✓ |
| KE 4700 - 040 - A | KE 4700 - 040 - B | 40 | 1.57 | 200 | 7.87 | 160 | 6.30 | + 20 °C +68 °F | | 7360 | 16547 | 8939 | 20096 | 393,0 | 23.97 | 2,68 | 5.91 | ✓ |
| KE 4700 - 050 - A | KE 4700 - 050 - B | 50 | 1.97 | 240 | 9.45 | 190 | 7.48 | | | 7326 | 16469 | 8883 | 19970 | 496,0 | 30.26 | 3,03 | 6.68 | ✓ |
| - | KE 4700 - 065 - B | 65 | 2.56 | 273 | 10.75 | 208 | 8.19 | 7926 | 17818 | 9862 | 22171 | 565,0 | 34.47 | 3,30 | 7.28 | ✓ | | |



HOW TO ORDER

p. 193

INSTALLATION GUIDELINE

p. 203

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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

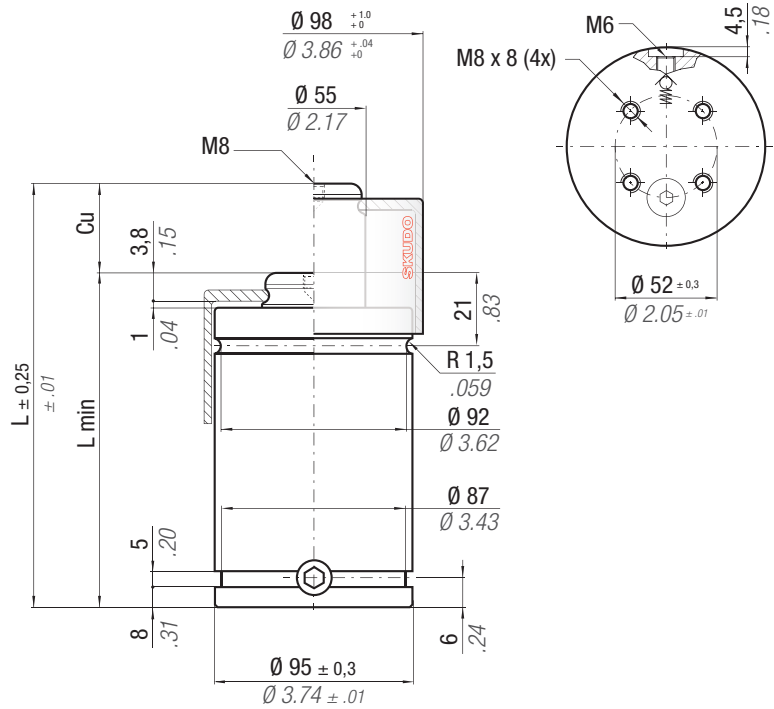
easu MANIFOLD p. 241

* $F_{1i} =$

Isothermal end force at 100% Cu p. 18

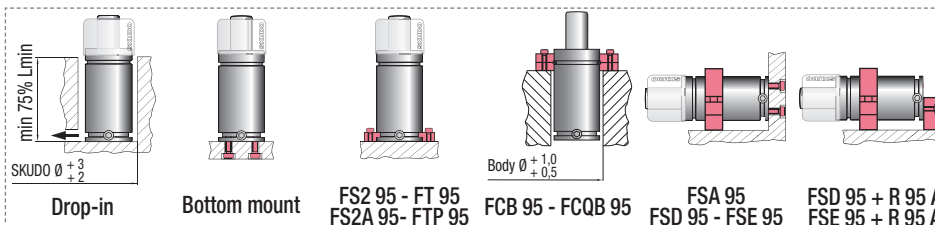
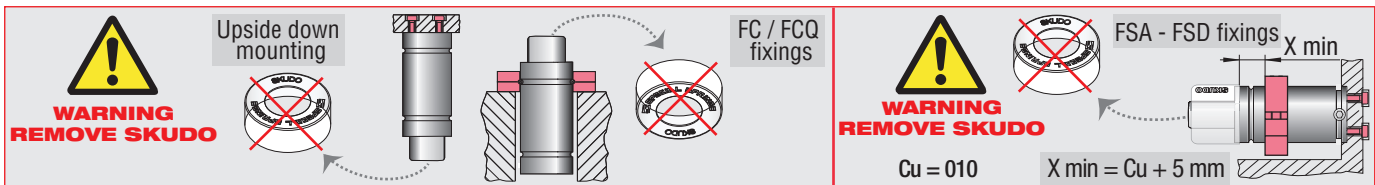
** $F_{1p} =$

Polytrophic end force at 100% Cu



| | | | | | | | | | |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|
| | °F 32 - 176 | °C 0 - 80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 50,27 cm ² 7.791 in ² | SPM ~ 80 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE07500B |
|--|----------------------|--------------------|---------------------------|------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|----------------------|---------------------------------|

| CODE PHASING OUT from 08/2012 | NEW | Cu | | L | | L min | | F ₀ Initial force | | F _{1i} * End force * | | F _{1p} ** End force ** | | V ₀ | | ~Kg | ~lb | PED 2014/68/EU |
|-------------------------------------|-------------------|----|------|-----|-------|-------|------|---------------------------------|-------|----------------------------------|-------|------------------------------------|-------|-----------------|-----------------|------|-------|-------------------|
| | | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | | | |
| KE 7500 - 010 - A | KE 7500 - 010 - B | 10 | 0.39 | 90 | 3.54 | 80 | 3.15 | 7540 | 16950 | 11910 | 26775 | 14481 | 32555 | 158,0 | 9.64 | 2,89 | 6.37 | ✓ |
| KE 7500 - 016 - A | KE 7500 - 016 - B | 16 | 0.63 | 116 | 4.57 | 100 | 3.94 | | | 11563 | 25995 | 13924 | 31302 | 266,0 | 16.23 | 3,26 | 7.19 | ✓ |
| KE 7500 - 025 - A | KE 7500 - 025 - B | 25 | 0.98 | 145 | 5.71 | 120 | 4.72 | 150 bar 2175psi | ± 5% | 12169 | 27357 | 14901 | 33499 | 379,0 | 23.12 | 3,64 | 8.02 | ✓ |
| KE 7500 - 032 - A | KE 7500 - 032 - B | 32 | 1.26 | 182 | 7.17 | 150 | 5.91 | | | 11486 | 25821 | 13800 | 31024 | 540,0 | 32.94 | 4,18 | 9.22 | ✓ |
| KE 7500 - 040 - A | KE 7500 - 040 - B | 40 | 1.57 | 210 | 8.27 | 170 | 6.69 | + 20 °C +68 °F | | 11697 | 26297 | 14138 | 31783 | 652,0 | 39.77 | 4,56 | 10.05 | ✓ |
| KE 7500 - 050 - A | KE 7500 - 050 - B | 50 | 1.97 | 255 | 10.04 | 205 | 8.07 | | | 11502 | 25857 | 13825 | 31080 | 841,0 | 51.30 | 5,19 | 11.44 | ✓ |
| - | KE 7500 - 065 - B | 65 | 2.56 | 279 | 10.98 | 214 | 8.43 | | | 12826 | 28834 | 15978 | 35920 | 907,0 | 55.33 | 5,46 | 12.40 | ✓ |

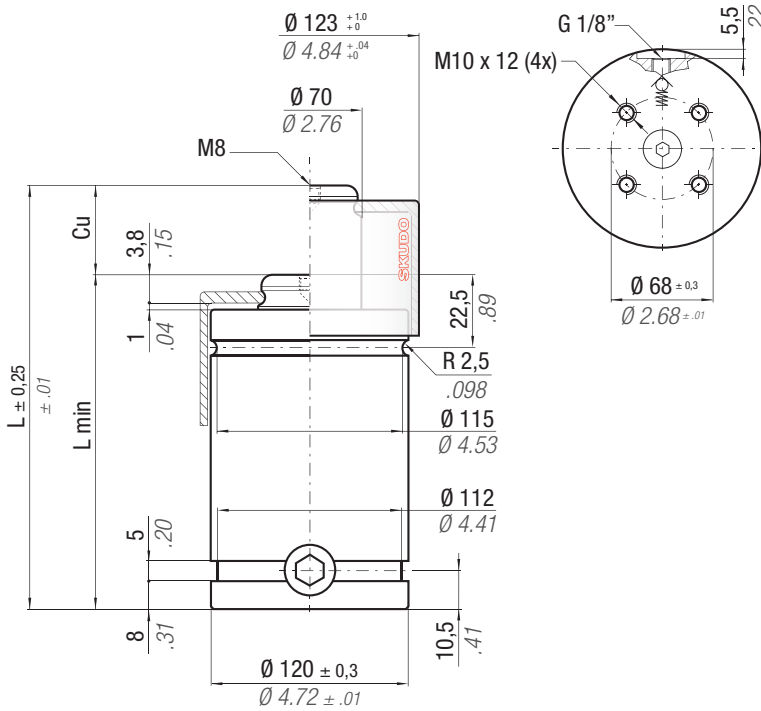


HOW TO ORDER

p. 193

INSTALLATION GUIDELINE

p. 203



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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

easu MANIFOLD p. 241

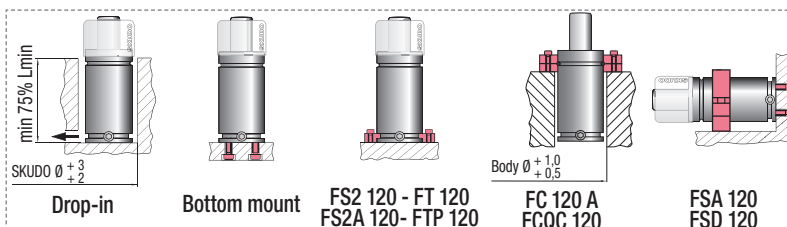
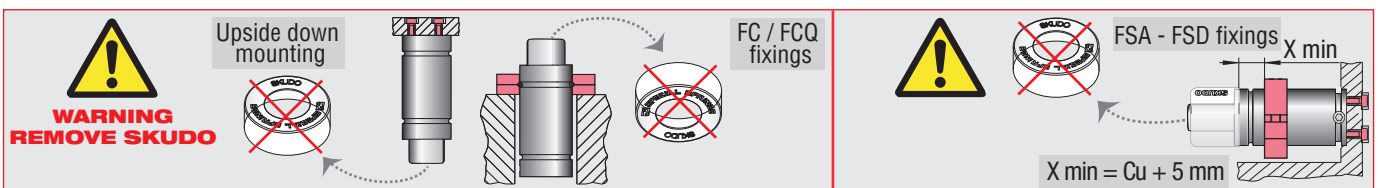
* $F_{1i} =$

Isothermal end force p. 18 at 100% Cu

** $F_{1p} =$

Polytrophic end force at 100% Cu

| | $^{\circ}F$ 32 - 176 | $^{\circ}C$ 0 - 80 | ΔP $\pm 0,33 \%/^{\circ}C$ | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 78,54 cm ² 12.174 in ² | SPM ~ 50 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE12000B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------------------------------|-----------------------------|---------------------------------------|------------------------------|----------------------------|------------------------------------------------------|--------------------------------|-----------------------------|---------------------------------|----------------------|-------|--------|------------|-----------------|-----------------|-------|-----|------------|-------|-------|-------|-------|-------|------|-------|---|-------|-------|-------|-------|-------|-------|------|-------|---|-------|-------|-------|-------|-------|-------|------|-------|---|
| CODE | Cu | L | L min | F₀ | | F_{1i} * | | F_{1p} ** | | V₀ | | | PED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PHASING OUT from 08/2012 | NEW | mm | inch | mm | inch | mm | inch | daN | lb | daN | lb | daN | lb | cm ³ | in ³ | ~Kg | ~lb | 2014/68/EU | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KE 12000 - 010 - A | KE 12000 - 010 - B | 10 | 0.39 | 100 | 3.94 | 90 | 3,54 | 11780 26482 $\pm 5\%$ | 17843 | 40113 | 21398 | 48105 | 267,0 | 16,29 | 5,49 | 12,10 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KE 12000 - 016 - A | KE 12000 - 016 - B | 16 | 0.63 | 126 | 4.96 | 110 | 4,33 | | | | | | | | | | | 17646 | 39670 | 21084 | 47399 | 436,5 | 26,63 | 6,11 | 13,47 | ✓ | | | | | | | | | | | | | | | | | | |
| KE 12000 - 025 - A | KE 12000 - 025 - B | 25 | 0.98 | 155 | 6.10 | 130 | 5,12 | | | | | | | | | | | | | | | | | | | | 18657 | 41943 | 22704 | 51041 | 613,0 | 37,39 | 6,76 | 14,90 | ✓ | | | | | | | | | |
| KE 12000 - 032 - A | KE 12000 - 032 - B | 32 | 1.26 | 187 | 7.36 | 155 | 6,10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18166 | 40838 | 21913 | 49262 | 824,0 | 50,26 | 7,54 | 16,62 | ✓ |
| KE 12000 - 040 - A | KE 12000 - 040 - B | 40 | 1.57 | 220 | 8.66 | 180 | 7,09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| KE 12000 - 050 - A | KE 12000 - 050 - B | 50 | 1.97 | 260 | 10.24 | 210 | 8,27 | 18116 | 40727 | 21834 | 49085 | 1294,0 | 78,93 | 9,25 | 20,9 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | KE 12000 - 065 - B | 65 | 2.56 | 320 | 12.60 | 255 | 10,04 | + 20 °C +68 °F | 18133 | 40765 | 21860 | 49143 | 1679,0 | 102,42 | 10,66 | 23,50 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |



HOW TO ORDER

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INSTALLATION GUIDELINE

p. 203

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ACTIVE SAFETY



OSAS



USAS



OPAS



SKUDO

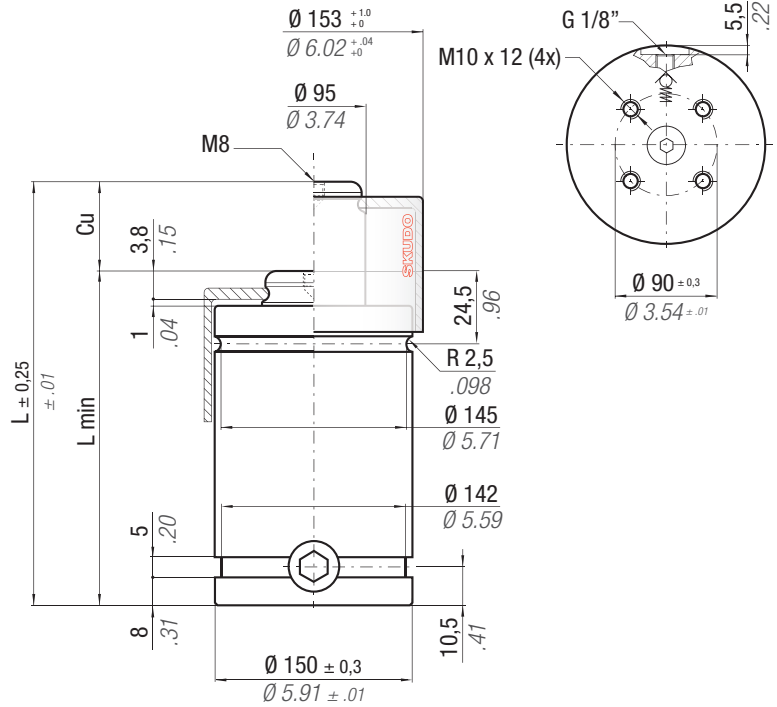
easu MANIFOLD p. 241

* $F_{1i} =$

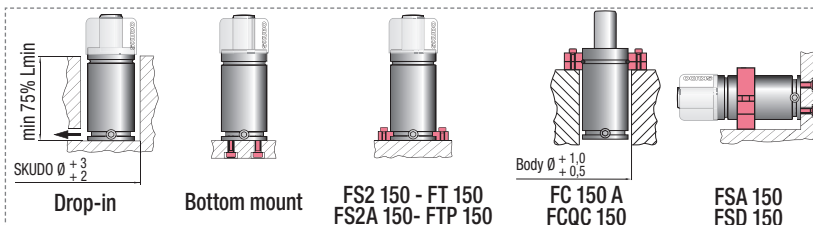
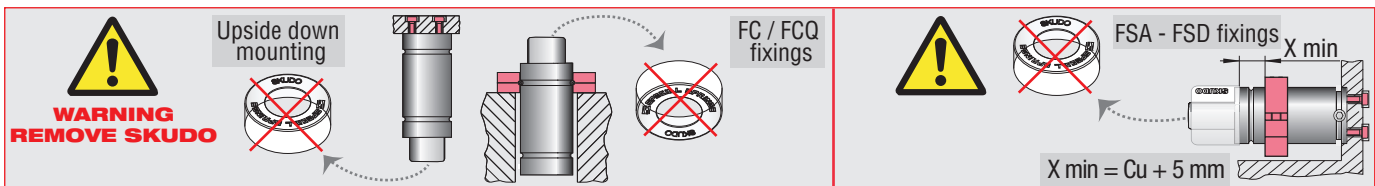
Isothermal end force at 100% Cu p. 18

** $F_{1p} =$

Polytropic end force at 100% Cu



| N ₂ | | °F 32 -176 | °C 0 -80 | ΔP ± 0,33 %/°C | P max 150 bar 2175 psi | P min 20 bar 290 psi | S 122,72 cm ² 19.022 in ² | SPM ~ 50 - 100 (at 20°C) | Max Speed 0,8 m/s | Maintenance kit 39BMKE18500B |
|--------------------------|--------------------|------------------|----------------|---------------------------|------------------------------|----------------------------|-------------------------------------------------------|---------------------------------|----------------------|---------------------------------|
| CODE | NEW | Cu | L | L min | F ₀ | F _{1i} * | F _{1p} ** | V ₀ | 2014/68/EU | |
| PHASING OUT from 08/2012 | | mm inch | mm inch | mm inch | daN lb | daN lb | daN lb | cm ³ in ³ | ~Kg ~lb | |
| KE 18500 - 010 - A | KE 18500 - 010 - B | 10 0.39 | 110 4.33 | 100 3.94 | 18410 41386 ± 5% | 25880 58181 | 30288 68090 | 493,0 30.07 | 9,31 20.53 | ✓ |
| KE 18500 - 016 - A | KE 18500 - 016 - B | 16 0.63 | 136 5.35 | 120 4.72 | | 26201 58903 | 30788 69214 | 765,0 46.67 | 10,28 22.66 | ✓ |
| KE 18500 - 025 - A | KE 18500 - 025 - B | 25 0.98 | 165 6.50 | 140 5.51 | | 27771 62431 | 33260 74771 | 1050,0 64.05 | 11,30 24.91 | ✓ |
| KE 18500 - 032 - A | KE 18500 - 032 - B | 32 1.26 | 197 7.76 | 165 6.50 | 150 bar 2175psi | 27347 61479 | 32588 73261 | 1388,0 84.67 | 12,51 27.58 | ✓ |
| KE 18500 - 040 - A | KE 18500 - 040 - B | 40 1.57 | 235 9.25 | 195 7.68 | + 20 °C +68 °F | 26947 60580 | 31957 71842 | 1791,0 109.25 | 13,93 30.71 | ✓ |
| KE 18500 - 050 - A | KE 18500 - 050 - B | 50 1.97 | 270 10.63 | 220 8.66 | | 27505 61833 | 32838 73823 | 2142,0 130.66 | 15,19 33.49 | ✓ |
| - | KE 18500 - 065 - B | 65 2.56 | 323 12.72 | 258 10.16 | | 28055 63070 | 33713 75790 | 2674,0 163.11 | 17,10 37.70 | ✓ |

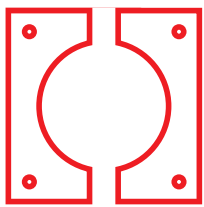


HOW TO ORDER

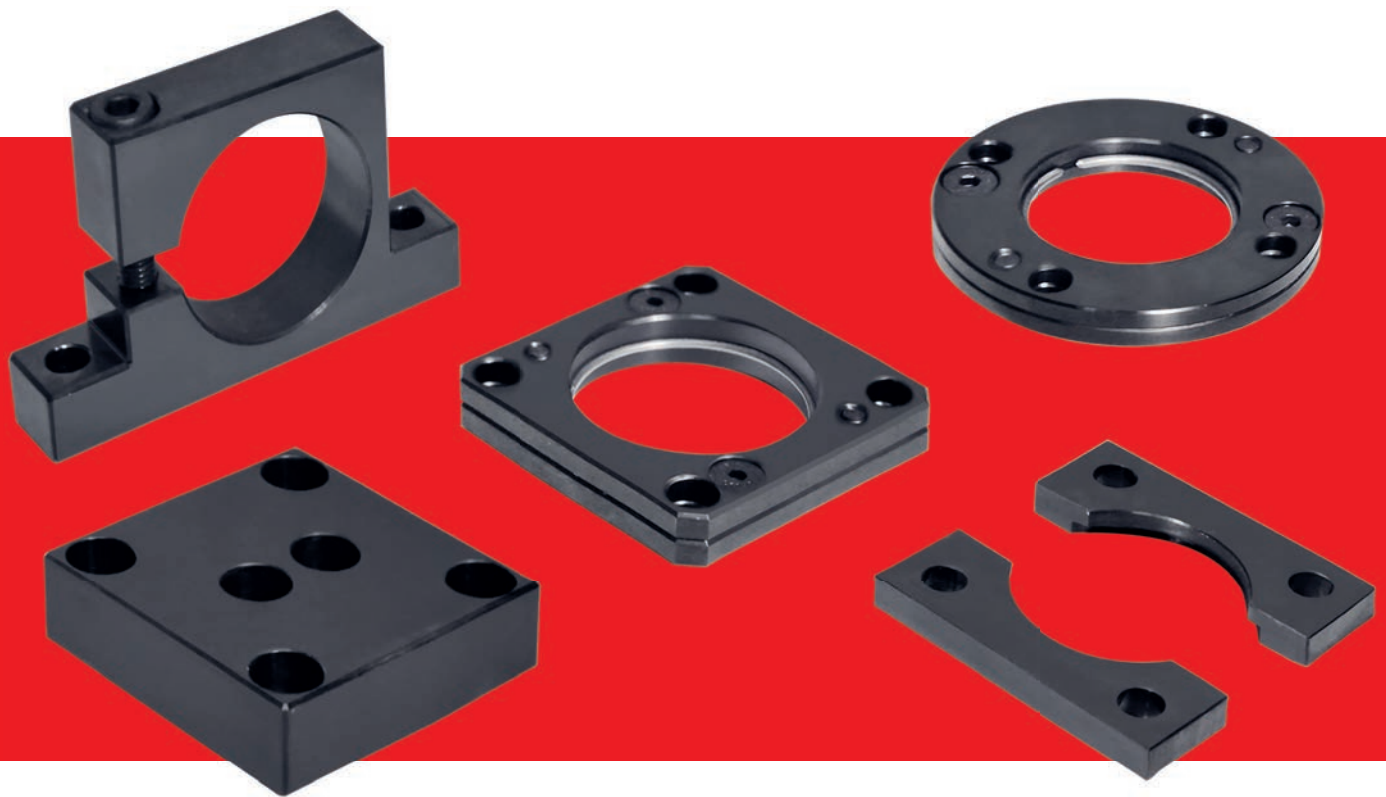
p. 193

INSTALLATION GUIDELINE

p. 203



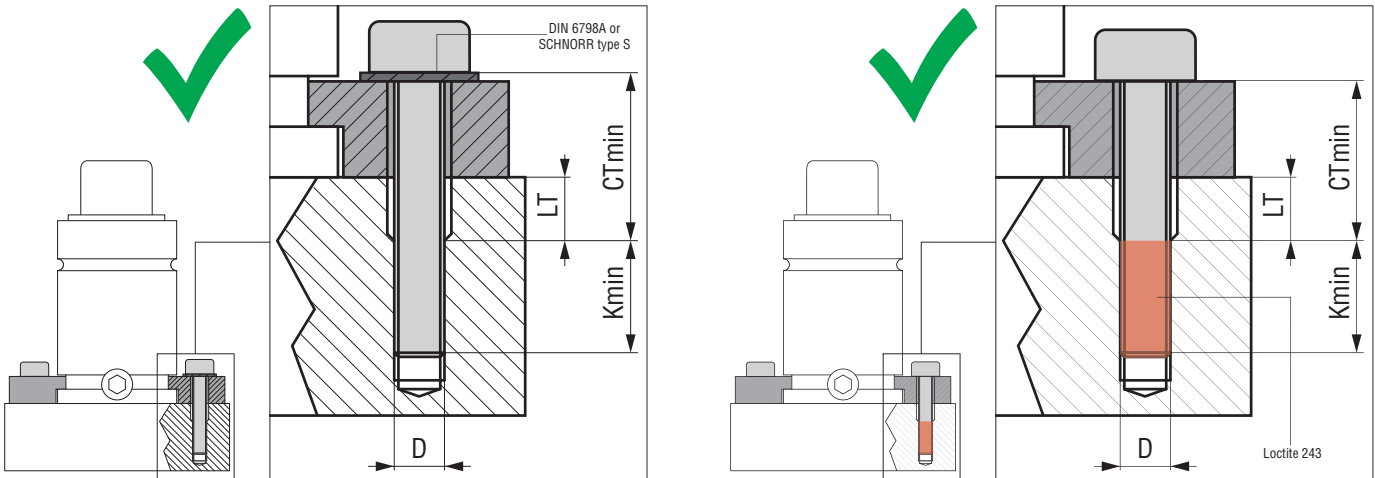
INSTALLATION GUIDELINE



INSTALLATION GUIDELINE



- IT** Un corretto fissaggio delle molle a gas previene danni ai prodotti e gravi pericoli agli operatori.
- EN** A correct fixing of the gas springs prevents damages to products and serious dangers to operators.
- DE** Die richtige Befestigung der Gasdruckfeder verhindert Schäden an den Produkten und ernsthafte Gefahren für das Personal.
- FR** La fixation correcte du ressort à gaz évite des dommages aux produits et des dangers graves pour les opérateurs.
- ES** Una correcta fijación del cilindro de gas previene daños a los productos y graves peligros para los operadores.
- PT** Uma correta fixação do cilindro pode prevenir danos ao produto e também ao operador.



| CTmin | Kmin | LT |
|--------------------------------|--------------------------------------------------------------------------------|--------------------------------------|
| Lunghezza libera (min. 2 x D) | Minimo impegno viti (acciaio = min. 1.5 x D, ghisa = min. 2 x D) | Allargamento per garantire CTmin |
| Free length (min. 2 x D) | Minimum thread engagement (steel = min. 1.5 x D, cast iron = min. 2 x D) | Widening to ensure CTmin |
| Klemmlänge (min. 2 x D) | Mindest-Einschraublänge (Stah = min. 1.5 x D, Guss = min. 2 x D) | Bohrung zur Gewährleistung der CTmin |
| Longueur libre (min. 2 x D) | Longueur minimum à visser (acier = min. 1.5 x D, fonte = min. 2 x D) | Élargissement pour assurer CTmin |
| Longitud libre (min. 2 x D) | Recubrimiento mínimo rosca (acero = min. 1.5 x D, hierro fundido = min. 2 x D) | Ampliación para garantizar CTmin |
| Comprimento livre (min. 2 x D) | Comprimento mínimo roscado (aço 1,5 x D – Fundido 2,0 x D) | Alívio para garantir o CT min |

- IT** Utilizzare sempre apposito frenafiletto e/o rondelle di sicurezza su tutte le viti di fissaggio. (Non rappresentate nei disegni delle pagine seguenti).
- EN** Always use the suitable threadlocker and/or safety washers on all fixing screws. (They are not represented in the drawings in the following pages of the catalog).
- DE** Verwenden Sie immer geeignete Schraubensicherungen und/oder Sicherungsscheiben an allen Befestigungsschrauben. (Nicht in den Zeichnungen auf den folgenden Seiten dargestellt).
- FR** Utilisez toujours le frein filet approprié et/ou les rondelles de sécurité sur toutes les vis de fixation. (Ils ne sont pas représentés sur les dessins dans les pages suivantes du catalogue).
- ES** Utilice siempre un fijador de roscas adecuado y/o arandelas de seguridad en todos los tornillos de fijación. (No son representados en los diseños de las páginas siguientes).
- PT** Sempre utilizar o trava roscas e/ou arruela de segurança em todos os parafusos de fixação (não estão representados nas próximas páginas do catálogo).



Rondelle di sicurezza - Safety Washers
Sicherungsscheiben - Rondelles de sécurité
Arandelas de seguridad - Arruela de segurança

Only for ML, MP,
MQ series



Conical spring
washer provided
by Special Springs

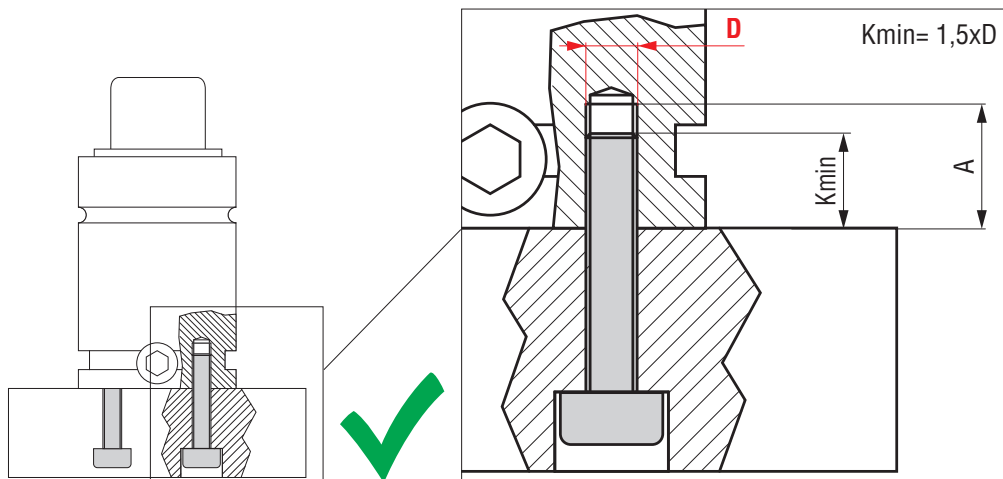


DIN 6798A
or
SCHNORR type S

- IT** L' uso di viti di classe superiore alla 8.8, come 9.8, 10.9 e 12.9, è sempre possibile. Si raccomanda di NON SUPERARE i valori della coppia di serraggio indicati per la classe 8.8 per qualsiasi classe di viti utilizzata (vedi pag. 207).
- EN** It is always possible to use screws belonging to Classes higher than 8.8, such as 9.8, 10.9 and 12.9. Do NOT EXCEED the values of the tightening torque valid for Class 8.8 for any of the screw's Classes you may use (see page 207 of the Catalogue).
- DE** Die Verwendung von Schrauben von höheren Klassen als 8.8, wie 9.8, 10.9 und 12.9 ist immer möglich. Es wird empfohlen, die für die Klasse 8.8 angegebenen Anziehdrehmomente für alle verwendeten Schraubenklassen nicht zu überschreiten.
- FR** L' est toujours possible d'utiliser des vis appartenant aux classes supérieures à 8.8, telles que 9.8, 10.9 et 12.9. NE PAS DÉPASSER les valeurs du couple de serrage indiquées pour la classe 8.8 pour n'importe quelle classe de résistance que vous allez utiliser (voir page 207 du catalogue).
- ES** Siempre es posible el uso de tornillos pertenecientes a clases superiores a 8.8, como 9.8, 10.9 y 12.9. Se recomienda NO EXCEDER los valores de torque indicados para la clase 8.8 para cualquier clase de tornillos utilizados (consulte la página 207).
- PT** Sempre é possível usar parafusos pertencentes a classes superiores a 8.8, como 9.8, 10.9 e 12.9. NÃO SUPERAR os valores do torque recomendado para os parafusos da classe 8.8, mesmo que esteja utilizando parafusos com classes diferentes, (ver página 207).

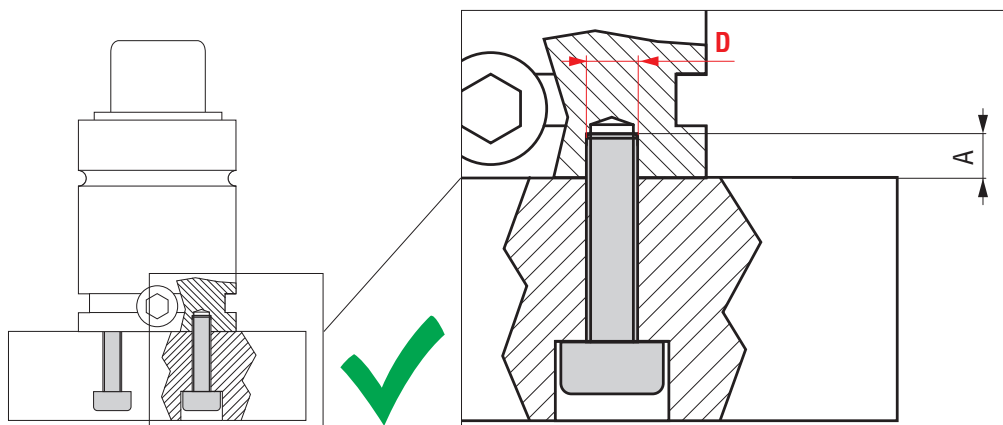
- IT** Molla a gas con fori di fissaggio in cui il valore di A è maggiore del valore D (esempio SC3000 con fori di fissaggio M8x13).
- EN** Gas spring with fixing holes for which value A is bigger than value D (e.g. SC3000 with fixing holes M8x13).
- DE** Gasdruckfeder mit Befestigungsbohrungen bei denen der Wert A größer als der Wert D ist (Beispiel SC3000 mit Befestigungsbohrungen M8x13).
- FR** Ressort à gaz avec trous de fixation dans lequel la valeur A est supérieure à la valeur D (par exemple, SC3000 avec trous de fixation M8x13).
- ES** Cilindro de gas con agujeros de fijación en el que el valor A es mayor que el valor D (ejemplo SC3000 con agujeros de fijación M8x13).
- PT** Cilindros com furos de fixação que a medida A é maior que a medida D (ex. SC3000 com furos de fixação M8x13).

Installation Example: $A > D$



- IT** Molla a gas in cui il valore A è minore del valore D (esempio RV1000 con fori di fissaggio M8x6). Attenzione: in questi casi utilizzare viti con lunghezza tale da impegnare l'intera profondità utile di fissaggio.
- EN** Gas spring with fixing holes for which value A is smaller than value D (e.g. RV1000 with fixing holes M8x6). In such cases, be careful to use screws with a length long enough to employ the whole usable fixing depth.
- DE** Gasdruckfeder bei der der Wert A kleiner als der Wert D ist (Beispiel RV1000 mit Befestigungsbohrungen M8x6). Achtung: Verwenden Sie in diesen Fällen Schrauben mit einer Länge, die über die gesamte Einschraublänge reicht.
- FR** Ressort à gaz avec trous de fixation dans lequel la valeur A est inférieure à la valeur D (par exemple, RV1000 avec trous de fixation M8x6). Dans ce cas, veuillez à utiliser des vis suffisamment longues pour utiliser toute la profondeur de fixation utilisable.
- ES** Cilindro de gas en el que el valor A es menor que el valor D (ejemplo RV1000 con agujeros de fijación M8x6). Atención: en estos casos utilice tornillos con tal longitud para enganchar toda la profundidad útil de fijación.
- PT** Cilindros que a medida A é menor que a medida D (ex. RV1000 com furos de fixação M8x6). Neste caso, atentar para que o comprimento do parafuso seja suficiente para garantir o comprimento mínimo de roscado na placa.

Installation Example: $A \leq D$



INSTALLATION GUIDELINE

IT Le viti di fissaggio non devono mai essere sollecitate direttamente dal carico agente sulla molla a gas.

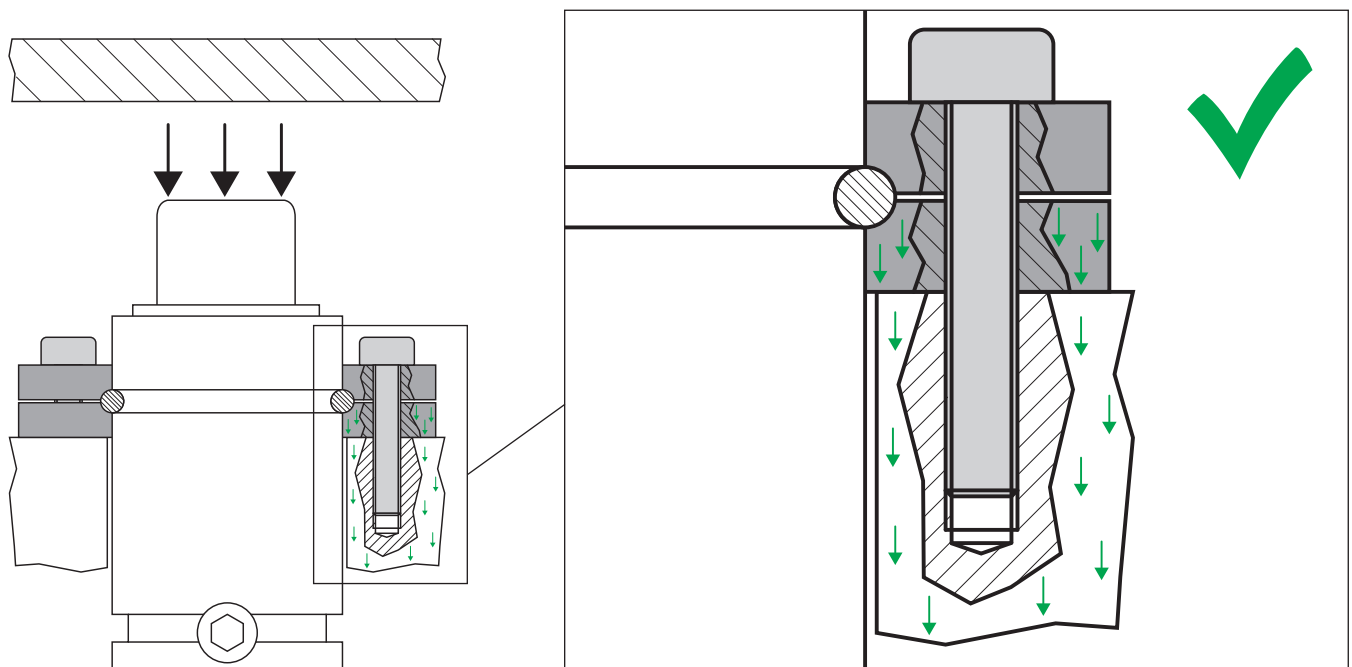
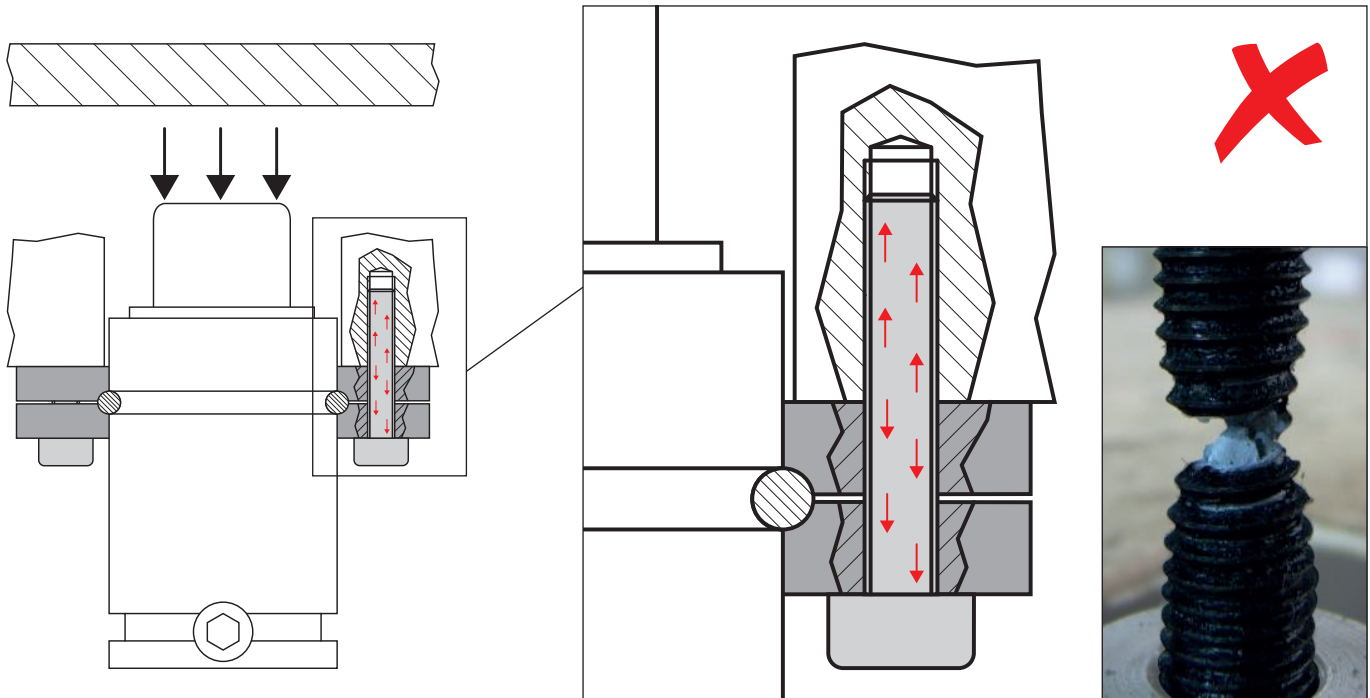
EN Fixing screws shall never be directly strained by the load acting on the gas spring.

DE Die Befestigungsschrauben dürfen niemals direkt durch die auf die Gasdruckfeder wirkende Last belastet werden.



FR Les vis de fixation ne doivent jamais être directement sollicitées par la charge agissant sur le ressort à gaz.

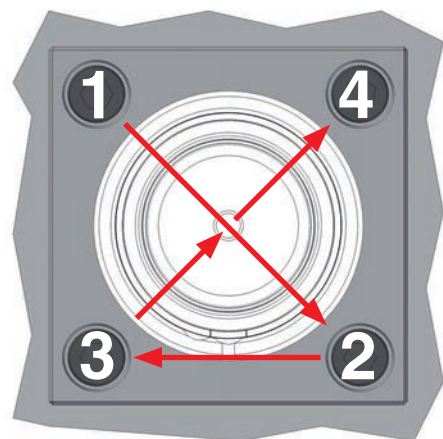
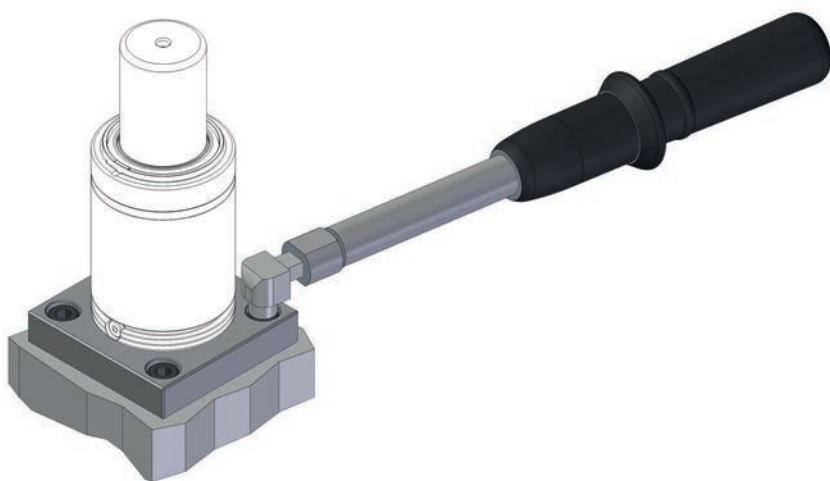
ES Los tornillos de fijación nunca deben ser estresados directamente por la carga que actúa sobre el cilindro de gas.

PT Os parafusos de fixação jamais devem receber diretamente a carga do cilindro.



- IT** Rispettare le coppie di serraggio prescritte e verificare sempre lo stato delle molle a gas e dei fissaggi ad ogni intervento sullo stampo.
- EN** Respect the specified tightening torques and verify always the condition of gas springs and fixings at each intervention on the die.
- DE** Beachten Sie die vorgeschriebenen Anziehdrehmomente und überprüfen Sie bei jedem Eingriff am Werkzeug den Zustand der Gasdruckfedern und Befestigungen.
- FR** Respectez les couples de serrage spécifiés et vérifiez les conditions des ressorts à gaz et des fixations à chaque intervention sur le moule.
- ES** Respete los pares de apriete indicados y verifique las condiciones de los resortes de gas y de las fijaciones en cada intervención en el troquel.
- PT** Respeitar o torque dos parafusos especificado e a cada parada para manutenção da ferramenta deve ser verificado as condições dos cilindros e das flanges.

| | | | | | | | |
|-----------------------------------------------------------------------------------|----------------------------------------------------|------|-------|-------|-------|-------|--------|
|  | UNI EN ISO 21269:2007 class ≥ 8.8 | M5 | M6 | M8 | M10 | M12 | M 16 |
|  | Torque force | 6 Nm | 10 Nm | 24 Nm | 50 Nm | 84 Nm | 205 Nm |



- IT** Serrare tutte le viti di fissaggio seguendo l'ordine a croce (1, 2, 3, 4) applicando la coppia di serraggio corretta. In questo modo la molla a gas sarà perfettamente posizionata.
- EN** Tighten all fixing screws by following the order shown in the image (1, 2, 3, 4) and by applying the correct tightening torque. In doing so, the gas springs will be perfectly positioned.
- DE** Alle Befestigungsschrauben über Kreuz in der Reihenfolge 1, 2, 3, 4 (s. Bild) mit dem richtigen Anziehdrehmoment anziehen. Auf diese Weise wird die Gasdruckfeder perfekt positioniert.
- FR** Serrez toutes les vis de fixation en respectant l'ordre indiqué sur l'image (1, 2, 3, 4) et en appliquant le couple de serrage approprié. Ce faisant, les ressorts à gaz seront parfaitement positionnés.
- ES** Apriete todos los tornillos de fijación siguiendo el orden que se muestra en la imagen (1, 2, 3, 4) y aplicando el par de apriete correcto. Al hacerlo, los resortes de gas estarán perfectamente posicionados.
- PT** Os parafusos devem ser apertados seguindo a ordem do desenho (1,2,3,4) e aplicado o torque correto. Dessa forma os cilindros estarão perfeitamente fixados.

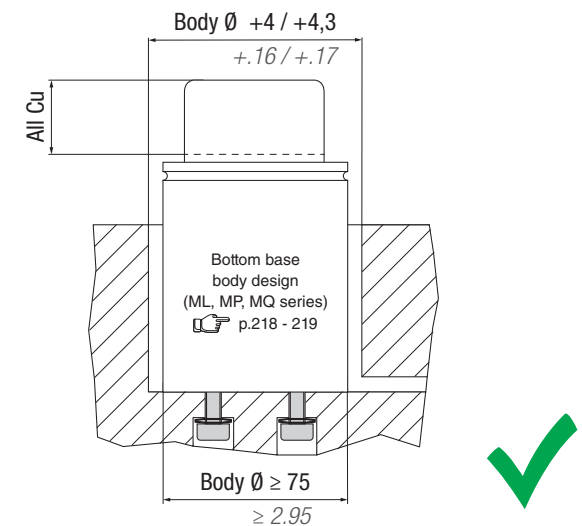
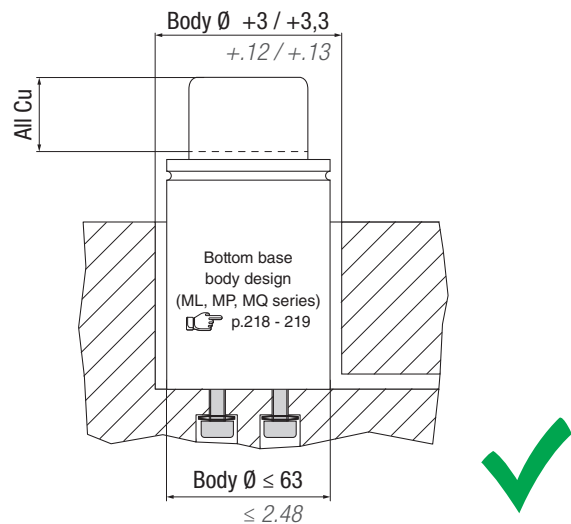
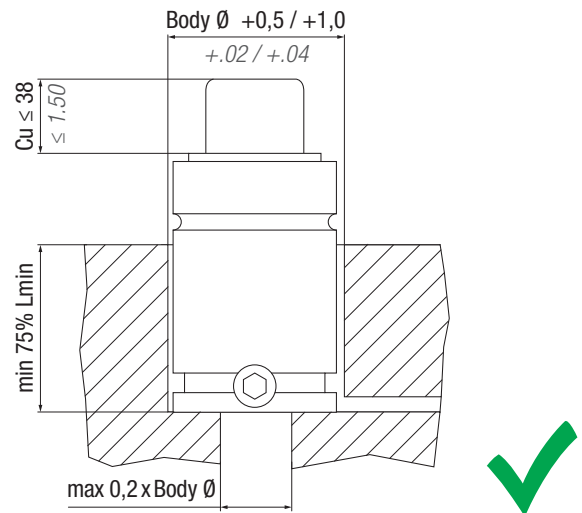
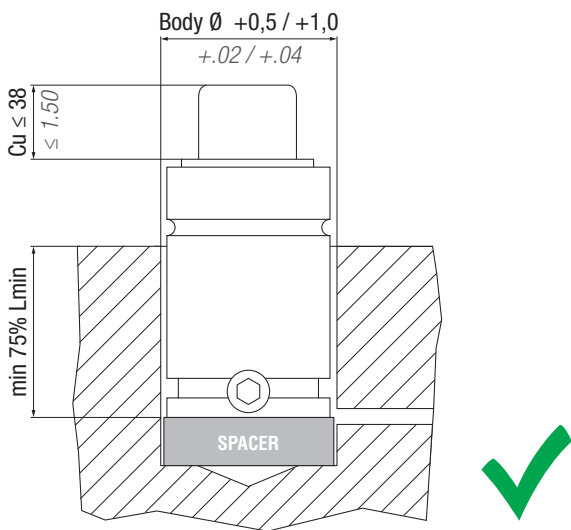
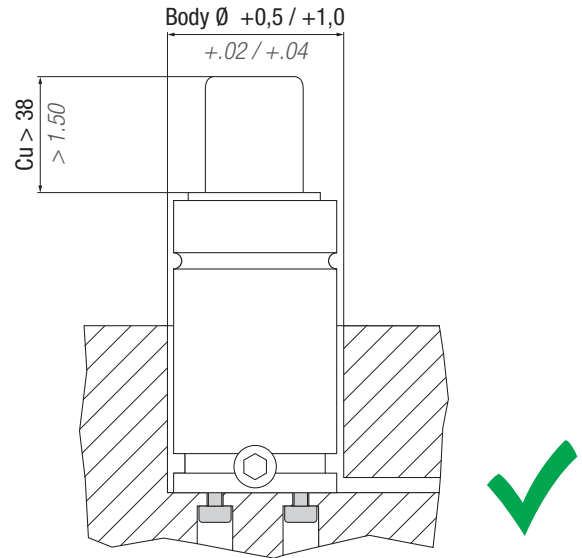
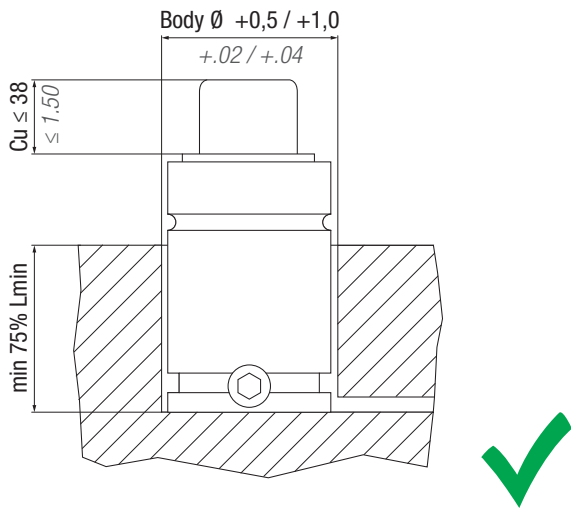


INSTALLATION GUIDELINE - DROP-IN



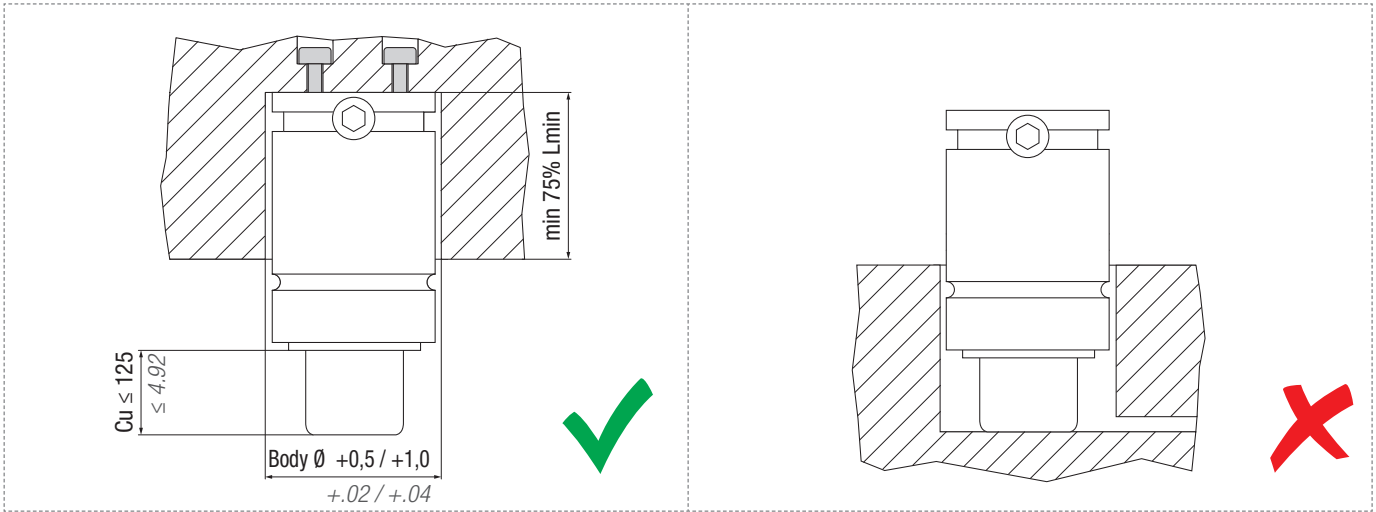
Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

VERTICAL FIXING

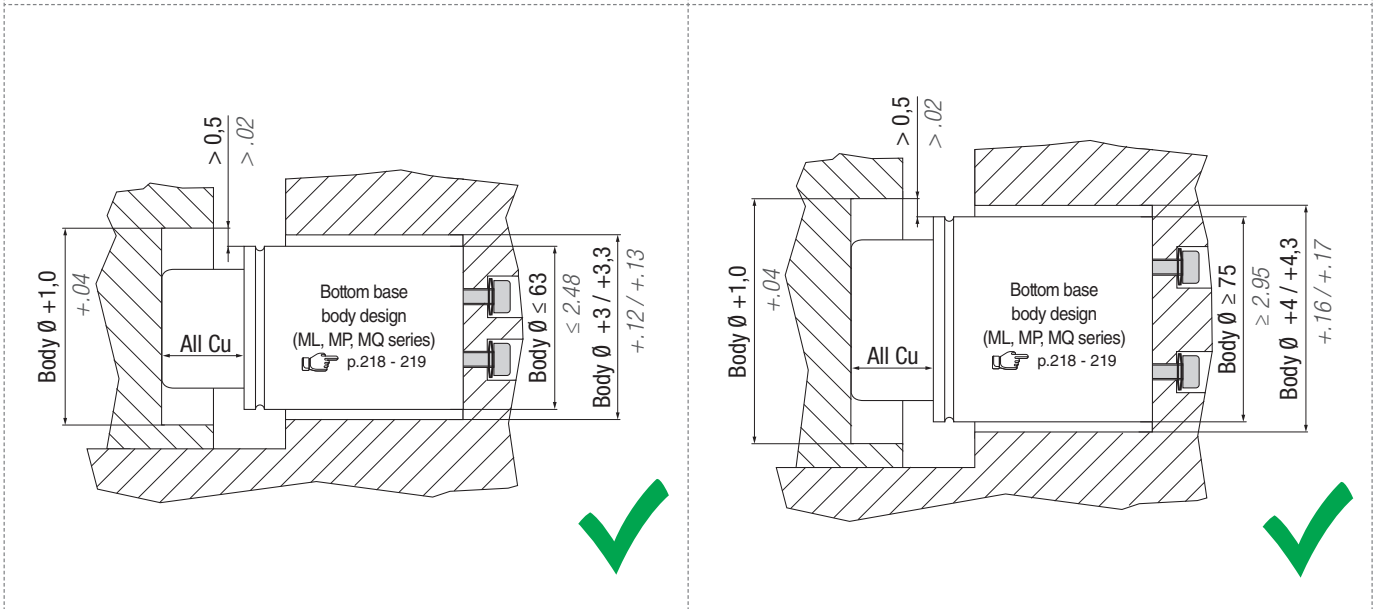
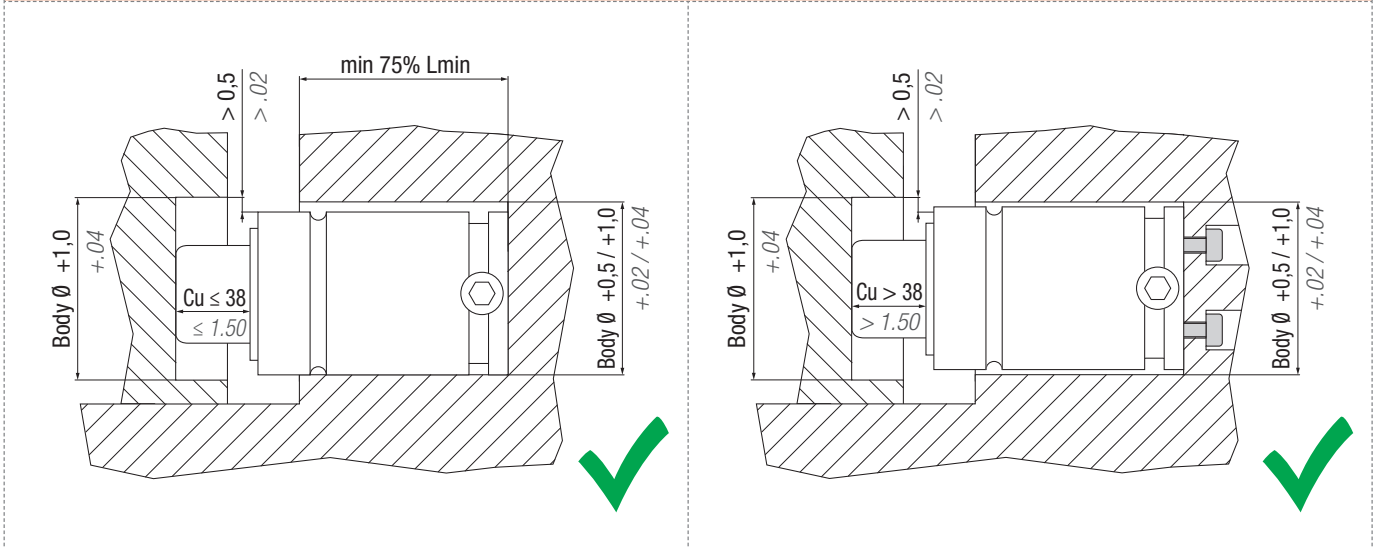


All dimensions in mm /inch

Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação



HORIZONTAL FIXING



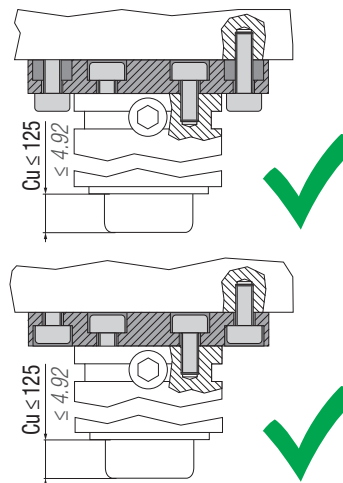
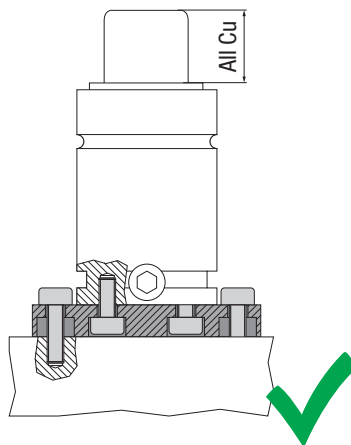
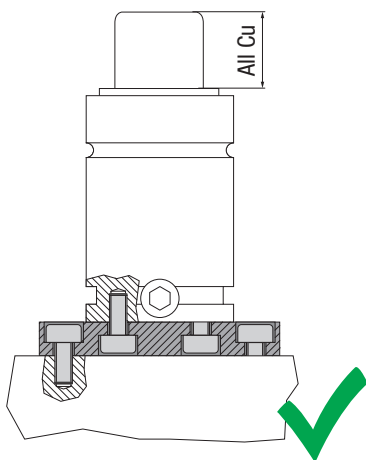
All dimensions in mm / inch

INSTALLATION GUIDELINE - BOTTOM MOUNT

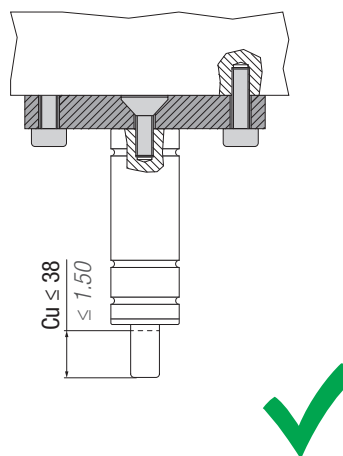
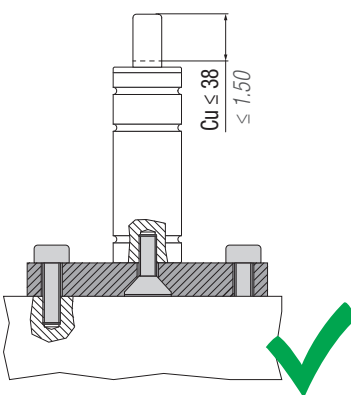
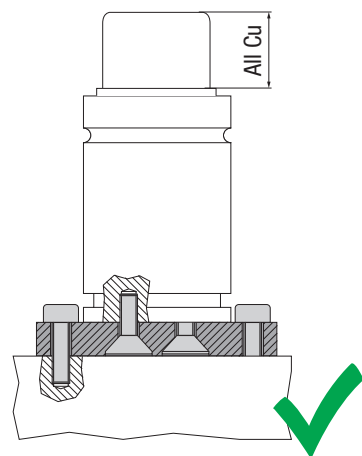
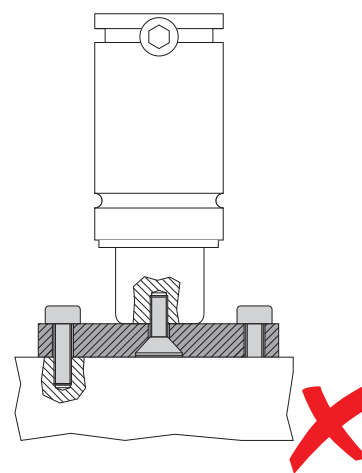
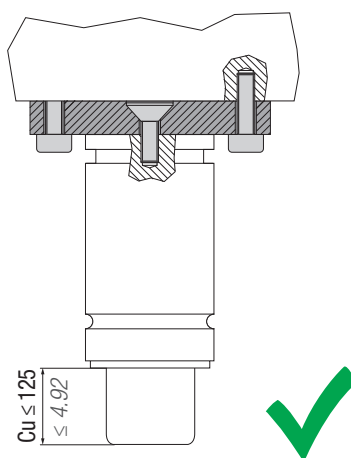
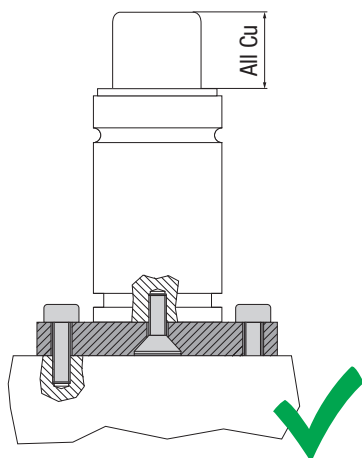


Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

FB - FBA - FBB - FBC - FBD - FBF



FBE

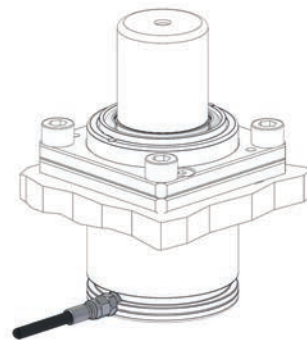
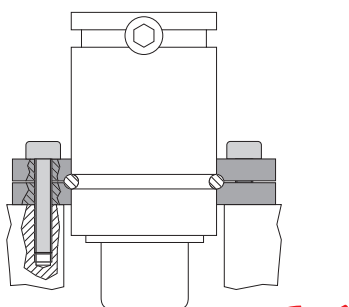
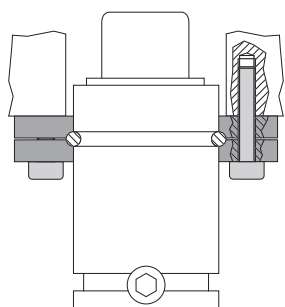
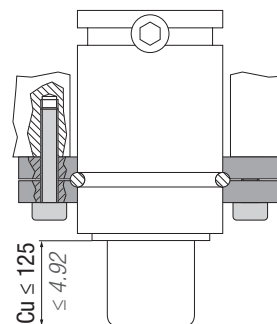
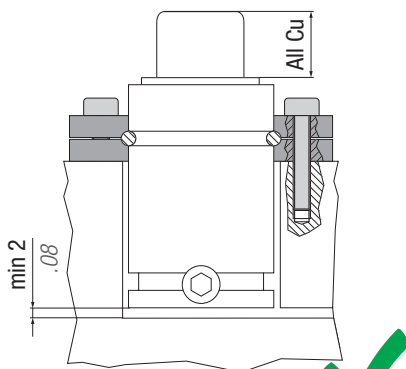
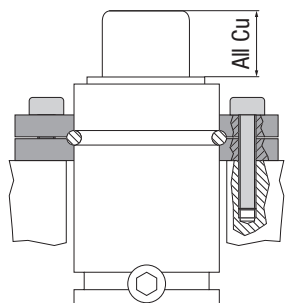


All dimensions in mm / inch

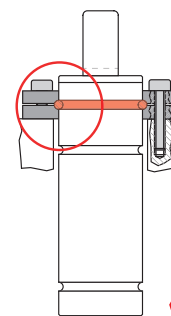
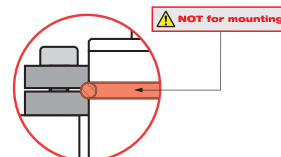
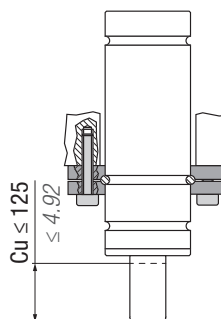
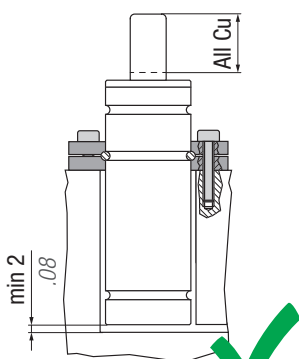
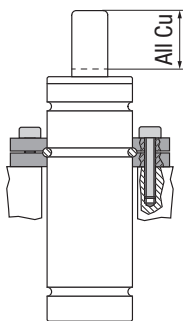
Special Springs

Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

FCB - FCD - FC - FCC - FCQ - FCQC - FCQB



FC (for body cylinder Ø 12 ÷ 25)



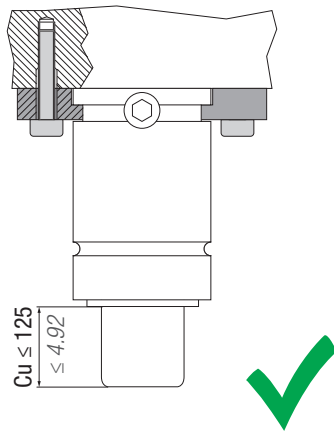
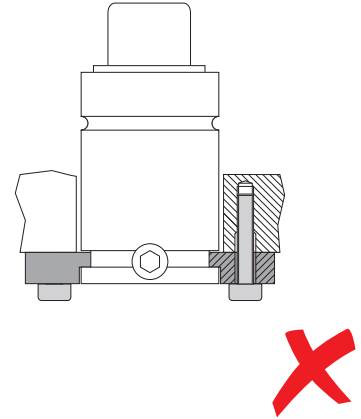
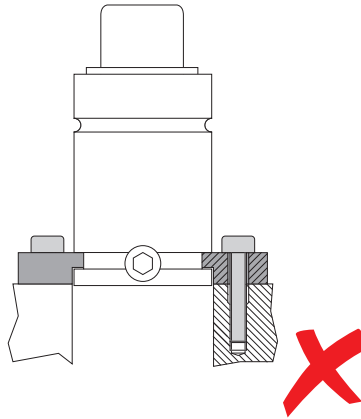
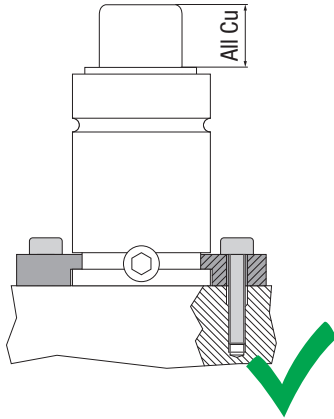
All dimensions in mm /inch

INSTALLATION GUIDELINE - BRACKET MOUNT

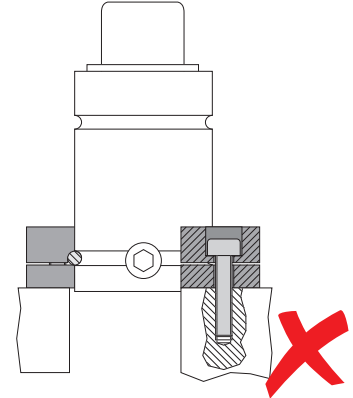
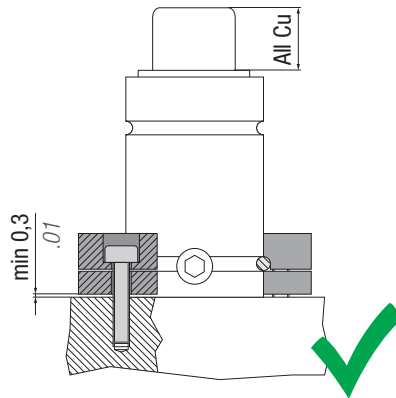


Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

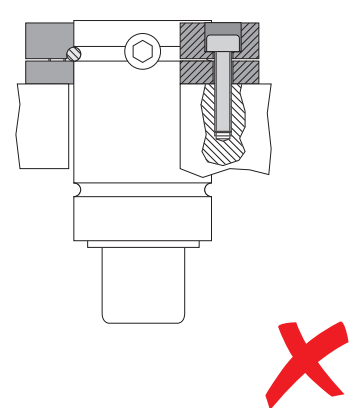
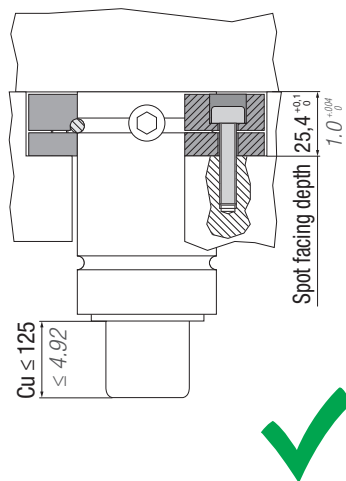
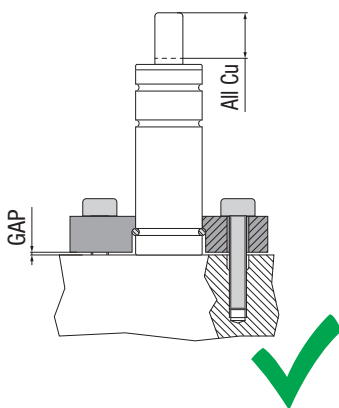
FS2 - FS2B - FS2A - FS2C



FS1



FS3

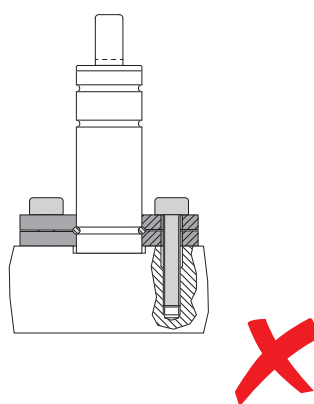
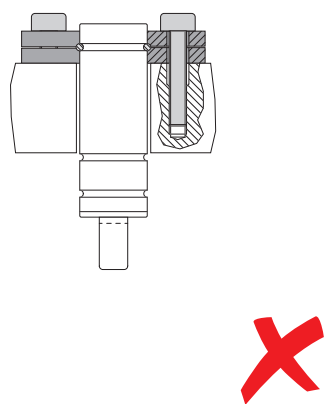
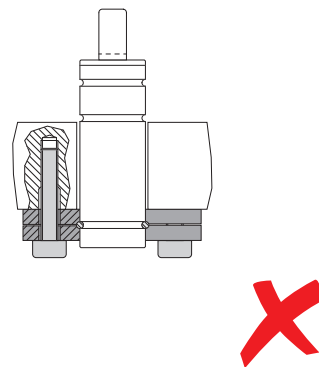
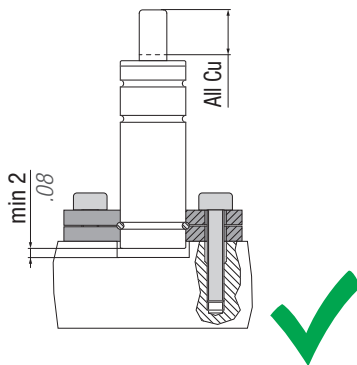
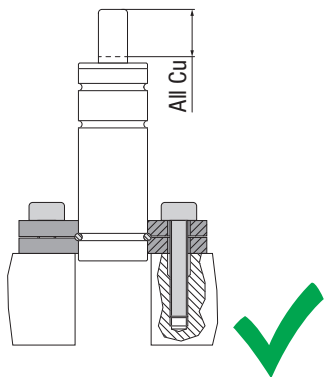


All dimensions in mm /inch

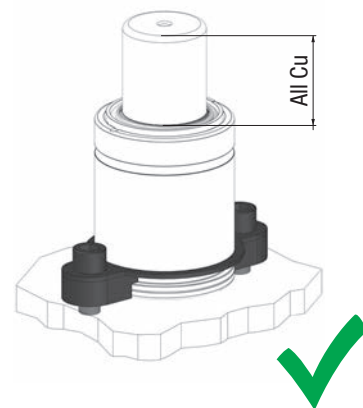
Special Springs

Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

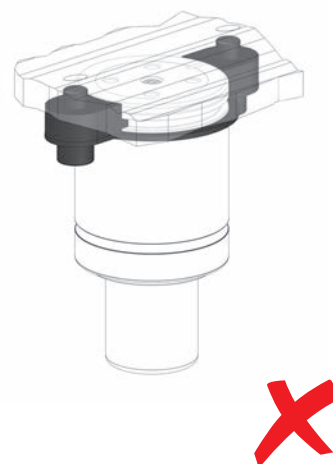
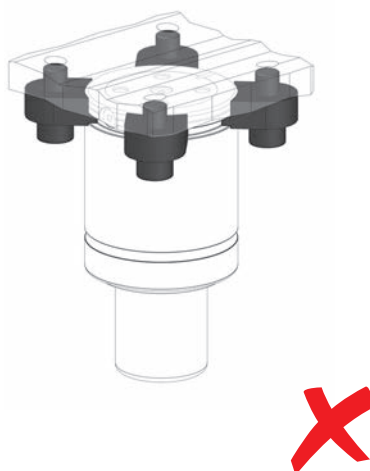
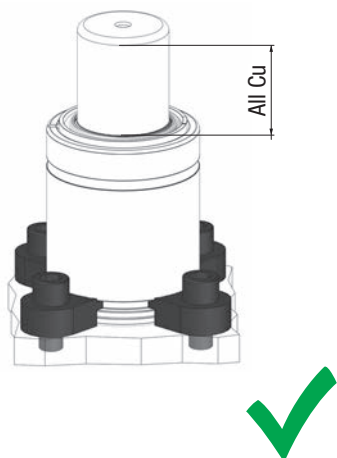
FC (for body cylinder Ø 12 ÷ 25)



FTP



FT



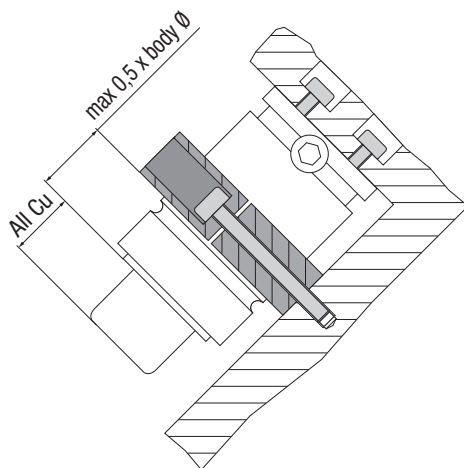
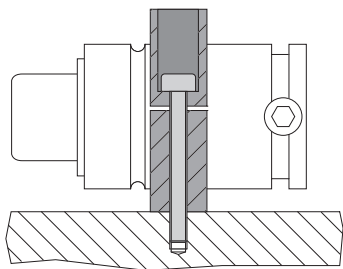
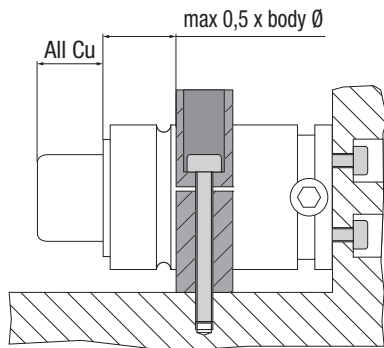
All dimensions in mm / inch

INSTALLATION GUIDELINE - BODY MOUNT

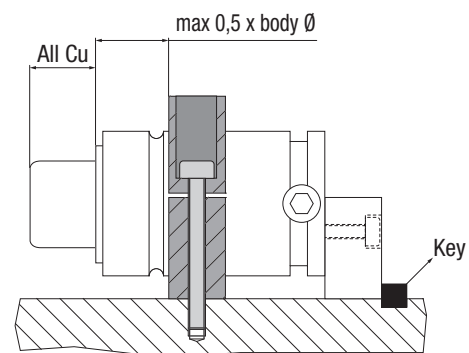
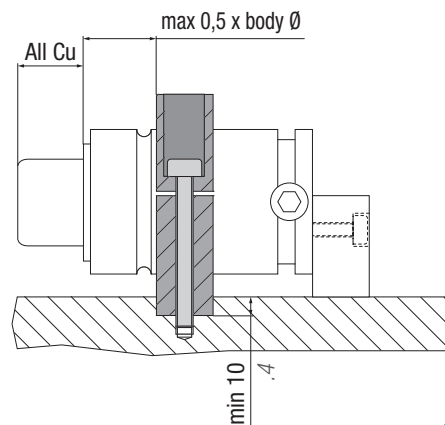
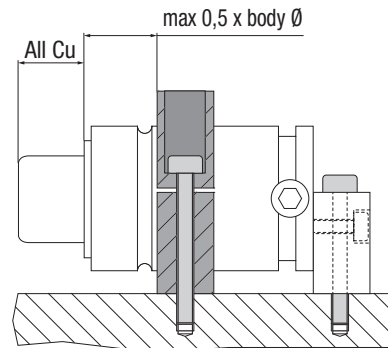


Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

FSA - FSB - FSC - FSD - FSE



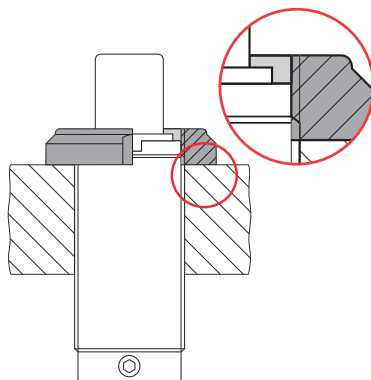
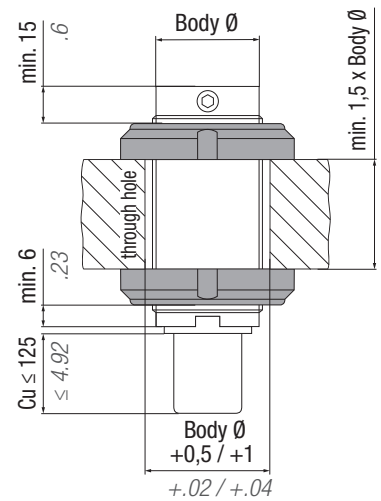
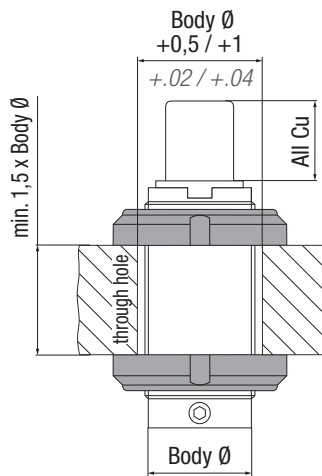
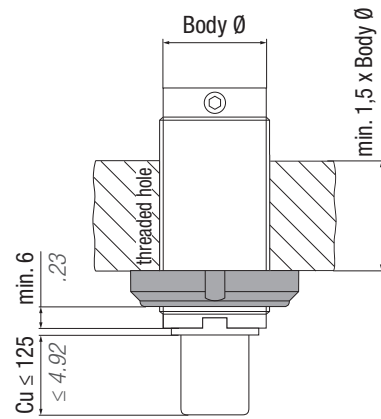
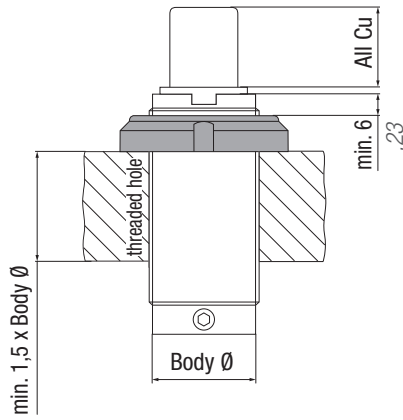
(FSA - FSB - FSC - FSD - FSE) + R



All dimensions in mm / inch

Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

GM

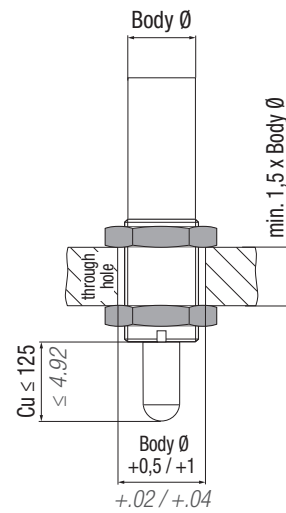
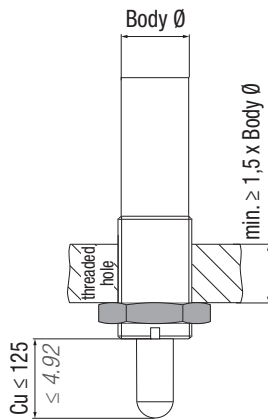
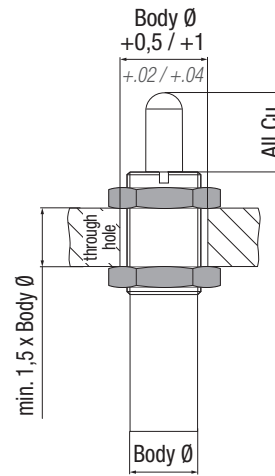
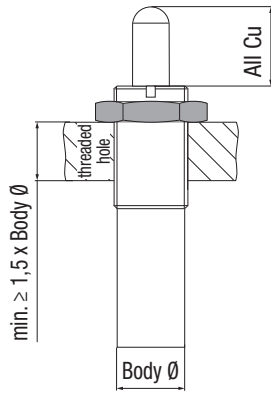


INSTALLATION GUIDELINE - THREAD MOUNT



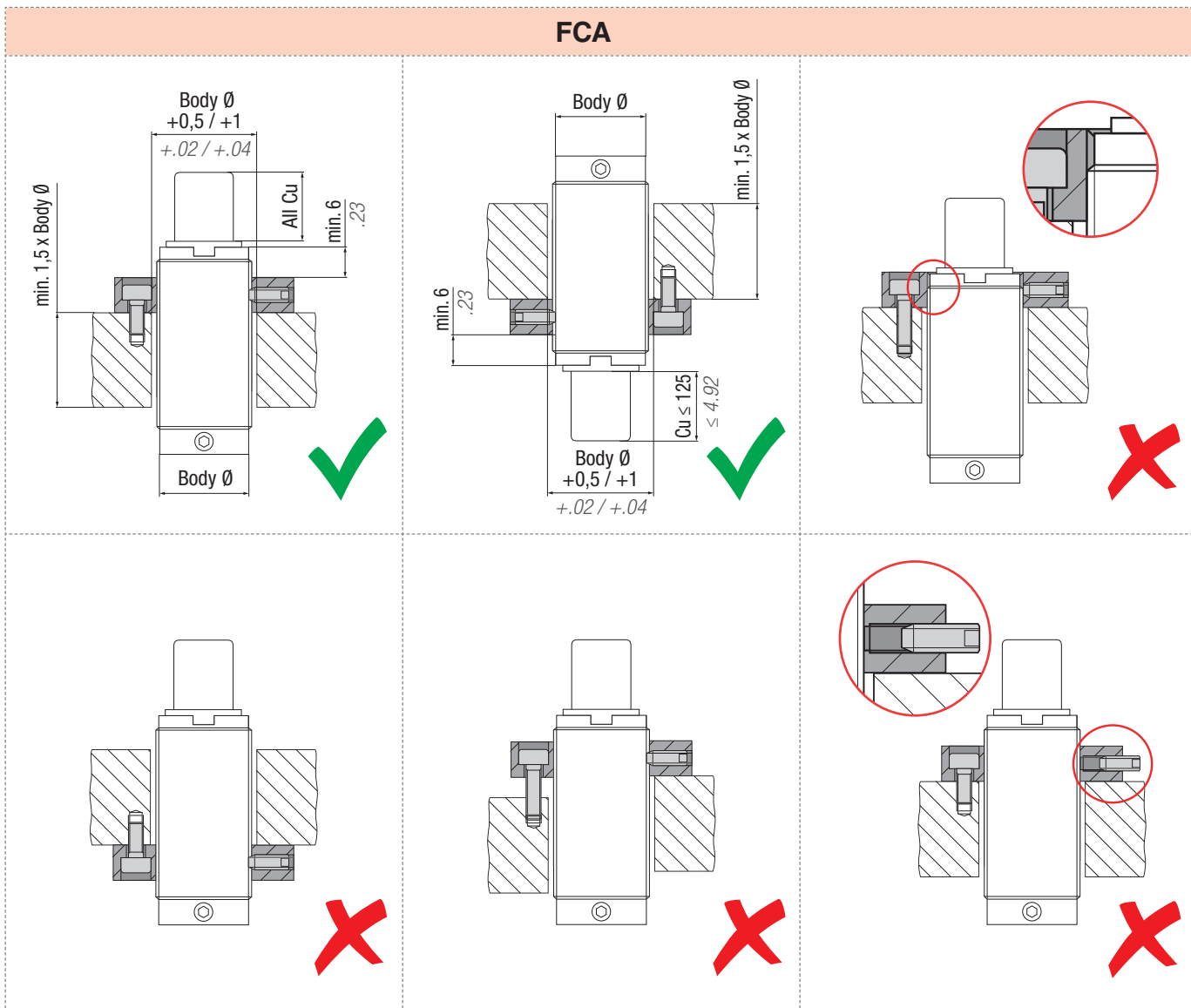
Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

DM - DI



Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

FCA



INSTALLATION GUIDELINE - ML, MP, MQ series

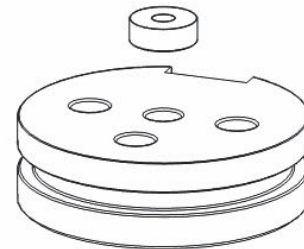
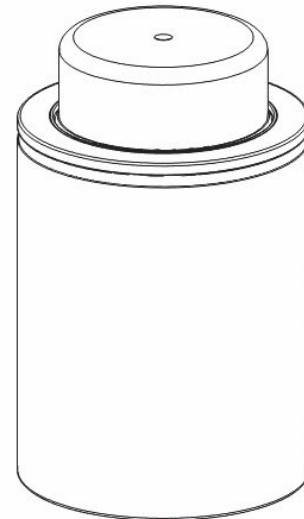


Esempi di installazione - Installation examples - Montagebeispiele - Exemples d'installation - Ejemplos de instalación - Exemplo de instalação

- IT** Installare le molle a gas rispettando le indicazioni fornite qui sotto. Informazioni dettagliate sono presenti nel kit dedicato.
- EN** Install the gas springs following the directions given here below. Detailed information is included in the specific kit.
- DE** Montieren Sie die Gasdruckfedern gemäß den unten folgenden Anweisungen. Detaillierte Anweisungen finden Sie im jeweiligen Bausatz.
- FR** Installez les ressorts à gaz en suivant les instructions données ci-dessous. Des informations détaillées sont incluses dans le kit spécifique.
- ES** Instale los resortes de gas siguiendo las instrucciones dadas a continuación. La información detallada se incluye en el kit específico.
- PT** Fixar os cilindros respeitando as orientações abaixo. Todas as informações detalhadas estão presentes no manual de instruções de cada cilindro.

ML, MP, MQ series - SELF CONTAINED

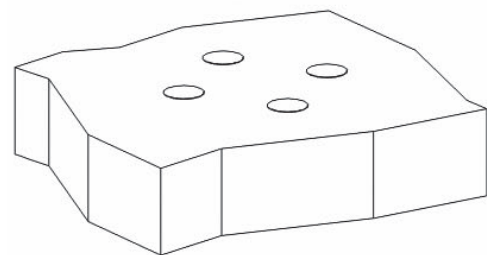
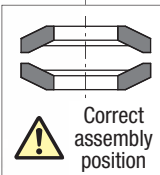
ML - LINKABLE



Conical spring washer
provided by
Special Springs

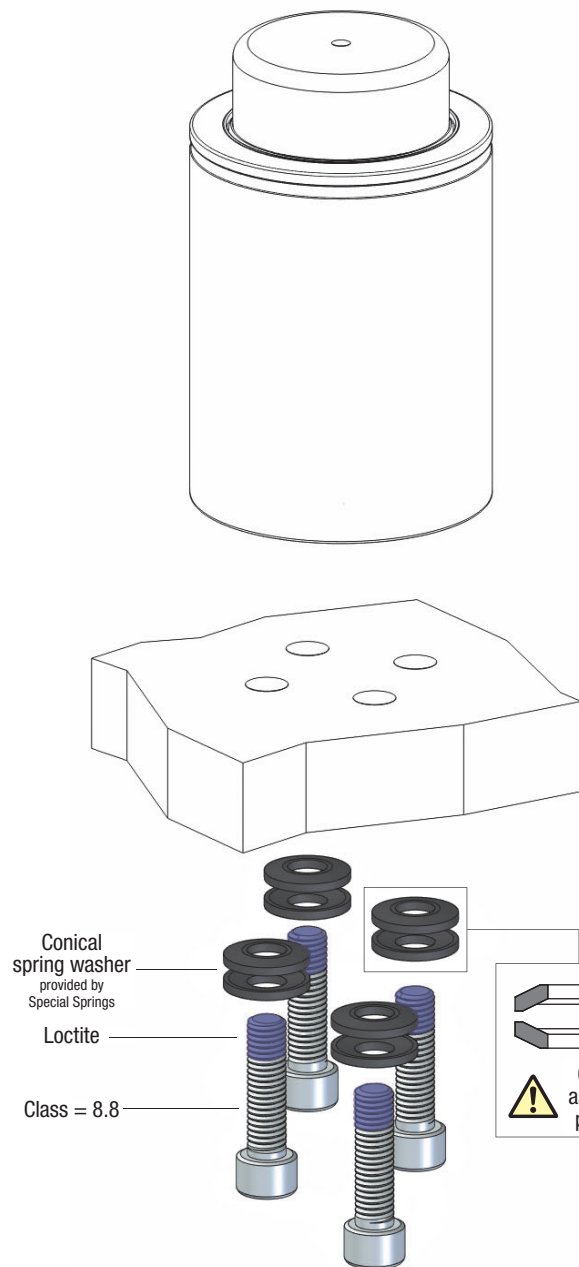
Self locking
screws
provided by
Special Springs

Class = 8.8

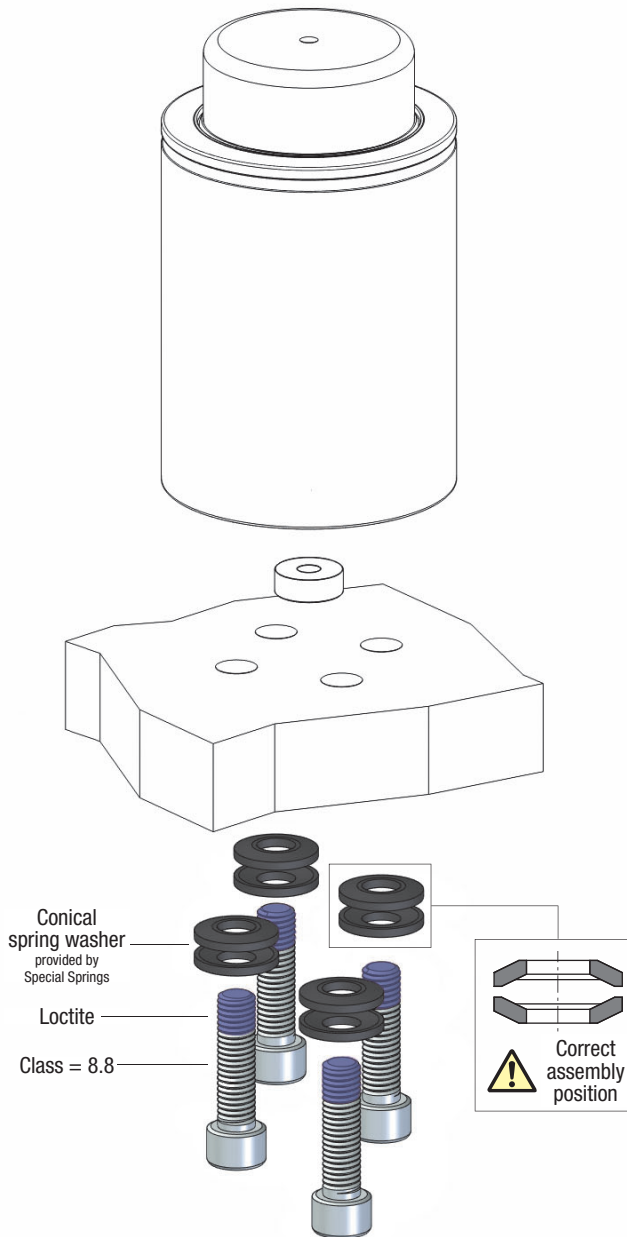


DIN 6798A or
SCHNORR type S

Class ≥ 8.8

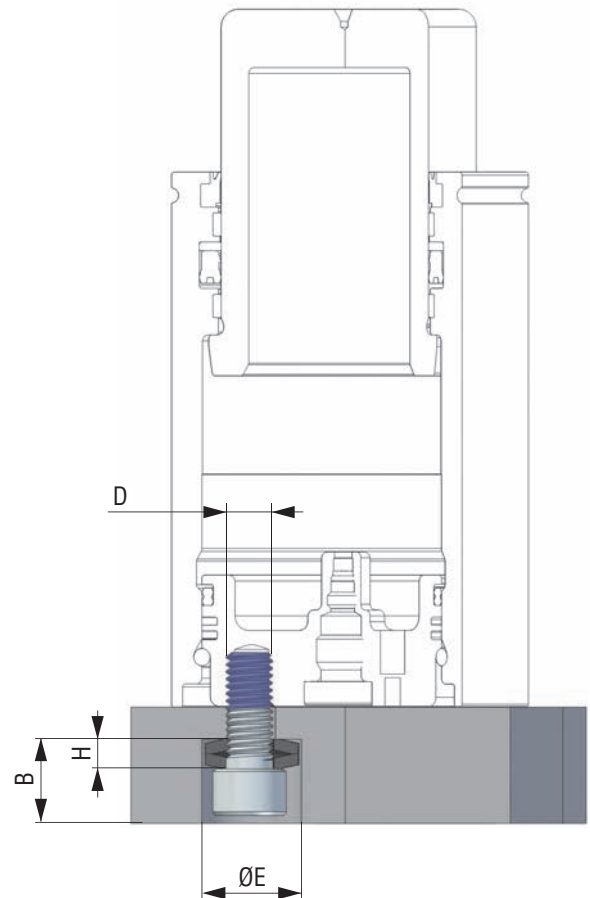


ML - EASY MANIFOLD



FIXING INFORMATION

- IT** Si raccomanda di installare le molle a gas nelle versioni "**Self Contained**" e "**Easy Manifold**" rispettando le indicazioni qui sotto.
- EN** It is recommended to install gas springs in the "**Self-Contained**" and "**Easy Manifold**" versions by following the directions given here below.
- DE** Es wird empfohlen, die Gasdruckfedern der Versionen "**Self-Contained**" und "**Easy Manifold**" gemäß den unten aufgeführten Anweisungen einzubauen.
- FR** Il est recommandé d'installer les ressorts à gaz dans les versions "**Self-Contained**" (autonome) et "**Easy Manifold**" en suivant les instructions données ci-dessous.
- ES** Se recomienda instalar los resortes de gas en las versiones "**Self-Contained**" (autónomo) y "**Easy Manifold**" siguiendo las instrucciones dadas a continuación.
- PT** Se recomenda fixar os cilindros **autonomos** e os para "**Easy Manifold**", conforme as instruções abaixo.



| Model | Washer code | Ø E | | B | | H | | D |
|------------|-------------|---------|-------|--------|-------|------|------|-----|
| | | mm | inch | mm | inch | mm | inch | |
| ML 1000 D | 49RC06A | ≥ 10,25 | ≥ .40 | ≥ 9,15 | ≥ .36 | 3,15 | .12 | M6 |
| ML 1800 D | 49RC06A | ≥ 10,25 | ≥ .40 | ≥ 9,15 | ≥ .36 | 3,15 | .12 | M6 |
| ML 3000 D | 49RCHS08A | ≥ 17,3 | ≥ .68 | ≥ 12 | ≥ .47 | 4 | .16 | M8 |
| ML 4700 D | 49RC08A | ≥ 18,3 | ≥ .72 | ≥ 12 | ≥ .47 | 4 | .16 | M8 |
| ML 7500 D | 49RC08A | ≥ 18,3 | ≥ .72 | ≥ 12 | ≥ .47 | 4 | .16 | M8 |
| ML 12000 D | 49RC10A | ≥ 23,3 | ≥ .92 | ≥ 15 | ≥ .59 | 5 | .20 | M10 |



UNI EN ISO
21269:2007
class = 8.8

FLANGE MOUNTS



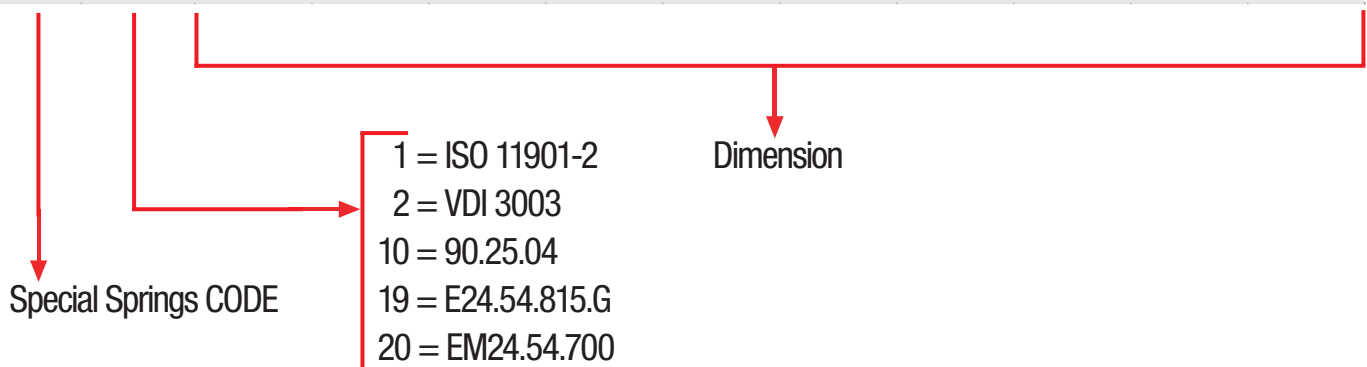
- IT** La seguente tabella indica i riferimenti Special Springs per ogni standards. Vedi esempio sotto riportato.
- EN** The following table shows the references for each Special Springs standards. See example below.
- DE** Die folgende Tabelle zeigt die Verweise für jede Special Springs Standards. Siehe Beispiel unten.
- FR** Le tableau suivant indique les références pour chacune des normes spéciales Springs. Voir l'exemple ci-dessous.
- ES** La siguiente tabla muestra las referencias de las normas especiales para cada Springs. Consulte el siguiente ejemplo.
- PT** A tabela a seguir mostra as referências para cada normas especiais molas. Veja o exemplo abaixo.

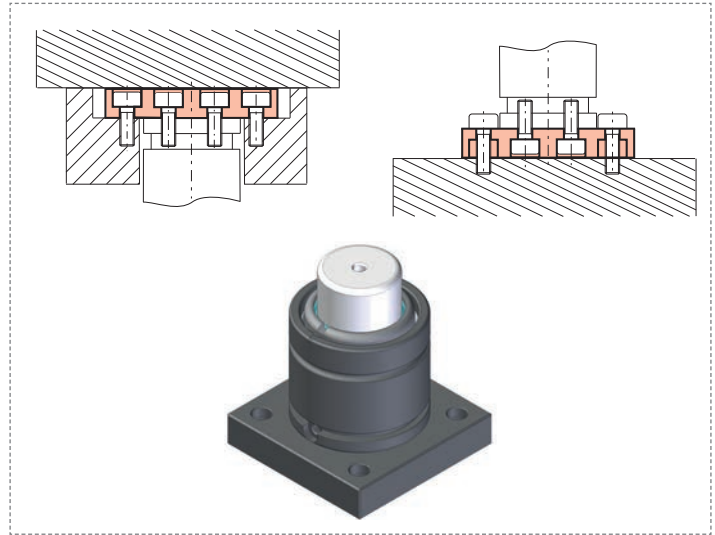
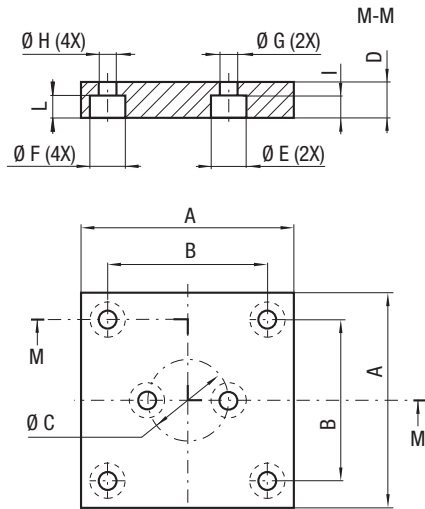
| Reference to standards | Standards | |
|------------------------|---------------------|-----------------|
| 0 | // | Special Springs |
| 1 | ISO 11901-2 | |
| 2 | VDI 3003 | |
| 3 | B2 4009 | BMW |
| 4 | W-DX35-62M | Ford |
| 5 | W-DX35-80M | Ford |
| 6 | W-DX40-80M | Ford |
| 7 | 90.25.01 | General Motors |
| 8 | 90.25.02 | General Motors |
| 9 | 90.25.03 | General Motors |
| 10 | 90.25.04 | General Motors |
| 11 | 90.25.06 | General Motors |
| 12 | 90.25.07 | General Motors |
| 13 | 90.25.455 | General Motors |
| 14 | B8 0132 110 008 801 | Mercedes Benz |

| Reference to standards | Standards | |
|------------------------|---------------------|-------------------|
| 15 | B8 0138 100 000 001 | Mercedes Benz |
| 16 | B8 0134 300 000 001 | Mercedes Benz |
| 17 | B8 0134 400 008 801 | Mercedes Benz |
| 18 | B8 | Mercedes Benz |
| 19 | E24.54.815.G | Peugeot - Citroën |
| 20 | EM24.54.700 | Renault |
| 21 | 39D 848 | Volkswagen |
| 22 | 075.90.70 | FCA |
| 23 | 075.90.75 | FCA |
| 24 | 075.90.80 | FCA |
| 25 | 075.90.85 | FCA |
| 26 | 075.90.90 | FCA |
| 27 | 075.90.95 | FCA |
| 28 | 075.90.40 | FCA |
| 29 | K32D2-2400-50 | Nissan |

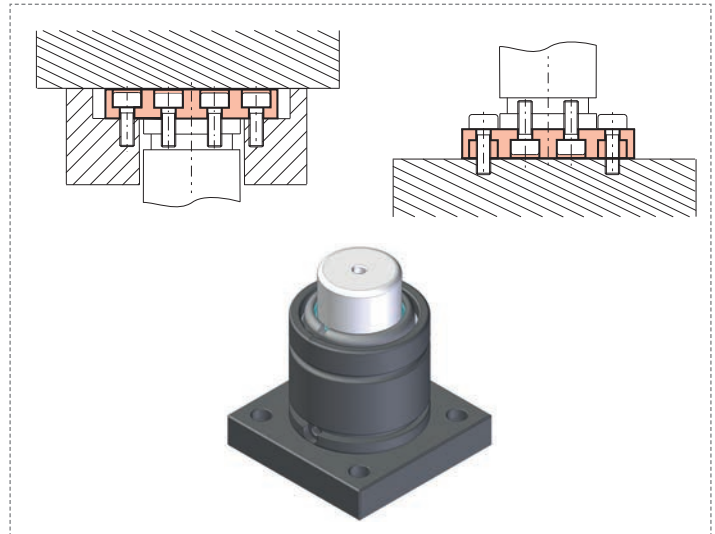
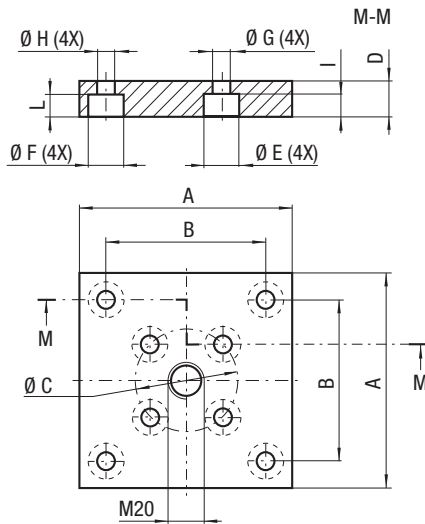
How to read the table

| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | Ø F | | Ø G | | Ø H | | I | | L | |
|-------|------------------------|----|------|----|------|-----|------|----|------|-----|------|-----|------|-----|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FB 45 | 1-2-10-19-20 | 70 | 2.76 | 50 | 1.97 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 9 | 0.35 | 14 | 0.55 | 12 | 0.47 |

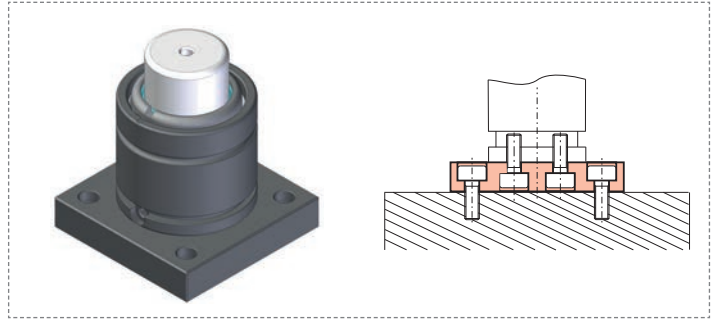
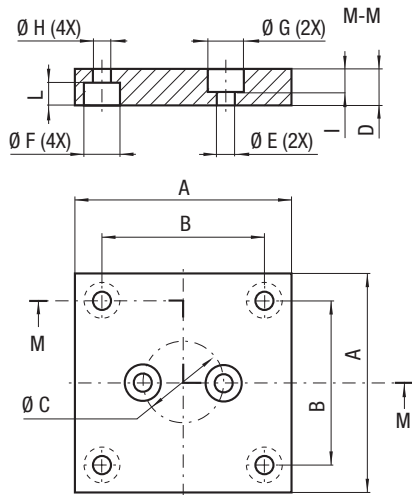




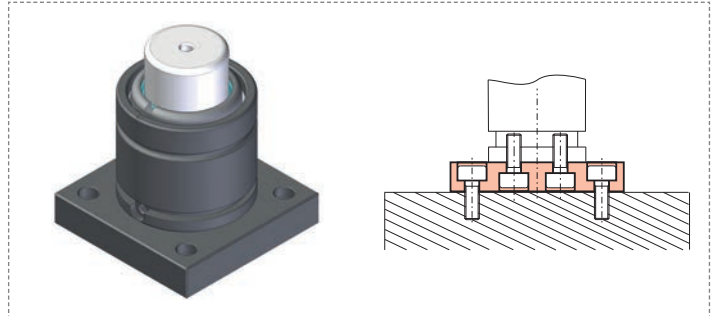
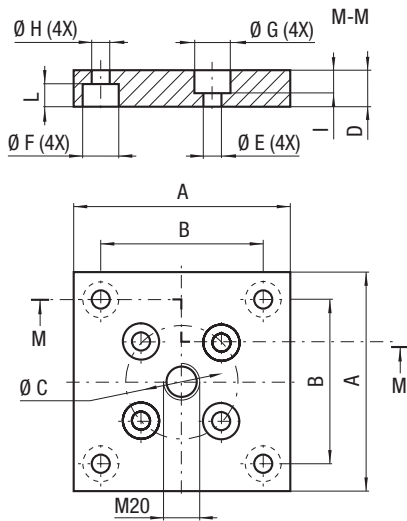
| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | Ø F | | Ø G | | Ø H | | I | | L | |
|-------|------------------------|-----|------|------|------|-----|------|----|------|-----|------|-----|------|-----|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FB 45 | 1-2-10-19-20 | 70 | 2.76 | 50 | 1.97 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 9 | 0.35 | 14 | 0.55 | 12 | 0.47 |
| FB 50 | 1-2-10-19-20 | 75 | 2.95 | 56,5 | 2.22 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 9 | 0.35 | 14 | 0.55 | 12 | 0.47 |
| FB 63 | 0 | 100 | 3.94 | 73,5 | 2.89 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 18 | 0.71 | 9 | 0.35 | 11 | 0.43 | 12 | 0.47 | 12 | 0.47 |



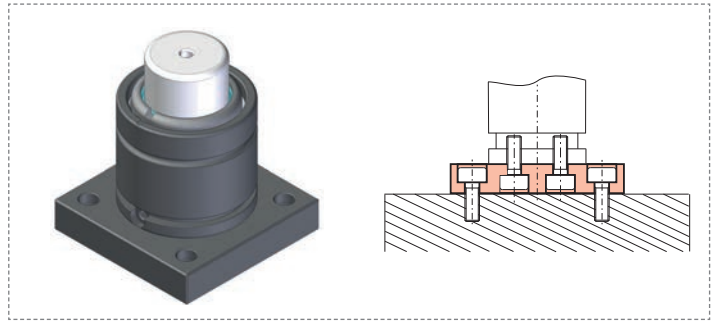
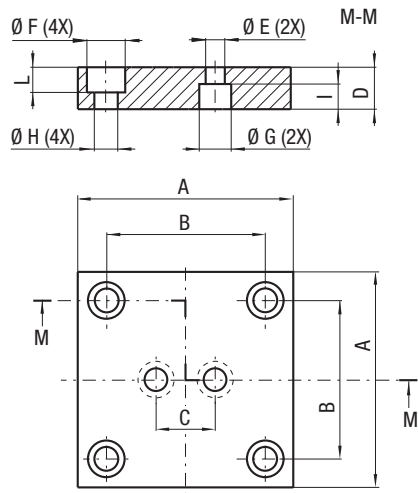
| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | Ø F | | Ø G | | Ø H | | I | | L | |
|--------|------------------------|-----|------|-------|------|-----|------|----|------|-----|------|-----|------|------|------|------|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FB 75 | 1-2-10-19-20 | 100 | 3.94 | 73,5 | 2.89 | 40 | 1.57 | 20 | 0.79 | 15 | 0.59 | 18 | 0.71 | 9 | 0.35 | 11 | 0.43 | 14 | 0.55 | 12 | 0.47 |
| FB 95 | 1-2-10-19-20 | 120 | 4.72 | 92 | 3.62 | 60 | 2.36 | 20 | 0.79 | 15 | 0.59 | 20 | 0.79 | 9 | 0.35 | 13,5 | 0.53 | 14 | 0.55 | 13 | 0.51 |
| FB 120 | 1-2-10-19-20 | 140 | 5.51 | 109,5 | 4.31 | 80 | 3.15 | 20 | 0.79 | 18 | 0.71 | 20 | 0.79 | 11 | 0.43 | 13,5 | 0.53 | 15 | 0.59 | 13 | 0.51 |
| FB 150 | 1-2-10-20 | 190 | 7.48 | 138 | 5.43 | 100 | 3.94 | 25 | 0.98 | 18 | 0.71 | 26 | 1.02 | 11 | 0.43 | 17,5 | 0.69 | 15 | 0.59 | 17 | 0.67 |
| FB 195 | 1-2-10-20 | 210 | 8.27 | 170 | 6.69 | 120 | 4.72 | 25 | 0.98 | 20 | 0.79 | 26 | 1.02 | 13,5 | 0.53 | 17,5 | 0.69 | 13 | 0.51 | 17 | 0.67 |



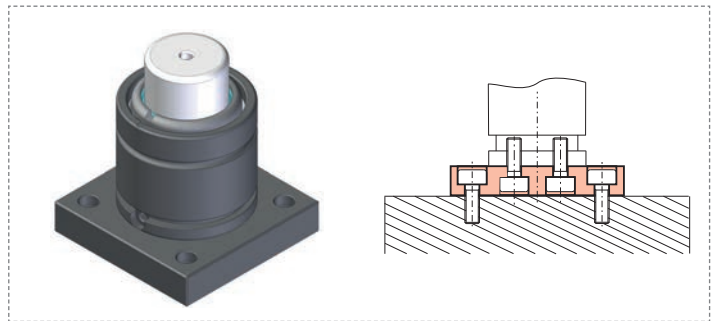
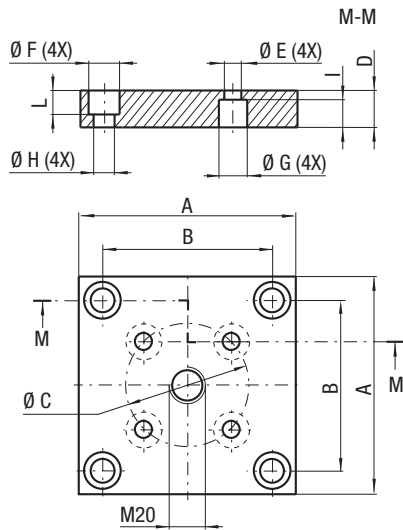
| CODE | Reference to standards | A | | B | | $\varnothing C$ | | D | | $\varnothing E$ | | $\varnothing F$ | | $\varnothing G$ | | $\varnothing H$ | | I | | L | |
|--------|------------------------|----|------|------|------|-----------------|------|----|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBA 45 | 20 | 70 | 2.76 | 50 | 1.97 | 20 | 0.79 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 14 | 0.55 | 12 | 0.47 |
| FBA 50 | 20 | 75 | 2.95 | 56,5 | 2.22 | 20 | 0.79 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 14 | 0.55 | 12 | 0.47 |



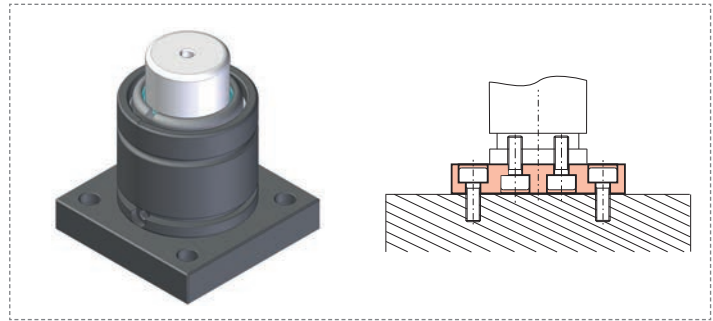
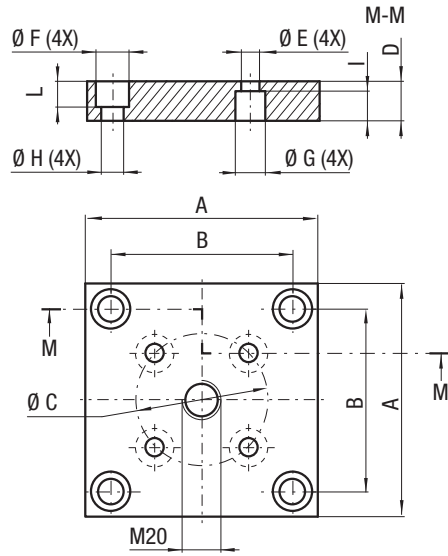
| CODE | Reference to standards | A | | B | | $\varnothing C$ | | D | | $\varnothing E$ | | $\varnothing F$ | | $\varnothing G$ | | $\varnothing H$ | | I | | L | |
|---------|------------------------|-----|------|-------|------|-----------------|------|----|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBA 75 | 20 | 100 | 3.94 | 73,5 | 2.89 | 40 | 1.57 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 14 | 0.55 | 12 | 0.47 |
| FBA 95 | 20 | 120 | 4.72 | 92 | 3.62 | 60 | 1.57 | 20 | 0.79 | 9 | 0.35 | 20 | 0.79 | 15 | 0.59 | 13,5 | 0.53 | 14 | 0.55 | 13 | 0.51 |
| FBA 120 | 20 | 140 | 5.51 | 109,5 | 4.31 | 80 | 3.15 | 20 | 0.79 | 11 | 0.43 | 20 | 0.79 | 18 | 0.71 | 13,5 | 0.53 | 15 | 0.59 | 13 | 0.51 |
| FBA 150 | 20 | 190 | 7.48 | 138 | 5.43 | 100 | 3.94 | 25 | 0.98 | 11 | 0.43 | 26 | 1.02 | 18 | 0.71 | 17,5 | 0.69 | 15 | 0.59 | 17 | 0.67 |
| FBA 195 | 20 | 210 | 8.27 | 170 | 6.69 | 120 | 4.72 | 25 | 0.98 | 13,5 | 0.53 | 26 | 1.02 | 20 | 0.79 | 17,5 | 0.69 | 15 | 0.59 | 17 | 0.67 |



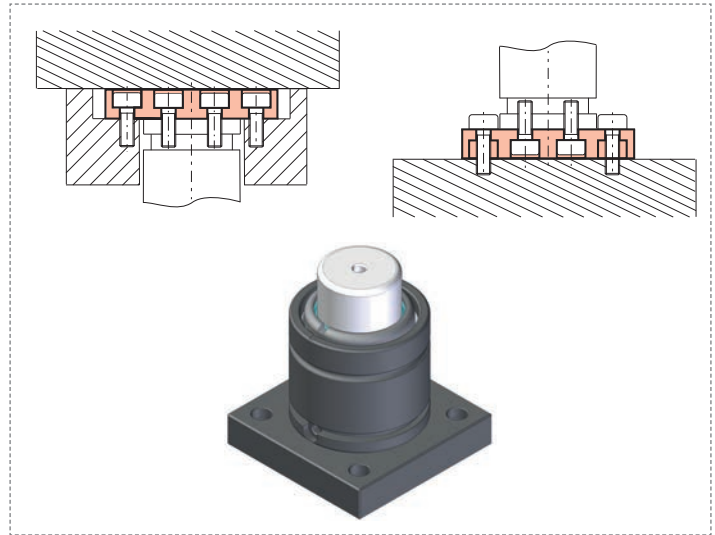
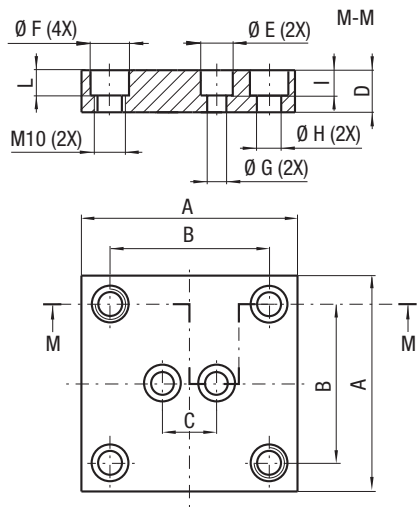
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBB 45 | 3-14 | 70 | 2.76 | 50 | 1.97 | 20 | 0.79 | 20 | 0.79 | 9 | 0.35 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 12 | 0.47 | 12 | 0.47 |
| FBB 50 | 3-14 | 75 | 2.95 | 56,5 | 2.22 | 20 | 0.79 | 20 | 0.79 | 9 | 0.35 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 12 | 0.47 | 12 | 0.47 |
| FBB 63 | 3-14 | 100 | 3.94 | 73,5 | 2.89 | 20 | 0.79 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 12 | 0.47 | 12 | 0.47 |



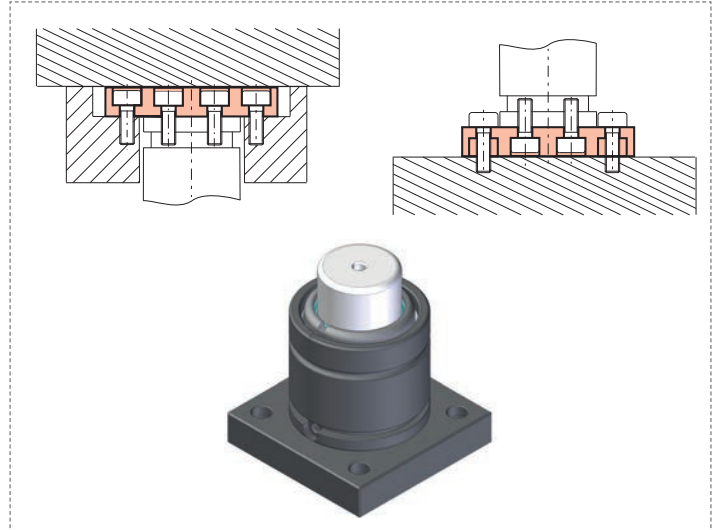
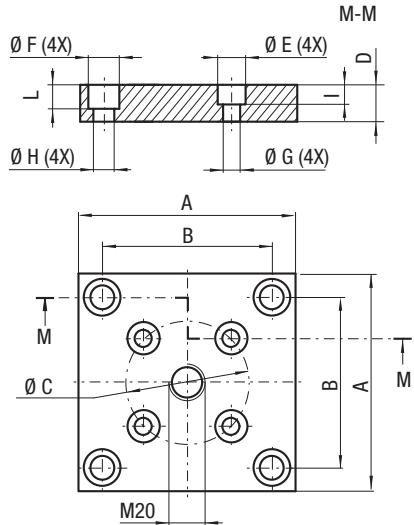
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBB 75 | 3-14 | 100 | 3.94 | 73,5 | 2.89 | 40 | 1.57 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 12 | 0.47 | 14 | 0.55 |
| FBB 95 | 3-14 | 120 | 4.72 | 92 | 3.62 | 60 | 2.36 | 20 | 0.79 | 9 | 0.35 | 20 | 0.79 | 15 | 0.59 | 13,5 | 0.53 | 14 | 0.55 | 13 | 0.51 |
| FBB 120 | 3-14 | 140 | 5.51 | 109,5 | 4.31 | 80 | 3.15 | 20 | 0.79 | 11 | 0.43 | 20 | 0.79 | 18 | 0.71 | 13,5 | 0.53 | 15 | 0.59 | 13 | 0.51 |
| FBB 150A | 3-14 | 190 | 7.48 | 138 | 5.43 | 100 | 3.94 | 20 | 0.79 | 11 | 0.43 | 20 | 0.79 | 18 | 0.71 | 13,5 | 0.53 | 15 | 0.59 | 13 | 0.51 |
| FBB 195 | 14 | 210 | 8.27 | 170 | 6.69 | 120 | 4.72 | 25 | 0.98 | 13,5 | 0.53 | 26 | 1.02 | 20 | 0.98 | 17,5 | 0.69 | 15 | 0.59 | 17 | 0.67 |



| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | Ø F | | Ø G | | Ø H | | I | | L | |
|-------|------------------------|-----|------|------|------|-----|------|----|------|-----|------|-----|------|-----|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBC75 | 0 | 100 | 3.94 | 73,5 | 2.89 | 40 | 1.57 | 20 | 0.79 | 9 | 0.35 | 18 | 0.71 | 15 | 0.59 | 11 | 0.43 | 12 | 0.47 | 15 | 0.55 |



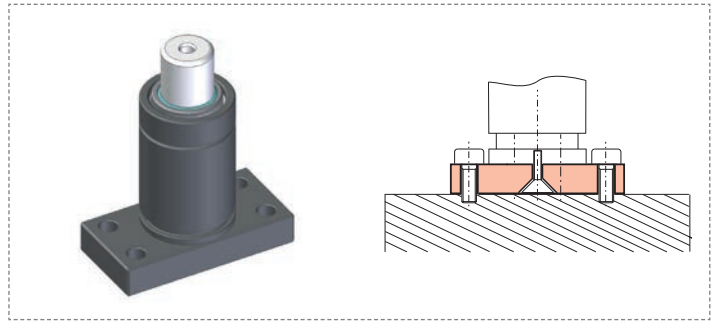
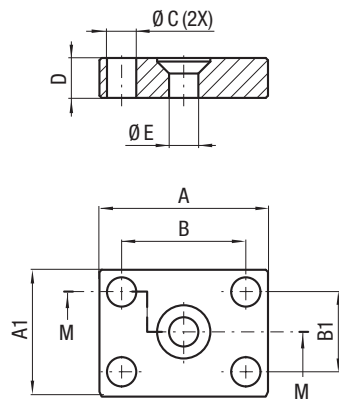
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBD 45 | 3 | 70 | 2.76 | 50 | 1.97 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 9 | 0.35 | 12 | 0.47 | 12 | 0.47 |
| FBD 50 | 3 | 75 | 2.95 | 56,5 | 2.22 | 20 | 0.79 | 20 | 0.79 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 9 | 0.35 | 12 | 0.47 | 12 | 0.47 |



| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | Ø F | | Ø G | | Ø H | | I | | L | |
|---------|------------------------|-----|------|------|------|-----|------|----|------|-----|------|-----|------|-----|------|------|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBD 75 | 3 | 100 | 3.94 | 73,5 | 2.89 | 40 | 1.57 | 20 | 0.79 | 15 | 0.59 | 18 | 0.71 | 9 | 0.35 | 11 | 0.43 | 12 | 0.47 | 15 | 0.59 |
| FBD 150 | 3-8 | 190 | 7.48 | 138 | 5.43 | 100 | 3.94 | 20 | 0.79 | 18 | 0.71 | 26 | 1.02 | 11 | 0.43 | 17,5 | 0.69 | 15 | 0.59 | 17 | 0.67 |

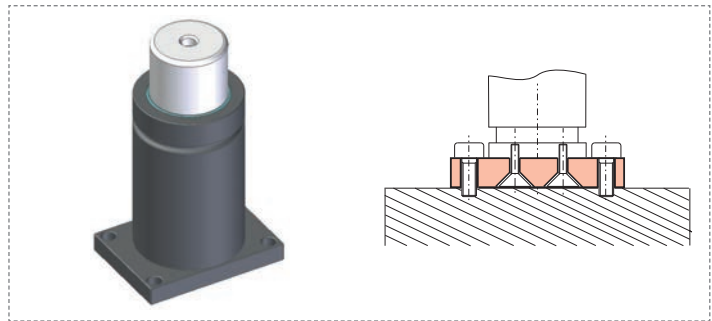
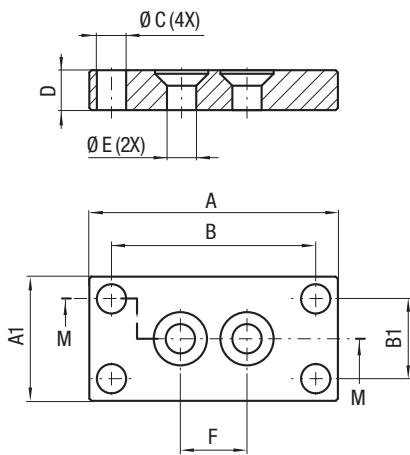


M-M

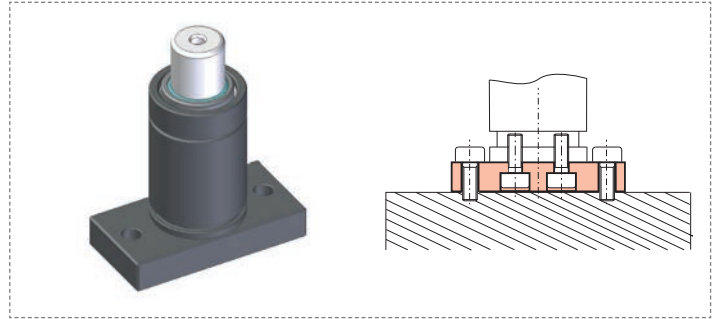
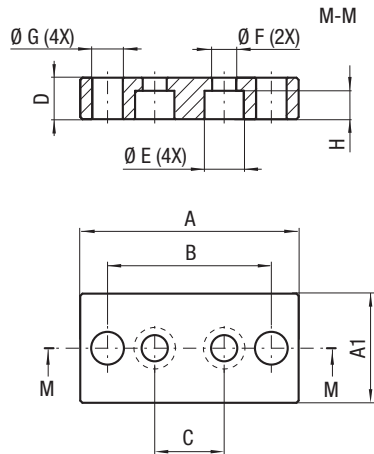


| CODE | Reference to standards | A | | A1 | | B | | B1 | | Ø C | | D | | Ø E | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBE 19 | 0 | 38 | 1.50 | 28 | 1.10 | 28 | 1.10 | 18 | 0.71 | 6,6 | 0.26 | 9 | 0.35 | 6,6 | 0.26 |
| FBE 25 | 0 | 44 | 1.73 | 28 | 1.10 | 34 | 1.34 | 18 | 0.71 | 6,6 | 0.26 | 9 | 0.35 | 6,6 | 0.26 |

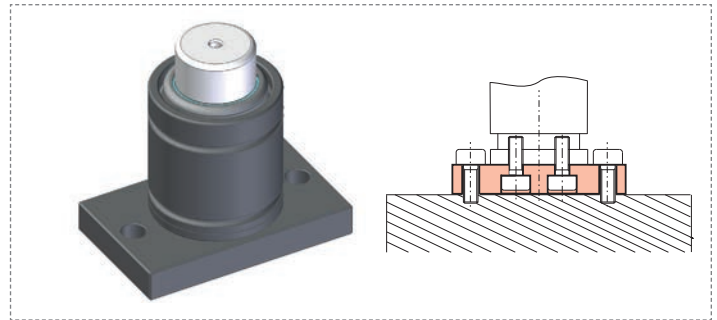
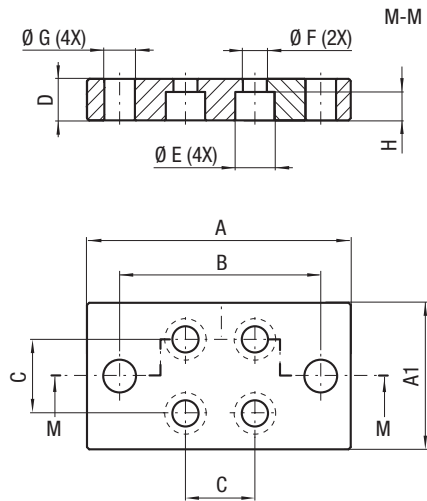
M-M



| CODE | Reference to standards | A | | A1 | | B | | B1 | | Ø C | | D | | Ø E | | F | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBE 32 | 0 | 51 | 2.01 | 32 | 1.26 | 41 | 1.61 | 22 | 0.87 | 6.6 | 0.26 | 9 | 0.35 | 6,6 | 0.26 | 15 | 0.59 |
| FBE 38 | 0 | 57 | 2.24 | 38 | 1.50 | 47 | 1.85 | 28 | 1.10 | 6.6 | 0.26 | 9 | 0.35 | 6,6 | 0.26 | 20 | 0.79 |
| FBE 50 | 0 | 69 | 2.72 | 50 | 1.97 | 59 | 2.32 | 40 | 1.57 | 6.6 | 0.26 | 9 | 0.35 | 9 | 0.35 | 20 | 0.79 |
| FBE 63 | 0 | 84 | 3.31 | 65 | 2.56 | 70 | 2.76 | 50 | 1.97 | 6.6 | 0.26 | 9 | 0.35 | 9 | 0.35 | 20 | 0.79 |

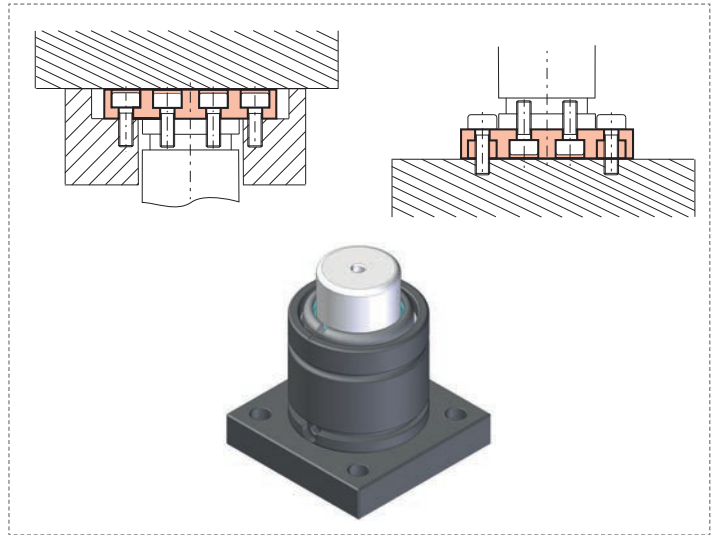
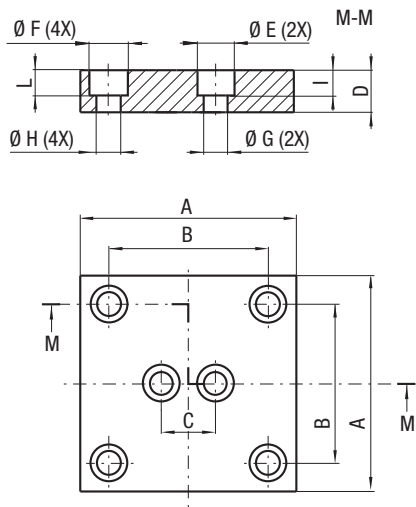


| CODE | Reference to standards | A | | A1 | | B | | C | | D | | Ø E | | Ø F | | Ø G | | H | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBF 45 | 20-29 | 90 | 3.54 | 45 | 1.77 | 70 | 2.76 | 20 | 0.79 | 16 | 0.63 | 14 | 0.55 | 9 | 0.35 | 9 | 0.35 | 10 | 0.39 |
| FBF 50 | 20-29 | 100 | 3.94 | 50 | 1.97 | 75 | 2.95 | 31,8 | 1.25 | 19 | 0.75 | 18 | 0.71 | 11 | 0.43 | 14 | 0.55 | 13 | 0.51 |
| FBFA 50 | 20-29 | 100 | 3.94 | 50 | 1.97 | 75 | 2.95 | 20 | 0.79 | 19 | 0.75 | 14 | 0.55 | 9 | 0.35 | 14 | 0.55 | 13 | 0.51 |

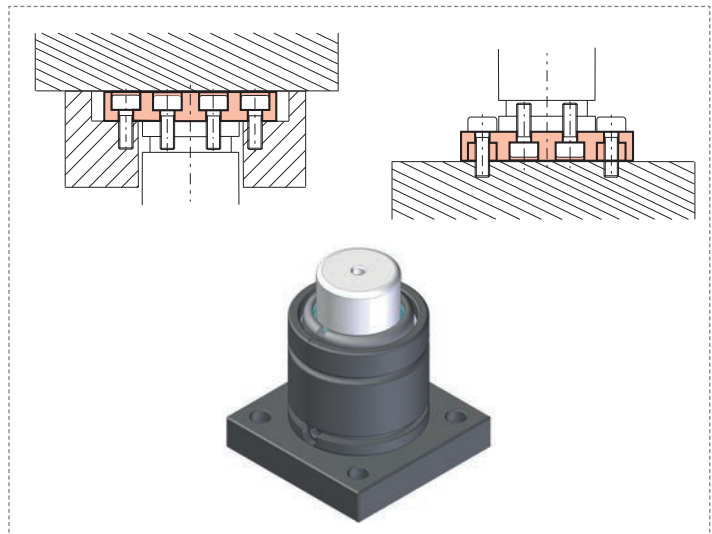
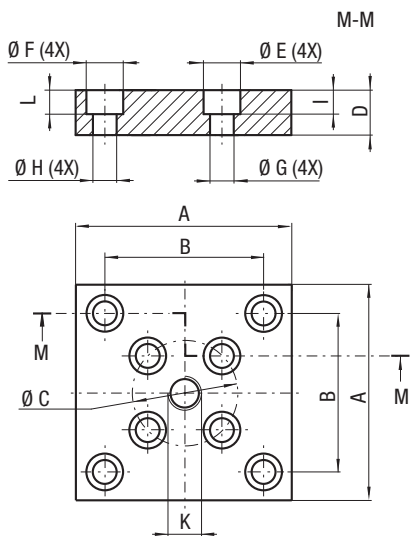


| CODE | Reference to standards | A | | A1 | | B | | C | | D | | Ø E | | Ø F | | Ø G | | H | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBF 75 | 20-29 | 130 | 5.12 | 80 | 3.15 | 105 | 4.13 | 38,1 | 1.50 | 19 | 0.75 | 20 | 0.79 | 14 | 0.55 | 14 | 0.55 | 13 | 0.51 |
| FBFA 75 | 20-29 | 130 | 5.12 | 80 | 3.15 | 105 | 4.13 | 28,3 | 1,11 | 19 | 0.75 | 14 | 0.55 | 9 | 0.35 | 14 | 0.55 | 13 | 0.51 |
| FBF 95 | 20-29 | 150 | 5.91 | 100 | 3.94 | 125 | 4.92 | 53,9 | 2,12 | 19 | 0.75 | 20 | 0.79 | 14 | 0.55 | 14 | 0.55 | 13 | 0.51 |
| FBFA 95 | 20-29 | 150 | 5.91 | 100 | 3.94 | 125 | 4.92 | 42,4 | 1,67 | 19 | 0.75 | 14 | 0.55 | 9 | 0.35 | 14 | 0.55 | 13 | 0.51 |
| FBF 120 | 20-29 | 170 | 6.69 | 120 | 4.72 | 145 | 5.71 | 57,1 | 2,25 | 19 | 0.75 | 20 | 0.79 | 14 | 0.55 | 14 | 0.55 | 13 | 0.51 |

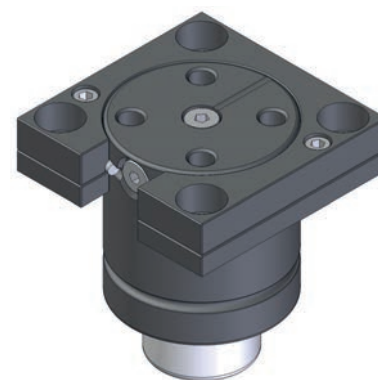
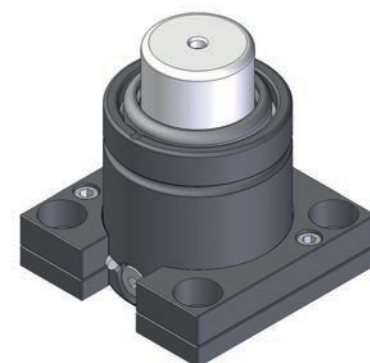
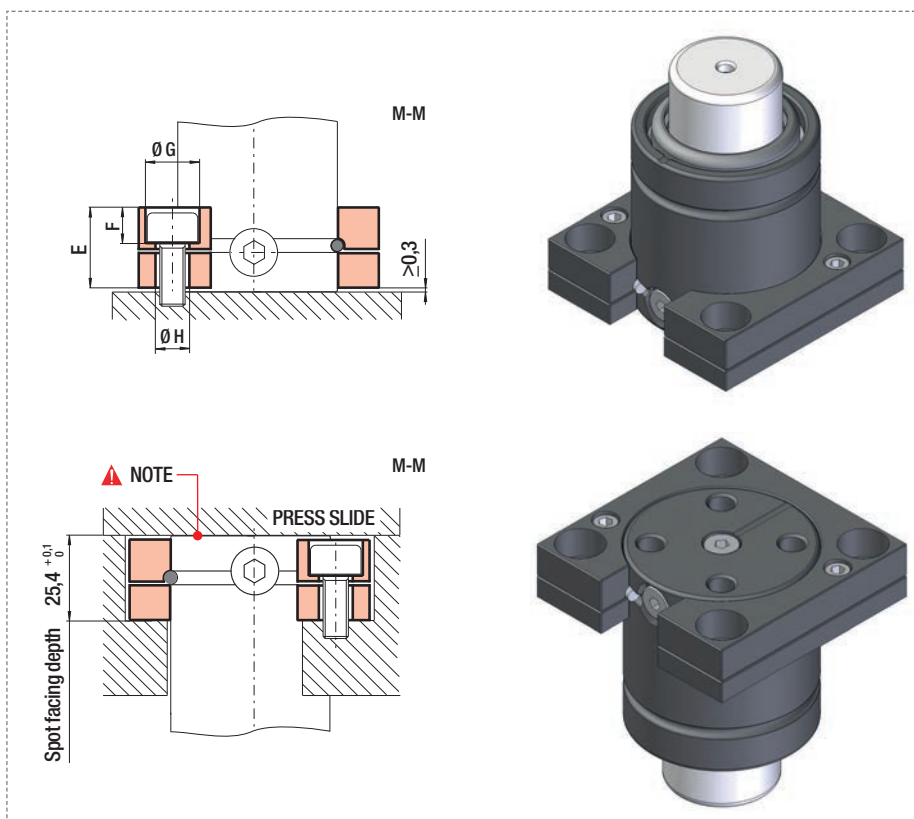
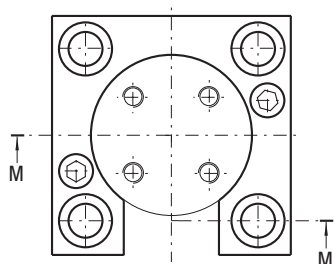
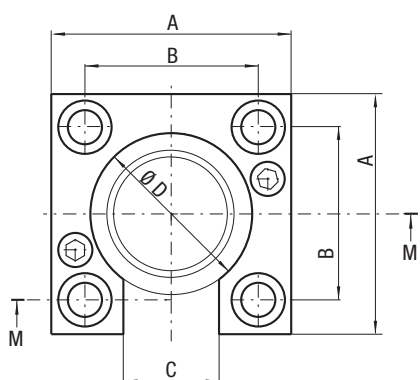




| CODE | Reference to standards | A | | B | | C | | D | | $\varnothing E$ | | $\varnothing F$ | | $\varnothing G$ | | $\varnothing H$ | | I | | L | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FBH 50 | 19 | 85 | 3.35 | 62 | 2.44 | 31,8 | 1.25 | 25 | 0.98 | 18 | 0.71 | 18 | 0.71 | 11 | 0.43 | 11 | 0.43 | 13 | 0.51 | 13 | 0.51 |



| CODE | Reference to standards | A | | B | | $\varnothing C$ | | D | | $\varnothing E$ | | $\varnothing F$ | | $\varnothing G$ | | $\varnothing H$ | | I | | L | | K |
|--------|------------------------|-----|------|----|------|-----------------|------|----|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|----|------|----|------|-----|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | |
| FBH 75 | 19 | 100 | 3.94 | 76 | 2.99 | 53,9 | 2.12 | 25 | 0.98 | 21 | 0.83 | 21 | 0.83 | 13 | 0.51 | 13 | 0.51 | 14 | 0.55 | 13 | 0.51 | M16 |
| FBH 95 | 19 | 132 | 5.20 | 95 | 3.74 | 76,2 | 3.00 | 30 | 1.18 | 20 | 0.79 | 26 | 1.02 | 13 | 0.51 | 17 | 0.67 | 14 | 0.55 | 18 | 0.71 | M20 |



| CODE | Reference to standards | A | | B | | C | | Ø D | | E | | F | | Ø G | | Ø H | |
|---------|------------------------|-----|------|-------|------|----|------|-------|------|----|------|----|------|-----|------|-----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS1 50 | 0 | 75 | 2.95 | 53,9 | 2.12 | 30 | 1.18 | 50,5 | 1.99 | 25 | 0.98 | 11 | 0.43 | 17 | 0.67 | 11 | 0.43 |
| FS1 63 | 0 | 100 | 3.94 | 73,5 | 2.89 | 30 | 1.18 | 63,5 | 2.50 | 25 | 0.98 | 11 | 0.43 | 17 | 0.67 | 11 | 0.43 |
| FS1 75 | 0 | 100 | 3.94 | 76,2 | 3.00 | 30 | 1.18 | 75,5 | 2.97 | 25 | 0.98 | 13 | 0.51 | 20 | 0.79 | 13 | 0.51 |
| FS1 95 | 0 | 125 | 4.92 | 98,3 | 3.87 | 30 | 1.18 | 95,5 | 3.76 | 25 | 0.98 | 13 | 0.51 | 20 | 0.79 | 13 | 0.51 |
| FS1 120 | 0 | 140 | 5.51 | 114,3 | 4.50 | 30 | 1.18 | 120,5 | 4.74 | 25 | 0.98 | 13 | 0.51 | 20 | 0.79 | 13 | 0.51 |
| FS1 150 | 0 | 175 | 6.89 | 139,7 | 5.50 | 30 | 1.18 | 150,5 | 5.93 | 25 | 0.98 | 17 | 0.67 | 25 | 0.98 | 17 | 0.67 |

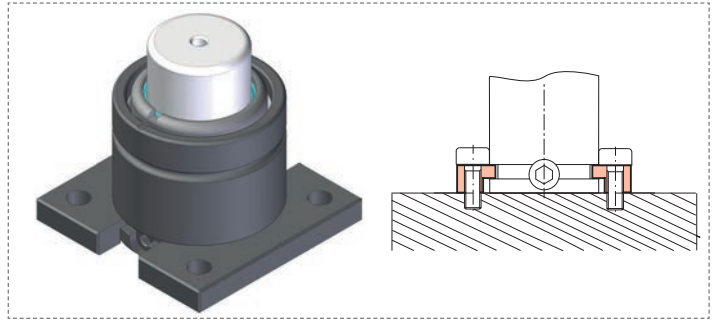
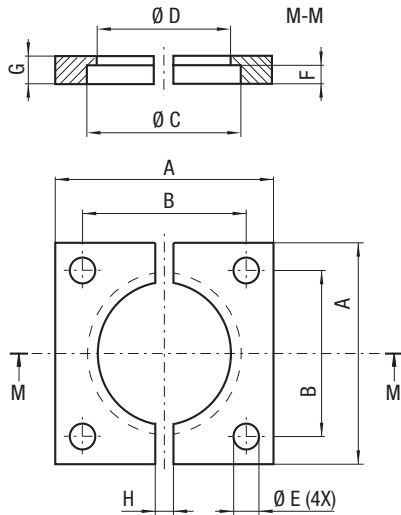
NOTE

- IT** Garantire sempre il contatto tra il piano premente e il fondo del cilindro.
- EN** Make sure there is always a contact between the bottom cylinder surface and the press slide.
- DE** Es muss immer ein Kontakt zwischen der Arbeitsfläche der Presse und dem Boden der Gasdruckfeder gewährleistet sein.
- FR** Toujours consentir un contact entre la surface du fond du cylindre et la presse.
- ES** Garantizar siempre un contacto entre la base del cilindro y la corredera del troquel.
- PT** Garantir sempre o contacto entre o fundo do cilindro e o dispositivo de pressão.



FS2

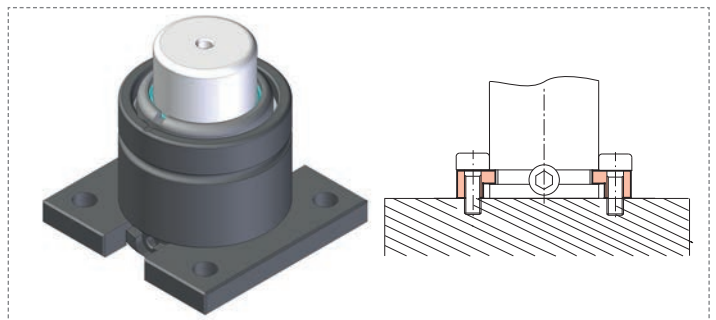
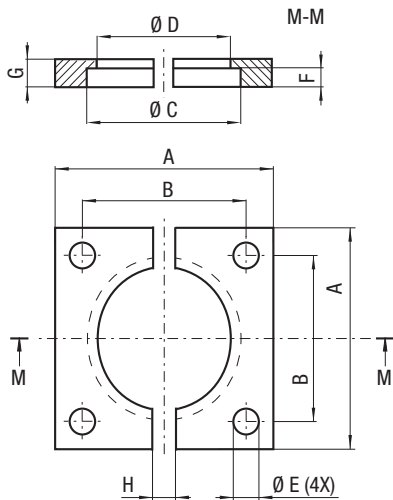
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|----------------|---------------|------------|------|
| ISO | VDI | BMW | Ford |
| General Motors | Mercedes Benz | Volkswagen | |



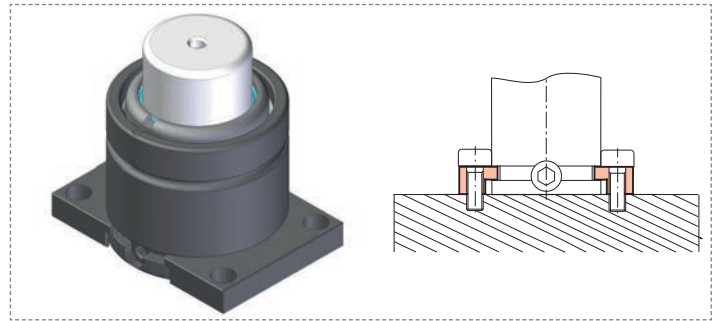
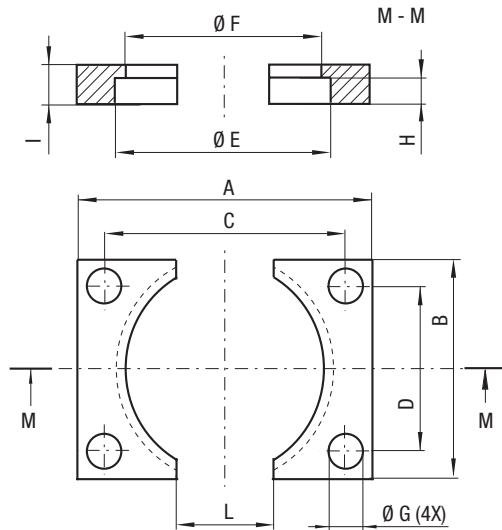
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|---------|------------------------|-----|------|-------|------|-------|------|-------|------|------|------|----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS2 32 | 1-3-4-7-15 | 50 | 1.97 | 35 | 1.38 | 32,5 | 1.28 | 28,5 | 1.12 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 5 | 0.20 |
| FS2 38 | 1-3-4-7-15 | 55 | 2.17 | 40 | 1.57 | 38,5 | 1.52 | 34,5 | 1.36 | 7 | 0.28 | 4 | 0.16 | 7 | 0.28 | 5 | 0.20 |
| FS2 45 | 1-2-3-4-7-15-21-26 | 70 | 2.76 | 50 | 1.97 | 45,5 | 1.79 | 41,5 | 1.63 | 9 | 0.35 | 4 | 0.16 | 7 | 0.28 | 20 | 0.79 |
| FS2 50 | 1-2-3-4-7-15-21-26 | 75 | 2.95 | 56,5 | 2.22 | 50,5 | 1.99 | 44,5 | 1.75 | 9 | 0.35 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 63 | 0 | 85 | 3.35 | 63,5 | 2.50 | 63,5 | 2.50 | 57,5 | 2.26 | 11 | 0.43 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 75 | 1-2-3-4-7-15-21-26 | 100 | 3.94 | 73,5 | 2.89 | 75,5 | 2.97 | 68,5 | 2.70 | 11 | 0.43 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 95 | 1-2-3-4-7-15-21-26 | 120 | 4.72 | 92 | 3.62 | 95,5 | 3.76 | 88,5 | 3.48 | 13,5 | 0.53 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 120 | 1-2-3-4-7-15-21-26 | 140 | 5.51 | 109,5 | 4.31 | 120,5 | 4.74 | 113,5 | 4.47 | 13,5 | 0.53 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 150 | 1-2-3-4-7-15-21-26 | 190 | 7.48 | 138 | 5.43 | 150,5 | 5.93 | 143,5 | 5.65 | 17,5 | 0.69 | 8 | 0.31 | 12 | 0.47 | 24 | 0.95 |
| FS2 195 | 1-2-4-7-15-21-26 | 210 | 8.27 | 170 | 6.69 | 195,5 | 7.70 | 188 | 7.40 | 17,5 | 0.69 | 8 | 0.31 | 13 | 0.51 | 24 | 0.95 |

FS2B

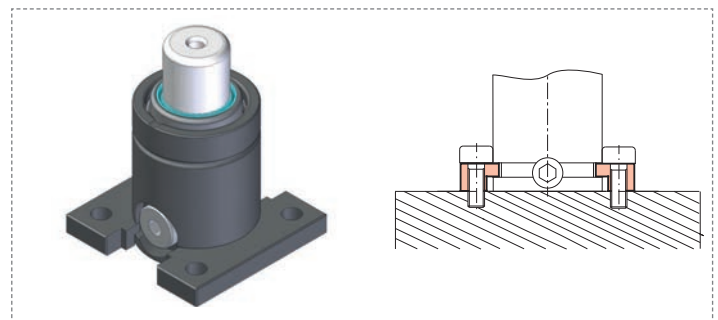
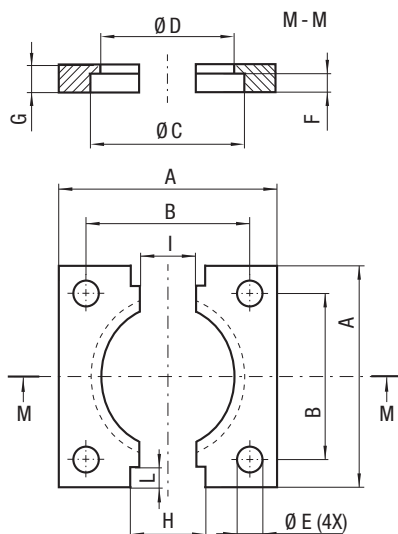
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|------------|-----|------|---------------|
| VDI | BMW | Ford | Mercedes Benz |
| Volkswagen | | | |



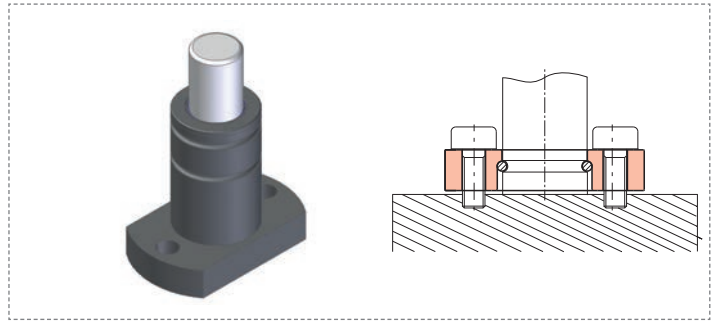
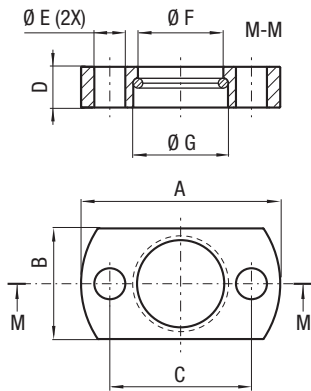
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS2B 32 | 2-21-26 | 50 | 1.97 | 35 | 1.38 | 32,5 | 1.28 | 28,5 | 1.12 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 12 | 0.47 |
| FS2B 38 | 2-21-26 | 55 | 2.17 | 40 | 1.57 | 38,5 | 1.52 | 34,5 | 1.36 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 12 | 0.47 |
| FS2B 63 | 2-3-4-15-21 | 100 | 3.94 | 73,5 | 2.89 | 64 | 2.52 | 57,5 | 2.60 | 11 | 0.43 | 8 | 0.32 | 12 | 0.47 | 24 | 0.95 |



| CODE | Reference to standards | A | | B | | C | | D | | Ø E | | Ø F | | Ø G | | H | | I | | L | |
|----------|------------------------|-----|------|-----|------|-----|------|-----|------|-------|------|-------|------|------|------|----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS2A 32 | 0 | 50 | 1.97 | 27 | 1.06 | 40 | 1.57 | 18 | 0.71 | 32,5 | 1.28 | 28,5 | 1.12 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 20 | 0.79 |
| FS2A 38 | 0 | 55 | 2.17 | 33 | 1.30 | 44 | 1.73 | 20 | 0.79 | 38,5 | 1.52 | 34,5 | 1.36 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 20 | 0.79 |
| FS2A 45 | 0 | 70 | 2.76 | 40 | 1.57 | 57 | 2.24 | 27 | 1.06 | 45,5 | 1.79 | 41,5 | 1.63 | 9 | 0.35 | 4 | 0.16 | 7 | 0.28 | 25 | 0.98 |
| FS2A 50 | 0 | 75 | 2.95 | 45 | 1.77 | 62 | 2.44 | 32 | 1.26 | 50,5 | 1.99 | 44,5 | 1.75 | 9 | 0.35 | 8 | 0.31 | 12 | 0.47 | 25 | 0.98 |
| FS2A 63 | 0 | 85 | 3.35 | 58 | 2.28 | 69 | 2.72 | 42 | 1.65 | 63,5 | 2.5 | 57,5 | 2.26 | 11 | 0.43 | 8 | 0.31 | 12 | 0.47 | 30 | 1.18 |
| FS2A 75 | 0 | 100 | 3.94 | 70 | 2.76 | 84 | 3.31 | 54 | 2.13 | 75,5 | 2.97 | 68,5 | 2.7 | 11 | 0.43 | 8 | 0.31 | 12 | 0.47 | 30 | 1.18 |
| FS2A 95 | 0 | 120 | 4.72 | 90 | 3.54 | 100 | 3.94 | 70 | 2.76 | 95,5 | 3.76 | 88,5 | 3.48 | 13,5 | 0.53 | 8 | 0.31 | 12 | 0.47 | 40 | 1.57 |
| FS2A 120 | 0 | 140 | 5.51 | 115 | 4.53 | 120 | 4.72 | 95 | 3.74 | 120,5 | 4.74 | 113,5 | 4.47 | 13,5 | 0.53 | 8 | 0.31 | 12 | 0.47 | 50 | 1.97 |
| FS2A 150 | 0 | 190 | 7.48 | 145 | 5.71 | 165 | 6.5 | 120 | 4.72 | 150,5 | 5.93 | 143,5 | 5.65 | 17,5 | 0.69 | 8 | 0.31 | 12 | 0.47 | 60 | 2.36 |
| FS2A 195 | 0 | 210 | 8.27 | 190 | 7.48 | 185 | 7.28 | 165 | 6.50 | 195,5 | 7.70 | 188 | 7.40 | 17,5 | 0.69 | 8 | 0.31 | 13 | 0.51 | 80 | 3.15 |

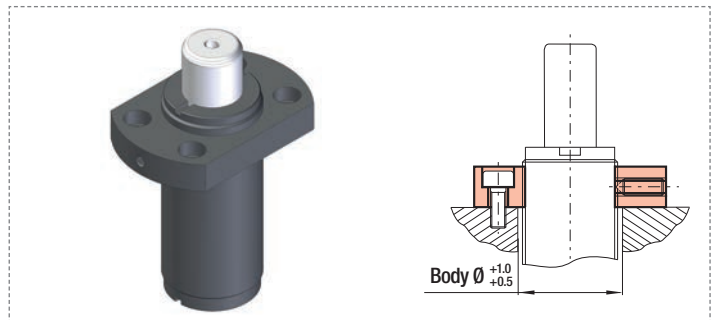
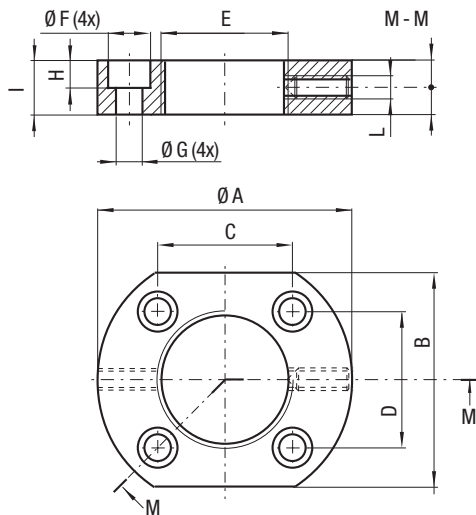


| CODE | Reference to standards | A | | B | | C | | D | | Ø E | | F | | G | | H | | I | | L | |
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| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS2C 32 | 0 | 50 | 1.97 | 35 | 1.38 | 32,5 | 1.28 | 28,5 | 1.12 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 21 | 0.83 | 17 | 0.67 | 6,5 | 0.26 |
| FS2C 38 | 0 | 55 | 2.17 | 40 | 1.57 | 38,5 | 1.52 | 34,5 | 1.36 | 6,6 | 0.26 | 4 | 0.16 | 7 | 0.28 | 21 | 0.83 | 17 | 0.67 | 6,5 | 0.26 |



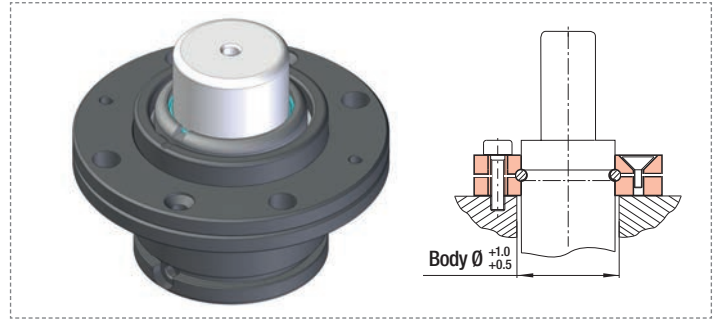
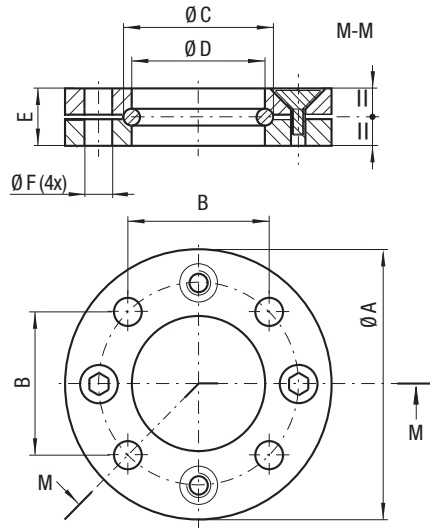
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|--------|------------------------|----|------|----|------|----|------|-----|------|-----|------|------|------|------|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FS3 19 | 0 | 45 | 1.77 | 25 | 0.98 | 32 | 1.26 | 9,2 | 0.36 | 7 | 0.28 | 19,3 | 0.76 | 21,4 | 0.84 |
| FS3 25 | 0 | 50 | 1.97 | 30 | 1.18 | 38 | 1.50 | 9,2 | 0.36 | 7 | 0.28 | 25,3 | 1.00 | 27,4 | 1.08 |

FCA



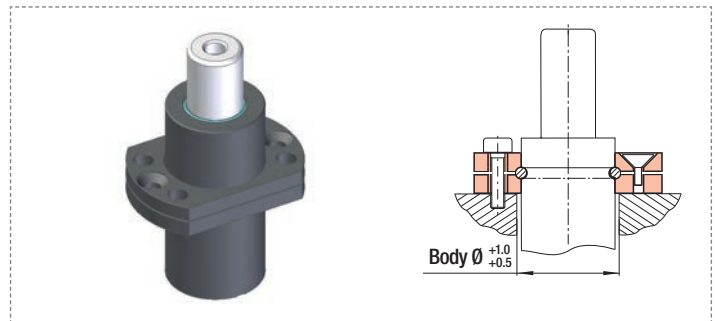
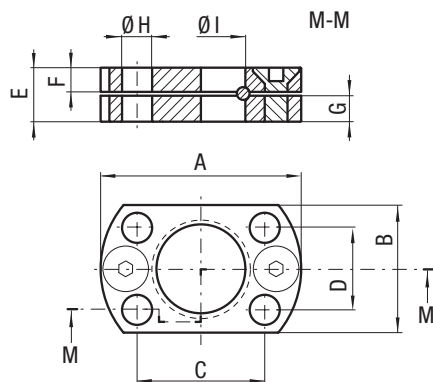
| CODE | Reference to standards | Ø A | | B | | C | | D | | E | | Ø F | | Ø G | | H | | I | | L |
|----------|------------------------|-----|------|----|------|------|------|----|------|------------|------|------|------|------|------|------|------|------|----|---|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | |
| FCA 38 | 0 | 75 | 2.95 | 50 | 1.97 | 50,3 | 1.98 | 29 | 1.14 | M 38 x 1,5 | 14 | 0.55 | 9 | 0.35 | 8 | 0.31 | 12 | 0.47 | M6 | |
| ⚠ FCA 45 | 0 | 90 | 3.54 | 60 | 2.36 | 60 | 2.36 | 34 | 1.34 | M 45 x 1,5 | 14 | 0.55 | 9 | 0.35 | 8 | 0.31 | 16 | 0.63 | M6 | |
| ⚠ FCA 50 | 0-22 | 100 | 3.94 | 66 | 2.60 | 66 | 2.60 | 38 | 1.50 | M 50 x 1,5 | 14 | 0.55 | 9 | 0.35 | 8 | 0.31 | 16 | 0.63 | M6 | |

⚠ PHASING OUT



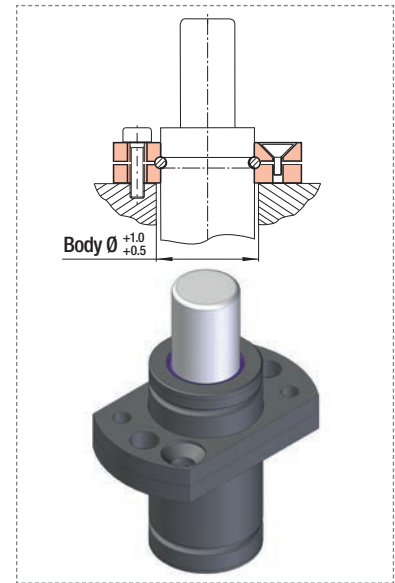
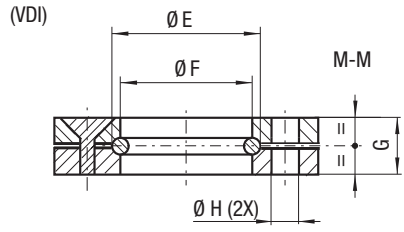
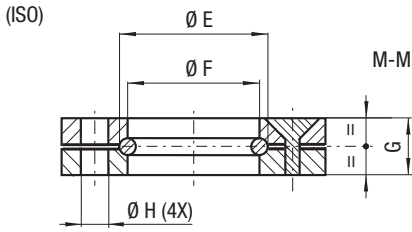
For KE series only

| CODE | Reference to standards | Ø A | | B | | Ø C | | Ø D | | E | | Ø F | |
|--------|------------------------|-----|------|------|------|-----|------|------|------|----|------|------|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FCB 50 | 0 | 95 | 3.74 | 56,5 | 2.22 | 52 | 2.05 | 50,5 | 1.99 | 13 | 0.51 | 9 | 0.35 |
| FCB 63 | 0 | 122 | 4.80 | 73,5 | 2.89 | 66 | 2.60 | 63,5 | 2.50 | 16 | 0.63 | 11 | 0.43 |
| FCB 75 | 0 | 122 | 4.80 | 73,5 | 2.89 | 78 | 3.07 | 75,5 | 2.97 | 16 | 0.63 | 11 | 0.43 |
| FCB 95 | 0 | 150 | 5.91 | 92 | 3.62 | 98 | 3.86 | 95,5 | 3.76 | 18 | 0.71 | 13,5 | 0.53 |

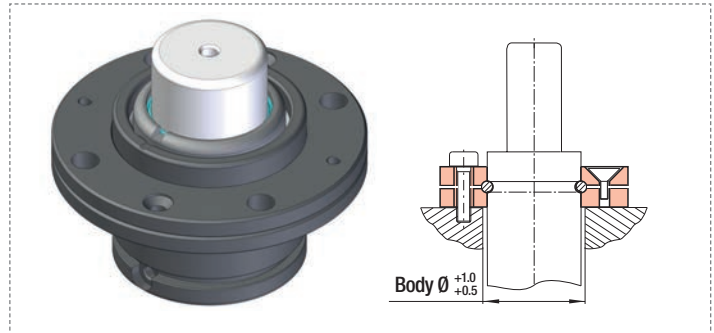
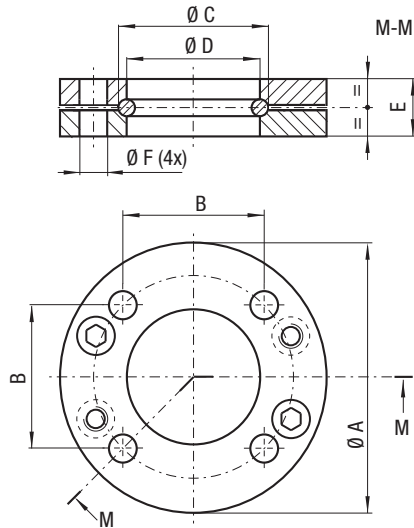
FCD


| CODE | Reference to standards | A | | B | | C | | D | | E | | F | | G | | Ø H | | Ø I | |
|--------|------------------------|----|------|----|------|----|------|----|------|----|------|-----|------|-----|------|-----|------|------|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FCD 19 | 0 | 44 | 1.73 | 28 | 1.10 | 28 | 1.10 | 18 | 0.71 | 11 | 0.43 | 5,2 | 0.20 | 5,6 | 0.22 | 6,6 | 0.26 | 19,5 | 0.77 |
| FCD 25 | 0 | 50 | 1.97 | 30 | 1.18 | 34 | 1.34 | 18 | 0.71 | 11 | 0.43 | 5,2 | 0.20 | 5,6 | 0.22 | 6,6 | 0.26 | 25,5 | 1.00 |
| FCD 32 | 0 | 57 | 2.24 | 39 | 1.54 | 40 | 1.57 | 22 | 0.87 | 11 | 0.43 | 5,2 | 0.20 | 5,6 | 0.22 | 6,6 | 0.26 | 32,5 | 1.28 |
| FCD 38 | 0 | 63 | 2.48 | 46 | 1.81 | 45 | 1.77 | 26 | 1.02 | 11 | 0.43 | 5,2 | 0.20 | 5,6 | 0.22 | 6,6 | 0.26 | 38,5 | 1.52 |
| FCD 50 | 0 | 75 | 2.95 | 58 | 2.28 | 54 | 2.13 | 34 | 1.34 | 11 | 0.43 | 6,2 | 0.24 | 4,6 | 0.18 | 6,6 | 0.26 | 50,5 | 1.99 |
| FCD 63 | 0 | 98 | 3.86 | 76 | 2.99 | 74 | 2.91 | 40 | 1.57 | 13 | 0.51 | 8,9 | 0.35 | 3,9 | 0.15 | 9 | 0.35 | 63,5 | 2.50 |

| | | | |
|-----------------------|----------------------|--------------------------|--------------------|
| ISO General Motors | VDI Mercedes Benz | BMW Peugeot - Citroën | Ford Volkswagen |
|-----------------------|----------------------|--------------------------|--------------------|



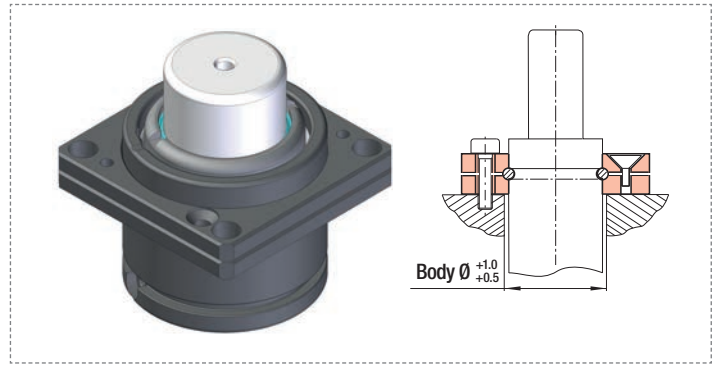
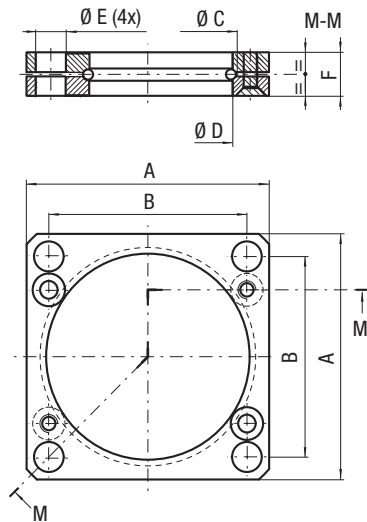
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|----------|------------------------|-----|------|----|------|----|------|----|------|------|------|------|------|----|------|-----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FC 12 A | 0 | 34 | 1.34 | 21 | 0.83 | 24 | 0.94 | - | - | 13,7 | 0.54 | 12,5 | 0.49 | 9 | 0.35 | 6,6 | 0.26 |
| FC 15 A | 0 | 37 | 1.36 | 24 | 0.94 | 27 | 1.06 | - | - | 16,7 | 0.66 | 15,5 | 0.61 | 9 | 0.35 | 6,6 | 0.26 |
| FC 19 B | 1-5 | 44 | 1.73 | 25 | 0.98 | 30 | 1.18 | 12 | 0.47 | 21,9 | 0.86 | 19,5 | 0.77 | 9 | 0.35 | 6,6 | 0.26 |
| FC 25 B | 1-5 | 50 | 1.97 | 30 | 1.18 | 34 | 1.34 | 18 | 0.71 | 27,9 | 1.10 | 25,5 | 1.00 | 9 | 0.35 | 6,6 | 0.26 |
| FCC 19 A | 2-3-17-21-23 | 44 | 1.73 | 25 | 0.98 | 32 | 1.26 | - | - | 21 | 0.83 | 19,5 | 0.77 | 9 | 0.35 | 6,6 | 0.26 |
| FCC 25 A | 2-3-17-19-21-23 | 50 | 1.97 | 30 | 1.18 | 38 | 1.50 | - | - | 27 | 1.06 | 25,5 | 1.00 | 9 | 0.35 | 6,6 | 0.26 |



| CODE | Reference to standards | Ø A | | B | | Ø C | | Ø D | | E | | Ø F | |
|----------|------------------------|-----|-------|-------|------|-----|------|-------|------|----|------|------|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FC 32 A | 1-2-3-9-16-24 | 60 | 2.36 | 35 | 1.38 | 34 | 1.34 | 32,5 | 1.28 | 9 | 0.35 | 7 | 0.28 |
| FC 38 A | 1-2-3-9-16-24 | 68 | 2.68 | 40 | 1.57 | 40 | 1.57 | 38,5 | 1.52 | 9 | 0.35 | 7 | 0.28 |
| FC 45 A | 1-2-3-9-16-24 | 86 | 3.39 | 50 | 1.97 | 47 | 1.85 | 45,5 | 1.79 | 13 | 0.51 | 9 | 0.35 |
| FC 50 A | 1-2-3-9-16-24 | 95 | 3.74 | 56,5 | 2.22 | 54 | 2.13 | 50,5 | 1.99 | 13 | 0.51 | 9 | 0.35 |
| FC 63 A | 0 | 122 | 4.80 | 73,5 | 2.89 | 67 | 2.64 | 63,5 | 2.50 | 16 | 0.63 | 11 | 0.43 |
| FC 75 A | 1-2-3-9-16-24 | 122 | 4.80 | 73,5 | 2.89 | 80 | 3.15 | 75,5 | 2.97 | 16 | 0.63 | 11 | 0.43 |
| FC 95 A | 1-2-3-9-16-24 | 150 | 5.91 | 92 | 3.62 | 100 | 3.94 | 95,5 | 3.76 | 18 | 0.71 | 13,5 | 0.53 |
| FC 120 A | 1-2-3-9-16-24 | 175 | 6.89 | 109,5 | 4.31 | 125 | 4.92 | 120,5 | 4.74 | 21 | 0.83 | 13,5 | 0.53 |
| FC 150 A | 1-2-3-9-16-24 | 220 | 8.66 | 138 | 5.43 | 155 | 6.10 | 150,5 | 5.93 | 27 | 1.06 | 17,5 | 0.69 |
| FC 195 A | 1-2-9-16-24 | 290 | 11.42 | 170 | 6.69 | 200 | 7.87 | 195,5 | 7.70 | 27 | 1.06 | 17,5 | 0.69 |

| | | | |
|----------------|------------|-----|------|
| ISO | VDI | BMW | Ford |
| General Motors | Volkswagen | | |

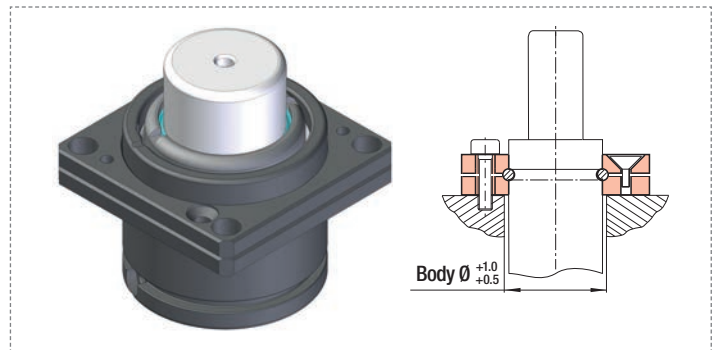
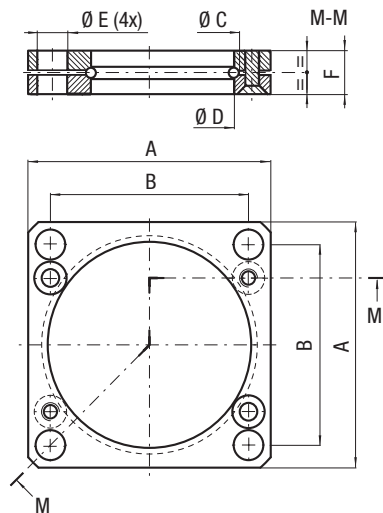
FCQ - FCQC



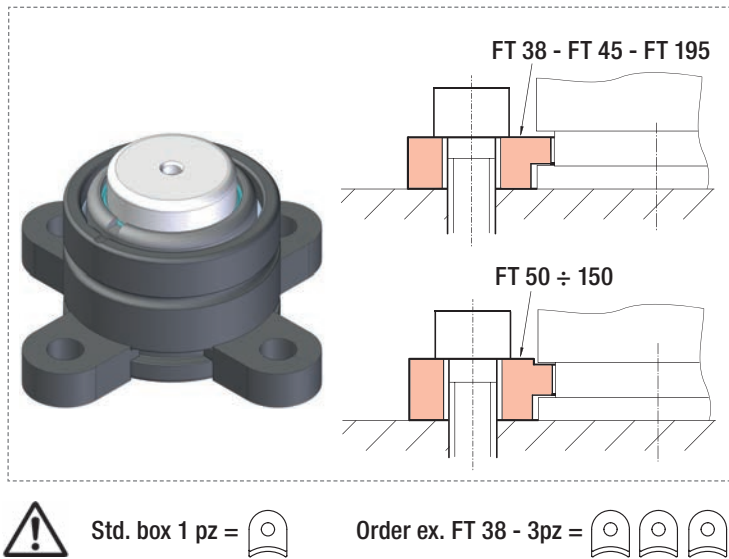
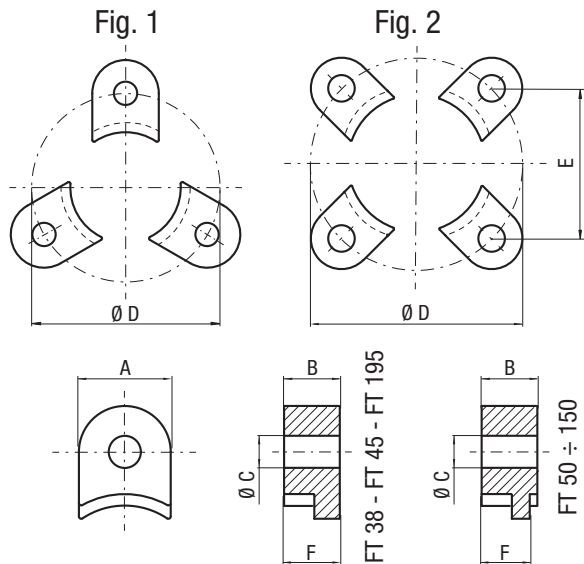
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|-------------|----------|------------------------|-----|------|-------|------|-----|------|-------|------|------|------|----|------|
| PHASING OUT | NEW | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FCQ 32 A | FCQC 32 | 2-4-8-25 | 45 | 1.77 | 35 | 1.38 | 34 | 1.34 | 32,5 | 1.28 | 7 | 0.28 | 9 | 0.26 |
| FCQ 38 A | FCQC 38 | 1-2-3-4-8-25 | 52 | 2.05 | 40 | 1.57 | 40 | 1.57 | 38,5 | 1.52 | 7 | 0.28 | 9 | 0.35 |
| FCQ 45 A | FCQC 45 | 1-2-3-4-8-25 | 64 | 2.52 | 50 | 1.97 | 47 | 1.85 | 45,5 | 1.79 | 9 | 0.35 | 13 | 0.51 |
| FCQ 50 A | FCQC 50 | 1-2-3-4-8-25 | 70 | 2.76 | 56,5 | 2.22 | 54 | 2.13 | 50,5 | 1.99 | 9 | 0.35 | 13 | 0.51 |
| FCQ 63 A | FCQ 63 A | 25 | 90 | 3.54 | 73,5 | 2.89 | 67 | 2.64 | 63,45 | 2.50 | 11 | 0.43 | 16 | 0.63 |
| FCQC 63 | FCQC 63 | 2-4-21 | 80 | 3.15 | 64 | 2.52 | 67 | 2.64 | 63,45 | 2.50 | 11 | 0.43 | 16 | 0.63 |
| FCQ 75 A | FCQC 75 | 1-2-3-4-8-25 | 90 | 3.54 | 73,5 | 2.89 | 80 | 3.15 | 75,5 | 2.97 | 11 | 0.43 | 16 | 0.63 |
| FCQ 95 A | FCQC 95 | 1-2-3-4-8-25 | 110 | 4.33 | 92 | 3.62 | 100 | 3.94 | 95,5 | 3.76 | 13,5 | 0.53 | 18 | 0.71 |
| FCQ 120 A | FCQC 120 | 1-2-3-4-8-25 | 130 | 5.12 | 109,5 | 4.31 | 125 | 4.92 | 120,5 | 4.74 | 13,5 | 0.53 | 21 | 0.83 |
| FCQ 150 A | FCQC 150 | 1-2-3-4-8-25 | 162 | 6.38 | 138 | 5.43 | 155 | 6.10 | 150,5 | 5.93 | 17,5 | 0.69 | 27 | 1.06 |
| FCQ 195 A | FCQC 195 | 1-2-4-8-25 | 210 | 8.27 | 170 | 6.69 | 200 | 7.87 | 195,5 | 7.70 | 17,5 | 0.69 | 27 | 1.06 |

FCQB - FCQD

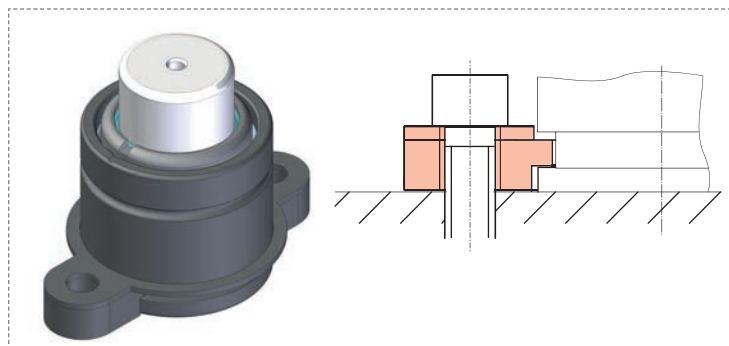
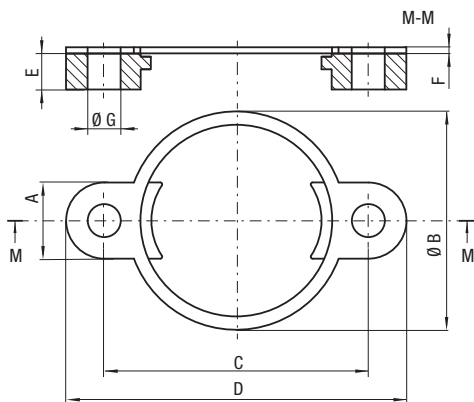
For KE series only



| CODE | Reference to standards | A | | B | | Ø C | | Ø D | | Ø E | | F | |
|---------|------------------------|-----|------|------|------|-----|------|------|------|------|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FCQB 50 | 0 | 70 | 2.76 | 56,5 | 2.22 | 52 | 2.05 | 50,5 | 1.99 | 9 | 0.35 | 13 | 0.51 |
| FCQB 63 | 0 | 90 | 3.54 | 73,5 | 2.89 | 66 | 2.60 | 63,5 | 2.50 | 11 | 0.43 | 16 | 0.63 |
| FCQD 63 | 0 | 80 | 3.15 | 64 | 2.52 | 66 | 2.60 | 63,5 | 2.50 | 11 | 0.43 | 16 | 0.63 |
| FCQB 75 | 0 | 90 | 3.54 | 73,5 | 2.89 | 78 | 3.07 | 75,5 | 2.97 | 11 | 0.43 | 16 | 0.63 |
| FCQB 95 | 0 | 110 | 4.33 | 92 | 3.62 | 98 | 3.86 | 95,5 | 3.76 | 13,5 | 0.53 | 18 | 0.71 |



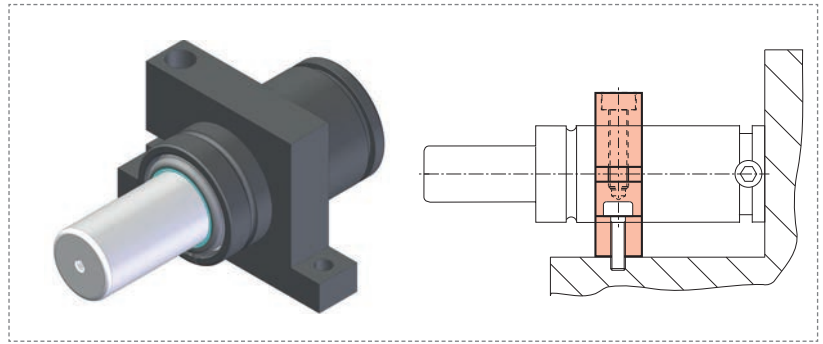
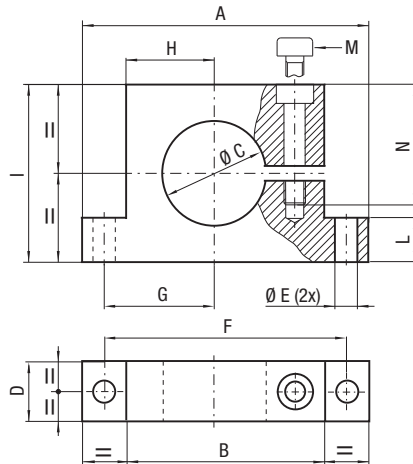
| CODE | Reference to standards | A | | B | | C | | Ø D | | E | | F | | Rif. Fig |
|--------|------------------------|----|------|------|------|----|------|------|------|-------|------|----|------|----------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | |
| FT 38 | 0 | 20 | 0.79 | 7 | 0.28 | 7 | 0.28 | 56,6 | 2.23 | - | - | 7 | 0.28 | Fig. 1 |
| FT 45 | 0 | 25 | 0.98 | 7 | 0.28 | 9 | 0.35 | 70,7 | 2.78 | - | - | 7 | 0.28 | |
| FT 50 | 0 | 30 | 1.18 | 14,2 | 0.56 | 13 | 0.51 | 80 | 3.15 | - | - | 13 | 0.51 | |
| FT 63 | 0 | 30 | 1.18 | 14,2 | 0.56 | 13 | 0.51 | 92 | 3.62 | 65 | 2.56 | 13 | 0.51 | Fig. 2 |
| FT 75 | 0 | 30 | 1.18 | 14,2 | 0.56 | 13 | 0.51 | 104 | 4.09 | 73,5 | 2.89 | 13 | 0.51 | |
| FT 95 | 0 | 40 | 1.57 | 14,2 | 0.56 | 17 | 0.67 | 130 | 5.12 | 92 | 3.62 | 13 | 0.51 | |
| FT 120 | 0 | 50 | 1.97 | 14,2 | 0.56 | 17 | 0.67 | 155 | 6.1 | 109,5 | 4.31 | 13 | 0.51 | |
| FT 150 | 0 | 50 | 1.97 | 14,2 | 0.56 | 21 | 0.83 | 195 | 7.68 | 138 | 5.43 | 13 | 0.51 | |
| FT 195 | 0 | 58 | 2.28 | 16 | 0.63 | 21 | 0.83 | 240 | 9.45 | 169 | 6.65 | 16 | 0.63 | |



| CODE | Reference to standards | A | | Ø B | | C | | D | | E | | F | | Ø G | |
|---------|------------------------|----|------|-----|------|------|------|------|------|------|------|-----|------|-----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FTP 38 | 0 | 20 | 0.79 | 48 | 1.89 | 56.6 | 2.23 | 76.6 | 3.02 | 7 | 0.28 | 2,5 | 0.10 | 7 | 0.28 |
| FTP 45 | 0 | 25 | 0.98 | 56 | 2.20 | 70.7 | 2.78 | 95.7 | 3.77 | 7 | 0.28 | 2,5 | 0.10 | 9 | 0.35 |
| FTP 50 | 0 | 30 | 1.18 | 61 | 2.40 | 80 | 3.15 | 110 | 4.33 | 14,2 | 0.56 | 2,5 | 0.10 | 13 | 0.51 |
| FTP 63 | 0 | 30 | 1.18 | 73 | 2.87 | 92 | 3.62 | 122 | 4.80 | 14,2 | 0.56 | 2,5 | 0.10 | 13 | 0.51 |
| FTP 75 | 0 | 30 | 1.18 | 86 | 3.39 | 104 | 4.09 | 134 | 5.28 | 14,2 | 0.56 | 2,5 | 0.10 | 13 | 0.51 |
| FTP 95 | 0 | 40 | 1.57 | 106 | 4.17 | 130 | 5.12 | 170 | 6.69 | 14,2 | 0.56 | 2,5 | 0.10 | 17 | 0.67 |
| FTP 120 | 0 | 50 | 1.97 | 131 | 5.16 | 155 | 6.10 | 205 | 8.07 | 14,2 | 0.56 | 2,5 | 0.10 | 17 | 0.67 |
| FTP 150 | 0 | 50 | 1.97 | 170 | 6.69 | 195 | 7.68 | 245 | 9.65 | 14,2 | 0.56 | 2,5 | 0.10 | 21 | 0.83 |

| | | | |
|-----|-----|-----|----------------|
| ISO | VDI | BMW | General Motors |
|-----|-----|-----|----------------|

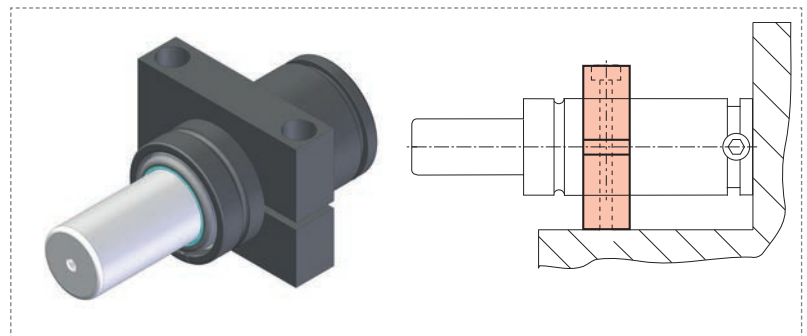
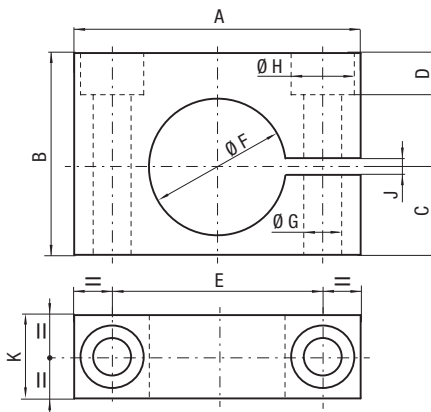
FSA - FSF



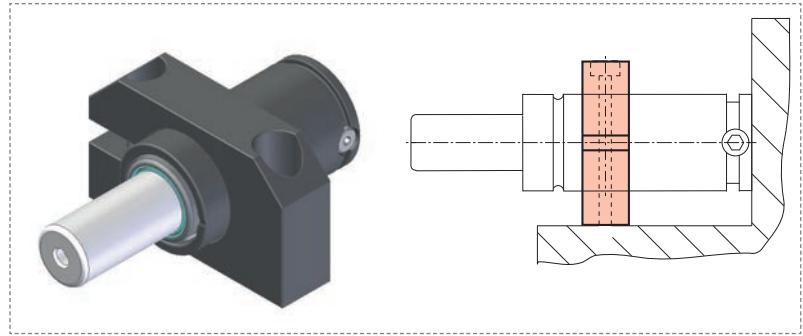
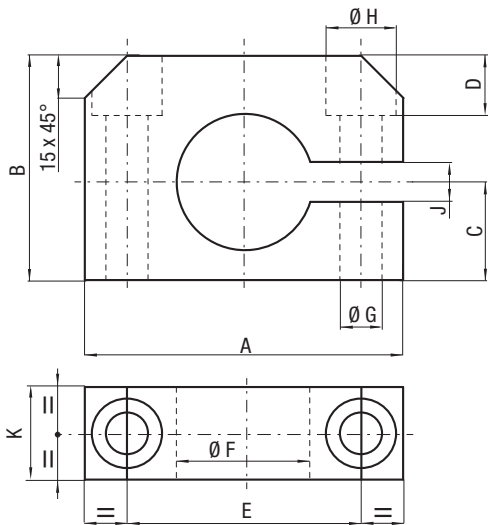
| CODE | Reference to standards | A | | B | | Ø C | | D | | Ø E | | F | | G | | H | | I | | L | | M | N | |
|---------|------------------------|-----|-------|-----|------|-----|------|----|------|------|------|-----|------|------|------|------|------|-----|------|----|------|-----|------|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | mm | inch |
| FSA 32 | 1-2-3-13-19 | 90 | 3.54 | 54 | 2.13 | 32 | 1.26 | 20 | 0.79 | 9 | 0.35 | 72 | 2.83 | 31 | 1.22 | 22 | 0.87 | 45 | 1.77 | 15 | 0.59 | M8 | 39 | 1.54 |
| FSF 32 | 12 | 90 | 3.54 | 54 | 2.13 | 32 | 1.26 | 30 | 1.18 | 8,5 | 0.33 | 72 | 2.83 | 31 | 1.22 | 22 | 0.87 | 45 | 1.77 | 15 | 0.59 | M8 | 40 | 1,57 |
| FSA 38 | 1-2-3-13-19 | 95 | 3.74 | 59 | 2.32 | 38 | 1.50 | 20 | 0.79 | 9 | 0.35 | 77 | 3.03 | 34 | 1.34 | 25 | 0.98 | 55 | 2.17 | 15 | 0.59 | M8 | 45 | 1,77 |
| FSF 38 | 12 | 95 | 3.74 | 59 | 2.32 | 38 | 1.50 | 30 | 1.18 | 8,5 | 0.33 | 77 | 3.03 | 34 | 1.34 | 25 | 0.98 | 55 | 2.17 | 15 | 0.59 | M8 | 46 | 1,81 |
| FSA 45 | 1-2-3-13-19 | 100 | 3.94 | 64 | 2.52 | 45 | 1.77 | 20 | 0.79 | 9 | 0.35 | 82 | 3.23 | 37 | 1.46 | 28 | 1.10 | 60 | 2.36 | 15 | 0.59 | M8 | 45 | 1,77 |
| FSF 45 | 12 | 100 | 3.94 | 64 | 2.52 | 45 | 1.77 | 30 | 1.18 | 8,5 | 0.33 | 82 | 3.23 | 37 | 1.46 | 28 | 1.10 | 60 | 2.36 | 15 | 0.59 | M8 | 52 | 2,05 |
| FSA 50 | 1-2-3-13-19 | 130 | 5.12 | 90 | 3.54 | 50 | 1.97 | 30 | 1.18 | 9 | 0.35 | 110 | 4.33 | 50 | 1.97 | 40 | 1.57 | 80 | 3.15 | 20 | 0.79 | M8 | 55 | 2,17 |
| FSA 75 | 1-2-3-13-19 | 160 | 6.30 | 115 | 4.53 | 75 | 2.95 | 30 | 1.18 | 11 | 0.43 | 137 | 5.39 | 63,5 | 2.50 | 52,5 | 2.07 | 105 | 4.13 | 20 | 0.79 | M10 | 80 | 3,15 |
| FSA 95 | 1-2-3-13-19 | 195 | 7.68 | 145 | 5.71 | 95 | 3.74 | 30 | 1.18 | 13,5 | 0.53 | 170 | 6.69 | 80 | 3.15 | 67,5 | 2.66 | 125 | 4.92 | 20 | 0.79 | M12 | 99,5 | 3,92 |
| FSA 120 | 1-2-3-13-19 | 220 | 8.66 | 165 | 6.50 | 120 | 4.72 | 30 | 1.18 | 13,5 | 0.53 | 195 | 7.68 | 92,5 | 3.64 | 77,5 | 3.05 | 148 | 5.83 | 20 | 0.79 | M12 | 106 | 4,17 |
| FSA 150 | 1-2-3-13-19 | 260 | 10.24 | 200 | 7.87 | 150 | 5.91 | 30 | 1.18 | 13,5 | 0.53 | 230 | 9.06 | 110 | 4.33 | 95 | 3.74 | 200 | 7.87 | 20 | 0.79 | M12 | 138 | 5,43 |

| | | | |
|-----|-----|------|---------------|
| VDI | BMW | Ford | Mercedes Benz |
|-----|-----|------|---------------|

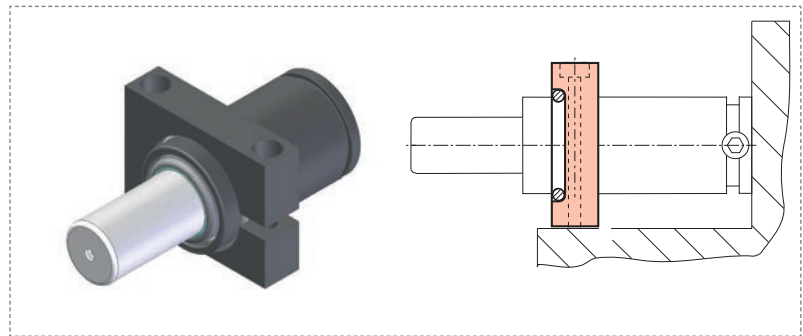
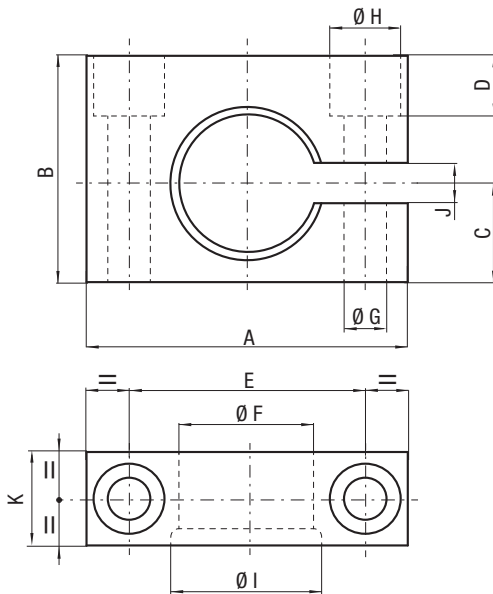
FSB - FSC - FSD



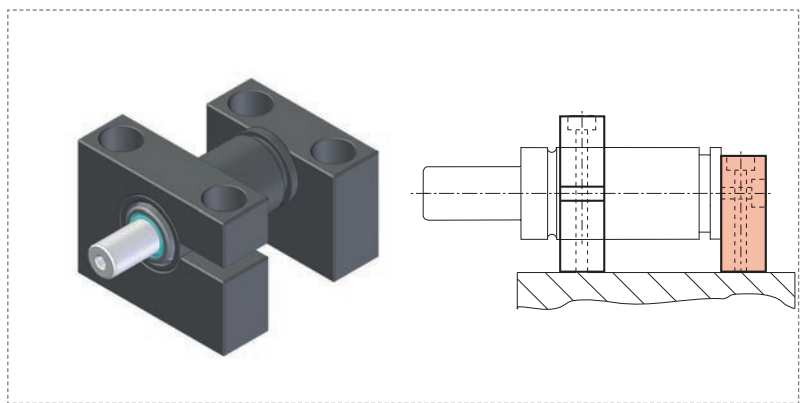
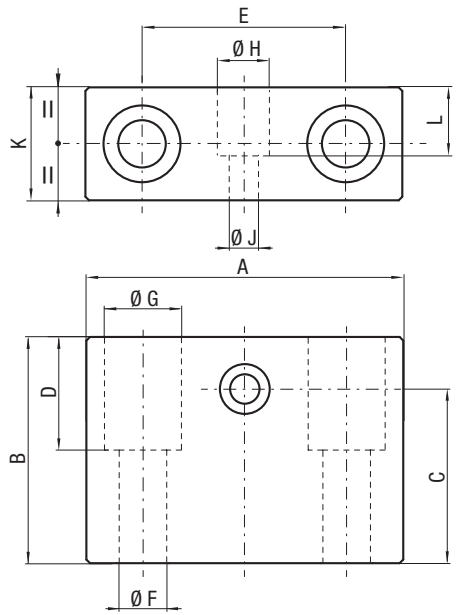
| CODE | Reference to standards | A | | B | | C | | D | | E | | Ø F | | Ø G | | Ø H | | J | | K | |
|---------|------------------------|-----|------|-----|------|------|------|----|------|-----|------|-------|------|------|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FSB 32 | 6 | 80 | 3.15 | 63 | 2.48 | 38,5 | 1.52 | 18 | 0.71 | 56 | 2.20 | 32 | 1.26 | 10,5 | 0.41 | 17 | 0.67 | 6 | 0.24 | 25 | 0.98 |
| FSD 32 | 2-3-12-18-21-27 | 68 | 2.68 | 48 | 1.89 | 20,9 | 0.82 | 10 | 0.39 | 50 | 1.97 | 32,5 | 1.28 | 9 | 0.35 | 15 | 0.59 | 4 | 0.16 | 20 | 0.79 |
| FSD 38 | 2-3-12-18-21-27 | 74 | 2.91 | 54 | 2.13 | 23,9 | 0.94 | 16 | 0.63 | 54 | 2.13 | 38,5 | 1.52 | 9 | 0.35 | 15 | 0.59 | 4 | 0.16 | 20 | 0.79 |
| FSD 45 | 2-3-12-18-21-27 | 80 | 3.15 | 60 | 2.36 | 27,5 | 1.08 | 22 | 0.87 | 60 | 2.36 | 45,5 | 1.79 | 9 | 0.35 | 15 | 0.59 | 4 | 0.16 | 20 | 0.79 |
| FSD 50 | 2-3-4-12-18-21-27 | 90 | 3.54 | 70 | 2.76 | 30 | 1.18 | 25 | 0.98 | 68 | 2.68 | 50,5 | 1.99 | 11 | 0.43 | 18 | 0.71 | 5 | 0.20 | 30 | 1.18 |
| FSC 63 | 0 | 105 | 4.13 | 80 | 3.15 | 40 | 1.57 | 11 | 0.43 | 80 | 3.15 | 63 | 2.48 | 10,5 | 0.41 | 17 | 0.67 | 10 | 0.39 | 30 | 1.18 |
| FSD 63 | 2-18-21-27 | 108 | 4.25 | 82 | 3.23 | 36,5 | 1.44 | 27 | 1.06 | 84 | 3.31 | 63,5 | 2.50 | 11 | 0.43 | 18 | 0.71 | 5 | 0.20 | 30 | 1.18 |
| FSD 75 | 2-3-4-12-18-21-27 | 125 | 4.92 | 94 | 3.70 | 42 | 1.65 | 32 | 1.26 | 100 | 3.94 | 75,5 | 2.97 | 13,5 | 0.53 | 20 | 0.79 | 5 | 0.20 | 30 | 1.18 |
| FSD 95 | 2-3-4-12-18-21-27 | 140 | 5.51 | 115 | 4.53 | 52,5 | 2.07 | 33 | 1.30 | 115 | 4.53 | 95,5 | 3.76 | 13,5 | 0.53 | 20 | 0.79 | 5 | 0.20 | 30 | 1.18 |
| FSD 120 | 2-3-12-18-21-27 | 170 | 6.69 | 140 | 5.51 | 65 | 2.56 | 58 | 2.28 | 145 | 5.71 | 120,5 | 4.74 | 13,5 | 0.53 | 20 | 0.79 | 7 | 0.28 | 30 | 1.18 |
| FSD 150 | 2-3-12-18-21-27 | 200 | 7.87 | 170 | 6.69 | 80 | 3.15 | 68 | 2.68 | 175 | 6.89 | 150,5 | 5.93 | 13,5 | 0.53 | 20 | 0.79 | 7 | 0.28 | 30 | 1.18 |



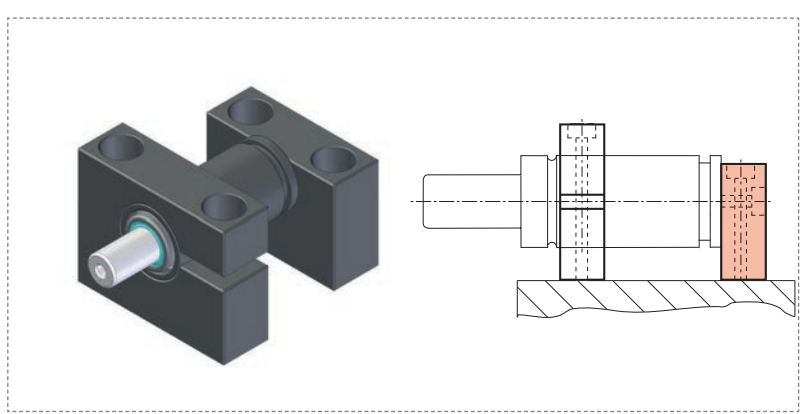
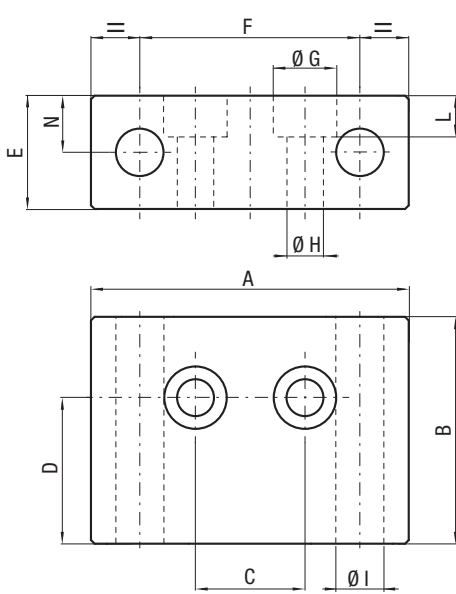
| CODE | Reference to standards | A | | B | | C | | D | | E | | Ø F | | Ø G | | Ø H | | J | | K | |
|--------|------------------------|-----|------|----|------|----|------|----|------|----|------|------|------|-----|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FSE 45 | 0 | 100 | 3.94 | 60 | 2.36 | 30 | 1.18 | 20 | 0.79 | 70 | 2.76 | 45,3 | 1.78 | 11 | 0.43 | 18 | 0.71 | 10 | 0.39 | 25 | 0.98 |



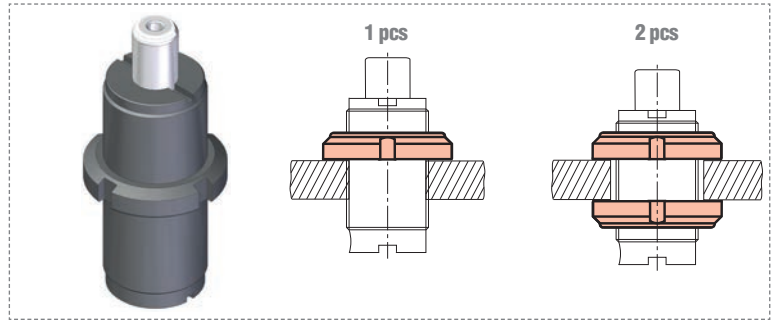
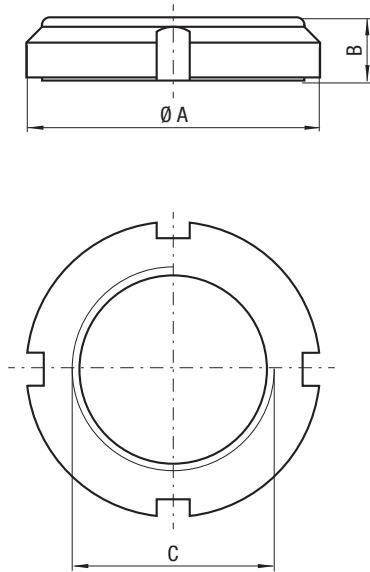
| CODE | Reference to standards | A | | B | | C | | D | | E | | Ø F | | Ø G | | Ø H | | Ø I | | J | | K | |
|--------|------------------------|-----|------|-----|------|------|------|----|------|-----|------|------|------|-----|------|-----|------|-------|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| FSE 50 | 11 | 90 | 3.54 | 70 | 2.76 | 30 | 1.18 | 25 | 0.98 | 68 | 2.68 | 50,3 | 1.98 | 11 | 0.43 | 18 | 0.71 | 54,1 | 2.13 | 10 | 0.39 | 30 | 1.18 |
| FSE 75 | 11 | 125 | 4.92 | 94 | 3.70 | 42 | 1.65 | 19 | 0.75 | 100 | 3.94 | 75,3 | 2.96 | 13 | 0.51 | 20 | 0.79 | 80,1 | 3.15 | 10 | 0.39 | 30 | 1.18 |
| FSE 95 | 11 | 140 | 5.51 | 115 | 4.53 | 52,5 | 2.07 | 40 | 1.57 | 115 | 4.53 | 95,3 | 3.75 | 13 | 0.51 | 20 | 0.79 | 100,1 | 3.94 | 10 | 0.39 | 30 | 1.18 |



| CODE | Reference to standards | A | | B | | C | | D | | E | | ØF | | ØG | | ØH | | ØJ | | L | | K | |
|------|------------------------|----|------|----|------|------|------|----|------|----|------|------|------|----|------|----|------|-----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| R32A | 5 | 70 | 2.76 | 50 | 1.97 | 38,5 | 1.52 | 25 | 0.98 | 45 | 1.77 | 10,5 | 0.41 | 17 | 0.67 | 11 | 0.43 | 6,5 | 0.26 | 15 | 0.59 | 25 | 0.98 |



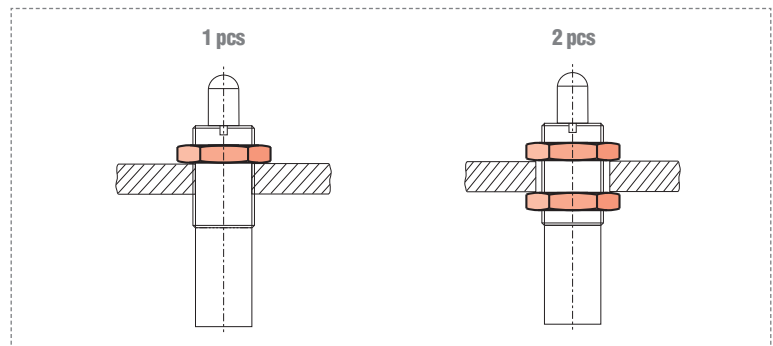
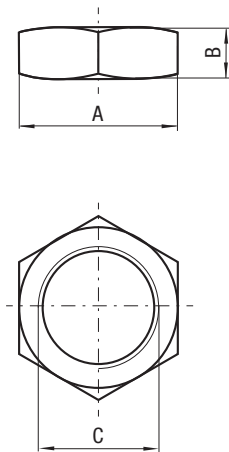
| CODE | Reference to standards | A | | B | | C | | D | | E | | F | | ØG | | ØH | | L | | ØI | | N | |
|------|------------------------|----|------|----|------|------|------|------|------|----|------|----|------|----|------|----|------|----|------|----|------|----|------|
| | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| R38A | 4 | 60 | 2.36 | 38 | 1.50 | 18 | 0.71 | 23,9 | 0.94 | 28 | 1.10 | 40 | 1.57 | 14 | 0.55 | 9 | 0.35 | 10 | 0.39 | 9 | 0.35 | 12 | 0.47 |
| R50A | 11 | 65 | 2.56 | 45 | 1.77 | 20 | 0.79 | 30 | 1.18 | 28 | 1.10 | 44 | 1.73 | 14 | 0.55 | 9 | 0.35 | 10 | 0.39 | 11 | 0.43 | 13 | 0.51 |
| R75A | 11 | 80 | 3.15 | 45 | 1.77 | 28,3 | 1.11 | 27,8 | 1.09 | 28 | 1.10 | 57 | 2.24 | 14 | 0.55 | 9 | 0.35 | 10 | 0.39 | 14 | 0.55 | 12 | 0.47 |
| R95A | 11 | 95 | 3.74 | 45 | 1.77 | 42,4 | 1.67 | 31,2 | 1.23 | 28 | 1.10 | 70 | 2.76 | 14 | 0.55 | 9 | 0.35 | 10 | 0.39 | 14 | 0.55 | 15 | 0.59 |



| CODE (1 pcs) | Reference to standards | $\varnothing A$ | | B | | C |
|-----------------|------------------------------|-----------------|------|------|------|------------|
| | | mm | inch | mm | inch | |
| GM 38 | 0 | 53 | 2.09 | 12 | 0.47 | M 38 X 1,5 |
| ▲ GM 45 | 0 | 62 | 2.44 | 12,3 | 0.48 | M 45 X 1,5 |
| ▲ GM 50 | 0 | 68 | 2.68 | 12,9 | 0.51 | M 50 X 1,5 |

▲ Phasing out

DM - DI



| CODE (1 pcs) | Reference to standards | A | B | | C |
|-----------------|------------------------------|-----|----|------|---------------|
| | | | mm | inch | |
| DM 16 | 0-28 | S24 | 8 | 0.31 | M 16 x 1,5 |
| 39DM16X2A | 0 | S24 | 8 | 0.31 | M 16 x 2 |
| ■ 39DI5/8-11A | 0 | S26 | 9 | 0.36 | 5/8" - 11 UNC |
| DM 24 | 0-28 | S36 | 10 | 0.39 | M 24 x 1,5 |
| DI 1" - 8 | 0 | S38 | 14 | 0.55 | 1" - 8 |

the easy way
to link nitrogen cylinders through plate



OSAS
Over Stroke
Active Safety



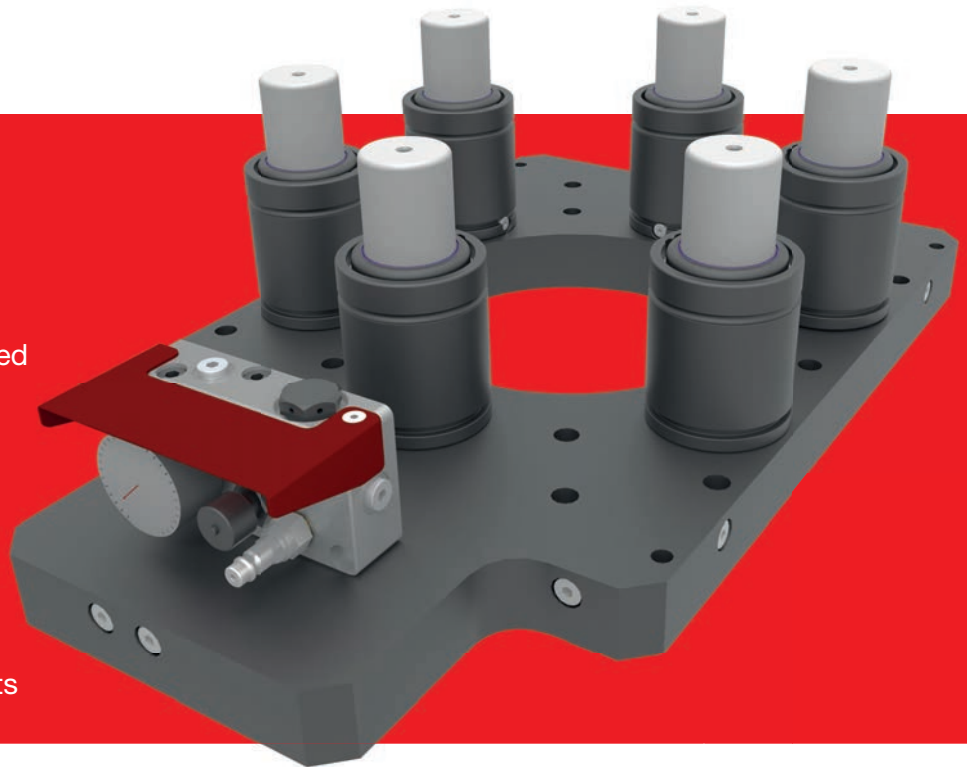
USAS
Uncontrolled Speed
Active Safety



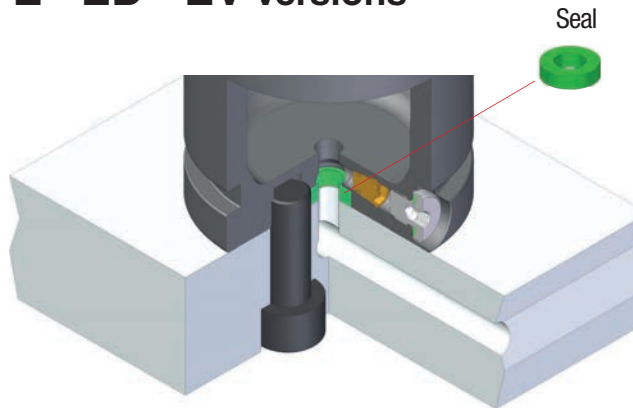
OPAS
Over Pressure
Active Safety



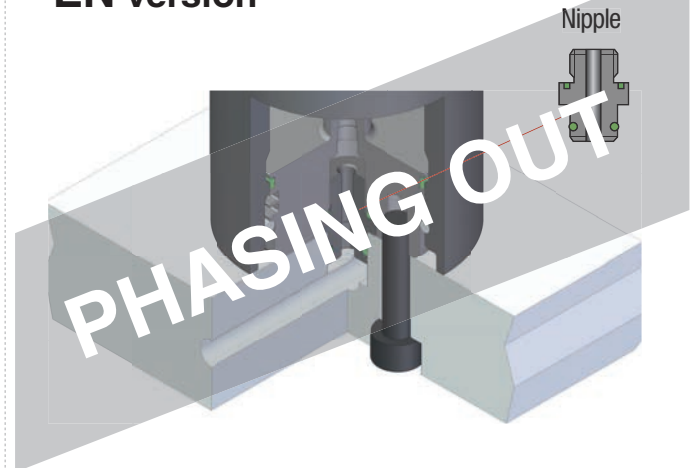
SKUDO
Active Protection
from Contaminants



E - ED - EV versions



EN version



IT CARATTERISTICHE:

- Vantaggiosa alternativa ai tradizionali e costosi cilindri Manifold.
- Grande varietà di combinazioni con l'uso di cilindri standard.
- Totale eliminazione di tubi e raccordi.
- Pressione uniforme nel sistema.
- Facile manutenzione, uguale ai cilindri standard.
- Piastre di collegamento realizzabili direttamente dagli utilizzatori.
- Massima flessibilità di realizzazione degli impianti.
- Nessuna richiesta di utensili speciali per l'installazione.
- **Special Springs è in grado di fornire le piastre/cuscino su specifiche del cliente, collaudate e pronte per l'installazione.**

EN CHARACTERISTICS:

- An advantageous alternative to conventional and expensive Manifold cylinders.
- Large variety of combinations with the use of standard cylinders.
- Total elimination of hoses and connections.
- Balanced pressure in the system.
- Easy maintenance, the same as standard cylinders.
- Connection plates can be made directly by users.
- Maximum flexibility in creation of systems.
- No special tools required for installation.
- **Special Springs can supply the plates/cushion to customer specifications, tested and ready for installation.**

FR CARACTERISTIQUES:

- Une alternative avantageuse aux traditionnels et coûteux cylindres Manifold.
- Une grande variété de combinaisons avec l'emploi de cylindres standard.
- L'élimination totale de tuyaux et raccords.
- Pression uniforme dans le système.
- Entretien facile, comme celui des cylindres standard.
- Plaques de liaison réalisables directement par les utilisateurs.
- Très grande souplesse de réalisation des installations.
- Aucun besoin d'outils spéciaux pour l'installation.
- **Special Springs est en mesure de fournir les plaques/coussin sur spécifications du client, testées et prêtes à être installées.**

ES CARACTERÍSTICAS:

- Ventajosa alternativa a los tradicionales y costosos cilindros Manifold.
- Gran variedad de combinaciones con el uso de cilindros (autónomos) estándar.
- Total eliminación de tubos y racores.
- Presión uniforme en el sistema.
- Fácil mantención, igual a la de los cilindros (autónomos) estándar.
- Placas de conexión realizables directamente por los usuarios.
- Máxima flexibilidad de realización de los equipos.
- No se requiere ninguna herramienta especial para la instalación.
- **Special Springs es en grado de proporcionar las placas/cojín sobre especificaciones del cliente, Comprobadas y listas para la instalación.**

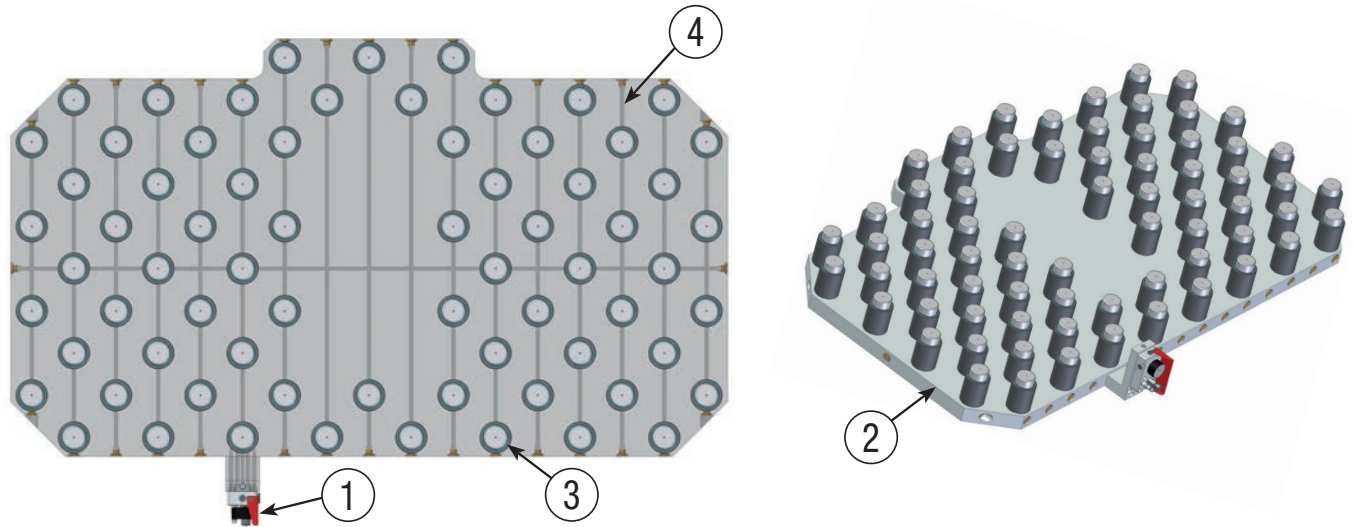
DE EIGENSCHAFTEN

- Preisgünstige Alternative zu herkömmlichen Tankplattensystemen.
- Große Auswahl an Einsatzkombinationen durch Verwendung von Standardzylindern.
- Keine Verwendung von Schläuchen und Anschlüssen.
- Gleichmäßiger Druck im System.
- Wartungsfreundlich.
- Verbundplatten können vom Kunden selbst gefertigt werden.
- Hohe Flexibilität bei den Anwendungen.
- Montage ohne Sonderwerkzeuge.
- **Platten können von Special Springs gefertigt, getestet und vormontiert geliefert werden.**

PT CARACTERÍSTICAS:

- Vantajosa alternativa aos tradicionais e caros cilindros Manifold.
- Grande variedade de combinações com uso de cilindros standard.
- Total eliminação de tubos e junções.
- Pressão uniforme em o sistema.
- Fácil manutenção, igual a dos cilindros standard.
- Chapas de conexão que podem ser realizadas diretamente pelos usuários.
- Máxima flexibilidade de realização das instalações.
- Não é necessário utilizar nenhum tipo de utensílio especial para a instalação.
- **Special Springs pode fornecer chapas/coxim conforme exigência do cliente, testadas e verificadas prontas para a instalação.**

Design recommendations



IT Per una facile progettazione e per ridurre i costi di produzione seguire le linee guida di cui sotto

- ① • Per collegare il pannello usare, se possibile, i canali del gas esistenti.
- ① • In alternativa collegare il pannello con tubi e raccordi.
- ② • Resilienza materiale piastra alla temperatura minima di utilizzo $\geq 27\text{J}$.
- ② • Allungamento a rottura del materiale piastra $\geq 14\%$.
- ③ • Evitare interferenza tra i fori di fissaggio dei cilindri e i canali del gas.
- ③ • Selezionare cilindri con corse maggiori per aumentare il volume del sistema.
- ④ • Realizzare canali passanti e pulire adeguatamente.
- ④ • Evitare canali ciechi.

EN For easier design and manufacturing cost-saving follow the guide lines below

- ① • When possible, use the existing gas ports to link the panel.
- ① • Alternatively, link the panel by using hoses and connections.
- ② • Resilience of the plate material at minimum operating temperature $\geq 27\text{J}$.
- ② • Elongation at break of plate material $\geq 14\%$.
- ③ • Avoid interference between the cylinder's fixing holes and the gas ports.
- ③ • Select cylinders with higher stroke to increase the volume of the system.
- ④ • Machine thru-holes and adequately clear the ports.
- ④ • Avoid blind channels.

DE Für eine bessere Empfehlung und produktionskosten zu speichern, folgen Sie die unteren Richtlinien

- ① • Die Kontrollarmatur, wenn möglich, an den vorhandenen Tieflochbohrungen anbringen.
- ① • Alternativ kann die Druckkontrollarmatur mit Schlauchkomponenten angeschlossen werden.
- ② • Zähigkeit des Plattenmaterials bei minimaler Betriebstemperatur $\geq 27\text{J}$.
- ② • Bruchdehnung des Plattenmaterials $\geq 14\%$.
- ③ • Abweichungen zwischen der Lage der Befestigungsgewinde und den Verbindungsbohrungen sind zu vermeiden.
- ③ • Um das Volumen des Systems zu vergrößern, wählen Sie Gasdruckfedern mit dem nächst größeren Hub.
- ④ • Die Durchgangsbohrungen und Anschlüsse sauber fertigen.
- ④ • Die Durchgangsbohrungen nicht blind fertigen.

FR Pour une conception plus facile et de l'épargne des coûts de fabrications suivez les instructions ci-dessous

- ① • Pour relier le panneau utiliser, si possible, les canaux du gaz existents.
- ① • Alternativement, joindre le panneau en utilisant des tubes et des raccords.
- ② • Résilience du matériau de la plaque à la température minimale de fonctionnement $\geq 27\text{J}$.
- ② • Allongement à la rupture du matériau de la plaque $\geq 14\%$.
- ③ • Eviter l'interférence entre les trous de fixation des ressorts et les canaux du gaz.
- ③ • Sélectionner des ressorts avec des courses majeures pour augmenter le volume du système.
- ④ • Réaliser des trous débouchants et nettoyez correctement.
- ④ • Eviter les trous sans issue.

ES Para facilitar el diseño y para ahorrar costes de producción siguen los lineamientos mencionados a continuación

- ① • Para conectar el panel utilizar, si posible, los canales del gas existentes.
- ① • En alternativa, conectar el panel con tuberías y conexiones.
- ② • Resiliencia del material de la placa a la temperatura mínima de uso $\geq 27\text{J}$.
- ② • Alargamiento a la rotura del material de la placa $\geq 14\%$.
- ③ • Evitar la interferencia entre los orificios de fijación de los cilindros y los canales de gas.
- ③ • Seleccionar los cilindros con carreras mas grande para aumentar el volumen del sistema.
- ④ • Realizar orificios pasantes por toda la placa y bien limpiar.
- ④ • Evitar los trous sans issue.

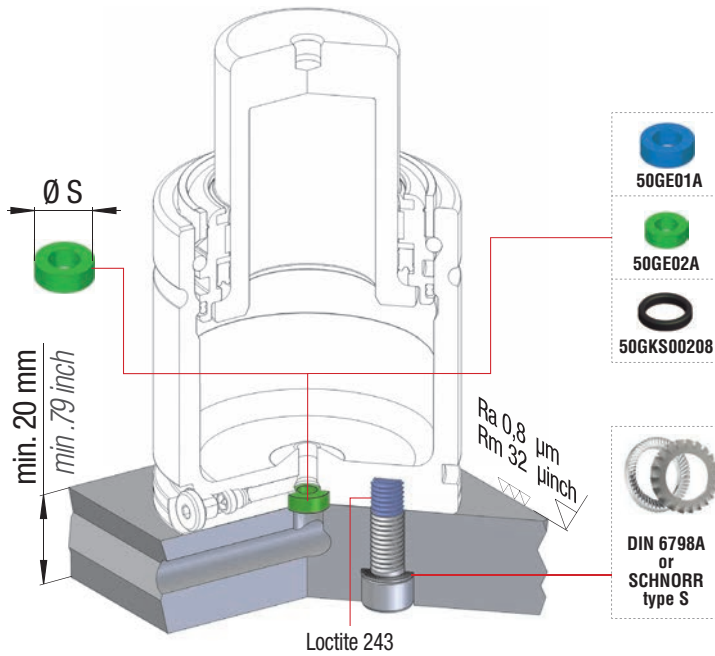
PT Para facilitar o desenho e economizar custos de produção seguir as orientações abaixo mencionados

- ① • Para ligar o painel, se possível, usar os canais de gás existentes.
- ① • Em alternativa conecte o painel com tubos e acessórios.
- ② • Placa com resistencia minima a temperatura minima de $> 27\text{J}$.
- ② • Alongamento de ruptura do material da placa $\geq 14\%$.
- ③ • Evitar a interferência entre os orificios de fixação dos cilindros e os canais de gás.
- ③ • Escolher os cilindros com curso mais grande para aumentar o volume do sistema.
- ④ • Realizar orificios de passagem por toda a placa e bem limpar.
- ④ • Evitar orificios sem saída.

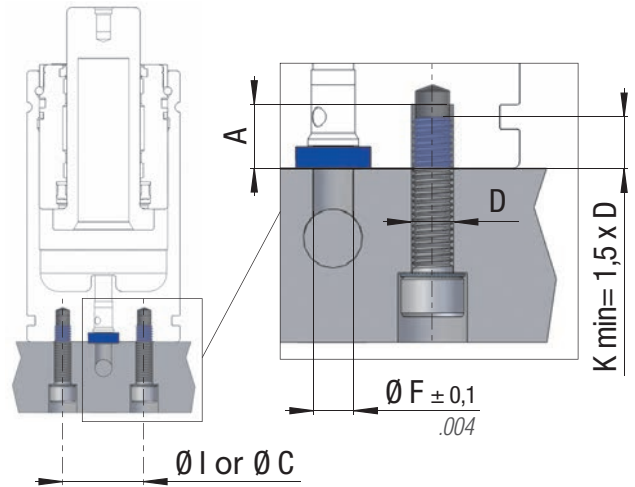
| Series | Model | Rev. code | Version | Fixing pattern | Thread size D x A | Ø I | | Ø C | | Ø F | | Ø S | | Seal code | Note | Cover code > see pag 250 |
|--------|-------|-----------|---------|----------------|-------------------|------|------|-----|------|------|------|------|---------|------------|----------|-----------------------------|
| | | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | |
| RV | 350 | A | E | α | M6 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE010A |
| | 500 | A | E | β | M6 x 6 | 20 | 0.79 | 25 | 1.00 | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE001A |
| | 750 | A | E | γ | M8 x 6 | 26 | 1.02 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE002A |
| | 1000 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE003A |
| | 1200 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE003A |
| | 1500 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE009A |
| | 2400 | A | E | γ | M8 x 6 | 40 | 1.57 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE004A |
| | 4200 | A | E | γ | M8 x 12 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 6600 | A | E | γ | M10 x 12 | 80 | 3.15 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| | 9500 | A | E | γ | M10 x 13 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| | 12000 | A | E | γ | M10 x 13 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| | 20000 | A | E | γ | M12 x 16 | 120 | 4.72 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE008A |
| | 750 | A | EV* | α | M8 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE011A |
| | 1000 | A | EV* | α | M8 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE011A |
| | 1200 | A | EV* | α | M8 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE011A |
| 1500 | A | EV* | α | M8 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE011A | |
| RS | 350 | A | E | α | M6 x 6 | 20 | 0.79 | 25 | 1.00 | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE010A |
| | 500 | A | E | β | M6 x 6 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE001A |
| | 750 | A | E | γ | M8 x 6 | 26 | 1.02 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE002A |
| | 1000 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE003A |
| | 1200 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE003A |
| | 1500 | A | E | γ | M8 x 6 | 34 | 1.34 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE009A |
| | 2400 | A | E | γ | M8 x 6 | 40 | 1.57 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE004A |
| | 4200 | A | E | γ | M8 x 12 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 6600 | A | E | γ | M10 x 12 | 80 | 3.15 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| | 9500 | A | E | γ | M10 x 13 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| RF | 2400 | A | E | γ | M8 x 13 | 40 | 1.57 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| RG | 2400 | A | E | γ | M8 x 16 | 40 | 1.57 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| | 4200 | A | E | γ | M8 x 16 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 6600 | A | E | γ | M10 x 16 | 80 | 3.15 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| RT | 2400 | A | E | γ | M12 x 16 | 53,9 | 2.12 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| | 4200 | A | E | γ | M12 x 16 | 76,2 | 3.00 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 6600 | A | E | γ | M12 x 16 | 80,8 | 3.18 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| | 9500 | A | E | γ | M12 x 16 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| S | 1500 | A | E | γ | M8 x 13 | 40 | 1.57 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| | 3000 | A | E | γ | M8 x 13 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| SC | 150 | D | E | α | M6 x 8 | 18 | 0.71 | 25 | 1.00 | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE012A |
| | 250 | D | E | β | M6 x 8 | 18 | 0.71 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE012A |
| | 500 | D | E | α | M8 x 13 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE011A |
| | 750 | D | E | α | M8 x 13 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE011A |
| | 1500 | D | E | γ | M8 x 13 | 40 | 1.57 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| | 3000 | D | E | γ | M8 x 13 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 5000 | D | E | γ | M10 x 16 | 80 | 3.15 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| | 7500 | D | E | γ | M10 x 16 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| | 10000 | D | E | γ | M12 x 16 | 120 | 4.72 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE008A |
| H | 300 | C | E | α | M6 x 8 | 18 | 0.71 | 25 | 1.00 | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE012A |
| | 500 | C | E | β | M6 x 8 | 18 | 0.71 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE012A |
| | 700 | D | E | α | M8 x 13 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE011A |
| | 1000 | D | E | α | M8 x 13 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 2 | 39TE011A |
| | 1500 | C | E | γ | M8 x 13 | 40 | 1.57 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | - | 39TE004A |
| | 2400 | D | E | γ | M8 x 13 | 40 | 1.57 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE004A |
| | 4200 | D | E | γ | M8 x 13 | 60 | 2.36 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE005A |
| | 6600 | D | E | γ | M10 x 16 | 80 | 3.15 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE006A |
| | 9500 | C | E | γ | M10 x 16 | 100 | 3.94 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE007A |
| | 18500 | C | E | γ | M12 x 16 | 120 | 4.72 | - | - | 8 | 0.31 | 15 | 0.59 | 50GE01A | - | 39TE008A |
| KE | 750 | B | ED | α | M6 x 8 | 24 | 0.94 | 26 | 1.02 | 5 | 0.20 | 11 | 0.43 | 50GE02A | 1+2 | 39TE010A |
| | 1000 | B | ED | δ | M6 x 8 | 20 | 0.79 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 1+2 | 39TE001A |
| | 1800 | B | ED | γ | M6 x 8 | 26 | 1.02 | - | - | 5 | 0.20 | 11 | 0.43 | 50GE02A | 1+2 | 39TE003A |
| | 3000 | B | ED | γ | M8 x 8 | 34 | 1.34 | - | - | 8 | 0.31 | 22 | 0.87 | 50GKS00208 | 1+2 | 39TE009A |
| | 4700 | B | ED | γ | M8 x 8 | 40 | 1.57 | - | - | 8 | 0.31 | 22 | 0.87 | 50GKS00208 | 1+2 | 39TE004A |
| | 7500 | B | ED | γ | M8 x 8 | 52 | 2.05 | - | - | 8 | 0.31 | 22 | 0.87 | 50GKS00208 | 1+2 | 39TE005A |
| | 12000 | B | ED | γ | M10 x 12 | 68 | 2.68 | - | - | 8 | 0.31 | 22 | 0.87 | 50GKS00208 | 1+2 | 39TE006A |
| | 18500 | B | ED | γ | M10 x 12 | 90 | 3.54 | - | - | 8 | 0.31 | 22 | 0.87 | 50GKS00208 | 1+2 | 39TE007A |

* : Volkswagen standard

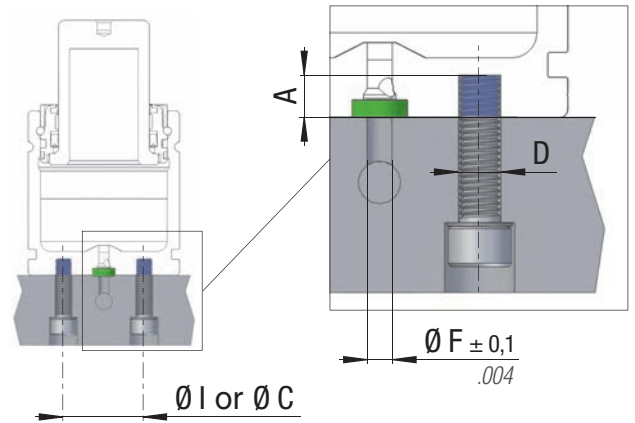
E - ED - EV versions ■



Example A > D : Thread size M8 x 13 (13 > 8)

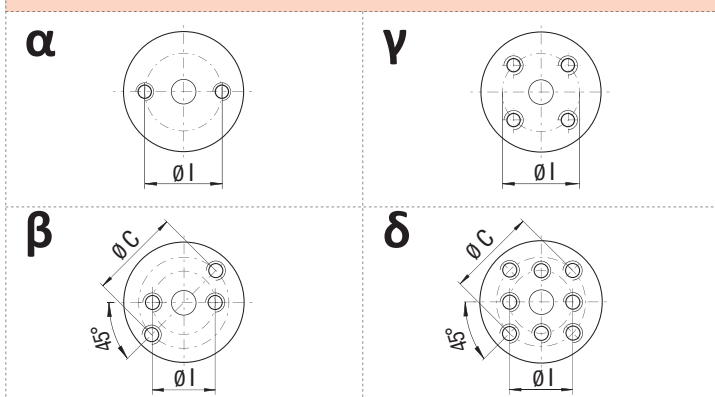


Example A ≤ D : Thread size M8 x 6 (6 ≤ 8)



| Ø I or Ø C | D | A |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interasse fissaggio Fixing c.t.c. distance Mittenabstand Entraxe Distancia centros Distância eixos | Dimensione viti Screw dimension Schraubengröße Dimension vis Tamaño tornillos Dimensão parafusos | Profondità filetti Thread depth Gewindetiefe Profondeur filet Profundidad rosca Profundidade rosca |
| K min | Ø F | Ø S |
| Minimo impegno viti Minimum thread engagement Mindest-Einschraublänge Longueur minimum à visser Recubrimiento mínimo rosca Comprimento mínimo roscado | Ø Foro piastra - cilindro Ø Plate - Cylinder hole Ø Platten - Zylinder Loch Ø Trou plaque - cylindre Ø Agujero Placa - Cilindro Ø Furo Placa - Cilindro | Ø Guarnizione piastra - cilindro Ø Plate - Cylinder seal Ø Platten - Zylinder Dichtung Ø Joint plaque - cylindre Ø Junta Placa - Cilindro Ø Junta Placa - Cilindro |

FIXING PATTERN



NOTE > see page 244

1

Modello con corpo liscio senza cave di fissaggio
Model with straight body without fixing grooves
Model mit flachem Körper ohne Befestigungsnuten
Modèle avec corps lisse sans encoches de fixation
Modelo con cuerpo parejo sin ranuras de fijación
Modelo com corpo liso sem ranhuras de fixação

2

Modello con corpo senza foro di caricamento laterale
Model with body without side charging port
Model mit Körper ohne Nebenladeloch
Modèle avec corps sans trou de charge latéral
Modelo con cuerpo sin hueco de carga
Modelo com corpo sem orifício de carregamen



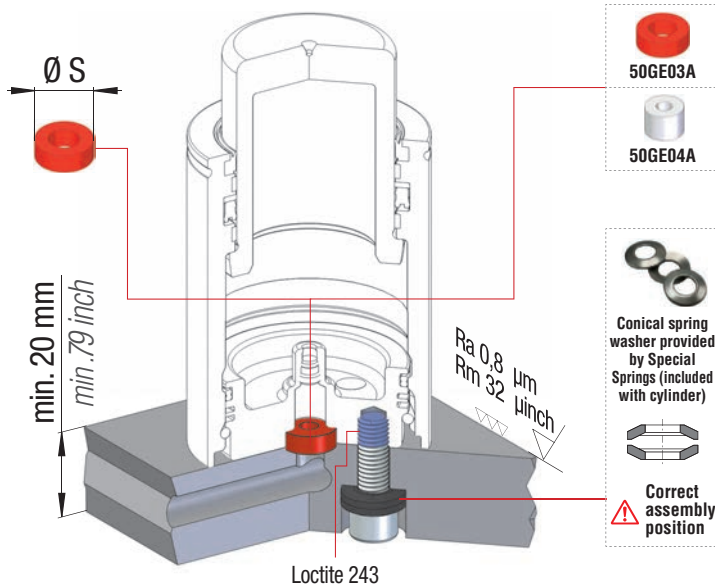
IT Corse e ingombri uguali al cilindro autonomo
EN Strokes and sizes same to self-contained cylinder
DE Hüben und Abmessungen gleiche zu den Autonomen Gdf

FR Courses et encombrement égaux à ceux du Cylindre autonome
ES Carreras y dimensiones iguales a las del cilindro autónomo
PT Cursos e dimensões iguais às do cilindro autónomo

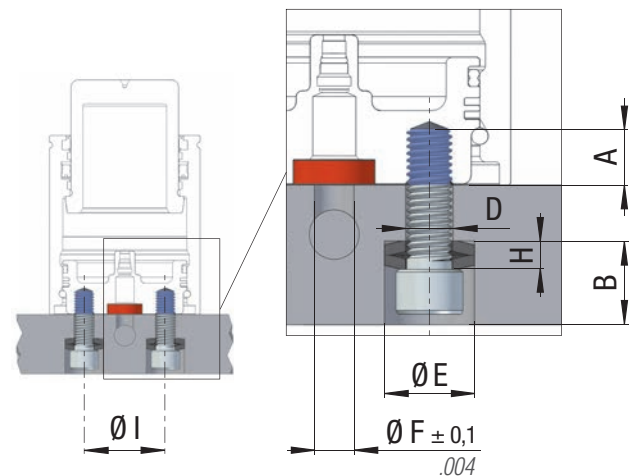
| Series | Model | Rev. code | Version | Fixing pattern | Thread size D x A | Ø I | | Ø F | | Ø S | | Seal code | Note | Cover code > see pag 250 |
|--------|-------|-----------|---------|----------------|----------------------|-----|------|-----|-------|------|------|-----------|------|-----------------------------|
| | | | | | | mm | inch | mm | inch | mm | inch | | | |
| ML | 1000 | D | E | α | M6 x 7 | 17 | 0,67 | 5 | 0,20 | 7,5 | 0,29 | 50GE04A | 1+2 | - |
| | 1800 | D | E | γ | M6 x 8 | 26 | 1,02 | | | 14,5 | 0,57 | 50GE03A | 1+2 | 39TE003A |
| | 3000 | D | E | γ | M8 x 8 | 34 | 1,34 | 8* | 0,31* | 14,5 | 0,57 | 50GE03A | 1+2 | 39TE009A |
| | 4700 | D | E | γ | M8 x 8 | 40 | 1,57 | or | or | 14,5 | 0,57 | 50GE03A | 1+2 | 39TE004A |
| | 7500 | D | E | γ | M8 x 8 | 52 | 2,05 | 10 | 0,39 | 14,5 | 0,57 | 50GE03A | 1+2 | 39TE005A |
| | 12000 | D | E | γ | M10 x 8 | 68 | 2,68 | | | 14,5 | 0,57 | 50GE03A | 1+2 | 39TE006A |

* : dimensione preferita - preferred size - bevorzugte Größe - dimension préférée - tamaño preferido - tamanho preferido

E version



Example thread size M8 x 8



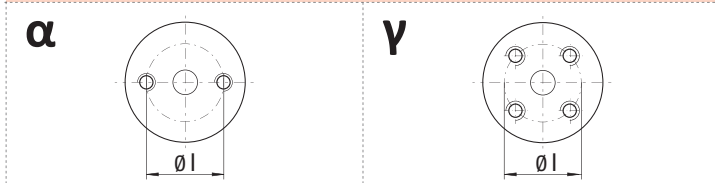
| Ø I | D | A | B |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Interasse fissaggio Fixing c.t.c. distance Mittenabstand Entraxe Distancia centros Distância eixos | Dimensione viti Screw dimension Schraubengröße Dimension vis Tamaño tornillos Dimensão parafusos | Profondità filetti Thread depth Gewindetiefe Profondeur filet Profundidad rosca Profundidade rosca | Profondità lamatura Depth of counterbore Senkungstiefe Profondeur du lamage Profundidad del contrataladro Profundida do alojamento |

| Ø E | Ø F | Ø S | H |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ø lamatura Ø counterbore Ø Senkung Ø lamage Ø contrataladro Ø alojamento | Ø Foro piastra - cilindro Ø Plate - Cylinder hole Ø Platten - Zylinder Loch Ø Trou plaque - cylindre Ø Agujero Placa - Cilindro Ø Furo Placa - Cilindro | Ø Guarnizione piastra - cilindro Ø Plate - Cylinder seal Ø Platten - Zylinder Dichtung Ø Joint plaque - cylindre Ø Junta Placa - Cilindro Ø Junta Placa - Cilindro | Spessore rosette Thickness of washers Dicke Sicherheitscheiben Epaisseur des rondelles Espesor de las arandelas Espessura das arruelas |

Sostituire viti di fissaggio e rosette coniche ogni 1.000.000 di cicli.
Replace fixing screws and conical spring washers every 1 million cycles.
Alle 1 Mio. Hübe Befestigungsschrauben und Sicherheitscheiben austauschen.
Remplacez les vis de fixation et les rondelles coniques à chaque million de cycles.
Reemplazar los tornillos de fijación y las arandelas cónicas cada 1 millón de ciclos.
Substituir a cada 1 milhão de ciclos os parafusos e aruelas de segurança.

| Model | Ø E | | B | | H | | Washer code for placement |
|----------|---------|-------|--------|-------|------|------|---------------------------|
| | mm | inch | mm | inch | mm | inch | |
| ML 1000 | ≥ 10,25 | ≥ .40 | ≥ 9,15 | ≥ .36 | 3,15 | .12 | 49RC06A |
| ML 1800 | ≥ 10,25 | ≥ .40 | ≥ 9,15 | ≥ .36 | 3,15 | .12 | 49RC06A |
| ML 3000 | ≥ 17,3 | ≥ .68 | ≥ 12 | ≥ .47 | 4 | .16 | 49RCHS08A |
| ML 4700 | ≥ 18,3 | ≥ .72 | ≥ 12 | ≥ .47 | 4 | .16 | 49RC08A |
| ML 7500 | ≥ 18,3 | ≥ .72 | ≥ 12 | ≥ .47 | 4 | .16 | 49RC08A |
| ML 12000 | ≥ 23,3 | ≥ .92 | ≥ 15 | ≥ .59 | 5 | .20 | 49RC10A |

FIXING PATTERN



IT Corse e ingombri uguali al cilindro autonomo
EN Strokes and sizes same to selfcontained cylinder
DE Hüben und Abmessungen gleiche zu den Autonomen Gdf
FR Courses et encombrement égaux à ceux du Cylindre autonome
ES Carreras y dimensiones iguales a las del cilindro autónomo
PT Cursos e dimensões iguais às do cilindro autónomo



NOTE

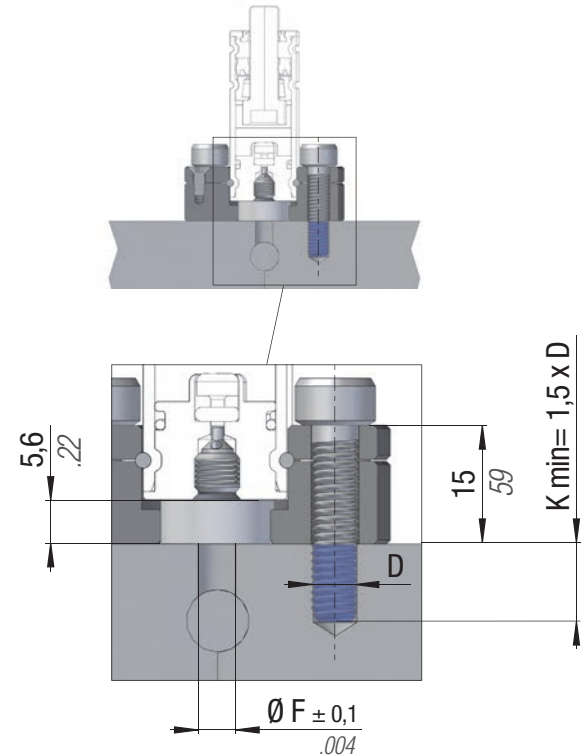
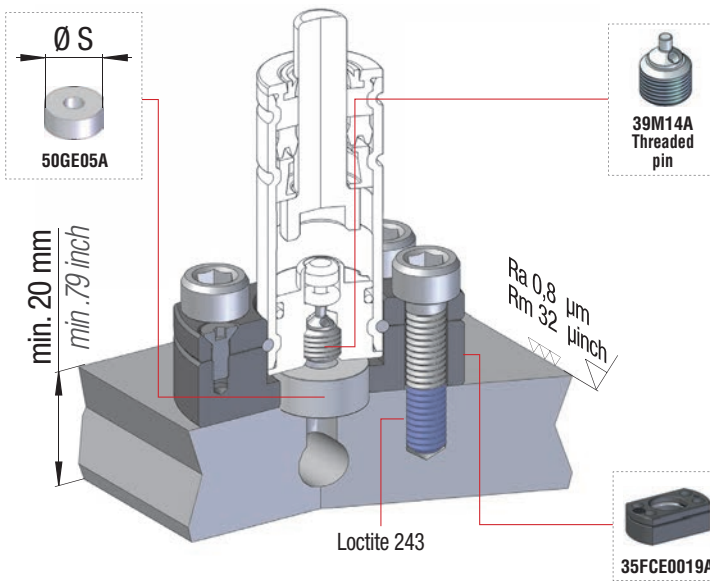
1 Modello con corpo liscio senza cave di fissaggio
Model with straight body without fixing grooves
Model mit flachem Körper ohne Befestigungsnuten
Modèle avec corps lisse sans encoches de fixation
Modelo con cuerpo parejo sin ranuras de fijación
Modelo com corpo liso sem ranhuras de fixação

2 Modello con corpo senza foro di caricamento laterale
Model with body without side charging port
Model mit Körper ohne Nebenladeloeh
Modèle avec corps sans trou de charge latéral
Modelo con cuerpo sin hueco de carga
Modelo com corpo sem orificio de carregamen

| Series | Model | Rev. code | Version | Fixing pattern | Thread size D | Ø F | | Ø S | | Seal code | Note |
|--------|-------|-----------|---------|----------------|---------------|-----|------|------|------|-----------|------|
| | | | | | | mm | inch | mm | inch | | |
| RV | 170 * | C | E | ε | M6 | 5 | 0.20 | 14,5 | 0.57 | 50GE05A | 2 |
| RS | 170 * | C | E | ε | M6 | 5 | 0.20 | 14,5 | 0.57 | 50GE05A | 2 |
| M | 90 * | B | E | ε | M6 | 5 | 0.20 | 14,5 | 0.57 | 50GE05A | 2 |
| MS | 90 * | B | E | ε | M6 | 5 | 0.20 | 14,5 | 0.57 | 50GE05A | 2 |

* : sicurezza OSAS e OPAS non disponibile - Safety features OSAS and OPAS not available - Sicherheitsfeatures OSAS und OPAS nicht verfügbar - Dispositifs de sécurité OSAS et OPAS non disponibles - Dispositivos de seguridad OSAS y OPAS no disponibles - Dispositivos OSAS e OPAS não disponiveis

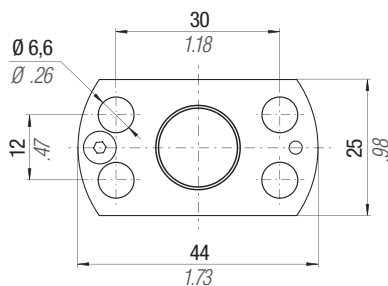
E version



| D | K min | Ø F | Ø S |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensione viti Screw dimension Schraubengröße Dimension vis Tamaño tornillos Dimensão parafusos | Minimo impegno viti Minimum thread engagement Mindest-Einschraublänge Longueur minimum à visser Recubrimiento mínimo rosca Comprimento mínimo roscado | Ø Foro piastra - cilindro Ø Plate - Cylinder hole Ø Platten - Zylinder Loch Ø Trou plaque - cylindre Ø Agujero Placa - Cilindro Ø Furo Placa - Cilindro | Ø Guarnizione piastra - cilindro Ø Plate - Cylinder seal Ø Platten - Zylinder Dichtung Ø Joint plaque - cylindre Ø Junta Placa - Cilindro Ø Junta Placa - Cilindro |

FIXING PATTERN

ε



NOTE

1

Modello con corpo liscio senza cave di fissaggio
Model with straight body without fixing grooves
Model mit flachem Körper ohne Befestigungsnuten
Modèle avec corps lisse sans encoches de fixation
Modelo con cuerpo parejo sin ranuras de fijación
Modelo com corpo liso sem ranhuras de fixação

2

Modello con corpo senza foro di caricamento laterale
Model with body without side charging port
Model mit Körper ohne Nebenladeloch
Modèle avec corps sans trou de charge latéral
Modelo con cuerpo sin hueco de carga
Modelo com corpo sem orificio de carregamen



IT Corse uguali al cilindro autonomo
EN Strokes same to selfcontained cylinder
DE Hüben gleiche zu den Autonomen Gdf

FR Courses égaux à ceux du Cylindre autonome
ES Carreras iguales a las del cilindro autónomo
PT Cursos iguais às do cilindro autónomo

HOW TO ORDER



IT Stato di fornitura

Tutti i cilindri Easy manifold e le coperture per i fori, sono forniti con guarnizione o nipplo e foglio di installazione.

EN Supply status

All the Easy manifold Cylinders and the hole covers, are supplied with square seal or nipple and installation guideline.

DE Lieferumfang

Alle Gasdruckfedern und Verschlussplatten für das Verbundplattensystem werden mit den nötigen Dichtungen / Verbindungsstücken und den Installationsrichtlinien ausgeliefert.

FR Etat de fourniture

Tous les vérins Easy Manifold et les couvertures pour les trous, sont fournis avec joint ou coupleur et feuille d'installation.

ES Estado de abastecimiento

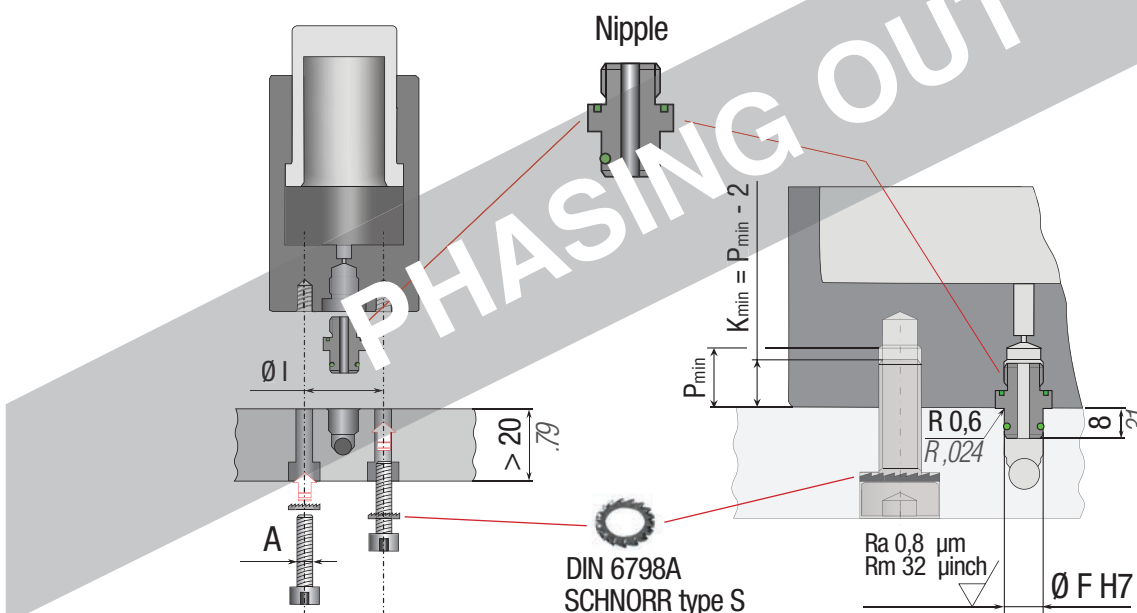
Todos los cilindros Easy Manifold y coberturas para los agujeros, se abastecerán con junta o el Tetón y la hoja de instalación.

PT Estado de abastecimento

Todos os cilindros Easy Manifold e as capas para os buracos, são fornecidos com junta ou conector e folha de instalação.

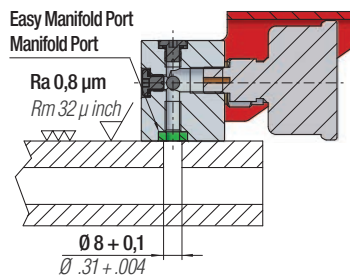
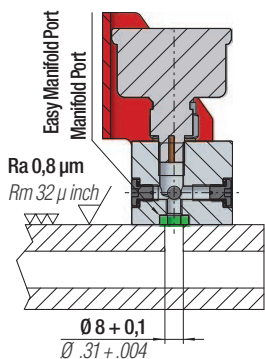
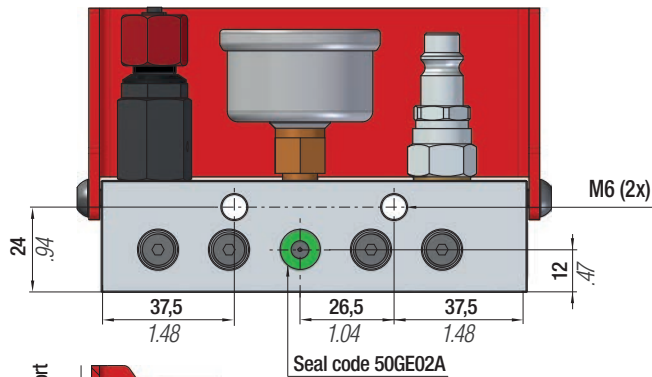
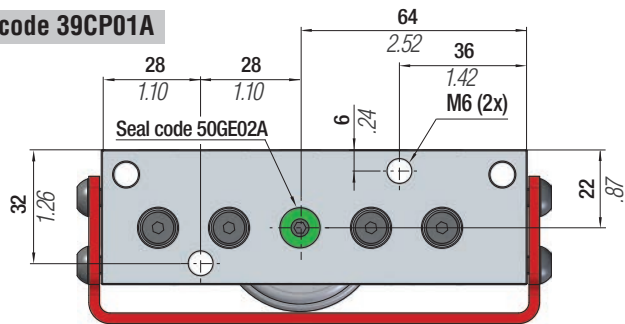
EN easy manifold system

| Series | Model | Revision code | Version | Fixing pattern | Thread size A x P _{min} | Ø I | | Ø D | | Ø F | | Ø S | | Seal code | Note | Cover code > see pag 250 |
|--------|-------|---------------|---------|----------------|-------------------------------------|----------|------|-----|------|-----|------|-----|------|-----------|------|-----------------------------|
| | | | | | | mm | inch | mm | inch | mm | inch | mm | inch | | | |
| ML | 1800 | C | EN | γ | M6 x 8 | 26 | 1,02 | - | - | 8 | 0,31 | - | - | 39NMLNC | - | 39TE003A |
| | 3000 | | | | | 39TE009A | | | | | | | | | | |
| | 4700 | | | | | 39TE004A | | | | | | | | | | |
| | 7500 | | | | | 39TE005A | | | | | | | | | | |
| | 12000 | | | | | 39TE006A | | | | | | | | | | |

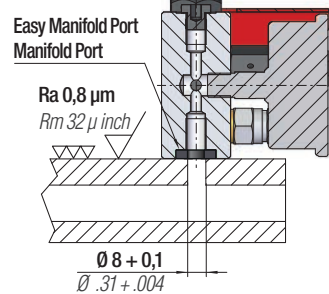
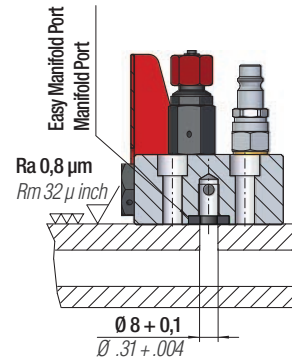
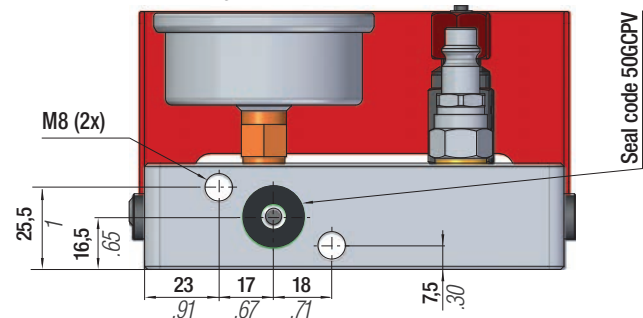
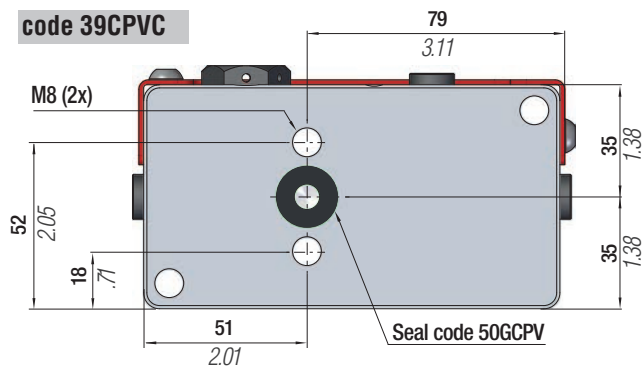


Easy manifold control panel

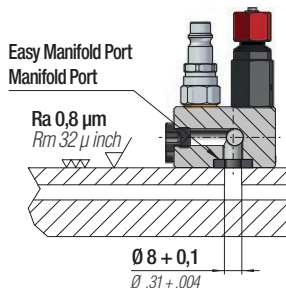
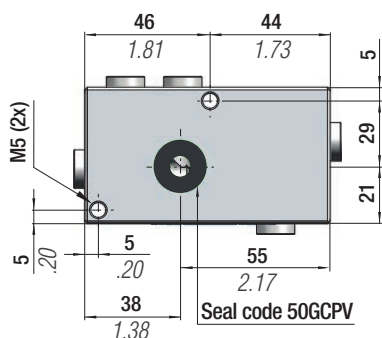
code 39CP01A



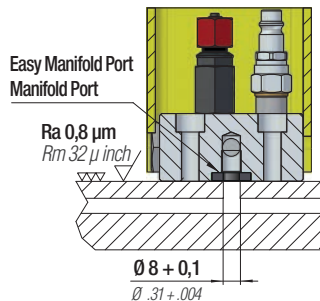
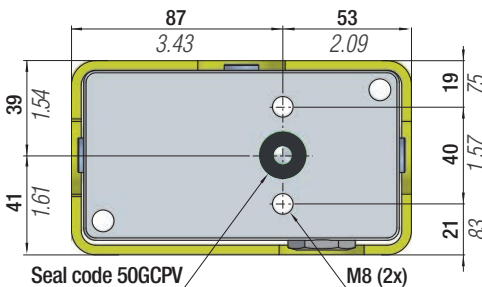
code 39CPVC



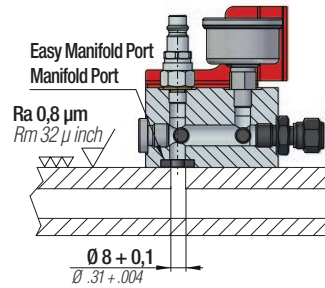
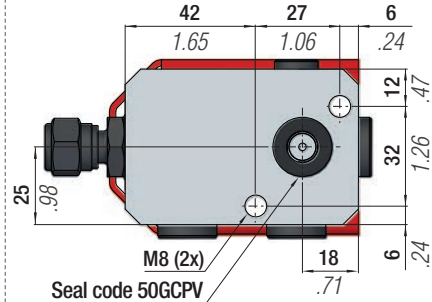
code 39MCPC



code 39CP14A



code 39CP07A



How to plug holes

IT Quando è richiesta una riduzione della forza del sistema, o del numero di cilindri, è possibile tappare i fori non utilizzati con una copertura dotata di guarnizione, che utilizza gli stessi fissaggi dei cilindri.

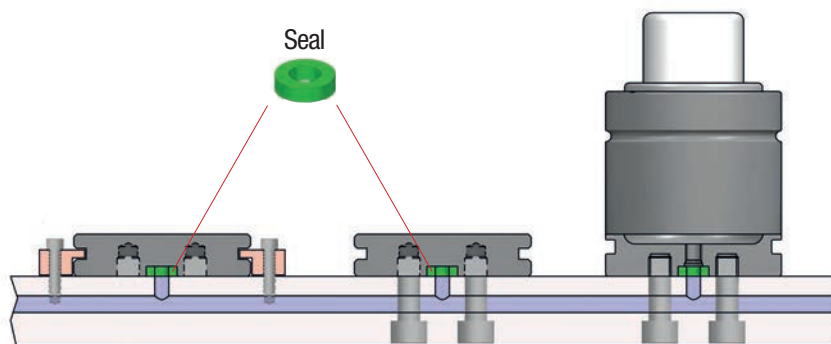
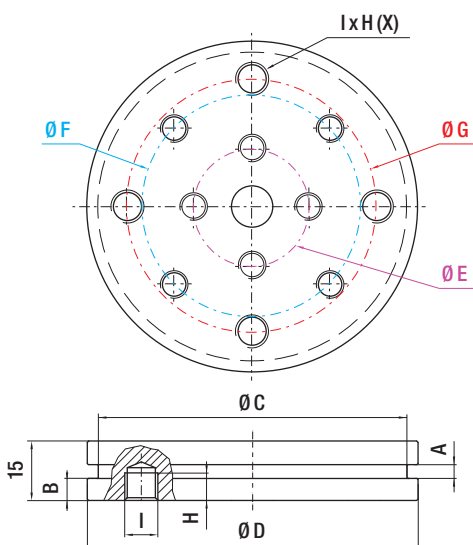
FR Quand une réduction de la force du système ou du nombre des vérins est requise, on peut boucher les trous qui ne sont pas utilisés, avec un couvercle équipée avec un joint, qui utilise les mêmes trous de fixations des vérins.

EN When a reduction either of the system's force, or of the number of cylinders, is required, it is possible to plug the holes which are not used, with a cover provided with a square seal, through the same fixing hoses of the cylinders.

ES Cuando se necesita de una reducción de la fuerza del sistema, o del número de cilindros, puede tapar los agujeros no utilizados con una cobertura equipada de junta, que utiliza los mismos agujeros de los cilindros.

DE Mit den Verschlussplatten werden nicht benötigte Bohrungen verschlossen und abgedichtet. Dadurch können einzelne Gasdruckfedern aus einem System entfernt und Kräfte in einem bestimmten Bereich reduziert werden.

PT Quando você solicita uma redução na força do sistema, ou o número de cilindros, pode tapar os buracos não utilizados com uma tampa com vedação, que usa o mesmo buracos dos cilindros.

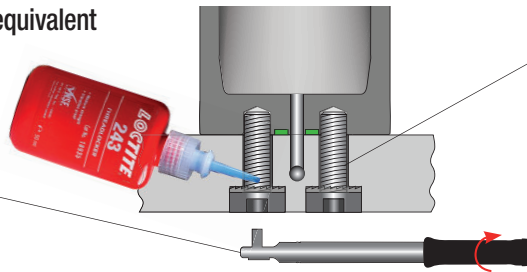


| Code | A | | B | | Ø C | | Ø D | | Ø E | | Ø F | | Ø G | | I (x) | H | | Seal Code | Fixing |
|----------|-----|------|----|------|-----|------|-----|------|-----|------|------|------|----------|------|----------|----|------|-----------|-----------|
| | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | mm | inch | | |
| 39TE012A | | | | | 27 | 1.06 | 32 | 1.26 | 18 | 0.71 | - | - | - | - | M6 (2x) | | | 50GE02A | FS2.. 32 |
| 39TE010A | | | | | 33 | 1.3 | 38 | 1.50 | 20 | 0.79 | 24 | 0.94 | - | - | M6 (4x) | | | | FS2.. 38 |
| 39TE001A | 3,5 | 0.14 | 4 | 0.16 | 40 | 1.06 | 45 | 1.77 | 20 | 0.79 | - | - | - | - | M8 (2x) | | | 50GE01A | FS2.. 45 |
| 39TE011A | | | | | 40 | 1.57 | 26 | 1.02 | - | - | - | - | M8 (4x) | | | | | | |
| 39TE002A | | | | | 26 | 1.02 | - | - | 26 | 1.02 | - | - | - | - | M6 (4x) | | | | FS2.. 50 |
| 39TE003A | | | | | 43 | 1.69 | 50 | 1.97 | - | - | 34 | 1.34 | - | - | - | | | | FS2.. 63 |
| 39TE009A | | | | | 56 | 2.2 | 63 | 2.48 | 34 | 1.34 | - | - | - | - | M8 (4x) | | | | FS2.. 75 |
| 39TE004A | | | | | 67 | 2.64 | 75 | 2.95 | 40 | 1.57 | - | - | - | - | - | | | | FS2.. 95 |
| 39TE005A | 5 | 0.20 | 8 | 0.31 | 87 | 3.43 | 95 | 3.74 | 52 | 2.05 | 60 | 2.36 | - | - | M12 (4x) | | | 50GE01A | FS2.. 120 |
| 39TE006A | | | | | 80 | 3.15 | - | - | 68 | 2.68 | - | - | M10 (4x) | | | | | | |
| 39TE007A | | | | | 112 | 4.41 | 120 | 4.72 | - | - | 80,8 | 3.18 | - | - | M12 (4x) | | | | FS2.. 195 |
| 39TE008A | 8 | 0.31 | | | 142 | 5.59 | 150 | 5.91 | 100 | 3.94 | - | - | 90 | 3.54 | M10 (4x) | | | | |
| 39TE008A | | | | | 187 | 7.36 | 195 | 7.68 | 120 | 4.72 | - | - | - | - | - | - | - | M12 (4x) | |

Mounting recommendations

⚠ It is always required Loctite 243 or equivalent

Chiave dinamometrica
Torque wrench
Drehmomentschlüssel
Clé dynamométrique
Llave dinamométrica
Chave dinamométrica



Torque force

| | | |
|-----|-----------|-------------|
| M6 | class 8.8 | max 10,4 Nm |
| M8 | class 8.8 | max 24,6 Nm |
| M10 | class 8.8 | max 52,4 Nm |
| M12 | class 8.8 | max 90 Nm |

IT Raccomandazioni

- L'uso di viti di classe superiore alla 8.8, come 9.8, 10.9 e 12.9, è sempre possibile (questa indicazione non vale per gli ML, MP e MQ).
- Si raccomanda di NON SUPERARE i valori della coppia di serraggio indicati per la classe 8.8 per qualsiasi classe di viti utilizzata.
- Impegnare sempre il filetto il più possibile, almeno il valore di Kmin.
- Massima attenzione nel montaggio della guarnizione di collegamento tra cilindro e piastra.

- Utilizzare SEMPRE i fori di fissaggio previsti.
- Massima attenzione alla corretta coppia di serraggio da applicare alle viti.
- Usare SEMPRE rondelle anti svitamento su cilindri e pannelli.
- Usare SEMPRE frena filetti tipo Loctite 243 su cilindri e pannelli.
- Non caricare il sistema Easy Manifold con pressione superiore alla massima consentita per specifico modello di cilindro.

EN Recommendations

- The use of screws of higher class than 8.8, such as 9.8, 10.9 and 12.9, is always allowed (this information is not valid for the Series ML, MP e MQ).
- DO NOT EXCEED the fixed values for torque force indicated for class 8.8, in any other class of screws used.
- ALWAYS engage thread as much as possible at least Kmin.
- Extreme caution when assembling the connecting seal between plate and cylinder.

- ALWAYS use the fixing holes provided.
- Extreme caution to tightening torque to be applied to screws.
- ALWAYS use lock washers on cylinders and panels.
- ALWAYS use thread lock LOCTITE 243 on cylinders and panels.
- Do not charge the easy manifold system over the maximum allowed pressure for each cylinder model.

DE Hinweise

- Schrauben mit einer Festigkeit von 8.8 verwenden. Höhere Festigkeitsklassen wie 9.8, 10.9 und 12.9 sind möglich (Diese Angabe gilt nicht für die Baureihen ML, MP und MQ).
- Das Drehmoment der Festigkeitsklasse 8.8 für andere Festigkeitsklassen nicht überschreiten.
- Die komplette Gewindelänge ausnutzen, mind. Kmin.
- Vorsicht bei der Montage der Dichtungen zwischen den Gasdruckfedern und der Platte.
- Äußerste Vorsicht bzgl. des korrekten Drehmoments beim Einschrauben.

- Alle Befestigungsgewinde verwenden.
- IMMER Sicherungsscheiben auf die Zylindern und Kontrollarmaturen, verwenden.
- IMMER eine Schraubensicherung wie z.B. Loctite 243 auf die Zylindern und Kontrollarmaturen, verwenden.
- Das Easy Manifold System nicht mit einem höheren Druck laden als dem, der speziell für das Modell der Gasdruckfeder empfohlen wird.

FR Reccomandacions

- L'usage de vis de classe supérieure au 8.8, tout comme 9.8, 10.9 et 12.9, est toujours possible (cette information n'est pas valable pour les séries ML, MP et MQ).
- N'EXCEDEZ PAS la valeur de la couple de serrage indiqués pour la classe 8.8 pour n'importe quelle autre classe de vis utilisée.
- Engager toujours le filetages plus que possible, et au moins Kmin.
- Une extrême vigilance est recommandée pour l'assemblage du joint entre la plaque et le vérin.

- Utiliser TOUJOURS les trous de fixation prévus.
- Bien veiller à appliquer le couple de serrage correct aux vis.
- TOUJOURS utiliser les rondelles de verrouillage avec les cylindres et les panneaux.
- TOUJOURS utiliser la colle frein filet LOCTITE 243 avec les cylindres et les panneaux.
- Ne pas charger le système manifold au delà de la pression autorisée pour chaque modèle de vérin.

ES Recomendaciones

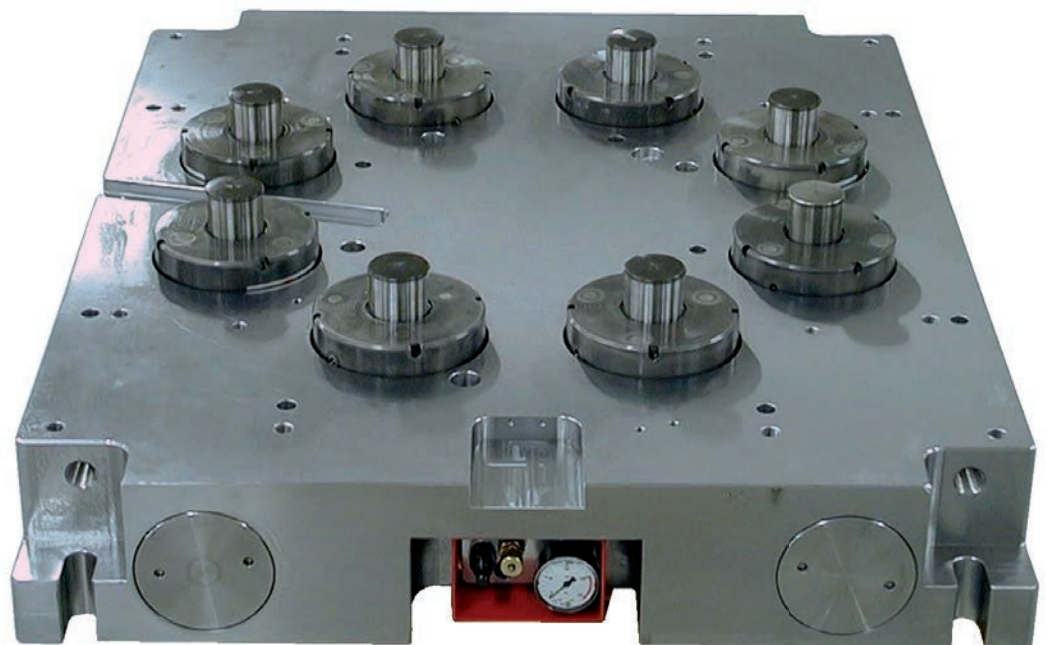
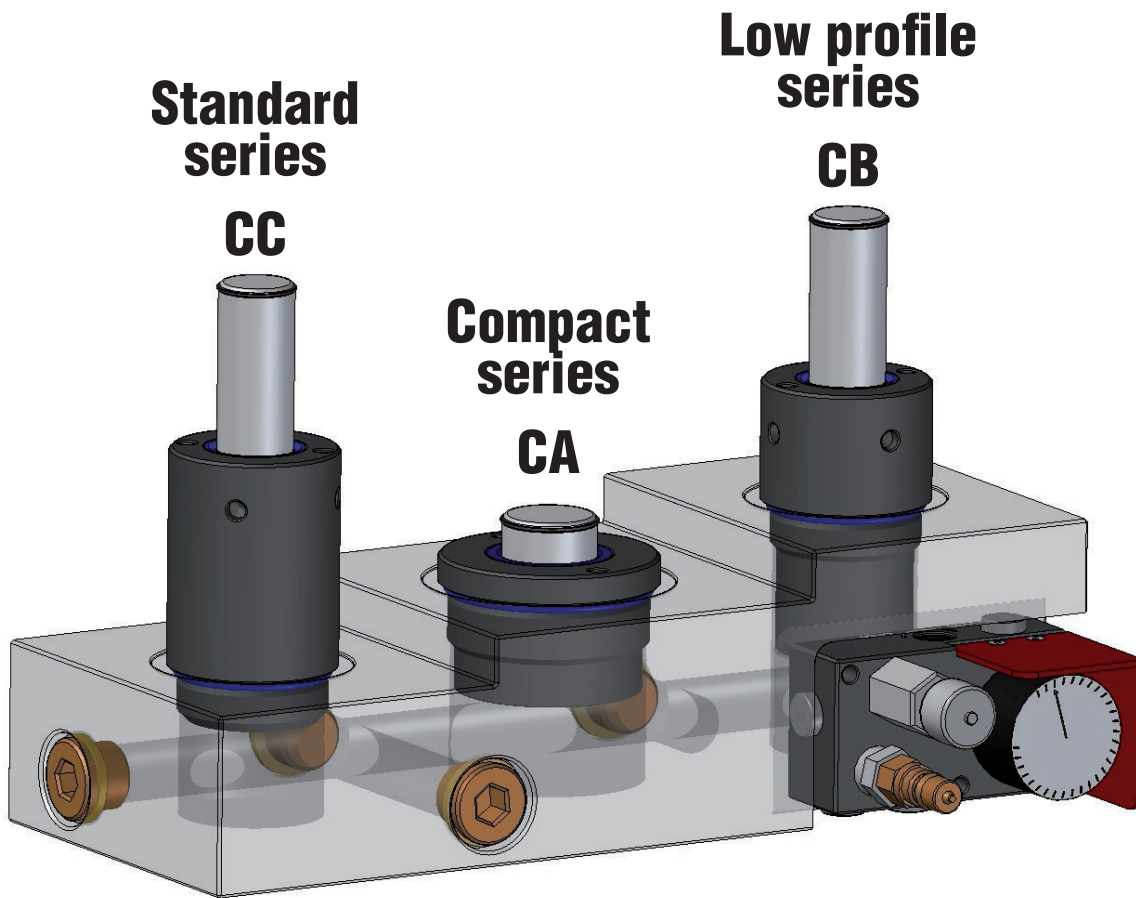
- La utilización de los tornillos superiores a 8,8, como 9.8, 10.9 y 12.9, siempre es posible (esta indicación no se aplica a ML, MP y MQ).
- Le recomendamos que NO HAY QUE SUPERAR los valores de las especificaciones de torsión para tornillos de clase 8.8 utilizados para cualquier clase.
- Siempre enganchar la rosca tanto como sea posible, al menos para Kmin.
- Máxima atención en el montaje de la junta de conexión entre placa y cilindro.

- SIEMPRE use los agujeros de fijación previstos.
- Máxima atención al correcto par de torsión que se aplica a los tornillos.
- Utilizar SIEMPRE arandelas autoblocantes por los cilindros y paneles.
- Utilizar SIEMPRE fijador de rosca tipo Loctite 243 por los cilindros y paneles.
- No cargar el sistema Easy Manifold con presión superior a la máxima permitida para cada tipo de cilindro.

PT Recomendações

- O uso de limitadores superiores a 8,8, tal como 9,8, 10,9 e 12,9, é sempre possível (não valido para as linhas ML, MP e MQ).
- Recomendamos que você NÃO ULTRAPASSE os valores das especificações de torque para a classe 8,8 por os limitadores utilizados para qualquer classe.
- Sempre envolver a rosca, tanto quanto possível, pelo menos para Kmin.
- Máxima atenção quando fixar os vedantes conectores entre a placa e cilindro.

- Use SEMPRE os furos de fixação fornecidos.
- Máxima atenção no torque de aperto aplicado nos parafuso.
- Utilizar SEMPRE as anilhas de travamento nos cilindros e painéis.
- Utilizar SEMPRE o fixador de rosca LOCTITE 243 nos cilindros e painéis.
- Não carregar o sistema EASY MANIFOLD acima da pressão máxima recomendada para cada modelo de cilindro.



IT SISTEMA MANIFOLD

- Alternativa ai cilindri autonomi collegati
- Minimo incremento di pressione e forza
- Minimo ingombro
- Assenza di tubi e raccordi
- Grandi forze concentrate
- Monitoraggio e modifica della pressione facilitati attraverso il pannello di controllo
- Facilità di montaggio
- Facilità di manutenzione
- Lunga durata

CARATTERISTICHE TECNICHE

- Cilindri con tenuta pistone
- Raschiatore di protezione da contaminanti
- Doppia guida autolubrificata
- Corpo cilindro nitratato con durezza ~ Hv 700
- Corpo cilindro lappato con rugosità ~ Ra ≤ 0,05 μ
- Stelo pistone nitratato con durezza ~ Hv 700
- Stelo pistone lappato con rugosità ~ Ra ≤ 0,05 μ
- Pressione massima di caricamento 110 bar a 20°C
- Pressione minima di caricamento 30 bar a 20°C
- Velocità massima 0,6 m/sec
- Progettati in conformità alla Direttiva PED 2014/68/EU e EN 13445:2015

DE TANKPLATTENSYSYSTEM

- Alternativ zu Gasdruckfedern in Verbundanordnung
- Sehr geringer Druck- bzw. Kraftanstieg
- Kleine Einbaubmessungen
- Keine Schlauchverbindungen nötig
- Hohe Kräfte auf engstem Raum
- Einfache Überwachung und Druckänderung über Kontrollarmatur
- Leichte Montage
- Einfache Wartung
- Lange Lebensdauer

TECHNISCHE DATEN

- Gasdruckfedern mit Kolbendichtung
- Schmutzabstreifer
- Doppelte selbstschmierende Führung
- Nitrierter Zylinderkörper, Härte ~ Hv 700
- Geläppter Zylinderkörper, Rauigkeit ~ Ra ≤ 0,05 μ
- Kolbenstange nitriert, Härte ~ Hv 700
- Geläppte Kolbenstange, Rauigkeit ~ Ra ≤ 0,05 μ
- Max. Fülldruck 110 bar bei 20 °C
- Min. Fülldruck 30 bar bei 20 °C
- Max. Kolbengeschwindigkeit 0,6 m/s
- Konstruktion nach Druckgeräterichtlinie PED 2014/68/EU und EN 13445:2015

ES SISTEMA MANIFOLD

- Alternativa a los cilindros autónomos conectados
- Incremento mínimo de presión y fuerza
- Dimensiones mínimas
- Ausencia de tubos y conectores
- Concentración de grandes fuerzas
- Monitorización y modificación de la presión asignada a través del panel de control
- Facilidad de montaje
- Facilidad de mantenimiento
- Larga vida útil

CARACTERÍSTICAS TÉCNICAS

- Cilindros con guarnición en el pistón
- Escudo protector de agentes externos contaminantes
- Doble guía autolubrificada
- Cuerpo del cilindro nitratado con dureza ~ Hv 700
- Cuerpo del cilindro lapeado con rugosidad ~ Ra ≤ 0,05 μ
- Vástago nitratado con dureza ~ Hv 700
- Vástago lapeado con rugosidad ~ Ra ≤ 0,05 μ
- Presión máxima de carga 110 bar a 20°C
- Presión mínima de carga 30 bar a 20°C
- Velocidad máxima 0,6 m/s
- Diseñados de acuerdo a la Directiva PED 2014/68/EU y EN 13445:2015

EN MANIFOLD SYSTEM

- Alternative choice to hose system
- Low increase of force and pressure
- Minimal heights
- No hoses and/or fittings
- Highest force in the minimum space
- Easy check and charge of pressure through the panel
- Easy mounting
- Easy maintenance
- Long lasting

TECHNICAL FEATURES

- Piston sealed cylinders
- Rod wiper against contaminants
- Double self lubricating guiding elements
- Nitred body with hardness of ~ Hv 700
- Lapped body with roughness of ~ Ra ≤ 0,05 μ
- Nitred piston rod with hardness of ~ Hv 700
- Lapped piston rod with roughness of ~ Ra ≤ 0,05 μ
- Maximum charging pressure 110 bar a 20°C
- Minimum charging pressure 30 bar a 20°C
- Maximum speed 0,6 m/sec
- In compliance with PED 2014/68/EU and EN 13445:2015 Directive

FR SYSTÈME MULTIPLE

- Solution alternative au système interconnecté par tuyaux
- Faible augmentation de la force et de la pression
- Hauteurs minimales
- Utilisation d'aucun tuyau ni adaptateur
- Force maximale pour un encombrement minimum
- Vérification aisée de la pression et rechargement facilité grâce au dispositif de gonflage
- Montage facile
- Maintenance facilitée
- Longévité optimale

CARACTÉRISTIQUES TECHNIQUES

- Vérins avec joint de piston
- Dévêtisseur protégeant de la poussière et de tous contaminants
- Doubles éléments de guidage auto-lubrifiants
- Corps trempé à ~Hv 700
- Corps rodé avec rugosité de ~Ra ≤ 0,05 μ
- Piston nituré, dureté de ~Hv 700
- Piston rodé avec rugosité de ~Ra ≤ 0,05 μ
- Pression de charge maximale 110 bar à 20°C
- Pression de charge minimale 30 bar à 20°C
- Vitesse maximale 0,6 m/sec
- Conformément à la directive PED2014/68/EU et EN 13445:2015

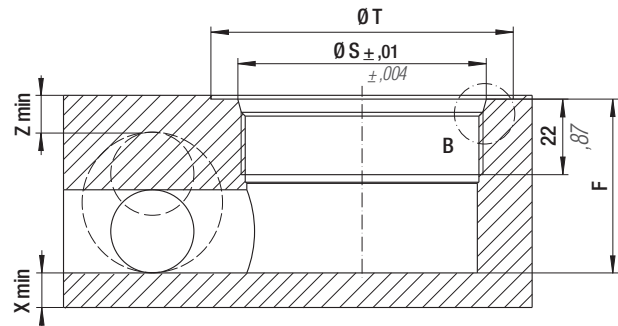
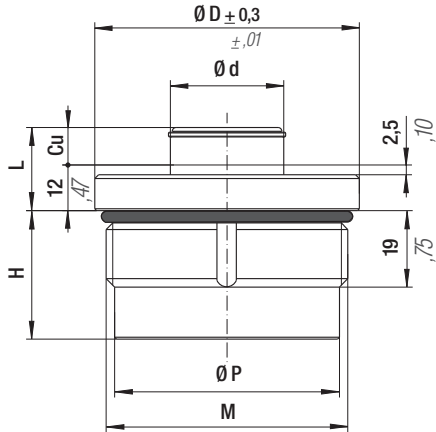
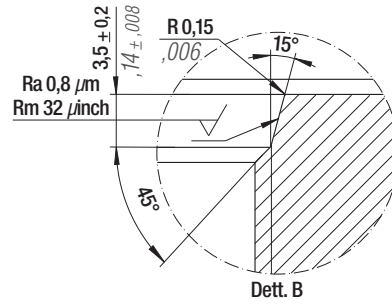
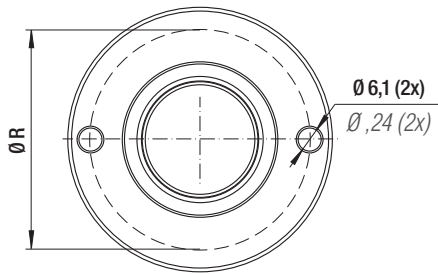
PT SISTEMA MANIFOLD

- Alternativa aos cilindros autónomos interligados
- Incremento mínimo de pressão e força
- Mínimo espaço
- Ausência de tubos e "racords"
- Grande força concentrada
- Monitorização e modificação da pressão facilitada através do painel de controlo
- De fácil montagem
- De fácil manutenção
- Longa duração

CARACTERÍSTICAS TÉCNICAS

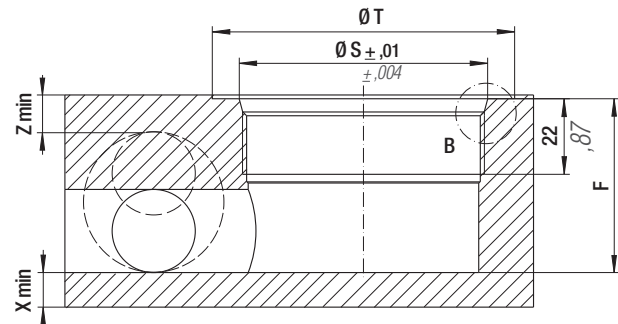
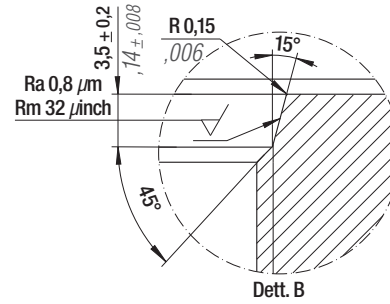
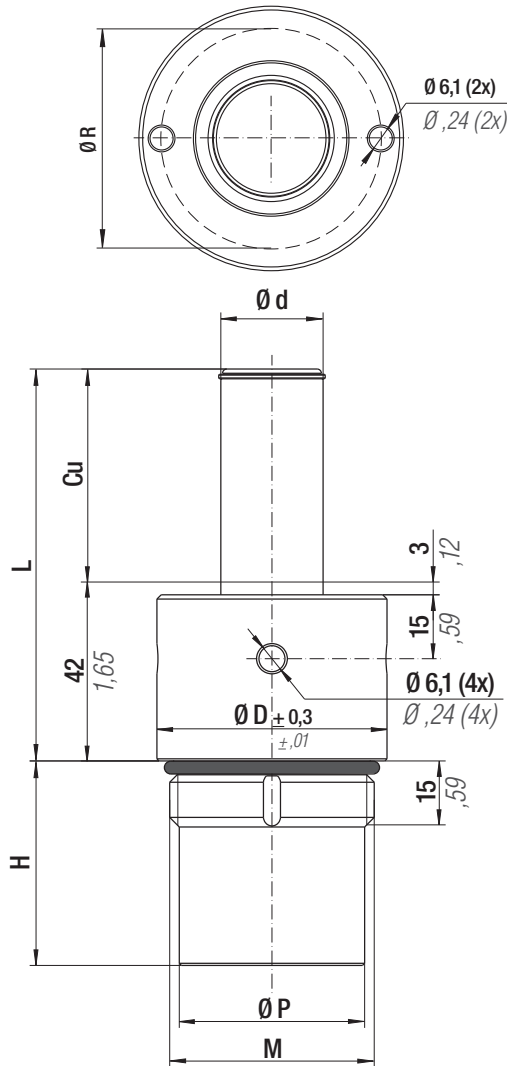
- Cilindros com estanquidade do êmbolo
- Raspador para protecção contra contaminantes
- Duplo guiamento autolubrificado
- Corpo do cilindro nitratado com dureza - Hv 700
- Corpo do cilindro polido com rugosidade ~Ra ≤ 0,05 μ
- Êmbolo nitratado com dureza - Hv 700
- Êmbolo polido com rugosidade ~Ra ≤ 0,05 μ
- Pressão máxima de carregamento 110 bar a 20°C
- Pressão mínima de carregamento 30 bar a 20°C
- Velocidade máxima 0,6 m/s
- Projectados em conformidade com a Directiva PED 2014/68/EU e EN 13445:2015

PED
2014/68/EU



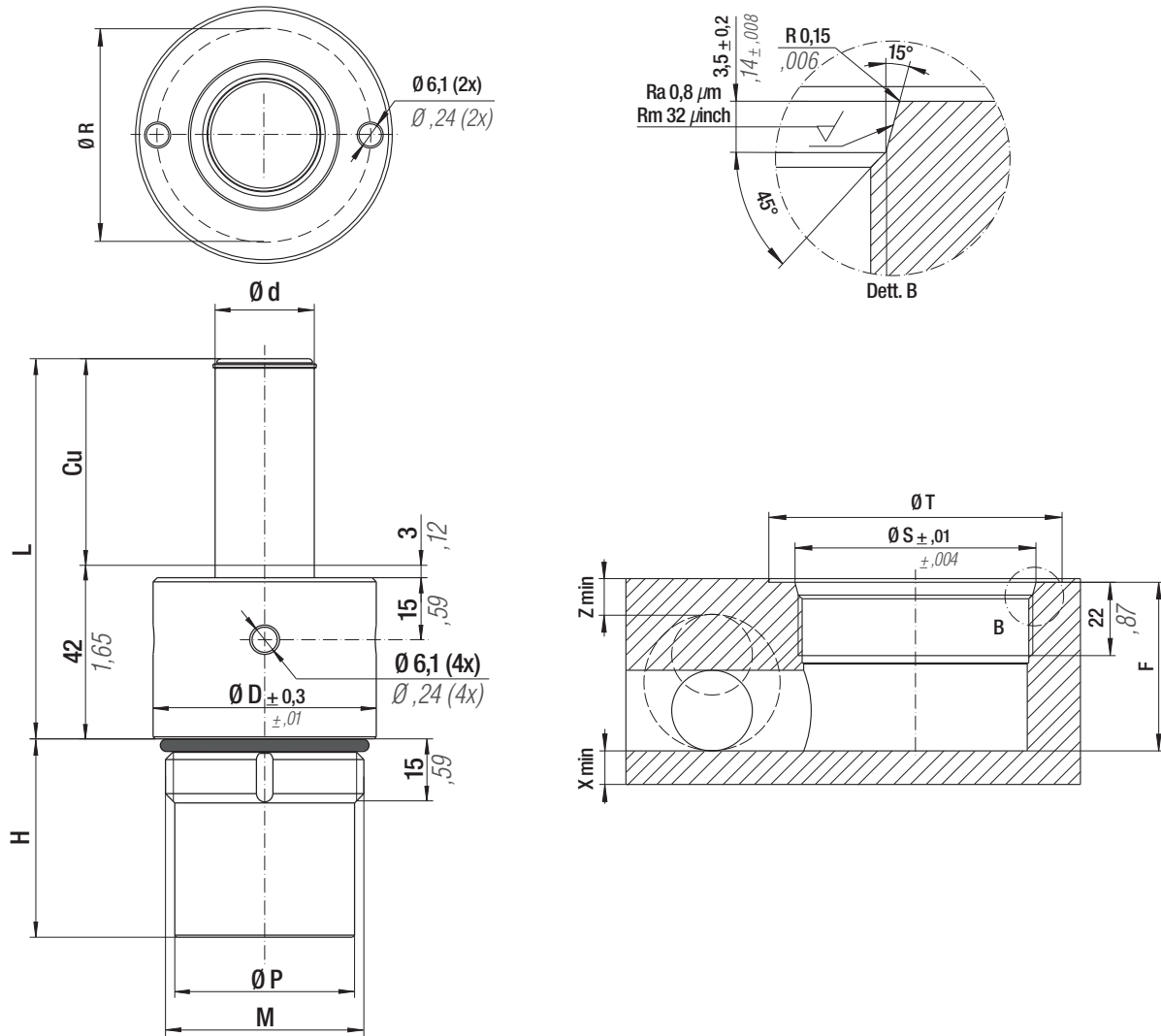
| | | | | | | | |
|-----------------------------|--|--|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|
| Max Speed 0,8 m/s | | | P max 110 bar 1595 psi | P min 20 bar 290 psi | S 22,9 cm ² 3,55 in ² | | Maintenance kit 39BMCA02500A |
|-----------------------------|--|--|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|

| MODEL | F ₀ | | M | Cu | | L | | H | | Ø D | | Ø d | | Ø P | | Ø R | | Ø T | | Ø S | | F | Xmin | | Zmin | | |
|-------------------|----------------|------|----------|----|------|----|------|----|------|-----|------|-----|------|------|------|-----|------|-----|------|------|------|----|------|------|------|------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | mm | inch | mm | inch | mm |
| CA 2500 - 006 - A | 2520 | 5665 | M 64 X 2 | 6 | 0.24 | 18 | 0.71 | 30 | 1.18 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 33 | 1.30 | 10 | 0.39 | 8 | 0.31 |
| CA 2500 - 010 - A | 2520 | 5665 | M 64 X 2 | 10 | 0.39 | 22 | 0.87 | 34 | 1.34 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 37 | 1.46 | 10 | 0.39 | 8 | 0.31 |
| CA 2500 - 015 - A | 2520 | 5665 | M 64 X 2 | 15 | 0.59 | 27 | 1.06 | 39 | 1.54 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 42 | 1.65 | 10 | 0.39 | 8 | 0.31 |
| CA 2500 - 020 - A | 2520 | 5665 | M 64 X 2 | 20 | 0.79 | 32 | 1.26 | 44 | 1.73 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 47 | 1.85 | 10 | 0.39 | 8 | 0.31 |



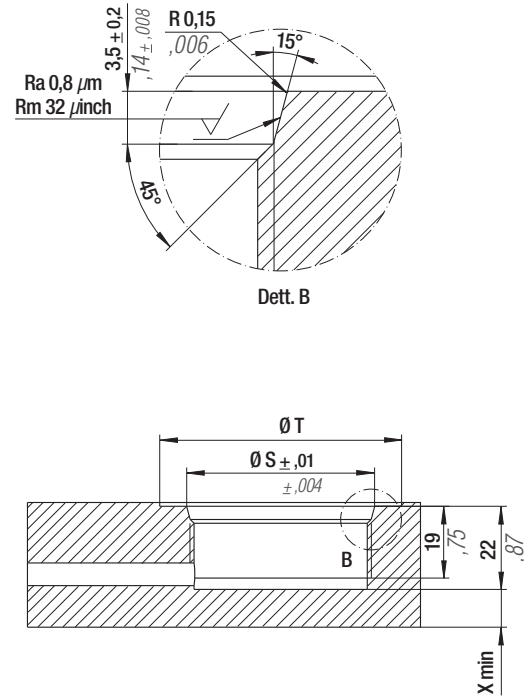
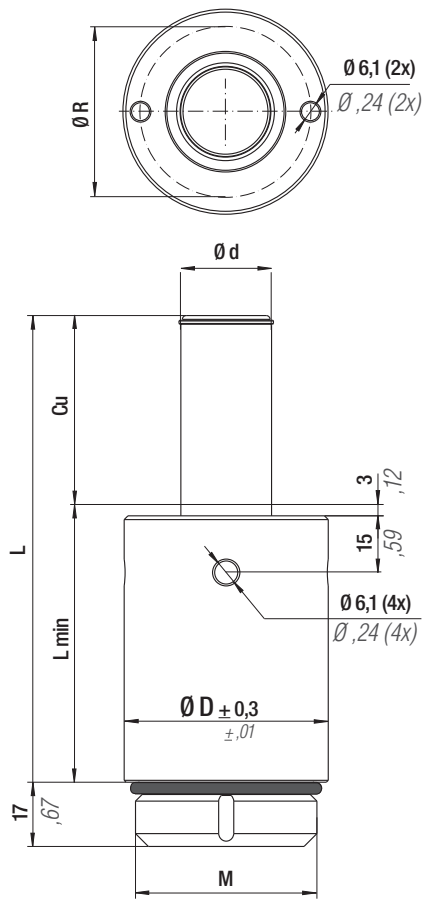
| | | | | | | | |
|------------------------------|--|--|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|
| Max Speed: 0,8 m/s | | | P max 110 bar 1595 psi | P min 20 bar 290 psi | S 9,62 cm ² 1,49 in ² | | Maintenance kit 39BMCC01000A |
|------------------------------|--|--|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|

| MODEL | F ₀ | | M | Cu | | L | | H | | Ø D | | Ø d | | Ø P | | Ø R | | Ø T | | Ø S | | F | | Xmin | | Zmin | |
|-------------------|----------------|------|-----------|-----|------|-----|------|-----|------|-----|------|-----|------|------|------|-----|------|-----|------|------|------|-----|------|------|------|------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| CB 1000 - 025 - A | 1060 | 2383 | M 48 X 2 | 25 | 0,98 | 67 | 2,64 | 23 | 0,91 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 26 | 1,02 | 10 | 0,39 | 8 | 0,31 |
| CB 1000 - 038 - A | 1060 | 2383 | M 48 X 2 | 38 | 1,50 | 80 | 3,15 | 36 | 1,42 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 39 | 1,54 | 10 | 0,39 | 8 | 0,31 |
| CB 1000 - 050 - A | 1060 | 2383 | M 48 X 2 | 50 | 1,97 | 92 | 3,62 | 48 | 1,89 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 51 | 2,01 | 10 | 0,39 | 8 | 0,31 |
| CB 1000 - 075 - A | 1060 | 2383 | M 48 X 2 | 75 | 2,95 | 117 | 4,61 | 73 | 2,87 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 76 | 2,99 | 10 | 0,39 | 8 | 0,31 |
| CB 1000 - 100 - A | 1060 | 2383 | M 48 X 2 | 100 | 3,94 | 142 | 5,59 | 98 | 3,86 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 101 | 3,98 | 10 | 0,39 | 8 | 0,31 |
| CB 1000 - 150 - A | 1060 | 2383 | M 48 X 2z | 150 | 5,91 | 192 | 7,56 | 148 | 5,83 | 54 | 2,13 | 24 | 0,95 | 43,5 | 1,71 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 151 | 5,94 | 10 | 0,39 | 8 | 0,31 |

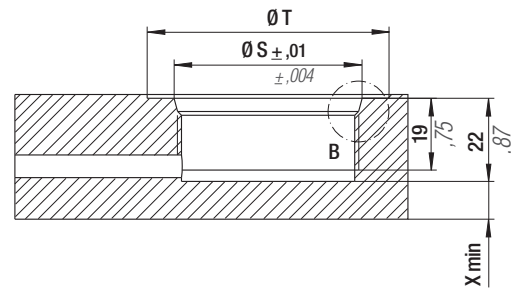
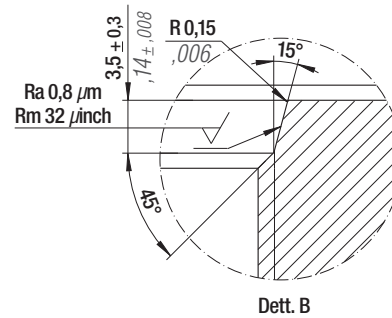
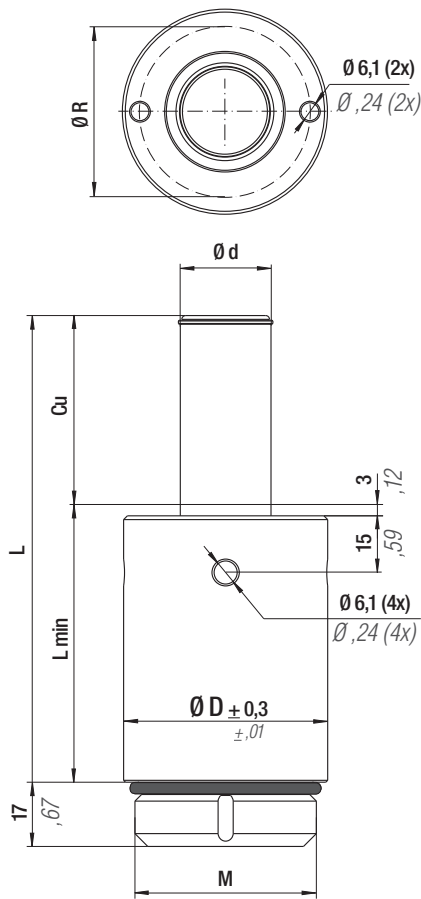


| | | | | | | | | |
|-----------------------------|------------------------|----------------------|----------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|
| Max Speed 0,8 m/s | °F 32 176 | °C 0 80 | N₂ | P max 110 bar 1595 psi | P min 20 bar 290 psi | S 22,9 cm ² 3,55 in ² | | Maintenance kit 39BMCB02500A |
|-----------------------------|------------------------|----------------------|----------------------|-------------------------------------|-----------------------------------|----------------------------------------------------------|--|----------------------------------------|

| MODEL | F ₀ | | M | Cu | | L | | H | | Ø D | | Ø d | | Ø P | | Ø R | | Ø T | | Ø S | | F | | Xmin | | Zmin | |
|-------------------|----------------|------|----------|-----|------|-----|------|-----|------|-----|------|-----|------|------|------|-----|------|-----|------|------|------|-------|------|------|------|------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| CB 2500 - 025 - A | 2520 | 5665 | M 64 X 2 | 25 | 0.98 | 67 | 2.64 | 23 | 0.91 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 26,0 | 1.02 | 10 | 0.39 | 8 | 0.31 |
| CB 2500 - 038 - A | 2520 | 5665 | M 64 X 2 | 38 | 1.5 | 80 | 3.15 | 36 | 1.42 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 39,0 | 1.54 | 10 | 0.39 | 8 | 0.31 |
| CB 2500 - 050 - A | 2520 | 5665 | M 64 X 2 | 50 | 1.97 | 92 | 3.62 | 48 | 1.89 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 51,0 | 2.01 | 10 | 0.39 | 8 | 0.31 |
| CB 2500 - 075 - A | 2520 | 5665 | M 64 X 2 | 75 | 2.95 | 117 | 4.61 | 73 | 2.87 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 76,0 | 2.99 | 10 | 0.39 | 8 | 0.31 |
| CB 2500 - 100 - A | 2520 | 5665 | M 64 X 2 | 100 | 3.94 | 142 | 5.59 | 98 | 3.86 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 101,0 | 3.98 | 10 | 0.39 | 8 | 0.31 |
| CB 2500 - 150 - A | 2520 | 5665 | M 64 X 2 | 150 | 5.91 | 192 | 7.56 | 148 | 5.83 | 70 | 2.76 | 30 | 1.18 | 59,5 | 2.34 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 151,0 | 5.94 | 10 | 0.39 | 8 | 0.31 |

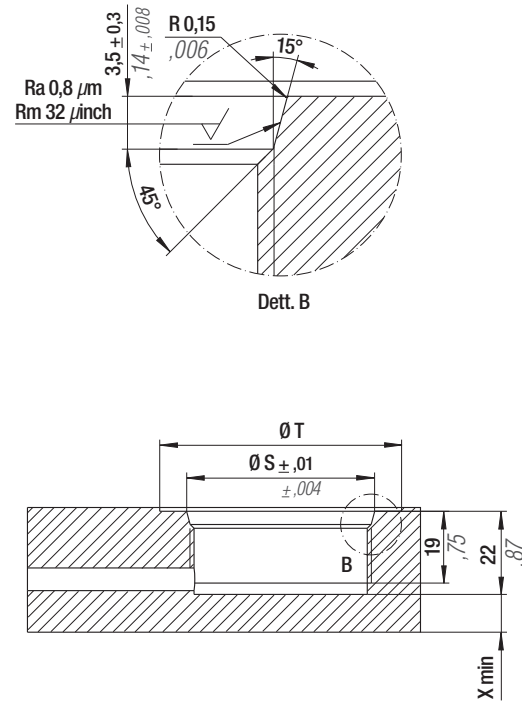
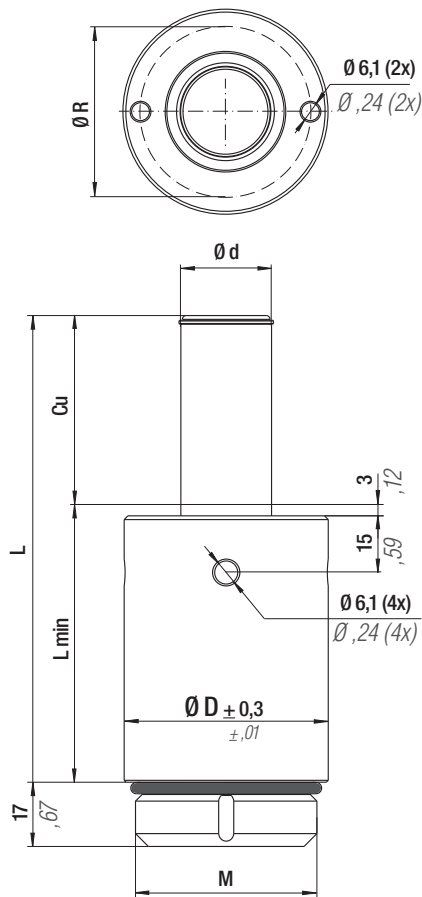


| MODEL | F ₀ | | M | Cu | | L | | L min | | Ø D | | Ø d | | Ø R | | Ø T | | Ø S | | Xmin | |
|-------------------|----------------|------|----------|------|------|-------|------|-------|------|-----|------|-----|------|-----|------|-----|------|------|------|------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| CC 0500 - 012 - A | 540 | 1214 | M 36 X 2 | 12,5 | 0.49 | 45,5 | 1.79 | 33,0 | 1.30 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |
| CC 0500 - 025 - A | 540 | 1214 | M 36 X 2 | 25 | 0.98 | 70,5 | 2.78 | 45,5 | 1.79 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |
| CC 0500 - 038 - A | 540 | 1214 | M 36 X 2 | 38 | 1.50 | 96,5 | 3.80 | 58,5 | 2.30 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |
| CC 0500 - 050 - A | 540 | 1214 | M 36 X 2 | 50 | 1.97 | 120,5 | 4.74 | 70,5 | 2.78 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |
| CC 0500 - 075 - A | 540 | 1214 | M 36 X 2 | 75 | 2.95 | 170,5 | 6.71 | 95,5 | 3.76 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |
| CC 0500 - 100 - A | 540 | 1214 | M 36 X 2 | 100 | 3.94 | 220,5 | 8.68 | 120,5 | 4.74 | 42 | 1.65 | 12 | 0.47 | 32 | 1.26 | 52 | 2.05 | 37,9 | 1.49 | 6 | 0.24 |



| | | | | | | | | |
|-----------------------------|------------------------|----------------------|----------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--|----------------------------------------|
| Max Speed 0,8 m/s | °F 32 176 | °C 0 80 | N₂ | P max 110 bar 1595 psi | P min 20 bar 290 psi | S 9,62 cm ² 1,491 in ² | | Maintenance kit 39BMCC01000A |
|-----------------------------|------------------------|----------------------|----------------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------|--|----------------------------------------|

| MODEL | F ₀ | | M | Cu | | L | | L min | | Ø D | | Ø d | | Ø R | | Ø T | | Ø S | | X min | |
|-------------------|----------------|------|----------|-----|------|-------|-------|-------|------|-----|------|-----|------|-----|------|-----|------|------|------|-------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| CC 1000 - 025 - A | 1060 | 2383 | M 48 X 2 | 25 | 0,98 | 73,5 | 2,89 | 48,5 | 1,91 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |
| CC 1000 - 038 - A | 1060 | 2383 | M 48 X 2 | 38 | 1,50 | 99,5 | 3,92 | 61,5 | 2,42 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |
| CC 1000 - 050 - A | 1060 | 2383 | M 48 X 2 | 50 | 1,97 | 123,5 | 4,86 | 73,5 | 2,89 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |
| CC 1000 - 075 - A | 1060 | 2383 | M 48 X 2 | 75 | 2,95 | 173,5 | 6,83 | 98,5 | 3,88 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |
| CC 1000 - 100 - A | 1060 | 2383 | M 48 X 2 | 100 | 3,94 | 223,5 | 8,80 | 123,5 | 4,86 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |
| CC 1000 - 150 - A | 1060 | 2383 | M 48 X 2 | 150 | 5,91 | 323,5 | 12,74 | 173,5 | 6,83 | 54 | 2,13 | 24 | 0,95 | 44 | 1,73 | 64 | 2,52 | 49,9 | 1,97 | 10 | 0,39 |



| MODEL | Fo | | M | Cu | | L | | L min | | $\varnothing D$ | | $\varnothing d$ | | $\varnothing R$ | | $\varnothing T$ | | $\varnothing S$ | | Xmin | |
|-------------------|------|------|----------|-----|------|-------|-------|-------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|------|------|
| | daN | lb | | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| CC 2500 - 025 - A | 2520 | 5665 | M 64 X 2 | 25 | 0.98 | 73,5 | 2.89 | 48,5 | 1.91 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |
| CC 2500 - 038 - A | 2520 | 5665 | M 64 X 2 | 38 | 1.50 | 99,5 | 3.92 | 61,5 | 2.42 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |
| CC 2500 - 050 - A | 2520 | 5665 | M 64 X 2 | 50 | 1.97 | 123,5 | 4.86 | 73,5 | 2.89 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |
| CC 2500 - 075 - A | 2520 | 5665 | M 64 X 2 | 75 | 2.95 | 173,5 | 6.83 | 98,5 | 3.88 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |
| CC 2500 - 100 - A | 2520 | 5665 | M 64 X 2 | 100 | 3.94 | 223,5 | 8.80 | 123,5 | 4.86 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |
| CC 2500 - 150 - A | 2520 | 5665 | M 64 X 2 | 150 | 5.91 | 323,5 | 12.74 | 173,5 | 6.83 | 70 | 2.76 | 30 | 1.18 | 58 | 2.28 | 80 | 3.15 | 65,9 | 2.59 | 10 | 0.39 |



IT Oltre alla protezione SKUDO installata come standard sulle serie KE, RS ed MS, Special Springs offre una completa gamma di raschiatori secondari per migliorare le prestazioni dei cilindri a gas utilizzati in ambienti molto contaminati. I nuovi raschiatori secondari in poliuretano sono progettati per un perfetto fitting con i vari modelli di cilindri. Vedi le tabelle per i dati tecnici. I raschiatori secondari sono ordinabili separatamente dal cilindro e installabili dall'utilizzatore o, se richiesti al momento dell'ordine, installati direttamente in fabbrica da Special Springs.

EN In addition to the SKUDO protection, which is standard on series KE, RS and MS, Special Springs offers a complete range of secondary wipers to improve performances of nitrogen cylinders used in heavy contaminated environments. The new secondary wipers, made in polyurethane, are designed for a perfect fitting with many series of nitrogen cylinders. See the charts for technical data. The secondary wipers can be ordered separately from the cylinders. They can be assembled by user or, if requested with the order, by Special Springs.

DE Neben dem SKUDO-Schutz, der standardmäßig auf der Produktreihe KE, RS und MS installiert ist, bietet Special Springs ein komplettes Sortiment an Sekundärabstreifer zur Verbesserung der Leistungen von Gasdruckfedern, die in stark kontaminierten Umgebungen eingesetzt werden. Die neuen Sekundärabstreifer, hergestellt aus Polyurethan, sind für eine perfekte Montage mit vielen Serien von Gasdruckfedern ausgelegt. Siehe die Tabelle für technische Daten. Die Sekundärabstreifer können separat von den Gasdruckfedern bestellt und vom Anwender montiert werden oder, falls in der Bestellung gewünscht, werkseitig vormontiert von Special Springs.

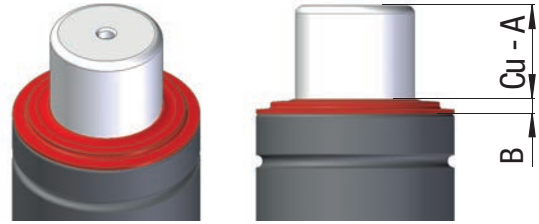
FR En plus de la protection SKUDO installée en standard sur les séries KE, RS et MS, Special Springs offre une gamme complète de joints racleurs secondaires pour améliorer les performances des ressorts à gaz utilisés dans les environnements fortement contaminés. Les nouveaux joints racleurs secondaires, fabriqués en polyuréthane, sont conçus pour une parfaite fixation avec de nombreuses séries de ressorts à gaz. Voir les tableaux pour les données techniques. Les joints racleurs secondaires peuvent être commandés séparément des cylindres et assemblés par l'utilisateur ou, si demandé dans la commande, seront assemblés en usine par Special Springs.

ES Además de la protección SKUDO instalada como estándar en las series KE, RS y MS, Special Springs ofrece una gama completa de rascadores secundarios para mejorar las prestaciones de los cilindros de nitrógeno utilizados en entornos muy contaminados. Los nuevos rascadores secundarios de poliuretano están diseñados para un ajuste perfecto con muchas series de cilindros de nitrógeno. Consulte las tablas para obtener información técnica. Los rascadores secundarios se pueden pedir por separado de los cilindros y ser montados por el usuario o, si se solicita en el pedido, se montarán en la fábrica por Special Springs.

PT Além da protecção SKUDO instalada como padrão na série KE, RS e MS, Special Springs oferece uma gama completa de raspadores secundários para melhorar os desempenhos dos cilindros de nitrogênio utilizados em ambientes muito contaminados. Os novos raspadores secundários, feitos de poliuretano, são projetados para um perfeito montagem com muitas séries de cilindros de nitrogênio. Veja a guia abaixo para obter dados técnicos. Os raspadores secundários podem ser encomendados separadamente dos cilindros e montados pelo usuário ou, se solicitado com a ordem, serão montados na fábrica por Special Springs.

■ SW - SECONDARY WIPER

| Cylinder Code | A mm | B mm | Secondary Wiper Code |
|------------------------|------|------|----------------------|
| M 300 | 2 | 4 | 59SW001 |
| RV / RT 350 | 2 | 4 | 59SW002 |
| RV / RT 500 | 2 | 4 | 59SW003 |
| RV / RF / RG / RT 750 | 2 | 4 | 59SW004 |
| RV / RF / RG / RT 1000 | 2 | 5 | 59SW005 |
| RV / RF / RT 1200 | 2 | 5 | 59SW005 |
| RV / RF / RG / RT 1500 | 2,5 | 5,5 | 59SW006 |
| RV / RF / RG / RT 2400 | 2,5 | 5,5 | 59SW007 |
| RV / RG / RT 4200 | 2,5 | 5,5 | 59SW008 |
| RV / RG / RT 6600 | 2,5 | 5,5 | 59SW009 |
| RV / RT 9500 | 3 | 6 | 59SW010 |
| RV 12000 | 3 | 6 | 59SW011 |
| RV 20000 | 3 | 6 | 59SW012 |
| H 300 | 2 | 4 | 59SW002 |
| H 500 / HF 500 | 2 | 4 | 59SW003 |
| HT 500 | 2 | 4 | 59SW047 |
| H 700 | 2 | 4 | 59SW004 |
| HT 700 | 2 | 4 | 59SW048 |
| H 1000 | 2 | 5 | 59SW005 |
| HT 1000 | 2 | 5 | 59SW049 |
| H 1500 | 2,5 | 5,5 | 59SW006 |
| H 2400 | 2,5 | 5,5 | 59SW007 |

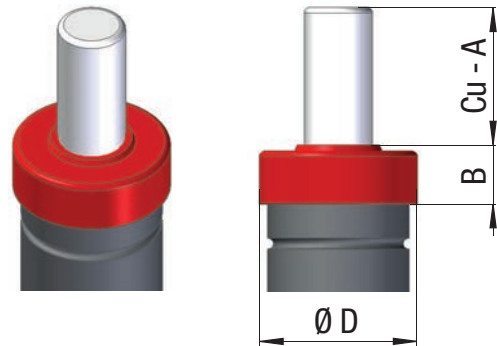


A = Nominal stroke reduction Cu = Nominal Stroke

| Cylinder Code | A mm | B mm | Secondary Wiper Code |
|---------------|------|------|----------------------|
| H 4200 | 2,5 | 5,5 | 59SW008 |
| H 6600 | 2,5 | 5,5 | 59SW009 |
| H 9500 | 3 | 6 | 59SW010 |
| H 18500 | 3 | 6 | 59SW013 |
| SC 150 | 2 | 4 | 59SW014 |
| SC / SCF 250 | 2 | 4 | 59SW015 |
| SC 500 | 2 | 4 | 59SW016 |
| S / SC 750 | 2 | 5 | 59SW017 |
| SC 1500 | 2,5 | 5,5 | 59SW018 |
| SC 3000 | 2,5 | 5,5 | 59SW019 |
| SC 5000 | 3 | 6 | 59SW020 |
| SC 7500 | 3 | 6 | 59SW021 |
| SC 10000 | 3 | 6 | 59SW022 |

⚠ The installation of the secondary wiper will require the removal of the active safety marker OSM where mounted.

| Cylinder Code | A mm | B mm | Ø D mm | Secondary Wiper Code |
|---------------|------|------|--------|----------------------|
| M 50 | - | 9,5 | 15 | 59SW023 |
| M 70 | - | 9,5 | 18 | 59SW024 |
| M 90 rev. A | 0,5 | 10,5 | 22 | 59SW025 |
| M 200 rev. A | 0,5 | 10,5 | 28 | 59SW026 |
| M 90 rev. B | 0,5 | 10,5 | 22 | 59SW045 |
| M 200 rev. B | 0,5 | 10,5 | 28 | 59SW046 |
| RV 170 | 1,5 | 9,5 | 22 | 59SW027 |
| RV 320 | 1,5 | 9,5 | 28 | 59SW028 |
| ML 300 | 1,5 | 11,5 | 29 | 59SW030 |
| ML 500 | 1,5 | 11,5 | 36 | 59SW031 |
| ML 1000 | 1,5 | 11,5 | 42 | 59SW032 |
| ML 1800 | 0,5 | 11,5 | 54 | 59SW033 |
| ML 3000 | 0,5 | 11,5 | 67 | 59SW034 |
| ML 4700 | 0,5 | 11,5 | 79 | 59SW035 |
| ML 7500 | 0,5 | 11,5 | 100 | 59SW036 |
| ML 12000 | 0,5 | 11,5 | 125 | 59SW037 |

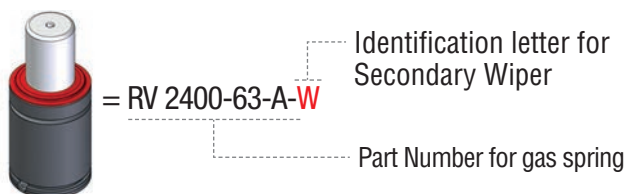


A = Nominal stroke reduction Cu = Nominal Stroke

| Cylinder Code | A mm | B mm | Ø D mm | Secondary Wiper Code |
|---------------|------|------|--------|----------------------|
| MP 500 | 1,5 | 33 | 36 | 59SW043 |
| MP 1000 | 1,5 | 19 | 42 | 59SW044 |

👁 HOW TO ORDER

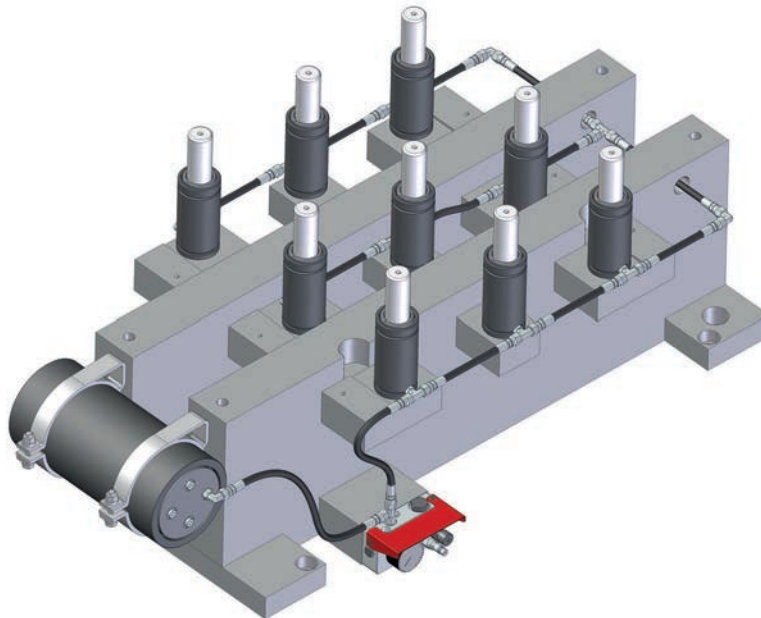
E.g. How to order a gas spring with Secondary Wiper **already installed**



E.g. How to order **only** the Secondary Wiper



SW



IT VANTAGGI

- Pressione uguale in tutti i cilindri
- Controllo della pressione = controllo della forza
- Aumento/riduzione della pressione = aumento/riduzione della forza attraverso il pannello di controllo anche durante lo stampaggio senza intervento diretto sui cilindri
- Utilizzo di polmoni di compensazione per un ridotto incremento della pressione a fine compressione
- Gestione di impianti e forze diverse nello stesso stampo (uso multipannello MCPC+AUMCP)
- Stop di sicurezza con uso pressostato
- Utilizzo tappo di sicurezza con disco di rottura CE
- Flessibilità di collegamento con tubi e raccordi EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS



I cilindri collegabili a sistema (codice modello + N/NA) sono forniti privi di valvola unidirezionale e con corpo/fondello speciale dove previsto. Per le serie S/SC/H/KE/RV/RS/RF/RG/RT/LS è possibile trasformare i cilindri autonomi in cilindri collegabili a sistema semplicemente rimuovendo i dispositivi di tenuta dal foro di caricamento. Scaricare completamente la pressione prima di questa operazione. Qualora si rendesse necessario rimuovere uno qualsiasi dei componenti installati, scaricare completamente la pressione attraverso il pannello.

EN BENEFITS

- Same pressure in all cylinders
- Pressure control = force control
- Increase/decrease of pressure = increase/decrease of force by control panel even during stamping operation without direct acting to the cylinders
- Lower pressure increase by using compensation tank
- Possibility to manage different systems and forces in the same tool by using the multipanel MCPC+AUMCP
- Safe stop function through pressure switch
- Use of the safety plug with rupture disc CE
- Flexible linking by using hose and connection EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS and couplings and many useful accessories



The hoses system cylinders (model code + N/NA) are supplied without charging valve and with special body/end plate when specified. However S/SC/H/KE/RV/RS/RF/RG/RT/LS series can be converted from self-contained to hoses system by simply removing the charging valve. Be sure that all pressure is exhausted before starting this operation. In case it's necessary to remove any of the installed components, pressure must be fully exhausted through the control panel.

DE VORTEILE

- Identischer Druck in allen Zylindern
- Druckkontrolle = Kraftkontrolle
- Steigerung/Minderung des Drucks = Erhöhung/Verringerung der Kraft über die Steuerung, auch während der Formung ohne direkten Eingriff an den Zylindern
- Einsatz von Ausgleichbehältern zur Reduzierung von Druckerhöhungen
- Verwaltung verschiedenartiger Anlagen und Leistungen in demselben Werkzeug über die Multisteuerung MCPC+AUMCP
- Sicherheitsstopp per Druckwächter
- Verwendung eines Sicherheitsverschlusses mit Berstscheibe (CE-Kennzeichnung)
- Flexibilität bei der Verbindung mit Rohren und Anschlüssen EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS



Zylinder im verbund (Modellcode + N/NA) werden ohne Einwegventile und, sofern vorgesehen, mit speziellem Gehäuse/Boden geliefert. Für die Serien S/SC/H/KE/RV/RS/RF/RG/RT/LS können die autonomen arbeitenden Zylinder in Zylinder im verbund abgeändert werden, indem die Dichtungsvorrichtungen an der Luftzufuhröffnung entfernt werden. Lassen Sie die Druckluft vor diesem Arbeitsschritt komplett ab. Falls es sich als notwendig erweisen sollte, einen der installierten Komponenten zu entfernen, muss vorher die Druckluft mittels der Steuerung vollständig abgelassen werden.

FR AVANTAGES

- La même pression dans tous les ressorts
- Contrôle de la pression = contrôle de la force
- Augmentation/réduction de la pression = augmentation/réduction de la force par l'intermédiaire du panneau de contrôle, même durant le moulage, sans aucune intervention directe sur les ressorts
- Utilisation de réservoirs de compensation produisant une petite augmentation de la pression à la fin de la compression

- Gestion d'installations et de forces différentes sur le même outil (utilisation multi-panneaux MCPC+AUMCP)
- Arrêt de sécurité à l'aide d'un pressostat
- Utilisation d'un bouchon de sécurité avec disque de rupture CE
- Souplesse du raccordement à l'aide de tubes et de raccords EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS



Les ressorts pouvant être reliés à un système (référence modèle + N/NA) sont livrés sans la vanne unidirectionnelle et avec corps/fond spécial si prévu. Pour les séries S/SC/H/KE/RV/RS/RF/RG/RT/LS, il est possible de transformer les ressorts autonomes en cylindres pouvant être reliés à un système en ôtant simplement les dispositifs d'étanchéité du trou de chargement. Décharger complètement la pression avant d'effectuer cette opération. S'il est nécessaire de démonter un des composants installés, décharger complètement la pression par l'intermédiaire du panneau de contrôle.

ES VENTAJAS

- La misma presión en todos los cilindros
- Control de la presión = control de la fuerza
- Aumento/reducción de la presión = aumento/reducción de la fuerza mediante el panel de control incluso en operaciones de estampación sin actuación directa sobre los cilindros
- Pueden emplearse pulmones de compensación para reducir el aumento de la presión al final de la compresión

- Gestión de equipos y fuerzas distintas sobre el mismo molde (uso multipanel MCPC+AUMCP)
- Parada de emergencia con presostat
- Tapón de seguridad con disco de ruptura CE
- Flexibilidad de conexión con tubos y acoplamientos EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS



Los cilindros para su conexión en sistema (código modelo + N/NA) se sirven sin válvula unidireccional y con cuerpo/base especiales en los casos en que se requieran. En las series S/SC/H/KE/RV/RS/RF/RG/RT/LS, los cilindros autónomos pueden transformarse en cilindros para su conexión en sistema simplemente quitando los dispositivos de estanqueidad del orificio de carga. Antes de realizar esta operación, vaciar completamente la presión. Si fuera necesario quitar alguno de los componentes instalados, vaciar completamente la presión mediante el panel de control.

PT VANTAGENS

- Pressão igual em todos os cilindros
- Controlo da pressão = controlo da força
- Aumento/redução da pressão = aumento/redução da força através do painel de controlo também durante a estampagem sem intervenção directa sobre os cilindros
- Utilização dos tanques de compensação para redução do aumento da pressão no final da compressão

- Gestão de instalações e de várias forças na mesma Ferramenta (uso do multi-painel MCPC+AUMCP)
- Stop de segurança com utilização do pressostat
- Utilização de Bujão de segurança com disco de rotura CE
- Flexibilidade de ligação com tubos e ligações EO - 24°, JIC 37°, Minimes, Micro 32°, ORFS



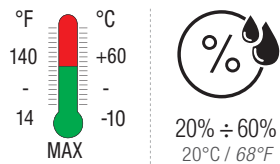
Os cilindros ligáveis em sistema (código do modelo + N/NA) são fornecidos sem válvula unidireccional e com corpo/extremidade especial. Para a série S/SC/H/KE/RV/RS/RF/RG/RT/LS, é possível transformar os cilindros autónomos em cilindros ligáveis em sistema, bastando remover os dispositivos de retenção do orificio de carga. Descarregar completamente a pressão antes desta operação. No caso de ser necessário remover um dos componentes instalados, descarregar completamente a pressão através do painel de controlo.



LINKED SYSTEM OPERATING INSTRUCTION



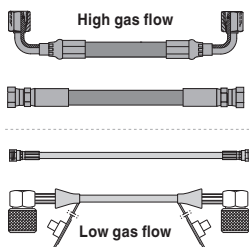
- IT** Conservare tubi e raccordi lontano da fonti di calore e luce solare diretta (raggi UV).
- EN** Store hoses and fittings away from heat sources and direct sunlight (UV radiation).
- DE** Lagern Sie Schläuche und Anschlussstücke fern von Wärmequellen und direktem Sonnenlicht (UV-Strahlung).
- FR** Conserver tuyaux et raccords à l'écart de toute source de chaleur et de la lumière directe du soleil.
- ES** Almacene mangueras y conexiones lejos del calor y de la luz solar directa (rayos UV).
- PT** Manter mangueiras e conexões longe do calor e da luz do sol.



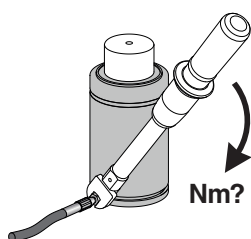
- IT** Conservare tubi e raccordi protetti da alte temperature e dal contatto con oli di stampaggio, solventi, acidi e fluidi aggressivi in genere (ad es. soda e cloruri).
- EN** Keep hoses and fittings protected against high temperatures and contact with oils, solvents, acids and aggressive fluids in general (e.g. soda and chlorides).
- DE** Halten Sie Schläuche und Anschlussstücke geschützt vor hohen Temperaturen und dem Kontakt mit Schmierstoffen für die Metallbearbeitung, Lösungsmitteln, Säuren und aggressiven Flüssigkeiten im Allgemeinen (z. B. Soda und Chloride).
- FR** Protégez les tuyaux et les raccords contre les températures élevées et le contact avec les huiles, les solvants, les acides et les fluides agressifs en général (par exemple, la soude et les chlorures).
- ES** Almacene mangueras y conexiones protegidos de altas temperaturas y del contacto con aceites de moldeo, solventes, ácidos y fluidos agresivos en general (por ejemplo, soda y cloruros).
- PT** Manter tubos e conexões longe de altas temperaturas e de contato com oleos, solventes, acidos ou qualquer outro elemento agressivo aos materiais (ex. solda, cloro, etc..).



- IT** Nella produzione del tubo rispettare le istruzioni operative indicate nel manuale d'uso della pressa pneumatica 39PR06.
- EN** When producing the hoses, follow the instructions given in the user manual of the hydraulic press 39PR06.
- DE** Bei der Herstellung des Schlauchs die Angaben in der Betriebsanleitung der pneumo-hydraulischen Schlauchpresse 39PR06 beachten.
- FR** Lors de la fabrication des tuyaux, suivez les instructions données dans le manuel d'utilisation de la presse hydraulique 39PR06.
- ES** Para la producción de las mangueras, siga las instrucciones de funcionamiento indicadas en el manual del usuario de la prensa neumohidráulica 39PR06.
- PT** Para cravamento das mangueiras, respeitar as orientações do manual de instruções da prensa pneumática 39PR06.

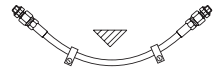
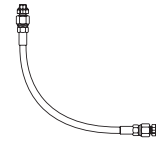
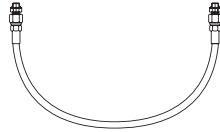


- IT** Selezionare tubi e raccordi idonei per l'applicazione.
- EN** Select hoses and fittings suitable for the system.
- DE** Für die Anwendung geeignete Schläuche und Anschlussstücke auswählen.
- FR** Sélectionnez les tuyaux et les raccords adaptés au système.
- ES** Seleccione mangueras y conexiones adecuados para la necesidad.
- PT** Selecionar os tubos e conexões de acordo com a necessidade.

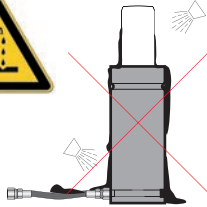
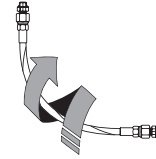


- IT** Rispettare la corretta coppia di serraggio dei raccordi indicata a catalogo per ogni modello.
- EN** Respect the correct tightening torque of the fittings as specified in the catalogue for each model.
- DE** Das richtige Anziehdrehmoment der Anschlüsse, wie im Katalog für jedes Modell angegeben, beachten.
- FR** Respectez le couple de serrage correct des raccords comme indiqué dans le catalogue pour chaque modèle.
- ES** Respete el par de apriete de las conexiones indicado en el catálogo para cada modelo.
- PT** Respeitar o torque correto para cada conexão indicado no catalogo para cada modelo.

RIGHT



WRONG



IT Evitare il contatto con solventi, acidi e fluidi aggressivi in genere (soda, cloruri) durante l'uso.

EN Avoid contact with solvents, acids and aggressive fluids in general (e.g. soda and chlorides) during use.

DE Bei Verwendung den Kontakt mit Lösungsmitteln, Säuren und aggressiven Flüssigkeiten im Allgemeinen (Soda, Chloride) vermeiden.

FR Évitez le contact avec les solvants, les acides et les fluides agressifs en général (par exemple, la soude et les chlorures) pendant l'utilisation.

ES Evite el contacto con solventes, ácidos y fluidos agresivos en general (por ejemplo, soda y cloruros) durante el uso.

PT Evitar que tubos e conexões mantenham contato com oleos, solventes, acidos ou qualquer outro elemento agressivo aos materiais (ex. solda, cloro, etc..).

IT Verificare ad ogni manutenzione dello stampo lo stato dei tubi e in particolare:

- Assenza di deterioramento dei tubi dovuto a sfregamenti, corrosione, tagli o schiacciamenti.
- Posizione dei tubi come da progetto. - Corretto serraggio dei raccordi.

EN Check at each maintenance of the die the condition of the hoses and specifically:

- absence of hose deterioration due to rubbing, wear, cutting or crushing.
- positioning of the hoses corresponding to the project's specifications. - Correct tightening of the fittings.

DE Bei jeder Wartung des Werkzeugs den Zustand der Schläuche prüfen und insbesondere:

- keine Beschädigung der Schläuche durch Reibung, Korrosion, Schneiden, Quetschen.
- die Position der Schläuche entsprechend der Konstruktion. - Das richtige Anziehen der Anschlüsse.

FR Vérifiez à chaque entretien du moule l'état des tuyaux et plus précisément:

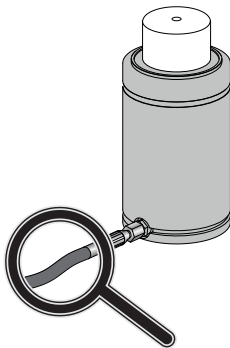
- absence de détérioration des tuyaux par frottement, usure, coupure ou écrasement.
- positionnement des tuyaux conforme aux spécifications du projet. - Serrage correct des raccords.

ES Compruebe el estado de las mangueras en cada mantenimiento del troquel, en particular:

- Ausencia de deterioro de las mangueras debido a roces, corrosión, cortes o aplastamientos.
- Posicionamiento de las mangueras según el proyecto. - Correcto apriete de las conexiones.

PT Verificar a cada manutenção do ferramental as condições das mangueiras e especificamente:

- Se as mangueiras não possuem nenhum dano, desgaste, corte ou fissura.
- Se as conexões estão nas mesmas posições indicadas no projeto. - Aperto correto das conexões.



**LIFE
WARRANTY**

IT Se correttamente installati, utilizzati e non esposti a fattori di rischio, la durata in funzionamento di tubi e raccordi è attesa almeno pari a quella dei cilindri.

EN If correctly installed and used, without being exposed to risk factors, the expected lifetime of hoses and fittings is at least equal to the one of gas springs.

DE Bei sachgemäßem Einbau bzw. Anwendung und ohne Einwirken von Risikofaktoren wird erwartet, dass die Lebensdauer der Schläuche und Anschlüsse mindestens so lang ist wie die der Gasdruckfedern.

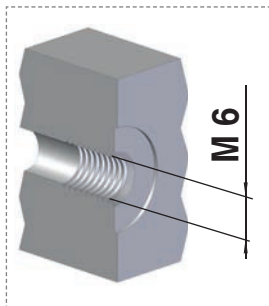
FR S'ils sont correctement installés et utilisés, sans être exposé à des facteurs de risque, la durée de vie attendue des tuyaux et des raccords est au moins égale à celle des ressorts à gaz.

ES Si correctamente instalados, utilizados y no expuestos a factores de riesgo, la vida útil esperada de mangueras y conexiones es al menos igual a la de los cilindros.

PT Se corretamente instalados e utilizados, a vida util das mangueiras e conexões são no minimo a mesma vida util dos cilindros.



LINKED SYSTEM SELECTION



M 6

MINIMESS - CONNECTIONS S12,65x1,5

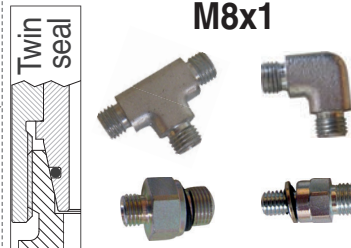


TM



Low gas flow

MICRO - CONNECTIONS M8x1



Twin seal

TSM



Low gas flow

JIC 37° - CONNECTIONS 7/16"-20 UNF



TNC



High gas flow

ORFS - CONNECTIONS 9/16"-18 UNF

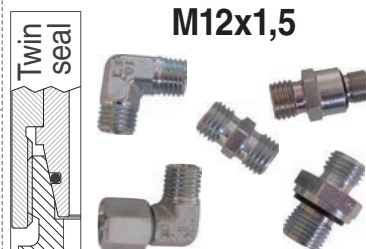


HY 400



High gas flow

EO - 24° - CONNECTIONS M12x1,5

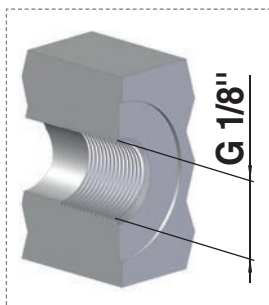


Twin seal

HY 500



High gas flow



G 1/8"

IT

- Pressa trasportabile con pompa pneumatica
- Idonea per raccordi dritti, 45° e 90°

EN

- Transportable press with hydraulic manual pump
- Suitable for straight, 45° and 90° fittings

DE

- Transportable Presse mit manueller Hydraulikpumpe
- Geeignet für gerade, 45° und 90° Anschlüsse

FR

- Presse transportable avec pompe oléodynamique manuelle
- Utilisable avec raccords droits, 45° et 90°

ES

- Prensa transportable con bomba oleodinámica manual
- Puede ser utilizada con tuberías derechas, 45° y 90°

PT

- Prensa transportável com bomba hidráulica manual
- Pode ser usado com tubos retos, 45° e 90°

code 39PR06



code 58UT022A (included)



IT Utensile rimuovi morsetti con calamita
EN Magnet tool to remove pressing jaws
DE Magnetwerkzeug für die Entfernung von Pressbacken
FR Outil magnétique pour enlever les mâchoires de pressage
ES Herramienta magnética para la remoción de las mordazas de prensado
PT Ferramenta magnética para remover os mordentes de prensar

code 58UT001A (optional)



IT Forbice taglia tubo
EN Scissor for hose
DE Schlauchschneideschere
FR Ciseaux coupe-tube
ES Tijeras cortatubos
PT Tesouras corta tubos

code 58UT023A (optional)

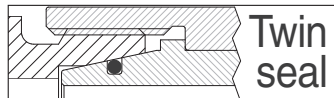


IT Lampada led con magnete
EN LED Light with magnet
DE LED-Lampe mit Magnet
FR Lampe à LED magnétique
ES Lámpara LED con imán
PT Lâmpada LED com íman

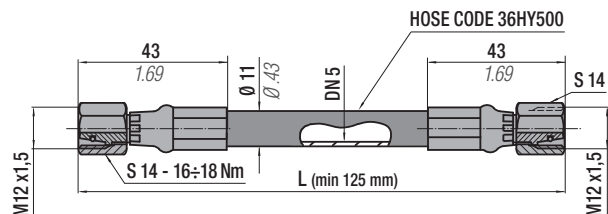
| | | | | |
|------------|-------------------------|------------------------------------------------|-----------------------|----------------------------------|
| | | | | |
| AIR | 7 bar 110 psi | 100 TON 110 US TON | 38 kg 84 lb | -5 ÷ 40 °C 23 ÷ 104 °F |
| | | 380 x 430 x 400 mm 15 x 17 x 16 inch | | |

| CONNECTIONS | ORFS "TSM" HOSE Ø 5,5 p. 284 | Micro 32° - JIC 37° "TSM" HOSE Ø 5,5 p. 272 - 279 | Minimess "TM" HOSE Ø 5,1 p. 274 | JIC 37° "TNC" HOSE Ø 8,1 p. 272 | EO 24° "HY 500" HOSE Ø 11 p. 268 | ORFS "HY 400" HOSE Ø 12,7 p. 282 |
|---------------|------------------------------------|---------------------------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|
| | | | | | | |
| PRESSING JAWS | code 39MTR10 (optional) | code 39MTR11 (optional) | code 39MTR12 (optional) | code 39MTR13 (optional) | | |

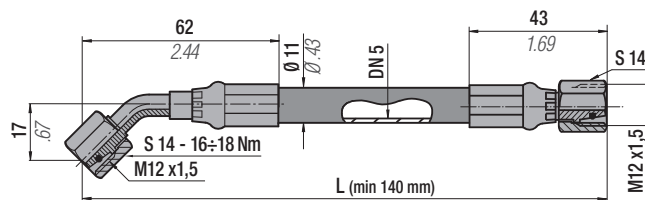
Ordering example: **39PR06A + 39MTR11** | Pressing jaws for Jic 37° "TNC" HOSE Ø 8,1



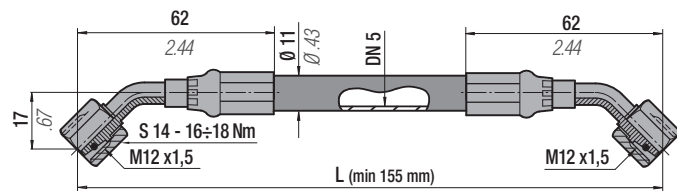
code 36HY50001...



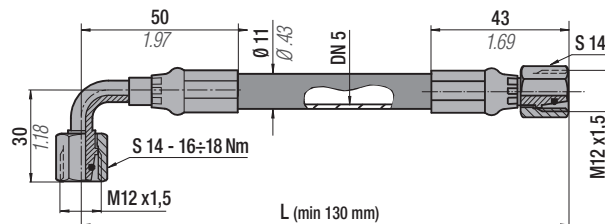
code 36HY50002...



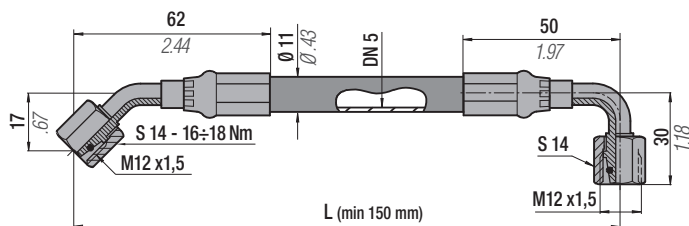
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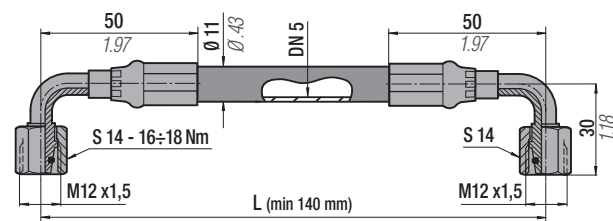
code 36HY50004...



code 36HY50005...



code 36HY50006...



Technical data

| | | | | |
|-----------------------|------------------|-------------------|--------------|--------------------------|
| "L" min | See each type | - | Volume | 18 ml/metre |
| Operation pressure | 345 bar | 5003 psi | Dimension | 3/16" (external Ø 11 mm) |
| Burst Pressure | 1380 bar at 20°C | 20010 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 40 mm | 1.57 in | Standard | SAE 100R8 |
| Operation temperature | -40+ 100°C | -38+212°F | Outer casing | Perforated |

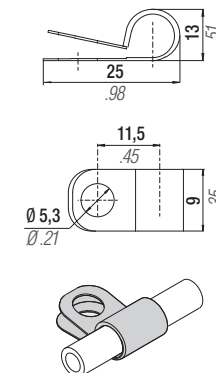


Lunghezza richiesta comprensiva di raccordi terminali
Length upon request including end hose fittings
Länge Anfrage einschließlich Ende Schlaucharmaturen

Longueur requise, y compris des raccords d'extrémité
Longitud requerida, incluyendo accesorios de los extremos
Comprimento necessário incluindo todos os acessórios

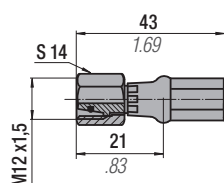
L = 5 mm upward increase - Example (36HY50001 0300; 36HY50001 0305; ...)

code: 36FF11A

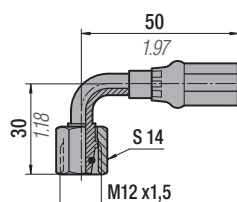


HOSE FITTINGS

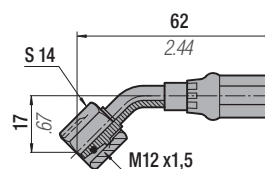
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code 36P2402

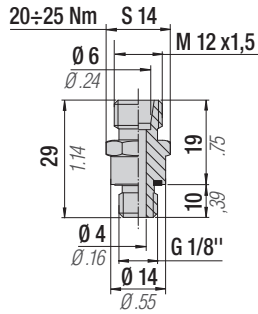
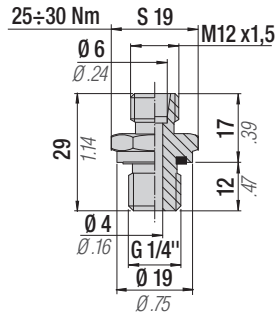


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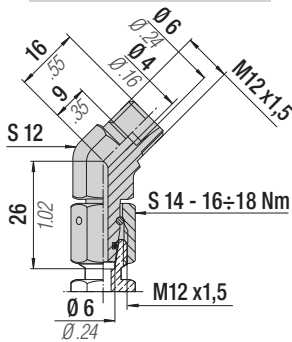
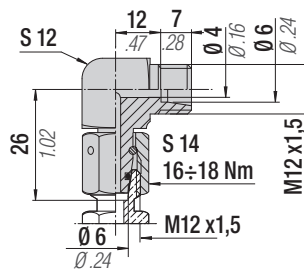
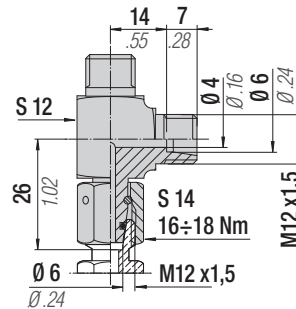
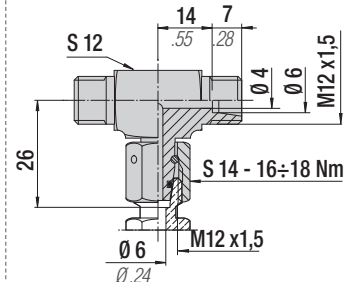


All dimensions in mm/inch

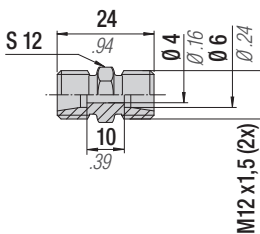
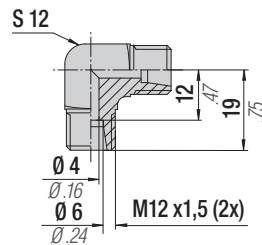
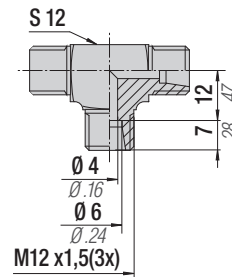
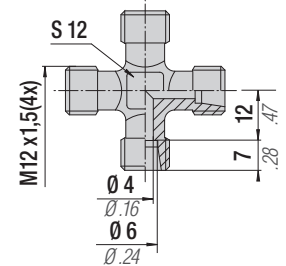
Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur - Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/painel

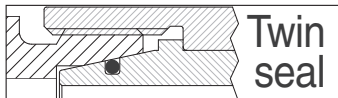
code 36R2401

code 36R2402


Raccordi di derivazione - Offtake connections - Anschlußstutzen - Raccords de dérivation - Racores - Racord de derivação

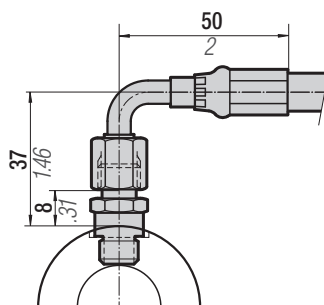
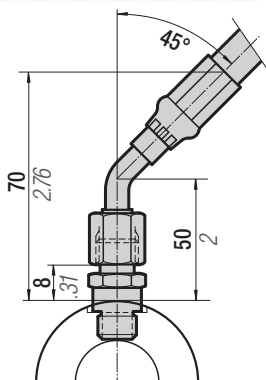
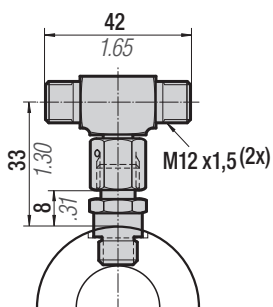
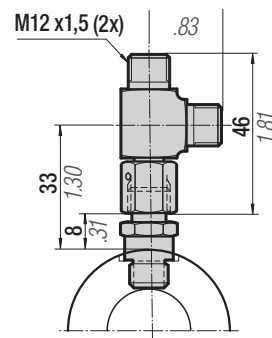
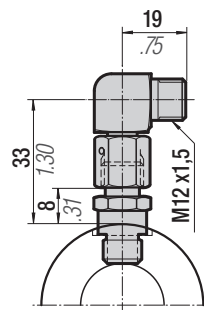
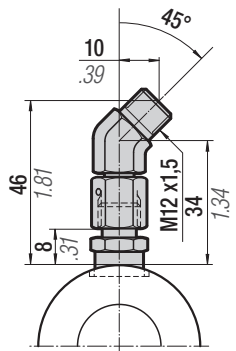
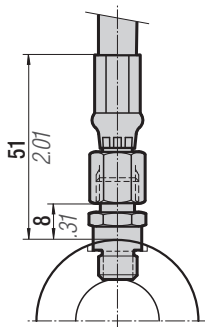
code 36R2403

code 36R2404

code 36R2405

code 36R2406


Raccordi tubo-tubo - Hose-hose connections - Anschlüsse zwischen Schlauch und Schlauch - Raccords tuyau-tuyau - Conexiones de tubo a tubo - Racord tubo-tubo

code 36R2407

code 36R2408

code 36R2409

code 36R2410




Esempi di installazione - Installation examples - Einbaubeispiele - Exemples de montage - Ejemplos de instalación - Exemplos de instalação

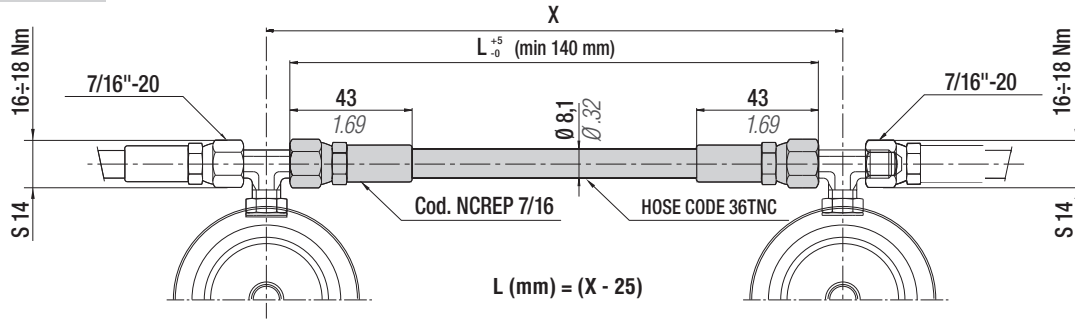




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code TNC 7/16...



| Technical data | | | | |
|-----------------------|------------------|-------------------|--------------|--------------------------|
| "L" min | See above | 5.51 in | Volume | 12,6 ml/metre |
| Operation pressure | 420 bar | 6090 psi | Dimension | 1/8" (external ø 8,1 mm) |
| Burst Pressure | 1680 bar at 20°C | 24360 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 25 mm | 0.98 in | Standard | SAE 100R8 |
| Operation temperature | -40+ 100°C | -38 +212°F | Outer casing | Perforated |

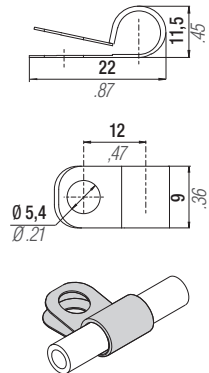


Lunghezza standard (mm) inclusive di n. 2 raccordi NCREP 7/16
Standard lengths (mm) inclusive of no. 2 connections NCREP 7/16
Standard-Länge (mm) einsch. 2 NCREP 7/16 -Anschlüssen

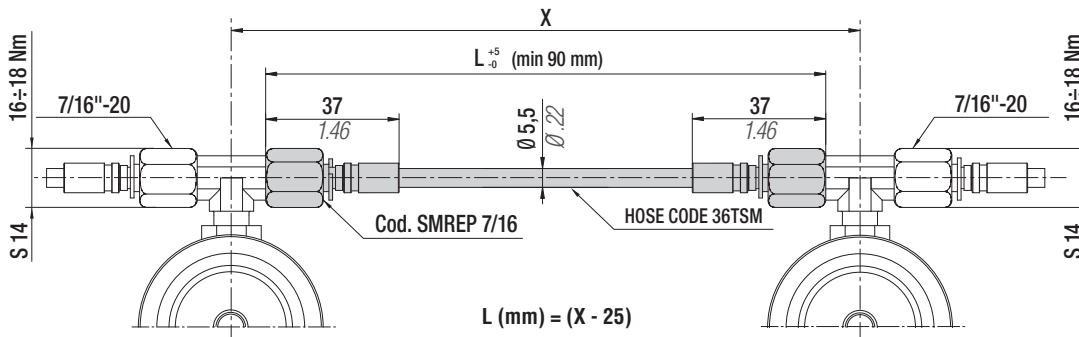
Longueur standard (mm) comprenant 2 raccords NCREP 7/16
Longitud estándar (mm) con 2 racores incluidos NCREP 7/16
Comprimento standard (mm) incluído nas 2 ligações NCREP 7/16

L = 5 mm upword increase - Example (TNC 7/16 140 mm; TNC 7/16 145 mm ...)

code: 36FF09A



code TSM7/16...



| Technical data | | | | |
|-----------------------|------------------|-------------------|--------------|---------------------------|
| "L" min | See above | 3.54 in | Volume | 3 ml/metre |
| Operation pressure | 630 bar | 9135 psi | Dimension | 5/64" (external ø 5,5 mm) |
| Burst Pressure | 1890 bar at 20°C | 27400 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 20 mm | 0.79 in | Standard | - |
| Operation temperature | -40+ 100°C | -38 +212°F | Outer casing | Perforated |

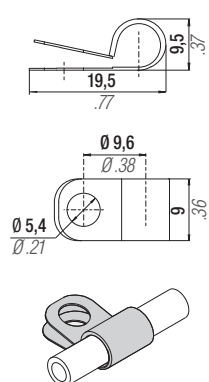


Lunghezza standard (mm) inclusive di n. 2 raccordi SMREP 7/16
Standard lengths (mm) inclusive of no. 2 connections SMREP 7/16
Standard-Länge (mm) einsch. 2 SMREP 7/16 -Anschlüssen

Longueur standard (mm) comprenant 2 raccords SMREP 7/16
Longitud estándar (mm) con 2 racores incluidos SMREP 7/16
Comprimento standard (mm) incluído nas 2 ligações SMREP 7/16

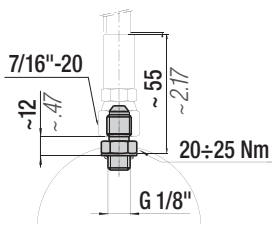
L = 10 mm upword increase - Example (TSM 7/16 90 mm; TSM 7/16 100 mm ...)

code: 36FF06A

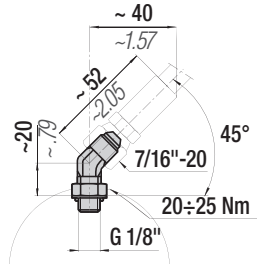


Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur -
Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/panel

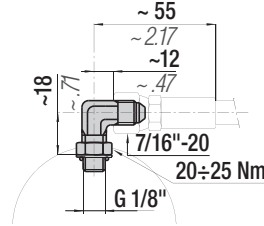
code RTC-D



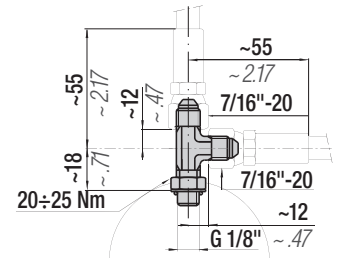
code RTC-M



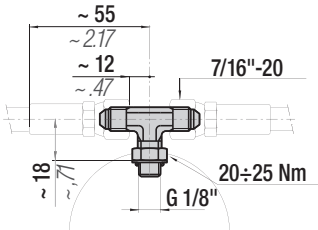
code RTC-R



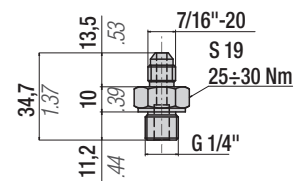
code RTC-L



code RTC-T

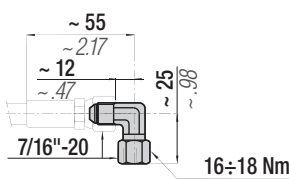


code 36J01A

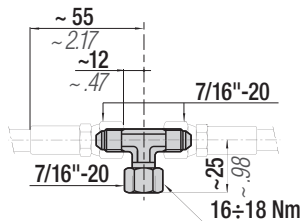


Raccordi di derivazione - Offtake connections - Anschlußstutzen - Raccords de dérivation - Racores - Racord de derivação

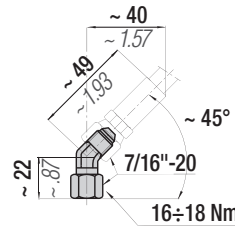
code RDR



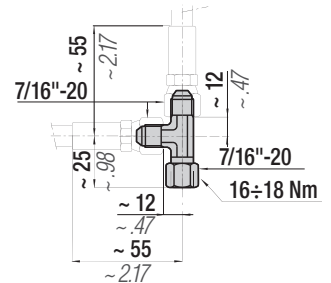
code RDT



code RDM

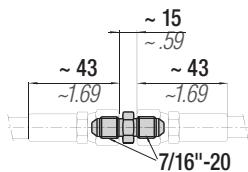


code RDL

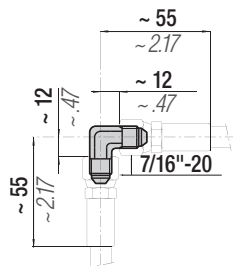


Raccordi tubo-tubo - Hose-hose connections - Anschlüsse zwischen Schlauch und Schlauch - Raccords tuyau-tuyau - Conexiones de tubo a tubo - Racord tubo-tubo

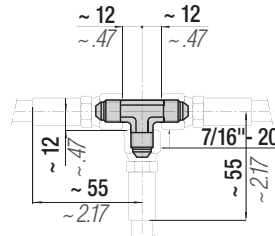
code RTT-D



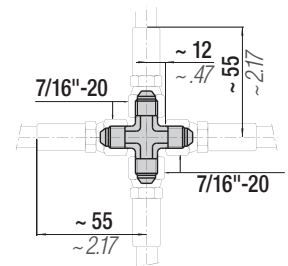
code RTT-R



code RTT-T



code RTT-C

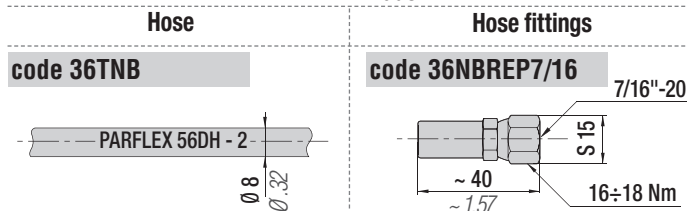


⚠ Available ONLY for loose supply

**JIC 37°
Hose Ø 8 mm**

TNB

PARKER made

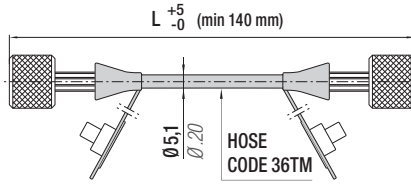


| Technical data | | |
|-----------------------|------------------|-------------------|
| "L" min | 140 mm | 5.51 in |
| Operation pressure | 415 bar | 6017 psi |
| Burst Pressure | 1655 bar at 20°C | 24000 psi at 68°F |
| R (bending radius) | 13 mm | 0.51 in |
| Operation temperature | -40+ 100°C | -38+212°F |

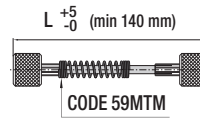
All dimensions in mm/inch



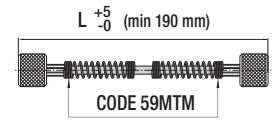
code TMD



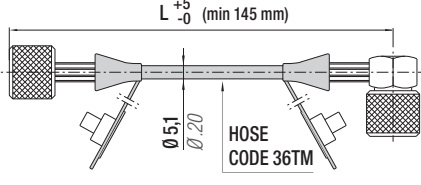
code TMD...-1



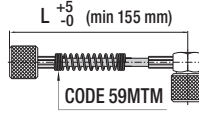
code TMD...-2



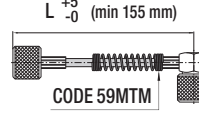
code TMDR



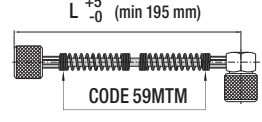
code TMDR...-1



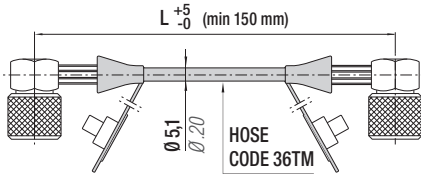
code TMDR...-3



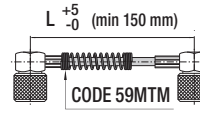
code TMDR...-2



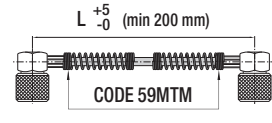
code TMR



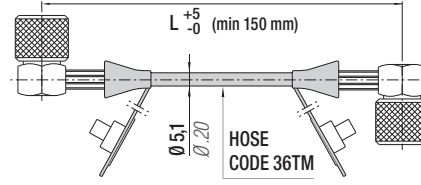
code TMR...-3



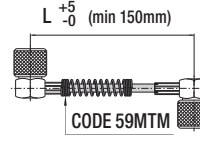
code TMR...-2



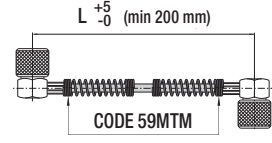
code TMR...V1



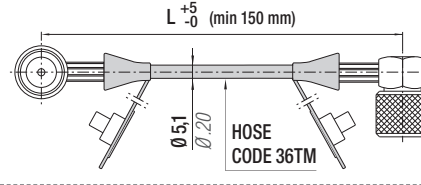
code TMR...V1-3



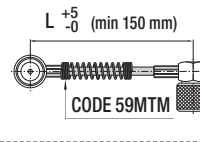
code TMR...V1-2



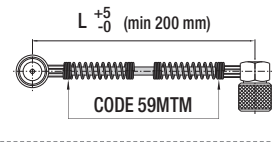
code TMR...V2



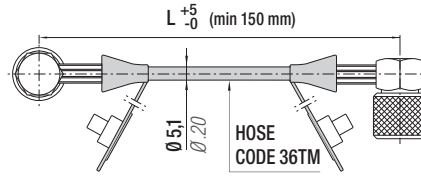
code TMR...V2-3



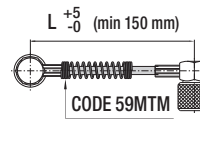
code TMR...V2-2



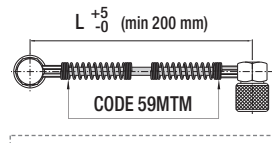
code TMR...V3



code TMR...V3-3



code TMR...V3-2



| Technical data | | | | | |
|------------------------|------------------|-------------------|-------------------|---------------------------|----------|
| "L" min (TMD - TMDR) | See above | - | Operation temp. | -20 +100°C | -2+212°F |
| "L" min (TMR - TMR...) | See above | - | Dimension hose | 5/64" (external Ø 5,1 mm) | |
| Operation pressure | 630 bar | 9135 psi | Material hose | Polyamid | |
| Burst Pressure | 1950 bar at 20°C | 28275 psi at 68°F | Standard | - | |
| R (bending radius) | 20 mm | 0.79 in | Outer casing hose | Perforated | |



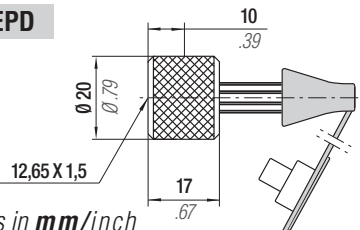
Lunghezze standard (mm) inclusive di n.2 raccordi e tappi
Standard lengths (mm) inclusive of no.2 connections and plugs
Standard-Länge (mm) einsch.2 und Stopfen Anschlüssen

Longueur standard (mm) comprenant 2 raccords et bouchons
Longitud estándar (mm) con 2 racores incluidos y tapones
Comprimento standard (mm) incluindo nas 2 ligações e tampões

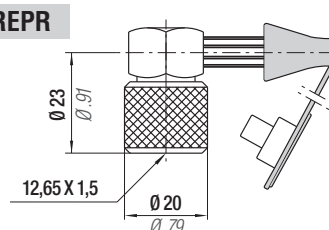
standard L = 140 mm min. - 5 mm upword increase - Example (TMD140; TMDR145; TMR150; TMR160V1; TMR170V2; ...)

HOSE FITTINGS

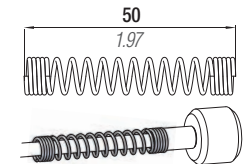
code 36MREPD



code 36MREPR

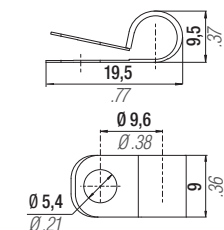


code: 59MTM



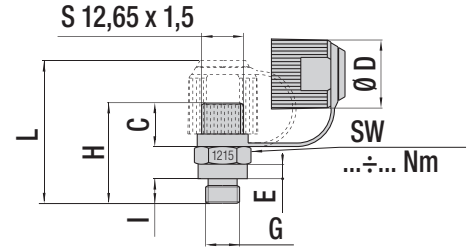
Protezione antipliega
Anti-kink protection
Knickschutzwendel
Protection anti-croqage
Protección anti-plegüe
Proteção anti-dobra

code: 36FF06A



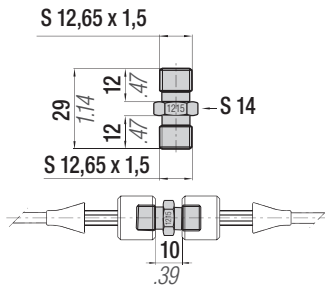
All dimensions in mm/inch

| CODE | G | mm | | inch | | mm | | inch | | S - ...÷... Nm | mm | | inch | | Ø D | mm | | inch | |
|----------------------|---------|----|------|------|------|----|------|----------------|--|----------------|------|------|------|---|------|----|--|------|--|
| | | | | | | | | | | | | | | | | | | | |
| RMTC ¹⁾ | G 1/8" | 8 | 0.31 | 30 | 1.18 | 41 | 1.61 | S14 - 20÷25 Nm | | 12 | 0.47 | 19,5 | 0.77 | 4 | 0.16 | | | | |
| RMTC01 ¹⁾ | G 1/4" | 10 | 0.39 | 31 | 1.22 | 39 | 1.54 | S19 - 25÷30 Nm | | 12 | 0.47 | 17 | 0.67 | 3 | 0.12 | | | | |
| RMTC02 ²⁾ | G 1/8" | 8 | 0.31 | 30 | 1.18 | - | - | S14 - 20÷25 Nm | | 12 | 0.47 | - | - | 4 | 0.16 | | | | |
| RMTC03 ²⁾ | G 1/4" | 10 | 0.39 | 31 | 1.22 | - | - | S19 - 25÷30 Nm | | 12 | 0.47 | - | - | 3 | 0.12 | | | | |
| RMPT ¹⁾ | 7/16-20 | 11 | 0.43 | 30 | 1.18 | 43 | 1.69 | S17 - 20÷25 Nm | | 12 | 0.47 | 19,5 | 0.77 | 3 | 0.12 | | | | |



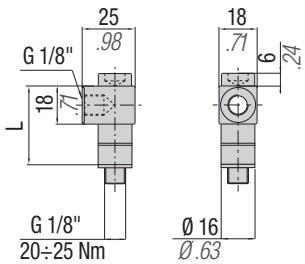
1) Con valvola unidirezionale - With one way valve - Mit Rückschlagventil - Avec valve unidirectionnelle - Con válvula unidireccional - Com válvula unidireccional
 2) Senza valvola unidirezionale - Without one way valve - Ohne Rückschlagventil - Sans valve unidirectionnelle - Sin válvula unidireccional - Sem válvula unidireccional

code RMTT



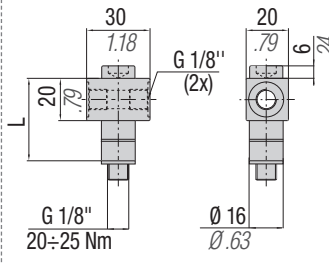
Blochetto di distribuzione - Distribution block - Gasverteilstück - Plot de distribution - Bloque de distribución - Bloco de distribuição

BDM01...



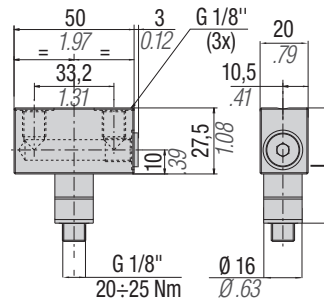
| CODE | L | |
|-----------|------|------|
| | mm | inch |
| 39BDM0102 | 24 | 0.94 |
| 39BDM01 | 38,5 | 1.52 |
| 39BDM0103 | 48 | 1.89 |

BDM02...



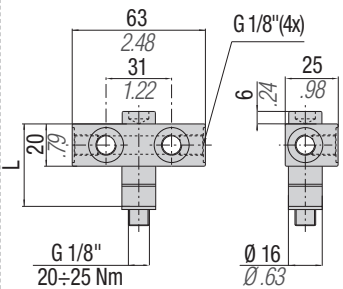
| CODE | L | |
|-----------|------|------|
| | mm | inch |
| 39BDM0202 | 26 | 1.02 |
| 39BDM02 | 40,5 | 1.59 |
| 39BDM0203 | 50 | 1.97 |

BDM03...



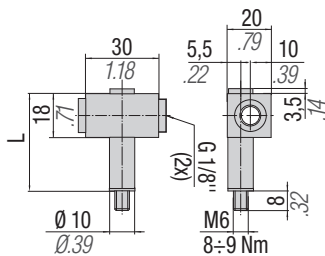
| CODE | L | |
|-----------|------|------|
| | mm | inch |
| 39BDM0302 | 33,5 | 1.32 |
| 39BDM0301 | 48 | 1.89 |
| 39BDM0303 | 57,5 | 2.26 |

BDM04...



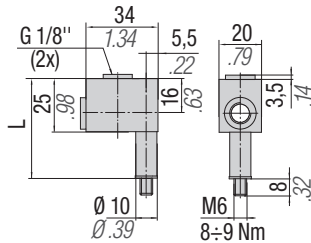
| CODE | L | |
|-----------|------|------|
| | mm | inch |
| 39BDM0402 | 26 | 1.02 |
| 39BDM04 | 40,5 | 1.59 |
| 39BDM0403 | 50 | 1.97 |

BDM...



| CODE | L | |
|---------|----|-------|
| | mm | inch |
| 39BDM05 | 26 | 1.020 |
| 39BDM06 | 42 | 1.65 |

BDM...



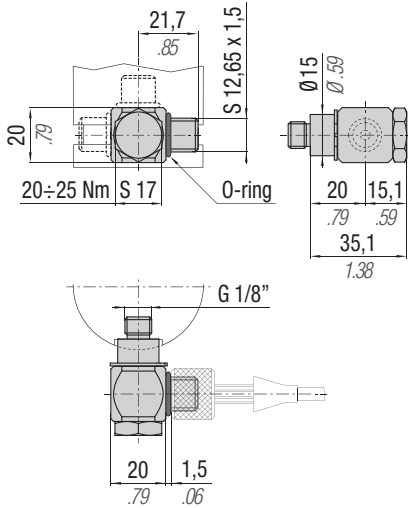
| CODE | L | |
|---------|----|------|
| | mm | inch |
| 39BDM07 | 33 | 1.30 |
| 39BDM08 | 49 | 1.93 |

All dimensions in mm/inch

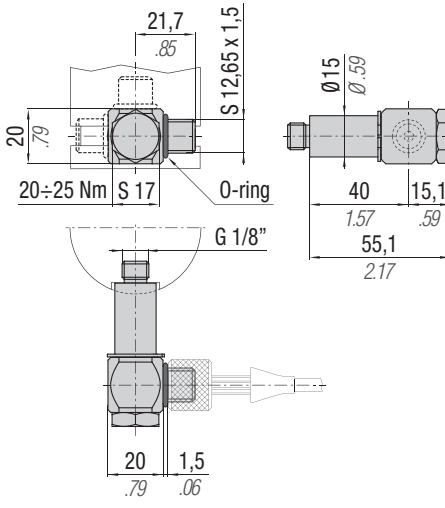


Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur -
Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/painel

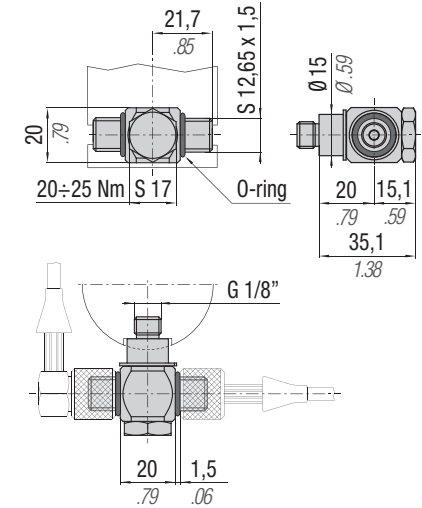
code 39BDM0901



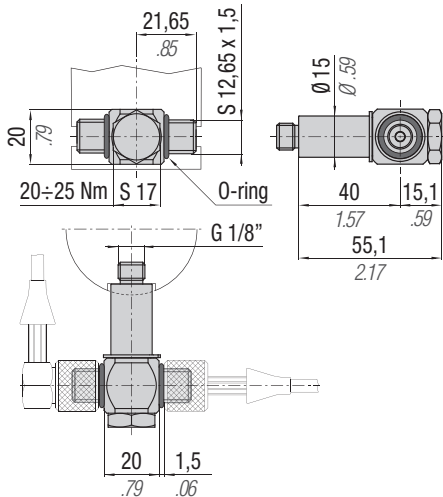
code 39BDM0902



code 39BDM1001

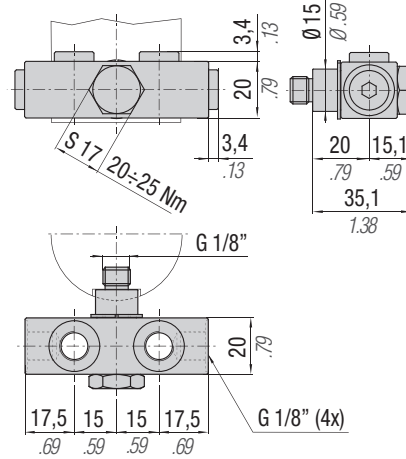


code 39BDM1002

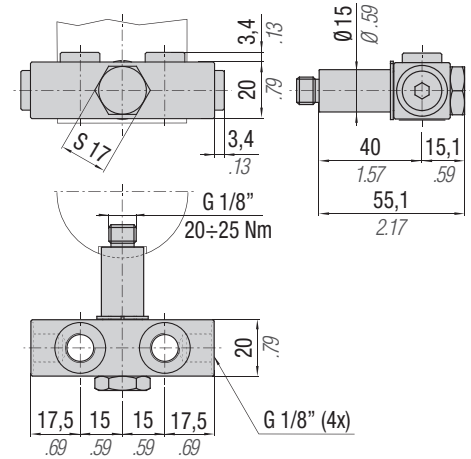


Bloccetto di distribuzione - Distribution block - Gasverteilstück - Plot de distribution - Bloque de distribución -
Bloco de distribuição

code 39BDM1101

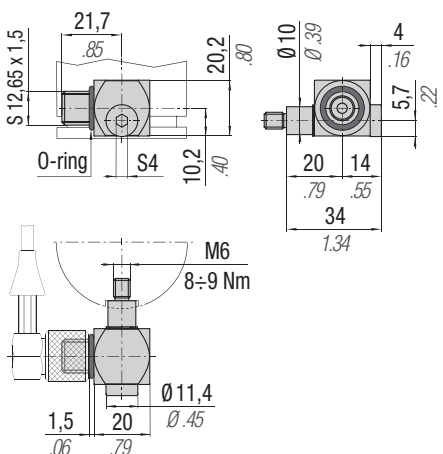


code 39BDM1102

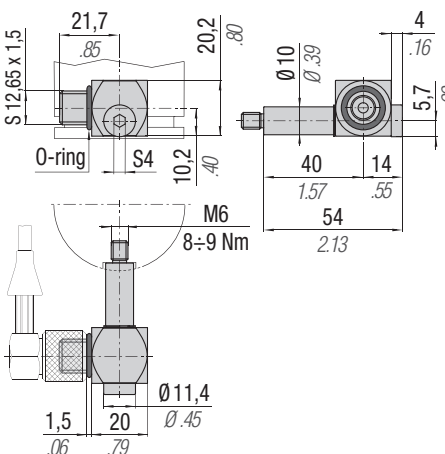


Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur -
Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/painel

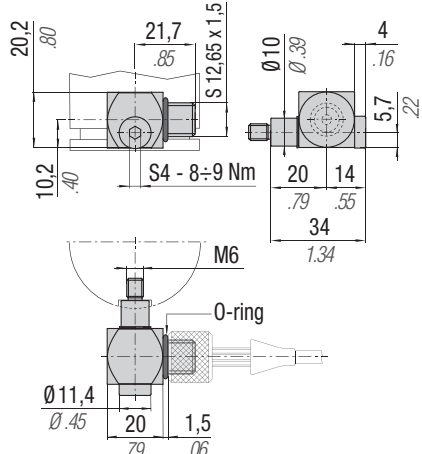
code 39BDM1201



code 39BDM1202

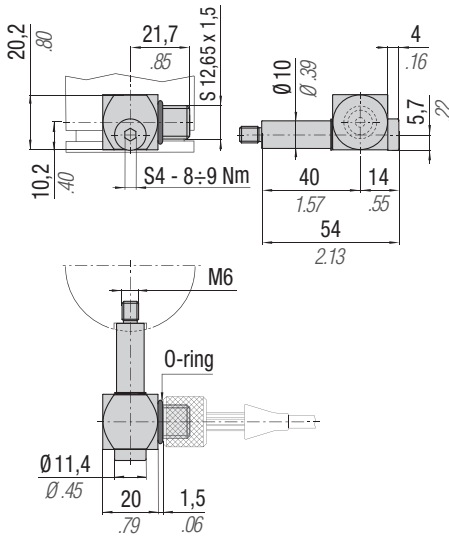


code 39BDM1301

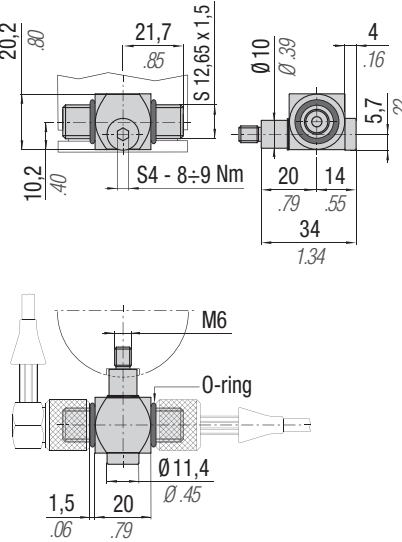


All dimensions in mm/inch

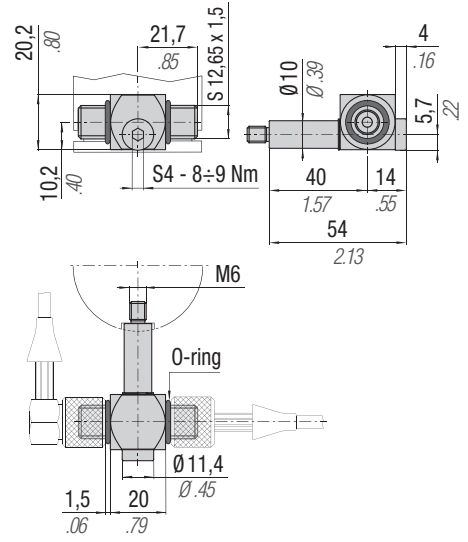
code 39BDM1302



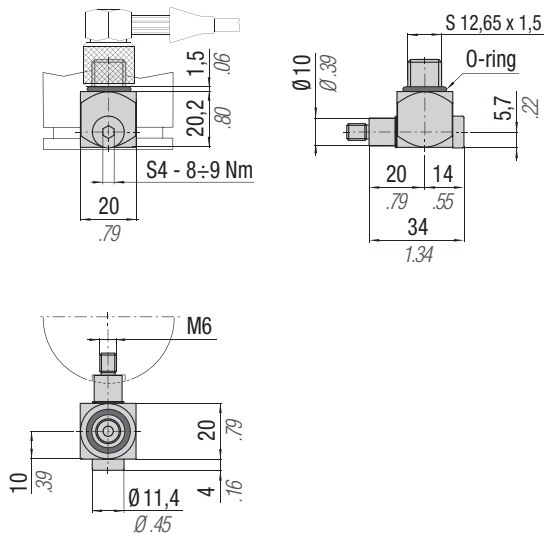
code 39BDM1401



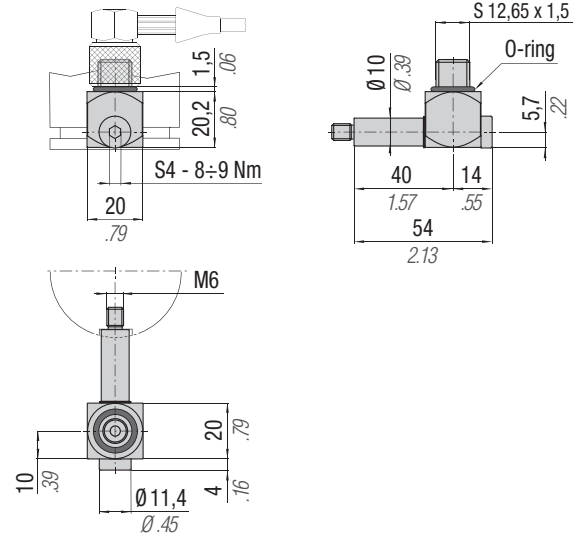
code 39BDM1402



code 39BDM1601

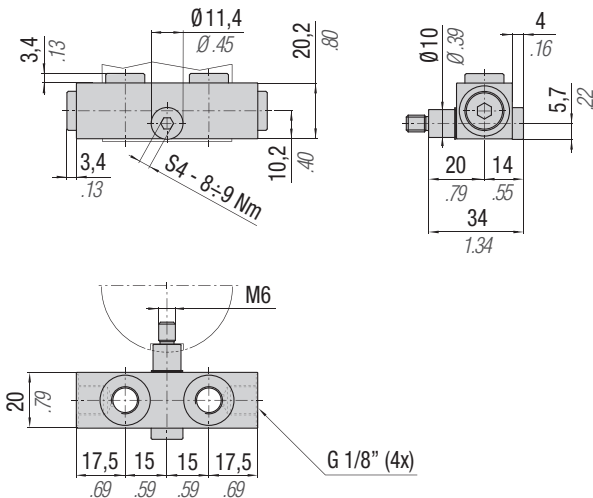


code 39BDM1602

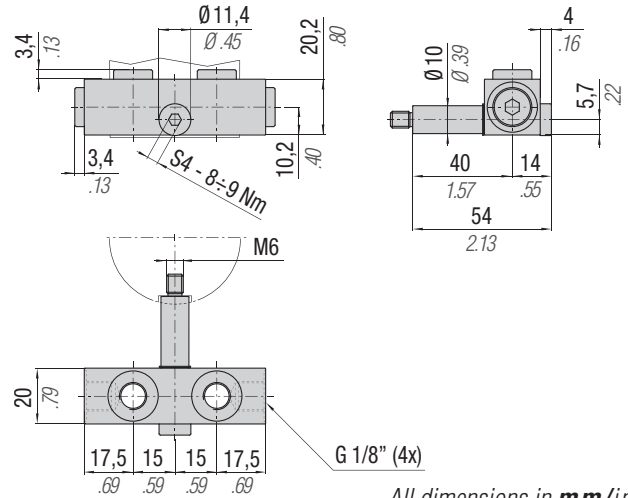


Blocchetto di distribuzione - Distribution block - Gasverteilstück - Plot de distribution - Bloque de distribución - Bloco de distribuição

code 39BDM1501



code 39BDM1502

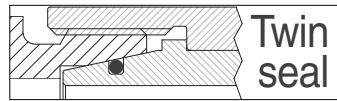


All dimensions in mm/inch



TSM

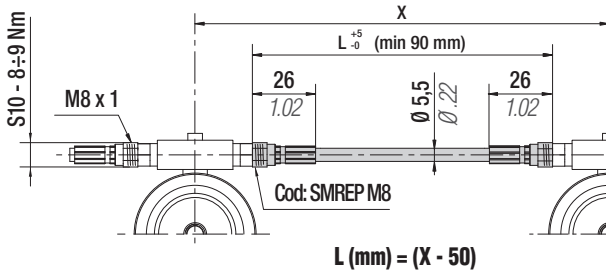
**MICRO 32°
Hose Ø 5,5 mm**



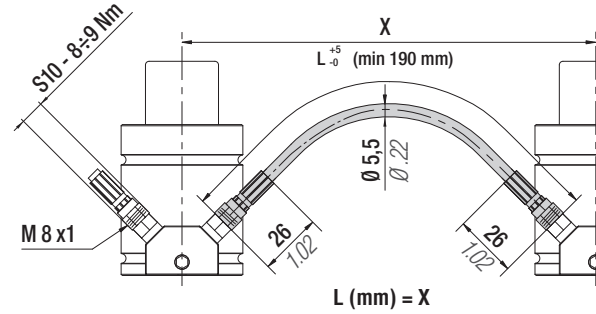
**Twin
seal**



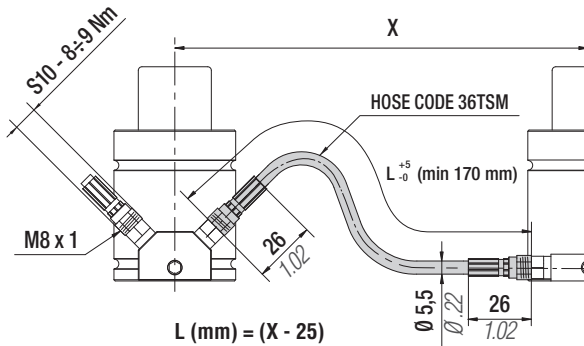
code TSM8...



L = 10 mm upward increase
Example (TSM8 090 mm; TSM8 100 mm ...)

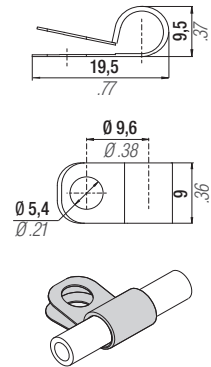


L = 10 mm upward increase
Example (TSM8 190 mm; TSM8 200 mm ...)



L = 10 mm upward increase
Example (TSM8 170 mm; TSM8 180 mm ...)

code: 36FF06A



| Technical data | | | | |
|--------------------|------------------|-------------------|--------------|---------------------------|
| "L" min | See each type | 3.54 in | Volume | 3 ml/metre |
| Operation pressure | 630 bar | 9135 psi | Dimension | 5/64" (external Ø 5,5 mm) |
| Burst Pressure | 1890 bar at 20°C | 27400 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 20 mm | 0.79 in | Standard | - |
| Operation temp. | -40 +100°C | -38 +212°F | Outer casing | Perforated |

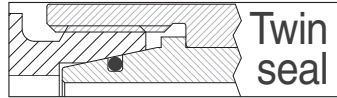


Lunghezze standard (mm) inclusive di n.2 raccordi SMREP M8
Standard lengths (mm) inclusive of no. 2 connections SMREP M8
Standard-Länge (mm) einsch. 2 SMREP-Anschlüssen M8

Longueur standard (mm) comprenant 2 raccords SMREP M8
Longitud estándar (mm) con 2 racores incluidos SMREP M8
Comprimento standard (mm) incluído nas 2 ligações SMREP M8

CONNECTIONS

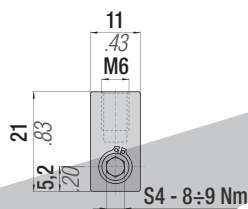
MICRO 32°



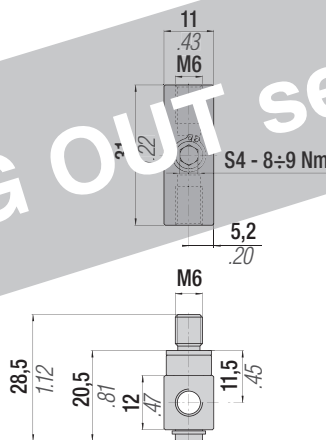
**Twin
seal**

Blochetto tubo-cilindro - Hose-cylinder block - Block, bestehend aus Schlauch-Zylinder - Bloc tube- cylindre - Bloque tubo-cilindro - Bloqueio do tubo-cilindro

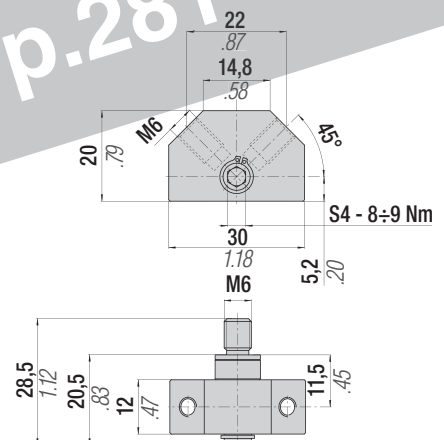
code BDSM01



code BDSM02



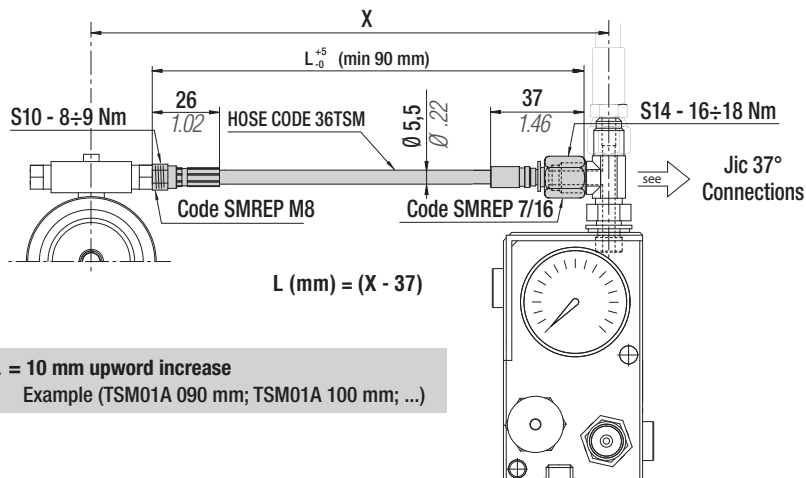
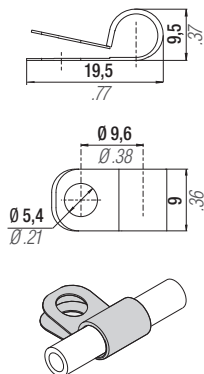
code BDSM02-45



All dimensions in mm/inch

code TSM01A...

code: 36FF06A



L = 10 mm upward increase
Example (TSM01A 090 mm; TSM01A 100 mm; ...)

| Technical data | | | | |
|--------------------|------------------|-------------------|--------------|---------------------------|
| "L" min | See each type | 3.54 in | Volume | 3 ml/metre |
| Operation pressure | 630 bar | 9135 psi | Dimension | 5/64" (external ø 5,5 mm) |
| Burst Pressure | 1890 bar at 20°C | 27400 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 20 mm | 0.79 in | Standard | - |
| Operation temp. | -40 +100°C | -38 +212°F | Outer casing | Perforated |



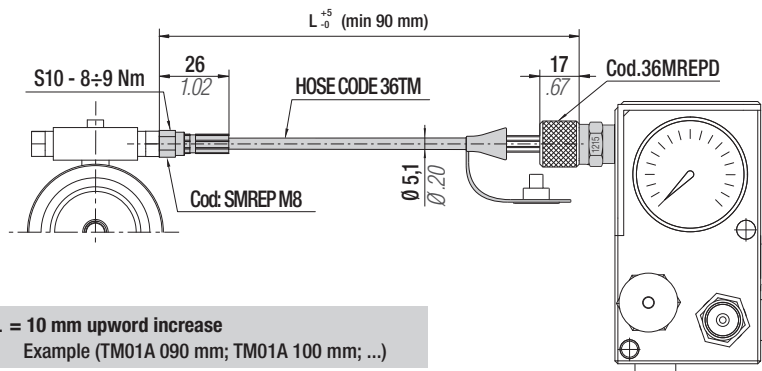
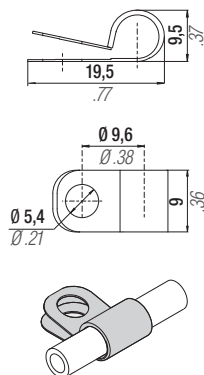
Lunghezze standard (mm) inclusive di n.2 raccordi SMREP M8
Standard lengths (mm) inclusive of no. 2 connections SMREP M8
Standard-Länge (mm) einsch. 2 SMREP-Anschlüssen M8

Longueur standard (mm) comprenant 2 raccords SMREP M8
Longitud estándar (mm) con 2 racores incluidos SMREP M8
Comprimento standard (mm) incluindo nas 2 ligações SMREP M8

MICRO 32° and MINIMESS Hose Ø 5,1 mm

code 36TM01A...

code: 36FF06A



L = 10 mm upward increase
Example (TM01A 090 mm; TM01A 100 mm; ...)

| Technical data | | | | |
|--------------------|------------------|-------------------|-------------------|---------------------------|
| "L" min | See each type | - | Volume | 3 ml/metre |
| Operation pressure | 630 bar | 9135 psi | Dimension hose | 5/64" (external ø 5,1 mm) |
| Burst Pressure | 1950 bar at 20°C | 28275 psi at 68°F | Material hose | Polyamid |
| R (bending radius) | 20 mm | 0.79 in | Standard | - |
| Operation temp. | -20 +100°C | -2 +212°F | Outer casing hose | Perforated |

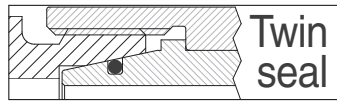


Lunghezze standard (mm) inclusive di n.2 raccordi e tappi
Standard lengths (mm) inclusive of no.2 connections and plugs
Standard-Länge (mm) einsch.2 und Stopfen Anschlüssen

Longueur standard (mm) comprenant 2 raccords et bouchons
Longitud estándar (mm) con 2 racores incluidos y tapones
Comprimento standard (mm) incluindo nas 2 ligações e tampões



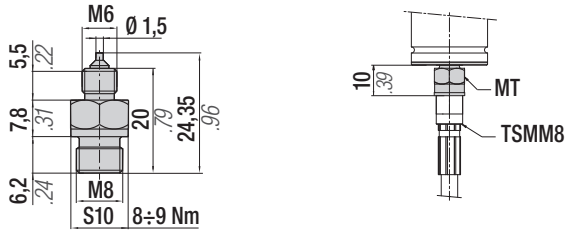
All dimensions in mm/inch



Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur - Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/painel

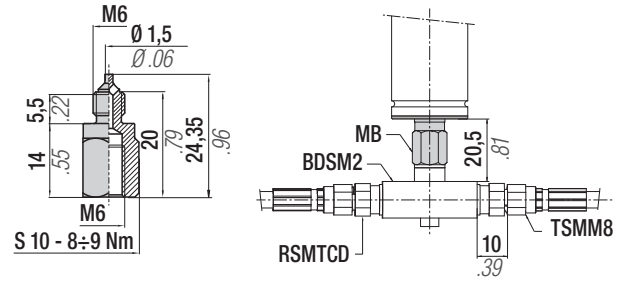
code MT

(only M 50, M70, M90, M90 TBM, M90 TEM, M90 TBI, M200 RV 170 - 320 rev.B)



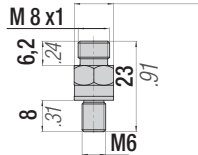
code MB

(only M 50, M70, M90, M90 TBM, M90 TEM, M90 TBI, M200 RV 170 - 320 rev.B)

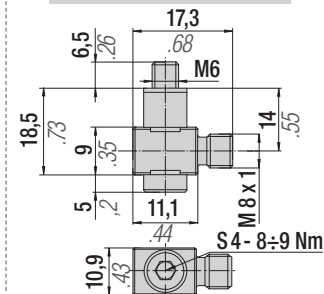


code RSMTCD

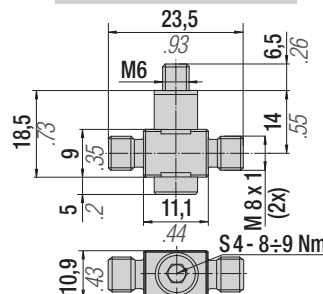
S 10 - 8±9 Nm



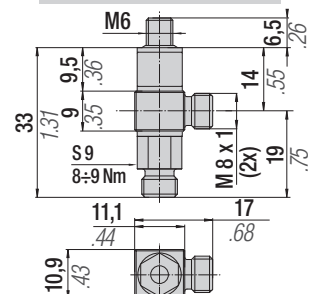
code 36M08A



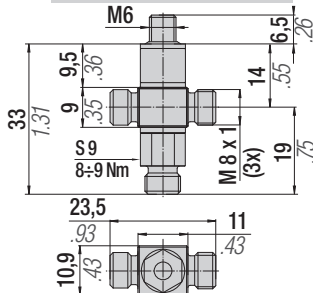
code 36M09A



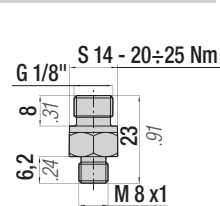
code 36M10B



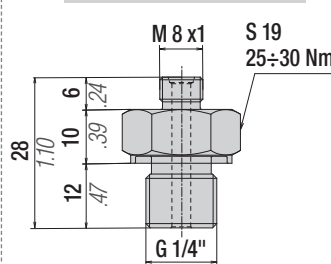
code 36M11B



code RSMPD

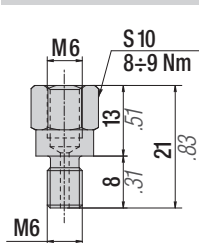


code 36M03A

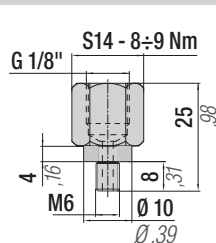


Raccordi di derivazione - Offtake connections - Anschlußstutzen - Raccords de dérivation - Racores - Racord de derivação

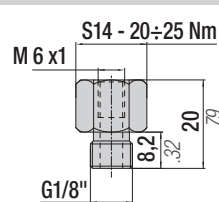
code 36M02A



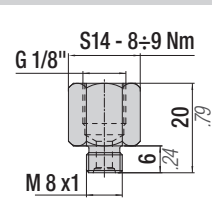
code 36M04A



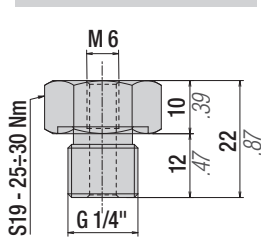
code 36MTC



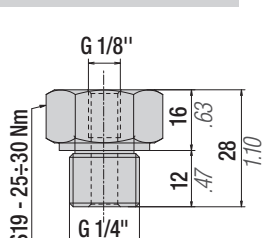
code 36MTR



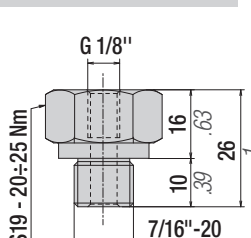
code 36M01A



code 36M12A



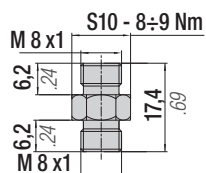
code 36M21A



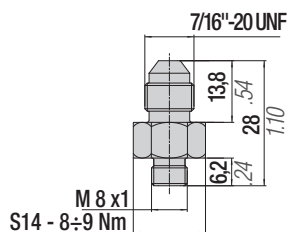
All dimensions in mm/inch

Raccordi tubo-tubo - Hose-hose connections - Anschlüsse zwischen Schlauch und Schlauch - Raccords tuyau-tuyau - Conexiones de tubo a tubo - Racord tubo-tubo

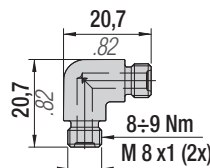
code 36MTTD



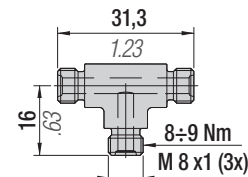
code 36RTTJM



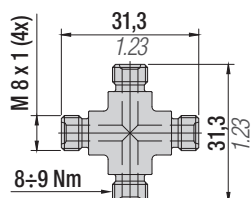
code 36M05A



code 36M06A



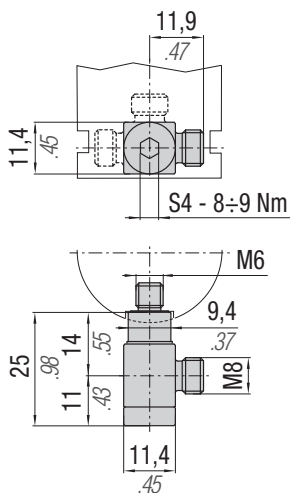
code 36M07A



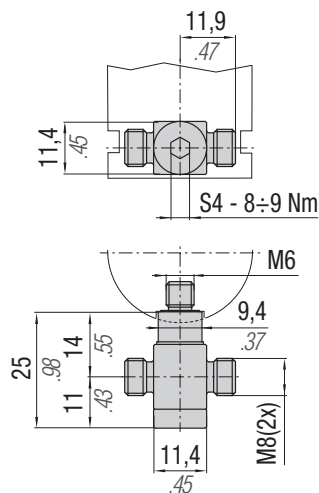
MICRO 32° HEAVY DUTY STAINLESS STEEL CONNECTIONS

Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur - Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/panel

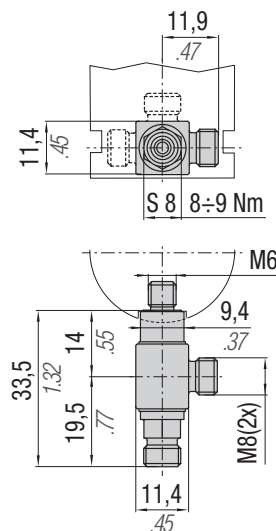
code 36M15A



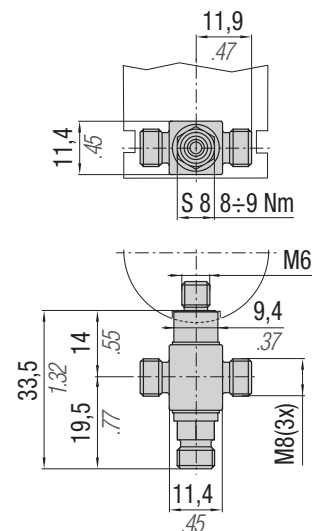
code 36M16A



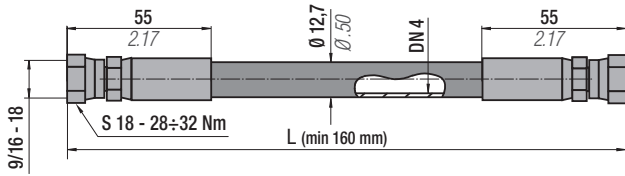
code 36M17A



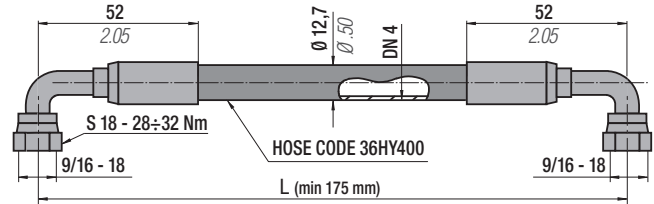
code 36M18A



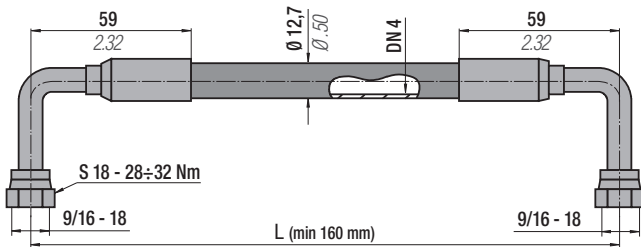
code 36HY40016...



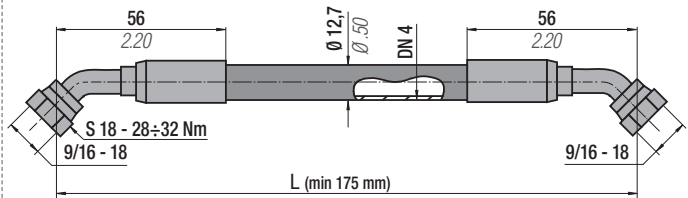
code 36HY40017...



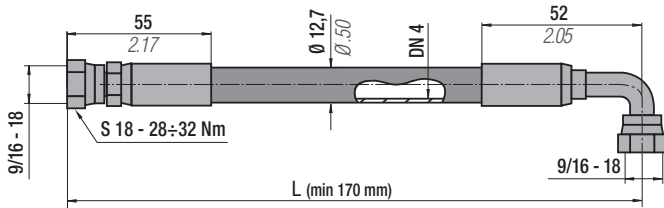
code 36HY40018...



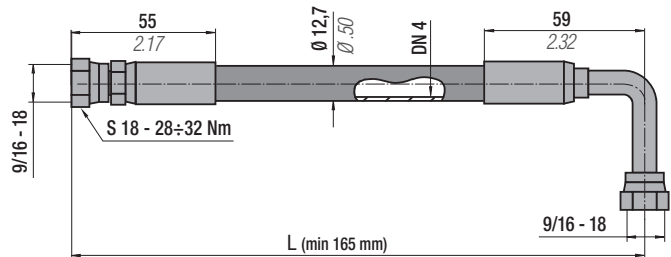
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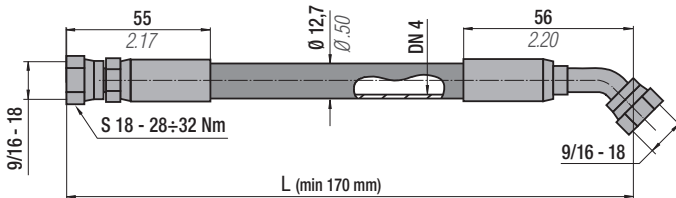
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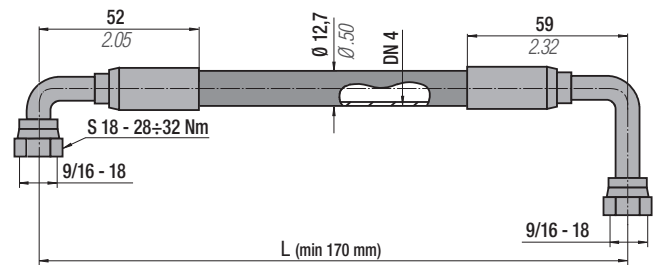
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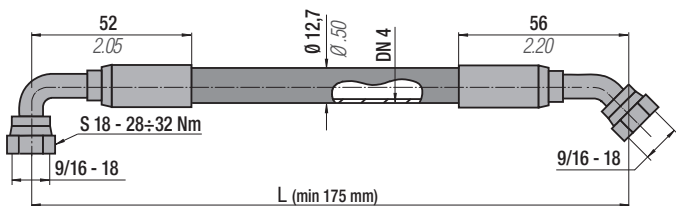
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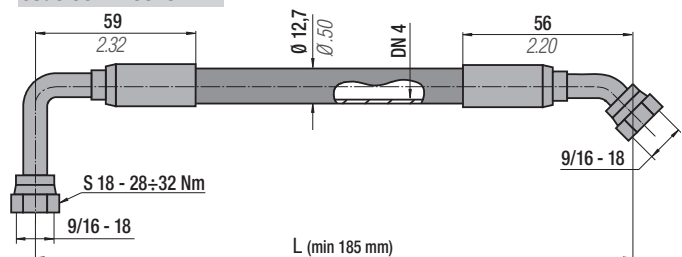
code 36HY40023...



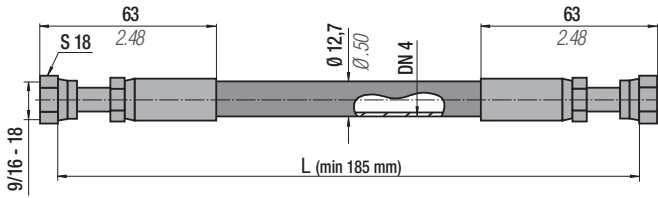
code 36HY40024...



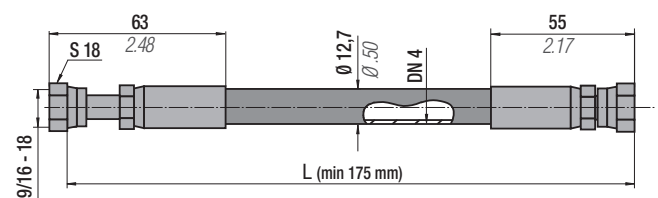
code 36HY40025...



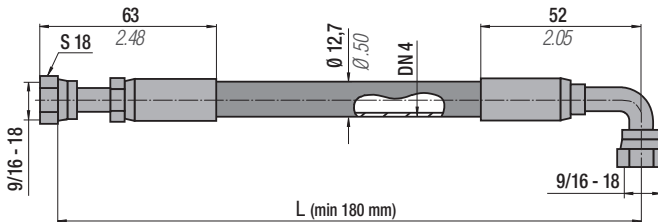
code 36HY40026...



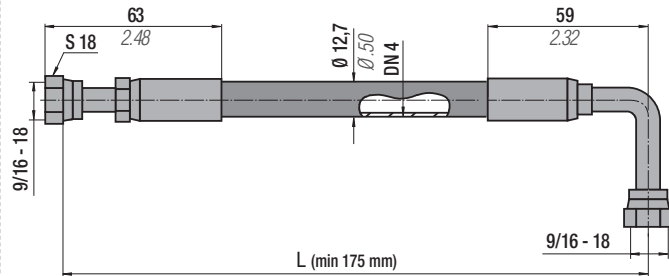
code 36HY40027...



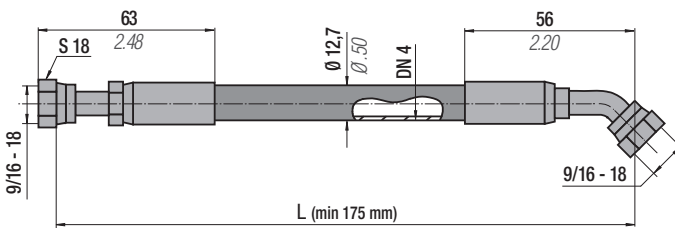
code 36HY40028...



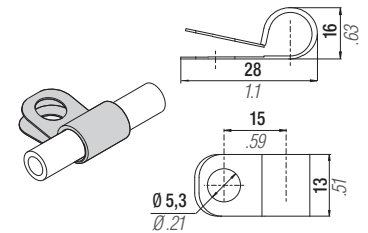
code 36HY40029...



code 36HY40030...



code: 36FF13A



| Technical data | | | | |
|-----------------------|------------------|-------------------|--------------|---------------------------------------|
| "L" min | See each type | - | Volume | 32 ml/metre |
| Operation pressure | 345 bar | 5003 psi | Dimension | 1/4" (external \varnothing 12,7 mm) |
| Burst Pressure | 1380 bar at 20°C | 20010 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 51 mm | 2.01 in | Standard | SAE 100R8 |
| Operation temperature | -40+ 100°C | -38 +212°F | Outer casing | Perforated |

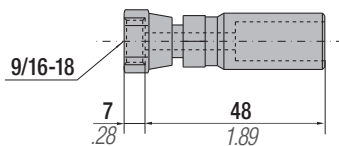


Lunghezza richiesta comprensiva di raccordi terminali
 Length upon request including end hose fittings
 Länge Anfrage einschließlich Ende Schlaucharmaturen
 Longueur requise, y compris des raccords d'extrémité
 Longitud requerida, incluyendo accesorios de los extremos
 Comprimento necessário incluindo todos os acessórios

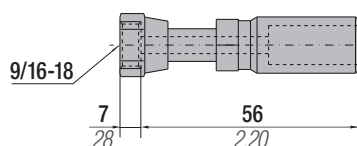
L = 5 mm upward increase - Example (36HY40016 0300; 36HY40016 0305; ...)

HOSE FITTINGS

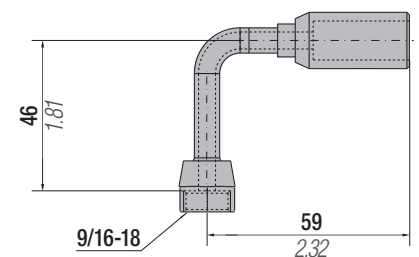
code 36P9/1604 ■ Straight Swivel



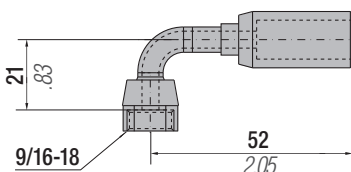
code 36P9/1605 ■ Straight Long Swivel



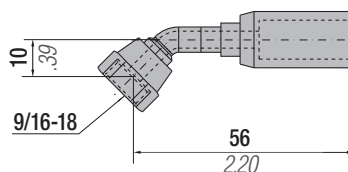
code 36P9/1606 ■ 90° Long Swivel



code 36P9/1607 ■ 90° Swivel

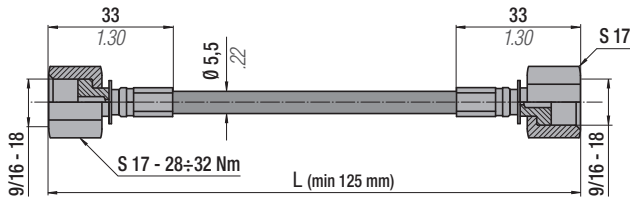


code 36P9/1608 ■ 45° Swivel

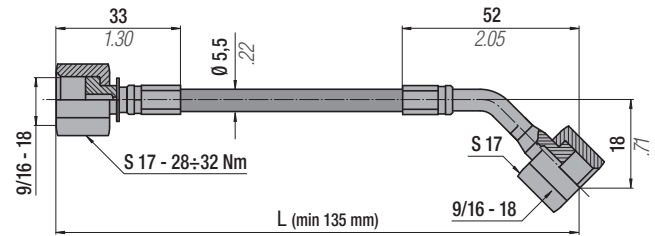


All dimensions in mm/inch

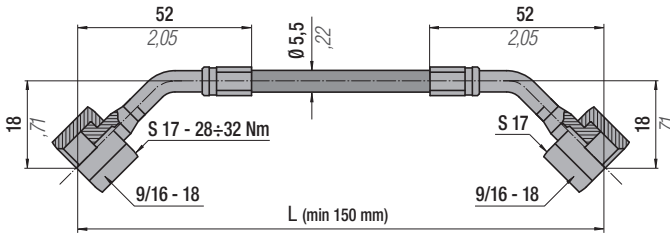
code 36TSM9/1601...



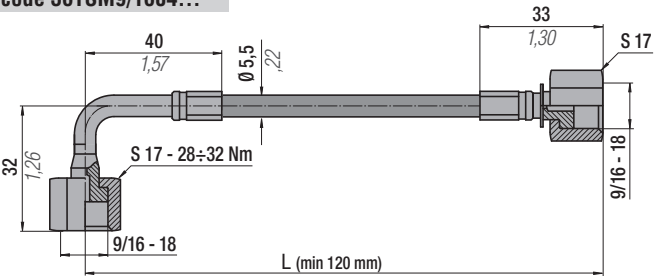
code 36TSM9/1602...



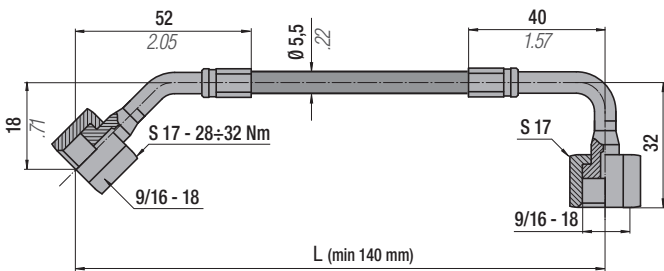
code 36TSM9/1603...



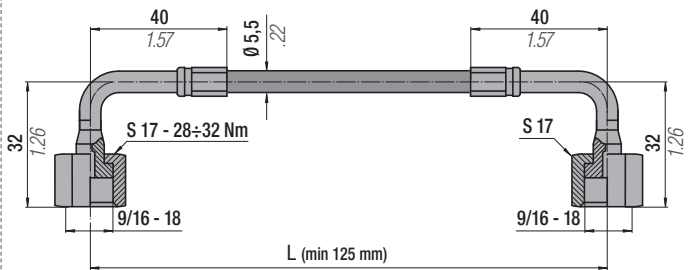
code 36TSM9/1604...



code 36TSM9/1605...



code 36TSM9/1606...



| Technical data | | | | |
|-----------------------|------------------|-------------------|--------------|---------------------------|
| "L" min | See each type | - | Volume | 3 ml/metre |
| Operation pressure | 630 bar | 9135 psi | Dimension | 5/64" (external Ø 5,5 mm) |
| Burst Pressure | 1890 bar at 20°C | 27400 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 20 mm | 0,79 in | Standard | - |
| Operation temperature | -40+ 100°C | -38 +212°F | Outer casing | Perforated |

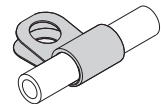
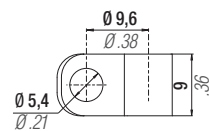
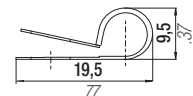


Lunghezza richiesta comprensiva di raccordi terminali
Length upon request including end hose fittings
Länge Anfrage einschließlich Ende Schlaucharmaturen

Longueur requise, y compris des raccords d'extrémité
Longitud requerida, incluyendo accesorios de los extremos
Comprimento necessário incluindo todos os acessórios

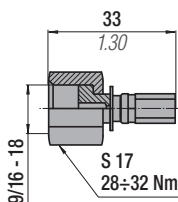
L = 10 mm upword increase - Example (36TSM9/1601 0300; 36TSM9/1605 0310; ...)

code: 36FF06A

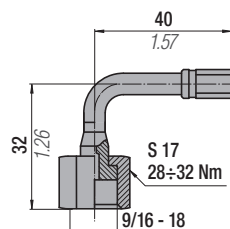


HOSE FITTINGS

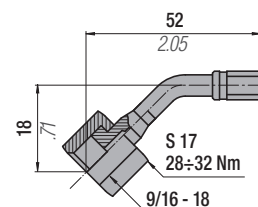
code 36P9/1601



code 36P9/1602



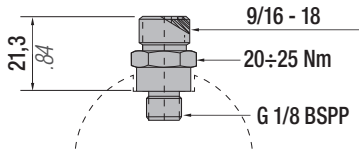
code 36P9/1603



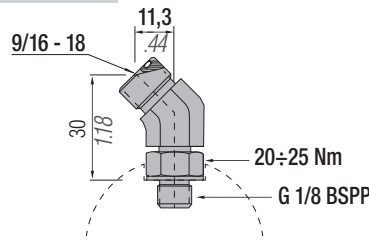
All dimensions in mm/inch

Raccordi tubo-cilindro/pannello - Hose-cylinder/panel connections - Anschlüsse zwischen schlauch und Zylinder/Kontrollarmatur - Raccords tuyau-cylindre/tableau - Conexiones sistema de cilindros/panel - Racord tubo-cilindro/panel

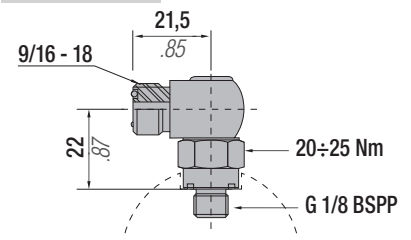
code PA-S Port Adapter - Straight



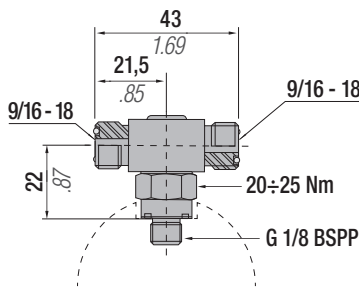
code PA-AS Port Adapter - Angle Swivel



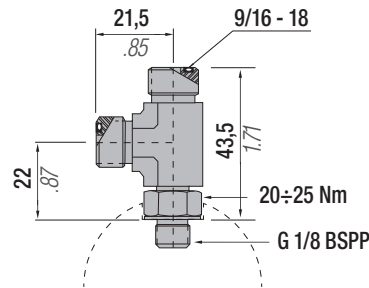
code PA-E Port Adapter - Elbow



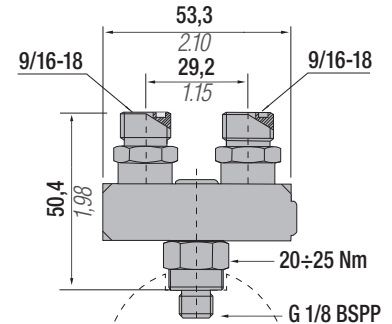
code PA-BTS Port Adapter - Branch Tee Swivel



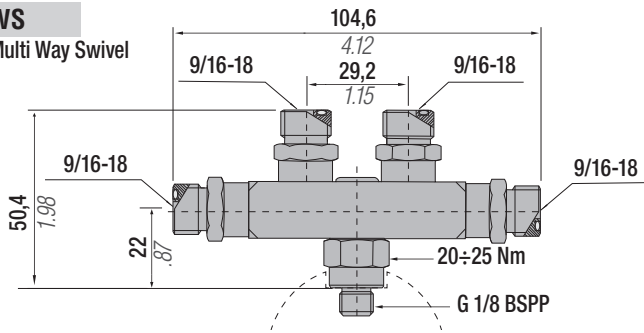
code PA-RT Port Adapter - Run Tee



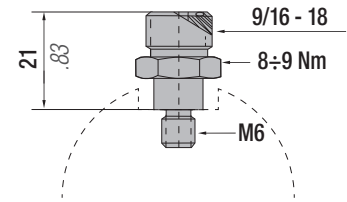
code PA-TWS Port Adapter - Two Way Swivel



code PA-MWS Port Adapter - Multi Way Swivel

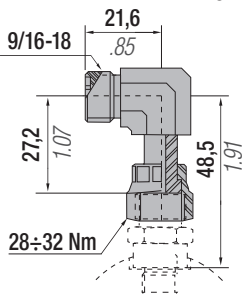


code PA-M6

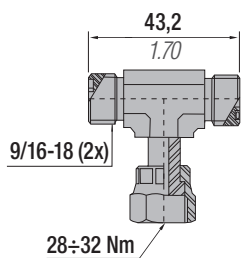


Raccordi di derivazione - Offtake connections - Anschlußstutzen - Raccords de dérivation - Racores - Racord de derivação

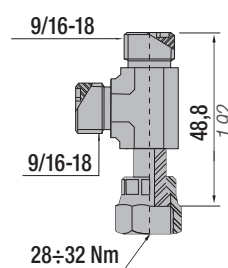
code SN-A Swivel Nut-Angle



code SN-BT Swivel Nut-Branch Tee

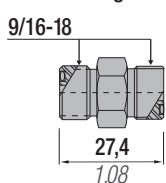


code SN-RT Swivel Nut-Run Tee

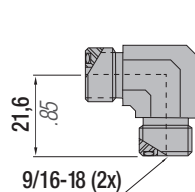


Raccordi tubo-tubo - Hose-hose connections - Anschlüsse zwischen Schlauch und Schlauch - Raccords tuyau-tuyau - Conexiones de tubo a tubo - Racord tubo-tubo

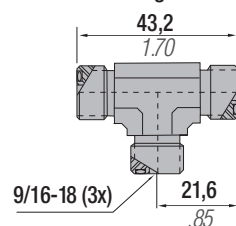
code F-U Fitting-Union



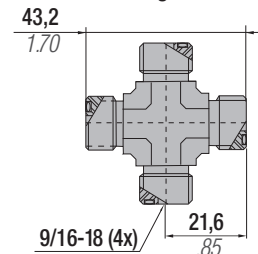
code F-E Fitting-Elbow



code F-T Fitting-Tee

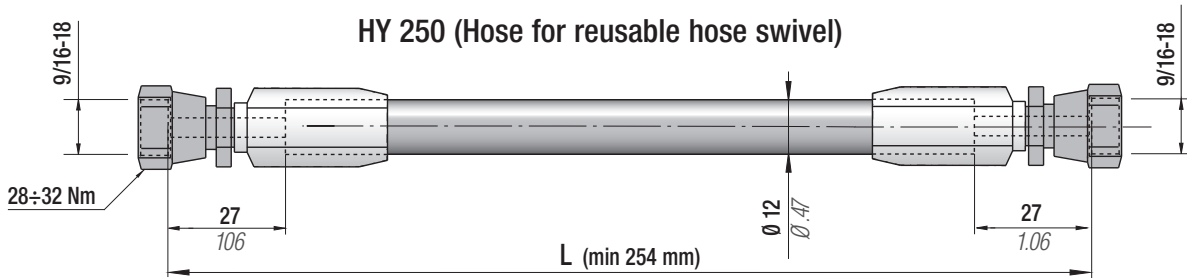


code F-C Fitting-Cross



All dimensions in **mm/inch**





| Technical data | | | | |
|-----------------------|-----------------|-------------------|--------------|-------------------------|
| "L" min | See above | 10,0 in | Volume | 31 ml/metre |
| Operation pressure | 190 bar | 2750 psi | Dimension | 1/4" (external Ø 12 mm) |
| Burst Pressure | 758 bar at 20°C | 11000 psi at 68°F | Material | Thermoplastic |
| R (bending radius) | 38 mm | 1,5 in | Standard | SAE 100R7 |
| Operation temperature | -40+ 100°C | -38 +212°F | Outer casing | Perforated |



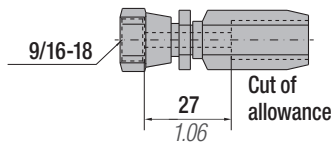
Lunghezza richiesta comprensiva di raccordi terminali
Length upon request including end hose fittings
Länge Anfrage einschließlich Ende Schlaucharmaturen

Longueur requise, y compris des raccords d'extrémité
Longitud requerida, incluyendo accesorios de los extremos
Comprimento necessário incluindo todos os acessórios

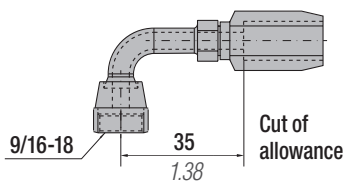
L = 10 mm upword increase - Example (36HY40005 12''(305))

REUSABLE HOSE SWIVELS

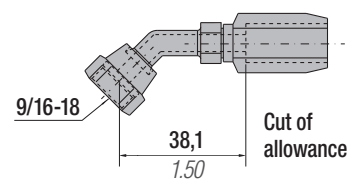
code SHF-R
Straight Swivel



code HF-R90
90° Swivel



code HF-R45
45° Swivel

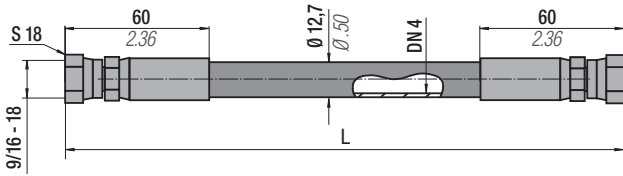




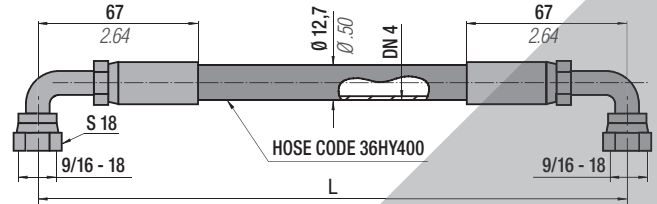
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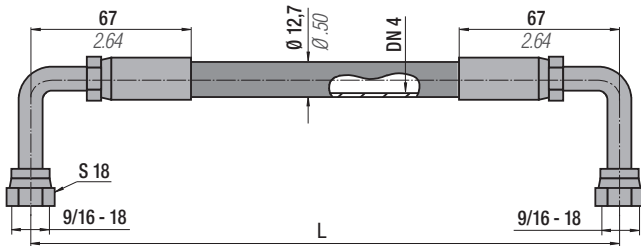
code 36HY40001...



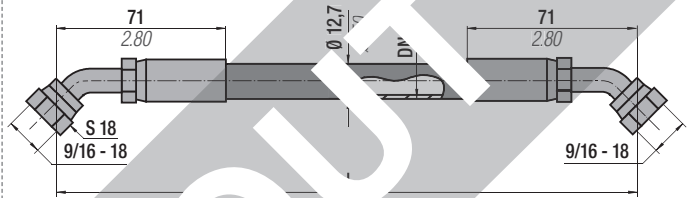
code 36HY40002...



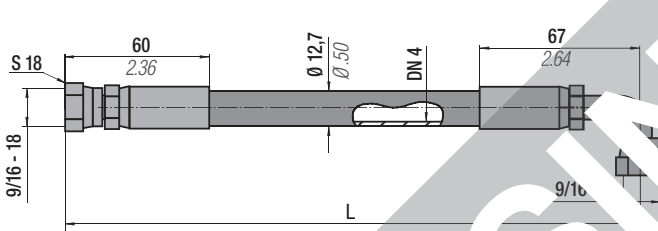
code 36HY40003...



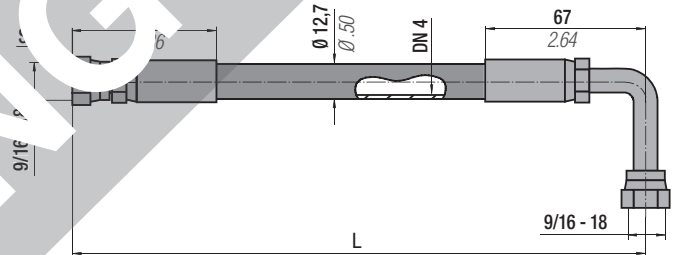
code 36HY40004...



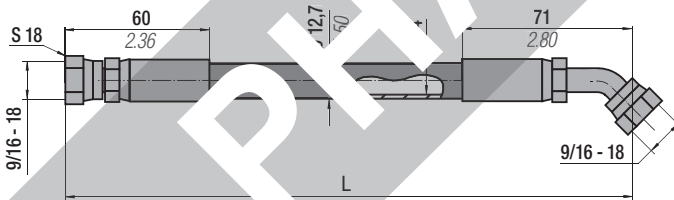
code 36HY40005...



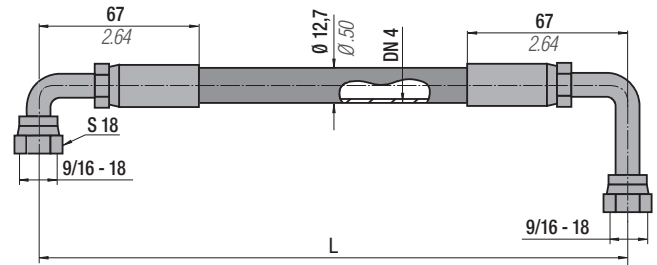
code 36HY40006...



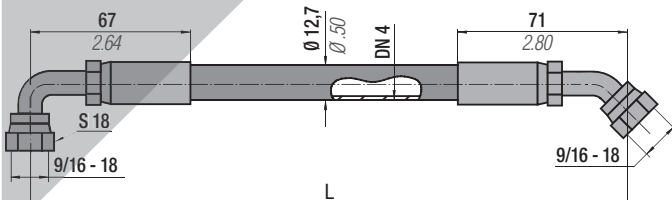
code 36HY40007...



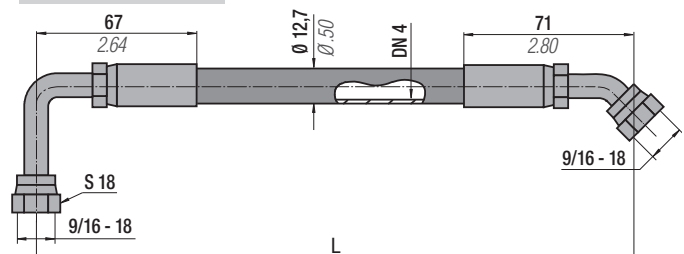
code 36HY40008...



code 36HY40009...

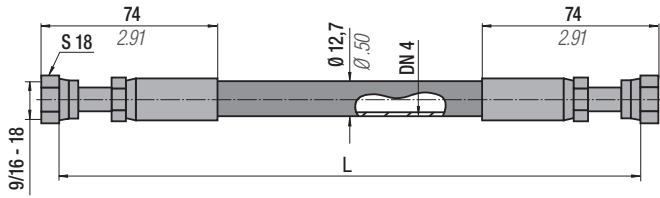


code 36HY40010...

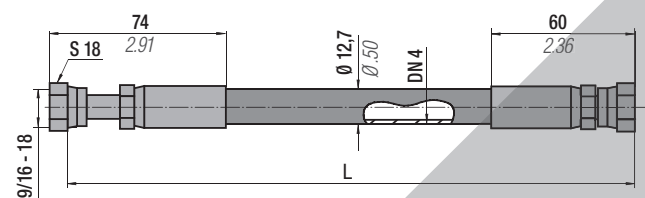


All dimensions in mm/inch

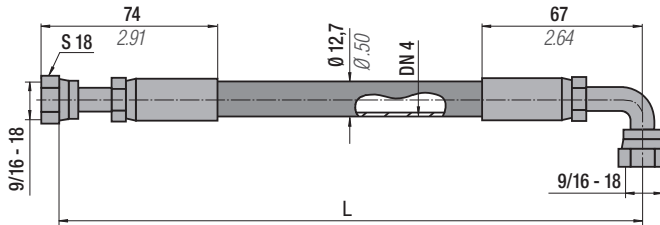
code 36HY40011...



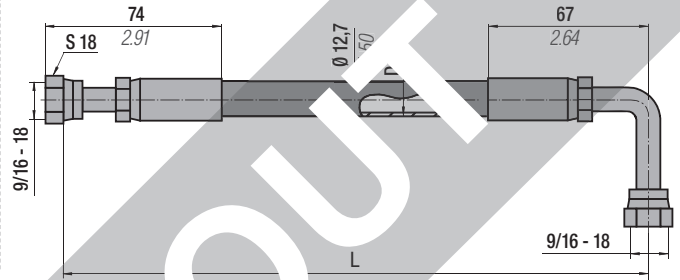
code 36HY40012...



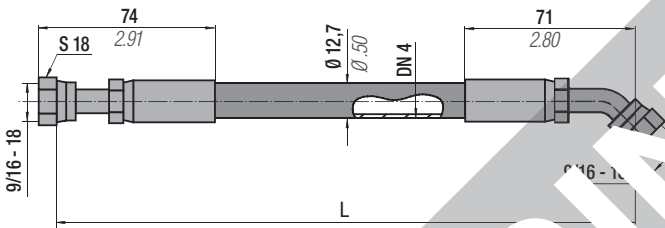
code 36HY40013...



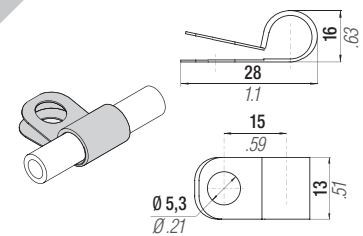
code 36HY40014...



code 36HY40015...



code: 36FF13A



Technical data

| | | | |
|-----------------------|------------------|--------------|---------------------------|
| "L" min | 255 mm | Volume | 32 ml/metre |
| Operation pressure | 345 bar | Dimension | 1/4" (external Ø 12,7 mm) |
| Burst Pressure | 1380 bar at 20°C | Material | Thermoplastic |
| R (bending radius) | 51 mm | Standard | SAE 100R8 |
| Operation temperature | -40+120°C | Outer casing | Perforated |



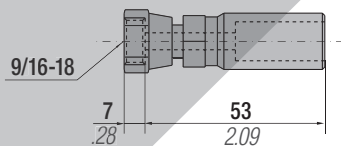
Lunghezza richiesta comprensiva di raccordi terminali
 Length upon request including end hose fittings
 Länge Anfrage einschließlich Ende Schlaucharmaturen
 Longueur requise, y compris des raccords d'extrémité
 Longitud requerida, incluyendo accesorios de los extremos
 Comprimento necessário incluindo todos os acessórios

standard L = 255 mm 5 mm per word increase - Example (36HY40016 0300; 36HY40016 0305; ...)

HOSE FITTINGS

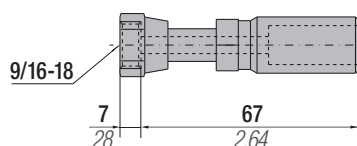
code S-F

Straight Swivel



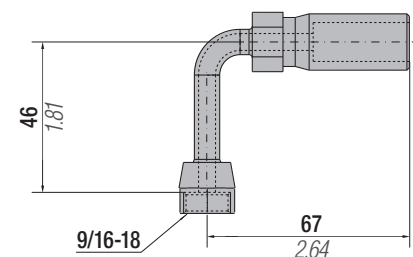
code S-FL

Straight Long Swivel



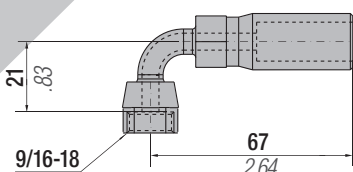
code H-F90L

90° Long Swivel



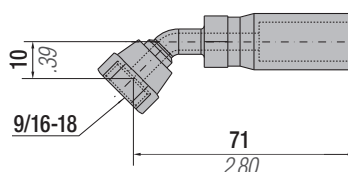
code H-F

90° Swivel



code H-F45

45° Swivel



All dimensions in mm/inch

CONTROL PANEL CP01A



IT

Micro pannello di controllo composto da base in alluminio, manometro, valvola per caricamento e scaricamento, tappo di rottura sovrappressione e protezione in acciaio. Idoneo per la gestione di impianti collegati realizzati con micro hose e micro connections. 16 uscite M6.

EN

Micro control panel with aluminium base, gauge, charging and discharging valve, overpressure rupture plug and steel protection. Suitable for hose systems equipped with micro hose and micro connections. 16 M6 ports.

DE

Micro-Kontrollarmatur mit Aluminiumsockel, Manometer, Auffüll- und Ablassventil, Überdruck Bruch Stecker und Stahlabdeckung. Geeignet für Verbundsysteme mit Micro-Kupplung und -Schläuchen. 16 M6 Anschlüsse.

FR

Mini panneau de contrôle avec base aluminium, équipé de manomètre, valve de chargement et déchargement, bouchon de rupture de surpression et protection acier ; il est adapté aux systèmes connectés équipés de mini tuyaux et mini connexions. 16 Portes M6.

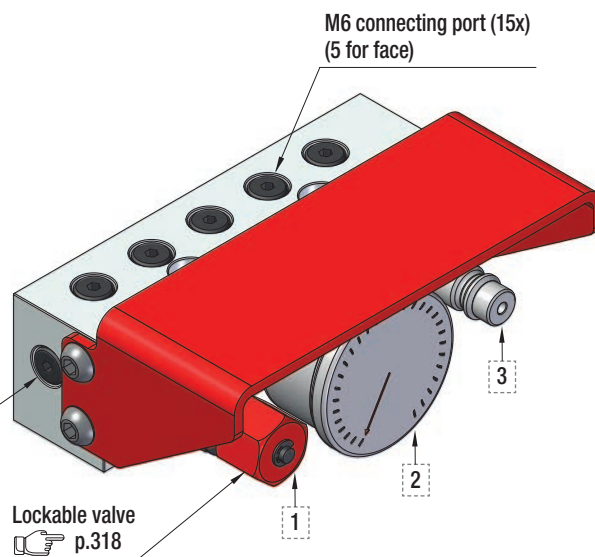
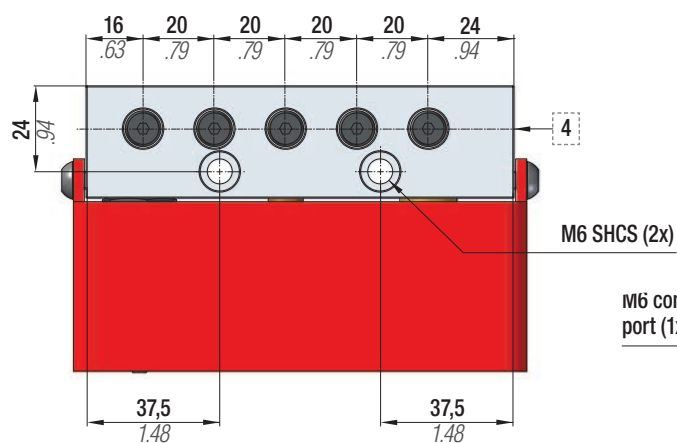
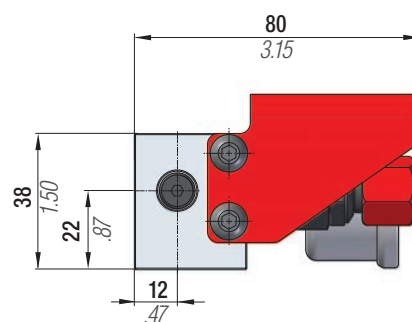
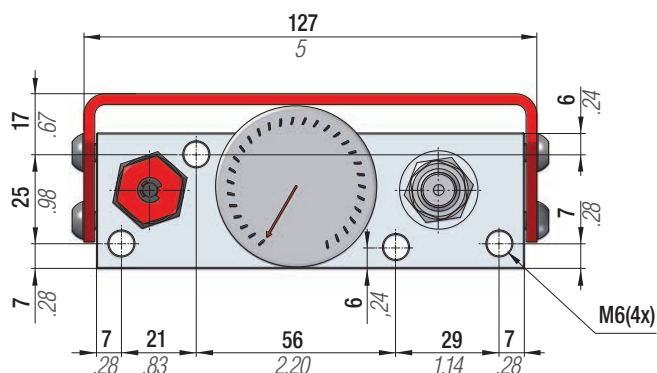
ES

Micropanel de control con base en aluminio, manómetro, válvula de carga y descarga, enchufe de la ruptura de sobrepresión y protección en acero. Idóneo para la gestión de instalaciones de cilindros conectados entre sí con micro mangueras y micro conectores. 16 salidas M6.

PT

Micro Painel de Control com base em alumínio, manómetro, válvula de carga e descarga, plugue ruptura sobrepresão e protecção em aço. Adequado para sistemas de mangueiras, equipado com micro mangueiras e micro conexões. 16 saídas M6.

| code | Pressure Gauge | Rupture Plug | Easy Manifold  p.241 |
|---------|----------------|--------------|-------------------------------------------------------------------------------------------------------|
| 39CP01A | bar/psi | ✓ | ✓ |



| | | | | | | | |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | 3 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

IT

Pannello standard per caricamento, regolazione, scaricamento e controllo della pressione nel sistema collegato. Consiste in una base provvista di manometro, valvola di caricamento e scaricamento, 3 uscite, protezione in acciaio. Può essere equipaggiato con disco di rottura (opzionale).

EN

Standard control panel to charge, adjust and check the pressure in the connected system. It consists of a plate with pressure gauge, charging and discharging valve, 3 outlets, steel case and can be equipped with a rupture disc (optional).

DE

Standard-Schalttafel zur Ladung, Regulierung, Entladung und Kontrolle des Drucks im angeschlossenen System. Bestehend aus einer Basis mit Manometer, Lade- und Entladeventil, 3 Ausgängen sowie Schutz aus Stahl. Kann mit einer Berstscheibe ergänzt werden (Zubehör).

FR


Panneau standard pour le chargement, le réglage, le déchargement et le contrôle de la pression dans le système relié. Il est formé par une embase équipée de manomètre, vanne de chargement et déchargement, 3 sorties, protection en acier. Il peut être équipé d'un disque de rupture (option).

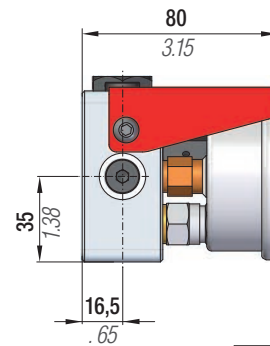
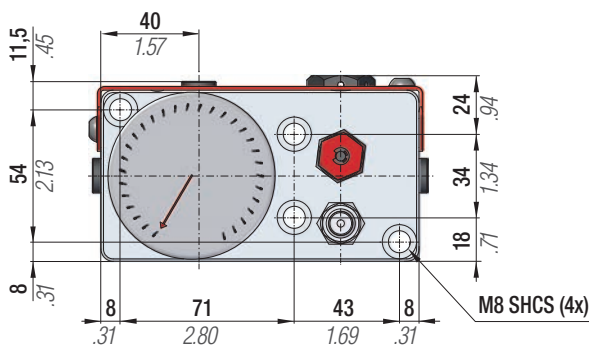
ES

Panel standard para la carga, regulación, descarga y control de la presión en sistemas de cilindros conectados. Consiste en una base con un manómetro Válvula de carga y descarga, 3 salidas, protección en acero. Puede equiparse con disco de ruptura (opcional).

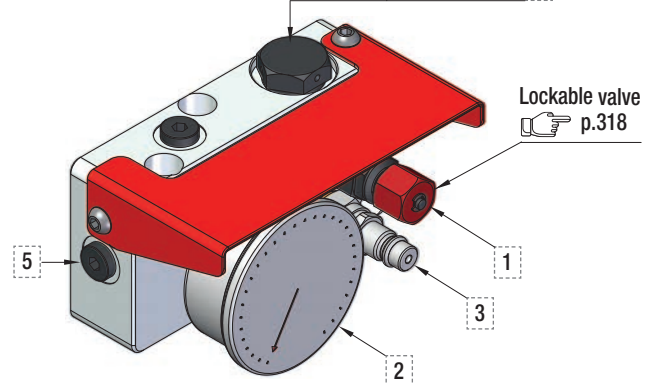
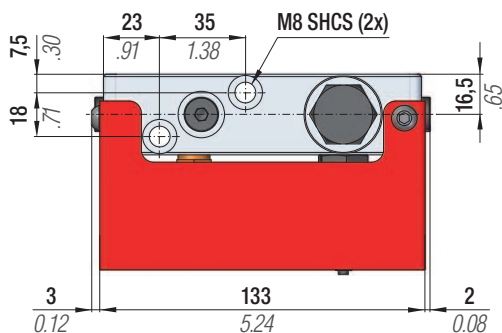
PT

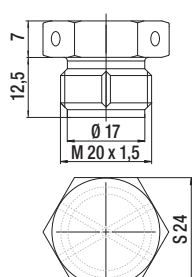
Painel standard para carga, regulação, descarga e controlo da pressão no sistema ligado. É composto por uma base com manómetro. Válvula de carga e de descarga, 3 saídas, protecção em aço. Pode ser equipado com disco de rotura (opcional).

| code | Pressure Gauge | Rupture Plug | Easy Manifold  p.241 |
|-------------------------|----------------|--------------|-------------------------------------------------------------------------------------------------------|
| 39CPVC | bar/psi | ✗ | ✓ |
| 39CPVC + 39DR004 | bar/psi | ✓ | ✓ |
| 39CPVC + 39TS460 | bar/psi | ✓ | ✓ |



code 39TS460 4.2 - option
code 39DR004 4.1 - option
standard 4



| | | | | | | | | |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | 3 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di chiusura M20 Closing plug M20 Verschlussstopfen M20 Bouchon de fermeture M20 Tapon de cierre M20 Plugue de fechamento M20 | code: 39TS460 |
| 4.1 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de ruptura de sobrepresión Plugue ruptura sobrepresão | 4.2 | Tappo di sicurezza sovrappressione CE Overpressure safety plug CE Überdruck Sicherheitsstecker CE Bouchon de sécurité surpression CE Enchufe de seguridad sobrepresion CE Bujão de segurança sobrepresão CE | 5 | Fori di collegamento 1/8"G (4x) 1/8"G connecting ports (4x) Anschlussöffnung 1/8"G (4x) Trous de raccordement 1/8"G (4x) Agujeros de conexión 1/8"G (4x) Furo de conexão 1/8"G (4x) | | |  |

CONTROL PANEL MCPC / CP19A

Replace code 39MCPB



IT

Il mini pannello di controllo Special Springs, grazie a un design miniaturizzato e unico, offre una grande flessibilità d'uso che aumenta con le unità addizionali AUMCP. Consiste in un blocchetto di alluminio provvisto di manometro, valvola di caricamento e scaricamento, 4 uscite, valvola d'intercettazione e tappo di rottura sovrappressione.

EN

The Special Springs mini control panel, thanks to its unique miniaturized design, offers wide flexibility of use, increased when combined with additional AUMCP units. It consists of a aluminium block with pressure gauge, charging and discharging valve, 4 outlets, on-off valve and overpressure rupture plug.

DE

Die Mini-Steuerung Special Springs bietet dank ihres miniaturisierten und einzigartigen Designs größte Benutzungsflexibilität, die mit den zusätzlichen AUMCP-Einheiten noch erhöht wird. Bestehend aus einem aluminiumblock mit Manometer, Lade- und Entladeventil, 4 Ausgängen, Sperrventil und Überdruck Bruch Stecker.

FR

Grâce à une conception miniaturisée et unique, le mini-panneau de contrôle Special Springs offre une grande souplesse d'utilisation qui augmente avec les unités supplémentaires AUMCP. Il est formé par une plaque en aluminium équipée de manomètre, vanne de chargement et déchargement, 4 sorties, vanne d'arrêt et Bouchon de rupture surpression.

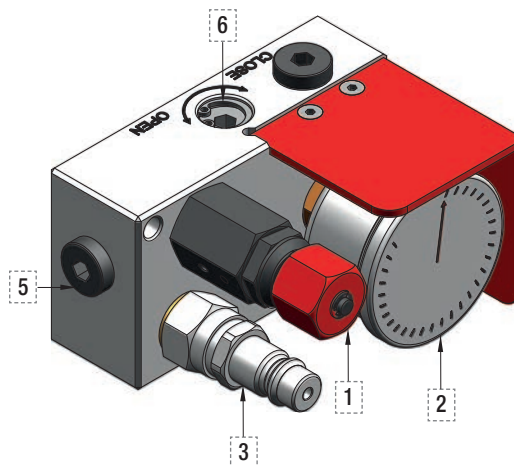
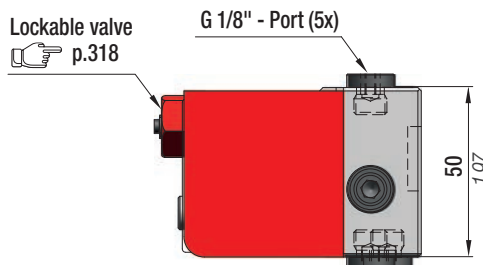
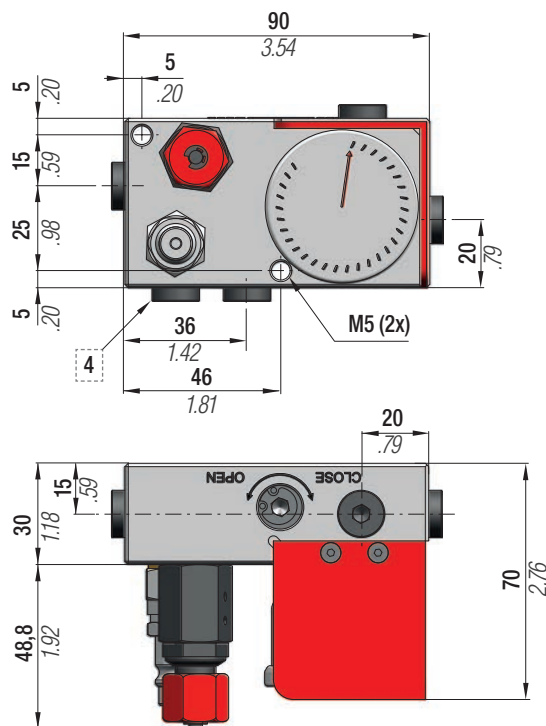
ES

El mini-panel de control Special Springs, gracias a su exclusivo diseño miniaturizado, ofrece una gran flexibilidad, que aumenta con las unidades adicionales AUMCP. Consiste en una placa de aluminio con manómetro, válvula de carga y descarga, 4 salidas, válvula de interceptación y enchufe de ruptura de sobrepresión.

PT

O mini-painel de controlo Special Springs, graças a um design miniaturizado e exclusivo, oferece uma grande flexibilidade de utilização que aumenta com as unidades adicionais AUMCP. É composto por um bloco em alumínio com manómetro, válvula de carga e de descarga, 4 saídas, válvula de interceptação e plugue de ruptura sobrepresão.

| code | Pressure Gauge | Rupture Plug | Shut off valve | Easy Manifold | 👉 p.241 |
|----------------|----------------|--------------|----------------|---------------|---------|
| 39MCPB | bar/psi | ✓ | ✓ | ✓ | |
| 39CP19A | bar/psi | ✓ | ✗ | ✓ | |



| | | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar |
| 3 | Innesto rapido di caricamento Quick coupling for charging Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão |
| | | 5 | Fori di collegamento 1/8"G (5x) 1/8"G connecting ports (5x) Anschlussöffnung 1/8"G (5x) Trous de raccordement 1/8"G (5x) Agujeros de conexión 1/8"G (5x) Furo de conexão 1/8G (5x) |
| | | 6 | Valvola di intercettazione Shut off valve Sperrventil Valve d'arrêt Válvula de interceptación Válvula de fecho |

IT

Unità addizionali per minipannello MCPC. Ideali per gestire impianti o cilindri singoli con pressioni diverse nello stesso stampo. Ogni unità include un manometro, una valvola di intercettazione e 1 uscita. Combinazione massima prevista 1 MCPC + 4 AUMCP.

EN

Additional units for the mini control panel MCPC. Ideal for operating hoses systems or single cylinders with different pressures in the same mould. Each unit includes pressure gauge, on-off valve and 1 outlet. Designed for a maximum combination of 1 MCPC + 4 AUMCP.

DE

Zusätzliche Einheiten für die Ministeuerung MCPC. Ideal zur Verwaltung von Anlagen oder einzelnen Zylindern, die beim selben Formprozess verschiedene Druckwerte aufweisen. Jede Einheit ist mit einem Manometer, einem Sperrventil und einem Ausgang ausgestattet. Maximal mögliche Kombination: 1 MCPC + 4 AUMCP.

FR

Unités supplémentaires pour le mini-panneau MCPC. L'idéal pour gérer des installations ou des cylindres seuls sous des pressions différentes dans le même moule. Chaque unité inclut un manomètre, une vanne d'arrêt et 1 sortie. Combinaison maximum prévue: 1 MCPC + 4 AUMCP.

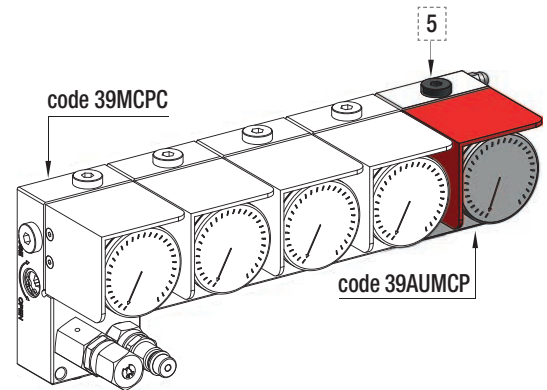
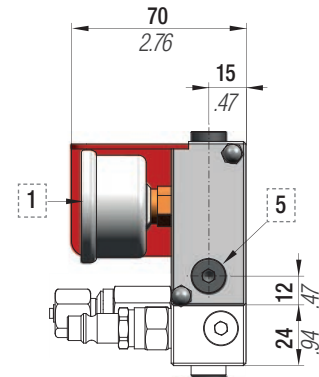
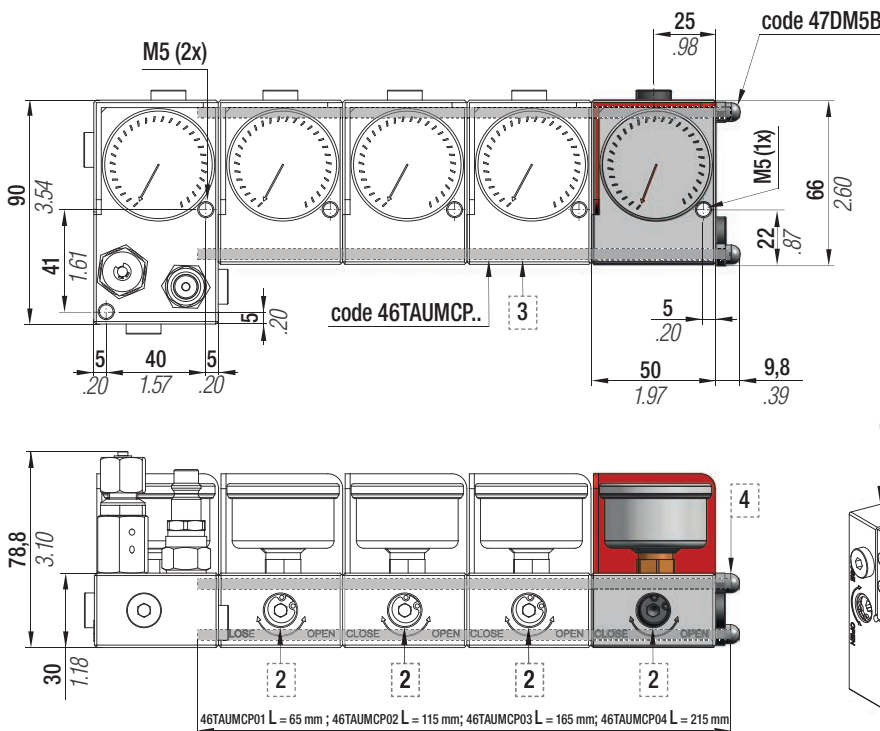
ES

Unidades adicionales para mini-panel MCPC. Ideales para la gestión de sistemas o de cilindros aislados con presiones distintas en un mismo molde. Cada unidad incluye un manómetro, una válvula de interceptación y 1 salida. Combinación máxima prevista 1 MCPC + 4 AUMCP.

PT

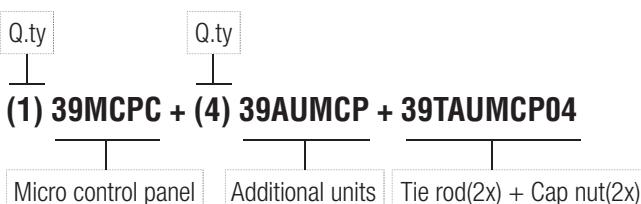
Unidade adicional para mini-painel MCPC. Ideais para gerir instalações ou cilindros individuais com pressões diferentes na mesma ferramenta. Cada unidade inclui um manómetro, uma válvula de interceptação e 1 saída. Combinação máxima prevista 1 MCPC + 4 AUMCP.

| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|---------|----------------|--------------|---------------|
| 39AUMCP | bar/psi | ✓ | ✗ |



| | | | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | Valvola di intercettazione Shut off valve Sperrventil Valve d'arrêt Válvula de interceptación Válvula de fecho | Tirante (2x) Tie rod (2x) Zugstange (2x) Tirant (2x) Tirante (2x) Barra de ligação (2x) | Dado cieco (2x) Cap nut (2x) Hutmutter (2x) Écrou borgne (2x) Tuerca de sombrerete (2x) Porca cega (2x) | Fori di collegamento 1/8"G (2x) 1/8"G connecting ports (2x) Anschlussöffnung 1/8"G (2x) Trous de raccordement 1/8"G (2x) Agujeros de conexión 1/8"G (2x) Furo de conexão 1/8G (2x) |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

Ordering example: **(1) 39MCPC + (4) 39AUMCP + 39TAUMCP04**



Ordering options code

- (1) 39MCPC + (1) 39AUMCP + 39TAUMCP01
- (1) 39MCPC + (2) 39AUMCP + 39TAUMCP02
- (1) 39MCPC + (3) 39AUMCP + 39TAUMCP03
- (1) 39MCPC + (4) 39AUMCP + 39TAUMCP04



CONTROL PANEL CP02A / CP08A / CP11A

(Ford, MABEC, Nissan, Renault and GM North America die Standard)



IT

Pannello di controllo secondo standard Ford e GM Nord America. Base in alluminio provvista di manometro, valvola di caricamento e scaricamento, adattatore 9/16-18 UNF ORFS, tappo di rottura sovrappressione e protezione in acciaio. 3 uscite G1/8" per gestione sistemi collegati.

EN

Control panel according to Ford and GM North America standards. Made up of aluminium base. Gauge, charging and discharging valve, 9/16-18 UNF ORFS adapter, over pressure rupture plug and steel protection. 3 ports G1/8".

DE

Kontrollarmatur gem. Ford und GM North America Normen. Aufgebaut auf Aluminiumsockel. Manometer, Auffüll- und Ablassventil, 9/16-18 UNF ORFS Adapter, Überdruck Bruch Stecker und Stahlabdeckung. 3 G1/8" Anschlüsse.

FR

Panneau de contrôle selon les standards Ford et GM, Amérique du Nord, base en aluminium. Manomètre, valve de chargement et déchargement, adaptateur 9/16-18 UNF ORFS, Bouchon de rupture de surpression et protection acier, 3 ports G1/8".

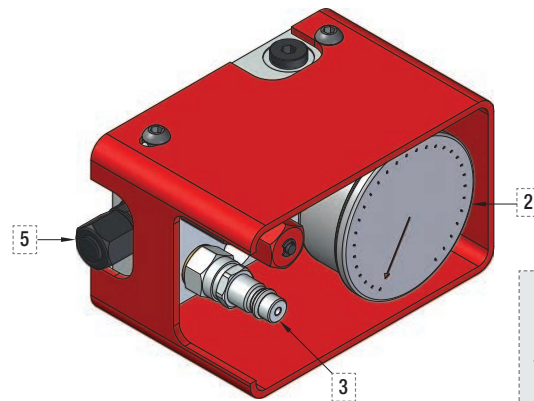
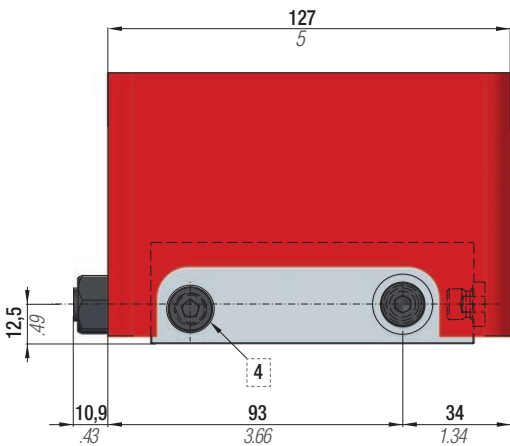
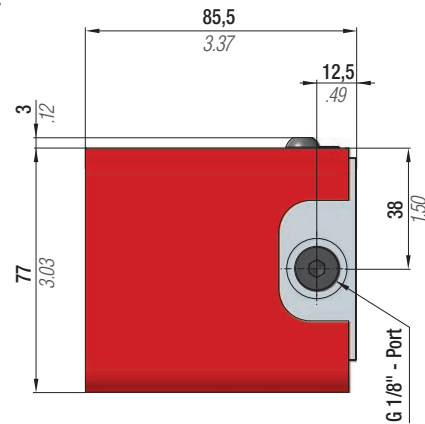
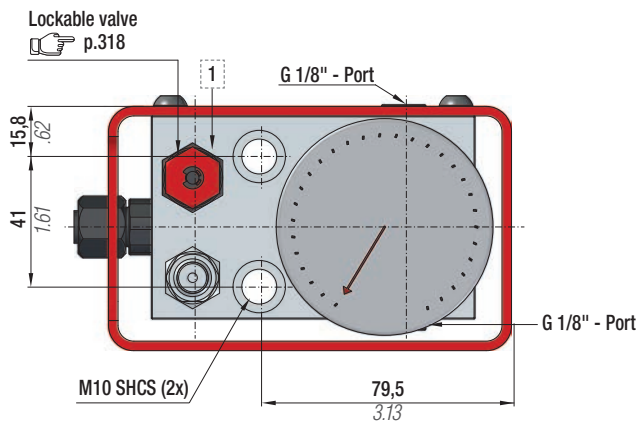
ES

Panel de control según standard Ford y GM Norte America. Base de aluminio con manómetro, válvula de carga y descarga, adaptador 9/16-18 UNF ORFS, Enchufe de ruptura de sobre presión y protección en acero. 3 salidas G1/8" para sistemas de cilindros conectados.

PT

Painel de controlo de acordo com os Standards Ford e GM América do Norte. Fabricado a partir de uma base de alumínio, manómetro, válvula de carga e descarga, adaptador ORFS 9/16-18 UNF, Plugue ruptura sobre pressão e protecção em aço. 3 saídas G1/8" para sistemas de gestão relacionados.

| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|---------|----------------|--------------|---------------|
| 39CP02A | bar/psi | ✓ | ✗ |
| 39CP08A | bar/MPa | ✓ | ✗ |
| 39CP11A | bar/psi | ✗ | ✗ |



1 Valvola di scarico
Discharging valve
Auslaßventil
Valve de déchargement
Válvula de desahogo
Válvula de descarga

| | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | 3 Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobre presión Plugue ruptura sobre pressão | 5 Adattatore tenuta frontale 9/16-18 UNF O-Ring Face Seal Adapter 9/16-18 UNF O-ring-Dichtung Adapter 9/16-18 UNF Joint torique adaptateur 9/16-18 UNF O-ring face seal adapter 9/16-18 UNF Adaptador de vedação frontal 9/16-18 UNF |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

IT

Pannello di controllo con base in alluminio, provvi manometro con valvola di intercettazione, valvola di caricamento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, 9 uscite da G1/4" per gestione sistemi collegati. La valvola di intercettazione protegge il manometro dalla pressione pulsante durante il funzionamento. Per controllare e regolare la pressione dell'impianto bisogna aprire la valvola di intercettazione del manometro.

EN

Control panel with aluminium base, gauge with shut-off valve, charging and discharging valve, over pressure rupture plug, steel protection. 9 G1/4" ports for hose systems managing. With shut-off valve closed the gauge is protected from pulsating pressure during operation. For checking and adjusting the pressure the interception valve on the gauge must be opened.

DE

Kontrollarmatur mit Aluminiumsockel, Manometer mit Sperrventil, Auffüll- und Ablassventil, Überdruck Bruch Stecker und Stahlabdeckung. 9 G1/4" Anschlüsse zur Steuerung der Verbundsysteme. Das Schließen des Manometers mit dem Sperrventil schützt vor Druckschwankungen während des Arbeitsgangs. Zum Prüfen und Einstellen des Drucks muss das Sperrventil am Manometer geöffnet sein.

FR

Panneau de contrôle avec embase aluminium, équipé de manomètre à valve d'arrêt, valve de chargement et déchargement, bouchon de rupture de surpression et protection acier. Ports 9 G1/4" pour gestion de la connectique. Lorsque la valve d'arrêt est fermée, le manomètre est protégé des vibrations dues à la pression durant les opérations. Pour contrôler et ajuster la pression, il convient d'ouvrir la valve d'interception au niveau du manomètre.

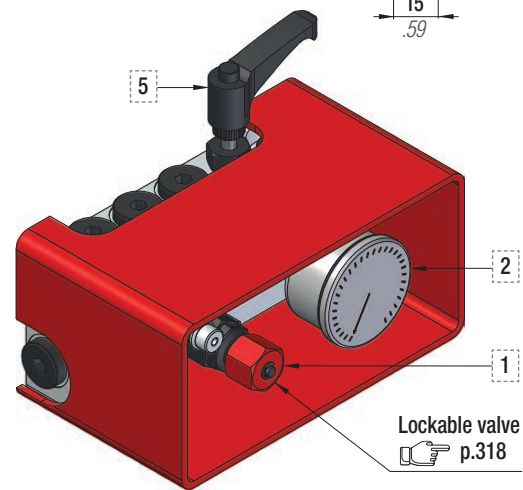
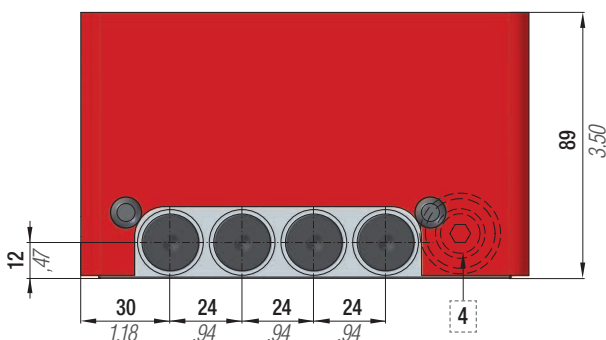
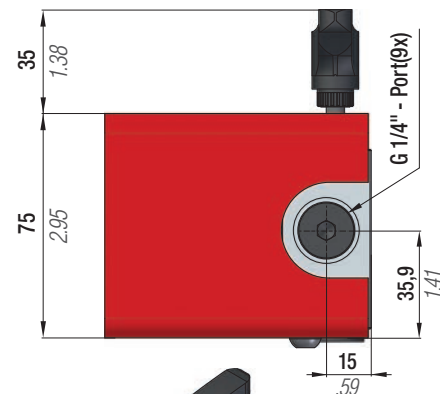
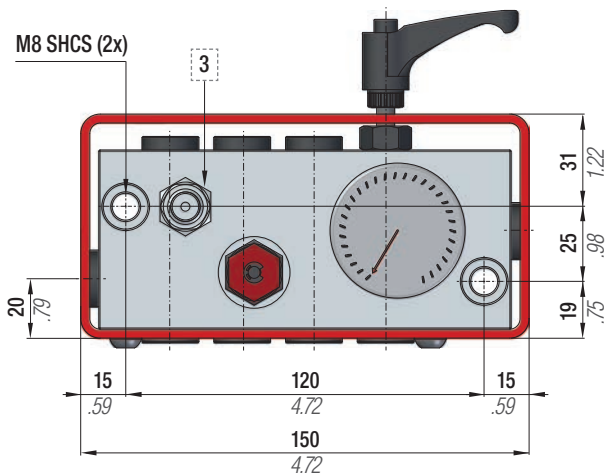
ES

Panel de control con base de aluminio, manómetro con válvula de interceptación (shut-off valve), válvula de carga y descarga, enchufe de ruptura de sobrepresión protección en acero. 9 salidas G1/4" para gestión de sistemas interconectados. Con válvula de interceptación cerrada el manómetro está protegido desde el pico de presión durante un funcionamiento normal. Para controlar y regular la presión abrir la válvula de interceptación del manómetro.

PT

Painel de Controlo com base em alumínio, manómetro com válvula de obturação, plugue ruptura sobrepresão e protecção em aço. 9 furos* G1/4" para uso de sistemas de mangueiras. Com a válvula de obturação fechada fica protegido das pressões existentes durante a operação. Para verificar e ajustar a pressão, a válvula de intercepção no manómetro tem que estar aberta.

| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|---------|----------------|--------------|---------------|
| 39CP03A | bar/psi | ✓ | ✗ |



| | | | | | | | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslassventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | 3 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão | 5 | Valvola di intercettazione Shut off valve Sperrventil Valve d'arrêt Válvula de interceptación Válvula de fecho |
|---|---------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------|



CONTROL PANEL CP06A / CP09A



IT
Pannello di controllo con base in alluminio provvisto di sensore di pressione con display digitale, valvola di caricamento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, 2 uscite da 1/8" gas per gestione sistemi collegati. Collegando direttamente il sensore di pressione al controllo pressa è possibile impostare un range di lavoro desiderato al di fuori del quale il dispositivo invierà un segnale di allarme.

EN
Control panel with aluminium base, equipped with pressure sensor with digital display, charging and discharging valve, over pressure rupture plug, steel protection and two 1/8" gas outlets for hose system managing. By connecting directly the pressure sensor with the Press control unit, it is possible to set a desired working range, outside this value, the control unit will send an alarm signal.

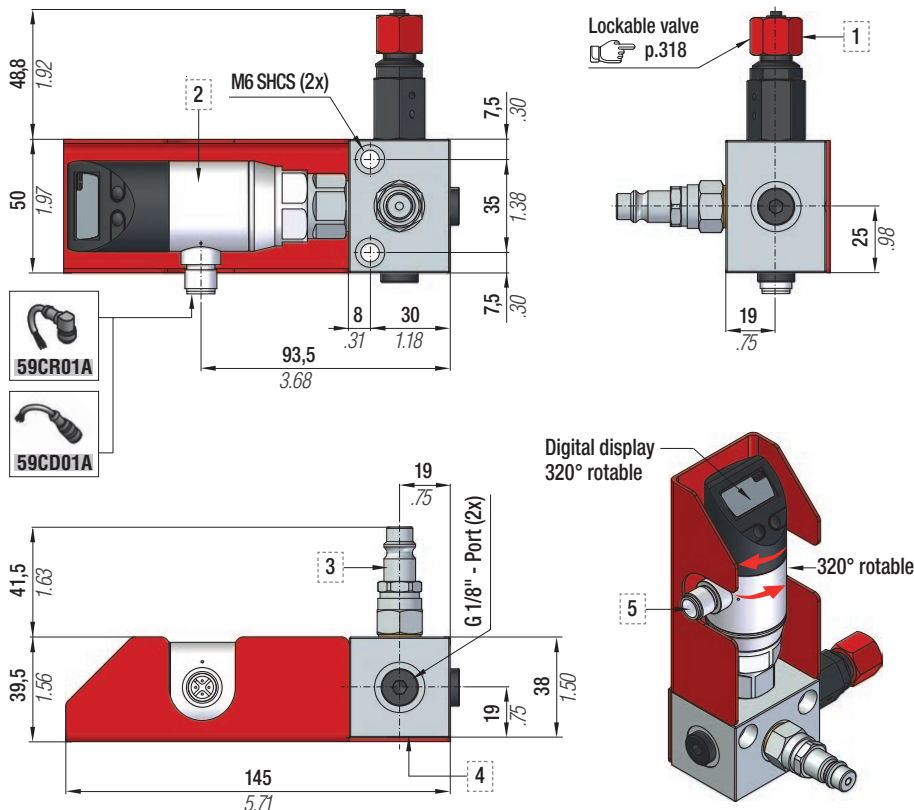
DE
Kontrollarmatur mit Aluminiumsockel, ausgestattet mit Drucksensor aus digitaler Display, auffüll- und Ablassventil, Überdruck Bruch Stecker, Stahlabdeckung und zwei 1/8" Anschlüsse zur Steuerung der Verbundsysteme. Bei der direkten Verbindung des Drucksensors mit Pressesteuerung es ist möglich eine erwünschte Arbeitsreichweite anzulegen, außerhalb diese Wert wird der Steuerung ein Alarm Signal zu senden.

FR
Panneau de contrôle avec embase en aluminium, équipé de senseur de pression à écran numérique, chargement et déchargement valve, Bouchon de rupture de surpression, protection en acier et deux sorties 1/8" gaz pour la gestion des systèmes connectés. En reliant directement le senseur de pression au système de gestion de la presse on peut établir un éventail désiré des valeurs de travail, au dehors de ces valeurs, le dispositif émettra un signal d'alarme.

ES
Panel de control con base de aluminio, provisto de sensor de presión con display digital, válvula de carga y descarga, Enchufe de ruptura de sobrepresión, protección en acero, 2 salidas de 1/8" gas para gestión de sistemas conectados. Conectando directamente el sensor de presión al control de la prensa es posible determinar unos rangos de trabajo, fuera de los cuales el dispositivo envía una señal de alarma.

PT
Painel de controlo com base de alumínio, equipado com sensor de pressão digital, válvula de carga e descarga, Plugue ruptura sobrepresão, sistema de protecção de aço e duas tomadas de 1/8" gas para ligação a mangueiras. ao ligar directamente o sensor de pressão com a unidade de controlo, é possível definir o funcionamento desejado, fora destes valores, a unidade de controlo envia um sinal de alarme.

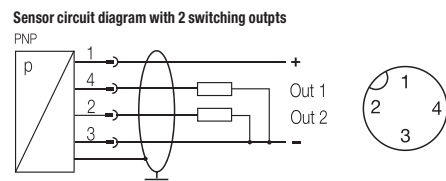
| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|----------------------|----------------|--------------|---------------|
| 39CP06A with 59CD01A | bar/psi | ✓ | ✗ |
| 39CP09A with 59CR01A | bar/psi | ✓ | ✗ |



| Technical data | |
|----------------------------------------------|------------------------|
| Electrical connector type | M12x1 - Male (4-pin) |
| Pressure connection | G 1/4" DIN 3852 |
| Nominal pressure | 0 - 600 bar |
| Burst pressure | 1100 bar |
| Operating voltage U _o | 18...36 V DC |
| Output current max. | 500 mA |
| No-load supply current I _o max | ≤ 50 mA |
| Switching frequency f | 200 Hz |
| Temperature range | - 25°C... + 85°C |
| Degree of protection as per IEC 60529 | IP67 when connected |
| Output: digital data (switching points only) | 2xPNP, NO/NC selection |

Always depressurize and disconnect pressure sensors from the power supply before establishing an electrical connection.

| Electrical connections | Sensors with switching output | Wire connections color |
|------------------------|-------------------------------|------------------------|
| Supply + | 1 | Brown |
| Supply - | 3 | Blue |
| Signal + | - | White |
| Switching output 1 | 4 | Black |
| Switching output 2 | 2 | - |
| Shield | Connector housing | - |



| | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1 Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 Manometro 0÷ 600 bar Pressure gauge 0÷ 600bar Manometer 0÷ 600 bar Manomètre 0÷ 600 bar Manómetro 0÷ 600 bar Manómetro 0÷ 600 bar | 3 Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão | 5 Connettore elettrico Electrical connector Elektrische Connecteur électrique Eléctrica Conector Conector elétrico |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

IT

Pannello di controllo con base in alluminio provvisto di sensore di pressione con display digitale, valvola di caricamento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, 2 uscite da 1/8" gas per gestione sistemi collegati. Collegando direttamente il sensore di pressione al controllo pressa è possibile monitorare in continuo il valore della pressione dell'impianto e gestirlo di conseguenza.

EN

Control panel with aluminium base, equipped with pressure sensor and digital display, charging and discharging valve, overpressure rupture plug, steel protective cover and two G 1/8" ports for managing linked systems. By connecting the pressure sensor to the press control, it is possible to constantly monitor the pressure value of the system and manage it accordingly.

DE

Kontrollarmatur mit Aluminiumgehäuse mit Drucksensor und Digitalanzeige, Befüll- und Ablassventil, Überdruck-Berstsicherung, Schutzabdeckung aus Stahl, zwei G1/8 Anschlussgewinden zur Steuerung von Verbundsystemen. Durch den Anschluss des Drucksensors direkt an die Pressensteuerung ist es möglich, den Druck der Anlage kontinuierlich zu überwachen und entsprechend zu steuern.

FR

Panneau de contrôle avec base en aluminium, équipé d'un capteur de pression et d'un affichage numérique, valve de chargement/déchargement, bouchon de rupture pour surpression, couverture de protection en acier et deux ports G 1/8" pour la gestion des systèmes connectés. En connectant le capteur de pression à la commande de la presse, il est possible de surveiller en permanence la valeur de pression du système et de la gérer en conséquence.

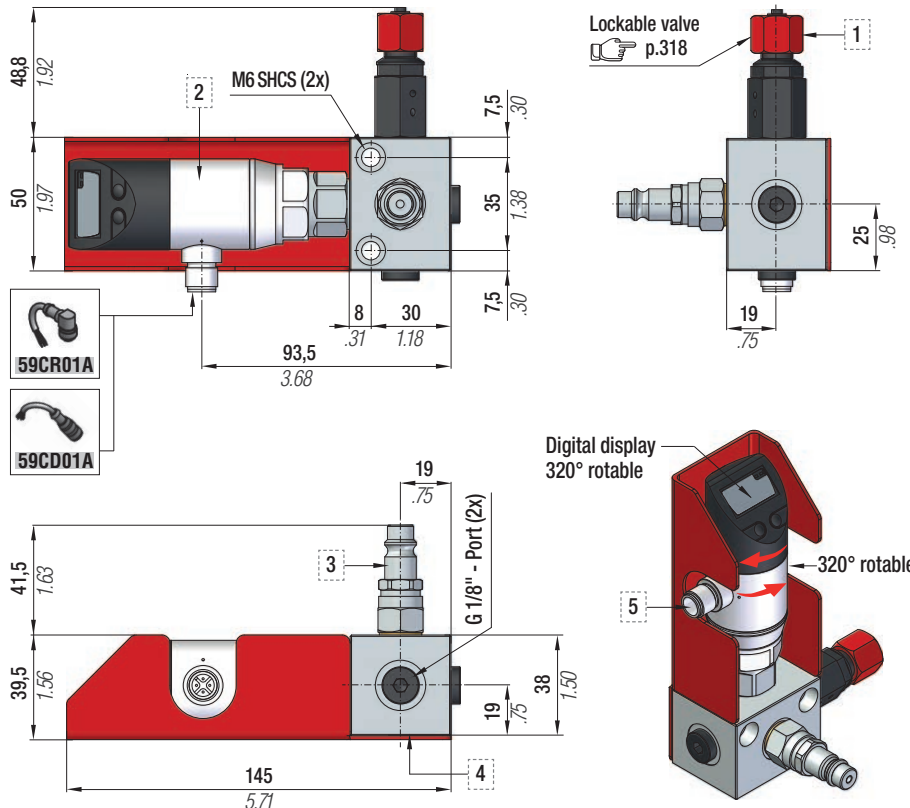
ES

Panel de control con base de aluminio equipado con sensor de presión con pantalla digital, válvula de carga y descarga, tapón de rotura de sobrepresión, protección de acero, 2 salidas G1/8" para administrar los sistemas conectados. Conectando directamente el sensor de presión al control de la prensa, es posible monitorear continuamente el valor de presión del sistema y administrarlo en consecuencia.

PT

Painel de controle com base em alumínio, fornecido com sensor de pressão e display digital, válvula de carregamento e descarregamento, bujão de ruptura para sobre pressão, 2 saídas G1/8" para verificação do sistema. Conectando o painel ao comando da prensa, é possível monitorar continuamente a pressão de trabalho do sistema, monitorando com total segurança o funcionamento.

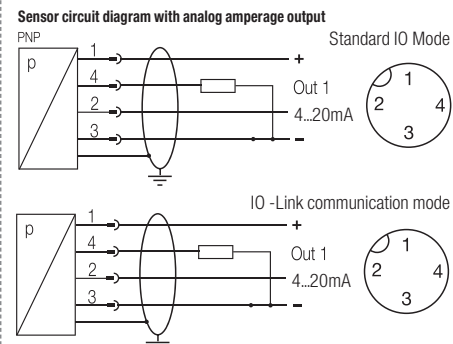
| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|----------------------|----------------|--------------|---------------|
| 39CP20A with 59CD01A | bar/psi | ✓ | ✗ |
| 39CP21A with 59CR01A | bar/psi | ✓ | ✗ |



| Technical data | |
|----------------------------------------------|------------------------|
| Electrical connector type | M12x1 - Male (4-pin) |
| Pressure connection | G 1/4" DIN 3852 |
| Nominal pressure | 0 - 600 bar |
| Burst pressure | 1000 bar |
| Operating voltage U _o | 18...36 V DC |
| Output current max. | 500 mA |
| No-load supply current I _o max | ≤ 50 mA |
| Switching frequency f | 200 Hz |
| Temperature range | - 25°C... + 85°C |
| Degree of protection as per IEC 60529 | IP67 when connected |
| Output: digital data (switching points only) | 2xPNP, NO/NC selection |

Always depressurize and disconnect pressure sensors from the power supply before establishing an electrical connection.

| Electrical connections | Standard IO mode | IO link mode | Wire connections color |
|------------------------|-------------------|-------------------|------------------------|
| Supply + | 1 | 1 | Brown |
| Supply - | 3 | 3 | Blue |
| IO - Link | - | 4 | White |
| Switching output 1 | 4 | - | Black |
| 4...20 mA | 2 | 2 | - |
| Shield | Connector housing | Connector housing | - |



| | | | | | | | | | |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 600 bar Pressure gauge 0÷ 600bar Manometer 0÷ 600 bar Manômetro 0÷ 600 bar Manómetro 0÷ 600 bar | 3 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepressão | 5 | Connettore elettrico Electrical connector Elektrische Connecteur électrique Eléctrica Conector Conector elétrico |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------|

CONTROL PANEL CP07A / CP10A / CP12A



IT

Pannello di controllo con base in alluminio provvisto di manometro, valvola di carica-mento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, 3 uscite da 1/4" gas e un uscita da 1/8" gas per gestione sistemi collegati.

EN

Control panel with aluminium base, equipped with gauge, charging and discharging valve, over pressure rupture plug, steel protection and three 1/4" and one 1/8" gas outlets for hose system managing.

DE

Kontrollarmatur mit Aluminiumsockel, Manometer, auffüll- und Ablassventil, Überdruck Bruch Stecker, Stahlabdeckung, drei 1/4" und eine 1/8" Gas Anschlüsse zur Steuerung der Verbundsysteme.

FR


Panneau de contrôle avec base en aluminium, muni de manomètre, valve de chargement-déchargement, bouchon de rupture de surpression, protection en acier et trois sorties 1/4 gaz et une sortie 1/8 gaz pour la gestion des systèmes connectés.

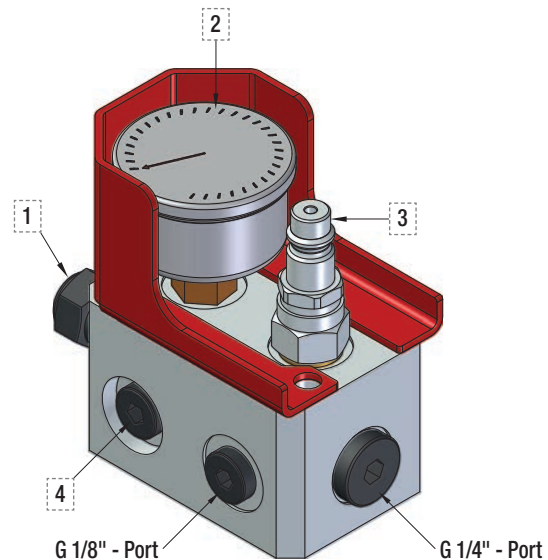
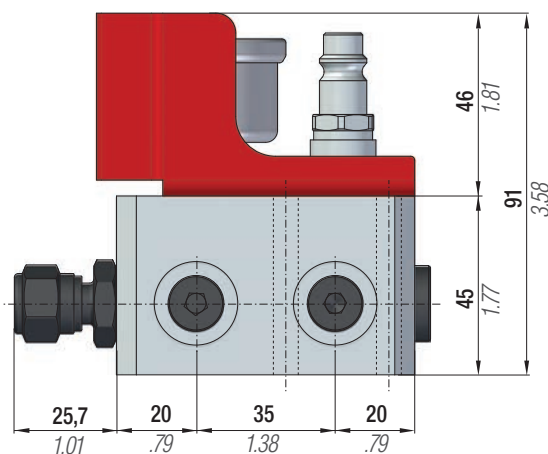
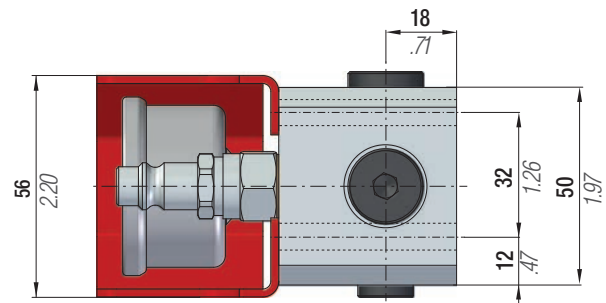
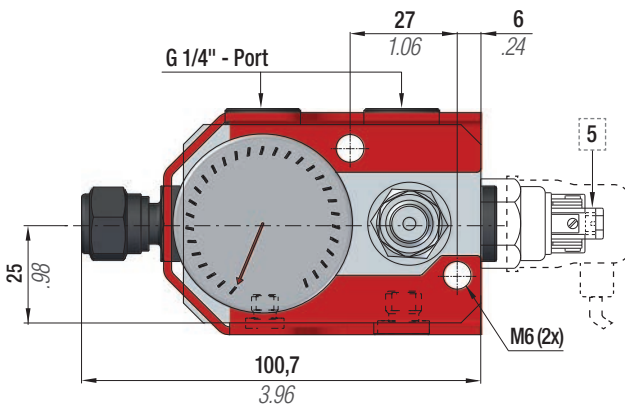
ES

Panel de control con base de aluminio provisto de manómetro, válvula de carga y descarga, enchufe de la ruptura de sobrepresión, protección en acero, 3 salidas de 1/4" gas y 1 salida de 1/8" gas para gestión de sistemas conectados.

PT

Painel de controlo com base de alumínio, equipado com manómetro, válvula de carga e descarga, plugue ruptura sobrepresão, sistema de protecção de aço, três tomadas de 1/4" e uma 1/8" gas para ligação a mangueiras.

| code | Pressure Gauge | Pressure Switch | Rupture Plug | Easy Manifold  p.241 |
|---------|----------------|-----------------|--------------|---------------------------------------------------------------------------------------------------------|
| 39CP07A | bar/psi | X | ✓ | ✓ |
| 39CP10A | bar/psi | ✓ | ✓ | ✓ |
| 39CP12A | bar/psi | X | X | ✓ |



| | | | | | | | | | |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 600 bar Pressure gauge 0÷ 600bar Manometer 0÷ 600 bar Manomètre 0÷ 600 bar Manómetro 0÷ 600 bar Manómetro 0÷ 600 bar | 3 | Innesto rapido di carica-mento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão | 5 | Pressostato 50÷300 bar Pressure switch 50÷300 bar Druckwächter 50÷300 bar Pressostat 50÷300 bar Presostato 50÷300 bar Pressostato 50÷300 bar |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

IT

Pannello di controllo a standard Daimler. Base in alluminio provvisto di manometro, valvola di caricamento e scaricamento, pressostato e protezione in acciaio. 3 uscite 7/16-20UNF per gestione sistemi collegati. Può essere equipaggiato con tappo di rottura sovrappressione.

EN

Control panel according to Daimler standard. Made of aluminium base. Equipped with pressure gauge, charging and discharging valve, pressure switch and steel protection. Three 7/16-20UNF gas outlets for managing hose system. It can be equipped with over pressure rupture plug.

DE

Kontrollarmatur nach Daimler-Norm. Aufgebaut auf Aluminiumsockel. Manometer, Auffüll- und Ablassventil, Druckwächter und Stahlabdeckung. Drei 7/16-20UNF Gas Anschlüsse zur Steuerung der Verbundsysteme. Es kann mit Überdruck Bruch Stecker ausgestattet werden.

FR


Panneau de contrôle selon le standard Daimler. Avec base en aluminium, manomètre, valve de chargement-déchargement, pressostat et protection en acier. Trois sorties 7/16-20UNF gaz pour la gestion des systèmes connectés. Il peut être équipé avec bouchon de rupture de surpression.

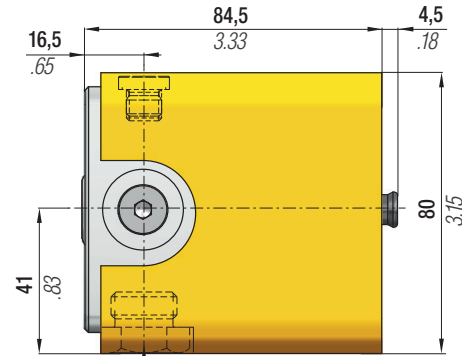
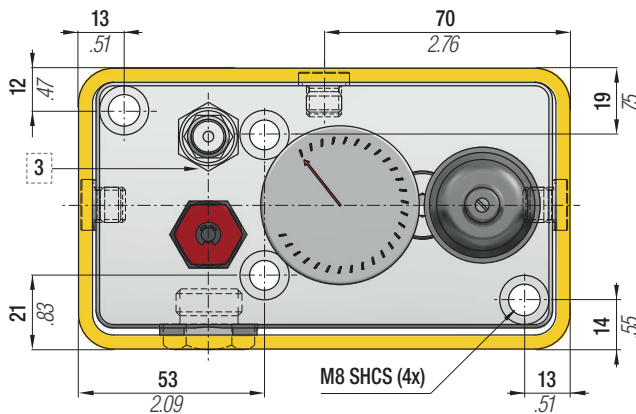
ES

Panel de control según standard Daimler. Con base de aluminio, manómetro, válvula de carga y descarga, presostato y protección en acero. 3 salidas de 7/16-20UNF gas para gestión de sistemas conectados. Puede equiparse con enchufe de la ruptura de sobre presión.

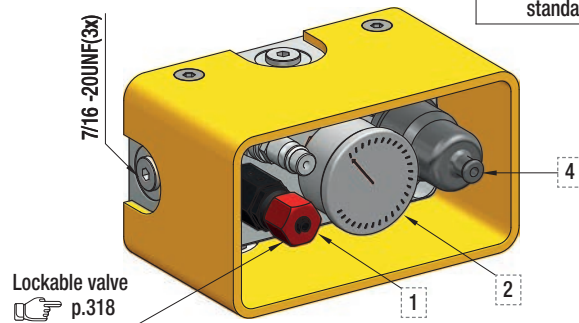
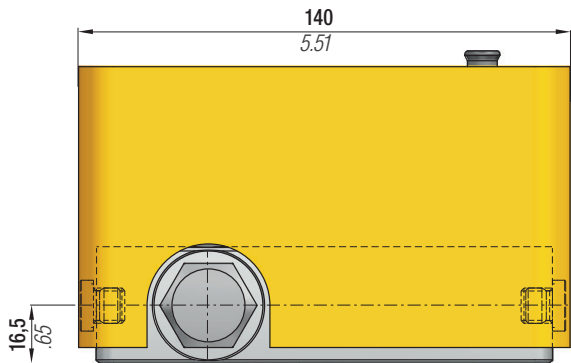
PT

Painel de controlo de acordo com o Standard Daimler. Fabricado a partir de uma base de alumínio. Equipado com manómetro, válvula de carga e descarga, pressostato e sistema de protecção de aço. Três saída de gás 7/16-20UNF para ligação a mangueiras. Pode ser equipado com plugue ruptura sobrepressão.

| code | Pressure Gauge | Pressure Switch | Rupture Plug | Easy Manifold  p.241 |
|--------------------------|----------------|-----------------|--------------|---------------------------------------------------------------------------------------------------------|
| 39CP14A | bar/psi | ✓ | ✗ | ✓ |
| 39CP14A + 39DR004 | bar/psi | ✓ | ✓ | ✓ |
| 39CP14A + 39TS460 | bar/psi | ✓ | ✓ | ✓ |



| | |
|--------------|--------------|
| code 39TS460 | 5.2 - option |
| code 39DR004 | 5.1 - option |
| standard | 5 |

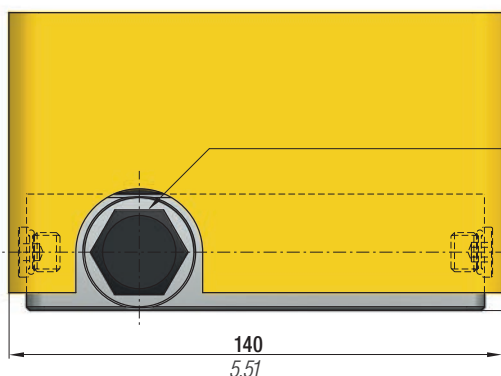
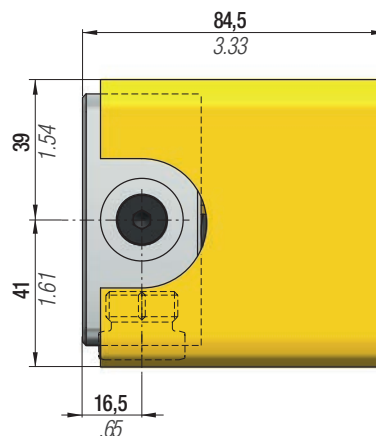
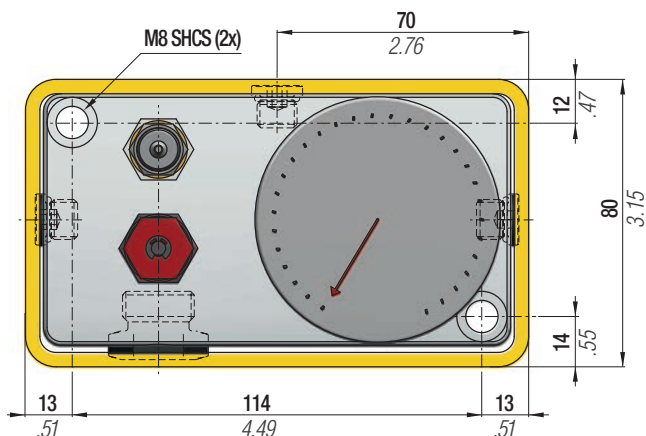


| | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <p>1 Valvola di scarico Discharging valve Auslaßventil Valve de déchargemen Válvula de desahogo Válvula de descarga</p> | <p>2 Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manomèter 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar</p> | <p>3 Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn</p> | <p>4 Pressostato 50÷300 bar Pressure switch 50÷300 bar Druckwächter 50÷300 bar Pressostat 50÷300 bar Presostato 50÷300 bar Pressostato 50÷300 bar</p> | <p>code: 39TS460</p> |
| <p>5 Tappo di chiusura M20 Closing plug M20 Verschlussstopfen M20 Bouchon de fermeture M20 Tapon de cierre M20 Plugue de fechamento M20</p> | <p>5.1 Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de ruptura de sobre presión Plugue ruptura sobrepressão</p> | <p>5.2 Tappo di sicurezza sovrappressione CE Overpressure safety plug CE Überdruck Sicherheitsstecker CE Bouchon de sécurité surpression CE Enchufe de seguridad sobre presión CE Bujão de segurança sobrepressão CE</p> | | |

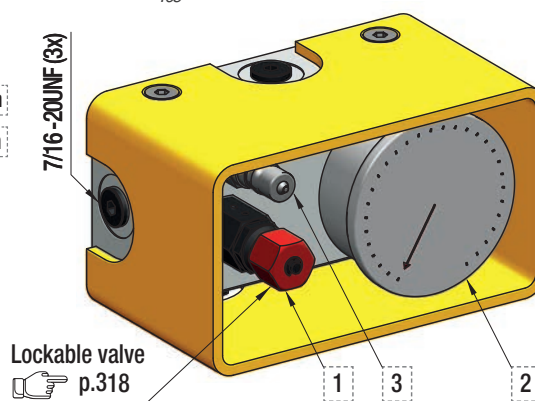
CONTROL PANEL CPVD (Fiat standard)



| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|------------------|----------------|--------------|---------------|
| 39CPVD | bar/psi | ✗ | ✗ |
| 39CPVD + 39DR004 | bar/psi | ✓ | ✗ |
| 39CPVD + 39TS460 | bar/psi | ✓ | ✗ |

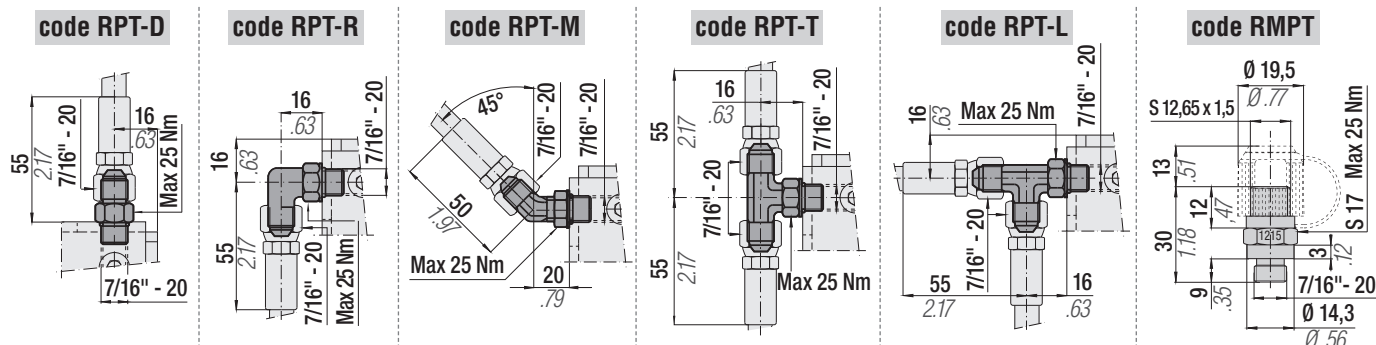


code 39TS460 4.2 - option
code 39DR004 4.1 - option
standard 4



| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <p>1</p> <p>Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga</p> | <p>2</p> <p>Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar</p> | <p>3</p> <p>Innesto rapido per caricamento ISO7241-1 Series B Quick coupling for charging ISO7241-1 Series B Steckkegel ISO7241-1 Series B Accouplement rapide mâle ISO7241-1 Series B Acoplamiento rápido para carga ISO7241-1 Series B União rápida para carregamento ISO7241-1 Series B</p> | <p>code: 39TS460</p> |
| <p>4</p> <p>Tappo di chiusura M20 Closing plug M20 Verschlussstopfen M20 Bouchon de fermeture M20 Tapon de cierre M20 Plugue de fechamento M20</p> | <p>4.1</p> <p>Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de ruptura de sobrepresión Plugue ruptura sobrepresão</p> | <p>4.2</p> <p>Tappo di sicurezza sovrappressione CE Overpressure safety plug CE Überdruck Sicherheitsstecker CE Bouchon de sécurité surpression CE Enchufe de seguridad sobrepresion CE Bujão de segurança sobrepresão CE</p> | |

CONTROL PANEL CPVD (FIAT standard) - Hose connections



IT

Pannello di controllo con base in alluminio, provvisto di manometro, valvola di carica e protezione in acciaio. 2 uscite da 1/8" gas per gestione sistemi collegati.

EN

Control panel with aluminum base. Equipped with pressure gauge, charging valve and steel protection. Two 1/8" gas outlets for managing hose system.

DE

Kontrollarmatur mit Aluminiumsockel. Ausgestattet mit Manometer, Auffüllventil und Stahlabdeckung. Zwei 1/8" Gas-Anschlüsse zur Steuerung der Verbundsysteme.

FR

Panneau de contrôle avec base en aluminium. Equipé de manomètre, valve de chargement et protection en acier. Deux sorties 1/8" gaz pour la gestion des systèmes connectés.

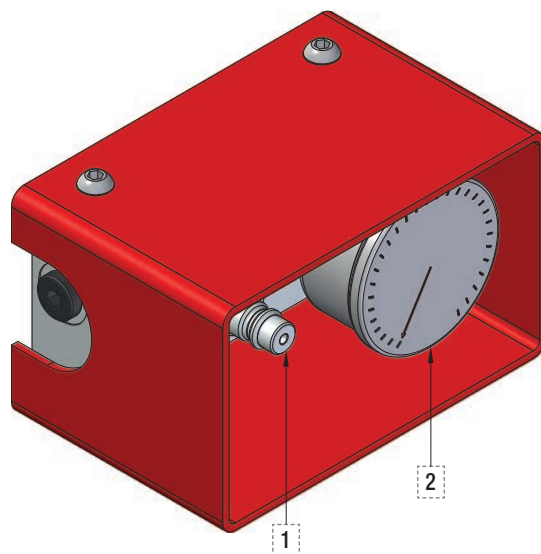
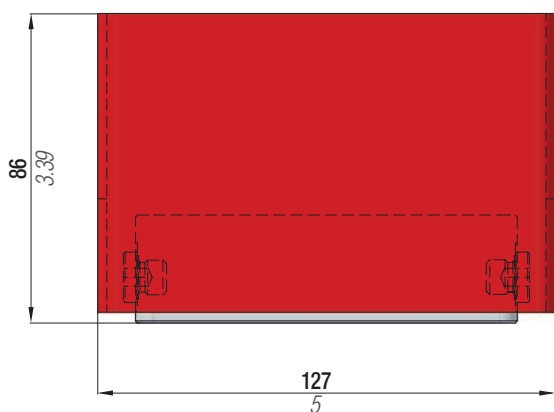
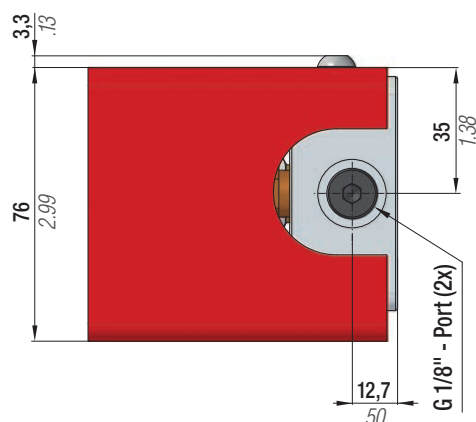
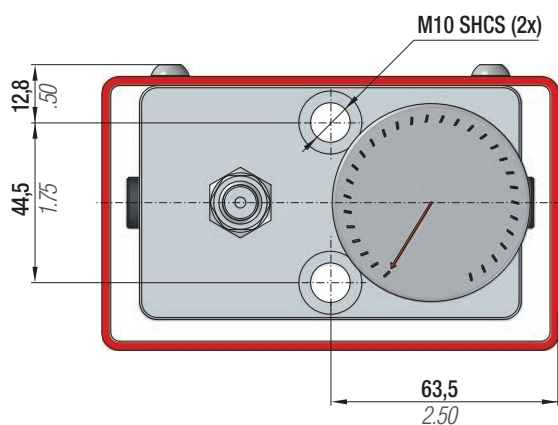
ES

Panel de control con base de aluminio. Equipado con manómetro, válvula de carga y protección en acero. 2 salidas de 1/8" gas para gestión de sistemas conectados.

PT

Painel de controlo com base de alumínio. Equipado com manómetro, válvula de carga e sistema de protecção de aço. Duas saídas de gás 1/8" para ligação a mangueiras.

| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|---------|----------------|--------------|---------------|
| 39CP15A | bar/MPa | ✗ | ✗ |



| | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accoplament rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷ 620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|

code 39VS03A



⚠ Use only for 39CP15A

IT Dispositivo di scaricamento

EN Discharging device

DE Ablassvorrichtung

FR Dispositif de déchargement

ES Dispositivo de descarga

PT Dispositivo de descarga



CONTROL PANEL CP16A



IT

Pannello di controllo con base in alluminio, provvisto di manometro, valvola di caricamento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, 3 uscite da 1/8" gas per gestione sistemi collegati.

EN

Control panel with aluminum base. Equipped with pressure gauge, charging and discharging valve, over pressure rupture plug, steel protection, three 1/8" gas outlets for managing hose system.

DE

Kontrollarmatur mit Aluminiumsockel. Ausgestattet mit Manometer, Auffüll- und Ablassventil, Überdruck Bruch Stecker, Stahlabdeckung, drei 1/8" Gas Anschlüsse zur Steuerung der Verbundsysteme.

FR

Panneau de contrôle avec base en aluminium. Equipé de manomètre, valve de chargement-déchargement, bouchon de rupture de surpression, protection en acier, trois sorties 1/8" gaz pour la gestion des systèmes connectés.

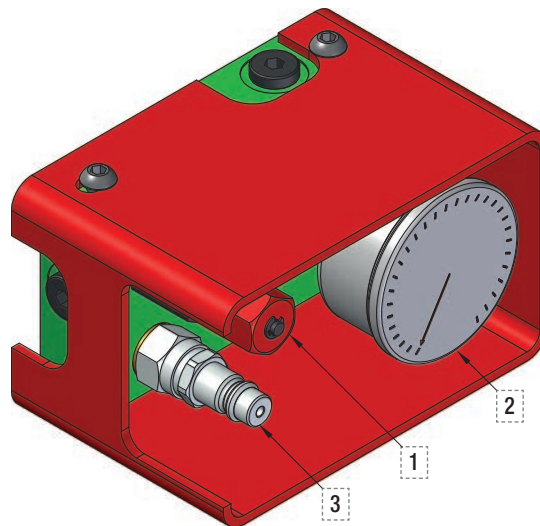
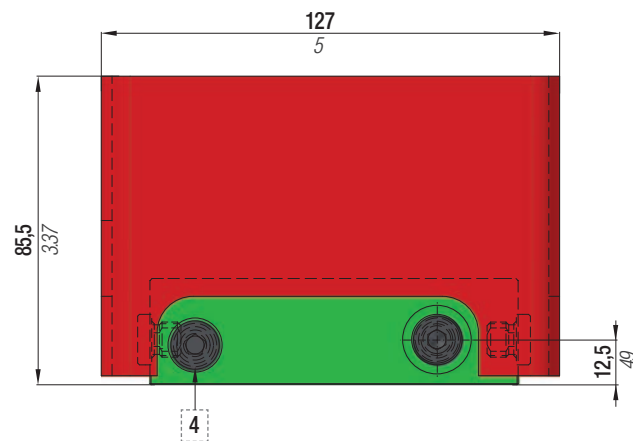
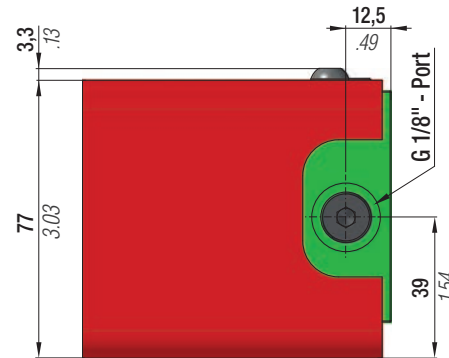
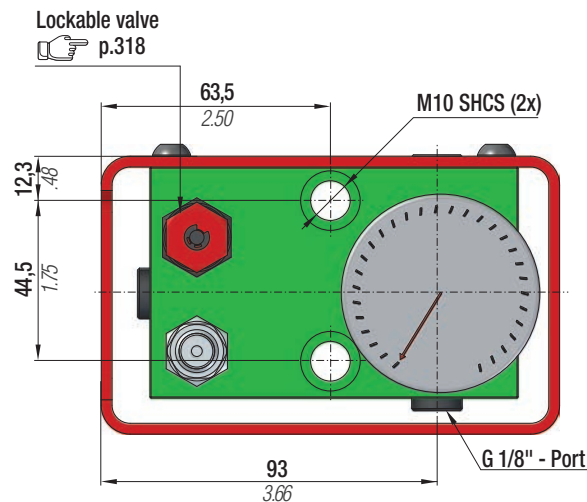
ES

Panel de control con base de aluminio. Equipado con manómetro, válvula de carga y descarga, enchufe de la ruptura de sobrepresión, protección en acero, 3 salidas de 1/8" gas para gestión de sistemas conectados.

PT

Painel de controlo com base de alumínio. Equipado com manómetro, válvula de carga e descarga, plugue ruptura sobrepresão, sistema de protecção de aço, três saídas de gás 1/8" para ligação a mangueiras.

| code | Pressure Gauge | Rupture Plug | Easy Manifold |
|---------|----------------|--------------|---------------|
| 39CP16A | bar/psi | ✓ | ✗ |



| | | | | | | | |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 | Manometro 0÷ 620 bar Pressure gauge 0÷620 bar Manometer 0÷ 620 bar Manomètre 0÷ 620 bar Manómetro 0÷ 620 bar Manómetro 0÷ 620 bar | 3 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de la ruptura de sobrepresión Plugue ruptura sobrepresão |
|---|--------------------------------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

IT
Pannello di controllo con base in alluminio provvisto di sensore di pressione con display digitale, innesto rapido di caricamento Cejn, tappo di rottura sovrappressione, 3 uscite da 1/8" gas. Collegando il pannello al controllo pressa, è possibile impostare un range di lavoro desiderato al di fuori del quale il dispositivo invierà un segnale di allarme.

EN
Control panel with aluminium base, equipped with pressure sensor and digital display, Cejn-quick coupling for charging, overpressure rupture plug and three G 1/8" ports. By connecting the control panel to the press control, it is possible to set a desired working range outside which the unit sends an alarm signal.

DE
Kontrollarmatur mit Aluminiumgehäuse mit Drucksensor und Digitalanzeige, Cejn-Schnelkuppung zur Befüllung, Überdruck-Berstsicherung und drei G1/8 Anschlussgewinden. Durch den Anschluss der Kontrollarmatur an die Pressensteuerung ist es möglich, einen gewünschten Arbeitsbereich einzustellen, außerhalb dessen das Gerät ein Alarmsignal sendet.

FR
Panneau de contrôle avec base en aluminium, équipé d'un capteur de pression et d'un affichage numérique, raccord rapide Cejn pour le chargement, bouchon de rupture pour surpression et trois ports G 1/8". En connectant le panneau de contrôle au système de contrôle de la presse, il est possible de définir une plage de fonctionnement souhaitée en dehors de laquelle l'unité envoie un signal d'alarme.

ES
Panel de control con base de aluminio equipado con sensor de presión con pantalla digital, conexión de carga rápida Cejn, tapón de rotura de sobre presión, 3 salidas G1/8". Conectando el panel al control de la prensa, es posible establecer un rango de trabajo deseado fuera del cual el dispositivo enviará una señal de alarma.

PT
Painel de controle com base em alumínio, fornecido com sensor de pressão e display digital, engate rápido de carregamento CEJN, bujão de ruptura para sobre pressão, 3 saídas G1/8". Conectando o painel ao comando da prensa, é possível determinar uma faixa de trabalho, que qualquer alteração desta faixa, o painel emitirá um alarme.

| code | Pressure Gauge | Rupture Plug | Easy Manifold | Pressure fitting position | | | |
|----------|----------------|--------------|---------------|---------------------------|--------|--------|------------|
| | | | | Pos. A | Pos. B | Pos. C | Pos. A + C |
| 39CP17A_ | bar/MPa | ✓ | ✗ | .1 | .2 | .3 | .4 |

(Toyota part number D-PACPS-B-...)

Technical drawings of the control panel CP17A showing front, side, and top views with dimensions and labels for ports and connectors.

| Cable length | 90° | Straight | Female |
|--------------|----------|----------|--------|
| 2 meter | 59CR02A1 | 59CD02A1 | |
| 5 meter | 59CR03A1 | 59CD03A1 | |
| 10 meter | 59CR04A1 | 59CD04A1 | |

Connector type M12x1 (5-pin) male – Reverse key (B-Code)

Ordering example:

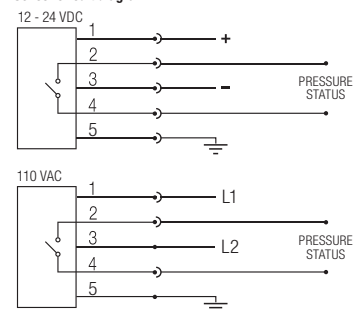
| | | |
|------|------------------|------------------|
| code | 39CP17A.1 | Fitting position |
|------|------------------|------------------|

| Technical data | |
|---------------------------------------|--------------------------------------------|
| Electrical connector type | M12x1 (5-pin) male Reverse key (B-Code) |
| Pressure connection | S12,65x1,5 |
| Nominal pressure | 0 - 350 bar |
| Temperature range | - 20°C... + 60°C |
| Degree of protection as per IEC 60529 | IP65 when connected |
| Supply voltage | 12...24 V DC 100...120 V AC 50...60Hz |
| Max Output relay current (2-4 wire) | 2A 1A |
| Max current | 230mA |

! Always depressurize and disconnect control panel from the power supply before establishing an electrical connection.

| Electrical connections | 12...24 V DC | 100...120 V AC 50...60Hz | Wire connections color |
|------------------------|------------------------------|-----------------------------|------------------------|
| 1 | + | 1 | Brown |
| 3 | - | 3 | Blue |
| 2 | Output relay - Normally Open | | White |
| 4 | | | Black |
| 5 | Ground | | Green / Yellow |

Sensor circuit diagram



| | | | | | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------|
| 1 | Manometro 0÷ 600 bar Pressure gauge 0÷ 600 bar Manometer 0÷ 600 bar Manomètre 0÷ 600 bar Manómetro 0÷ 600 bar Manómetro 0÷ 620 bar | 2 | Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 3 | Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de ruptura de sobre presión Plugue ruptura sobrepressão | 4 | Connettore elettrico Electrical connector Elektrische Connecteur électrique Eléctrica Conector Conector elétrico |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------|



CONTROL PANEL CP23A



IT
Pannello di controllo con base in alluminio provvisto di sensore di pressione EYE, valvola di caricamento e scaricamento, tappo di rottura sovrappressione, protezione in acciaio, innesto rapido di caricamento Cejn e 3 uscite da 1/8" gas per gestione sistemi collegati.

EN
Control panel with aluminium base, equipped with pressure sensor EYE, charging and discharging valve, overpressure rupture plug, steel protective cover, Cejn-quick coupling for charging and three G 1/8" ports for managing linked systems.

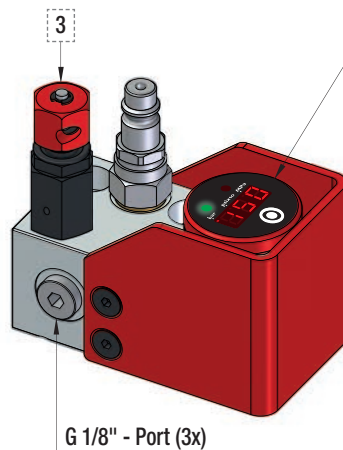
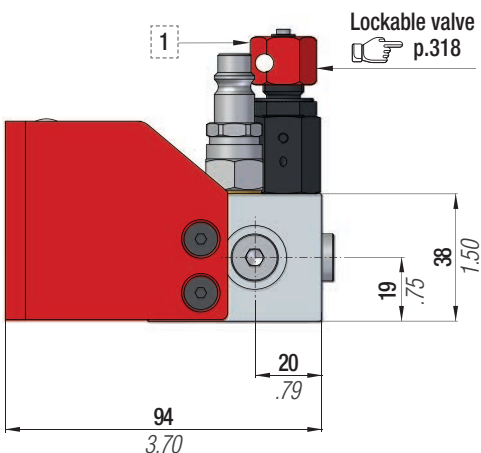
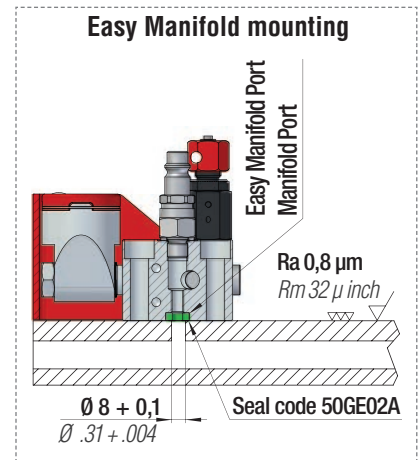
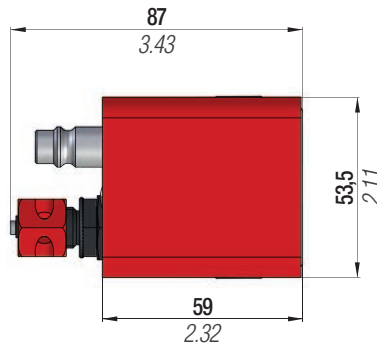
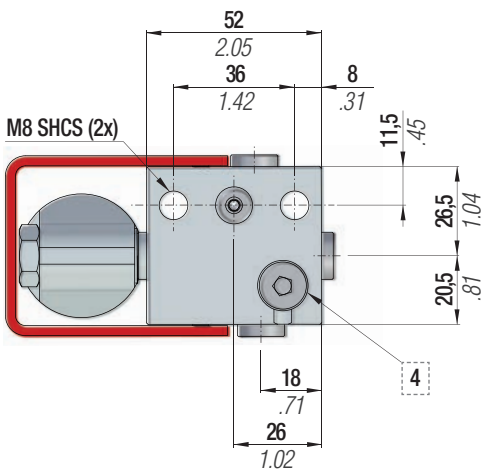
DE
Kontrollarmatur mit Aluminiumgehäuse mit Drucksensor EYE, Befüll- und Ablassventil, Überdruck-Berstsicherung, Schutzabdeckung aus Stahl, Cejn-Schnellkupplung zur Befüllung, und drei G1/8" Anschlussgewinden zur Steuerung von Verbundsystemen.

FR
Panneau de contrôle avec base en aluminium, équipé du capteur de pression EYE, valve de chargement-déchargement, bouchon de rupture pour surpression, couverture de protection en acier, raccord rapide Cejn pour le chargement et trois ports G 1/8" pour la gestion des systèmes connectés.

ES
Panel de control con base de aluminio equipado con sensor de presión EYE, válvula de carga y descarga, tapón de rotura de sobrepresión, protección de acero, acoplamiento rápido Cejn y 3 salidas G1/8" para gestión de sistemas conectados.

PT
Painel de controle com base em alumínio, fornecido com o sensor de pressão EYE, válvula de carregamento e descarregamento, bujão de ruptura para sobrepressão, cobertura protetora em aço, engate rápido de carregamento CEJN e 3 saídas G1/8" para a gestão de sistemas de mangueiras.

| | | | |
|----------------|-----------------------|---------------------|----------------------------|
| code | Pressure Gauge | Rupture Plug | Easy Manifold p.241 |
| 39CP23A | bar/psi/MPa | | |



EYE pressure sensor
 p.332

| Technical data | |
|----------------------|-----------------------------------------------------------------------------------|
| Measuring range | 0 ÷ 600 bar / 8700 psi / 60 MPa |
| Visualization | 3 digit display + 2 led |
| Resolution | 1 bar, 10 psi, 1 MPa |
| Measurement unit | bar, psix10, MPa |
| Accuracy | ±1,0% f.s., ±1 digit whichever is greater |
| Working temperature | 0 ÷ 80°C / 176°F |
| Compatible fluids | Nitrogen |
| Battery | Maxell CR2032-3V, 220mAh |
| Material | Stainless steel/Aluminum alloy |
| Connection | G1/8" |
| Alarms | Low pressure (adjustable), High pressure (fixed), Sensor malfunction, Low battery |
| Battery lifetime | > 2000 readings |
| Degree of protection | IP65 when connected |

| | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Valvola di scarico Discharging valve Auslaßventil Valve de déchargement Válvula de desahogo Válvula de descarga | 2 Sensore di pressione EYE EYE Pressure Sensor Drucksensor EYE Capteur de pression EYE Sensor de presión EYE Sensor de pressão EYE | 3 Innesto rapido di caricamento Cejn Quick coupling for charging Cejn Steckkegel Cejn Accouplement rapide mâle Cejn Acoplamiento rápido para carga Cejn União rápida para carregamento Cejn | 4 Tappo di rottura sovrappressione Over pressure rupture plug Überdruck Bruch Stecker Bouchon de rupture de surpression Enchufe de ruptura de sobrepresión Plugue ruptura sobrepressão |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



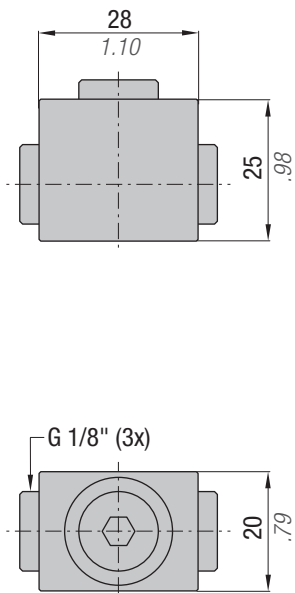
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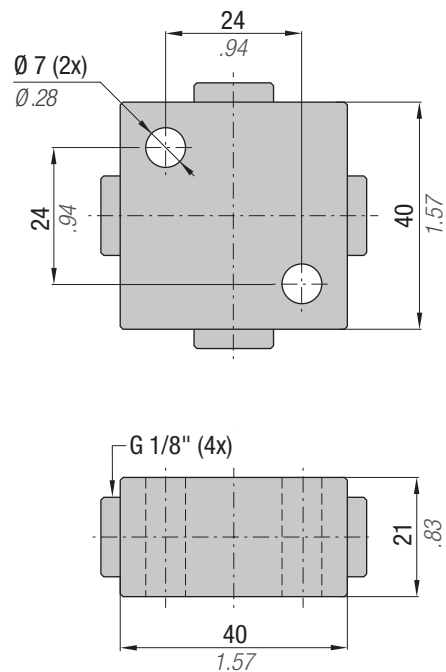
DISTRIBUTION BLOCKS



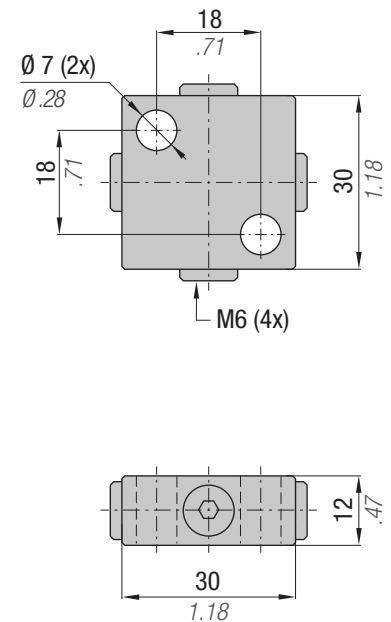
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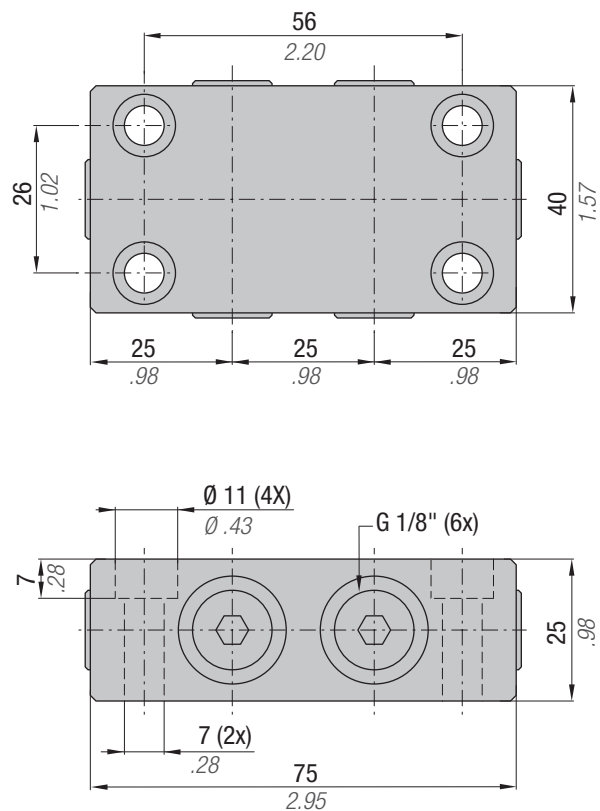
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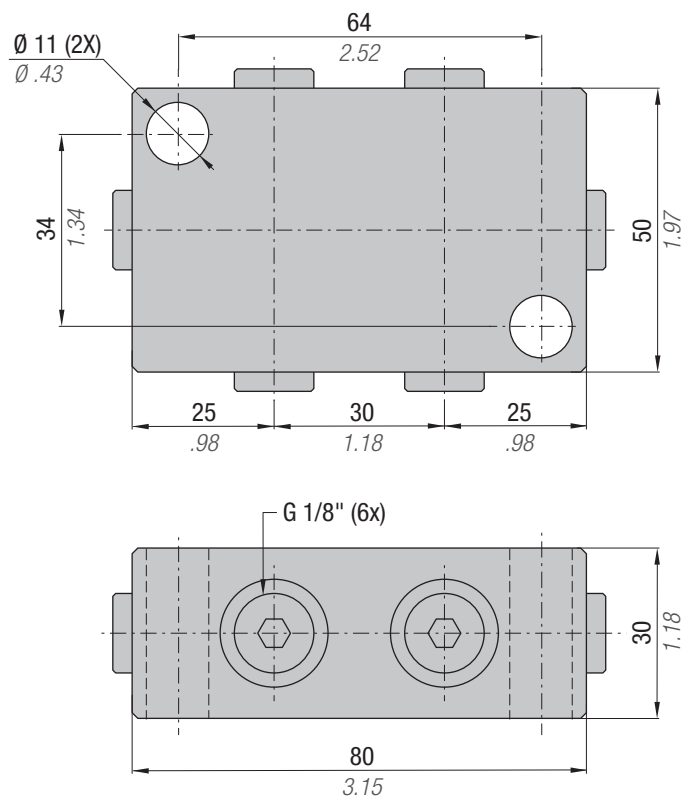
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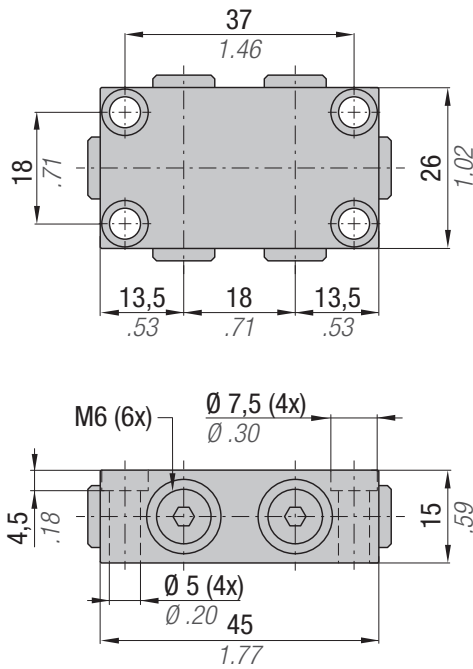
code 39BD06A



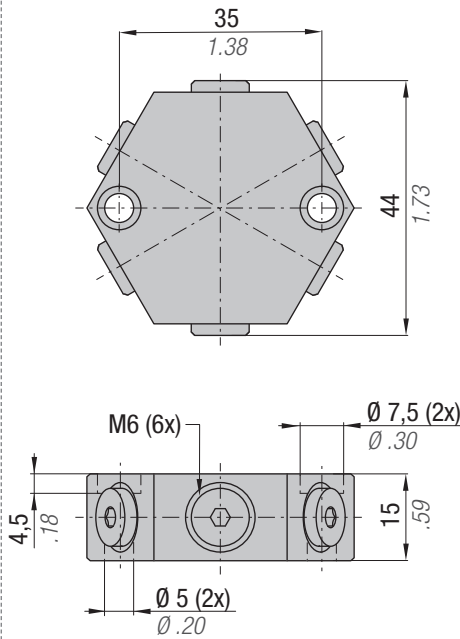
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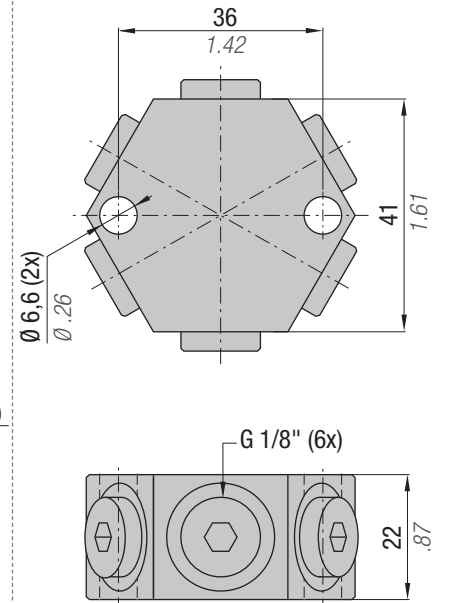
code 39BD06/1



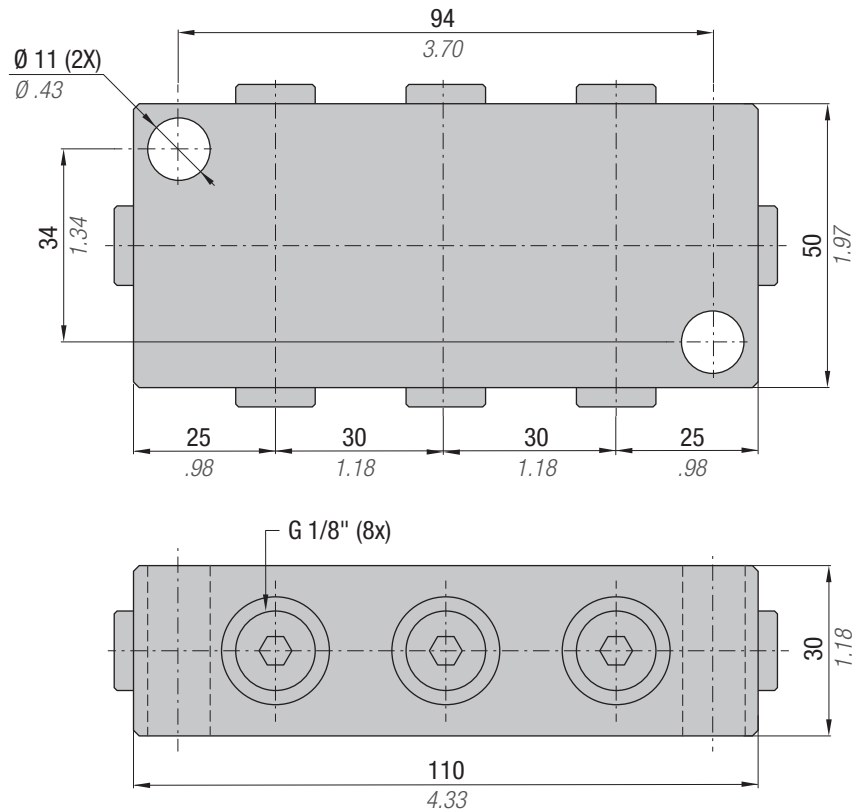
code 39BD06/2



code 39BD0603A



code 39BD0801A



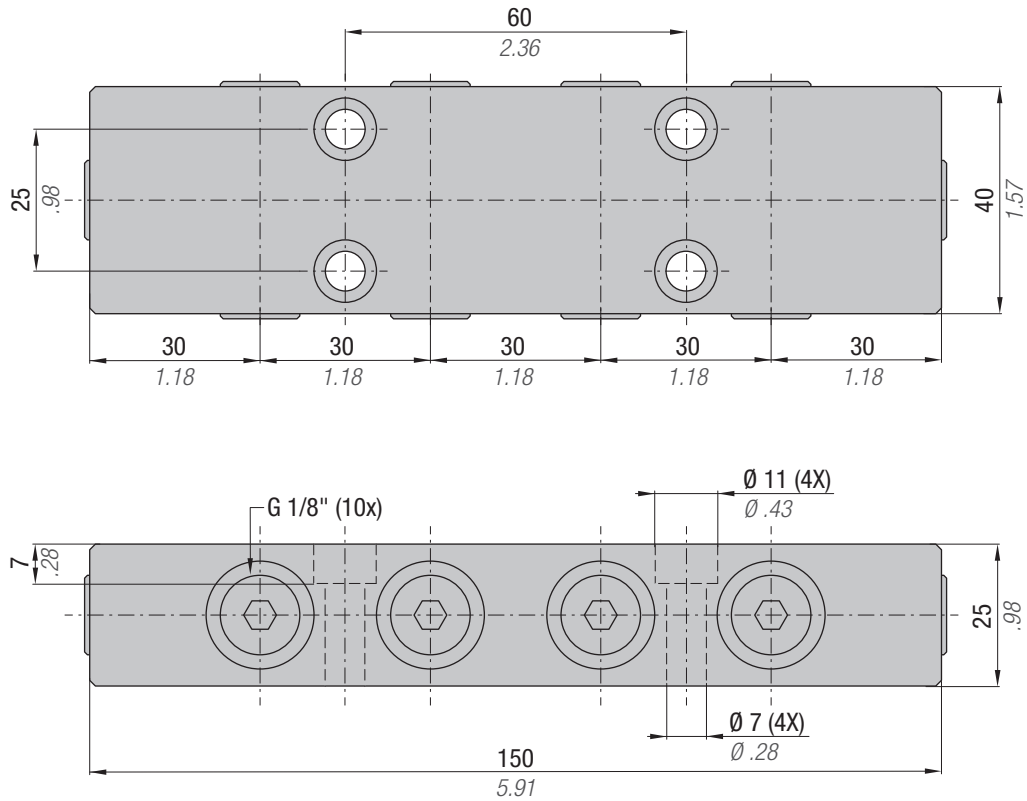
All dimensions in mm/inch



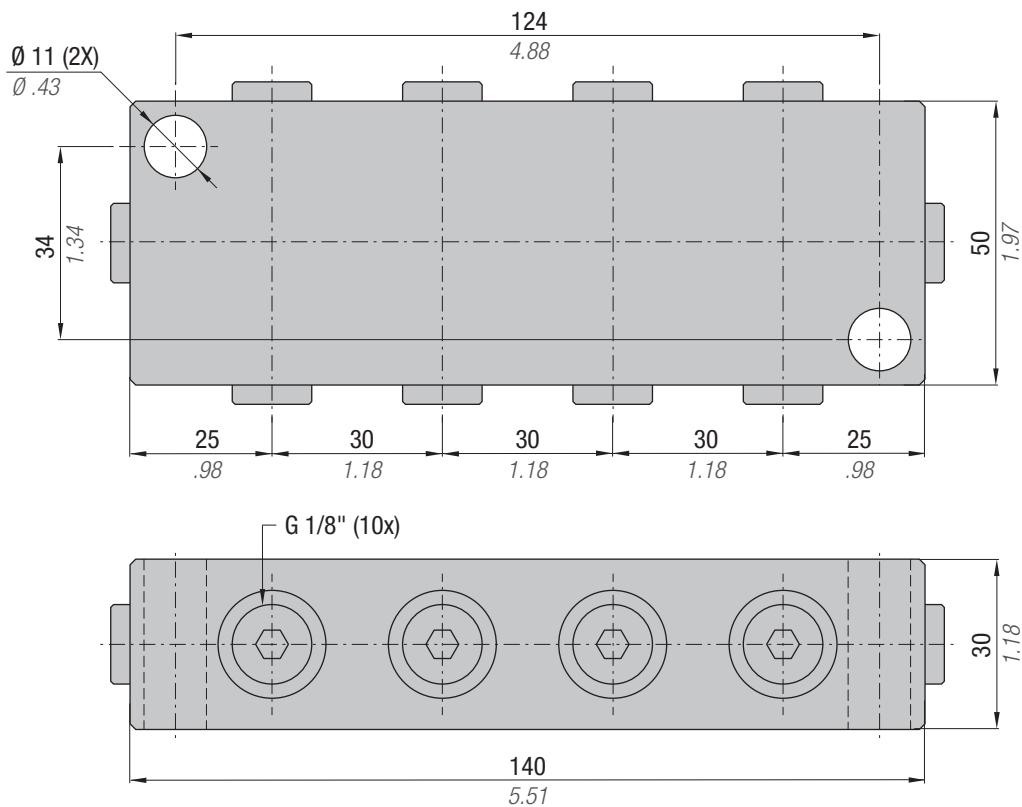
DISTRIBUTION BLOCKS



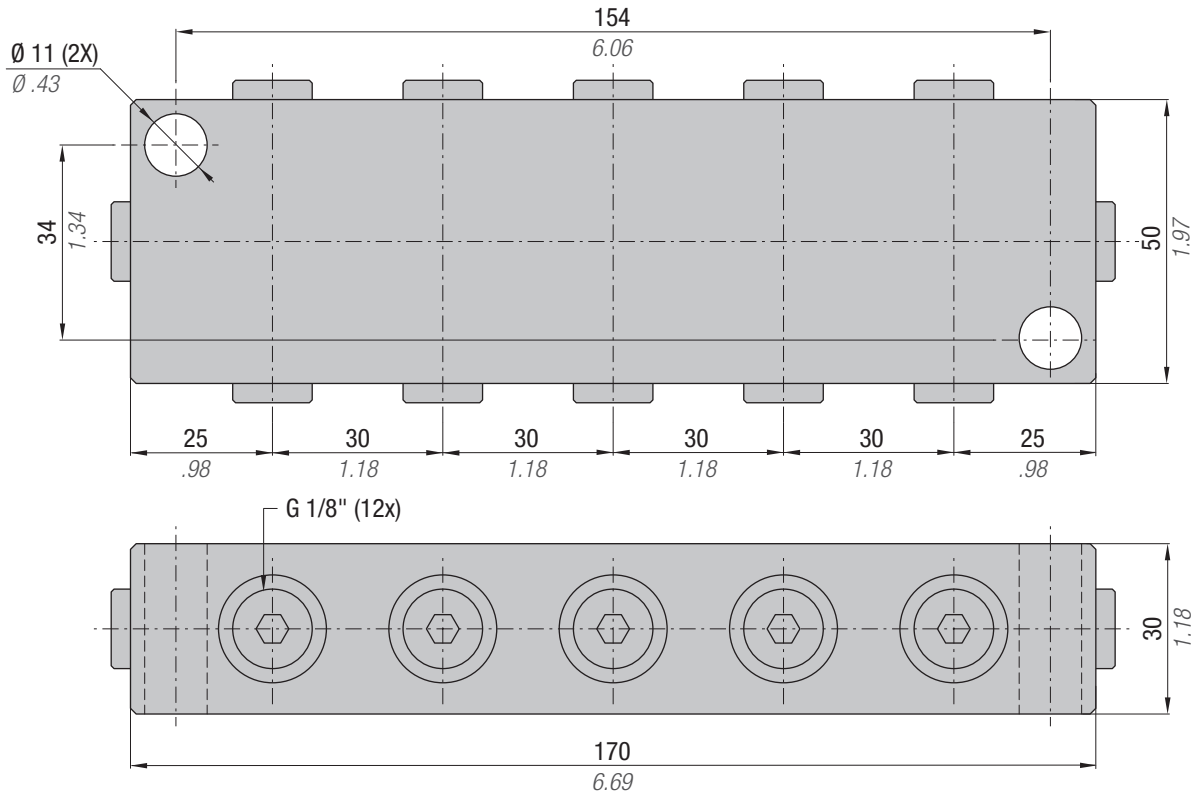
code 39BD10A



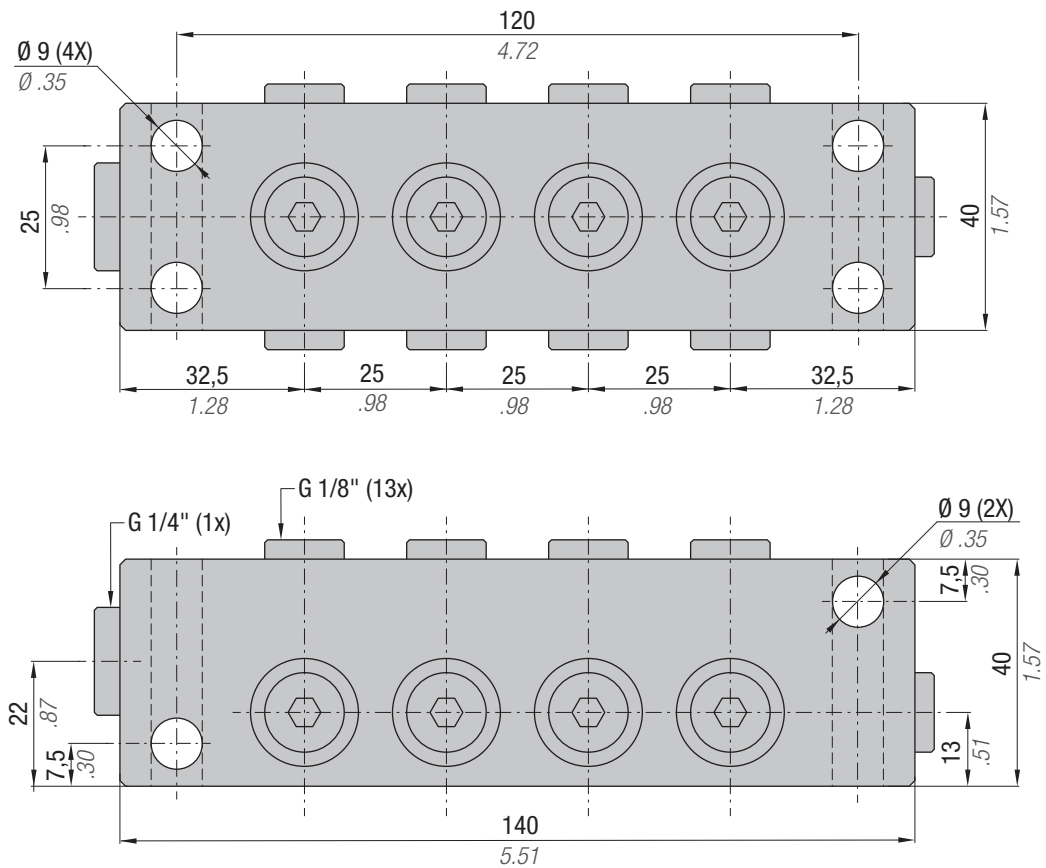
code 39BD1001A



code 39BD1201A



code 39BD1401A



All dimensions in mm/inch



IT Nel modo di funzionamento non autonomo i cilindri possono essere collegati ad un polmone di compensazione esterno. Lo scopo principale è contenere l'aumento di pressione nel sistema entro limiti prefissati e minori rispetto al normale incremento dato dalla compressione degli steli-pistoni. La determinazione del volume di compensazione richiesto è facilmente calcolabile applicando la seguente formula:

$$V_p = n \cdot \{[S \cdot x \cdot R / (R-1)] - V_0\}$$

V_p = volume del polmone [cm³]

n = numero di cilindri componenti il sistema

S = sezione dello stelo (pistone per serie KE)
di ogni singolo cilindro [cm²]

x = corsa effettiva di lavoro [cm]

R = rapporto tra pressione finale ed iniziale del sistema [max 1,4]

V_0 = volume iniziale di ogni singolo cilindro [cm³]

Esempio:

Forza richiesta ~6000 daN ed $R=1,1$ (10%). Si scelgono n. 4 SC1500-50 (oppure n. 2 SC3000-50) Il volume richiesto è di circa 1300 cm³ e quindi la scelta sarà per il polmone tipo PC-3. Un eventuale maggior volume del polmone non è un problema. Inoltre possono essere collegati tra loro più polmoni di compensazione per ottenere volumi più prossimi a quelli richiesti

EN Gas cylinders operating in non self-contained mode may be connected to a compensation tank. The principal aim is to limit the pressure within the system to a lower figure than would normally be obtained with standard compression rates. The compensation tank volume may be easily found using the following formula:

$$V_p = n \cdot \{[S \cdot x \cdot R / (R-1)] - V_0\}$$

V_p = compensation volume [cm³]

n = no. of gas cylinders required.

S = Area of rod (piston for series KE) in [cm²]

x = effective working stroke in [cm]

R = Ratio between final required pressure and initial pressure of the system [max 1,4]

V_0 = Initial volume of each cylinder in [cm³]

Example:

Force required ~6000 daN and $R = 1,1$ (10%). No. of cylinders = 4 Type SC1500-50 (or 2 Type SC3000-50). The compensation volume required is approximately 1300 cm³. Therefore, the compensation tank required will be type PC-3. Extra volume in the tank is generally not a problem, and to obtain more accurate volume, extra tanks may be connected in the system

DE Im gesteuerten Funktionsmodus können die Zylinder an einen Ausgleichspeicher angeschlossen werden. Hauptzweck ist es, den Druckaufbau im System innerhalb der vorgegebenen Grezwerte und unter der zulässigen Zunahme durch den Druck der Kolbenstangen zu halten. Die Bestimmung des notwendigen Ausgleichsvolumens kann mit folgender Formel leicht errechnet werden:

$$V_p = n \cdot \{[S \cdot x \cdot R / (R-1)] - V_0\}$$

V_p = Speichervolumen [cm³]

n = Anzahl der Zylinder im System

S = Stangenquerschnitt (Kolben für Serie KE)
jedes einzelnen Zylinders [cm²]

x = tatsächlicher Arbeitshub [cm]

R = Verhältnis zwischen Anfangs- und Enddruck des Systems [max 1,4]

V_0 = Anfangsvolumen jedes einzelnen Zylinders [cm³]

Beispiel:

Benötigte Kraft ca. 6000 daN, $R = 1,1$ (10%) Nr. 4 SC1500-50 (oder Nr. 2 SC3000-50) Das benötigte Volumen beträgt ca. 1300 cm³, die Wahl des Speichers fällt daher auf den Typ PC-3. Auch ein eventuelles höheres Speicher volumen stellt kein Problem dar. Außerdem können mehrere Ausgleichspeicher aneinander geschlossen werden, um die benötigten Volumina zu erhalten

FR Dans le mode de fonctionnement non autonome, les vérins peuvent être reliés à un réservoir de compensation.

L'objectif principal est de contenir l'élévation de la pression, dans le système, dans les limites préétablies et inférieures par rapport à l'augmentation normale provoquée par la compression des tiges-pistons.

La détermination du volume de compensation requis se calcule facilement en utilisant la formule suivante:

$$V_p = n \cdot \{[S \cdot x \cdot R / (R-1)] - V_0\}$$

V_p = volume du réservoir [cm³]

n = nombre de vérins composant le système

S = section de la tige (piston pour série KE)
de chaque vérin [cm²]

x = course réelle de travail [cm]

R = rapport entre pression finale et initiale du système [max 1,4]

V_0 = volume initial de chaque vérin [cm³]

Exemple:

Force requise env. 6000 daN et $R = 1,1$ (10%) 4 SC1500-50 (ou bien 2 SC3000-50) Le volume requis est d'environ 1300 cm³ et le choix se portera donc sur le réservoir de type PC-3. A noter qu'un plus grand volume éventuel du réservoir ne représente pas un problème. De plus, les réservoirs peuvent être couplés pour obtenir les volumes voisinant ceux requis.

ES Los cilindros de gas en funcionamiento no autónomo pueden conectarse a un pulmón de compensación. El objetivo principal es limitar la presión del sistema, reduciéndola a un valor menor que el que normalmente se obtendría con tasas de compresión standard. El volumen del pulmón de compensación puede calcularse fácilmente mediante la siguiente fórmula:

$$V_p = n \cdot \{ [S \cdot x \cdot R / (R-1)] - V_0 \}$$

V_p = volumen de compensación [cm³]
 n = nº de cilindros de gas necesarios.
 S = Área del vástago (pistón en la serie KE) en [cm²]
 x = carrera efectiva en [cm]
 R = Cociente entre la presión final necesaria y la presión inicial del sistema max 1,4
 V_0 = Volumen inicial de cada cilindro en [cm³]

Ejemplo:

Fuerza necesaria ~6000 daN y $R = 1,1$ (10%).

Nº de cilindros = 4 Tipo SC1500-50 (ó 2 Tipo SC3000-50). El volumen de compensación necesario es de aproximadamente 1300 cm³.

Por lo tanto, el pulmón de compensación será del tipo PC-3. Por lo general, un pulmón con volumen extra no constituye problema. Para obtener un volumen más exacto, puede ser necesario conectar más pulmones al sistema

PT Os cilindros de gás que operam em modo não autónomo podem ser ligados a um depósito de compensação. O principal objectivo é limitar o aumento de pressão dentro do sistema a um valor inferior ao que se obteria normalmente com taxas de compressão normalizadas. O volume do depósito de compensação pode ser facilmente determinado utilizando a fórmula seguinte:

$$V_p = n \cdot \{ [S \cdot x \cdot R / (R-1)] - V_0 \}$$

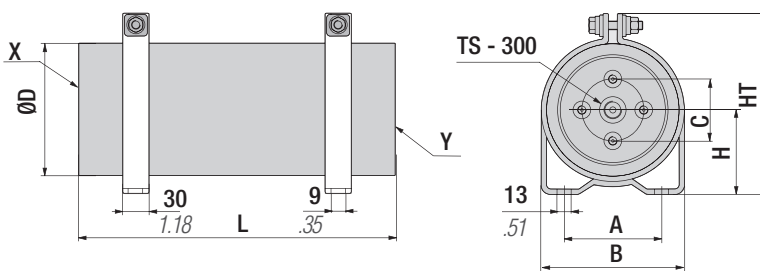
V_p = volume de compensação [cm³]
 n = nº de cilindros de gás necessários.
 S = Área do embolo (pistão para a série KE) em [cm²]
 x = curso de trabalho efectivo em [cm]
 R = Relação entre a pressão final requerida e a pressão inicial do sistema [max 1,4]
 V_0 = Volume inicial de cada cilindro em [cm³]

Exemplo:

Força requerida ~6000 daN e $R = 1,1$ (10%).

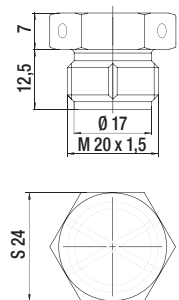
Nº de cilindros = 4 Tipo SC1500-50 (ou 2 Tipo SC3000-50). O volume de compensação requerido é de aproximadamente 1300 cm³. Logo, o depósito de compensação requerido é do tipo PC-3. O volume suplementar no depósito não é geralmente um problema e, para obter um volume mais preciso, podem ser ligados ao sistema depósitos suplementares

| Codice Code Bestallnr. Code Codigo Código | Ø D | | L | | A | | H | | HT | | B | | Faccia X X Side Seite X Face X Cara X Face X | Faccia Y Y Side Seite Y Face Y Cara Y Face Y | C | Raccordi Fittings Anschlüsse Raccords Racores Ligações | Volume Volume Volumen Volume Volumen Volume | | PED 2014/68/EU | |
|----------------------------------------------------------|-----|------|-----|-------|-----|------|-----|------|-----|------|-----|------|-------------------------------------------------------------|-------------------------------------------------------------|----|-----------------------------------------------------------------------|------------------------------------------------------------|-----------------|-------------------|---|
| | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | | | | cm ³ | in ³ | | |
| 39PC001A | 100 | 3.94 | 290 | 11.42 | 90 | 3.54 | 58 | 2.28 | 140 | 5.51 | 125 | 4.20 | G1/8" (3x) | G1/8" (4x) | 40 | 1.57 | | 1000 | 61.02 | ✓ |
| 39PC003A | 150 | 5.91 | 310 | 12.20 | 136 | 5.35 | 83 | 3.27 | 190 | 7.48 | 172 | 6.77 | G1/8" (4x) | G1/8" (4x) | 70 | 2.76 | RTC | 3000 | 183.07 | ✓ |
| 39PC005A | 150 | 5.91 | 475 | 18.70 | 136 | 5.35 | 83 | 3.27 | 190 | 7.48 | 172 | 6.77 | G1/8" (4x) | G1/8" (4x) | 70 | 2.76 | RMTC | 5000 | 305.12 | ✓ |
| 39PC008A | 200 | 7.87 | 415 | 16.34 | 212 | 8.35 | 108 | 4.25 | 242 | 9.53 | 252 | 9.92 | G1/8" (6x) | G1/8" (6x) | 97 | 3.82 | RSMPTD | 8000 | 488.18 | ✓ |
| 39PC010A | 200 | 7.87 | 505 | 19.88 | 212 | 8.35 | 108 | 4.25 | 242 | 9.53 | 252 | 9.92 | G1/8" (6x) | G1/8" (6x) | 97 | 3.82 | | 9960 | 607.79 | ✓ |

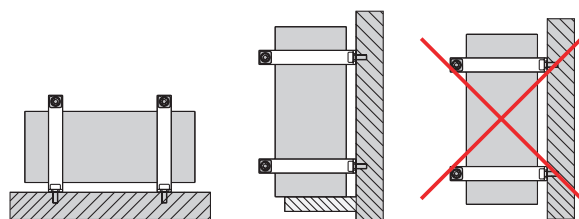


code: TS - 300 (300 bar)

Tappo di sicurezza sovrappressione CE
 Overpressure safety plug CE
 Überdruck Sicherheitsstecker CE
 Bouchon de sécurité surpression CE
 Enchufe de seguridad sobrepresion CE
 Bujão de segurança sobrepresão CE



Esempio - Example - Beispiel - Exemple - Ejemplo - Exemplo:



IT Pressione massima di caricamento: P= 150 bar

EN Maximum charging pressure: P= 150 bar

DE Max. Fülldruck: P= 150 bar

FR Pression maximale: P= 150 bar

ES Presión máxima de carga P = 150 bar

PT Pressão máxima de carregamento: P= 150 bar



All dimensions in mm/inch

AIR SYSTEMS TANKS

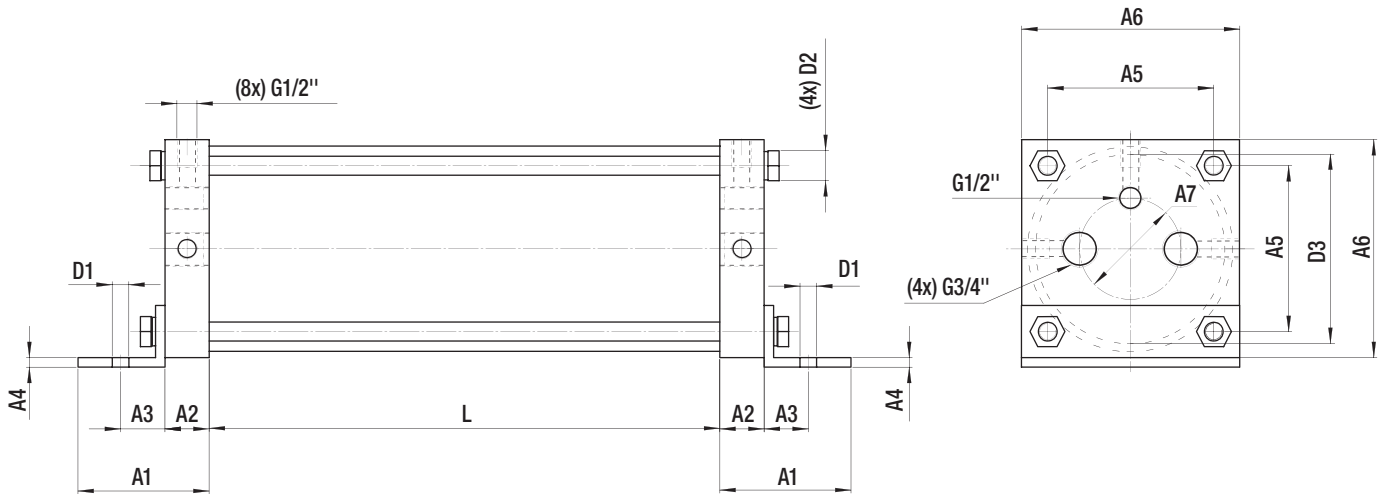


- IT** Le tabelle sotto riportate devono essere utilizzate, in fase di progettazione, per determinare il numero, il volume e le dimensioni dei serbatoi aria a bordo stampi. Tabella volumi (litri): volume d'aria necessario per cilindro pneumatico in relazione al diametro e alla corsa.
- EN** The tables below must be used, during design, to define the number, volume and sizes of the air tanks on the dies. Volume table (litres): volume of air needed for the pneumatic cylinder in relation to the diameter and stroke.
- DE** Die untenstehenden Tabellen werden in der Planungsphase für die Bestimmung der Anzahl, des Volumens und der Abmessung der Luftbehälter an Bord der Formen benutzt. Tabelle der Volumen (Liter): Das für Pneumatikzylinder in Bezug auf Durchmesser und Hub notwendige Luftvolumen
- FR** Les tableaux reportés ci-dessous doivent être utilisés, lors de la conception, pour déterminer le nombre, le volume et les dimensions des réservoirs d'air sur le bord des moules. Tableau des volumes (litres) : volume d'air nécessaire par cylindre pneumatique par rapport au diamètre et à la course.
- ES** Las tablas propuestas abajo deben ser utilizadas, en la fase de diseño, para determinar el número, el volumen y las dimensiones de los tanques de aire al borde de moldes. Tabla de volúmenes (litros): volumen de aire necesario para cilindro neumático en relación al diámetro y a la carrera.
- PT** As tabelas abaixo devem ser usadas na fase de design de forma a determinar o número, o volume e o tamanho do reservatório de ar da ferramenta.

| Cilindro pneumatico Pneumatic cylinder Pneumatikzylinder Vérin pneumatique Cilindro neumático Cilindro pneumático mm inch | | Corse standard - Standard Strokes - Standardhöhe - Course standard - Carreras estándar - Cursos standard mm inch | | | | | | | | | | | | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|
| | | 25 | 0.98 | 40 | 1.57 | 50 | 1.97 | 60 | 2.36 | 75 | 2.95 | 100 | 3.94 | 125 | 4.92 | 150 | 5.91 | 175 | 6.89 |
| | | Volume - Volume - Volumens - Volume - Volumen - Volume dm ³ in ³ | | | | | | | | | | | | | | | | | |
| Ø 32 | Ø 1.26 | 0,020 | 1.220 | 0,032 | 1.953 | 0,040 | 2.441 | 0,048 | 2.929 | 0,060 | 3.661 | 0,080 | 4.882 | 0,100 | 6.102 | 0,120 | 7.323 | 0,140 | 8.543 |
| Ø 40 | Ø 1.57 | 0,031 | 1.892 | 0,050 | 3.051 | 0,063 | 3.844 | 0,075 | 4.577 | 0,094 | 5.736 | 0,126 | 7.689 | 0,157 | 9.581 | 0,189 | 11.533 | 0,221 | 13.486 |
| Ø 50 | Ø 1.97 | 0,049 | 2.990 | 0,078 | 4.760 | 0,098 | 5.980 | 0,118 | 7.201 | 0,147 | 8.970 | 0,196 | 11.961 | 0,245 | 14.951 | 0,294 | 17.941 | 0,343 | 20.931 |
| Ø 63 | Ø 2.48 | 0,078 | 4.760 | 0,125 | 7.628 | 0,158 | 9.642 | 0,187 | 11.411 | 0,234 | 14.280 | 0,312 | 19.039 | 0,390 | 23.799 | 0,488 | 29.780 | 0,546 | 33.319 |
| Ø 80 | Ø 3.15 | 0,126 | 7.689 | 0,201 | 12.266 | 0,251 | 15.317 | 0,302 | 18.429 | 0,377 | 23.006 | 0,503 | 30.700 | 0,528 | 32.221 | 0,754 | 46.012 | 0,880 | 53.701 |
| Ø 100 | Ø 3.94 | 0,196 | 11.961 | 0,314 | 19.161 | 0,393 | 23.982 | 0,471 | 28.742 | 0,589 | 35.943 | 0,785 | 47.904 | 0,982 | 59.925 | 1,177 | 71.825 | 1,374 | 83.847 |
| Ø 125 | Ø 4.92 | 0,308 | 18.795 | 0,491 | 29.963 | 0,614 | 37.469 | 0,738 | 45.036 | 0,920 | 56.142 | 1,227 | 74.876 | 1,534 | 93.610 | 1,841 | 112.34 | 2,147 | 131.02 |
| Ø 160 | Ø 6.30 | 0,502 | 30.634 | 0,804 | 49.063 | 1,005 | 61.329 | 1,208 | 73.717 | 1,508 | 92.024 | 2,010 | 122.66 | 2,513 | 153.35 | 3,016 | 184.05 | 3,519 | 214.74 |
| Ø 200 | Ø 7.87 | 0,785 | 47.904 | 1,257 | 76.707 | 1,571 | 95.868 | 1,885 | 115.03 | 2,356 | 143.77 | 3,142 | 191.74 | 3,928 | 239.70 | 4,712 | 287.54 | 5,498 | 335.51 |

- IT** Per cilindri pneumatici funzionanti a doppio effetto (d.e.) determinare il volume attraverso la tabella. Per cilindri pneumatici funzionanti a semplice effetto (s.e.) determinare sempre il volume tramite la tabella e moltiplicare il risultato ottenuto per 3. Sommare tutti i volumi dei vari cilindri pneumatici a bordo stampo per ricavare la capacità totale (dm³) del serbatoio. Scegliere il serbatoio in relazione alla capacità totale ricavata (dm³) ed allo spazio disponibile sullo stampo.
- EN** For double acting pneumatic cylinders (d.e.) use the table to define the volume. For single-acting pneumatic cylinders (s.e.) still use the table to define the volume and multiply the result obtained by 3. Add all the volumes of the various pneumatic cylinders on the die to obtain the total capacity (dm³) of the tank. Choose the tank in relation to the total capacity obtained (dm³) and to the space available on the die.
- DE** Für Pneumatikzylinder mit Doppelleffekt (d.e.) wird das Volumen auf Grund der Tabelle bestimmt. Für Pneumatik Zylindern mit Einzeleffekt (s.e.), immer das Volume aufgrund der Tabelle bestimmen, dann der Ergebnis bei 3 multiplizieren. Aller Volumen der verschiedene Pneumatik Zylindern außer der Form summen, um das totale Fassungsvermögen des Tanks (dm³) zu ergeben. Der Tankbehälter in Verbindung mit der bestimmte Fassungsvermögen (dm³), und mit dem verfügbare Raum auf der Form, auszuwählen.
- FR** Pour les cylindres pneumatiques fonctionnant à double effet (d.e.), déterminer le volume au moyen du tableau. Pour les cylindres pneumatiques fonctionnant à effet simple (s.e.), déterminer toujours le volume au moyen du tableau et multiplier le résultat obtenu par 3. Sommer tous les volumes des différents cylindres pneumatiques sur le bord du moule pour obtenir la capacité totale (dm³) du réservoir. Choix du réservoir par rapport à la capacité totale obtenue (dm³) et à l'espace disponible sur le moule.
- ES** Para cilindros neumáticos funcionantes a doble efecto (d. e.) determinar el volumen por medio de la tabla. Para cilindros neumáticos funcionantes a simple efecto (s. e.) determinar siempre el volumen por medio de la tabla y multiplique el resultado obtenido por 3. Sumar todos los volúmenes de los varios cilindros neumáticos en el borde de la prensa para calcular la capacidad total (dm³) del depósito. Selección del tanque en relación a la capacidad total relevada (dm³) y a el espacio disponible en la prensa.
- PT** Para cilindros pneumáticos de duplo efeito (d.e), o volume deve ser determinado de acordo com a tabela. Para cilindros pneumáticos de efeito único, o volume deve ser determinado de acordo com a mesma tabela. o resultado deve ser multiplicado por 3. Para saber a capacidade total (litros) do reservatório, deve somar todos os volumes dos cilindros pneumáticos. A escolha da capacidade do reservatório, está relacionada com o cálculo da capacidade total (litros) e o espaço disponível na ferramenta.

All dimensions in mm/inch



| Codice Code Bestallnr. Code Codigo Código | Volume | | A1 | | A2 | | A3 | | A4 | | A5 | | A6 | | A7 | | D1 | | D2 | | D3 | | L | | Peso Weight Gewicht Poids Peso Peso | | PED 2014/68/EU |
|----------------------------------------------------------|-----------------|-----------------|----|------|----|------|----|------|----|------|-----|------|-----|------|-----|------|------|------|-----|------|------|------|-------|------|----------------------------------------------------|-----|-------------------|
| | dm ³ | in ³ | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | ~Kg | ~lb | |
| 39SRA1003A | 3 | 0,12 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 105 | 4,13 | 138 | 5,43 | 65 | 2,56 | 10,5 | ,41 | M12 | 120 | 4,72 | 271 | 10,67 | 14 | 30,9 | ✓ | |
| 39SRA1004A | 4 | 0,16 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 105 | 4,13 | 138 | 5,43 | 65 | 2,56 | 10,5 | ,41 | M12 | 120 | 4,72 | 360 | 14,17 | 15,7 | 34,6 | ✓ | |
| 39SRA1005A | 5 | 0,20 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 105 | 4,13 | 138 | 5,43 | 65 | 2,56 | 10,5 | ,41 | M12 | 120 | 4,72 | 449 | 17,68 | 17,4 | 38,4 | ✓ | |
| 39SRA1006A | 6 | 0,24 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 105 | 4,13 | 138 | 5,43 | 65 | 2,56 | 10,5 | ,41 | M12 | 120 | 4,72 | 538 | 21,18 | 19,1 | 42,1 | ✓ | |
| 39SRA1008A | 8 | 0,31 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 105 | 4,13 | 138 | 5,43 | 65 | 2,56 | 10,5 | ,41 | M12 | 120 | 4,72 | 716 | 28,19 | 22,5 | 49,6 | ✓ | |
| 39SRA2003A | 3 | 0,12 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 175 | 6,89 | 17,2 | 37,9 | ✓ | |
| 39SRA2004A | 4 | 0,16 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 232 | 9,13 | 18,4 | 40,6 | ✓ | |
| 39SRA2005A | 5 | 0,20 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 289 | 11,38 | 19,7 | 43,4 | ✓ | |
| 39SRA2006A | 6 | 0,24 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 346 | 13,62 | 21,0 | 46,3 | ✓ | |
| 39SRA2008A | 8 | 0,31 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 460 | 18,11 | 23,6 | 52,0 | ✓ | |
| 39SRA2010A | 10 | 0,39 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 574 | 22,60 | 26,2 | 57,8 | ✓ | |
| 39SRA2012A | 12 | 0,47 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 127 | 5,00 | 168 | 6,61 | 80 | 3,15 | 12,5 | ,49 | M12 | 150 | 5,91 | 688 | 27,09 | 28,7 | 63,3 | ✓ | |
| 39SRA3004A | 4 | 0,16 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 132 | 5,20 | 26,3 | 58,0 | ✓ | |
| 39SRA3005A | 5 | 0,20 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 164 | 6,46 | 27,3 | 60,2 | ✓ | |
| 39SRA3006A | 6 | 0,24 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 196 | 7,72 | 28,3 | 62,4 | ✓ | |
| 39SRA3008A | 8 | 0,31 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 260 | 10,24 | 30,3 | 66,8 | ✓ | |
| 39SRA3010A | 10 | 0,39 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 324 | 12,76 | 32,4 | 71,4 | ✓ | |
| 39SRA3012A | 12 | 0,47 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 388 | 15,28 | 34,4 | 75,8 | ✓ | |
| 39SRA3015A | 15 | 0,59 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 484 | 19,06 | 37,4 | 82,5 | ✓ | |
| 39SRA3018A | 18 | 0,71 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 580 | 22,83 | 40,4 | 89,0 | ✓ | |
| 39SRA3022A | 22 | 0,87 | 83 | 3,27 | 28 | 1,10 | 34 | 1,34 | 6 | ,24 | 163 | 6,42 | 218 | 8,58 | 120 | 4,72 | 12,5 | ,49 | M16 | 200 | 7,87 | 708 | 27,87 | 44,4 | 97,9 | ✓ | |



| | | |
|--------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 50°C | 122°F | Temperatura max esercizio - Max. operating temperature - max. Betriebstemperatur Température maximum de fonctionnement - Temperatura máx. de ejercicio - Temepratura Max operacional. |
| 15 bar | 218 psi | P. max esercizio - Maximum operating pressure - max: Betriebsdruck Pression Max de Fonctionnement - Presión máx de ejercicio - Pressão máxima de operação. |
| 25 bar | 363 psi | Pressione di collaudo - Testing pressure - Druckprüfung Pression d'essais - Probar la presión - Pressão de teste. |

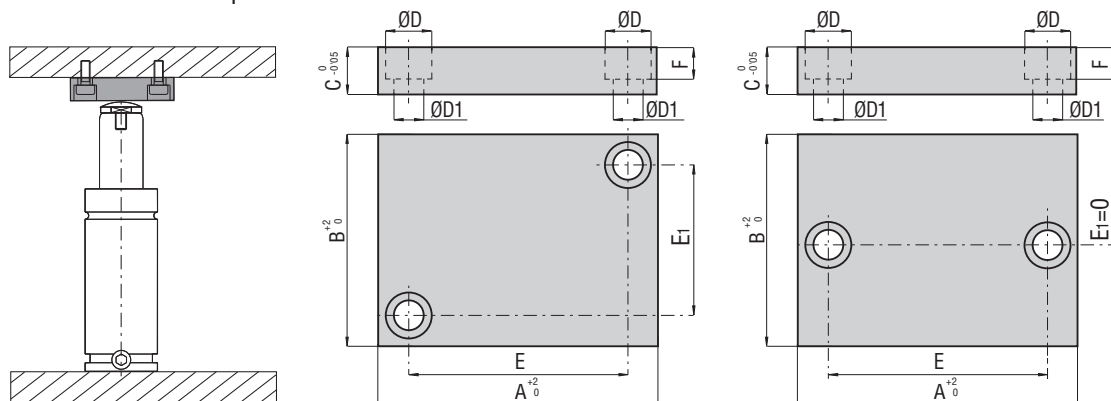
All dimensions in mm/inch

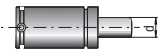


ACCESSORIES



| | | |
|-----------|-----------------------------|-----------|
| IT | Piastra di contrasto | Temperato |
| EN | Counter plate | Hardened |
| DE | Stellplatten | Gehärtet |
| FR | Plaques d'appui | Tempéré |
| ES | Placas de soporte | Templado |
| PT | Placas de apoi | Temperado |



| CODE | | A | | B | | C | | ØD | | ØD1 | | E | | E1 | | F |  | | |
|-------------|-------------------------------|-----|------|-----|------|----|------|----|------|-----|------|-----|------|-----|------|----|-------------------------------------------------------------------------------------|---------|------|
| PHASING OUT | NEW | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | | inch | |
| PS040040 | 39PA040040A ¹⁾⁵⁾ | 40 | 1.57 | 40 | 1.57 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 21 | 0.83 | 21 | 0.83 | 10 | 0.39 | d ≤ 20 | 0.79 |
| - | 39PAB040040A ⁴⁾⁷⁾ | 40 | 1.57 | 40 | 1.57 | 12 | 0.47 | 11 | 0.43 | 7 | 0.28 | 24 | 0.94 | 24 | 0.94 | 7 | 0.28 | d ≤ 20 | 0.79 |
| - | 39PAA040040A | 40 | 1.57 | 40 | 1.57 | 15 | 0.59 | 11 | 0.43 | 7 | 0.28 | 24 | 0.94 | 24 | 0.94 | 7 | 0.28 | d ≤ 20 | 0.79 |
| PS056056 | 39PA056056A ³⁾⁵⁾ | 56 | 2.20 | 56 | 2.20 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 32 | 1.26 | 32 | 1.26 | 13 | 0.51 | d ≤ 36 | 1.42 |
| - | 39PA060060A ⁴⁾⁷⁾ | 60 | 2.36 | 60 | 2.36 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 40 | 1.57 | 40 | 1.57 | 9 | 0.35 | d ≤ 36 | 1.42 |
| - | 39PAA060060A ⁶⁾ | 60 | 2.36 | 60 | 2.36 | 12 | 0.47 | 14 | 0.55 | 9 | 0.35 | 38 | 1.5 | 38 | 1.5 | 9 | 0.35 | d ≤ 36 | 1.42 |
| - | 39PA070070A ¹⁾⁴⁾⁷⁾ | 70 | 2.76 | 70 | 2.76 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 50 | 1.97 | 50 | 1.97 | 9 | 0.35 | d ≤ 60 | 2.36 |
| PS071071 | 39PA071071A ⁵⁾ | 71 | 2.80 | 71 | 2.80 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 48 | 1.89 | 48 | 1.89 | 13 | 0.51 | d ≤ 60 | 2.36 |
| - | 39PA080080A ²⁾ | 80 | 3.15 | 80 | 3.15 | 16 | 0.63 | 15 | 0.59 | 9 | 0.35 | 62 | 2.44 | 0 | 0 | 10 | 0.39 | d ≤ 65 | 2.56 |
| - | 39PAB090090A | 90 | 3.54 | 90 | 3.54 | 12 | 0.47 | 15 | 0.59 | 9 | 0.35 | 64 | 2.52 | 64 | 2.52 | 9 | 0.35 | d ≤ 80 | 3.15 |
| - | 39PAA090090A ¹⁾ | 90 | 3.54 | 90 | 3.54 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 70 | 2.76 | 70 | 2.76 | 9 | 0.35 | d ≤ 80 | 3.15 |
| - | 39PA090090A ²⁾³⁾⁵⁾ | 90 | 3.54 | 90 | 3.54 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 67 | 2.64 | 67 | 2.64 | 13 | 0.51 | d ≤ 80 | 3.15 |
| - | 39PAC090090A ⁶⁾ | 90 | 3.54 | 90 | 3.54 | 12 | 0.47 | 14 | 0.55 | 9 | 0.35 | 70 | 2.76 | 70 | 2.76 | 9 | 0.35 | d ≤ 80 | 3.15 |
| - | 39PA100100A ²⁾ | 100 | 3.94 | 100 | 3.94 | 16 | 0.63 | 15 | 0.59 | 9 | 0.35 | 82 | 3.23 | 0 | 0 | 10 | 0.39 | d ≤ 90 | 3.54 |
| - | 39PAA100100A ⁴⁾⁷⁾ | 100 | 3.94 | 100 | 3.94 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 74 | 2.91 | 74 | 2.91 | 11 | 0.43 | d ≤ 90 | 3.54 |
| - | 39PAB100100A ⁶⁾ | 100 | 3.94 | 100 | 3.94 | 12 | 0.47 | 14 | 0.55 | 9 | 0.35 | 81 | 3.19 | 81 | 3.19 | 9 | 0.35 | d ≤ 90 | 3.54 |
| - | 39PAA140140A ⁴⁾ | 140 | 5.51 | 140 | 5.51 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 110 | 4.33 | 110 | 4.33 | 11 | 0.43 | d ≤ 130 | 5.12 |
| - | 39PA140140A ³⁾⁵⁾ | 140 | 5.51 | 140 | 5.51 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 110 | 4.33 | 110 | 4.33 | 13 | 0.51 | d ≤ 130 | 5.12 |
| PS050025 | 39PA050025A ¹⁾⁵⁾ | 50 | 1.97 | 25 | 0.98 | 12 | 0.47 | 11 | 0.43 | 7 | 0.28 | 32 | 1.26 | 8 | 0.31 | 8 | 0.31 | d ≤ 15 | 0.59 |
| - | 39PA050030A ⁵⁾ | 50 | 1.97 | 30 | 1.18 | 12 | 0.47 | 11 | 0.43 | 7 | 0.28 | 40 | 1.57 | 14 | 0.55 | 8 | 0.31 | d ≤ 20 | 0.79 |
| PS055030 | 39PA055030A ¹⁾ | 55 | 2.17 | 30 | 1.18 | 12 | 0.47 | 11 | 0.43 | 7 | 0.28 | 40 | 1.57 | 14 | 0.55 | 8 | 0.31 | d ≤ 20 | 0.79 |
| - | 39PA055032A ²⁾ | 55 | 2.17 | 32 | 1.26 | 16 | 0.63 | 15 | 0.59 | 9 | 0.35 | 37 | 1.46 | 0 | 0 | 10 | 0.39 | d ≤ 20 | 0.79 |
| - | 39PA065050A ²⁾ | 65 | 2.56 | 50 | 1.97 | 16 | 0.63 | 15 | 0.59 | 9 | 0.35 | 47 | 1.85 | 0 | 0 | 10 | 0.39 | d ≤ 36 | 1.42 |
| PS070035 | 39PA070035A ¹⁾⁵⁾ | 70 | 2.76 | 35 | 1.38 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 48 | 1.89 | 14 | 0.55 | 10 | 0.39 | d ≤ 30 | 1.18 |
| PS075050 | 39PA075050A ¹⁾⁵⁾ | 75 | 2.95 | 50 | 1.97 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 56 | 2.2 | 30 | 1.18 | 10 | 0.39 | d ≤ 36 | 1.42 |
| - | 39PA080060A ²⁾ | 80 | 3.15 | 60 | 2.36 | 16 | 0.63 | 15 | 0.59 | 9 | 0.35 | 62 | 2.44 | 0 | 0 | 10 | 0.39 | d ≤ 55 | 2.17 |
| - | 39PAA085060A ⁵⁾ | 85 | 3.35 | 60 | 2.36 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 56 | 2.2 | 40 | 1.57 | 10 | 0.39 | d ≤ 55 | 2.17 |
| PS085060 | 39PA085060A ¹⁾ | 85 | 3.35 | 60 | 2.36 | 15 | 0.59 | 15 | 0.59 | 9 | 0.35 | 66 | 2.6 | 40 | 1.57 | 10 | 0.39 | d ≤ 55 | 2.17 |
| PS100080 | 39PA100080A ¹⁾⁵⁾ | 100 | 3.94 | 80 | 3.15 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 72 | 2.83 | 56 | 2.2 | 12 | 0.47 | d ≤ 70 | 2.76 |
| PS110100 | 39PA110100A ⁵⁾ | 110 | 4.33 | 100 | 3.94 | 20 | 0.79 | 18 | 0.71 | 11 | 0.43 | 85 | 3.35 | 75 | 2.95 | 12 | 0.47 | d ≤ 100 | 3.94 |

¹⁾ VDI 3003 ²⁾ Volvo ³⁾ Renault ⁴⁾ Volkswagen ⁵⁾ FCA ⁶⁾ Mercedes Benz ⁷⁾ BMW

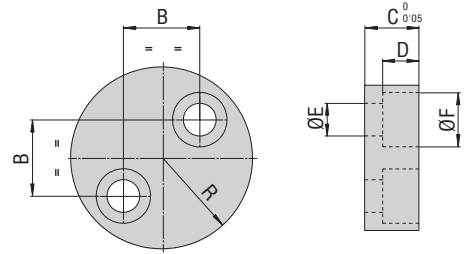
All dimensions in mm/inch

| | | |
|-----------|----------------------|-----------|
| IT | Piastra di contrasto | Temperato |
| EN | Counter plate | Hardened |
| DE | Stellplatten | Gehärtet |
| FR | Plaques d'appui | Tempré |
| ES | Placas de soporte | Templado |
| PT | Placas de apoio | Temperado |

| CODE | R | | B | | C | | D | | ØE | | ØF | | | |
|--------------------------|----|------|----|------|----|------|----|------|----|------|----|------|--------|------|
| | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | |
| ▲ 39PA050A ⁸⁾ | 25 | 0.98 | 21 | 0.83 | 15 | 0.59 | 10 | 0.39 | 9 | 0.35 | 15 | 0.59 | d < 15 | 0.59 |
| ▲ 39PA070A ⁸⁾ | 35 | 1.38 | 32 | 1.26 | 20 | 0.79 | 13 | 0.51 | 11 | 0.43 | 18 | 0.71 | d < 25 | 0.98 |
| ▲ 39PA094A ⁸⁾ | 47 | 1.85 | 48 | 1.89 | 20 | 0.79 | 13 | 0.51 | 11 | 0.43 | 18 | 0.71 | d < 50 | 1.97 |

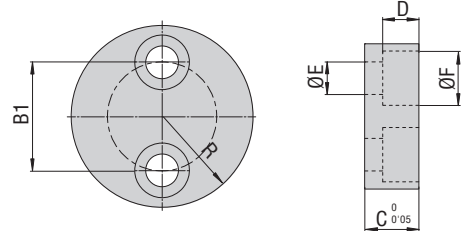
8) Fiat

▲ Phasing out



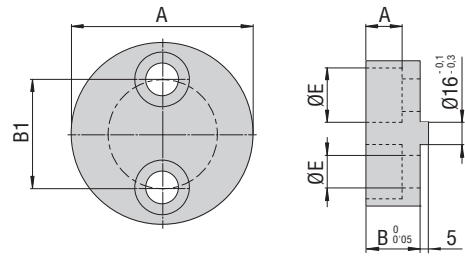
| CODE | R | | B1 | | C | | D | | ØE | | ØF | | | |
|--------------------------|----|------|----|------|----|------|----|------|----|------|----|------|--------|------|
| | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | |
| ■ 39PA050B ⁵⁾ | 25 | 0.98 | 21 | 0.83 | 15 | 0.59 | 10 | 0.39 | 9 | 0.35 | 15 | 0.59 | d < 15 | 0.59 |
| ■ 39PA070B ⁵⁾ | 35 | 1.38 | 32 | 1.26 | 20 | 0.79 | 13 | 0.51 | 11 | 0.43 | 18 | 0.71 | d < 25 | 0.98 |
| ■ 39PA094B ⁵⁾ | 47 | 1.85 | 48 | 1.89 | 20 | 0.79 | 13 | 0.51 | 11 | 0.43 | 18 | 0.71 | d < 50 | 1.97 |

5) FCA



| CODE | A | | B | | ØC | | ØD | | ØE | | ØF | | | |
|------------------------|----|------|----|------|-----|------|-----|------|----|------|------|------|--------|------|
| | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch | | |
| 39PA098A ⁴⁾ | 12 | 0.47 | 20 | 0.79 | 98 | 3.86 | 73 | 2.87 | 20 | 0.79 | 13.5 | 0.53 | d < 50 | 1.97 |
| 39PA113A ⁴⁾ | 12 | 0.47 | 20 | 0.79 | 113 | 4.45 | 88 | 3.46 | 20 | 0.79 | 13.5 | 0.53 | d < 65 | 2.58 |
| 39PA128A ⁴⁾ | 12 | 0.47 | 20 | 0.79 | 128 | 5.04 | 103 | 4.06 | 20 | 0.79 | 13.5 | 0.53 | d < 80 | 3.15 |
| 39PA143A ⁴⁾ | 12 | 0.47 | 20 | 0.79 | 143 | 5.63 | 118 | 4.65 | 20 | 0.79 | 13.5 | 0.53 | d < 95 | 3.74 |

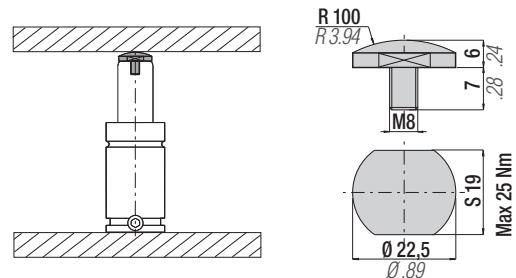
4) Volkswagen



code FA 022

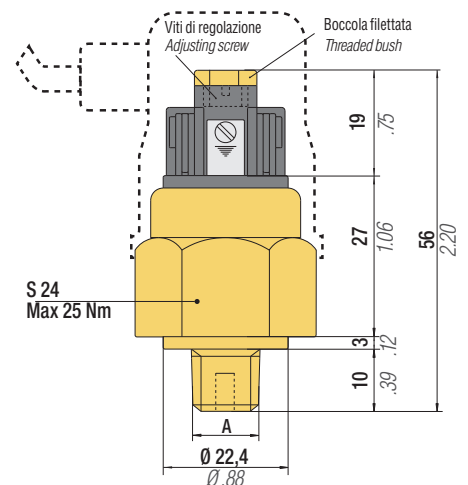
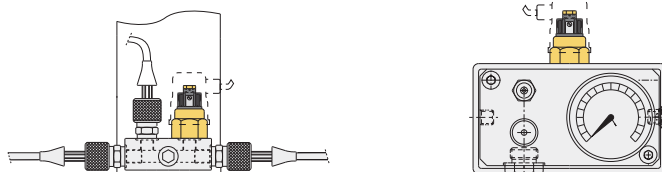
| | | |
|-----------|-------------------------|-----------|
| IT | Calotta | Temperato |
| EN | Thrust plates | Hardened |
| DE | Schaftkappe | Gehärtet |
| FR | Calotte pour tiges | Tempré |
| ES | Casquillo para vástagos | Templado |
| PT | Calote para embolo | Temperado |

49 - 52 HRC



| | | | |
|-----------|-----------------|--------------------------------|---------------------|
| IT | Pressostato | Tensione di lavoro 48 V max | Normalmente aperto |
| EN | Pressure switch | Operating voltage 48 V max | Normally opened |
| DE | Druckwächter | Arbeitsspannung 48 V max | Normalerweise offen |
| FR | Pressostat | Tension d'utilisation 48 V max | Normalement ouvert |
| ES | Presostato | Tensión de trabajo 48 V max | Normalmente abierto |
| PT | Pressostato | Tensão de Trabalho 48 V max | Normalmente aberto |

PRESSURE SWITCH



| CODE | A | Range |
|-----------|------------|------------|
| PMM150A | 1/8 " BSPT | 50:150 bar |
| PMM300A | 1/8 " BSPT | 50:300 bar |
| PMM150A01 | 1/4 " BSPT | 50:150 bar |
| PMM300A01 | 1/4 " BSPT | 50:300 bar |

All dimensions in mm/inch

code 39DMA

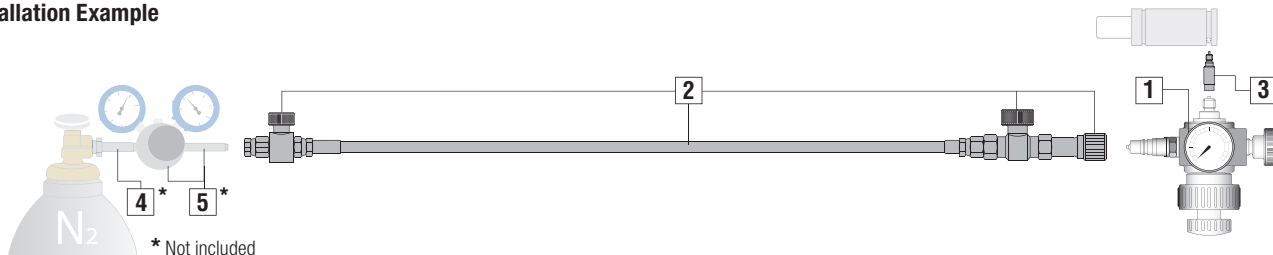


- IT** Dispositivo completo per le operazioni di controllo, riduzione/aumento della pressione o caricamento di cilindri autonomi e sistemi collegati.
- EN** Complete device designed and built for checking operations, decreasing/increasing pressure, or charging self-contained cylinders and linked systems.
- DE** Komplette Vorrichtung zur Kontrolle Operationen, Verminderung / Erhöhung des Drucks, oder Ladung die Selbstständigen gasdruckfedern und verbundenen Systemen.
- FR** Dispositif complet pour les opérations de contrôle, réduction/augmentation de la pression ou chargement de cylindres autonomes et systèmes reliés.
- ES** Dispositivo completo para las operaciones de control, reducción/aumento de la presión o carga de cilindros autónomos y sistemas conectados.
- PT** Dispositivo completo para as operações de controle, redução/aumento da pressão ou carregamento dos cilindros autônomos e sistemas conectados.

Box content:

| | |
|---|---------------------------------------------------------------------------------------------------------------------|
| 1 | 39DMCILA (1 pcs) |
| 2 | 39DMCPVA (1 pcs) included 39IR01A (1 pcs) |
| 3 | ADM01 (1 pcs) - ADM002 (1 pcs) - ADM003 (1 pcs) - ADM004 (1 pcs) - ADM005 (1 pcs) - ADM006 (1 pcs) - ADM008 (1 pcs) |
| - | Declaration of CE conformity - User manual |

Installation Example



- 4* Attacco per bombola - Connection for bottle - Ansatz für die Flasche - Décapage pour bombonne - Ataque a la Bombona - Ataque a Bottle p.322
- 5* Riduttore di pressione - Pressure reducer - Druckminderer - Réducteur de pression - Reductor de presión - Redutor de pressão p.323

code 39DMCILA



- IT** Manometro 0 ÷ 315 bar - 2 manopole - valvola di riduzione/scarico pressione - adattatore fisso G1/8" - attacco rapido maschio Cejn.
- EN** 0 ÷ 315 bar gauge - 2 hand knobs- pressure limitation/discharging valve - G1/8" built in adapter - quickfit male Cejn.
- DE** Manometer 0 ÷ 315 bar - 2 Drehknopfs - Entlüftungsventil - fester Adapter G1/8" - Schnellverschlusskupplung Stecker Cejn.
- FR** Manomètre 0 ÷ 315 bar - 2 poignées - soupape de réduction/déchargement pression - Adaptateur fixe G1/8" - enclenchement instantané mâle Cejn.
- ES** Manómetro 0 ÷ 315 bar - 2 perillas - válvula de reducción/descarga de presión - adaptador fijo G1/8"-enganche rápido macho Cejn.
- PT** Manómetro 0 ÷ 315 bar/psi - 2 manoplas - válvula de redução/descarga pressão - adaptador fixo G1/8"-engate rápido macho Cejn.

code 39DMCPVA



1/4" BSP

- IT** 3 mt di tubo - attacco rapido femmina Cejn - valvola ON/OFF - valvola di scarico tubo - 1 innesto rapido supplementare (cod. 39IR01A - SOLO PER CPVB - CPVD).
- EN** 3 Mt high pressure hose- quickfit female Cejn- shut-off valve- hose release valve -additional quick coupling (cod. 39IR01A - ONLY FOR CPVB - CPVD).
- DE** 3 Meter Schlauch- Schnellverschlusskupplung Muffe Cejn- Sperrventil- Rohr Ablassventil- 1 zusätzliche Schnellverschluss Kupplung (im. 39IR01A - NUR FÜR CPVB-CPVD KONTROLLARMATUR).
- FR** 3 m de tuyau – enclenchement instantané femelle Cejn – soupape ON/OFF – soupape de déchargement tuyau - 1 enclenchement instantané supplémentaire (cod. 39IR01A - UNIQUEMENT POUR CPVB - CPVD).
- ES** 3 mt de tubo - enganche rápido hembra Cejn - válvula ON/OFF - válvula de descarga tubo - 1 inserción rápida suplementaria (cod. 39IR01A - SÓLO PARA CPVB - CPVD).
- PT** 3 mt de tubo – engate rápido fêmea Cejn - válvula ON/OFF - válvula de descarga tubo - 1 engate rápido suplementar (cod. 39IR01A - SOMENTE PARA CPVB - CPVD).

code 39IR01A



ISO 72 - C - 2 - 2 - RP

- IT** Innesto rapido femmina per dispositivo 39DMCPVA (USARE SOLO CON PANNELLI CPVB - CPVD).
- EN** Quickfit female coupling for device 39DMCPVA (SUITABLE ONLY FOR CPVB - CPVD PANELS).
- DE** Schnellverschlusskupplung Muffe für Ausstattung 39DMCPVA (NUR FÜR CPVB - CPVD KONTROLLARMATUR).
- FR** Enclenchement instantané femelle pour dispositif 39DMCPVA (N'UTILISER QU'AVEC PANNEAUX CPVB - CPVD).
- ES** Inserción rápida hembra para dispositivo 39DMCPVA (USO SOLAMENTE CON PANELES CPVB - CPVD).
- PT** Engate rápido fêmea para dispositivo 39DMCPVA (USE UNICAMENTE COM PAINÉIS CPVB - CPVD).

code 39IRFA

⚠ Only for 39DMCPV



Cejn 358

- IT** Innesto rapido femmina per dispositivo 39DMCPV (NON USARE CON PANNELLI CPVB - CPVD).
- EN** Quickfit female coupling for device 39DMCPV (NOT SUITABLE FOR CPVB - CPVD PANELS).
- DE** Schnellverschlusskupplung Muffe für Ausstattung 39DMCPV (NICHT MIT CPVB - CPVD ARMATUR VERWENDEN).
- FR** Enclenchement instantané femelle pour dispositif 39DMCPV (NE PAS UTILISER AVEC PANNEAUX CPVB - CPVD).
- ES** Inserción rápida hembra para dispositivo 39DMCPV (NO USAR CON PANELES CPVB - CPVD).
- PT** Engate rápido fêmea para dispositivo 39DMCPV (NÃO USE COM PAINÉIS CPVB - CPVD).

code 39QDFV01 for 1/8G thread code 39QDFV02 for M6 thread code 39QDFV03 for M6 thread

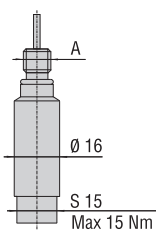


- IT** Adattatore per caricamento diretto con innesto rapido maschio Cejn.
- EN** Cejin male quick fit adapter for direct charging.
- DE** Adapter für direkt Ladung mit Schnellverschlusskupplung Stecker Cejin.
- FR** Adaptateur direct pour le chargement avec enclenchement instantané mâle Cejin.
- ES** Adaptador directo para la carga con enganche rápido macho Cejin.
- PT** Adaptador direto para la carga con engate rápido macho Cejin.

⚠ **tab below.**

| Code | 39QDFV01 | 39QDFV03 | 39QDFV02 | 39QDFV03 | 39QDFV02: 39QDFV02 | 39QDFV02 | 39QDFV03 | 39QDFV01 |
|---------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modello Model Modell Model Modelo Modelo | ML1800 - 12000 (rev A) | HR300 Cu 5 - 16 HR500 Cu 5 - 16 HR700 Cu 10 - 16 HRF700 Cu 10 - 16 ML500 ML1000 LI400 Cu 13 | NE16, NE24 (rev A) HR1000 - 4200 HRF1000 LI900 - 2000 | SC150, SC250 SCF250, H300 H500, HF500 HR500 Cu 25 - 125 HR700 Cu 19 - 125 HRF500 Cu 25 - 125 HRF700 Cu 19 - 125 LI400 Cu 25 - 100 | K40 ML300 | HR200 MCS19 MCS19 - TBM MCS19 - TBI MCS19 - TEM MCS25 | NE16 - NE24 (revB) NG16 - NG24 M50 - M70 M90 - MS90 M90 TBM - TBI - TEM M200 - MS200 M300 KE400 - 7500 RV170 - 2400 RS170 - 2400 SC150 - 250 (rev D) H 300 - 500 (rev C) ML300 (rev B+C) MP150 | ML500-1000 (rev B+C) MP300 - 3000 MQ700 SC500 - 10000, SCF500 - 750 H700 - 18500 HF700 - 1000 HR6600 - 11800 LI3200 LS1500 - 9500 KE12000 - 18500 S500 - S3000 RV4200 - RV20000 RS4200 - RS9500 RF750 - RF2400 RG750 - RG6600 RT350 - RT9500 ML1800 - ML12000 (rev B+C) |
| A | G1/8" | M6 | M6 | M6 | M6 | M6 | M6 | G 1/8" |
| Code | ADM01 | ADM02 | ADM03 | ADM04 | ADM05 | ADM06 | ADM08 | ADM09 |
| | | | | | | | | Direttamente con 39DMA (senza adattatore) Directly with 39DMA (without adapter) Direkt mit 39DMA (ohne Adapter) Directement avec 39DMA (sans adaptateur) Directamente con 39DMA (sin adaptador) Directamente com 39DMA (sem adaptador) |

code ADM...



- IT** Adattatore per dispositivo 39DMCILA.
- EN** Adapter for 39DMCILA device.
- DE** Adapter für 39DMCILA Vorrichtung.
- FR** Adaptateur pour dispositif 39DMCILA.
- ES** Adaptador para dispositivo 39DMCILA.
- PT** Adaptador para dispositivo 39DMCILA.

⚠ **tab above.**

ACCESSORIES



code 39DDS-...

IT Dispositivo di scaricamento.

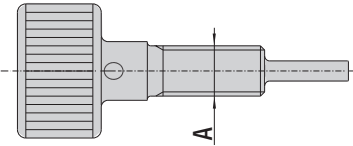
DE Ablassvorrichtung.

ES Dispositivo de descarga.

EN Discharging device.

FR Dispositif de déchargement.

PT Dispositivo de descarga.



| Code | 39DDS-M6/1 | 39DDS-M6/2 | 39DDS-M6/3 | 39DDS-1/8G1 | 39DDS-1/8G | |
|-------|-------------------------------------|------------------------------------------------------|------------------------------------|------------------|---------------------------|------------------------------------------------------|
| A | M6 | M6 | M6 | G 1/8" | G 1/8" | |
| Model | MCS K ML (rev. A) HR LI | NE (rev. A) SC (rev. B) H (rev. A) HR LI | NE (rev. B) NG M MS KE | K ML (rev. A) | SC H HR LI LS | KE ML (rev. B) S RV RS RF RT RG |



39DDS01A



39DDS01A

code 39DDS01A

IT Dispositivo di scaricamento.

DE Ablassvorrichtung.

ES Dispositivo de descarga.

EN Discharging device.

FR Dispositif de déchargement.

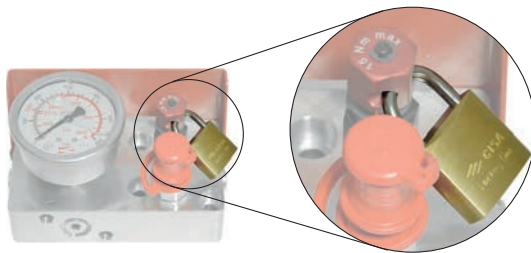
PT Dispositivo de descarga.

| A | M6 | | |
|-------|------------------------------|-----------------------------------|---------------------------------------|
| Model | NE (rev. B) NG M MS | KE ML (rev. B + C) MP MQ | RV RS SC (rev. D) H (rev. C) |



| A | G 1/8" | | |
|-------|---------------------|------------------------------|----------------------------|
| Model | SC H HR LI | LS KE ML (rev. B) S | RV RS RF RT RG |

code 58UT029A



IT Lucchetto blocca valvola di scarico.

EN Padlock for discharge valve.

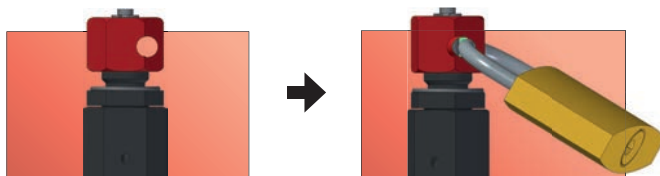
DE Vorhängeschloss für das Ablassventil.

FR Verrou pour soupape de décharge.

ES Candado de bloqueo de la válvula de descarga.

PT Cadeado para tramcar a valvula de descarregamento.

HOW TO USE IT



WHY TO USE IT

IT Per impedire caricamenti **NON autorizzati** durante la manutenzione.

EN To prevent **UNauthorized** charging during maintenance.

DE Um **unbefugtes** Befüllen zu verhindern bei der Wartung.

FR Pour empêcher le chargement **NON autorisé** pendant l'entretien.

ES Para impedir cargas **NO autorizadas** durante el mantenimiento.

PT Para impedir o carregamento **SEM autorização** durante a manutenção.

BENEFITS

IT Manutenzioni più sicure e con meno incidenti.

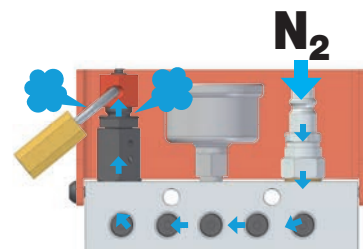
EN Safer maintenance and less accidents.

DE Mehr Sicherheit bei der Wartung und weniger Unfälle.

FR Un entretien plus sûr et moins d'accidents.

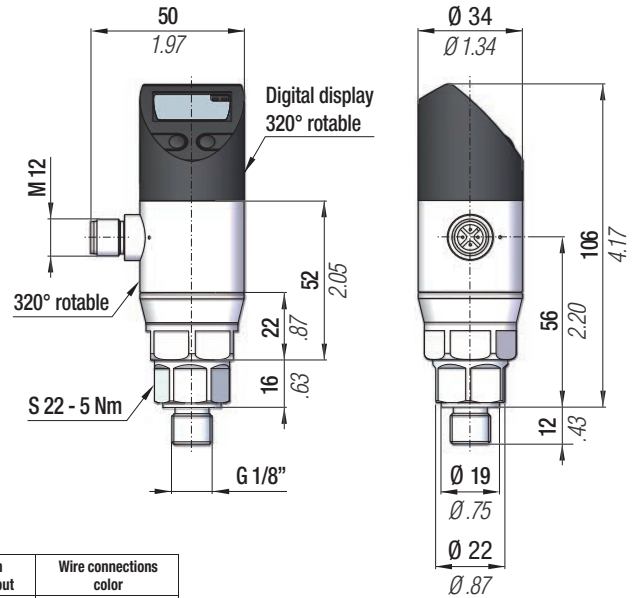
ES Mantenimientos más seguros y con menos accidentes.

PT Manutenção mais segura e com menos acidentes.



code 39SP01A

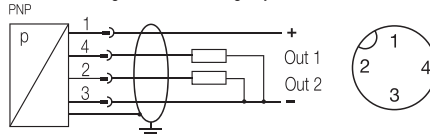
- IT** Sensore di pressione con display digitale. Collegando direttamente il sensore di pressione al controllo pressa è possibile impostare un range di lavoro desiderato al di fuori del quale il dispositivo invierà un segnale di allarme.
- EN** Pressure sensor with digital display. By connecting the pressure sensor directly to the press control, it is possible to set a desired working range outside which the unit sends an alarm signal.
- DE** Drucksensor mit Digitalanzeige. Wenn man den Drucksensor direkt an die Pressensteuerung anschließt, ist es möglich einen gewünschten Arbeitsbereich einzustellen, außerhalb dessen das Gerät ein Alarmsignal sendet.
- FR** Capteur de pression avec affichage numérique. En connectant le capteur de pression directement au système de contrôle de la presse, il est possible de définir une plage de fonctionnement souhaitée en dehors de laquelle l'unité envoie un signal d'alarme.
- ES** Sensor de presión con pantalla digital. Conectando directamente el sensor de presión al control de la prensa, es posible establecer un rango de trabajo deseado fuera del cual el dispositivo enviará una señal de alarma.
- PT** Sensor de pressão com display digital. Conectando o painel ao comando da prensa, é possível determinar uma faixa de trabalho, que qualquer alteração desta faixa, o painel emitira um alarme.



| Technical data | |
|---------------------------------------------------------------------|----------------------|
| Electrical connector type | M12x1 - Male (4-pin) |
| Pressure connection | G 1/4" DIN 3852 |
| Nominal pressure | 0 - 600 bar |
| Burst pressure | 1100 bar |
| Operating voltage U _o | 18...36 V DC |
| Output current max. | 500 mA |
| No-load supply current I _o max | ≤ 50 mA |
| Switching frequency f | 200 Hz |
| Temperature range | - 25°C... + 85°C |
| Degree of protection as per IEC 60529 | IP67 when connected |
| Output: digital data (switching points only) 2xPNP, NO/NC selection | |

| Electrical connections | Sensors with switching output | Wire connections color |
|------------------------|-------------------------------|------------------------|
| Supply + | 1 | Brown |
| Supply - | 3 | Blue |
| Signal + | - | White |
| Switching output 1 | 4 | Black |
| Switching output 2 | 2 | - |
| Shield | Connector housing | - |

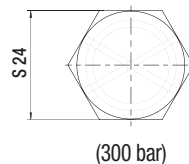
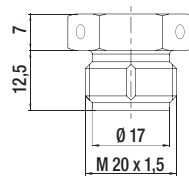
Sensor circuit diagram with 2 switching outputs



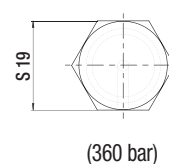
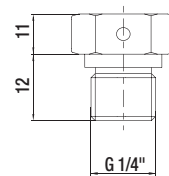
Always depressurize and disconnect pressure sensors from the power supply before establishing an electrical connection.

- IT** Tappo di sicurezza sovrappressione CE.
- EN** Overpressure safety plug CE.
- DE** Überdruck Sicherheitsstecker CE.
- FR** Bouchon de sécurité surpression CE.
- ES** Enchufe de seguridad sobrepresión CE.
- PT** Bujão de segurança sobrepresão CE.

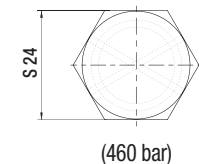
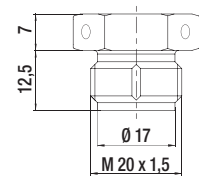
code: TS - 300



code: 39TS360

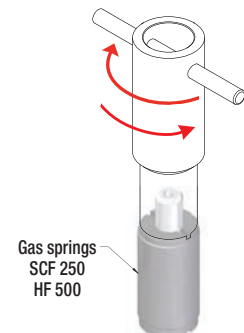
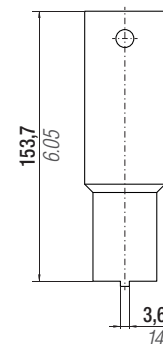
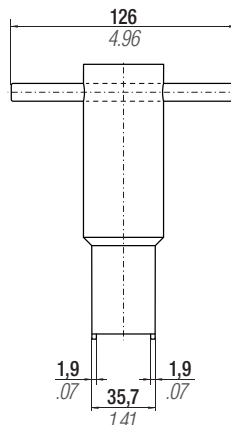


code: 39TS460



code 58UT037A

- IT** Utensile per avvitare e svitare i cilindri SCF 250 e HF 500.
- EN** Tool to screw and unscrew gas springs SCF 250 and HF 500.
- DE** Schlüssel zum An- und Abschrauben von Gasdruckfedern SCF 250 und HF 500.
- FR** Outil pour visser et dévisser les ressorts à gaz SCF 250 et HF 500.
- ES** Herramienta para atornillar y desatornillar resortes de gas SCF 250 y HF 500.
- PT** Ferramenta para parafusar e desparafusar molas a gás SCF 250 e HF 500.



All dimensions in mm/inch

ACCESSORIES



- IT** Chiave dinamometrica con accessori.
- EN** Torque wrench with accessories.
- DE** Drehmomentschlüssel mit Zubehör.
- FR** Clé dynamométrique avec ses accessoires.
- ES** Llave dinamométrica con accesorios.
- PT** Chave dinamométrica com acessórios.



Torque force

| code | Nm |
|----------|--------|
| 58UT025A | 4 - 40 |

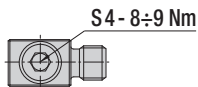
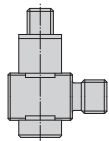


| code | size | |
|----------|------|------|
| | mm | inch |
| 58UT009A | 3 | 0.12 |
| 58UT010A | 4 | 0.16 |
| 58UT011A | 6 | 0.24 |
| 58UT012A | 8 | 0.31 |

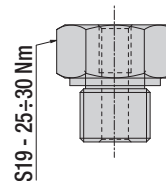


| code | size | |
|----------|------|------|
| | mm | inch |
| 58UT014A | 10 | 0.39 |
| 58UT015A | 12 | 0.47 |
| 58UT016A | 14 | 0.55 |
| 58UT017A | 15 | 0.59 |
| 58UT018A | 17 | 0.67 |
| 58UT019A | 18 | 0.71 |
| 58UT020A | 19 | 0.75 |

ORDERING EXAMPLE

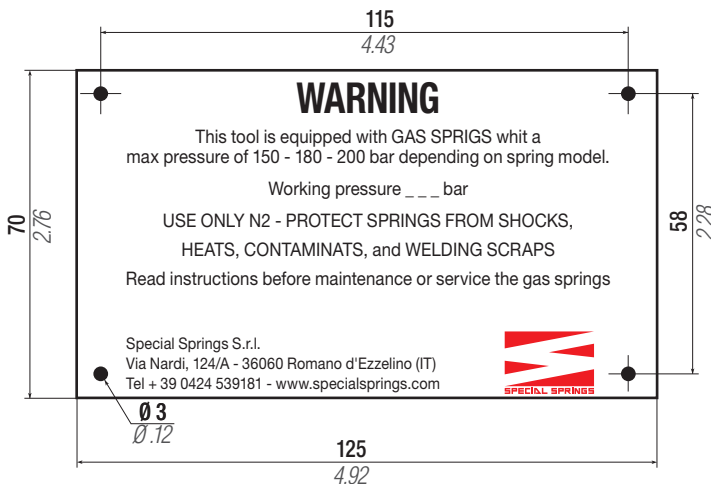


58UT025A
+
58UT013A
+
58UT010A



58UT025A
+
58UT020A

WARNING PLATE



- IT** Targhetta
- EN** Advice plate
- DE** Schilder
- FR** Plaquettes
- ES** Placas
- PT** Etiquetas

| | |
|----------------|-----------|
| Codice | 39 TAR-I |
| Code | 39 TAR-GB |
| Bestell-nummer | 39 TAR-D |
| Référence | 39 TAR-F |
| Codigo | 39 TAR-E |
| Codigo | 39 TAR-P |



| code | Tools set | Accessories set |
|------|-----------|-----------------|
| CMC | ✓ | ✓ |

- IT** Set completo per manutenzione cilindri.
EN Complete maintenance kit for cylinders.
DE Komplettes Wartungsset für Gasdruckfedern.

- FR** Kit d'entretien complet pour ressorts à gaz.
ES Kit de mantenimiento completo para resortes de gas.
PT Kit de manutenção completo para cilindros.



| code | Tools set | Accessories set |
|------|-----------|-----------------|
| CMCT | ✓ | ✗ |

- IT** Solo set utensili per manutenzione cilindri.
EN Tool set only for cylinders' maintenance.
DE Nur Werkzeugsset zur Wartung von Gasdruckfedern.

- FR** Set d'outils pour l'entretien de ressorts à gaz.
ES Set de herramientas para mantenimiento de resortes de gas.
PT Conjunto de ferramentas para manutenção dos cilindros.



| code | Tools set | Accessories set (specific family of cylinders) |
|-----------|-----------|---------------------------------------------------|
| CMC - ... | ✗ | ✓ |

- IT** Set accessori per determinata famiglia di cilindri (es. CMC-SC 10000).
EN Set of accessories for a specific family of cylinders (ex. CMC-SC 10000).
DE Zubehörset für bestimmte Zylindertypen (z. B. CMC-SC 10000).

- FR** Jeu d'accessoires pour une famille donnée de cylindres (ex.: CMC-SC 10000).
ES Set de accesorios para una determinada familia de cilindros (p.ej. CMC-SC 10000).
PT Acessórios de conjunto para determinada família de cilindros (ex. CMC-SC 10000).

code 58CD01



- IT** Cacciavite dinamometrico per valvola unidirezionale.
EN Torque screwdriver for one-way valve.
DE Drehmomentschrauber für Rückschlagventil.
FR Tournevis dynamométrique pour valve anti-retour.
ES Destornillador dinámico para válvula anti-retorno.
PT Chave torquimétrica para válvula de retenção.

code 39PM02A



- IT** Pressa manuale per assemblaggio stelo, boccia e anello di ritengo a C.
EN Table manual press for assembly of rod, bushing and retaining C-ring.
DE Manuelle Presse zur Montage von Kolbenstange, Buchse und Sprengring.
FR Presse manuelle pour l'assemblage de la tige, douille et bague d'étanchéité en C.
ES Prensa manual para ensamblaje vástago, casquillo y anillo de retención a C.
PT Prensa manual para ensabladura haste, bucha e anel de retenção a C.

code 59VU02



- IT** Valvola unidirezionale (esclusi M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).
EN One-way valve (excluding M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).
DE Rückschlagventil (außer M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).
FR Valve anti-retour (à l'exclusion de M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).
ES Válvula anti-retorno (excepto M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).
PT Válvula de retenção (excluindo M50, M70, M90-TBM/TEM/TBI, MS90, M200, MS200).

code 39RFG



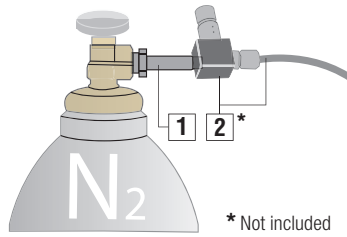
- IT** Spray rivelatore di fughe.
EN Gas detector.
DE Gasdetektor Spray.
FR Spray détecteur de fuites de gaz.
ES Spray detector de escapes de gas.
PT Spray revelador de fugas de gás.



ACCESSORIES



- IT** Attacco per bombola.
- EN** Connection for bottle.
- DE** Ansatz für die Flasche.
- FR** Décapage pour bombonne.
- ES** Ataque a la Bombona.
- PT** Ataque a Bottle.



Installation Example

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1</p> <p>Attacco per bombola Connection for bottle Ansatz für die Flasche Décapage pour bombonne Ataque a la Bombona Ataque a Bottle</p> | <p>2*</p> <p>Tubo collegamento bombola con valvola di scarico Connecting hose from the bottle to the valve discharging Verbindung Schlauche des Flasche mit Auslassventil Tube pour la connexion bombonne avec valve de décharge Tubo de conexión de la Bombona con la válvula de descarga Tubo de ligação Frasco com a válvula de descarga</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| code | X | Box content | Country |
|--------|----------------------------------------------------------------------------------------------|-------------|--------------------------------|
| 47TB | W 21,7x1/14" - Male - ISO 228 | | IT - Italy PT - Portugal |
| 47TB01 | - | | CN - China KR - South Korea |
| 47TB02 | W 22,5 - 14 t.p.i JIS B 8246 - Male | | JP - Japan ID - Indonesia |
| 47TB03 | W 24,32x1/14" - DIN 477 - 1 Female (for bottles up to 200 bar / 2900 psi) | | DE - Germany |
| 47TB04 | d 21,7x1,814 - NF E 29 - 650 - Female | | FR - France |
| 47TB05 | G 5/8" - ISO 228 - Male | | IN - India |
| 47TB06 | G 3/4" - ISO 228 - Female | | RU - Russia |
| 47TB07 | 0.960 - 14 NGO - RH - Male (for bottles up to 206 bar / 3000 psi) | | US - United States |
| 47TB08 | 1.040 - 14 NGO - RH - Male (for bottles from 206 bar / 3000 psi to 324 bar / 4700 psi) | | US - United States |
| 47TB09 | W 21,7x1/14 - Female | | ES - Spain |
| 47TB10 | W 24,32x1/14 - DIN 477 - 1 - Female | | KR - South Korea |
| 47TB11 | W 30x2 - DIN 477 - 5 - Female (for bottles from 200 bar / 2900 psi to 300 bar / 4351 psi) | | DE - Germany |
| 47TB12 | G 3/4A - RH IS 3224 - Female | | IN - India |
| 47TB13 | W 22 - 14 t.p.i JIS B 8246 - Male | | JP - Japan |
| 47TB14 | W 30x2 - DIN 477 - 5 - Male (for bottles from 200 bar / 2900 psi to 300 bar / 4351 psi) | | PT - Portugal |

| code | Box content | Country |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Phasing out | New | 1 + 2 |
| 39RP (max. inlet pressure 200 bar / 2900 psi) | 39RHP (max. inlet pressure 300 bar / 4350 psi) | IT - Italy PT - Portugal |
| 39RP01 (max. inlet pressure 200 bar / 2900 psi) | 39RHP01 (max. inlet pressure 300 bar / 4350 psi) | CN - China KR - South Korea |
| 39RP02 (max. inlet pressure 200 bar / 2900 psi) | 39RHP02 (max. inlet pressure 300 bar / 4350 psi) | JP - Japan ID - Indonesia |
| 39RP03 (max. inlet pressure 200 bar / 2900 psi) | 39RHP03 (max. inlet pressure 300 bar / 4350 psi) (for bottles up to 200 bar / 2900 psi) | DE - Germany |
| 39RP04 (max. inlet pressure 200 bar / 2900 psi) | 39RHP04 (max. inlet pressure 300 bar / 4350 psi) | FR - France |
| 39RP05 (max. inlet pressure 200 bar / 2900 psi) | 39RHP05 (max. inlet pressure 300 bar / 4350 psi) | IN - India |
| 39RP06 (max. inlet pressure 200 bar / 2900 psi) | 39RHP06 (max. inlet pressure 300 bar / 4350 psi) | RU - Russia |
| 39RP07 (max. inlet pressure 200 bar / 2900 psi) | 39RHP07 (max. inlet pressure 300 bar / 4350 psi) (for bottles up to 206 bar / 3000 psi) | US - United States |
| 39RP08 (max. inlet pressure 200 bar / 2900 psi) | 39RHP08 (max. inlet pressure 300 bar / 4350 psi) (for bottles from 206 bar / 3000 psi to 324 bar / 4700 psi) | US - United States |
| 39RP09 (max. inlet pressure 200 bar / 2900 psi) | 39RHP09 (max. inlet pressure 300 bar / 4350 psi) | ES - Spain |
| 39RP10 (max. inlet pressure 200 bar / 2900 psi) | 39RHP10 (max. inlet pressure 300 bar / 4350 psi) | KR - South Korea |
| 39RP11 (max. inlet pressure 200 bar / 2900 psi) | 39RHP11 (max. inlet pressure 300 bar / 4350 psi) (for bottles from 200 bar / 2900 psi to 300 bar / 4351 psi) | DE - Germany |
| 39RP12 (max. inlet pressure 200 bar / 2900 psi) | 39RHP12 (max. inlet pressure 300 bar / 4350 psi) | IN - India |
| 39RP13 (max. inlet pressure 200 bar / 2900 psi) | 39RHP13 (max. inlet pressure 300 bar / 4350 psi) | JP - Japan |
| 39RP14 (max. inlet pressure 200 bar / 2900 psi) | 39RHP14 (max. inlet pressure 300 bar / 4350 psi) (for bottles from 200 bar / 2900 psi to 300 bar / 4351 psi) | PT - Portugal |

IT Riduttore di pressione completo di attacco bombola per controllare e ridurre la pressione.

EN Pressure reducer complete with cylinder connection to control and reduce the pressure.

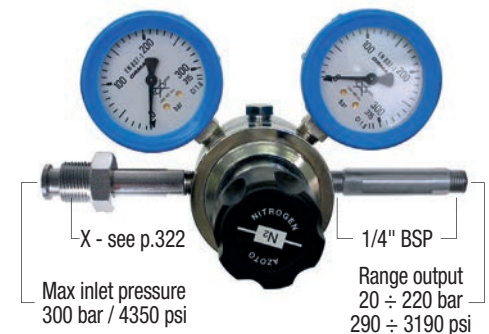
DE Druckminderer vollstaendig mit Flasche verbindungs, um die Druck zu uberwaechen und verringern.

FR Réducteur de pression complet avec jonction de bouteille pour contrôler et réduire la pression.

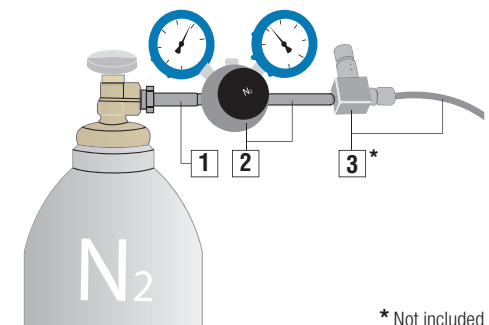
ES Reductor de presión completo con enganche de las bombonas para controlar y reducir la presión.

PT Redutor de pressão completo com engate para controlar e reduzir a pressão.

Example code: 39RHP



Installation Example



| | | | |
|----------|------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1 | Attacco per bombola Connection for bottle Ansatz für die Flasche Ataque a la Bombona Ataque a Bottle | 2 | Riduttore di pressione Pressure reducer Druckminderer Réducteur de pression Reductor de presión Redutor de pressão |
|----------|------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3* | Tubo collegamento bombola con valvola di scarico Connecting hose from the bottle to the valve discharging Verbindung Schlauche des Flasche mit Auslassventil Tube pour la connexion bombone avec valve de décharge Tubo de conexión de la Bombona con la válvula de descarga Tubo de ligação Frasco com a válvula de descarga |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

ACCESSORIES



* Not included

| code | Box content 1 + 2 p. 320 | Power supply | Country | Kg |
|----------|------------------------------|--------------------------|------------------|----------------|
| 39NCU01B | Booster + 47TB | 220 ÷ 240 VAC 50 ÷ 60 Hz | Italy - Portugal | 91 kg 200 lbs |
| 39NCU10B | Booster + 47TB01 | 220 ÷ 240 VAC 50 ÷ 60 Hz | China - Korea | 91 kg 200 lbs |
| 39NCU11B | Booster + 47TB02 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Indonesia | 91 kg 200 lbs |
| 39NCU12B | Booster + 47TB03 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Germany | 91 kg 200 lbs |
| 39NCU13B | Booster + 47TB04 | 220 ÷ 240 VAC 50 ÷ 60 Hz | France | 91 kg 200 lbs |
| 39NCU14B | Booster + 47TB05 | 220 ÷ 240 VAC 50 ÷ 60 Hz | India | 91 kg 200 lbs |
| 39NCU15B | Booster + 47TB06 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Russia | 91 kg 200 lbs |
| 39NCU22B | Booster + 47TB07 | 120 VAC 50 ÷ 60 Hz | USA | 116 kg 255 lbs |
| 39NCU23B | Booster + 47TB08 | 120 VAC 50 ÷ 60 Hz | USA | 116 kg 255 lbs |
| 39NCU29B | Booster + 47TB09 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Spain | 91 kg 200 lbs |
| 39NCU31B | Booster + 47TB010 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Korea | 91 kg 200 lbs |
| 39NCU32B | Booster + 47TB011 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Germany | 91 kg 200 lbs |
| 39NCU33B | Booster + 47TB12 | 220 ÷ 240 VAC 50 ÷ 60 Hz | India | 91 kg 200 lbs |
| 39NCU34B | Booster + 47TB13 | 100 VAC 50 ÷ 60 Hz | Japan | 116 kg 255 lbs |
| 39NCU40B | Booster + 47TB14 | 220 ÷ 240 VAC 50 ÷ 60 Hz | Portugal | 91 kg 200 lbs |
| 39NCU41B | Booster + 47TB02 | 100 VAC 50 ÷ 60 Hz | Japan | 116 kg 255 lbs |

| | | | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Booster carrellato per il caricamento di grandi volumi di azoto, con azionamento elettro-idraulico per la massima velocità Wheeled Booster for the filling of large volumes of nitrogen, with electro-hydraulic start-up for the maximum speed Ein fahrbares Booster, für die Ladung aus großen Mengen von Stickstoff, mit elektrohydraulischer Antrieb für die Maximaldrehzahl Booster à chariot, pour la charge de grands volumes d'azote, avec actionnement électro-hydraulique pour la vitesse maximum Booster sobre ruedas para la carga de grandes volúmenes de nitrógeno con accionamiento electro-hidráulico para la velocidad máxima Booster rodado para o carregamento de grandes volumes de nitrogênio com acionamento eletro-hidráulico para a velocidade máxima | 2 | Attacco per bombola Connection for bottle Ansatz für die Flasche Décapage pour bombonne Ataque a la Bombona Ataque a Bottle | Direct to N2 bottle p. 322 | |
| 3 | Riduttore di pressione Pressure reducer Druckminderer Réducteur de pression Reductor de presión Redutor de pressão | 4 | Tubo collegamento bombola con valvola di scarico Connecting hose from the bottle to the valve discharging Verbindung Schlauche des Flasche mit Auslassventil Tube pour la connexion bombonne avec valve de décharge Tubo de conexión de la Bombona con la válvula de descarga Tubo de ligação Frasco com a válvula de descarga | 5* | Dispositivo di caricamento DMA Charging device DMA Ladung Vorrichtung DMA Dispositif de charge DMA Dispositivo de carga DMA Dispositivo de carregamento de DMA |

IT Caratteristiche - vantaggi

- Massima sicurezza, minimi tempi di caricamento
- Arresto automatico alla pressione impostata
- Segnale luminoso di fine ciclo
- Valvola di sicurezza per sovrappressione
- Pompa elettrica
- Pressione di uscita regolabile
- Telaio carrellato con alloggiamento bombola N2
- Utilizzare con set di caricamento DMA (opzionale)

La fornitura comprende: Unità booster, 3 mt di tubo per collegamento a bombola o riduttore di pressione + attacco per bombola.

FR Caractéristiques - avantages

- Sécurité maximum, temps de chargement minimum
- Arrêt automatique à la pression établie
- Signal lumineux de fin de cycle
- Valve de sécurité pour la surpression
- Pompe électrique
- Pression de sortie réglable
- Châssis à chariot avec logement de bombonne N2
- À utiliser avec le set de chargement DMA (en option)

La fourniture inclut: Unité booster, 3 mt de tube pour la connexion à la bombonne ou au réducteur de pression + Décapage bombonne.

EN Features - advantages

- Maximum safety, low charging time
- Automatic stop when the set pressure is reached
- Light indicator of cycle end
- Safety valve for overpressure
- Electric pump
- Adjustable output pressure
- Wheeled cart with N2 bottle housing
- To be used with charging set DMA (optional)

The supply includes: Booster unit, 3 mt hose for connecting the bottle or pressure reducer + bottle connection.

ES Características - Ventajas

- Máxima seguridad, tiempo mínimo de carga
- Parada automática en la presión elegida
- Señal luminosa de final de ciclo
- Válvula de seguridad para sobrepresión
- Bomba eléctrica
- Presión de salida regulable
- Chasis sobre ruedas y alojamiento para botella de N2
- Utilizar combinado con set de carga DMA (opcional)

El suministro incluye: Unidad Booster, tubo de 3 mt para conexión a la bombona o al reductor de presión + Ataque Bombona.

DE Eigenheiten - Vorteile

- Maximale Sicherheit, minimale Befüllzeiten
- Automatisches Anhalten beim Erreichen des Drucks
- Leuchtsignal bei Zyklusende
- Überdruck-Sicherheitsventil
- Elektrische Pumpe
- Einstellbarer Output-Druck
- Fahrbares Gestell mit Ablagefach für N2-Gasflasche
- Zum Einsatz mit der DMA Ladevorrichtung (optional)

Die Lieferung beinhaltet: Booster Gerät, 3 Meters Schlauch für den Anschluss zur Flasche oder zum Druckminderer + Ansatz für die Flasche.

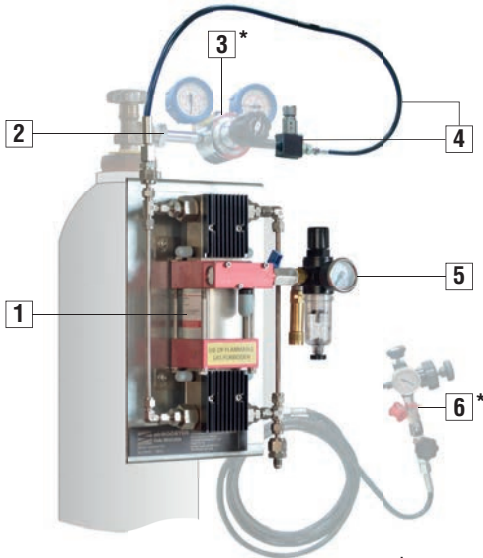
PT Características - Benefícios

- Máxima segurança, tempos de carregamento mais baixos
- Paragem automática quando atingida a pressão especificada
- Sinal luminoso de fim de ciclo
- Válvula de segurança activa sobrepresão
- Bomba eléctrica
- Saída de pressão ajustável
- Quadro rodado com alojamento para tank N2
- Utilizado com o conjunto de carregamento DMA (opcional)

O fornecimento inclui: Unidade Booster, 3 mt tubo para ligação ao cilindro de azoto ou de reductor de pressão + Ataque a Bottle.

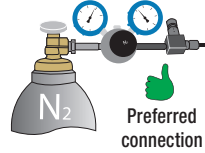
| | | | | | | |
|-----------------------------|---------------------|-------------------|-----------------|--------------------------|-----------------------------------------|----------|
| | Pmax | Pmin | Vm | | | |
| 0,85 kW see power supply | 210 bar 3045 psi | 30 bar 435 psi | 1300 NL / min * | 0 - 45 °C 32 - 113 °F | 600 x 560 x 680 mm 24 x 22 x 27 inch | See tab. |

* Il rendimento volumetrico varia in funzione di PN₂ - The volumetric efficiency varies according to PN₂ - Der Liefergrad ändert sich in Abhängigkeit vom PN₂
Le rendement volumétrique varie en fonction de PN₂ - El rendimiento volumétrico varía en función de Pair et PN₂ - O rendimento volumétrico varia em função da PN₂



* Not included

To N2 bottle with pressure reducer
p. 323



Direct to N2 bottle
p. 322



| code | Box content 1 + 2 p. 320 | Country |
|----------|-----------------------------|-------------------|
| 39NCU03A | AirBooster + 47TB | Italy - Portugal |
| 39NCU04A | AirBooster + 47TB01 | China - Korea |
| 39NCU05A | AirBooster + 47TB02 | Japan - Indonesia |
| 39NCU06A | AirBooster + 47TB03 | Germany |
| 39NCU07A | AirBooster + 47TB04 | France |
| 39NCU08A | AirBooster + 47TB05 | India |
| 39NCU09A | AirBooster + 47TB06 | Russia |
| 39NCU26A | AirBooster + 47TB07 | USA |
| 39NCU27A | AirBooster + 47TB08 | USA |
| 39NCU28A | AirBooster + 47TB09 | Spain |
| 39NCU35A | AirBooster + 47TB010 | Korea |
| 39NCU36A | AirBooster + 47TB011 | Germany |
| 39NCU37A | AirBooster + 47TB12 | India |
| 39NCU38A | AirBooster + 47TB13 | Japan |
| 39NCU39A | AirBooster + 47TB14 | Portugal |

| | | | | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Booster portable compacto per caricamento azoto con azionamento pneumatico Compact portable booster for the filling of nitrogen, with pneumatic start-up Ein kompakter und Portabler Booster für die Ladung von Stickstoff, mit pneumatischer Betätigung Booster compacte et portable pour la charge avec azote, avec actionnement pneumatique Booster compacto y portátil para la carga con nitrógeno con accionamiento neumático Booster compacto e portátil para carregar com nitrogênio com acionamento pneumático | 2 | Attacco per bombola Connection for bottle Ansatz für die Flasche Décapage pour bombonne Ataque a la Bombona Ataque a Bottle | 3* | Riduttore di pressione Pressure reducer Druckminderer Réducteur de pression Reductor de presión Redutor de pressão |
| 4 | Tubo collegamento bombola con valvola di scarico Connecting hose from the bottle to the valve discharging Verbindung Schlauche des Flasche mit Auslassventil Tube pour la connexion bombonne avec valve de décharge Tubo de conexión de la Bombona con la válvula de descarga Tubo de ligação Frasco com a válvula de descarga | 5 | Valvola sicurezza e ingresso aria Safety valve and air inlet Sicherheit Ventile und Luft Eingang Valve de sécurité et entrée de l'air Válvula de Seguridad y ingreso aire Válvula de segurança e entrada de ar | 6* | Dispositivo di caricamento DMA Charging device DMA Ladung Vorrichtung DMA Dispositif de charge DMA Dispositivo de carga DMA Dispositivo de carregamento de DMA |

IT Caratteristiche - Vantaggi

- Compatto, leggero e portatile
- Massimo utilizzo del volume bombola N2
- Installazione diretta su bombola N2
- Valvola di sicurezza output N2 max 220 bar

La fornitura comprende: Unità booster completa di valvola di sicurezza, supporto per bombola, 1 mt di tubo per collegamento a bombola o riduttore di pressione + attacco per bombola.

EN Features - Advantages

- Compact, light and portable
- Max use of the nitrogen bottle N2
- Direct installation on the N2 bottle
- Safety N2 output valve max 220 bar

The supply includes: Booster unit provided with safety valve, bottle support, 1 mt hose for connecting the bottle or pressure reducer + bottle connection.

DE Eigenschaften - Vorteile

- Kompakt, licht und portabel
- Maximaler Nutzung der Stickstoffflasche N2
- Direkter Installation am Stickstoffflasche N2
- Sicherheit Ventile von N2 Ausgabe, max. 220 bar

Die Lieferung beinhaltet: Booster Gerät versehen mit Sicherheit Ventile, träger für die Stickstoffflasche, meters Schlauch für den Anschluss zur Flasche oder zum Druckminderer + Ansatz für die Flasche.

FR Caractéristiques - Avantages

- Compacte, léger et portable
- Utilisation maximale de la bombonne d'azote N2
- Installation directe sur la bombonne d'azote N2
- Valve de sortie N2 sécurisé max 220 bar

La fourniture inclut: Unité booster équipé avec valve de sécurité, support pour bombonne, 1 mt de tube pour la connexion à la bombonne ou au réducteur de pression + Décapage bombonne.

ES Características - Ventajas

- Compacto, ligero y portátil
- Uso máximo de la bombona de nitrógeno N2
- Instalación directamente sobre la bombona de N2
- Válvula de seguridad, output N2 max 220 bar

El suministro incluye: Unidad Booster equipado con válvula de seguridad, soporte para la bombona de nitrógeno, tubo de 1 mt para la conexión a la bombona o al reductor de presión + Ataque Bombona.

PT Características - Benefícios

- Compacto, leve e portátil
- Máxima utilização do cilindro de nitrogênio N2
- Instalação directamente sobre o cilindro de N2
- Válvula de segurança, saída máxima de 220 bar N2

O fornecimento inclui: Unidade Booster equipado com válvula de segurança, o suporte para o cilindro de nitrogênio, 1 mt tubo para ligação ao cilindro de azoto ou de reductor de pressão + Ataque a Bottle.

| | | | | | | |
|---------------------------------------|---------------------|-------------------|----------------|--------------------------|---------------------------------------|---------------------|
| | | | | | | |
| AIR 1 - 10 bar 15 - 145 psi | 220 bar 3190 psi | 30 bar 435 psi | 280 NL / min * | 0 - 45 °C 32 - 113 °F | 230 x 350 x 230 mm 9 x 13 x 9 inch | 10,8 Kg 23,8 lbs |

* Il rendimento volumetrico varia in funzione di Pair e PN2 - The volumetric efficiency varies according to Pair and PN2 - Der Liefergrad ändert sich in Abhängigkeit vom Pair und PN2
Le rendement volumétrique varie en fonction de Pair et PN2 - El rendimiento volumétrico varia en función de Pair et PN2 - O rendimento volumétrico varia em função da Pair e PN2

ACCESSORIES



IT Trolley completo di AirBooster e dispositivo 39DMA.

DE Trolley mit AirBooster und Füll- und Kontrollarmatur 39DMA.

ES Maleta completa con AirBooster y dispositivo 39DMA.

EN Trolley with AirBooster and charging device 39DMA.

FR Chariot avec AirBooster et kit de chargement 39DMA.

PT Maleta completa com Booster e Kit de carregamento 39DMA.



AirBooster



p. 325



39DMA



p. 316

| code | Box content | Country |
|-----------|------------------|-------------------|
| 39KNCU03A | 39NCU03A + 39DMA | Italy - Portugal |
| 39KNCU04A | 39NCU04A + 39DMA | China - Korea |
| 39KNCU05A | 39NCU05A + 39DMA | Japan - Indonesia |
| 39KNCU06A | 39NCU06A + 39DMA | Germany |
| 39KNCU07A | 39NCU07A + 39DMA | France |
| 39KNCU08A | 39NCU08A + 39DMA | India |
| 39KNCU09A | 39NCU09A + 39DMA | Russia |
| 39KNCU26A | 39NCU26A + 39DMA | USA |
| 39KNCU27A | 39NCU27A + 39DMA | USA |
| 39KNCU28A | 39NCU28A + 39DMA | Spain |
| 39KNCU35A | 39NCU35A + 39DMA | Korea |
| 39KNCU36A | 39NCU36A + 39DMA | Germany |
| 39KNCU37A | 39NCU37A + 39DMA | India |
| 39KNCU38A | 39NCU38A + 39DMA | Japan |
| 39KNCU39A | 39NCU39A + 39DMA | Portugal |

IT Caratteristiche

Trolley con struttura antiurto e valvola pressurizzata per lo spostamento aereo e la sicurezza dei dispositivi all'interno.

EN Features

Trolley with shock-resistant structure and pressure relief valve for transport in the aircraft and safe storage of the contents.

DE Eigenheiten

Trolley mit stoßfester Struktur und Überdruckventil für den Transport im Flugzeug und ein sicheres Verstauen des Inhalts.

FR Caractéristiques

Chariot avec structure résistante aux chocs et soupape de surpression pour le transport dans l'avion et le stockage sécurisé du contenu.

ES Características

Maleta con estructura a prueba de golpes y válvula presurizada para viajes aéreos y para la seguridad de los dispositivos en el interior.

PT Características

Maleta de ferramentas com estrutura reforçada e pressurizada para viagens aéreas garantindo a segurança dos equipamentos.

IT Stazione mobile per caricamento, controllo forza e manutenzione dei cilindri a gas.

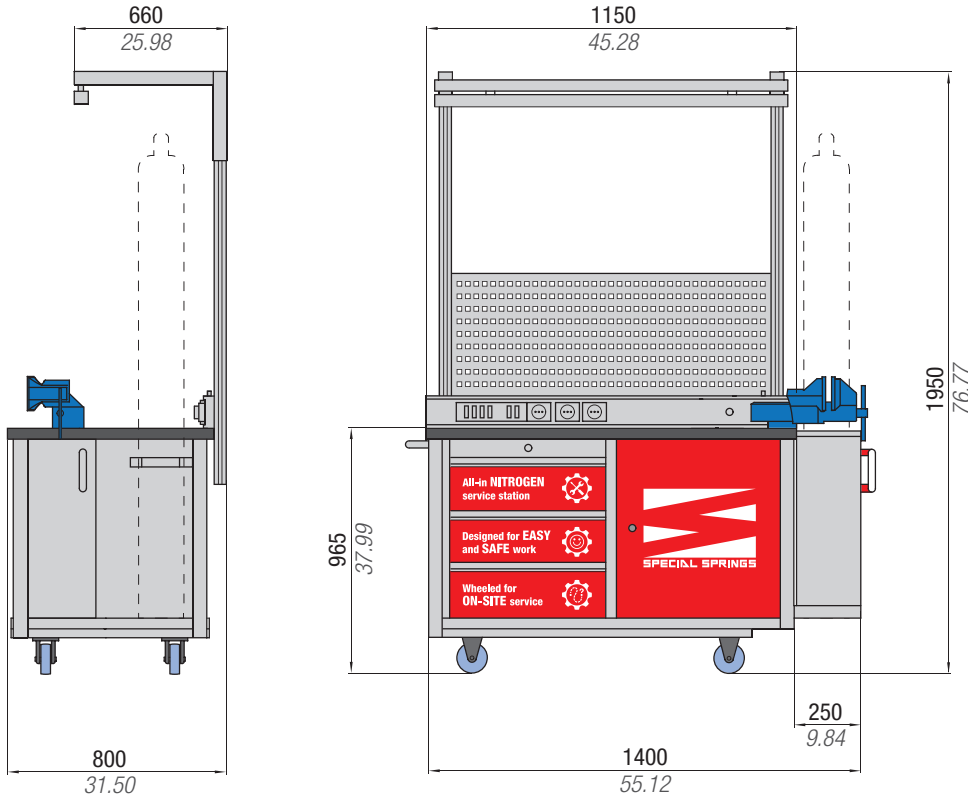
EN Mobile service station for charging, force testing and maintenance of gas springs.

DE Mobile Servicestation zum Befüllen, zur Druckkontrolle und zur Wartung der Gasdruckfedern.

FR Station de service mobile pour le chargement, la mesure de force et la maintenance de ressorts à gaz.

ES Estación móvil para carga, control de fuerza y mantenimiento de cilindros de gas.

PT Estação de trabalho movel para carregamento, ajuste de força e manutenção dos cilindros.



| code | Country |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 39UT027A | Italy - Denmark Egypt - Russia Austria - Indonesia India - Greece Holland - Romania Finlandia Czech Republic Spain - France Slovenia - Portugal Turkey - Korea Germany |
| 39UT031A | Japan - Usa |
| 39UT032A | Belgium - France |
| 39UT033A | United Kingdom |
| 39UT034A | Brasil |
| 39UT036A | China |

IT Vantaggi

- Unica postazione per strumenti e kit.
- Elevata mobilità.
- Maggiore sicurezza e comodità per ogni operazione.
- Predisposizione ancoraggio force tester.

FR Avantages

- Station tout-en-un pour tous outils et appareils.
- Grande mobilité.
- Plus de sécurité et de confort pour chaque opération.
- Préparé pour le montage du testeur de force.

IT Dati tecnici

- 3 cassetti (1 con vaschetta raccogli olio) + anta per riporre kit e tools.
- Piano di lavoro 1400 x 685 x 40 mm.
- Lampada a led con interruttore.
- Attacco aria compressa da 1/4".
- 3 prese elettriche.
- Morsa parallela 130 mm.
- Protezione operatore da proiezione parti in fase di caricamento.

FR Données techniques

- 3 tiroirs (un avec bac de récupération d'huile) + compartiment fermé avec porte pour ranger kits et outils.
- Plan de travail 1400 x 685 x 40 mm.
- Lumière LED avec interrupteur.
- Alimentation en air comprimé 1/4".
- 3 prises de courant.
- Étau parallèle 130 mm.
- Protection de l'opérateur contre la projection de pièces lors du chargement.

EN Advantages

- All-in-one station for all tools and devices.
- High mobility.
- More safety and comfort for each operation.
- Prepared for mounting of force tester.

ES Ventajas

- Estación de trabajo para instrumentos y kits.
- Alta movilidad.
- Mayor seguridad y comodidad para cada operación.
- Predisposición al anclaje de probador de fuerza.

EN Technical Data

- 3 drawers (one with oil drain pan) + compartment closed with door for storing kits and tools.
- Worktop 1400 x 685 x 40 mm.
- LED light with switch.
- Compressed air supply 1/4".
- 3 power sockets.
- Parallel vice 130 mm.
- Operator's protection against projection of parts during charging.

ES Datos técnicos

- 3 cajones (1 con bandeja de recogida de aceite) + puerta para guardar kit y herramientas.
- Encimera 1400 x 685 x 40 mm.
- Lámpara LED con interruptor.
- Conexión de aire comprimido de 1/4".
- 3 enchufes eléctricos.
- Tornillo de banco 130 mm.
- Protección del operador contra la proyección de piezas durante la carga.

DE Vorteile

- All-in-one Servicestation für Werkzeuge und Reparatursätze.
- Hohe Mobilität.
- Mehr Sicherheit und Komfort bei jedem Arbeitsschritt.
- Aufnahme zur Befestigung des Kraftmessgeräts.

PT Benefícios

- Todas as ferramentas e kit de carregamento em um so lugar.
- Total mobilidade.
- Maior segurança e comodidade.
- Já preparada para o Dinamometro.

DE Technische Daten

- 3 Schubladen (davon eine mit Ölauffangwanne) + mit Tür verschlossenes Fach zur Aufbewahrung von Reparatursätzen und Werkzeugen.
- Arbeitsplatte 1400 x 685 x 40 mm.
- LED-Leuchte mit Schalter.
- 1/4" Druckluftanschluss.
- 3 Steckdosen.
- Parallelschraubstock 130 mm.
- Schutz des Bedieners gegen das Herausspringen von Teilen beim Befüllen.

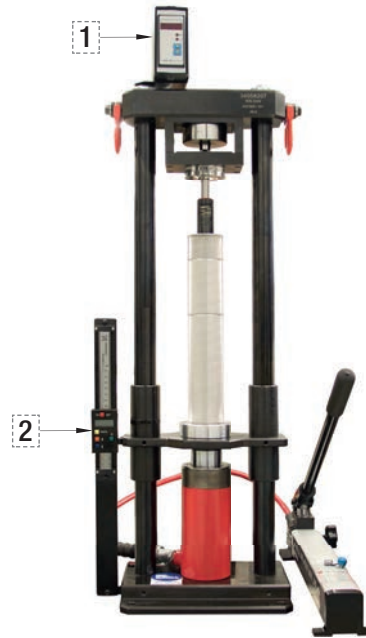
PT Dados técnicos

- 3 Gavetas (1 com espaços demarcados para os kits de manutenção) as outras para armazenar instrumentos e ferramentas.
- Mesa de trabalho de 1400 x 685 x 40mm.
- Lampada de LED com interruptor.
- Saída para ar comprimido 1/4".
- 3 tomadas.
- Morsa paralela de 130mm.
- Proteção para o operador enquanto carrega os cilindros.

ACCESSORIES - DIGITAL FORCE TESTER



code 39FT2000 ■



code 39FT00250A ■

code 39FT00500A ■

| | | | | |
|--|-----------------------------------------|----------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| | Measuring range | 0 ÷ 2000 daN <i>0 ÷ 4496 lb</i> | 0 ÷ 250 daN <i>0 ÷ 562 lb</i> | 0 ÷ 500 daN <i>0 ÷ 1124 lb</i> |
| | Recommended for FO | 0 ÷ 1500 daN <i>0 ÷ 3372 lb</i> | 0 ÷ 250 daN <i>0 ÷ 562 lb</i> | 250 ÷ 500 daN <i>562 ÷ 1124 lb</i> |
| | Max. length | 430 mm <i>16.93 inch</i> | 430 mm <i>16.93 inch</i> | 430 mm <i>16.93 inch</i> |
| | Max. diameter | 75 mm <i>2.95 inch</i> | 45 mm <i>1.77 inch</i> | 45 mm <i>1.77 inch</i> |
| | Accuracy according EN ISO 7500-1 | - | CLASS 1 (± 1%) | CLASS 1 (± 1%) |
| | Power supply | Battery (included) | 100 - 240 VAC 50-60 Hz | 100 - 240 VAC 50-60 Hz |
| | L x P x H | 255 x 310 x 1300 mm <i>10.04 x 12.20 x 51.18 inch</i> | 385 x 250 x 1075 mm <i>15.16 x 9.84 x 42.32 inch</i> | 385 x 250 x 1075 mm <i>15.16 x 9.84 x 42.32 inch</i> |
| | Weight | 22 Kg <i>48.50 lb</i> | 82 Kg <i>180.78 lb</i> | 82 Kg <i>180.78 lb</i> |

code 59VCATM02



DIGITAL DISPLAY

code 59RE150






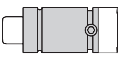


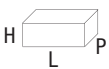

DIGITAL LINEAR SCALE



code 39FT07500A



code 39IPCDIG

| | | | |
|-------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------|--------------------------------------------------|
|  | Measuring range | 0 ÷ 7500 daN 0 ÷ 16861 lb | 0 ÷ 20000 daN 0 ÷ 44962 lb |
|  | Recommended for FO | 500 ÷ 7500 daN 1124 ÷ 16861 lb | 7500 ÷ 20000 daN 16861 ÷ 44962 lb |
|  | Max. length | 400 mm 15.75 inch | 760 mm 29.92 inch |
|  | Max. diameter | 120 mm 4.72 inch | 195 mm 7.68 inch |
|  | Accuracy according EN ISO 7500-1 | CLASS 1 (± 1%) | CLASS 1 (± 1%) |
|  | Power supply | 100 - 240 VAC 50-60 Hz | 100 - 240 VAC 50-60 Hz |
|  | L x P x H | 385 x 260 x 1350 mm 15.16 x 10.24 x 53.15 inch | 500 x 250 x 1462 mm 19.69 x 9.84 x 57.56 inch |
|  | Weight | 82 Kg 180.78 lb | 210 Kg 462.97 lb |

code 59VCATM02



DIGITAL DISPLAY

code 59RE150



DIGITAL LINEAR SCALE

code 59VCM051



DIGITAL DISPLAY

IT Cos'è DYBO 4.0?

Unità per controllo dei parametri operativi di cilindri ad azoto collegati su stampi lamiera.

EN What's DYBO 4.0?

Equipment for checking the operating parameters of nitrogen cylinders systems installed in stamping dies.

DE Was ist DYBO 4.0?

Gerät zur Überwachung der Funktionsparameter von in Werkzeuge eingebauten Gasdruckfeder-Systemen.

FR Qu'est-ce que c'est DYBO 4.0?

Équipement de contrôle des paramètres de fonctionnement des systèmes de ressort à gaz installés dans les moules d'emboutissage.

ES ¿Qué es DYBO 4.0?

Equipo para verificar los parámetros de funcionamiento de los sistemas de cilindros de nitrógeno instalados en troqueles de estampado.

PT O que é DYBO 4.0?

Equipamento para verificação de pressão dos sistemas de cilindros instalados nas ferramentas.



new

IT Vantaggi DYBO 4.0

- Adatto per controllo produzione Industria 4.0
- Riduzione dei costi di stampaggio, scarti e tempi improduttivi
- Registrazione della pressione del sistema
- Gestione simultanea della pressione su circuiti indipendenti
- Collegabile a tutti i pannelli di controllo sul mercato
- Adatta per tutti i sistemi collegati esistenti senza retrofit

EN DYBO 4.0 benefits

- Suitable for production control systems for Industry 4.0
- Reduction of stamping costs, scraps and downtimes of production
- Recording of the pressure value of the system
- Simultaneous management of pressure on independent lines
- Linkable to all control panels on the market
- Suitable for all existing systems without retrofit

DE Vorteile von DYBO 4.0

- Geeignet für Produktionsüberwachungssysteme für Industrie 4.0
- Reduzierung von Stanzkosten, Ausschuss und Produktionsausfallzeiten
- Aufzeichnung des Drucks des Systems
- Simultanes Druckmanagement auf unabhängigen Kreisläufen
- Kann an alle auf dem Markt verfügbaren Kontrollarmaturen angeschlossen werden
- Geeignet für alle bestehenden Systeme ohne Nachrüstung

FR Avantages DYBO 4.0

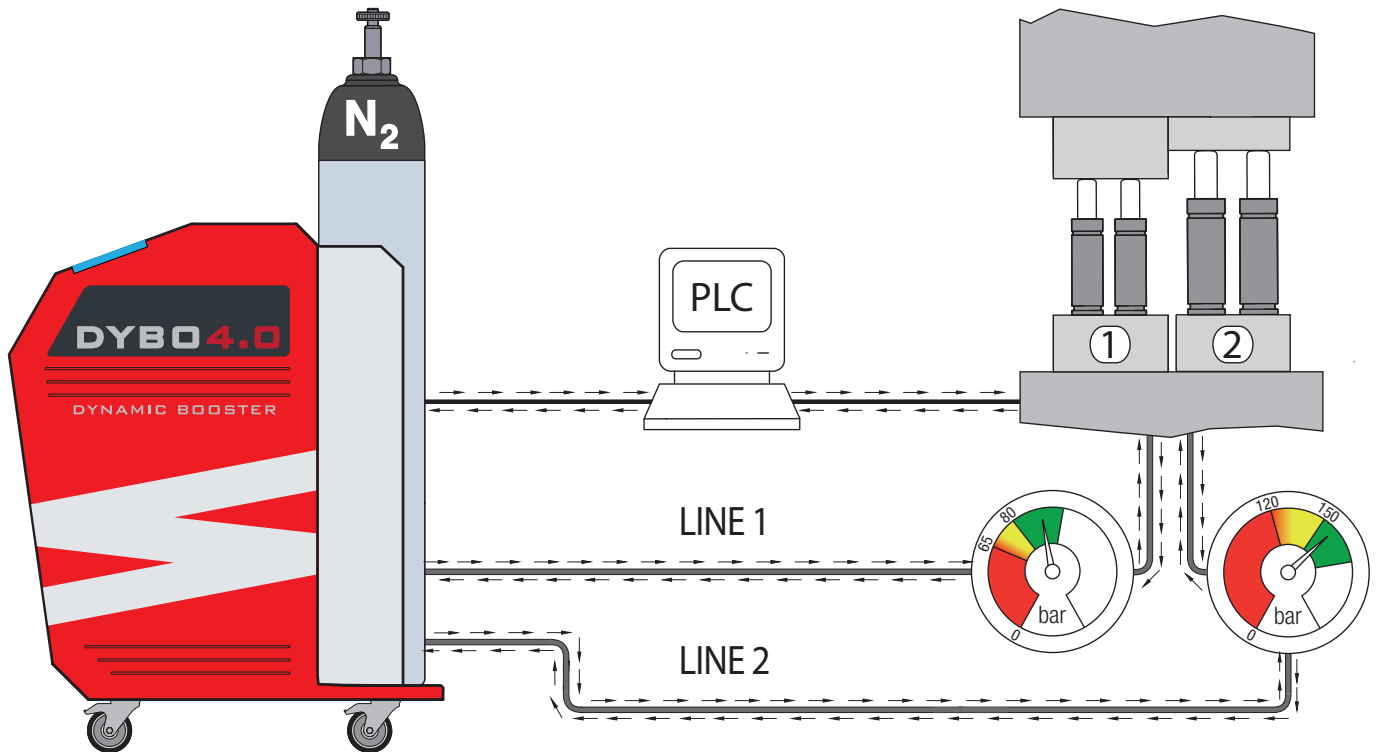
- Adapté aux systèmes de contrôle de production pour l'Industrie 4.0
- Réduction des coûts d'emboutissage, des déchets et des temps d'arrêt de la production
- Enregistrement de la valeur de pression du système
- Gestion simultanée de la pression sur des lignes indépendantes
- Connectable à tous les panneaux de contrôle sur le marché
- Adapté à tous les systèmes existants sans retrofit

ES Ventajas DYBO 4.0

- Adecuado para sistemas de control de producción para la Industria 4.0
- Reducción de los costos de estampado, desechos y tiempos muertos de producción
- Registro del valor de presión del sistema
- Gestión simultánea de la presión en líneas independientes
- Conectable a todos los paneles de control en el mercado
- Apto para todos los sistemas existentes sin modificación

PT Vantagens DYBO 4.0

- Compatível com os sistemas de controle da Indústria 4.0
- Redução dos custos de produção, refugos e paradas de produção
- Memorização dos valores de pressão da ferramenta
- Gestão simultânea de pressão sobre linhas independentes
- Compatível com todos os painéis de controle
- Compatível com todos os sistemas de cilindros sem necessidade de adaptação



IT Che cosa fa DYBO 4.0?

- Monitoraggio della pressione dell'azoto nel sistema ad ogni ciclo
- Trasmissione di un segnale che permette di fermare automaticamente la pressa se la pressione scende al di sotto di un valore di soglia regolabile
- Recupero automatico della pressione del sistema durante il fermo pressa
- Trasmissione dei dati operativi via cavo o Wi-Fi al server o al Cloud con protocollo MQTT

FR Que fait-DYBO 4.0?

- Détection de la pression du système d'azote à chaque cycle
- Transmission d'un signal permettant d'arrêter automatiquement la presse lorsque la pression tombe en dessous d'une valeur seuil réglable
- Récupération automatique de la pression dans le système lors de l'arrêt de la presse
- Transmission des données de travail par câble ou WI-FI au serveur ou au cloud avec protocole MQTT

EN What DYBO 4.0 does?

- Detection of the nitrogen system pressure at each cycle
- Transmission of a signal which allows to stop automatically the press when the pressure falls below an adjustable threshold value
- Automatic recovery of the pressure in the system during the press stop
- Transmission of working data via cable or Wi-Fi to server or Cloud with MQTT protocol

ES ¿Qué hace DYBO 4.0?

- Detección de la presión del sistema de nitrógeno en cada ciclo
- Transmisión de una señal que permite que la prensa se detenga automáticamente cuando la presión cae por debajo de un valor umbral ajustable
- Recuperación automática de la presión en el sistema durante la parada de la prensa
- Transmisión de datos de trabajo por cable o WI-FI al servidor o a la nube con protocolo MQTT

DE Was macht DYBO 4.0?

- Messung des Stickstoffgasdrucks bei jedem Zyklus
- Senden eines Signals, das es ermöglicht, die Presse automatisch zu stoppen, wenn der Druck unter einen einstellbaren Grenzwert fällt
- Automatische Wiederherstellung des Drucks im System bei Pressenstillstand
- Senden der Arbeitsdaten über Kabel oder Wi-Fi an Server oder Cloud mit MQTT Protokoll

PT O que DYBO 4.0 faz?

- Detecta a pressão do Sistema a cada ciclo
- Transmite um sinal que permite que a prensa seja desligada automaticamente quando a pressão cai abaixo do valor determinado
- Recarregamento automatico da pressão quando a prensa esta parade
- Transmissão automatica dos dados via cabo ou WI-FI para o servidor ou para nuvem utilizando o protocol MQTT

| | | | | | | |
|------------------------------------------------------|-----------------------------------|---------------------------------|-------------------------------|----------------------------------------|-----------------------------------------------------------------|------------------------------------|
| | | | AIR | | | |
| | 210 bar <i>3045 psi</i> | 30 bar <i>435 psi</i> | 6 bar <i>87 psi</i> | 0 - 45 °C <i>32 - 113 °F</i> | 550 x 990 x 1200 mm <i>21.65 x 38.98 x 47.24 inch</i> | 165 Kg <i>363.76 lbs</i> |
| | | | | | | |
| 230/400/415/440/ 480/575 V - 50 Hz / 60Hz | | | | | | |

IT Cos'è EYE?

Sistema digitale per il rapido controllo della pressione di cilindri ad azoto autonomi. Valore di soglia della pressione regolabile con 3 diverse unità di misura (bar, psi, MPa). Alimentato a batteria.

EN What's EYE?

Digital system for quick control of the pressure of self-contained gas cylinders. Settable pressure threshold value with 3 different measurement units (bar, psi, MPa). Battery-powered.

DE Was ist EYE?

Digitales System zur schnellen Überprüfung des Drucks von autonomen Gasdruckfedern. Grenzwert in drei verschiedenen Maßeinheiten (bar, psi, MPa) einstellbar. Batteriebetrieben.

FR Qu'est-ce que c'est EYE?

Système numérique pour le contrôle rapide de la pression de ressorts à gaz autonomes. Valeur de seuil de la pression réglable avec 3 unités de mesure différentes (bar, psi, MPa). Alimenté par piles.

ES ¿Qué es EYE?

Sistema digital para el control rápido de la presión de los cilindros de gas autónomos. Valor umbral de la presión configurable con 3 unidades de medida diferentes (bar, psi, MPa). Alimentado por batería.

PT O que é EYE?

Sistema digital para um controle rápido de pressão para cilindros autonomos, podendo ser configurado com 3 diferentes valores-limiar de pressão (bar, psi, MPa). Alimentação com bateria.



new

IT Vantaggi EYE

- Visualizzazione e lettura rapida
- Riduzione dei costi di manutenzione degli stampi
- Interfaccia semplice
- Piccole dimensioni
- Alimentazione elettrica con batterie a lunga durata

FR Avantages EYE

- Visualisation et lecture rapide
- Réduction des coûts de maintenance des moules
- Interface simple
- Dimensions compactes
- Alimentation électrique avec batterie longue durée

EN EYE benefits

- Quick visualization and reading
- Reduction of maintenance costs of dies
- Simple interface
- Small size
- Power supply with long-lasting battery

ES Ventajas EYE

- Visualización y lectura rápida
- Reducción de los costes de mantenimiento de los troqueles
- Interfaz simple
- Tamaño pequeño
- Fuente de alimentación con batería de larga duración

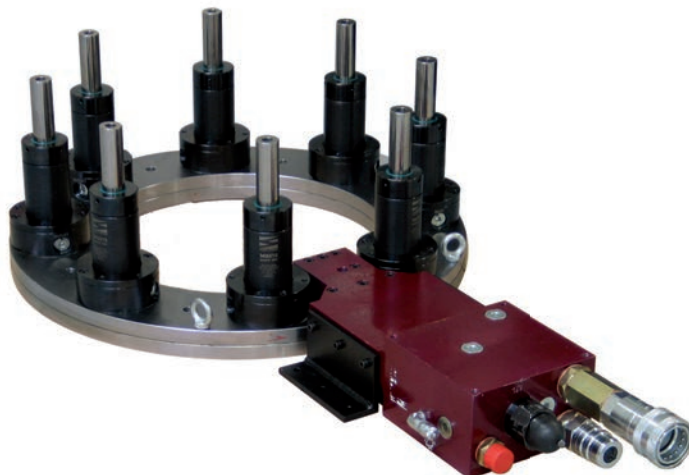
DE Vorteile von EYE

- Schnelle Anzeige und Ablesbarkeit
- Reduzierung der Wartungskosten der Werkzeuge
- Einfache Schnittstelle
- Platzsparend
- Stromversorgung über langlebige Batterie

PT Vantagens EYE

- Rápida leitura e visualização da pressão
- Redução dos custos de Manutenção do ferramental
- Interface simples
- Dimensões reduzidas
- Fonte de alimentação com bateria de longa duração

| | | | | | |
|-------------------------|-------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------|--|
| | | | | | |
| Battery lifetime | Measuring range: | Accuracy | Alarms | °F °C | |
| > 2000 readings | 0 ÷ 600 bar 0 ÷ 8700 psi 0 ÷ 60 MPa | ±1,0% f.s., ±1 digit whichever is greater | Low pressure (adjustable), High pressure (fixed), Sensor malfunction, Low battery | 0 - 80 °C 32 - 176 °F | |



IT VANTAGGI DEL SISTEMA SPECIAL SPRINGS

- Ritorno degli steli dei cilindri indipendente dal ciclo pressa.
- Velocità di ritorno degli steli dei cilindri indipendente dalla velocità della pressa.
- Velocità di ritorno degli steli dei cilindri costante e regolabile.
- Forza di contrasto dei cilindri costante, crescente o decrescente da inizio a fine ciclo di lavoro.
- Utilizzo parziale della corsa dei cilindri possibile senza apportare modifiche al sistema.
- Continuo smaltimento del calore con scambiatori di calore sull'unità di comando.
- Massima affidabilità del sistema garantita dal fluido idraulico continuamente rigenerato.

EN ADVANTAGES OF THE SPECIAL SPRINGS SYSTEM

- Return stroke of the cylinder rods independent from press cycle.
- Return speed of cylinder rods independent from press speed.
- Return speed of cylinder rods constant and adjustable.
- Cylinder contrasting force: constant, increasing or decreasing from beginning to end of working cycle.
- Partial use of cylinder stroke possible without system modifications.
- Continuous dispersal of the heat by heat exchanger on the command unit.
- Maximum system reliability guaranteed by the constant renewal of the hydraulic fluid.

DE DIE VORTEILE DES SYSTEMS VON SPECIAL SPRINGS

- Rücklauf der Kolbenstangen unabhängig vom Pressenzklus.
- Rücklaufgeschwindigkeit der Kolbenstangen unabhängig von der Pressengeschwindigkeit.
- Rücklaufgeschwindigkeit der Kolbenstangen konstant und einstellbar.
- Gegenkraft der Zylinder konstant, zunehmend oder abnehmend von Anfang bis Ende des Arbeitszyklus.
- Teilnutzung vom hub der Zylinder möglich, ohne dass dazu Systemänderungen erforderlich sind.
- Kontinuierliche Ableitung der Wärme, durch einen Wärmeaustauscher im Hydraulikaggregat.
- Maximale Zuverlässigkeit des Systems, garantiert durch eine kontinuierliche Filtrierung und Temperierung des Hydrauliköls.

FR LES AVANTAGES DE SPECIAL SPRINGS SYSTÈME

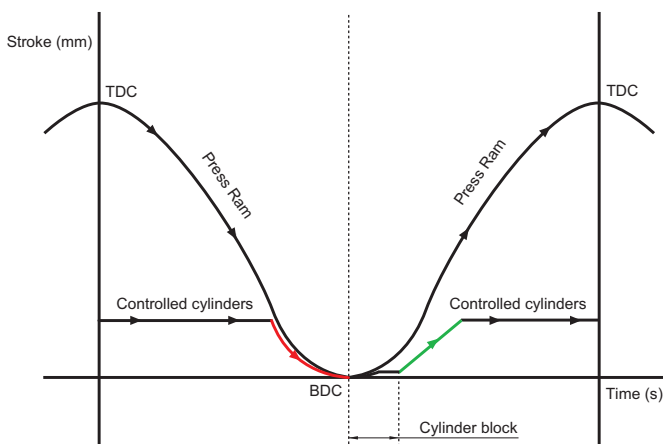
- Course de retour des pistons indépendante du cycle de la presse.
- Vitesse de remontée des pistons indépendante de la vitesse de la presse.
- Vitesse de remontée des pistons constante et réglable.
- Force d'opposition du vérin : constante, croissante ou décroissante du début à la fin du cycle de travail.
- Utilisation partielle de la course possible sans modification du système.
- Dispersion continue de la chaleur avec un échangeur thermique sur l'unité de commande.
- Fiabilité maximale du système garantie par le renouvellement permanent du fluide hydraulique.

ES VENTAJAS DEL SISTEMA SPECIAL SPRINGS

- Retorno del cilindro independiente del ciclo de la prensa.
- Velocidad de retorno del vástago independiente del ciclo de la prensa.
- Velocidad de retorno del vástago constante a regulable.
- Fuerza de contraste del cilindro: constante, aumentable o disminuible de principio a fin del ciclo de trabajo.
- Posibilidad de utilizar incluso parcialmente la carrera sin necesidad de modificar el sistema.
- Continua dispersión del calor con un intercambiador de calor en la unidad de control.
- Fiabilidad máxima del troquel garantizada por la constante renovación del fluido en el sistema.

PT VANTAGENS DO SISTEMA SPECIAL SPRINGS

- Curso de retorno do cilindro independente do ciclo da prensa.
- Velocidade de retorno do êmbolo independente do ciclo da prensa.
- Velocidade de retorno do êmbolo constante ou regulável.
- Força do cilindro: constante ou variável (maior ou menor força) do início ao fim do ciclo de trabalho.
- Possibilidade de se usar também parcialmente o curso sem ter necessidade de modificar o sistema.
- Continua dissipação do calor com um permutador de calor na unidade de comando.
- Máxima fiabilidade da ferramenta garantida pela renovação constante do fluido no sistema.



Standard version with 2 lines. Customized version available with more lines.



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IT Carichi forti - estrattore a gas con forza di estrazione regolabile. Montaggio diretto su portapunzoni standard per punzoni ball-lock o con testa ISO 8020.

EN Heavy duty - Nitrogen gas stripper with adjustable force. Direct mounting on standard retainers for Ball-Lock or ISO 8020 punches.

DE Schwere Belastung - Gasdruck-Abstreifer mit einstellbarer Kraft. Direktmontage auf Standard-Stempelhalteplatten für Stempel mit Ball-Lock-System oder nach ISO 8020.

FR Charge lourde - Unité de dévêtissage à gaz avec force réglable. Montage direct sur les plaques porte-poinçon standard pour poinçons avec système Ball-Lock ou selon ISO 8020.

ES Carga pesada - Extractor de punzones de nitrógeno con fuerza ajustable. Montaje directo en porta punzones estándares para punzones Ball-Lock o según ISO 8020.

PT Carga pesada - Perfuradores de nitrogênio com força ajustável. Montagem directa em porta punções padrão para punções Ball-Lock ou segundo ISO 8020.



new



OPAS
(Over Pressure Active Safety)

IT Caratteristiche

- Montaggio diretto su portapunzoni standard
- Testina estrattore e premiamiera lunga o corta in bronzo guidata, rimovibile e sagomabile
- Testina anti-rotazione con 8 mm di corsa
- 4 codici colore standard indicativi del carico/forza
- 8 modelli per punzoni da 10 a 40 mm di diametro
- Forza a contatto fino a 1880 daN / 4200 lbf
- Forza di estrazione fino a 3200 daN / 7200 lbf
- Forze di estrazione regolabili
- Collegabile con altre unità NITRO STRIP per massima flessibilità
- Sicurezza OPAS inclusa come standard
- Dimensioni compatte

EN Features

- Direct mounting on standard retainers
- Bronze stripping head that is guided, demountable and machinable. Available short or long
- Anti-rotation head with 8 mm stroke
- 4 standard color codes for different forces/loads
- 8 models with punch diameter from 10 to 40 mm
- Contact force as high as 1880 daN / 4200 lbf
- Stripping force as high as 3200 daN / 7200 lbf
- Adjustable stripping force
- Connectable with other NITRO STRIP units for maximum flexibility
- OPAS built-in as standard
- Compact design

DE Merkmale

- Direktmontage auf Standard-Stempelhalteplatten
- Abstreiferkopf aus Bronze, geführten, abnehm- und bearbeitbar. Verfügbar kurz oder lang
- Abstreiferkopf verdrehgesichert, mit einem Hub von 8 mm
- 4 Standard-Farbcodes für verschiedene Kräfte/ Belastungen
- 8 Modelle mit Stempeldurchmesser von 10 bis 40 mm
- Kontaktkraft bis zu 1880 daN / 4200 lbf
- Abstreiferkraft bis zu 3200 daN / 7200 lbf
- Abstreiferkraft einstellbar
- Anschließbar mit anderen NITRO STRIP Einheiten für maximale Flexibilität
- OPAS standardmäßig eingebaut
- Kompaktes Design

FR Caractéristiques

- Montage direct sur les plaques porte-poinçon standard
- Tête de dévêtisseur de bronze, guidée, démontable et qui peut être usinée. Disponible courte ou longue
- Tête de dévêtisseur résistant à la torsion, avec une course de 8 mm
- 4 codes couleur standard avec différentes forces/charges
- 8 modèles avec diamètres de poinçon de 10 à 40 mm
- Force de contact jusqu'à 1880 daN / 4200 lbf
- Force de dévêtisseur jusqu'à 3200 daN / 7200 lbf
- Force de dévêtisseur ajustable
- Possibilité de relier avec autres unités NITRO STRIP pour une flexibilité maximale
- OPAS installée de série - Design compact

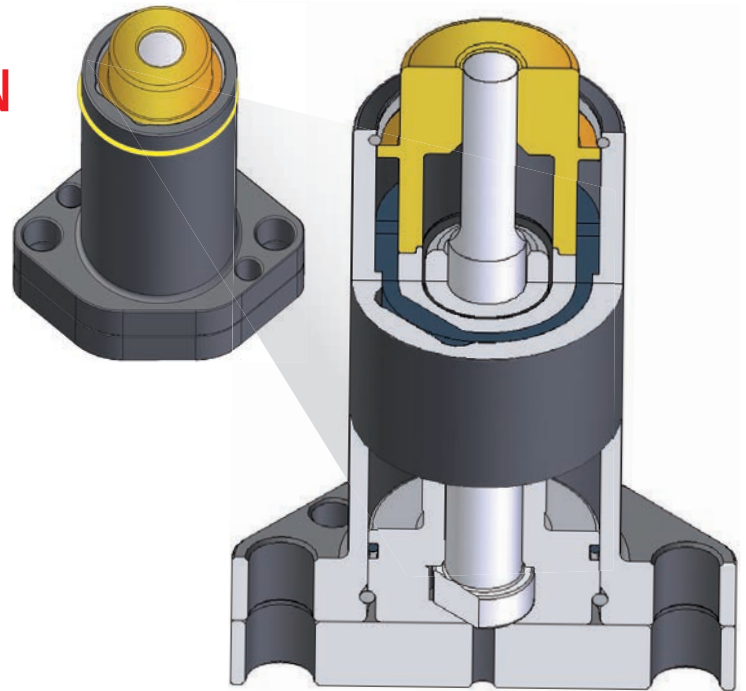
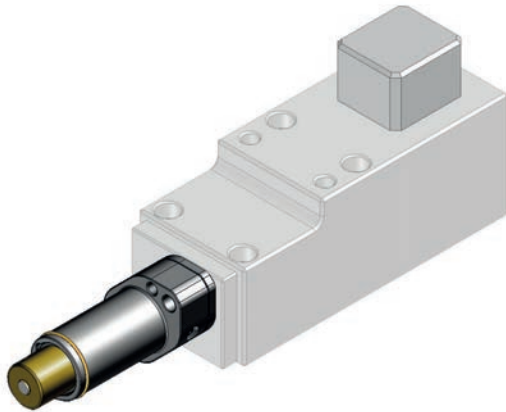
ES Características

- Montaje directo en porta punzones estándares
- Cabeza del extractor de bronce, guiada, desmontable y mecanizable. Disponible corta o larga
- Cabeza anti-rotación con carrera de 8 mm
- 4 códigos de colores estándares para fuerzas/ cargas diferentes
- 8 modelos con diámetro del punzón de 10 a 40 mm
- Fuerza de contacto hasta 1880 daN / 4200 lbf
- Fuerza de extracción hasta 3200 daN / 7200 lbf
- Fuerza de extracción ajustable
- Conectable a otras unidades NITRO STRIP para una máxima flexibilidad
- OPAS incluida como estándar
- Diseño compacto

PT Características

- Montagem directa em porta punções padrão
- Cabeça do destacador em bronze, guiada, removível e de fácil usinagem. Disponível curta ou longa
- Cabeça anti-rotação com curso de 8 mm
- 4 códigos de cores padrão para diferentes forças/cargas
- 8 modelos com diâmetro da punção de 10 a 40 mm
- Força de contato até 1880 daN / 4200 lbf
- Força de extração até 3200 daN / 7200 lbf
- Força de extração pode ser ajustada
- Possibilidade de interligação com outras unidades NITRO STRIP para o máximo de flexibilidade
- OPAS como padrão
- Design compacto

Initial force up to 2000 daN
Stripping force up to 4000 daN



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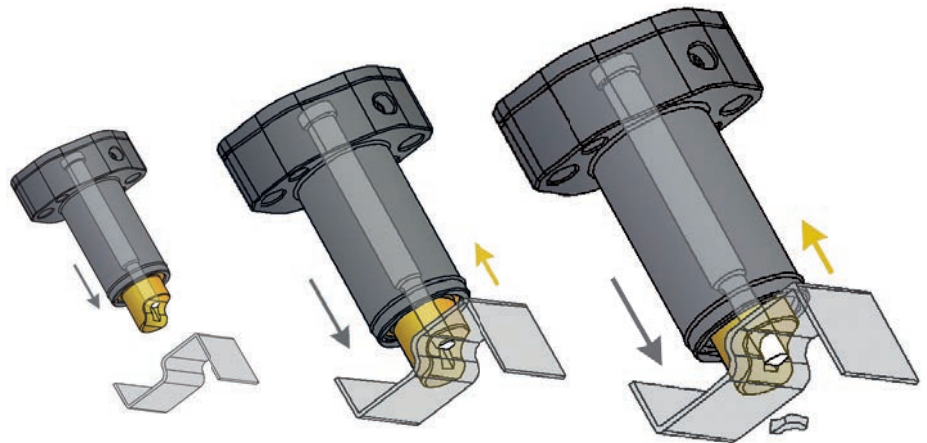
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IT - Testa prelamiera estraibile e sagomabile
 - Facile posizionamento e fissaggio
 - Elevata forza di estrazione
 - Dimensioni compatte
 - Adatto per punzoni ISO 8020
 - Non è richiesto l'uso di altro portapunzone
 - Ideale per uso combinato con unità cam

EN - Stripper head removable and mouldable
 - Easy positioning
 - High and adjustable holding and stripping force
 - Compact dimensions
 - Suitable for ISO 8020 shoulder style punch
 - Doesn't require the use of standard retainer
 - Ideal for combined use with cam unit

DE - Niederhalterkopf herausnehmbar und mit bearbeitbarer Kontur
 - Einfache Positionierung
 - Hohe und einstellbare Niederhalter- und Abstreiferkraft
 - Kompakte Größe
 - Geeignet für Schneidstempel ISO 8020
 - Andere Stempelhalteplatten sind nicht erforderlich
 - Ideal für den Einsatz in Kombination mit Schiebern

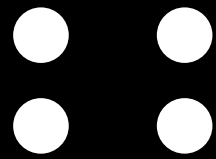
FR - Tête de bronze que peut être modelée et extraite
 - Positionnement facile
 - Force élevée de extraction
 - Dimensions compactes
 - Indiqué pour poinçons ISO 8020
 - Il ne demande pas l'emploi de autre poinçon
 - Idéal à utiliser avec l'unité CAM

ES - Cabeza de despegador desmontable y moldeable
 - Fácil posicionamiento
 - Fuerza de extracción superior y ajustable
 - Dimensiones compactas
 - Apropiado para punzón con cabeza ISO 8020
 - No requiere uso de porta punzón estándar
 - Ideal para utilizar con carro

PT - Cabeça de corte fácil remoção e maquinável
 - Fácil posicionamento
 - Fixação alta e ajustável e força de corte
 - Dimensões compactas
 - Adequado para punção o ISO 8020 respigado
 - Não necessita do uso de um retentor normalizado
 - Ideal para uso combinado com uma unidade CAM



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