GENERAL CATALOGUE

TECAPRES

PERFECTION IN PRESSURE DYNAMICS

TPGAS 09/2024

Técnicas Aplicadas de Presión, s.l.

Welcome to Tecapres!

As usual in TECAPRES we have worked on updating our current program through this catalogue and we want it to continue to be a helpful tool for you.

Periodically in TECAPRES we work on the improvement of this tool with the intention that it becomes an essential help for our customers.

In these pages you will find the complete description of our products, as well as their characteristics, how to use them and safety instructions to guarantee the integrity of the people who use them, as well as the profitability provided by the quality of our products and services.

At TECAPRES we work every day with the enthusiasm of becoming indispensable partners of our customers. The achievement of their objectives is our main goal.

For this reason, from TECAPRES we offer a continuous service of direct support, translated into both telephone and face-to-face advice, which is also reinforced with training courses.

Our vocation is to provide value from our products, and also by contributing our knowledge in intangibles that go beyond them. Attention, analysis and offering unforeseen solutions motivate us to be more helpful every day.

The reason for being of TECAPRES is Continuous Improvement through Quality Certifications and Approvals, while maintaining our commitment to the Creation of Social Wealth and scrupulous respect for the Environment.

The people who make up this team would like to thank you for the trust you place in us, we strive to improve responsibly and constantly.

We send you a sincere, respectful and affectionate greeting!

Thank you for trusting in TECAPRES.

¡Bienvenidos a **TECAPRES**!

Como es habitual en TECAPRES, hemos trabajado en la actualización de nuestro programa actual a través de este catálogo y queremos que siga siendo una herramienta útil para ustedes.

Periódicamente en TECAPRES trabajamos en la mejora de esta herramienta con la intención de que se convierta en una ayuda imprescindible para nuestros clientes.

En estas páginas se encuentra la descripción completa de nuestros productos, así como sus características, modo de empleo e instrucciones de seguridad con el fin de asegurar la integridad de las personas que los utilizan, además de la rentabilidad que la calidad de nuestros productos y servicios aportan.

En TECAPRES trabajamos día a día con la ilusión de convertirnos en compañeros indispensables de nuestros clientes. La consecución de sus objetivos, es nuestro principal objetivo.

Es por ello que desde TECAPRES ofrecemos un servicio continuo de apoyo directo, traduciéndose en una asesoría tanto telefónica como presencial fortaleciéndose además con cursos de formación.

Nuestra vocación es aportar valor desde nuestros productos, y también aportando nuestro conocimiento en intangibles que van más allá de éstos. La atención, el análisis, ofrecer soluciones no planteadas, nos motiva en nuestro desempeño de ser cada día más útiles.

Es razón de ser de TECAPRES la Mejora Continua a través de las Certificaciones de Calidad y Homologaciones, manteniendo un compromiso con la Creación de Riqueza Social y el escrupuloso respeto al Medio Ambiente.

Las personas que componemos este equipo queremos agradeceros la confianza que depositáis en nosotros esforzándonos en mejorar de forma responsable y constante.

¡Os enviamos un sincero, respetuoso y afectuoso saludo!

Gracias por confiar en TECAPRES.

TECAPRES

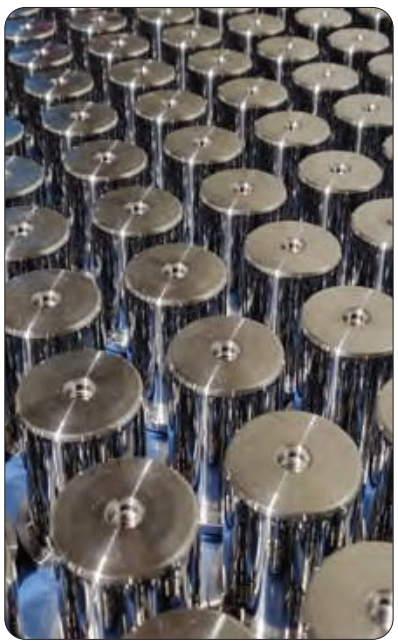
PERFECTION IN PRESSURE DYNAMICS

Ø BODY	INITIAL FORCE (daN)															
(mm)	≤50	90-100	140-170	200	250-320	350-400	420-450	470-500	550-600	660	740-750	850	920	1000	1100	1200-1250
12	TPC12.1															
14	TPC14															
15	TPHT15	MICRO15														
M16x1,5	TPRF16 TPRN16 TPR16 TPRB16							Model according with VDI /ISO Standard								
M16x2	TPRC16															
19		TPC19.2	MICRO19V1													
20		TPA20														
22		TPG22														
M24,1,5		TPRC24 TPRT24	TPR24 TPRB24													
25			TPHT25.1	TPK25.1 TPKN25.1 TPKR25.1 TPC25.1 TPA25 TPG25 TPCT25.1	MICRO25.2 MICRO25R.2 MICRO25V1 TPH320		TPF420									
26				TPG26												
M28x1,5				TPR28.1												
32				TPS32.2 TPHT32	TPSP300.1 TPKN32 TPKR32 TPG32 TPCT300	MICRO32VS MICRO32V MICRO32C TPK32 TPC350.1	MICRO32 MICRO32R MICRO32H TPGP32 TPCT450	TITAN32 TPH470 TPH500	TPH570		TPF750.1					
38		TPSL100			TPS250.2 TPHC300 TPHT38			MICRO38VS.1 MICRO38V MICRO38C.1 TPSP500.1 TPC500	TPK600 TPCT550	MICRO38 MICRO38R MICRO38H	TITAN38	TPH850.1 TPH850.1C		TPH1000.1 TPH1000.1C TPF1000B.1 TPFS1000.2		
M38x1,5					TPR38.1											
45						TPB350 TPHT45		TPS500.2 TPKF500 TPG500			MICRO45V.1 MICRO45 MICRO45C.1 MICRO45CF.1 TPSP750 TPKS750		TITAN45			TPH1250.1 TPH1250.1C
M45x1,5											TPR45					
50					TPSL250 TPSLR250			TPHT50	TPHC 600		TPS750 TPKF750		MICRO50.1 MICRO50VS.1 MICRO50CS.1 MICRO50CF.1 TPKFR1000	TPSP1000.1 TPKS1000 TPC1000	MICRO50V MICRO50C.1	TITAN50
M50x1,5														TPR50		
63												TPB850.1				
75											TPB750					TPB1250
95																
105																
120																
150																
195																

Ø BODY	INITIAL FORCE (daN)															
(mm)	1500	1700-1800	1900	2000-2100	2400-2500	2800-3000	4000-4300	4700-5000	6600	7000	7500	9500	10000	11800	18300	20000
12																
14																
15																
M16x1,5																
M16x2																
19																
20																
22																
M24,1,5																
25																
26																
M28x1,5																
32																
38																
M38x1,5																
45																
M45x1,5																
50		TPH1700.1 TPH1700.1C TPFS1800.2	TPH2000.1 TPH2000.1C	TPFS2000.2												
M50x1,5																
63	MICRO63V.2 MICRO63CF MICRO63C.1 TPSP1500 TPK1500.1 TPKN1500 TPC1500.1		MICRO63	TITAN63		TPH2800.1 TPH2800.1C TPFS3000.2										
75	TPS1500.2 TPKF1500				MICRO75.2 MICRO75CS MICRO75CF TPSP2400 TPKFR2400 TPK2500 TPC2500 TPHC 2500 TPCT2500	TITAN75.1 TPK3000 TPC3000 TPCT3000	TPH4300.1 TPH4300.1C	TPFS4700.3								
95	TPB1500	TPB1800				TPS3000.1 TPKF3000	MICRO95.2 MICRO95CF TPSP4200 TPKFR4200 TPK4250 TPC4000			TPF7000	TPF7500 TPF7500C					
105								TPCT5000								
120						TPB2800 TPB3000		TPS5000	MICRO120V.1 TPSP6600 TPC6500		MICRO120H			TPF11800 TPF11800C		
150								TPB5000			TPS7500	MICRO150 TPSP9500 TPC10000		MICRO150H	TPF18300 TPF18300C	
195													TPS10000			MICRO195 TPSP20000

Model according with VDI /ISO Standard


90 Bar
90 Bar



MICRO 25 x 10, 19, 32, 75
New stroke lengths

Page 34

MICRO 25V1
New gas spring model

Page 35

MICRO 95CF
New gas spring model

Page 67

TPH 320
New gas spring model

Page 82

TPSP 1500 x 175, 200
New stroke lengths

Page 116

TPSP 2400 x 175
New stroke lengths

Page 117

TPSP 4200 x 175
New stroke lengths

Page 118

TPKN 25 x 100 | TPKN 32 x 100, 125
New stroke lengths

Page 141, 144

TPC 25 x 175, 200
New stroke lengths

Page 165

TPRF 16 - TPRN 16
New gas spring models

Page 176, 177

TPHC
New Hollow gas spring range

Page 199

TPG 32 x 125
New stroke length

Page 209

TPSL 250 x 38, 63
New stroke lengths

Page 223

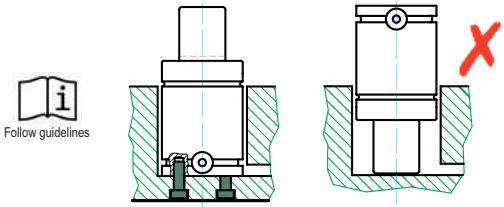
TPCM
Monobloc Stop - Cylinder

Page 225

TPCB / TPCBS
Standard Stop - Cylinder

Page 237

Gas springs instaling guideline
Assembly Possibilities

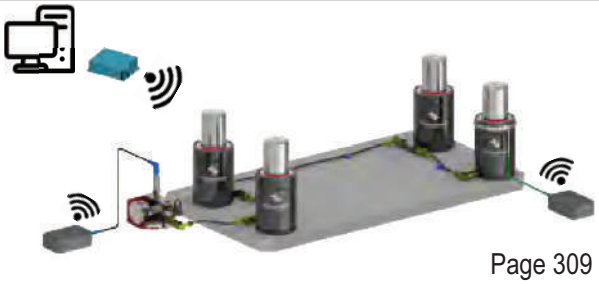


Page 288

FS 12
Flange

Page 293

WIRELESS CONTROL SYSTEM
Industry 4.0

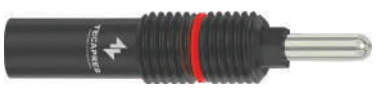


Page 309

Seal 24º
Racords and Hoses

Page 323

SP1 - SP2
Spring plungers



Page 352, 353

Model according with VDI /ISO Standard

PED 2014/68/UE

All TECAPRES gas springs fulfil the European Community Pressure Equipment Directive 2014/68/EU(PED)
Todos los cilindros TECAPRES cumplen con la Directiva europea sobre aparatos a presión 2014/68/UE

VDI 3003	ISO 11901	E.24.54.815.G	RENAULT EM24.54/700/F	PSA E24.54/815/G

Gas Spring manufactured in accordance with this standard
El cilindro cumple con la norma indicada

VDI SAFETY

Gas spring designed with active safety system for free release
Cilindro diseñado con sistemas de seguridad activa para la liberación descontrolada

VDI SAFETY

Gas spring designed with active safety system for overstroke
Cilindro diseñado con sistemas de seguridad activa para la sobrecarrera

VDI SAFETY

Gas spring designed with active safety system for overpressure
Cilindro diseñado con sistemas de seguridad activa para la sobrepresión

Floating guiding system that allows the gas spring to absorb side loads
Sistema de guiado flotante que permite al cilindro absorber cargas laterales

Autonomous gas springs with the possibility of connection to a control panel
Cilindros autónomos con posibilidad de conexión a panel de control

Protect gas springs from liquid or solid pollution
Proteger de contaminaciones sólidas y líquidas

This model allows for an optional shield-scraper / Rod protection cap
Permite opción al uso de rascador-escudo / dispositivo protector eje

Up to 120ºC

Designed to work up to a maximum of 120ºC
Diseñado para trabajar hasta un máximo de 120ºC

Stop cylinder
Cilindro con sistema de parada

Cylinder with slow speed return
Cilindro con expansión lenta del eje

Initial force for an open gas spring in daN, at 20ºC
Fuerza inicial a cilindro abierto en daN, a 20ºC

90%

Final force at 90% nominal stroke in daN, at 20ºC (maximum recommended stroke)
Fuerza final al 90% de la carrera nominal en daN, a 20ºC (carrera máxima recomendada)

100%

Final force at 100% nominal stroke in daN, at 20ºC (not recommended)
Fuerza final al 100% de la carrera nominal en daN, a 20ºC (no recomendado)

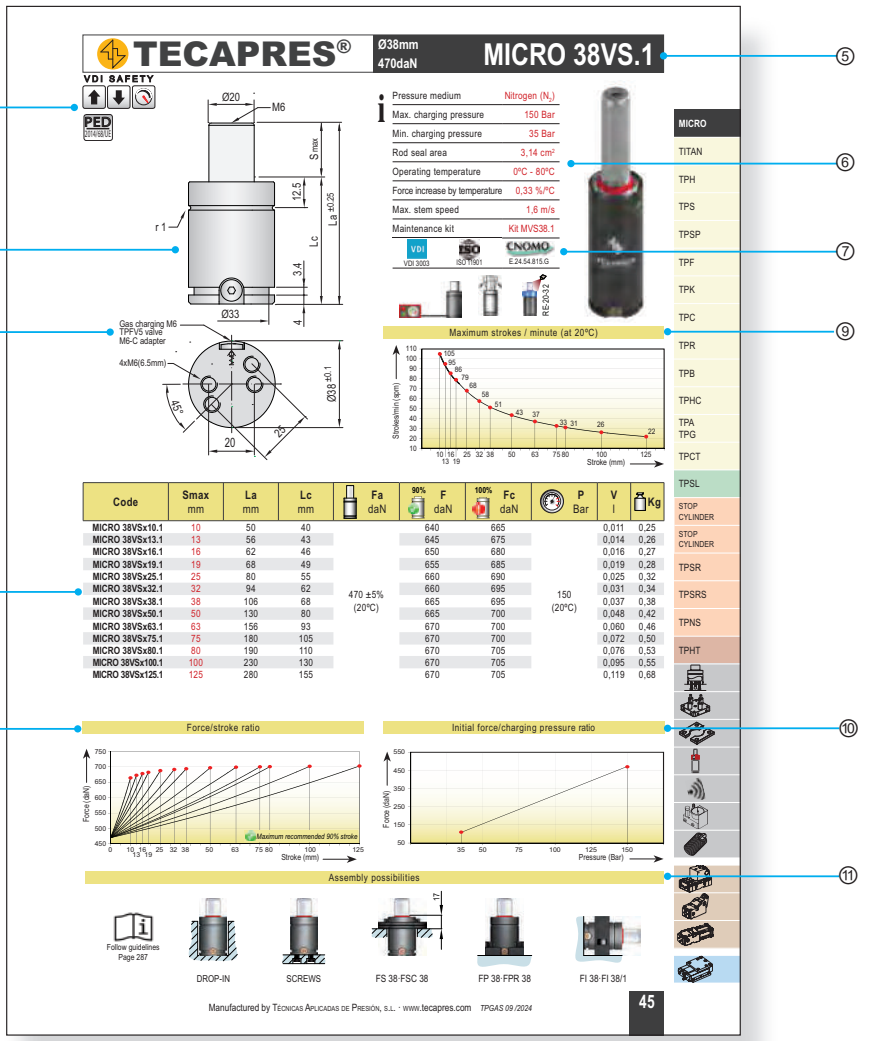
Charging pressure in Bar at 20ºC
Presión de carga a 20ºC

Weight in Kg
Peso en Kg

Smax mm	**Maximum working stroke in mm** Carrera máxima de trabajo en mm
La mm	**Open gas spring length in mm** Longitud de cilindro abierto en mm
Lc mm	**Closed gas spring length (100% stroke) in mm** Longitud de cilindro cerrado (100% carrera) en mm
V l	**Gas volume of open gas spring in litres** Volumen de gas en cilindro abierto en litros

All dimensions are in mm. In Tecapres we are immersed in a policy of improvement and continuous evolution of the product through research and development. Therefore, all specifications are subject to change in this catalog without notice.

Todas las medidas son en mm. En Tecapres estamos inmersos en una política de mejora y evolución continua del producto a través de la investigación y desarrollo. Por ello, queda reservado el derecho a modificar cualquier especificación de este catálogo sin previo aviso.



Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38VSx10.1	10	50	40	470 ±5% (20ºC)	640	665	150 (20ºC)	0,011	0,25
MICRO 38VSx13.1	13	56	43		645	675		0,014	0,26
MICRO 38VSx16.1	16	62	46		650	680		0,016	0,27
MICRO 38VSx19.1	19	68	49		655	685		0,019	0,28
MICRO 38VSx25.1	25	80	55		660	690		0,025	0,32
MICRO 38VSx32.1	32	94	62		660	695		0,031	0,34
MICRO 38VSx38.1	38	106	68		665	695		0,037	0,38
MICRO 38VSx50.1	50	130	80		665	700		0,048	0,42
MICRO 38VSx63.1	63	156	93		670	700		0,060	0,46
MICRO 38VSx75.1	75	180	105		670	700		0,072	0,50
MICRO 38VSx80.1	80	190	110		670	705		0,076	0,53
MICRO 38VSx100.1	100	230	130		670	705		0,095	0,55
MICRO 38VSx125.1	125	280	155		670	705		0,119	0,68

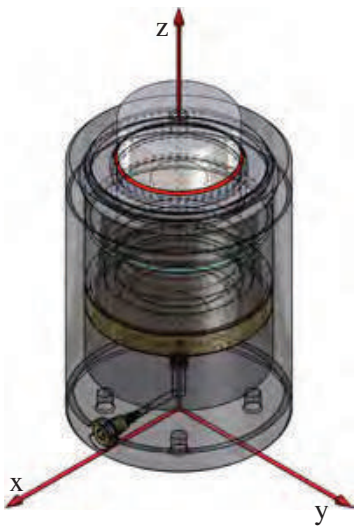
Sketch	①	Croquis modelo
Charging port · Valve code · Charging adapter	②	Puerto de carga · Código válvula · Adaptador de carga
Datasheet	③	Tabla de datos
Force / stroke graph	④	Gráfica fuerza en función de la carrera
Gas spring model	⑤	Modelo
Technical data	⑥	Información técnica
Gas spring manufactured in accordance with this standard	⑦	Normas
Characteristics and options	⑧	Características y opciones del modelo
Maximum rate graph	⑨	Gráfica de cadencia máxima aconsejada
Intitial force / charging pressure graph	⑩	Gráfica fuerza inicial / presión de carga
Fixing element assembly posssibilities and flange codes	⑪	Posibilidades de montaje y referencia elementos de fijación

CAD

3D CAD FILES
AVAILABLE

TECAPRES provides for the free downloading of 3D CAD files in neutral format from our website, www.tecapres.com

TECAPRES proporciona la descarga gratuita de los archivos CAD en 3D con formato neutro desde nuestro sitio web, **www.tecapres.com**



WORLDWIDE GUARANTEE FOR TECAPRES® GAS SPRINGS · GARANTIA MUNDIAL TECAPRES®

The high level of development of the TECAPRES® gas springs, as well as of the various tests carried out in all gas springs is to satisfy the expectations of our customers in terms of reliability, safety and service life.
All TECAPRES products are designed to meet the highest expectations and to bring full customer satisfaction.

- ◊ **2.000.000 cycles for strokes up to 50mm**
- ◊ **200.000 linear meters for strokes above 50mm**
- ◊ **2 years warranty as from date of sale**

Whichever condition takes place first.

El alto nivel en el desarrollo de los cilindros **TECAPRES®**, así como los correspondientes test y rigurosas pruebas que se realizan al 100%, permite a Técnicas Aplicadas de Presión garantizar, que los productos **TECAPRES®** están libre de defectos, tanto de materiales como de montaje.
Todos los productos **TECAPRES** están diseñados para satisfacer las más altas expectativas de los clientes.

- ◊ 2.000.000 ciclos para carreras hasta 50mm
- ◊ 200.000 metros lineales para carreras superiores a 50mm
- ◊ 2 años a partir de la fecha de adquisición

La garantía expira en cuanto se cumpla cualquiera de las condiciones indicadas

The guarantee (which covers parts and labour costs) is applicable if and when the following conditions are met:

1. The gas spring is to be returned to TECAPRES, for inspection.

2. The gas spring does not present defects due to dents (blows, scratches, spot facing, welding detachments, rust...).

3. Gas spring Its application and use is within the limits of the specified technical and environmental conditions.

4. The gas spring has not been manipulated (opening the gas spring cancels the guarantee).

La garantía (que cubre piezas y mano de obra) es aplicable siempre que se cumplan las siguientes condiciones y la causa del fallo sea imputable a **TECAPRES**

1. El cilindro debe retornar libre de coste a fábrica para su inspección, previa autorización.

2. El cilindro no muestra desperfectos por señales de marcas (golpes, rayas, refrentados, desprendimientos de soldadura, oxidaciones...).

3. Su aplicación y utilización este comprendida dentro de los límites de las condiciones técnicas y ambientales especificadas..

4. El cilindro no haya sido manipulado (la apertura del cilindro anula la garantía).

TECAPRES is not liable for injury, property damage, or other loss related to the inability to the gas spring or failure of the gas spring, nor is TECAPRES liable for any costs incurred relating to the removal and/or replacement of the gas spring. In no event is TECAPRES's liability to exceed the selling price of the gas spring.

TECAPRES no se hace responsable de las lesiones, daños a la propiedad u otras pérdidas relacionadas con la incapacidad del muelle de gas o el fallo del cilindro, **TECAPRES** tampoco es responsable de los costos incurridos en relación con la eliminación y / o sustitución del resorte de gas. En ningún caso la responsabilidad de **TECAPRES** es superior al precio de venta del muelle de gas.

TECHNICAL ADVICE · ASESORAMIENTO TÉCNICO

Both the TECAPRES technical department and our wide-ranging commercial network are directly at your disposal to answer any questions, provide additional information and help you choose the most adequate product depending on its application.

TECAPRES offers the possibility of imparting training workshop sessions, both in technical matters and for maintenance purposes.

- ✓ **Quality** · Calidad
- ✓ **Service** · Servicio
- ✓ **Reliability** · Fiabilidad

Please go to our www.tecapres.com website to find the nearest distributor.

Tanto el departamento técnico de **TECAPRES** como nuestra amplia red comercial a través de un trato directo están a su disposición para responder a sus preguntas, facilitarles información adicional y ayudarles a escoger el producto más adecuado según la aplicación.

TECAPRES ofrece la posibilidad de impartir talleres de formación, tanto a personal de oficina técnica como de mantenimiento.

+34 945 121 845
+34 945 250 827
support@tecapres.com

Consulte nuestra web www.tecapres.com para localizar a su distribuidor más cercano.

DESIGN
35 years of experience in design and manufacturing and permanent collaboration with the VDI/ISO committee.

DISEÑO
35 años de experiencia en diseño y fabricación y en colaboración permanente con el comité VDI / ISO.

MATERIALS AND TRACEABILITY
Use of harmonised materials and guaranteed traceability from origin

MATERIALES Y TRAZABILIDAD
Uso de materiales armonizados y trazabilidad garantizada desde origen.

DIMENSIONAL CONTROL
In-house workshop to guarantee the highest quality standards throughout the manufacturing process.

CONTROL DIMENSIONAL
Taller propio para garantizar los más altos estándares de calidad durante todo el proceso de fabricación.

COMPONENTS CLEANING
All components are thoroughly cleaned to remove any dirt or impurities.

LIMPIEZA DE COMPONENTES
Todos los componentes se limpian exhaustivamente eliminando cualquier suciedad e impureza

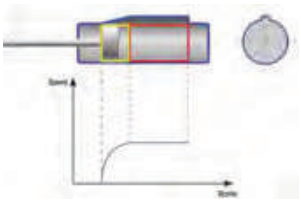
CONPONENTS INSPECTION
100% of components are inspected prior to assembly.

INSPECCIÓN DE COMPONENTES
100% de los componentes inspeccionados antes de su montaje.

ASSEMBLY
TECAPRES staff have highly proven experience. The training processes have a minimum duration of one year.

MONTAJE
Los operarios de TECAPRES cuentan con una experiencia altamente contrastada. Los procesos de formación tienen una duración mínima de un año.

POST-CHARGING CHECKING
100% of the gas springs are subjected to static and dynamic tests and controls to ensure the absolute tightness of the gas springs.



CONTROLES POST-PRESURIZACIÓN
El **100%** de los cilindros es sometido a pruebas y controles estáticos y dinámicos para asegurar la absoluta estanqueidad del cilindro

FINAL CONTROLS
Before shipment, 100% of the gas springs are checked again to rule out possible material and other faults.

CONTROLES FINALES
Antes de la expedición el **100%** de los cilindros se vuelven a realizar controles para descartar posibles fallos de materiales y otros.

PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU (PED) · DIRECTIVA EQUIPOS A PRESION 2014/68/UE (DEP)

All TECAPRES gas springs comply with European Directive 2014/68/EU on pressurized appliances. New European Parliament and European Council Directive 2014/68/EU dated 15 May 2014 reforms European Parliament and European Council Directive 97/23/EC from 29 May 1997, adapting its provisions to recent Community legislation.

The current directive applies to design, manufacture and conformity assessment of pressure equipment subjected to a maximum permissible PS pressure of over 0,5 bar.

All gas springs with a volume over 1 litre and PS·V above 50 bar × litre are established in different categories (I, II and III). Gas springs belonging to these categories are identified by the corresponding «CE» marking.

There is a large variety of models that do not reach these values in the TECAPRES gas spring program, and therefore, again according to Directive 2014/68/EU, such products are covered by Article 4.3, and are designed and manufactured in accordance with general good practices. TECAPRES applies the same design, safety and manufacturing criteria as the Directive establishes, and therefore all TECAPRES gas springs are identified and marked as specified in the Directive. Gas springs covered by Article 4.3, however, cannot carry any «CE» markings.

Use and safety instructions are also supplied with each gas spring so as to guarantee correct use of the gas springs.

Todos los cilindros **TECAPRES** cumplen con la Directiva Europea 2014/68/UE sobre aparatos a presión. La nueva Directiva 2014/68/UE del Parlamento Europeo y del Consejo, con fecha 15 de mayo de 2014, realiza una refundición de la anterior Directiva 97/23/CE del Parlamento Europeo y del Consejo, de 29 de mayo de 1997, adaptando sus disposiciones a la nueva normativa comunitaria.

La presente directiva se aplica al diseño, la fabricación y la evaluación de la conformidad de los equipos a presión y de los conjuntos sometidos a una presión máxima admisible PS superior a 0,5 bar.

Todos los cilindros a gas cuyo volumen sea superior a 1 litro y cuyo producto PS·V sea superior a 50 bar x litro se agrupan en diferentes categorías (I, II y III). Los cilindros pertenecientes a estas categorías son identificados por el correspondiente marcado «CE».

Dentro del programa de cilindros **TECAPRES** existen una gran variedad de modelos que no alcanzan dichos valores, por lo cual, y según la Directiva 2014/68/UE estos quedan englobados dentro del artículo 4.3, y son diseñados y fabricados de conformidad con las buenas prácticas de la técnica al uso. **TECAPRES** aplica los mismos criterios de diseño, seguridad y fabricación que la Directiva establece, y por lo tanto todos los cilindros **TECAPRES** son identificados y marcados como se especifica en la Directiva. Estos cilindros del artículo 4.3 no pueden llevar el marcado «CE».

Se suministra asimismo con cada cilindro a gas las instrucciones de uso y seguridad para garantizar en todo momento la correcta utilización del mismo.

The aim of the directive is to ensure the safety of equipment by acting on all processes involved in manufacturing (or importing) and placing on the market.

El objetivo de la directiva es garantizar la seguridad de los equipos actuando en todos los procesos que intervienen en la fabricación (o importación) y comercialización.

- **Design (FEM analysis)** · Diseño (análisis FEM)
- **Manufacturing** · Fabricación
- **Materials and traceability** · Materiales y su trazabilidad
- **Controls and inspections** · Controles e inspecciones
- **Marking** · Marcado
- **Marketing** · Comercialización

- **Manufacturer's obligations** · Obligaciones del fabricante
- **Importer's obligations** · Obligaciones del importador
- **Distributor's obligations**· Obligaciones del distribuidor

SHEATHED TYPE GAS SPRING
CILINDRO TIPO BUZO

BODY
Single-piece construction up to strokes of 160 mm. In higher strokes a tubular construction with a welded lid is used. In contrast with other brands, TECAPRES incorporates a threaded joint between the two elements that eliminates the possible fatigue factor in weld beads.

CUERPO
Desarrollado en una sola pieza hasta carreras de 160 mm. En carreras superiores se presenta una construcción de tubo con fondo soldado. A diferencia de otras marcas, **TECAPRES** incorpora una unión roscada entre los dos elementos que elimina el factor de la fatiga en el cordón de soldadura.

SINGLE CHAMBER GAS SPRING
CILINDRO TIPO BOMBA

STEM
Fatigue-resistant steels are employed, which have specific treatments that ensure a long useful life. TECAPRES offers the maximum quality MICROFINISH on the surface of all its stems, thus ensuring a longer service life by reducing friction and wear and tear in the seals.

VÁSTAGO-PISTÓN
Se emplean aceros aleados resistentes a la fatiga y con tratamientos específicos que aseguran una larga vida de trabajo. **TECAPRES** ofrece el acabado **MICROFINISH** de máxima calidad sobre la superficie de todos los vástagos, asegurando así una vida de servicio mayor al reducirse la fricción y el desgaste de la junta de sellado.

Hardness · Dureza	**Rugosity** · Rugosidad
> 64HRc	**Ra < 0,05µm**

STANDARD GAS SPRING
CILINDRO ESTÁNDAR

BUSHING
Bushings incorporate scrapers, which are elements that avoid the entrance of filth. All bushings are designed avoiding a metal-to-metal contact, recurring to self-lubricating guiding elements. Reference to gastightness, specific seals are used, which have been painstakingly tested and which offer a high working yield even near their maximum limits of use.

CASQUILLO
Incorporan rascador, elemento que evita la entrada de suciedad. Todos los casquillos se diseñan con ausencia de contacto metal-metal, recurriendo a elementos de guiado autolubricados. En el apartado de estanqueidad se emplean juntas específicas altamente testadas y que ofrecen un alto rendimiento de trabajo aún cerca de sus límites máximos.

FEM FATIGUE ANALYSIS · ANALISIS DE FATIGA POR ELEMENTOS FINITOS

Técnicas Aplicadas de Presión certifies that all TECAPRES® gas springs have a guaranteed service life in terms of structural fatigue of all gas spring components, of 2.000.000 cycles according to the FEM analysis following the UNE-EN 13445 norm.

Técnicas Aplicadas de Presión certifica que todos los componentes de los cilindros **TECAPRES®** tienen una resistencia mínima a la fatiga de 2.000.000 ciclos según análisis FEM acorde a la norma UNE-EN 13445.

The designs have been aproved by LRQA and TÜV.

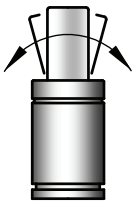
Diseños verificados por LRQA y TÜV.

The technology used in TECAPRES gas springs incorporates a flexible guiding system that makes it possible to absorb deviations in vertical movement, thus considerably reducing gas spring damage due to lateral forces.

See model options to check for availability.

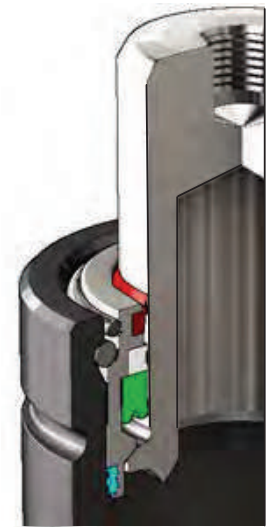
La tecnología utilizada en los cilindros TECAPRES incorpora un sistema de guiado flexible que posibilita la absorción de desviaciones en el movimiento vertical, reduciendo considerablemente los daños en el cilindro por fuerzas laterales.

Ver opciones de modelo para comprobar disponibilidad.



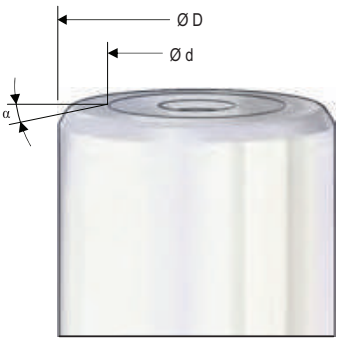
Movement allowed with no damage

Movimiento permitido sin daños



Absence of metal-to-metal contact

Ausencia contacto metal-metal

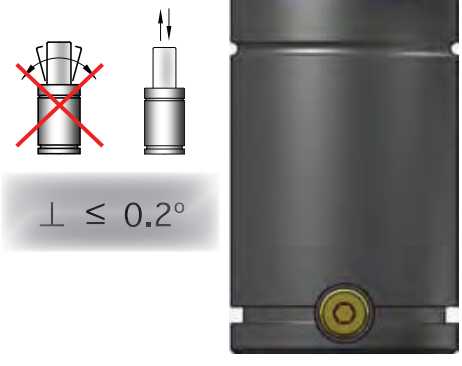


Special stem design in order to centralize contact

Diseño especial en eje para centrar contacto

Standard Gas Springs

Classical design



TECAPRES design

Floating guide

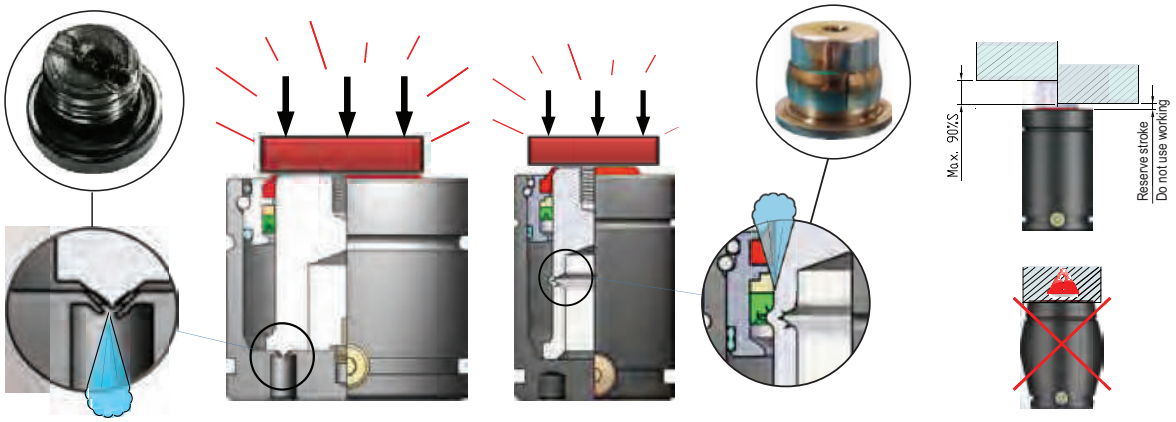
OVERSTROKE PROTECTION · PROTECCIÓN CONTRA SOBRECARRERA

VDI SAFETY

PATENTED

Patented active safety system that allows for controlled nitrogen gas discharge in gas springs in case of overstroke. The gas spring should be discarded, making sure that it is fully discharged.

Sistema de seguridad activa patentado, que permite la descarga controlada del gas nitrógeno de los cilindros en caso de actuar sobre ellos con una carrera de trabajo superior a la carrera nominal. El cilindro debe ser desechado, asegurandose que esté totalmente descargado.



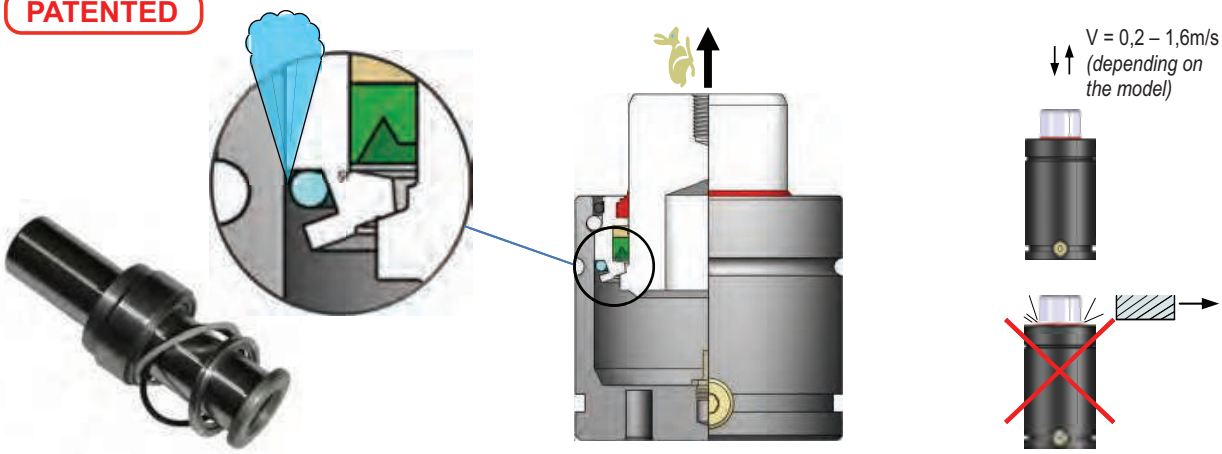
FREE RELEASE PROTECTION · PROTECCIÓN CONTRA LIBERACION DESCONTROLADA

VDI SAFETY

PATENTED

Designed and patented to produce controlled gas spring discharge in case of unrestricted expansion of the piston-rod. The gas spring should be discarded, making sure that it is fully discharged.

Diseñado y patentado para producir un vaciado controlado del cilindro, en caso de producirse una liberacion descontrolada del vástago-pistón. El cilindro debe ser desechado, asegurandose que esté totalmente descargado.

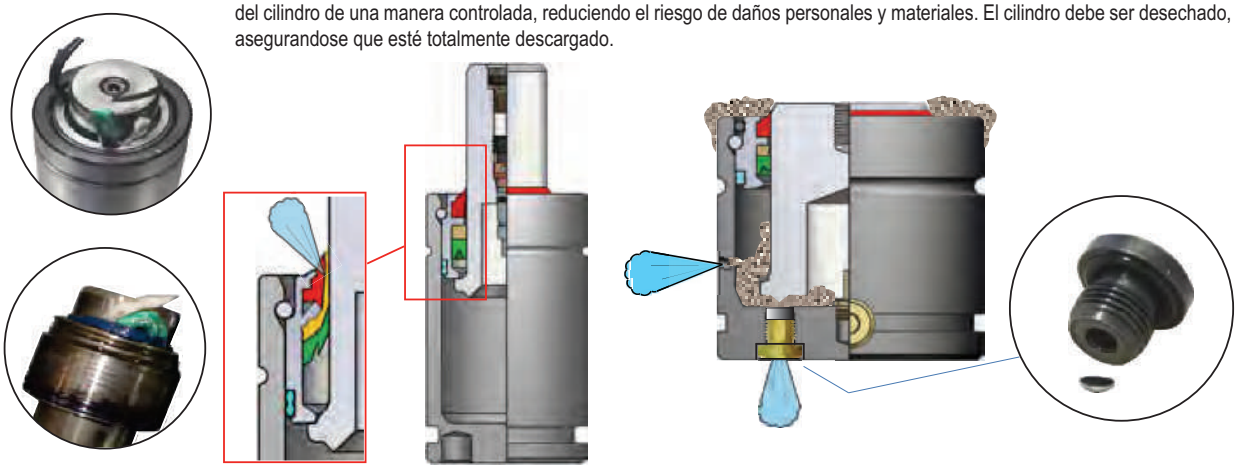


OVERPRESSURE PROTECTION · PROTECCIÓN CONTRA SOBREPRESIÓN

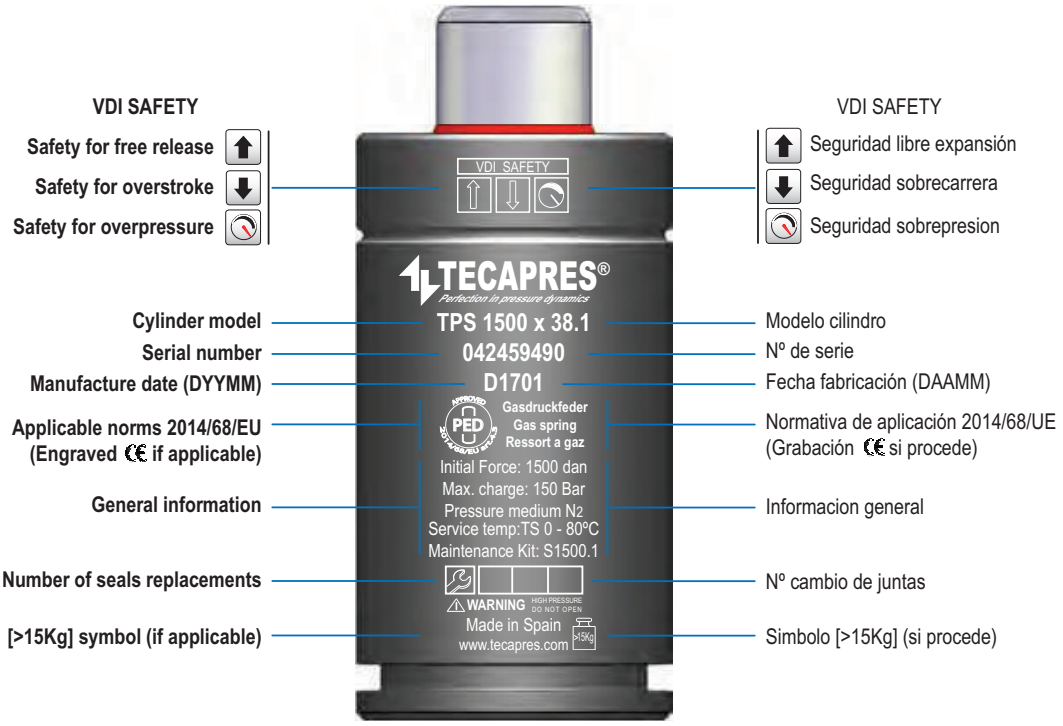
VDI SAFETY

Active safety system that allows for protection against damage produced by excessive pressure, allowing for controlled gas-spring discharge, thus reducing the risk of personal injury and damages. The gas spring should be discarded, making sure that it is fully discharged.

Sistema de seguridad activo que permite proteger contra los daños producidos por una sobrepresión, permitiendo la descarga del cilindro de una manera controlada, reduciendo el riesgo de daños personales y materiales. El cilindro debe ser desechado, asegurandose que esté totalmente descargado.



MARKING · MARCAJE

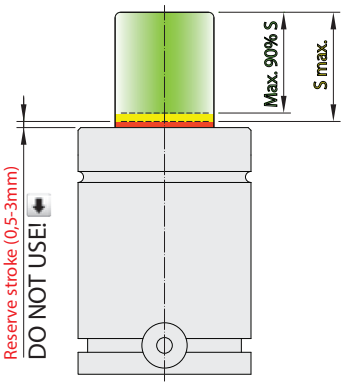


WORKING STROKE (S) · CARRERA DE TRABAJO (S)

The working stroke is defined as the length of the gas spring that can be compressed. It remains unchanged in use.

It is highly recommended in order to achieve an optimum service life, and to avoid activating the overstroke device, always design with a range of safety.

It is recommended to foresee a minimum stroke reserve of 10%, not exceeding 90% (85% depending on the model) of the maximum stroke (Smax), or at least the last 5mm of the longest strokes, to achieve optimum service life and to avoid activation of the safety devices. Due to the possibility of chips and contamination that can increase the stroke of the ram, causing an overstroke in the gas sprig with the risk of crushing.



Se define como carrera de trabajo, la longitud del cilindro que se puede comprimir. Se mantiene invariable en el uso.

Es muy recomendable, para alcanzar una vida de servicio óptima, y con el fin de no activar la protección contra la sobrecarrera, diseñar siempre con un rango de seguridad.

Se recomienda prever una reserva minima de carrera del 10%, no superar el 90 (u 85% según modelos) de la carrera máxima (Smax), o al menos los últimos 5mm en las carreras más largas, para alcanzar una vida de servicio óptima, y para que no se activen las medidas de seguridad. Debido a la posibilidad de existencia de virutas, pepitas y contaminaciones que pueden hacer que aumente la carrera del pisador, generando una sobrecarrera sobre el cilindro con el riesgo de aplastamiento.

Due to the fact that it is in the final part of the stroke that the highest compression and temperature values are obtained, we recommend, in our compact and boosted cylinder families, not to use more than 85% of the maximum stroke, in order to extend the service life of the seals.

If required by application circumstances, the gas springs can work precompressed.

Debido a que en la parte final de la carrera es cuando se obtienen los valores de compresión y temperatura más elevados, recomendamos en nuestras familias de cilindros compactos y potenciados, no usar más del 85% de la carrera máxima, para alargar la vida de servicio de las juntas.

Si por circunstancias de aplicación se requiere, el cilindro puede trabajar precomprimido.

RECOMMENDED RESERVE STROKES

ISO / VDI series	10% / 5mm
TPF / TITAN / TPH series	15%

AVAILABLE WORKING STROKES

ISO series	13mm ÷ 300mm
VDI series	7mm ÷ 125mm
TPF / TITAN / TPH series	6mm ÷ 80mm

WORKING TEMPERATURE · TEMPERATURA DE TRABAJO

Maximum working temperature of an standard gas spring is 80°C. Higher temperatures can damage the sealing elements, thus seriously affecting gas spring service life.

Gas spring working temperature is mainly altered by the working environment, the gas spring working rate (spm) and working speed. The gas temperature affects the pressure of gas springs of 0,33% / 1ºC.

It is possible to mount the gas springs with special seals that allow to increase the maximum working temperature up to 180ºC. Please contact our technical department.

MAX. 80ºC / 176ºF!

El rango óptimo de trabajo de un cilindro a gas estándar se comprende desde 0º hasta 80ºC. Temperaturas superiores pueden dañar los elementos de estanqueidad, afectando seriamente la vida de servicio de los cilindros.

La temperatura de trabajo de los cilindros se ve determinada principalmente por las condiciones ambientales del entorno, la cadencia de trabajo del cilindro (spm) y la velocidad de trabajo. La temperatura del gas afecta a la presión en los cilindros en una proporción de 0,33% / 1ºC.

Existe la posibilidad de montar los cilindros con juntas especiales que permiten aumentar la temperatura máxima de trabajo hasta 180ºC. Consultar con nuestro departamento técnico.

Gas springs for cold stamping
(2.000.000 cycles)

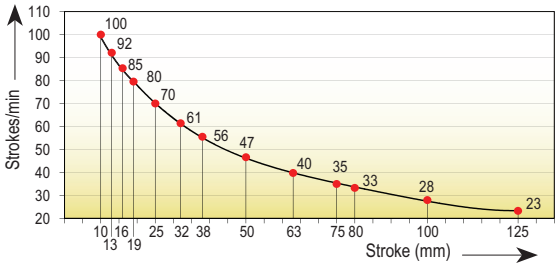
Gas springs for molds
(500.000 cycles)

Gas springs for high temperature stamping
(250.000 cycles)

MAXIMUM RATE (SPM) · CADENCIA MÁXIMA (SPM)

The working rate is the number of strokes or cycles per minute (spm | strokes per minute) that a gas spring works at.

It is important to respect the maximum rate as indicated in the technical specifications for each model. This is a very interesting and important piece of information to bear in mind when choosing a gas spring for any given application.



Se define como cadencia, el número de golpes o ciclos por minuto (spm | strokes per minute) a los que trabaja el cilindro.

Es importante respetar el valor máximo indicado en las fichas técnicas de cada modelo. Este es un dato muy relevante e importante a tener en cuenta en el momento de elegir un cilindro para una aplicación determinada.

Indicated values at 90% Smax maximum and charging pressure at 20ºC.

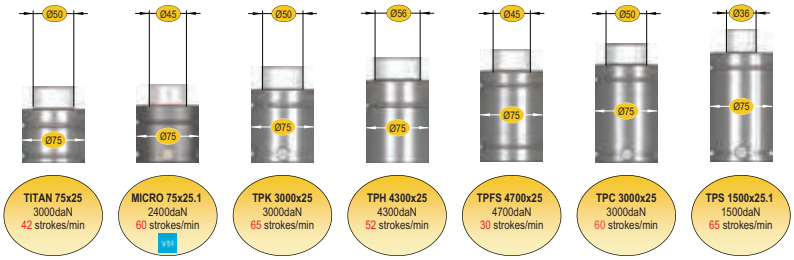
A higher working rate above the maximum values produces high temperatures inside the gas spring which in turn bring about a rapid deterioration of seals, significantly shortening gas spring service life.

In contrast to, reducing the working stroke and/or the charging pressure can increase the working rate of gas spring.

Valores indicados a 90% Smax y presión de carga máxima a 20ºC.

Valores superiores a los máximos indicados producen un exceso de temperatura en el cilindro que provoca un desgaste prematuro de los elementos de sellado, acortando significativamente la vida de servicio del cilindro.

Por el contrario, disminuir carrera de trabajo y/o presión de carga puede incrementar la cadencia de trabajo del cilindro.



WORKING SPEED · VELOCIDAD DE TRABAJO

Working speed is defined as the stem lineal speed. It must not go above the speed indicated in the specifications of each model.

A higher speed may rapidly deteriorate sealing and guiding elements. In addition to this, it could cause structural damage leading to an increased risk of uncontrolled explosions since mechanical stop limits have been designed for those maximum speeds even though ample safety margins have also been established.

Se define como velocidad de trabajo, la velocidad lineal del vástago. No se debe superar el valor indicado en la ficha de cada modelo.

Velocidades superiores pueden deteriorar rápidamente las juntas de estanqueidad, así como afectar estructuralmente al cilindro, pudiendo causar la rotura de los topes mecánicos, que están diseñados para trabajar con dichas velocidades máximas.

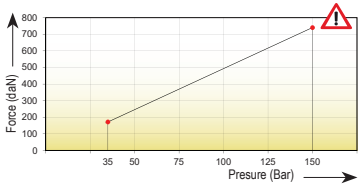
AVAILABLE WORKING SPEEDS

ISO /VDI series	1,6 m/s
TITAN series	0,8 m/s
TPF / TPH series	0,33 m/s

CHARGING PRESSURE · PRESIÓN DE LLENADO

In order to guarantee maximum sealing, respect the maximum and minimum loading pressures for each model, as indicated in the technical specifications (at 20ºC).

Do not exceed the maximum pressure, danger of structural damage.
Gas springs must only be loaded with commercial nitrogen gas grade 5 (N_2).



Para garantizar un sellado óptimo de las juntas de estanqueidad, se deben respetar tanto las presiones máximas como mínimas de cada modelo. Los valores se indican en las fichas técnicas de cada modelo (a 20ºC).

No sobrepasar la presión máxima, peligro de daño estructural.
Solo está permitido el uso de gas nitrógeno comercial N_2 nivel 5.

Charging pressure may be modified in order to vary the initial force of the gas spring. Any pressure may be chosen between minimum and maximum charging pressures.

Working with a gas spring at reduced pressure extends its service life and increases its performance.

La presión de carga puede ser modificada al efecto de variar la fuerza inicial de un cilindro. Se puede escoger cualquier valor entre los valores mínimos y máximos.

Trabajar con un cilindro a una presión reducida alarga la vida de servicio y aumenta sus prestaciones.

INITIAL FORCE · FUERZA INICIAL

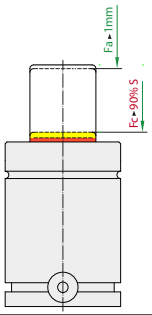
The definition of the initial force of a gas spring is the power offered by a gas spring at the beginning of its working stroke.

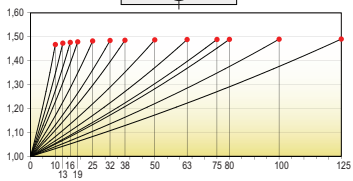
The initial force (Fa) of Nitrogen gas springs depends mainly on *the working area (A) and the loading pressure (P).*

The initial force of the gas spring is calculated depending on the gas spring rod seal area and the charging pressure in accordance with the following formula:

Fa: Initial force (daN)
A: Working area (cm²)
P: Charging pressure (bar)

Fa = A x P





Due to the compression of the gas spring, the force increases along the working stroke. See graph and force values in the technical sheet of each model.

Se define como fuerza inicial de un cilindro a gas, la potencia que ofrece un cilindro al comenzar la carrera de trabajo.

La fuerza inicial (Fa) de los cilindros a Gas Nitrógeno es directamente proporcional al *área de trabajo (A) y la presión de carga (P).*

La fuerza inicial de los cilindros se calcula en función de la sección de trabajo del cilindro y la presión de carga según la siguiente fórmula:

Fa: Fuerza inicial nominal (daN)
A: sección de trabajo (cm²)
P: presión de carga (bar)

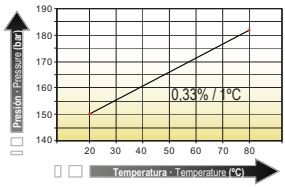
Fa = A x P

Debido a la compresión del cilindro, la fuerza aumenta a lo largo de la carrera de trabajo. Ver gráfica y valores de fuerza en la ficha técnica de cada modelo.

FORCE VARIATION DEPENDING ON THE TEMPERATURE · VARIACIÓN DE FUERZAS EN FUNCIÓN DE LA TEMPERATURA

Gas temperature affects the pressure of gas springs and therefore their force. The forces specified in the catalogue correspond to loading pressures at the temperature of 20°C.

In the following graph it is possible to see how nitrogen pressure varies according to temperature.



La temperatura del gas afecta a la presión de los cilindros y por lo tanto a su fuerza. Las fuerzas dadas en el catálogo corresponden a una presión de carga de 20ºC.

En la gráfica siguiente se muestra cómo la presión del Nitrógeno varía en función de la temperatura.

Gas springs are elements that contain gas subjected to high pressure. It is therefore very important to adhere to the following warnings, recommendations and a correct instalation.
Any unauthorised operation carried out may bring about serious material damages and personal injuries. It is therefore essential to handle such elements with care and to respect these instructions. These gas spring have been designed for use in stamping and die sets. Any use differing from the use they have been designed for is exclusively the responsibility of the user, TECAPRES assumes no resposability whatsoever.

El cilindro a gas es un elemento que contiene gas a alta presión, por lo que es muy importante seguir las siguientes advertencias, recomendaciones y una correcta instalación.
Cualquier operación realizada no autorizada puede ocasionar graves daños materiales y personales. Es esencial manipular los elementos con atención y respetando las indicaciones. Los cilindros han sido diseñados para su uso en estampación y troquelería, por lo que un uso fuera de aquel para el cual se han diseñado será bajo la responsabilidad del usuario, TECAPRES queda excluido de toda responsabilidad.

Gas springs must only be charged with commercial nitrogen gas grade 5 (N_2). The use of any other medium is expressly forbidden.

Los cilindros se deben cargar únicamente con Gas Nitrógeno comercial nivel 5 (N_2). La utilización de otro medio queda expresamente prohibida.

Protect the gas spring body or stem from blows. Any resulting imperfection could bring about a loss of pressure and affect the useful life of the gas spring. Carry and keep the gas spring in a way that it does not hit other gas springs.

If the gas spring has been dented in its structure, discharge it completely before carrying out its revision or handling.

Preservar de golpes en el cuerpo o en el vástago del cilindro. Cualquier imperfección puede ocasionar una pérdida de presión y afectar a la vida útil del cilindro. Manipular y transportar los cilindros de manera que no se golpeen entre sí.

Si un cilindro presenta desperfectos en su estructura, descargar completamente de gas antes de proceder a su revisión o manipulación.

Protect gas springs adequately during transport, in order to prevent gas spring blows or damage.

Please foresee special protection in sea freight, and protect gas springs against rust and corrosion.

Proteger adecuadamente el cilindro durante el transporte, para prevenir golpes o deterioro de este.

Extremar protecciones en transporte marítimo protegiendo el cilindro contra oxidación y corrosión.

Any mechanical operation (machining, drilling, welding...) on the gas spring is strictly prohibited.

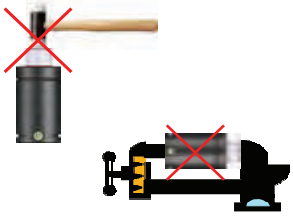
Do not use the gas spring close to flames or heat sources.

Cualquier operación mecánica (mecanizado, taladrado, soldaduras... etc.) en el cilindro queda totalmente prohibida.

No acercar el cilindro a ninguna llama o fuente de calor.

There are specific tools to measure gas spring force.

Never knock the stem with a hammer to check its pressure, and gas springs should not be inadequately compressed in order to check their force.



Para comprobar la fuerza de un cilindro existen útiles específicos para ello.

Nunca golpear el vástago con un martillo para verificar su presión, así como comprimir los cilindros de manera inadecuada para comprobar su fuerza.

Once the useful life of the gas spring is over, it should be completely discharged. The stem should remain fully introduced into the body.

In case of structural damage of the gas spring, it is imperative to discharge all residual pressure before handling.

Acabada la vida de servicio del cilindro descargar completamente. El vástago debe quedar completamente introducido en el cuerpo.

En caso de cualquier daño estructural del cilindro descargar completamente toda presión residual antes de manipular.

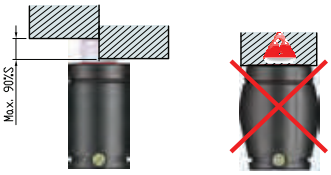
Prevent controled rod release to avoid discharges or component damage.

If checking the tool or gas springs a broken or loosen screw is found, could indicate that there has been a free release, please replace and correct the cause.

Prevenir la liberación descontrolada del vástago del cilindro para evitar descargas o daños en los componentes.

Si en una revisión del troquel y los cilindros, se encontraran tornillos rotos o aflojados, podría indicar que se ha producido una liberación libre, por lo que conviene reemplazar el clindro y corregir la causa

It is most recommendable not to go over 10% of the maximum stroke (Smax) due to the benefit this implies in terms of the gas spring useful life, but especially due to the possibility of the existence of nuggets, particles and pollutants that may make the press stroke increase, thus generating a possible gas spring over-stroke that could generate risks of crushing or explosion. Once the active system has been activated, gas spring should be discarded.



Es muy recomendable no superar el 90% de la carrera máxima (Smax) por el beneficio que supone para la vida útil del cilindro, pero sobre todo debido a la posibilidad de existencia de virutas, pepitas y contaminaciones que pueden hacer que aumente la carrera del pisador, generando una sobrecarrera sobre el cilindro con el riesgo de aplastamiento o explosión. Una vez las medidas de seguridad han sido activadas, el cilindro debe ser desechado.

All TECAPRES gas springs are susceptible of repair. All handling or maintenance operations should be carried out by authorised personnel, who should be especially trained for this purpose.

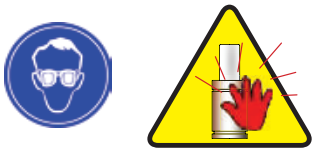
Original components, accessories and spares should always be used. For any doubts during gas spring maintenance, please consult our Technical Department.

Todos los cilindros **TECAPRES** pueden ser reparados. Cualquier operación de manipulación o mantenimiento debe realizarse por personal autorizado, ya que debe estar especialmente formado para ello.

Siempre se deben usar componentes, accesorios y recambios originales. Para cualquier duda durante la realización del mantenimiento a un cilindro puede dirigirse a nuestro departamento técnico.

The use of protective goggles is recommended during any operations carried out on the gas spring, and specifically during maintenance operations.

Be careful if you touch a gas spring after use. It could be very hot.



Se recomienda el uso de gafas de protección durante cualquier operación realizada sobre el cilindro, específicamente durante operaciones de mantenimiento.

Cuidado al tocar un cilindro después de trabajar. Puede quemar

Gas springs should never be handled without their being previously completely discharged.

To be on the safe side, the stem should be introduced completely into the body without it coming up again.

Nunca se deben realizar manipulaciones al cilindro sin estar descargado totalmente.

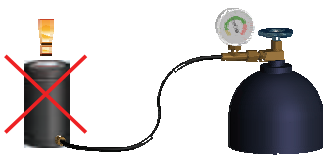
Para asegurarse se debe poder introducir el vástago dentro del cuerpo sin que éste vuelva a subir.

During gas spring discharging, the discharging point is to be placed as high as possible. The use of protective goggles is recommended.

Durante el vaciado del gas de un cilindro se debe posicionar el punto de descarga lo más alto posible. Se recomienda usar gafas de protección.

The gas spring should never be charged unless the stem has been extracted from the body 100% of its stroke (otherwise there is a risk of structural damage). It is first necessary to carry out a 5-to-10 bar precharge, checking the gas spring before carrying out the complete charge.

Maximum and minimum charging pressures should be respected, as indicated in the specifications for each gas spring model.

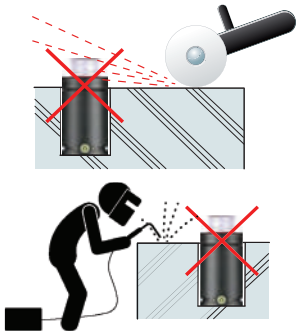


Nunca se debe cargar un cilindro si el vástago no esta completamente extendido al 100% de la carrera (riesgo de graves daños estructurales). Realizar primero una precarga de 5-10 bares verificando el cilindro antes de realizar la carga completa.

Respetar las presiones de llenado máximas y mínimas de cada modelo, indicadas en la ficha técnica de cada cilindro.

The cylinder must be fully protected during modifications or repairs to the die, and maintenance, painting and cleaning operations.

During cleaning operations, the gas spring must be protected from aggressive chemicals (alcohols, thinners...) as they may cause adverse effects on the seals. If they are used for die cleaning, a complete cleaning of the gas spring must be ensured afterwards.



El cilindro debe estar totalmente protegido durante las modificaciones o reparaciones que sufra el troquel, así como operaciones de mantenimiento, pintura y limpieza.

Durante operaciones de limpieza se debe proteger el cilindro de productos químicos agresivos (alcoholes, disolventes…) ya que pueden causar efectos adversos sobre los sellos. Si son utilizados para la limpieza del troquel, debe asegurarse una total limpieza del cilindro posteriormente.

Before starting operation, it is recommended to lubricate the piston rod lightly.

Do not remove the lubricant from the piston rod supplied from the factory before installing the gas spring in the tool.

Antes de iniciar el funcionamiento es recomendable lubricar ligeramente el vástago.

No retirar el lubricante del vástago suministrado de fábrica antes de instalar el cilindro en la herramienta.

Before removing a damaged cylinder from its pocket, completely discharge the nitrogen gas from the inside.

Antes de extraer un clindro dañado de su cajera, descargar completamente el gas nitrógeno del interior.

EMERGENCY DISCHARGE · DESCARGA DE EMERGENCIA

Occasionally, there can be some kind of incidents that jeopardize the structural integrity of a gas spring.

In such cases, it is imperative to act with utmost care and diligence, discharging the gas spring immediately.

In the event that access to the valve is not possible or implies a risk, discharge the gas spring by drilling a hole on it, or by applying heat (with a blowtorch or any other similar device) on the upper body, where the seals are situated.

The heat will melt the seals, thus discharging the gas spring quickly and safety.

Moreover, the latter option can be performed keeping a safe distance from the gas spring.

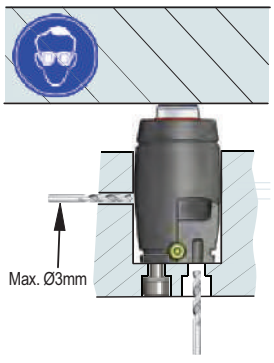
Ocasionalmente, puede haber algún tipo de incidentes que ponen en peligro la integridad estructural de un muelle de gas.

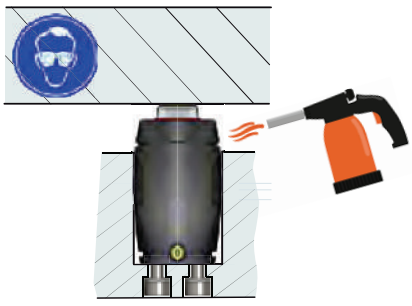
En tales casos, es imprescindible actuar con sumo cuidado y diligencia, descargando la fuente de gas inmediatamente.

En caso de que el acceso a la válvula no sea posible o implique un riesgo, descargue el resorte de gas taladrando o aplicando calor (con un soplete o cualquier otro dispositivo similar) en la parte superior cuerpo, donde se encuentran los sellos.

El calor fundirá los sellos, descargando así el resorte de gas de forma rápida y segura.

Además, esta última opción se puede realizar manteniendo una distancia segura del resorte de gas.





GAS SPRINGS STORAGE · ALMACENAJE CILINDROS

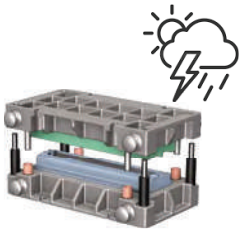
It is important that the storage conditions are appropriate so as to prevent any damage to the gas springs.

- **Please handle gas springs with special care: they should never be knocked about. A strong blow can damage working surfaces and make a gas spring unusable. It could even cause structural damage compromising the safety of people and property.**
- **A gas spring should never be exposed to any blows whatsoever.**
- **Provide shelves that are adequate to their size and weight. It is recommended to avoid leaving gas springs at ground level to prevent possible blows.**
- **Protect gas springs from dust and polluted environments. It is also highly recommended to conveniently lubricate gas springs to prevent possible rust. A small spot of rust on working areas in contact with seals can cause a rapid loss of gas when the gas spring starts to work.**
- **If it is anticipated that the gas spring will be a long time without use (> 3months), we recommend you discharge it and leave it with a small preload (25-50bar) so as to extend the service life of the seals.**
- **Never store a gas spring with structural damage. In such cases, fully discharge the gas spring and discard it.**

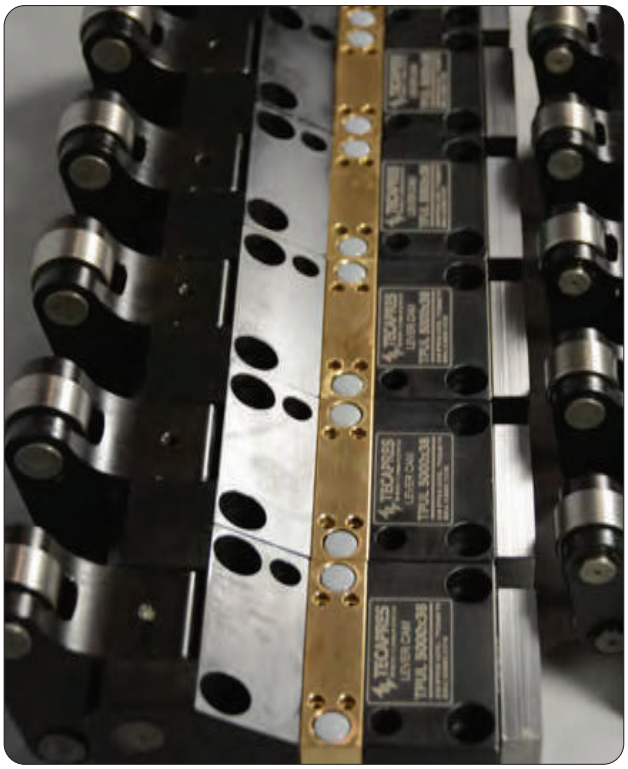
Es muy importante que las condiciones de almacenaje sean las adecuadas para evitar daños en los cilindros.

- Manipular los cilindros con especial atención, nunca deben ser golpeados. un golpe intenso puede desde dañar la superficie de trabajo y dejarlo inservible hasta causar daños estructurales que afecten a la seguridad de las personas y los bienes.
- El cilindro nunca debe estar expuesto a posibles golpes.
- Proveer de estanterías adecuadas a su tamaño y peso. Se recomienda evitar dejar los cilindros a la altura del suelo.
- Proteger de ambientes polucionados. Es muy importante también lubricar convenientemente el cilindro para prevenir posibles oxidaciones. Cualquier pequeño punto de oxidación en la zona de trabajo de las juntas puede provocar una rápida pérdida de gas cuando el cilindro comience a trabajar.
- Si se prevé que el cilindro va a estar un largo tiempo sin usar (>3 meses), se recomienda descargar y dejarlo con una pequeña recarga (25-50Bar), con el fin de alargar la vida de servicio de las juntas.
- Nunca almacenar un cilindro con daños estructurales.

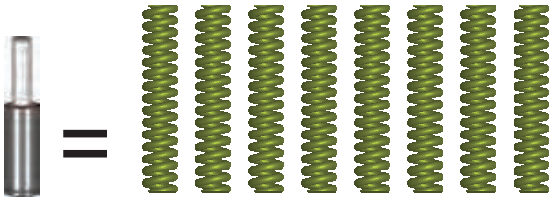
Do not store or use the gas springs outdoors.



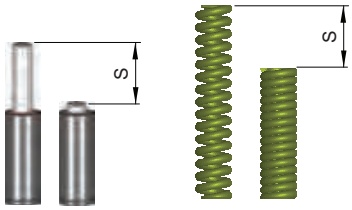
No almacenar o usar los cilindros en el exterior



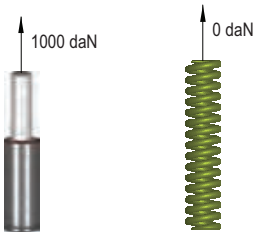
MORE FORCE IN LESS SPACE · MAS FUERZA EN MENOS ESPACIO



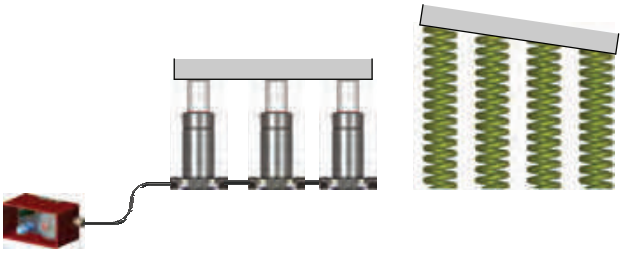
LESS LENGTH FOR THE SAME WORKING STROKE AND FORCE · MENOR LONGITUD A IGUALDAD DE CARRERA DE TRABAJO Y FUERZA



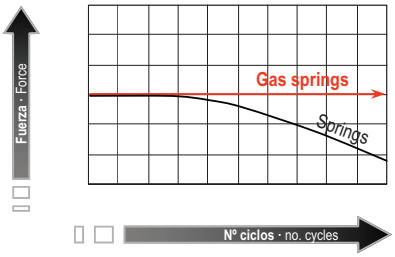
THE WHOLE OF THE FORCE AT THE BEGINNING OF THE STROKE · TOTALIDAD DE LA FUERZA AL INICIO DE LA CARRERA



THE SAME FORCE AT ALL CONTACT POINTS · FUERZA EQUILIBRADA EN TODOS LOS PUNTOS DE LA CARRERA



INVARIABLE FORCE DURING USEFUL LIFE · FUERZA INVARIABLE EN EL USO

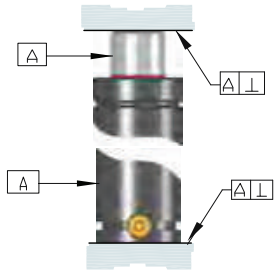


PARTS MAINTENANCE AND REPLACEMENT CAPACITY · CAPACIDAD DE MANTENIMIENTO Y RECAMBIO DE LAS PIEZAS

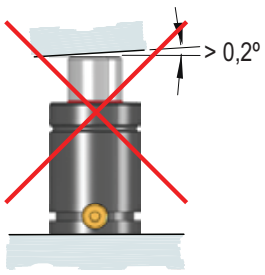
PERPENDICULAR WORK · PERPENDICULARIDAD

The gas spring must always work completely perpendicular to the contact surface. Lateral forces produced by a badly-aligned press can cause irreparable damage.

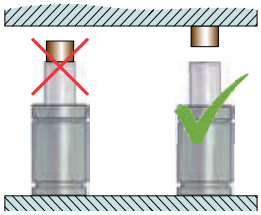
El cilindro debe trabajar siempre totalmente perpendicular a la superficie de contacto. Las fuerzas laterales producidas por un mal alineado pueden causar daños irreversibles.



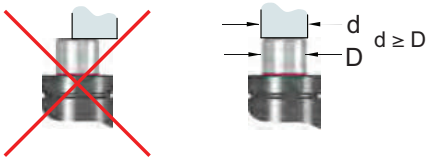
The support and atack surface must to be completely perpendicluar to axis of cylinder
La superficie de ataque y apoyo debe ser completamente perpendicular al eje del cilindro



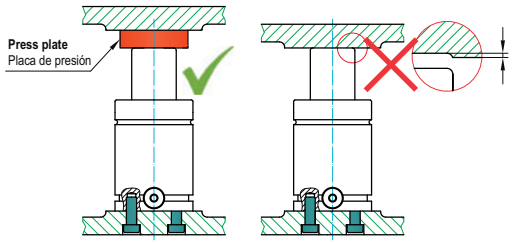
Maximum deviation (without floating guide)
Maxima desviación (sin guiado flotante)



Please do not fix any extension to stem
Esta prohibido suplementar el eje

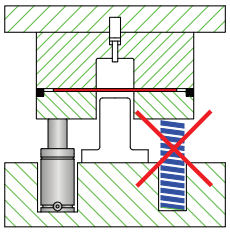


The entire surface of the stem must be used
Se debe usar toda la superficie del eje para pisado



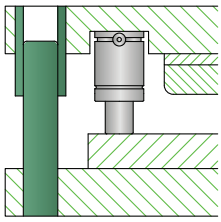
Tempered plate should be used in contact surface with cylinder
Utilizar placas templadas para la superficie de pisado del cilindro

EQUALIZING LOADS· EQUILIBRAR LAS CARGAS



Die must be balanced
El troquel debe estar equilibrado en fuerzas

CORRECT GUIDING · GUIADO CORRECTO

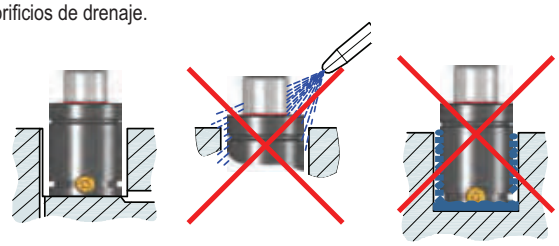


Correctly guide the die to avoid lateral forces
Guiar correctamente el troquel para evitar fuerzas laterales

PROTECTION FROM POLLUTANTS
PROTEGER DE CONTAMINACIONES

Protect gas springs from liquid or solid pollution, to avoid particles from making direct contact with the gas spring. Box cavities are to be cleaned regularly and should be equipped with drainage holes.

Proteger los cilindros de contaminaciones líquidas o sólidas, para evitar que entren en contacto directo con el cilindro. Las cavidades de las cajeras se deben limpiar regularmente y éstas deben de ir dotadas de orificios de drenaje.

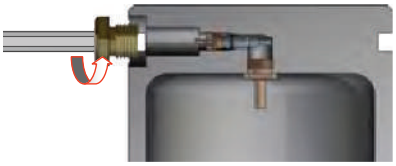


FIXING ELEMENTS · ELEMENTOS DE SUJECCIÓN

In order to fix the gas spring to the tool, use specific fixing elements. TECAPRES offers a wide variety of assembly options to satisfy our customers' different application needs.

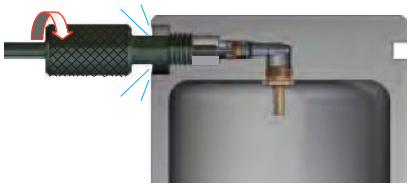
Utilizar para fijar el cilindro al útil, los elementos de sujeción específicos. TECAPRES ofrece una gran variedad de opciones de montaje para satisfacer las diferentes necesidades de aplicación de nuestros clientes.

GAS SPRING DISCHARGING WITH TPFV1 VALVE · DESCARGA DEL CILINDRO VÁLVULA TPFV1



Withdraw the safety plug.

Retirar el tapón de seguridad.

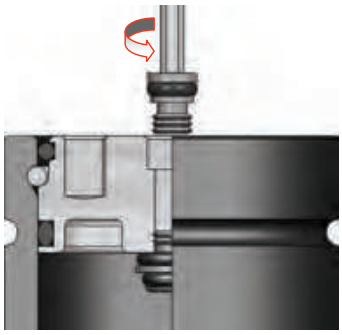


Softly screw in discharging tool DV-M6 or DV-G1/8 until the gas spring starts to discharge.

Roscar suavemente el útil de descarga DV-M6 ó DV- G1/8 hasta que el cilindro comience a descargarse.

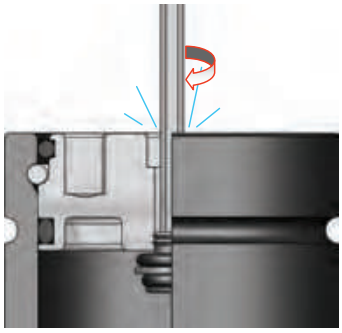
GAS SPRING DISCHARGING WITH TPFV3 VALVE · DESCARGA DEL CILINDRO VÁLVULA TPFV3

Withdraw the safety plug, if necessary.



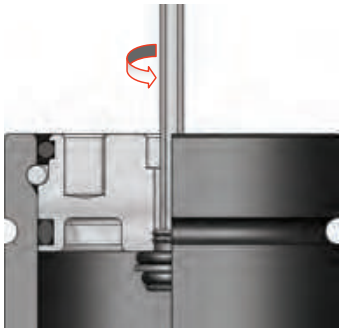
Retirar el tapón de seguridad, si procede.

Loosen the valve using a 3mm Allen key turning right until the gas spring begins to discharge (1/2 turn).



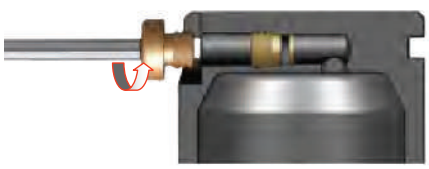
Aflojar la válvula utilizando una llave Allen de 3mm girando a derechas hasta que el cilindro comience a descargarse (1/2 vuelta).

Once the gas spring has been discharged, place the valve by turning it left until it reaches its initial position. Valve is ready for charging.



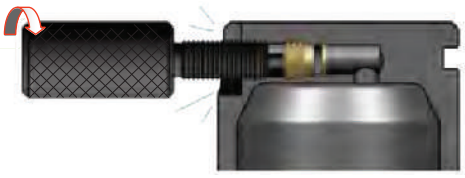
Descargado el cilindro posicionar la válvula girándola a izquierdas hasta su posición inicial, a bloque. Válvula lista para la recarga.

GAS SPRING DISCHARGING WITH TPFV5 VALVE · DESCARGA DEL CILINDRO VÁLVULA TPFV5



Withdraw the safety plug.

Retirar el tapón de seguridad.



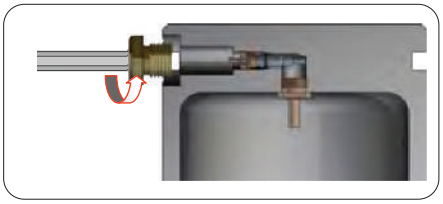
Softly screw in discharging tool DV-M6C until the gas spring start to discharge.

Roscar suavemente el útil de descarga DV- M6C hasta que el cilindro comience a descargarse.

CONVERSION FROM AUTONOMOUS GAS SPRING WITH CHARGING PORT G1/8 TO INTERCONNECTED GAS SPRING

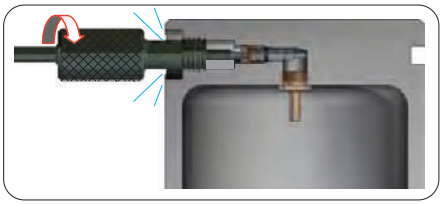
CONVERSIÓN DE CILINDRO AUTÓNOMO CON PUERTO DE CARGA G1/8 A INTERCOMUNICADO

Withdraw the safety plug.



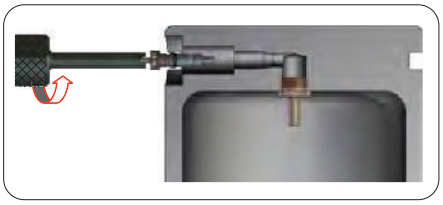
Retirar el tapón de seguridad.

Discharge the gas spring with key DV-G1/8, pressing slightly on the valve.



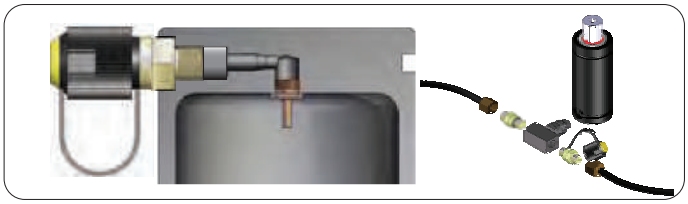
Descargar el cilindro con el útil DV-G1/8, presionando ligeramente la válvula.

Withdraw filling valve TPFV1 by unscrewing it with key DV-G1/8.



Extraer la válvula de llenado TPFV1 desenroscándola con el útil DV-G1/8.

Install the appropriate fittings and hoses. TECAPRES offers a wide variety of connection fitting options.



Instalar los racores y latiguillos apropiados. TECAPRES ofrece una gran variedad de opciones de racores de conexión.

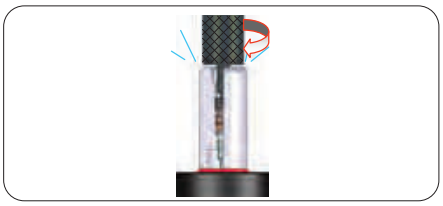
CONVERSION FROM AUTONOMOUS GAS SPRING WITH CHARGING PORT M6 IN STEM, TO INTERCONNECTED GAS SPRING

CONVERSIÓN DE CILINDRO AUTÓNOMO CON PUERTO DE CARGA M6 EN EL EJE, A INTERCOMUNICADO

Withdraw the M6 safety plug.

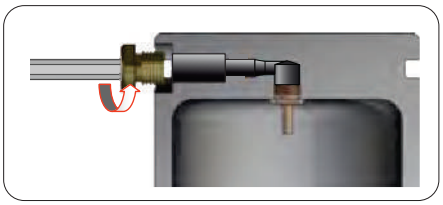
Retirar el tapón de seguridad M6.

Discharge the gas spring with key DV-M6, pressing slightly on the valve, and screw the M6 safety plug again.



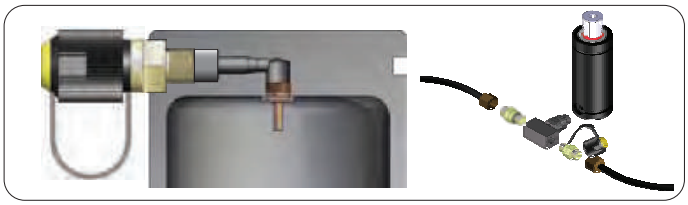
Descargar el cilindro con el útil DV-M6, presionando ligeramente la válvula, y volver a colocar el tapón M6.

Withdraw the G1/8 safety plug.



Retirar el tapón de seguridad G1/8.

Install the appropriate fittings and hoses. TECAPRES offers a wide variety of connection fitting options.



Instalar los racores y latiguillos apropiados. TECAPRES ofrece una gran variedad de opciones de racores de conexión.

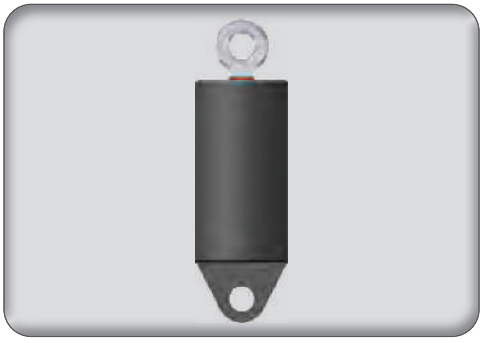
Every day, our R+D department is at work developing new products to satisfy a demanding and competitive market.
We have a constant and long-standing commitment towards offering good quality, low costs and a high profitability in all our products.
Our considerable flexibility allows us to design and manufacture tailor-made gas springs in accordance with our customers' requirements in a record-breaking period of time.

Nuestro departamento I+D trabaja cada día desarrollando nuevos productos para satisfacer un mercado exigente y competitivo.
Tenemos un compromiso constante y una larga trayectoria ofreciendo la mejor calidad, bajos costos y una alta rentabilidad en todos nuestros productos.
Nuestra flexibilidad y cualificacion nos permite diseñar y fabricar muelles de gas a medida según las necesidades de nuestros clientes en un tiempo récord.

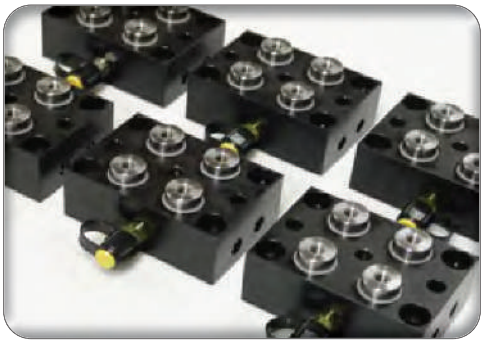
Customerised gas springs
Cilindros a medida del cliente

Extra large gas springs
Cilindros extra largos

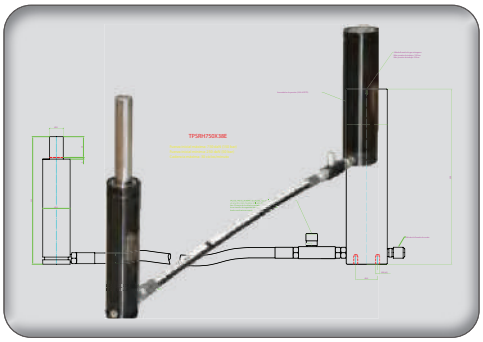
Spring pack



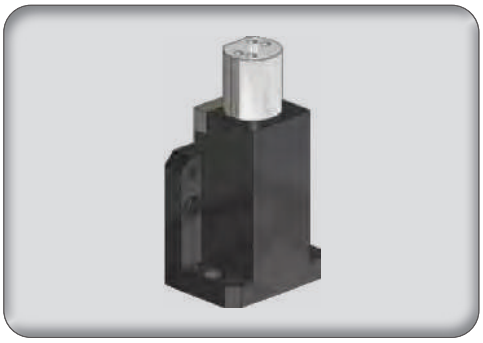
Gas spring for extension work
Cilindros para trabajos a tracción



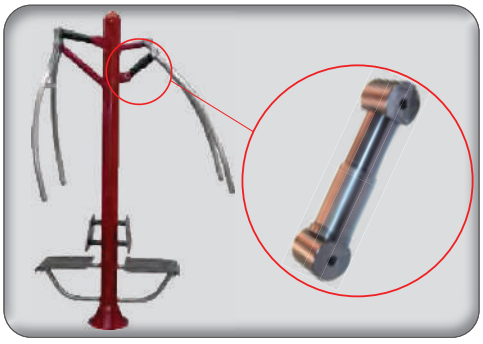
Pressure box



Hydraulic cylinders with controlled expansion speed
Cilindros hidráulicos con velocidad de expansión controlada



Flange stripper
Extractor de chapa



Articulated cylinders for multifunction gym equipment
Cilindros articulados para equipos de gimnasia multifunción

TECAPRES has a worldwide commercial distributor network that can offer global integral service in key markets in order to inmediately respond to our customers' needs.

Our philosophy is to provide quick and efficient assistance by means of a team of professionals. Our customers' satisfaction is also guaranteed thanks to our fast and reliable deliveries.

TECAPRES cuenta con una amplia red de distribuidores repartida por todo el mundo, capaz de ofrecer un servicio integral a nivel global en los mercados clave para responder inmediatamente a las necesidades de nuestros clientes.

Nuestra filosofía es proporcionar una asistencia rápida a través de un equipo de profesionales. La satisfacción de los clientes está garantizada además por entregas rápidas y fiables.

Please go to our www.tecapres.com website to find our nearest distributor.

Consulte la página web para localizar a su distribuidor más cercano

PED 2014/68/UE

ISO

VDI

CNOMO

VDI POWER

VDI gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY			VDI STANDARD
MICRO 15	15	7 - 80	90	√	√		√	
MICRO 19V1	19	7 - 125	170	√	√		√	√
MICRO 25.2	25	10 - 100	275	√	√		√	
MICRO 25V1	25	7 - 125	300	√	√		√	
MICRO 25R.2	25	12 - 80	275	√	√		√	
MICRO 32	32	7 - 80	450	√	√		√	
MICRO 32V	32	10 - 125	350	√	√		√	
MICRO 32VS	32	10 - 125	350	√	√	√	√	√
MICRO 32H	32	10 - 100	450	√	√		√	
MICRO 32C	32	10 - 125	350	√	√	√	√	
MICRO 32R	32	12 - 100	450	√	√		√	
MICRO 38	38	12 - 80	660	√	√		√	
MICRO 38V	38	10 - 125	470	√	√		√	
MICRO 38VS.1	38	10 - 125	470	√	√	√	√	√
MICRO 38H	38	10 - 125	660	√	√		√	
MICRO 38C.1	38	10 - 125	470	√	√	√	√	
MICRO 38R	38	12 - 80	660	√	√		√	
MICRO 45	45	13 - 125	740	√	√		√	
MICRO 45V.1	45	10 - 125	740	√	√	√	√	√
MICRO 45C.1	45	10 - 125	740	√	√	√	√	
MICRO 45CF.1	45	10 - 125	740	√	√	√	√	
MICRO 50.1	50	13 - 100	920	√	√		√	
MICRO 50V	50	13 - 125	1100	√	√		√	
MICRO 50VS.1	50	13 - 125	920	√	√	√	√	√
MICRO 50CS.1	50	13 - 125	920	√	√	√	√	
MICRO 50C.1	50	13 - 125	1100	√	√	√	√	
MICRO 50CF.1	50	13 - 125	920	√	√	√	√	
MICRO 63	63	25 - 100	1900	√	√		√	
MICRO 63V.2	63	13 - 125	1500	√	√	√	√	√
MICRO 63CF	63	13 - 125	1500	√	√	√	√	
MICRO 63C.1	63	13 - 125	1500	√	√	√	√	
MICRO 75.2	75	16 - 125	2400	√	√	√	√	√
MICRO 75CS	75	16 - 125	2400	√	√	√	√	
MICRO 75CF	75	16 - 125	2400	√	√	√	√	
MICRO 95.2	95	16 - 125	4200	√	√	√	√	√
MICRO 95CF	95	16 - 125	4200	√	√	√	√	
MICRO 120H	120	25 - 100	7500	√	√	√	√	
MICRO 120V.1	120	16 - 125	6600	√	√	√	√	√
MICRO 150	150	16 - 125	9500	√	√	√	√	√
MICRO 150H	150	19 - 125	11800	√	√	√	√	
MICRO 195	195	16 - 125	20000	√	√	√		

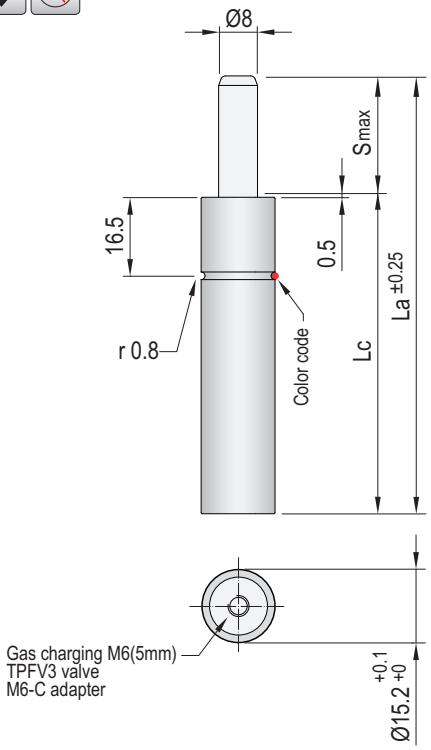
TECAPRES®

Ø15mm
90daN

MICRO 15

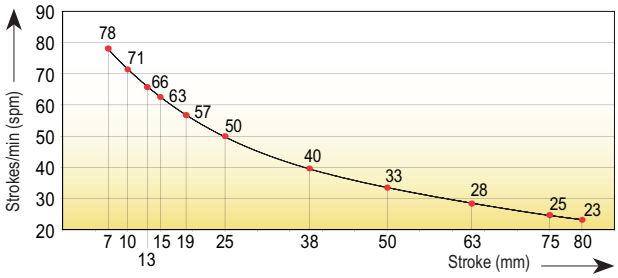
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	0,50 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit M15

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 15x7	7	56	49	0,001	0,07
MICRO 15x10	10	62	52	0,002	0,07
MICRO 15x13	13	68	55	0,002	0,08
MICRO 15x15	15	72	57	0,002	0,08
MICRO 15x19	19	80	61	0,003	0,09
MICRO 15x25	25	92	67	0,003	0,09
MICRO 15x38	38	118	80	0,005	0,10
MICRO 15x50	50	142	92	0,006	0,11
MICRO 15x63	63	172	109	0,008	0,12
MICRO 15x75	75	195	120	0,009	0,14
MICRO 15x80	80	205	125	0,010	0,15

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	30 (±5)	≈ 46	60
BL *(Blue)*	50 (±5)	≈ 76	100
RD *(Red)*	70 (±10)	≈ 107	140
YW *(Yellow)*	90 (±10)	≈ 133	175
(Other forces)	25 - 90	≈ 40 - 133	50 - 175

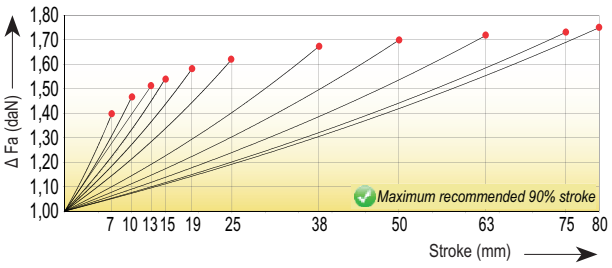
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

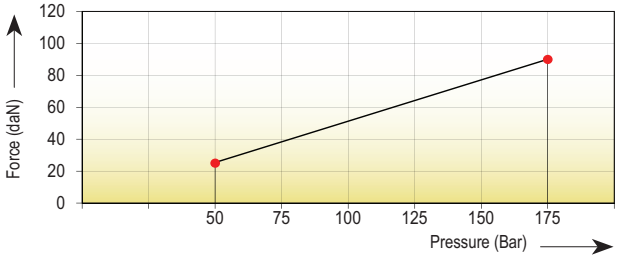
MICRO 15 x **50** **YW**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

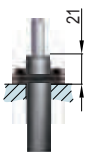


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 15

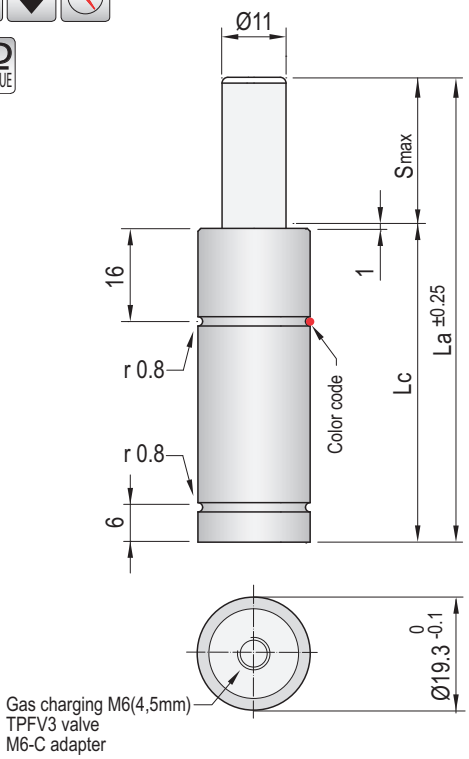
TECAPRES®

Ø19mm 170daN

MICRO 19V1

VDI SAFETY

PED 2014/68/UE

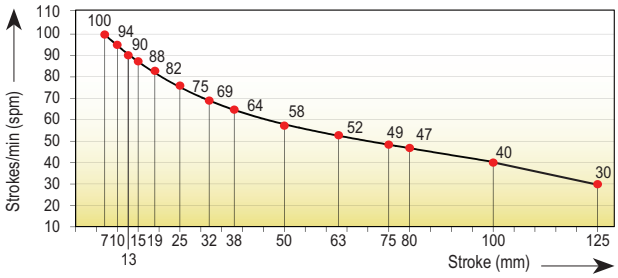


Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,95 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M19V1

VDI 3003 ISO 11901

RE-11-19

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 19V1x7	7	44	37	0,002	0,07
MICRO 19V1x10	10	50	40	0,002	0,07
MICRO 19V1x13	13	56	43	0,003	0,08
MICRO 19V1x15	15	60	45	0,004	0,08
MICRO 19V1x19	19	68	49	0,005	0,09
MICRO 19V1x25	25	80	55	0,006	0,09
MICRO 19V1x32	32	94	62	0,007	0,10
MICRO 19V1x38	38	106	68	0,008	0,11
MICRO 19V1x50	50	130	80	0,011	0,12
MICRO 19V1x63	63	156	93	0,014	0,13
MICRO 19V1x75	75	185	110	0,017	0,13
MICRO 19V1x80	80	195	115	0,018	0,14
MICRO 19V1x100	100	235	135	0,022	0,15
MICRO 19V1x125	125	285	160	0,027	0,16

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	60 (±5)	≈ 100	63
BL *(Blue)*	90 (±5)	≈ 150	95
RD *(Red)*	120 (±10)	≈ 200	125
YW *(Yellow)*	170 (±10)	≈ 280	175
(Other forces)	24 - 170	≈ 40 - 280	25 - 175

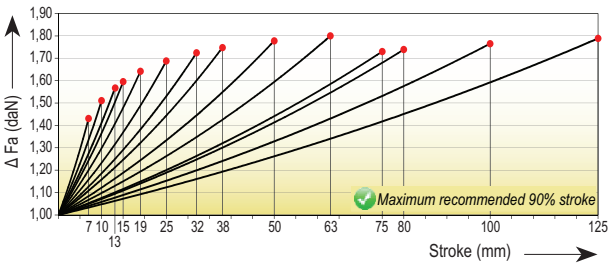
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

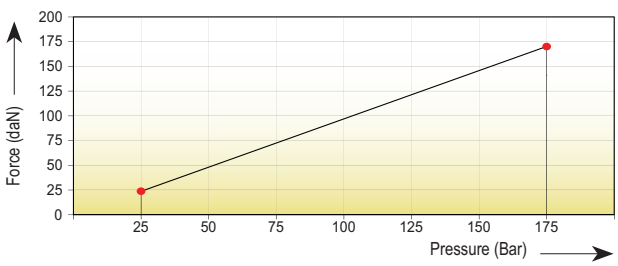
MICRO 19V1 x **75** **GR**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

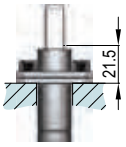


Assembly possibilities

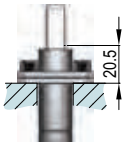
Follow guidelines Page 287


DROP-IN


SCREWS



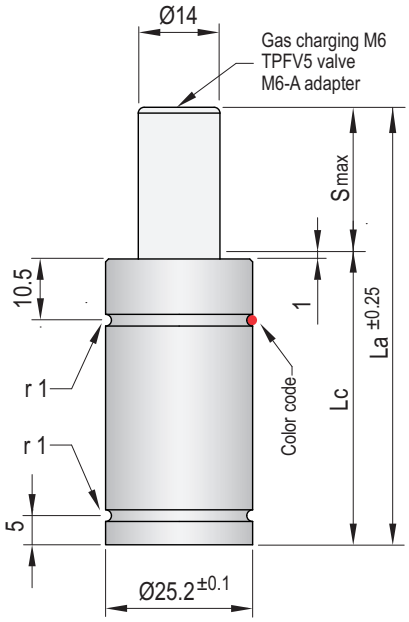
FS19·FS19/2



FS19/1

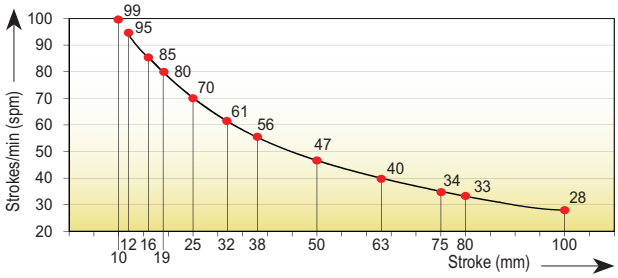

FS19·FS19/2

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	1,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit M25.2

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 25x10.2	9,5	45	35	0,004	0,07
MICRO 25x12.2	11,5	49	37	0,005	0,08
MICRO 25x16.2	15,5	57	41	0,007	0,09
MICRO 25x19.2	18,5	63	44	0,008	0,10
MICRO 25x25.2	24,5	75	50	0,010	0,11
MICRO 25x32.2	31,5	89	57	0,013	0,12
MICRO 25x38.2	37,5	101	63	0,016	0,13
MICRO 25x50.2	49,5	125	75	0,021	0,15
MICRO 25x63.2	62,5	151	88	0,026	0,18
MICRO 25x75.2	74,5	175	100	0,031	0,19
MICRO 25x80.2	79,5	185	105	0,033	0,20
MICRO 25x100.2	99,5	225	125	0,041	0,25

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 150	65
BL *(Blue)*	150 (±10)	≈ 230	100
RD *(Red)*	200 (±15)	≈ 300	130
YW *(Yellow)*	275 (±20)	≈ 405	175
(Other forces)	75 - 275	≈ 120 - 405	50 - 175

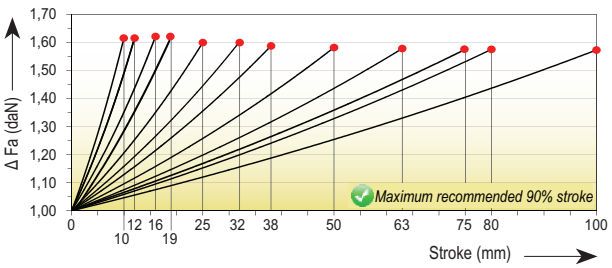
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

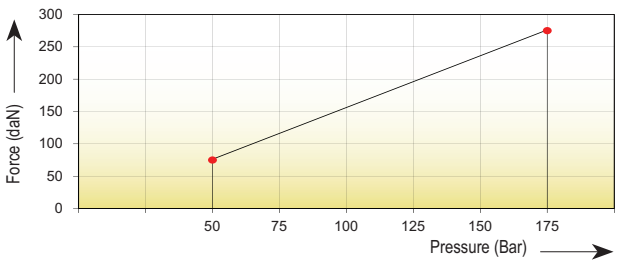
MICRO 25 x **38.2** **RD**

Model | Stroke | Color code

Force/stroke ratio



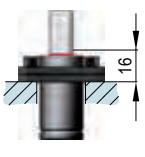
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN

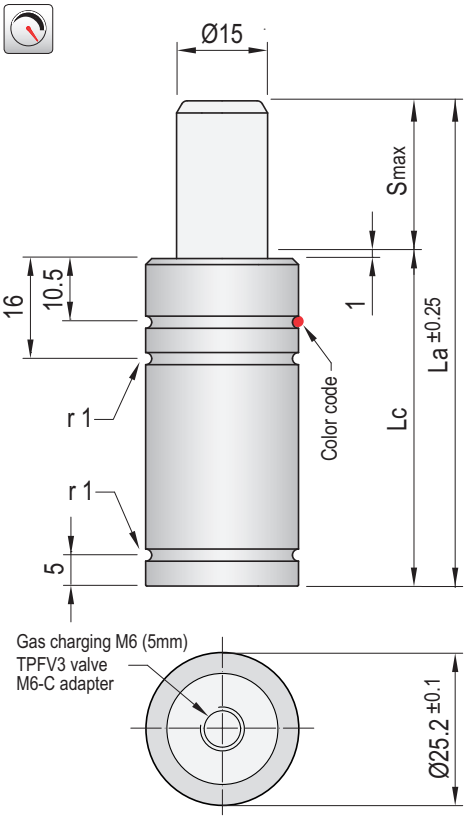


FS 25/1

FS 25/1

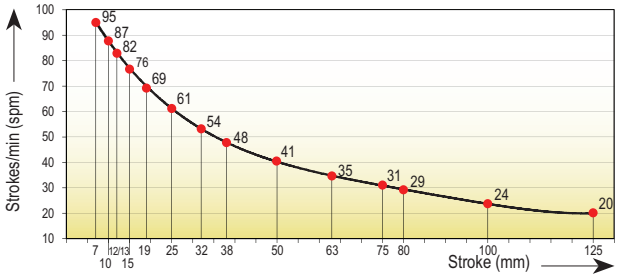
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	170 Bar
Min. charging pressure	30 Bar
Rod seal area	1,77 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M25V1

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 25V1x7	7	44	37	0,004	0,10
MICRO 25V1x10	10	50	40	0,005	0,12
MICRO 25V1x12	12	54	42	0,006	0,13
MICRO 25V1x13	13	56	43	0,006	0,13
MICRO 25V1x15	15	60	45	0,007	0,14
MICRO 25V1x19	19	68	49	0,009	0,15
MICRO 25V1x25	25	80	55	0,011	0,16
MICRO 25V1x32	32	94	62	0,014	0,17
MICRO 25V1x38	38	106	68	0,016	0,19
MICRO 25V1x50	50	130	80	0,021	0,22
MICRO 25V1x63	63	156	93	0,026	0,25
MICRO 25V1x75	75	185	110	0,031	0,26
MICRO 25V1x80	80	195	115	0,033	0,27
MICRO 25V1x100	100	235	135	0,041	0,34
MICRO 25V1x125	125	285	160	0,051	0,37

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 150	55
BL *(Blue)*	150 (±10)	≈ 235	85
RD *(Red)*	200 (±15)	≈ 300	110
YW *(Yellow)*	300 (±20)	≈ 465	170
(Other forces)	50 - 300	≈ 90 - 465	30 - 170

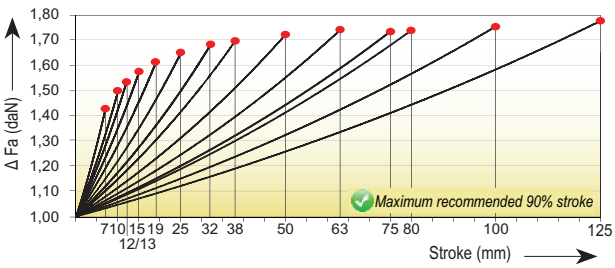
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

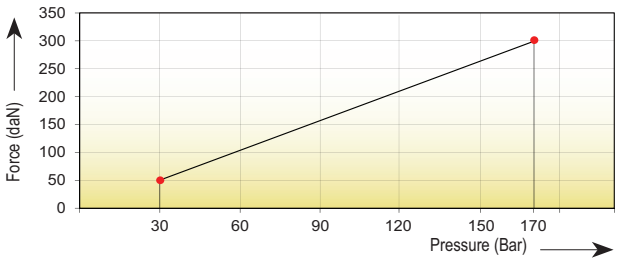
MICRO 25V1 x **50** **YW**

Model | Stroke | Color code

Force/stroke ratio

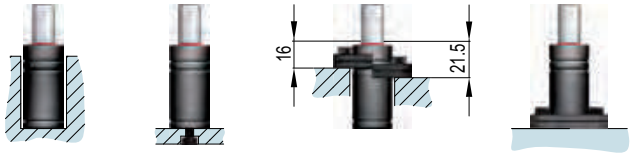


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 25/1·FS 25/2 | FS 25/1·FS 25/2

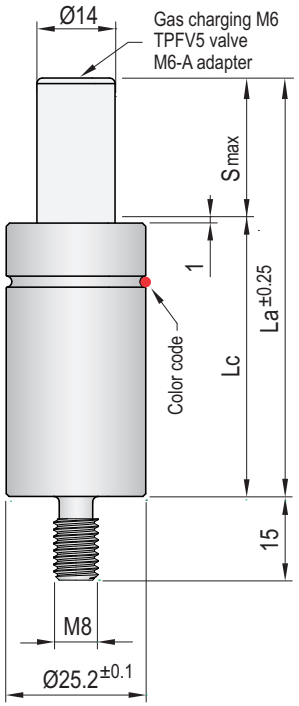
TECAPRES®

Ø25mm 275daN

MICRO 25R.2

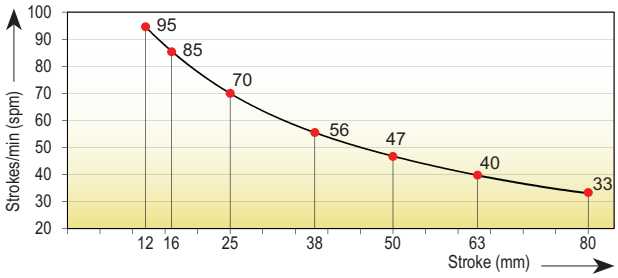
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	1,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MR25.2

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 25Rx12.2	11,5	49	37	0,005	0,08
MICRO 25Rx16.2	15,5	57	41	0,007	0,09
MICRO 25Rx25.2	24,5	75	50	0,010	0,11
MICRO 25Rx38.2	37,5	101	63	0,016	0,13
MICRO 25Rx50.2	49,5	125	75	0,021	0,15
MICRO 25Rx63.2	62,5	151	88	0,026	0,18
MICRO 25Rx80.2	79,5	185	105	0,033	0,20

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 150	65
BL *(Blue)*	150 (±10)	≈ 230	100
RD *(Red)*	200 (±15)	≈ 300	130
YW *(Yellow)*	275 (±20)	≈ 405	175
(Other forces)	75 - 275	≈ 120 - 405	50 - 175

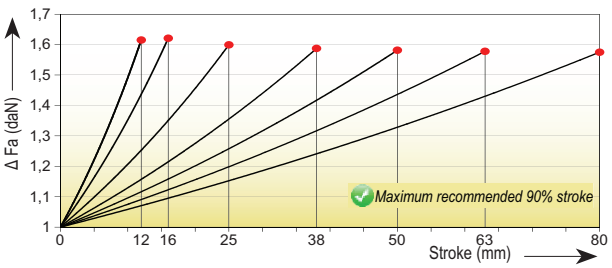
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

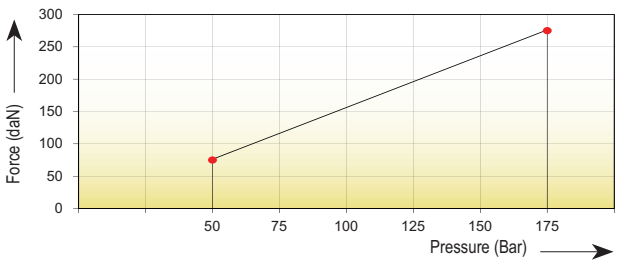
MICRO 25 x **16.2** **RD**

Model | Stroke | Color code

Force/stroke ratio

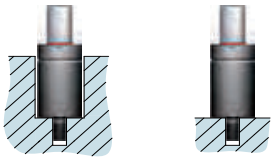


Initial force/charging pressure ratio



Assembly possibilities

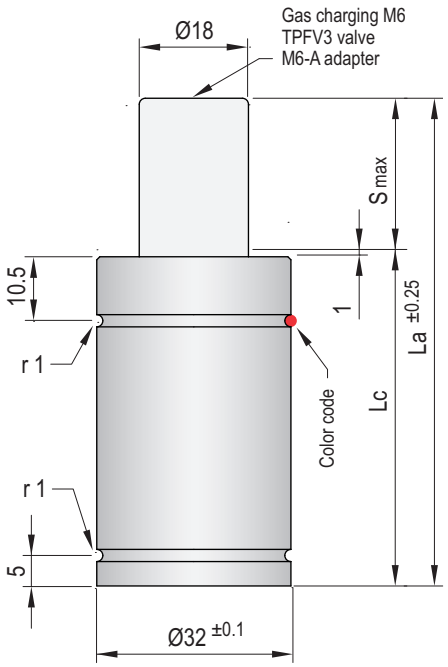
Follow guidelines Page 287



THREAD MOUNT

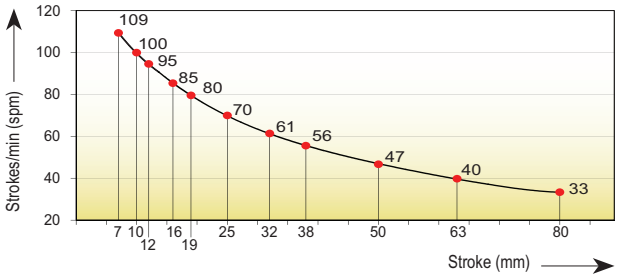
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit M32

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 32x7	7	44	37	0,005	0,16
MICRO 32x10	10	50	40	0,007	0,17
MICRO 32x12	12	54	42	0,008	0,18
MICRO 32x16	16	62	46	0,011	0,19
MICRO 32x19	19	68	49	0,013	0,20
MICRO 32x25	25	80	55	0,017	0,22
MICRO 32x32	32	94	62	0,021	0,24
MICRO 32x38	38	106	68	0,025	0,26
MICRO 32x50	50	130	80	0,033	0,30
MICRO 32x63	63	156	93	0,041	0,36
MICRO 32x80	80	190	110	0,052	0,41

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 155	40
BL *(Blue)*	200 (±15)	≈ 310	80
RD *(Red)*	300 (±20)	≈ 465	120
YW *(Yellow)*	450 (±20)	≈ 680	175
(Other forces)	60 - 450	≈ 100 - 680	25 - 175

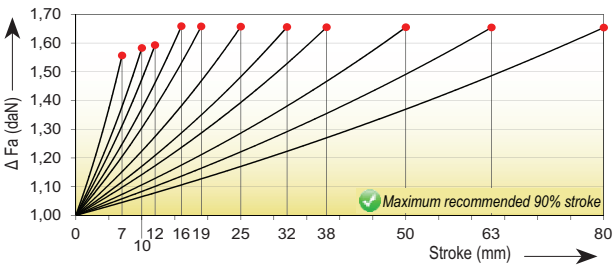
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

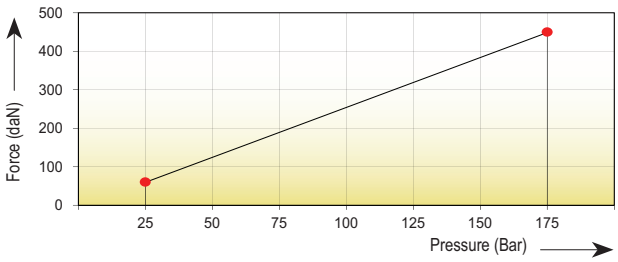
MICRO 32 x **19** **RD**

Model | Stroke | Color code

Force/stroke ratio

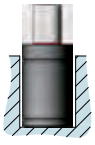


Initial force/charging pressure ratio

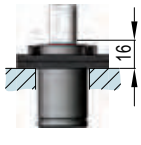


Assembly possibilities

Follow guidelines Page 287



DROP-IN



FS 32
FS 32/1·FSC 32

FS 32
FS 32/1·FSC 32

FI 32·FI 32/1

TECAPRES®

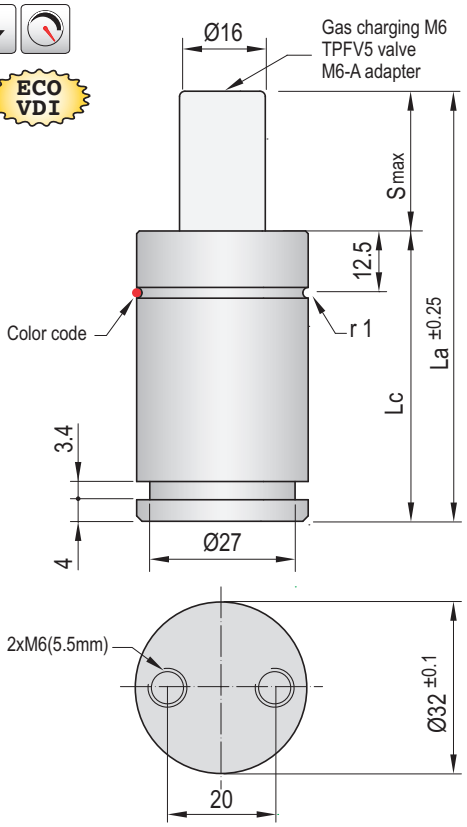
Ø32mm 350daN

MICRO 32V

VDI SAFETY

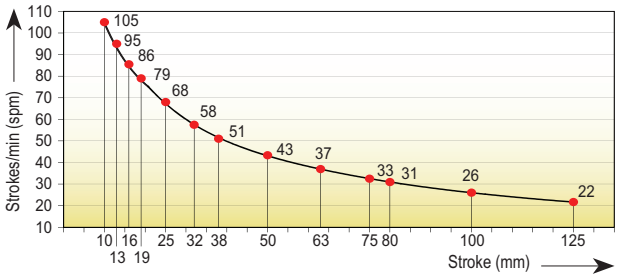
PED 2014/68/UE

ECO VDI



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MV32.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 32Vx10	10	50	40	0,006	0,16
MICRO 32Vx13	13	56	43	0,008	0,17
MICRO 32Vx16	16	62	46	0,010	0,18
MICRO 32Vx19	19	68	49	0,012	0,19
MICRO 32Vx25	25	80	55	0,015	0,20
MICRO 32Vx32	32	94	62	0,019	0,22
MICRO 32Vx38	38	106	68	0,024	0,24
MICRO 32Vx50	50	130	80	0,031	0,28
MICRO 32Vx63	63	156	93	0,038	0,33
MICRO 32Vx75	75	180	105	0,046	0,36
MICRO 32Vx80	80	190	110	0,049	0,38
MICRO 32Vx100	100	230	130	0,061	0,44
MICRO 32Vx125	125	280	155	0,076	0,51

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	25
BL *(Blue)*	150 (±15)	≈ 215	75
RD *(Red)*	250 (±20)	≈ 360	125
YW *(Yellow)*	350 (±20)	≈ 500	175
(Other forces)	50 - 350	≈ 75 - 500	25 - 175

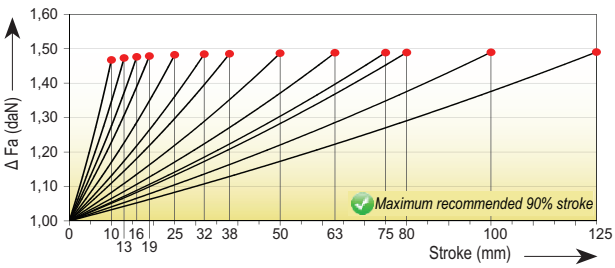
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

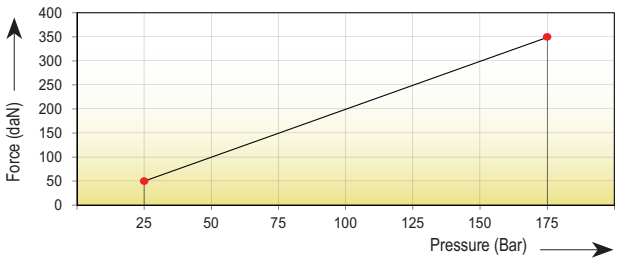
MICRO 32V x **32** **YW**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

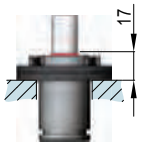


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



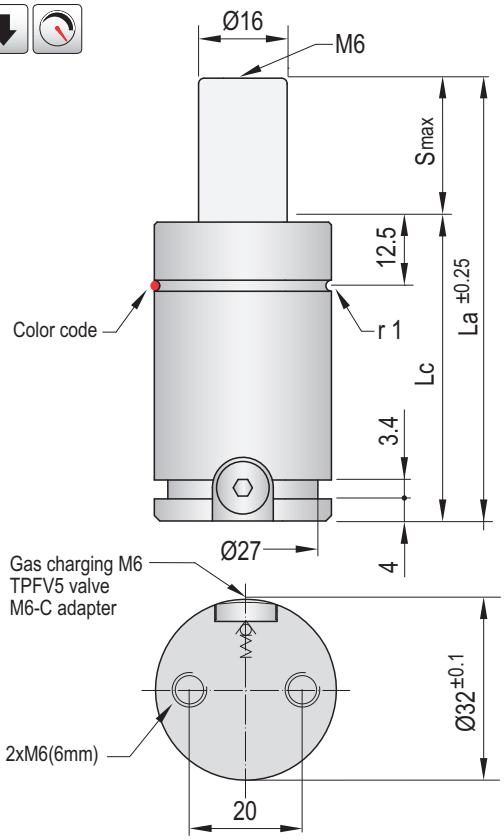
FS 32
FS 32/1·FSC 32

FP 32·FPR 32

FI 32·FI 32/1

VDI SAFETY

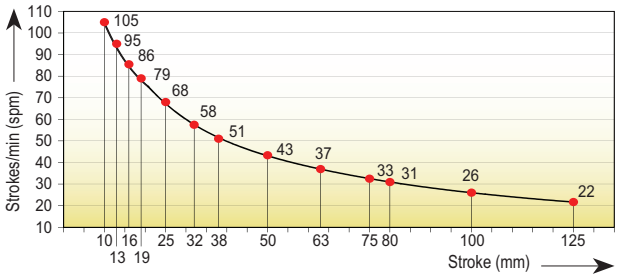
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit MVS32

VDI 3003 ISO 11901

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 32VSx10	10	50	40	0,007	0,16
MICRO 32VSx13	13	56	43	0,008	0,17
MICRO 32VSx16	16	62	46	0,010	0,18
MICRO 32VSx19	19	68	49	0,012	0,19
MICRO 32VSx25	25	80	55	0,016	0,20
MICRO 32VSx32	32	94	62	0,020	0,22
MICRO 32VSx38	38	106	68	0,024	0,24
MICRO 32VSx50	50	130	80	0,031	0,28
MICRO 32VSx63	63	156	93	0,039	0,33
MICRO 32VSx75	75	180	105	0,046	0,36
MICRO 32VSx80	80	190	110	0,049	0,38
MICRO 32VSx100	100	230	130	0,061	0,44
MICRO 32VSx125	125	280	155	0,076	0,51

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	25
BL *(Blue)*	150 (±15)	≈ 215	75
RD *(Red)*	250 (±20)	≈ 355	125
YW *(Yellow)*	350 (±20)	≈ 495	175
(Other forces)	50 - 350	≈ 75 - 495	25 - 175

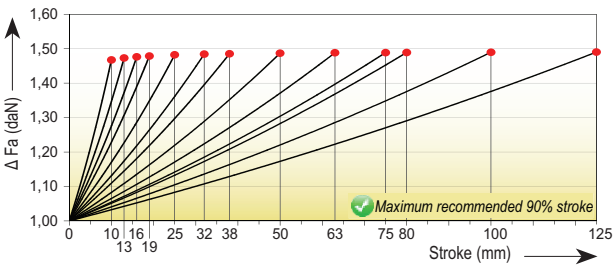
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

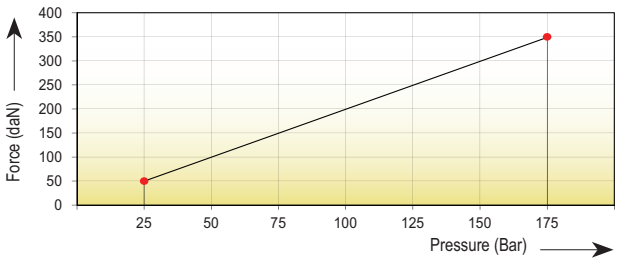
MICRO 32VS x 75 YW

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

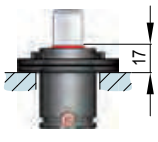


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 32
FS 32/1·FSC 32


FP 32·FPR 32


FI 32·FI 32/1

TECAPRES®

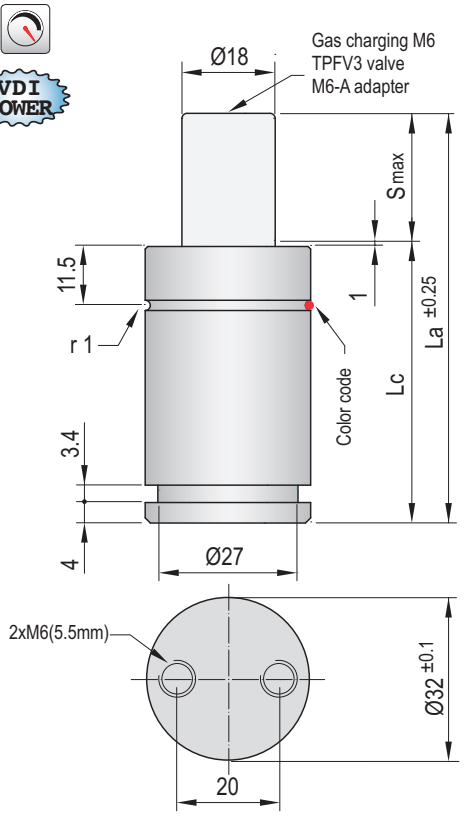
Ø32mm
450daN

MICRO 32H

VDI SAFETY

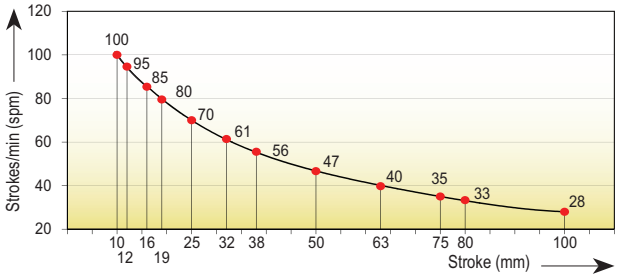
PED 2014/68/UE

VDI POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MH32

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 32Hx10	10	50	40	0,007	0,16
MICRO 32Hx12	12	54	42	0,008	0,17
MICRO 32Hx16	16	62	46	0,011	0,18
MICRO 32Hx19	19	68	49	0,013	0,19
MICRO 32Hx25	25	80	55	0,017	0,20
MICRO 32Hx32	32	94	62	0,021	0,22
MICRO 32Hx38	38	106	68	0,025	0,24
MICRO 32Hx50	50	130	80	0,033	0,28
MICRO 32Hx63	63	156	93	0,041	0,33
MICRO 32Hx75	75	180	105	0,049	0,36
MICRO 32Hx80	80	190	110	0,052	0,38
MICRO 32Hx100	100	230	130	0,065	0,44

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 155	40
BL *(Blue)*	200 (±15)	≈ 310	80
RD *(Red)*	300 (±20)	≈ 465	120
YW *(Yellow)*	450 (±20)	≈ 680	175
(Other forces)	60 - 450	≈ 100 - 680	25 - 175

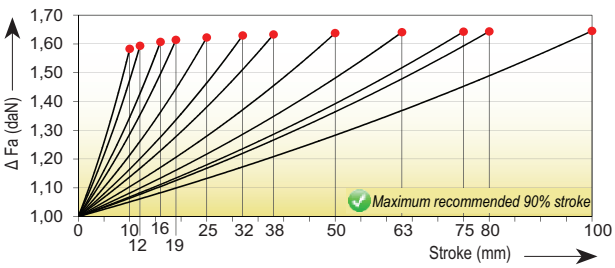
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

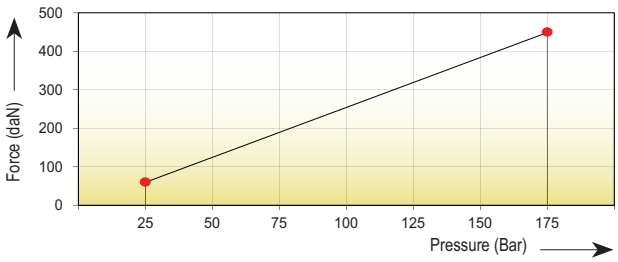
MICRO 32H x **80** **RD**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

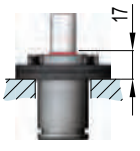


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 32
FS 32/1·FSC 32


FP 32·FPR 32


FI 32·FI 32/1

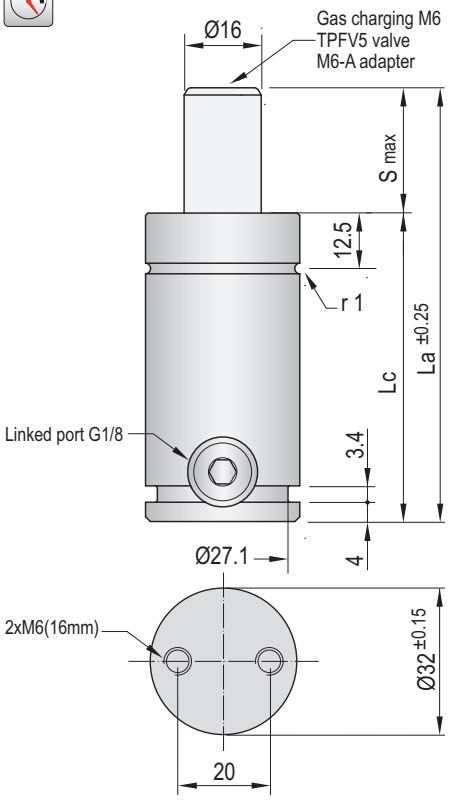
TECAPRES®

Ø32mm · G1/8 connectable
350daN

MICRO 32C

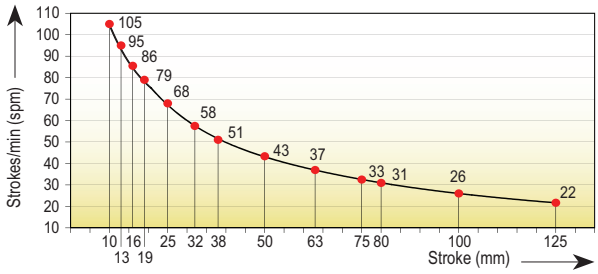
VDI SAFETY

PED 2014/68/UE



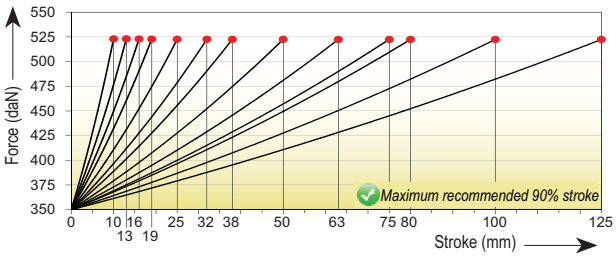
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MC32.1

Maximum strokes / minute (at 20ºC)

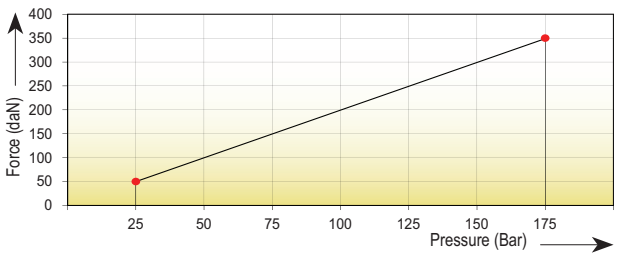


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 32Cx10	10	60	50		500	525		0,006	0,20
MICRO 32Cx13	13	66	53		500	525		0,008	0,22
MICRO 32Cx16	16	72	56		500	525		0,010	0,24
MICRO 32Cx19	19	78	59		500	525		0,012	0,25
MICRO 32Cx25	25	90	65		500	525		0,015	0,27
MICRO 32Cx32	32	104	72	350 ±5% (20ºC)	500	525	175 (20ºC)	0,019	0,30
MICRO 32Cx38	38	116	78		500	525		0,024	0,34
MICRO 32Cx50	50	140	90		500	525		0,031	0,37
MICRO 32Cx63	63	166	103		500	525		0,038	0,40
MICRO 32Cx75	75	190	115		500	525		0,046	0,46
MICRO 32Cx80	80	200	120		500	525		0,049	0,47
MICRO 32Cx100	100	240	140		500	525		0,061	0,51
MICRO 32Cx125	125	290	165		500	525		0,076	0,55

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS

FS 32
FS 32/1·FSC 32

FP 32·FPR 32

FI 32·FI 32/1

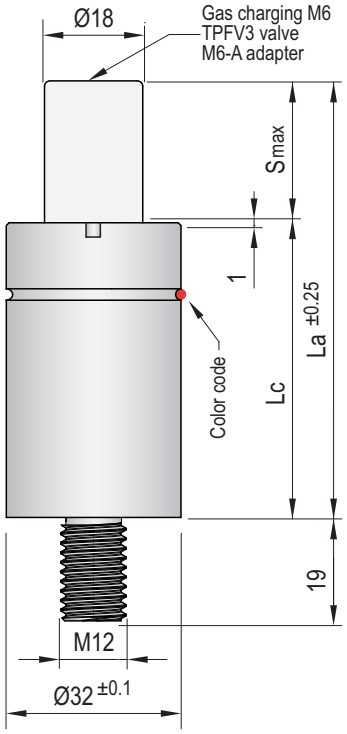
TECAPRES®

Ø32mm 450daN

MICRO 32R

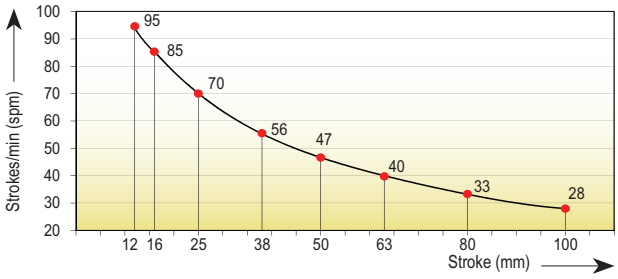
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MR32

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
MICRO 32Rx12	12	54	42	0,008	0,09
MICRO 32Rx16	16	62	46	0,011	0,10
MICRO 32Rx25	25	80	55	0,017	0,12
MICRO 32Rx38	38	106	68	0,025	0,14
MICRO 32Rx50	50	130	80	0,033	0,16
MICRO 32Rx63	63	156	93	0,041	0,19
MICRO 32Rx80	80	190	110	0,052	0,21
MICRO 32Rx100	100	230	130	0,065	0,25

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 155	40
BL *(Blue)*	200 (±15)	≈ 310	80
RD *(Red)*	300 (±20)	≈ 465	120
YW *(Yellow)*	450 (±20)	≈ 680	175
(Other forces)	60 - 450	≈ 100 - 680	25 - 175

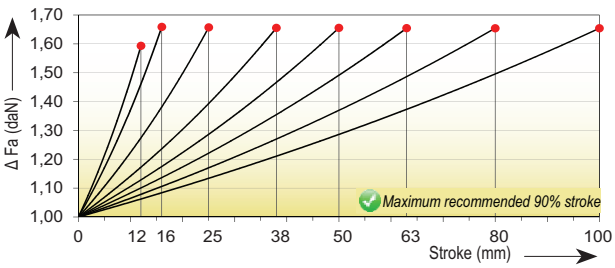
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

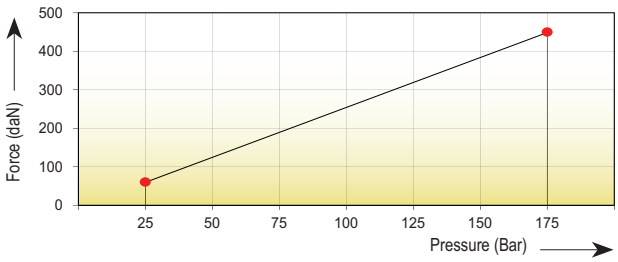
MICRO 32R x **63** **RD**

Model | Stroke | Color code

Force/stroke ratio

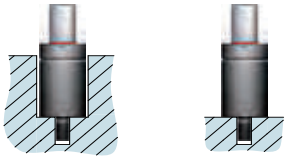


Initial force/charging pressure ratio



Assembly possibilities

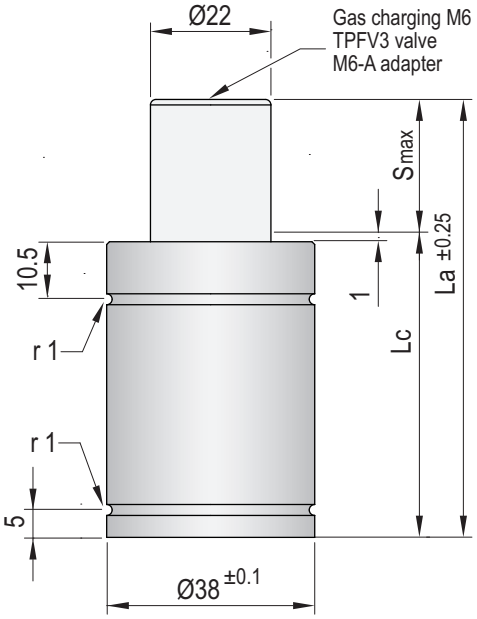
Follow guidelines Page 287



THREAD MOUNT

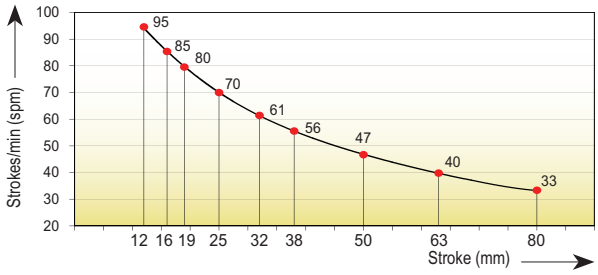
VDI SAFETY

PED 2014/68/UE



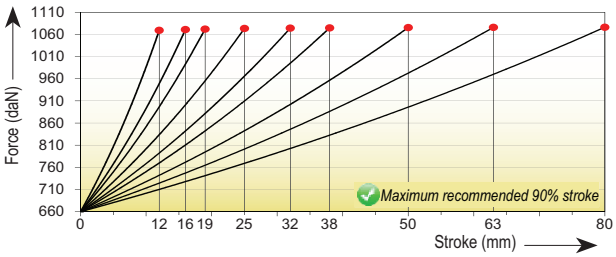
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit M38

Maximum strokes / minute (at 20ºC)

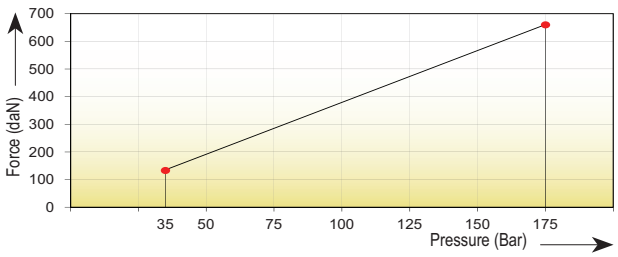


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38x12	12	54	42	660 ±5% (20ºC)	1015	1080	175 (20ºC)	0,012	0,28
MICRO 38x16	16	62	46		1015	1080		0,016	0,30
MICRO 38x19	19	68	49		1015	1080		0,019	0,32
MICRO 38x25	25	80	55		1020	1080		0,025	0,33
MICRO 38x32	32	94	62		1020	1085		0,032	0,35
MICRO 38x38	38	106	68		1020	1085		0,037	0,39
MICRO 38x50	50	130	80		1020	1085		0,049	0,43
MICRO 38x63	63	156	93		1020	1085		0,062	0,48
MICRO 38x80	80	190	110		1020	1085		0,079	0,55

Force/stroke ratio

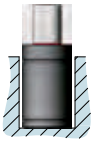


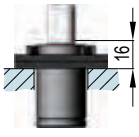
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN



FS 38·FSC 38


FS 38·FSC 38


FI 38·FI 38/1

TECAPRES®

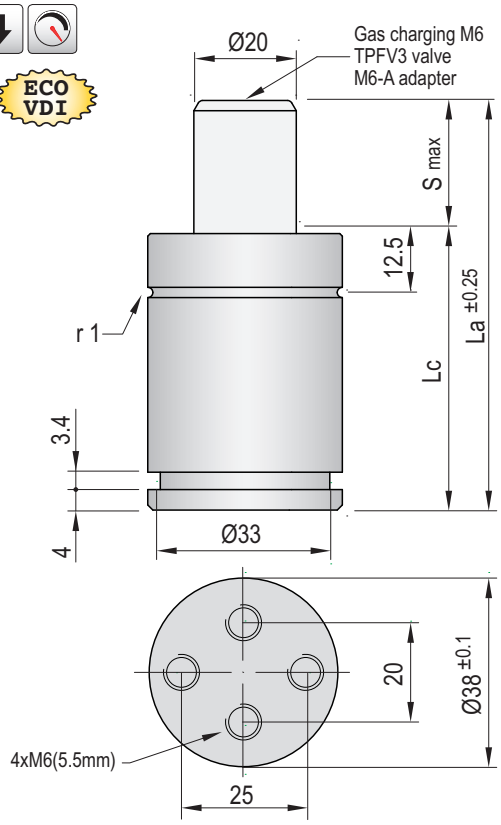
Ø38mm 470daN

MICRO 38V

VDI SAFETY

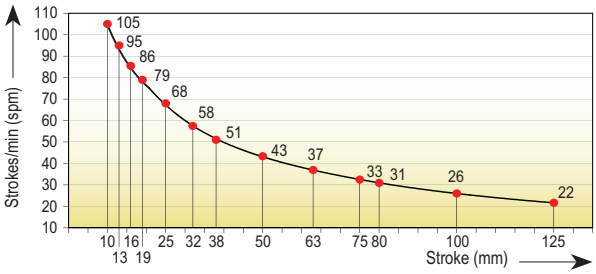
PED 2014/68/UE

ECO VDI



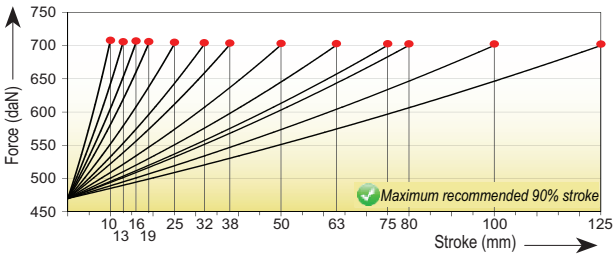
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MV38

Maximum strokes / minute (at 20ºC)

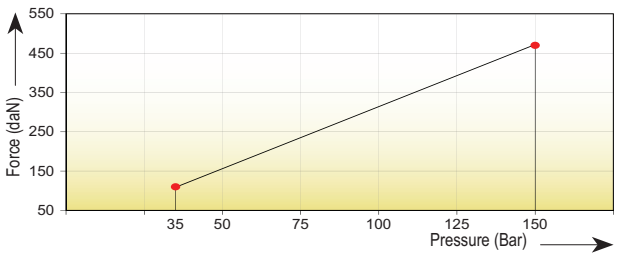


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38Vx10	10	50	40		675	710		0,010	0,25
MICRO 38Vx13	13	56	43		675	710		0,012	0,26
MICRO 38Vx16	16	62	46		675	705		0,015	0,27
MICRO 38Vx19	19	68	49		670	705		0,018	0,28
MICRO 38Vx25	25	80	55		670	705		0,024	0,32
MICRO 38Vx32	32	94	62	470 ±5%	670	705	150	0,030	0,34
MICRO 38Vx38	38	106	68	(20ºC)	670	705	(20ºC)	0,036	0,38
MICRO 38Vx50	50	130	80		670	705		0,048	0,42
MICRO 38Vx63	63	156	93		670	700		0,060	0,46
MICRO 38Vx75	75	180	105		670	700		0,072	0,50
MICRO 38Vx80	80	190	110		670	700		0,076	0,53
MICRO 38Vx100	100	230	130		670	700		0,096	0,55
MICRO 38Vx125	125	280	155		670	700		0,120	0,68

Force/stroke ratio



Initial force/charging pressure ratio

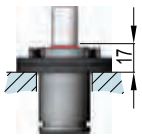


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



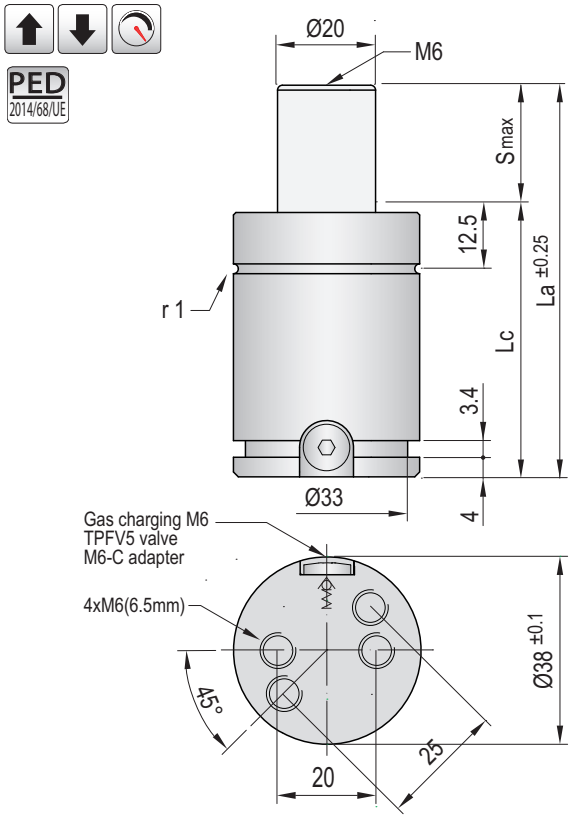
FS 38·FSC 38

FP 38·FPR 38

FI 38·FI 38/1

VDI SAFETY

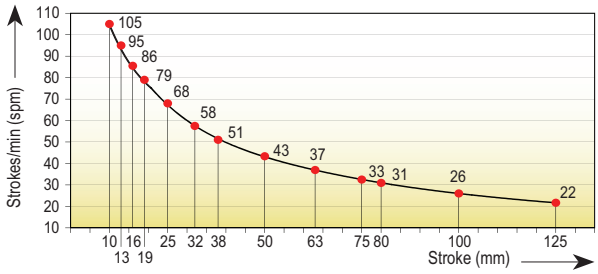
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MVS38.1

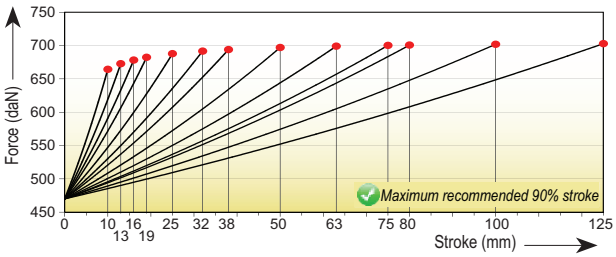
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

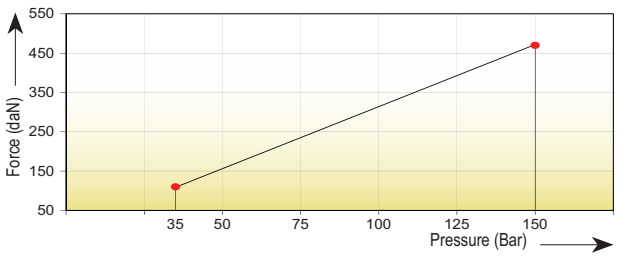


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38VSx10.1	10	50	40	470 ±5% (20ºC)	640	665	150 (20ºC)	0,011	0,25
MICRO 38VSx13.1	13	56	43		645	675		0,014	0,26
MICRO 38VSx16.1	16	62	46		650	680		0,016	0,27
MICRO 38VSx19.1	19	68	49		655	685		0,019	0,28
MICRO 38VSx25.1	25	80	55		660	690		0,025	0,32
MICRO 38VSx32.1	32	94	62		660	695		0,031	0,34
MICRO 38VSx38.1	38	106	68		665	695		0,037	0,38
MICRO 38VSx50.1	50	130	80		665	700		0,048	0,42
MICRO 38VSx63.1	63	156	93		670	700		0,060	0,46
MICRO 38VSx75.1	75	180	105		670	700		0,072	0,50
MICRO 38VSx80.1	80	190	110		670	705		0,076	0,53
MICRO 38VSx100.1	100	230	130		670	705		0,095	0,55
MICRO 38VSx125.1	125	280	155		670	705		0,119	0,68

Force/stroke ratio

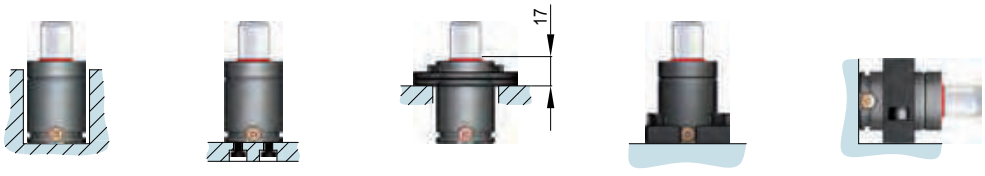


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 38·FSC 38 · FP 38·FPR 38 · FI 38·FI 38/1

TECAPRES®

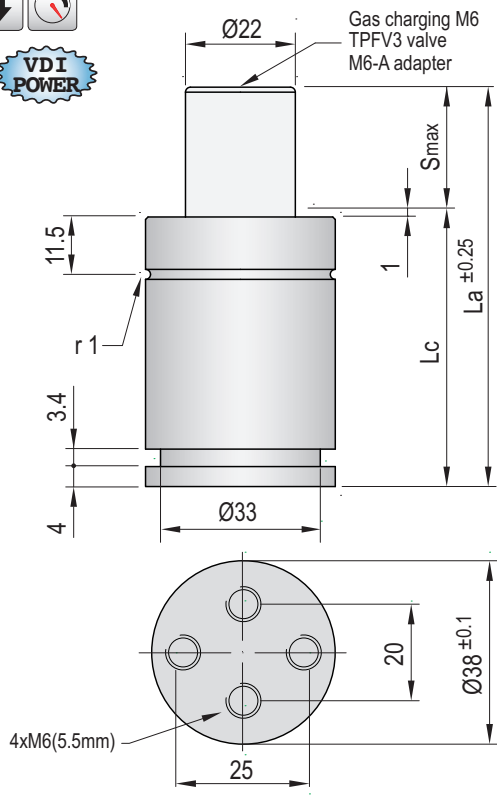
Ø38mm 660daN

MICRO 38H

VDI SAFETY

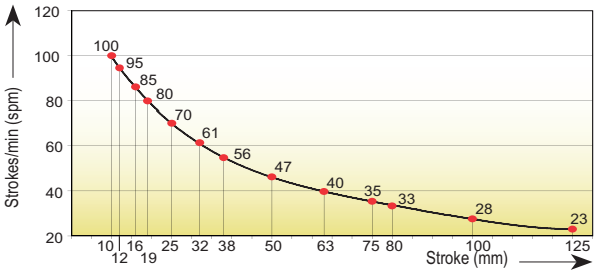
PED 2014/68/UE

VDI POWER



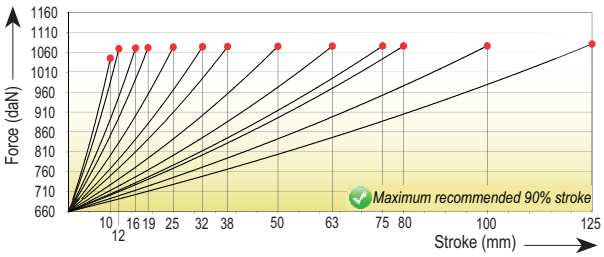
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit MH38

Maximum strokes / minute (at 20°C)

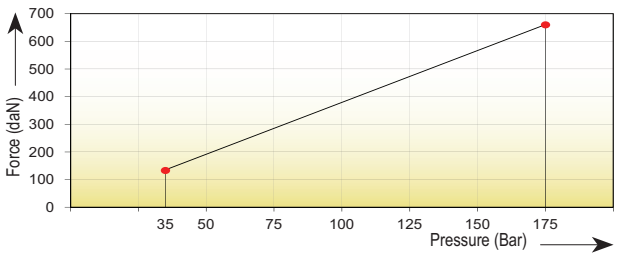


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38Hx10	10	50	40	660 ±5% (20°C)	995	1055	175 (20°C)	0,010	0,26
MICRO 38Hx12	12	54	42		1015	1080		0,012	0,27
MICRO 38Hx16	16	62	46		1015	1080		0,016	0,28
MICRO 38Hx19	19	68	49		1015	1080		0,019	0,30
MICRO 38Hx25	25	80	55		1020	1080		0,025	0,33
MICRO 38Hx32	32	94	62		1020	1085		0,032	0,35
MICRO 38Hx38	38	106	68		1020	1085		0,037	0,39
MICRO 38Hx50	50	130	80		1020	1085		0,049	0,43
MICRO 38Hx63	63	156	93		1020	1085		0,062	0,48
MICRO 38Hx75	75	180	105		1020	1085		0,074	0,51
MICRO 38Hx80	80	190	110		1020	1085		0,079	0,55
MICRO 38Hx100	100	230	130		1020	1085		0,098	0,62
MICRO 38Hx125	125	280	155		1020	1085		0,123	0,75

Force/stroke ratio



Initial force/charging pressure ratio

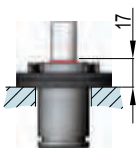


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



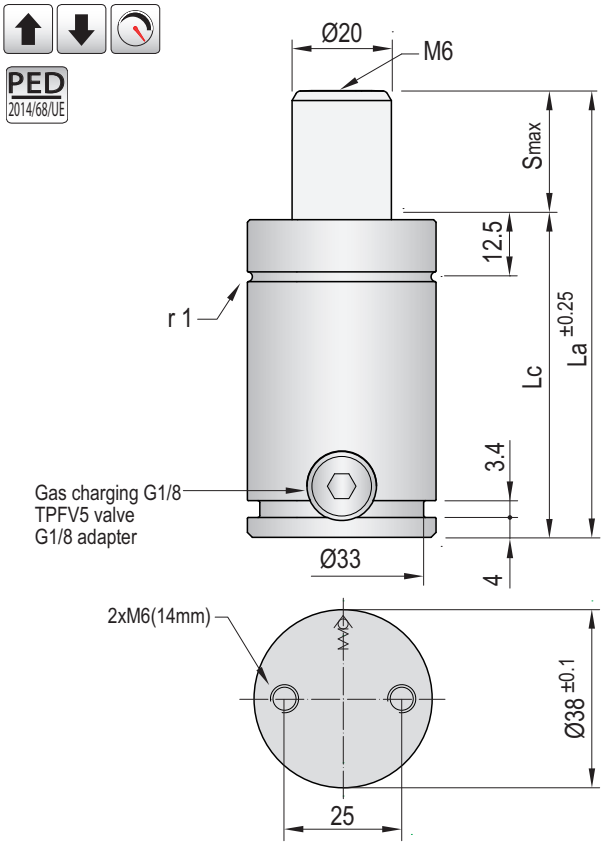
FS 38·FSC 38

FP 38·FPR 38

FI 38·FI 38/1

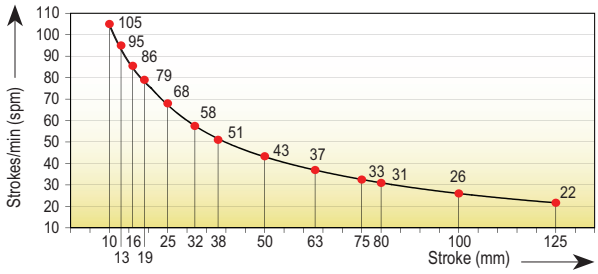
VDI SAFETY

PED 2014/68/UE



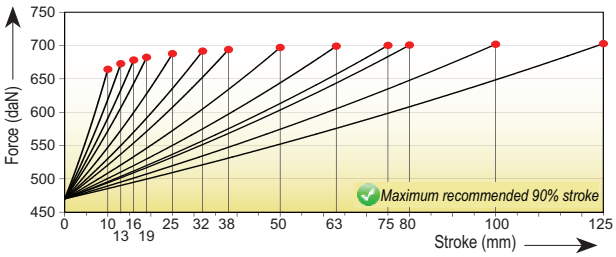
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MC38.1

Maximum strokes / minute (at 20ºC)

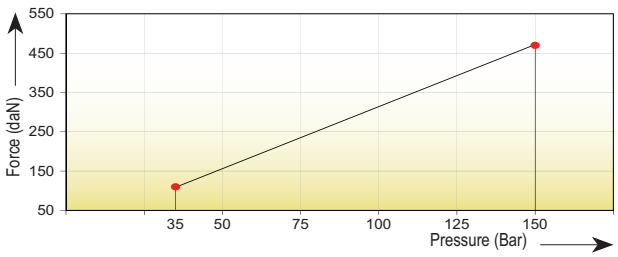


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38Cx10.1	10	60	50	470 ±5% (20ºC)	640	665	150 (20ºC)	0,011	0,33
MICRO 38Cx13.1	13	66	53		645	675		0,014	0,34
MICRO 38Cx16.1	16	72	56		650	680		0,016	0,35
MICRO 38Cx19.1	19	78	59		655	685		0,019	0,37
MICRO 38Cx25.1	25	90	65		660	690		0,025	0,40
MICRO 38Cx32.1	32	104	72		660	695		0,031	0,41
MICRO 38Cx38.1	38	116	78		665	695		0,037	0,45
MICRO 38Cx50.1	50	140	90		665	700		0,048	0,50
MICRO 38Cx63.1	63	166	103		670	700		0,060	0,54
MICRO 38Cx75.1	75	190	115		670	700		0,072	0,60
MICRO 38Cx80.1	80	200	120		670	705		0,076	0,62
MICRO 38Cx100.1	100	240	140		670	705		0,095	0,69
MICRO 38Cx125.1	125	290	165		670	705		0,119	0,76

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS

FS 38·FSC 38


FP 38·FPR 38


FI 38·FI 38/1

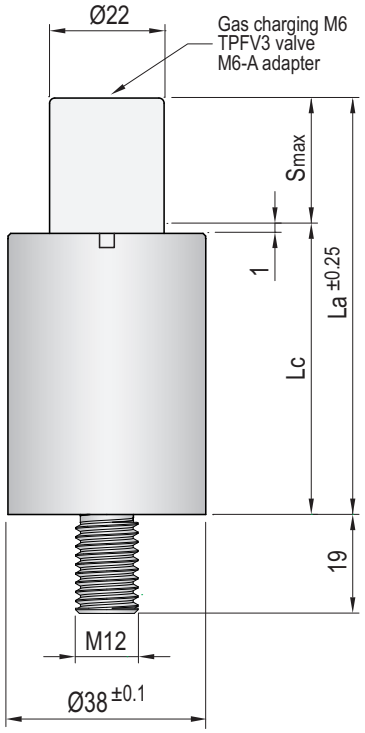
TECAPRES®

Ø38mm 660daN

MICRO 38R

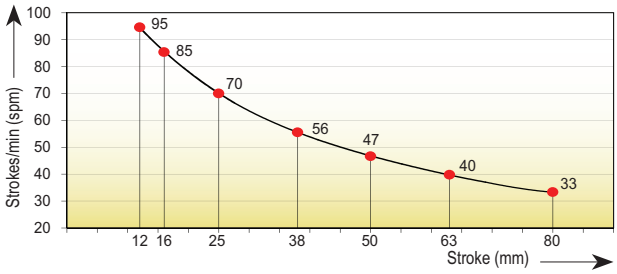
VDI SAFETY

PED 2014/68/UE



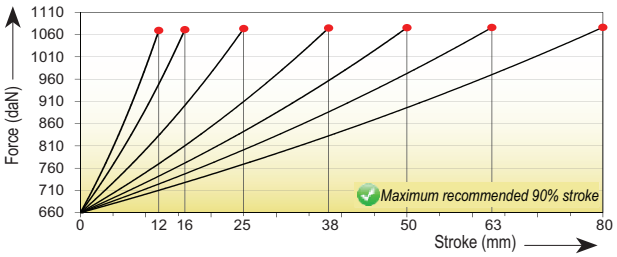
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MR38

Maximum strokes / minute (at 20ºC)

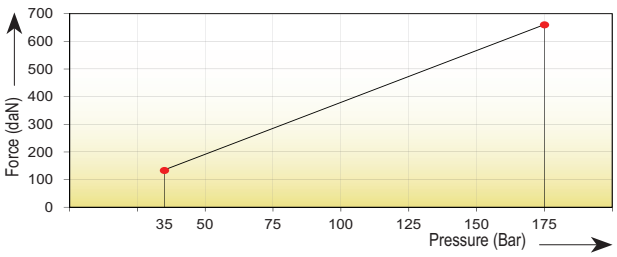


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 38Rx12	12	54	42	660 ±5% (20ºC)	1015	1080	175 (20ºC)	0,012	0,28
MICRO 38Rx16	16	62	46		1015	1080		0,016	0,30
MICRO 38Rx25	25	80	55		1015	1080		0,025	0,33
MICRO 38Rx38	38	106	68		1020	1085		0,037	0,39
MICRO 38Rx50	50	130	80		1020	1085		0,049	0,43
MICRO 38Rx63	63	156	93		1020	1085		0,062	0,48
MICRO 38Rx80	80	190	110		1020	1085		0,079	0,55

Force/stroke ratio

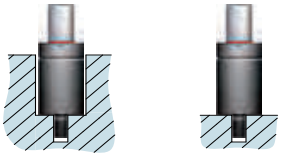


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

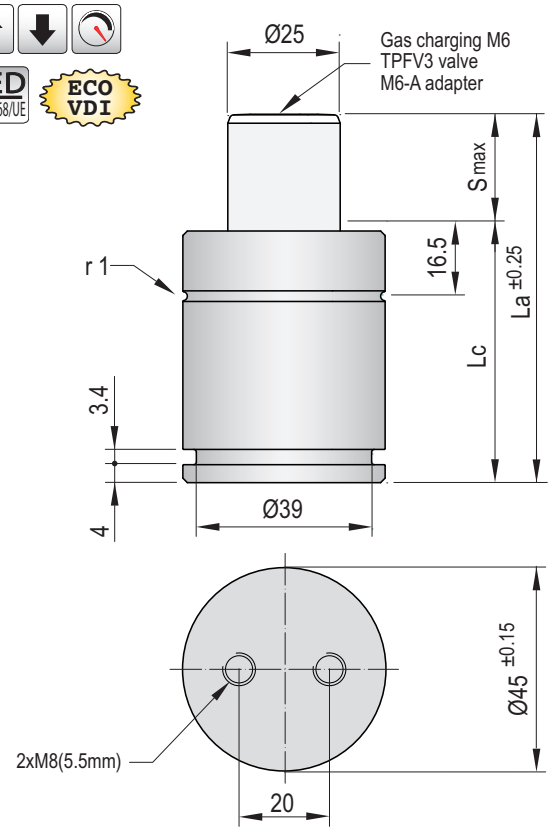


THREAD MOUNT

VDI SAFETY

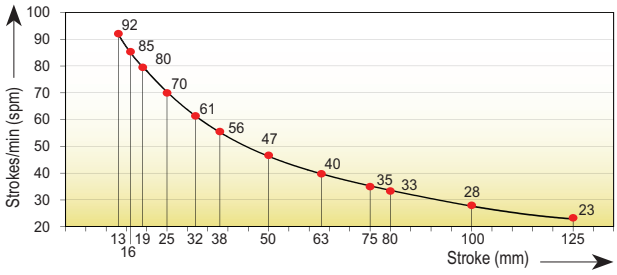
PED 2014/68/UE

ECO VDI



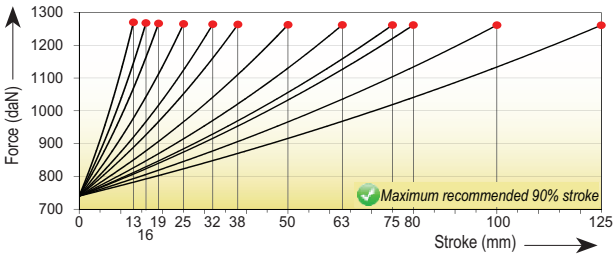
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M45

Maximum strokes / minute (at 20°C)

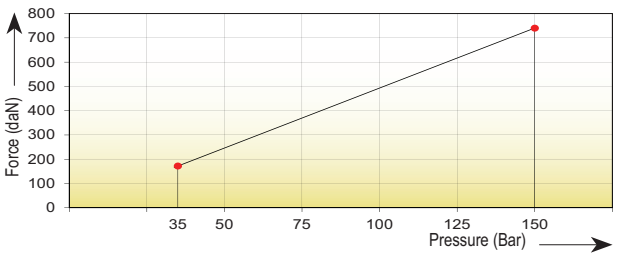


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 45x13	13	58	45		1180	1265		0,015	0,35
MICRO 45x16	16	64	48		1180	1260		0,019	0,39
MICRO 45x19	19	70	51		1175	1260		0,022	0,40
MICRO 45x25	25	82	57		1175	1260		0,030	0,44
MICRO 45x32	32	96	64		1175	1260		0,038	0,47
MICRO 45x38	38	108	70	740 ±5%	1175	1255	150	0,045	0,50
MICRO 45x50	50	132	82	(20°C)	1175	1255	(20°C)	0,059	0,59
MICRO 45x63	63	158	95		1175	1255		0,075	0,65
MICRO 45x75	75	182	107		1175	1255		0,089	0,80
MICRO 45x80	80	192	112		1175	1255		0,095	0,85
MICRO 45x100	100	232	132		1175	1255		0,119	0,98
MICRO 45x125	125	282	157		1170	1255		0,149	1,15

Force/stroke ratio



Initial force/charging pressure ratio

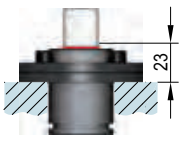


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 45·FSC 45


FP 45·FPR 45


FB 45


FI 45·FI 45/1

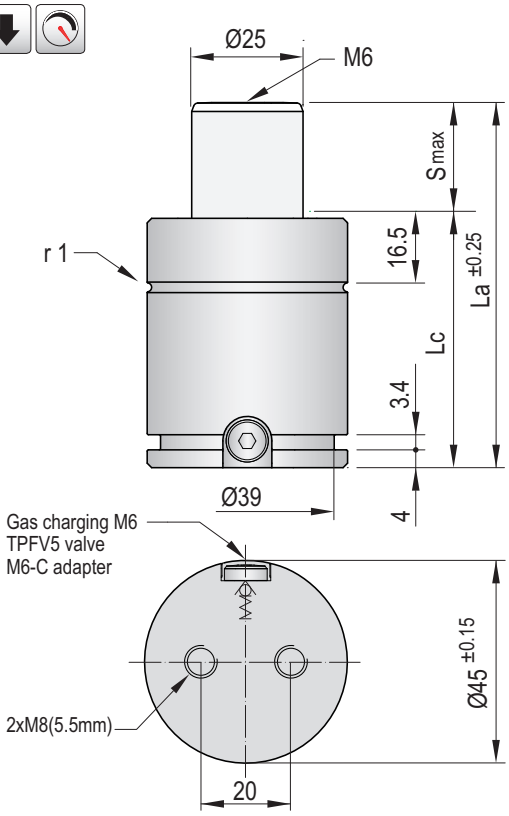
TECAPRES®

Ø45mm
740daN

MICRO 45V.1

VDI SAFETY

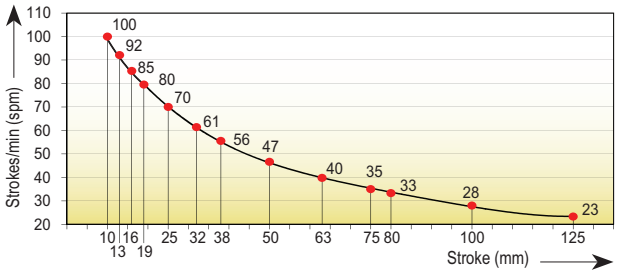
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MV45.1

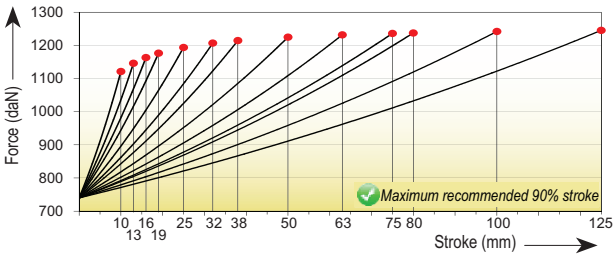
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

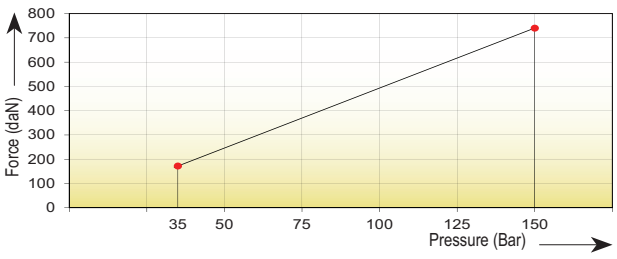


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 45Vx10.1	10	52	42		1060	1115		0,014	0,32
MICRO 45Vx13.1	13	58	45		1080	1140		0,018	0,35
MICRO 45Vx16.1	16	64	48		1095	1160		0,022	0,39
MICRO 45Vx19.1	19	70	51		1105	1170		0,025	0,40
MICRO 45Vx25.1	25	82	57		1120	1190		0,032	0,44
MICRO 45Vx32.1	32	96	64		1130	1200		0,041	0,47
MICRO 45Vx38.1	38	108	70	740 ±5% (20ºC)	1135	1210	150 (20ºC)	0,048	0,50
MICRO 45Vx50.1	50	132	82		1145	1220		0,062	0,59
MICRO 45Vx63.1	63	158	95		1150	1225		0,078	0,65
MICRO 45Vx75.1	75	182	107		1155	1230		0,092	0,80
MICRO 45Vx80.1	80	192	112		1155	1230		0,098	0,85
MICRO 45Vx100.1	100	232	132		1155	1235		0,122	0,98
MICRO 45Vx125.1	125	282	157		1160	1240		0,151	1,15

Force/stroke ratio

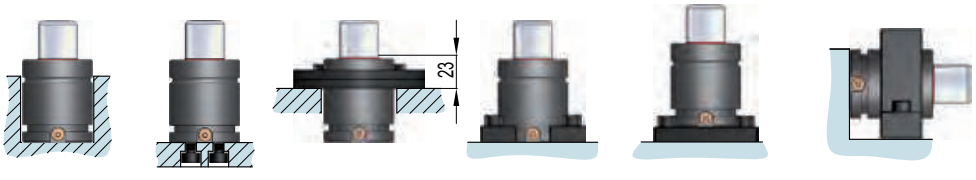


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 45·FSC 45 · FP 45·FPR 45 · FB 45 · FI 45·FI 45/1

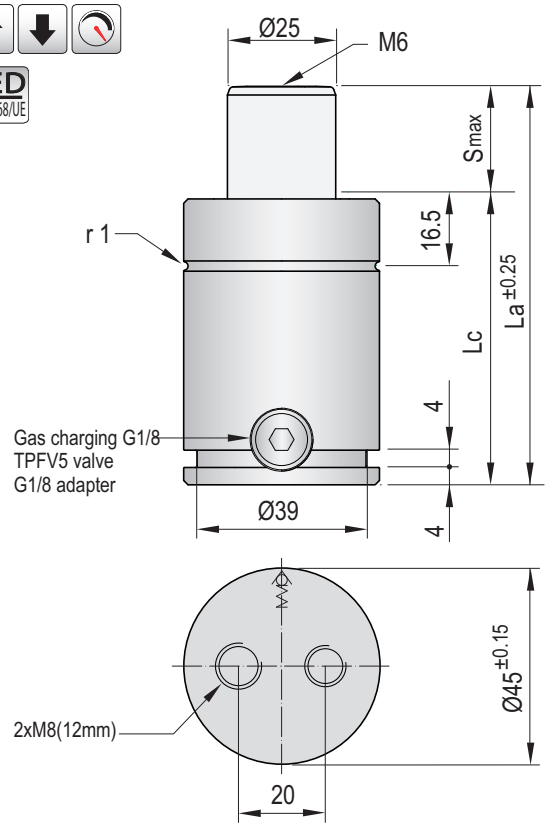
TECAPRES®

Ø45mm · G1/8 connectable
740daN

MICRO 45C.1

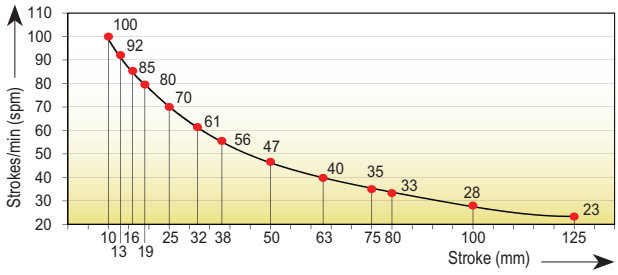
VDI SAFETY

PED 2014/68/UE



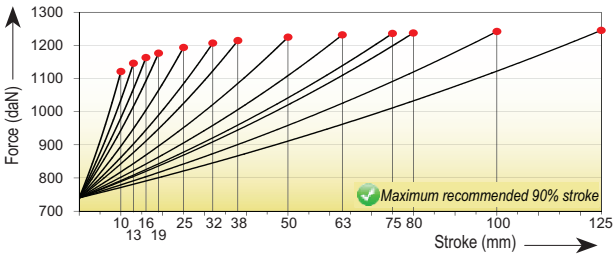
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MC45.1

Maximum strokes / minute (at 20ºC)

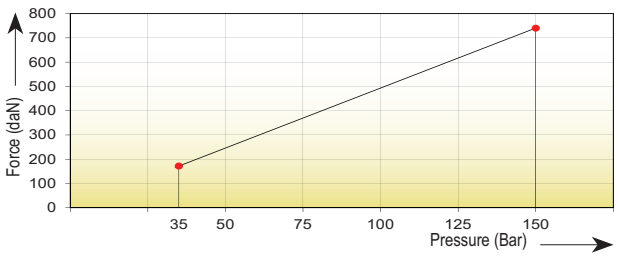


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 45Cx10.1	10	62	52		1060	1115		0,014	0,32
MICRO 45Cx13.1	13	68	55		1080	1140		0,018	0,35
MICRO 45Cx16.1	16	74	58		1095	1160		0,022	0,39
MICRO 45Cx19.1	19	80	61		1105	1170		0,025	0,40
MICRO 45Cx25.1	25	92	67		1120	1190		0,032	0,44
MICRO 45Cx32.1	32	106	74		1130	1200		0,041	0,47
MICRO 45Cx38.1	38	118	80	740 ±5% (20ºC)	1135	1210	150 (20ºC)	0,048	0,50
MICRO 45Cx50.1	50	142	92		1145	1220		0,062	0,59
MICRO 45Cx63.1	63	168	105		1150	1225		0,078	0,65
MICRO 45Cx75.1	75	192	117		1155	1230		0,092	0,80
MICRO 45Cx80.1	80	202	122		1155	1230		0,098	0,85
MICRO 45Cx100.1	100	242	142		1155	1235		0,122	0,98
MICRO 45Cx125.1	125	292	167		1160	1240		0,151	1,15

Force/stroke ratio

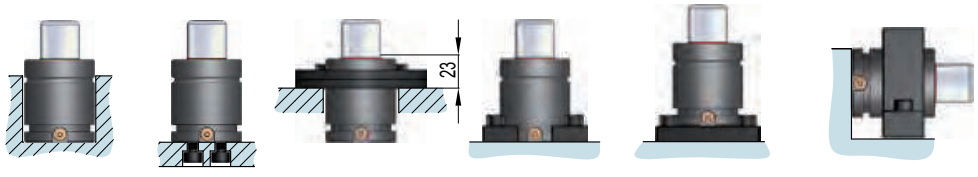


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 45·FSC 45 | FP 45·FPR 45 | FB 45 | FI 45·FI 45/1

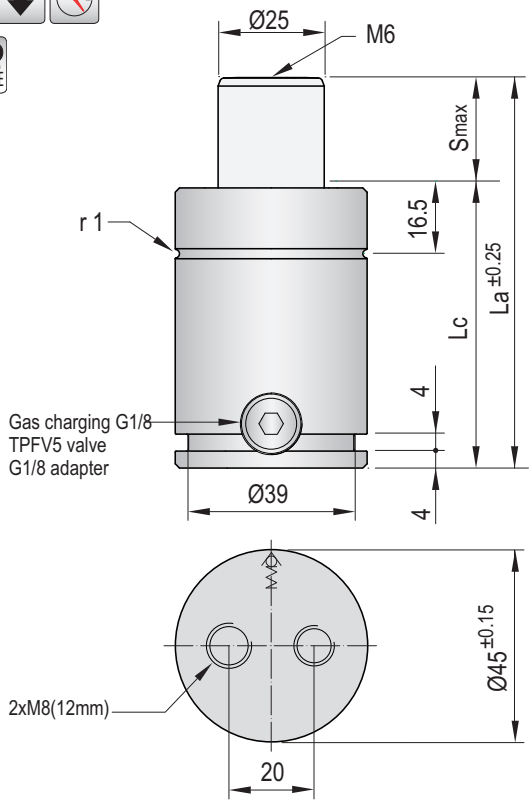
TECAPRES®

Ø45mm · G1/8 connectable
740daN

MICRO 45CF.1

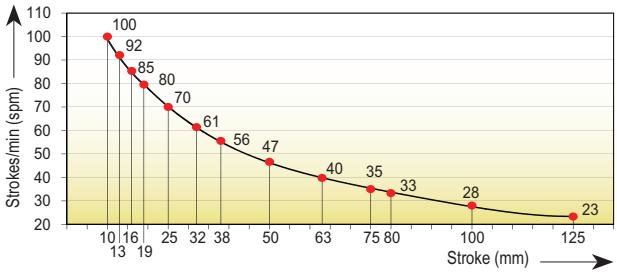
VDI SAFETY

PED 2014/68/UE



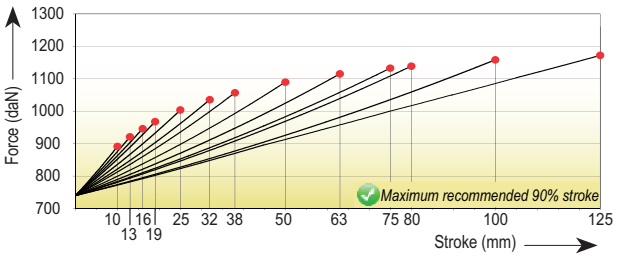
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M45CF.1

Maximum strokes / minute (at 20ºC)

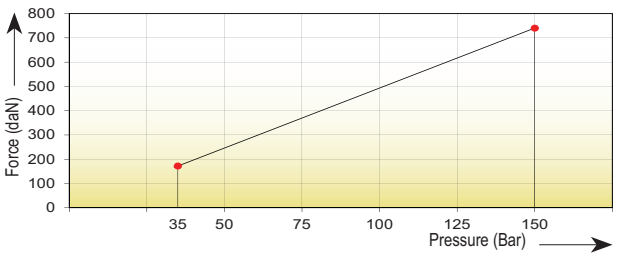


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 45CFx10.1	10	67	57		870	885		0,029	0,37
MICRO 45CFx13.1	13	73	60		895	915		0,032	0,40
MICRO 45CFx16.1	16	79	63		915	940		0,036	0,44
MICRO 45CFx19.1	19	85	66		935	965		0,040	0,45
MICRO 45CFx25.1	25	97	72		965	1000		0,047	0,49
MICRO 45CFx32.1	32	111	79	740 ±5% (20ºC)	990	1030	150 (20ºC)	0,055	0,54
MICRO 45CFx38.1	38	123	85		1010	1050		0,062	0,55
MICRO 45CFx50.1	50	147	97		1035	1085		0,076	0,64
MICRO 45CFx63.1	63	173	110		1055	1110		0,092	0,70
MICRO 45CFx75.1	75	197	122		1070	1125		0,106	0,85
MICRO 45CFx80.1	80	207	127		1075	1135		0,112	0,90
MICRO 45CFx100.1	100	247	147		1090	1155		0,136	1,03
MICRO 45CFx125.1	125	297	172		1105	1170		0,166	1,29

Force/stroke ratio

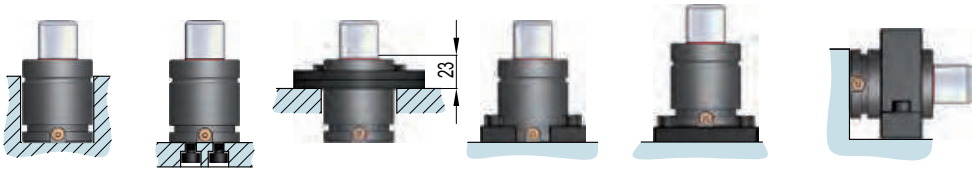


Initial force/charging pressure ratio



Assembly possibilities

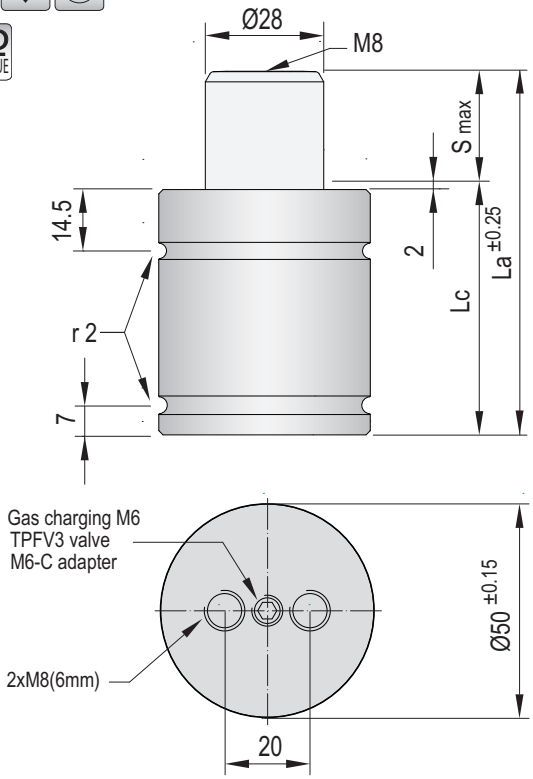
Follow guidelines Page 287



DROP-IN | SCREWS | FS 45·FSC 45 | FP 45·FPR 45 | FB 45 | FI 45·FI 45/1

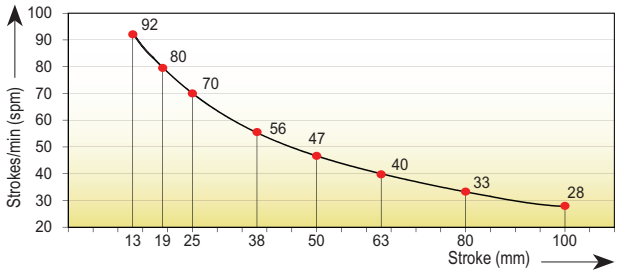
VDI SAFETY

PED 2014/68/UE



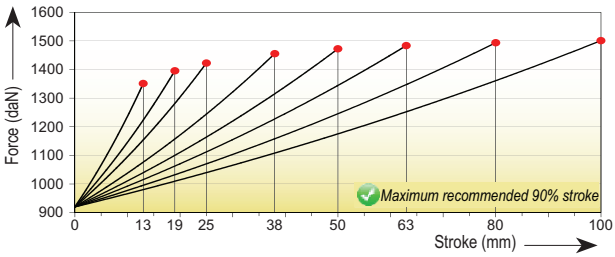
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M50.1

Maximum strokes / minute (at 20ºC)

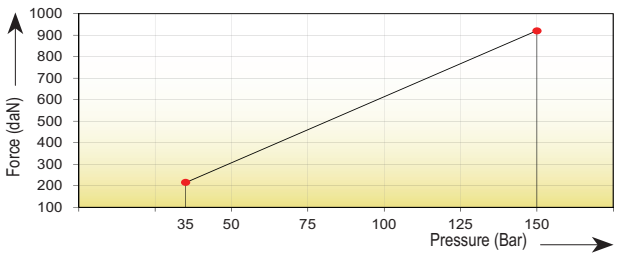


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50x13.1	13	61	48		1295	1355		0,025	0,57
MICRO 50x19.1	19	73	54		1330	1400		0,034	0,60
MICRO 50x25.1	25	85	60		1355	1430		0,044	0,67
MICRO 50x38.1	38	111	73	920 ±5%	1380	1460	150	0,064	0,79
MICRO 50x50.1	50	135	85	(20ºC)	1395	1480	(20ºC)	0,082	0,89
MICRO 50x63.1	63	161	98		1405	1490		0,102	1,02
MICRO 50x80.1	80	195	115		1410	1500		0,128	1,18
MICRO 50x100.1	100	235	135		1415	1505		0,159	1,39

Force/stroke ratio

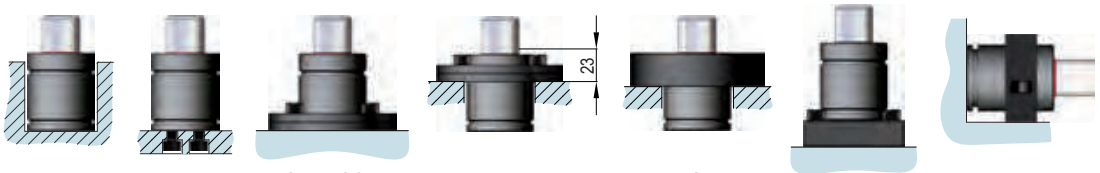


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 50·FSC 50 | FS 50·FSC 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

TECAPRES®

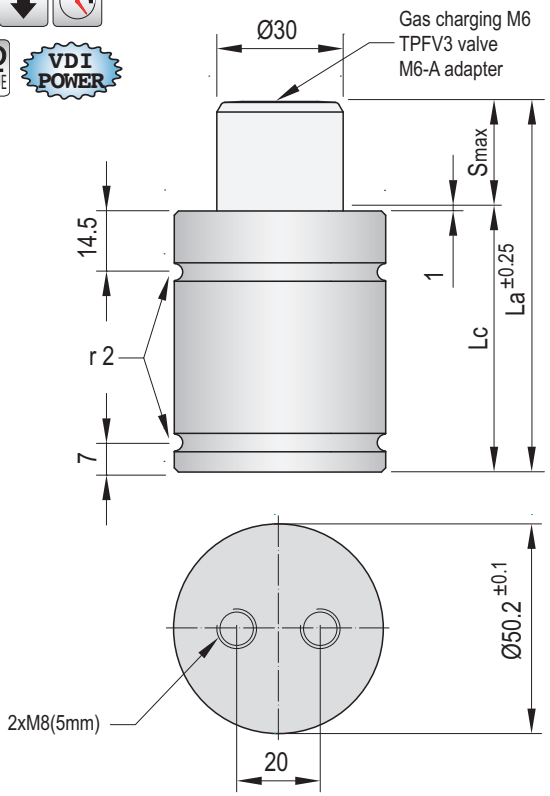
Ø50mm 1100daN

MICRO 50V

VDI SAFETY

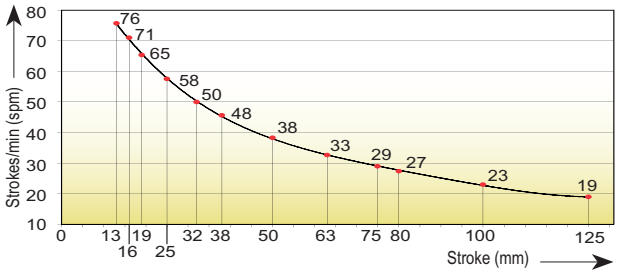
PED 2014/68/UE

VDI POWER



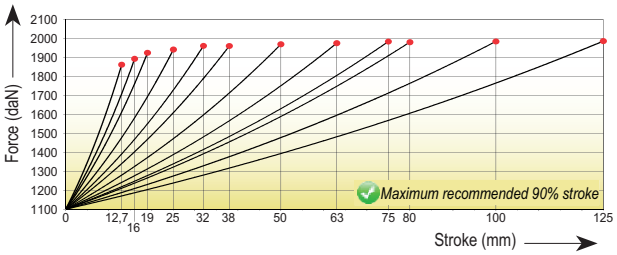
Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1 m/s
Maintenance kit	Kit M50V

Maximum strokes / minute (at 20ºC)

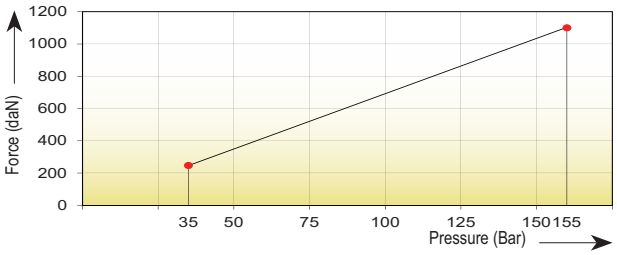


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50Vx13	12,7	63,4	50,7		1760	1885		0,022	0,59
MICRO 50Vx16	16	70	54		1775	1905		0,027	0,60
MICRO 50Vx19	19	76	57		1785	1917		0,031	0,62
MICRO 50Vx25	25	88	63		1795	1935		0,041	0,69
MICRO 50Vx32	32	102	70		1805	1945		0,052	0,75
MICRO 50Vx38	38	114	76	1100 ±5%	1810	1955	155	0,061	0,81
MICRO 50Vx50	50	138	88	(20ºC)	1820	1960	(20ºC)	0,080	0,91
MICRO 50Vx63	63	165	102		1825	1970		0,101	1,05
MICRO 50Vx75	75	188	113		1825	1970		0,119	1,15
MICRO 50Vx80	80	198	118		1825	1975		0,127	1,20
MICRO 50Vx100	100	238	138		1830	1975		0,159	1,41
MICRO 50Vx125	125	288	163		1830	1980		0,198	1,68

Force/stroke ratio

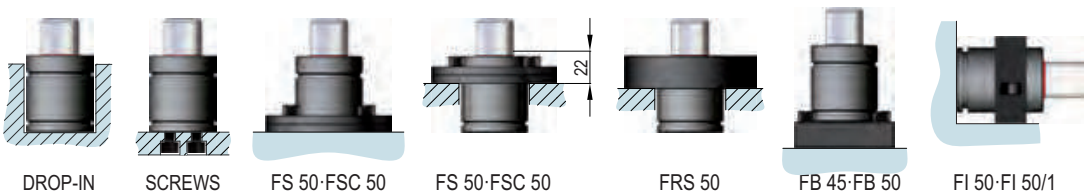


Initial force/charging pressure ratio



Assembly possibilities

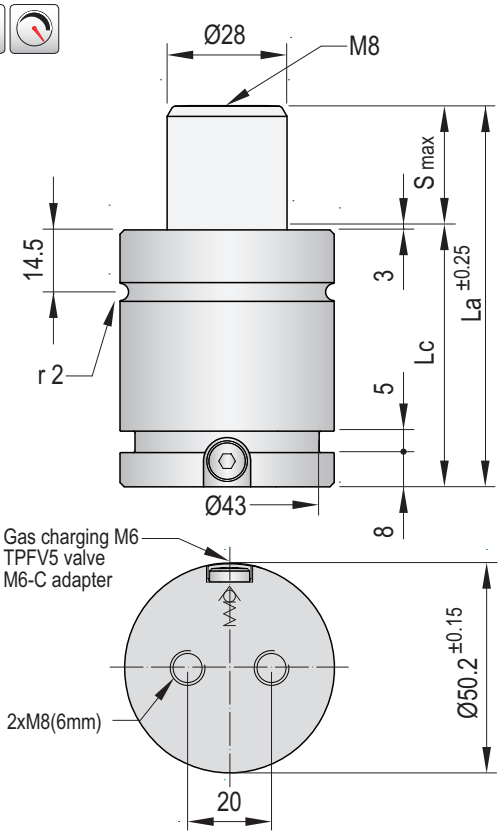
Follow guidelines Page 287



DROP-IN | SCREWS | FS 50·FSC 50 | FS 50·FSC 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

VDI SAFETY

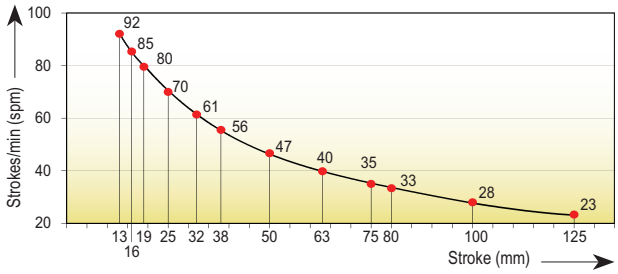
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M50VS.1

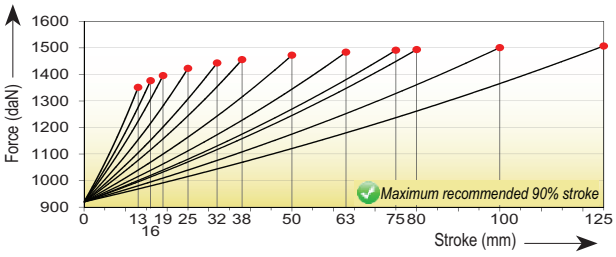
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

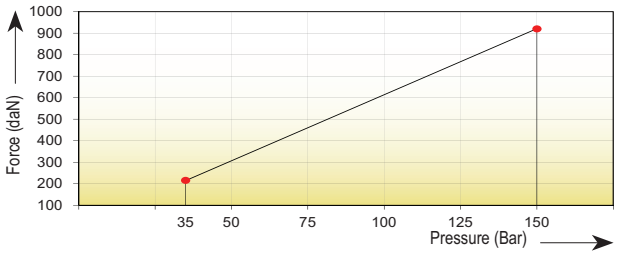


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50VSx13.1	13	64	51		1295	1355		0,025	0,53
MICRO 50VSx16.1	16	70	54		1315	1380		0,030	0,55
MICRO 50VSx19.1	19	76	57		1330	1400		0,034	0,58
MICRO 50VSx25.1	25	88	63		1355	1430		0,044	0,62
MICRO 50VSx32.1	32	102	70		1370	1450		0,054	0,67
MICRO 50VSx38.1	38	114	76	920 ±5% (20ºC)	1380	1460	150 (20ºC)	0,064	0,72
MICRO 50VSx50.1	50	138	88		1395	1480		0,082	0,82
MICRO 50VSx63.1	63	164	101		1405	1490		0,102	0,93
MICRO 50VSx75.1	75	188	113		1410	1495		0,121	1,10
MICRO 50VSx80.1	80	198	118		1410	1500		0,128	1,15
MICRO 50VSx100.1	100	238	138		1415	1505		0,159	1,25
MICRO 50VSx125.1	125	288	163		1420	1515		0,198	1,45

Force/stroke ratio

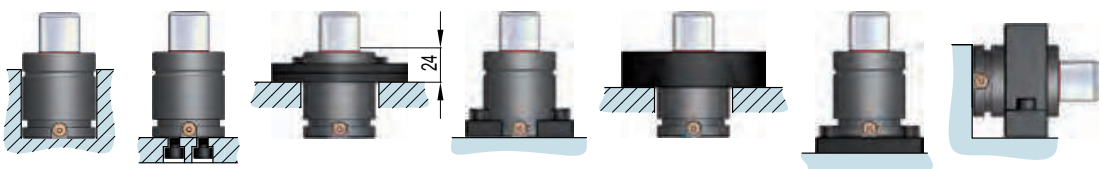


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 50·FSC 50 · FP 50·FPR 50 · FRS 50 · FB 45·FB 50 · FI 50·FI 50/1

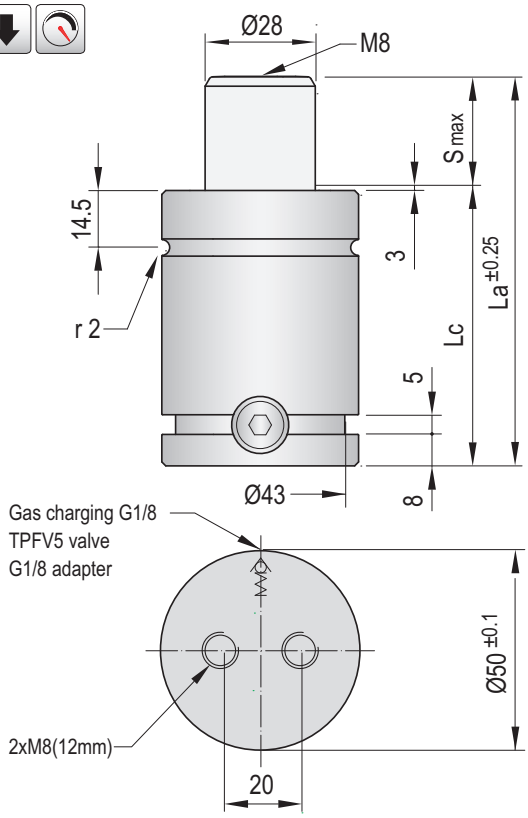
TECAPRES®

Ø50mm · G1/8 connectable
920daN

MICRO 50CS.1

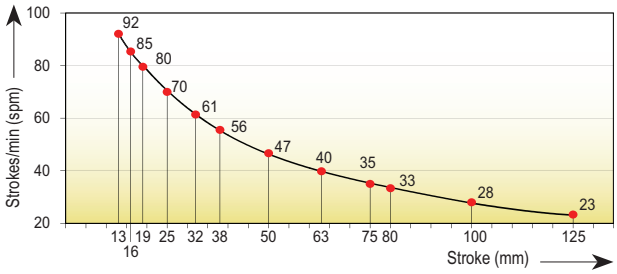
VDI SAFETY

PED 2014/68/UE



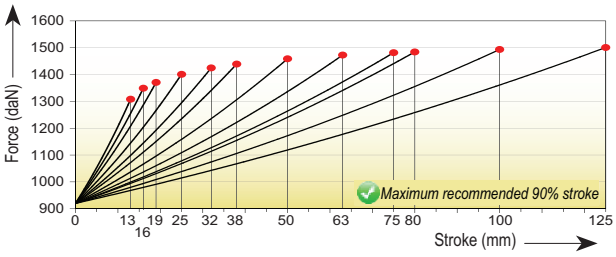
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MCS50.1

Maximum strokes / minute (at 20ºC)

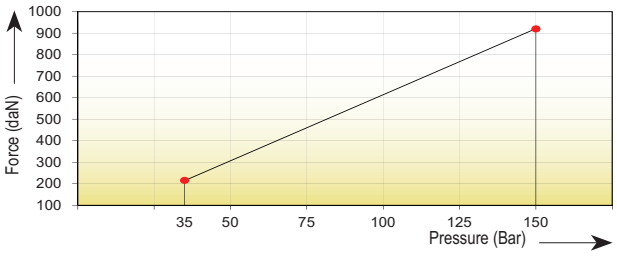


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50CSx13.1	13	74	61		1270	1325		0,026	0,60
MICRO 50CSx16.1	16	80	64		1295	1355		0,031	0,63
MICRO 50CSx19.1	19	86	67		1310	1375		0,036	0,68
MICRO 50CSx25.1	25	98	73		1335	1405		0,045	0,79
MICRO 50CSx32.1	32	112	80		1355	1430		0,056	0,89
MICRO 50CSx38.1	38	124	86	920 ±5%	1370	1445	150	0,065	1,02
MICRO 50CSx50.1	50	148	98	(20ºC)	1385	1465	(20ºC)	0,083	1,18
MICRO 50CSx63.1	63	174	111		1395	1480		0,103	1,31
MICRO 50CSx75.1	75	198	123		1400	1485		0,122	1,44
MICRO 50CSx80.1	80	208	128		1405	1490		0,130	1,52
MICRO 50CSx100.1	100	248	148		1410	1500		0,160	1,88
MICRO 50CSx125.1	125	298	173		1415	1505		0,199	2,13

Force/stroke ratio



Initial force/charging pressure ratio



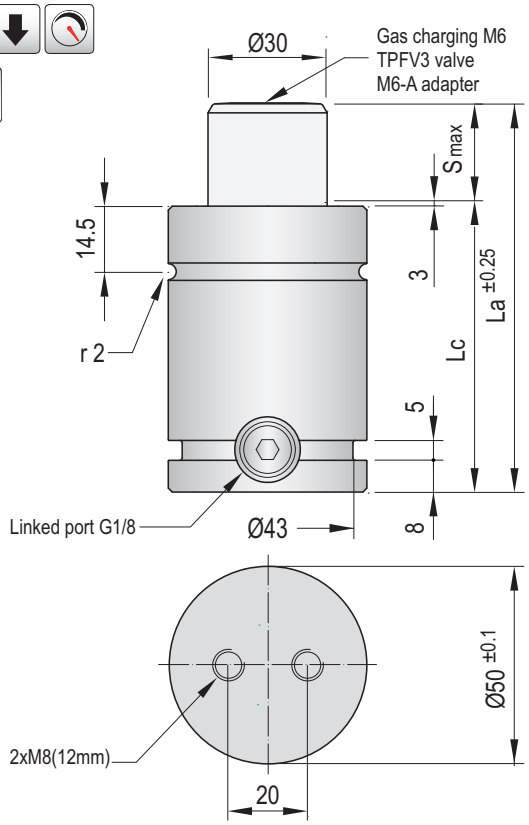
Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

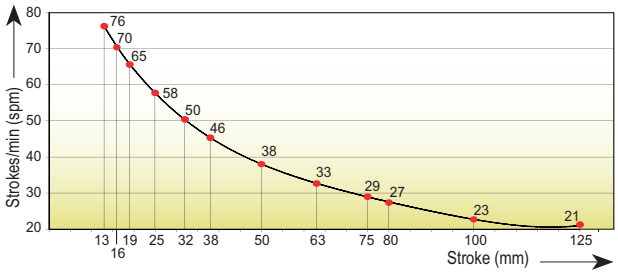
VDI SAFETY

PED 2014/68/UE



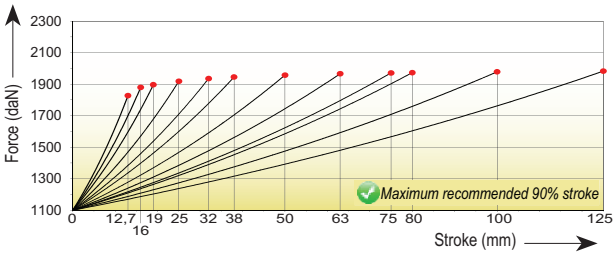
Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MC50.1

Maximum strokes / minute (at 20ºC)

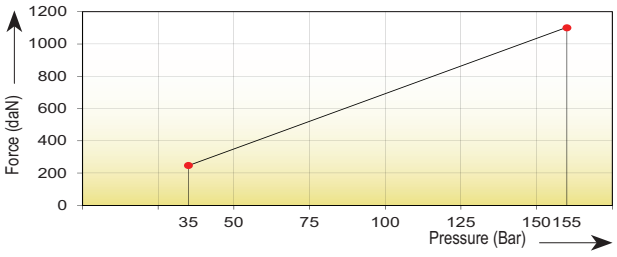


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50Cx13.1	12,7	74	61,3		1740	1860		0,023	0,70
MICRO 50Cx16.1	16	80	64		1760	1885		0,027	0,73
MICRO 50Cx19.1	19	86	67		1775	1900		0,032	0,78
MICRO 50Cx25.1	25	98	73		1790	1925		0,041	0,89
MICRO 50Cx32.1	32	112	80		1805	1940		0,052	0,99
MICRO 50Cx38.1	38	124	86	1100 ±5%	1810	1950	155	0,062	1,12
MICRO 50Cx50.1	50	148	98	(20ºC)	1820	1960	(20ºC)	0,081	1,28
MICRO 50Cx63.1	63	174	111		1825	1970		0,101	1,41
MICRO 50Cx75.1	75	198	123		1830	1975		0,120	1,54
MICRO 50Cx80.1	80	208	128		1830	1980		0,128	1,62
MICRO 50Cx100.1	100	248	148		1835	1985		0,159	1,98
MICRO 50Cx125.1	125	298	173		1840	1985		0,199	2,23

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN · SCREWS · FS 50·FSC 50 · FP 50·FPR 50 · FRS 50 · FB 45·FB 50 · FI 50·FI 50/1

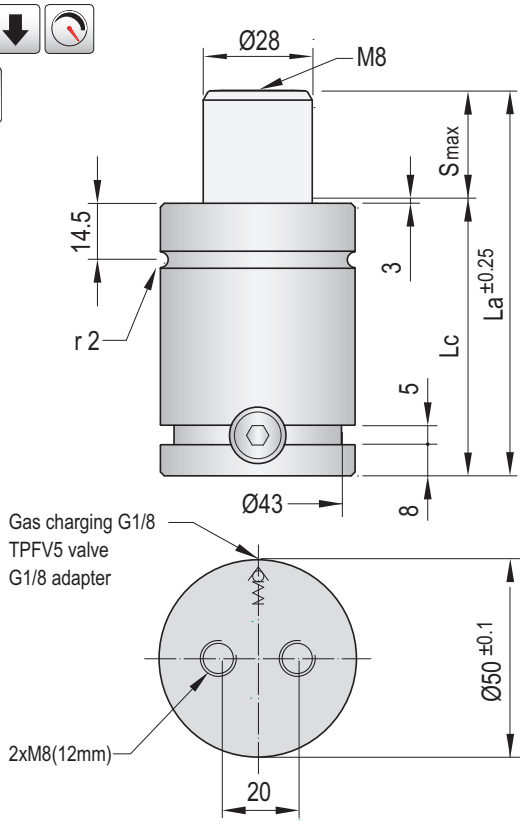
TECAPRES®

Ø50mm · G1/8 connectable
920daN

MICRO 50CF.1

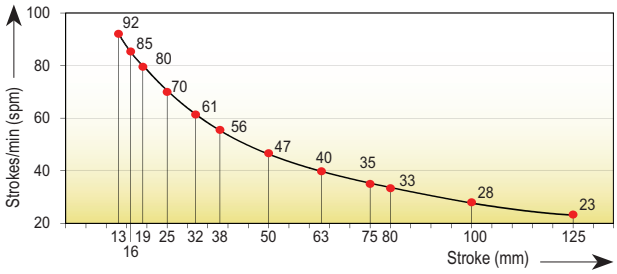
VDI SAFETY

PED 2014/68/UE



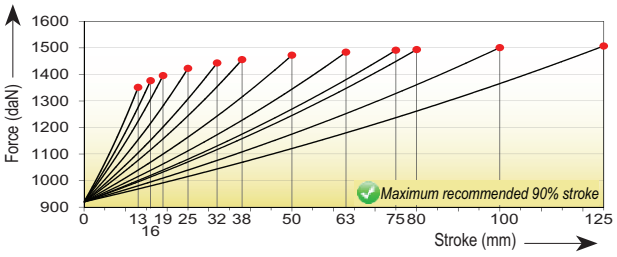
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit MCS50.1

Maximum strokes / minute (at 20ºC)

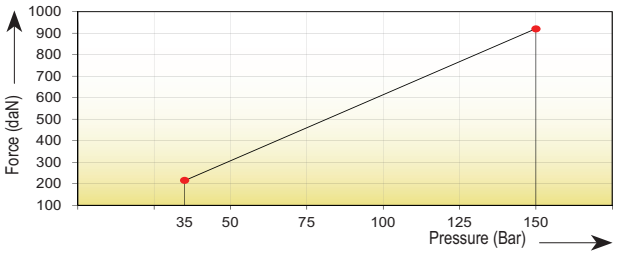


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 50CFx13.1	13	78	65		1295	1355		0,025	0,64
MICRO 50CFx16.1	16	84	68		1315	1380		0,030	0,67
MICRO 50CFx19.1	19	90	71		1330	1400		0,034	0,72
MICRO 50CFx25.1	25	102	77		1355	1430		0,044	0,83
MICRO 50CFx32.1	32	116	84		1370	1450		0,054	0,93
MICRO 50CFx38.1	38	128	90	920 ±5%	1380	1460	150	0,064	1,05
MICRO 50CFx50.1	50	152	102	(20ºC)	1395	1480	(20ºC)	0,082	1,22
MICRO 50CFx63.1	63	178	115		1405	1490		0,102	1,36
MICRO 50CFx75.1	75	202	127		1410	1495		0,121	1,50
MICRO 50CFx80.1	80	212	132		1410	1500		0,128	1,57
MICRO 50CFx100.1	100	252	152		1415	1505		0,159	1,92
MICRO 50CFx125.1	125	302	177		1420	1515		0,198	2,20

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

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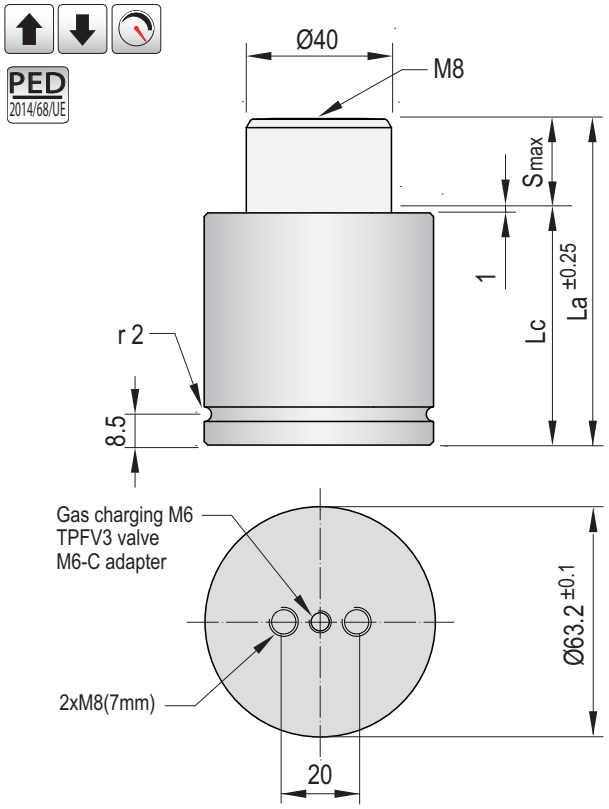
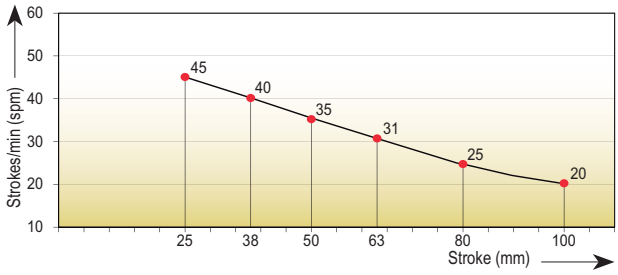


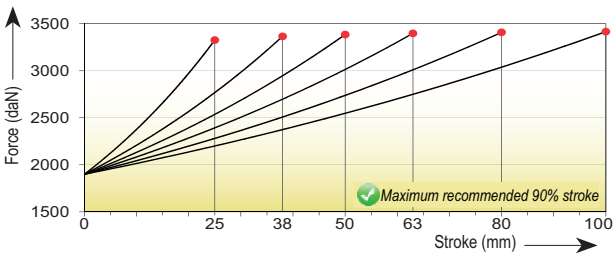
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	12,57 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,6 m/s
Maintenance kit	Kit M63

Maximum strokes / minute (at 20°C)

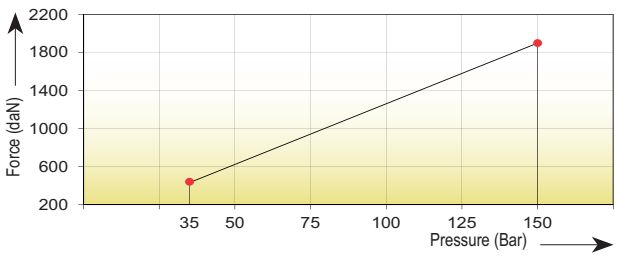


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 63x25	25	90	65		3070	3300		0,073	0,93
MICRO 63x38	38	116	78		3100	3340		0,110	1,39
MICRO 63x50	50	140	90	1900 ±5% (20°C)	3115	3360	150 (20°C)	0,143	1,65
MICRO 63x63	63	166	103		3125	3370		0,180	1,81
MICRO 63x80	80	200	120		3135	3380		0,227	1,90
MICRO 63x100	100	240	140		3140	3390		0,283	2,23

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

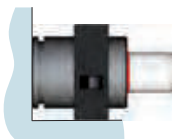
Follow guidelines Page 287


DROP-IN


SCREWS


FS 63
FSC 63·FSC 63/1


FB 50·FB 63


FI 63/1

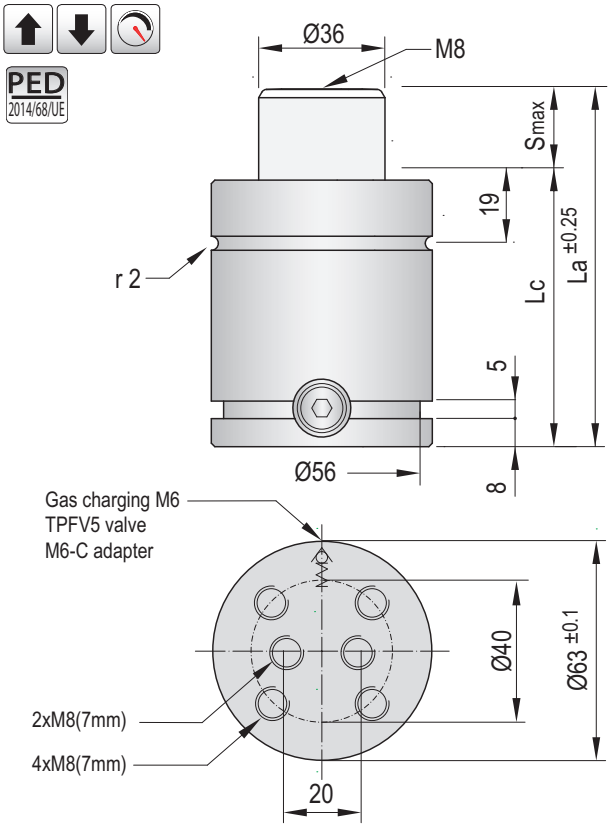
TECAPRES®

Ø63mm
1500daN

MICRO 63V.2

VDI SAFETY

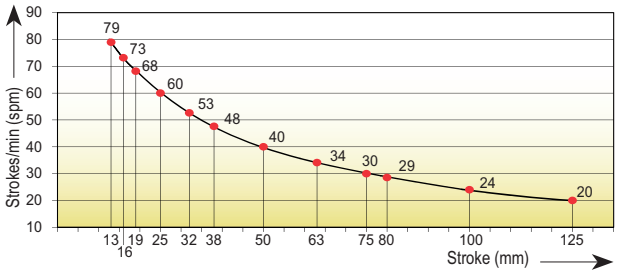
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M63V.2

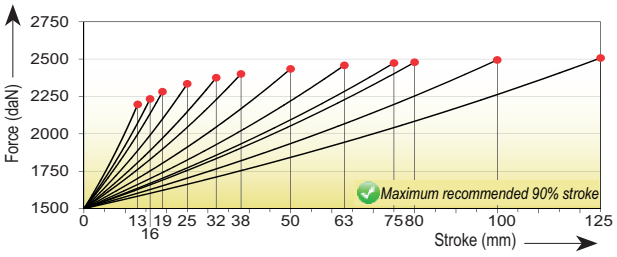
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20°C)

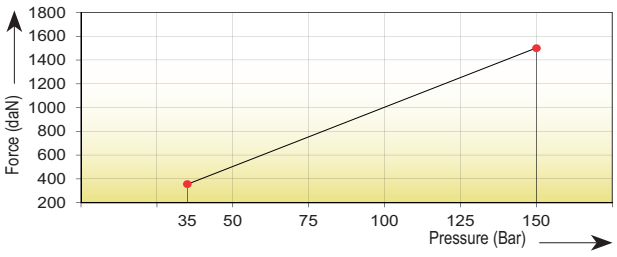


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 63Vx13.2	13	70	57		2135	2245		0,040	0,95
MICRO 63Vx16.2	16	76	60		2165	2275		0,048	0,97
MICRO 63Vx19.2	19	82	63		2200	2320		0,054	1,15
MICRO 63Vx25.2	25	94	69		2235	2365		0,069	1,27
MICRO 63Vx32.2	32	108	76		2265	2405		0,086	1,35
MICRO 63Vx38.2	38	120	82	1500 ±5%	2280	2425	150	0,101	1,40
MICRO 63Vx50.2	50	144	94	(20°C)	2305	2455	(20°C)	0,131	1,55
MICRO 63Vx63.2	63	170	107		2320	2470		0,162	1,71
MICRO 63Vx75.2	75	194	119		2330	2485		0,192	1,83
MICRO 63Vx80.2	80	204	124		2335	2490		0,204	1,95
MICRO 63Vx100.2	100	244	144		2345	2500		0,253	2,32
MICRO 63Vx125.2	125	294	169		2355	2510		0,315	2,82

Force/stroke ratio

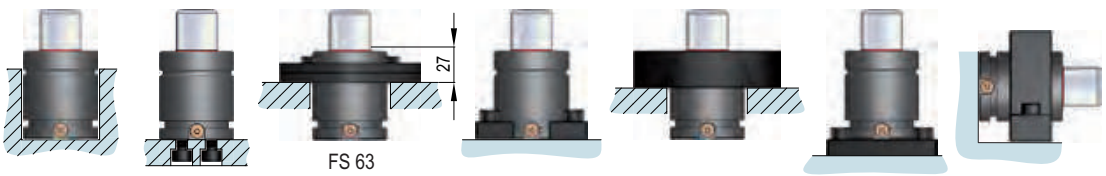


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 63 FSC 63·FSC 63/1 · FP 63·FPR 63 · FRS 63 · FB 63·FB 50 · FI 63/1

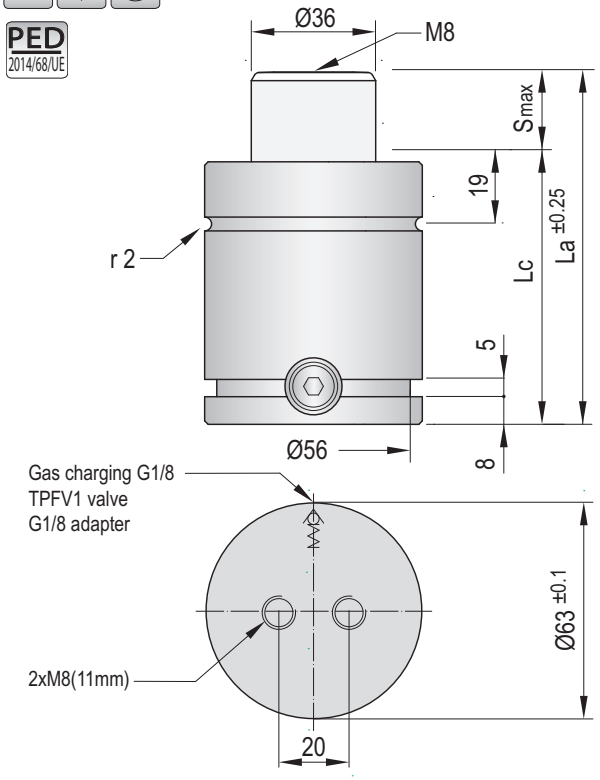
TECAPRES®

Ø63mm · G1/8 connectable
1500daN

MICRO 63CF

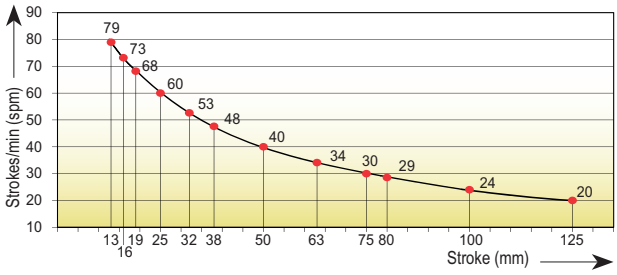
VDI SAFETY

PED 2014/68/UE



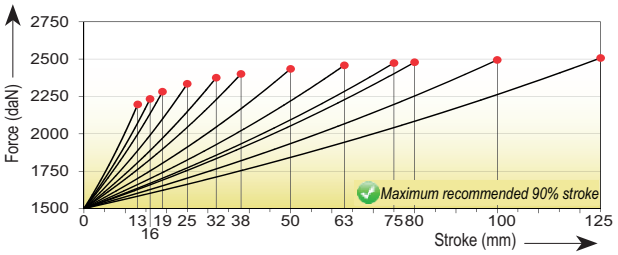
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M63CF

Maximum strokes / minute (at 20ºC)

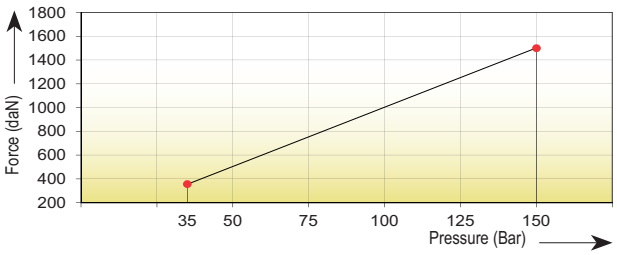


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 63CFx13	13	78	65		2135	2245		0,040	0,95
MICRO 63CFx16	16	84	68		2165	2275		0,048	0,97
MICRO 63CFx19	19	90	71		2200	2320		0,054	1,15
MICRO 63CFx25	25	102	77		2235	2365		0,069	1,27
MICRO 63CFx32	32	116	84		2265	2405		0,086	1,35
MICRO 63CFx38	38	128	90	1500 ±5%	2280	2425	150	0,101	1,40
MICRO 63CFx50	50	152	102	(20ºC)	2305	2455	(20ºC)	0,131	1,55
MICRO 63CFx63	63	178	115		2320	2470		0,162	1,71
MICRO 63CFx75	75	202	127		2330	2485		0,192	1,83
MICRO 63CFx80	80	212	132		2335	2490		0,204	1,95
MICRO 63CFx100	100	252	152		2345	2500		0,253	2,32
MICRO 63CFx125	125	302	177		2355	2510		0,315	2,82

Force/stroke ratio

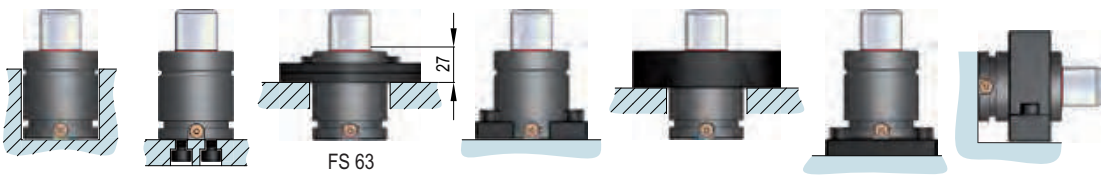


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 63 FSC 63·FSC 63/1 | FP 63·FPR 63 | FRS 63 | FB 63·FB 50 | FI 63/1

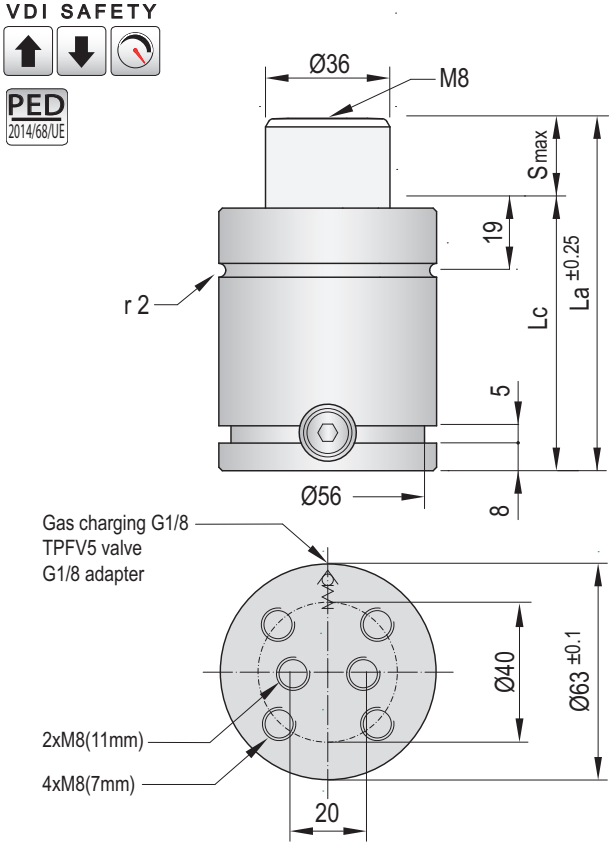
TECAPRES®

Ø63mm · G1/8 connectable
1500daN

MICRO 63C.1

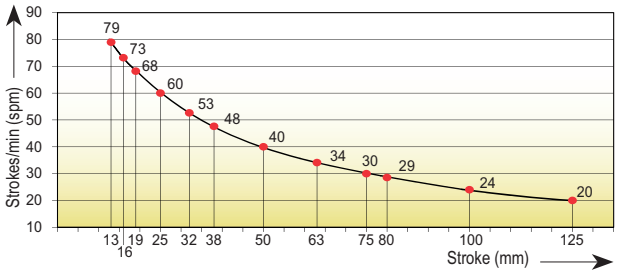
VDI SAFETY

PED 2014/68/UE



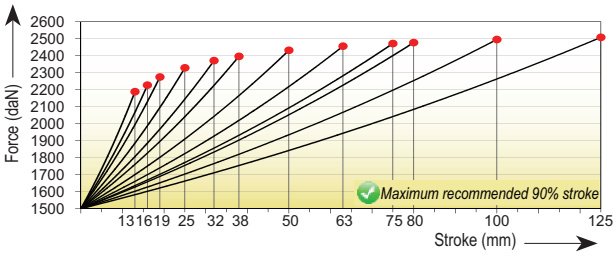
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M63C.1

Maximum strokes / minute (at 20ºC)

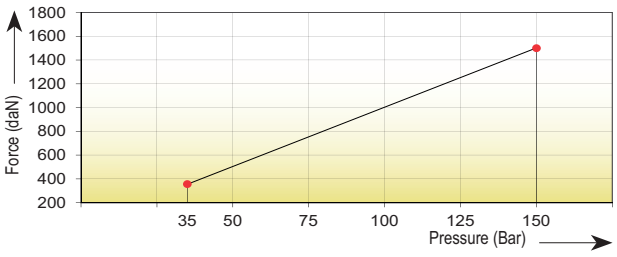


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 63Cx13.1	13	80	67		2085	2185		0,042	1,18
MICRO 63Cx16.1	16	86	70		2120	2220		0,050	1,22
MICRO 63Cx19.1	19	92	73		2155	2270		0,057	1,36
MICRO 63Cx25.1	25	104	79		2200	2325		0,072	1,41
MICRO 63Cx32.1	32	118	86		2235	2365		0,089	1,75
MICRO 63Cx38.1	38	130	92	1500 ±5%	2255	2390	150	0,103	1,85
MICRO 63Cx50.1	50	154	104	(20ºC)	2285	2425	(20ºC)	0,133	2,10
MICRO 63Cx63.1	63	180	117		2305	2450		0,165	2,28
MICRO 63Cx75.1	75	204	129		2315	2465		0,194	2,60
MICRO 63Cx80.1	80	214	134		2320	2470		0,207	2,70
MICRO 63Cx100.1	100	254	154		2330	2485		0,256	2,85
MICRO 63Cx125.1	125	304	179		2345	2500		0,317	3,05

Force/stroke ratio

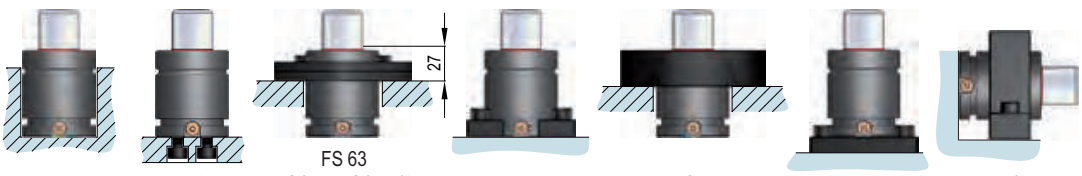


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 63 FSC 63·FSC 63/1 | FP 63·FPR 63 | FRS 63 | FB 63·FB 50 | FI 63/1

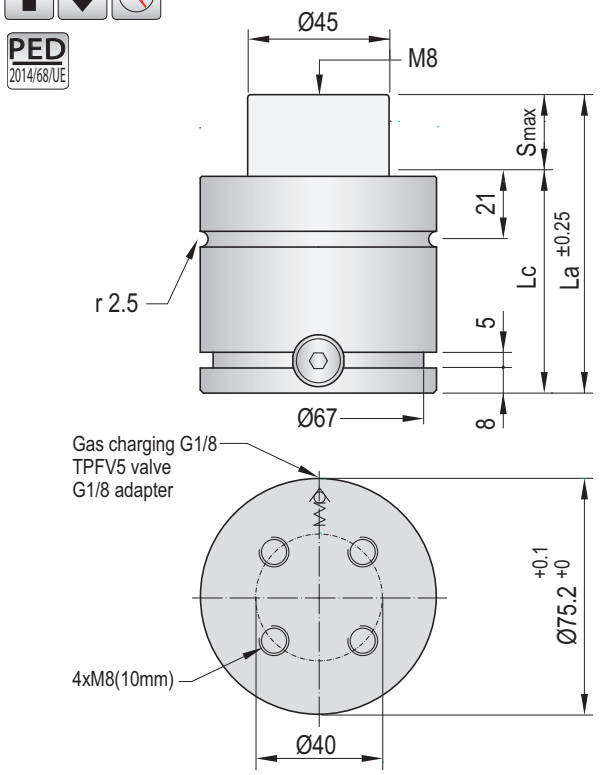
TECAPRES®

Ø75mm · G1/8 connectable
2400daN

MICRO 75.2

VDI SAFETY

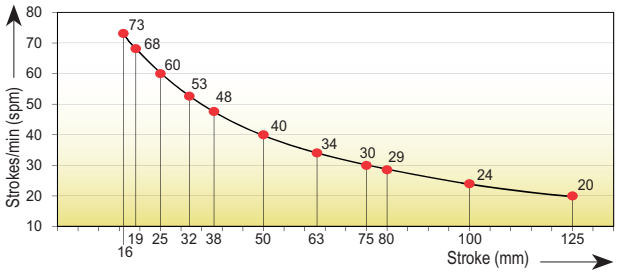
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M75.2

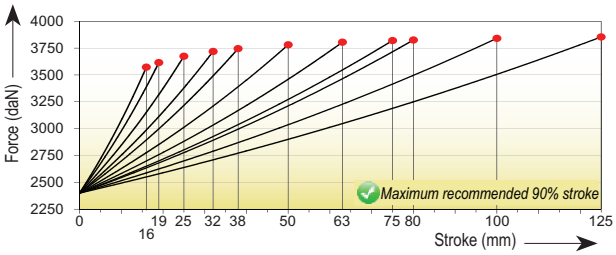
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20°C)

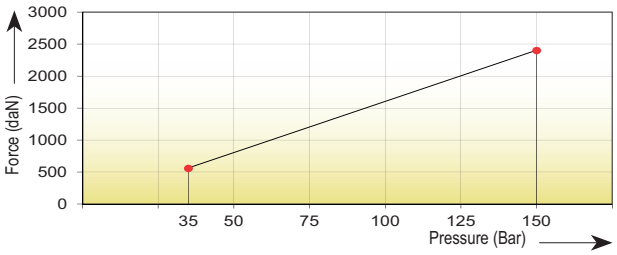


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 75x16.2	16	77	61		3385	3550		0,078	1,40
MICRO 75x19.2	19	83	64		3420	3595		0,090	1,43
MICRO 75x25.2	25	95	70		3470	3650		0,115	1,45
MICRO 75x32.2	32	109	77		3505	3695		0,144	1,65
MICRO 75x38.2	38	121	83		3525	3725		0,168	1,70
MICRO 75x50.2	50	145	95	2400 ±5% (20°C)	3555	3760	150 (20°C)	0,218	1,80
MICRO 75x63.2	63	171	108		3575	3785		0,271	2,10
MICRO 75x75.2	75	195	120		3585	3800		0,321	2,15
MICRO 75x80.2	80	205	125		3590	3805		0,341	2,25
MICRO 75x100.2	100	245	145		3600	3820		0,424	2,60
MICRO 75x125.2	125	295	170		3610	3830		0,527	3,10

Force/stroke ratio

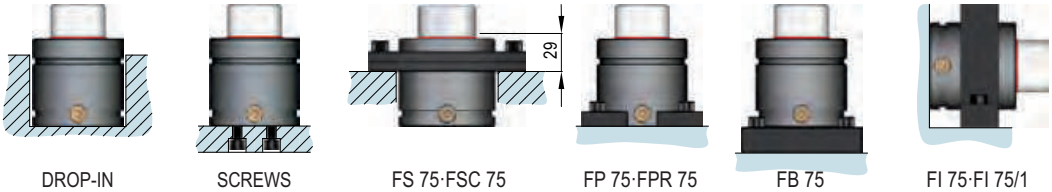


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 75·FSC 75 · FP 75·FPR 75 · FB 75 · FI 75·FI 75/1

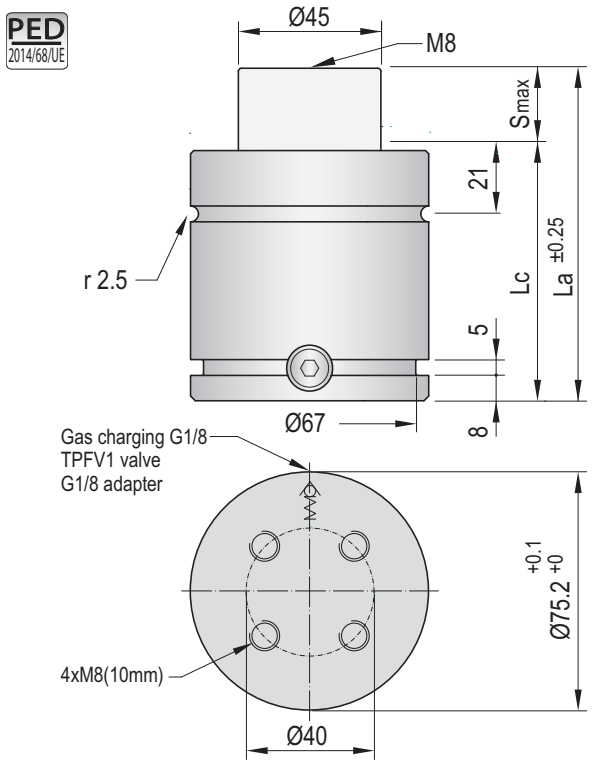
TECAPRES®

Ø75mm · G1/8 connectable
2400daN

MICRO 75CS

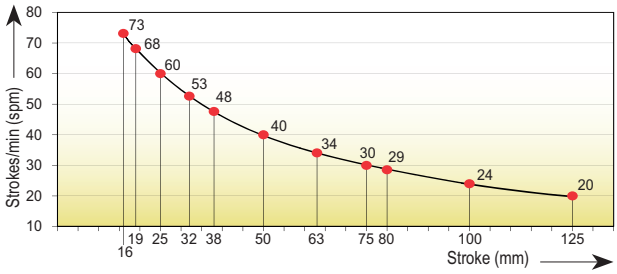
VDI SAFETY

PED 2014/68/UE



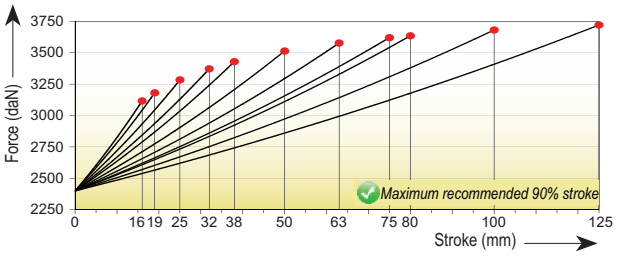
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M75CS

Maximum strokes / minute (at 20ºC)

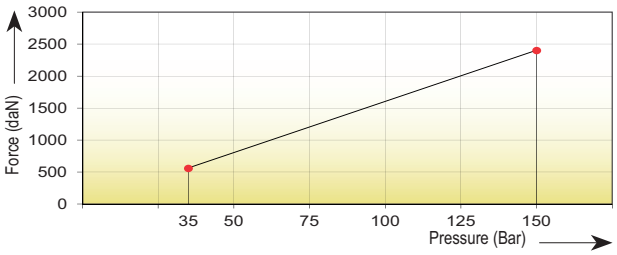


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 75CSx16	16	87	71	2400 ±5% (20ºC)	3010	3100	150 (20ºC)	0,111	1,60
MICRO 75CSx19	19	93	74		3060	3160		0,123	1,63
MICRO 75CSx25	25	105	80		3150	3265		0,148	1,65
MICRO 75CSx32	32	119	87		3220	3350		0,177	1,85
MICRO 75CSx38	38	131	93		3270	3410		0,201	1,90
MICRO 75CSx50	50	155	105		3340	3495		0,251	2,00
MICRO 75CSx63	63	181	118		3390	3555		0,305	2,30
MICRO 75CSx75	75	205	130		3425	3600		0,354	2,35
MICRO 75CSx80	80	215	135		3435	3615		0,375	2,45
MICRO 75CSx100	100	255	155		3475	3660		0,457	2,80
MICRO 75CSx125	125	305	180		3505	3700		0,560	3,30

Force/stroke ratio

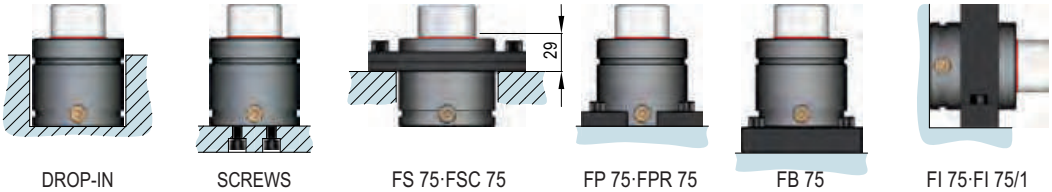


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 75·FSC 75 · FP 75·FPR 75 · FB 75 · FI 75·FI 75/1

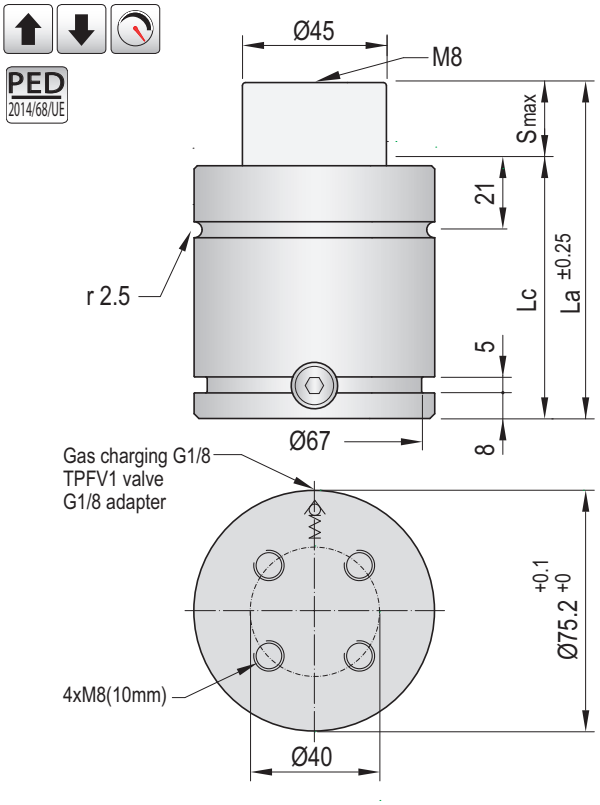
TECAPRES®

Ø75mm · G1/8 connectable
2400daN

MICRO 75CF

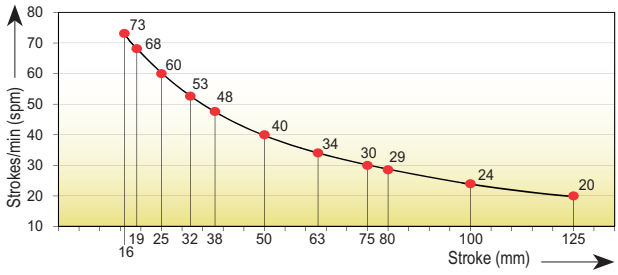
VDI SAFETY

PED 2014/68/UE



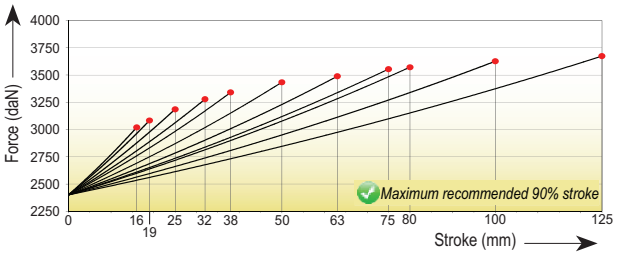
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M75CF

Maximum strokes / minute (at 20ºC)

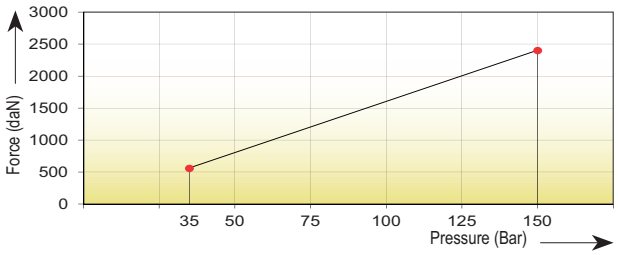


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 75CFx16	16	91	75	2400 ±5% (20ºC)	2925	3000	150 (20ºC)	0,124	1,75
MICRO 75CFx19	19	97	78		2980	3065		0,137	1,78
MICRO 75CFx25	25	109	84		3065	3165		0,161	1,80
MICRO 75CFx32	32	123	91		3145	3260		0,190	2,00
MICRO 75CFx38	38	135	97		3195	3320		0,215	2,05
MICRO 75CFx50	50	159	109		3270	3415		0,264	2,15
MICRO 75CFx63	63	185	122		3315	3470		0,321	2,45
MICRO 75CFx75	75	209	134		3370	3535		0,367	2,50
MICRO 75CFx80	80	219	139		3385	3550		0,388	2,60
MICRO 75CFx100	100	259	159		3430	3605		0,470	2,95
MICRO 75CFx125	125	309	184		3470	3650		0,573	3,45

Force/stroke ratio

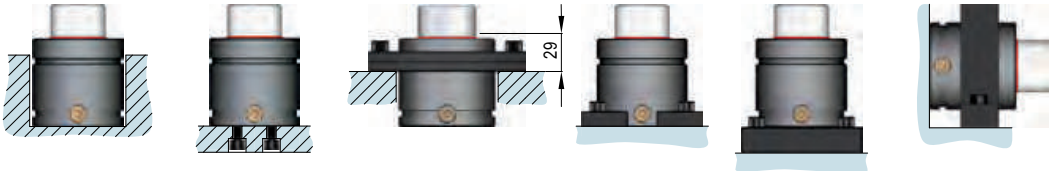


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FI 75·FI 75/1

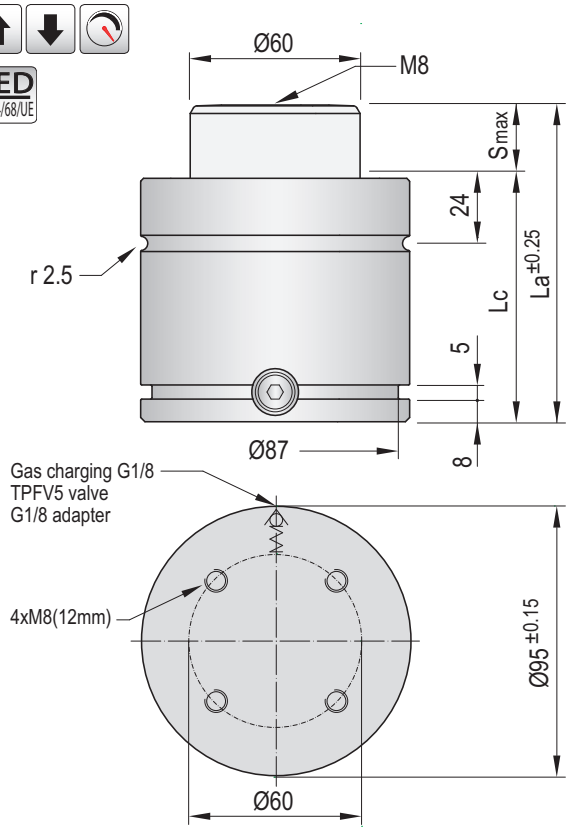
TECAPRES®

Ø95mm
4200daN

MICRO 95.2

VDI SAFETY

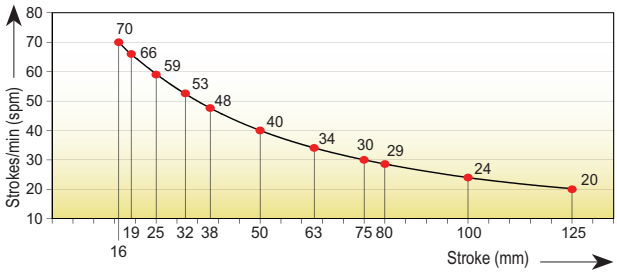
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M95.2

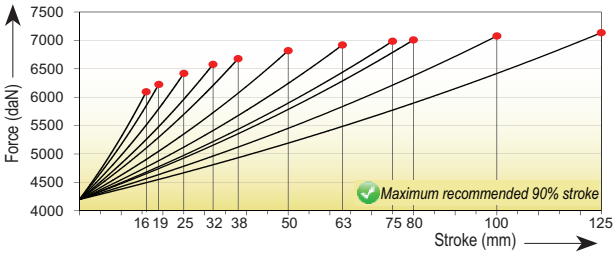
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

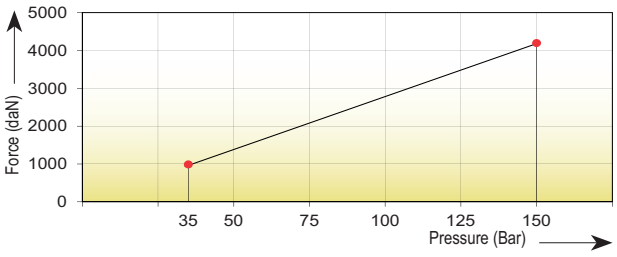


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 95x16.2	16	90	74		5890	6155		0,146	2,80
MICRO 95x19.2	19	96	77		6000	6285		0,165	2,90
MICRO 95x25.2	25	108	83		6160	6485		0,204	3,10
MICRO 95x32.2	32	122	90		6285	6645		0,250	3,25
MICRO 95x38.2	38	134	96		6370	6745		0,290	3,70
MICRO 95x50.2	50	158	108	4200 ±5% (20ºC)	6480	6885	150 (20ºC)	0,368	3,90
MICRO 95x63.2	63	184	121		6565	6990		0,453	4,40
MICRO 95x75.2	75	208	133		6615	7055		0,532	4,75
MICRO 95x80.2	80	218	138		6635	7075		0,565	4,90
MICRO 95x100.2	100	258	158		6690	7145		0,695	5,30
MICRO 95x125.2	125	308	183		6735	7205		0,859	5,90

Force/stroke ratio

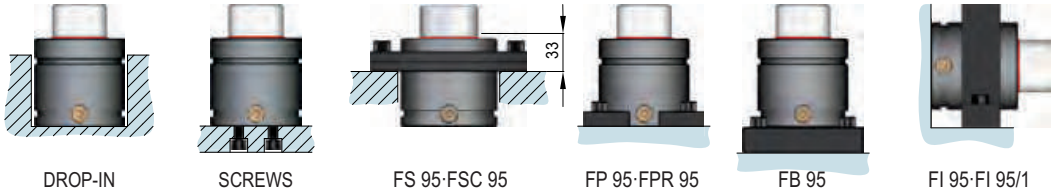


Initial force/charging pressure ratio



Assembly possibilities

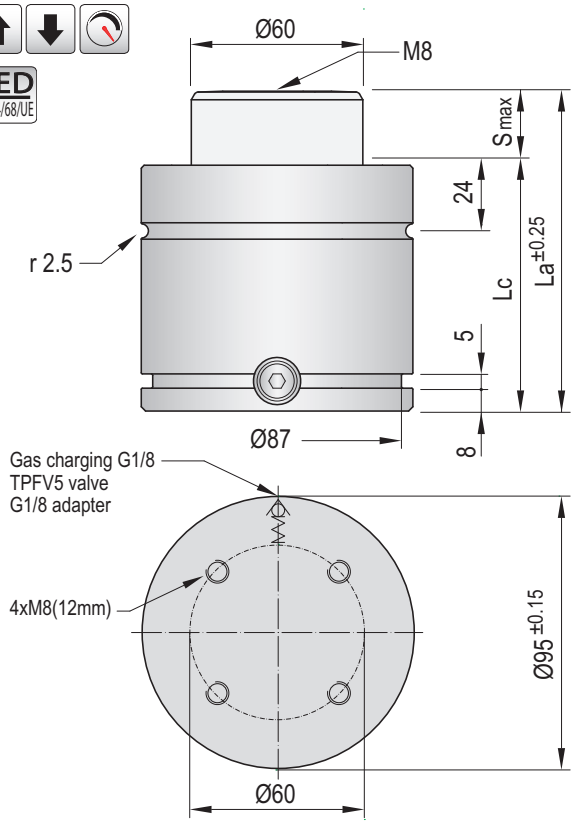
Follow guidelines Page 287



DROP-IN · SCREWS · FS 95·FSC 95 · FP 95·FPR 95 · FB 95 · FI 95·FI 95/1

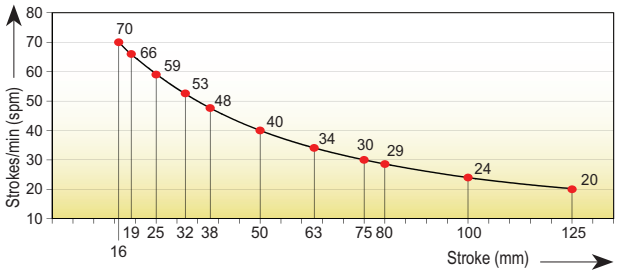
VDI SAFETY

PED 2014/68/UE



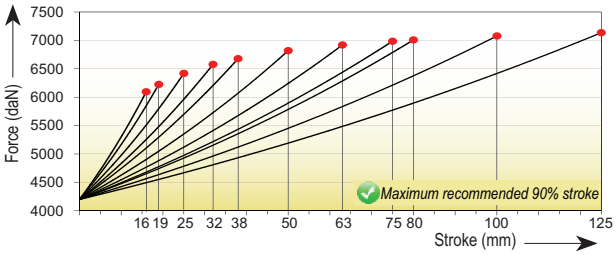
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M95CF

Maximum strokes / minute (at 20ºC)

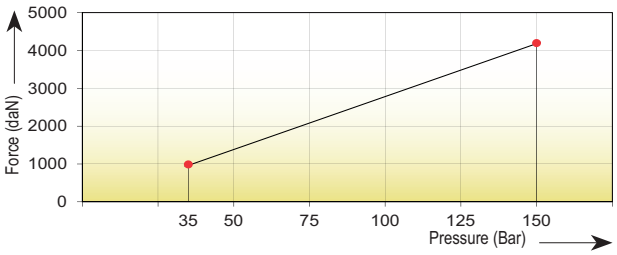


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 95CFx16	16	94	78	4200 ±5% (20ºC)	5890	6155	150 (20ºC)	0,146	2,80
MICRO 95CFx19	19	100	81		6000	6285		0,165	2,90
MICRO 95CFx25	25	112	87		6160	6485		0,204	3,10
MICRO 95CFx32	32	126	94		6285	6645		0,250	3,25
MICRO 95CFx38	38	138	100		6370	6745		0,290	3,70
MICRO 95CFx50	50	162	112		6480	6885		0,368	3,90
MICRO 95CFx63	63	188	125		6565	6990		0,453	4,40
MICRO 95CFx75	75	212	137		6615	7055		0,532	4,75
MICRO 95CFx80	80	222	142		6635	7075		0,565	4,90
MICRO 95CFx100	100	262	162		6690	7145		0,695	6,00
MICRO 95CFx125	125	312	187		6735	7205		0,859	6,50

Force/stroke ratio

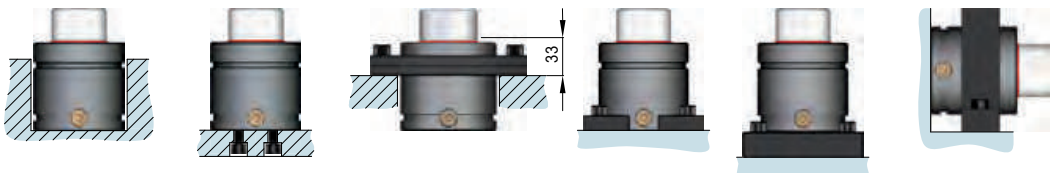


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FPR 95 | FB 95 | FI 95·FI 95/1

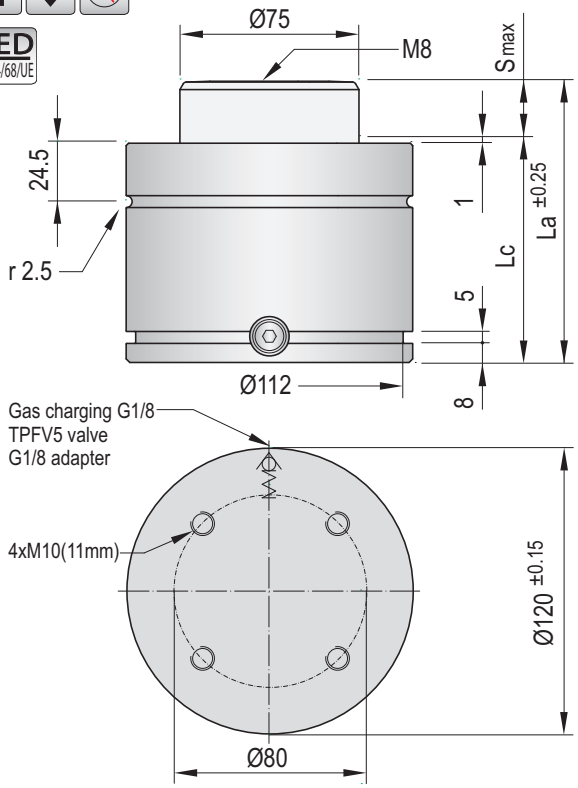
TECAPRES®

Ø120mm
7500daN

MICRO 120H

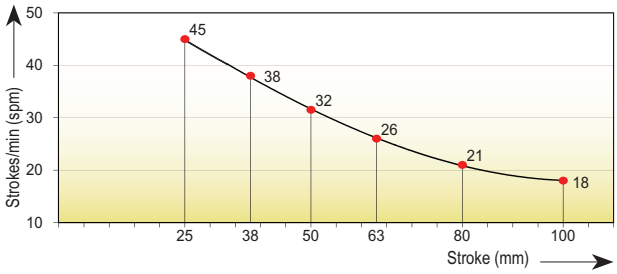
VDI SAFETY

PED 2014/68/UE



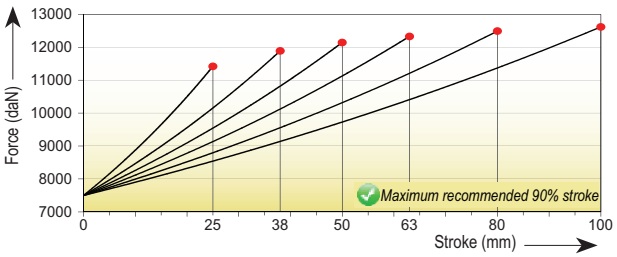
Pressure medium	Nitrogen (N_2)
Max. charging pressure	170 Bar
Min. charging pressure	35 Bar
Rod seal area	44,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit M120H

Maximum strokes / minute (at 20ºC)

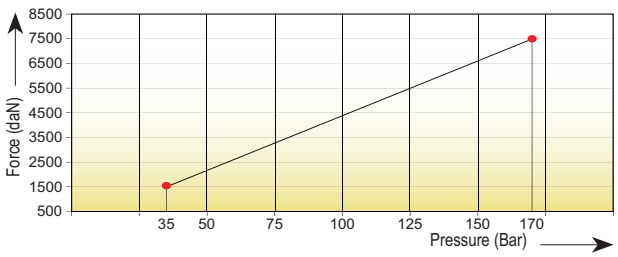


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 120Hx25	25	108	83		10870	11435		0,322	5,0
MICRO 120Hx38	38	134	96		11250	11905		0,455	5,5
MICRO 120Hx50	50	158	108	7500 ±5%	11455	12165	170	0,578	5,9
MICRO 120Hx63	63	184	121	(20ºC)	11600	12350	(20ºC)	0,710	6,4
MICRO 120Hx80	80	218	138		11730	12510		0,885	7,1
MICRO 120Hx100	100	258	158		11830	12635		1,089	7,9

Force/stroke ratio

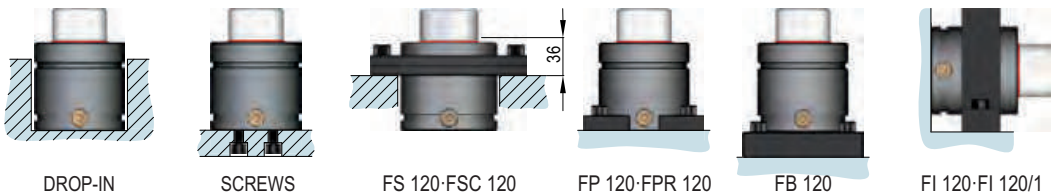


Initial force/charging pressure ratio



Assembly possibilities

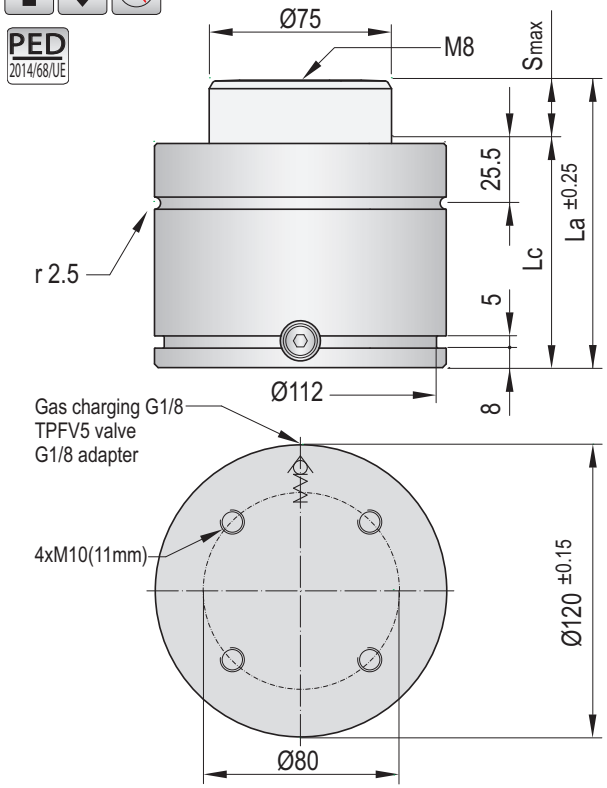
Follow guidelines Page 287



DROP-IN | SCREWS | FS 120·FSC 120 | FP 120·FPR 120 | FB 120 | FI 120·FI 120/1

VDI SAFETY

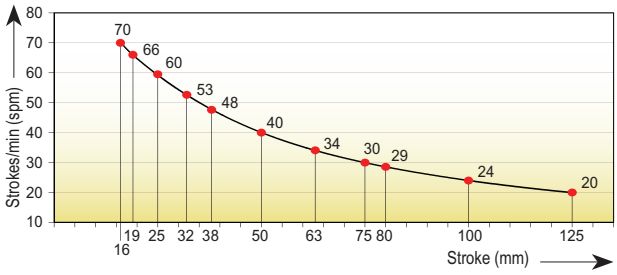
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	44,18 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M120V.1

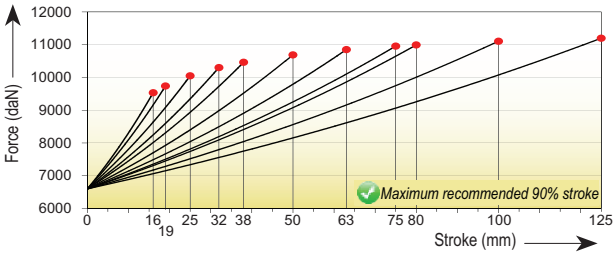
VDI 3003 ISO 11901

Maximum strokes / minute (at 20°C)

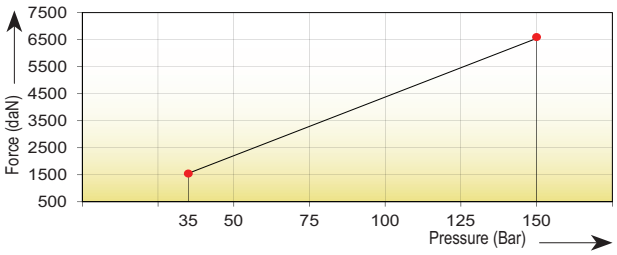


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 120Vx16.1	16	100	84	6600 ±5% (20°C)	9165	9575	150 (20°C)	0,230	5,20
MICRO 120Vx19.1	19	106	87		9335	9780		0,260	5,35
MICRO 120Vx25.1	25	118	93		9590	10090		0,322	5,40
MICRO 120Vx32.1	32	132	100		9795	10345		0,393	5,60
MICRO 120Vx38.1	38	144	106		9925	10505		0,455	5,95
MICRO 120Vx50.1	50	168	118		10105	10730		0,577	6,30
MICRO 120Vx63.1	63	194	131		10235	10895		0,710	6,70
MICRO 120Vx75.1	75	218	143		10320	11000		0,833	7,05
MICRO 120Vx80.1	80	228	148		10350	11040		0,884	7,55
MICRO 120Vx100.1	100	268	168		10440	11150		1,089	8,40
MICRO 120Vx125.1	125	318	193		10510	11245		1,345	9,45

Force/stroke ratio

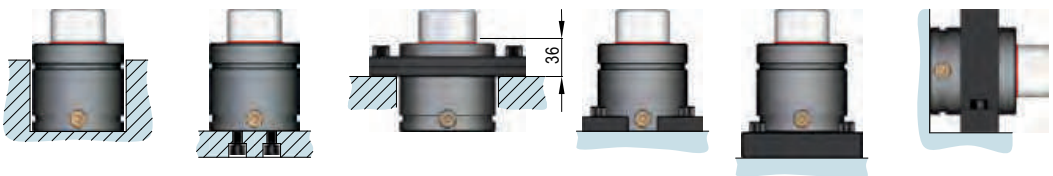


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



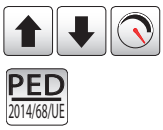
DROP-IN | SCREWS | FS 120·FSC 120 | FP 120·FPR 120 | FB 120 | FI 120·FI 120/1

TECAPRES®

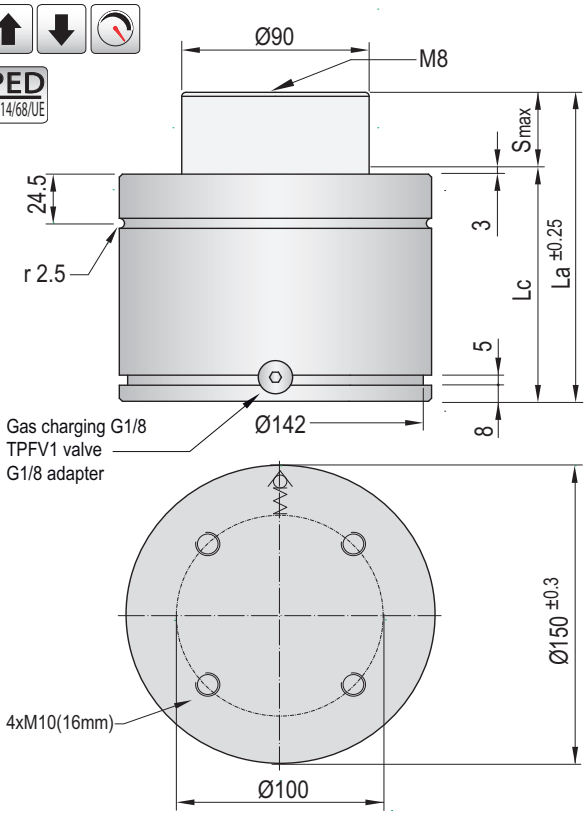
Ø150mm
9500daN

MICRO 150

VDI SAFETY



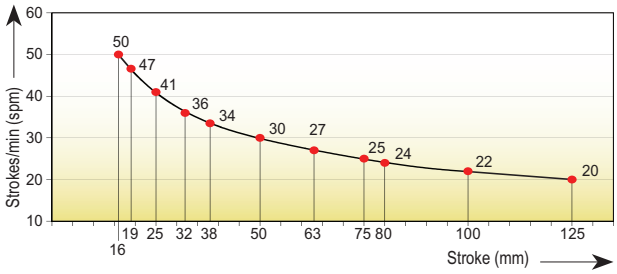
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	63,62 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M150

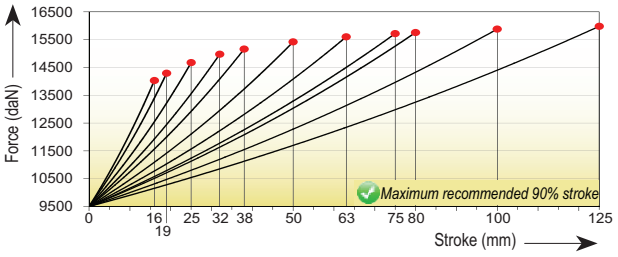
VDI 3003 · ISO 11901

Maximum strokes / minute (at 20ºC)

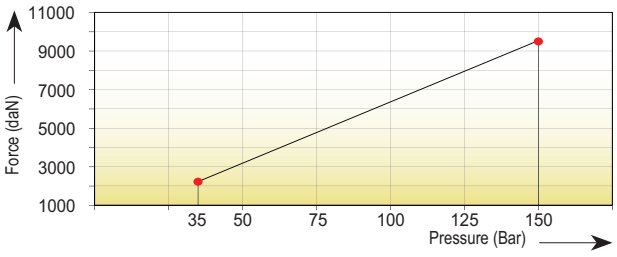


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 150x16	16	110	94	9500 ±5% (20ºC)	13455	14095	150 (20ºC)	0,315	9,50
MICRO 150x19	19	116	97		13665	14355		0,361	9,60
MICRO 150x25	25	128	103		13980	14740		0,451	9,85
MICRO 150x32	32	142	110		14225	15045		0,557	10,50
MICRO 150x38	38	154	116		14375	15230		0,647	10,85
MICRO 150x50	50	178	128		14580	15490		0,829	11,45
MICRO 150x63	63	204	141		14725	15670		1,025	12,05
MICRO 150x75	75	228	153		14820	15790		1,206	12,45
MICRO 150x80	80	238	158		14850	15830		1,282	13,70
MICRO 150x100	100	278	178		14945	15950		1,584	14,80
MICRO 150x125	125	328	203		15025	16050		1,961	15,95

Force/stroke ratio



Initial force/charging pressure ratio

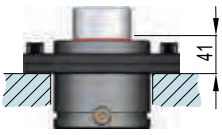


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 150·FSC 150


FP 150·FPR 150

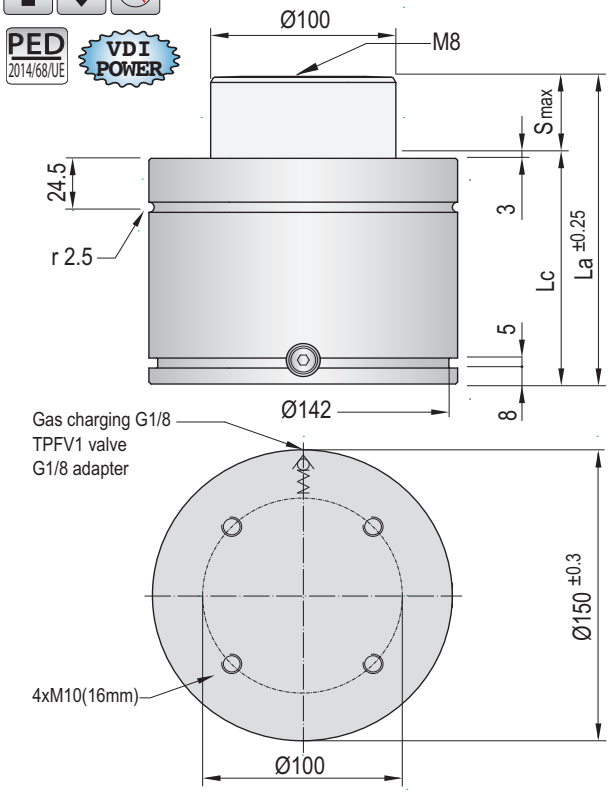

FB 150


FI 150·FI 150/1

VDI SAFETY

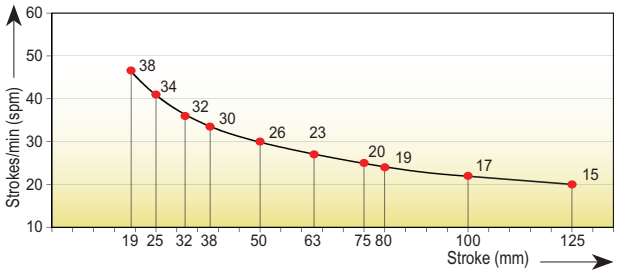
PED 2014/68/UE

VDI POWER



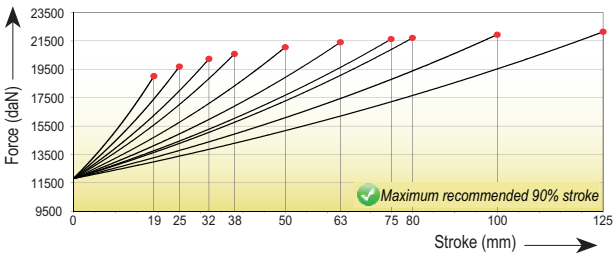
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	78,54 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit M150H

Maximum strokes / minute (at 20°C)

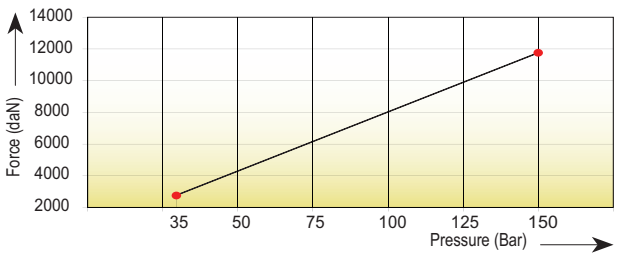


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 150Hx19	19	116	97		17895	18990		0,393	9,70
MICRO 150Hx25	25	128	103		18430	19660		0,490	9,95
MICRO 150Hx32	32	142	110		18860	20210		0,603	10,60
MICRO 150Hx38	38	154	116		19125	20550		0,699	10,95
MICRO 150Hx50	50	178	128	11800 ±5%	19500	21030	150	0,893	11,55
MICRO 150Hx63	63	204	141	(20°C)	19765	21375	(20°C)	1,102	12,15
MICRO 150Hx75	75	228	153		19935	21600		1,296	12,55
MICRO 150Hx80	80	238	158		19995	21675		1,376	13,80
MICRO 150Hx100	100	278	178		20175	21910		1,699	14,90
MICRO 150Hx125	125	328	203		20325	22105		2,102	16,05

Force/stroke ratio

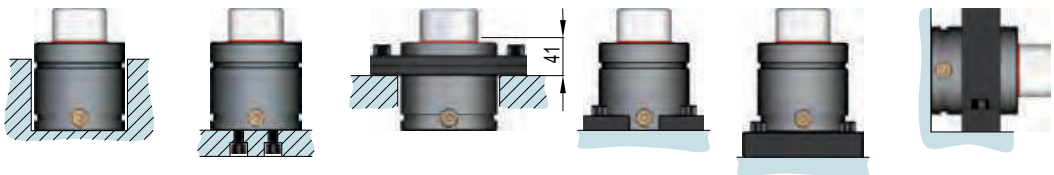


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 150·FSC 150 | FP 150·FPR 150 | FB 150 | FI 150·FI 150/1

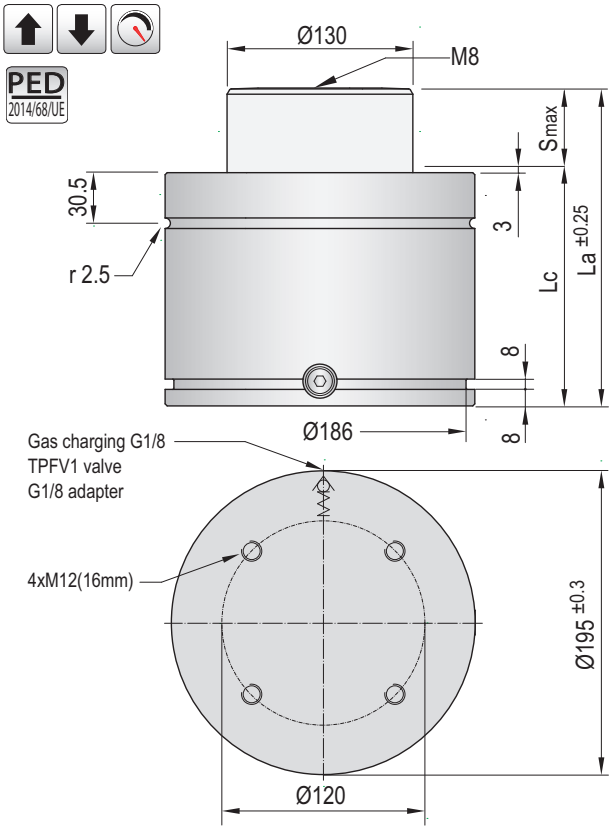
TECAPRES®

Ø195mm 20000daN

MICRO 195

VDI SAFETY

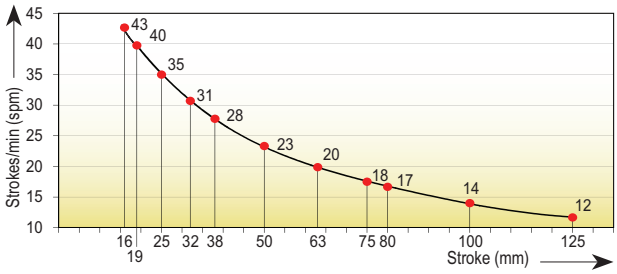
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	132,73 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1 m/s
Maintenance kit	Kit M195

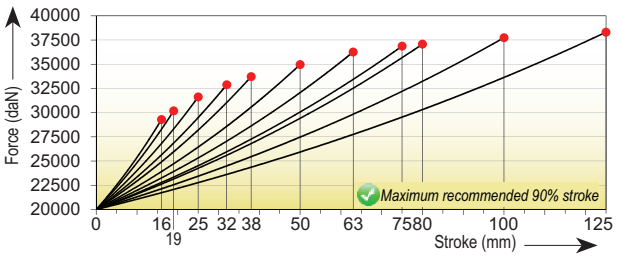
ISO 11901

Maximum strokes / minute (at 20ºC)

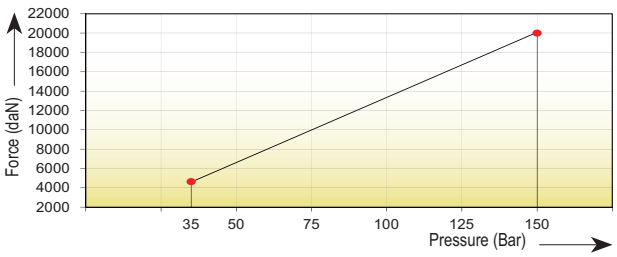


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
MICRO 195x16	16	142	126	20000 ±5% (20ºC)	28260	29645	150 (20ºC)	0,647	20,85
MICRO 195x19	19	148	129		28990	30540		0,725	21,45
MICRO 195x25	25	160	135		30135	31960		0,880	22,10
MICRO 195x32	32	174	142		31115	33190		1,061	22,85
MICRO 195x38	38	186	148		31755	34005		1,217	23,45
MICRO 195x50	50	210	160		32690	35200		1,528	24,70
MICRO 195x63	63	236	173		33380	36095		1,865	26,10
MICRO 195x75	75	260	185		33850	36700		2,176	27,25
MICRO 195x80	80	270	190		34005	36910		2,305	28,20
MICRO 195x100	100	310	210		34510	37570		2,824	31,10
MICRO 195x125	125	360	235		34940	38135		3,472	35,20

Force/stroke ratio



Initial force/charging pressure ratio

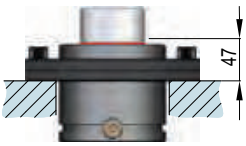


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



FSC 195

FP 195

FB 195

PED 2014/68/UE

COMPACT EXTRA POWER

Extra force and extremely compact gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY		
TITAN 32	32	12 - 80	500	√	√		√
TITAN 38	38	16 - 80	750	√	√		√
TITAN 45	45	12 - 80	920	√	√		√
TITAN 50	50	13 - 80	1200	√	√		√
TITAN 63	63	13 - 80	2100	√	√		√
TITAN 75.1	75	12 - 80	3000	√	√		√

TECAPRES®

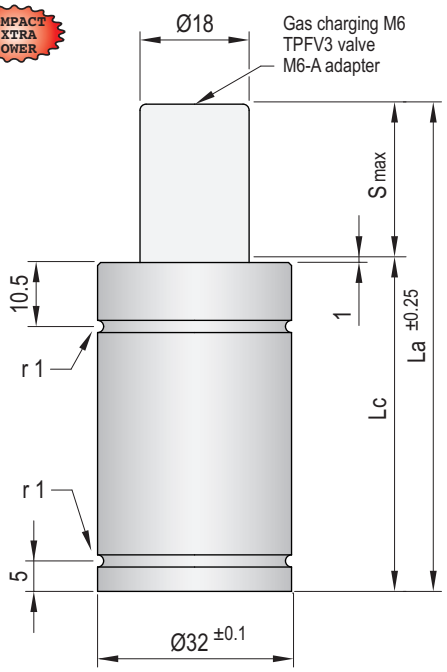
Ø32mm 500daN

TITAN 32

VDI SAFETY

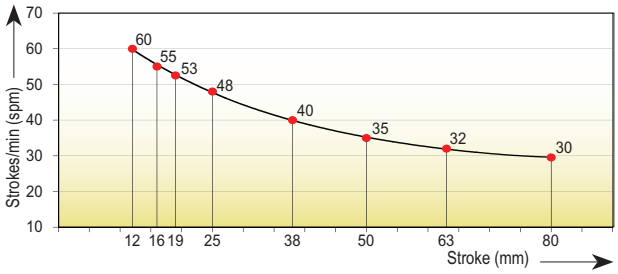
PED 2014/68/UE

COMPACT EXTRA POWER



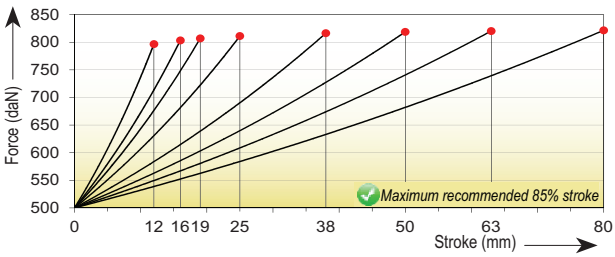
Pressure medium	Nitrogen (N_2)
Max. charging pressure	190 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit T32

Maximum strokes / minute (at 20ºC)

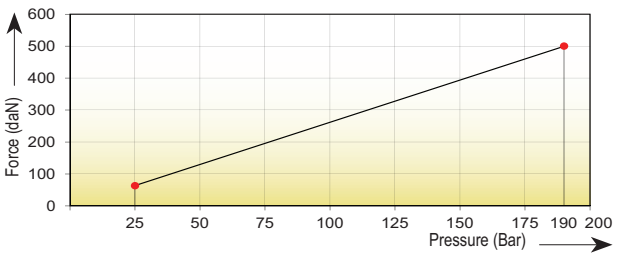


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 32x12	12	49	37		735	800		0,008	0,19
TITAN 32x16	16	58	42		740	805		0,011	0,21
TITAN 32x19	19	65	46		740	810		0,013	0,22
TITAN 32x25	25	76	51	500 ±5%	745	815	190	0,017	0,24
TITAN 32x38	38	102	64	(20ºC)	750	820	(20ºC)	0,025	0,27
TITAN 32x50	50	127	77		750	820		0,033	0,30
TITAN 32x63	63	152	89		750	825		0,041	0,34
TITAN 32x80	80	186	106		750	825		0,052	0,41

Force/stroke ratio



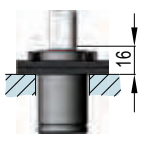
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN



FS 32
FS 32/1·FSC 32

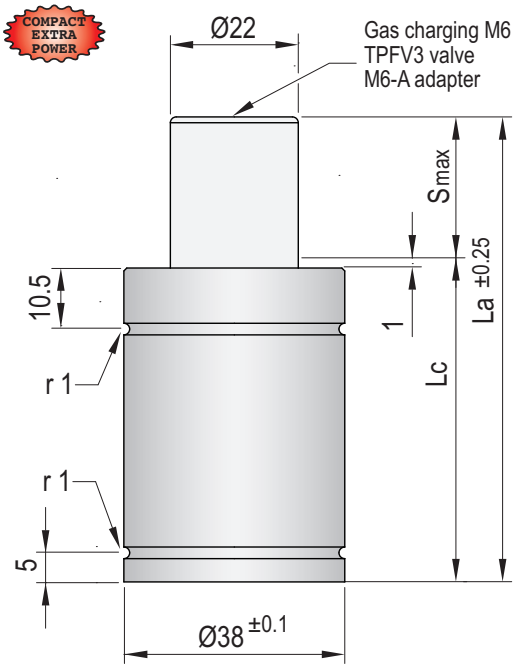
FS 32
FS 32/1·FSC 32

FI 32·FI 32/1

VDI SAFETY

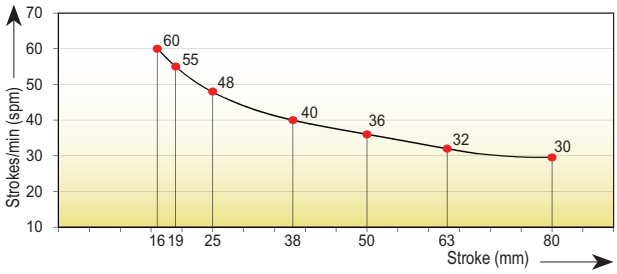
PED 2014/68/UE

COMPACT EXTRA POWER



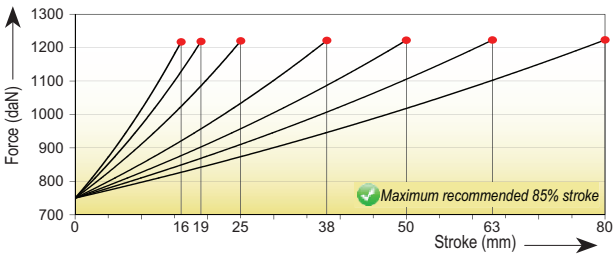
Pressure medium	Nitrogen (N_2)
Max. charging pressure	190 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit T38

Maximum strokes / minute (at 20°C)

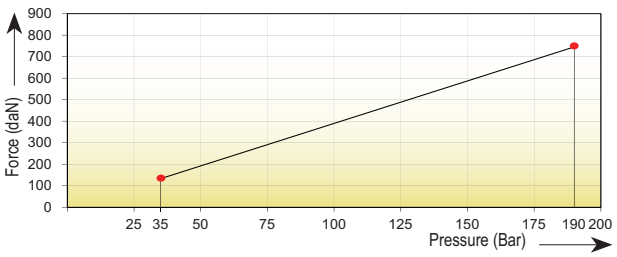


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 38x16	16	58	42	750 ±5% (20°C)	1110	1215	190 (20°C)	0,016	0,27
TITAN 38x19	19	65	46		1110	1215		0,019	0,30
TITAN 38x25	25	78	53		1115	1220		0,025	0,32
TITAN 38x38	38	102	64		1115	1220		0,037	0,35
TITAN 38x50	50	127	77		1115	1220		0,049	0,39
TITAN 38x63	63	152	89		1115	1220		0,062	0,42
TITAN 38x80	80	186	106		1115	1220		0,079	0,51

Force/stroke ratio

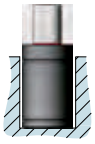


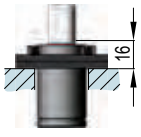
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN



FS 38·FSC 38


FS 38·FSC 38


FI 38·FI 38/1

TITAN
TPH
TPS
TPSP
TPF
TPK
TPC
TPR
TPB
TPHC
TPA
TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

TECAPRES®

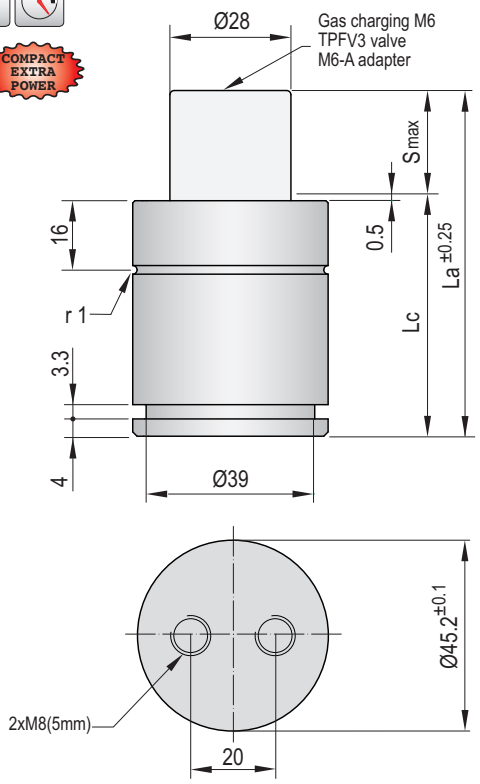
Ø45mm 920daN

TITAN 45

VDI SAFETY

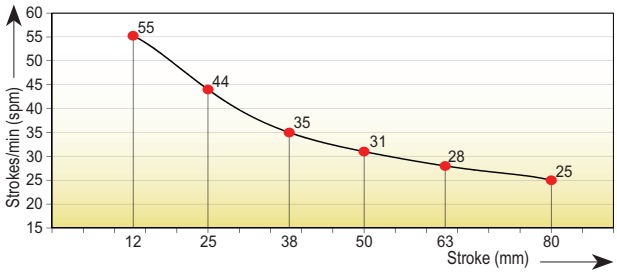
PED 2014/68/UE

COMPACT EXTRA POWER



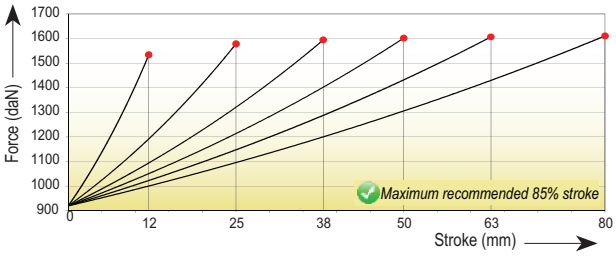
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit T45

Maximum strokes / minute (at 20ºC)

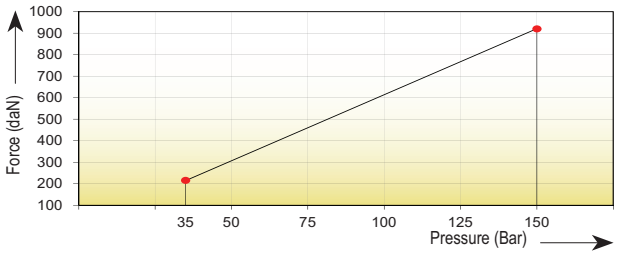


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 45x12	12	54	42		1400	1540		0,019	0,33
TITAN 45x25	25	80	55		1430	1585		0,037	0,43
TITAN 45x38	38	106	68	920 ±5%	1440	1600	150	0,055	0,49
TITAN 45x50	50	130	80	(20ºC)	1445	1610	(20ºC)	0,072	0,58
TITAN 45x63	63	156	93		1450	1615		0,091	0,64
TITAN 45x80	80	190	110		1455	1615		0,115	0,84

Force/stroke ratio



Initial force/charging pressure ratio

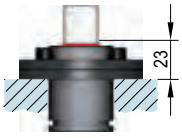


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



FS 45·FSC 45

FP 45·FPR 45

FB 45

FI 45·FI 45/1

TECAPRES®

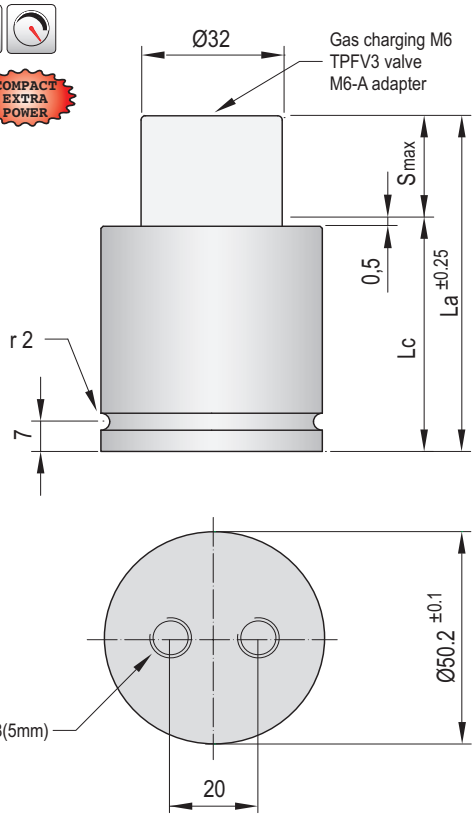
Ø50mm 1200daN

TITAN 50

VDI SAFETY

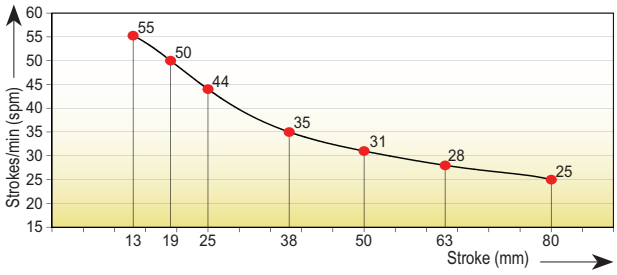
PED 2014/68/UE

COMPACT EXTRA POWER



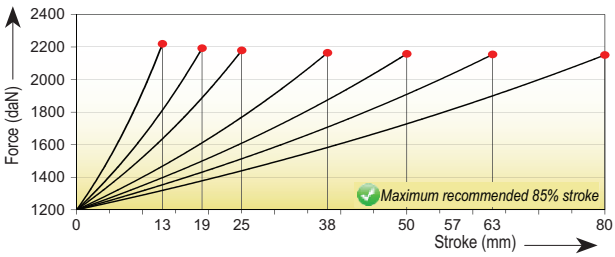
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	8,04 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit T50

Maximum strokes / minute (at 20ºC)

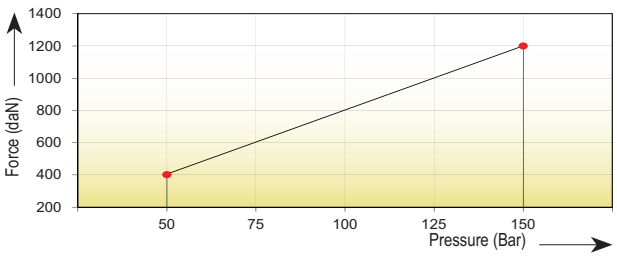


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 50x13	13	55	42	1200 ±5% (20ºC)	1965	2215	150 (20ºC)	0,023	0,49
TITAN 50x19	19	67	48		1950	2190		0,034	0,52
TITAN 50x25	25	79	54		1940	2175		0,045	0,59
TITAN 50x38	38	105	67		1930	2160		0,069	0,68
TITAN 50x50	50	129	79		1925	2155		0,091	0,79
TITAN 50x63	63	155	92		1920	2150		0,114	0,95
TITAN 50x80	80	189	109		1920	2150		0,146	1,10

Force/stroke ratio

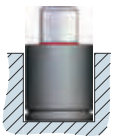


Initial force/charging pressure ratio



Assembly possibilities

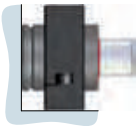
Follow guidelines Page 287


DROP-IN


SCREWS


FS 50·FSC 50


FB 45·FB 50


FI 50·FI 50/1

TECAPRES®

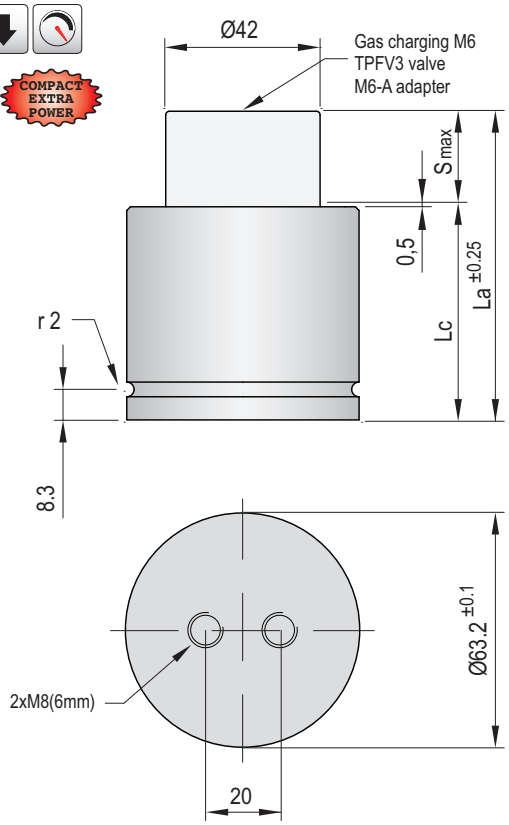
Ø63mm 2100daN

TITAN 63

VDI SAFETY

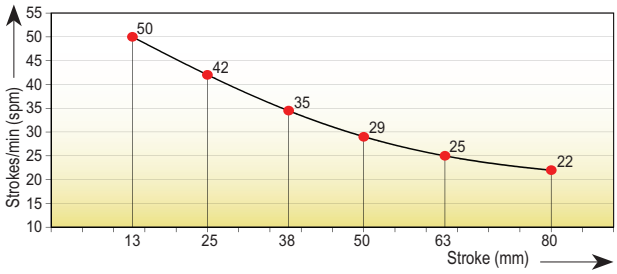
PED 2014/68/UE

COMPACT EXTRA POWER



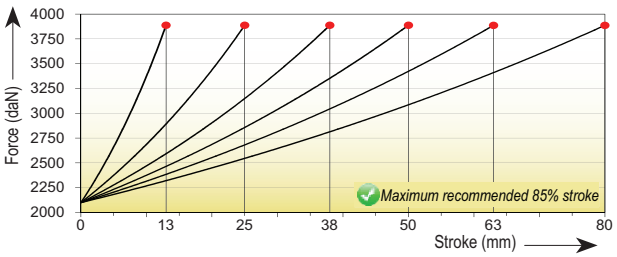
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	13,85 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit T63

Maximum strokes / minute (at 20ºC)

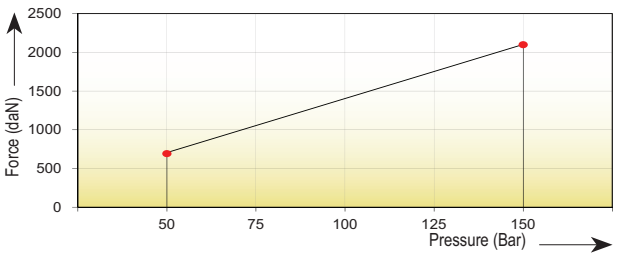


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 63x13	13	60	47		3410	3845		0,039	0,87
TITAN 63x25	25	84	59		3410	3845		0,075	0,92
TITAN 63x38	38	110	72	2100 ±5%	3410	3845	150	0,115	1,30
TITAN 63x50	50	134	84	(20ºC)	3410	3845	(20ºC)	0,151	1,55
TITAN 63x63	63	160	97		3410	3845		0,190	1,70
TITAN 63x80	80	194	114		3410	3845		0,241	1,85

Force/stroke ratio

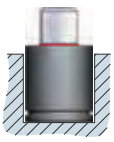


Initial force/charging pressure ratio



Assembly possibilities

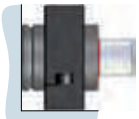
Follow guidelines Page 287


DROP-IN


SCREWS


FS 63
FSC 63·FSC 63/1


FB 50·FB 63


FI 63/1

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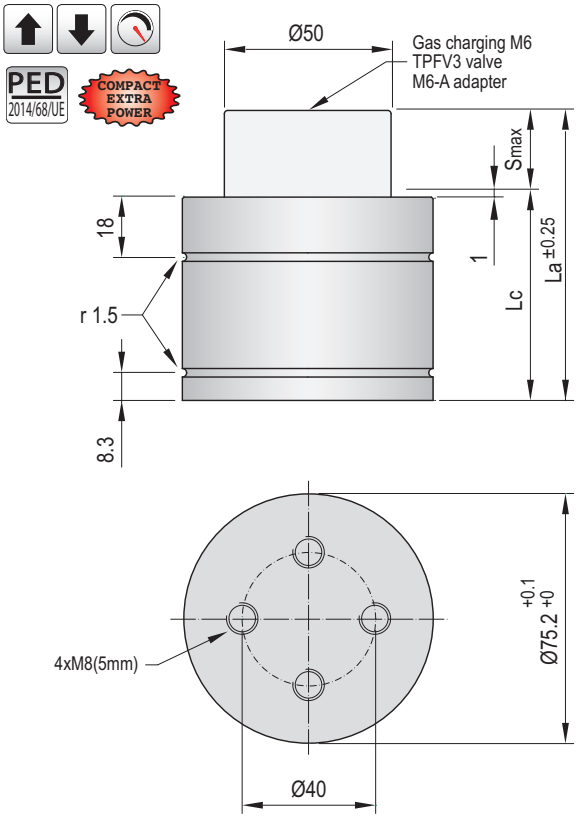
VDI SAFETY

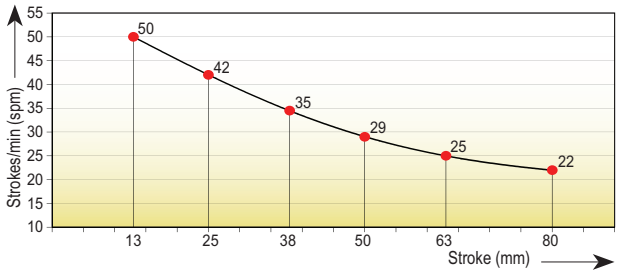
PED 2014/68/UE

COMPACT EXTRA POWER



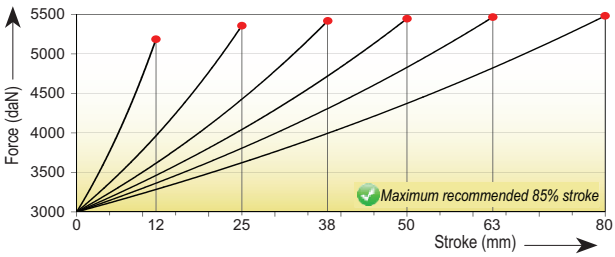
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit T75.1

Maximum strokes / minute (at 20ºC)

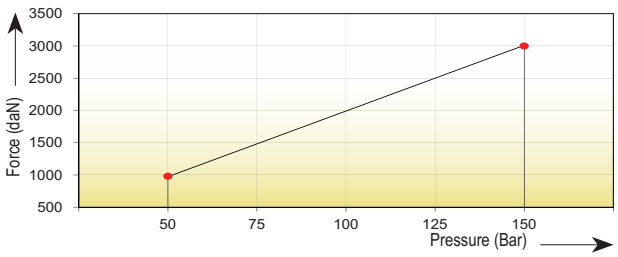


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TITAN 75x12.1	12	61	49		4650	5160		0,056	1,25
TITAN 75x25.1	25	87	62		4770	5330		0,112	1,39
TITAN 75x38.1	38	113	75	3000 ±5%	4810	5390	150	0,167	1,62
TITAN 75x50.1	50	137	87	(20ºC)	4830	5420	(20ºC)	0,219	1,72
TITAN 75x63.1	63	163	100		4840	5435		0,274	1,99
TITAN 75x80.1	80	197	117		4850	5455		0,347	2,18

Force/stroke ratio

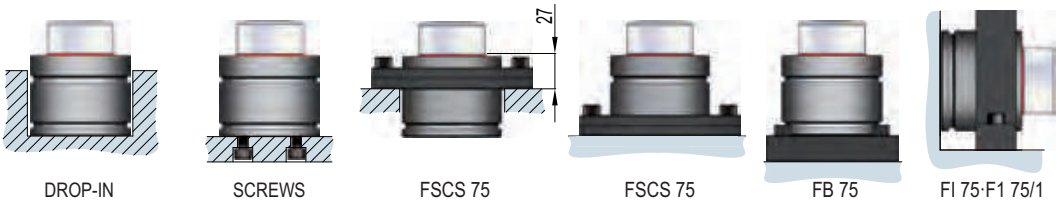


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FSCS 75 | FSCS 75 | FB 75 | FI 75·F1 75/1

PED 2014/68/UE

EXTRA POWER

Maximum force gas springs. Gas-tight rod

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY	
TPH 320	25	10 - 80	320	√	√	
TPH 470	32	13 - 50	470	√	√	
TPH 500	32	10 - 80	500	√	√	
TPH 570	32	13 - 50	570	√	√	
TPH 850.1	38	12 - 80	850	√	√	
TPH 850.1C	38	12 - 80	850	√	√	√
TPH 1000.1	38	10 - 80	1000	√	√	
TPH 1000.1C	38	10 - 80	1000	√	√	√
TPH 1250.1	45	12 - 80	1250	√	√	
TPH 1250.1C	45	12 - 80	1250	√	√	√
TPH 1700.1	50	12 - 80	1700	√	√	
TPH 1700.1C	50	12 - 80	1700	√	√	√
TPH 2000.1	50	15 - 80	1925	√	√	
TPH 2000.1C	50	15 - 80	1925	√	√	√
TPH 2800.1	63	12 - 80	2800	√	√	
TPH 2800.1C	63	12 - 80	2800	√	√	√
TPH 4300.1	75	12 - 80	4300	√	√	
TPH 4300.1C	75	12 - 80	4300	√	√	√

TECAPRES®

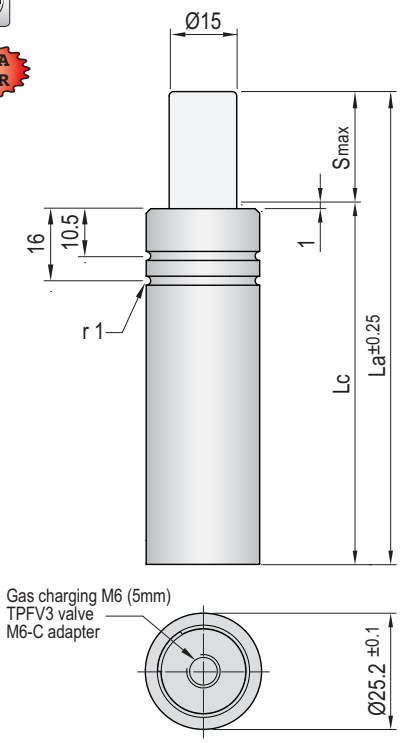
Ø25mm
320daN

TPH 320

VDI SAFETY

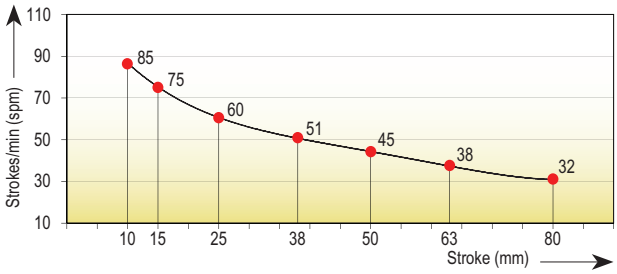
PED 2014/68/UE

EXTRA POWER



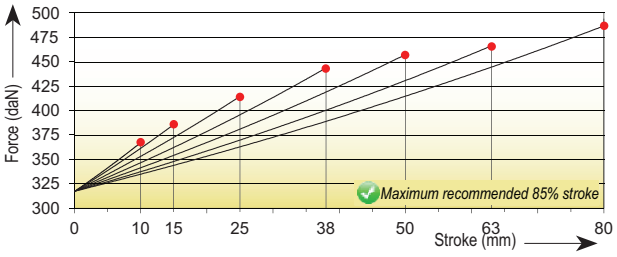
Pressure medium	Nitrogen (N_2)
Max. charging pressure	170 Bar
Min. charging pressure	30 Bar
Rod seal area	1,77 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit M25V1

Maximum strokes / minute (at 20ºC)

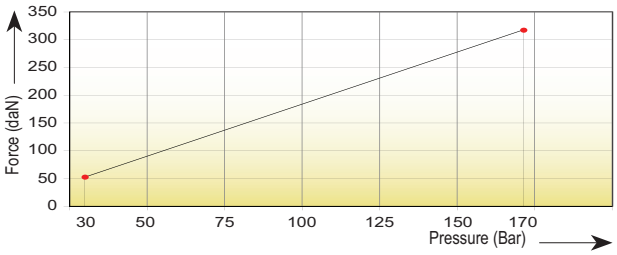


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 320x10	10	75	65	320 ±5% (20ºC)	360	365	170 (20ºC)	0,013	0,17
TPH 320x15	15	85	70		375	385		0,015	0,18
TPH 320x25	25	105	80		395	415		0,019	0,22
TPH 320x38	38	130	92		420	445		0,024	0,25
TPH 320x50	50	155	105		430	455		0,029	0,27
TPH 320x63	63	185	122		435	465		0,035	0,32
TPH 320x80	80	220	140		450	485		0,041	0,37

Force/stroke ratio



Initial force/charging pressure ratio

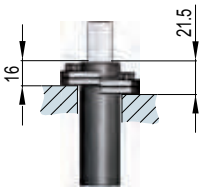


Assembly possibilities

Follow guidelines
Page 287

DROP-IN

SCREWS



FS 25/1 · FS 25/2

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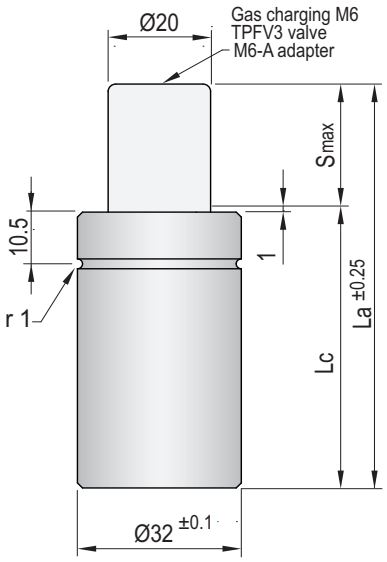
VDI SAFETY

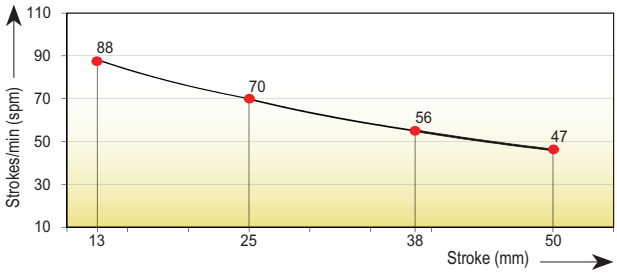
PED 2014/68/UE

EXTRA POWER



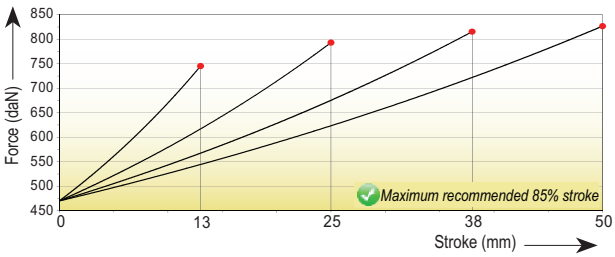
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit H470

Maximum strokes / minute (at 20ºC)

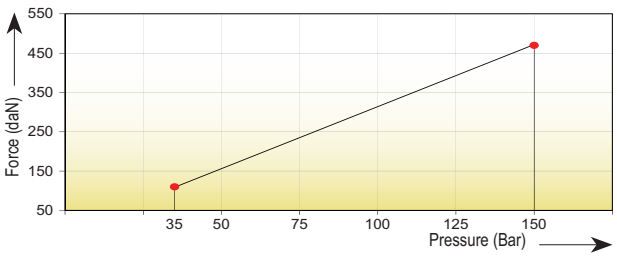


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 470x13	13	58	45	470 ±5% (20ºC)	685	745	150 (20ºC)	0,011	0,20
TPH 470x25	25	82	57		720	795		0,019	0,24
TPH 470x38	38	108	70		735	815		0,028	0,27
TPH 470x50	50	132	82		745	830		0,036	0,32

Force/stroke ratio



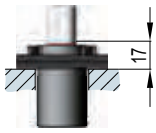
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN



FS 32
FS 32/1·FSC 32

FI 32 · FI 32/1

TECAPRES®

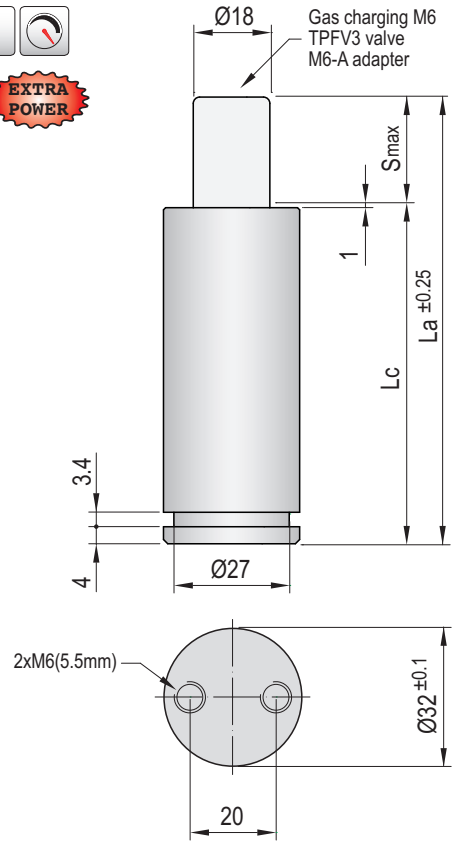
Ø32mm 500daN

TPH 500

VDI SAFETY

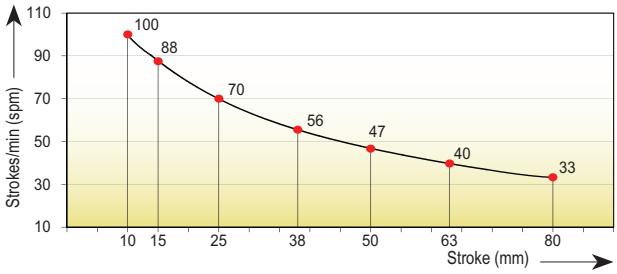
PED 2014/68/UE

EXTRA POWER



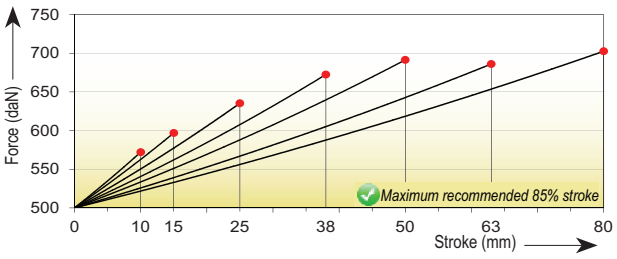
Pressure medium	Nitrogen (N_2)
Max. charging pressure	190 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit MH32

Maximum strokes / minute (at 20ºC)

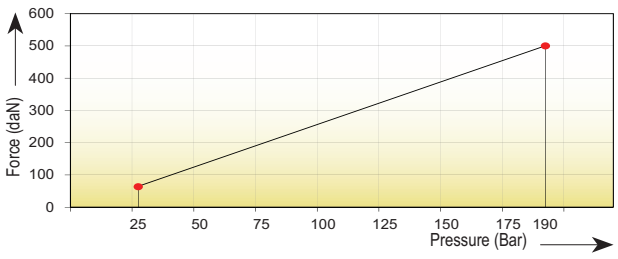


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 500x10	10	75	65		560	570		0,020	0,18
TPH 500x15	15	85	70		580	595		0,024	0,20
TPH 500x25	25	105	80		610	635		0,030	0,25
TPH 500x38	38	130	92		640	670		0,038	0,28
TPH 500x38B	38	135	97	500 ±5%	625	655	190	0,040	0,30
TPH 500x50	50	155	105	(20ºC)	650	690	(20ºC)	0,046	0,33
TPH 500x50B	50	160	110		640	675		0,049	0,36
TPH 500x63	63	190	127		650	685		0,059	0,40
TPH 500x63B	63	195	132		640	675		0,062	0,42
TPH 500x80	80	225	145		660	700		0,071	0,45

Force/stroke ratio

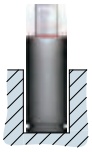


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

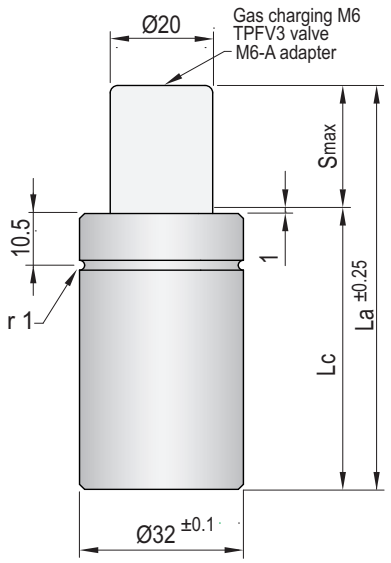

FP 32·FP 32R


FI 32·FI 32/1

VDI SAFETY

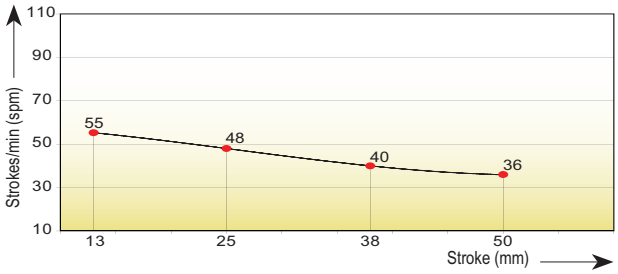
PED 2014/68/UE

EXTRA POWER



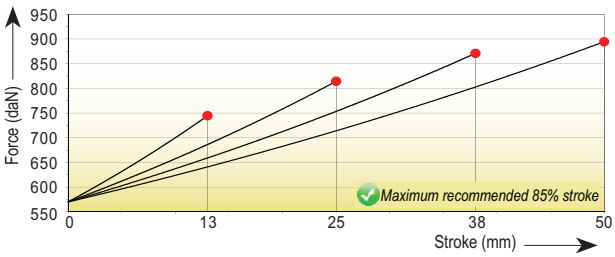
Pressure medium	Nitrogen (N_2)
Max. charging pressure	180 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,8 m/s
Maintenance kit	Kit H570

Maximum strokes / minute (at 20°C)

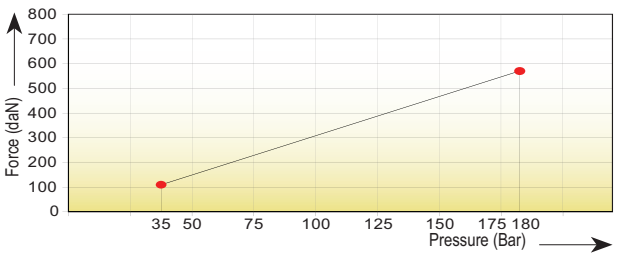


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 570x13	13	70	57	570 ±5% (20°C)	705	740	180 (20°C)	0,017	0,22
TPH 570x25	25	95	70		760	810		0,026	0,25
TPH 570x38	38	120	82		800	865		0,035	0,29
TPH 570x50	50	145	95		820	885		0,043	0,33

Force/stroke ratio



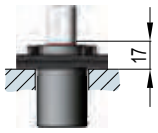
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN



FS 32
FS 32/1·FSC 32

FI 32 · FI 32/1

TECAPRES®

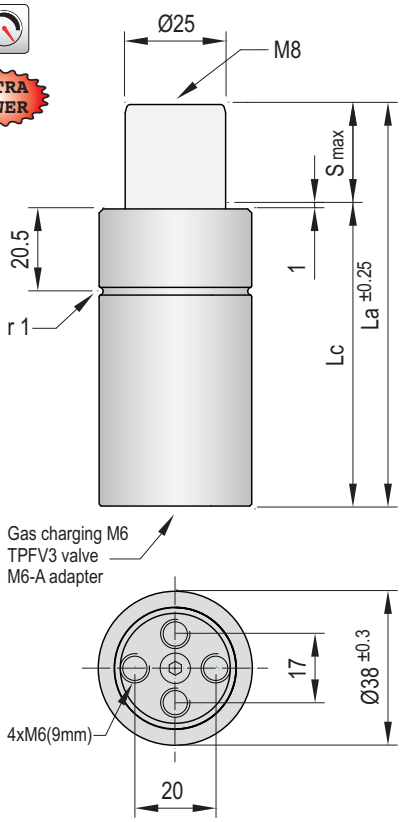
Ø38mm
850daN

TPH 850.1

VDI SAFETY

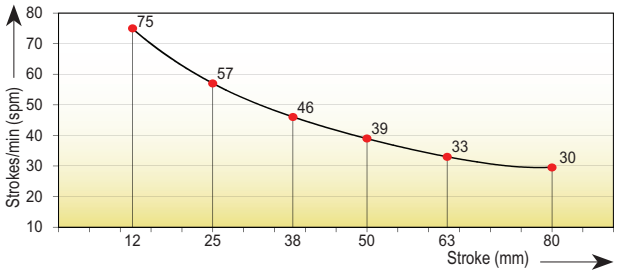
PED 2014/68/UE

EXTRA POWER



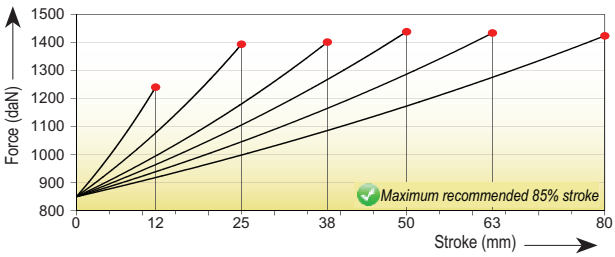
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit H850.1

Maximum strokes / minute (at 20ºC)

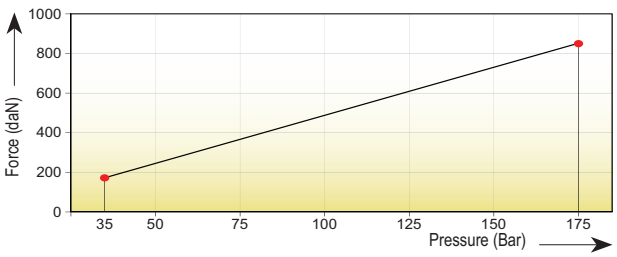


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 850x12.1	12	74	62		1175	1255		0,019	0,40
TPH 850x25.1	25	100	75		1285	1405		0,031	0,45
TPH 850x38.1	38	130	92	850 ±5%	1290	1415	175	0,047	0,52
TPH 850x50.1	50	155	105	(20ºC)	1315	1455	(20ºC)	0,060	0,64
TPH 850x63.1	63	185	122		1315	1450		0,076	0,75
TPH 850x80.1	80	225	145		1305	1440		0,098	0,86

Force/stroke ratio



Initial force/charging pressure ratio

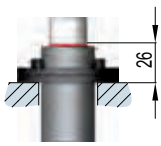


Assembly possibilities

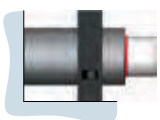
Follow guidelines
Page 287

DROP-IN

SCREWS



FS 38·FSC 38



FI 38·FI 38/1

TECAPRES®

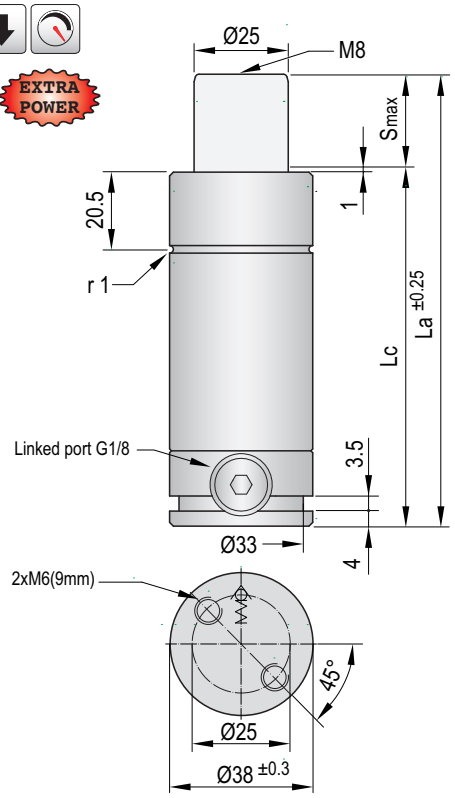
Ø38mm · G1/8 connectable
850daN

TPH 850.1 C

VDI SAFETY

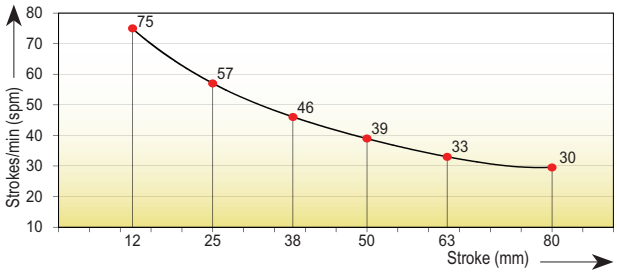
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit HC850.1

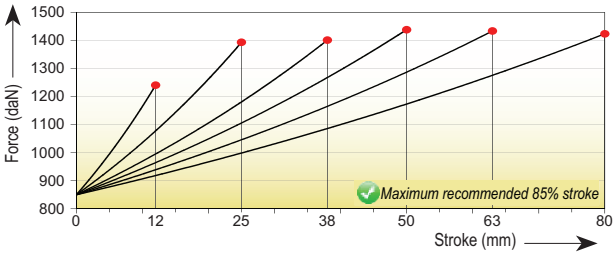
Maximum strokes / minute (at 20ºC)



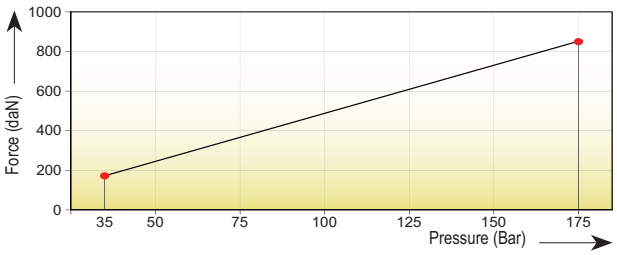
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 850x12.1 C	12	94	82		1175	1255		0,019	0,60
TPH 850x25.1 C	25	120	95		1285	1405		0,031	0,65
TPH 850x38.1 C	38	150	112	850 ±5%	1290	1415	175	0,047	0,72
TPH 850x50.1 C	50	175	125	(20ºC)	1315	1455	(20ºC)	0,060	0,84
TPH 850x63.1 C	63	205	142		1315	1450		0,076	0,95
TPH 850x80.1 C	80	245	165		1305	1440		0,098	1,06

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

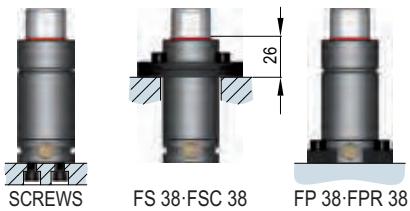


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 38·FSC 38 | FP 38·FPR 38

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

TECAPRES®

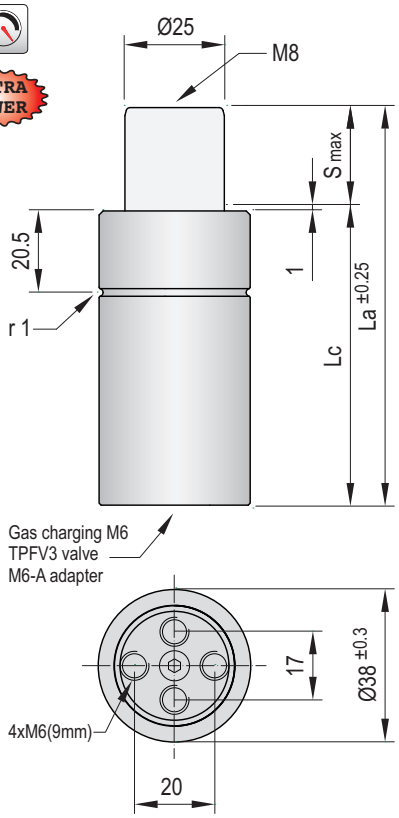
Ø38mm 1000daN

TPH 1000.1

VDI SAFETY

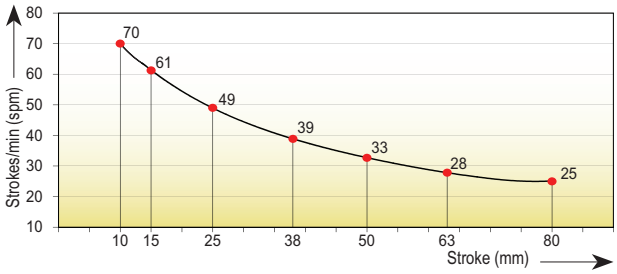
PED 2014/68/UE

EXTRA POWER



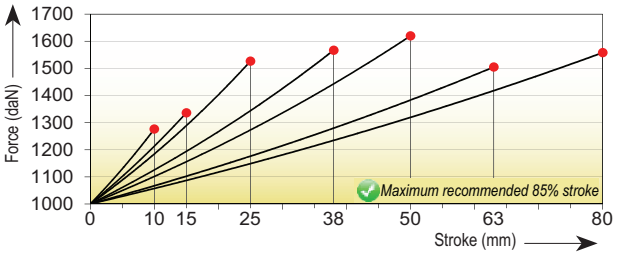
Pressure medium	Nitrogen (N_2)
Max. charging pressure	190 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit H1000.1

Maximum strokes / minute (at 20ºC)

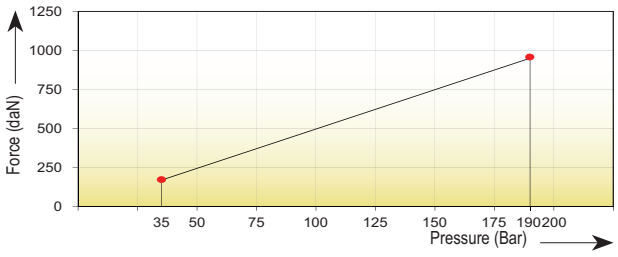


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1000x10.1	10	75	65	1000 ±5% (20ºC)	1225	1280	190 (20ºC)	0,023	0,35
TPH 1000x15.1	15	85	70		1275	1340		0,029	0,42
TPH 1000x25.1	25	105	80		1415	1530		0,035	0,50
TPH 1000x38.1	38	135	97		1445	1570		0,052	0,57
TPH 1000x50.1	50	160	110		1485	1620		0,064	0,69
TPH 1000x63.1	63	205	142		1400	1505		0,092	0,80
TPH 1000x80.1	80	240	160		1440	1560		0,110	0,91

Force/stroke ratio



Initial force/charging pressure ratio

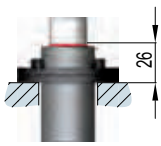


Assembly possibilities

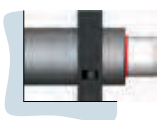
Follow guidelines Page 287

DROP-IN

SCREWS



FS 38·FSC 38

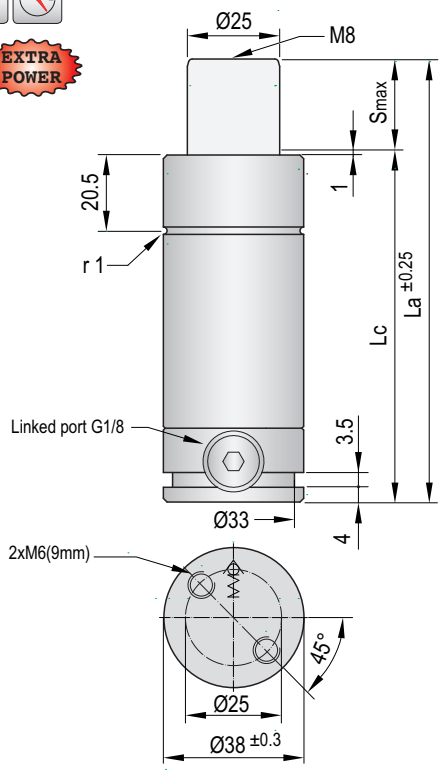


FI 38·FI 38/1

VDI SAFETY

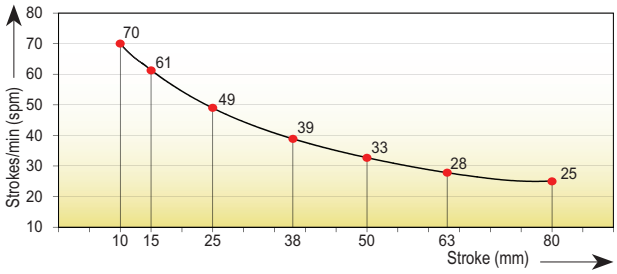
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	190 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit HC1000.1

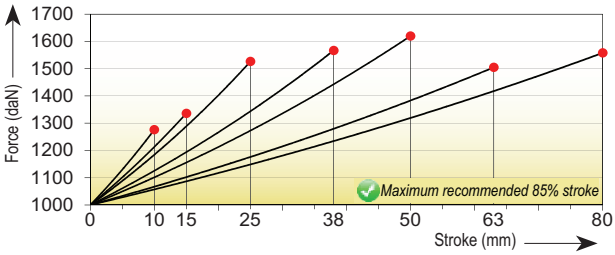
Maximum strokes / minute (at 20°C)



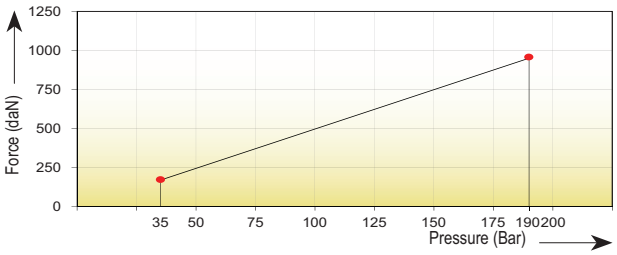
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1000x10.1 C	10	95	85	1000 ±5% (20°C)	1225	1280	190 (20°C)	0,023	0,35
TPH 1000x15.1 C	15	105	90		1275	1340		0,029	0,42
TPH 1000x25.1 C	25	125	100		1415	1530		0,035	0,50
TPH 1000x38.1 C	38	155	117		1445	1570		0,052	0,57
TPH 1000x50.1 C	50	180	130		1485	1620		0,064	0,69
TPH 1000x63.1 C	63	225	162		1400	1505		0,092	0,80
TPH 1000x80.1 C	80	260	180		1440	1560		0,110	0,91

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

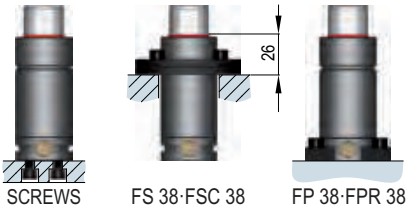


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS FS 38·FSC 38 FP 38·FPR 38

Connection alternatives

RMF-D1 RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 RMF-L + RMF-D1(2x)

TECAPRES®

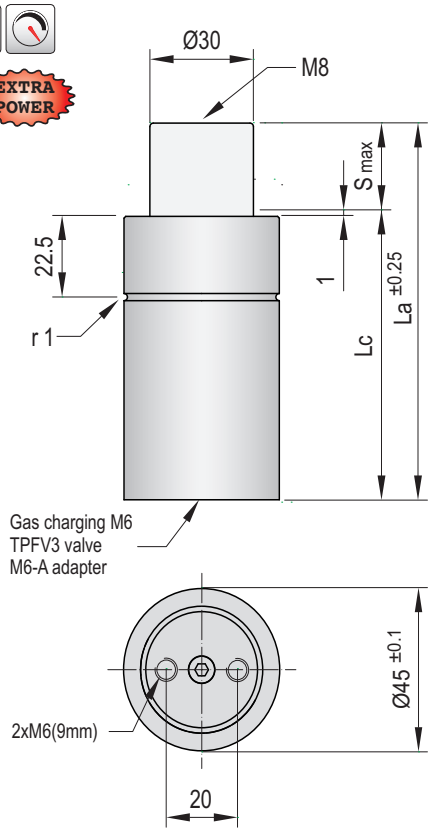
Ø45mm 1250daN

TPH 1250.1

VDI SAFETY

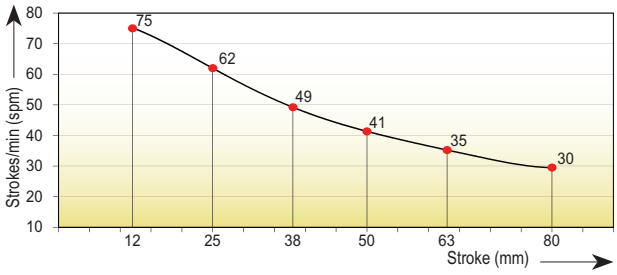
PED 2014/68/UE

EXTRA POWER



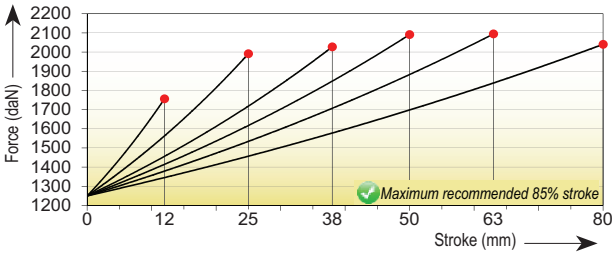
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit H1250.1

Maximum strokes / minute (at 20ºC)

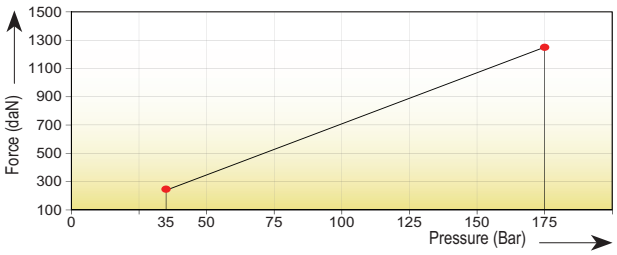


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1250x12.1	12	79	67		1640	1740		0,029	0,62
TPH 1250x25.1	25	105	80		1810	1970		0,047	0,75
TPH 1250x38.1	38	135	97	1250 ±5%	1835	2005	175	0,070	0,83
TPH 1250x50.1	50	160	110	(20ºC)	1880	2070	(20ºC)	0,088	0,91
TPH 1250x63.1	63	190	127		1880	2075		0,110	1,10
TPH 1250x80.1	80	230	150		1845	2020		0,146	1,17

Force/stroke ratio



Initial force/charging pressure ratio

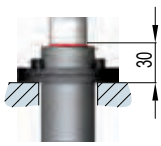


Assembly possibilities

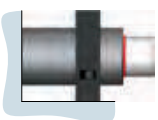
Follow guidelines Page 287

DROP-IN

SCREWS



FS 45·FSC 45



FI 45·FI 45/1

TECAPRES®

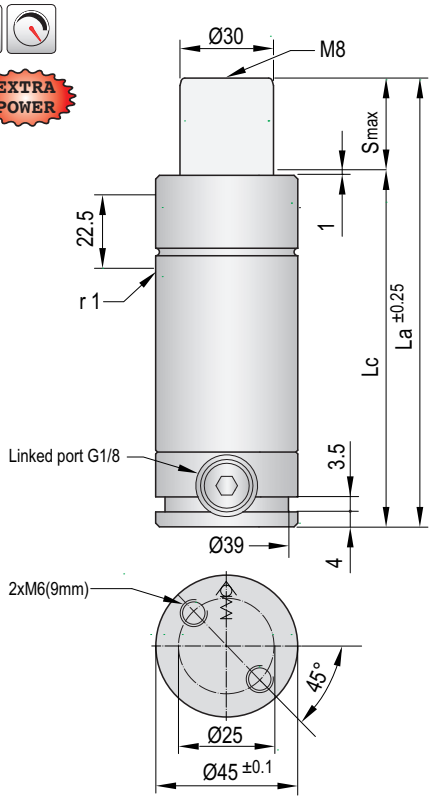
Ø45mm · G1/8 connectable
1250daN

TPH 1250.1 C

VDI SAFETY

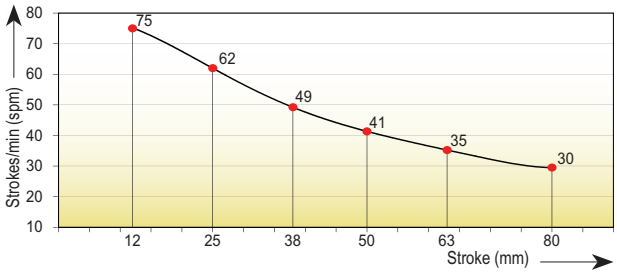
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit HC1250.1

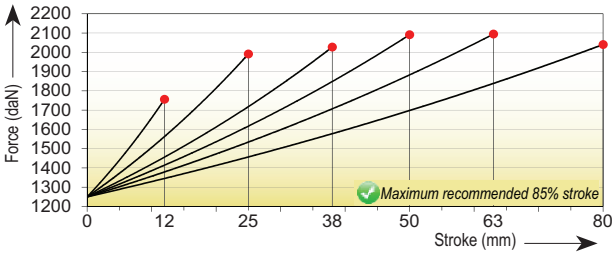
Maximum strokes / minute (at 20°C)



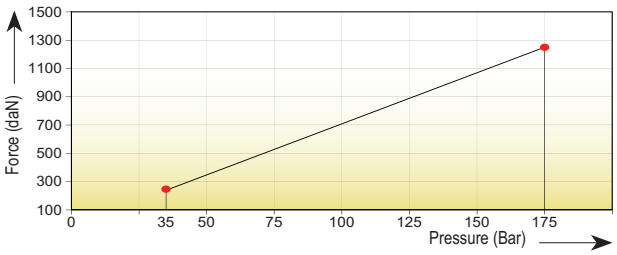
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1250x12.1 C	12	99	87		1640	1740		0,029	0,82
TPH 1250x25.1 C	25	125	100		1810	1970		0,047	0,95
TPH 1250x38.1 C	38	155	117	1250 ±5%	1835	2005	175	0,070	1,03
TPH 1250x50.1 C	50	180	130	(20°C)	1880	2070	(20°C)	0,088	1,15
TPH 1250x63.1 C	63	210	147		1880	2075		0,110	1,30
TPH 1250x80.1 C	80	250	170		1845	2020		0,146	1,27

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

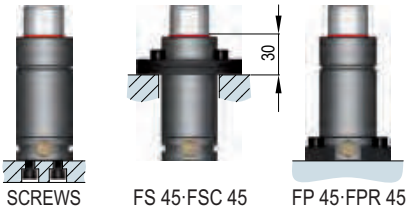


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 45·FSC 45 | FP 45·FPR 45

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

TECAPRES®

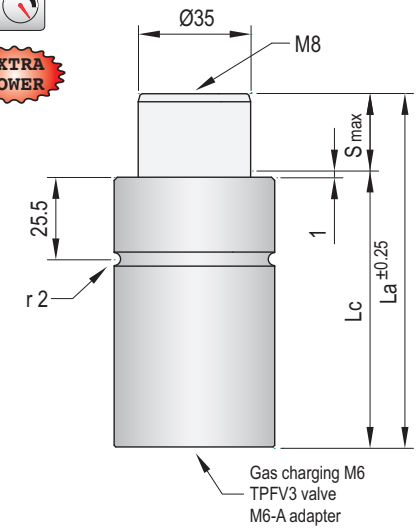
Ø50mm 1700daN

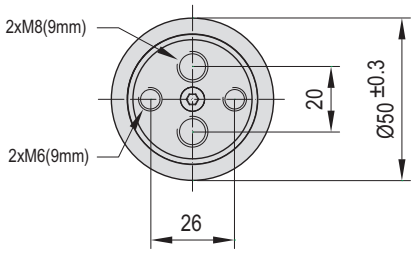
TPH 1700.1

VDI SAFETY

PED 2014/68/UE

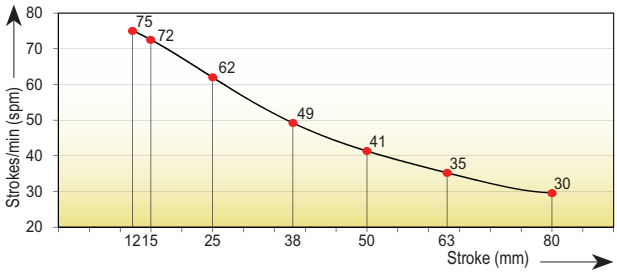
EXTRA POWER





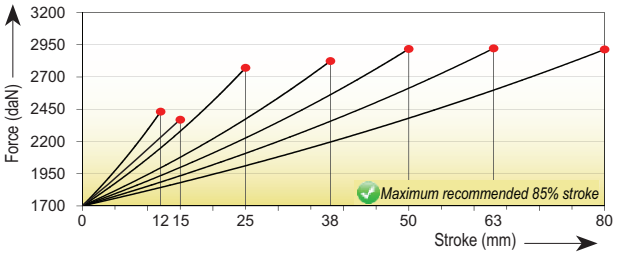
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	9,62 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit H1700.1

Maximum strokes / minute (at 20°C)

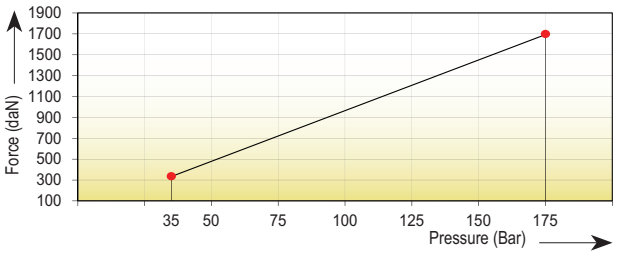


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1700x12.1	12	84	72		2260	2410		0,039	0,82
TPH 1700x15.1	15	95	80		2215	2345		0,051	0,86
TPH 1700x25.1	25	110	85		2510	2745		0,062	0,91
TPH 1700x25B.1	25	115	90	1700 ±5%	2385	2575	175	0,069	1,00
TPH 1700x38.1	38	140	102	(20°C)	2545	2795	(20°C)	0,092	1,12
TPH 1700x50.1	50	165	115		2610	2890		0,115	1,25
TPH 1700x63.1	63	195	132		2615	2895		0,145	1,35
TPH 1700x80.1	80	235	155		2605	2885		0,185	1,48

Force/stroke ratio

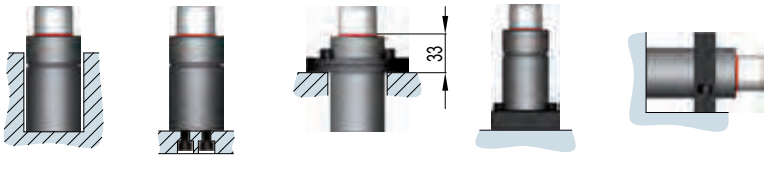


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 50·FSC 50 | FB 45·FB 50 | FI 50·FI 50/1

TECAPRES®

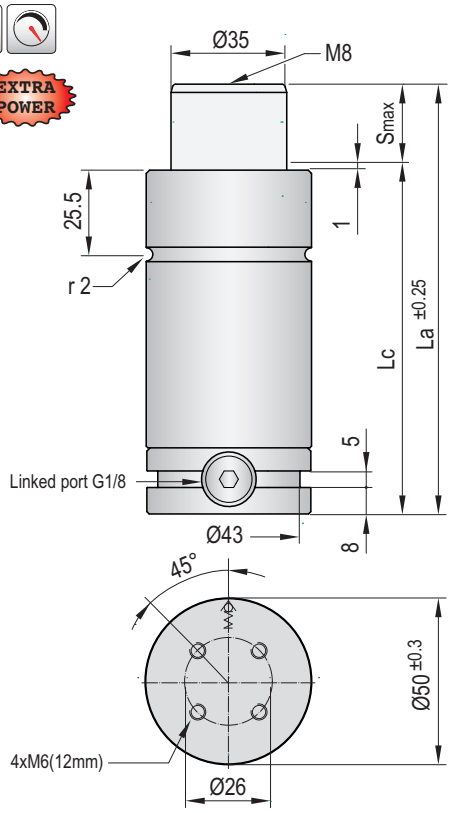
Ø50mm · G1/8 connectable
1700daN

TPH 1700.1 C

VDI SAFETY

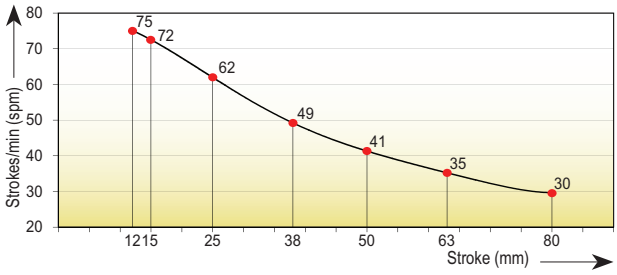
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	9,62 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit HC1700.1

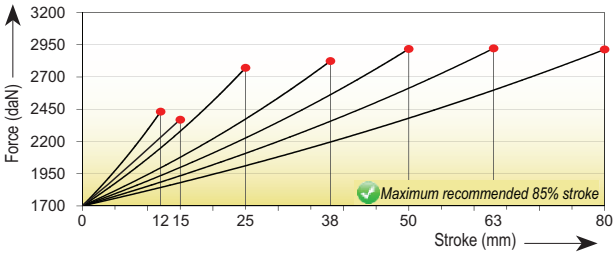
Maximum strokes / minute (at 20ºC)



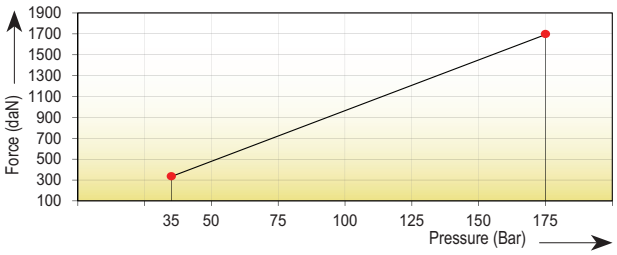
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 1700x12.1 C	12	104	92		2260	2410		0,039	1,12
TPH 1700X15.1 C	15	115	100		2215	2345		0,051	1,16
TPH 1700x25.1 C	25	130	105		2510	2745		0,062	1,21
TPH 1700x25B.1 C	25	135	110	1700 ±5%	2385	2575	175	0,069	1,30
TPH 1700x38.1 C	38	160	122	(20ºC)	2545	2795	(20ºC)	0,092	1,42
TPH 1700x50.1 C	50	185	135		2610	2890		0,115	1,55
TPH 1700x63.1 C	63	215	152		2615	2895		0,145	1,65
TPH 1700x80.1 C	80	255	175		2605	2885		0,185	1,78

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

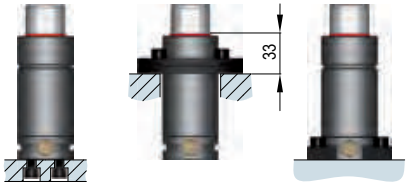


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 50·FSC 50 | FP 50·FPR 50

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

TECAPRES®

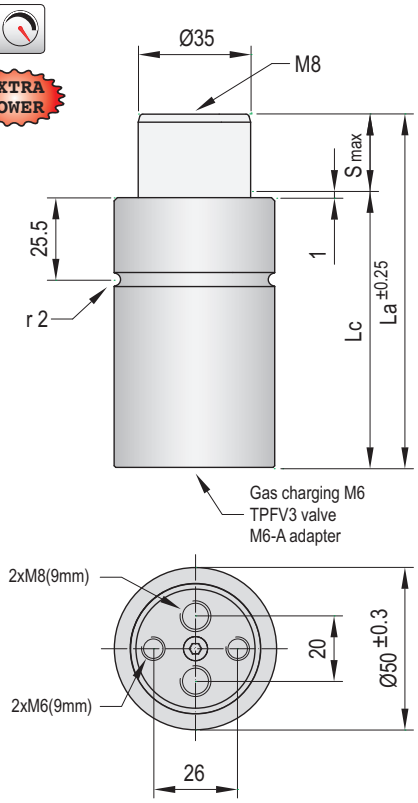
Ø50mm
1925daN

TPH 2000.1

VDI SAFETY

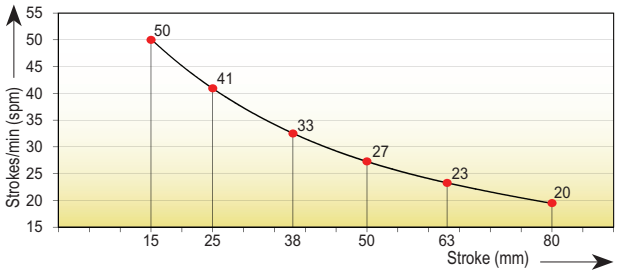
PED 2014/68/UE

EXTRA POWER



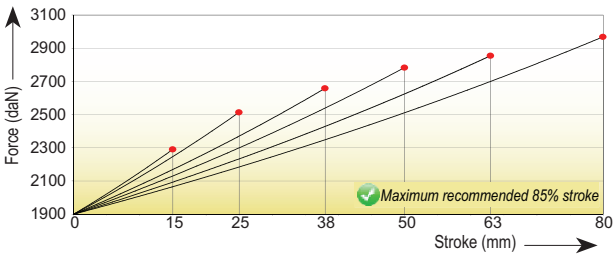
Pressure medium	Nitrogen (N_2)
Max. charging pressure	195 Bar
Min. charging pressure	35 Bar
Rod seal area	9,62 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit H2000.1

Maximum strokes / minute (at 20°C)

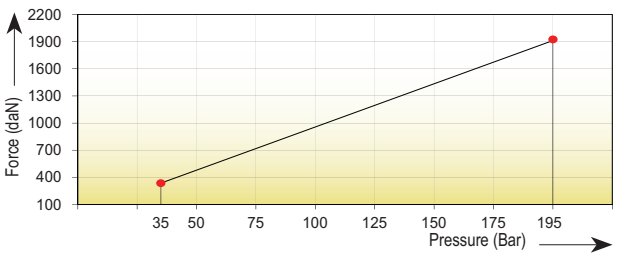


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 2000x15.1	15	115	100		2250	2320		0,085	0,80
TPH 2000x25.1	25	135	110		2430	2545		0,099	1,02
TPH 2000x38.1	38	165	127	1925 ±5%	2540	2690	195	0,128	1,32
TPH 2000x50.1	50	190	140	(20°C)	2635	2820	(20°C)	0,152	1,45
TPH 2000x63.1	63	220	157		2625	2805		0,193	1,55
TPH 2000x80.1	80	255	175		2775	3005		0,214	1,68

Force/stroke ratio

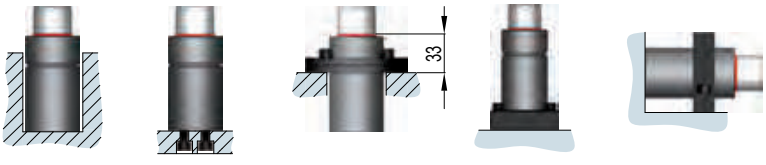


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 50·FSC 50 | FB 45·FB 50 | FI 50·FI 50/1

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

TECAPRES®

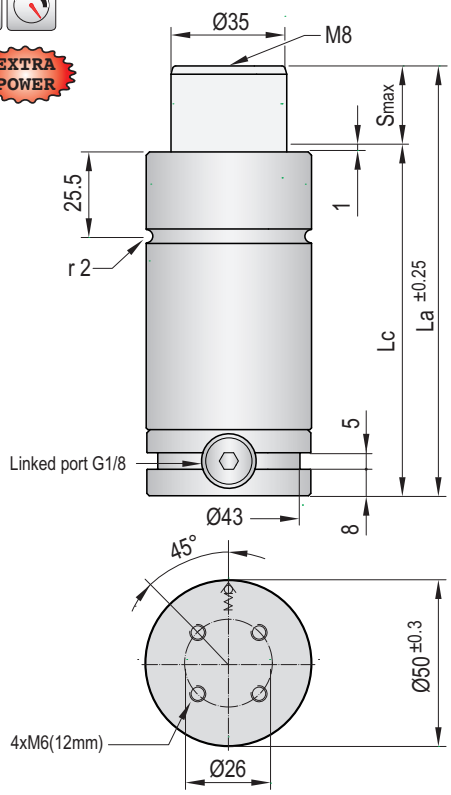
Ø50mm · G1/8 connectable
1925daN

TPH 2000.1C

VDI SAFETY

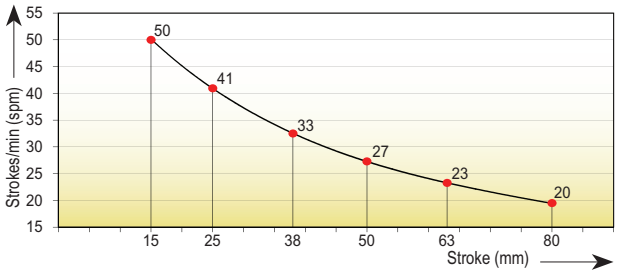
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	195 Bar
Min. charging pressure	35 Bar
Rod seal area	9,62 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit HC2000.1

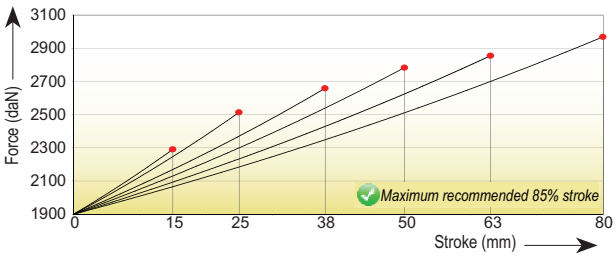
Maximum strokes / minute (at 20°C)



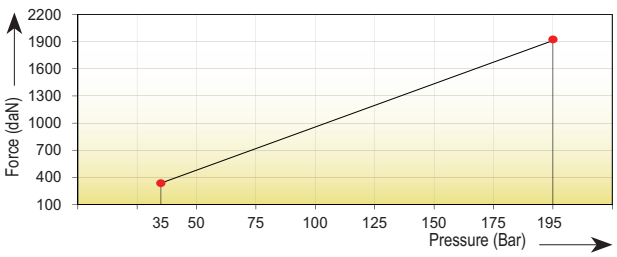
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 2000x15.1 C	15	135	120		2250	2320		0,085	0,95
TPH 2000x25.1 C	25	155	130		2430	2545		0,099	1,22
TPH 2000x38.1 C	38	185	147	1925 ±5%	2540	2690	195	0,128	1,52
TPH 2000x50.1 C	50	210	160	(20°C)	2635	2820	(20°C)	0,152	1,65
TPH 2000x63.1 C	63	240	177		2625	2805		0,193	1,75
TPH 2000x80.1 C	80	275	195		2775	3005		0,214	1,88

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

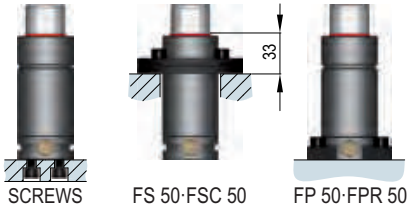


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 50·FSC 50 | FP 50·FPR 50

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

TECAPRES®

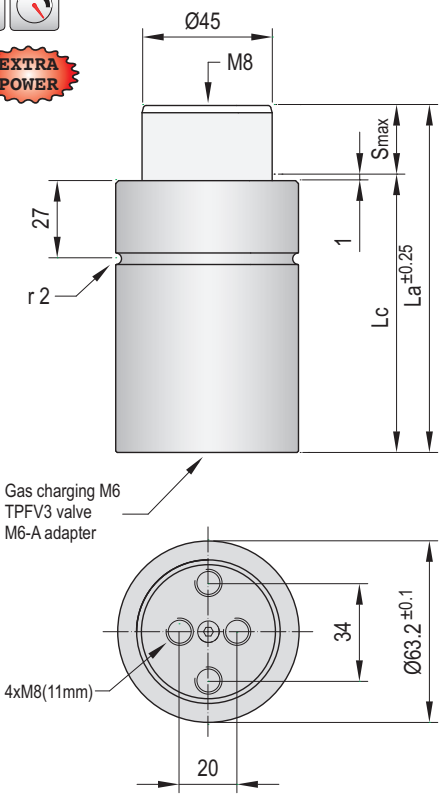
Ø63mm 2800daN

TPH 2800.1

VDI SAFETY

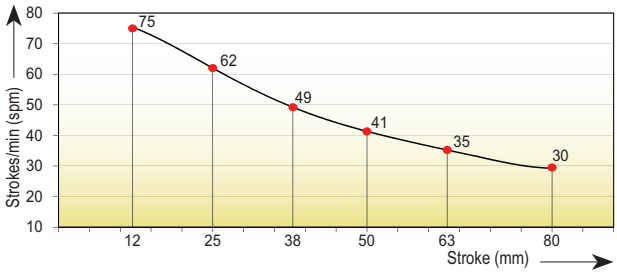
PED 2014/68/UE

EXTRA POWER



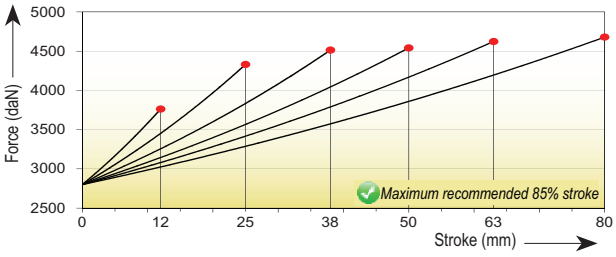
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit H2800.1

Maximum strokes / minute (at 20°C)

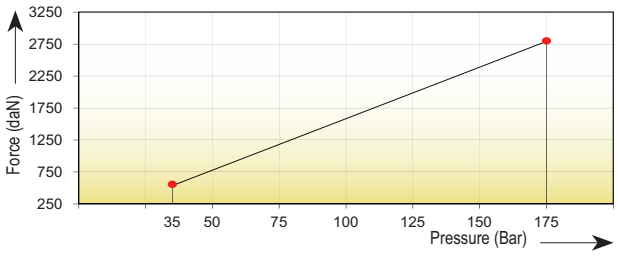


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 2800x12.1	12	94	82		3555	3740		0,075	1,31
TPH 2800x25.1	25	120	95		3980	4305		0,112	1,52
TPH 2800x38.1	38	150	112	2800 ±5%	4110	4485	175	0,159	1,85
TPH 2800x50.1	50	175	125	(20°C)	4130	4515	(20°C)	0,207	1,97
TPH 2800x63.1	63	210	147		4185	4595		0,254	2,05
TPH 2800x80.1	80	250	170		4225	4650		0,317	2,22

Force/stroke ratio



Initial force/charging pressure ratio

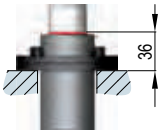


Assembly possibilities

Follow guidelines Page 287

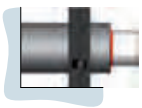

DROP-IN


SCREWS



FS 63
FSC 63·FSC 63/1


FB 50·FB 63


FI 63/1

TECAPRES®

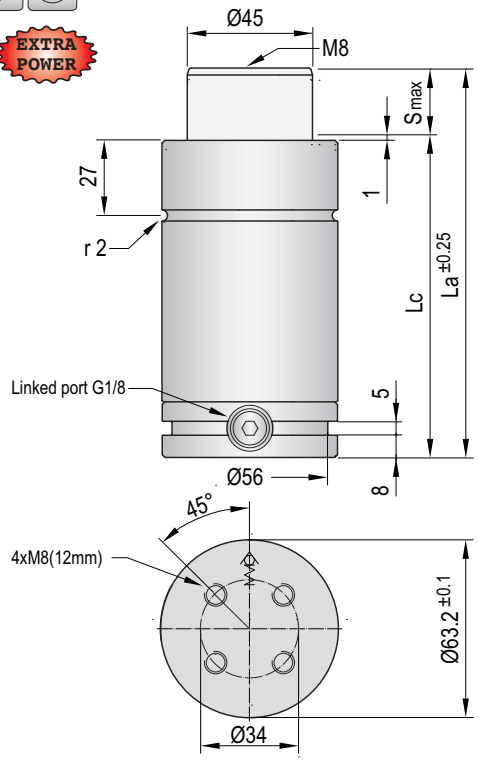
Ø63mm · G1/8 connectable
2800daN

TPH 2800.1 C

VDI SAFETY

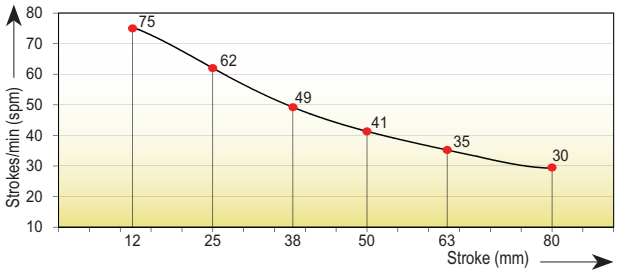
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit HC2800.1

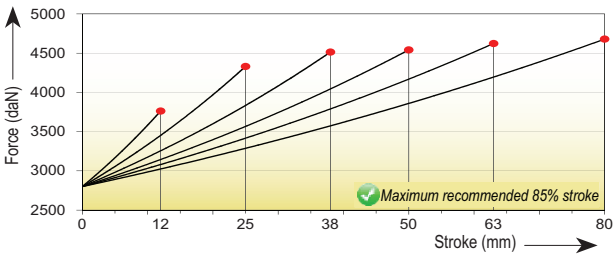
Maximum strokes / minute (at 20°C)



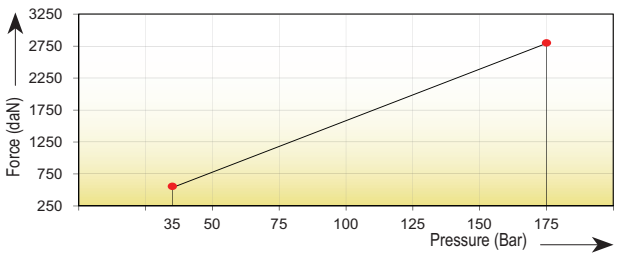
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 2800x12.1 C	12	114	102		3555	3740		0,075	1,41
TPH 2800x25.1 C	25	140	115		3980	4305		0,112	1,92
TPH 2800x38.1 C	38	170	132	2800 ±5%	4110	4485	175	0,159	2,35
TPH 2800x50.1 C	50	195	145	(20°C)	4130	4515	(20°C)	0,207	2,37
TPH 2800x63.1 C	63	230	167		4185	4595		0,254	2,45
TPH 2800x80.1 C	80	270	190		4225	4650		0,317	2,62

Attention!
This model can only be pressurised through a control panel. It is supplied without pressure.

Force/stroke ratio

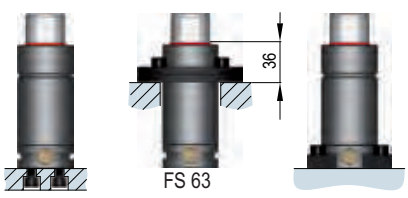


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 63 FSC 63·FSC 63/1 | FP 63·FPR 63

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

TECAPRES®

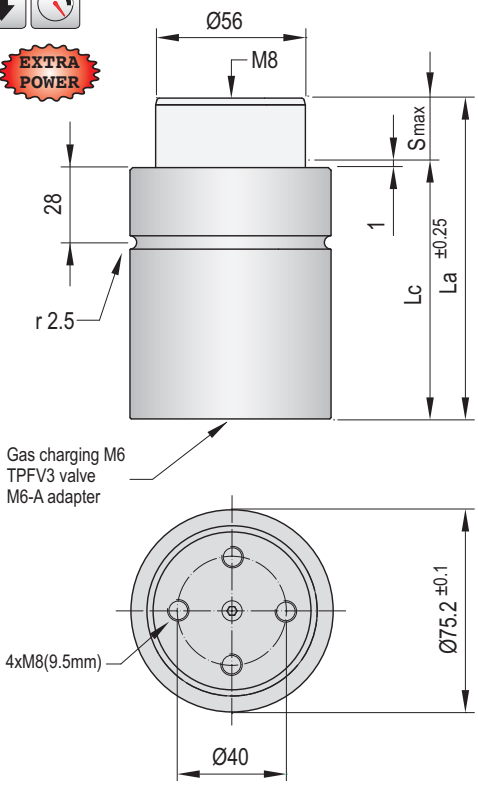
Ø75mm 4300daN

TPH 4300.1

VDI SAFETY

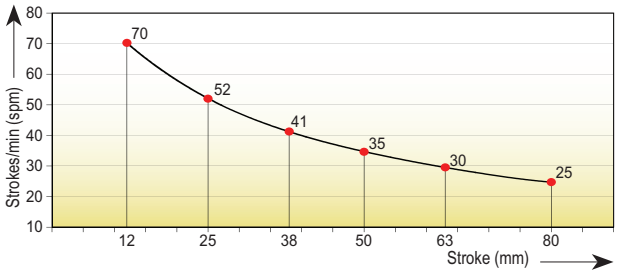
PED 2014/68/UE

EXTRA POWER



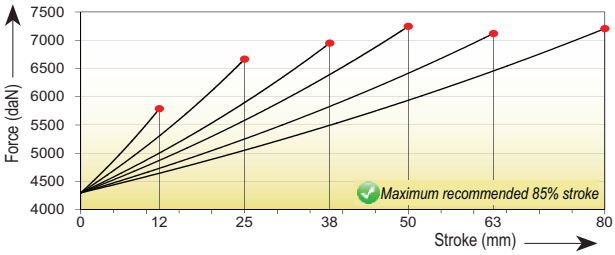
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	24,63 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit H4300.1

Maximum strokes / minute (at 20°C)

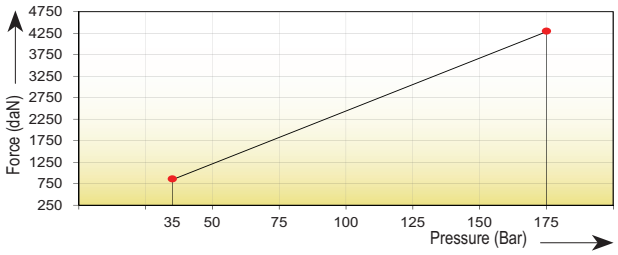


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 4300x12.1	12	94	82		5515	5800		0,115	1,82
TPH 4300x25.1	25	120	95		6170	6680		0,174	2,10
TPH 4300x38.1	38	150	112	4300 ±5%	6375	6965	175	0,246	2,42
TPH 4300x50.1	50	175	125	(20°C)	6585	7265	(20°C)	0,303	2,61
TPH 4300x63.1	63	210	147		6500	7135		0,392	2,70
TPH 4300x80.1	80	250	170		6560	7225		0,489	3,05

Force/stroke ratio

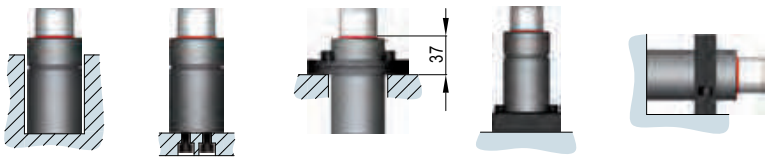


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FB 75 | FI 75·FI 75/1

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

TECAPRES®

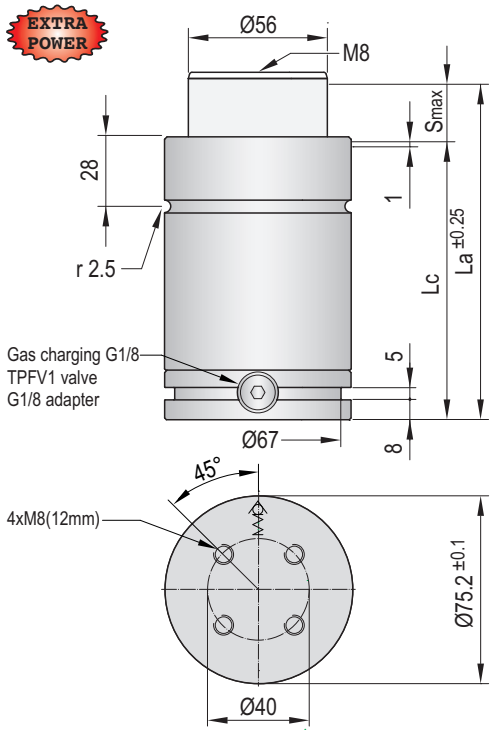
Ø75mm · G1/8 connectable
4300daN

TPH 4300.1C

VDI SAFETY

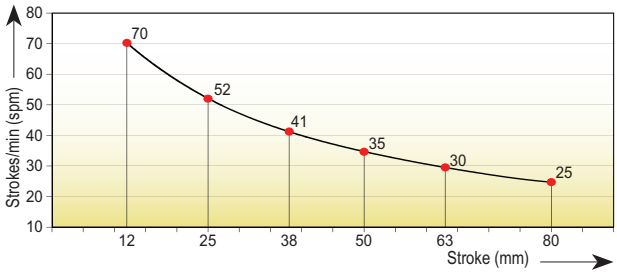
PED 2014/68/UE

EXTRA POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	24,63 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit HC4300.1

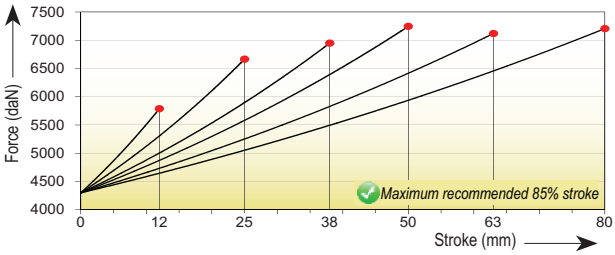
Maximum strokes / minute (at 20°C)



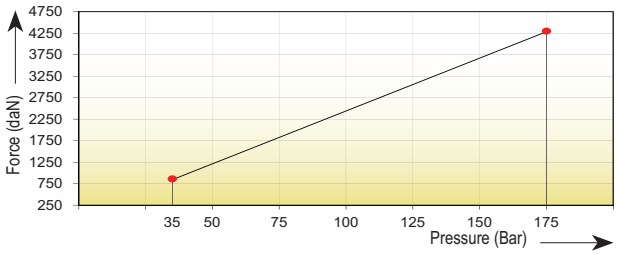
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPH 4300x12.1 C	12	114	102		5515	5800		0,115	2,32
TPH 4300x25.1 C	25	140	115		6170	6680		0,174	2,60
TPH 4300x38.1 C	38	170	132	4300 ±5%	6375	6965	175	0,246	2,92
TPH 4300x50.1 C	50	195	145	(20°C)	6585	7265	(20°C)	0,303	3,11
TPH 4300x63.1 C	63	230	167		6500	7135		0,392	3,20
TPH 4300x80.1 C	80	270	190		6560	7225		0,489	4,05

Attention!
This model is designed to work in a hose system.

Force/stroke ratio

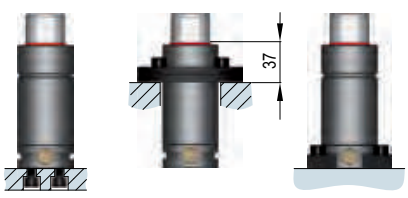


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 75·FSC 75 | FP 75·FPR 75

Connection alternatives

RMF-D1 | RMF-T + RMF-D1(2x)

RMF-C + RMF-D1 | RMF-L + RMF-D1(2x)

PED 2014/68/UE

ISO

VDI

CNOMO

ISO gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY			ISO STANDARD
TPS 32.2	32	10 - 125	200	√	√			√
TPS 250.2	38	10 - 125	250	√	√	√	√	√
TPS 500.2	45	10 - 160	470	√	√	√	√	√
TPS 750	50	13 - 300	740	√	√	√	√	√
TPS 1500.2	75	13 - 300	1500	√	√	√	√	√
TPS 3000.1	95	25 - 300	3000	√	√	√	√	√
TPS 5000	120	25 - 300	5000	√	√	√	√	√
TPS 7500	150	25 - 300	7500	√	√	√	√	√
TPS 10000	195	25 - 200	10000	√	√	√		√

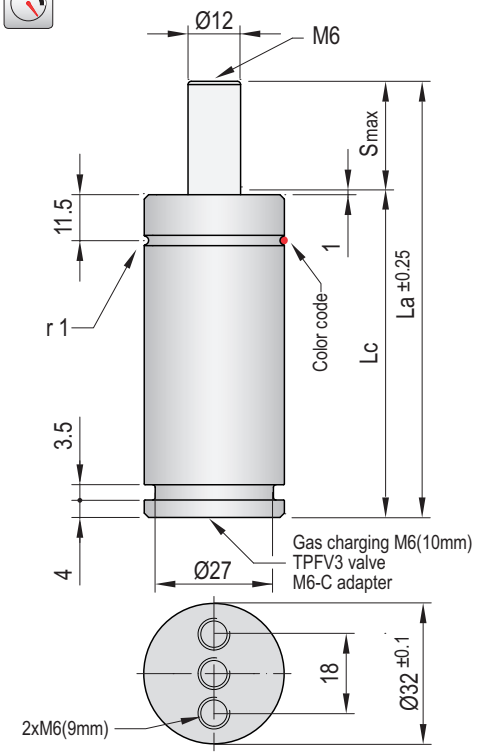
TECAPRES®

Ø32mm
200daN

TPS 32.2

VDI SAFETY

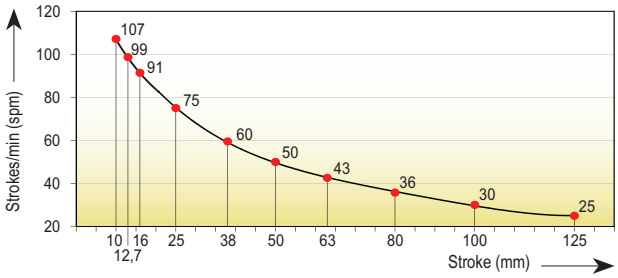
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S32.2

ISO 11901 · VDI 3003 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPS 32x10.2	10	70	60	0,006	0,30
TPS 32x13.2	12,7	75,4	62,7	0,007	0,32
TPS 32x16.2	16	82	66	0,008	0,33
TPS 32x25.2	25	100	75	0,011	0,37
TPS 32x38.2	38	126	88	0,015	0,42
TPS 32x50.2	50	150	100	0,019	0,47
TPS 32x63.2	63	177	114	0,024	0,52
TPS 32x80.2	80	210	130	0,030	0,60
TPS 32x100.2	100	250	150	0,037	0,75
TPS 32x125.2	125	300	175	0,045	0,85

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 65	45
BL *(Blue)*	100 (±10)	≈ 135	90
RD *(Red)*	150 (±15)	≈ 200	135
YW *(Yellow)*	200 (±20)	≈ 260	175
(Other forces)	28 - 200	≈ 40 - 200	25 - 175

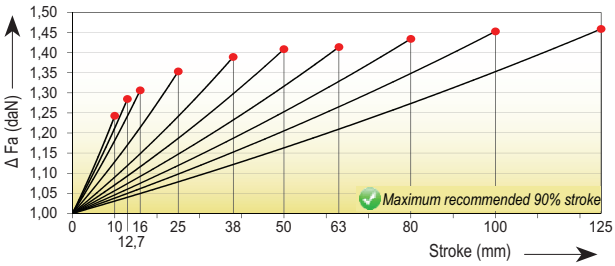
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

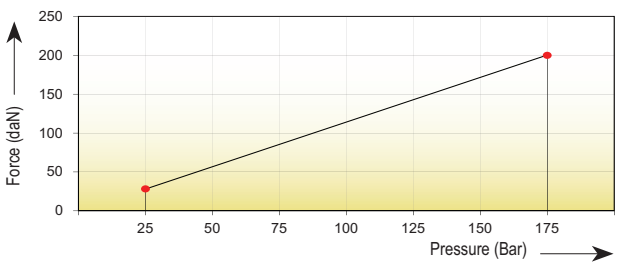
TPS 32 x **63.2** **RD**

Model · Stroke · Color code

Force/stroke ratio

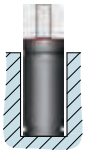


Initial force/charging pressure ratio

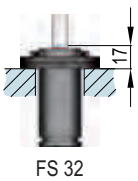


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



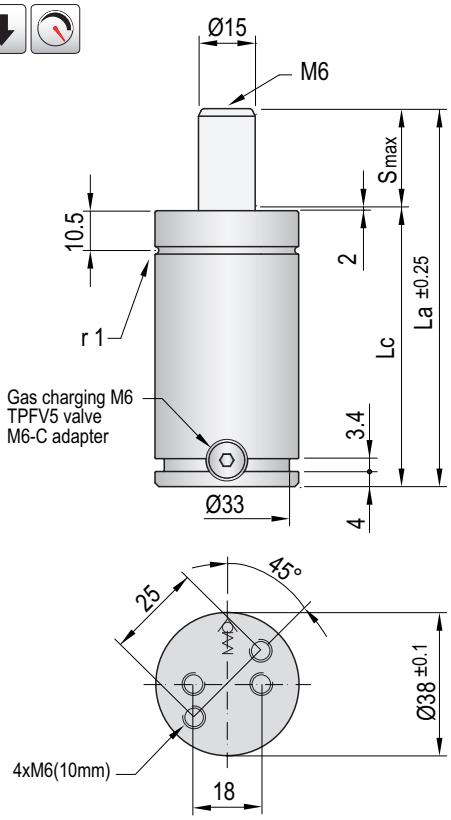
FS 32
FS 32/1·FSC 32


FP 32·FPR 32


FI 32·FI 32/1

VDI SAFETY

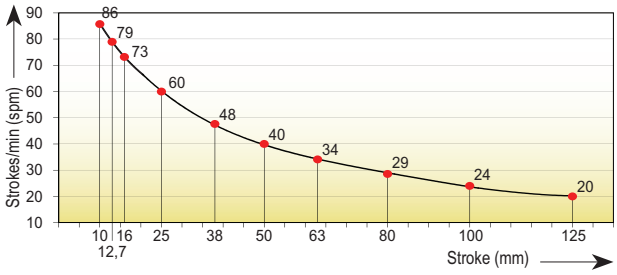
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	1,77 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S250.2

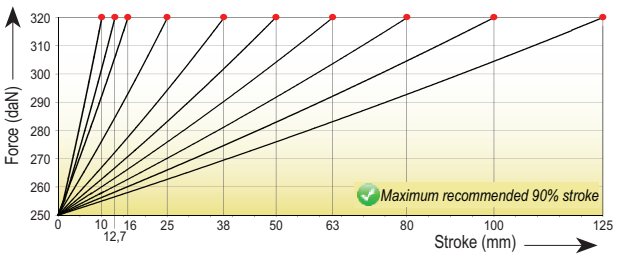
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

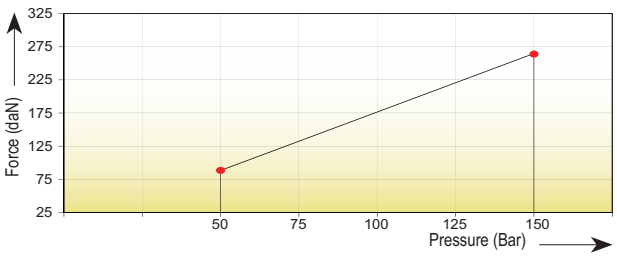


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 250x10.2	10	70	60		315	320		0,012	0,43
TPS 250x13.2	12,7	75,4	62,7		310	320		0,014	0,44
TPS 250x16.2	16	82	66		310	320		0,017	0,46
TPS 250x25.2	25	100	75		310	320		0,024	0,51
TPS 250x38.2	38	126	88	250 ±5%	310	320	142	0,035	0,59
TPS 250x50.2	50	150	100	(20ºC)	310	320	(20ºC)	0,044	0,66
TPS 250x63.2	63	177	114		310	320		0,055	0,73
TPS 250x80.2	80	210	130		310	320		0,068	0,83
TPS 250x100.2	100	250	150		310	320		0,085	0,96
TPS 250x125.2	125	300	175		310	320		0,105	1,05

Force/stroke ratio



Initial force/charging pressure ratio

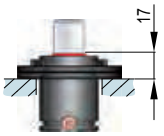


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 38·FSC 38


FP 38·FPR 38


FI 38·FI 38/1

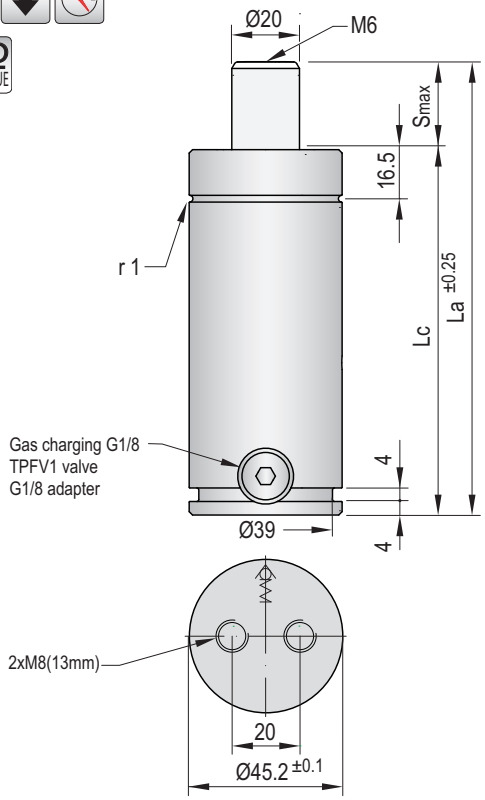
TECAPRES®

Ø45mm 470daN

TPS 500.2

VDI SAFETY

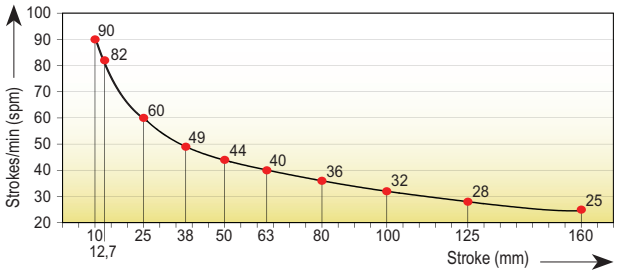
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit S500.2

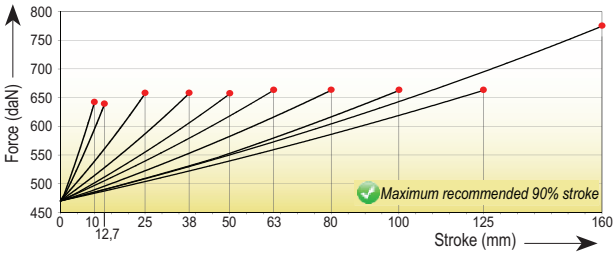
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20°C)

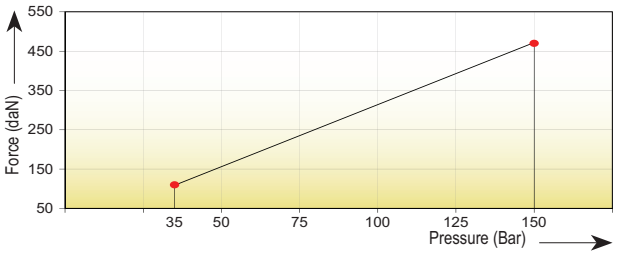


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 500x10.2	10	105	95		620	645		0,016	0,43
TPS 500x13.2	12,7	110,4	97,7		620	645		0,019	0,44
TPS 500x25.2	25	135	110		630	655		0,032	0,46
TPS 500x38.2	38	161	123		630	655		0,046	0,51
TPS 500x50.2	50	185	135	470 ±5%	630	655	150	0,060	0,59
TPS 500x63.2	63	212	149	(20°C)	635	660	(20°C)	0,074	0,66
TPS 500x80.2	80	245	165		635	660		0,092	0,73
TPS 500x100.2	100	285	185		635	660		0,114	0,83
TPS 500x125.2	125	335	210		635	660		0,142	0,96
TPS 500x160.2	160	405	245		725	775		0,133	1,05

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN · SCREWS · FS 45·FSC 45 · FP 45·FPR 45 · FB 45 · FRS 45 · FI 45·FI 45/1

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

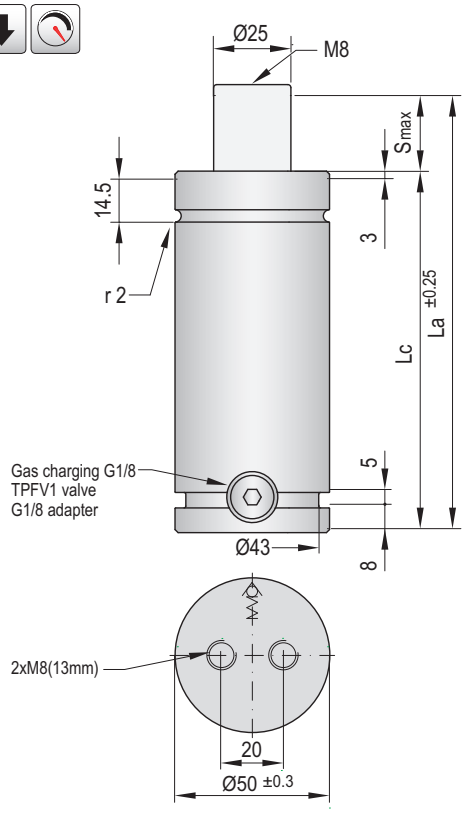
TECAPRES®

Ø50mm
740daN

TPS 750

VDI SAFETY

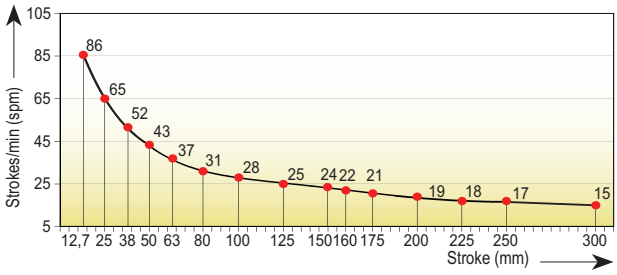
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S750

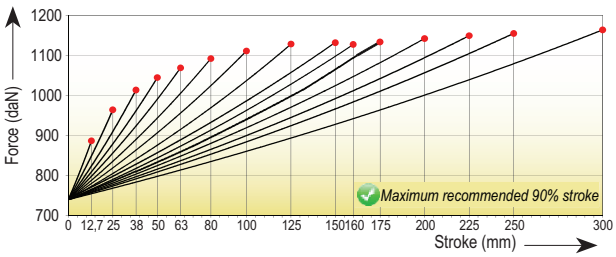
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

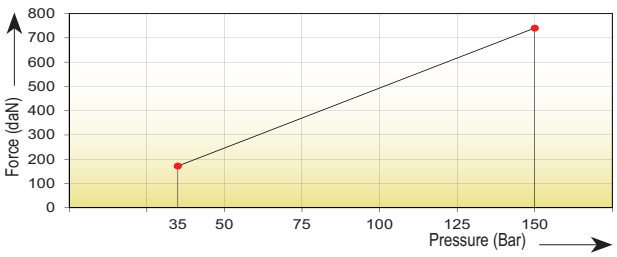


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 750x13	12,7	120,4	107,7		865	880		0,037	1,20
TPS 750x25	25	145	120		930	960		0,053	1,35
TPS 750x38	38	171	133		975	1010		0,069	1,40
TPS 750x50	50	195	145		1000	1040		0,084	1,52
TPS 750x63	63	222	159		1020	1065		0,101	1,70
TPS 750x80	80	255	175		1035	1085		0,122	1,82
TPS 750x100	100	295	195		1055	1105		0,147	1,85
TPS 750x125	125	345	220	740 ±5% (20ºC)	1065	1120	150 (20ºC)	0,178	2,20
TPS 750X150	150	395	245		1075	1135		0,210	2,25
TPS 750X160	160	415	255		1065	1120		0,229	2,30
TPS 750X175	175	445	270		1070	1130		0,248	2,65
TPS 750X200	200	495	295		1080	1135		0,279	3,10
TPS 750X225	225	545	320		1085	1145		0,310	3,27
TPS 750X250	250	595	345		1090	1150		0,342	3,60
TPS 750X300	300	695	395		1095	1160		0,405	4,15

Force/stroke ratio

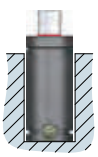


Initial force/charging pressure ratio

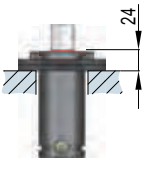


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 50·FSC 50


FP 50·FPR 50


FB 45·FB 50


FRS 50


FI 50·FI 50/1

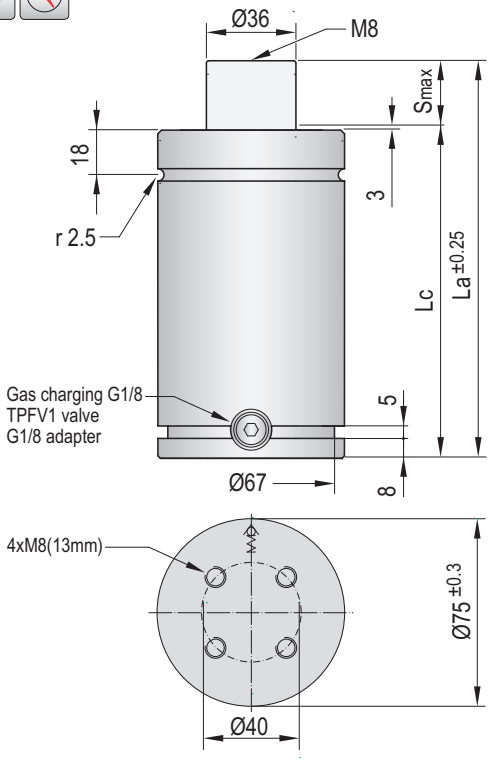
TECAPRES®

Ø75mm 1500daN

TPS 1500.2

VDI SAFETY

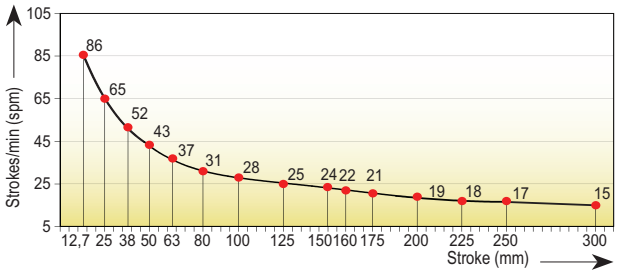
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit S1500.2

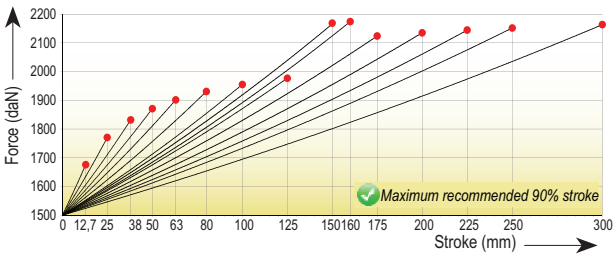
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20°C)

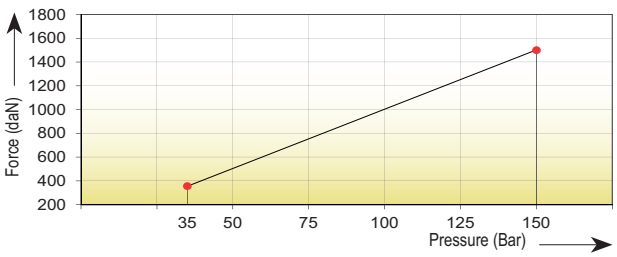


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 1500x13.2	12,7	135,4	122,7		1665	1685		0,123	3,15
TPS 1500x25.2	25	160	135		1745	1780		0,167	3,30
TPS 1500x38.2	38	186	148		1800	1840		0,214	3,50
TPS 1500x50.2	50	210	160		1835	1880		0,257	3,65
TPS 1500x63.2	63	237	174		1860	1910		0,304	3,90
TPS 1500x80.2	80	270	190		1885	1940		0,365	4,45
TPS 1500x100.2	100	310	210		1905	1965		0,437	4,80
TPS 1500x125.2	125	360	235	1500 ±5% (20°C)	1925	1985	148 (20°C)	0,494	5,36
TPS 1500X150.2	150	410	260		2090	2180		0,530	5,80
TPS 1500x160.2	160	430	270		2090	2185		0,540	6,10
TPS 1500x175.2	175	460	285		2050	2135		0,606	6,55
TPS 1500x200.2	200	510	310		2060	2145		0,684	7,15
TPS 1500x225.2	225	560	335		2065	2155		0,762	7,45
TPS 1500x250.2	250	610	360		2070	2160		0,840	7,86
TPS 1500x300.2	300	710	410		2080	2175		0,996	8,66

Force/stroke ratio

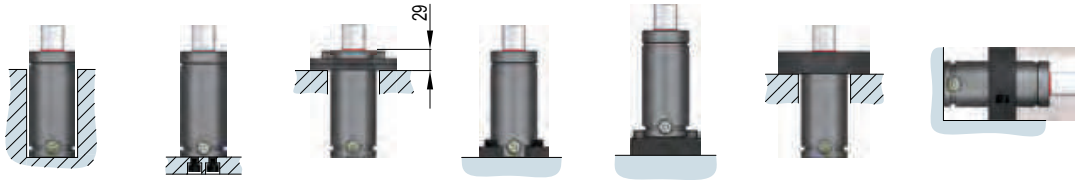


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 75·FSC 75 · FP 75·FPR 75 · FB 75 · FRS 75 · FI 75·FI 75/1

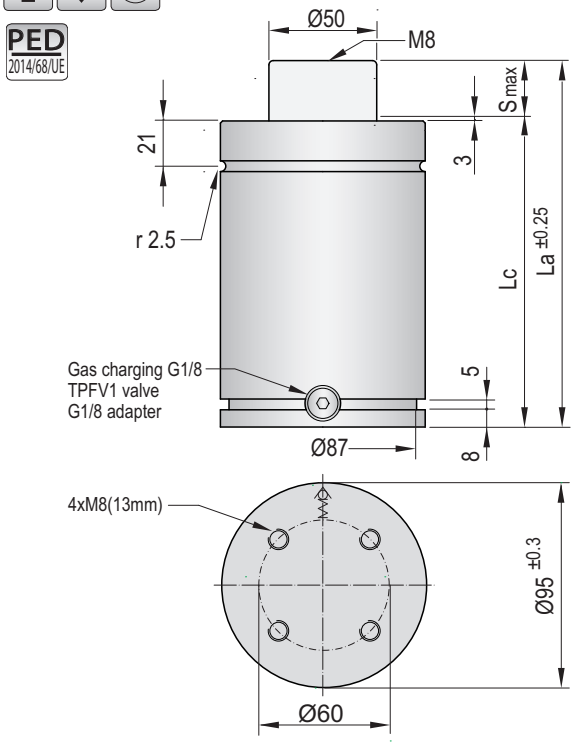
TECAPRES®

Ø95mm 3000daN

TPS 3000.1

VDI SAFETY

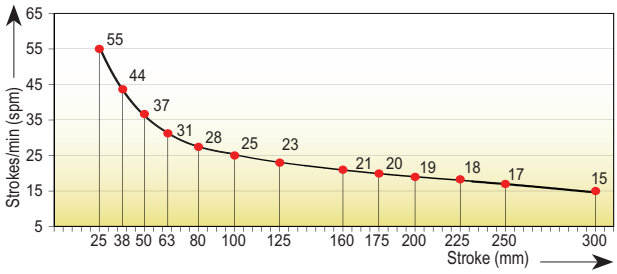
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S3000.1

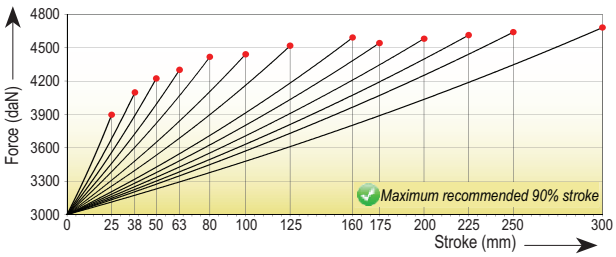
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

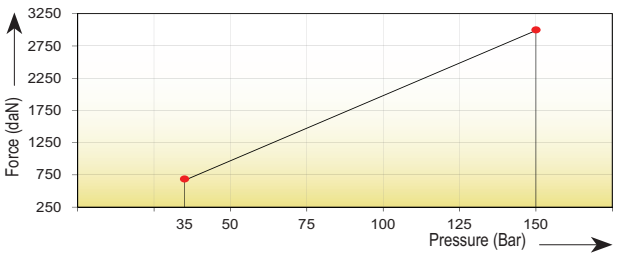


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 3000x25.1	25	170	145		3790	3900		0,213	5,75
TPS 3000x38.1	38	196	158		3960	4105		0,279	6,15
TPS 3000x50.1	50	220	170		4065	4230		0,339	6,53
TPS 3000x63.1	63	247	184		4045	4220		0,409	6,91
TPS 3000x80.1	80	280	200		4225	4420		0,490	7,25
TPS 3000x100.1	100	320	220		4245	4445		0,605	8,00
TPS 3000x125.1	125	370	245	3000 ±5% (20ºC)	4305	4520	150 (20ºC)	0,731	8,15
TPS 3000x160.1	160	440	280		4365	4595		0,907	9,24
TPS 3000x175.1	175	470	295		4325	4545		1,013	9,60
TPS 3000x200.1	200	520	320		4355	4585		1,138	10,31
TPS 3000x225.1	225	570	345		4385	4620		1,264	11,36
TPS 3000x250.1	250	620	370		4405	4645		1,390	11,90
TPS 3000x300.1	300	720	420		4440	4685		1,641	14,87

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN · SCREWS · FS 95·FSC 95 · FP 95·FPR 95 · FB 95 · FRS 95 · FI 95·FI 95/1

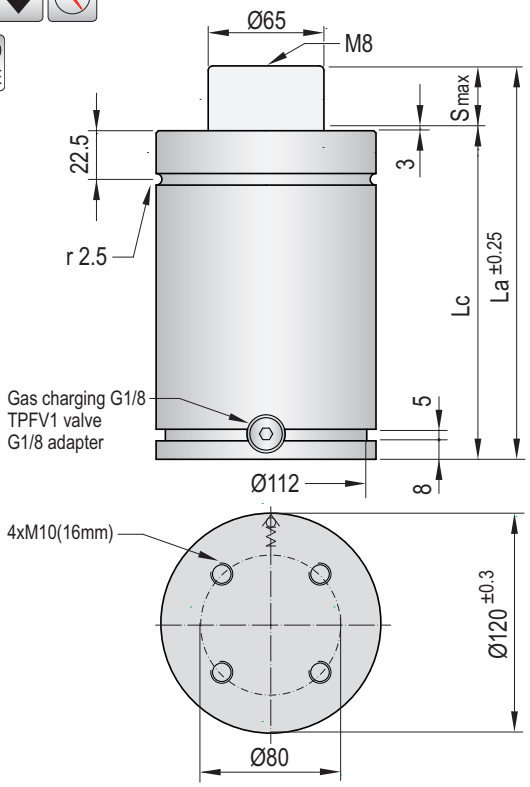
TECAPRES®

Ø120mm 5000daN

TPS 5000

VDI SAFETY

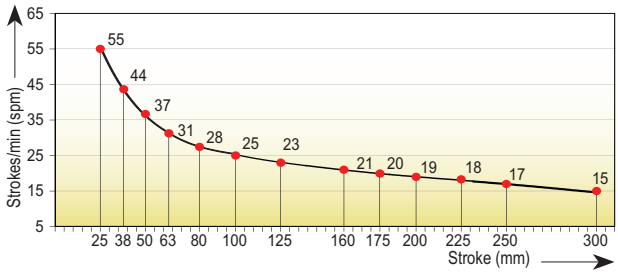
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	33,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S5000

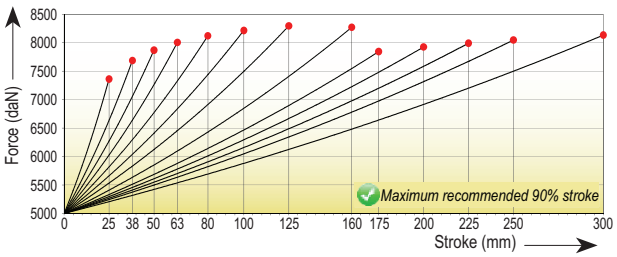
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20ºC)

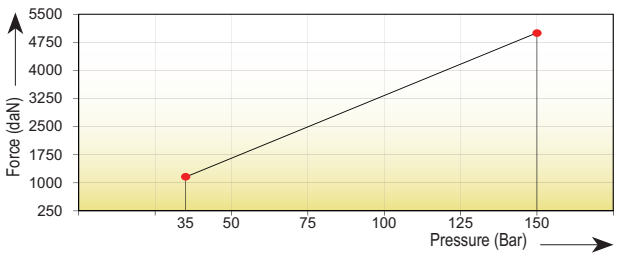


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 5000x25	25	190	165		7000	7330		0,258	12,01
TPS 5000x38	38	216	178		7265	7655		0,361	12,85
TPS 5000x50	50	240	190		7410	7835		0,455	13,60
TPS 5000x63	63	267	204		7515	7970		0,557	14,50
TPS 5000x80	80	300	220		7610	8085		0,690	15,39
TPS 5000x100	100	340	240		7685	8180		0,847	16,48
TPS 5000x125	125	390	265	5000 ±5% (20ºC)	7750	8260	150 (20ºC)	1,044	18,05
TPS 5000x160	160	460	300		7730	8235		1,342	19,83
TPS 5000x175	175	490	315		7390	7810		1,601	20,11
TPS 5000x200	200	540	340		7455	7890		1,798	21,70
TPS 5000x225	225	590	365		7505	7955		1,994	22,60
TPS 5000x250	250	640	390		7550	8010		2,191	23,85
TPS 5000x300	300	740	440		7620	8100		2,583	25,60

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN · SCREWS · FS 120·FSC 120 · FP 120·FPR 120 · FB 120 · FRS 120 · FI 120·FI 120/1

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

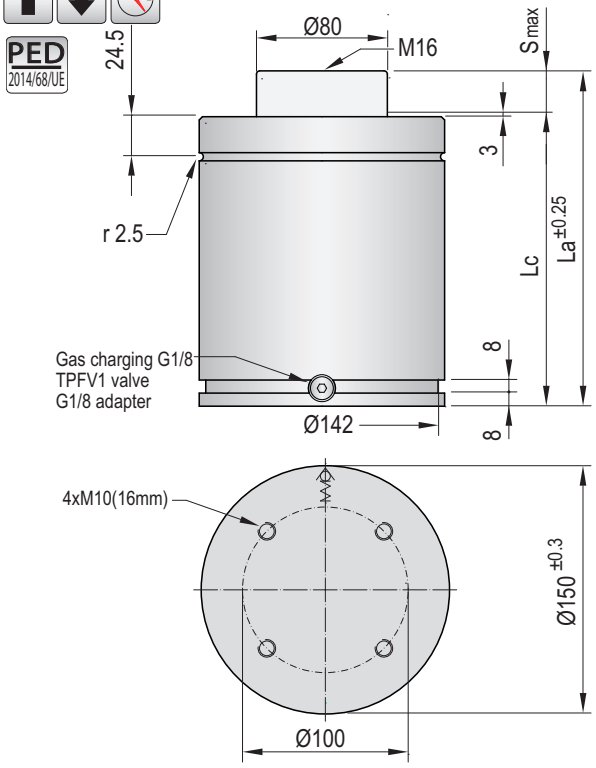
TECAPRES®

Ø150mm
7500daN

TPS 7500

VDI SAFETY

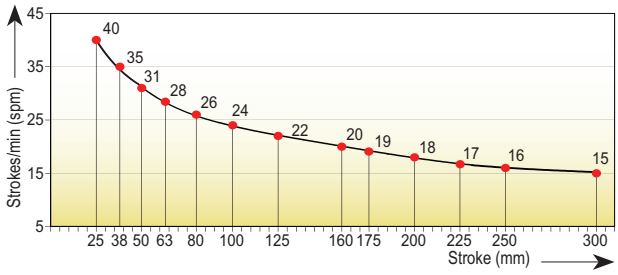
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	50,27 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit S7500

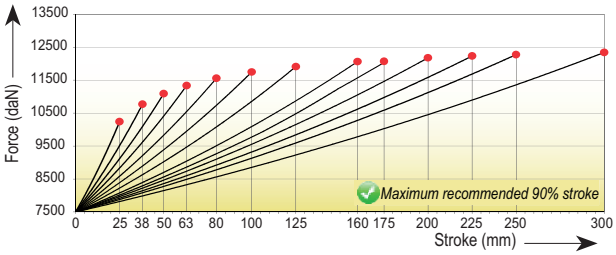
VDI 3003 · ISO 11901 · E.24.54.815.G

Maximum strokes / minute (at 20°C)

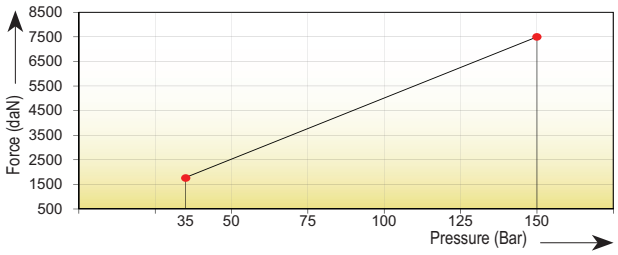


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 7500x25	25	205	180	7500 ±5% (20°C)	9935	10295	150 (20°C)	0,469	19,50
TPS 7500x38	38	231	193		10375	10830		0,629	20,60
TPS 7500x50	50	255	205		10640	11150		0,776	21,50
TPS 7500x63	63	282	219		10845	11400		0,936	22,30
TPS 7500x80	80	315	235		11030	11625		1,144	23,70
TPS 7500x100	100	355	255		11180	11815		1,390	25,40
TPS 7500x125	125	405	280		11310	11975		1,697	27,00
TPS 7500x160	160	475	315		11430	12130		2,126	30,60
TPS 7500x175	175	505	330		11470	12175		2,310	31,40
TPS 7500x200	200	555	355		11525	12245		2,617	37,40
TPS 7500x225	225	605	380		11565	12295		2,924	35,60
TPS 7500x250	250	655	405		11600	12340		3,230	37,40
TPS 7500x300	300	755	455		11655	12405		3,844	40,10

Force/stroke ratio

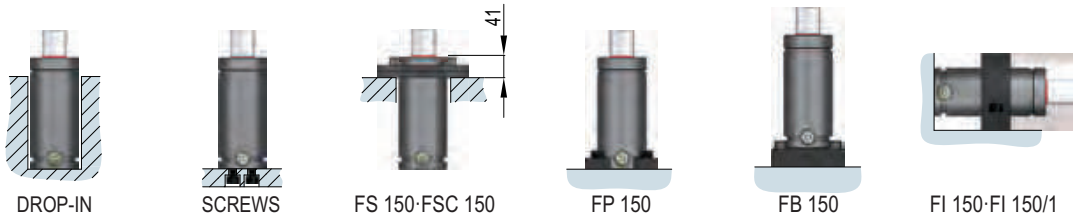


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 150·FSC 150 · FP 150 · FB 150 · FI 150·FI 150/1

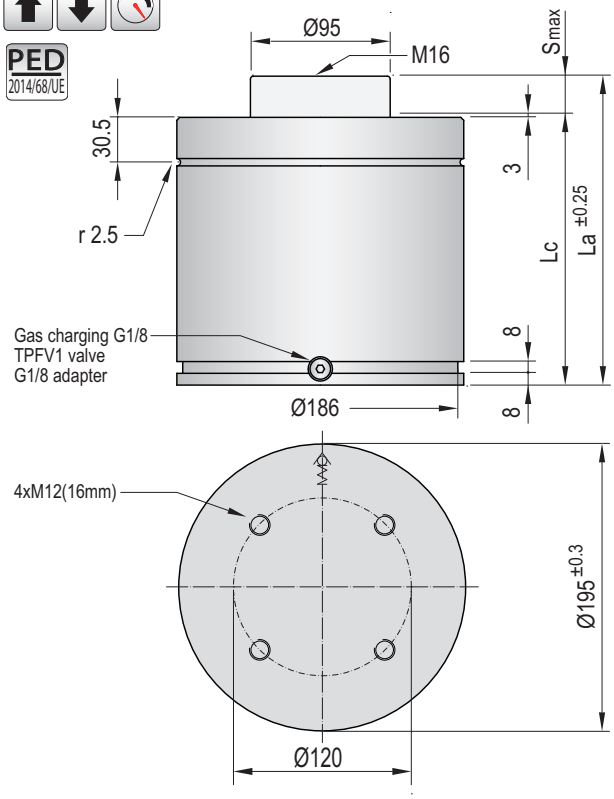
TECAPRES®

Ø195mm
10000daN

TPS 10000

VDI SAFETY

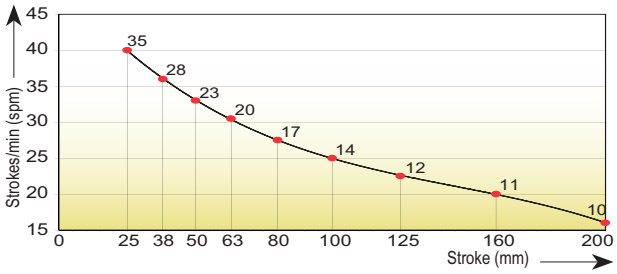
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	70,88 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit S10000

VDI 3003 · ISO 11901 · E.24.54.815.G

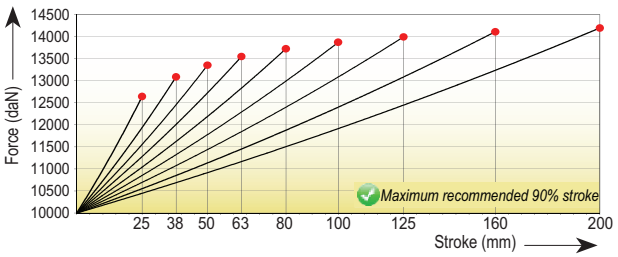
Maximum strokes / minute (at 20ºC)



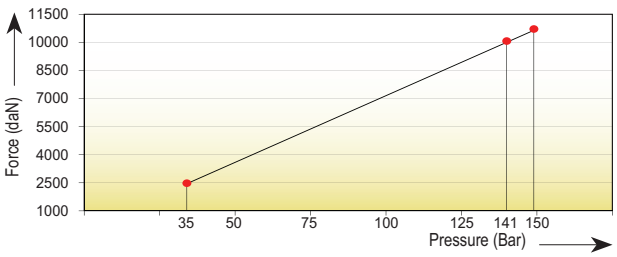
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPS 10000x25	25	210	185	10000 ±5% (20ºC)	12310	12635	141 (20ºC)	0,848	35,60
TPS 10000x38	38	236	198		12690	13085		1,141	37,30
TPS 10000x50	50	260	210		12910	13345		1,412	39,10
TPS 10000x63	63	287	224		13075	13540		1,705	41,20
TPS 10000x80	80	320	240		13225	13720		2,089	43,50
TPS 10000x100	100	360	260		13345	13865		2,540	46,10
TPS 10000x125	125	410	285		13450	13985		3,104	50,50
TPS 10000x160	160	480	320		13545	14100		3,894	55,90
TPS 10000x200	200	560	360		13615	14190		4,797	61,30

(Other strokes under order)

Force/stroke ratio



Initial force/charging pressure ratio

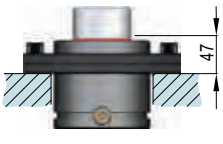


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FSC 195


FP 195


FB 195

PED 2014/68/UE

ISO

VDI

ISO POWER

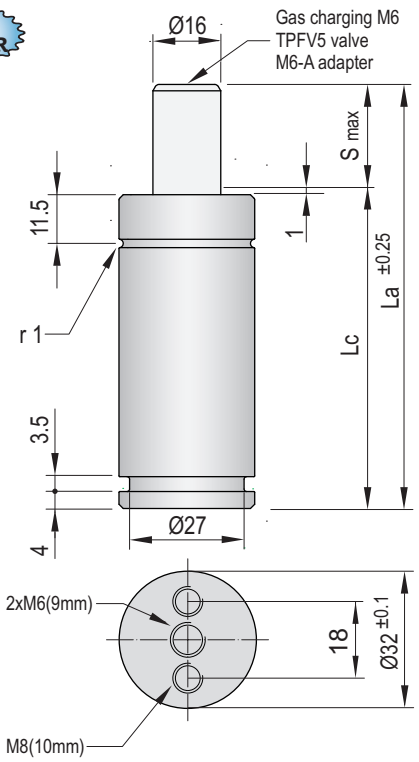
Powered ISO gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY			ISO STANDARD
TPSP 300.1	32	10 - 125	300	√	√		√	
TPSP 500.1	38	10 - 125	470	√	√	√	√	
TPSP 750	45	13 - 200	740	√	√	√	√	
TPSP 1000.1	50	13 - 300	920	√	√	√	√	√
TPSP 1500	63	13 - 200	1500	√	√	√	√	
TPSP 2400	75	25 - 300	2400	√	√	√	√	√
TPSP 4200	95	25 - 300	4200	√	√	√	√	√
TPSP 6600	120	25 - 300	6600	√	√	√	√	√
TPSP 9500	150	25 - 300	9500	√	√	√	√	√
TPSP 20000	195	25 - 200	20000	√	√	√		

VDI SAFETY

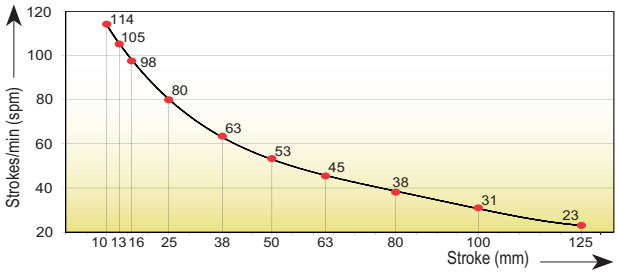
PED 2014/68/UE

ISO POWER



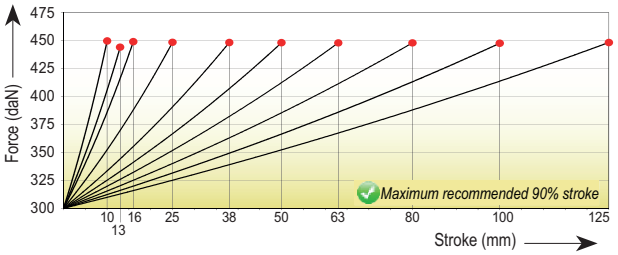
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP300.2

Maximum strokes / minute (at 20ºC)

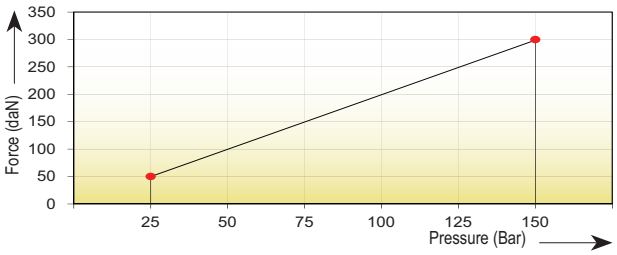


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 300x10.1	10	70	60		430	450		0,006	0,31
TPSP 300x13.1	13	75,4	62,7		425	445		0,008	0,33
TPSP 300x16.1	16	82	66		430	450		0,010	0,34
TPSP 300x25.1	25	100	75		430	450		0,015	0,38
TPSP 300x38.1	38	126	88	300 ±5%	430	450	150	0,023	0,43
TPSP 300x50.1	50	150	100	(20ºC)	430	450	(20ºC)	0,030	0,48
TPSP 300x63.1	63	176	113		430	450		0,038	0,53
TPSP 300x80.1	80	210	130		430	450		0,049	0,61
TPSP 300x100.1	100	250	150		430	450		0,061	0,77
TPSP 300x125.1	125	300	175		430	450		0,076	0,89

Force/stroke ratio



Initial force/charging pressure ratio

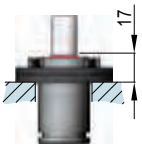


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 32
FS 32/1·FSC 32

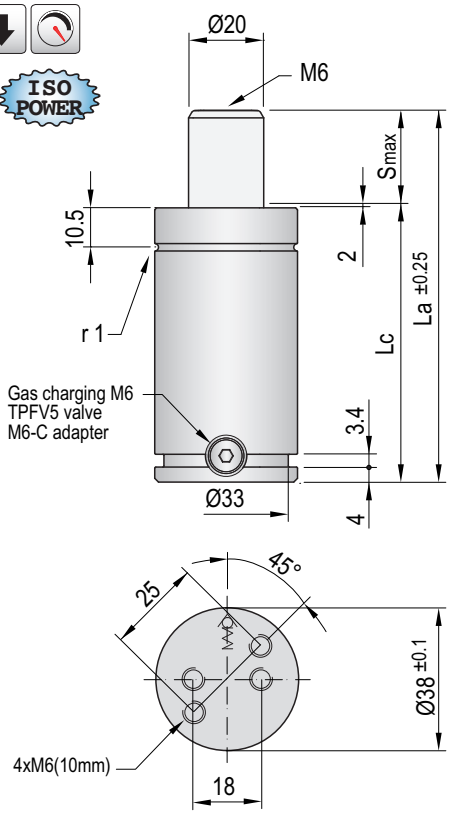

FP 32·FPR 32


FI 32·FI 32/1

VDI SAFETY

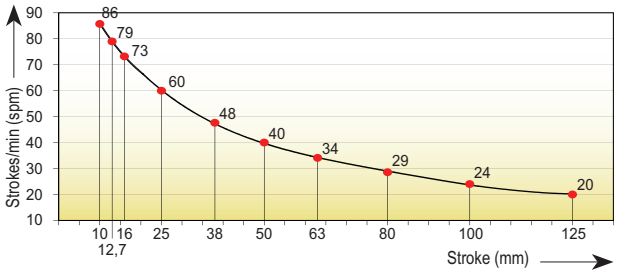
PED 2014/68/UE

ISO POWER



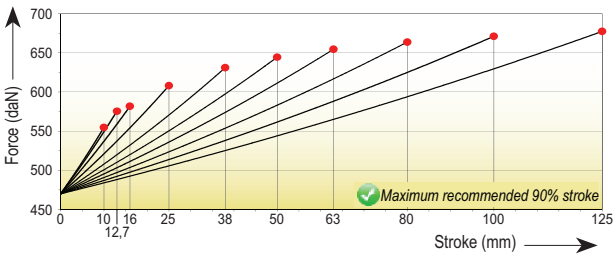
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP500.1

Maximum strokes / minute (at 20ºC)

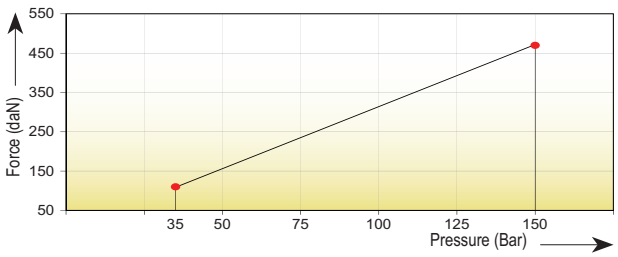


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 500x10.1	10	70	60		545	555		0,021	0,43
TPSP 500x13.1	12,7	75,4	62,7		565	575		0,022	0,44
TPSP 500x16.1	16	82	66		570	585		0,026	0,46
TPSP 500x25.1	25	100	75		590	610		0,035	0,51
TPSP 500x38.1	38	126	88	470 ±5%	610	635	150	0,047	0,59
TPSP 500x50.1	50	150	100	(20ºC)	625	645	(20ºC)	0,058	0,66
TPSP 500x63.1	63	177	114		630	655		0,070	0,73
TPSP 500x80.1	80	210	130		640	665		0,086	0,83
TPSP 500x100.1	100	250	150		645	675		0,105	0,96
TPSP 500x125.1	125	300	175		650	680		0,128	1,05

Force/stroke ratio



Initial force/charging pressure ratio

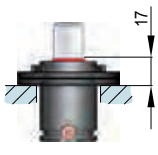


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 38·FSC 38


FP 38·FPR 38


FI 38·FI 38/1

TPSP
TPF
TPK
TPC
TPR
TPB
TPHC
TPA
TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

TECAPRES®

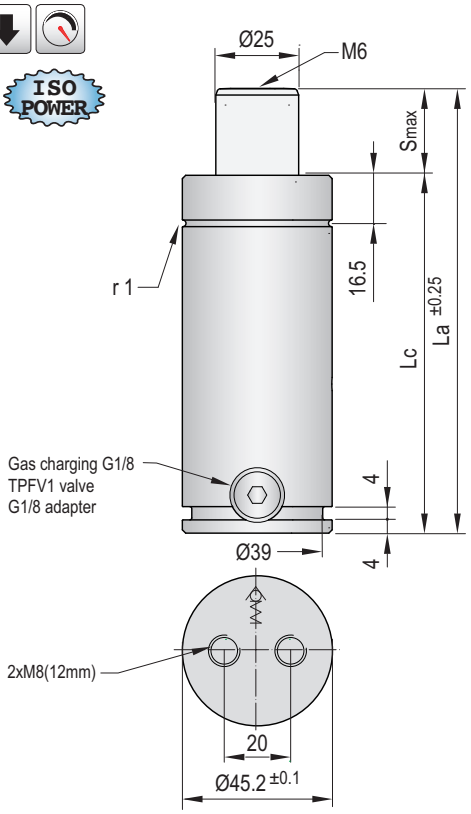
Ø45mm 740daN

TPSP 750

VDI SAFETY

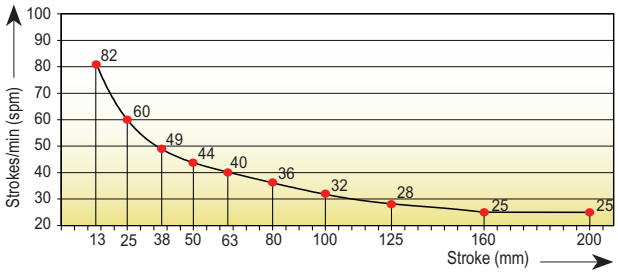
PED 2014/68/UE

ISO POWER



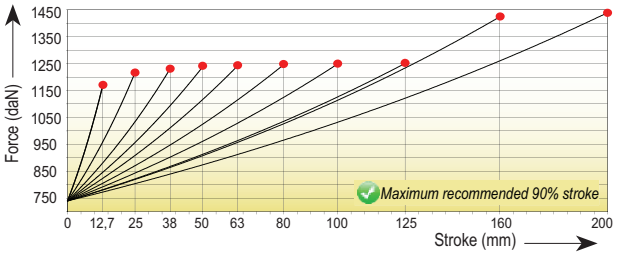
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP750

Maximum strokes / minute (at 20ºC)

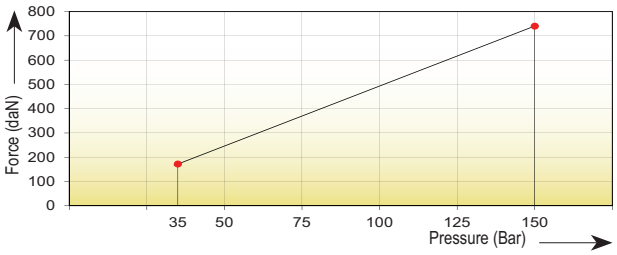


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 750x13	12,7	110,4	97,7		1105	1170		0,017	0,90
TPSP 750x25	25	135	110		1145	1220		0,031	0,98
TPSP 750x38	38	161	123		1155	1235		0,047	1,02
TPSP 750x50	50	185	135		1160	1240		0,061	1,15
TPSP 750x63	63	212	149	740 ±5%	1165	1245	150	0,077	1,24
TPSP 750x80	80	245	165	(20ºC)	1170	1250	(20ºC)	0,097	1,35
TPSP 750x100	100	285	185		1170	1250		0,121	1,60
TPSP 750x125	125	335	210		1170	1255		0,150	1,70
TPSP 750x160	160	405	245		1305	1425		0,163	2,20
TPSP 750x200	200	485	285		1315	1440		0,202	2,35

Force/stroke ratio



Initial force/charging pressure ratio

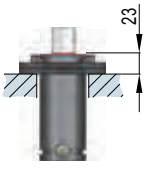


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



FS 45·FSC 45

FP 45·FPR 45

FB 45

FRS 45

FI 45·FI 45/1

TECAPRES®

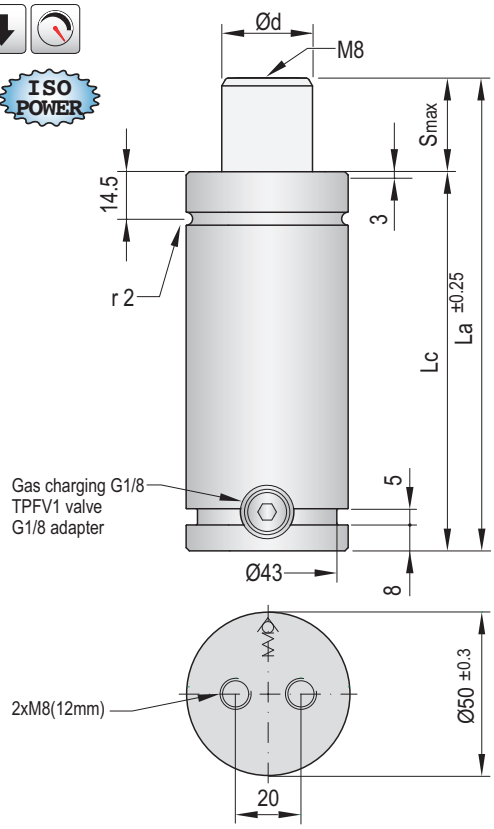
Ø50mm 1000daN

TPSP 1000.1

VDI SAFETY

PED 2014/68/UE

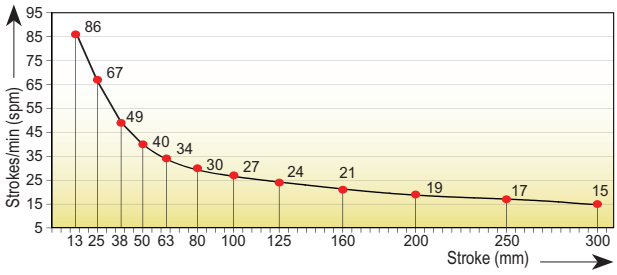
ISO POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	Ø28 - 6,16 cm² Ø30 - 7,07 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Ø28 - Kit SP1000.1/28 Ø30 - Kit SP1000.1/30

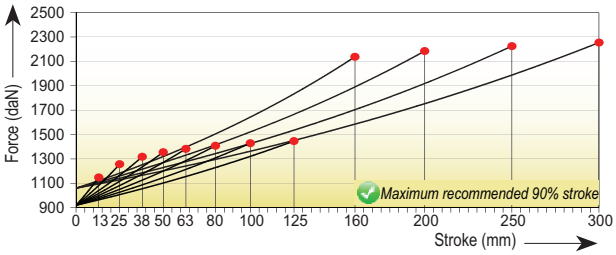
VDI 3003 — ISO 11901

Maximum strokes / minute (at 20°C)

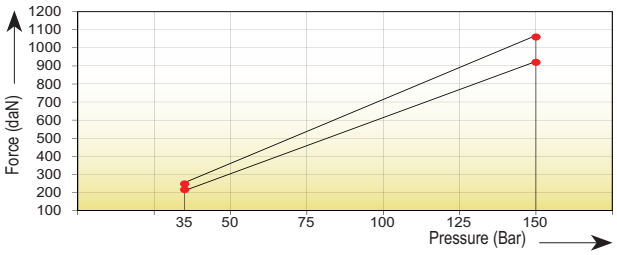


Code	Smax mm	La mm	Lc mm	Ød mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 1000x13.1	13	120,4	107,7	28		1120	1145		0,040	1,25
TPSP 1000x25.1	25	145	120	28		1220	1260		0,057	1,40
TPSP 1000x38.1	38	171	133	28		1270	1325		0,077	1,45
TPSP 1000x50.1	50	195	145	28	920 ±5%	1300	1360		0,096	1,57
TPSP 1000x63.1	63	222	159	28	(20°C)	1320	1390		0,116	1,75
TPSP 1000x80.1	80	255	175	28		1340	1415	150	0,142	1,87
TPSP 1000x100.1	100	295	195	28		1360	1435	(20°C)	0,173	1,90
TPSP 1000x125.1	125	345	220	28		1375	1450		0,211	2,25
TPSP 1000x160.1	160	415	255	30		1940	2140		0,224	2,35
TPSP 1000x200.1	200	495	295	30	1060 ±5%	1975	2185		0,275	2,50
TPSP 1000x250.1	250	595	345	30	(20°C)	2005	2225		0,337	3,25
TPSP 1000x300.1	300	695	395	30		2025	2255		0,400	3,95

Force/stroke ratio



Initial force/charging pressure ratio

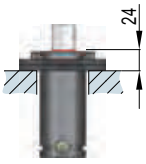


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 50·FSC 50


FP 50·FPR 50


FB 45·FB 50

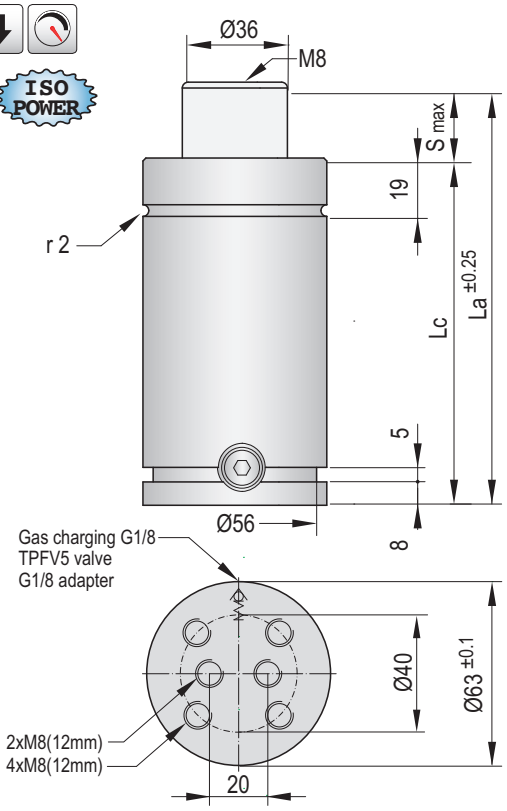

FRS 50


FI 50·FI 50/1

VDI SAFETY

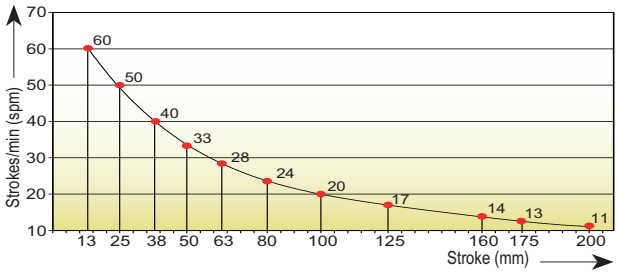
PED 2014/68/UE

ISO POWER



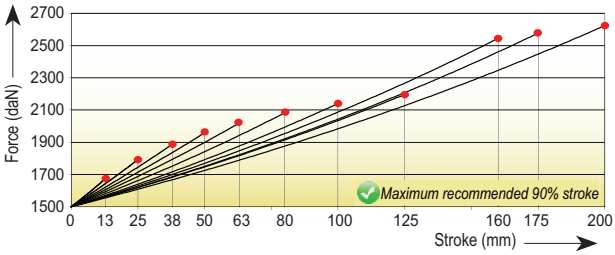
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP1500

Maximum strokes / minute (at 20ºC)

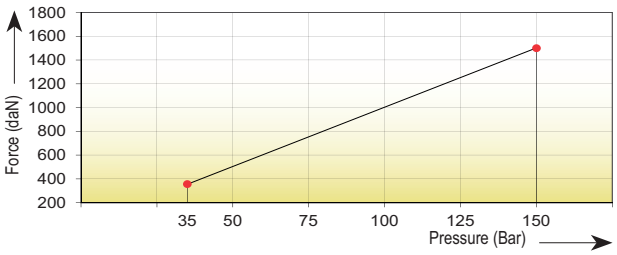


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 1500x13	13	121	108	1500 ±5% (20ºC)	1660	1680	148 (20ºC)	0,126	1,96
TPSP 1500x25	25	145	120		1765	1800		0,156	2,20
TPSP 1500x38	38	171	133		1850	1895		0,188	2,36
TPSP 1500x50	50	195	145		1910	1965		0,217	2,44
TPSP 1500x63	63	221	158		1960	2030		0,249	2,55
TPSP 1500x80	80	255	175		2015	2090		0,291	2,61
TPSP 1500x100	100	295	195		2060	2150		0,340	3,25
TPSP 1500x125	125	345	220		2110	2205		0,401	4,06
TPSP 1500x160	160	415	255		2390	2555		0,397	5,23
TPSP 1500x175	175	445	270		2415	2590		0,426	5,46
TPSP 1500x200	200	495	295		2450	2635		0,475	5,80

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

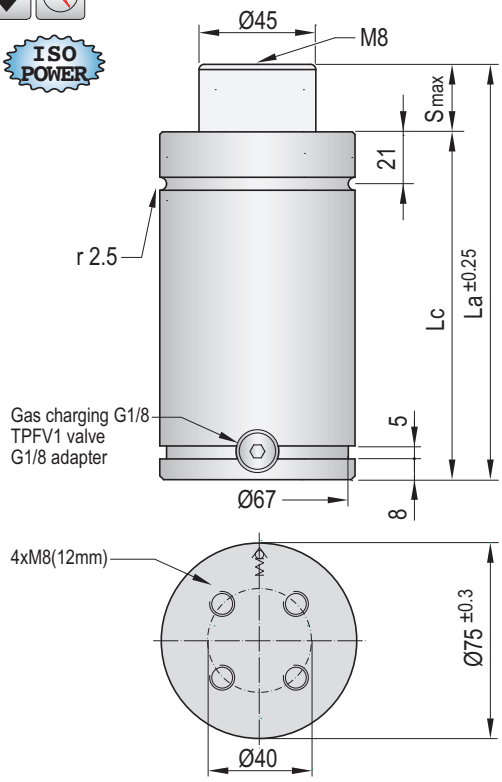
Follow guidelines Page 287

DROP-IN | SCREWS | FS 63 FSC 63·FSC 63/1 | FP 63 | FRS 63 | FB 50·FB 63 | FI 63/1

VDI SAFETY

PED 2014/68/UE

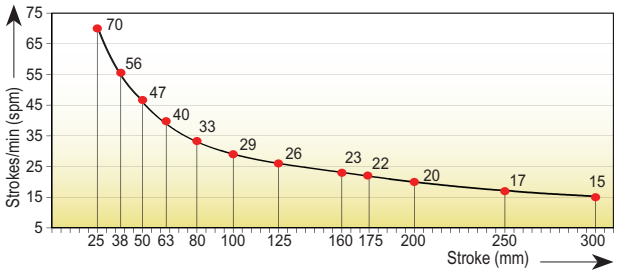
ISO POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP2400

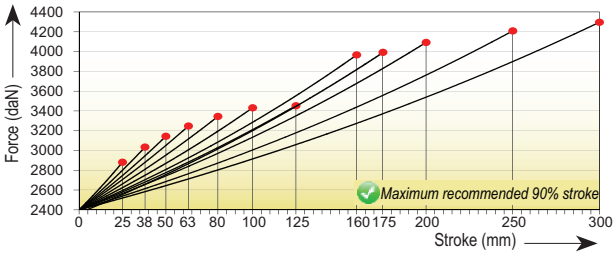
VDI 3003 ISO 11901

Maximum strokes / minute (at 20ºC)

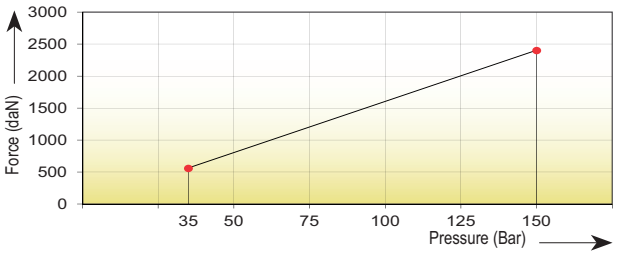


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 2400x25	25	160	135		2810	2865		0,238	3,50
TPSP 2400x38	38	186	148		2940	3015		0,289	3,70
TPSP 2400x50	50	210	160		3030	3125		0,336	3,85
TPSP 2400x63	63	237	174		3120	3230		0,384	4,10
TPSP 2400x80	80	270	190		3200	3325		0,451	4,65
TPSP 2400x100	100	310	210	2400 ±5%	3270	3410	150	0,529	5,00
TPSP 2400x125	125	360	235	(20ºC)	3290	3430	(20ºC)	0,652	5,56
TPSP 2400x160	160	430	270		3700	3940		0,645	6,24
TPSP 2400x175	175	460	285		3740	3995		0,691	6,51
TPSP 2400x200	200	510	310		3800	4070		0,769	7,36
TPSP 2400x250	250	610	360		3890	4185		0,925	8,12
TPSP 2400x300	300	710	410		3960	4270		1,081	9,05

Force/stroke ratio



Initial force/charging pressure ratio

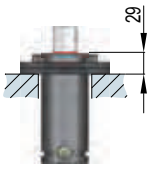


Assembly possibilities

Follow guidelines Page 287


DROP-IN

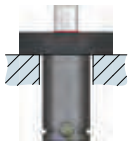

SCREWS



FS 75·FSC 75


FP 75·FPR 75


FB 75


FRS 75


FI 75·FI 75/1

TPSP
TPF
TPK
TPC
TPR
TPB
TPHC
TPA
TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

TECAPRES®

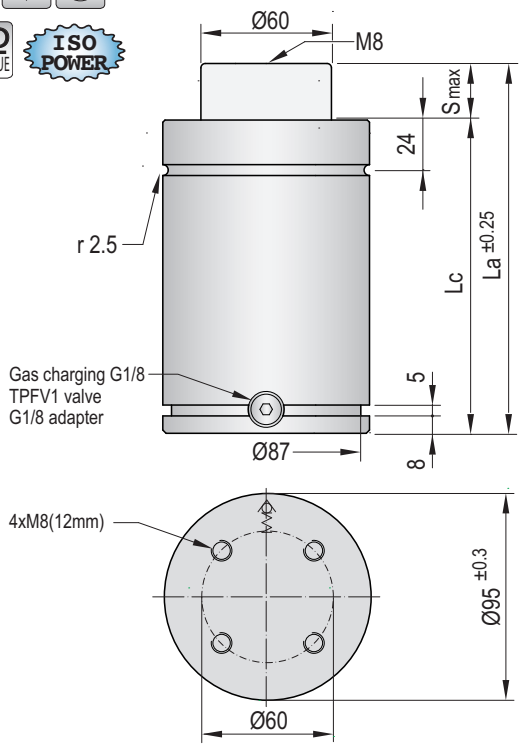
Ø95mm 4200daN

TPSP 4200

VDI SAFETY

PED 2014/68/UE

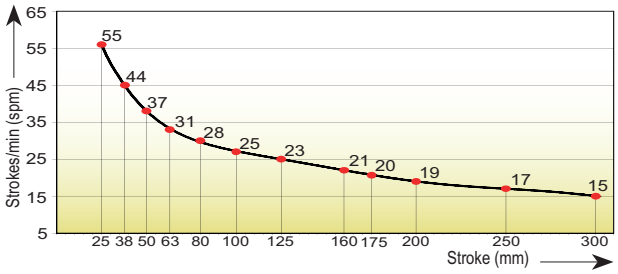
ISO POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP4200

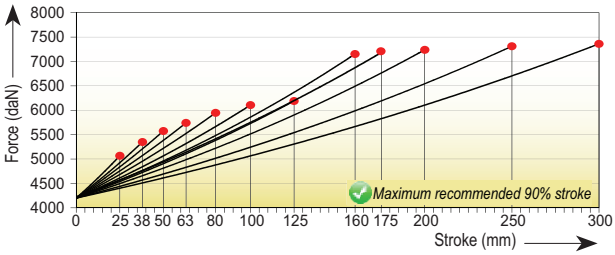
VDI 3003 ISO 11901

Maximum strokes / minute (at 20ºC)

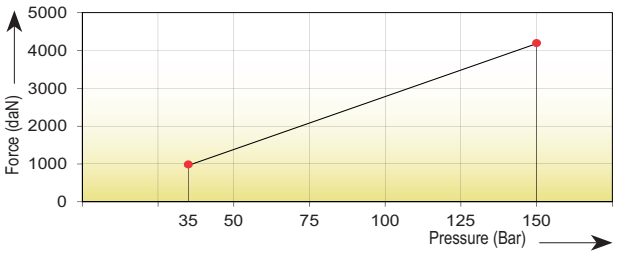


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 4200x25	25	170	145		5010	5115		0,413	6,25
TPSP 4200x38	38	196	158		5260	5400		0,500	6,75
TPSP 4200x50	50	220	170		5450	5630		0,574	7,05
TPSP 4200x63	63	247	184		5590	5795		0,664	7,54
TPSP 4200x80	80	280	200		5765	6005		0,770	8,04
TPSP 4200x100	100	320	220	4200 ±5%	5900	6165	150	0,906	9,05
TPSP 4200x125	125	370	245	(20ºC)	5970	6250	(20ºC)	1,099	9,87
TPSP 4200x160	160	440	280		6750	7225		1,096	10,75
TPSP 4200x175	175	470	295		6775	7260		1,190	10,89
TPSP 4200x200	200	520	320		6815	7310		1,347	11,84
TPSP 4200x250	250	620	370		6875	7380		1,661	13,21
TPSP 4200x300	300	720	420		6910	7435		1,975	16,43

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FPR 95 | FB 95 | FRS 95 | FI 95·FI 95/1

TECAPRES®

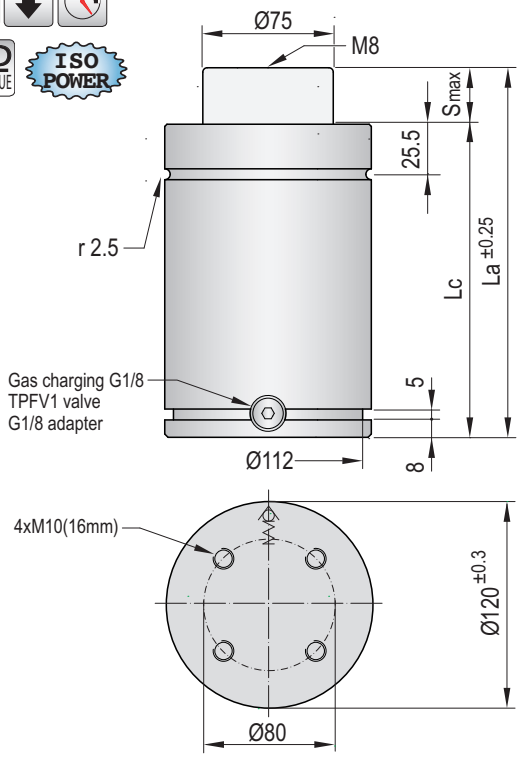
Ø120mm
6600daN

TPSP 6600

VDI SAFETY

PED 2014/68/UE

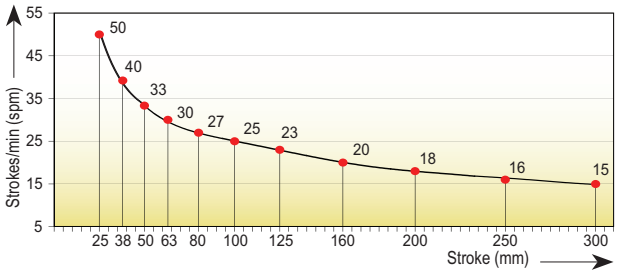
ISO POWER



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	44,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP6600

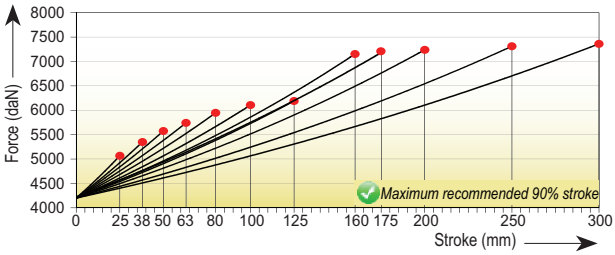
VDI 3003 ISO 11901

Maximum strokes / minute (at 20ºC)

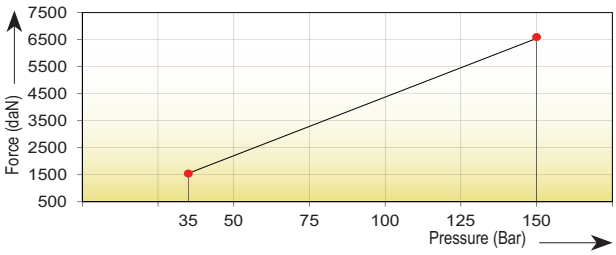


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 6600x25	25	190	165		7620	7755		0,730	12,47
TPSP 6600x38	38	216	178		7980	8170		0,863	13,75
TPSP 6600x50	50	240	190		8245	8485		0,986	14,09
TPSP 6600x63	63	267	204		8480	8760		1,119	15,34
TPSP 6600x80	80	300	220		8730	9060		1,293	16,15
TPSP 6600x100	100	340	240	6600 ±5% (20ºC)	8965	9340	147 (20ºC)	1,497	17,08
TPSP 6600x125	125	390	265		9185	9610		1,753	18,95
TPSP 6600x160	160	460	300		10495	11240		1,706	20,58
TPSP 6600x200	200	540	340		10165	10818		2,257	22,46
TPSP 6600x250	250	640	390		10270	10950		2,769	25,13
TPSP 6600x300	300	740	440		10345	11045		3,280	27,87

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

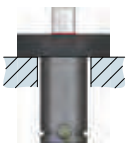

DROP-IN


SCREWS

FS 120·FSC 120


FP 120·FPR 120


FB 120


FRS 120


FI 120·FI 120/1

TECAPRES®

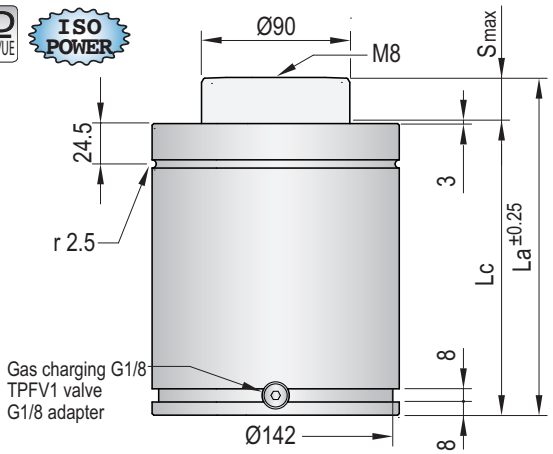
Ø150mm 9500daN

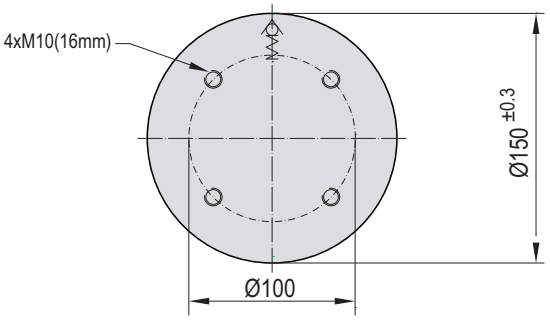
TPSP 9500

VDI SAFETY

PED 2014/68/UE

ISO POWER

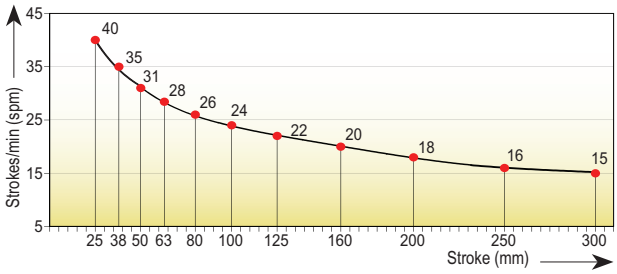




Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	63,62 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SP9500

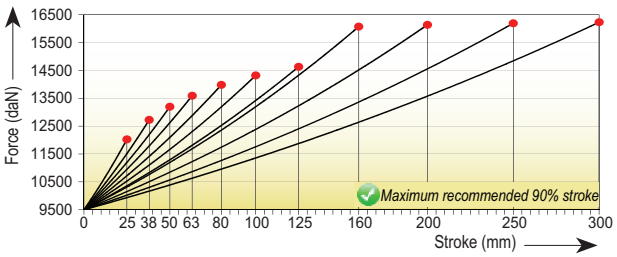
VDI 3003 ISO 11901

Maximum strokes / minute (at 20ºC)

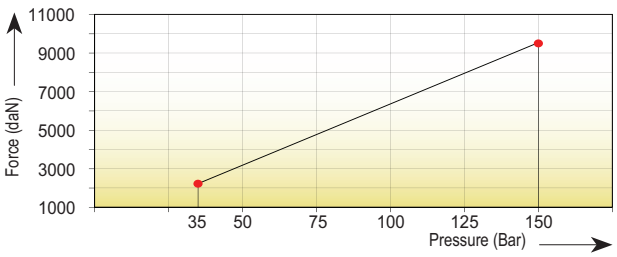


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 9500x25	25	205	180	9500 ±5% (20ºC)	11765	12075	150 (20ºC)	0,758	20,61
TPSP 9500x38	38	231	193		12360	12780		0,954	21,72
TPSP 9500x50	50	255	205		12760	13255		1,135	22,62
TPSP 9500x63	63	282	219		13090	13650		1,332	23,93
TPSP 9500x80	80	315	235		13410	14040		1,588	25,84
TPSP 9500x100	100	355	255		13690	14385		1,890	27,55
TPSP 9500x125	125	405	280		13945	14695		2,268	29,15
TPSP 9500x160	160	475	315		15100	16145		2,490	32,78
TPSP 9500x200	200	555	355		15150	16210		3,093	34,00
TPSP 9500x250	250	655	405		15195	16265		3,848	40,62
TPSP 9500x300	300	755	455		15225	16300		4,603	43,33

Force/stroke ratio

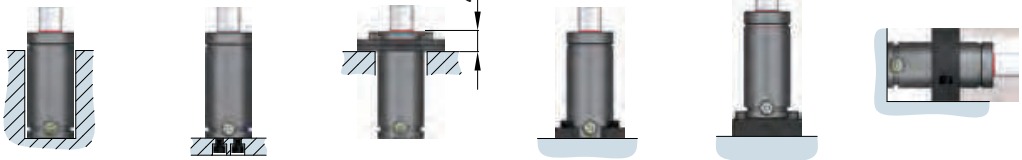


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 150·FSC 150 | FP 150 | FB 150 | FI 150·FI 150/1

TECAPRES®

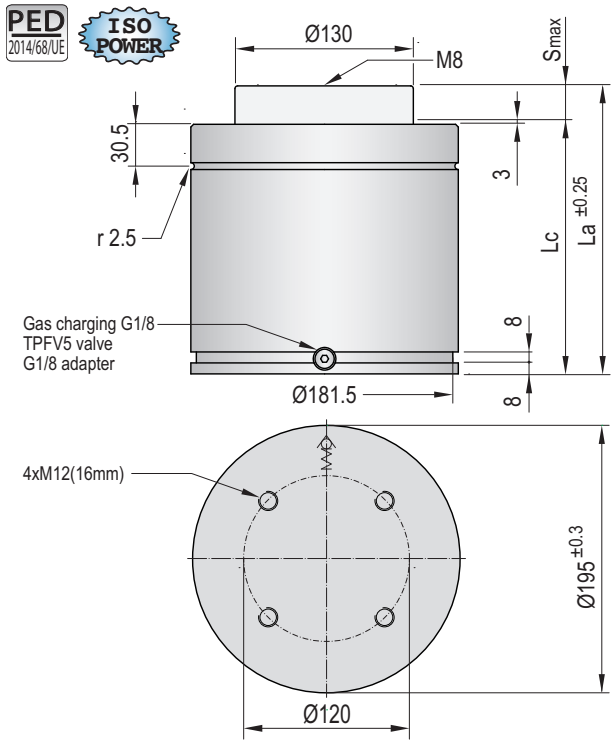
Ø195mm
20000daN

TPSP 20000

VDI SAFETY

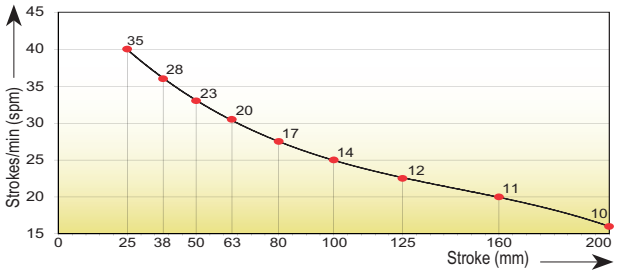
PED 2014/68/UE

ISO POWER



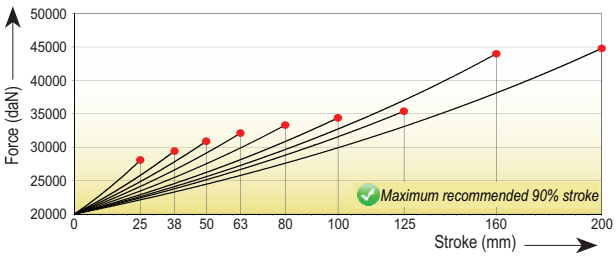
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	132,73 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1 m/s
Maintenance kit	Kit SP20000

Maximum strokes / minute (at 20ºC)

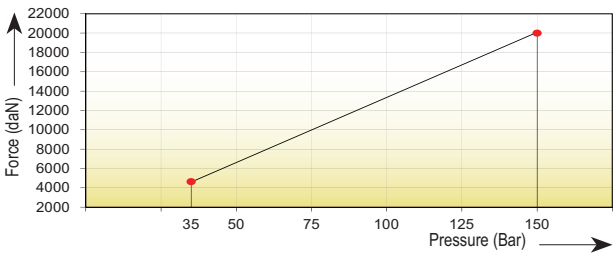


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSP 20000x25	25	210	185	20000 ±5% (20ºC)	26865	27950	150 (20ºC)	1,154	31,8
TPSP 20000x38	38	236	198		27990	29310		1,573	32,3
TPSP 20000x50	50	260	210		29165	30755		1,882	34,25
TPSP 20000x63	63	286	223		30140	31965		2,217	35,37
TPSP 20000x80	80	320	240		31105	33175		2,655	38,09
TPSP 20000x100	100	360	260		31945	34245		3,171	39,15
TPSP 20000x125	125	410	285		32710	35230		3,816	42,75
TPSP 20000x160	160	480	320		39105	43795		3,894	45,91
TPSP 20000x200	200	560	360		39670	44585		4,797	51,33

Force/stroke ratio



Initial force/charging pressure ratio

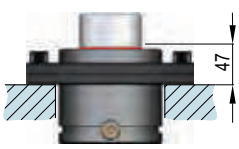


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



FSC 195

FP 195

FB 195

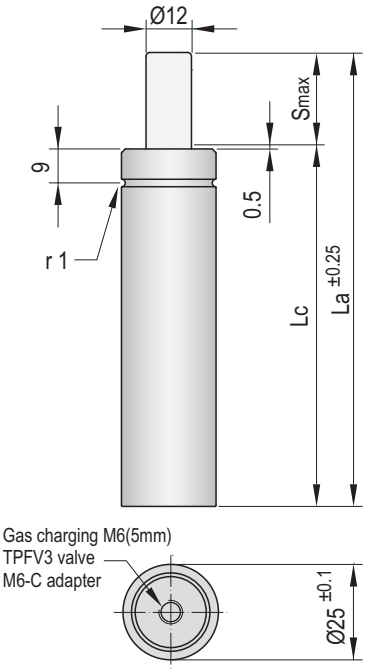
PED 2014/68/UE

Maximum force gas springs. Piston seal

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY		
TPF 420	25	6 - 50	420	√	√		
TPF 750.1	32	6 - 50	750	√	√		√
TPF 1000 B.1	38	10 - 50	1000	√	√		
TPFS 1000.2	38	6 - 50	1000	√	√	√	√
TPFS 1800.2	50	6 - 65	1800	√	√	√	√
TPFS 2000.2	50	16 - 50	2000	√	√	√	√
TPFS 3000.2	63	10 - 65	3000	√	√	√	√
TPFS 4700.3	75	10 - 65	4700	√	√	√	√
TPF 7000	95	10 - 50	7000	√	√		
TPF 7500	95	10 - 50	7500	√	√		
TPF 7500C	95	10 - 50	7500	√	√	√	
TPF 11800	120	10 - 50	11800	√	√		
TPF 11800C	120	10 - 50	11800	√	√	√	
TPF 18300	150	10 - 50	18300	√	√		
TPF 18300C	150	10 - 50	18300	√	√	√	

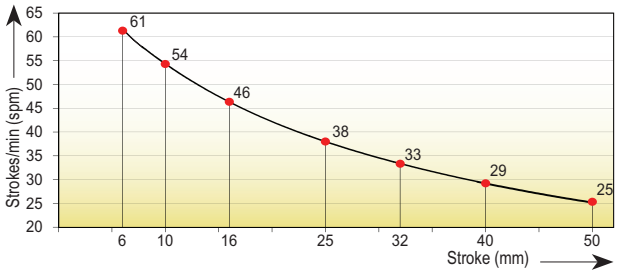
VDI SAFETY

PED 2014/68/UE



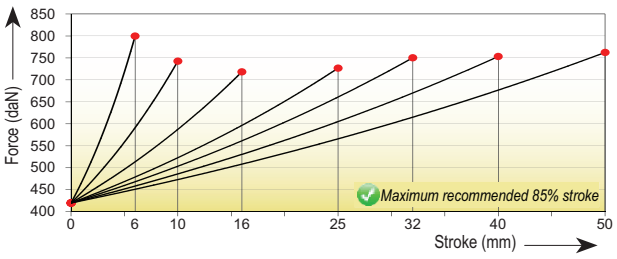
Pressure medium	Nitrogen (N_2)
Max. charging pressure	133 Bar
Min. charging pressure	50 Bar
Piston seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F420

Maximum strokes / minute (at 20ºC)

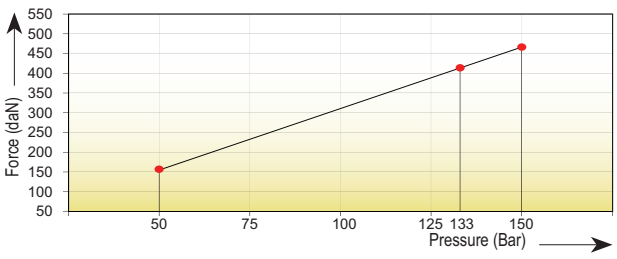


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg	Kit
TPF 420x6	6	56	50	420 ±5% (20ºC)	700	795	133 (20ºC)	0,004	0,13	✓
TPF 420x10	10	70	60		665	740		0,007	0,15	✓
TPF 420x16	16	91	75		645	715		0,012	0,20	✓
TPF 420x25	25	120	95		650	725		0,019	0,30	✓
TPF 420x32	32	140	108		670	745		0,023	0,38	✓
TPF 420x40	40	165	125		670	750		0,028	0,46	-
TPF 420x50	50	195	145		675	760		0,035	0,57	-

Force/stroke ratio



Initial force/charging pressure ratio

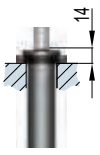


Assembly possibilities

Follow guidelines
Page 287

DROP-IN

SCREWS



FS 25/1·FS 25/2

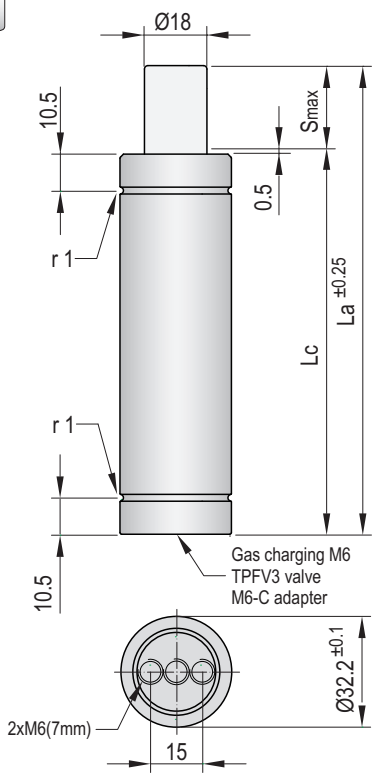
TECAPRES®

Ø32mm
750daN

TPF 750.1

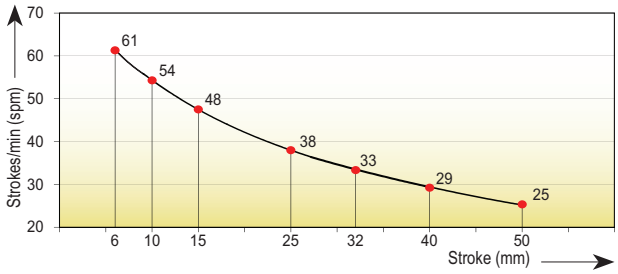
VDI SAFETY

PED 2014/68/UE



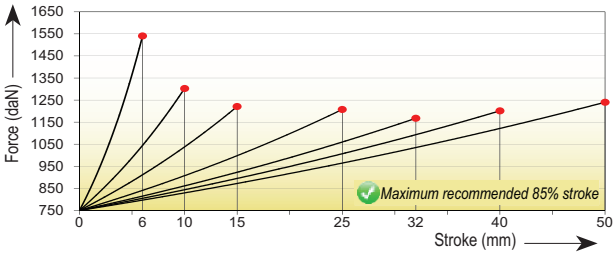
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F750.1

Maximum strokes / minute (at 20ºC)

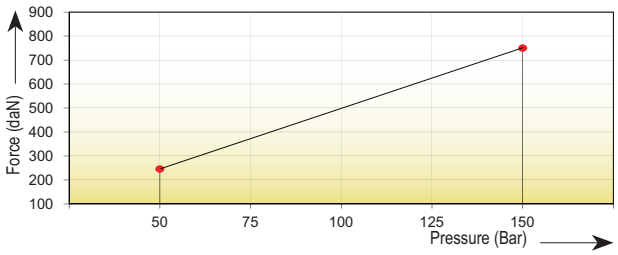


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 750x6.1	6	63	57		1330	1540		0,006	0,29
TPF 750x10B.1	10	75	65		1385	1625		0,009	0,33
TPF 750x10.1	10	80	70		1175	1305		0,012	0,35
TPF 750x15B.1	15	93	78		1250	1420		0,016	0,39
TPF 750x15.1	15	100	85	750 ±5%	1120	1225	150	0,019	0,42
TPF 750x25B.1	25	120	95	(20ºC)	1290	1475	(20ºC)	0,025	0,48
TPF 750x25.1	25	135	110		1110	1210		0,032	0,51
TPF 750x32.1	32	140	108		1080	1170		0,044	0,55
TPF 750x40.1	40	165	125		1105	1205		0,052	0,61
TPF 750x50.1	50	195	145		1130	1240		0,062	0,67

Force/stroke ratio



Initial force/charging pressure ratio

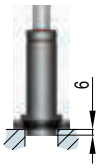


Assembly possibilities

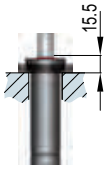
Follow guidelines Page 287

DROP-IN

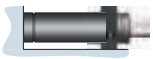
SCREWS



FS 32·FS 32/1



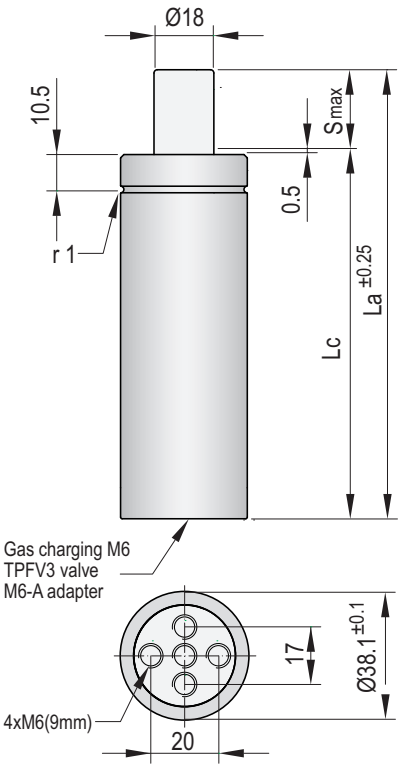
FS 32·FS 32/1



FI 32·FI 32/1

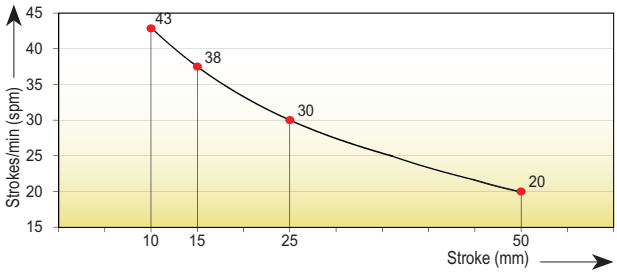
VDI SAFETY

PED 2014/68/UE



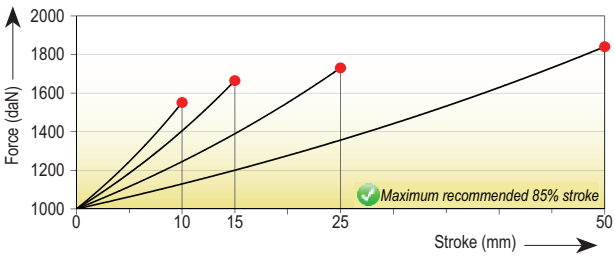
Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	50 Bar
Piston seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F1000B.1

Maximum strokes / minute (at 20ºC)

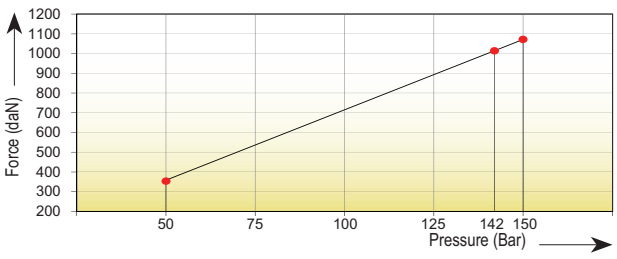


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 1000x10B.1	10	75	65	1000 ±5% (20ºC)	1420	1535	140 (20ºC)	0,020	0,39
TPF 1000x15B.1	16	90	74		1500	1645		0,027	0,45
TPF 1000x25B.1	25	120	95		1545	1715		0,042	0,51
TPF 1000x50B.1	50	195	145		1620	1820		0,077	0,75

Force/stroke ratio



Initial force/charging pressure ratio

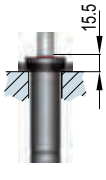


Assembly possibilities

Follow guidelines
Page 287

DROP-IN

SCREWS

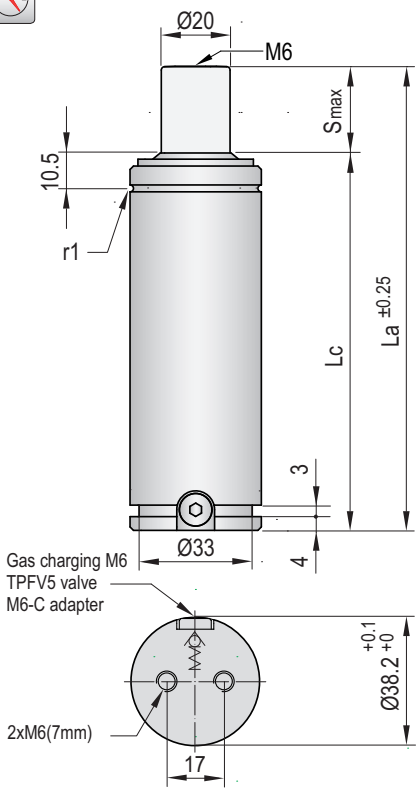


FS 38·FSC 38

FI 38·FI 38/1

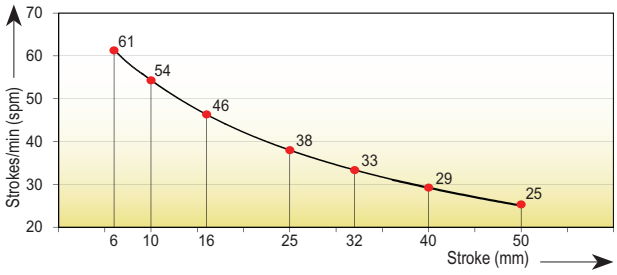
VDI SAFETY

PED 2014/68/UE



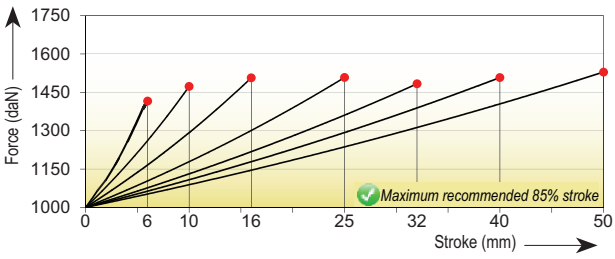
Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	50 Bar
Piston seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit FS1000.2

Maximum strokes / minute (at 20ºC)

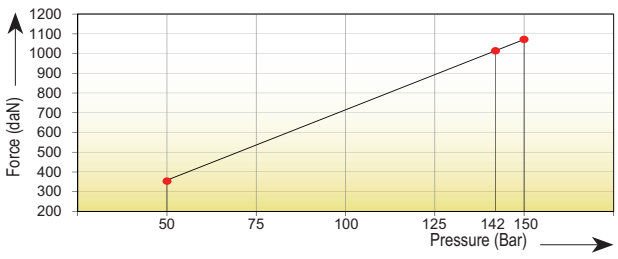


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPFS 1000x6.2	6	61	55	1000 ±5% (20ºC)	1300	1370	140 (20ºC)	0,016	0,37
TPFS 1000x10.2	10	78	68		1345	1435		0,024	0,42
TPFS 1000x16.2	16	100	84		1380	1475		0,035	0,51
TPFS 1000x25.2	25	135	110		1385	1485		0,055	0,58
TPFS 1000x32.2	32	167	135		1365	1455		0,073	0,66
TPFS 1000x40.2	40	195	155		1385	1485		0,087	0,78
TPFS 1000x50.2	50	230	180		1400	1505		0,106	0,95

Force/stroke ratio



Initial force/charging pressure ratio



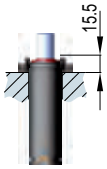
Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS


FP 38·FPR 38

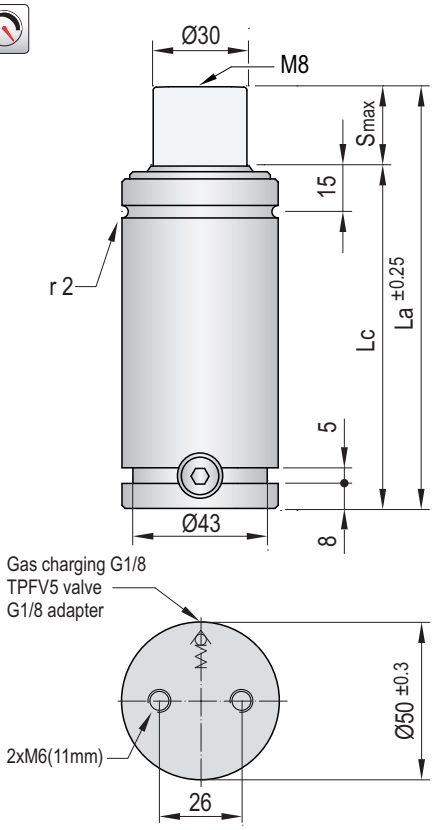


FS 32·FSC 38


FI 38·FI 38/1

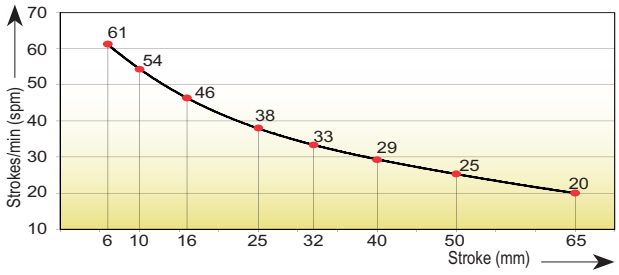
VDI SAFETY

PED 2014/68/UE



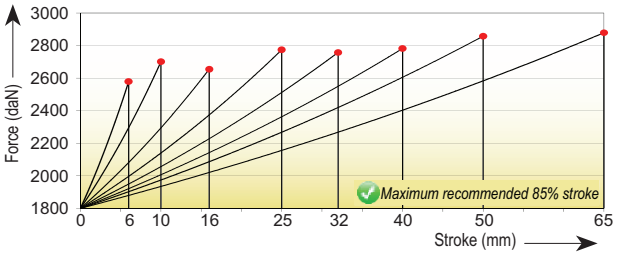
Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	50 Bar
Piston seal area	12,57 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit FS1800.2

Maximum strokes / minute (at 20°C)

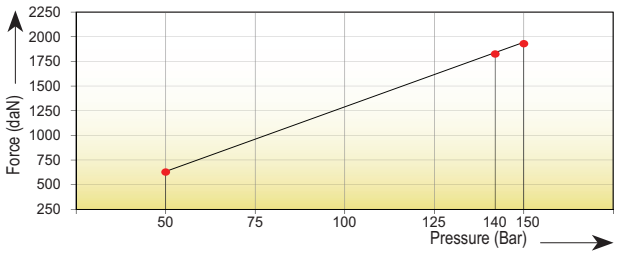


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPFS 1800x6.2	6	66	60		2400	2555		0,025	0,62
TPFS 1800x10.2	10	80	70		2490	2680		0,038	0,73
TPFS 1800x16.2	16	106	90		2455	2630		0,062	0,85
TPFS 1800x25.2	25	135	110	1800 ±5%	2545	2750	140	0,090	0,98
TPFS 1800x32.2	32	162	130	(20°C)	2535	2735	(20°C)	0,116	1,20
TPFS 1800x40.2	40	190	150		2550	2760		0,142	1,25
TPFS 1800x50.2	50	220	170		2605	2835		0,170	1,42
TPFS 1800x65.2	65	271	206		2620	2855		0,218	1,65

Force/stroke ratio



Initial force/charging pressure ratio

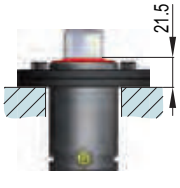


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



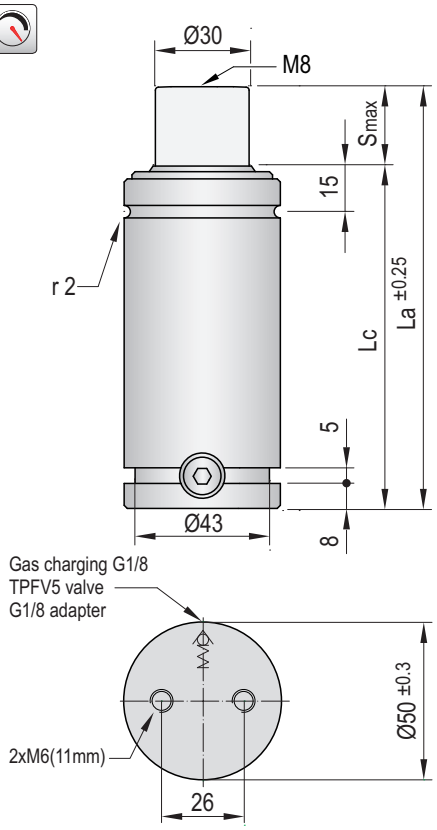
FS 50·FSC 50


FP 50·FPR 50


FI 50·FI 50/1

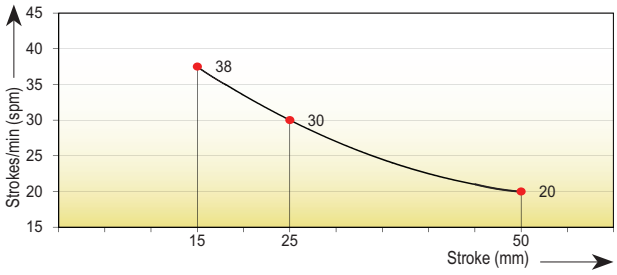
VDI SAFETY

PED 2014/68/UE



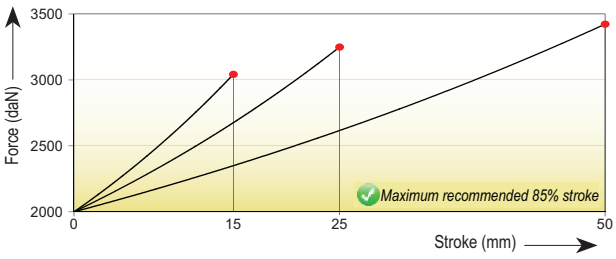
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	12,57 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit FS2000.2

Maximum strokes / minute (at 20ºC)

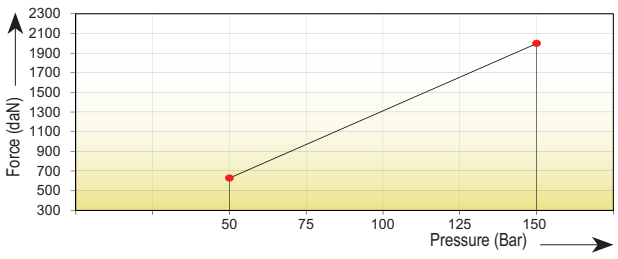


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPFS 2000x16.2	16	95	79	2000 ±5% (20ºC)	2730	3015	150 (20ºC)	0,055	0,70
TPFS 2000x25.2	25	125	100		2725	3000		0,082	0,81
TPFS 2000x50.2	50	200	150		2815	33135		0,151	1,05

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 50·FSC 50


FP 50·FPR 50


FI 50·FI 50/1

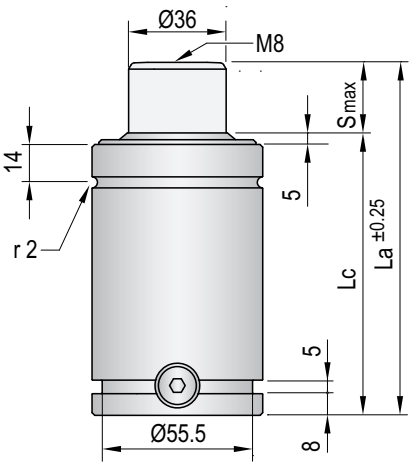
TECAPRES®

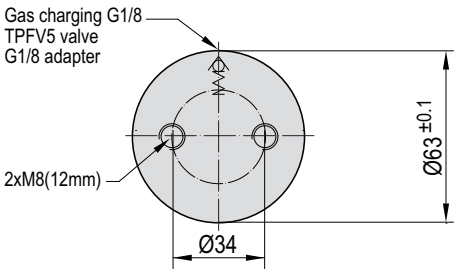
Ø63mm
3000daN

TPFS 3000.2

VDI SAFETY

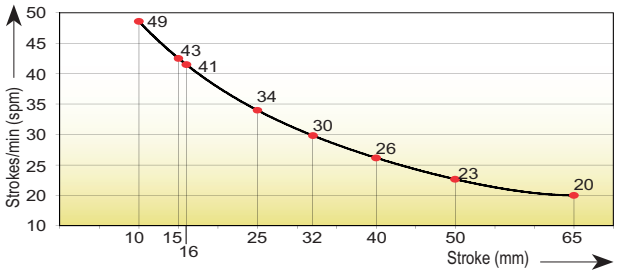
PED 2014/68/UE





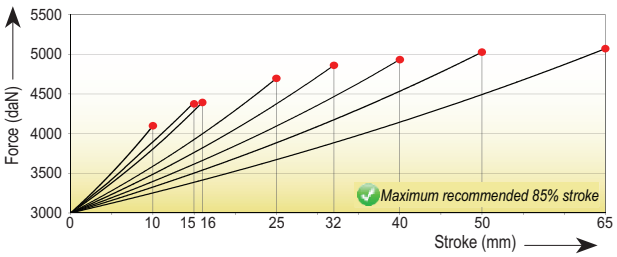
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit FS3000.2

Maximum strokes / minute (at 20ºC)

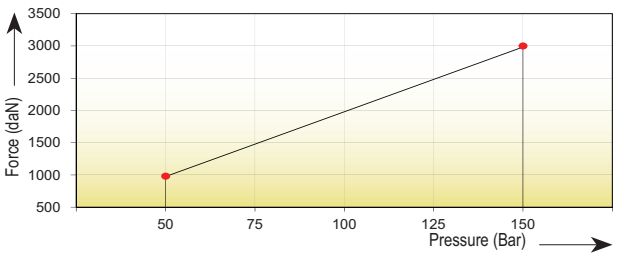


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPFS 3000x10.2	10	85	75		3890	4105		0,073	1,15
TPFS 3000x15.2	15	100	85		4075	4350		0,095	1,30
TPFS 3000x16.2	16	103	87		4115	4400		0,099	1,32
TPFS 3000x25.2	25	130	105	3000 ±5%	4335	4705	150	0,136	1,50
TPFS 3000x32.2	32	150	118	(20ºC)	4455	4870	(20ºC)	0,164	1,57
TPFS 3000x40.2	40	175	135		4505	4940		0,200	1,77
TPFS 3000x50.2	50	205	155		4570	5035		0,243	2,07
TPFS 3000x65.2	65	256	191		4600	5080		0,313	2,38

Force/stroke ratio



Initial force/charging pressure ratio

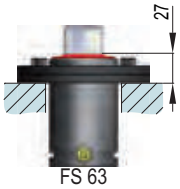


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



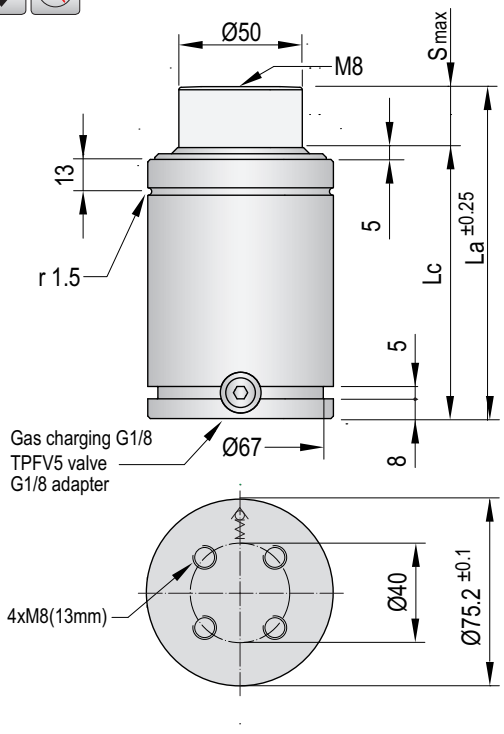
FS 63
FSC 63·FSC 63/1


FP 63·FPR 63


FI 63/1

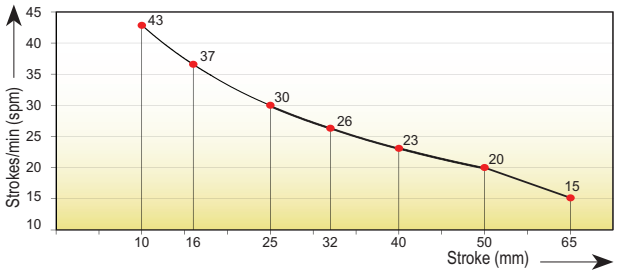
VDI SAFETY

PED 2014/68/UE



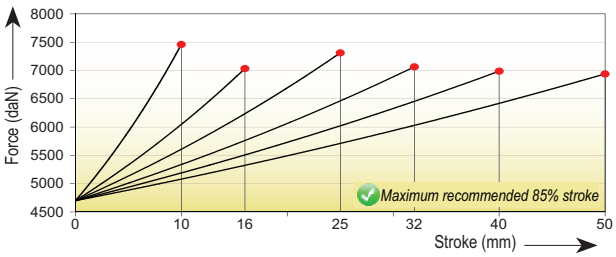
Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	50 Bar
Piston seal area	31,17 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit FS4700.3

Maximum strokes / minute (at 20ºC)

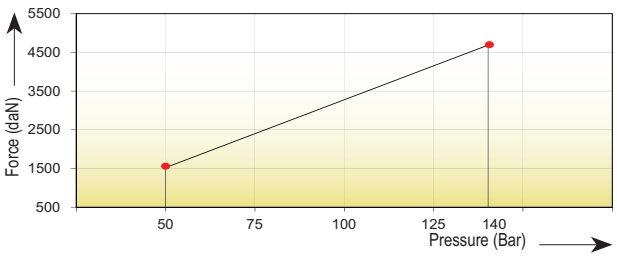


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPFS 4700x10.3	10	80	70	4700 ±5% (20ºC)	6605	7120	140 (20ºC)	0,091	1,55
TPFS 4700x16.3	16	106	90		6410	6860		0,157	1,83
TPFS 4700x25.3	25	135	110		6605	7125		0,227	2,15
TPFS 4700x32.3	32	167	135		6440	6900		0,310	2,37
TPFS 4700x40.3	40	200	160		6400	6845		0,394	2,70
TPFS 4700x50.3	50	240	190		6385	6825		0,495	3,10
TPFS 4700x65.3	65	273	208		6725	7290		0,565	3,65

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FSCS 75


FP 75·FPR 75


FI 75·FI 75/1

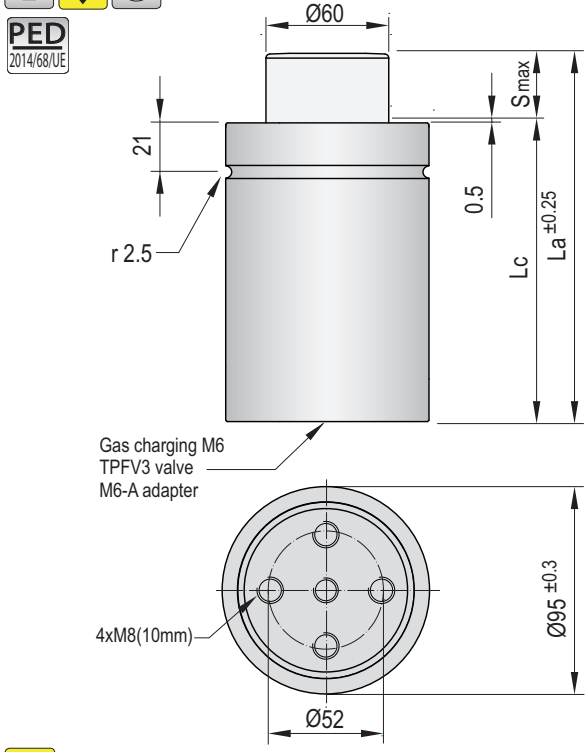
TECAPRES®

Ø95mm
7000daN

TPF 7000

VDI SAFETY

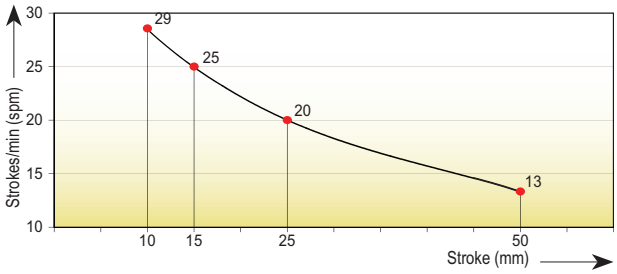
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	50 Bar
Piston seal area	50,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F7000

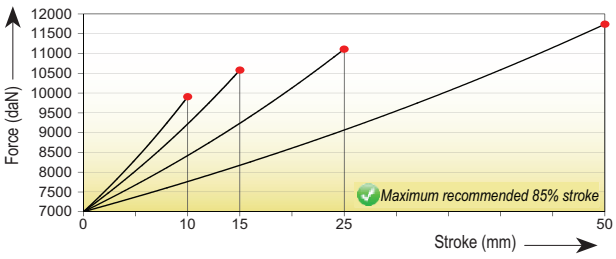
Under request

Maximum strokes / minute (at 20ºC)

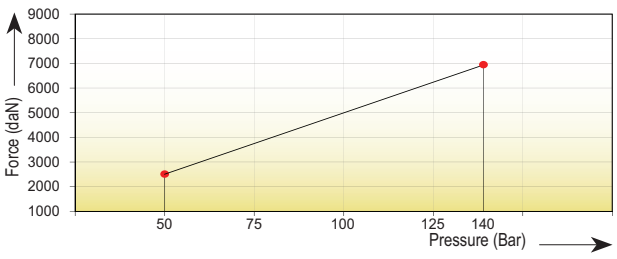


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 7000x10	10	90	80		9310	9890		0,171	3,10
TPF 7000x15	15	105	90	7000 ±5%	9810	10560	140	0,223	3,20
TPF 7000x25	25	135	110	(20ºC)	10195	11090	(20ºC)	0,340	3,45
TPF 7000x50	50	210	160		10640	11720		0,622	4,95

Force/stroke ratio

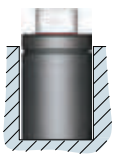


Initial force/charging pressure ratio

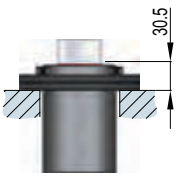


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 95·FSC 95


FI 95·FI 95/1

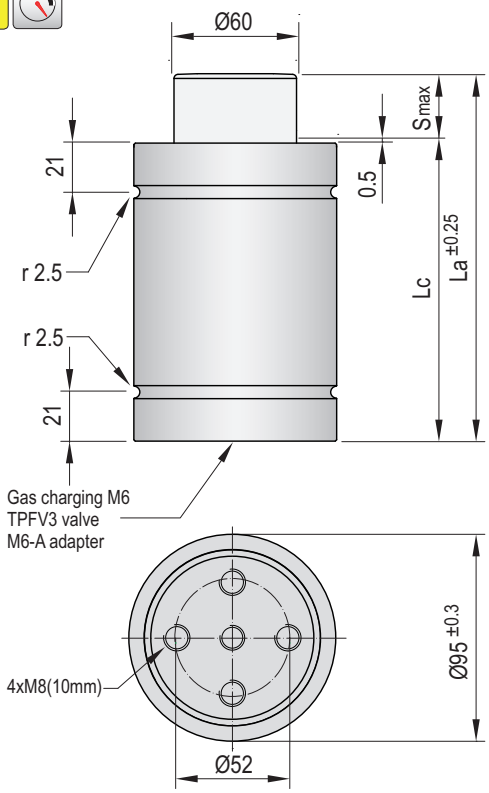
TECAPRES®

Ø95mm
7500daN

TPF 7500

VDI SAFETY

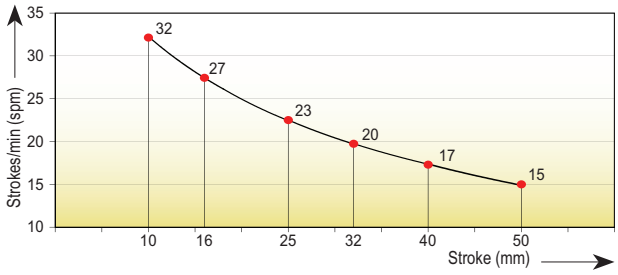
PED 2014/68/UE



Under request

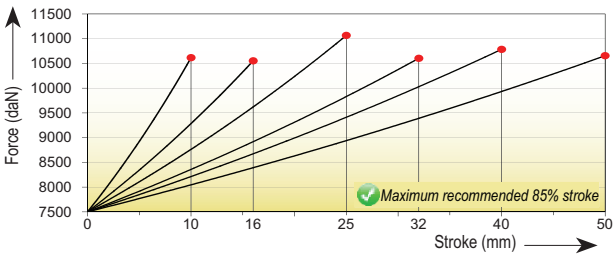
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	50,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F7500

Maximum strokes / minute (at 20ºC)

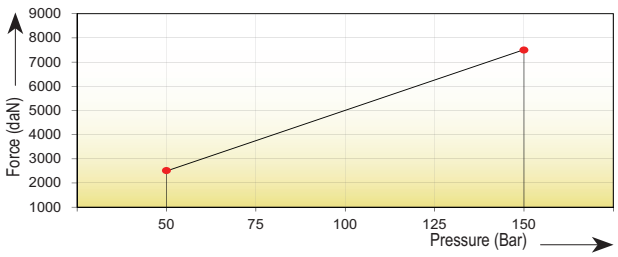


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 7500x10	10	90	80		10045	10675		0,171	3,10
TPF 7500x16	16	116	100		10000	10610		0,278	3,30
TPF 7500x25	25	145	120	7500 ±5%	10385	11125	150	0,390	3,85
TPF 7500x32	32	182	150	(20ºC)	10035	10660	(20ºC)	0,550	4,46
TPF 7500x40	40	210	170		10175	10845		0,660	4,69
TPF 7500x50	50	255	205		10075	10715		0,849	5,50

Force/stroke ratio



Initial force/charging pressure ratio

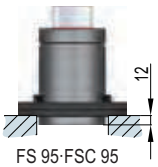


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 95·FSC 95

FS 95·FSC 95


FI 95·FI 95/1

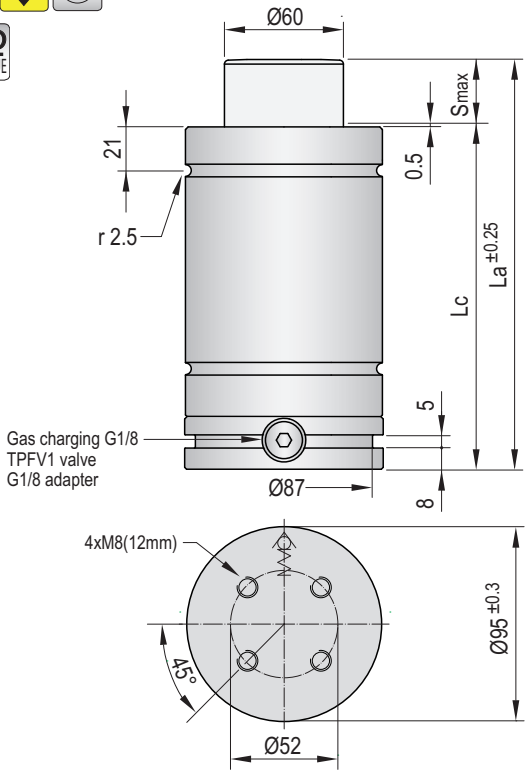
TECAPRES®

Ø95mm · G1/8 connectable
7500daN

TPF 7500 C

VDI SAFETY

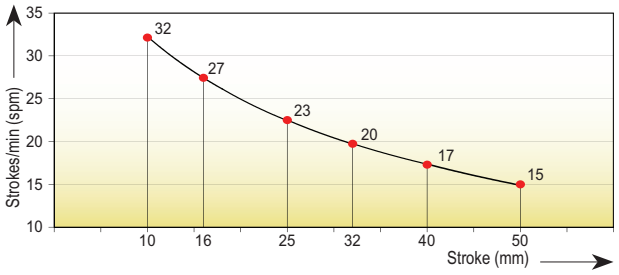
PED 2014/68/UE



Under request

Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	50,27 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit F7500C

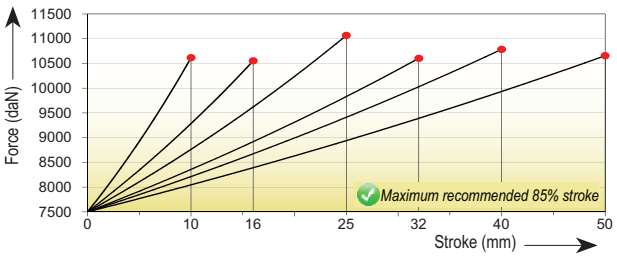
Maximum strokes / minute (at 20°C)



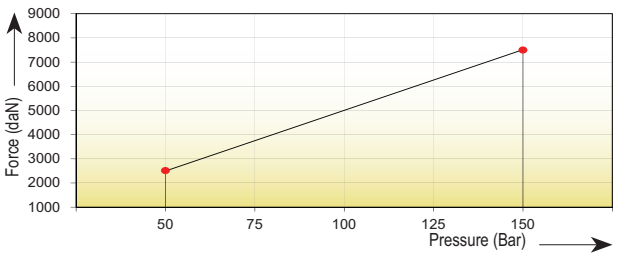
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 7500x10 C	10	110	100		10045	10675		0,171	4,05
TPF 7500x16 C	16	136	120		10000	10610		0,278	4,25
TPF 7500x25 C	25	165	140	7500 ±5%	10385	11125	150	0,390	4,80
TPF 7500x32 C	32	202	170	(20°C)	10035	10660	(20°C)	0,550	5,41
TPF 7500x40 C	40	230	190		10175	10845		0,660	5,64
TPF 7500x50 C	50	275	225		10075	10715		0,849	6,45

Attention!
This model is designed to work in a hose system.

Force/stroke ratio

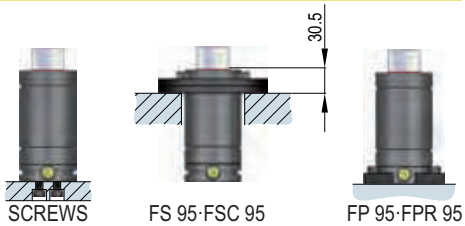


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



SCREWS | FS 95·FSC 95 | FP 95·FPR 95

Connection alternatives

RMF-D1

RMF-T + RMF-D1(2x)

RMF-C + RMF-D1

RMF-L + RMF-D1(2x)

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

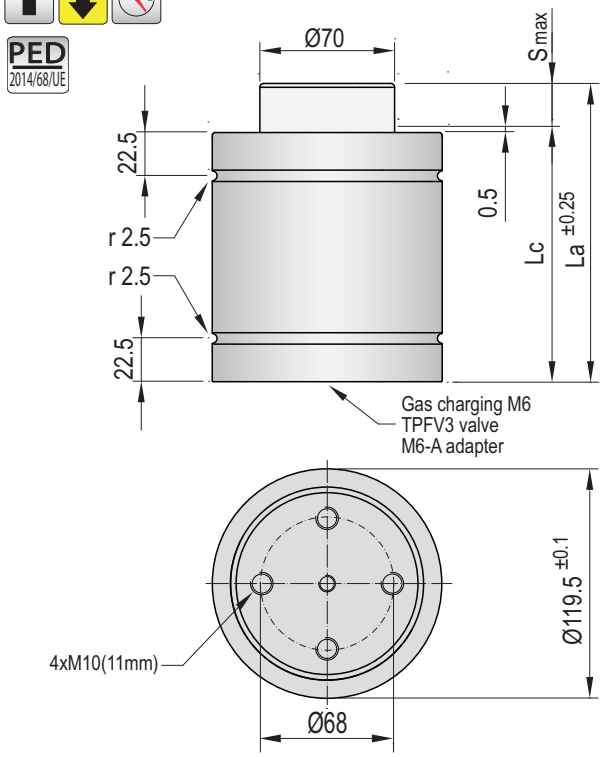
TECAPRES®

Ø120mm
11800daN

TPF 11800

VDI SAFETY

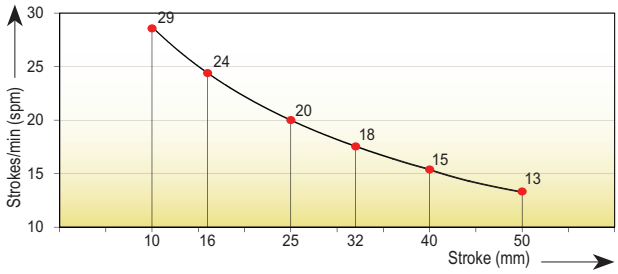
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	78,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F11800

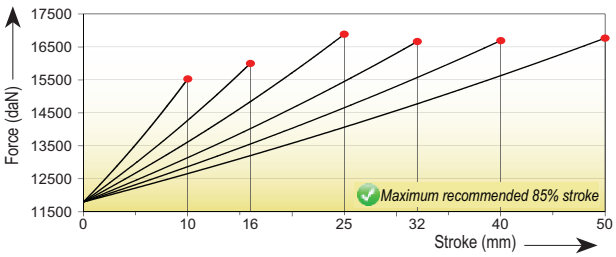
Under request

Maximum strokes / minute (at 20ºC)

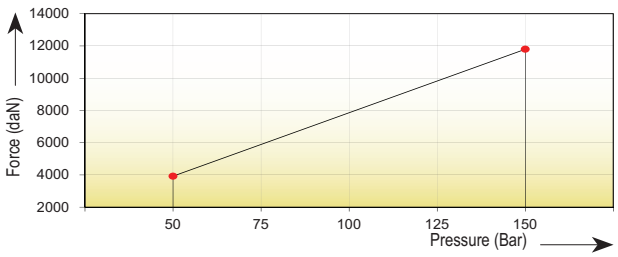


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 11800x10	10	100	90		14805	15505		0,327	5,60
TPF 11800x16	16	126	110		15165	15975		0,479	6,39
TPF 11800x25	25	155	130	11800 ±5%	15835	16860	150	0,652	7,15
TPF 11800x32	32	187	155	(20ºC)	15670	16640	(20ºC)	0,861	7,96
TPF 11800x40	40	220	180		15690	16665		1,072	8,91
TPF 11800x50	50	260	210		15745	16740		1,326	10,15

Force/stroke ratio



Initial force/charging pressure ratio

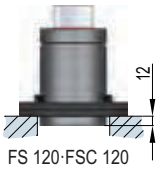


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS 120·FSC 120

FS 120·FSC 120


FI 120·FI 120/1

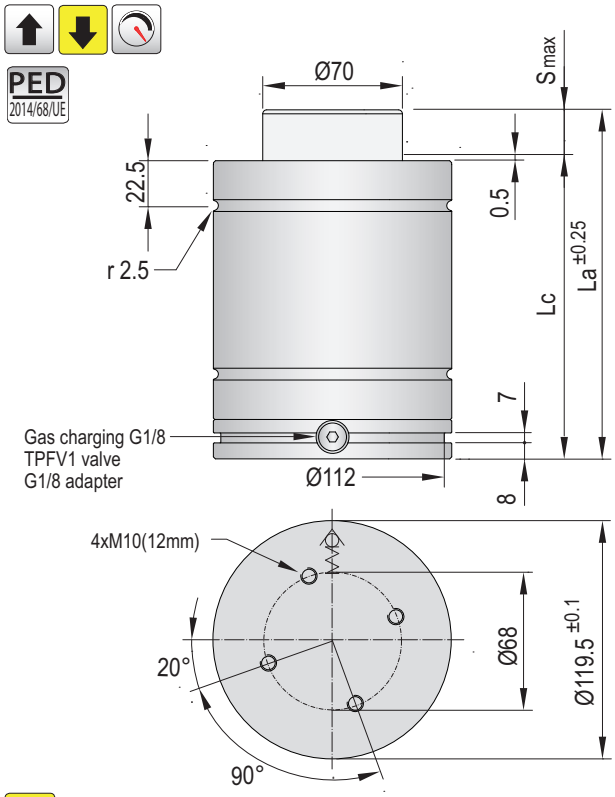
TECAPRES®

Ø120mm · G1/8 connectable
11800daN

TPF 11800 C

VDI SAFETY

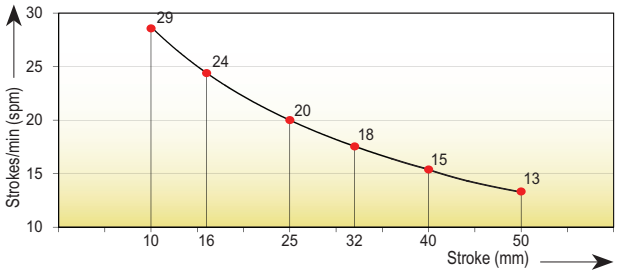
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	78,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F11800C

Under request

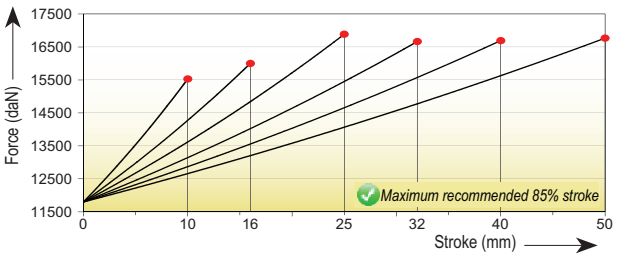
Maximum strokes / minute (at 20ºC)



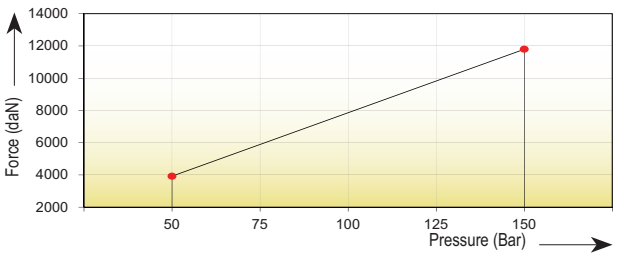
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 11800x10 C	10	120	110		14805	15505		0,327	7,10
TPF 11800x16 C	16	146	130		15165	15975		0,479	7,89
TPF 11800x25 C	25	175	150	11800 ±5%	15835	16860	150	0,652	8,65
TPF 11800x32 C	32	207	175	(20ºC)	15670	16640	(20ºC)	0,861	9,46
TPF 11800x40 C	40	240	200		15690	16665		1,072	10,41
TPF 11800x50 C	50	280	230		15745	16740		1,326	11,65

Attention!
This model is designed to work in a hose system.

Force/stroke ratio



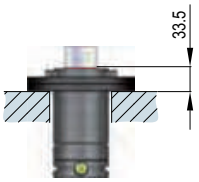
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


SCREWS



FS 120·FSC 120


FP 120·FPR 120

Connection alternatives

RMF-D1

RMF-T + RMF-D1(2x)

RMF-C + RMF-D1

RMF-L + RMF-D1(2x)

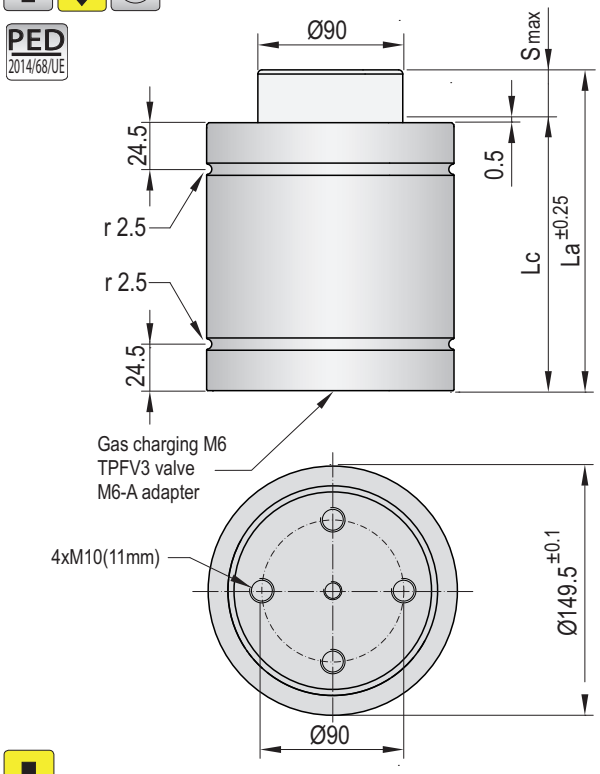
TECAPRES®

Ø150mm
18300daN

TPF 18300

VDI SAFETY

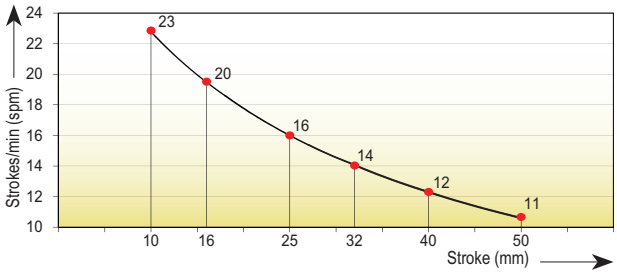
PED 2014/68/UE



Under request

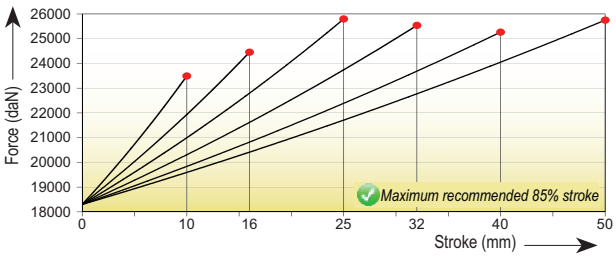
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	122,72 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 m/min
Maintenance kit	Kit F18300

Maximum strokes / minute (at 20°C)

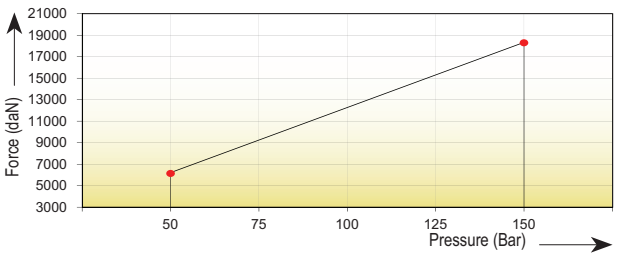


Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 18300x10	10	110	100		22665	23630		0,555	9,10
TPF 18300x16	16	136	120		23420	24600		0,780	9,95
TPF 18300x25	25	165	140	18300 ±5%	24450	25950	150	1,055	10,80
TPF 18300x32	32	197	165	(20°C)	24250	25690	(20°C)	1,385	13,26
TPF 18300x40	40	235	195		24045	25415		1,780	15,10
TPF 18300x50	50	270	220		24415	25905		2,120	16,80

Force/stroke ratio



Initial force/charging pressure ratio

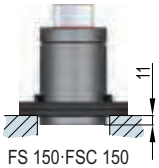


Assembly possibilities

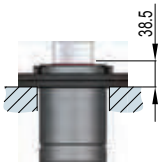
Follow guidelines Page 287


DROP-IN


SCREWS



FS 150·FSC 150



FS 150·FSC 150


FI 150·FI 150/1

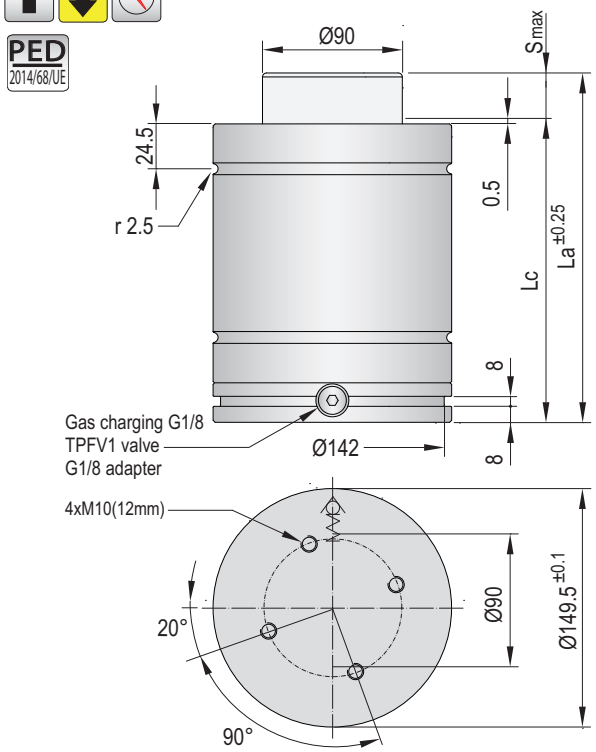
TECAPRES®

Ø150mm · G1/8 connectable
18300daN

TPF 18300 C

VDI SAFETY

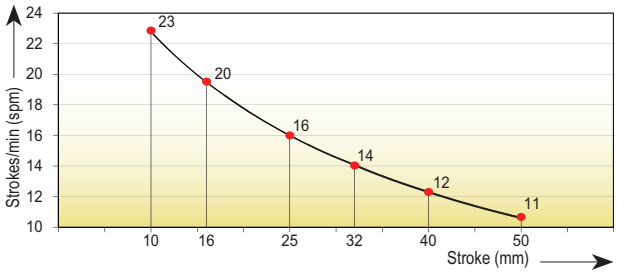
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Piston seal area	122,72 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	25 m/min
Maintenance kit	Kit F18300C

Under request

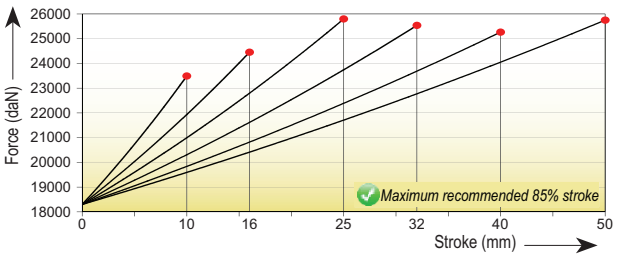
Maximum strokes / minute (at 20ºC)



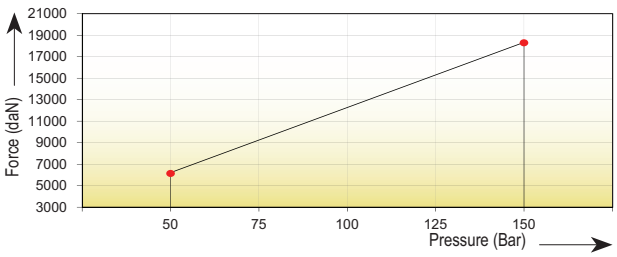
Code	Smax mm	La mm	Lc mm	Fa daN	85% F daN	100% Fc daN	P Bar	V l	Kg
TPF 18300x10 C	10	110	100		22665	23630		0,555	9,10
TPF 18300x16 C	16	136	120		23420	24600		0,780	9,95
TPF 18300x25 C	25	165	140	18300 ±5%	24450	25950	150	1,055	10,80
TPF 18300x32 C	32	197	165	(20ºC)	24250	25690	(20ºC)	1,385	13,26
TPF 18300x40 C	40	235	195		24045	25415		1,780	15,10
TPF 18300x50 C	50	270	220		24415	25905		2,120	16,80

Attention!
This model is designed to work in a hose system.

Force/stroke ratio



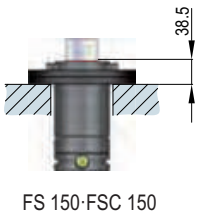
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

SCREWS



FS 150·FSC 150

FP 150·FPR 150

Connection alternatives

RMF-D1

RMF-T + RMF-D1(2x)

RMF-C + RMF-D1

RMF-L + RMF-D1(2x)

PED 2014/68/UE

Medium compact gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY			RENAULT STANDARD
TPK 25.1	25	7 - 125	200	√	√			
TPKN 25.1	25	12 - 100	200	√	√			
TPKR 25.1	25	7 - 63	200	√	√			
TPK 32	32	7 - 100	400	√	√		√	
TPKN 32	32	7 - 125	300	√	√		√	
TPKR 32	32	7 - 80	300	√	√		√	
TPK 600	38	12 - 125	600	√	√		√	
TPKF 500	45	13 - 125	470	√	√	√	√	√
TPKS 750	45	13 - 125	740	√	√	√	√	
TPKF 750	50	13 - 125	740	√	√	√	√	√
TPKS 1000	50	13 - 125	1000	√	√	√	√	
TPKFR 1000	50	25 - 125	920	√	√	√	√	√
TPK 1500.1	63	12 - 100	1500	√	√	√	√	
TPKN 1500	63	12 - 80	1500	√	√	√	√	
TPKF 1500	75	25 - 100	1500	√	√	√	√	√
TPKFR 2400	75	25 - 125	2400	√	√	√	√	√
TPK 2500	75	25 - 125	2400	√	√	√	√	
TPK 3000	75	12 - 100	3000	√	√	√	√	
TPKF 3000	95	25 - 100	3000	√	√	√	√	√
TPKFR 4200	95	25 - 125	4200	√	√	√	√	√
TPK 4250	95	25 - 125	4250	√	√	√	√	

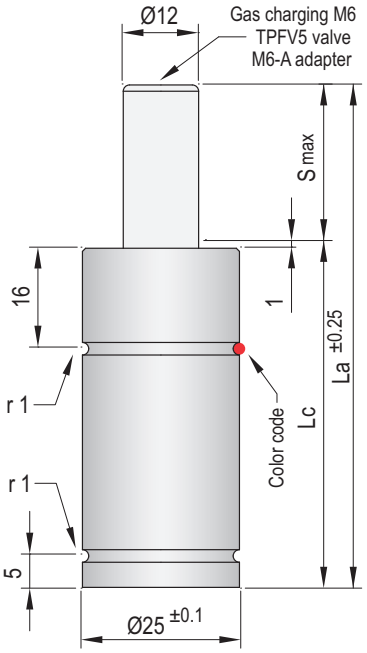
TECAPRES®

Ø25mm 200daN

TPK 25.1

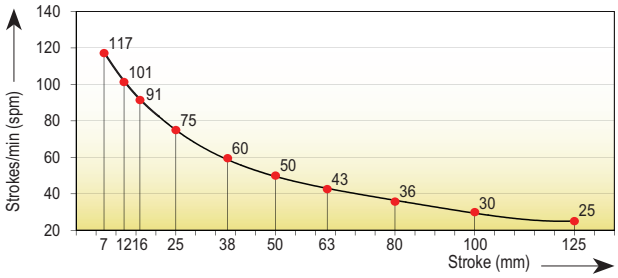
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit K25.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPK 25x7.1	7	46	39	0,003	0,09
TPK 25x12.1	12	54	42	0,005	0,10
TPK 25x16.1	16	62	46	0,006	0,11
TPK 25x25.1	25	80	55	0,009	0,13
TPK 25x38.1	38	106	68	0,014	0,15
TPK 25x50.1	50	130	80	0,018	0,17
TPK 25x63.1	63	156	93	0,023	0,20
TPK 25x80.1	80	190	110	0,029	0,22
TPK 25x100.1	100	230	130	0,036	0,25
TPK 25x125.1	125	282	157	0,046	0,30

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 140	90
RD *(Red)*	150 (±15)	≈ 210	135
YW *(Yellow)*	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

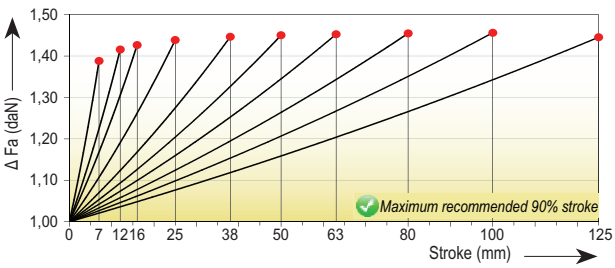
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

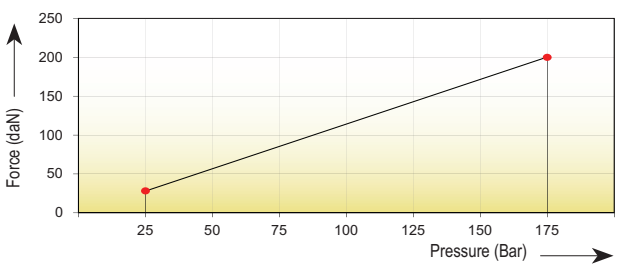
TPK 25 x **38.1** **YW**

Model | Stroke | Color code

Force/stroke ratio

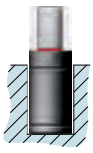


Initial force/charging pressure ratio

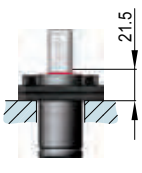


Assembly possibilities

Follow guidelines Page 287



DROP-IN

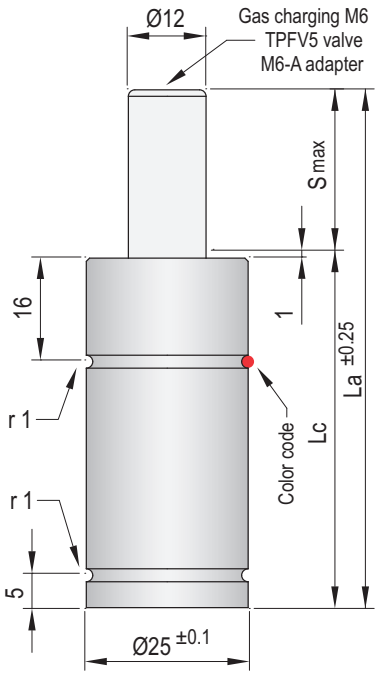


FS 25/1·FS 25/2

FS 25/1·FS 25/2

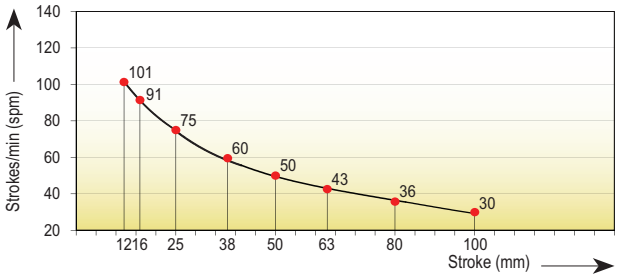
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KN25.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPKN 25x12.1	12	56	44	0,005	0,12
TPKN 25x16.1	16	64	48	0,006	0,13
TPKN 25x25.1	25	82	57	0,009	0,15
TPKN 25x38.1	38	108	70	0,014	0,17
TPKN 25x50.1	50	132	82	0,018	0,19
TPKN 25x63.1	63	158	95	0,023	0,21
TPKN 25x80.1	80	192	112	0,029	0,24
TPKN 25x100.1	100	232	132	0,036	0,27

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 140	90
RD *(Red)*	150 (±15)	≈ 210	135
YW *(Yellow)*	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

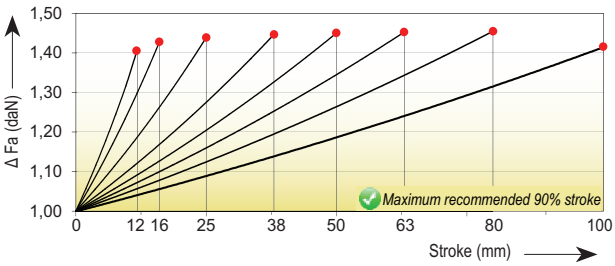
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

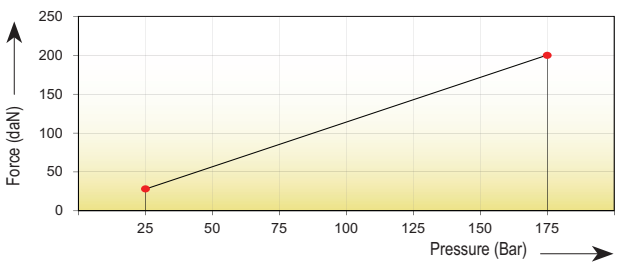
TPKN 25 x **16.1** **YW**

Model | Stroke | Color code

Force/stroke ratio

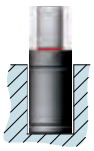


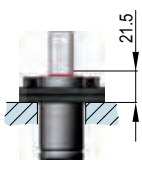
Initial force/charging pressure ratio



Assembly possibilities

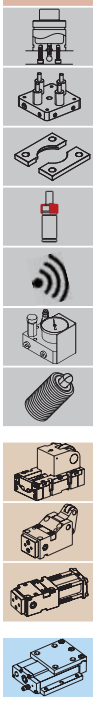
Follow guidelines
Page 287


DROP-IN



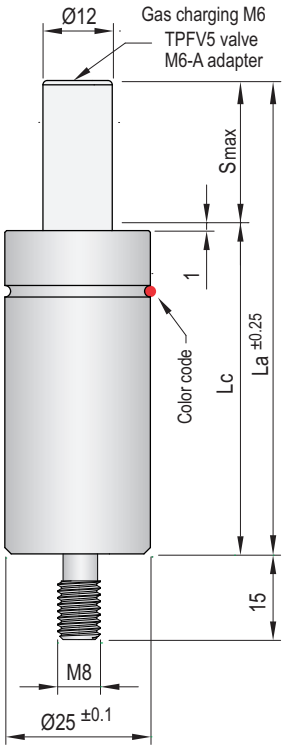
FS 25/1·FS 25/2


FS 25/1·FS 25/2



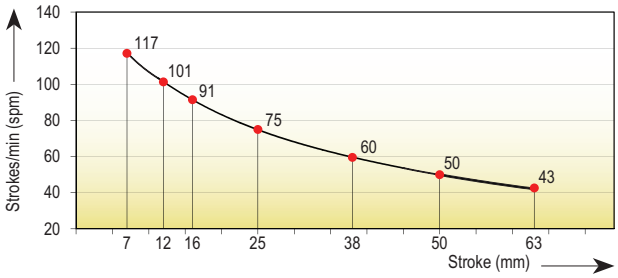
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KR25.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPKR 25x7.1	7	46	39	0,003	0,13
TPKR 25x12.1	12	56	44	0,005	0,14
TPKR 25x16.1	16	64	48	0,006	0,16
TPKR 25x25.1	25	82	57	0,009	0,18
TPKR 25x38.1	38	108	70	0,014	0,20
TPKR 25x50.1	50	132	82	0,018	0,22
TPKR 25x63.1	63	158	95	0,023	0,25

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 140	90
RD *(Red)*	150 (±15)	≈ 210	135
YW *(Yellow)*	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

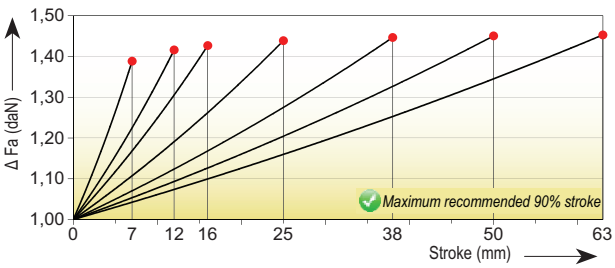
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

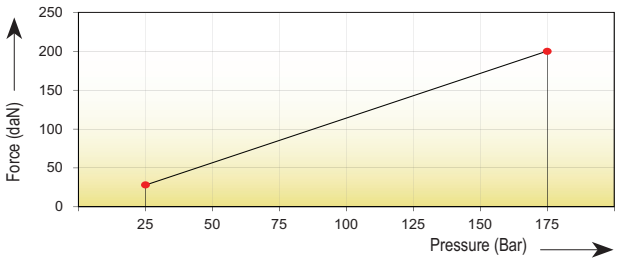
TPKR 25 x **12.1** **YW**

Model | Stroke | Color code

Force/stroke ratio

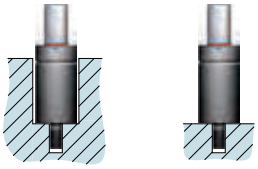


Initial force/charging pressure ratio



Assembly possibilities

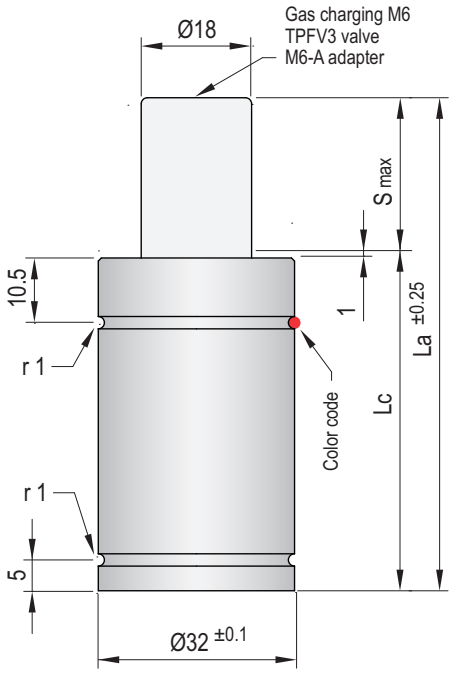
Follow guidelines
Page 287



THREAD MOUNT

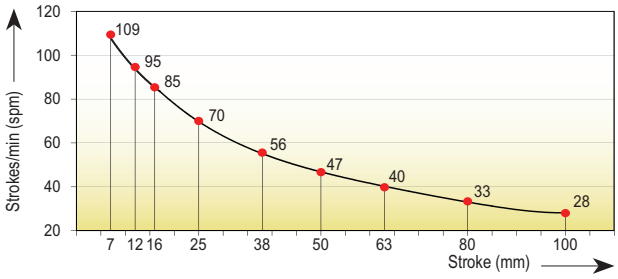
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit K32

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPK 32x7	7	49	42	0,005	0,20
TPK 32x12	12	59	47	0,008	0,21
TPK 32x16	16	67	51	0,011	0,23
TPK 32x25	25	85	60	0,017	0,26
TPK 32x38	38	111	73	0,025	0,29
TPK 32x50	50	135	85	0,033	0,33
TPK 32x63	63	161	98	0,041	0,37
TPK 32x80	80	195	115	0,052	0,43
TPK 32x100	100	235	135	0,065	0,49

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 155	40
BL *(Blue)*	200 (±15)	≈ 310	80
RD *(Red)*	300 (±20)	≈ 465	120
YW *(Yellow)*	400 (±20)	≈ 600	155
(Other forces)	65 - 400	≈ 100 - 600	25 - 155

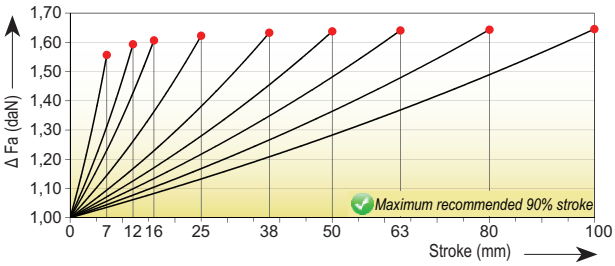
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

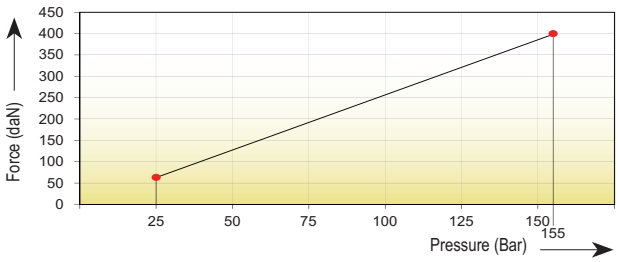
TPK 32 x **38** **YW**

Model | Stroke | Color code

Force/stroke ratio



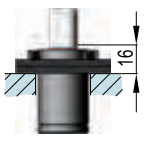
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN



FS 32
FS 32/1·FSC 32

FS 32
FS 32/1·FSC 32

FI 32·FI 32/1

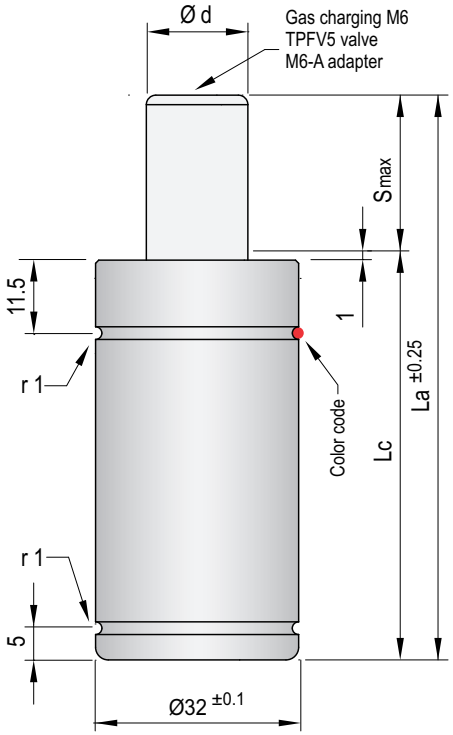
TECAPRES®

Ø32mm
300daN

TPKN 32

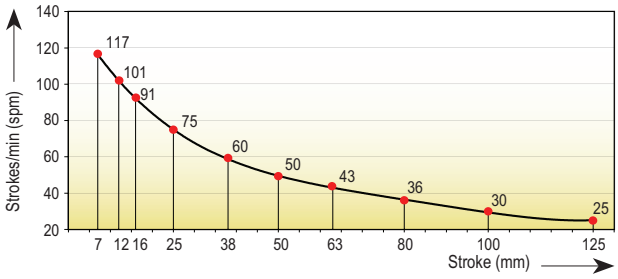
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	25 Bar
Rod seal area	Ø16 - 2,01cm² Ø18 - 2,54cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Ø16 - Kit KN32/16 Ø18 - Kit KN32/18

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	Ød mm	V l	Kg
TPKN 32x7	7	53	46	18	0,004	0,22
TPKN 32x12	12	63	51	18	0,007	0,23
TPKN 32x16	16	71	55	16	0,010	0,25
TPKN 32x25	25	89	64	16	0,015	0,29
TPKN 32x38	38	115	77	16	0,023	0,31
TPKN 32x50	50	139	89	16	0,030	0,35
TPKN 32x63	63	165	102	16	0,038	0,39
TPKN 32x80	80	199	119	16	0,049	0,45
TPKN 32x100	100	239	139	16	0,061	0,51
TPKN 32x125	125	289	164	16	0,081	0,57

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 145	50
BL *(Blue)*	200 (±15)	≈ 285	100
RD *(Red)*	250 (±20)	≈ 360	125
YW *(Yellow)*	300 (±20)	≈ 430	150
(Other forces)	50 - 300	≈ 75 - 430	25 - 150

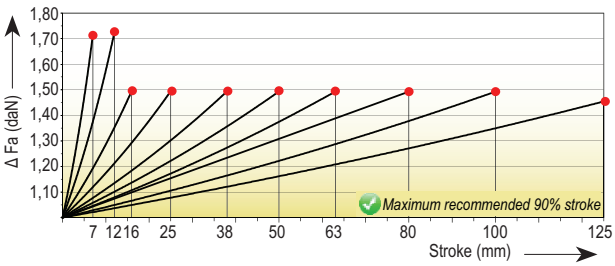
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

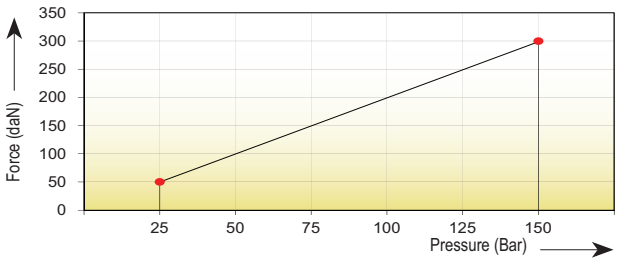
TPKN 32 x **63** **BL**

Model | Stroke | Color code

Force/stroke ratio



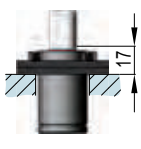
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN



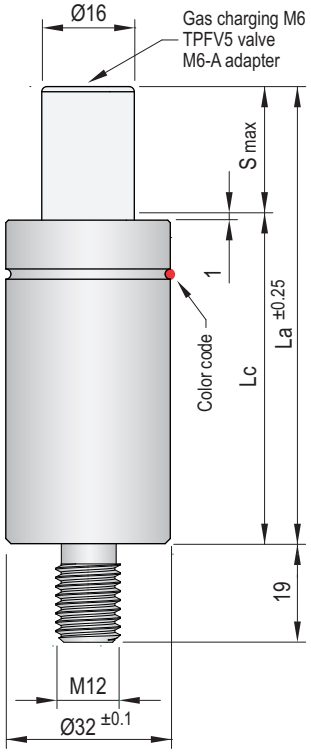
FS 32
FS 32/1·FSC 32

FS 32
FS 32/1·FSC 32

FI 32·FI 32/1

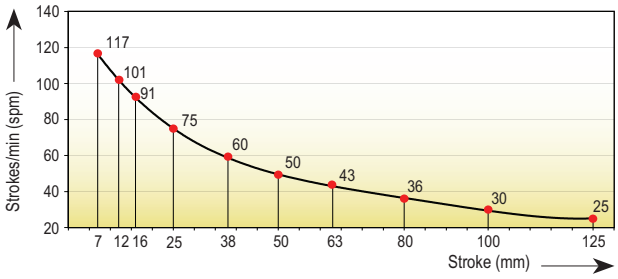
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit KR32.1

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPKR 32x7	7	53	46	0,005	0,23
TPKR 32x12	12	63	51	0,007	0,24
TPKR 32x16	16	71	55	0,010	0,26
TPKR 32x25	25	89	64	0,015	0,30
TPKR 32x38	38	115	77	0,023	0,32
TPKR 32x50	50	139	89	0,030	0,36
TPKR 32x63	63	165	102	0,038	0,40
TPKR 32x80	80	199	119	0,049	0,46

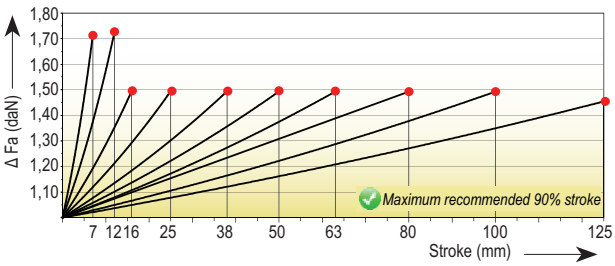
Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 145	50
BL *(Blue)*	200 (±15)	≈ 285	100
RD *(Red)*	250 (±20)	≈ 360	125
YW *(Yellow)*	300 (±20)	≈ 430	150
(Other forces)	50 - 300	≈ 75 - 430	25 - 150

The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

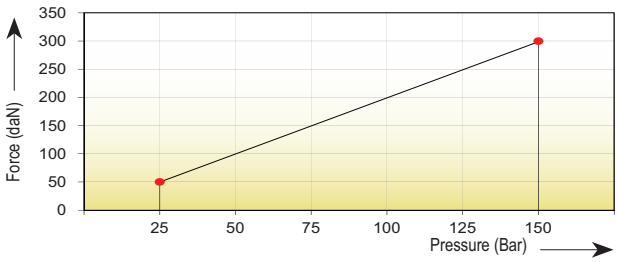
How to order

TPKR 32 (Model) x 25 (Stroke) RD (Color code)

Force/stroke ratio

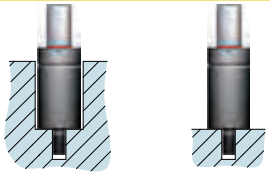


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



THREAD MOUNT

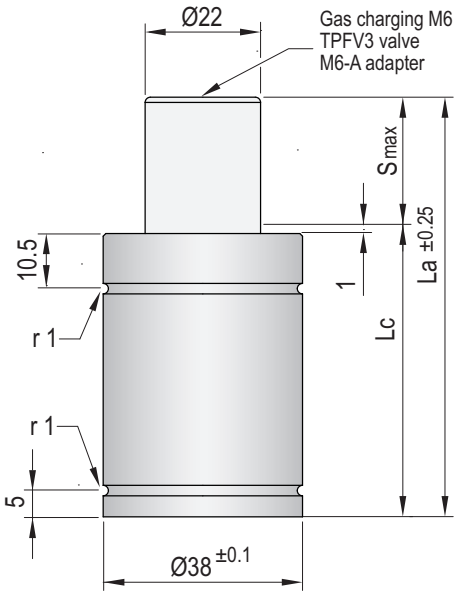
TECAPRES®

Ø38mm
600daN

TPK 600

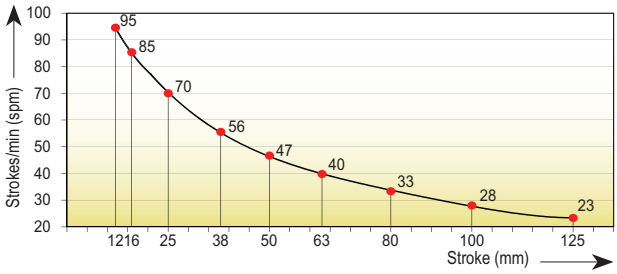
VDI SAFETY

PED 2014/68/UE



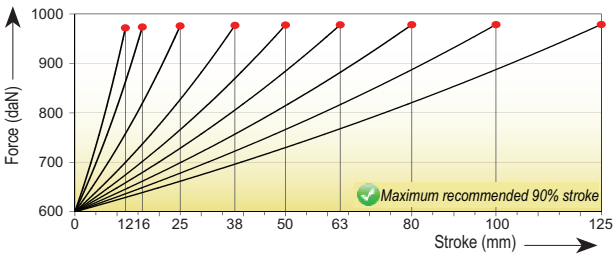
Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit K600

Maximum strokes / minute (at 20°C)

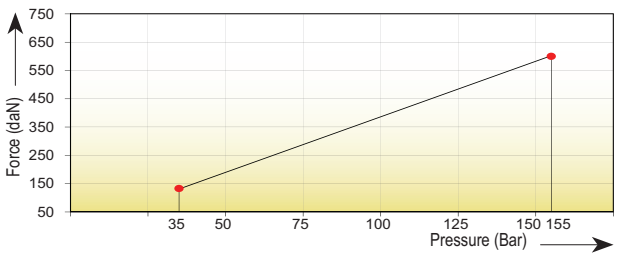


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPK 600x12	12	61	49	600 ±5% (20°C)	900	955	155 (20°C)	0,012	0,30
TPK 600x16	16	69	53		900	955		0,016	0,32
TPK 600x25	25	87	62		900	960		0,025	0,35
TPK 600x38	38	113	75		905	960		0,037	0,41
TPK 600x50	50	137	87		905	960		0,049	0,45
TPK 600x63	63	163	100		905	960		0,062	0,50
TPK 600x80	80	197	117		905	960		0,079	0,57
TPK 600x100	100	237	137		905	960		0,098	0,66
TPK 600x125	125	287	162		905	960		0,123	0,79

Force/stroke ratio

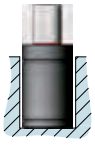


Initial force/charging pressure ratio

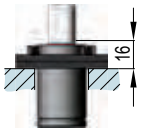


Assembly possibilities

Follow guidelines
Page 287



DROP-IN



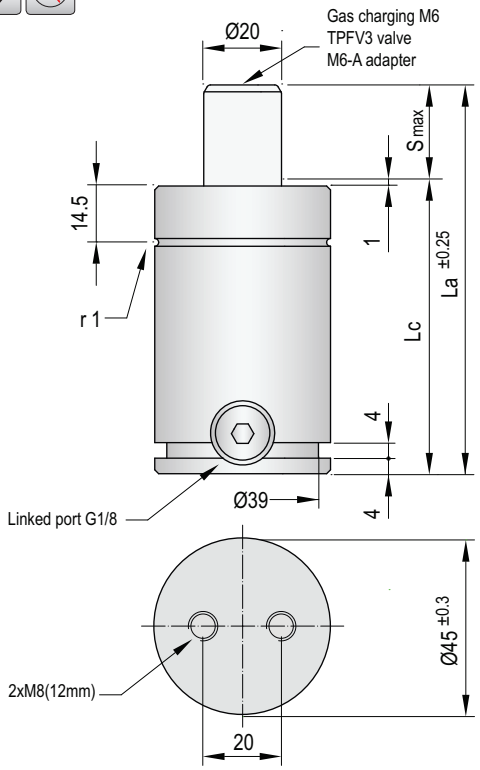
FS 38·FSC 38

FS 38·FSC 38

FI 38·FI 38/1

VDI SAFETY

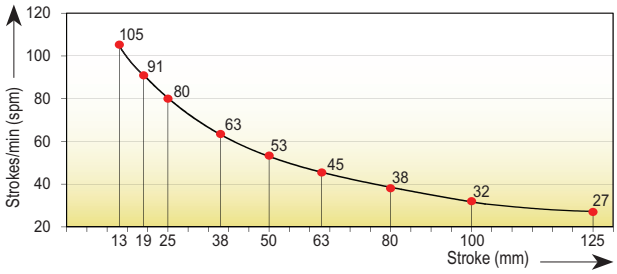
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KF500

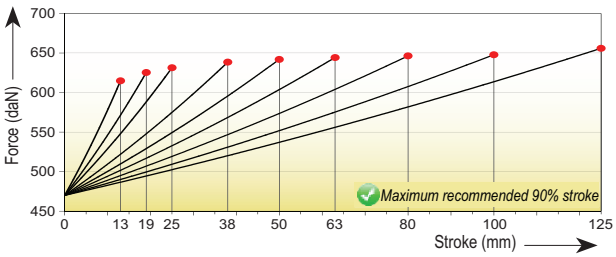
RENAULT
EM24.54/700/F

Maximum strokes / minute (at 20ºC)

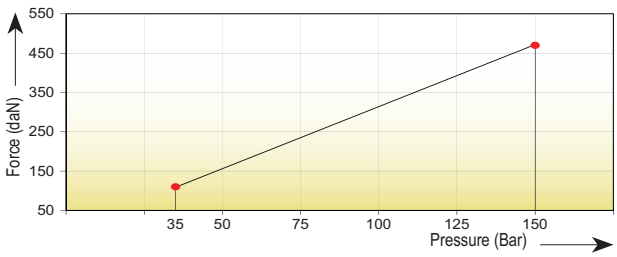


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKF 500x13	13	75,7	62,7	470 ±5% (20ºC)	600	615	150 (20ºC)	0,017	0,55
TPKF 500x19	19	88	69		605	625		0,024	0,60
TPKF 500x25	25	100	75		610	635		0,031	0,65
TPKF 500x38	38	126	88		620	640		0,045	0,85
TPKF 500x50	50	150	100		620	645		0,059	0,88
TPKF 500x63	63	177	114		625	645		0,073	0,95
TPKF 500x80	80	210	130		625	650		0,092	1,05
TPKF 500x100	100	250	150		625	650		0,114	1,20
TPKF 500x125	125	300	175		635	660		0,139	1,45

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 45·FSC 45 | FP 45·FPR 45 | FRS 45 | FB 45·FB 45 | FI 45·FI 45/1

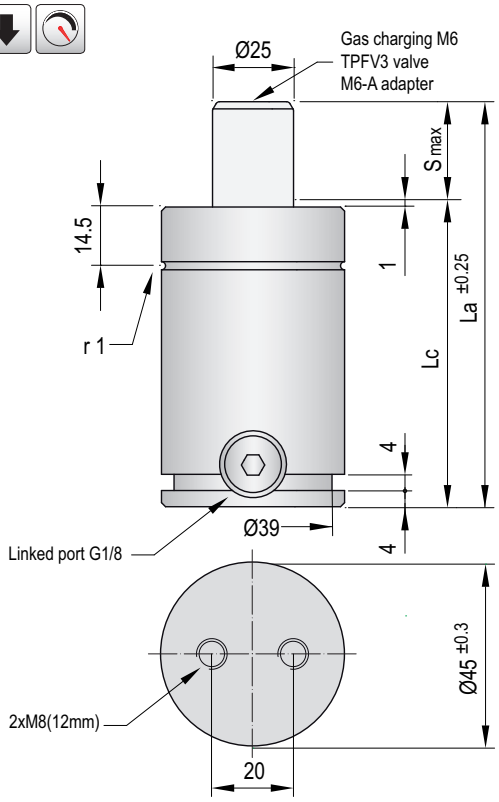
TECAPRES®

Ø45mm 740daN

TPKS 750

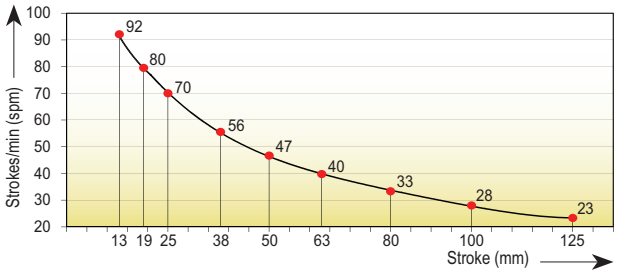
VDI SAFETY

PED 2014/68/UE



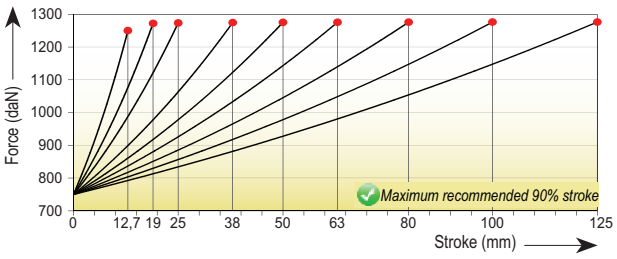
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KS750

Maximum strokes / minute (at 20ºC)

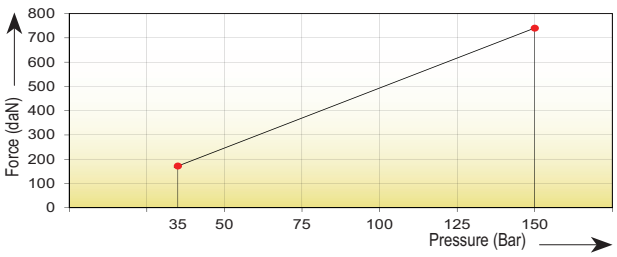


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKS 750x13	12,7	75,4	62,7	740 ±5% (20ºC)	1150	1225	150 (20ºC)	0,016	0,60
TPKS 750x19	19	88	69		1170	1250		0,023	0,65
TPKS 750x25	25	100	75		1170	1250		0,030	0,70
TPKS 750x38	38	126	88		1170	1250		0,045	0,80
TPKS 750x50	50	150	100		1170	1250		0,060	0,88
TPKS 750x63	63	177	114		1170	1255		0,075	0,98
TPKS 750x80	80	210	130		1170	1255		0,095	1,10
TPKS 750x100	100	250	150		1170	1255		0,119	1,24
TPKS 750x125	125	300	175		1170	1255		0,149	1,37

Force/stroke ratio

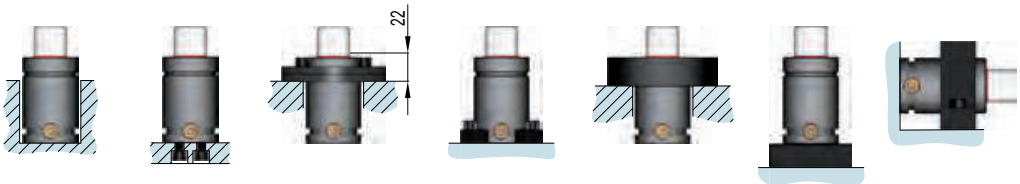


Initial force/charging pressure ratio



Assembly possibilities

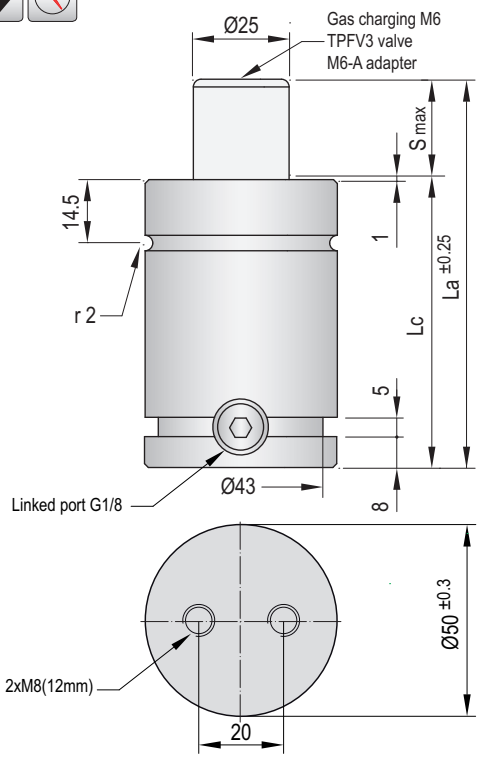
Follow guidelines Page 287



DROP-IN | SCREWS | FS 45·FSC 45 | FP 45·FPR 45 | FRS 45 | FB 45 | FI 45·FI 45/1

VDI SAFETY

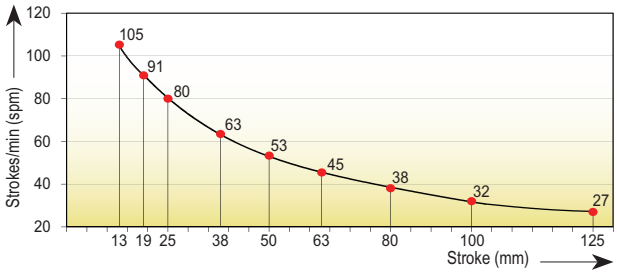
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KF750

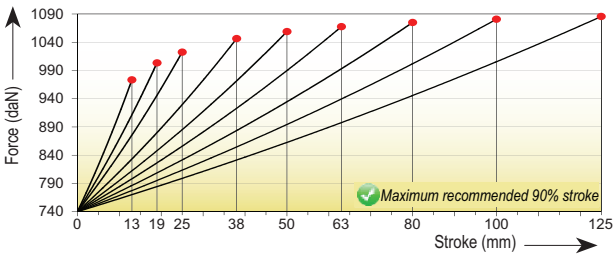
RENAULT
EM24.54/700/F

Maximum strokes / minute (at 20ºC)

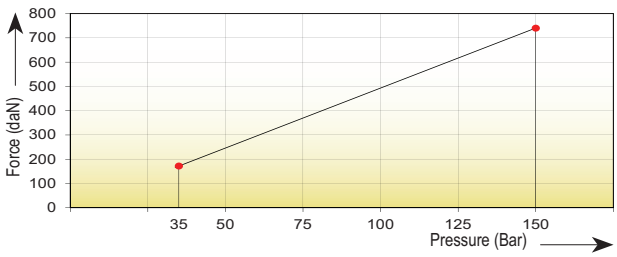


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKF 750x13	13	75,7	62,7	740 ±5% (20ºC)	935	960	150 (20ºC)	0,027	0,72
TPKF 750x19	19	88	69		965	1000		0,036	0,75
TPKF 750x25	25	100	75		980	1015		0,044	0,80
TPKF 750x38	38	126	88		1000	1040		0,064	0,92
TPKF 750x50	50	150	100		1010	1055		0,082	1,02
TPKF 750x63	63	177	114		1015	1060		0,101	1,15
TPKF 750x80	80	210	130		1025	1070		0,126	1,31
TPKF 750x100	100	250	150		1030	1075		0,156	1,50
TPKF 750x125	125	300	175		1030	1080		0,193	1,65

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

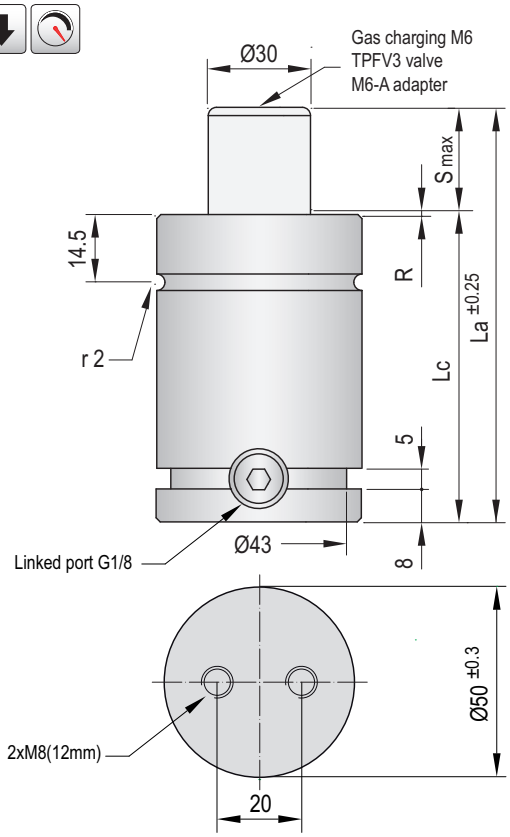
TECAPRES®

Ø50mm
1000daN

TPKS 1000

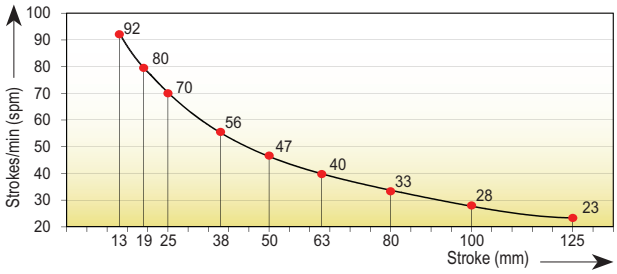
VDI SAFETY

PED 2014/68/UE



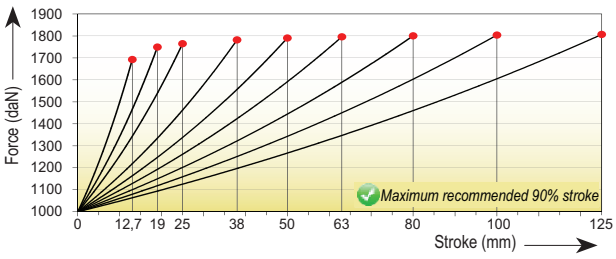
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit KS1000

Maximum strokes / minute (at 20ºC)

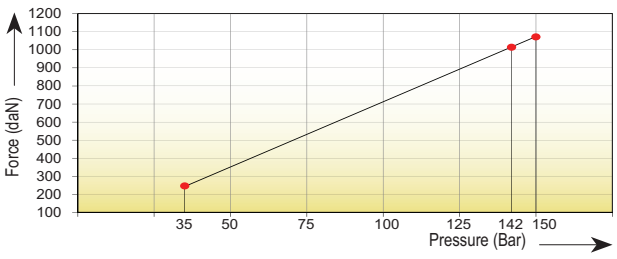


Code	Smax mm	La mm	Lc mm	R mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKS 1000x13	12,7	75,4	62,7	1	1000 ±5% (20ºC)	1590	1700	142 (20ºC)	0,022	0,59
TPKS 1000x19	19	88	69	1		1635	1755		0,031	0,62
TPKS 1000x25	25	100	75	1		1645	1770		0,041	0,69
TPKS 1000x38	38	126	88	1		1660	1790		0,061	0,81
TPKS 1000x50	50	150	100	1		1665	1795		0,080	0,91
TPKS 1000x63	63	177	114	1		1670	1805		0,101	1,05
TPKS 1000x80	80	210	130	1		1675	1805		0,127	1,20
TPKS 1000x100	100	250	150	1		1675	1810		0,159	1,41
TPKS 1000x125	125	300	175	3		1680	1815		0,198	1,55

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

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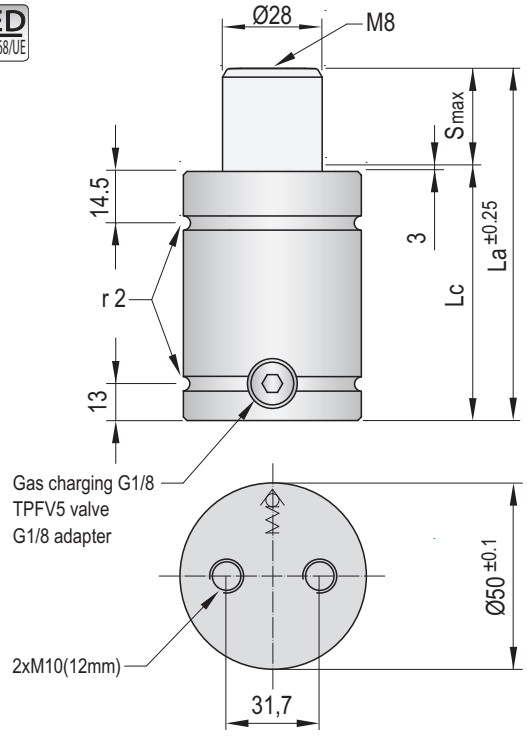
VDI SAFETY

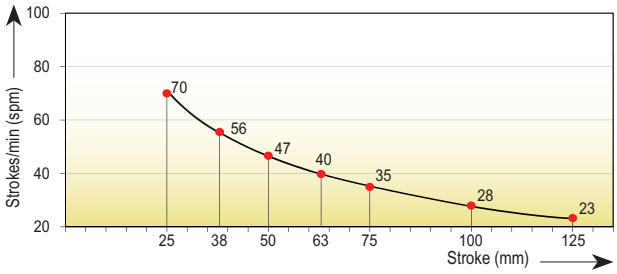
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KFR1000

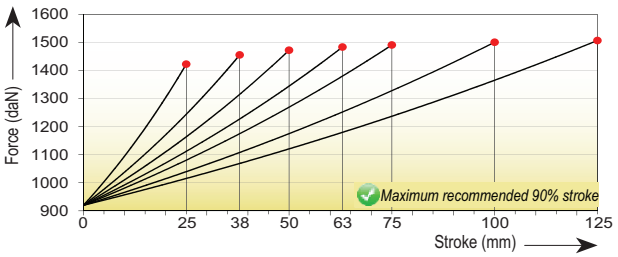
RENAULT	PSA
EM24.54/700/F	E24.54/815/G

Maximum strokes / minute (at 20ºC)

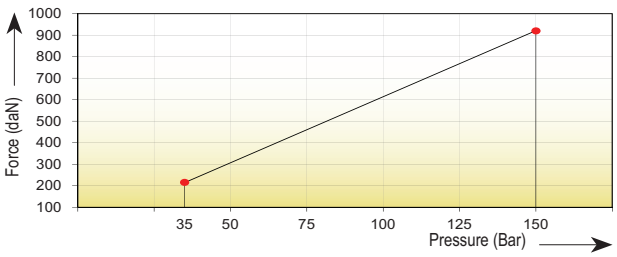


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKFR 1000x25	25	102	77	920 ±5% (20ºC)	1355	1430	150 (20ºC)	0,044	0,83
TPKFR 1000x38	38	128	90		1380	1460		0,064	1,05
TPKFR 1000x50	50	152	102		1395	1480		0,082	1,22
TPKFR 1000x63	63	178	115		1405	1490		0,102	1,36
TPKFR 1000x75	75	202	127		1410	1495		0,121	1,50
TPKFR 1000x100	100	252	152		1415	1505		0,159	1,92
TPKFR 1000x125	125	302	177		1420	1515		0,198	2,20

Force/stroke ratio

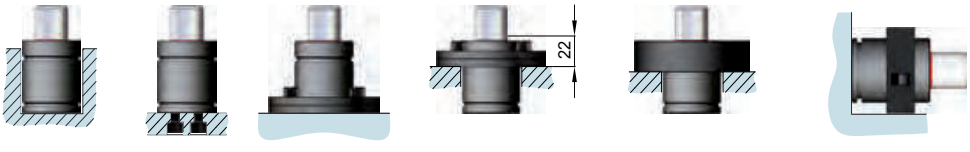


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 50 · FSC 50 | FS 50 · FSC 50 | FRS 50 | FI 50 · FI 50/1

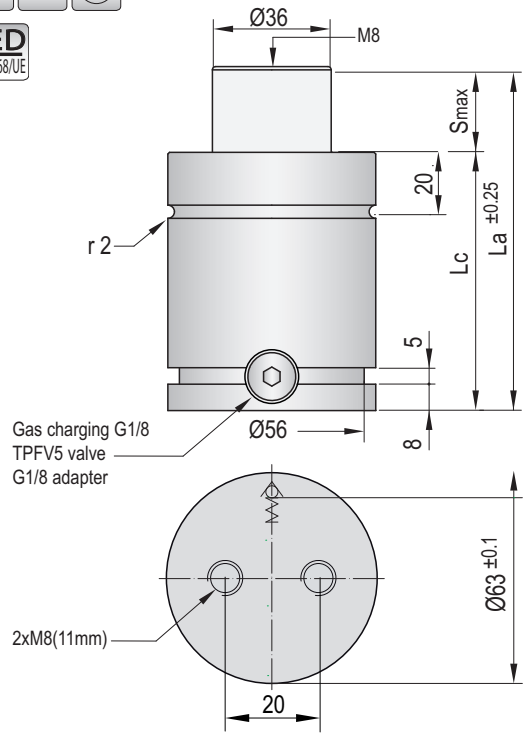
TECAPRES®

Ø63mm 1500daN

TPK 1500.1

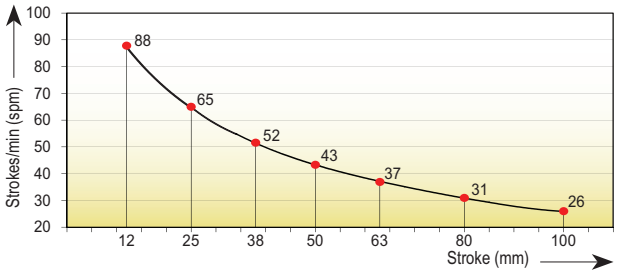
VDI SAFETY

PED 2014/68/UE



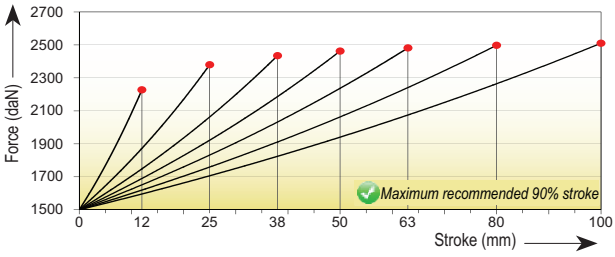
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit K1500.1

Maximum strokes / minute (at 20ºC)

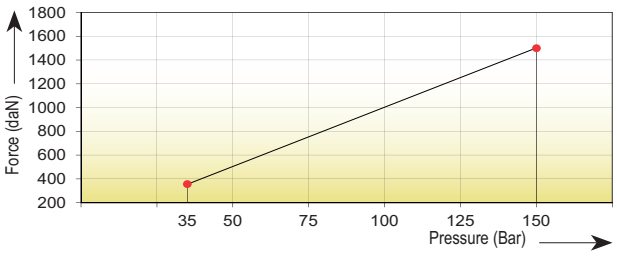


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPK 1500x12.1	12	79	67	1500 ±5% (20ºC)	2135	2235	148 (20ºC)	0,037	1,20
TPK 1500x25.1	25	105	80		2260	2390		0,069	1,43
TPK 1500x38.1	38	131	93		2300	2445		0,101	1,89
TPK 1500x50.1	50	155	105		2325	2475		0,130	2,45
TPK 1500x63.1	63	181	118		2340	2495		0,162	2,31
TPK 1500x80.1	80	215	135		2350	2510		0,204	2,40
TPK 1500x100.1	100	255	155		2360	2520		0,253	2,73

Force/stroke ratio



Initial force/charging pressure ratio

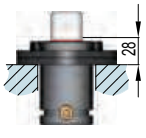


Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS



FS63· FSC 63·FSC 63/1


FP 63·FPR 63

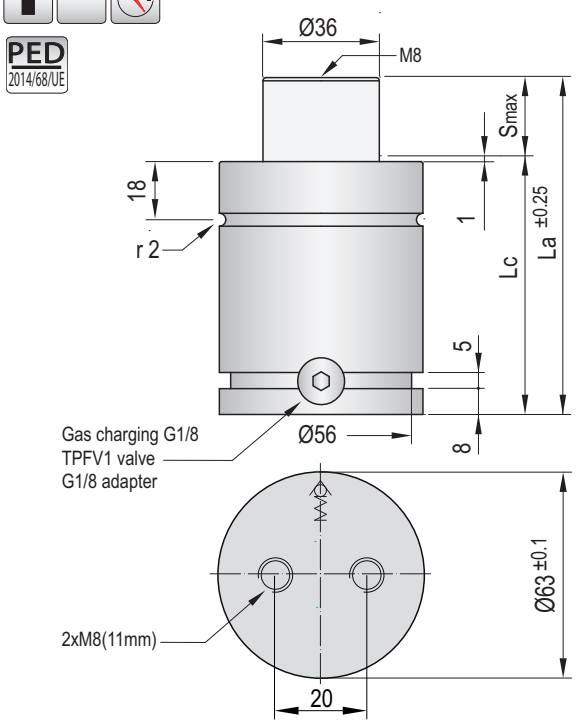

FRS 63


FB 50·FB 63


FI 63/1

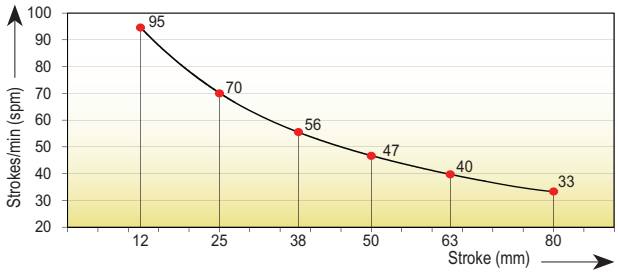
VDI SAFETY

PED 2014/68/UE



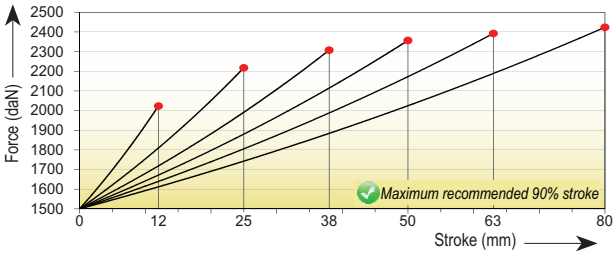
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit KN1500

Maximum strokes / minute (at 20°C)

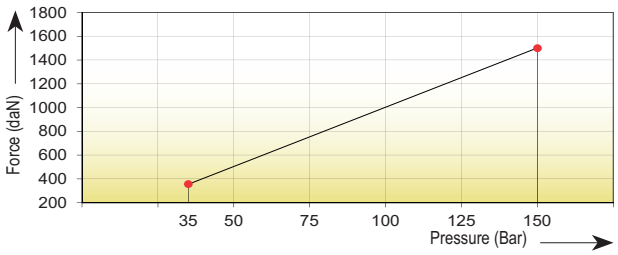


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKN 1500x12	12	84	72		1965	2030		0,047	1,30
TPKN 1500x25	25	110	85		2125	2225		0,079	1,53
TPKN 1500x38	38	136	98	1500 ±5%	2200	2315	148	0,111	1,99
TPKN 1500x50	50	160	110	(20°C)	2240	2365	(20°C)	0,140	2,25
TPKN 1500x63	63	186	123		2270	2405		0,172	2,41
TPKN 1500x80	80	220	140		2295	2435		0,214	2,50

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS63· FSC 63·FSC 63/1 | FP 63·FPR 63 | FRS 63 | FB 50·FB 63 | FI 63/1

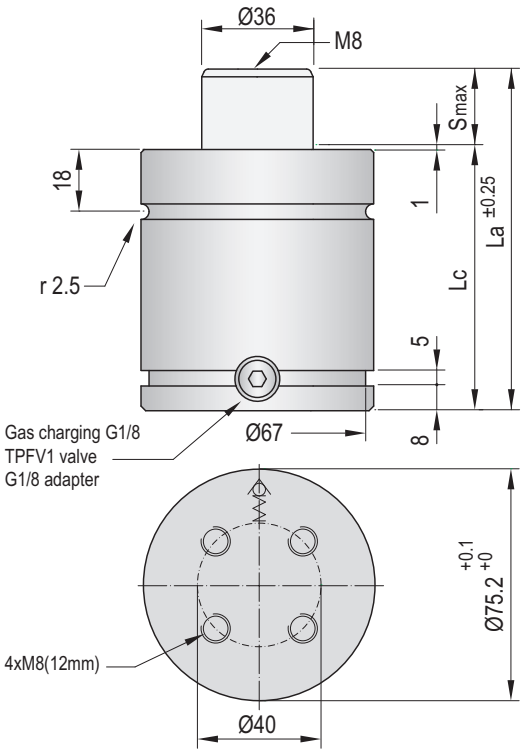
TECAPRES®

Ø75mm 1500daN

TPKF 1500

VDI SAFETY

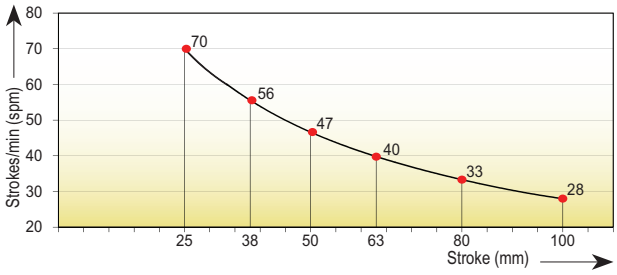
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KF1500

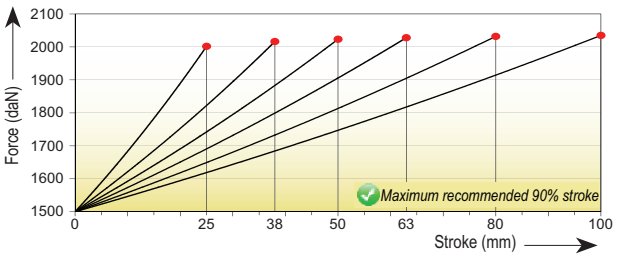
RENAULT
EM24.54/700/F

Maximum strokes / minute (at 20ºC)

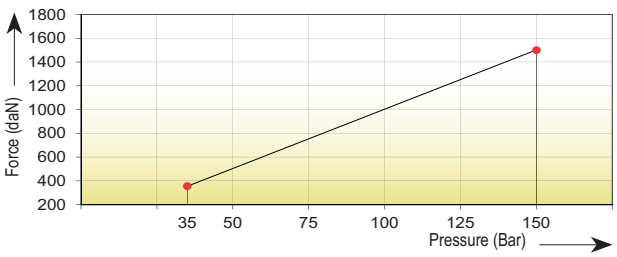


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKF 1500x25	25	110	85		1945	2010		0,102	1,80
TPKF 1500x38	38	136	98		1960	2025		0,151	1,90
TPKF 1500x50	50	160	110	1500 ±5%	1965	2030	148	0,197	2,20
TPKF 1500x63	63	186	123	(20ºC)	1970	2035	(20ºC)	0,246	2,45
TPKF 1500x80	80	220	140		1970	2040		0,311	2,80
TPKF 1500x100	100	260	160		1975	2045		0,387	3,20

Force/stroke ratio



Initial force/charging pressure ratio



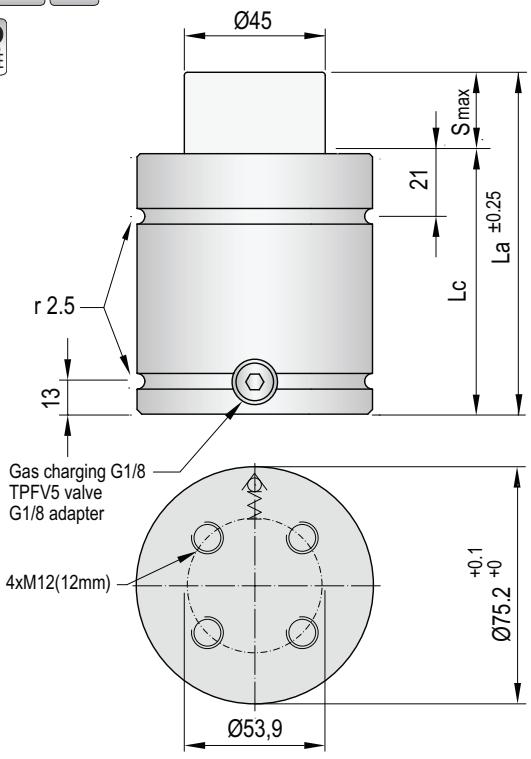
Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS75·FSC 75 | FP 75·FPR 75 | FRS 63 | FB 75 | FI 75·FI 75/1

VDI SAFETY

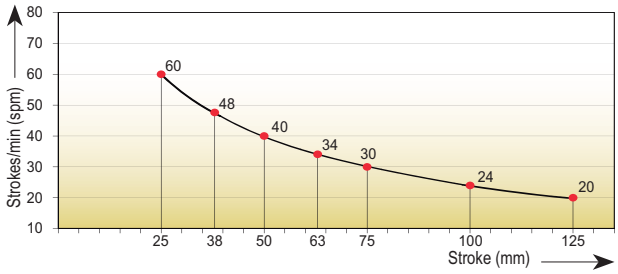
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KFR2400

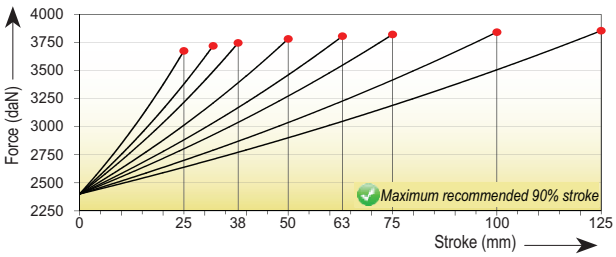
RENAULT	PSA
EM24.54/700/F	E24.54/815/G

Maximum strokes / minute (at 20ºC)

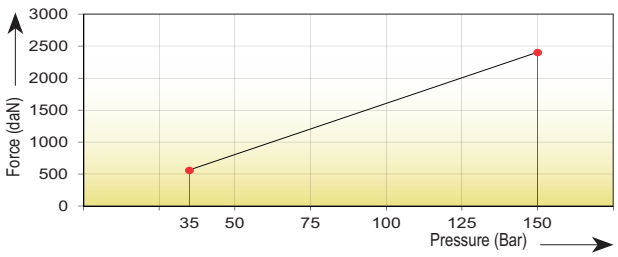


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKFR 2400x25	25	109	84	2400 ±5% (20ºC)	3470	3650	150 (20ºC)	0,115	1,74
TPKFR 2400x38	38	135	97		3525	3725		0,168	1,99
TPKFR 2400x50	50	159	109		3555	3760		0,218	2,09
TPKFR 2400x63	63	185	122		3575	3785		0,271	2,39
TPKFR 2400x75	75	209	134		3585	3800		0,321	1,44
TPKFR 2400x100	100	259	159		3600	3820		0,424	2,89
TPKFR 2400x125	125	309	184		3610	3830		0,527	3,39

Force/stroke ratio

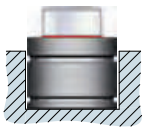


Initial force/charging pressure ratio

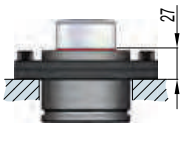


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 75 · FSC 75


FS 75 · FSC 75


FI 75 · FI 75/1

TPK
TPC
TPR
TPB
TPHC
TPA
TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

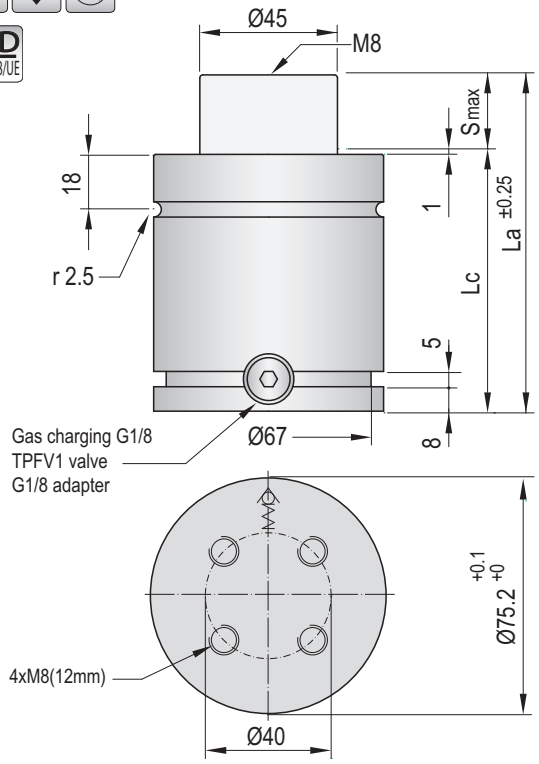
TECAPRES®

Ø75mm 2400daN

TPK 2500

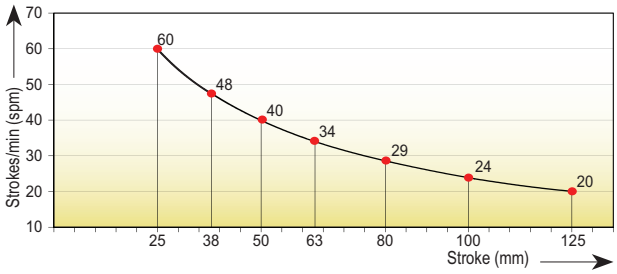
VDI SAFETY

PED 2014/68/UE



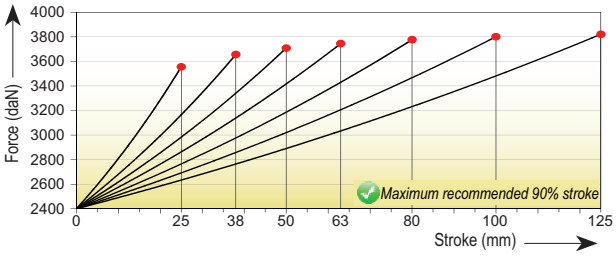
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit K2500

Maximum strokes / minute (at 20°C)

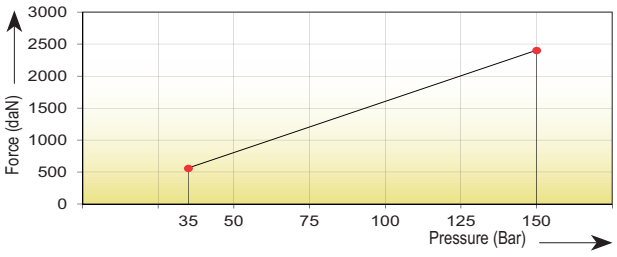


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPK 2500x25	25	110	85	2400 ±5% (20°C)	3375	3535	150 (20°C)	0,122	2,00
TPK 2500x38	38	136	98		3455	3635		0,176	2,10
TPK 2500x50	50	160	110		3495	3685		0,225	2,40
TPK 2500x63	63	186	123		3525	3725		0,279	2,65
TPK 2500x80	80	220	140		3550	3755		0,349	3,00
TPK 2500x100	100	260	160		3570	3780		0,432	3,30
TPK 2500x125	125	310	185		3585	3800		0,535	3,65

Force/stroke ratio

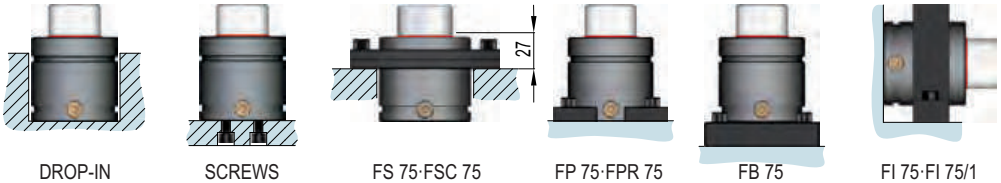


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FI 75·FI 75/1

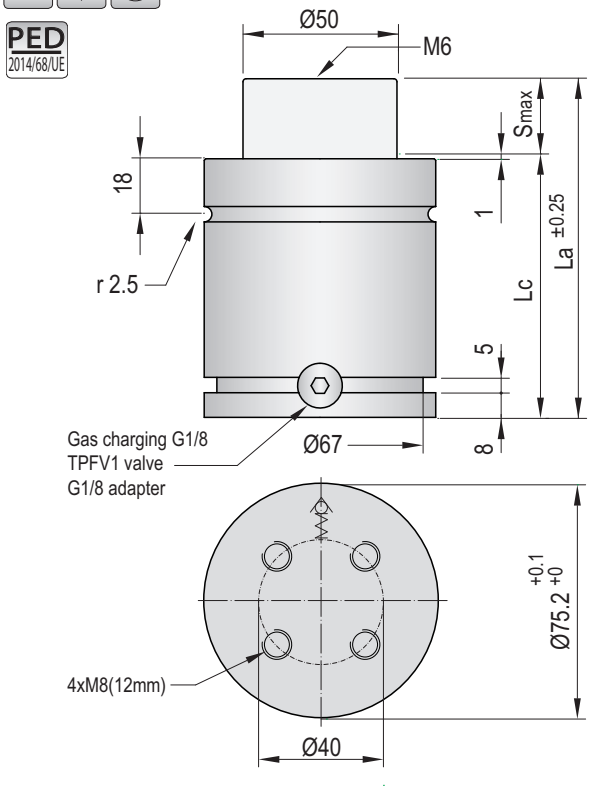
TECAPRES®

Ø75mm
3000daN

TPK 3000

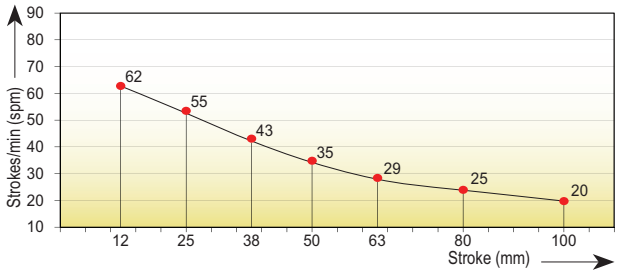
VDI SAFETY

PED 2014/68/UE



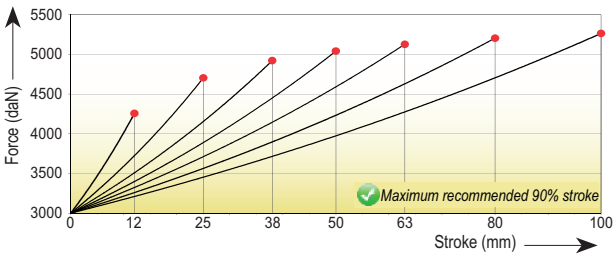
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit K3000

Maximum strokes / minute (at 20ºC)

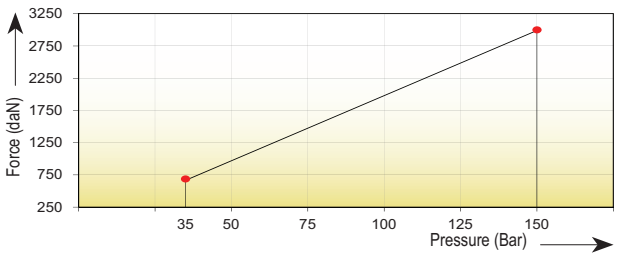


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPK 3000x12	12	84	72	3000 ±5% (20ºC)	4090	4265	150 (20ºC)	0,080	1,65
TPK 3000x25	25	110	85		4460	4710		0,136	2,10
TPK 3000x38	38	136	98		4630	4930		0,191	2,25
TPK 3000x50	50	160	110		4725	5050		0,243	2,50
TPK 3000x63	63	186	123		4795	5135		0,298	2,75
TPK 3000x80	80	220	140		4855	5210		0,371	3,15
TPK 3000x100	100	260	160		4900	5270		0,457	3,45

Force/stroke ratio

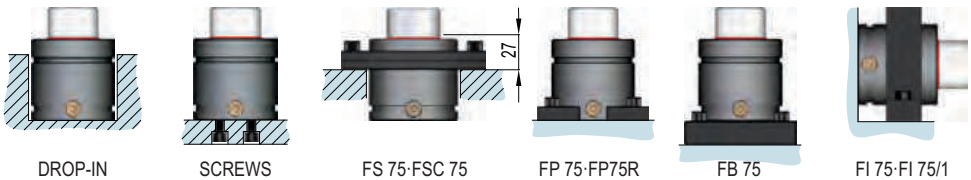


Initial force/charging pressure ratio



Assembly possibilities

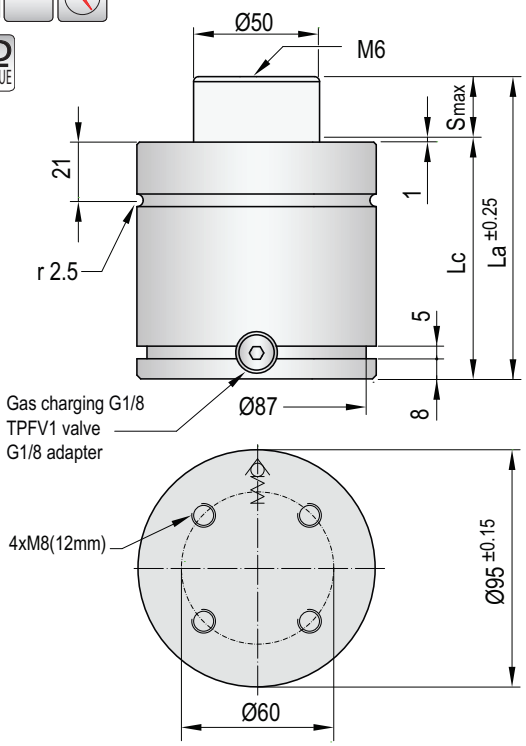
Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FP75R | FB 75 | FI 75·FI 75/1

VDI SAFETY

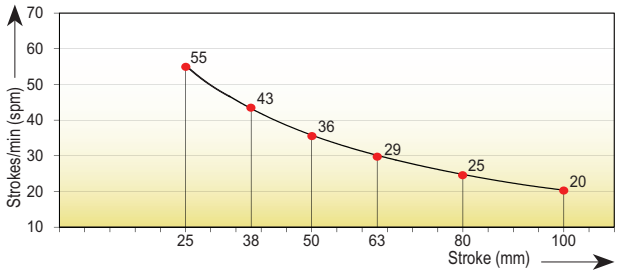
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit KF3000

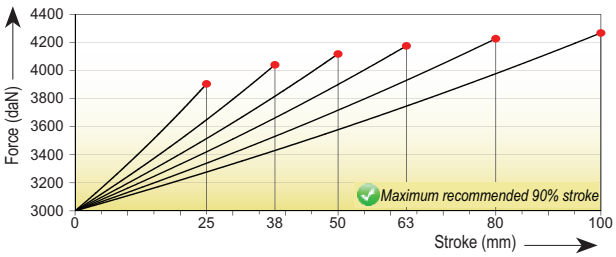
RENAULT
EM24.54/700/F

Maximum strokes / minute (at 20°C)

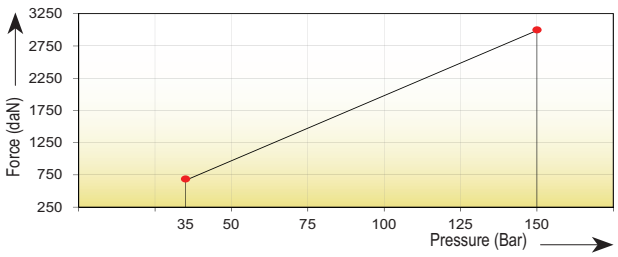


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKF 3000x25	25	120	95		3795	3910		0,212	3,60
TPKF 3000x38	38	146	108		3910	4045		0,290	4,20
TPKF 3000x50	50	170	120	3000 ±5%	3975	4125	150	0,362	4,40
TPKF 3000x63	63	196	133	(20°C)	4025	4180	(20°C)	0,440	4,90
TPKF 3000x80	80	230	150		4065	4230		0,541	5,40
TPKF 3000x100	100	270	170		4100	4275		0,661	6,50

Force/stroke ratio

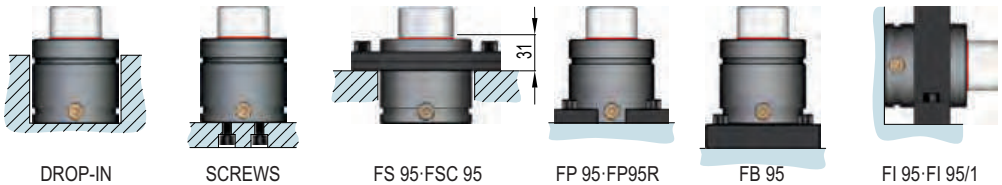


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FP95R | FB 95 | FI 95·FI 95/1

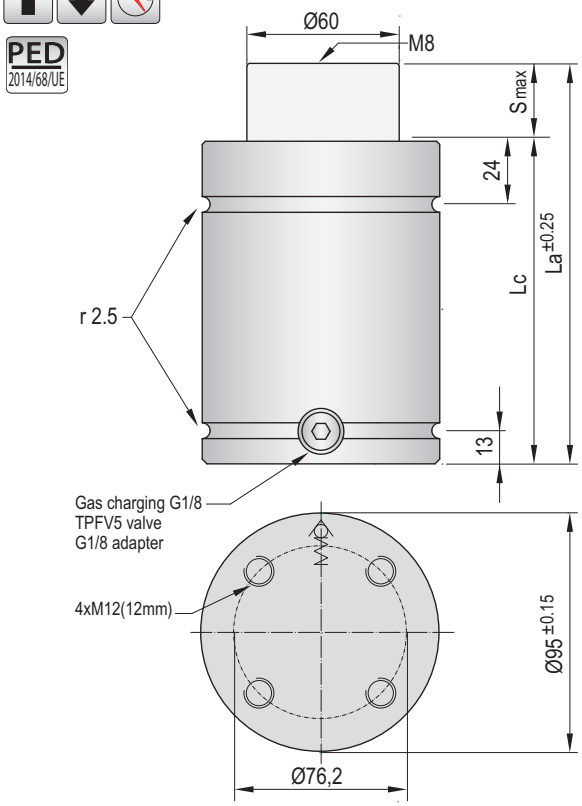
TECAPRES®

Ø95mm 4200daN

TPKFR 4200

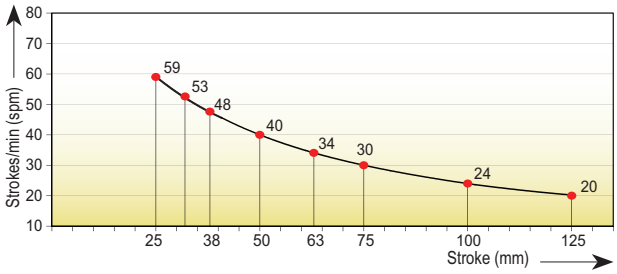
VDI SAFETY

PED 2014/68/UE



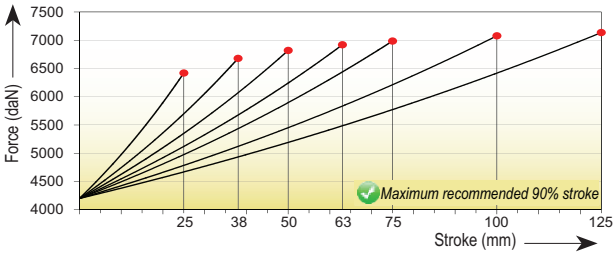
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit KFR4200
RENAULT EM24.54/700/F	**PSA** E24.54/815/G

Maximum strokes / minute (at 20ºC)

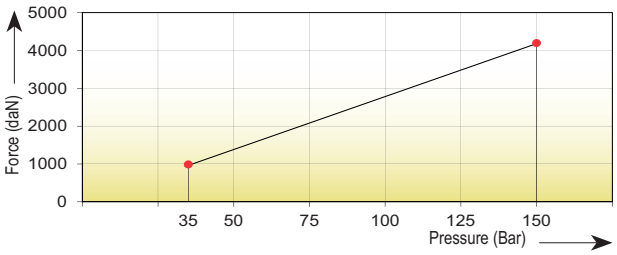


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPKFR 4200x25	25	112	87	4200 ±5% (20ºC)	6160	6485	150 (20ºC)	0,204	3,12
TPKFR 4200x38	38	138	100		6370	6745		0,290	3,72
TPKFR 4200x50	50	162	112		6480	6885		0,368	3,92
TPKFR 4200x63	63	188	125		6565	6990		0,453	4,42
TPKFR 4200x75	75	212	137		6615	7055		0,532	4,77
TPKFR 4200x100	100	262	162		6690	7145		0,695	6,02
TPKFR 4200x125	125	312	187		6735	7205S		0,859	6,52

Force/stroke ratio

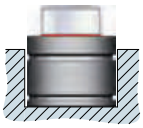


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 95 · FSC 95


FS 95 · FSC 95


FI 95 · FI 95/1

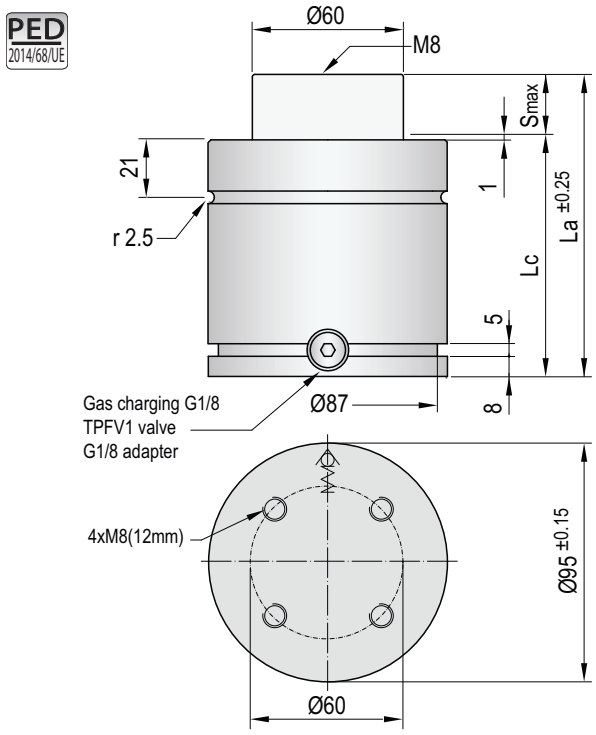
TECAPRES®

Ø95mm
4250daN

TPK 4250

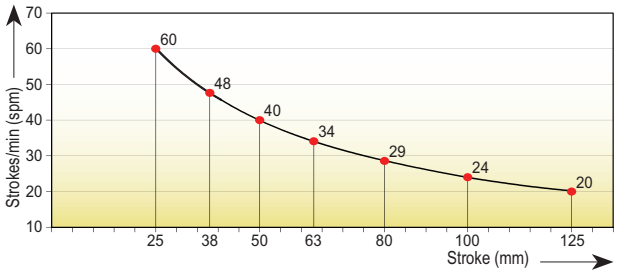
VDI SAFETY

PED 2014/68/UE



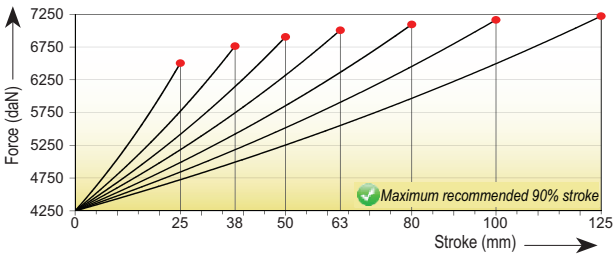
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit K4250

Maximum strokes / minute (at 20ºC)

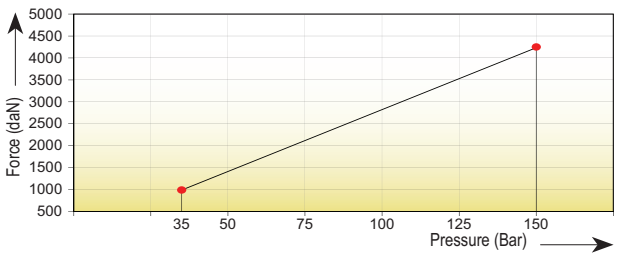


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPK 4250x25	25	120	95	4250 ±5% (20ºC)	6165	6490	150 (20ºC)	0,204	3,65
TPK 4250x38	38	146	108		6375	6750		0,289	4,25
TPK 4250x50	50	170	120		6485	6890		0,368	4,45
TPK 4250x63	63	196	133		6565	6995		0,453	4,95
TPK 4250x80	80	230	150		6635	7080		0,564	5,45
TPK 4250x100	100	270	170		6690	7150		0,695	6,55
TPK 4250x125	125	320	195		6735	7210		0,859	7,65

Force/stroke ratio

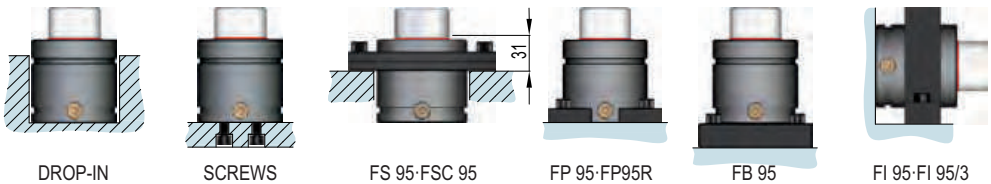


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FP95R | FB 95 | FI 95·FI 95/3

PED 2014/68/UE

Medium compact gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY		
TPC 12.1	12	7 - 63	42	√	√		√
TPC 14	14	15 - 80	50	√	√		√
TPC 19.2	19	7 - 125	90	√	√		√
TPC 25.1	25	7 - 200	200	√	√		√
TPC 350.1	32	10 - 125	350	√	√		√
TPC 500.1	38	10 - 80	500	√	√		√
TPC 1000	50	25 - 100	1000	√	√	√	√
TPC 1500.1	63	25 - 100	1500	√	√	√	√
TPC 2500	75	25 - 125	2500	√	√	√	√
TPC 3000	75	25 - 200	3000	√	√	√	√
TPC 4000	95	25 - 100	4000	√	√	√	√
TPC 6500	120	25 - 160	6500	√	√	√	√
TPC 10000	150	25 - 125	9500	√	√	√	√

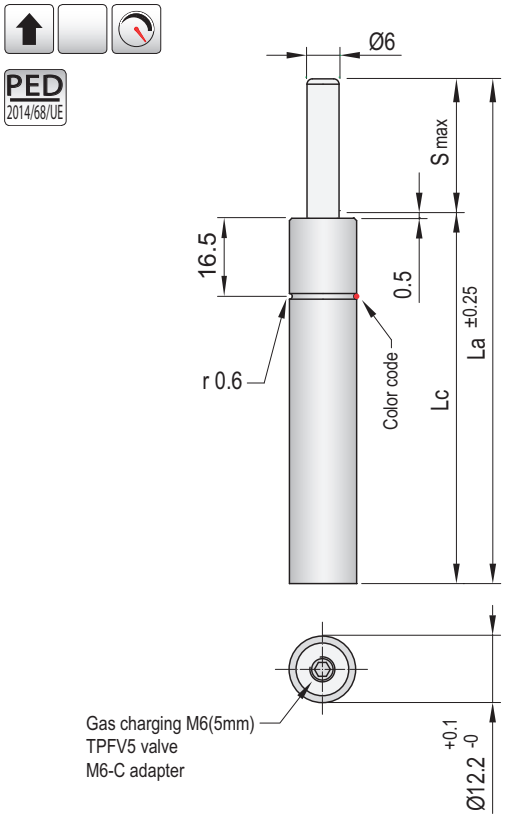
TECAPRES®

Ø12mm 42daN

TPC 12.1

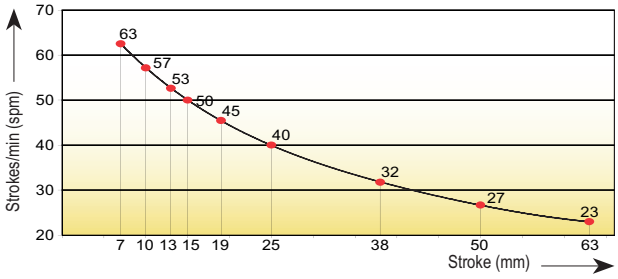
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	20 Bar
Rod seal area	0,28 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit C12.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPC 12x7.1	7	56	49	0,001	0,03
TPC 12x10.1	10	62	52	0,001	0,03
TPC 12x13.1	13	68	55	0,001	0,03
TPC 12x15.1	15	72	57	0,001	0,04
TPC 12x19.1	19	80	61	0,001	0,05
TPC 12x25.1	25	92	67	0,002	0,05
TPC 12x38.1	38	118	80	0,003	0,06
TPC 12x50.1	50	142	92	0,004	0,06
TPC 12x63.1	63	172	109	0,005	0,07

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	13 (±5%)	≈ 19	45
BL *(Blue)*	25 (±5%)	≈ 38	90
RD *(Red)*	38 (±5%)	≈ 57	135
YW *(Yellow)*	42 (±5%)	≈ 63	150
(Other forces)	6 - 42	≈ 10 - 63	20 - 150

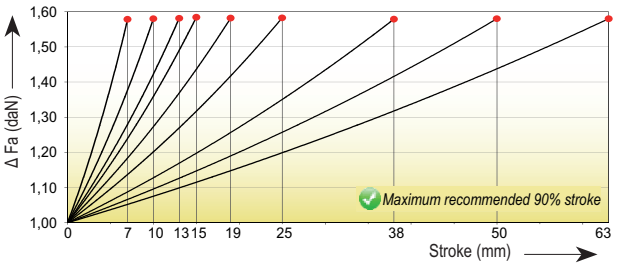
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

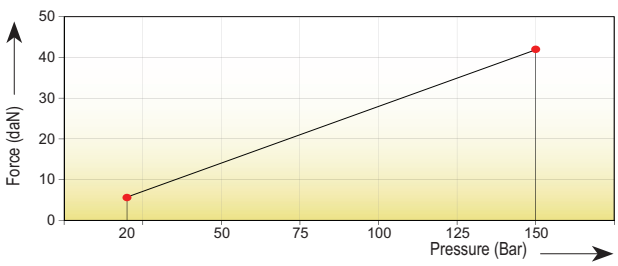
TPC 12 x **7.1** **YW**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN SCREWS FS 12

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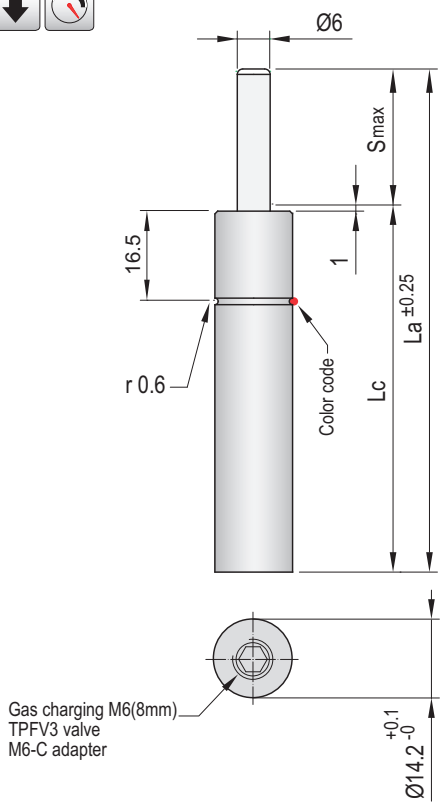
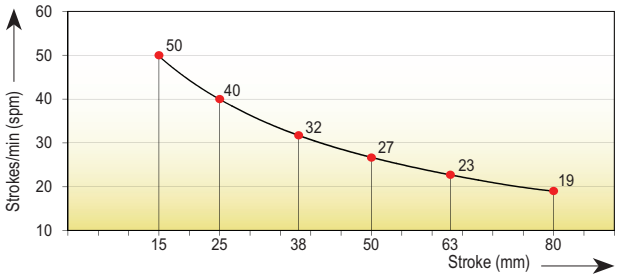
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	0,28 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,5 m/s
Maintenance kit	Kit C14

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPC 14x15	15	72	57	0,002	0,06
TPC 14x25	25	92	67	0,003	0,08
TPC 14x38	38	118	80	0,005	0,09
TPC 14x50	50	142	92	0,006	0,10
TPC 14x63	63	169	106	0,007	0,12
TPC 14x80	80	205	125	0,009	0,15

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	20 (±5%)	≈ 25	70
BL *(Blue)*	30 (±5%)	≈ 40	110
RD *(Red)*	40 (±5%)	≈ 50	142
YW *(Yellow)*	50 (±5%)	≈ 62	175
(Other forces)	14 - 50	≈ 20 - 62	50 - 175

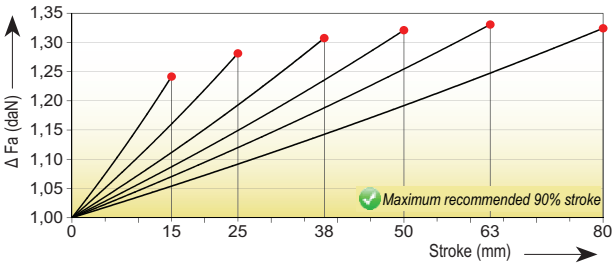
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

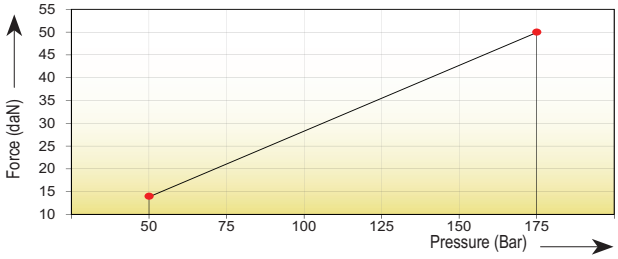
TPC 14 x 15 YW

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS

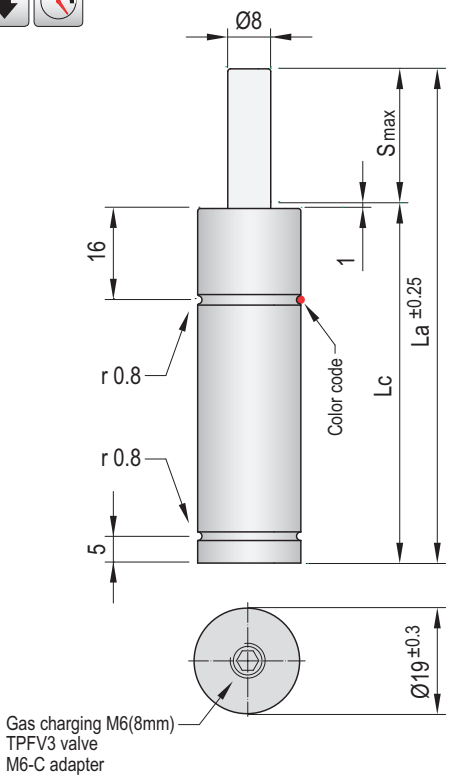
TECAPRES®

Ø19mm 90daN

TPC 19.2

VDI SAFETY

PED 2014/68/UE

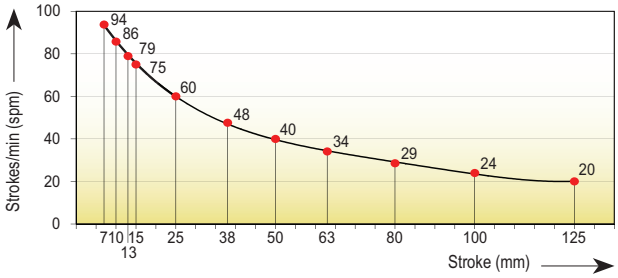


Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,50 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C19.2

ISO 11901 VDI 3003

RE-8-19

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPC 19x7.2	7	56	49	0,002	0,08
TPC 19x10.2	10	62	52	0,003	0,08
TPC 19x13.2	13	67,4	54,4	0,003	0,08
TPC 19x15.2	15	72	57	0,004	0,09
TPC 19x25.2	25	92	67	0,006	0,10
TPC 19x38.2	38,1	118,2	80,1	0,008	0,12
TPC 19x50.2	50	142	92	0,011	0,13
TPC 19x63A.2	63	168	105	0,013	0,15
TPC 19x63.2	63	172	109	0,014	0,15
TPC 19x80A.2	80	202	122	0,016	0,16
TPC 19x80.2	80	205	125	0,017	0,17
TPC 19x100.2	100	245	145	0,021	0,18
TPC 19x125.2	125	295	170	0,026	0,21

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	30 (±5%)	≈ 38	60
BL *(Blue)*	50 (±5%)	≈ 63	100
RD *(Red)*	70 (±5%)	≈ 88	140
YW *(Yellow)*	90 (±5%)	≈ 109	175
(Other forces)	13 - 90	≈ 16 - 109	25 - 175

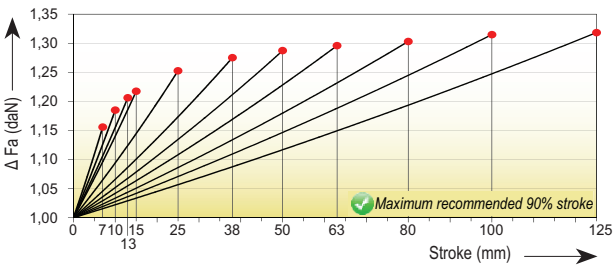
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

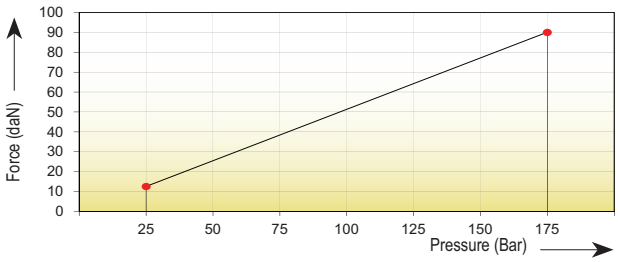
TPC 19 x **125.2** **YW**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

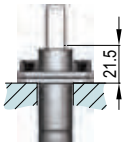


Assembly possibilities

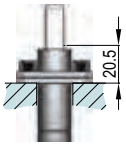
Follow guidelines Page 287


DROP-IN


SCREWS



FS19·FS19/2



FS19/1


FS19·FS19/2

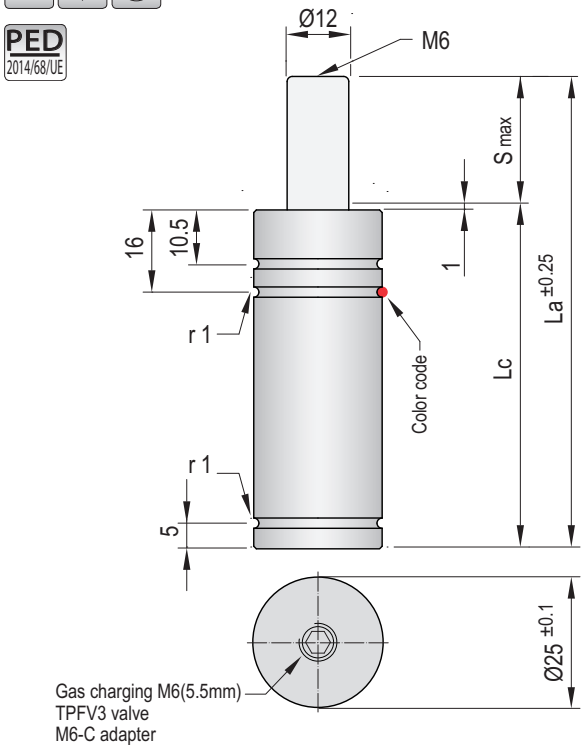
TECAPRES®

Ø25mm 200daN

TPC 25.1

VDI SAFETY

PED 2014/68/UE

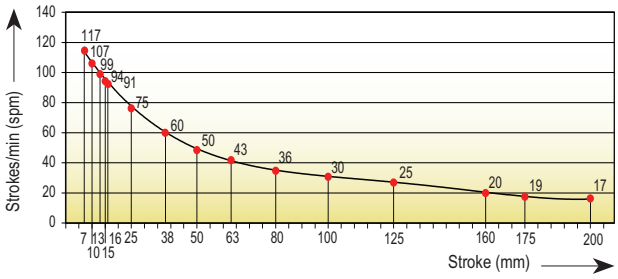


Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C25.1

ISO 11901 VDI 3003

RE-12-25

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPC 25x7.1	7	56	49	0,004	0,13
TPC 25x10.1	10	62	52	0,005	0,14
TPC 25x13.1	13	67,4	54,7	0,006	0,14
TPC 25x15.1	15	72	57	0,006	0,15
TPC 25x16.1	16	74,3	58,3	0,007	0,15
TPC 25x25.1	25	92	67	0,010	0,16
TPC 25x38.1	38,1	118,2	80,1	0,014	0,19
TPC 25x50.1	50	142	92	0,019	0,21
TPC 25x63.1	63	172	109	0,022	0,25
TPC 25x80.1	80	205	125	0,028	0,26
TPC 25x100.1	100	245	145	0,035	0,29
TPC 25x125.1	125	295	170	0,046	0,33
TPC 25x160.1	160	373	213	0,057	0,37
TPC 25x175.1	175	403	228	0,062	0,40
TPC 25x200.1	200	453	253	0,071	0,43

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 135	90
RD *(Red)*	150 (±15)	≈ 205	135
YW *(Yellow)*	200 (±20)	≈ 265	175
(Other forces)	28 - 200	≈ 40 - 277	25 - 175

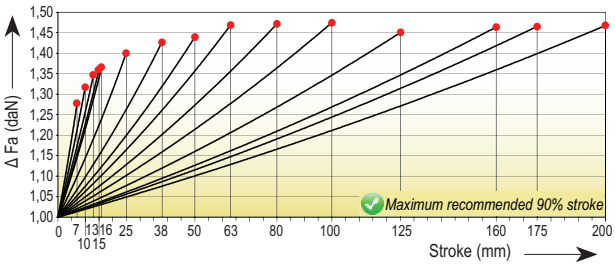
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

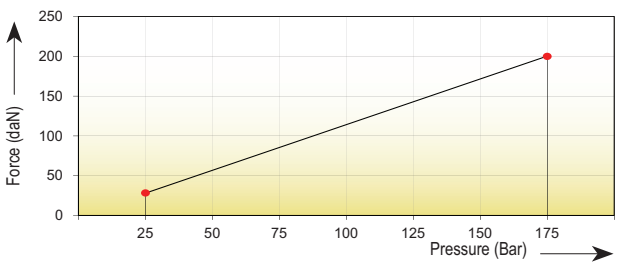
TPC 25 x **50.1** **BL**

Model | Stroke | Color code

Force/stroke ratio

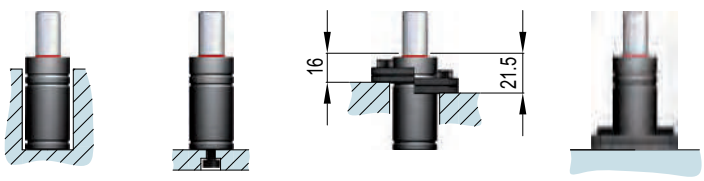


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN SCREWS FS 25/1·FS 25/2 FS 25/1·FS 25/2

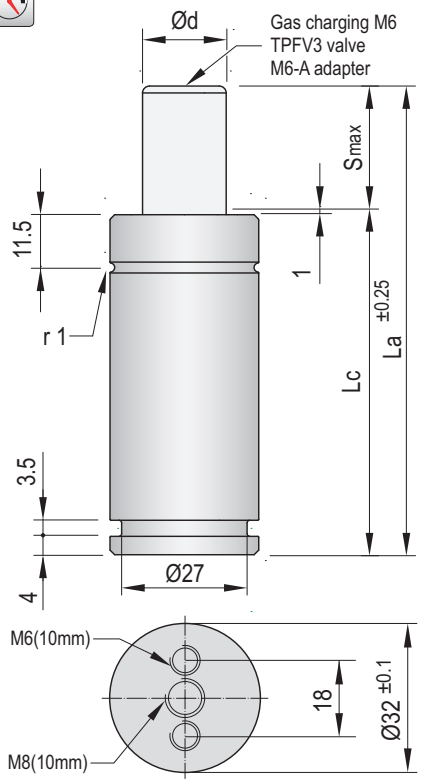
TECAPRES®

Ø32mm 350daN

TPC 350.1

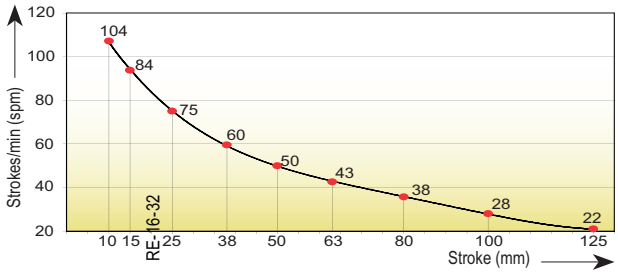
VDI SAFETY

PED 2014/68/UE



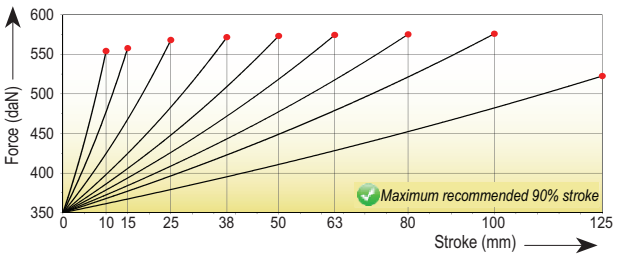
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	Ø16 - 2,01cm² Ø18 - 2,54cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Ø18mm - Kit C350.1/18 Ø16mm - Kit C350.1/16

Maximum strokes / minute (at 20ºC)

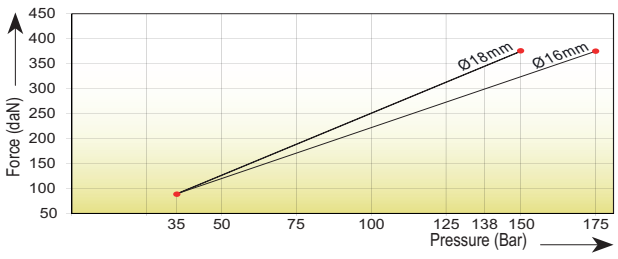


Code	Smax mm	La mm	Lc mm	Ød mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 350x10.1	10	70	60	18		520	550		0,007	0,28
TPC 350x15.1	15	80	65	18		525	555		0,010	0,30
TPC 350x25.1	25	100	75	18		535	565		0,017	0,32
TPC 350x38.1	38	126	88	18		535	570	138	0,025	0,36
TPC 350x50.1	50	150	100	18	350 ±5%	537	570	(20ºC)	0,033	0,40
TPC 350x63.1	63	176	113	18	(20ºC)	540	570		0,041	0,44
TPC 350x80.1	80	210	130	18		540	575		0,052	0,50
TPC 350x100.1	100	250	150	18		540	575		0,065	0,57
TPC 350x125.1	125	300	175	16		500	520	175 (20ºC)	0,076	0,65

Force/stroke ratio



Initial force/charging pressure ratio

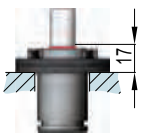


Assembly possibilities

Follow guidelines Page 287

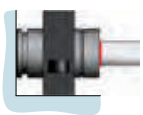
DROP-IN

SCREWS



FS 32·FSC 32/1

FP 32·FPR 32



FI 32·FI 32/1

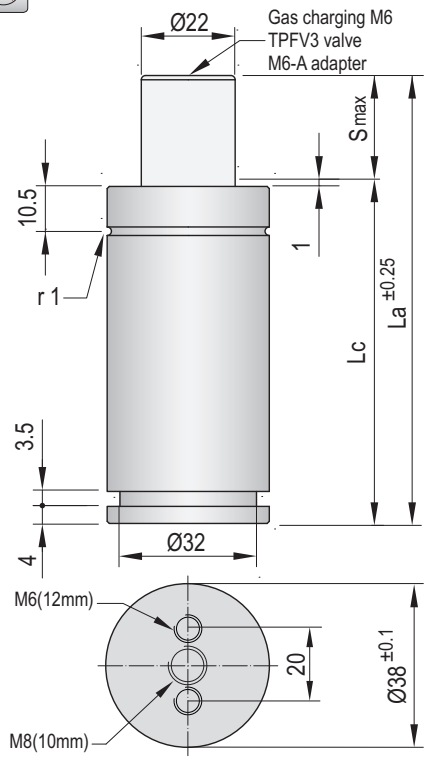
TECAPRES®

Ø38mm 500daN

TPC 500.1

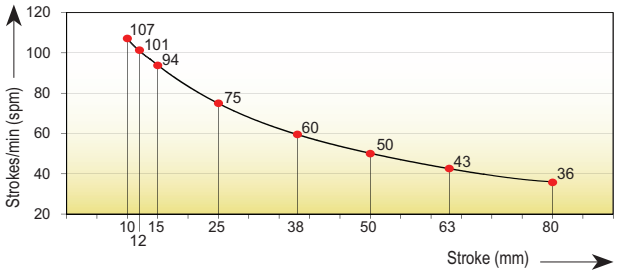
VDI SAFETY

PED 2014/68/UE



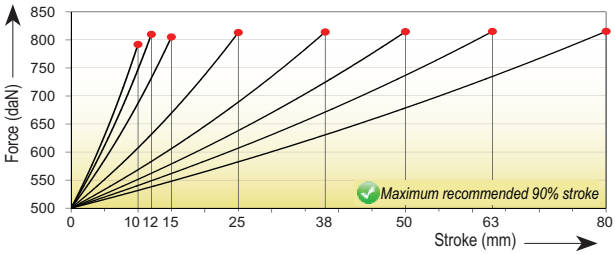
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C500.1

Maximum strokes / minute (at 20ºC)

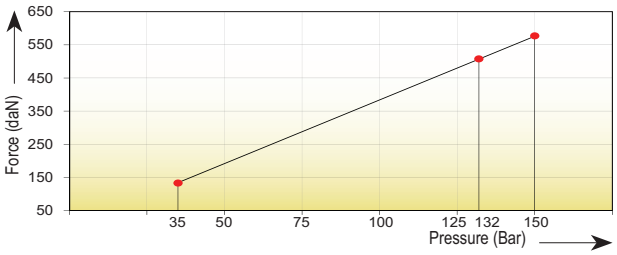


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 500x10.1	10	75	65		750	795		0,010	0,38
TPC 500x12.1	12	79	67		765	815		0,012	0,40
TPC 500x15.1	15	85	70		760	810		0,015	0,43
TPC 500x25.1	25	105	80	500 ±5%	770	815	132	0,025	0,45
TPC 500x38.1	38	131	93	(20ºC)	770	815	(20ºC)	0,037	0,52
TPC 500x50.1	50	155	105		770	820		0,049	0,55
TPC 500x63.1	63	186	123		770	820		0,062	0,62
TPC 500x80.1	80	220	140		770	820		0,079	0,69

Force/stroke ratio



Initial force/charging pressure ratio

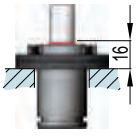


Assembly possibilities

Follow guidelines Page 287

DROP-IN

SCREWS



FS 38·FSC 38

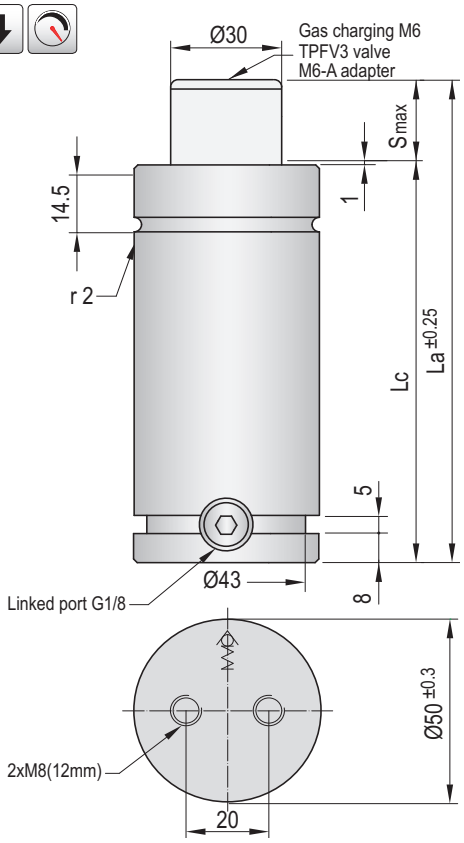
FP 38·FPR 38

FI 38·FI 38/1

TPC
TPR
TPB
TPHC
TPA TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

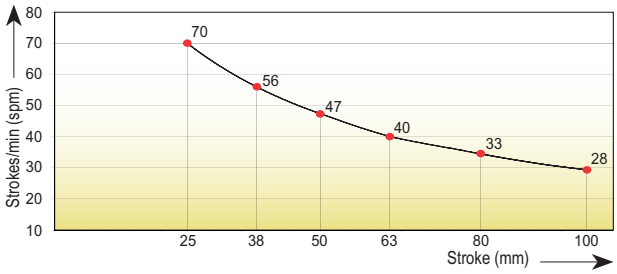
VDI SAFETY

PED 2014/68/UE



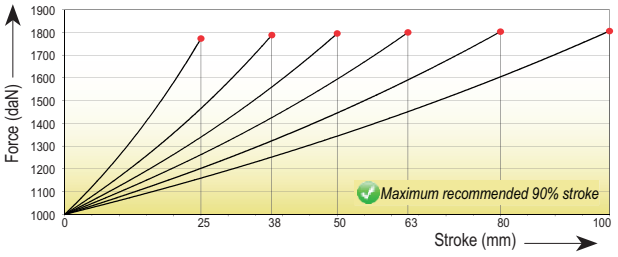
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit C1000.1

Maximum strokes / minute (at 20ºC)

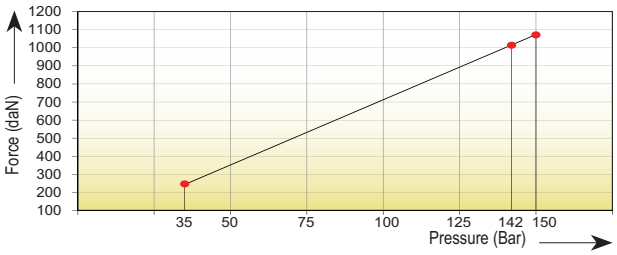


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 1000x25	25	135	110		1650	1780		0,041	1,20
TPC 1000x38	38	161	123		1665	1795		0,061	1,35
TPC 1000x50	50	185	135	1000 ±5%	1670	1800	142	0,080	1,46
TPC 1000x63	63	211	148	(20ºC)	1675	1805	(20ºC)	0,100	1,52
TPC 1000x80	80	245	165		1675	1810		0,127	1,73
TPC 1000x100	100	295	195		1680	1815		0,158	2,41

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FRS 50 | FB 45·FB 50 | FI 50·FI 50/1

Manufactured by Técnicas Aplicadas de Presión, s.l. · www.tecapres.com TPGAS 09 /2024

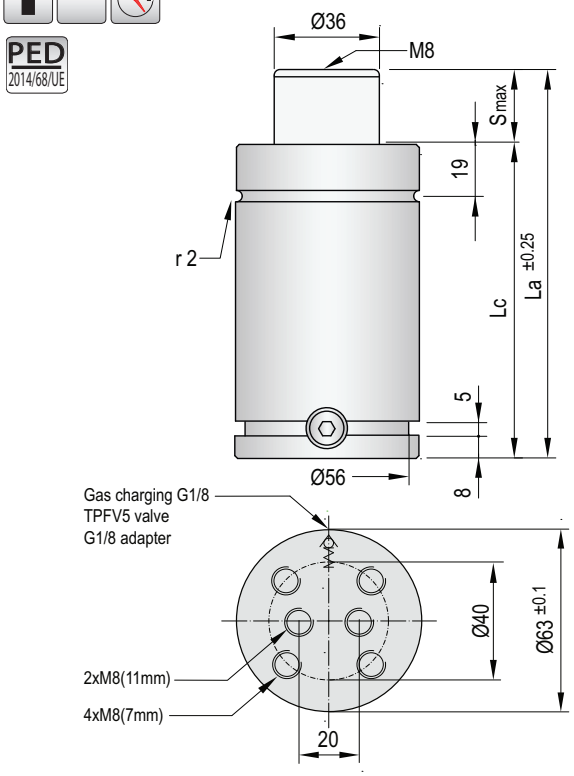
TECAPRES®

Ø63mm 1500daN

TPC 1500.1

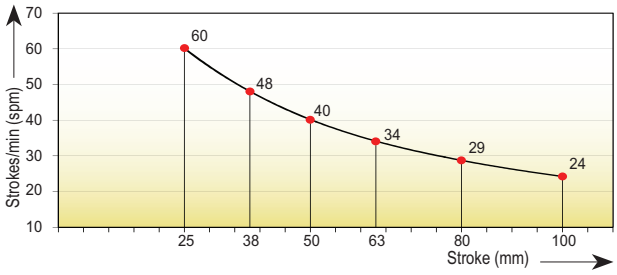
VDI SAFETY

PED 2014/68/UE



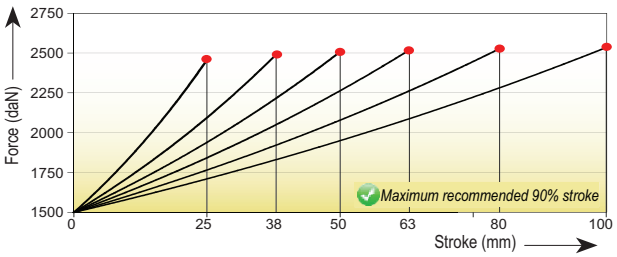
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C1500.1

Maximum strokes / minute (at 20ºC)

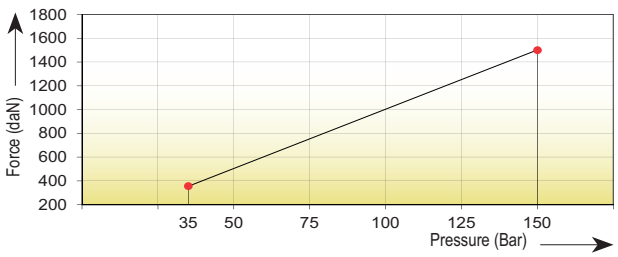


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 1500x25.1	25	135	110		2275	2420		0,065	1,86
TPC 1500x38.1	38	161	123		2300	2450		0,097	2,10
TPC 1500x50.1	50	185	135	1500 ±5%	2310	2470	148	0,127	2,25
TPC 1500x63.1	63	211	148	(20ºC)	2320	2480	(20ºC)	0,159	2,30
TPC 1500x80.1	80	245	165		2330	2485		0,200	2,55
TPC 1500x100.1	100	285	185		2335	2495		0,249	3,15

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 63 FSC 63·FSC 63/1 | FP 63 | FRS 63 | FB 50·FB 63 | FI 63/1

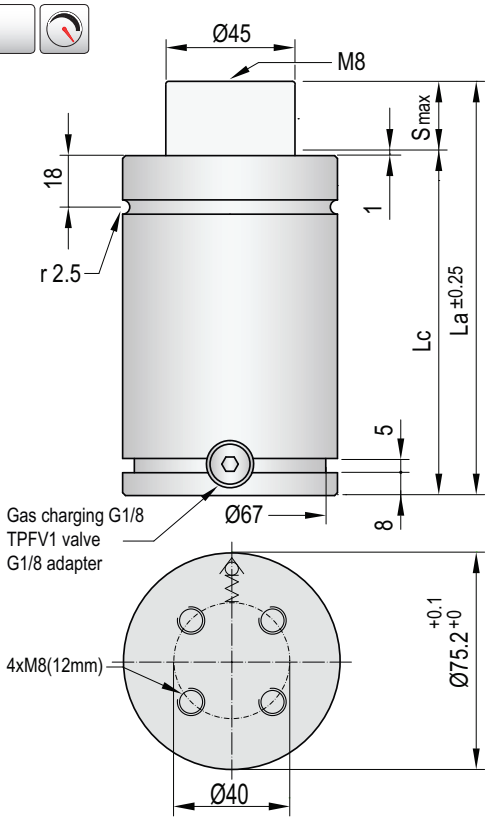
TECAPRES®

Ø75mm 2500daN

TPC 2500

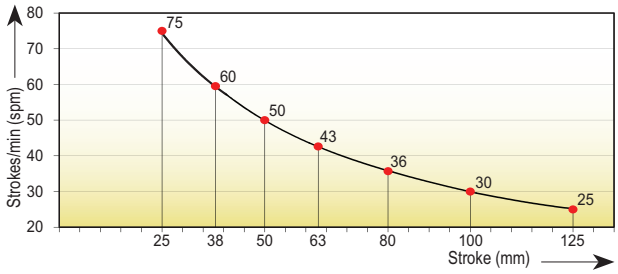
VDI SAFETY

PED 2014/68/UE



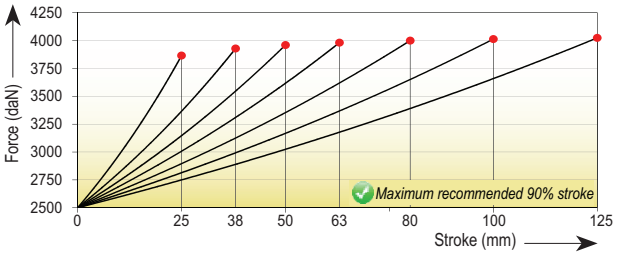
Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C2500

Maximum strokes / minute (at 20ºC)

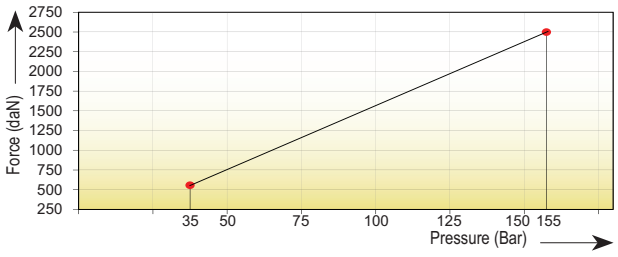


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 2500x25	25	145	120	2500 ±5% (20ºC)	3655	3855	155 (20ºC)	0,113	2,50
TPC 2500x38	38	171	133		3710	3920		0,167	3,25
TPC 2500x50	50	195	145		3735	3950		0,216	4,00
TPC 2500x63	63	221	158		3750	3975		0,270	4,40
TPC 2500x80	80	255	175		3765	3990		0,340	5,05
TPC 2500x100	100	300	200		3780	4005		0,422	5,55
TPC 2500x125	125	350	225		3785	4020		0,525	5,98

Force/stroke ratio

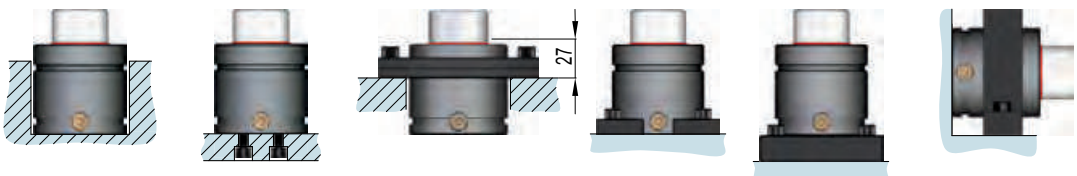


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FI 75·FI 75/1

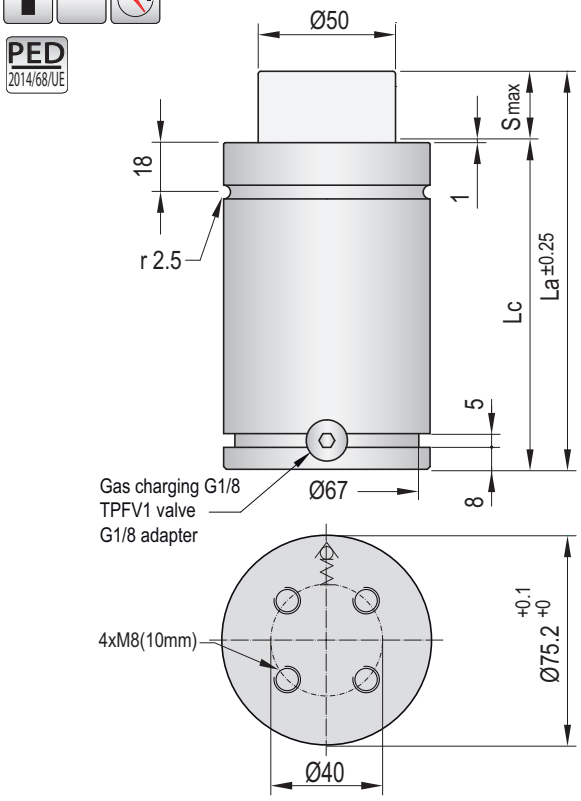
TECAPRES®

Ø75mm 3000daN

TPC 3000

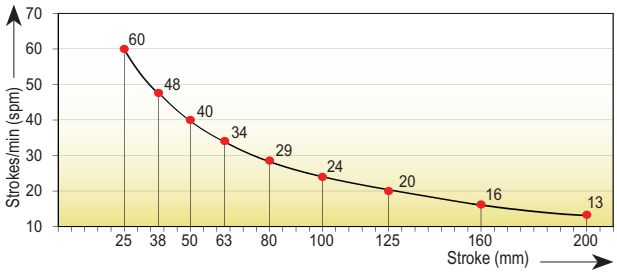
VDI SAFETY

PED 2014/68/UE



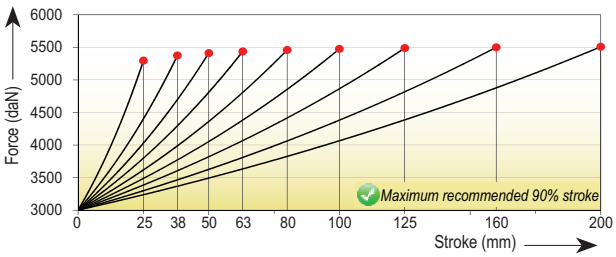
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit C3000

Maximum strokes / minute (at 20ºC)

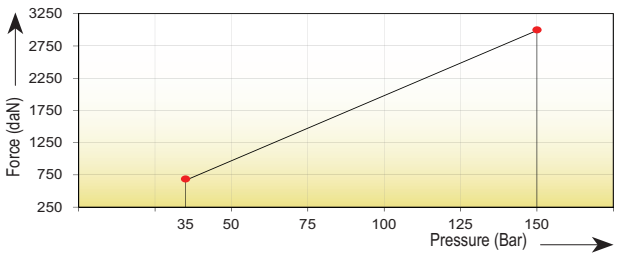


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 3000x25	25	145	120		4925	5305		0,113	2,70
TPC 3000x38	38	171	133		4990	5380		0,169	3,30
TPC 3000x50	50	195	145		5015	5420		0,221	4,10
TPC 3000x63	63	221	158	3000 ±5%	5035	5445	150	0,276	4,50
TPC 3000x80	80	255	175	(20ºC)	5055	5470	(20ºC)	0,349	5,10
TPC 3000x100	100	300	200		5065	5485		0,434	5,90
TPC 3000x125	125	350	225		5075	5495		0,541	6,50
TPC 3000x160	160	425	265		5085	5510		0,691	7,40
TPC 3000x200	200	510	310		5090	5515		0,862	7,85

Force/stroke ratio

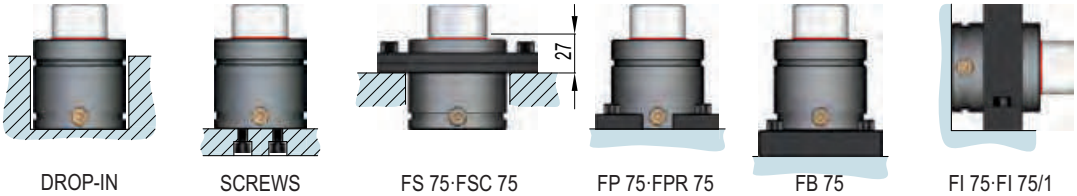


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FI 75·FI 75/1

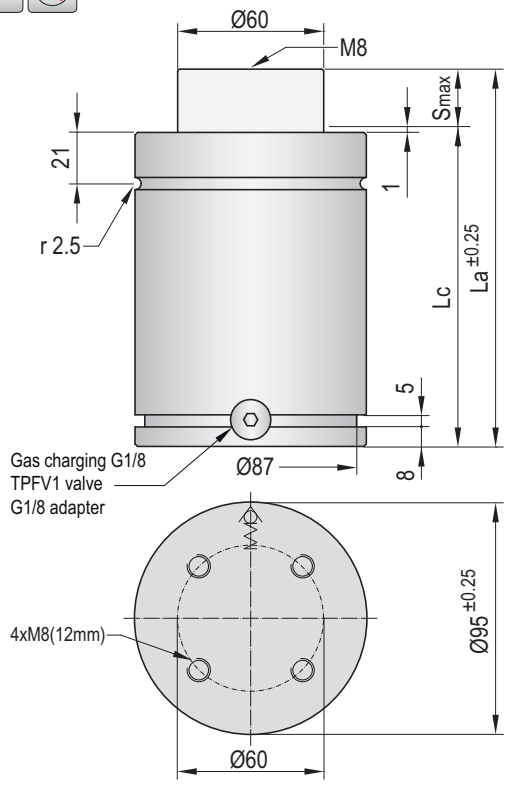
TECAPRES®

Ø95mm
4000daN

TPC 4000

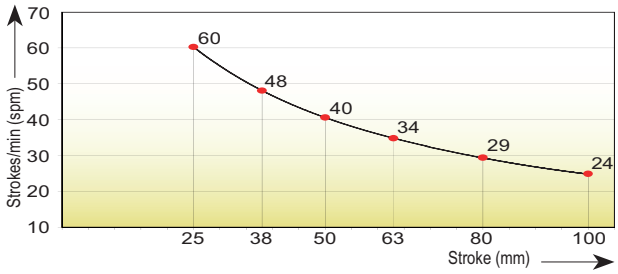
VDI SAFETY

PED 2014/68/UE



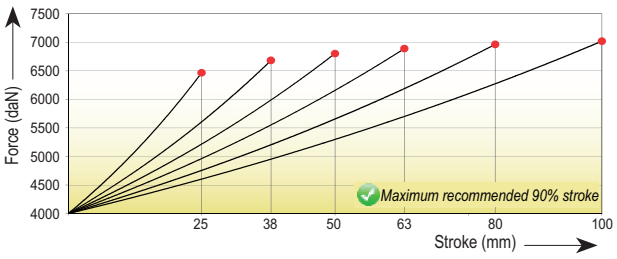
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C4000

Maximum strokes / minute (at 20ºC)

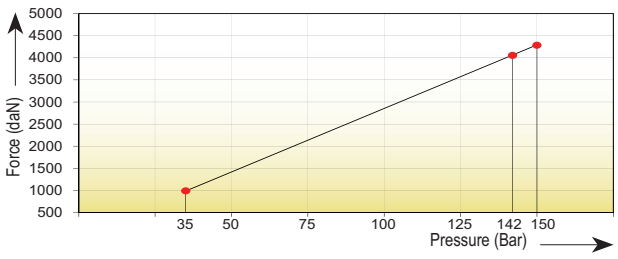


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 4000x25	25	155	130		6115	6490		0,185	4,20
TPC 4000x38	38	181	143		6285	6705		0,268	4,90
TPC 4000x50	50	205	155	4000 ±5%	6380	6830	142	0,343	5,30
TPC 4000x63	63	236	173	(20ºC)	6450	6915	(20ºC)	0,425	6,10
TPC 4000x80	80	270	190		6505	6990		0,532	7,20
TPC 4000x100	100	310	210		6550	7045		0,657	7,80

Force/stroke ratio

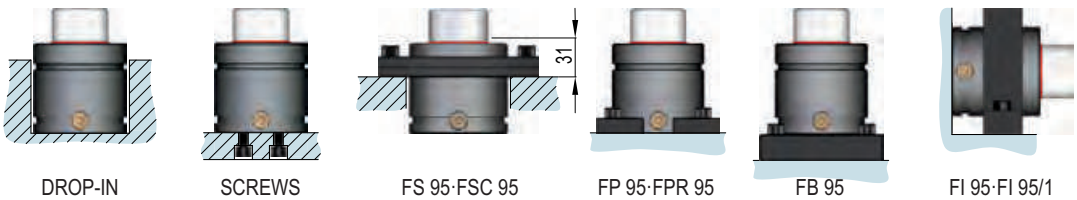


Initial force/charging pressure ratio



Assembly possibilities

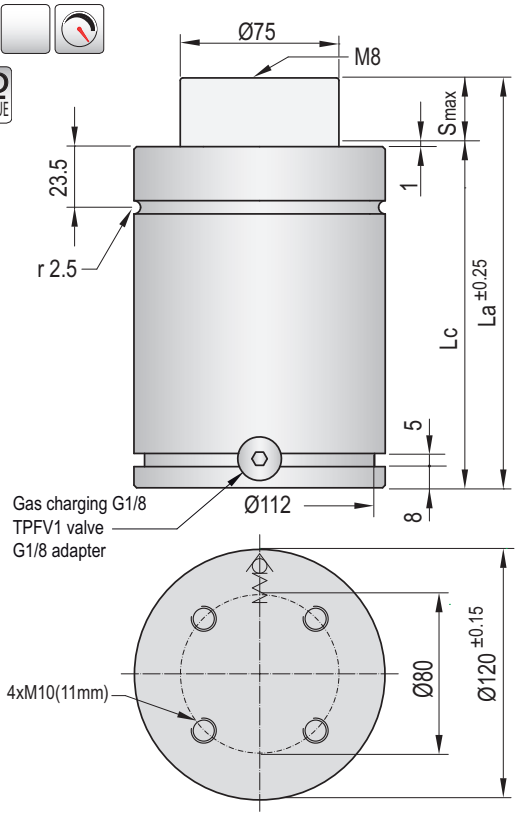
Follow guidelines Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FPR 95 | FB 95 | FI 95·FI 95/1

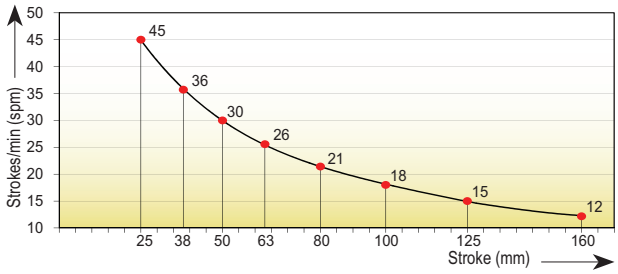
VDI SAFETY

PED 2014/68/UE



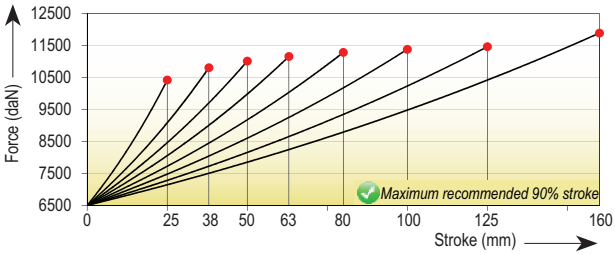
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	44,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C6500

Maximum strokes / minute (at 20ºC)

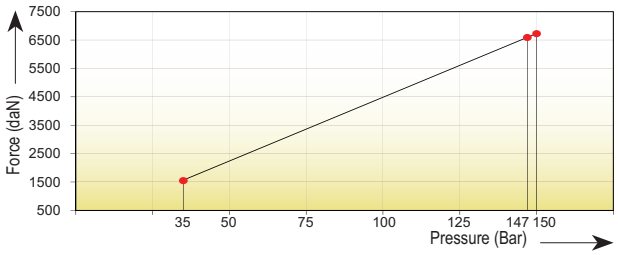


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 6500x25	25	165	140	6500 ±5% (20ºC)	9820	10400	147 (20ºC)	0,294	9,45
TPC 6500x38	38	191	153		10125	10800		0,421	10,05
TPC 6500x50	50	215	165		10290	11000		0,539	10,75
TPC 6500x63	63	241	178		10405	11150		0,667	11,67
TPC 6500x80	80	275	195		10500	11275		0,834	12,28
TPC 6500x100	100	315	215		10580	11375		1,030	13,35
TPC 6500x125	125	375	250		10640	11455		1,275	14,29
TPC 6500x160	160	450	290		10970	11880		1,559	17,53

Force/stroke ratio

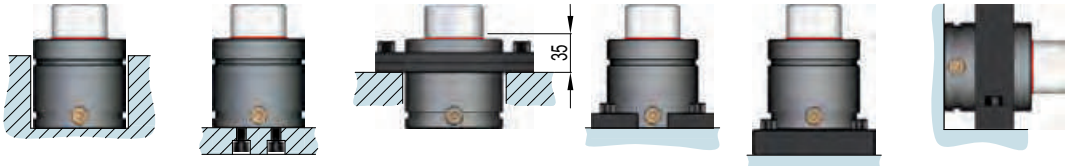


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 120·FSC 120 | FP 120·FPR 120 | FB 120 | FI 120·FI 120/1

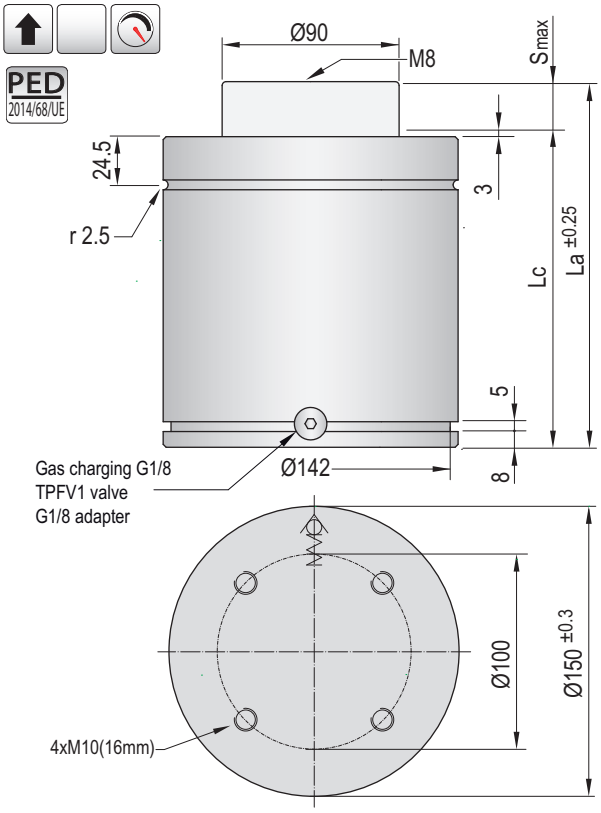
TECAPRES®

Ø150mm 9500daN

TPC 10000

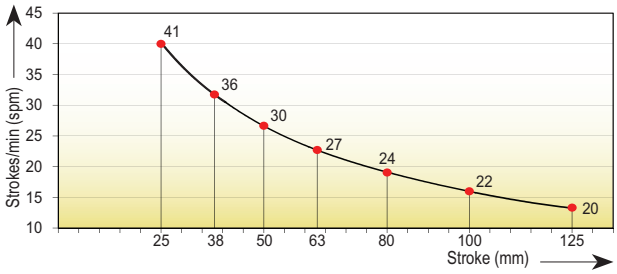
VDI SAFETY

PED 2014/68/UE



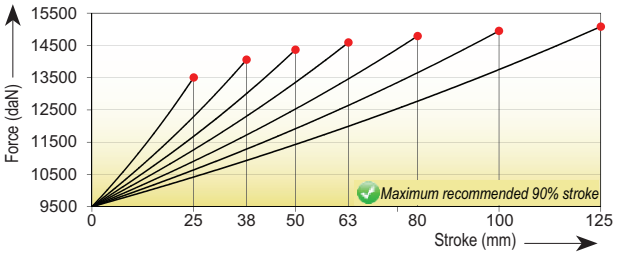
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	63,62 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit C10000

Maximum strokes / minute (at 20ºC)

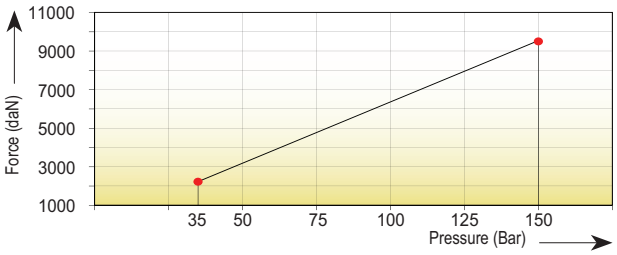


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPC 10000x25	25	186	161	9500 ±5% (20ºC)	13020	13570	150 (20ºC)	0,536	19,70
TPC 10000x38	38	212	174		13475	14120		0,745	21,70
TPC 10000x50	50	236	186		13730	14430		0,939	22,90
TPC 10000x63	63	262	199		13910	14655		1,149	24,10
TPC 10000x80	80	296	216		14075	14860		1,422	26,40
TPC 10000x100	100	336	236		14200	15015		1,745	29,60
TPC 10000x125	125	386	261		14310	15150		2,148	31,50

Force/stroke ratio

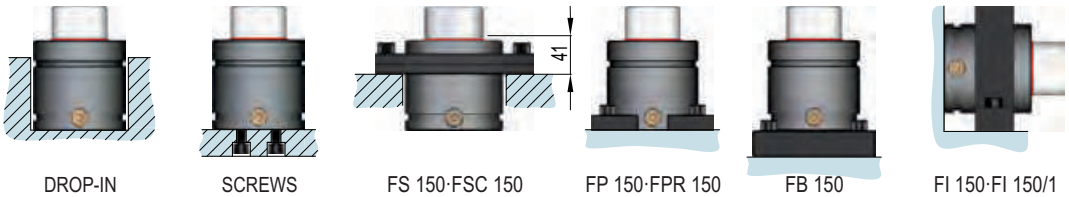


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 150·FSC 150 | FP 150·FPR 150 | FB 150 | FI 150·FI 150/1

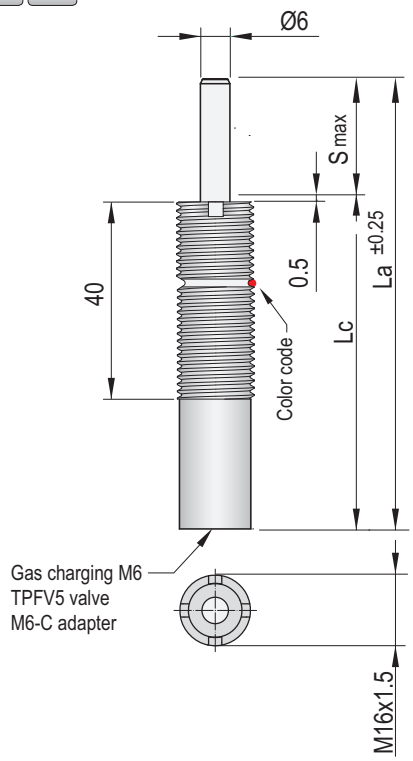
PED 2014/68/UE

Threaded body gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY	
TPRF 16	M16 x 1,5	7 - 63	42	√	√	
TPRN 16	M16 x 2	7 - 63	42	√	√	
TPR 16	M16 x 1,5	10 - 100	50		√	
TPRB 16	M16 x 1,5	10 - 100	50		√	
TPRC 16	M16 x 2	10 - 125	40		√	
TPR 24	M24 x 1,5	10 - 100	140		√	
TPRB 24	M24 x 1,5	10 - 125	140		√	
TPRC 24	M24 x 1,5	7 - 125	90	√	√	
TPRT 24	M24 x 1,5	7 - 125	90	√	√	
TPR 28.1	M28 x 1,5	15 - 125	200	√	√	
TPR 38.1	M38 x 1,5	13 - 80	250	√	√	√
TPR 45	M45 x 1,5	13 - 100	740	√	√	√
TPR 50	M50 x 1,5	13 - 100	1000	√	√	√

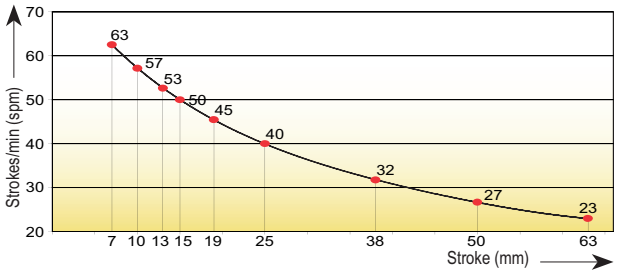
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	20 Bar
Rod seal area	0,28 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,5 m/s
Maintenance kit	Kit RF16

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRF 16x7	7	56	49	0,001	0,05
TPRF 16x10	10	62	52	0,001	0,06
TPRF 16x13	13	68	55	0,001	0,06
TPRF 16x15	15	72	57	0,001	0,07
TPRF 16x19	19	80	61	0,001	0,08
TPRF 16x25	25	92	67	0,002	0,08
TPRF 16x38	38	118	80	0,003	0,09
TPRF 16x50	50	142	92	0,004	0,09
TPRF 16x63	63	172	109	0,005	0,10

Color code	Fa daN	Fc daN	P Bar
GR *(Green)*	13 (±5%)	≈ 20	45
BL *(Blue)*	25 (±5%)	≈ 40	90
RD *(Red)*	38 (±5%)	≈ 60	135
YW *(Yellow)*	42 (±5%)	≈ 65	150
(Other forces)	6 - 42	≈ 10 - 65	20 - 150

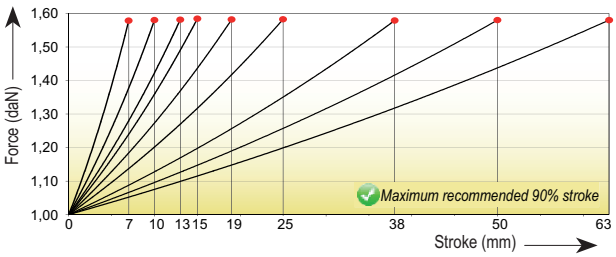
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (20Bar) and the maximum charging pressure (150Bar).

How to order

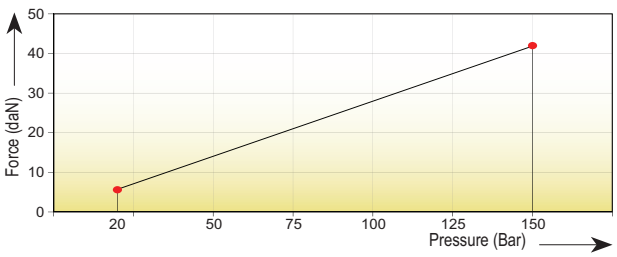
TPRF 16 x **25** **YW**

Model | Stroke | Force

Force/stroke ratio



Initial force/charging pressure ratio

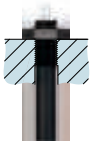


Assembly possibilities

Follow guidelines
Page 287


THREADED

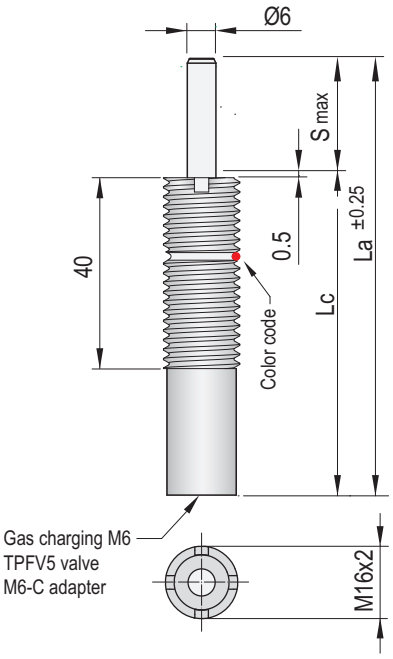

FR 16


FR 16


TPRN KEY

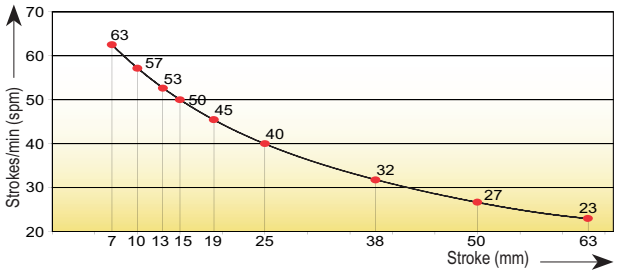
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	20 Bar
Rod seal area	0,28 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit RN16

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRN 16x7	7	56	49	0,001	0,05
TPRN 16x10	10	62	52	0,001	0,06
TPRN 16x13	13	68	55	0,001	0,06
TPRN 16x15	15	72	57	0,001	0,07
TPRN 16x19	19	80	61	0,001	0,08
TPRN 16x25	25	92	67	0,002	0,08
TPRN 16x38	38	118	80	0,003	0,09
TPRN 16x50	50	142	92	0,004	0,09
TPRN 16x63	63	172	109	0,005	0,10

Color code	Fa daN	Fc daN	P Bar
GR *(Green)*	13 (±5%)	≈ 20	45
BL *(Blue)*	25 (±5%)	≈ 40	90
RD *(Red)*	38 (±5%)	≈ 60	135
YW *(Yellow)*	42 (±5%)	≈ 65	150
(Other forces)	6 - 42	≈ 10 - 65	20 - 150

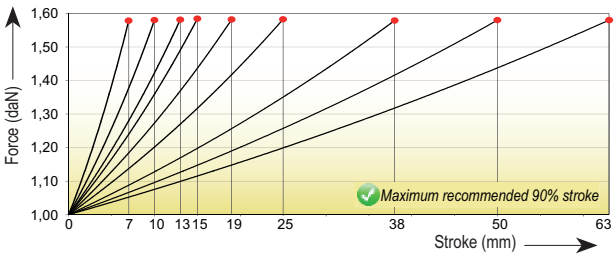
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (20Bar) and the maximum charging pressure (150Bar).

How to order

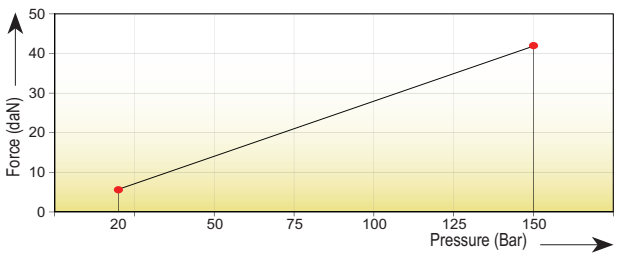
TPRN 16 x **25** **YW**

Model | Stroke | Force

Force/stroke ratio



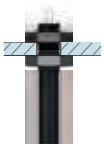
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


THREADED

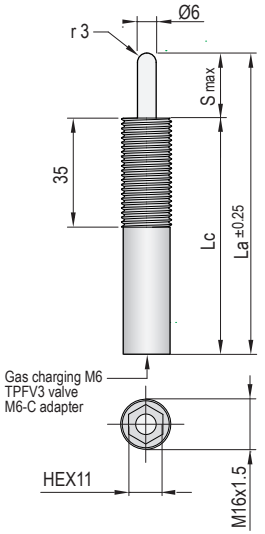

FRC 16.1


FRC 16.1


TPRN KEY

VDI SAFETY

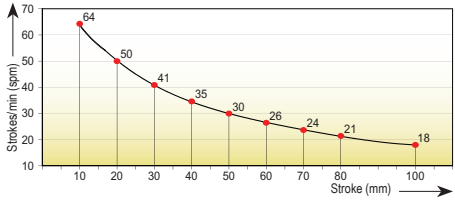
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	0,28 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit R16

VDI 3004

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPR 16x10	10	80	70	0,004	0,06
TPR 16x20	20	100	80	0,005	0,06
TPR 16x30	30	120	90	0,006	0,07
TPR 16x40	40	140	100	0,007	0,08
TPR 16x50	50	160	110	0,008	0,08
TPR 16x60	60	180	120	0,009	0,09
TPR 16x70	70	200	130	0,010	0,09
TPR 16x80	80	220	140	0,011	0,11
TPR 16x100	100	260	160	0,013	0,11

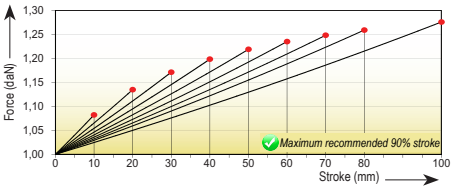
Code	Fa daN	Fc daN	P Bar
TPR 16x ... F10	10 (±5%)	≈ 12	35
TPR 16x ... F15	15 (±5%)	≈ 15	50
TPR 16x ... F20	20 (±5%)	≈ 25	70
TPR 16x ... F25	25 (±5%)	≈ 30	90
TPR 16x ... F30	30 (±5%)	≈ 35	110
TPR 16x ... F35	35 (±5%)	≈ 45	125
TPR 16x ... F40	40 (±5%)	≈ 50	140
TPR 16x ... F45	45 (±5%)	≈ 55	160
TPR 16x ... F50	50 (±5%)	≈ 60	175

How to order

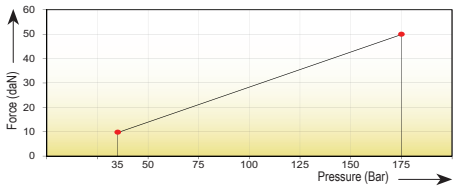
TPR 16 x 20 F50

Model | Stroke | Force

Force/stroke ratio



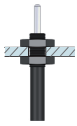
Initial force/charging pressure ratio

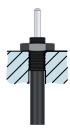


Assembly possibilities

Follow guidelines Page 287


THREADED


FR 16


FR 16


TPR 16 KEY

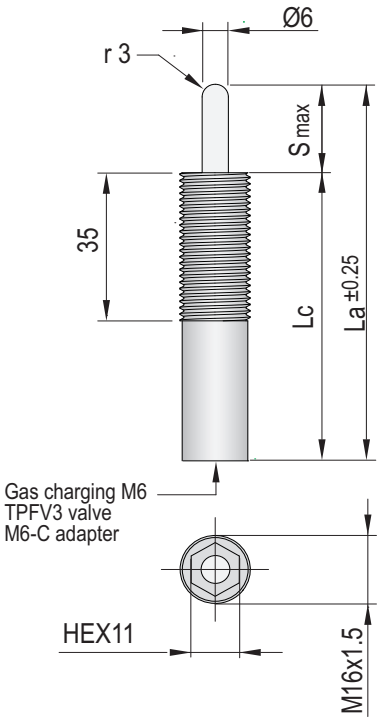
TECAPRES®

M16x1,5
50daN

TPRB 16

VDI SAFETY

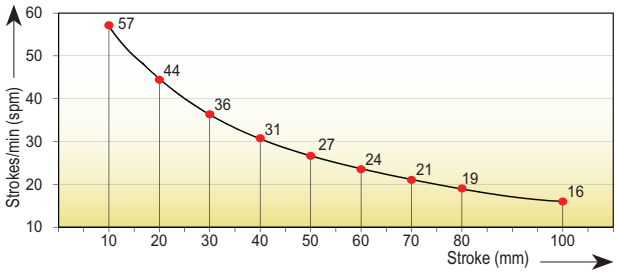
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	0,28 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit RB16

VDI 3004

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRB 16x10	10	65	55	0,002	0,05
TPRB 16x20	20	85	65	0,003	0,05
TPRB 16x30	30	105	75	0,004	0,06
TPRB 16x40	40	125	85	0,005	0,07
TPRB 16x50	50	145	95	0,006	0,07
TPRB 16x60	60	165	105	0,007	0,08
TPRB 16x70	70	185	115	0,008	0,08
TPRB 16x80	80	205	125	0,009	0,10
TPRB 16x100	100	245	145	0,012	0,10

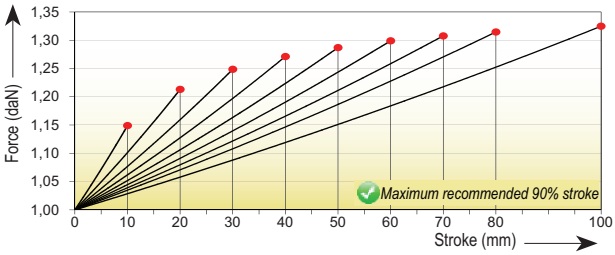
Code	Fa daN	Fc daN	P Bar
TPRB 16x ... F10	10 (±5%)	≈ 13	35
TPRB 16x ... F15	15 (±5%)	≈ 18	50
TPRB 16x ... F20	20 (±5%)	≈ 25	70
TPRB 16x ... F25	25 (±5%)	≈ 32	90
TPRB 16x ... F30	30 (±5%)	≈ 40	110
TPRB 16x ... F35	35 (±5%)	≈ 45	125
TPRB 16x ... F40	40 (±5%)	≈ 50	140
TPRB 16x ... F45	45 (±5%)	≈ 55	160
TPRB 16x ... F50	50 (±5%)	≈ 60	175

How to order

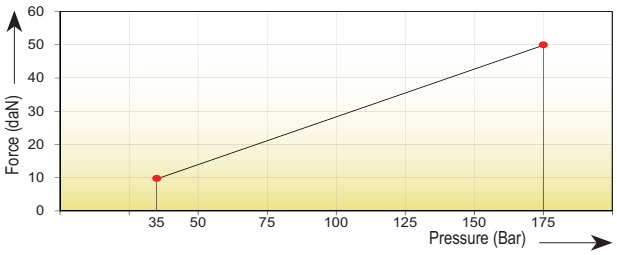
TPRB 16 x **40** **F30**

Model | Stroke | Force

Force/stroke ratio



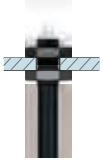
Initial force/charging pressure ratio

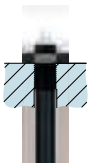


Assembly possibilities

Follow guidelines
Page 287


THREADED


FR 16


FR 16


TPR 16 KEY

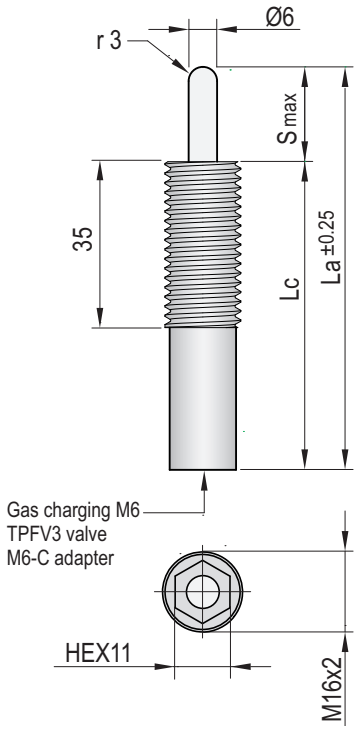
TECAPRES®

M16x2
50daN

TPRC 16

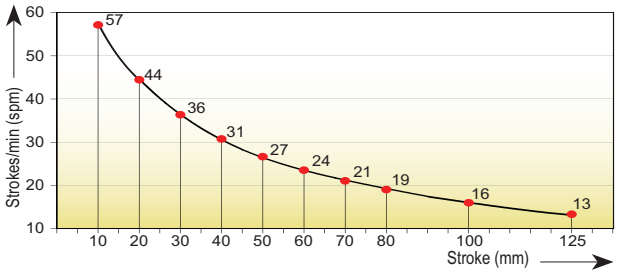
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	140 Bar
Min. charging pressure	20 Bar
Rod seal area	0,28 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit RC16

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRC 16x10	10	65	55	0,002	0,05
TPRC 16x20	20	85	65	0,003	0,05
TPRC 16x30	30	105	75	0,004	0,06
TPRC 16x40	40	125	85	0,005	0,07
TPRC 16x50	50	145	95	0,006	0,07
TPRC 16x60	60	165	105	0,007	0,08
TPRC 16x70	70	185	115	0,008	0,08
TPRC 16x80	80	205	125	0,009	0,10
TPRC 16x100	100	245	145	0,012	0,10
TPRC 16x125	125	295	170	0,014	0,13

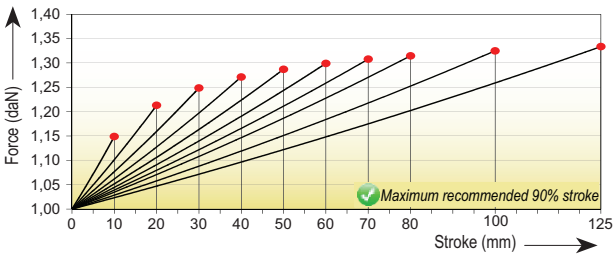
Code	Fa daN	Fc daN	P Bar
TPRC 16x ... F6	6 (±5%)	≈ 7	20
TPRC 16x ... F10	10 (±5%)	≈ 13	35
TPRC 16x ... F15	15 (±5%)	≈ 18	50
TPRC 16x ... F20	20 (±5%)	≈ 25	70
TPRC 16x ... F25	25 (±5%)	≈ 32	90
TPRC 16x ... F30	30 (±5%)	≈ 40	110
TPRC 16x ... F35	35 (±5%)	≈ 45	125
TPRC 16x ... F40	40 (±5%)	≈ 50	140

How to order

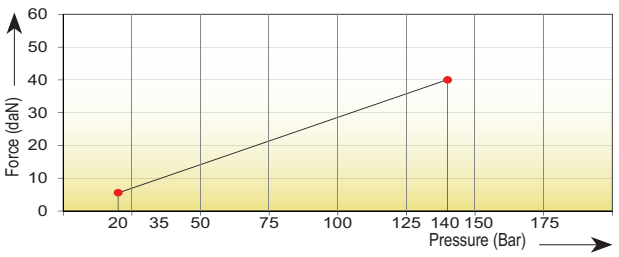
TPRC 16 x **60** **F6**

Model | Stroke | Force

Force/stroke ratio



Initial force/charging pressure ratio

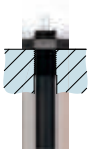


Assembly possibilities

Follow guidelines
Page 287


THREADED


FRC 16.1


FRC 16.1


TPR 16 KEY

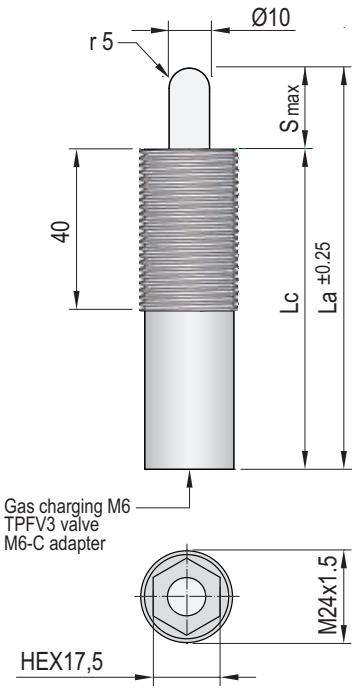
TECAPRES®

M24x1,5
140daN

TPR 24

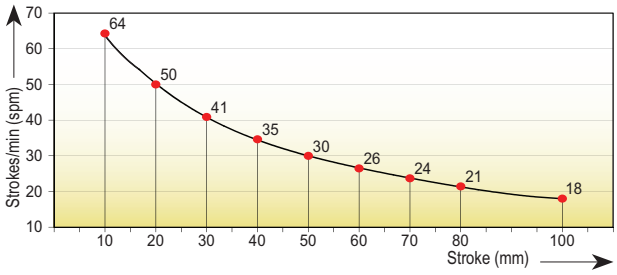
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,78 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit R24

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPR 24x10	10	80	70	0,009	0,20
TPR 24x20	20	100	80	0,012	0,22
TPR 24x30	30	120	90	0,015	0,24
TPR 24x40	40	140	100	0,017	0,25
TPR 24x50	50	160	110	0,020	0,27
TPR 24x60	60	180	120	0,022	0,30
TPR 24x70	70	200	130	0,025	0,35
TPR 24x80	80	220	140	0,027	0,41
TPR 24x100	100	260	160	0,032	0,45

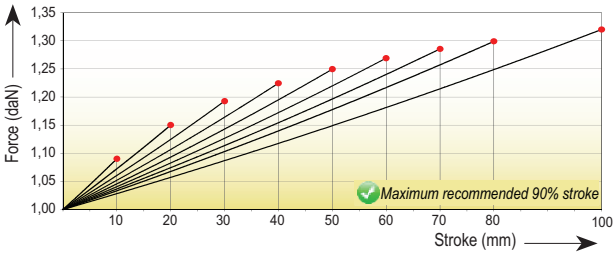
Code	Fa daN	Fc daN	P Bar
TPR 24x ... F20	20 (±5%)	≈ 25	25
TPR 24x ... F40	40 (±5%)	≈ 50	50
TPR 24x ... F60	60 (±5%)	≈ 75	75
TPR 24x ... F80	80 (±5%)	≈ 100	100
TPR 24x ... F100	100 (±5%)	≈ 125	125
TPR 24x ... F120	120 (±5%)	≈ 150	150
TPR 24x ... F140	140 (±5%)	≈ 175	175

How to order

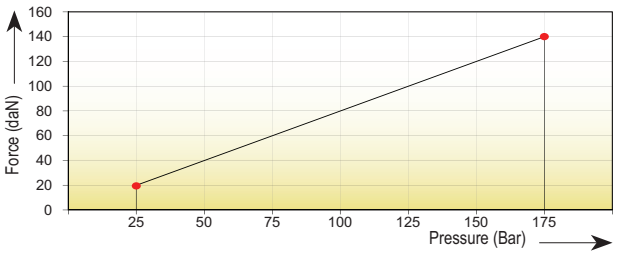
TPR 24 x **60** **F140**

Model | Stroke | Force

Force/stroke ratio



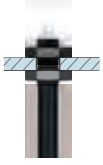
Initial force/charging pressure ratio

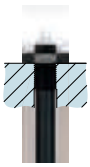


Assembly possibilities

Follow guidelines
Page 287


THREADED


FR 24


FR 24


TPR 24 KEY

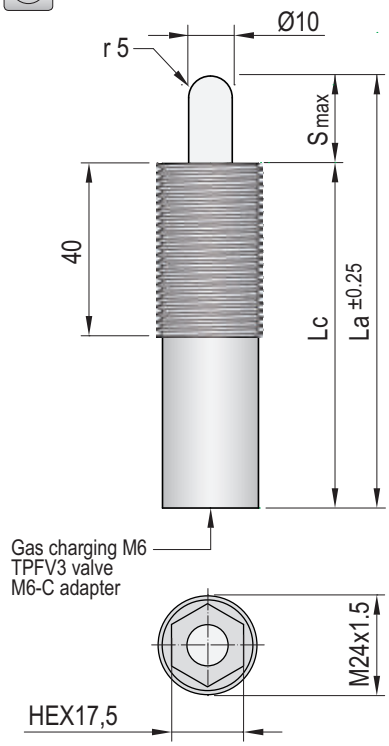
TECAPRES®

M24x1,5
140daN

TPRB 24

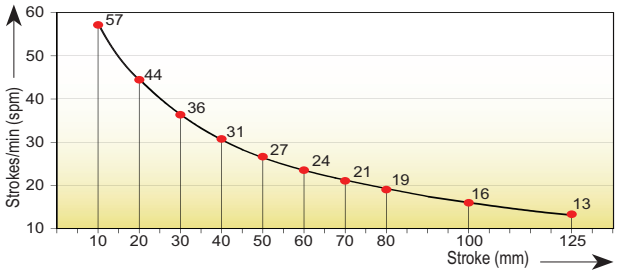
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,78 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit RB24

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRB 24x10	10	65	55	0,006	0,18
TPRB 24x20	20	85	65	0,008	0,20
TPRB 24x30	30	105	75	0,011	0,22
TPRB 24x40	40	125	85	0,013	0,23
TPRB 24x50	50	145	95	0,016	0,25
TPRB 24x60	60	165	105	0,018	0,28
TPRB 24x70	70	185	115	0,021	0,32
TPRB 24x80	80	205	125	0,024	0,38
TPRB 24x100	100	245	145	0,029	0,48
TPRB 24x125	125	295	170	0,035	0,61

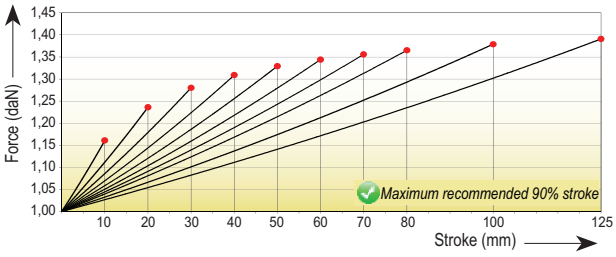
Code	Fa daN	Fc daN	P Bar
TPRB 24x ... F20	20 (±5%)	≈ 25	25
TPRB 24x ... F40	40 (±5%)	≈ 55	50
TPRB 24x ... F60	60 (±5%)	≈ 80	75
TPRB 24x ... F80	80 (±5%)	≈ 105	100
TPRB 24x ... F100	100 (±5%)	≈ 135	125
TPRB 24x ... F120	120 (±5%)	≈ 160	150
TPRB 24x ... F140	140 (±5%)	≈ 185	175

How to order

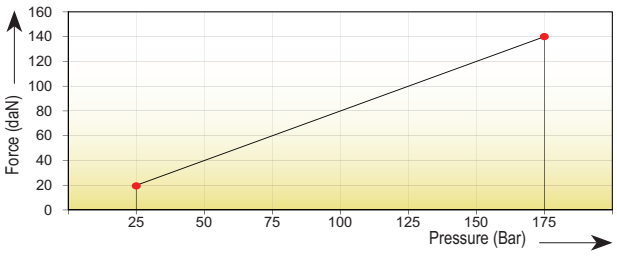
TPRB 24 x **30** **F80**

Model | Stroke | Force

Force/stroke ratio



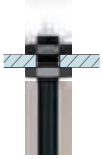
Initial force/charging pressure ratio

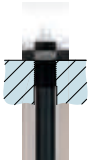


Assembly possibilities

Follow guidelines
Page 287


THREADED


FR 24


FR 24


TPR 24 KEY

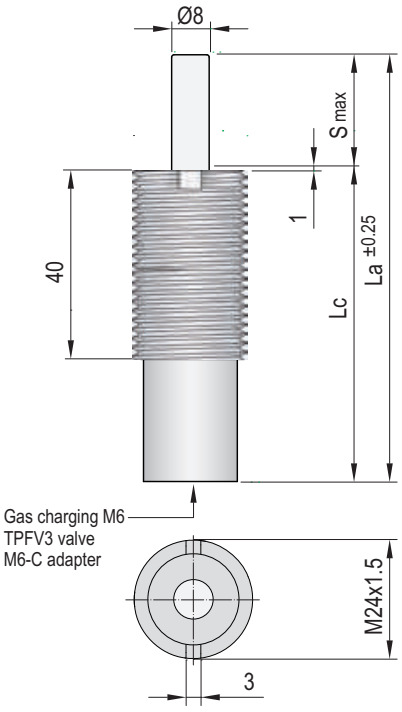
TECAPRES®

M24x1,5
90daN

TPRC 24

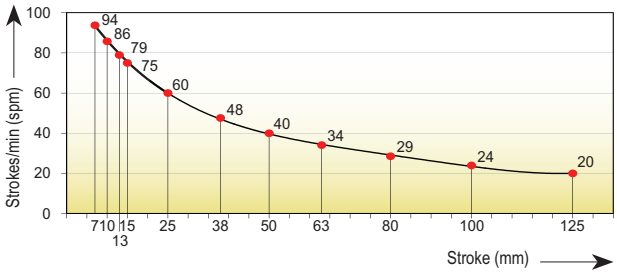
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	20 Bar
Rod seal area	0,50 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit RC24

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRC 24x7	7	56	49	0,002	0,08
TPRC 24x10	10	62	52	0,003	0,08
TPRC 24x13	13	67,4	54,4	0,003	0,08
TPRC 24x15	15	72	57	0,004	0,09
TPRC 24x25	25	92	67	0,006	0,10
TPRC 24x38	38	118	80	0,008	0,12
TPRC 24x50	50	142	92	0,011	0,13
TPRC 24x63	63	172	109	0,014	0,15
TPRC 24x80	80	205	125	0,017	0,17
TPRC 24x100	100	245	145	0,021	0,18
TPRC 24x125	125	295	170	0,026	0,21

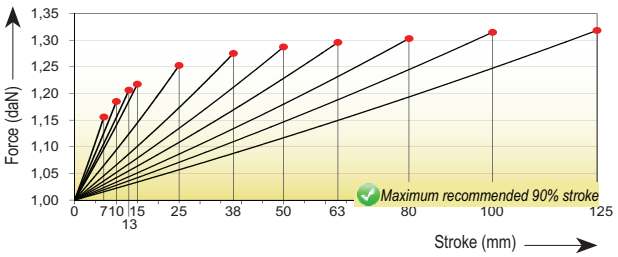
Code	Fa daN	Fc daN	P Bar
TPRC 24x ... F10	10 (±5%)	≈ 13	20
TPRC 24x ... F20	20 (±5%)	≈ 25	40
TPRC 24x ... F30	30 (±5%)	≈ 40	60
TPRC 24x ... F40	40 (±5%)	≈ 50	80
TPRC 24x ... F50	50 (±5%)	≈ 65	100
TPRC 24x ... F60	60 (±5%)	≈ 75	120
TPRC 24x ... F70	70 (±5%)	≈ 90	140
TPRC 24x ... F80	80 (±5%)	≈ 105	160
TPRC 24x ... F90	90 (±5%)	≈ 110	175

How to order

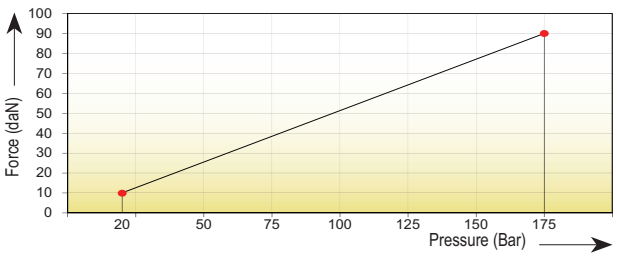
TPRC 24 x **100** **F50**

Model | Stroke | Force

Force/stroke ratio



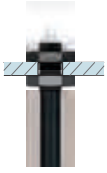
Initial force/charging pressure ratio

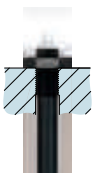


Assembly possibilities

Follow guidelines
Page 287


THREADED


FR 24


FR 24

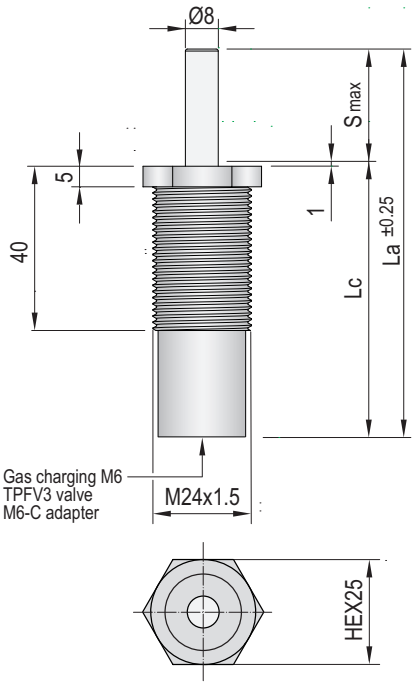
TECAPRES®

M24x1,5
90daN

TPRT 24

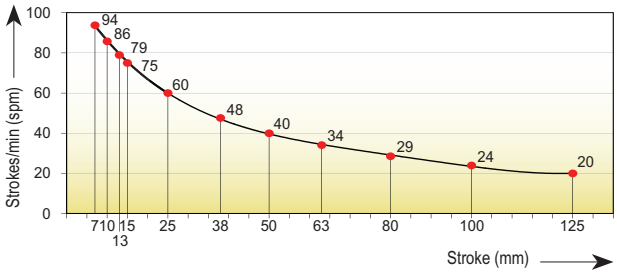
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	20 Bar
Rod seal area	0,50 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit RT24

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPRT 24x7	7	56	49	0,002	0,08
TPRT 24x10	10	62	52	0,003	0,08
TPRT 24x13	13	67,4	54,4	0,003	0,08
TPRT 24x15	15	72	57	0,004	0,09
TPRT 24x25	25	92	67	0,006	0,10
TPRT 24x38	38	118	80	0,008	0,12
TPRT 24x50	50	142	92	0,011	0,13
TPRT 24x63	63	172	109	0,014	0,15
TPRT 24x80	80	205	125	0,017	0,17
TPRT 24x100	100	245	145	0,021	0,18
TPRT 24x125	125	295	170	0,026	0,21

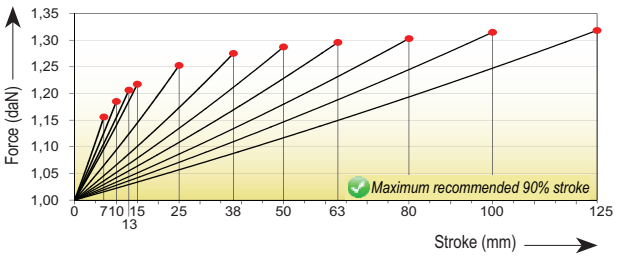
Code	Fa daN	Fc daN	P Bar
TPRT 24x ... F10	10 (±5%)	≈ 13	20
TPRT 24x ... F20	20 (±5%)	≈ 25	40
TPRT 24x ... F30	30 (±5%)	≈ 40	60
TPRT 24x ... F40	40 (±5%)	≈ 50	80
TPRT 24x ... F50	50 (±5%)	≈ 65	100
TPRT 24x ... F60	60 (±5%)	≈ 75	120
TPRT 24x ... F70	70 (±5%)	≈ 90	140
TPRT 24x ... F80	80 (±5%)	≈ 105	160
TPRT 24x ... F90	90 (±5%)	≈ 110	175

How to order

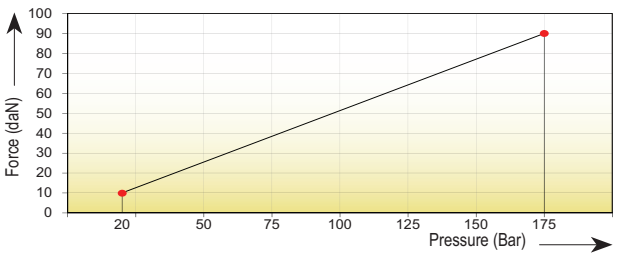
TPRT 24 x **10** **F40**

Model | Stroke | Force

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

THREADED

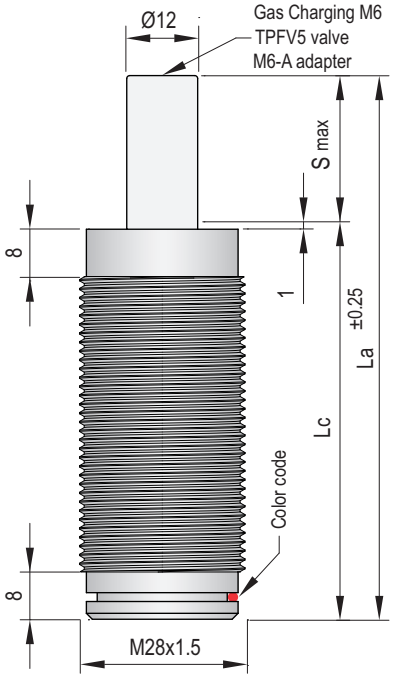
TECAPRES®

M28x1,5
200daN

TPR 28.1

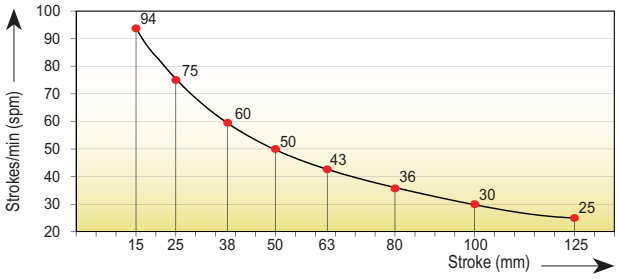
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit R28.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPR 28x15.1	15	72	57	0,006	0,15
TPR 28x25.1	25	92	67	0,010	0,17
TPR 28x38.1	38	118	80	0,014	0,20
TPR 28x50.1	50	142	92	0,019	0,22
TPR 28x63.1	63	172	109	0,024	0,25
TPR 28x80.1	80	205	125	0,030	0,30
TPR 28x100.1	100	242	142	0,037	0,35
TPR 28x125.1	125	292	167	0,046	0,38

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 140	90
RD *(Red)*	150 (±15)	≈ 210	135
YW *(Yellow)*	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

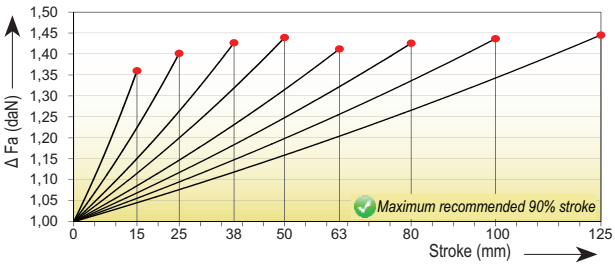
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

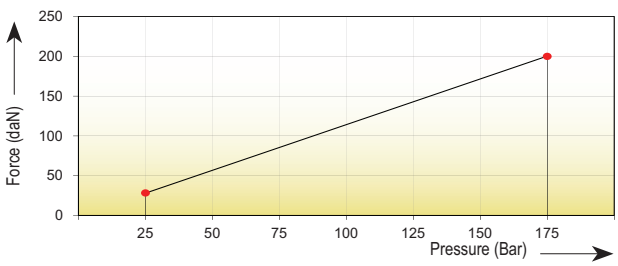
TPR 28 x **38.1** **RD**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


FR 28


FR 28

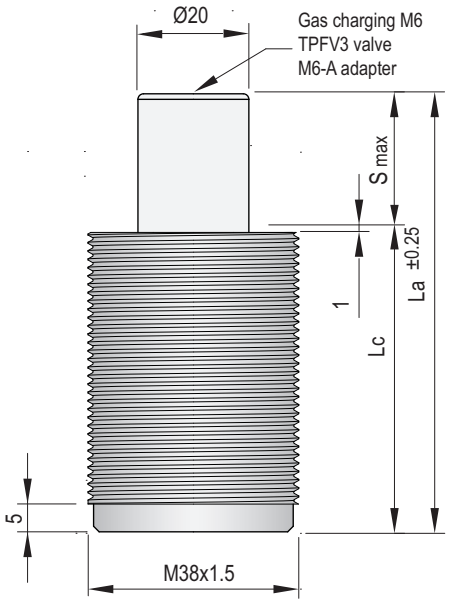
TECAPRES®

ØM38x1,5
250daN

TPR 38.1

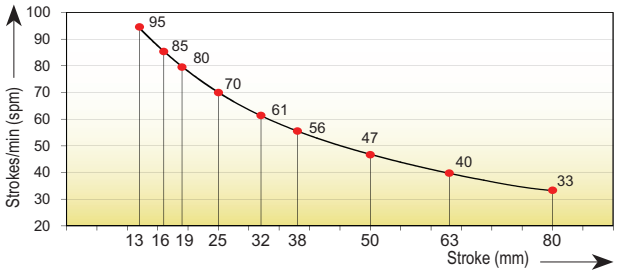
VDI SAFETY

PED 2014/68/UE



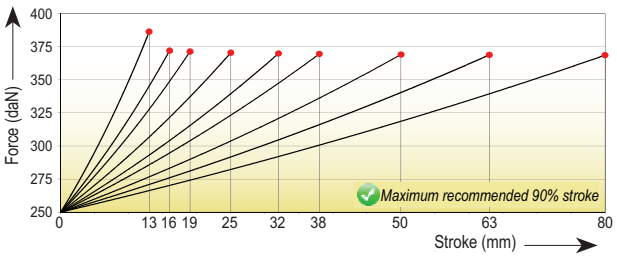
Pressure medium	Nitrogen (N_2)
Max. charging pressure	100 Bar
Min. charging pressure	35 Bar
Rod seal area	3,14 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit R38.1

Maximum strokes / minute (at 20ºC)

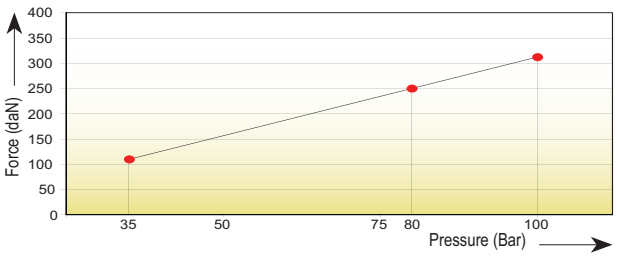


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPR 38x13.1	13	56	43		370	390		0,012	0,28
TPR 38x16.1	16	62	46		355	375		0,015	0,30
TPR 38x19.1	19	68	49		355	375		0,018	0,32
TPR 38x25.1	25	80	55	250 ±5%	355	370	80	0,024	0,33
TPR 38x32.1	32	94	62	(20ºC)	355	370	(20ºC)	0,031	0,35
TPR 38x38.1	38	106	68		355	370		0,037	0,39
TPR 38x50.1	50	130	80		355	370		0,049	0,43
TPR 38x63.1	63	156	93		355	370		0,062	0,48
TPR 38x80.1	80	190	110		355	370		0,078	0,55

Force/stroke ratio

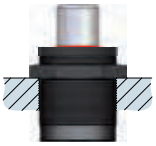


Initial force/charging pressure ratio



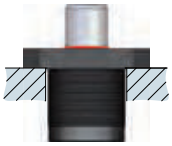
Assembly possibilities

Follow guidelines
Page 287



FR 38

FR 38



FRS 38

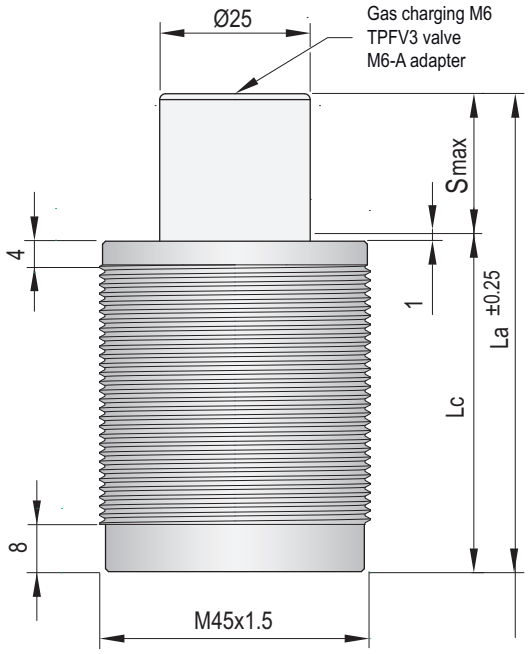
TECAPRES®

M45x1,5
740daN

TPR 45

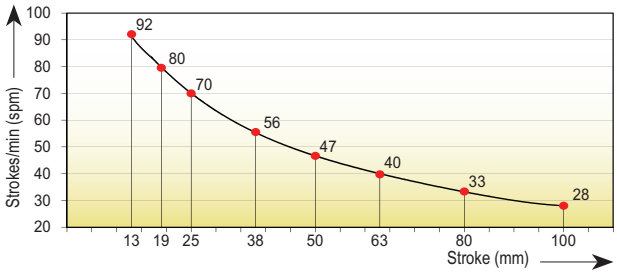
VDI SAFETY

PED 2014/68/UE



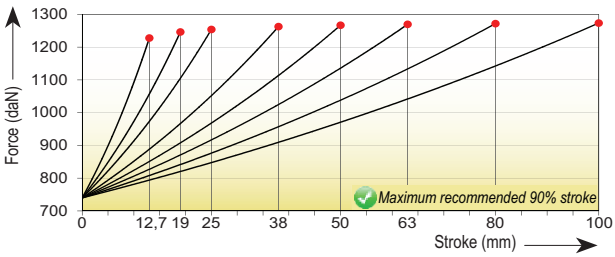
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit R45

Maximum strokes / minute (at 20ºC)

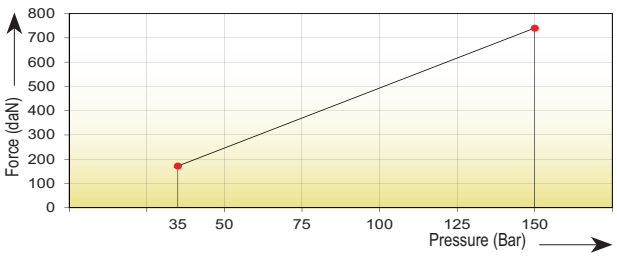


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPR 45x13	12,7	57,4	44,7		1145	1220		0,016	0,40
TPR 45x19	19	70	51		1160	1240		0,023	0,47
TPR 45x25	25	82	57		1165	1250		0,030	0,50
TPR 45x38	38	108	70	740 ±5% (20ºC)	1175	1255	150 (20ºC)	0,045	0,61
TPR 45x50	50	132	82		1175	1260		0,059	0,69
TPR 45x63	63	159	96		1180	1265		0,074	0,80
TPR 45x80	80	192	112		1180	1265		0,094	0,91
TPR 45x100	100	232	132		1180	1265		0,117	1,10

Force/stroke ratio

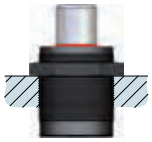


Initial force/charging pressure ratio

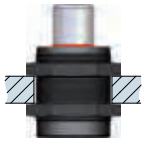


Assembly possibilities

Follow guidelines
Page 287



FR 45



FR 45

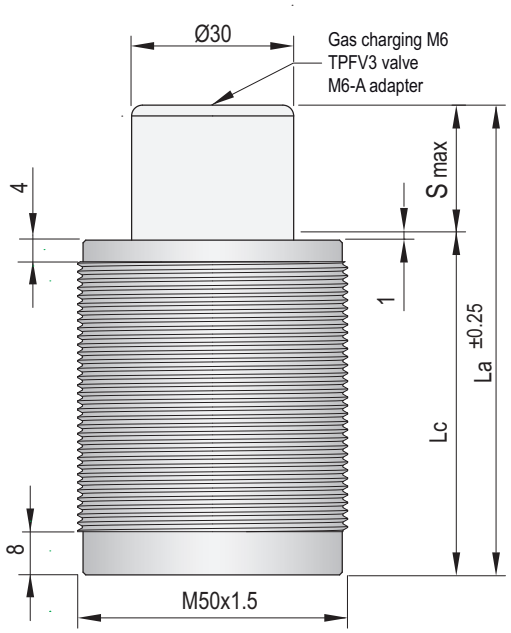
TECAPRES®

M50x1,5
1000daN

TPR 50

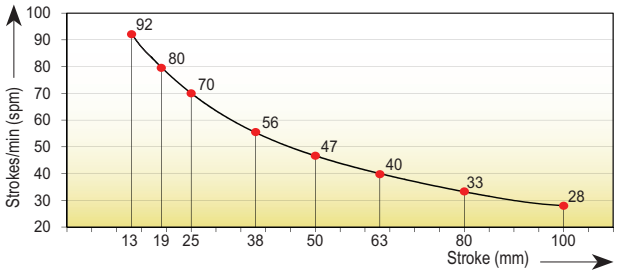
VDI SAFETY

PED 2014/68/UE



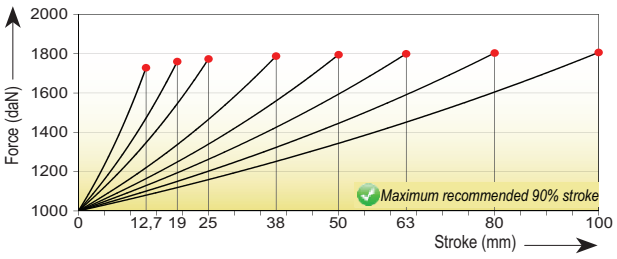
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit R50

Maximum strokes / minute (at 20ºC)

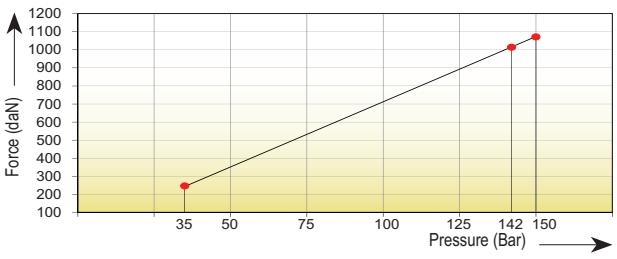


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPR 50x13	12,7	63,4	50,7	1000 ±5% (20ºC)	1615	1735	142 (20ºC)	0,021	0,59
TPR 50x19	19	76	57		1640	1765		0,031	0,63
TPR 50x25	25	88	63		1650	1780		0,041	0,69
TPR 50x38	38	114	76		1665	1795		0,061	0,80
TPR 50x50	50	138	88		1670	1800		0,080	0,90
TPR 50x63	63	165	102		1675	1805		0,100	1,10
TPR 50x80	80	198	118		1675	1810		0,127	1,15
TPR 50x100	100	238	138		1680	1815		0,158	1,40

Force/stroke ratio

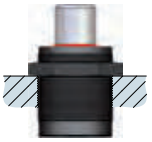


Initial force/charging pressure ratio

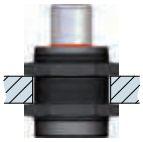


Assembly possibilities

Follow guidelines
Page 287



FR 50



FR 50

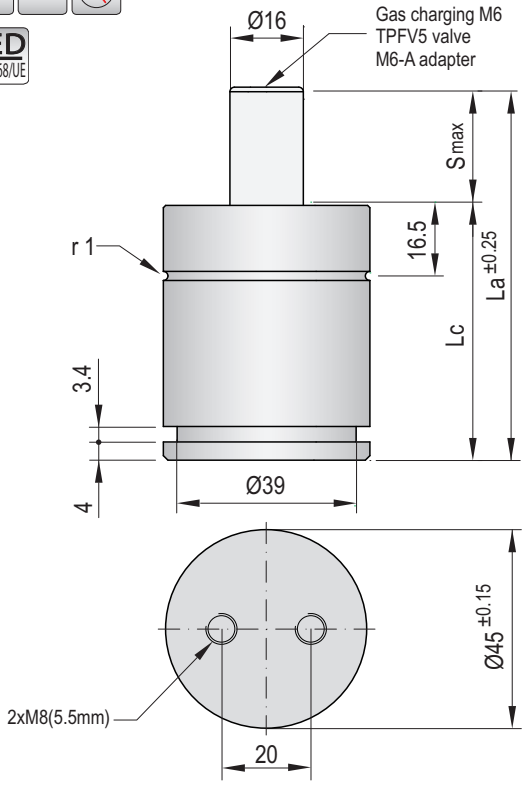
PED 2014/68/UE

Low compresion gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY	
TPB 350	45	13 - 100	350	✓	✓	
TPB 850.1	63	13 - 100	850	✓	✓	✓
TPB 750	75	13 - 300	740	✓	✓	✓
TPB 1250	75	25 - 100	1250	✓	✓	✓
TPB 1500	95	13 - 300	1500	✓	✓	✓
TPB 1800	95	25 - 100	1800	✓	✓	✓
TPB 2800	120	25 - 100	2800	✓	✓	✓
TPB 3000	120	25 - 300	3000	✓	✓	✓
TPB 5000	150	25 - 300	5000	✓	✓	✓

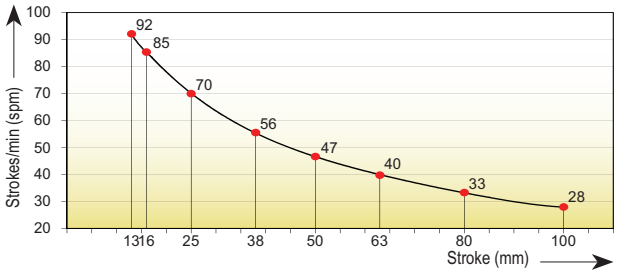
VDI SAFETY

PED 2014/68/UE



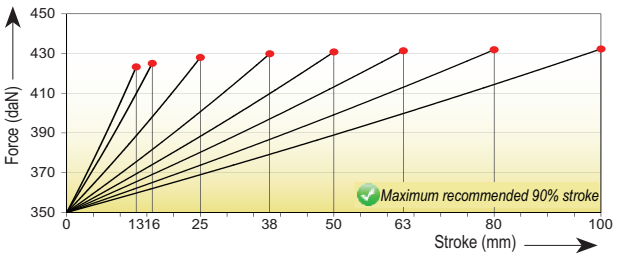
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit B350.1

Maximum strokes / minute (at 20ºC)

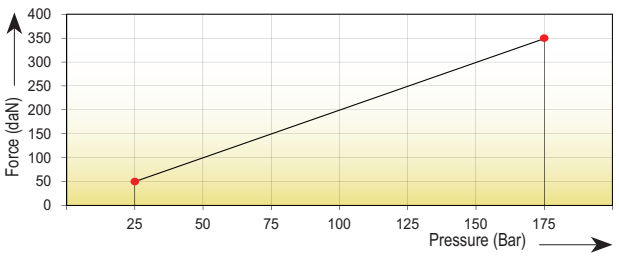


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 350x13	13	58	45		415	425		0,015	0,34
TPB 350x16	16	64	48		420	425		0,018	0,38
TPB 350x25	25	82	57		420	430		0,028	0,39
TPB 350x38	38	108	70	350 ±5% (20ºC)	425	430	175 (20ºC)	0,041	0,43
TPB 350x50	50	132	82		425	435		0,054	0,46
TPB 350x63	63	158	95		425	435		0,067	0,49
TPB 350x80	80	192	112		425	435		0,085	0,57
TPB 350x100	100	232	132		425	435		0,106	0,63

Force/stroke ratio



Initial force/charging pressure ratio

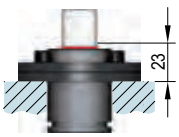


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS



FS 45·FSC 45

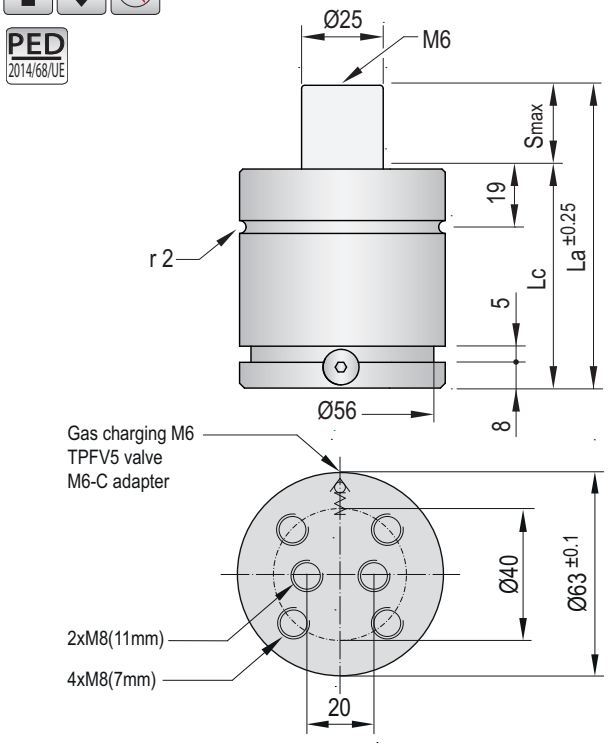

FP 45·FPR 45


FB 45


FI 45·FI 45/1

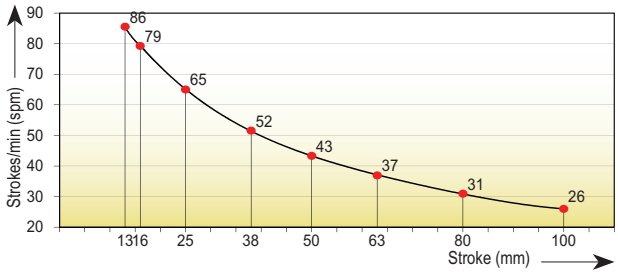
VDI SAFETY

PED 2014/68/UE



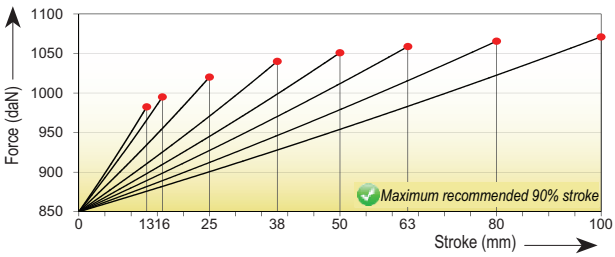
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit B850.1

Maximum strokes / minute (at 20ºC)

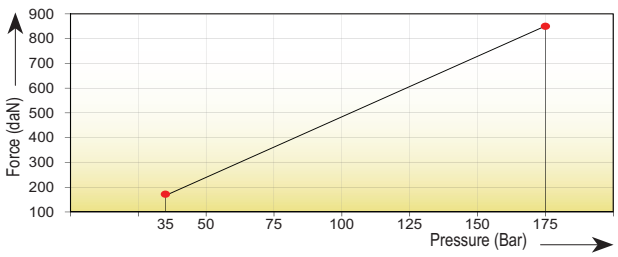


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 850x13.1	13	70	57	850 ±5% (20ºC)	980	995	175 (20ºC)	0,047	0,92
TPB 850x16.1	16	76	60		990	1005		0,054	0,95
TPB 850x25.1	25	94	69		1010	1030		0,074	1,24
TPB 850x38.1	38	120	82		1030	1050		0,102	1,32
TPB 850x50.1	50	144	94		1040	1060		0,128	1,37
TPB 850x63.1	63	170	107		1045	1070		0,157	1,52
TPB 850x80.1	80	204	124		1050	1075		0,194	1,68
TPB 850x100.1	100	244	144		1055	1080		0,238	1,80

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 63·FSC 63·FSC 63/1 | FP 63·FPR 63 | FB 50·FB 63 | FRS 63 | FI 63/1

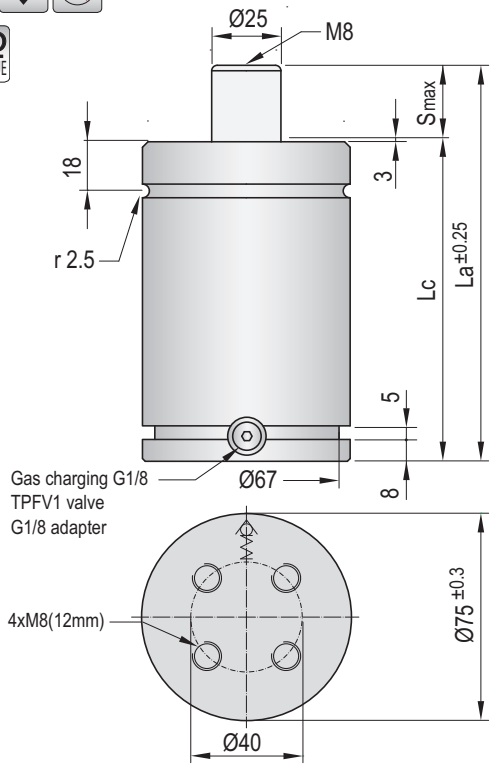
TECAPRES®

Ø75mm · Low compresion 740daN

TPB 750

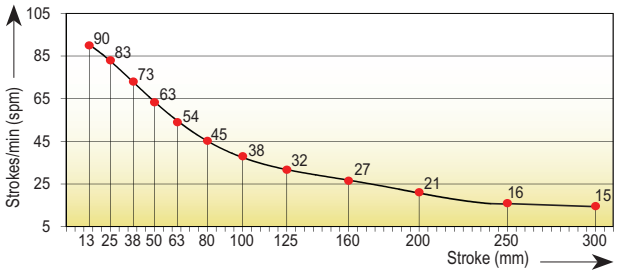
VDI SAFETY

PED 2014/68/UE



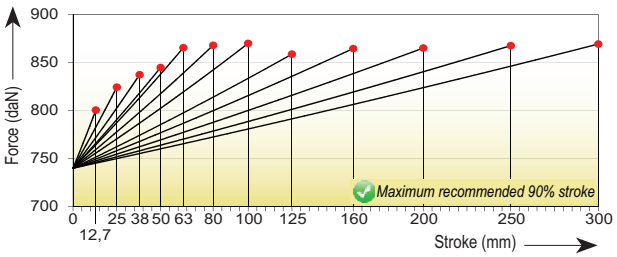
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit B750

Maximum strokes / minute (at 20ºC)

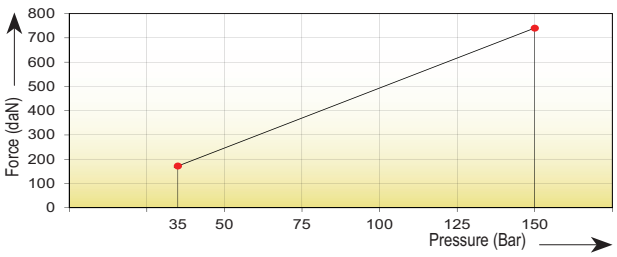


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 750x13	12,7	120,4	107,7	740 ±5% (20ºC)	790	795	150 (20ºC)	0,083	3,00
TPB 750x25	25	145	120		810	820		0,120	3,15
TPB 750x38	38	171	133		820	835		0,161	3,35
TPB 750x50	50	195	145		830	840		0,198	3,50
TPB 750x63	63	222	159		845	860		0,214	3,75
TPB 750x80	80	255	175		850	865		0,267	4,30
TPB 750x100	100	295	195		850	865		0,329	4,65
TPB 750x125	125	345	220		840	855		0,444	5,21
TPB 750x160	160	415	255		845	860		0,546	5,94
TPB 750x200	200	495	295		845	860		0,680	7,00
TPB 750x250	250	595	345		850	865		0,835	7,68
TPB 750x300	300	695	395		850	865		0,991	8,09

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 75·FSC 75


FP 75·FPR 75

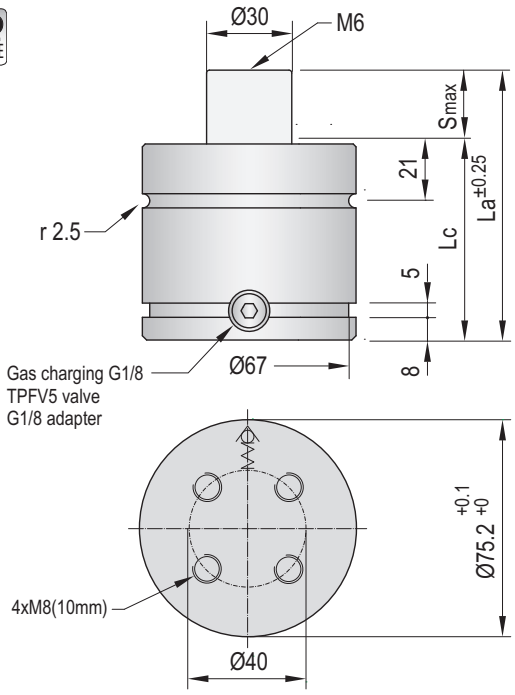

FB 75


FRS 75


FI 75·FI 75/1

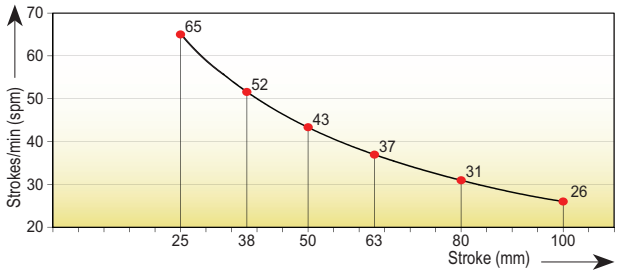
VDI SAFETY

PED 2014/68/UE



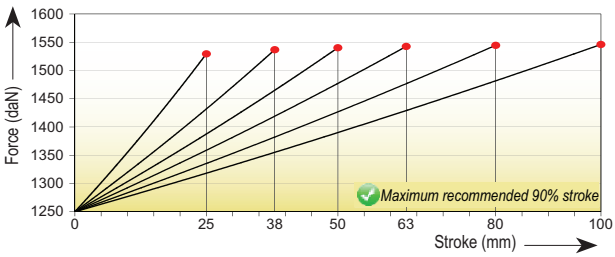
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit B1250.1

Maximum strokes / minute (at 20ºC)

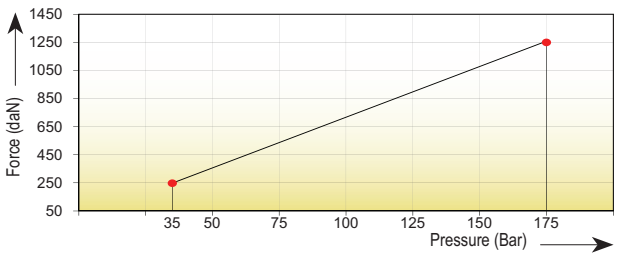


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 1250x25	25	95	70		1505	1540		0,097	1,30
TPB 1250x38	38	121	83		1510	1545		0,144	1,51
TPB 1250x50	50	145	95	1250 ±5%	1510	1545	175	0,188	1,58
TPB 1250x63	63	171	108	(20ºC)	1510	1550	(20ºC)	0,235	1,67
TPB 1250x80	80	205	125		1515	1550		0,297	2,08
TPB 1250x100	100	245	145		1515	1550		0,369	2,49

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS

FS 75 · FSC 75

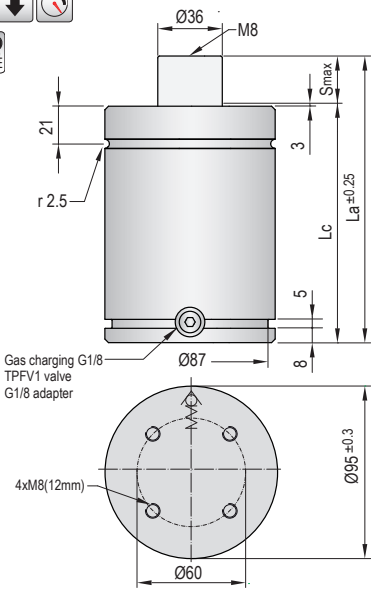

FP 75 · FPR 75


FB 75


FI 75 · FI 75/1

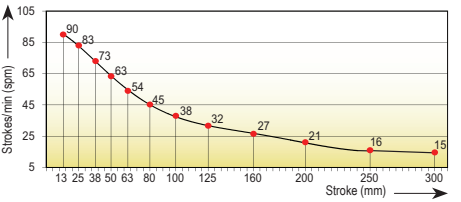
VDI SAFETY

PED 2014/68/UE



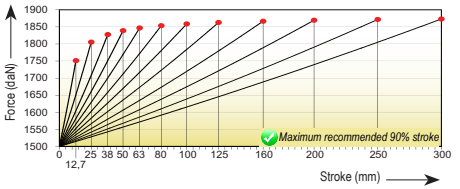
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit B1500

Maximum strokes / minute (at 20ºC)

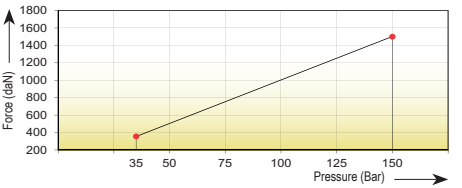


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 1500x13	12,7	135,4	122,7	1500 ±5% (20ºC)	1730	1760	148 (20ºC)	0,090	5,25
TPB 1500x25	25	160	135		1775	1815		0,150	5,50
TPB 1500x38	38	186	148		1795	1835		0,216	5,90
TPB 1500x50	50	210	160		1805	1845		0,276	6,28
TPB 1500x63	63	237	174		1815	1855		0,341	6,60
TPB 1500x80	80	270	190		1820	1860		0,427	7,05
TPB 1500x100	100	310	210		1825	1865		0,527	7,65
TPB 1500x125	125	360	235		1825	1870		0,653	7,90
TPB 1500x160	160	430	270		1830	1875		0,829	8,98
TPB 1500x200	200	510	310		1830	1880		1,030	10,05
TPB 1500x250	250	610	360		1835	1880		1,281	11,65
TPB 1500x300	300	710	410		1835	1880		1,533	14,60

Force/stroke ratio

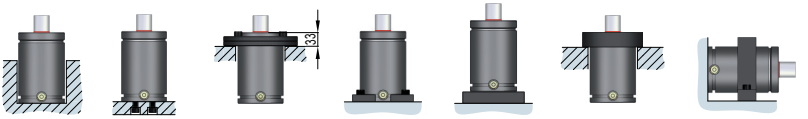


Initial force/charging pressure ratio



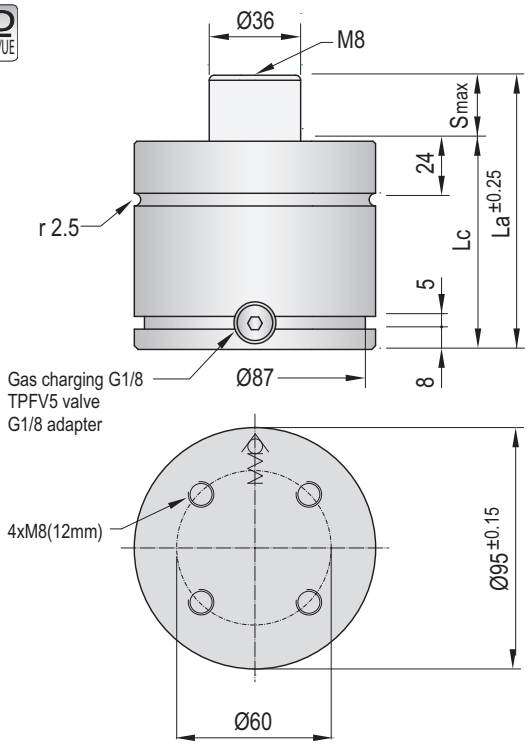
Assembly possibilities

Follow guidelines Page 287



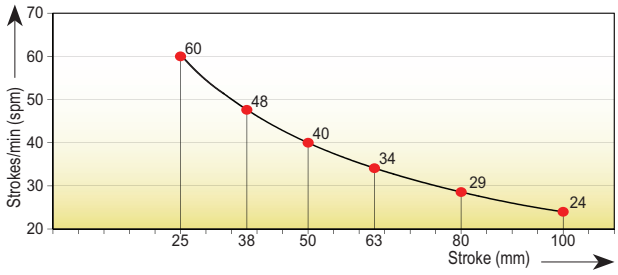
VDI SAFETY

PED 2014/68/UE



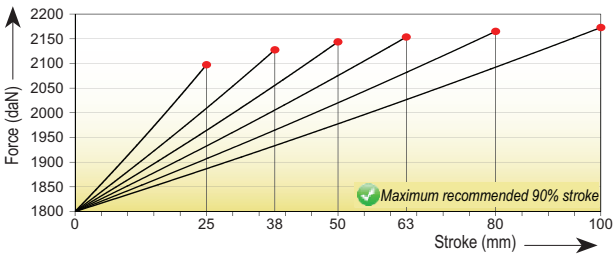
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit B1800.1

Maximum strokes / minute (at 20ºC)

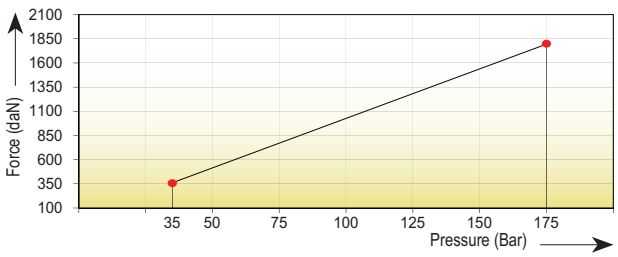


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 1800x25	25	108	83		2040	2075		0,179	3,05
TPB 1800x38	38	134	96		2070	2105		0,251	3,65
TPB 1800x50	50	158	108	1800 ±5%	2080	2120	175	0,317	3,84
TPB 1800x63	63	184	121	(20ºC)	2090	2130	(20ºC)	0,391	4,32
TPB 1800x80	80	218	138		2100	2145		0,483	4,79
TPB 1800x100	100	258	158		2105	2150		0,593	5,88

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 95·FSC 95


FP 95·FPR 95


FB 95


FRS 95


FI 95·FI 95/1

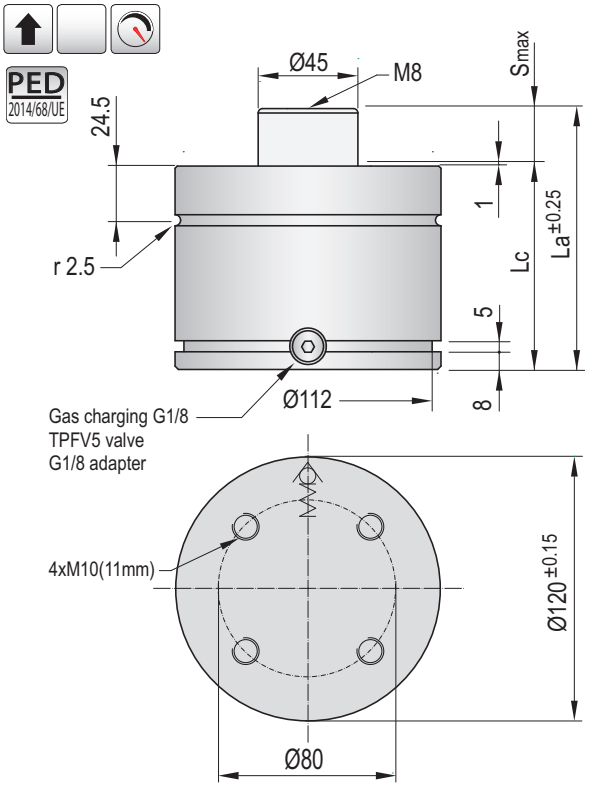
TECAPRES®

Ø120mm · Low compresion 2800daN

TPB 2800

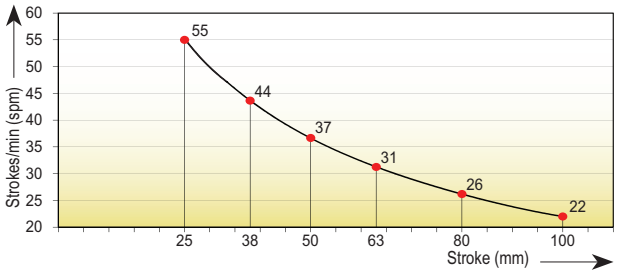
VDI SAFETY

PED 2014/68/UE



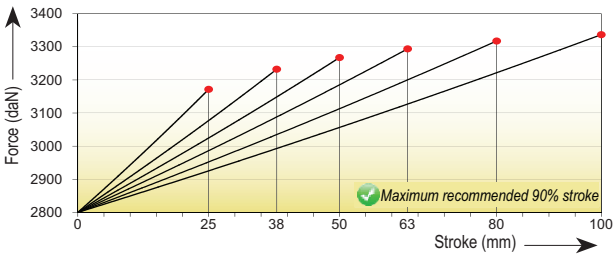
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit B2800.1

Maximum strokes / minute (at 20ºC)

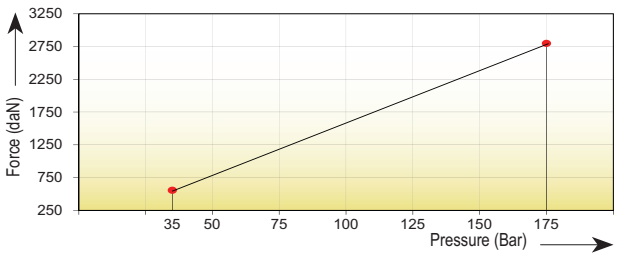


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 2800x25	25	118	93		3110	3155		0,339	4,80
TPB 2800x38	38	144	106		3165	3215		0,452	5,55
TPB 2800x50	50	168	118	2800 ±5%	3195	3250	175	0,556	6,25
TPB 2800x63	63	194	131	(20ºC)	3215	3275	(20ºC)	0,668	6,32
TPB 2800x80	80	228	148		3240	3300		0,816	7,15
TPB 2800x100	100	268	168		3255	3315		0,987	8,10

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 120 · FSC 120

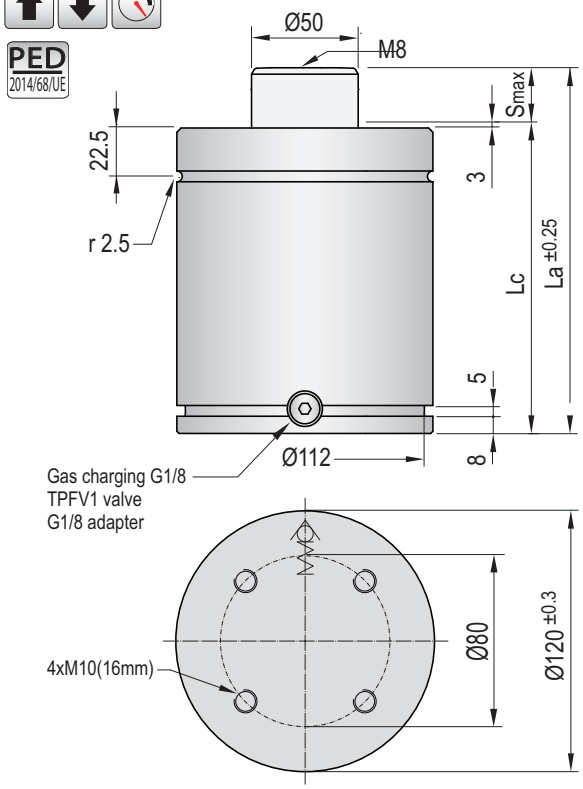

FP 120 · FPR 120


FB 120


FI 120 · FI 120/1

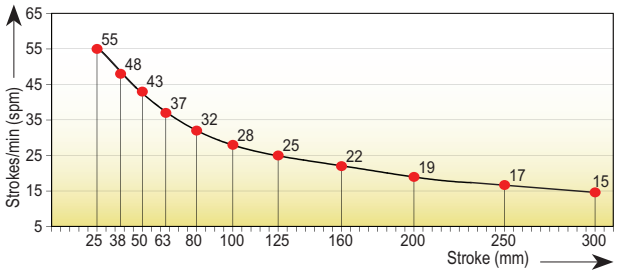
VDI SAFETY

PED 2014/68/UE



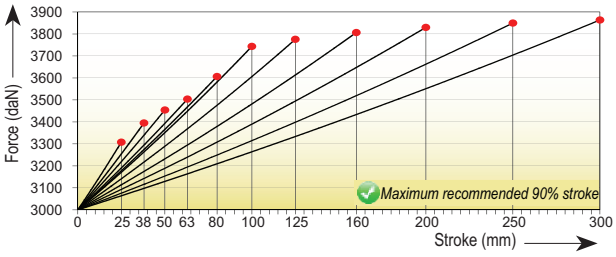
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit B3000

Maximum strokes / minute (at 20ºC)

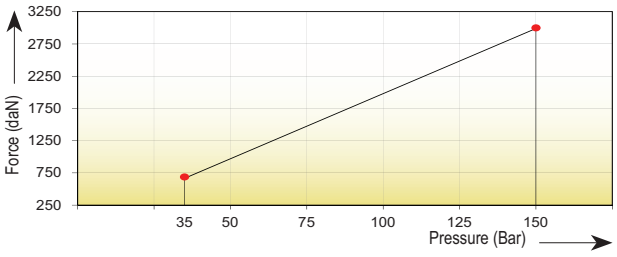


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 3000x25	25	170	145		3280	3315		0,527	11,75
TPB 3000x38	38	196	158		3275	3310		0,641	12,70
TPB 3000x50	50	220	170		3410	3460		0,746	13,45
TPB 3000x63	63	247	184		3450	3510		0,860	14,25
TPB 3000x80	80	280	200	3000 ±5%	3540	3610	150	0,934	15,16
TPB 3000x100	100	320	220	(20ºC)	3660	3750	(20ºC)	0,989	16,20
TPB 3000x125	125	370	245		3685	3780		1,195	17,85
TPB 3000x160	160	440	280		3710	3810		1,483	19,60
TPB 3000x200	200	520	320		3730	3835		1,812	21,50
TPB 3000x250	250	620	370		3750	3855		2,224	23,60
TPB 3000x300	300	720	420		3760	3870		2,635	25,30

Force/stroke ratio

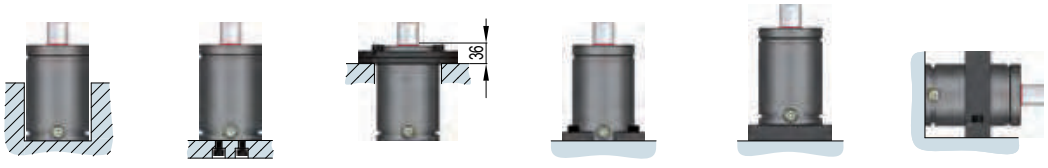


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287



DROP-IN · SCREWS · FS 120 · FSC 120 · FP 120 · FPR 120 · FB 120 · FI 120 · FI 120/1

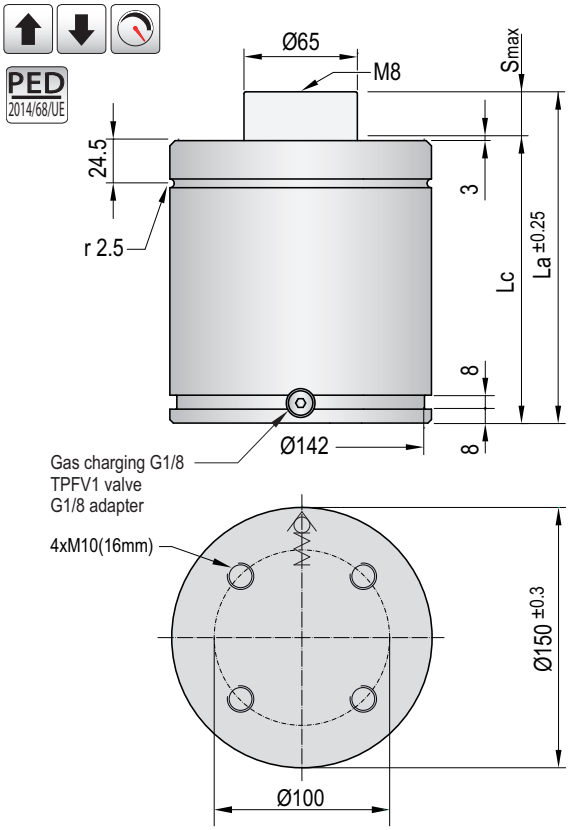
TECAPRES®

Ø150mm · Low compresion 5000daN

TPB 5000

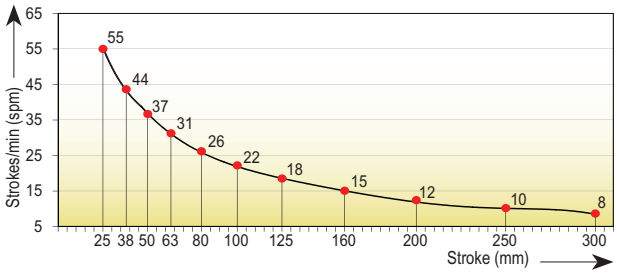
VDI SAFETY

PED 2014/68/UE



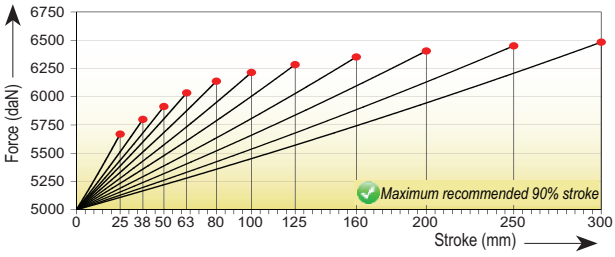
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	33,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit B5000

Maximum strokes / minute (at 20ºC)

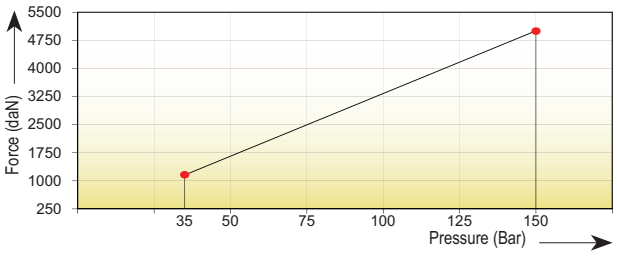


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPB 5000x25	25	190	165		5570	5645		0,702	18,50
TPB 5000x38	38	216	178		5685	5585		0,915	19,30
TPB 5000x50	50	240	190		5780	5885		1,074	20,10
TPB 5000x63	63	267	204		5885	6005		1,220	21,00
TPB 5000x80	80	300	220	5000 ±5%	5975	6110	150	1,432	22,85
TPB 5000x100	100	340	240	(20ºC)	6040	6185	(20ºC)	1,698	24,00
TPB 5000x125	125	390	265		6100	6255		2,030	26,45
TPB 5000x160	160	460	300		6155	6325		2,494	29,25
TPB 5000x200	200	540	340		6200	6375		3,025	32,10
TPB 5000x250	250	640	390		6240	6420		3,689	36,20
TPB 5000x300	300	740	440		6270	6455		4,352	39,10

Force/stroke ratio

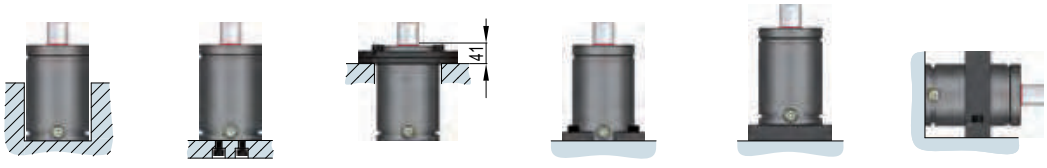


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN · SCREWS · FS 150 · FSC 150 · FP 150 · FPR 150 · FB 150 · FI 150 · FI 150/1

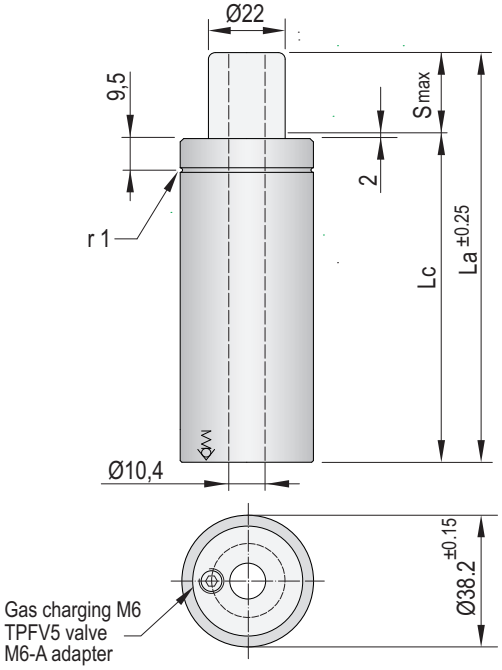
PED
2014/68/UE

Hollow Cylinders

Code	ØBody mm	Strokes mm	Fa daN
TPHC 300	38	16 - 80	300
TPHC 600	50	16 - 80	600
TPHC 2500	75	16 - 80	2500

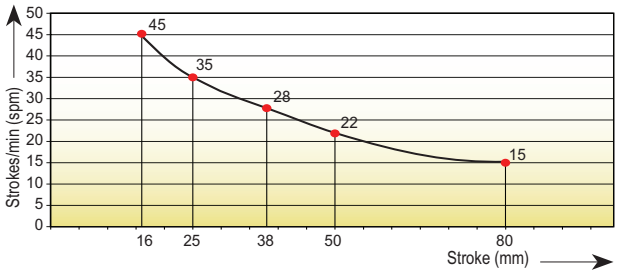
VDI SAFETY

PED 2014/68/UE



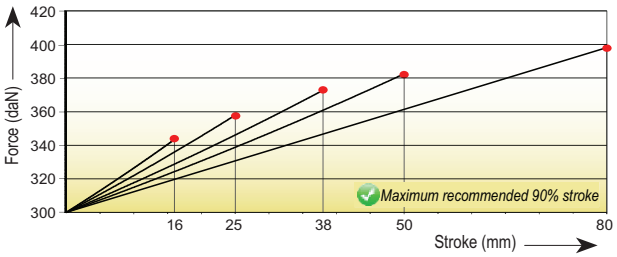
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	2,04 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HC300

Maximum strokes / minute (at 20ºC)

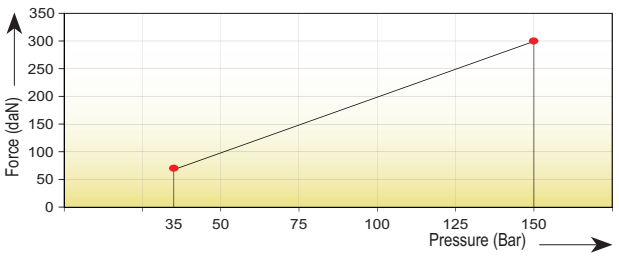


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHC300X16	16	108	92	300 ±5% (20ºC)	345	350	150 (20ºC)	0,025	0,35
TPHC300X25	25	126	101		355	365		0,031	0,40
TPHC300X38	38	152	114		370	380		0,040	0,51
TPHC300X50	50	176	126		380	390		0,047	0,58
TPHC300X80	80	236	156		390	405		0,066	0,71

Force/stroke ratio

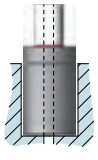


Initial force/charging pressure ratio

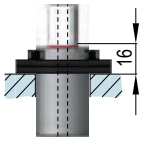


Assembly possibilities

Follow guidelines
Page 287



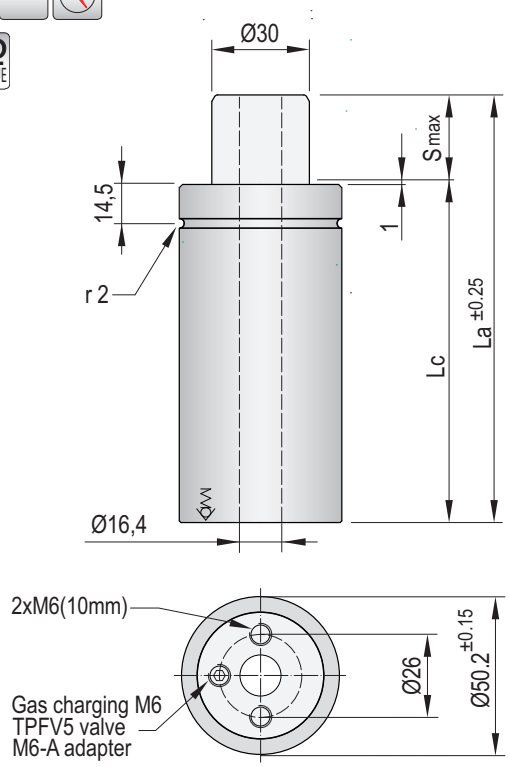
DROP-IN



FS 38·FSC 38

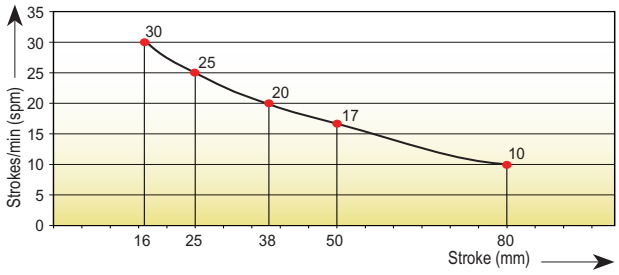
VDI SAFETY

PED 2014/68/UE



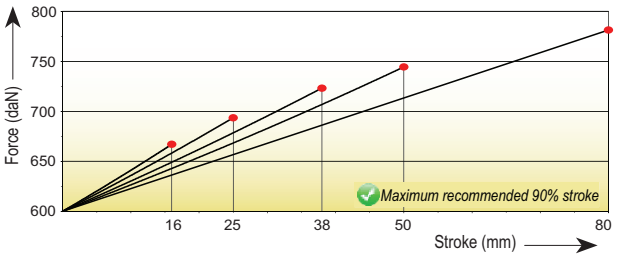
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,93 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HC600

Maximum strokes / minute (at 20ºC)

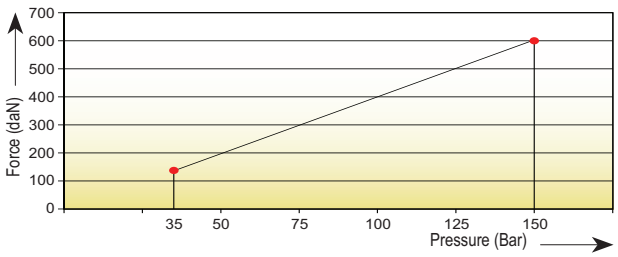


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHC600x16	16	112	96	600 ±5% (20ºC)	650	655	150 (20ºC)	0,063	0,70
TPHC600x25	25	130	105		670	680		0,073	0,91
TPHC600x38	38	156	118		695	710		0,088	1,12
TPHC600x50	50	180	130		715	730		0,101	1,28
TPHC600x80	80	240	160		745	765		0,135	1,62

Force/stroke ratio

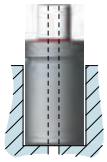


Initial force/charging pressure ratio

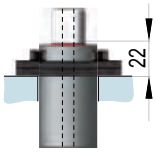


Assembly possibilities

Follow guidelines
Page 287



DROP-IN



FS 50·FSC 50

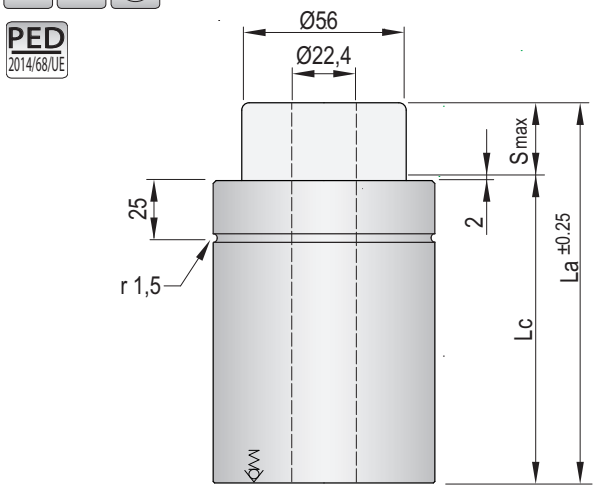
TECAPRES®

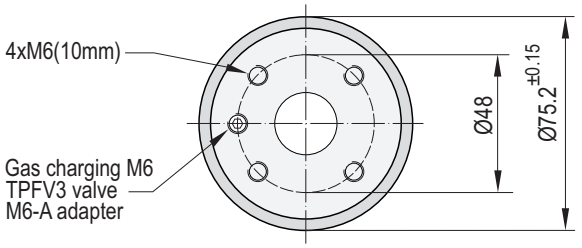
Ø75,2mm
2500daN

TPHC 2500

VDI SAFETY

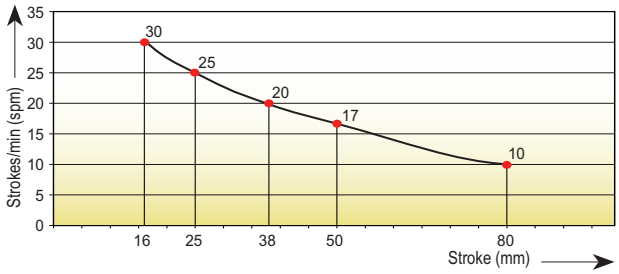
PED 2014/68/UE





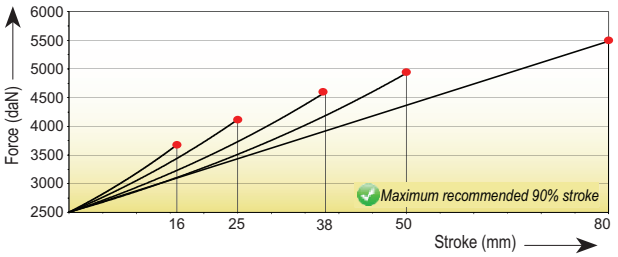
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	16,58 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HC2500

Maximum strokes / minute (at 20ºC)

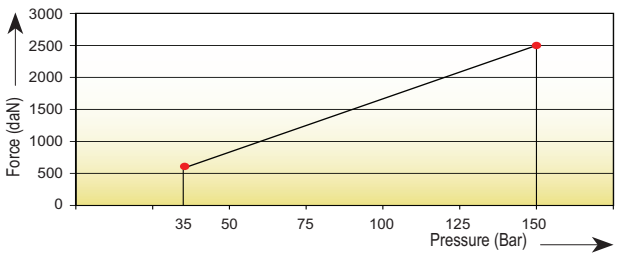


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHC2500x16	16	122	106	2500 ±5% (20ºC)	3495	3660	150 (20ºC)	0,083	2,03
TPHC2500x25	25	140	115		3850	4095		0,106	2,20
TPHC2500x38	38	166	128		4220	4575		0,138	2,60
TPHC2500x50	50	190	140		4470	4900		0,168	3,35
TPHC2500x80	80	250	170		4875	5460		0,244	3,80

Force/stroke ratio

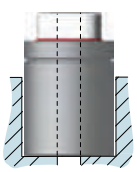


Initial force/charging pressure ratio

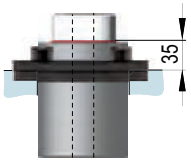


Assembly possibilities

Follow guidelines
Page 287



DROP-IN



FS 75·FSC 75

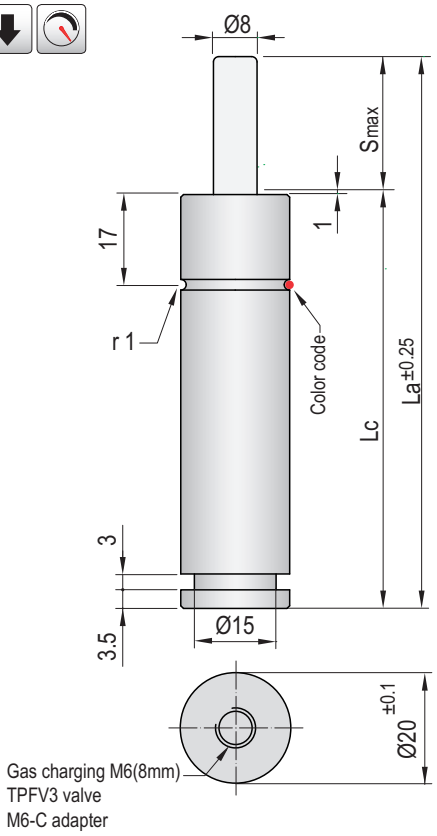
PED 2014/68/UE

Small gas springs for reduced forces

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY		
TPA 20	20	13 - 80	90	√	√		
TPA 25	25	10 - 50	200	√	√		√
TPG 22	22	12 - 160	90	√	√		
TPG 25	25	12 - 100	200	√	√		√
TPG 26	26	12 - 160	200	√	√		
TPG 32	32	12 - 125	300	√	√		√
TPGP 32	32	12 - 100	450	√	√		√
TPG 500	45	12 - 100	500	√	√		√

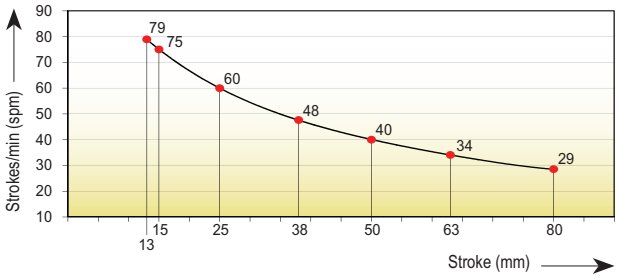
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,50 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit A20

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPA 20x13	12,7	79,4	66,7	0,004	0,11
TPA 20x15	15	86	71	0,005	0,12
TPA 20x25	25	104	79	0,007	0,13
TPA 20x38	38	130	92	0,009	0,15
TPA 20x50	50	154	104	0,012	0,16
TPA 20x63	63	180	117	0,014	0,18
TPA 20X80	80	214	134	0,017	0,20

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	25 (±5)	≈ 31	50
BL *(Blue)*	50 (±5)	≈ 61	100
RD *(Red)*	75 (±5)	≈ 92	150
YW *(Yellow)*	90 (±5)	≈ 107	175
(Other forces)	13 - 90	≈ 16 - 107	25 - 175

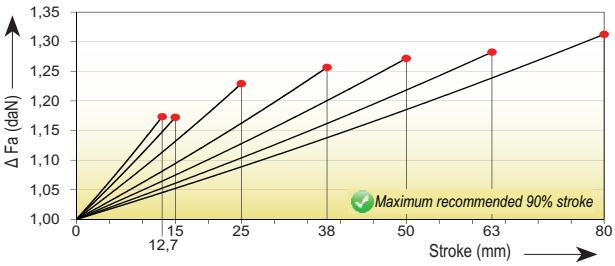
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

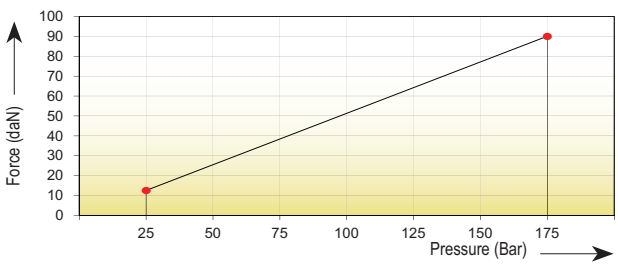
TPA 20 x 15 GR

Model | Stroke | Color code

Force/stroke ratio

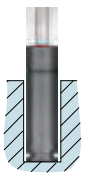


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

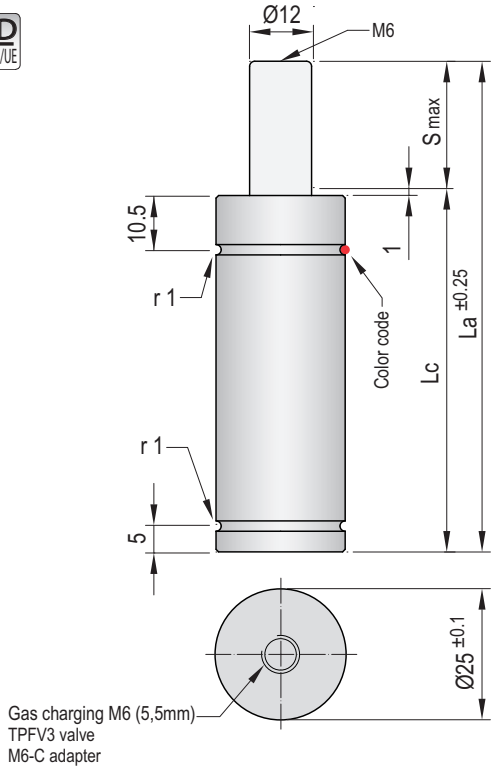

DROP-IN


SCREWS


FP 20

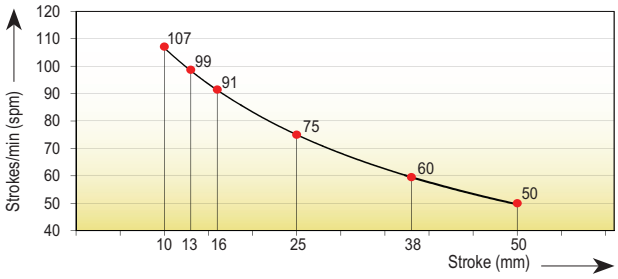
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit A25

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPA 25x10	10	65	55	0,006	0,14
TPA 25x13	12,7	70,4	57,7	0,007	0,14
TPA 25x16	16	77	61	0,008	0,15
TPA 25x25	25	95	70	0,012	0,17
TPA 25x38	38	121,2	83,2	0,017	0,19
TPA 25x50	50	145	95	0,021	0,21

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 135	90
RD *(Red)*	150 (±15)	≈ 205	135
YW *(Yellow)*	200 (±20)	≈ 265	175
(Other forces)	28 - 200	≈ 40 - 277	25 - 175

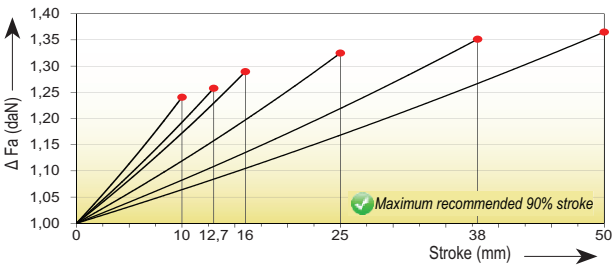
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

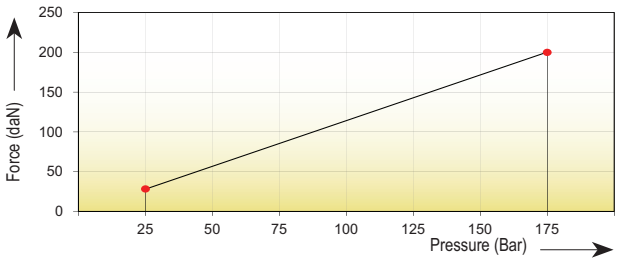
TPA 25 x **25** **BL**

Model | Stroke | Color code

Force/stroke ratio

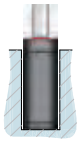


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287


DROP-IN

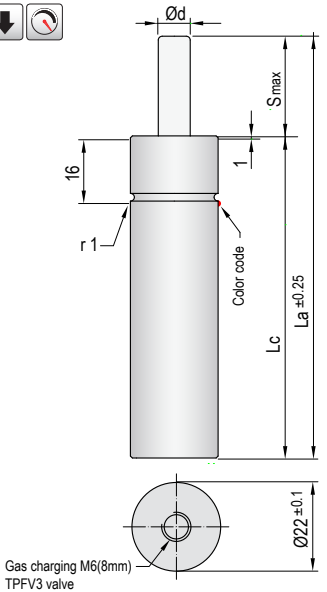

SCREWS

FS 25/1 · FS 25/2

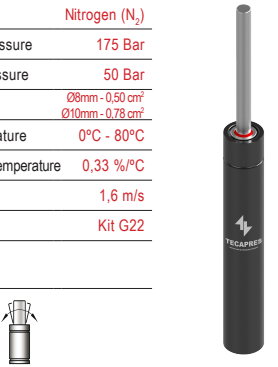

FS 25/1 · FS 25/2

VDI SAFETY

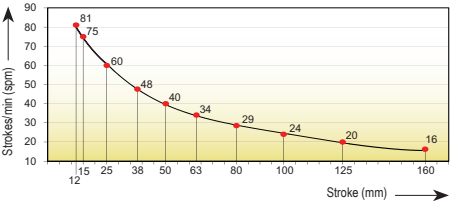
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	Ø8mm - 0,50 cm² / Ø10mm - 0,78 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit G22



Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	Ød mm	V l	Kg
TPG 22x12	12	84	72	8	0,005	0,23
TPG 22x15	15	90	75	8	0,006	0,24
TPG 22x25	25	110	85	8	0,008	0,27
TPG 22x38	38	136	98	8	0,010	0,29
TPG 22x50	50	160	110	8	0,013	0,32
TPG 22x63	63	186	123	8	0,015	0,36
TPG 22x80	80	220	140	8	0,019	0,38
TPG 22x100	100	260	160	8	0,023	0,44
TPG 22x125	125	310	185	8	0,028	0,46
TPG 22x160	160	380	220	10	0,035	0,52

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	30 (±5%)	≈ 35	60*
BL *(Blue)*	50 (±5%)	≈ 60	100*
RD *(Red)*	70 (±5%)	≈ 85	140*
YW *(Yellow)*	90 (±5%)	≈ 106	175*
(Other forces)	25 - 90	≈ 32 - 106	50 - 175

* TPG22x160: YW - 130Bar / RD - 90Bar / BL - 65Bar / GR - 40Bar

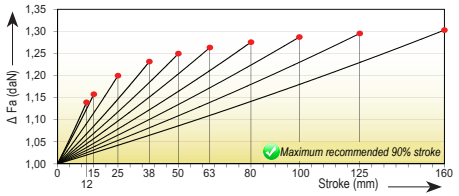
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

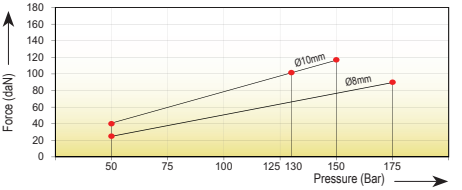
TPG 22 x 100 YW

Model | Stroke | Color code

Force/stroke ratio

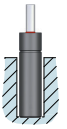


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

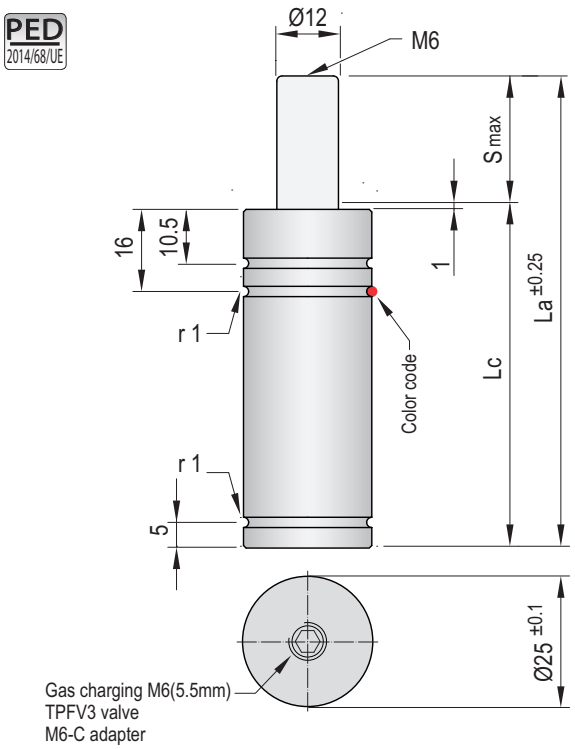


DROP-IN

SCREWS

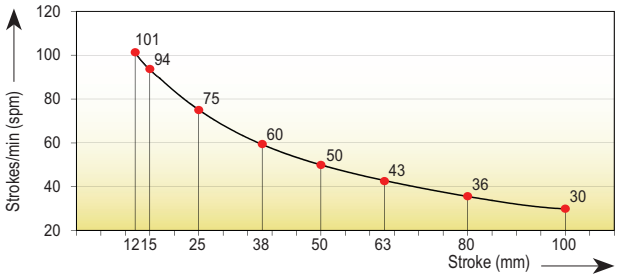
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit G25

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPG 25x12	12	78	66	0,009	0,16
TPG 25x15	15	84	69	0,010	0,17
TPG 25x25	25	104	79	0,014	0,18
TPG 25x38	38	130	92	0,019	0,22
TPG 25x50	50	154	104	0,024	0,25
TPG 25x63	63	180	117	0,029	0,26
TPG 25x80	80	214	134	0,035	0,28
TPG 25x100	100	254	154	0,043	0,32

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 135	90
RD *(Red)*	150 (±15)	≈ 205	135
YW *(Yellow)*	200 (±20)	≈ 265	175
(Other forces)	28 - 200	≈ 40 - 277	25 - 175

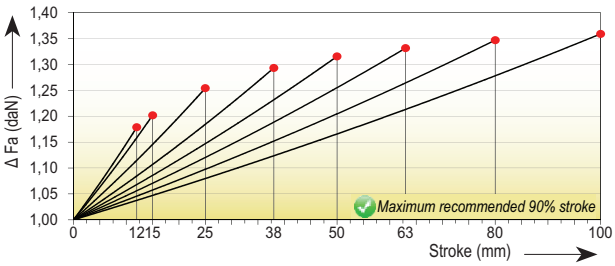
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

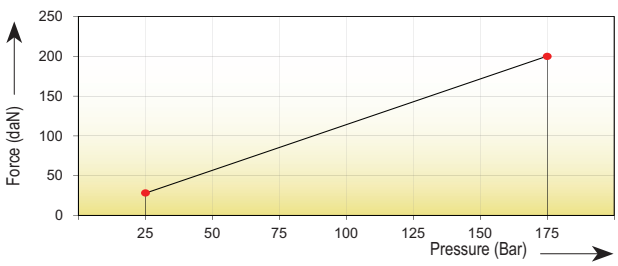
TPG 25 x **63** **RD**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

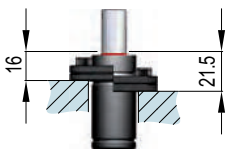


Assembly possibilities

Follow guidelines
Page 287


DROP-IN


SCREWS

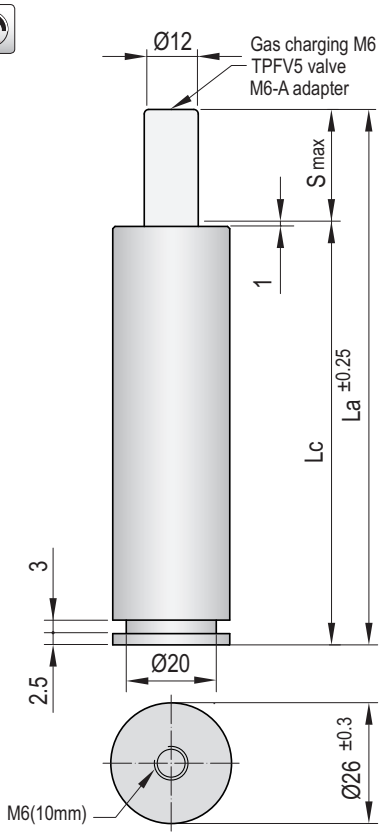


FS 25/1·FS 25/2


FS 25/1·FS 25/2

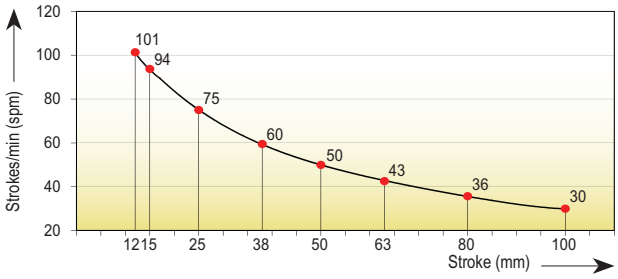
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit G26.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPG 26x12	12	93	81	0,009	0,16
TPG 26x25	25	119	94	0,014	0,20
TPG 26x38	38	145	107	0,019	0,22
TPG 26x50	50	169	119	0,024	0,24
TPG 26x63	63	195	132	0,029	0,26
TPG 26x80	80	229	149	0,035	0,30
TPG 26x100	100	269	169	0,039	0,33
TPG 26x125	125	319	194	0,049	0,39
TPG 26x160	160	389	229	0,062	0,48

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 135	90
RD *(Red)*	150 (±15)	≈ 205	135
YW *(Yellow)*	200 (±20)	≈ 265	175
(Other forces)	28 - 200	≈ 40 - 265	25 - 175

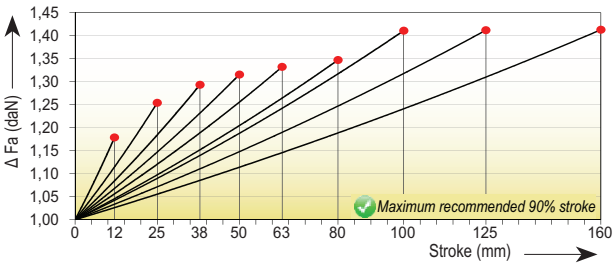
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

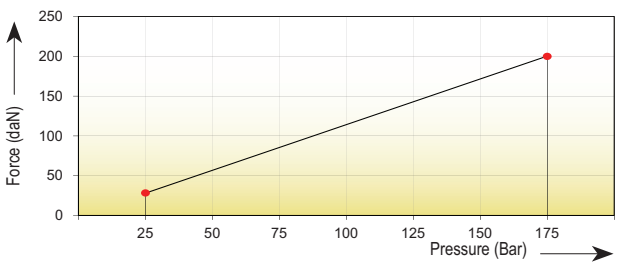
TPG 26 x 100 RD

Model | Stroke | Color code

Force/stroke ratio

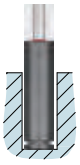


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

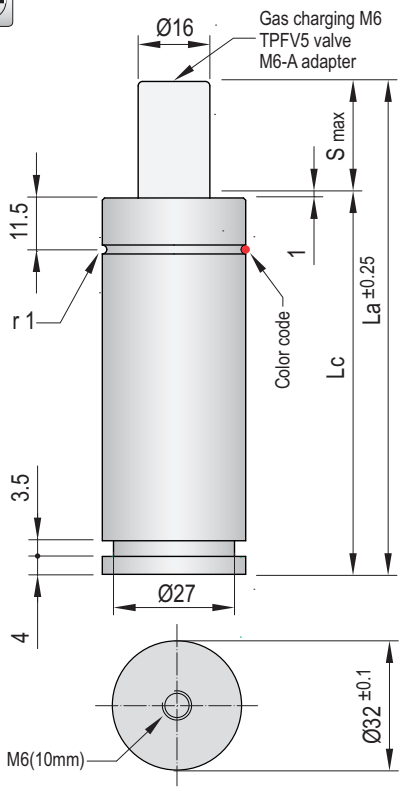


DROP-IN

SCREWS

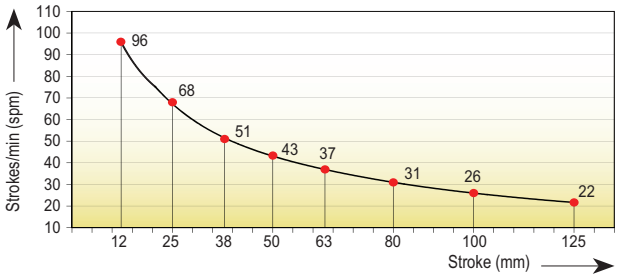
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit G32.1

Maximum strokes / minute (at 20°C)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPG 32x12	12	84	72	0,007	0,35
TPG 32x25	25	110	85	0,015	0,36
TPG 32x38	38	136	98	0,023	0,40
TPG 32x50	50	160	110	0,030	0,47
TPG 32x63	63	186	123	0,038	0,48
TPG 32x80	80	220	140	0,049	0,56
TPG 32x100	100	260	160	0,061	0,64
TPG 32x125	125	310	185	0,076	0,74

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 145	50
BL *(Blue)*	200 (±15)	≈ 285	100
RD *(Red)*	250 (±20)	≈ 360	125
YW *(Yellow)*	300 (±20)	≈ 430	150
(Other forces)	50 - 300	≈ 75 - 430	25 - 150

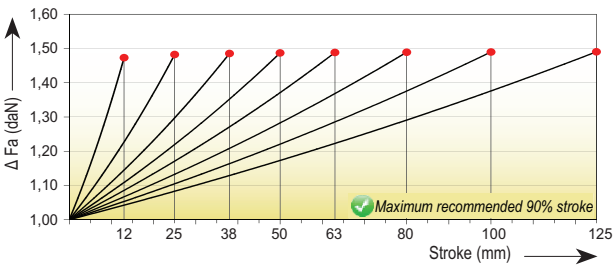
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

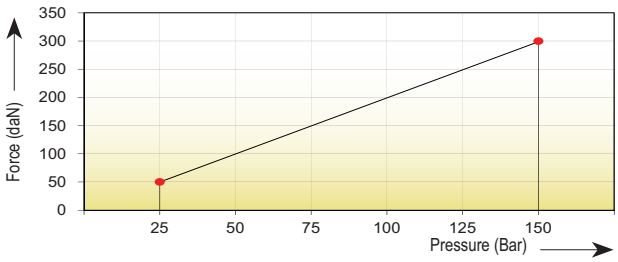
TPG 32 x 50 YW

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

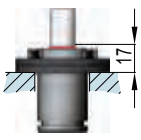


Assembly possibilities

Follow guidelines Page 287

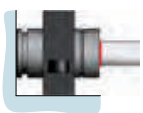

DROP-IN


SCREWS



FS 32·FSC 32/1


FP 32·FPR 32


FI 32·FI 32/1

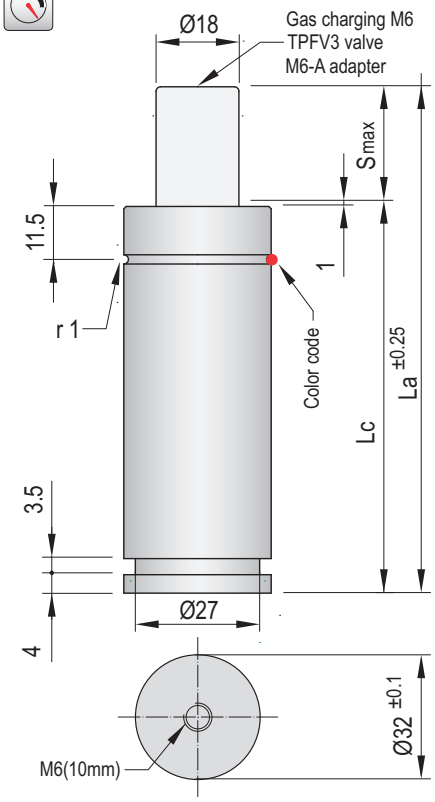
TECAPRES®

Ø32mm
450daN

TPGP 32

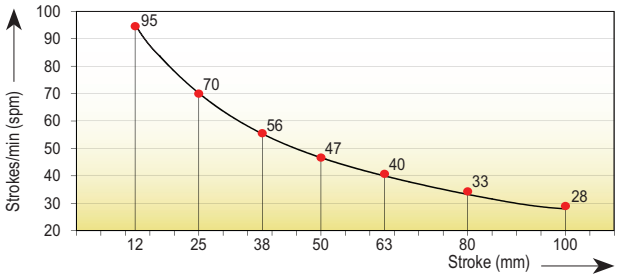
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit GP32

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPGP 32x12	12	84	72	0,008	0,36
TPGP 32x25	25	110	85	0,017	0,37
TPGP 32x38	38	136	98	0,025	0,41
TPGP 32x50	50	160	110	0,033	0,48
TPGP 32x63	63	186	123	0,041	0,49
TPGP 32x80	80	220	140	0,052	0,57
TPGP 32x100	100	260	160	0,065	0,65

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	100 (±10)	≈ 155	40
BL *(Blue)*	200 (±15)	≈ 310	80
RD *(Red)*	300 (±20)	≈ 470	120
YW *(Yellow)*	450 (±20)	≈ 685	175
(Other forces)	60 - 450	≈ 25-685	25 - 175

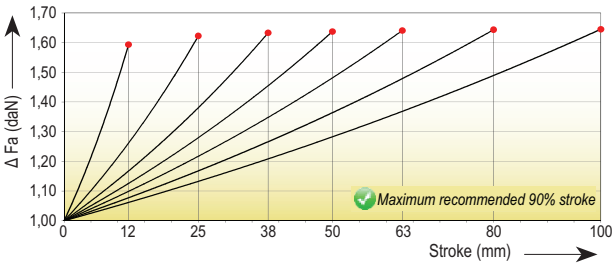
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

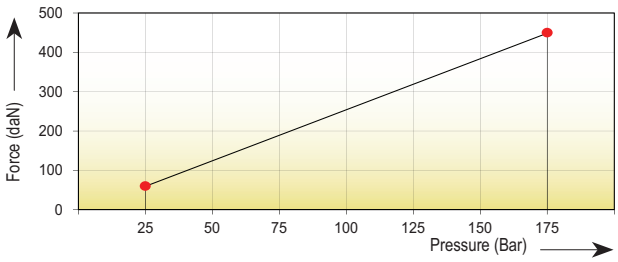
TPGP 32 x **25** **YW**

Model | Stroke | Color code

Force/stroke ratio



Initial force/charging pressure ratio

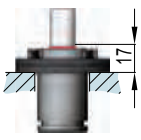


Assembly possibilities

Follow guidelines
Page 287

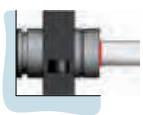
DROP-IN

SCREWS



FS 32·FSC 32/1

FP 32·FPR 32



FI 32·FI 32/1

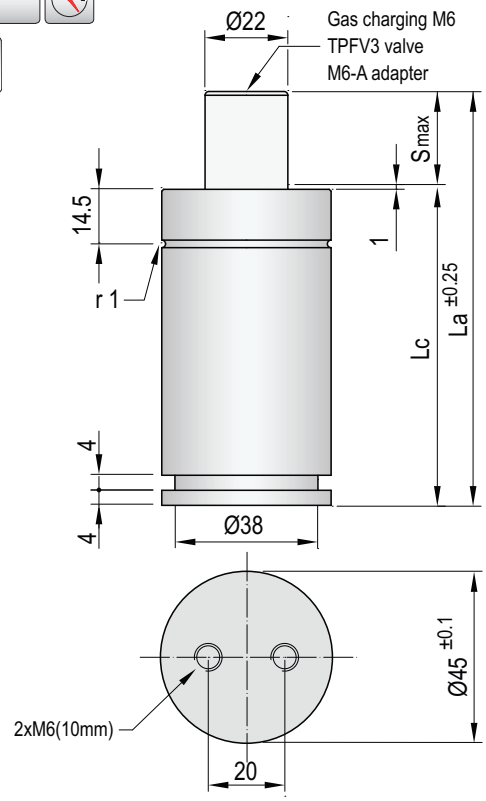
TECAPRES®

Ø45mm 500daN

TPG 500

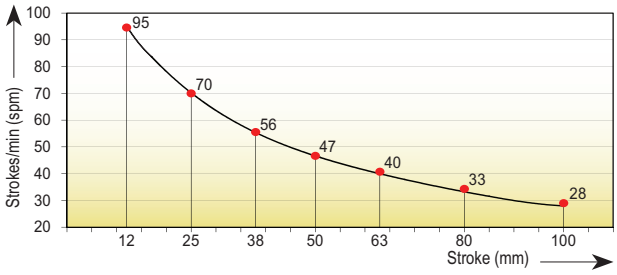
VDI SAFETY

PED 2014/68/UE



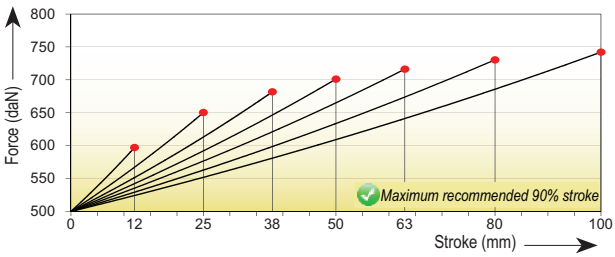
Pressure medium	Nitrogen (N_2)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit G500

Maximum strokes / minute (at 20°C)

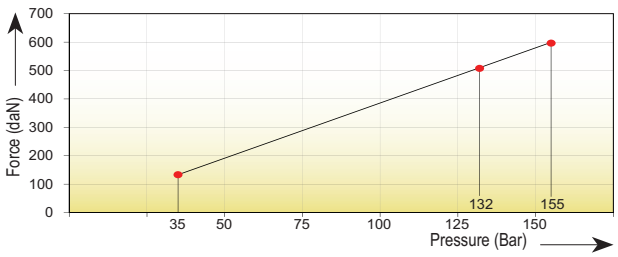


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPG 500x12	12	84	72	500 ±5% (20°C)	590	600	132 (20°C)	0,028	0,70
TPG 500x25	25	110	85		635	655		0,041	0,78
TPG 500x38	38	136	98		660	685		0,054	0,88
TPG 500x50	50	160	110		675	705		0,066	0,97
TPG 500x63	63	186	123		690	720		0,079	1,07
TPG 500x80	80	220	140		700	735		0,096	1,20
TPG 500x100	100	260	160		710	745		0,117	1,38

Force/stroke ratio

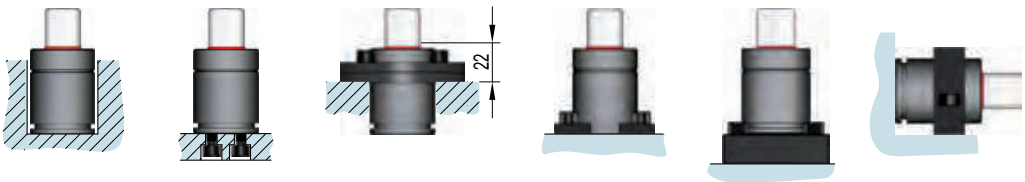


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 45·FSC 45 | FP 45·FPR 45 | FB 45 | FI 45·FI 45/1

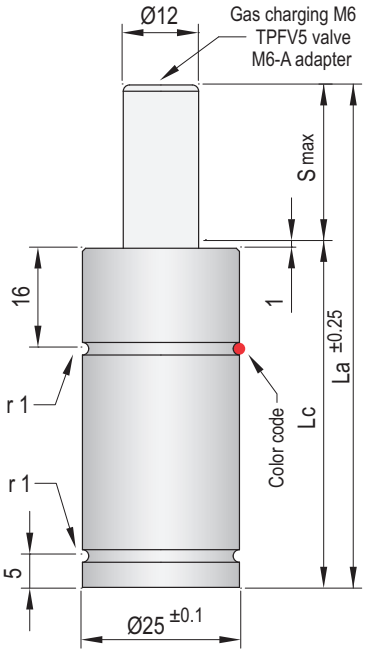
PED 2014/68/UE

Medium compact gas springs

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY		
TPCT 25.1	25	7 - 100	200	√	√		√
TPCT 300	32	10 - 100	300	√	√		√
TPCT 450	32	7 - 100	450	√	√		√
TPCT 550	38	12 - 100	550	√	√		√
TPCT 2500	75	12 - 125	2500	√	√		√
TPCT 3000	75	12 - 125	3000	√	√		√
TPCT 5000	105	25 - 125	5000	√	√	√	√

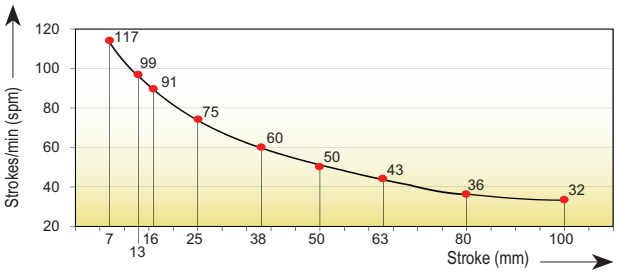
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit CT25.1

Maximum strokes / minute (at 20ºC)



Code	Smax mm	La mm	Lc mm	V l	Kg
TPCT 25x7.1	7	47	40	0,003	0,10
TPCT 25x13.1	12,7	58,4	45,7	0,005	0,11
TPCT 25x16.1	16	65	49	0,006	0,12
TPCT 25x25.1	25	83	58	0,009	0,14
TPCT 25x38.1	38	109	71	0,014	0,16
TPCT 25x50.1	50	133	83	0,018	0,18
TPCT 25x63.1	63	160	97	0,023	0,21
TPCT 25x80.1	80	193	113	0,029	0,23
TPCT 25x100.1	100	232	132	0,036	0,26

Color code	Fa daN	90% F daN	P Bar
GR *(Green)*	50 (±5)	≈ 70	45
BL *(Blue)*	100 (±10)	≈ 140	90
RD *(Red)*	150 (±15)	≈ 210	135
YW *(Yellow)*	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

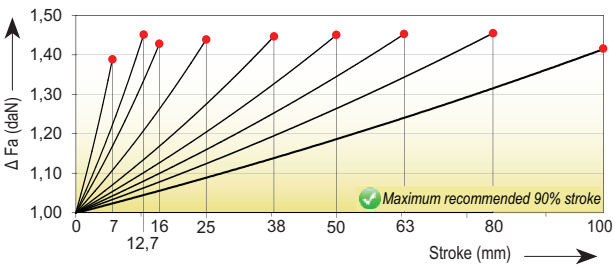
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure and the maximum charging pressure. If not otherwise specified, the gas spring will be supplied in the yellow code version (YW).

How to order

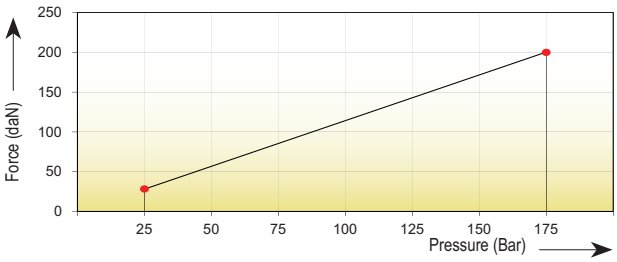
TPCT 25 x 38.1 GR

Model | Stroke | Color code

Force/stroke ratio



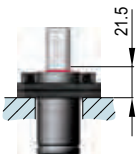
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
Page 287

DROP-IN



FS 25/1 · FS 25/2

FS 25/1· FS 25/2

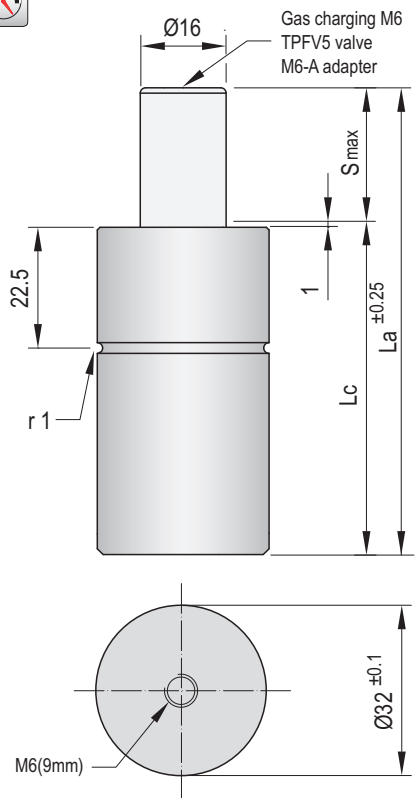
TECAPRES®

Ø32mm
300daN

TPCT 300

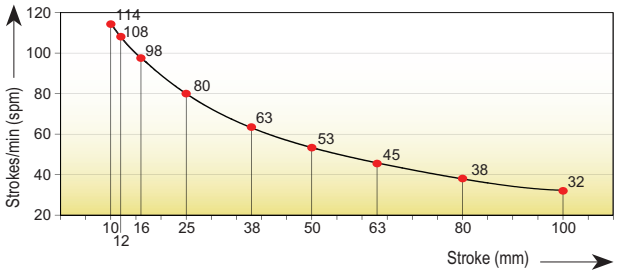
VDI SAFETY

PED 2014/68/UE



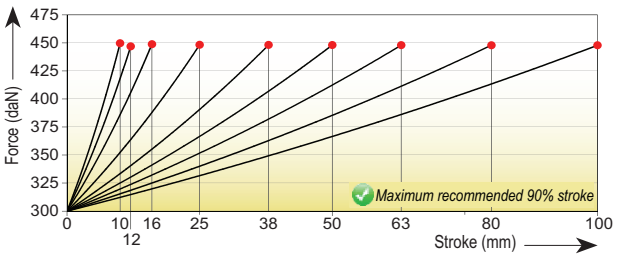
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	25 Bar
Rod seal area	2,01 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit CT300.1

Maximum strokes / minute (at 20ºC)

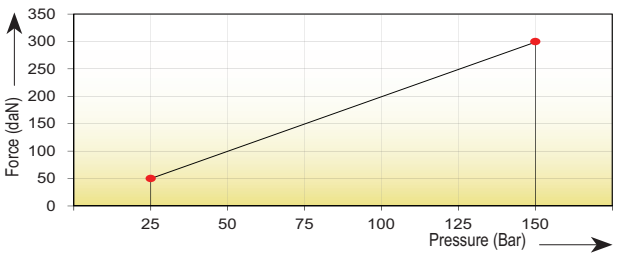


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 300x10	10	57	47	300 ±5% (20ºC)	430	450	150 (20ºC)	0,006	0,16
TPCT 300x12	12	61	49		430	450		0,007	0,17
TPCT 300x16	16	69	53		430	450		0,010	0,18
TPCT 300x25	25	87	62		430	450		0,015	0,20
TPCT 300x38	38	113	75		430	450		0,023	0,24
TPCT 300x50	50	137	87		430	450		0,030	0,28
TPCT 300x63	63	163	100		430	450		0,038	0,33
TPCT 300x80	80	197	117		430	450		0,049	0,38
TPCT 300x100	100	237	137		430	450		0,061	0,44

Force/stroke ratio

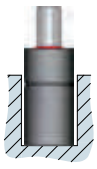


Initial force/charging pressure ratio



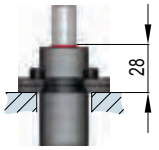
Assembly possibilities

Follow guidelines Page 287

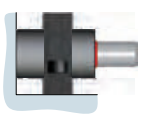


DROP-IN

SCREWS



FS 32· FS 32/1·FSC 32

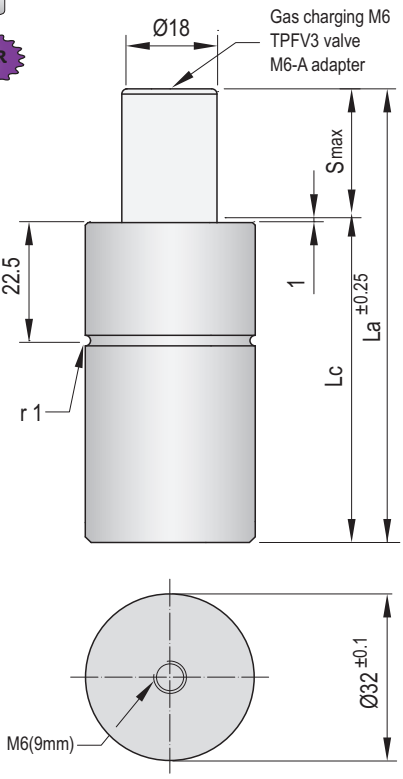


FI 32 · FI 32/1

VDI SAFETY

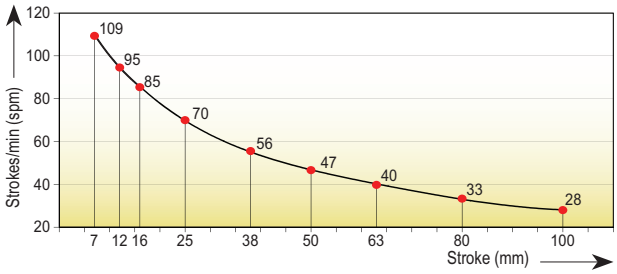
PED 2014/68/UE

POWER



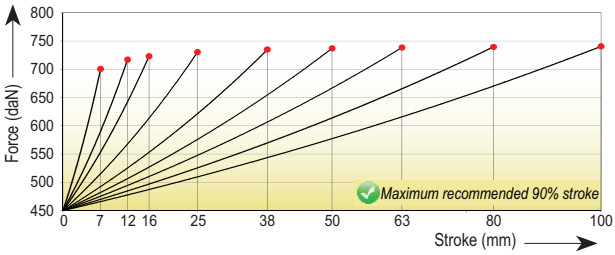
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit CT450

Maximum strokes / minute (at 20ºC)

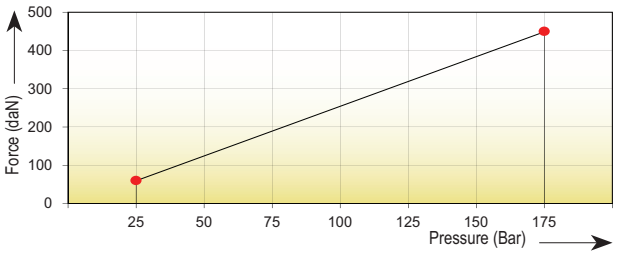


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 450x7	7	51	44	450 ±5% (20ºC)	655	695	175 (20ºC)	0,005	0,16
TPCT 450x12	12	61	49		670	710		0,008	0,17
TPCT 450x16	16	69	53		675	715		0,011	0,18
TPCT 450x25	25	87	62		680	725		0,017	0,20
TPCT 450x38	38	113	75		685	725		0,025	0,24
TPCT 450x50	50	137	87		685	730		0,033	0,28
TPCT 450x63	63	163	100		685	730		0,041	0,33
TPCT 450x80	80	197	117		690	730		0,052	0,38
TPCT 450x100	100	237	137		690	735		0,065	0,44

Force/stroke ratio

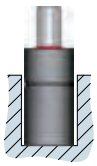


Initial force/charging pressure ratio



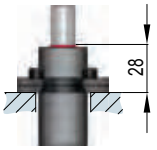
Assembly possibilities

Follow guidelines
Page 287

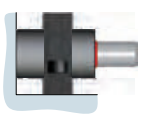


DROP-IN

SCREWS



FS 32· FS 32/1·FSC 32



FI 32 · FI 32/1

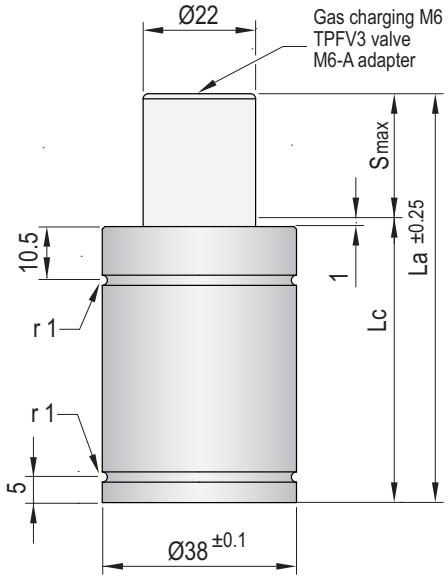
TECAPRES®

Ø38mm
550daN

TPCT 550

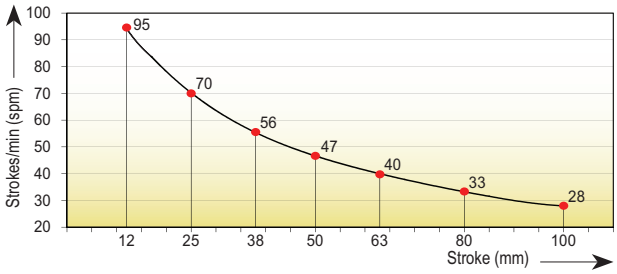
VDI SAFETY

PED 2014/68/UE



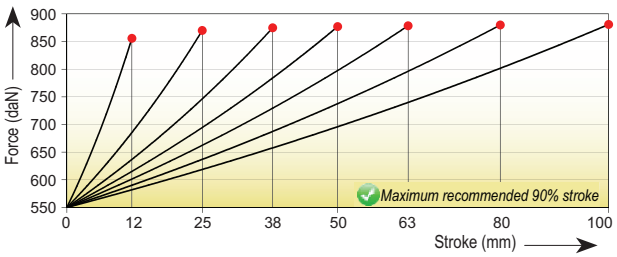
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit CT550

Maximum strokes / minute (at 20ºC)

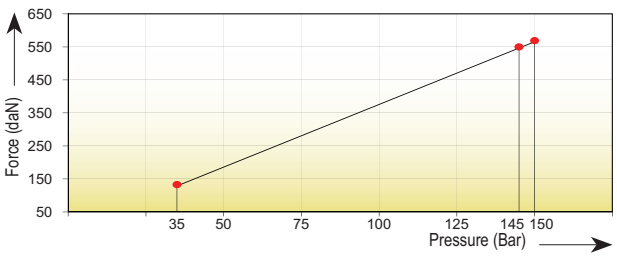


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 550x12	12	56	44	550 ±5% (20ºC)	810	860	145 (20ºC)	0,013	0,28
TPCT 550x25	25	82	57		825	870		0,026	0,34
TPCT 550x38	38	108	70		830	875		0,039	0,39
TPCT 550x50	50	132	82		830	880		0,051	0,43
TPCT 550x63	63	158	95		830	880		0,064	0,48
TPCT 550x80	80	192	112		830	880		0,081	0,55
TPCT 550x100	100	232	132		835	885		0,101	0,64

Force/stroke ratio



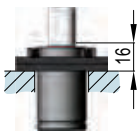
Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287

DROP-IN



FS 38·FSC 38

FS 38·FSC 38

FI 38·FI 38/1

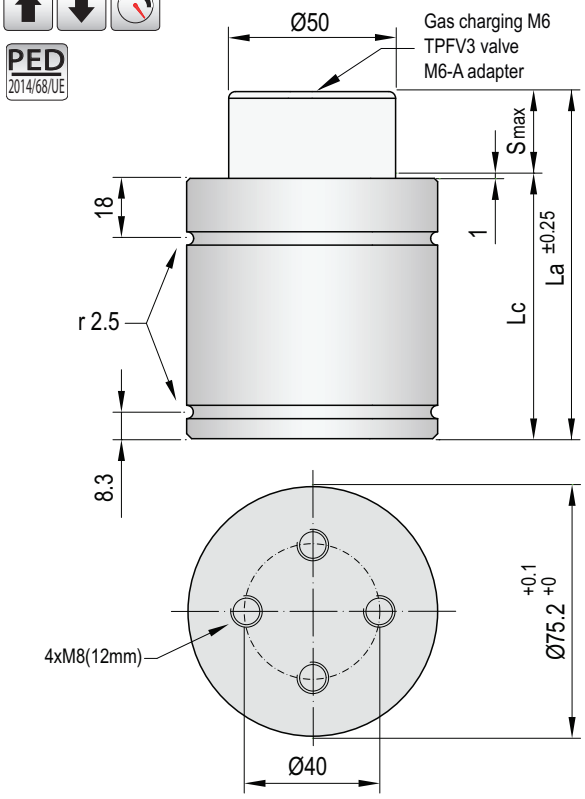
TECAPRES®

Ø75mm 2500daN

TPCT 2500

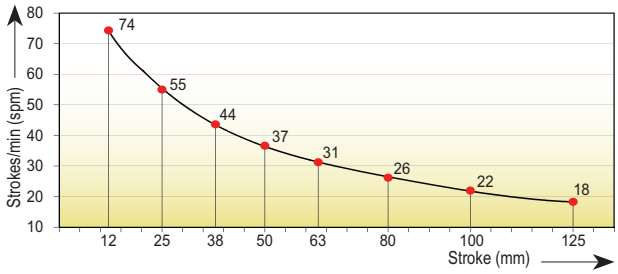
VDI SAFETY

PED 2014/68/UE



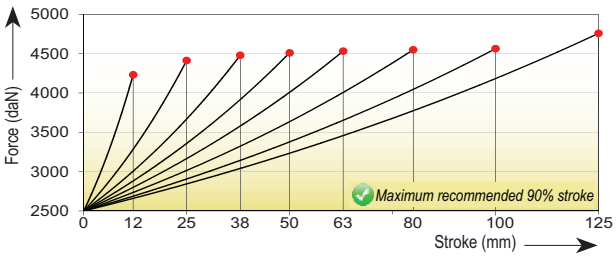
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,8 m/s
Maintenance kit	Kit CT2500

Maximum strokes / minute (at 20ºC)

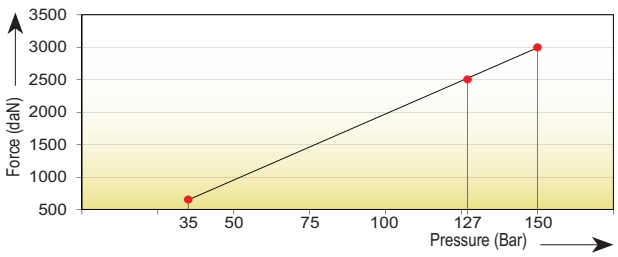


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 2500x12	12	78	66		3950	4220		0,058	1,60
TPCT 2500x25	25	104	79		4090	4400		0,113	1,90
TPCT 2500x38	38	130	92		4140	4470		0,169	2,05
TPCT 2500x50	50	154	104	2500 ±5%	4165	4500	127	0,220	2,30
TPCT 2500x63	63	180	117	(20ºC)	4180	4520	(20ºC)	0,276	2,55
TPCT 2500x80	80	214	134		4195	4540		0,349	2,95
TPCT 2500x100	100	254	154		4205	4550		0,434	3,25
TPCT 2500x125	125	304	179		4355	4745		0,517	3,70

Force/stroke ratio

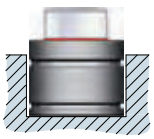


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 75 · FSC 75

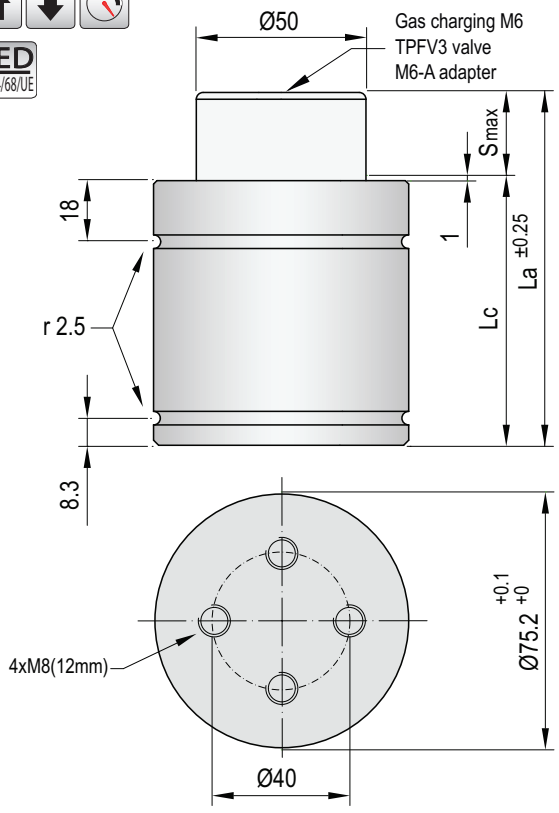

FS 75 · FSC 75


FB 75


FI 75 · FI 75/1

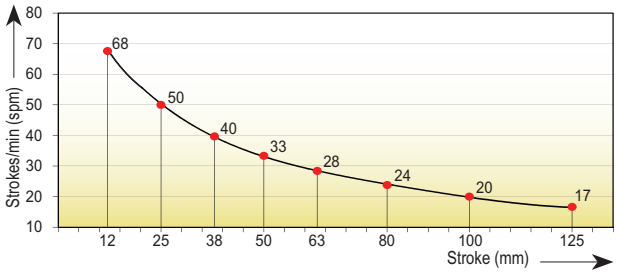
VDI SAFETY

PED 2014/68/UE



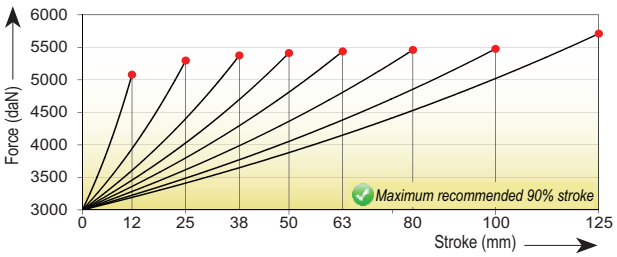
Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,6 m/s
Maintenance kit	Kit CT3000

Maximum strokes / minute (at 20ºC)

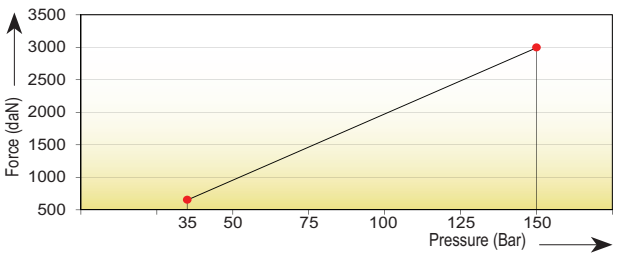


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 3000x12	12	78	66		4755	5085		0,058	1,60
TPCT 3000x25	25	104	79		4925	5305		0,113	1,90
TPCT 3000x38	38	130	92		4500	5380		0,169	2,05
TPCT 3000x50	50	154	104	3000 ±5%	5015	5420	150	0,220	2,30
TPCT 3000x63	63	180	117	(20ºC)	5035	5445	(20ºC)	0,276	2,55
TPCT 3000x80	80	214	134		5055	5470		0,349	2,95
TPCT 3000x100	100	254	154		5065	5485		0,434	3,25
TPCT 3000x125	125	304	179		5245	5715		0,517	3,70

Force/stroke ratio

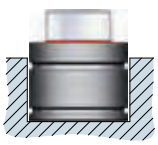


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287


DROP-IN


SCREWS

FS 75 · FSC 75


FS 75 · FSC 75


FB 75


FI 75 · FI 75/1

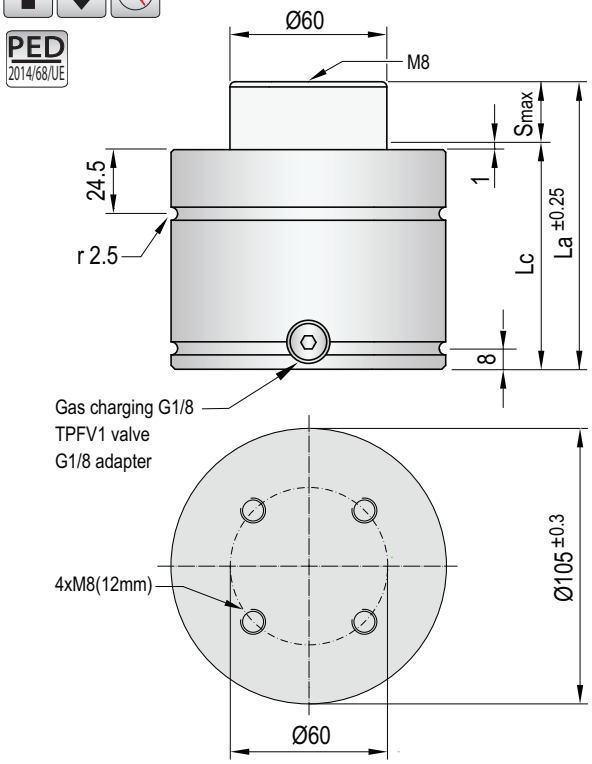
TECAPRES®

Ø105mm
5000daN

TPCT 5000

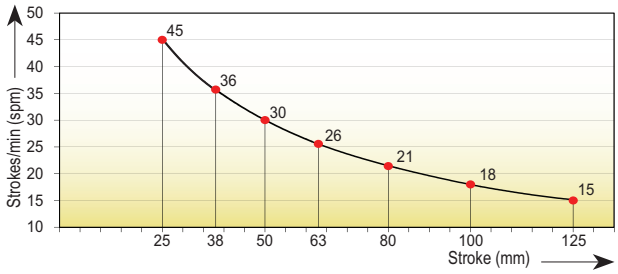
VDI SAFETY

PED 2014/68/UE



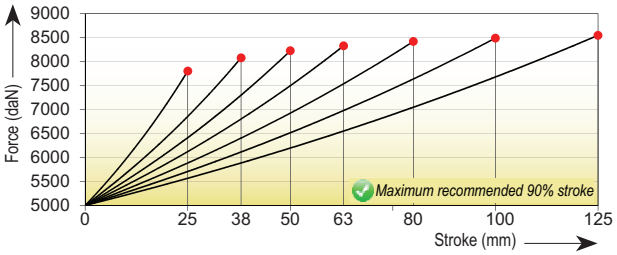
Pressure medium	Nitrogen (N_2)
Max. charging pressure	175 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,2 m/s
Maintenance kit	Kit CT5000

Maximum strokes / minute (at 20ºC)

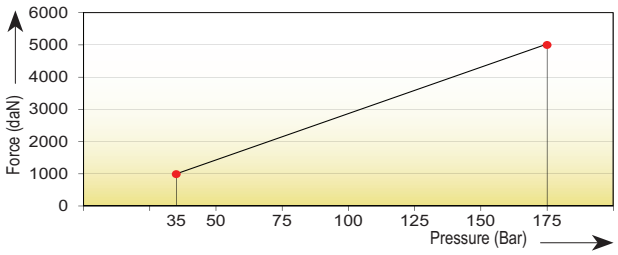


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPCT 5000x25	25	110	85	5000 ±5% (20ºC)	7395	7810	175 (20ºC)	0,197	4,10
TPCT 5000x38	38	136	98		7615	8085		0,282	4,70
TPCT 5000x50	50	160	110		7735	8235		0,361	4,90
TPCT 5000x63	63	186	123		7815	8335		0,446	5,40
TPCT 5000x80	80	220	140		7890	8425		0,557	5,75
TPCT 5000x100	100	260	160		7945	8495		0,688	5,90
TPCT 5000x125	125	310	185		7990	8555		0,852	7,05

Force/stroke ratio

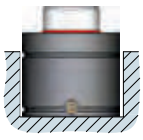


Initial force/charging pressure ratio



Assembly possibilities

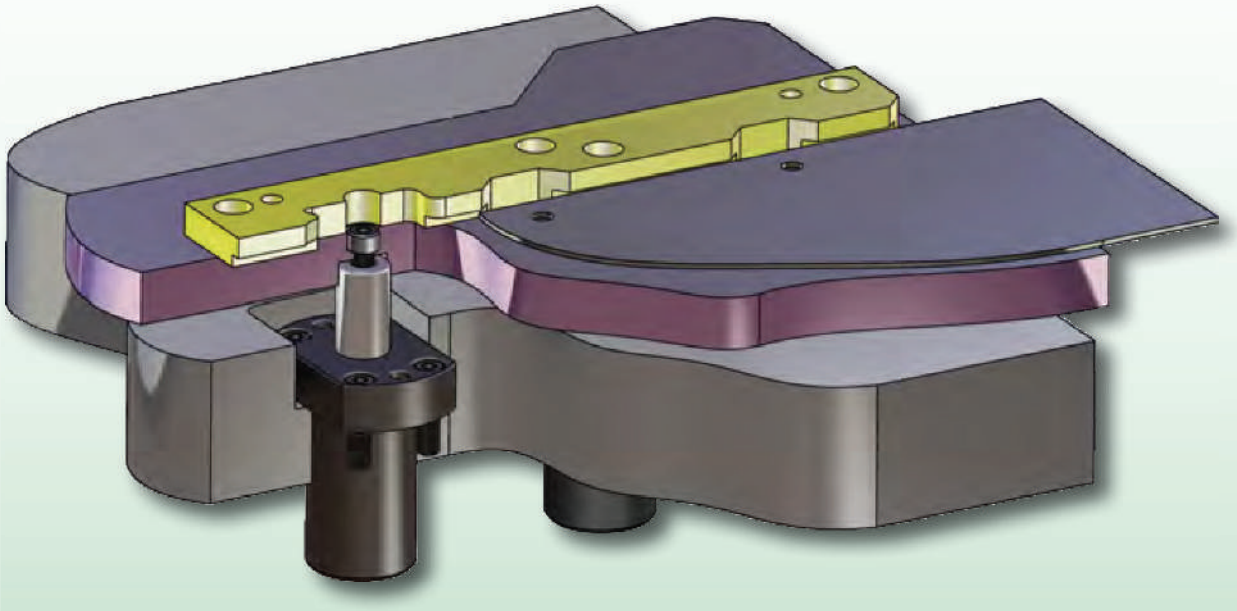
Follow guidelines
Page 287

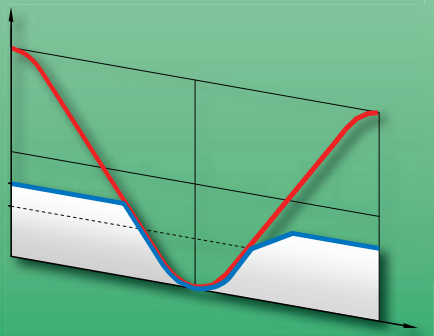


DROP-IN

SCREWS

FB 95





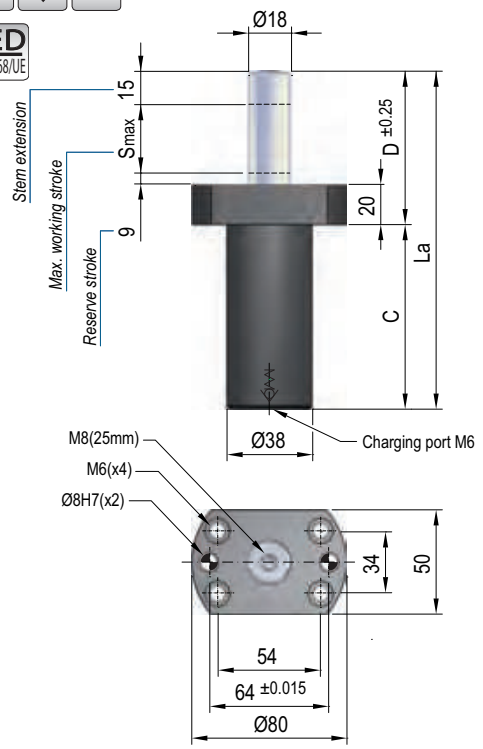
► Special cushioning feature

Gas spring lifters

Code	ØBody mm	Strokes mm	Fa daN	
TPSL 100	38	25 - 125	100	
TPSL 250	50	38 - 200	250	
TPSLR 250	50	50 - 200	250	✓

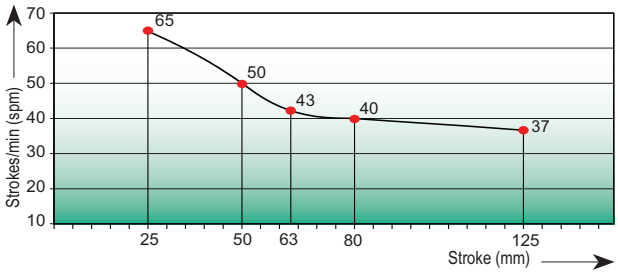
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	50 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SL100

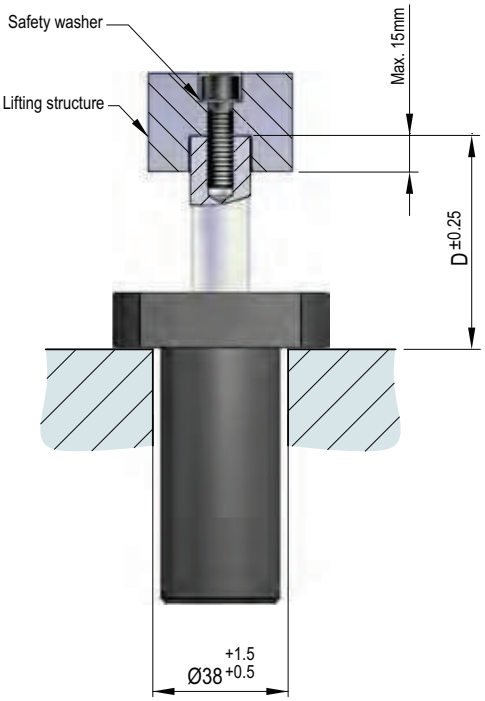
Maximum strokes / minute



Code	Smax mm	La mm	C mm	D mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l
TPSL 100x25	25	135	66	69	100 ±5% (20ºC)	140	150	40 (20ºC)	0,020
TPSL 100x50	50	185	91	94		130	135		0,040
TPSL 100x63	63	211	104	107		130	135		0,051
TPSL 100x80	80	245	121	124		130	135		0,064
TPSL 100x125	125	335	166	169		125	130		0,101

(Other strokes under order)

Mounting example

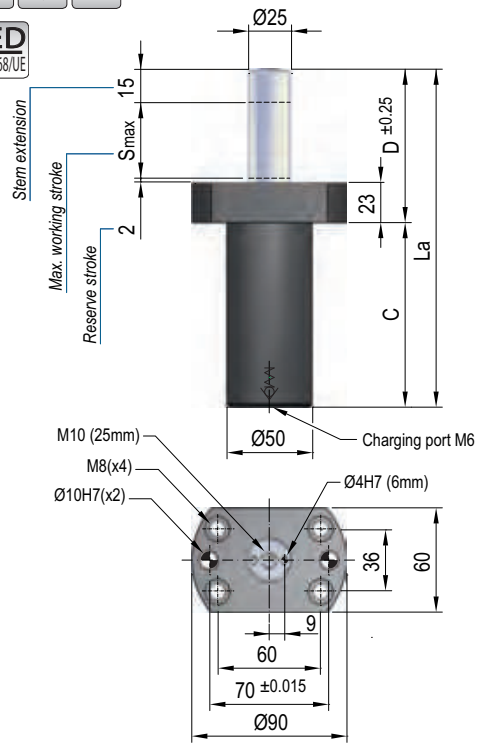


The stem is an extra 15mm long to facilitate attachment to the lifting structure.

Gas Spring lifter TPSL 250

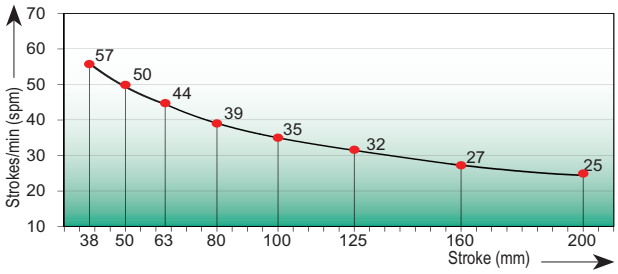
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	50 Bar
Min. charging pressure	25 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s
Maintenance kit	Kit SL250

Maximum strokes / minute

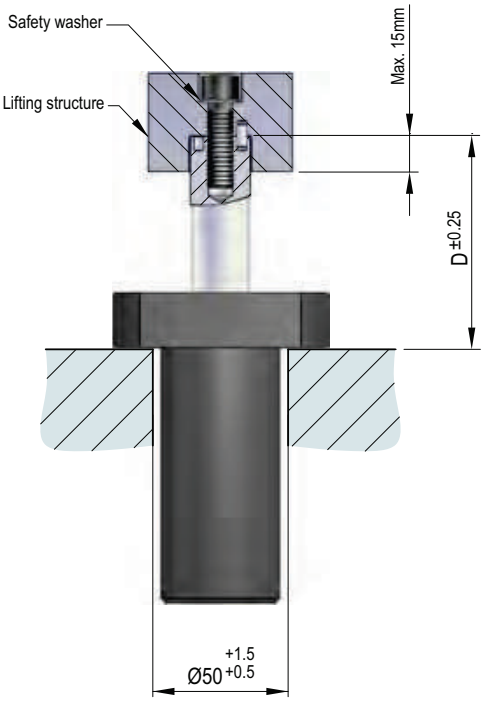


Code	Smax mm	La mm	C mm	D mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l
TPSL 250x38	38	173	95	78		370	390		0,050
TPSL 250x50	50	197	107	90		370	395		0,065
TPSL 250x63	63	223	120	103		370	395		0,082
TPSL 250x80	80	257	137	120	250 ±5%	375	395	50	0,103
TPSL 250x100	100	297	157	140	(20ºC)	375	400	(20ºC)	0,128
TPSL 250x125	125	347	182	165		375	400		0,160
TPSL 250x160	160	417	217	200		375	400		0,204
TPSL 250x200	200	497	257	240		375	400		0,254

(Other strokes under order)

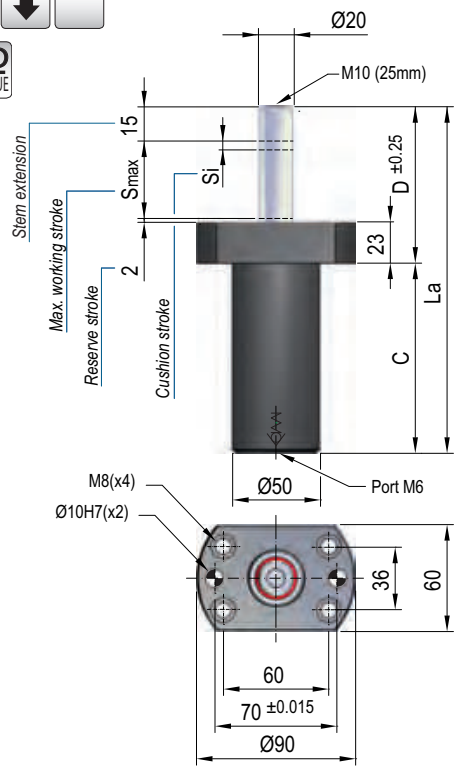
Mounting example

The stem is an extra 15mm long to facilitate attachment to the lifting structure.

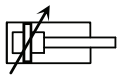


VDI SAFETY

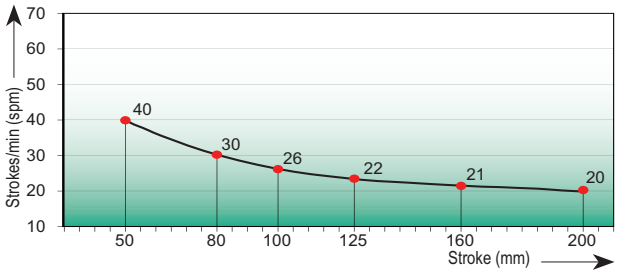
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	25 Bar
Rod seal area	3,14 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit SLR250



Maximum strokes / minute

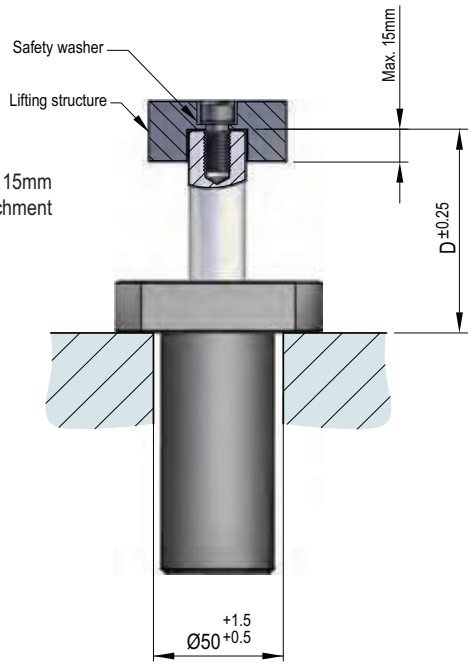


Code	Smax mm	La mm	C mm	D mm	Si mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l
TPSLR 250x50	50	230	140	90	15	250 ±5% (20°C)	320	330	80 (20°C)	0,065
TPSLR 250x80	80	290	170	120			320	330		0,103
TPSLR 250x100	100	330	190	140			320	335		0,128
TPSLR 250x125	125	380	215	165			325	335		0,160
TPSLR 250x160	160	450	250	200			325	335		0,204
TPSLR 250x200	200	530	290	240			325	335		0,254

(Other strokes under order)

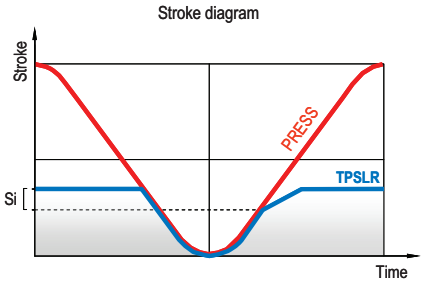
Mounting example

The stem is an extra 15mm long to facilitate attachment to the lifting structure.

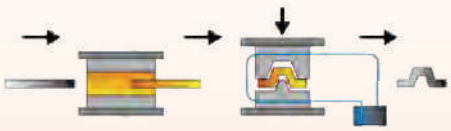


Special cushioning feature

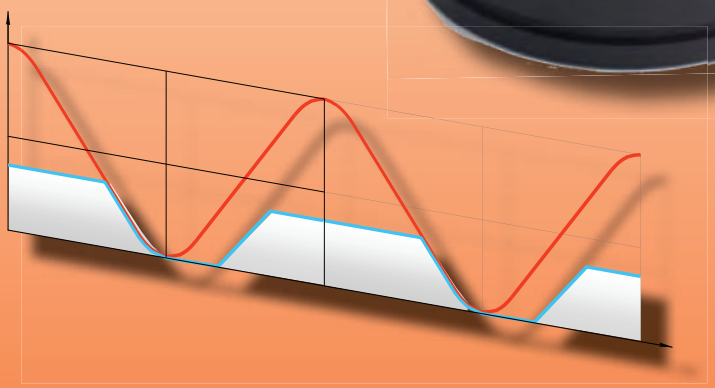
TPSLR 250 gas springs are equipped with a final 15mm cushion stroke, for shock absorption purposes.



HOT STAMPING

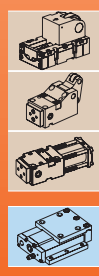


COLD STAMPING



Monobloc stop-cylinders

Code	Strokes mm	Fa daN		VDI SAFETY			
TPCM 1500	50 - 125	1500	√	√	√	√	√
TPCM 2400	50 - 125	2400	√	√	√	√	√
TPCM 3000	50 - 125	3000	√	√	√	√	√
TPCM 4500	50 - 125	4500	√	√	√	√	√
TPCM 7500	50 - 125	7500	√	√	√	√	



STOP-CYLINDER

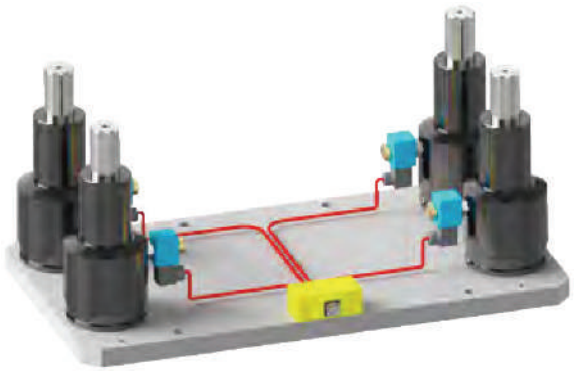
Cylinders with stem-controlled movement can stop at the desired working position, with the possibility of deciding when stem withdrawal is to take place by means of an electric signal, in accordance with the application that is being executed.

The new format holds all elements in a single monoblock. This is subjected in one of its parts to nitrogen gas pressure, thus providing pressure for the whole system. The accumulator has the capacity to absorb the whole of the volume of oil displaced by the working cylinder.

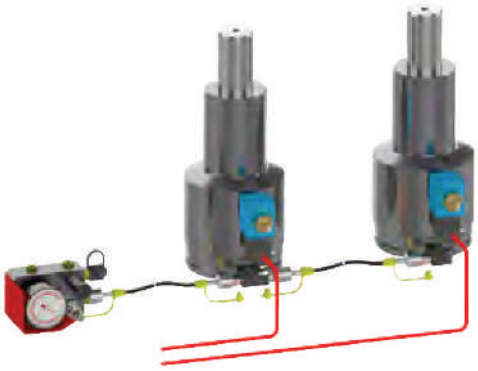
The working cylinder is activated by the movement of the press, displacing the hydraulic volume freely through the active cylinder to the pressure accumulator. Once the working stroke has been attained, the hydraulic valve, which is controlled by means of an electric signal, stops the return of hydraulic fluid from the accumulator to the working cylinder, with which the stem movement stops. When the hydraulic valve opens once again, the hydraulic volume returns to the working cylinder, thus bringing about the return of the stem to its stand-by position.

The pressure accumulator is regulated in accordance to Pressure Equipment Directive, as it is charged with nitrogen gas at a maximum pressure of 150 Bar.

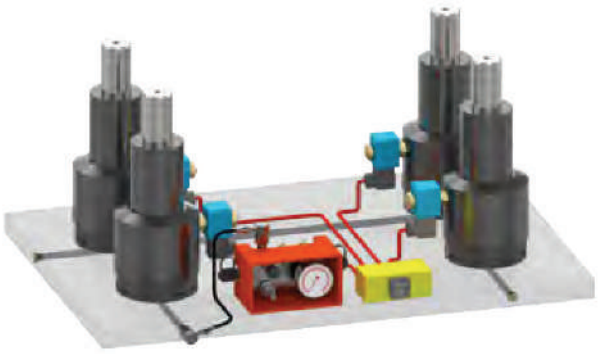
Example of an application in autonomous working



Example of an application connected to a control panel



Example of Eco Manifold working application



Advanced Features

- ✓ Fulfils European Pressure Equipment Directive PED 2014/68/UE
- ✓ VDI safety features
- ✓ Monoblock size format
- ✓ Stoppable at any stage of the working stroke
- ✓ High Frecuency
- ✓ No cooling system required
- ✓ Commanded by electrical signal
- ✓ Slow return speed (≈ 10 m/min)
- ✓ Application: Self-contained, hosed and eco-manifold
- ✓ Long service-life without maintenance
- ✓ Very easy mounting on the tool
- ✓ Total synchronization in stem expansion
- ✓ It can work in every position and angle
- ✓ Supply voltage: 24V DC, 110V AC, 220V AC

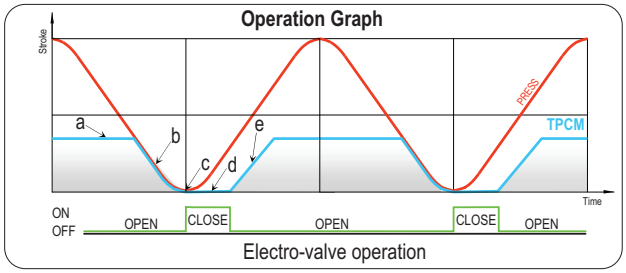


Figure a

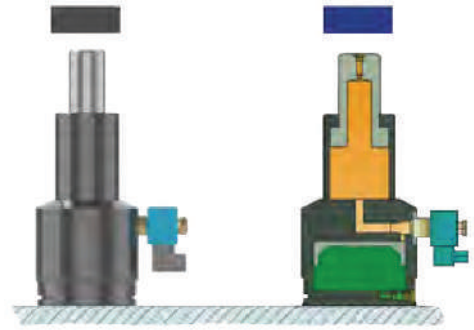
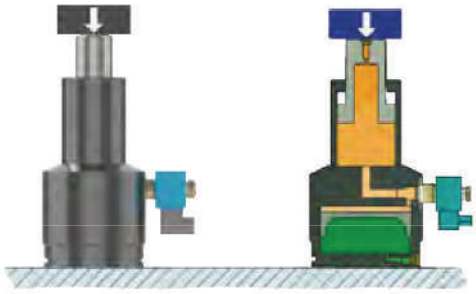


Figure b



STOP (1% to 90% Smax)

Figure c

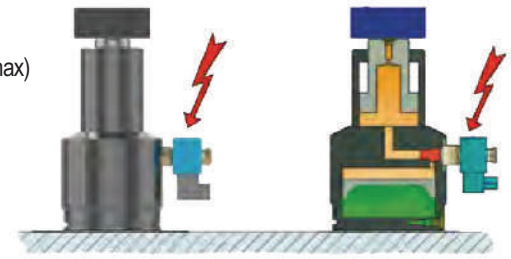


Figure d

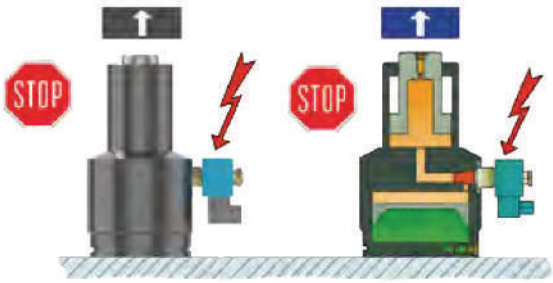
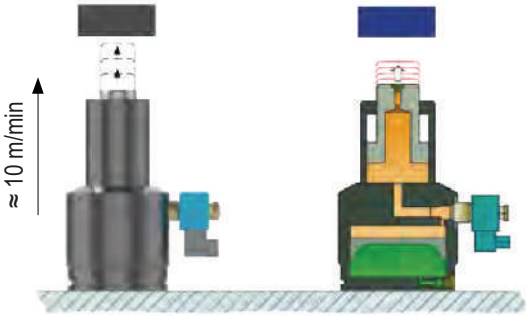
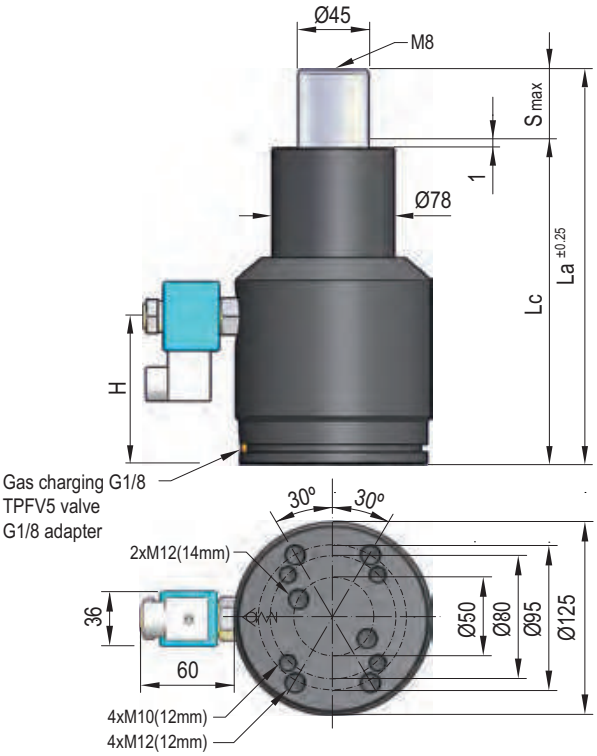


Figure e



VDI SAFETY

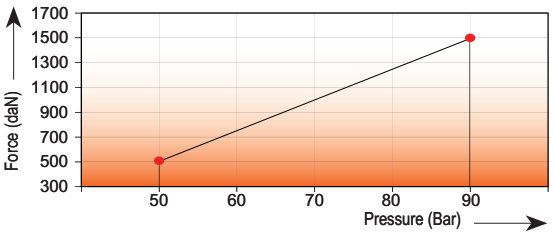
PED 2014/68/UE



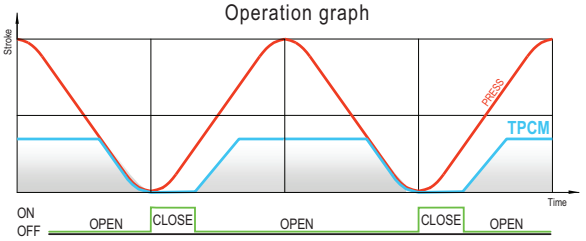
Code	Smax mm	La mm	Lc mm	H mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCM 1500x50	50	245	195	83,5		1905	1980	
TPCM 1500x75	75	307	232	95,5	1500 ±5%	2000	2080	90
TPCM 1500x100	100	365	265	103,5	(20ºC)	2110	2230	(20ºC)
TPCM 1500x125	125	425	300	113,5		2175	2310	

(Other strokes under order)

Initial force/charging pressure ratio

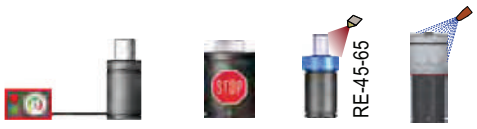


Operation graph



Electro-valve operation

Pressure medium	Gas Nitrógeno (N_2) / Oil
Max. charging pressure	90 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm^2
Operating temperature	0ºC - 60ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,4 m/s
Max. recommended strokes/min	10 - 30* spm
Hydraulic valve	24 VDC / 21w

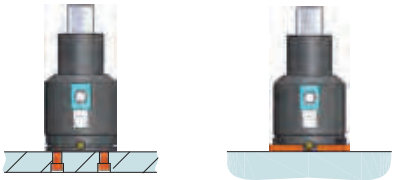


Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

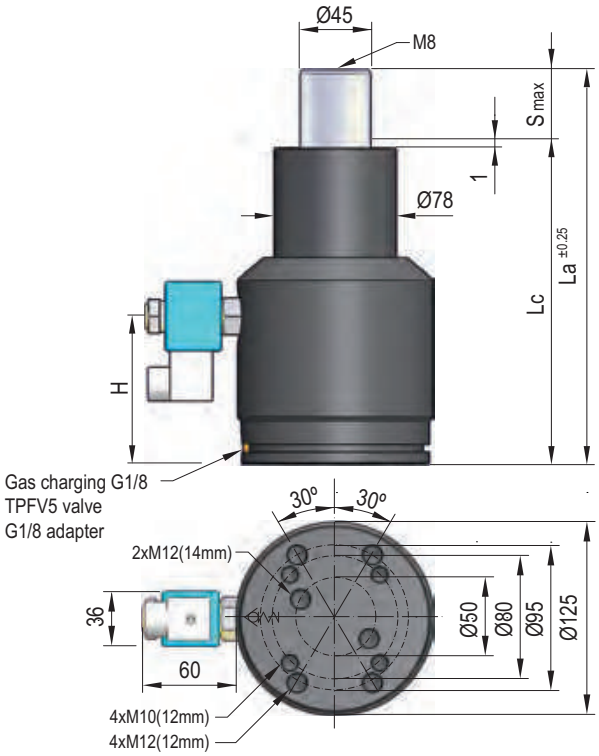
* Maximum rate will depend on working parameters

Assembly possibilities



VDI SAFETY

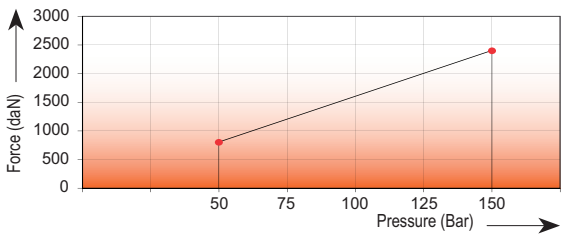
PED 2014/68/UE



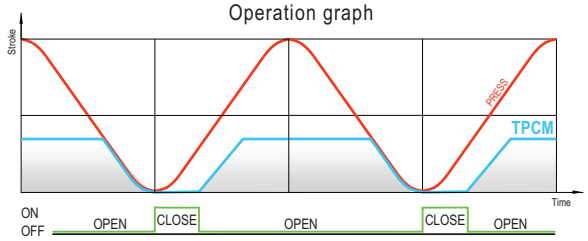
Code	Smax mm	La mm	Lc mm	H mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCM 2400x50	50	245	195	83,5		3180	3300	
TPCM 2400x75	75	307	232	95,5	2400 ±5%	3320	3470	150
TPCM 2400x100	100	365	265	103,5	(20ºC)	3520	3715	(20ºC)
TPCM 2400x125	125	425	300	113,5		3630	3850	

(Other strokes under order)

Initial force/charging pressure ratio

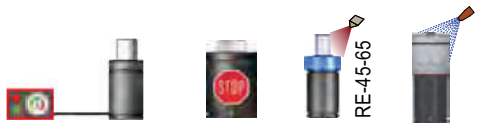


Operation graph



Electro-valve operation

Pressure medium	Gas Nitrógeno (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm²
Operating temperature	0ºC - 60ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,4 m/s
Max. recommended strokes/min	8 - 20* spm
Hydraulic valve	24 VDC / 21w

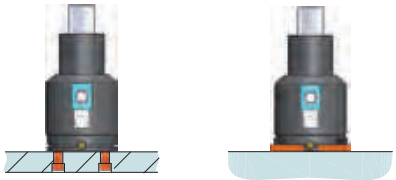


Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

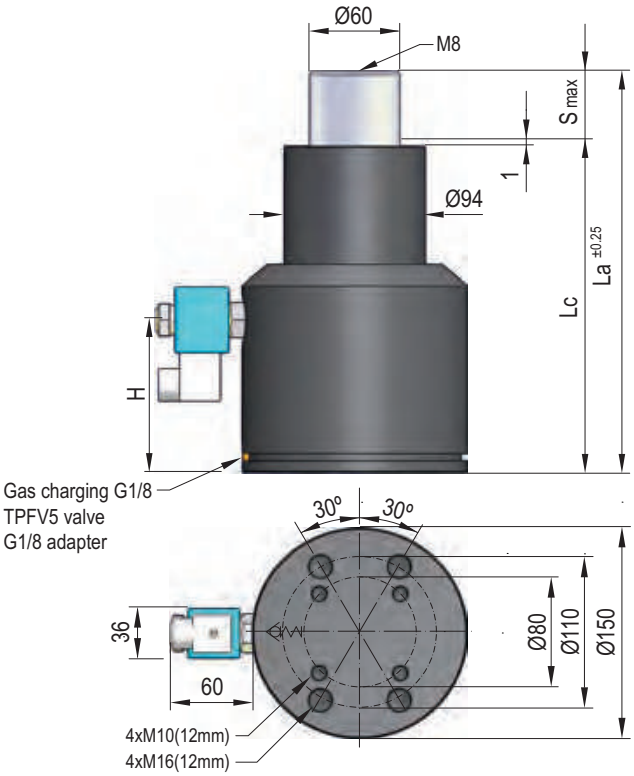
* Maximum rate will depend on working parameters

Assembly possibilities



VDI SAFETY

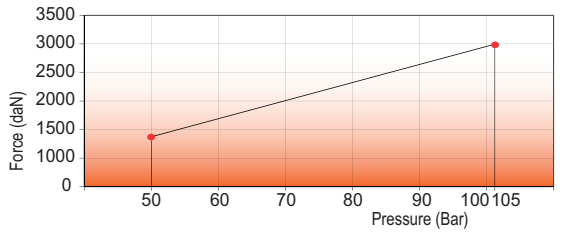
PED 2014/68/UE



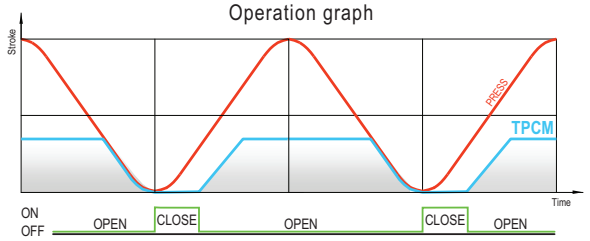
Code	Smax mm	La mm	Lc mm	H mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCM 3000x50	50	258	208	88,5		4065	4240	
TPCM 3000x75	75	320	245	100,5	3000 ±5%	4330	4560	105
TPCM 3000x100	100	382	282	112,5	(20ºC)	4515	4795	(20ºC)
TPCM 3000x125	125	444	319	124,5		4655	4965	

(Other strokes under order)

Initial force/charging pressure ratio

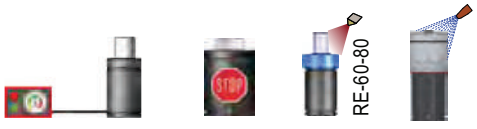


Operation graph



Electro-valve operation

Pressure medium	Gas Nitrógeno (N_2) / Oil
Max. charging pressure	105 Bar
Min. charging pressure	50 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 60ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Max. recommended strokes/min	10 - 25* spm
Hydraulic valve	24 VDC / 21w

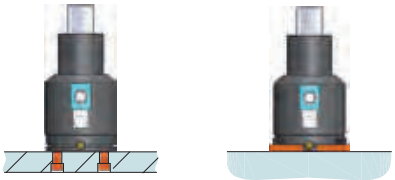


Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

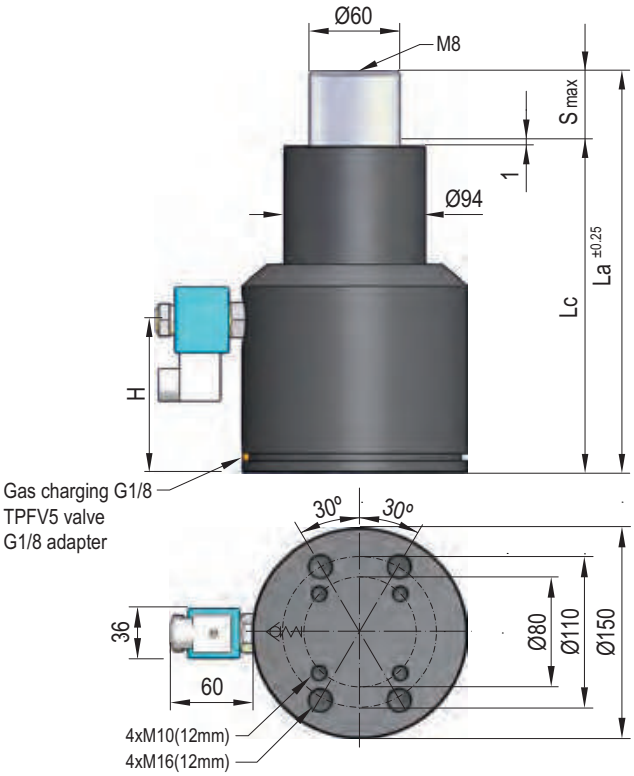
* Maximum rate will depend on working parameters

Assembly possibilities



VDI SAFETY

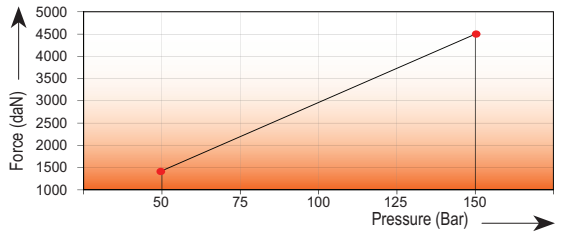
PED 2014/68/UE



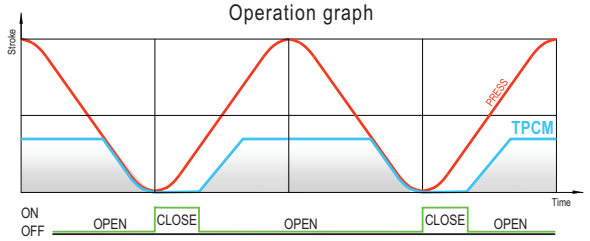
Code	Smax mm	La mm	Lc mm	H mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCM 4500x50	50	258	208	88,5		5810	6060	
TPCM 4500x75	75	320	245	100,5	4500 ±5% (20ºC)	6185	6518	150 (20ºC)
TPCM 4500x100	100	382	282	112,5		6450	6845	
TPCM 4500x125	125	444	319	124,5		6650	7095	

(Other strokes under order)

Initial force/charging pressure ratio

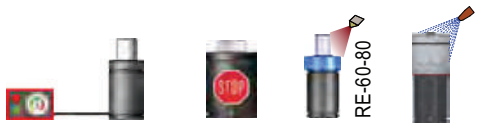


Operation graph



Electro-valve operation

Pressure medium	Gas Nitrógeno (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	28,27 cm^2
Operating temperature	0ºC - 60ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Max. recommended strokes/min	8 - 20* spm
Hydraulic valve	24 VDC / 21w

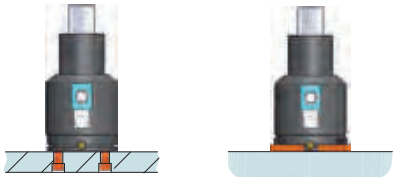


Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

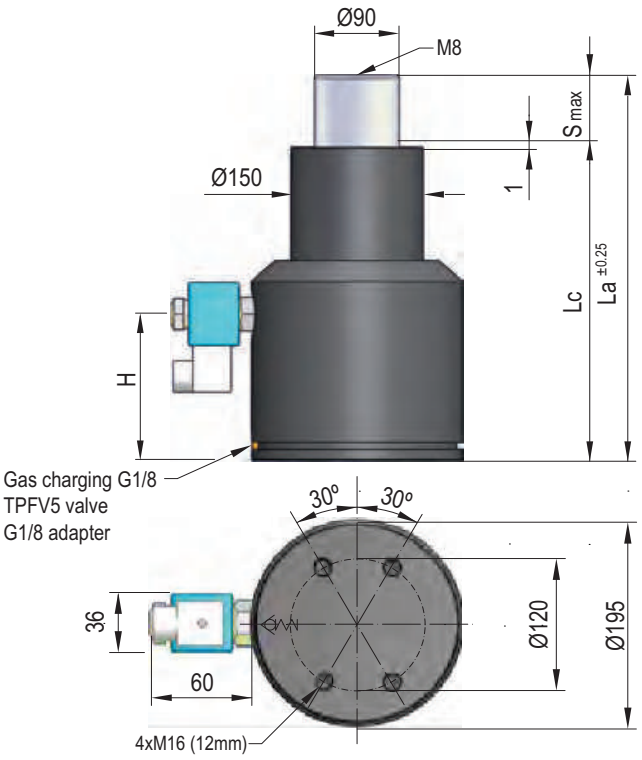
* Maximum rate will depend on working parameters

Assembly possibilities



VDI SAFETY

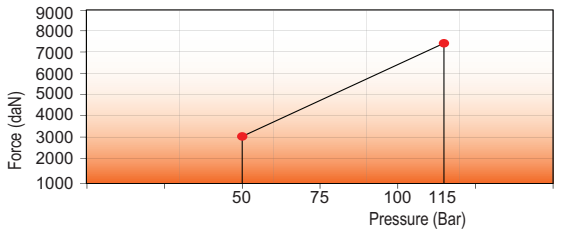
PED 2014/68/UE



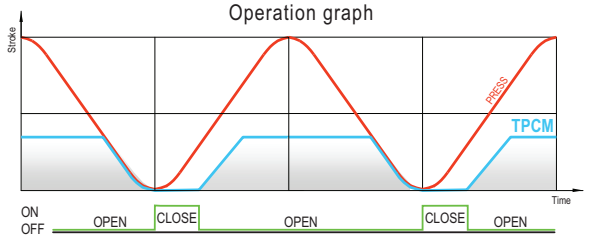
Code	Smax mm	La mm	Lc mm	H mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCM 7500x50	50	294	244	99		9625	9975	
TPCM 7500x75	75	359	284	114	7500 ±5%	10160	10620	115
TPCM 7500x100	100	424	324	129	(20ºC)	10535	11075	(20ºC)
TPCM 7500x125	125	489	364	144		10810	11415	

(Other strokes under order)

Initial force/charging pressure ratio



Operation graph



Electro-valve operation

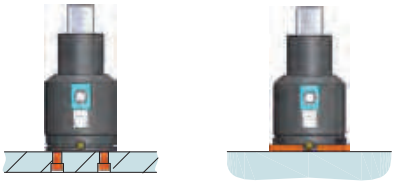
Pressure medium	Gas Nitrógeno (N_2) / Oil
Max. charging pressure	115 Bar
Min. charging pressure	50 Bar
Rod seal area	63,62 cm²
Operating temperature	0ºC - 60ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Max. recommended strokes/min	4 - 12* spm
Hydraulic valve	24 VDC / 21w

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters

Assembly possibilities



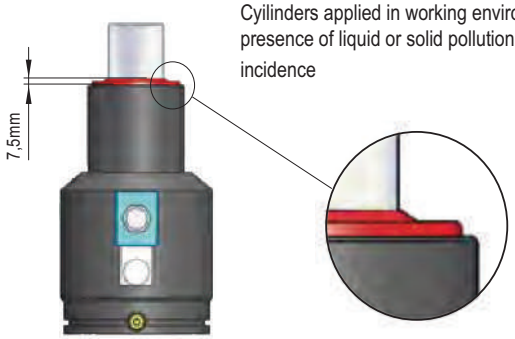
Type 1
Standard Version

Cyilinders applied in working enviroments with low pollution risk

How to order

TPCM 1500	x	50	-	E24	-	C	-	1
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Standard Version

Type 2
Shield-Scraper Version

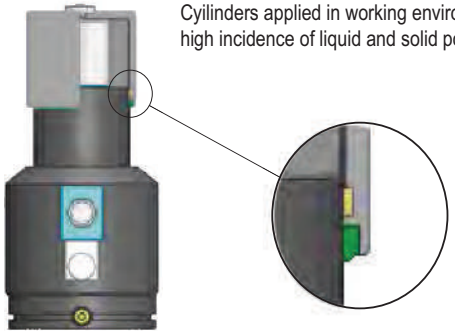


Cyilinders applied in working enviroments with presence of liquid or solid pollution at medium incidence

How to order

TPCM 1500	x	50	-	E24	-	C	-	2
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Shield-Scraper Version

Type 3
Sealing Cap Version

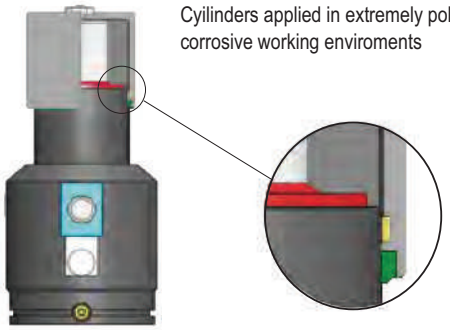


Cyilinders applied in working enviroments with a high incidence of liquid and solid pollution

How to order

TPCM 1500	x	50	-	E24	-	C	-	3
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Sealing Cap Version

Type 4
Shield-Scraper + Sealing Cap Version

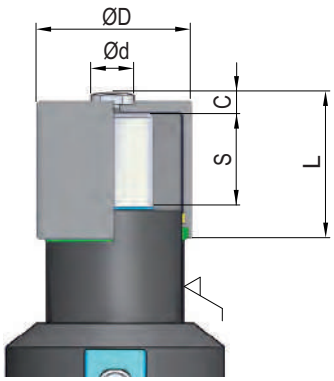


Cyilinders applied in extremely polluted or corrosive working enviroments

How to order

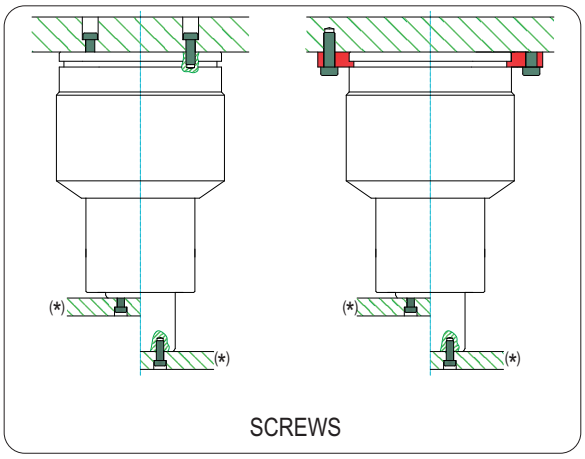
TPCM 1500	x	50	-	E24	-	C	-	4
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Shield-Scraper + Sealing Cap Version

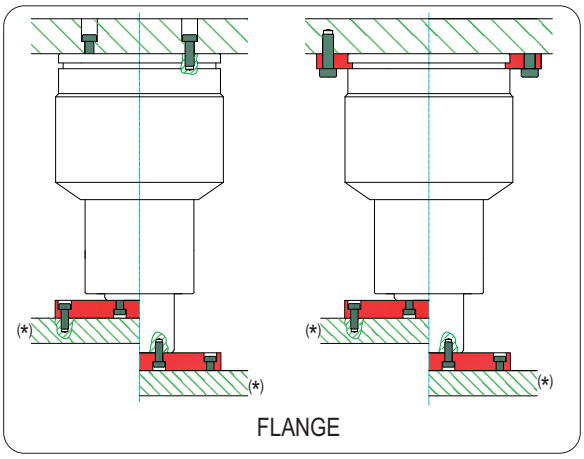
Protection Cap details



Stop-cylinder model	ØD mm	Ød mm	L mm	C mm
TPCM 1500 / TPCM 2400	91	35	28,5 + S	11
TPCM 3000 / TPCM 4500	108	35	30,5 + S	13

Stem Fixed Option

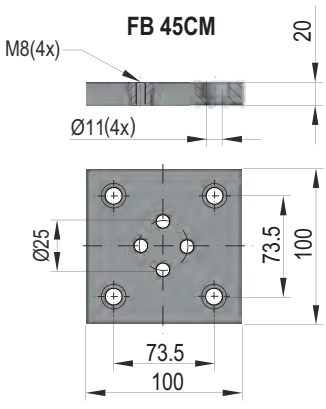


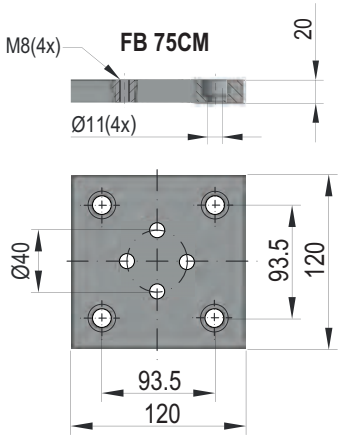


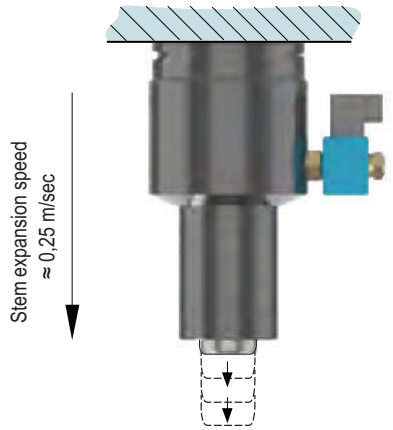
(*) Blank Holder

Model	Stem Fixed Holes	Fixed with Flange	Max. Stem Weight Support
TPCM 1500	2 X M8 Ø 20	FB 45CM	225 Kg
TPCM 2400			360 Kg
TPCM 3000	4 X M8 Ø 40	FB 75CM	450 Kg
TPCM 4500			600 Kg

Flanges



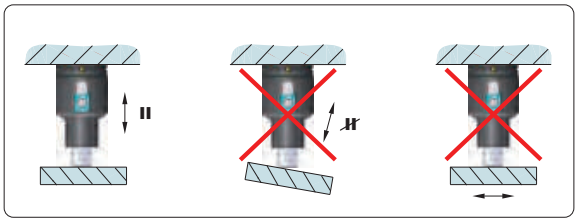




How to order

TPCM 1500 x 50BH

Model — Stroke

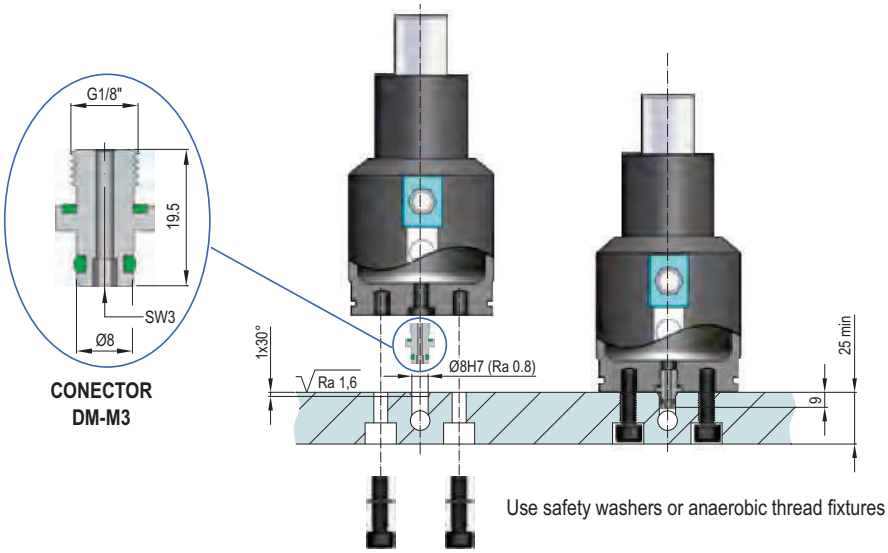


Eco Manifold version

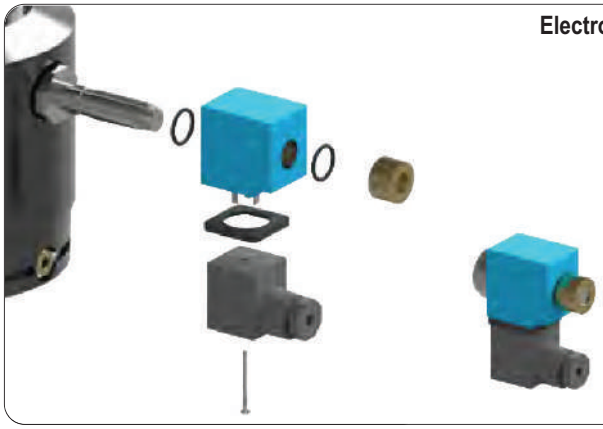
How to order

TPCM 1500	DM	x	50
Model	Eco Manifold Version		Stroke

Eco Manifold DM-M3



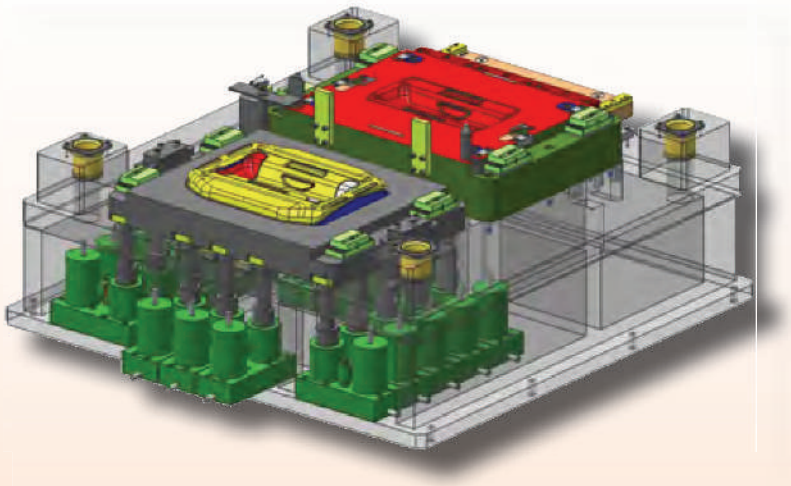
Electrovalve detail

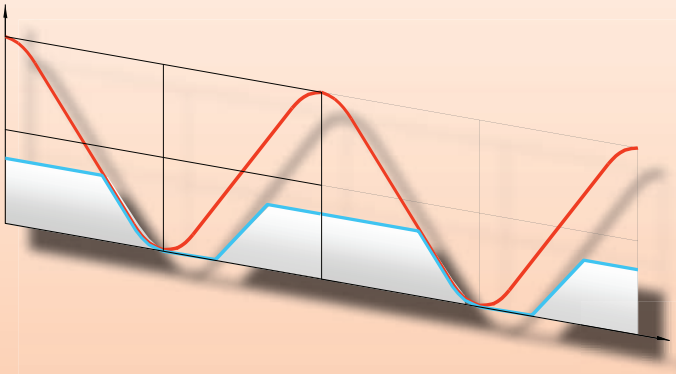


Optional Hydraulic valves - Technical information			
Valve Code	E 24	E 110	E 220
Supply voltage	24 VDC	110 VAC	220 VAC
Power consumption	21w	21w	21w
Protection Class	IP65	IP65	IP65
Fatigue cycle life	$2x10^6$	$2x10^6$	$2x10^5$


TECAPRES


TECAPRES





STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

Stop-cylinders

Code	Strokes mm	Fa daN		VDI SAFETY			
TPCB 1500	12 - 125	1500	√	√	√	√	√
TPCBS 1500	12 - 125	1500	√	√	√	√	√
TPCB 2400	12 - 125	2400	√	√	√	√	√
TPCBS 2400	12 - 125	2400	√	√	√	√	√
TPCBS 3000	12 - 125	3000	√	√	√	√	√
TPCB 4500	12 - 125	4500	√	√	√	√	√
TPCBS 4500	12 - 125	4500	√	√	√	√	√
TPCB 6500	12 - 125	6500	√	√	√	√	
TPCBS 6000	12 - 125	6000	√	√	√	√	

Cylinders with stem-controlled movement can stop at the desired working position, with the possibility of deciding when stem withdrawal is to take place by means of an electric signal, in accordance with the application that is being executed.

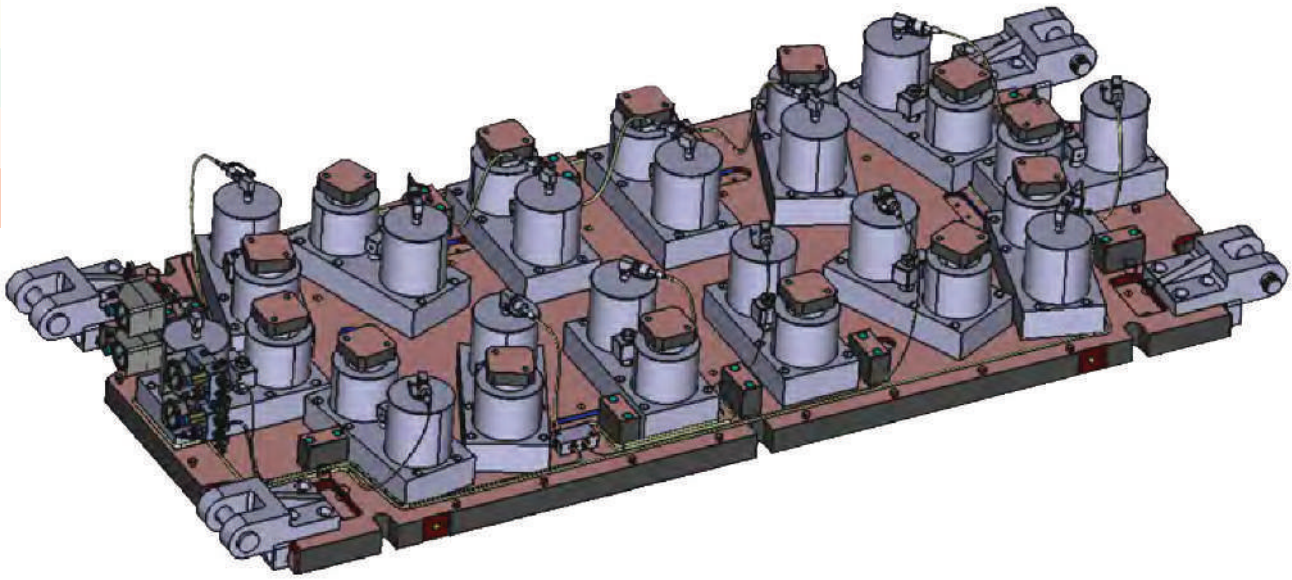
The complete set has the following elements:

- Working cylinder
- Pressure accumulator
- Manifold plate
- Hydraulic valve

The adaptor plate lodges all the elements, communicating them one with another. The working cylinder, which is full of oil, is connected through the adaptor plate to the pressure accumulator. This is subjected in one of its parts to nitrogen gas pressure, thus providing pressure for the whole system. The accumulator has the capacity to absorb the whole of the volume of oil displaced by the working cylinder.

The working cylinder is activated by the movement of the press, displacing the hydraulic volume freely through the adaptor plate up to the pressure accumulator. Once the working stroke has been attained, the hydraulic valve, which is controlled by means of an electric signal, stops the return of hydraulic fluid from the accumulator to the working cylinder, with which the stem movement stops. When the hydraulic valve opens once again, the hydraulic volume returns to the working cylinder, thus bringing about the return of the stem to its stand-by position.

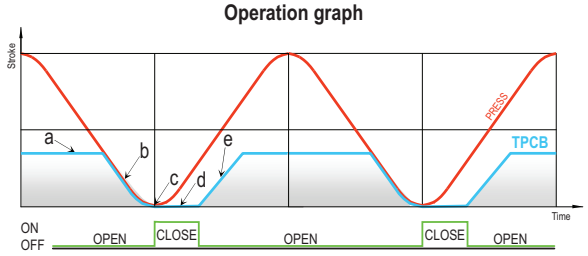
The pressure accumulator is regulated in accordance to pressure device norms, as it is charged with nitrogen gas at a pressure of 150 Bar.



Advanced Features

- ✓ **Fulfils European Pressure Equipment Directive** PED 2014/68/UE
- ✓ **VDI safety features**
- ✓ **Stoppable at any stage of the working stroke**
- ✓ **No cooling system required**
- ✓ **Commanded by electrical signal**
- ✓ **Slow return speed (≈ 10 m/min)**
- ✓ **Application: Self-contained and hosed system**
- ✓ **Long service-life without maintenance**
- ✓ **Very easy mounting on the tool**
- ✓ **Total synchronization in stem expansion**
- ✓ **It can work in every position and angle**
- ✓ **Supply voltage: 24V DC, 110V AC, 220V AC**

Operation graph



Electro-valve operation

Figure a

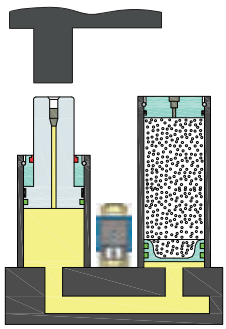


Figure b

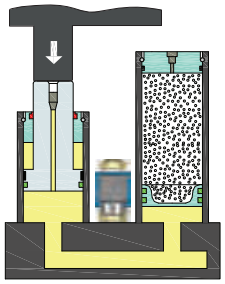


Figure c

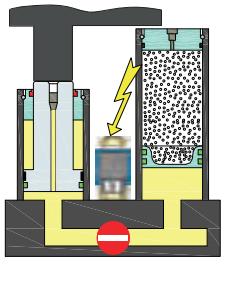


Figure d

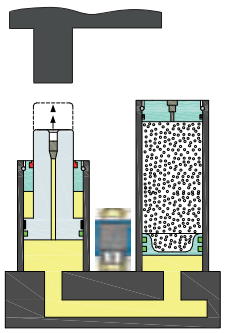
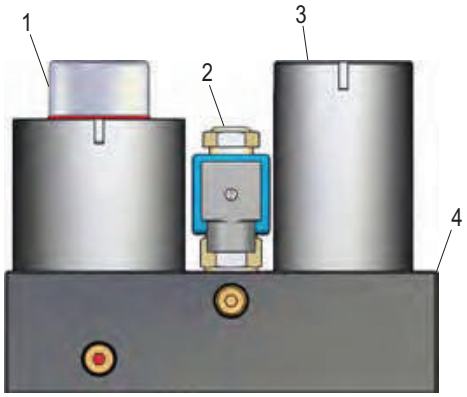


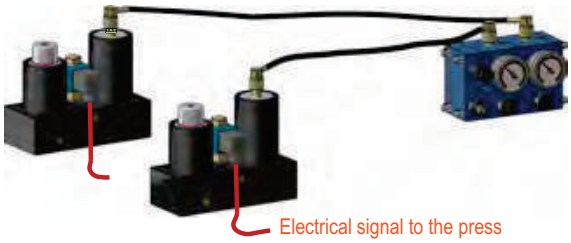
Figure e

Components description

① Working cylinder
② Hydraulic valve
③ Pressure accumulation tank
④ Manifold plate

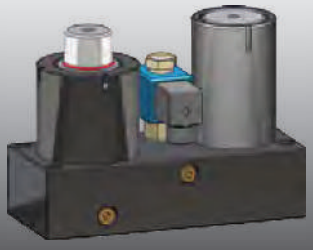


Example of an application connected to a control panel



TPCB 1500

Fa. initial: 1500 daN
Stem speed: 15 - 20 m/min
Press rate: 8 - 25 spm

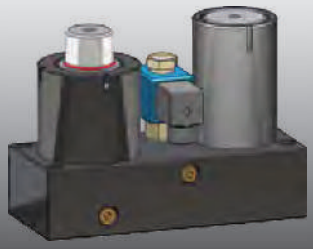


TPCBS 1500

Fa. initial: 1500 daN
Stem speed: 25 - 30 m/min
Press rate: 8 - 25 spm

TPCB 2400

Fa. initial: 2400 daN
Stem speed: 15 - 20 m/min
Press rate: 8 - 20 spm



TPCBS 2400

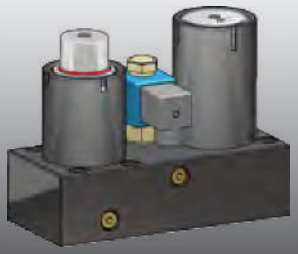
Fa. initial: 2400 daN
Stem speed: 25 - 30 m/min
Press rate: 8 - 20 spm

TPCBS 3000

Fa. initial: 3000 daN
Stem speed: 25 - 30 m/min
Press rate: 8 - 20 spm

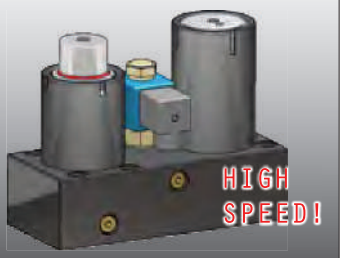
TPCB 4500

Fa. initial: 4500 daN
Stem speed: 15 - 22 m/min
Press rate: 8 - 20 spm



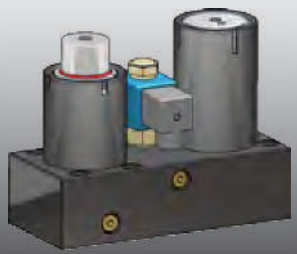
TPCBS 4500

Fa. initial: 4500 daN
Stem speed: 25 - 30 m/min
Press rate: 8 - 20 spm



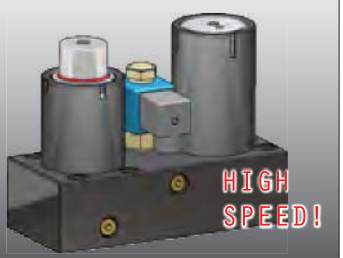
TPCB 6500

Fa. initial: 6500 daN
Stem speed: 10 -18 m/min
Press rate: 8 - 20 spm



TPCBS 6000

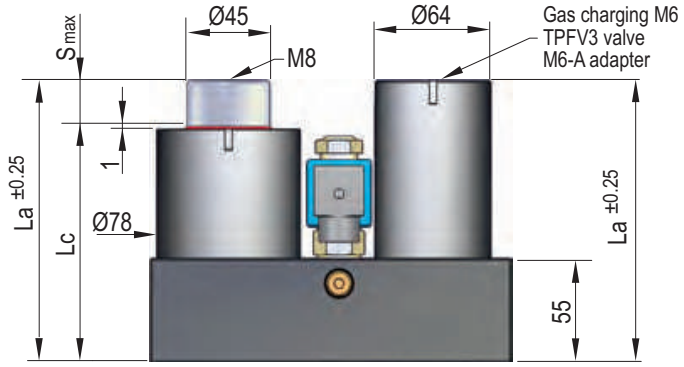
Fa. initial: 6000 daN
Stem speed: 20 - 30 m/min
Press rate: 8 - 20 spm



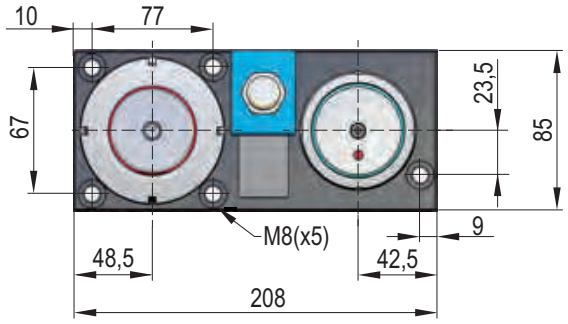
VDI SAFETY

PED 2014/68/UE

RISK OF ENTRAPMENT
CAUTION!

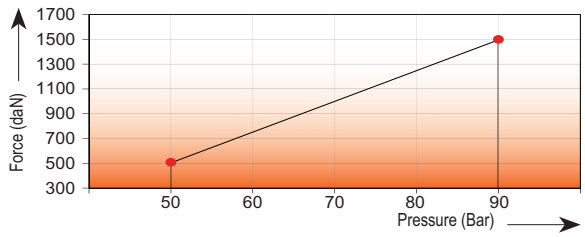


The TPCB 1500 model is also available equipped with RMF-D1. (TPCB 1500x...C-Linked)

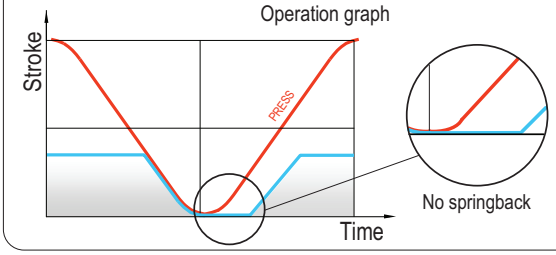


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCB 1500x12	12	124	112		1545	1555	
TPCB 1500x25	25	150	125		1610	1630	
TPCB 1500x38	38	176	138		1650	1675	
TPCB 1500x50	50	200	150	1500 ±5% (20°C)	1675	1705	90 (20°C)
TPCB 1500x63	63	226	163		1690	1725	
TPCB 1500x80	80	260	180		1710	1750	
TPCB 1500x100	100	300	200		1725	1765	
TPCB 1500x125	125	350	225		1740	1785	

Initial force/charging pressure ratio



Operation graph

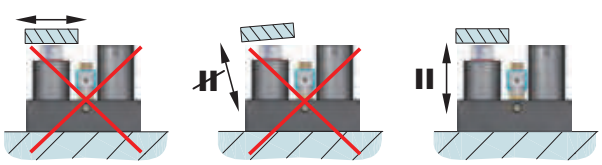


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	90 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	15 - 20 m/min
Max. recommended strokes/min	8 - 25* spm

Required Information

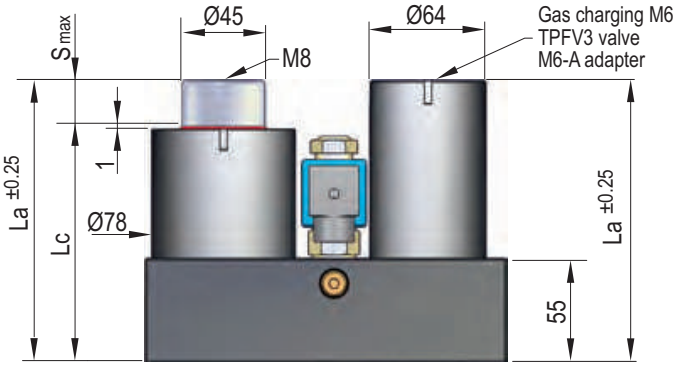
Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

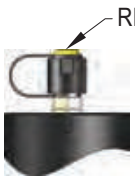
* Maximum rate will depend on working parameters



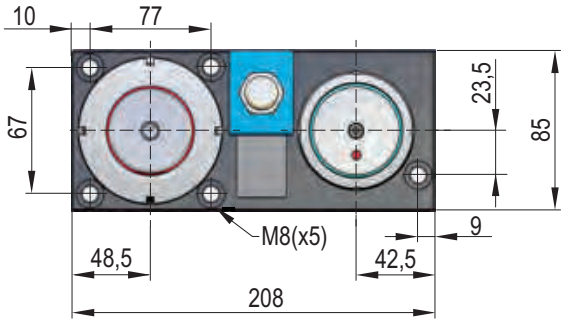
VDI SAFETY

PED 2014/68/UE



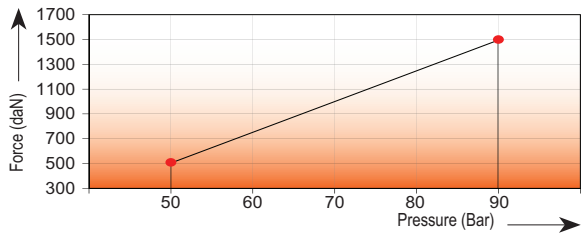


The TPCBS 1500 model is also available equipped with RMF-D1. (TPCBS 1500x...C-Linked)

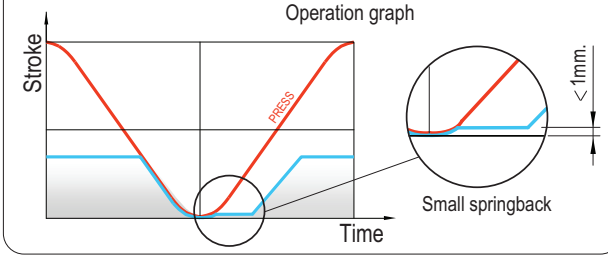


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCBS 1500x12	12	124	112		1545	1555	
TPCBS 1500x25	25	150	125		1610	1630	
TPCBS 1500x38	38	176	138		1650	1675	
TPCBS 1500x50	50	200	150	1500 ±5% (20°C)	1675	1705	90 (20°C)
TPCBS 1500x63	63	226	163		1690	1725	
TPCBS 1500x80	80	260	180		1710	1750	
TPCBS 1500x100	100	300	200		1725	1765	
TPCBS 1500x125	125	350	225		1740	1785	

Initial force/charging pressure ratio



Operation graph

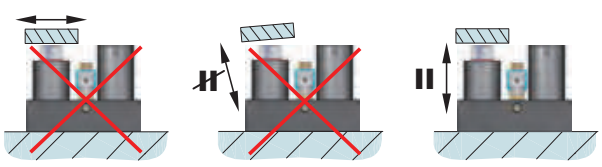


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	90 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 - 30 m/min
Max. recommended strokes/min	8 - 25* spm

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters



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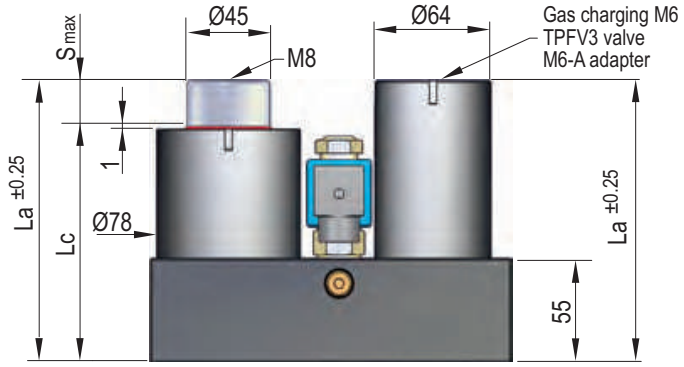
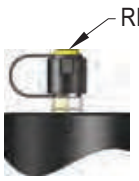
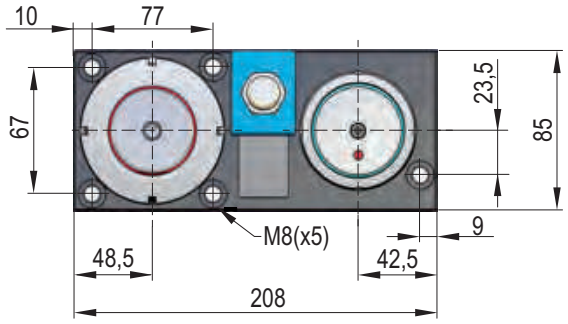
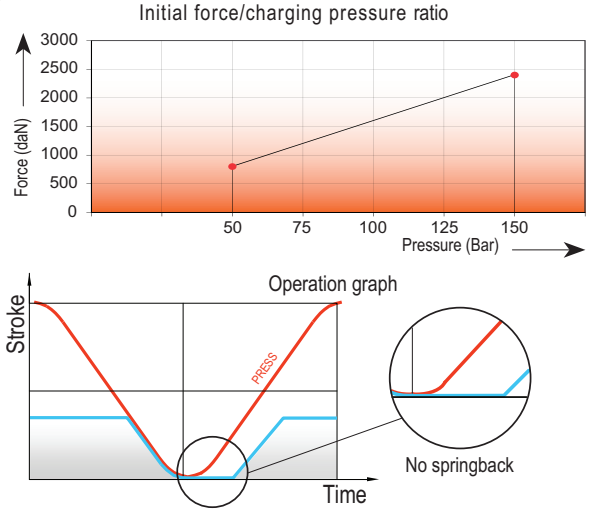




The TPCB 2400 model is also available equipped with RMF-D1. (TPCB 2400x...C-Linked)



Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCB 2400x12	12	124	112		2575	2595	
TPCB 2400x25	25	150	125		2680	2720	
TPCB 2400x38	38	176	138		2745	2795	
TPCB 2400x50	50	200	150	2400 ±5% (20°C)	2790	2840	150 (20°C)
TPCB 2400x63	63	226	163		2820	2880	
TPCB 2400x80	80	260	180		2850	2915	
TPCB 2400x100	100	300	200		2875	2945	
TPCB 2400x125	125	350	225		2900	2970	

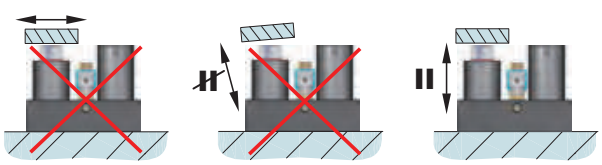


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	15 - 20 m/min
Max. recommended strokes/min	8 - 20* spm

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters



STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

VDI SAFETY

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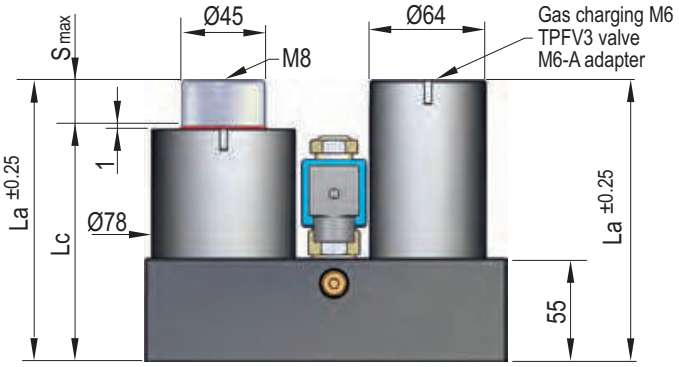
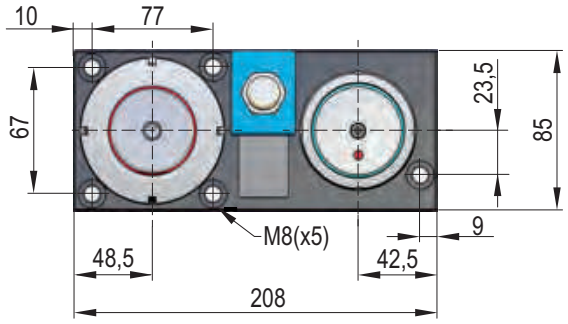
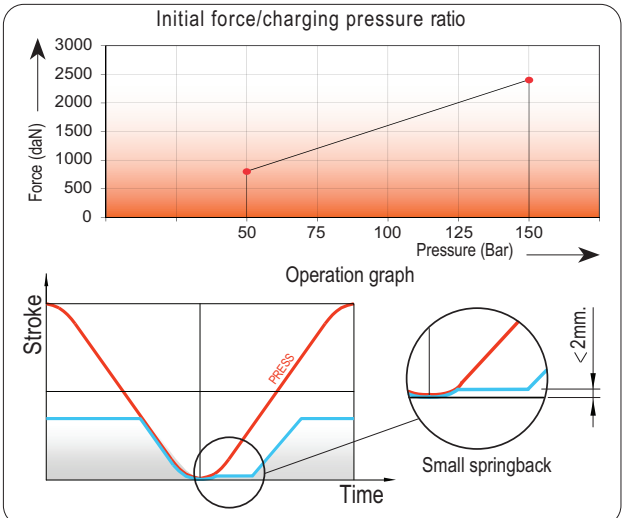


The TPCBS 2400 model is also available equipped with RMF-D1. (TPCBS 2400x...C-Linked)



Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCBS 2400x12	12	124	112		2575	2595	
TPCBS 2400x25	25	150	125		2680	2720	
TPCBS 2400x38	38	176	138		2745	2795	
TPCBS 2400x50	50	200	150	2400 ±5% (20°C)	2790	2840	150 (20°C)
TPCBS 2400x63	63	226	163		2820	2880	
TPCBS 2400x80	80	260	180		2850	2915	
TPCBS 2400x100	100	300	200		2875	2945	
TPCBS 2400x125	125	350	225		2900	2970	

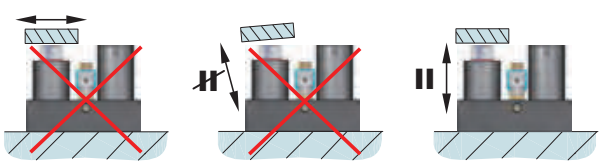


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 - 30 m/min
Max. recommended strokes/min	8 - 20* spm

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters



VDI SAFETY

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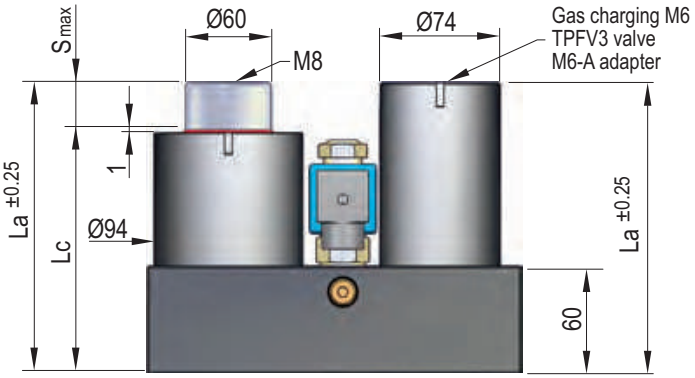
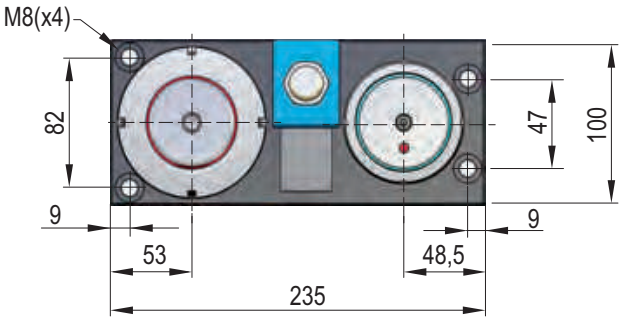
RISK OF ENTRAPMENT
CAUTION!

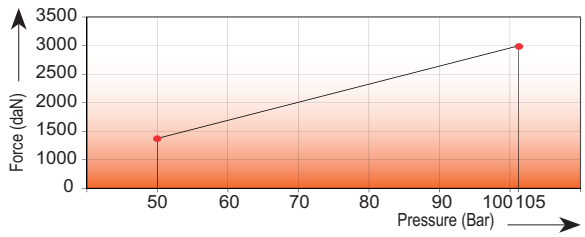


The TPCBS 3000 model is also available equipped with RMF-D1. (TPCBS 3000x...C-Linked)

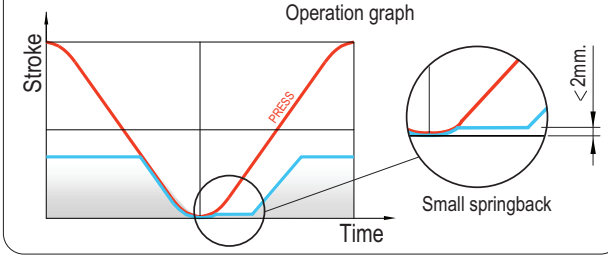


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCBS 3000x12	12	140	128		3215	3240	
TPCBS 3000x25	25	166	141		3370	3425	
TPCBS 3000x38	38	192	154		3475	3540	
TPCBS 3000x50	50	216	166	3000 ±5% (20°C)	3545	3620	105 (20°C)
TPCBS 3000x63	63	242	179		3600	3685	
TPCBS 3000x80	80	276	196		3655	3750	
TPCBS 3000x100	100	316	216		3700	3805	
TPCBS 3000x125	125	366	241		3745	3855	

Initial force/charging pressure ratio



Operation graph

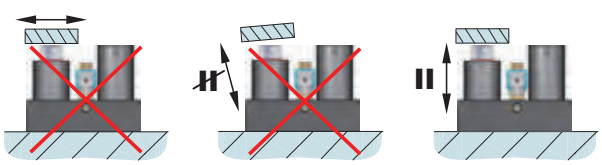


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	105 Bar
Min. charging pressure	50 Bar
Rod seal area	28,27 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 - 30 m/min
Max. recommended strokes/min	8 - 20* spm

Required Information

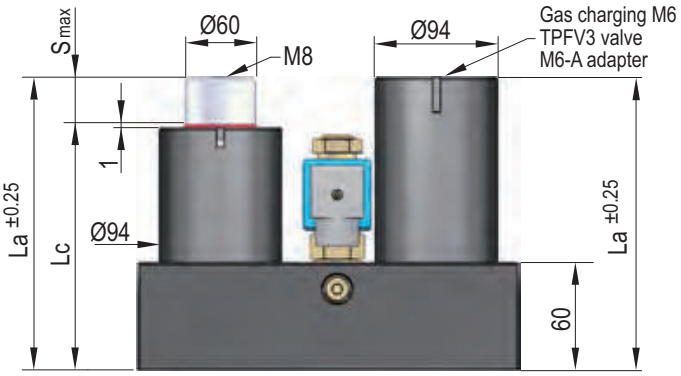
Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

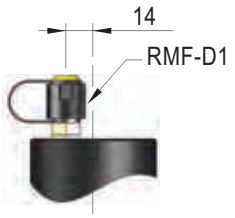
* Maximum rate will depend on working parameters



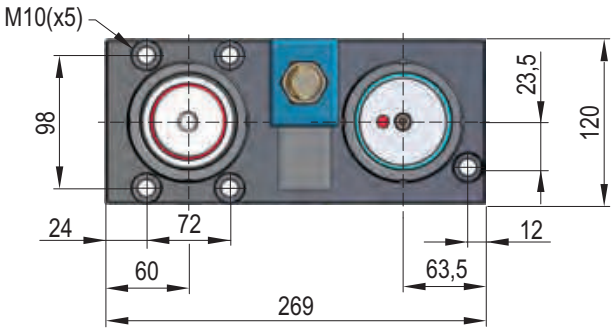
VDI SAFETY

PED 2014/68/UE



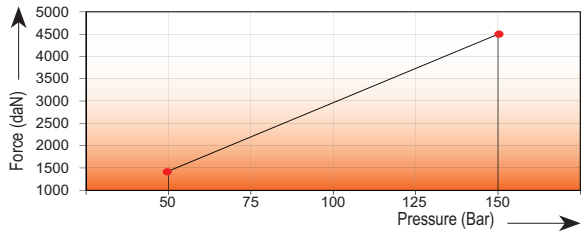


The TPCB 4500 model is also available equipped with RMF-D1. (TPCB 4500x...C-Linked)

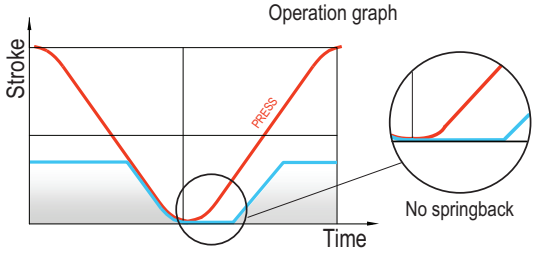


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCB 4500x12	12	140	128		4590	4630	
TPCB 4500x25	25	166	141		4815	4890	
TPCB 4500x38	38	192	154		4965	5060	
TPCB 4500x50	50	216	166	4500 ±5% (20°C)	5065	5175	150 (20°C)
TPCB 4500x63	63	242	179		5140	5265	
TPCB 4500x80	80	276	196		5220	5355	
TPCB 4500x100	100	316	216		5285	5435	
TPCB 4500x125	125	366	241		5345	5505	

Initial force/charging pressure ratio



Operation graph

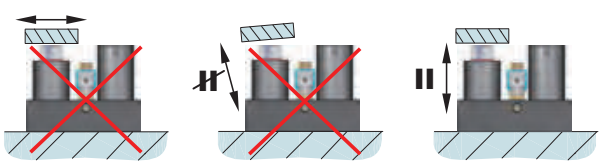


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	28,27 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	15 - 22 m/min
Max. recommended strokes/min	8 - 20* spm

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

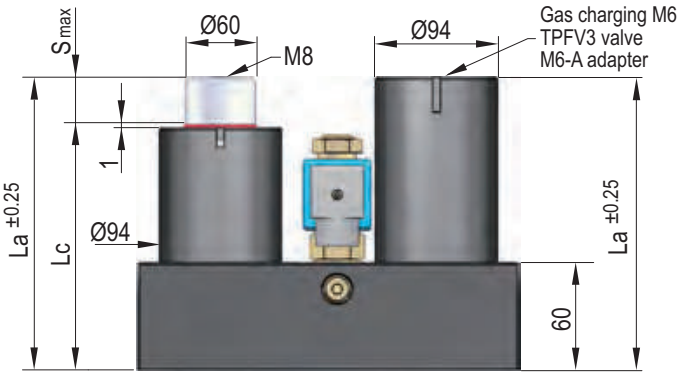
* Maximum rate will depend on working parameters

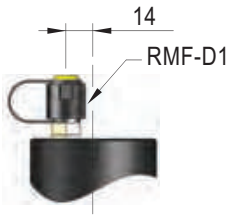


VDI SAFETY

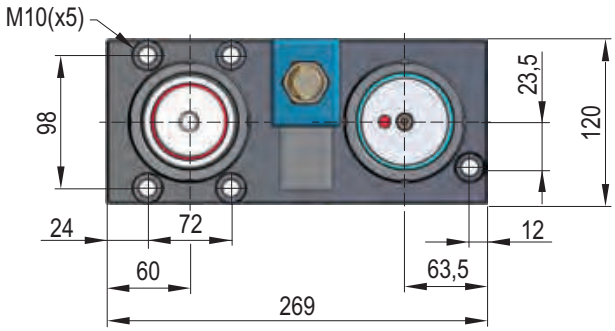
PED 2014/68/UE

RISK OF ENTRAPMENT
CAUTION!



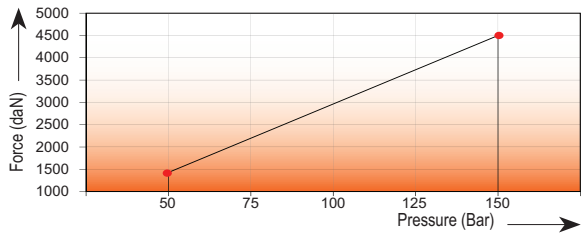


The TPCBS 4500 model is also available equipped with RMF-D1. (TPCBS 4500x...C-Linked)

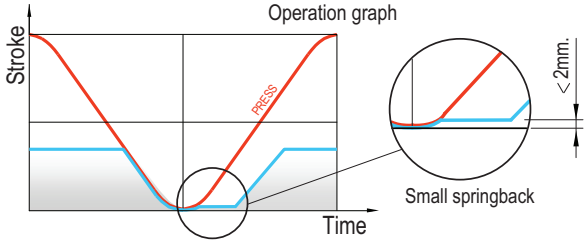


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCBS 4500x12	12	140	128		4590	4630	
TPCBS 4500x25	25	166	141		4815	4890	
TPCBS 4500x38	38	192	154		4965	5060	
TPCBS 4500x50	50	216	166	4500 ±5% (20°C)	5065	5175	150 (20°C)
TPCBS 4500x63	63	242	179		5140	5265	
TPCBS 4500x80	80	276	196		5220	5355	
TPCBS 4500x100	100	316	216		5285	5435	
TPCBS 4500x125	125	366	241		5345	5505	

Initial force/charging pressure ratio



Operation graph

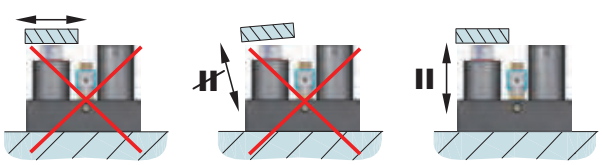


Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	28,27 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	25 - 30 m/min
Max. recommended strokes/min	8 - 20* spm

Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

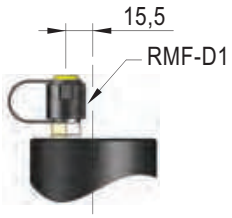
* Maximum rate will depend on working parameters



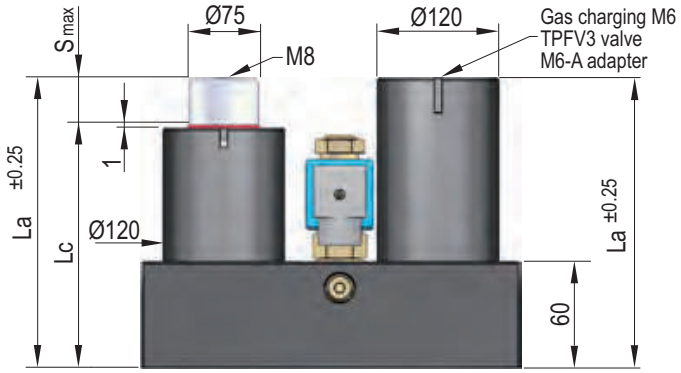
VDI SAFETY

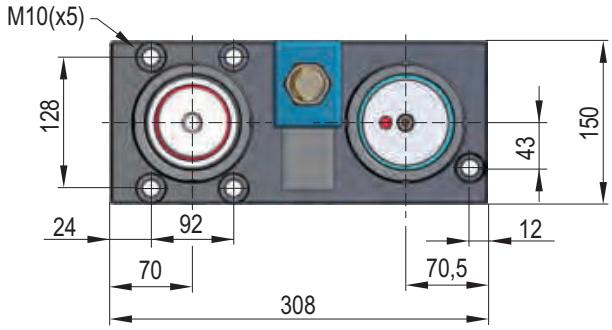
PED 2014/68/UE

RISK OF ENTRAPMENT
CAUTION!



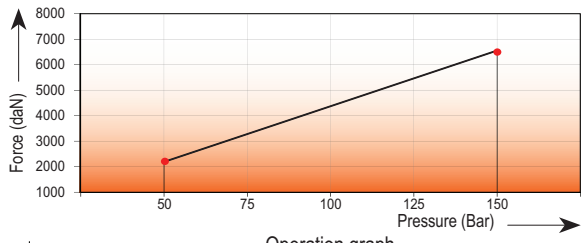
The TPCB 6500 model is also available equipped with RMF-D1. (TPCB 6500x...C-Linked)



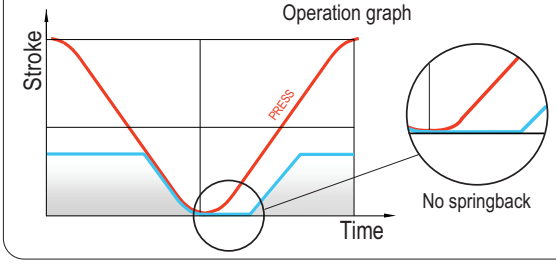


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCB 6500x12	12	152	140		7125	7185	
TPCB 6500x25	25	178	153		7465	7570	
TPCB 6500x38	38	204	166		7690	7830	
TPCB 6500x50	50	228	178	6500 ±5% (20°C)	7845	8010	150 (20°C)
TPCB 6500x63	63	254	191		7970	8155	
TPCB 6500x80	80	288	208		8095	8305	
TPCB 6500x100	100	328	228		8205	8430	
TPCB 6500x125	125	378	253		8305	8545	

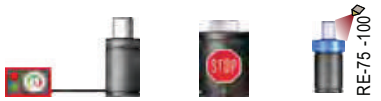
Initial force/charging pressure ratio



Operation graph



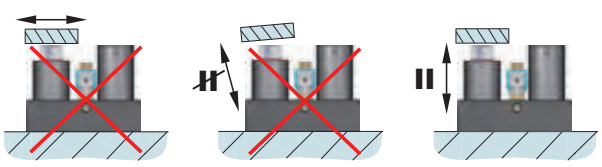
Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	44,18 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	10 - 18 m/min
Max. recommended strokes/min	8 - 20* spm



Required Information

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters



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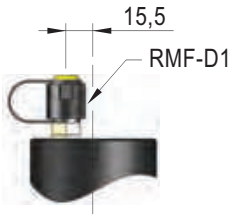
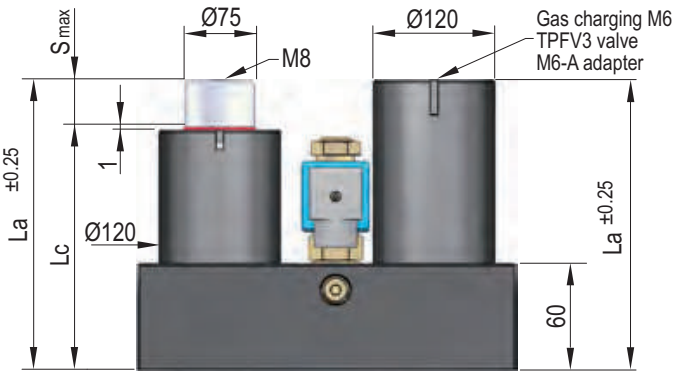
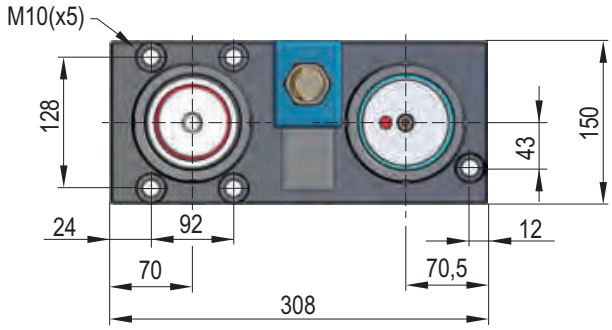
PED 2014/68/UE

RISK OF ENTRAPMENT
CAUTION!



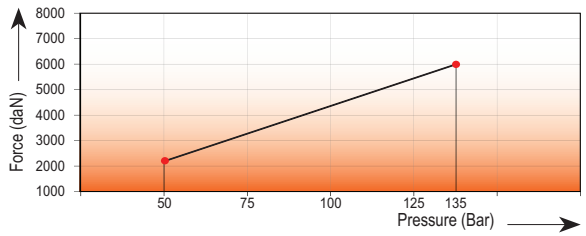
The TPCBS 6000 model is also available equipped with RMF-D1. (TPCBS 6000x...C-Linked)



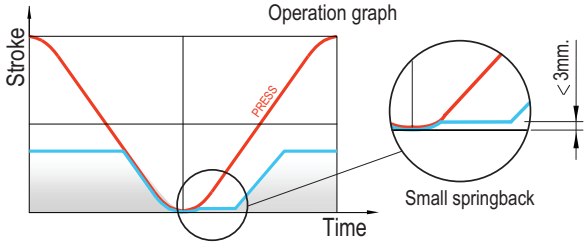


Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar
TPCBS 6000x12	12	152	140		3410	6465	
TPCBS 6000x25	25	178	153		6715	6810	
TPCBS 6000x38	38	204	166		6920	7050	
TPCBS 6000x50	50	228	178	6000 ±5% (20°C)	7060	7210	135 (20°C)
TPCBS 6000x63	63	254	191		7175	7340	
TPCBS 6000x80	80	288	208		7290	7470	
TPCBS 6000x100	100	328	228		7385	7585	
TPCBS 6000x125	125	378	253		7475	7690	

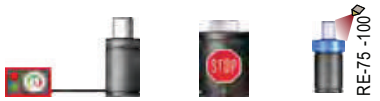
Initial force/charging pressure ratio



Operation graph



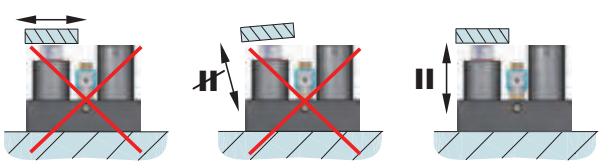
Pressure medium	Nitrogen (N_2) / Oil
Max. charging pressure	135 Bar
Min. charging pressure	50 Bar
Rod seal area	44,18 cm²
Operating temperature	0°C - 60°C
Force increase by temperature	0,33 %/°C
Max. stem speed	20 - 30 m/min
Max. recommended strokes/min	8 - 20* spm



Required Information

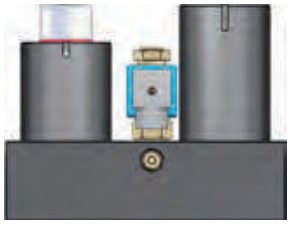
Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Working pressure	*(bar)*

* Maximum rate will depend on working parameters



Type 1
Standard Version

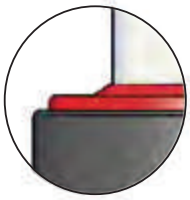
Cyilinders applied in working enviroments with low pollution risk



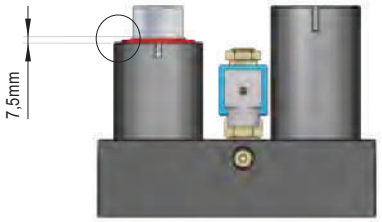
How to order

TPCB 1500	x	50	-	E24	-	C	-	1
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Standard Version

Type 2
Shield-Scraper Version



Cyilinders applied in working enviroments with presence of liquid or solid pollution at medium incidence

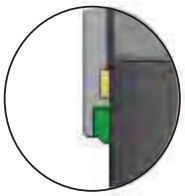


How to order

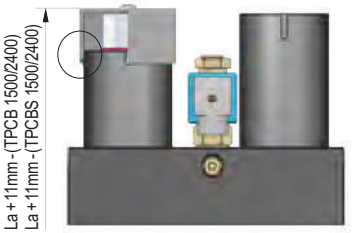
TPCBS 1500	x	50	-	E24	-	C	-	2
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Shield-Scraper Version

Type 3
Sealing Cap Version

Please contact technical department for dimensions of protection cap



Cyilinders applied in working enviroments with a high incidence of liquid and solid pollution

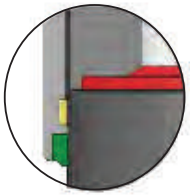


How to order

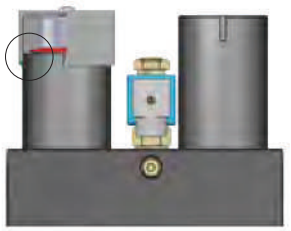
TPCBS 1500	x	50	-	E24	-	C	-	3
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Sealing Cap Version

Type 4
Shield-Scraper + Sealing Cap Version

Please contact technical department for dimensions of protection cap



Cyilinders applied in extremely polluted or corrosive working enviroments

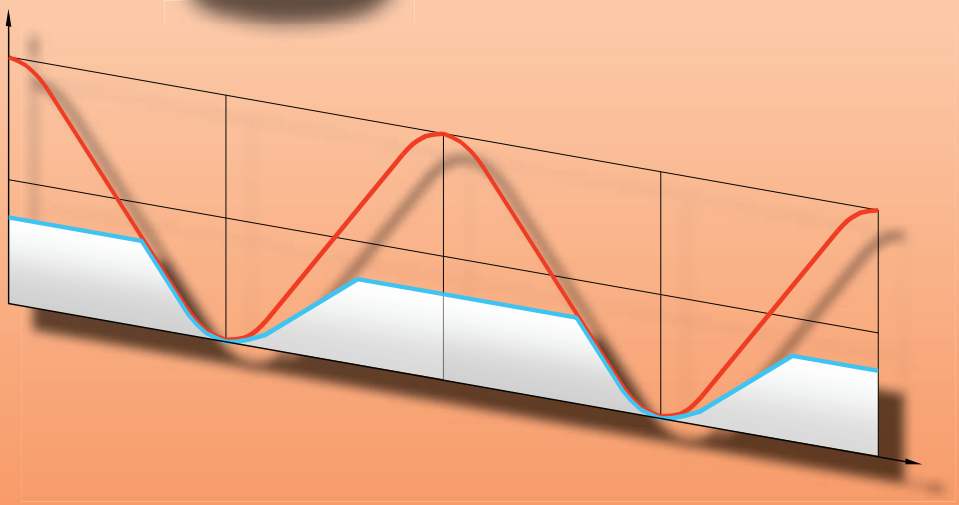


How to order

TPCB 1500	x	50	-	E24	-	C	-	4
Model		Stroke		Hydraulic valve		C - Linked system NC - Self contained		Shield-Scraper + Sealing Cap Version

Electrovalve detail

Hydraulic valve - Technical information			
Hydraulic valve	**E 24**	**E 110**	**E 220**
Supply voltage	24 VDC	110 VAC	220 VAC
Power consumption	21w	21w	21w
Protection class	IP65	IP65	IP65



Cylinders with slow-speed return

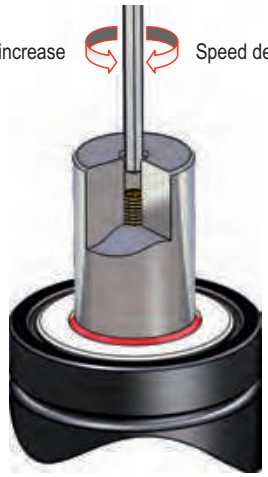
Code	ØBody mm	Strokes mm	Fa daN	
TPSR 750	50	13 - 125	740	√
TPSR 1500	75	13 - 125	1500	√
TPSR 3000	95	25 - 125	3000	√
TPSR 5000	120	25 - 125	5000	√
TPSRC 750	50	160 - 300	740	√
TPSRC 1500	75	160 - 300	1500	√
TPSRC 3000	95	160 - 300	3000	√
TPSRC 5000	120	160 - 300	5000	√

Gas springs of the TPSR and TPSRC series make it possible to control stem recovery speed when the gas spring opens after its compression. This reduces the blank holder bounce in the high speed presses.

During the compression phase, the gas spring works in just the same manner as that of a conventional gas spring (see operation graph below). It is during the phase when the gas spring recovers its original position that we obtain this delay effect that allows us to avoid damage to delicate parts since the press does not recover its original position at the same speed. This characteristic allows for maximum optimization of working conditions.

- **TPSR:** adjustable slow speed return
- **TPSRC:** non adjustable slow speed return

In TPSR series, the speed can be adjusted to the customer's requirements. Speed selection is carried out by manipulating an internal valve situated on the stem head. Turning the valve to the right decreases the speed and turning it to the left increases it.

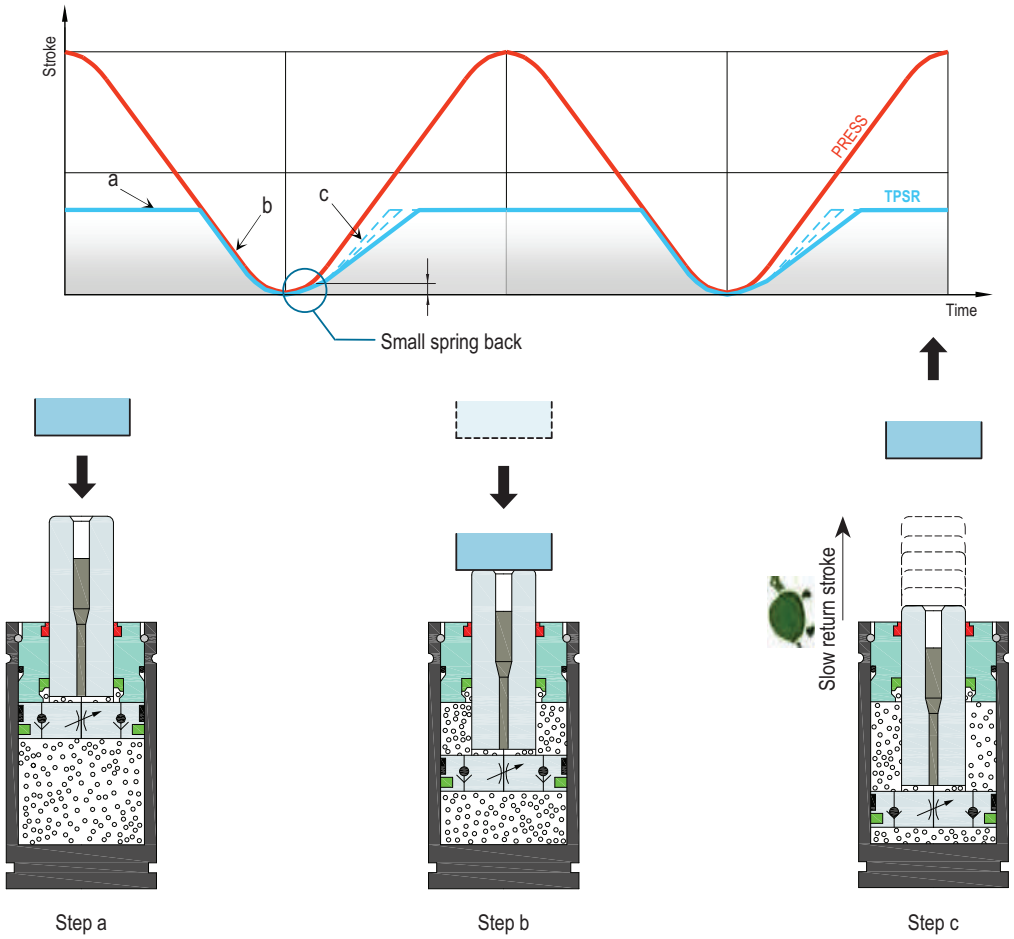


Speed modification · TPSR series

In order to avoid damage in the sealing system due to an increase in temperature, the gas spring stroke rate should be limited. The temperature should not be allowed to go above 80°C. In order to use this product correctly the customer is to provide data as requested.

The TPSR and TPSRC series are manufactured in ISO-norm dimensions. They admit operation both in the autonomous mode and connected to a control panel.

Operation graph



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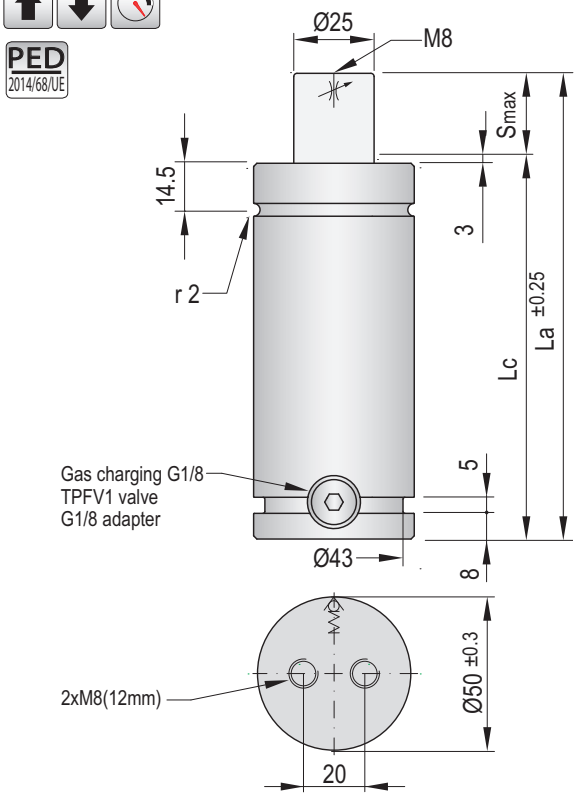
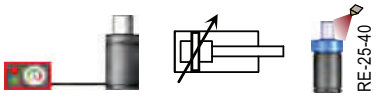
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	12 m/min
Maintenance kit	Kit SR750
Recommended max. strokes/min	5 - 20 spm

ISO
STANDARD DIMENSIONS



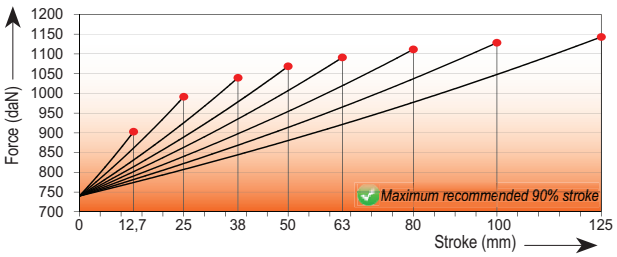
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

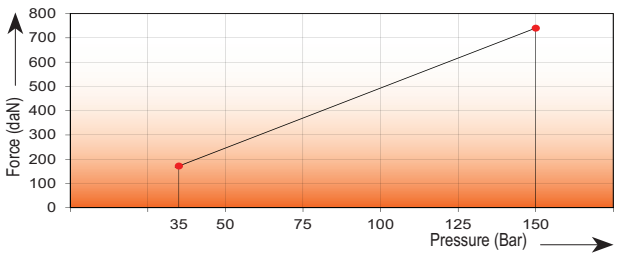
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSR 750x13	12,7	120,4	107,7		880	900		0,035	1,20
TPSR 750x25	25	145	120		955	990		0,048	1,35
TPSR 750x38	38	171	133		995	1035		0,065	1,40
TPSR 750x50	50	195	145	740 ±5%	1020	1065	150	0,080	1,52
TPSR 750x63	63	222	159	(20ºC)	1035	1085	(20ºC)	0,096	1,70
TPSR 750x80	80	255	175		1055	1105		0,118	1,82
TPSR 750x100	100	295	195		1065	1125		0,143	1,85
TPSR 750x125	125	345	220		1080	1135		0,174	2,20

(Other strokes under order)

Force/stroke ratio



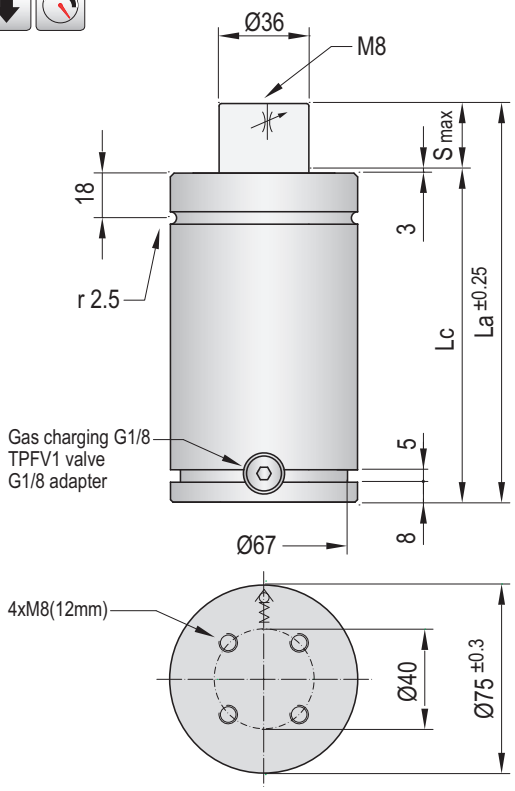
Initial force/charging pressure ratio



Assembly possibilities

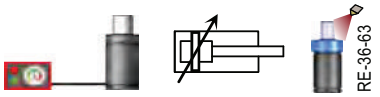
Follow guidelines Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FB 45·FB 50 | FRS 50 | FI 50·FI 50/1



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	15 m/min
Maintenance kit	Kit SR1500
Recommended max. strokes/min	5 - 20 spm

ISO STANDARD DIMENSIONS



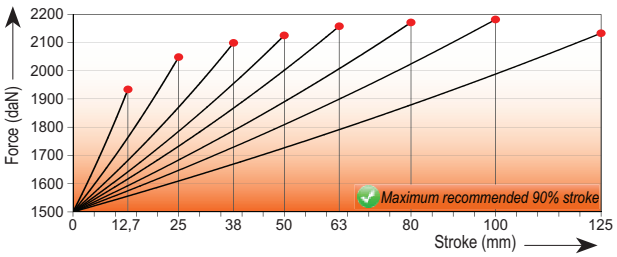
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

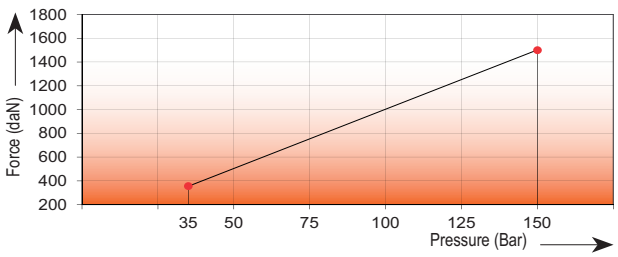
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSR 1500x13	12,7	135,4	122,7		1890	1940		0,058	3,15
TPSR 1500x25	25	160	135		1985	2055		0,095	3,30
TPSR 1500x38	38	186	148		2025	2110		0,136	3,50
TPSR 1500x50	50	210	160	1500 ±5%	2050	2135	150	0,173	3,65
TPSR 1500x63	63	237	174	(20ºC)	2075	2165	(20ºC)	0,210	3,90
TPSR 1500x80	80	270	190		2085	2180		0,263	4,45
TPSR 1500x100	100	310	210		2095	2190		0,326	4,80
TPSR 1500x125	125	360	235		2055	2145		0,429	5,36

(Other strokes under order)

Force/stroke ratio

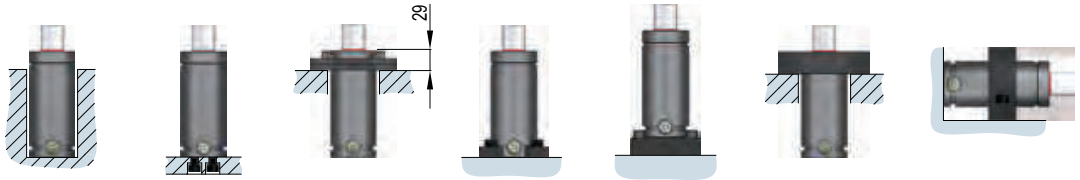


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FRS 75 | FI 75·FI 75/1

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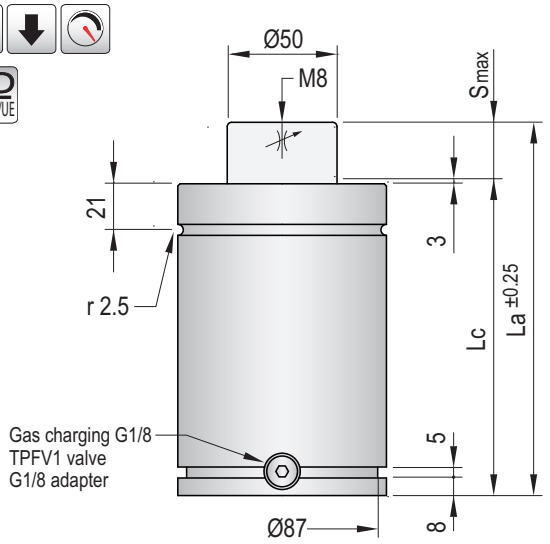
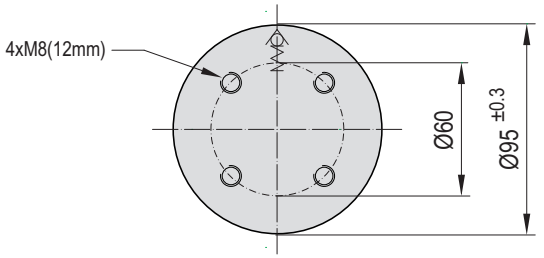
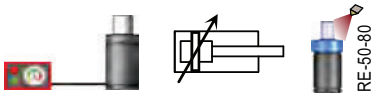
PED 2014/68/UE





Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	20 m/min
Maintenance kit	Kit SR3000
Recommended max. strokes/min	5 - 20 spm

ISO STANDARD DIMENSIONS



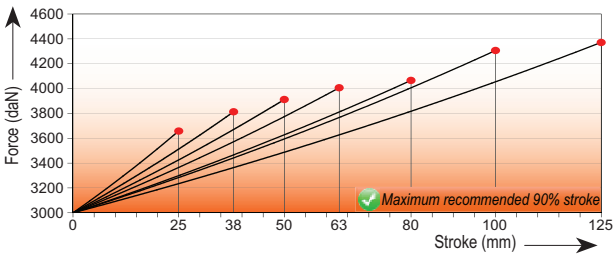
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

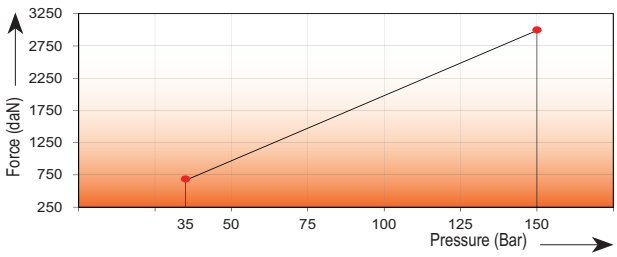
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSR 3000x25	25	170	145	3000 ±5% (20ºC)	3515	3590	150 (20ºC)	0,273	5,75
TPSR 3000x38	38	196	158		3645	3745		0,350	6,15
TPSR 3000x50	50	220	170		3725	3840		0,421	6,53
TPSR 3000x63	63	247	184		3805	3935		0,492	6,91
TPSR 3000x80	80	280	200		3855	3990		0,599	7,25
TPSR 3000x100	100	320	220		4050	4230		0,647	8,00
TPSR 3000x125	125	370	245		4105	4290		0,782	8,15

(Other strokes under order)

Force/stroke ratio

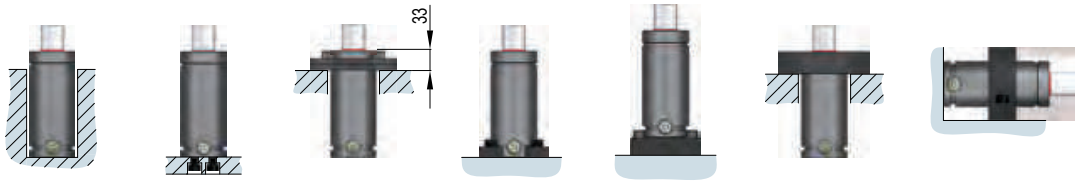


Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FPR 95 | FB 95 | FRS 95 | FI 95·FI 95/1

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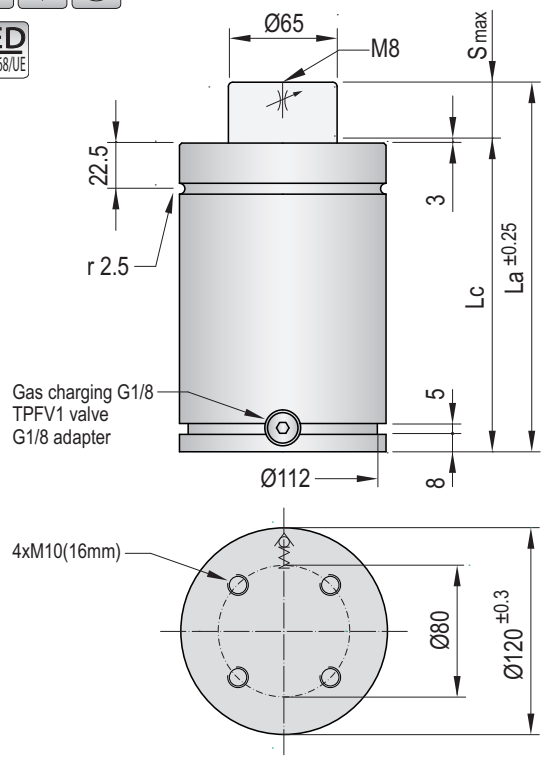
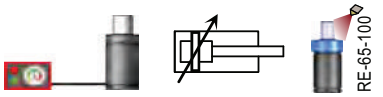
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	33,18 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	20 m/min
Maintenance kit	Kit SR5000
Recommended max. strokes/min	5 - 20 spm

ISO
STANDARD DIMENSIONS



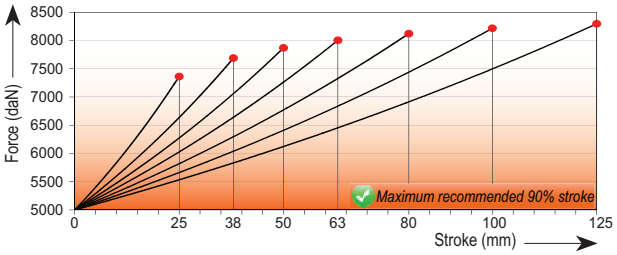
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

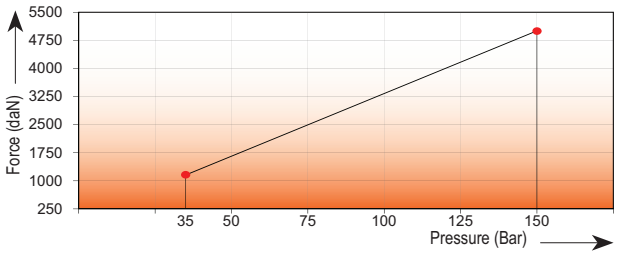
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSR 5000x25	25	190	165	5000 ±5% (20ºC)	7000	7330	150 (20ºC)	0,258	12,01
TPSR 5000x38	38	216	178		7265	7655		0,361	12,85
TPSR 5000x50	50	240	190		7410	7835		0,455	13,60
TPSR 5000x63	63	267	204		7515	7970		0,557	14,50
TPSR 5000x80	80	300	220		7610	8085		0,690	15,39
TPSR 5000x100	100	340	240		7685	8180		0,847	16,48
TPSR 5000x125	125	390	265		7750	8260		1,044	18,05

(Other strokes under order)

Force/stroke ratio

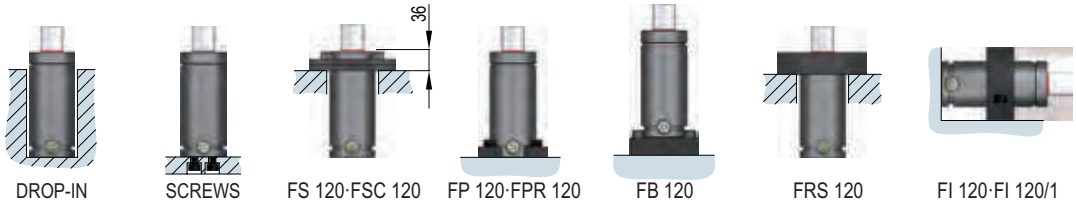


Initial force/charging pressure ratio



Assembly possibilities

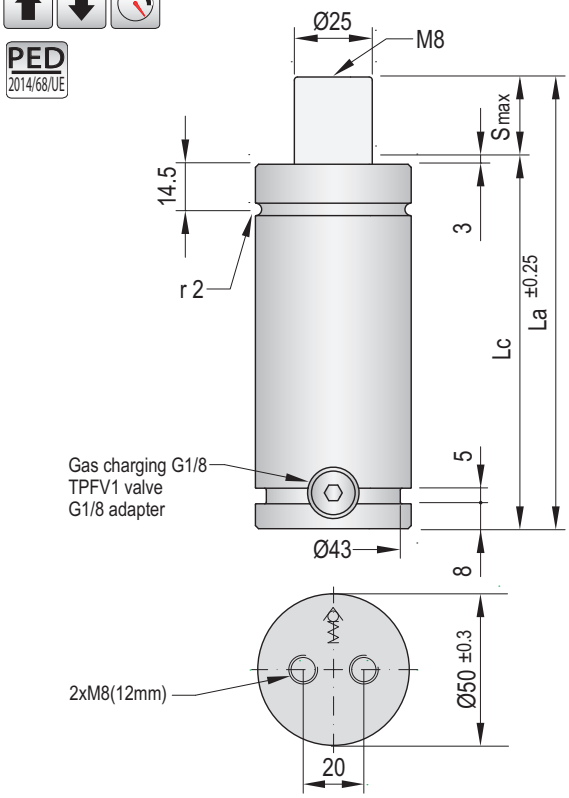
Follow guidelines Page 287



DROP-IN | SCREWS | FS 120·FSC 120 | FP 120·FPR 120 | FB 120 | FRS 120 | FI 120·FI 120/1

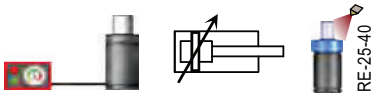
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	12 m/min
Maintenance kit	Kit SR750
Recommended max. strokes/min	2 - 8 spm

ISO STANDARD DIMENSIONS



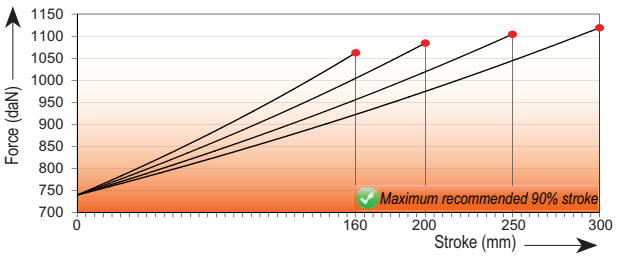
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

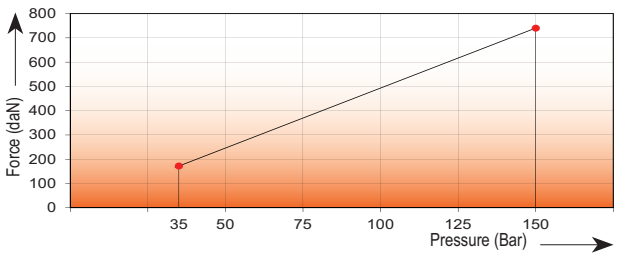
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSRC 750x160	160	415	255	740 ±5% (20ºC)	1015	1055	150 (20ºC)	0,259	2,30
TPSRC 750x200	200	495	295		1030	1080		0,309	3,10
TPSRC 750x250	250	595	345		1045	1100		0,372	3,60
TPSRC 750x300	300	695	395		1060	1115		0,435	4,15

(Other strokes under order)

Force/stroke ratio



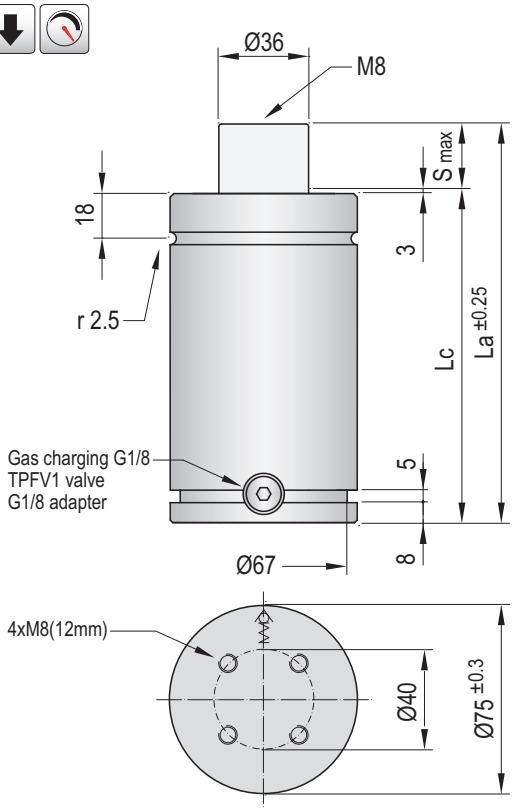
Initial force/charging pressure ratio



Assembly possibilities

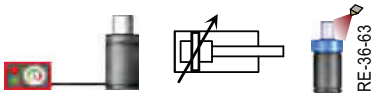
Follow guidelines Page 287

DROP-IN | SCREWS | FS 50·FSC 50 | FP 50·FPR 50 | FB 45·FB 50 | FRS 50 | FI 50·FI 50/1



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	12 m/min
Maintenance kit	Kit SR1500
Recommended max. strokes/min	2 - 8 spm

ISO
STANDARD DIMENSIONS



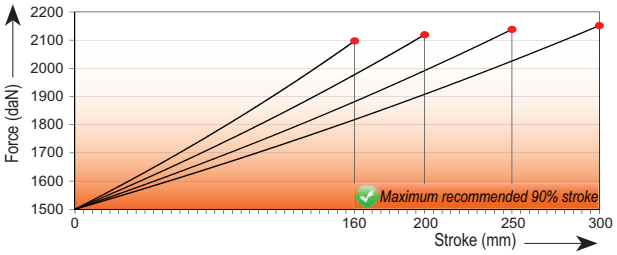
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

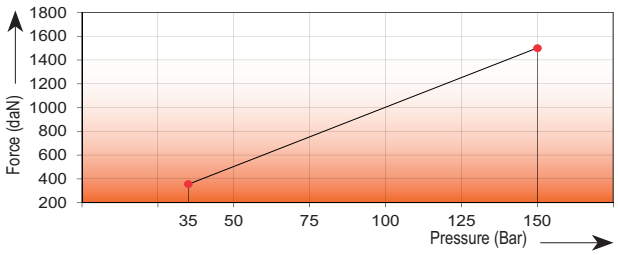
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSRC 1500x160	160	430	270		2025	2105		0,572	6,10
TPSRC 1500x200	200	510	310	1500 ±5% (20º C)	2045	2130	148 (20ºC)	0,697	7,15
TPSRC 1500x250	250	610	360		2060	2145		0,853	7,86
TPSRC 1500x300	300	710	410		2070	2160		1,008	8,86

(Other strokes under order)

Force/stroke ratio



Initial force/charging pressure ratio



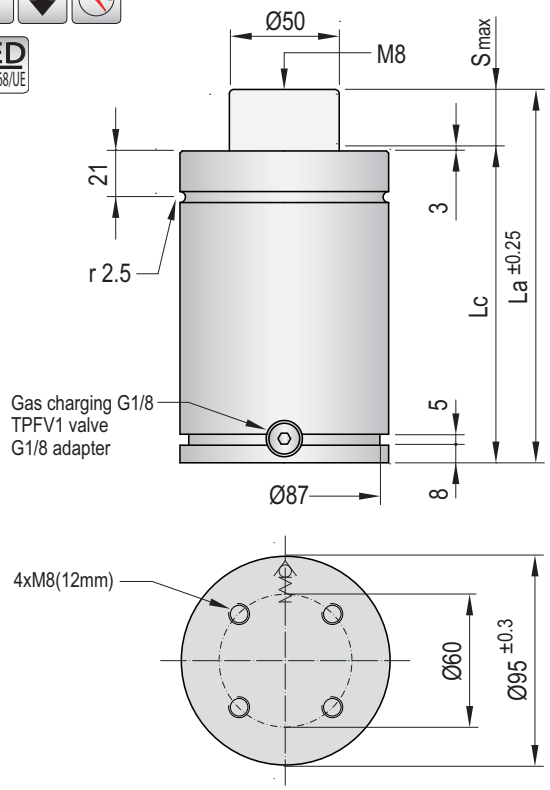
Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FS 75·FSC 75 | FP 75·FPR 75 | FB 75 | FRS 75 | FI 75·FI 75/1

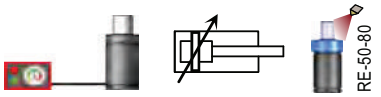
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm^2
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	20 m/min
Maintenance kit	Kit SR3000
Recommended max. strokes/min	2 - 8 spm

ISO STANDARD DIMENSIONS



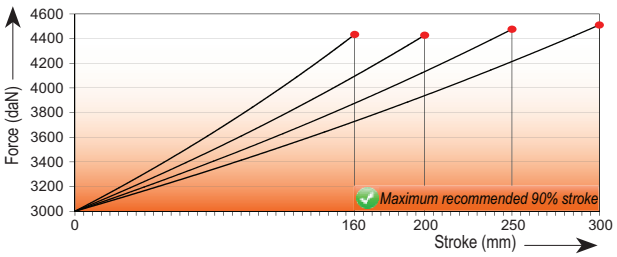
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

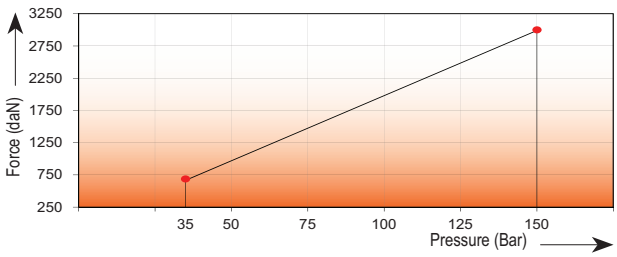
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSRC 3000x160	160	440	280		4410	4665		0,852	9,24
TPSRC 3000x200	200	520	320	3000 ±5%	4270	4495	150	1,138	10,31
TPSRC 3000x250	250	620	370	(20ºC)	4320	4555	(20ºC)	1,390	11,90
TPSRC 3000x300	300	720	420		4350	4595		1,641	14,87

(Other strokes under order)

Force/stroke ratio

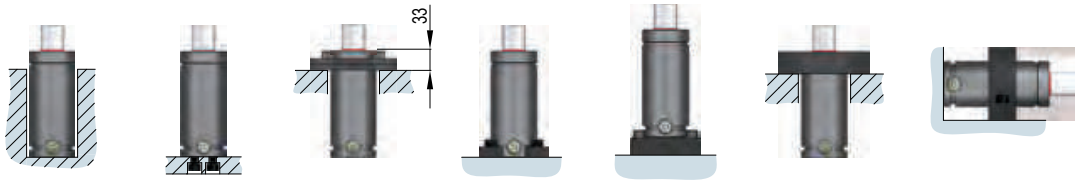


Initial force/charging pressure ratio



Assembly possibilities

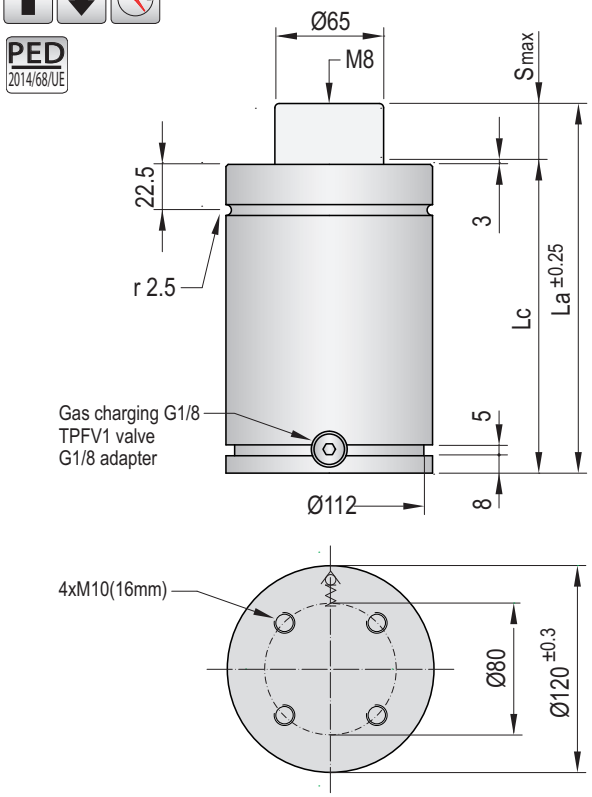
Follow guidelines Page 287



DROP-IN | SCREWS | FS 95·FSC 95 | FP 95·FPR 95 | FB 95 | FRS 95 | FI 95·FI 95/1

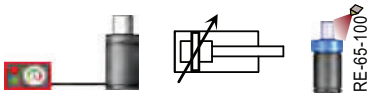
VDI SAFETY

PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	33,18 cm²
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	20 m/min
Maintenance kit	Kit SR5000
Recommended max. strokes/min	2 - 8 spm

ISO
STANDARD DIMENSIONS



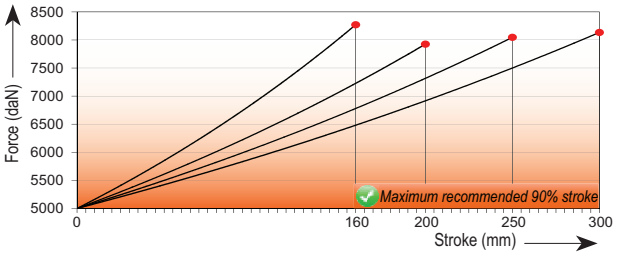
Required data

Working stroke	*(mm)*
Press speed	*(m/min)*
Maximum production rate	*(spm)*
Gas spring expansion speed	*(m/min)*

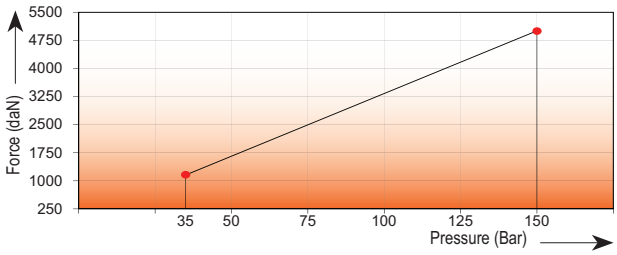
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSRC 5000x160	160	460	300		7730	8235		1,342	19,83
TPSRC 5000x200	200	540	340	5000 ±5% (20ºC)	7455	7890	150 (20ºC)	1,798	21,70
TPSRC 5000x250	250	640	390		7550	8010		2,191	23,85
TPSRC 5000x300	300	740	440		7620	8100		2,583	25,60

(Other strokes under order)

Force/stroke ratio

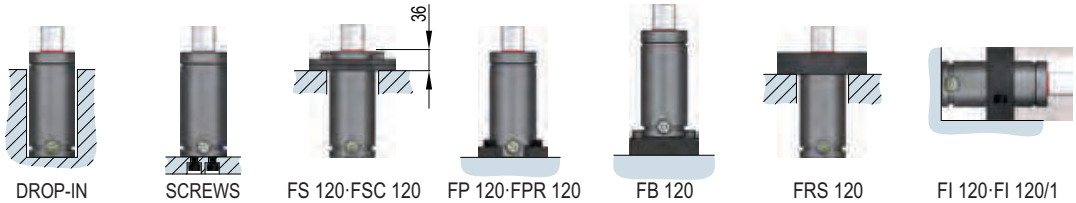


Initial force/charging pressure ratio

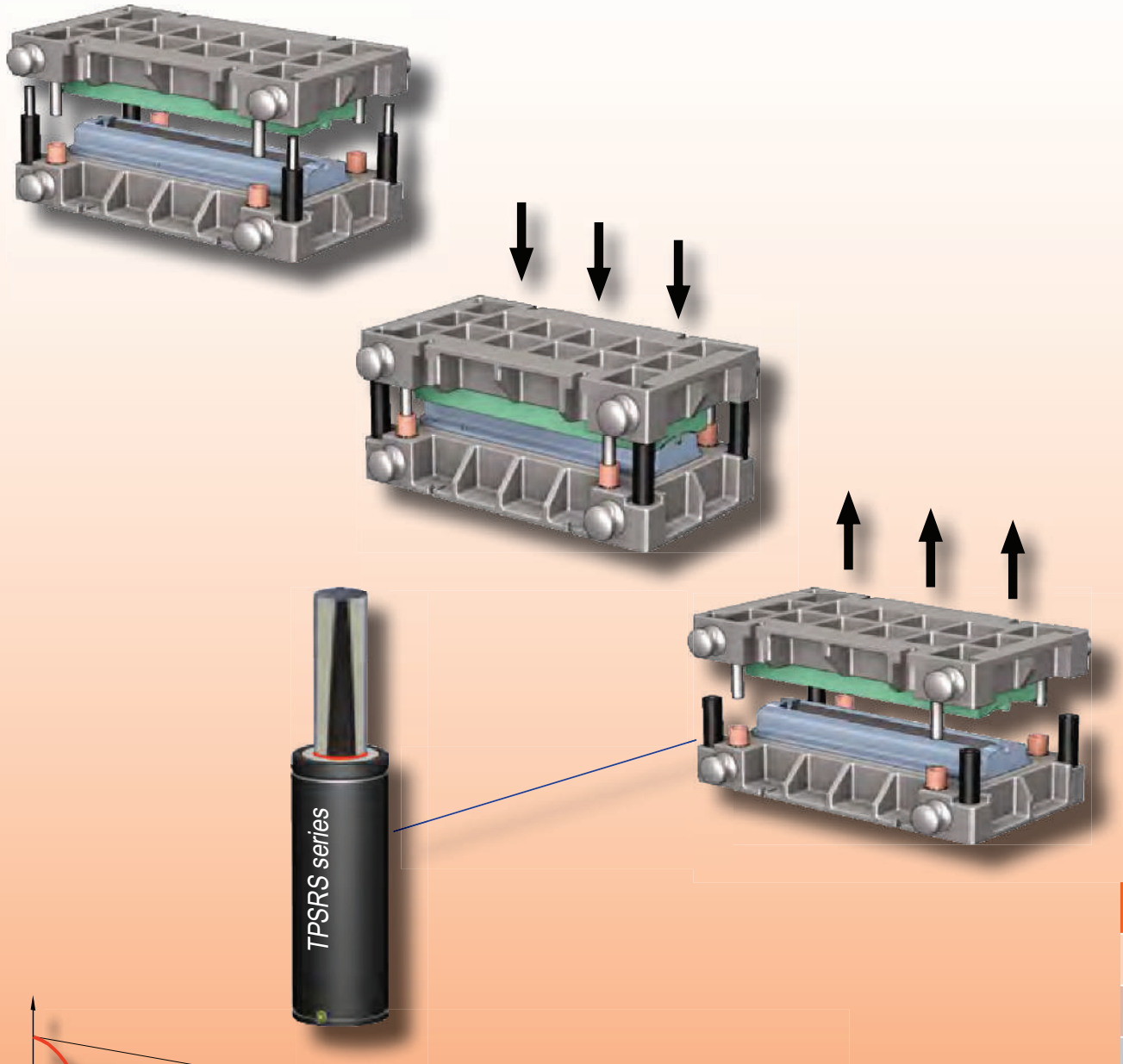


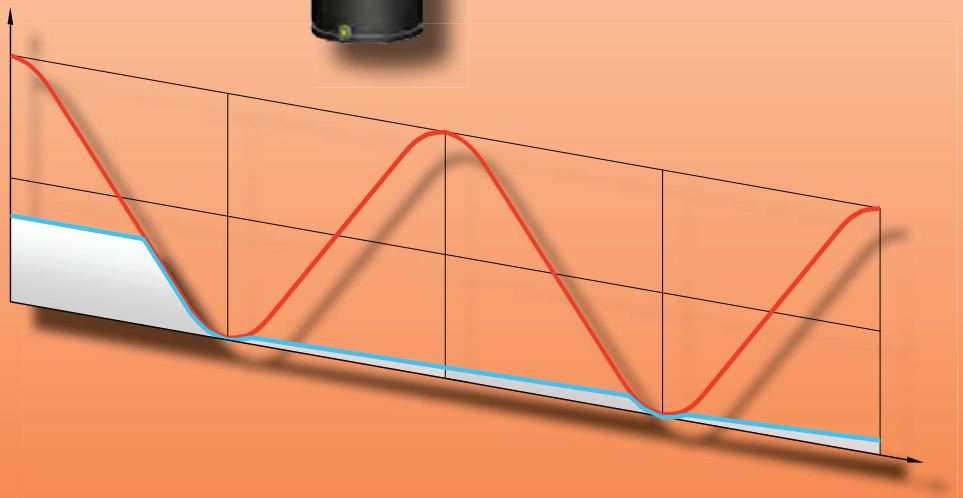
Assembly possibilities

Follow guidelines Page 287



DROP-IN | SCREWS | FS 120·FSC 120 | FP 120·FPR 120 | FB 120 | FRS 120 | FI 120·FI 120/1





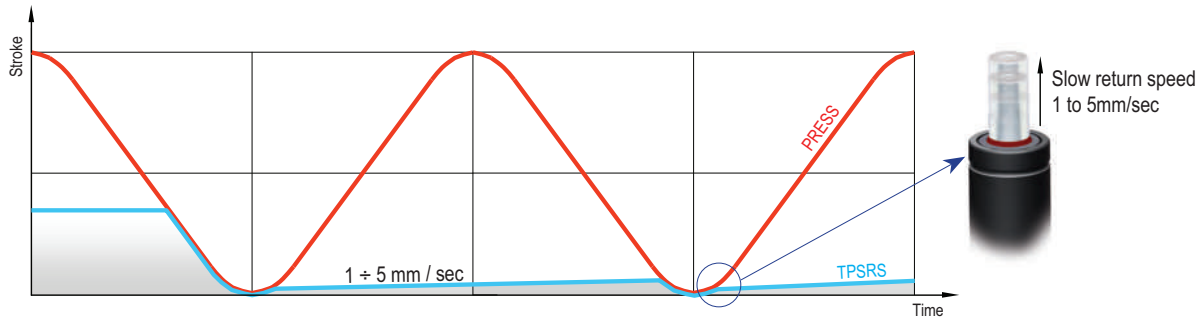
Storage cylinders

Code	Strokes mm	Fa daN	
TPSRS 3000	100 - 300	3000	✓
TPSRS 5000	100 - 300	5000	✓
TPSRS 7500	100 - 300	7500	✓

As with our TPSR series (delayed ascent gas springs), the TPSRS series allows us to control the expansion speed of the stem once the gas spring has been compressed. This delayed ascent is extremely slow (1 / 5 mm per second). This makes this series an ideal option for die set storage operations.

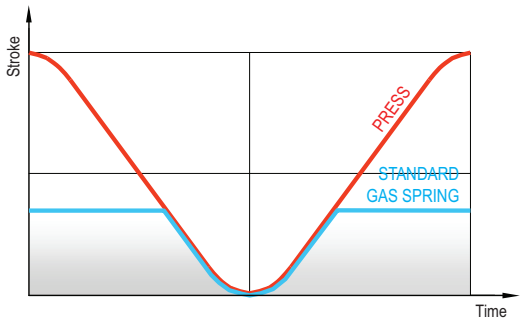
These gas springs only expand for a small fraction of the stroke (see diagram 3).

Operation graph
TPSRS series

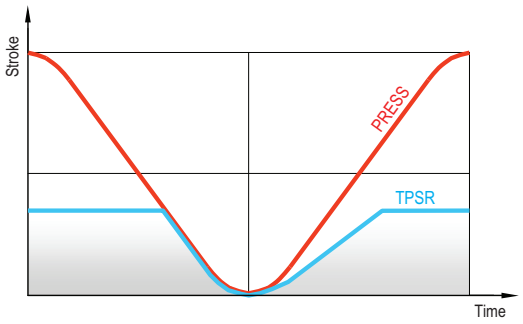


NOTE: please take into a consideration that the return could be not sincronized between the different gas springs in the same tool

Operation graph
STANDARD GAS SPRING



Operation graph
TPSR series



ADVANTAGES

- Excepcionally long service-life
- ISO norm dimensions
- High frequency of use 30 / 60 spm
- Low working temperatures
- Optional use of shield scrapers

CHARACTERISTICS

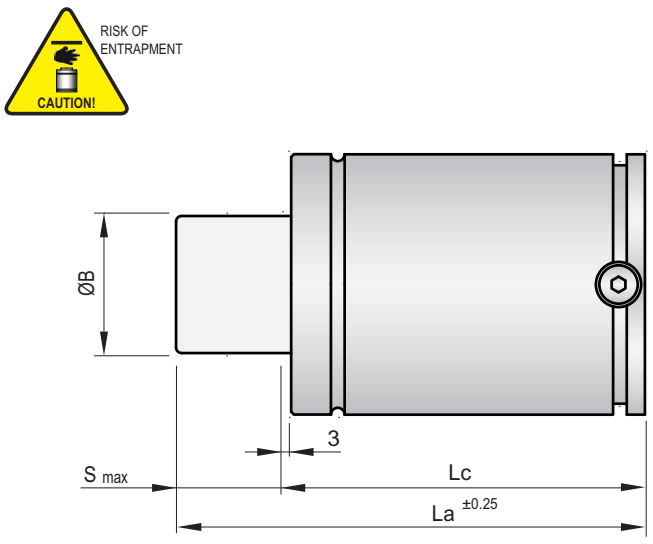
- 3-ton, 5-ton and 7.5-ton forces
- Working rate from 100 to 300 m
- Great variety of assembly options
- VDI Safety

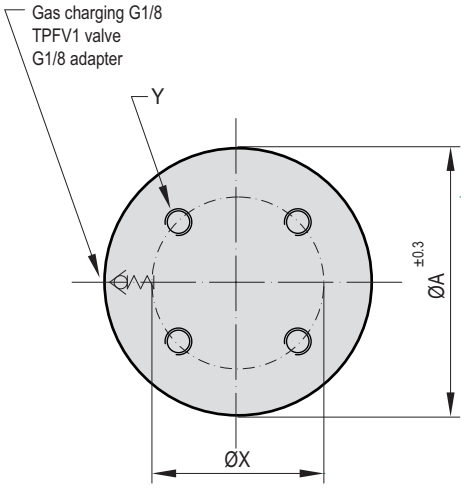
Pressure medium	Gas Nitrógeno (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	1,6 m/s

PED 2014/68/UE
ISO STANDARD DIMENSIONS

Maintenance kit TPSRS 3000	Kit SRS3000
Maintenance kit TPSRS 5000	Kit SRS5000
Maintenance kit TPSRS 7500	Kit SRS7500

Code	Smax mm	La mm	Lc mm	Fa daN	Fc daN	P Bar	Ø A mm	Ø B mm	Ø X mm	Y
TPSRS 3000x100.1	100	320	220	3000 ±5% (20ºC)	≈ 4340	150 (20ºC)	95	50	60	4 x M8
TPSRS 3000x125.1	125	370	245							
TPSRS 3000x160.1	160	440	280							
TPSRS 3000x200.1	200	520	320							
TPSRS 3000x250.1	250	620	370							
TPSRS 3000x300.1	300	720	420							
TPSRS 5000x100.1	100	340	240	5000 ±5% (20ºC)	≈ 8115	150 (20ºC)	120	65	80	4 x M10
TPSRS 5000x125.1	125	390	265							
TPSRS 5000x160.1	160	460	300							
TPSRS 5000x200.1	200	540	340							
TPSRS 5000x250.1	250	640	390							
TPSRS 5000x300.1	300	740	440							
TPSRS 7500x100.1	100	355	255	7500 ±5% (20ºC)	≈ 12150	150 (20ºC)	150	80	100	4 x M10
TPSRS 7500x125.1	125	405	280							
TPSRS 7500x160.1	160	475	315							
TPSRS 7500x200.1	200	555	355							
TPSRS 7500x250.1	250	655	405							
TPSRS 7500x300.1	300	755	455							





NOTE: These gas-springs could not have sincronized return speed.

Assembly possibilities

Follow guidelines Page 287


DROP-IN

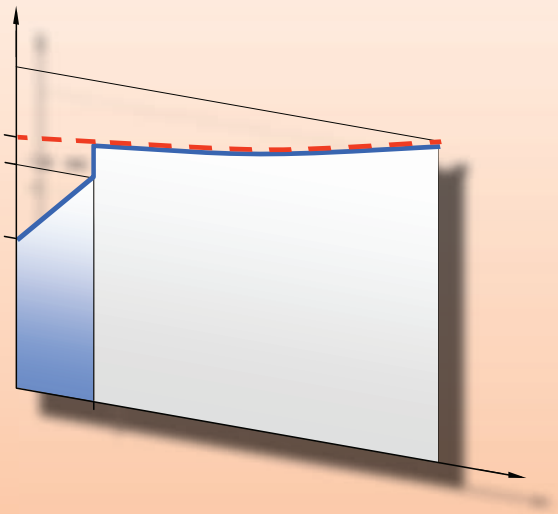

SCREWS


FS · FSC


FP · FPR


FB


FI · FI/1



- Noise reduction
- Vibration reduction
- Low contact force
- More efficient working environment

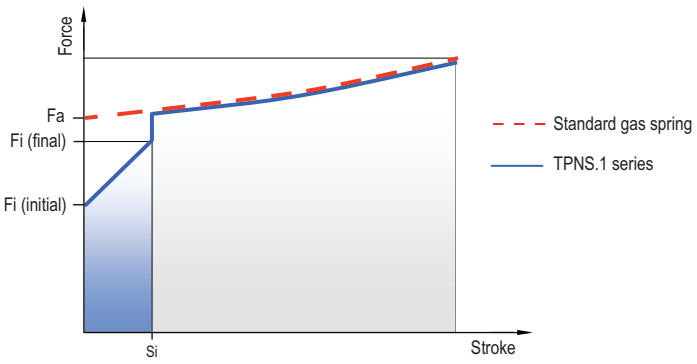
Cylinders with impact dampening

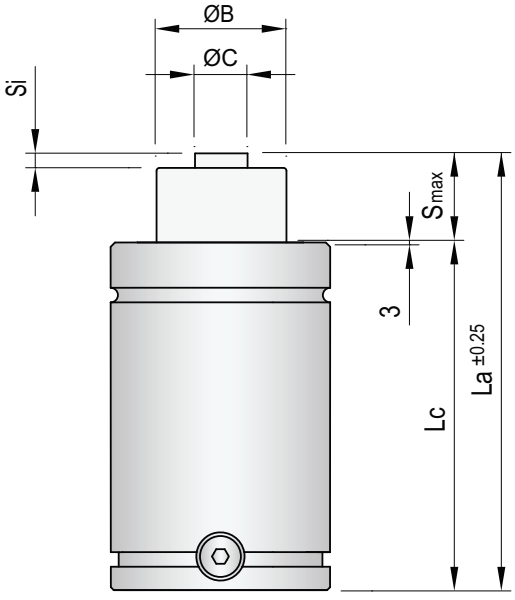
Code	ØBody mm	Strokes mm	Fa daN	
TPNS 750.1	50	25 - 300	750	
TPNS 1500.1	75	25 - 300	1500	
TPNS 3000.1	95	25 - 300	3000	
TPNS 5000.1	120	25 - 300	5000	
TPNSR 1500	75	125 - 200	1500	✓
TPNSR 3000	95	125 - 200	3000	✓

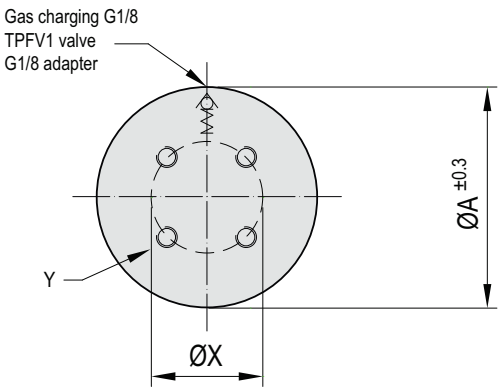
All TPNS.1 gas springs are characterised by the fact that they reduce the impact force at the beginning of their working stroke. This series gradually increases force in such a way that in the first few millimetres of working stroke, the force is practically null.

The TPNS series is manufactured in ISO-norm dimensions and fixtures. They admit operation both in the autonomous mode and connected to a control panel.

Force Curve







Pressure medium	Gas Nitrógeno (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1 m/s

PED 2014/68/UE

ISO STANDARD DIMENSIONS

ADVANTAGES

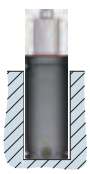
- ✓ Noise reduction
- ✓ Vibration reduction
- ✓ Progressive increase of force
- ✓ Interchangeability with ISO-standard gas springs
- ✓ Possibility of interconnection to a control panel
- ✓ Decrease in maintenance costs
- ✓ More efficient working environment

Code	Smax mm	La mm	Lc mm	Fi daN	Fa daN	Fc daN	Si mm	Ø A mm	Ø B mm	Ø C mm	Ø X mm	Y	P Bar	spm
TPNS 750x25.1	25	145	120	Initial 270	750 ±5% (20ºC)	≈ 1000	6	50	30	14	20	2 x M8	105 (20ºC)	65
TPNS 750x38.1	38	171	133											52
TPNS 750x50.1	50	195	145											43
TPNS 750x63.1	63	222	159											37
TPNS 750x80.1	80	255	175											31
TPNS 750x100.1	100	295	195											26
TPNS 750x125.1	125	345	220											22
TPNS 750x160.1	160	415	255											18
TPNS 750x200.1	200	495	295	Final 430										14
TPNS 750x250.1	250	595	345											12
TPNS 750x300.1	300	695	395											10
TPNS 1500x25.1	25	160	135	Initial 450	1500 ±5% (20ºC)	≈ 2000	5	75	45	18	40	4 x M8	95 (20ºC)	65
TPNS 1500x38.1	38	186	148											52
TPNS 1500x50.1	50	210	160											43
TPNS 1500x63.1	63	237	174											37
TPNS 1500x80.1	80	270	190											31
TPNS 1500x100.1	100	310	210											26
TPNS 1500x125.1	125	360	235											22
TPNS 1500x160.1	160	430	270											18
TPNS 1500x200.1	200	510	310	Final 700										14
TPNS 1500x250.1	250	610	360											12
TPNS 1500x300.1	300	710	410											10
TPNS 3000x25.1	25	170	145	Initial 750	3000 ±5% (20ºC)	≈ 4000	5	95	60	22	60	4 x M8	105 (20ºC)	55
TPNS 3000x38.1	38	196	158											44
TPNS 3000x50.1	50	220	170											37
TPNS 3000x63.1	63	247	184											31
TPNS 3000x80.1	80	280	200											26
TPNS 3000x100.1	100	320	220											22
TPNS 3000x125.1	125	370	245											18
TPNS 3000x160.1	160	440	280											15
TPNS 3000x200.1	200	520	320	Final 1200										12
TPNS 3000x250.1	250	620	370											10
TPNS 3000x300.1	300	720	420											8
TPNS 5000x25.1	25	190	165	Initial 1200	5000 ±5% (20ºC)	≈ 7000	5	120	75	32	80	4 x M10	110 (20ºC)	55
TPNS 5000x38.1	38	216	178											44
TPNS 5000x50.1	50	240	190											37
TPNS 5000x63.1	63	267	204											31
TPNS 5000x80.1	80	300	220											26
TPNS 5000x100.1	100	340	240											22
TPNS 5000x125.1	125	390	265											18
TPNS 5000x160.1	160	460	300											15
TPNS 5000x200.1	200	540	340	Final 2000										12
TPNS 5000x250.1	250	640	390											10
TPNS 5000x300.1	300	740	440											8

(Oher models under order)

Assembly possibilities

Follow guidelines Page 287

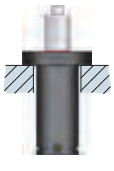

DROP-IN


SCREWS


FS · FSC


FP · FPR


FB


FRS


FI · FI/1





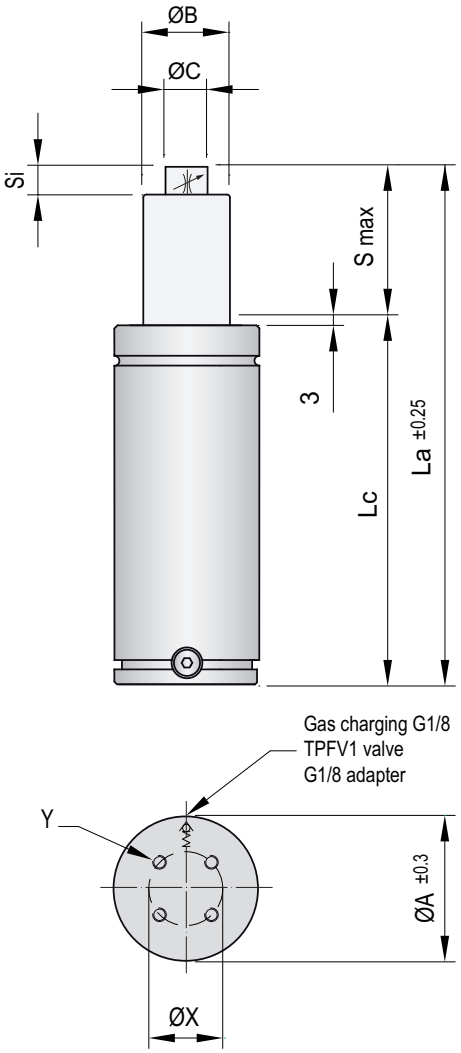






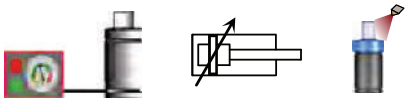
TPNSR gas springs are characterised by two functions:

- ► Reduction of initial working stroke force
- ► Reduction of stem speed during the expansion in the final stroke phase (Si)

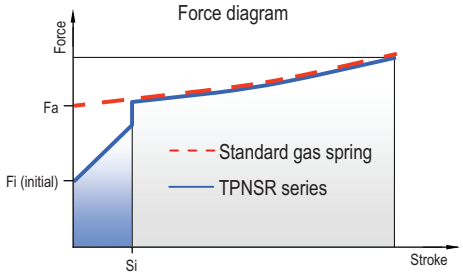


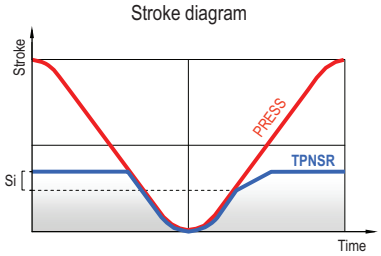
Pressure medium	Gas Nitrógeno (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1 m/s

PED 2014/68/UE — ISO STANDARD DIMENSIONS



Operation Graph

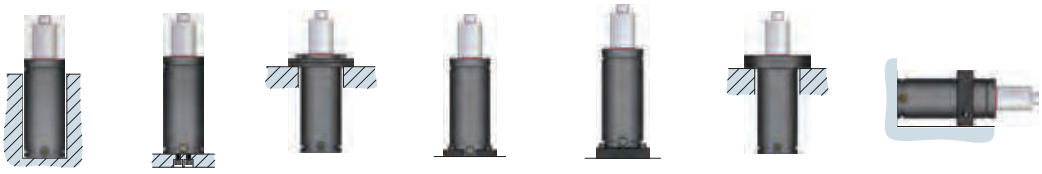




Code	Smax mm	La mm	Lc mm	Fi daN	Fa daN	Fc daN	Si mm	Ø A mm	Ø B mm	Ø C mm	Ø X mm	Y	P Bar	spm
TPNSR 1500x125	125	360	235	750	1500 ±5% (20°C)	≈ 2200	15	75	45	22	40	4 x M8	95 (20°C)	22
TPNSR 1500x160	160	430	270											18
TPNSR 1500x200	200	510	310											14
TPNSR 3000x125	125	370	245	1200	3000 ±5% (20°C)	≈ 4500	24	95	60	32	60	4 x M8	105 (20°C)	18
TPNSR 3000x160	160	440	280											15
TPNSR 3000x200	200	520	320											12

Assembly possibilities

Follow guidelines Page 287



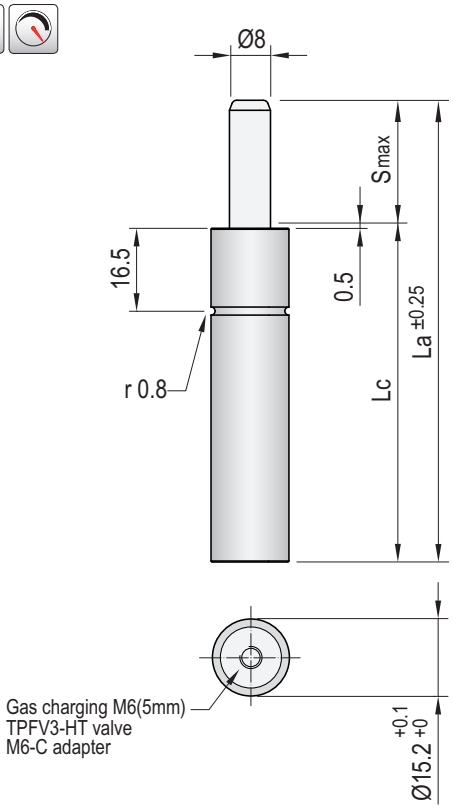
- Gas springs designed with sealing and guiding components for high temperature
- For applications where temperatures will exceed standard working temperatures

Gas springs for high temperature applications

Code	ØBody mm	Strokes mm	Fa daN		VDI SAFETY	Up to 120ºC
TPHT 15	15	7 - 75	40	√	√	√
TPHT 25.1	25	7 - 80	140	√	√	√
TPHT 32	32	10 - 80	200	√	√	√
TPHT 38	38	10 - 80	300	√	√	√
TPHT 45	45	13 - 80	400	√	√	√
TPHT 50	50	13 - 80	500	√	√	√

VDI SAFETY

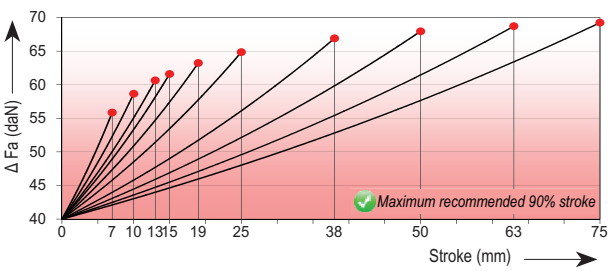
PED 2014/68/UE



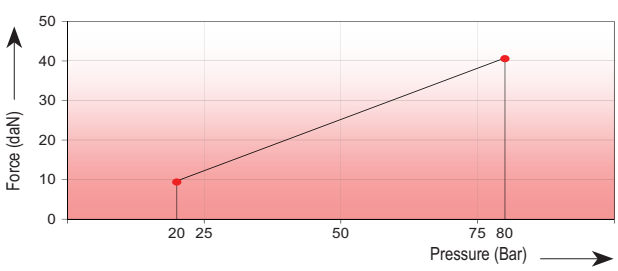
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	20 Bar
Rod seal area	0,50 cm^2
Operating temperature	0ºC - 120ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT15
Max. strokes / min	10-15 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 15x7	7	56	49		55	55		0,001	0,07
TPHT 15x10	10	62	52		55	60		0,002	0,07
TPHT 15x13	13	68	55		60	60		0,002	0,08
TPHT 15x15	15	72	57		60	60		0,002	0,08
TPHT 15x19	19	80	61	40 ±5%	60	65	80	0,003	0,09
TPHT 15x25	25	92	67	(20ºC)	60	65	(20ºC)	0,003	0,09
TPHT 15x38	38	118	80		65	65		0,005	0,10
TPHT 15x50	50	142	92		65	70		0,006	0,11
TPHT 15x63	63	172	109		65	70		0,008	0,12
TPHT 15x75	75	195	120		65	70		0,009	0,14

Force/stroke ratio

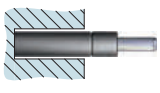


Initial force/charging pressure ratio



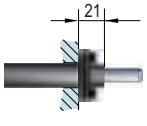
Assembly possibilities

Follow guidelines Page 287



DROP-IN

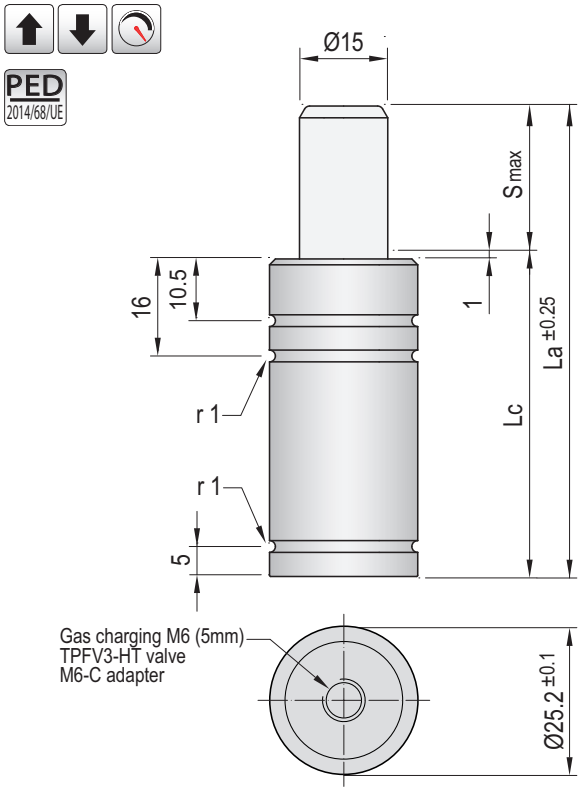
SCREWS



FS 15

VDI SAFETY

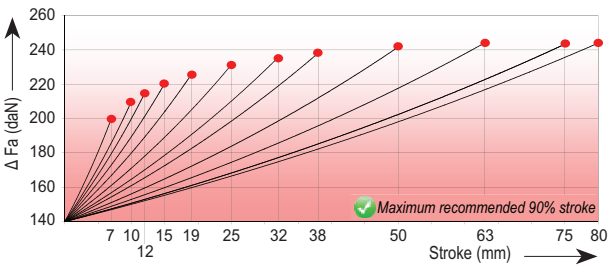
PED 2014/68/UE



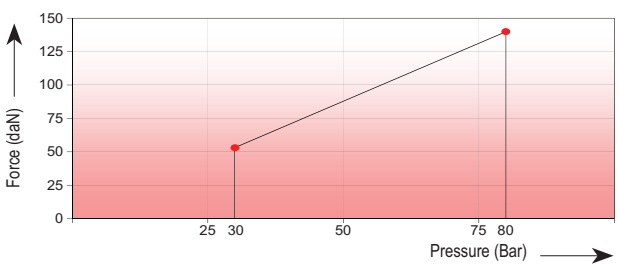
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	30 Bar
Rod seal area	1,77 cm^2
Operating temperature	0ºC - 120ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT25.1
Max. strokes / min	10 - 20 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 25x7.1	7	44	37		195	200		0,004	0,11
TPHT 25x10.1	10	50	40		200	210		0,005	0,13
TPHT 25x12.1	12	54	42		205	215		0,006	0,14
TPHT 25x15.1	15	60	45		210	225		0,007	0,15
TPHT 25x19.1	19	68	49		215	230		0,009	0,16
TPHT 25x25.1	25	80	55	140 ±5%	220	235	80	0,011	0,17
TPHT 25x32.1	32	94	62	(20ºC)	225	240	(20ºC)	0,014	0,17
TPHT 25x38.1	38	106	68		225	240		0,016	0,19
TPHT 25x50.1	50	130	80		225	245		0,021	0,22
TPHT 25x63.1	63	156	93		230	245		0,026	0,25
TPHT 25x75.1	75	185	110		230	245		0,031	0,26
TPHT 25x80.1	80	195	115		230	245		0,033	0,27

Force/stroke ratio

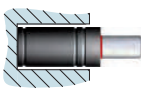


Initial force/charging pressure ratio



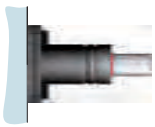
Assembly possibilities

Follow guidelines Page 287

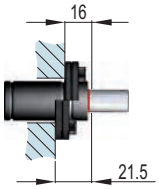


DROP-IN

SCREWS



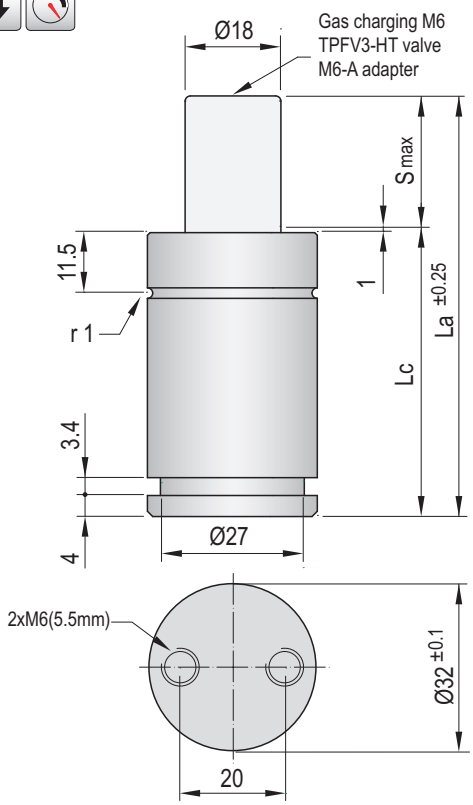
FS 25/1



FS 25/1

VDI SAFETY

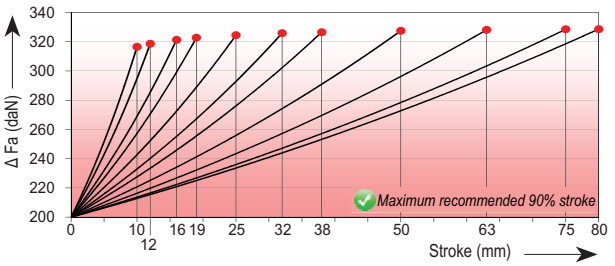
PED 2014/68/UE



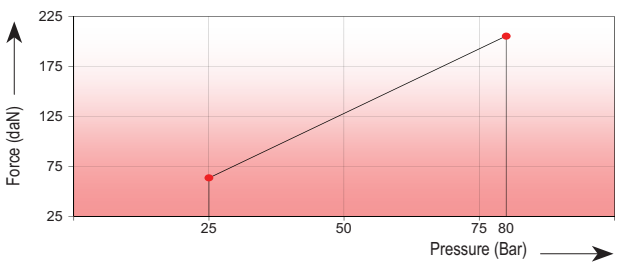
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	25 Bar
Rod seal area	2,54 cm^2
Operating temperature	0ºC - 120ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT32
Max. strokes / min	10 - 20 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 32x10	10	50	40	200 ±5% (20ºC)	305	320	80 (20ºC)	0,007	0,16
TPHT 32x12	12	54	42		305	325		0,008	0,17
TPHT 32x16	16	62	46		310	325		0,011	0,18
TPHT 32x19	19	68	49		310	330		0,013	0,19
TPHT 32x25	25	80	55		310	330		0,017	0,20
TPHT 32x32	32	94	62		310	330		0,021	0,22
TPHT 32x38	38	106	68		315	330		0,025	0,24
TPHT 32x50	50	130	80		315	335		0,033	0,28
TPHT 32x63	63	156	93		315	335		0,041	0,33
TPHT 32x75	75	180	105		315	335		0,049	0,36
TPHT 32x80	80	190	110		315	335		0,052	0,38

Force/stroke ratio

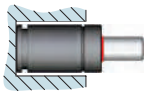


Initial force/charging pressure ratio

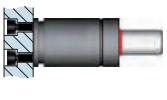


Assembly possibilities

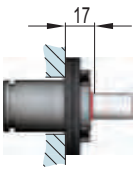
Follow guidelines Page 287



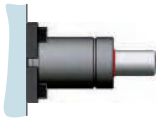
DROP-IN



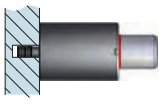
SCREWS



FS 32 · FS 32/1 · FSC 32



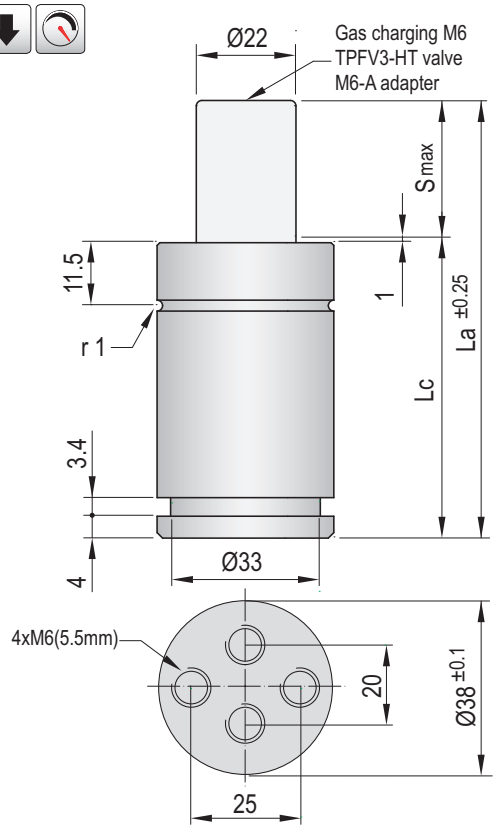
FP 32 · FPR 32



TPHT 32R

VDI SAFETY

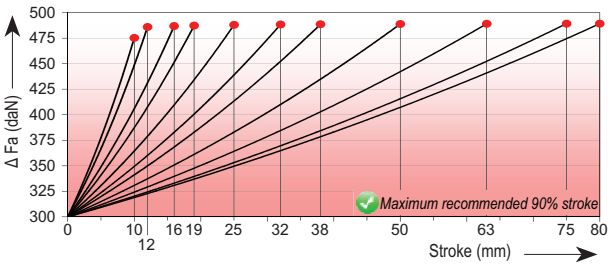
PED 2014/68/UE



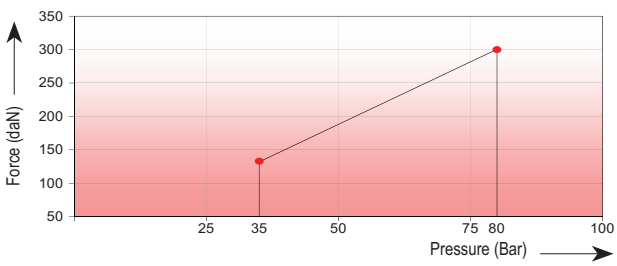
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm^2
Operating temperature	0ºC - 120ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT38
Max. strokes / min	10 - 20 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 38x10	10	50	40	300 ±5% (20ºC)	455	480	80 (20ºC)	0,010	0,26
TPHT 38x12	12	54	42		465	495		0,012	0,27
TPHT 38x16	16	62	46		465	495		0,016	0,28
TPHT 38x19	19	68	49		465	495		0,019	0,30
TPHT 38x25	25	80	55		465	495		0,025	0,33
TPHT 38x32	32	94	62		465	495		0,032	0,35
TPHT 38x38	38	106	68		465	495		0,037	0,39
TPHT 38x50	50	130	80		465	495		0,049	0,43
TPHT 38x63	63	156	93		465	495		0,062	0,48
TPHT 38x75	75	180	105		465	495		0,074	0,51
TPHT 38x80	80	190	110		465	495		0,079	0,55

Force/stroke ratio

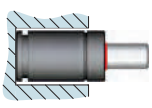


Initial force/charging pressure ratio

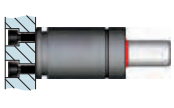


Assembly possibilities

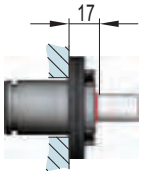
Follow guidelines Page 287



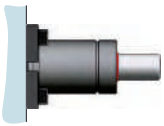
DROP-IN



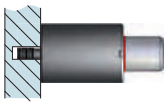
SCREWS



FS 38/1·FSC 38



FP 38·FPR 38



TPHT 38R





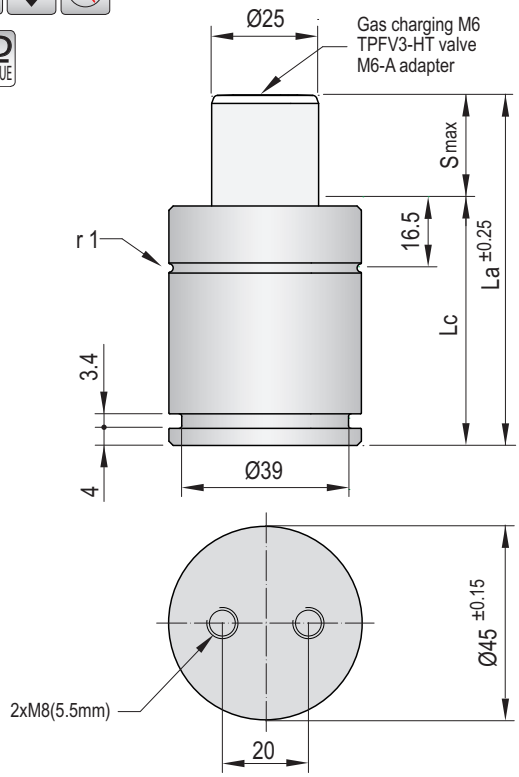






VDI SAFETY

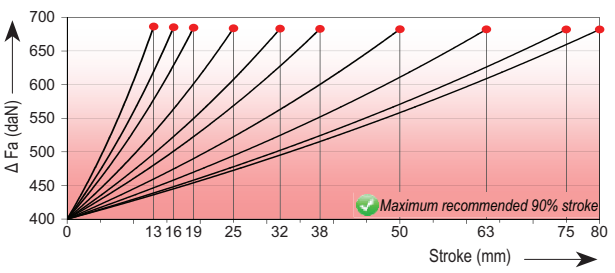
PED 2014/68/UE



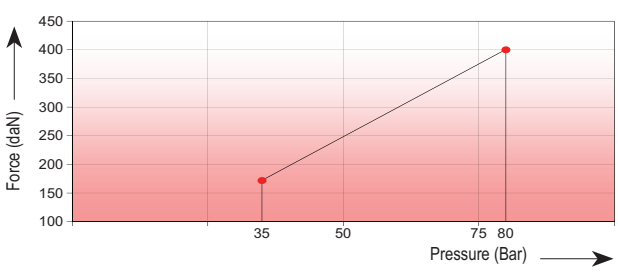
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	35 Bar
Rod seal area	4,91 cm^2
Operating temperature	0°C - 120°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT45
Max. strokes / min	10 - 25 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 45x13	13	58	45		630	675		0,015	0,35
TPHT 45x16	16	64	48		630	675		0,019	0,39
TPHT 45x19	19	70	51		630	670		0,022	0,40
TPHT 45x25	25	82	57		625	670		0,030	0,44
TPHT 45x32	32	96	64	400 ±5%	625	670	80	0,038	0,47
TPHT 45x38	38	108	70	(20°C)	625	670	(20°C)	0,045	0,50
TPHT 45x50	50	132	82		625	670		0,059	0,59
TPHT 45x63	63	158	95		625	670		0,075	0,65
TPHT 45x75	75	182	107		625	670		0,089	0,80
TPHT 45x80	80	192	112		625	670		0,095	0,85

Force/stroke ratio

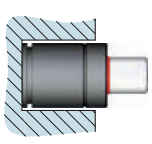


Initial force/charging pressure ratio

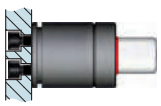


Assembly possibilities

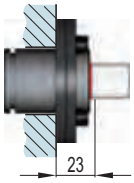
Follow guidelines Page 287



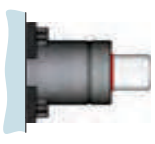
DROP-IN



SCREWS



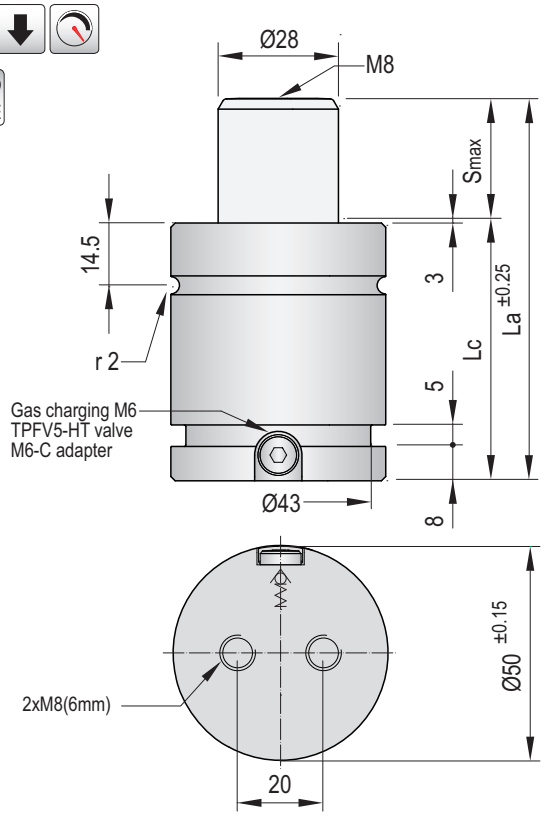
FS 45 · FSC 45



FP 45 · FPR 45

VDI SAFETY

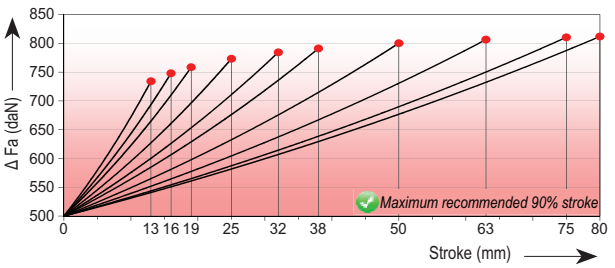
PED 2014/68/UE



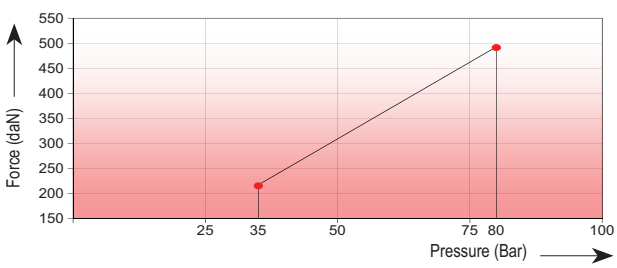
Pressure medium	Nitrogen (N_2)
Max. charging pressure	80 Bar
Min. charging pressure	35 Bar
Rod seal area	6,16 cm^2
Operating temperature	0ºC - 120ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	0,5 m/s
Maintenance kit	Kit HT50.1
Max. strokes / min	10 - 25 spm
Life service	300.000 ÷ 500.000 strokes

Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPHT 50x13	13	64	51		690	725		0,025	0,53
TPHT 50x16	16	70	54		700	735		0,030	0,55
TPHT 50x19	19	76	57		710	745		0,034	0,58
TPHT 50x25	25	88	63		720	760		0,044	0,62
TPHT 50x32	32	102	70	500 ±5%	730	775	80	0,054	0,67
TPHT 50x38	38	114	76	(20ºC)	735	780	(20ºC)	0,064	0,72
TPHT 50x50	50	138	88		745	790		0,082	0,82
TPHT 50x63	63	164	101		750	795		0,102	0,93
TPHT 50x75	75	188	113		750	800		0,121	1,10
TPHT 50x80	80	198	118		755	800		0,128	1,15

Force/stroke ratio

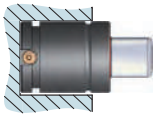


Initial force/charging pressure ratio

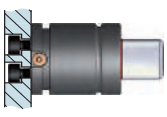


Assembly possibilities

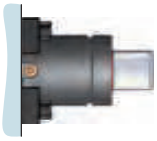
Follow guidelines Page 287



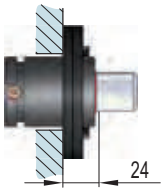
DROP-IN



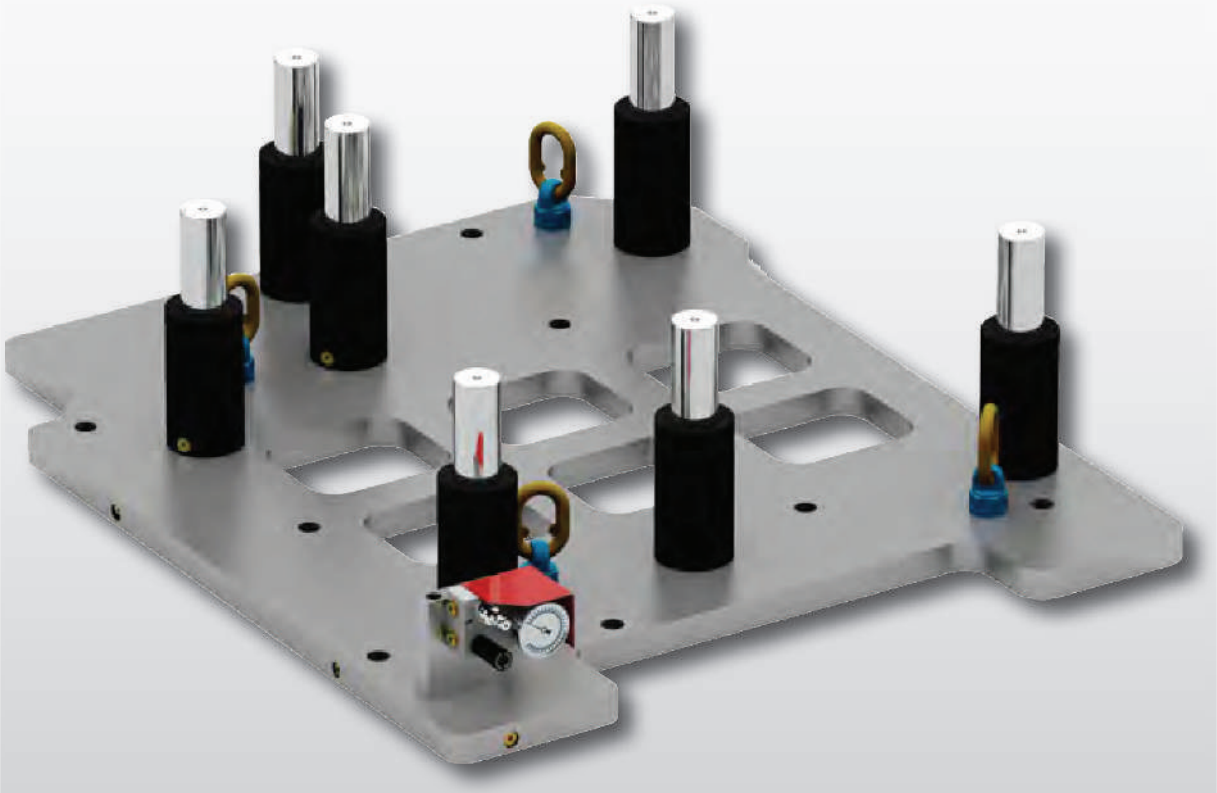
SCREWS

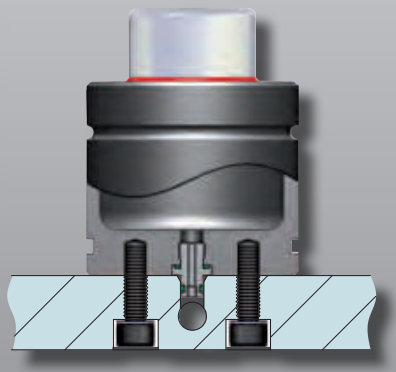


FP 50 · FPR 50



FS 50 · FSC 50





Eco manifold system with standard gas springs

The ECO MANIFOLD system is an advantageous alternative to the traditional standard manifold systems and to gas springs interconnected by means of hoses and connectors. It is an extraordinary solution to connect gas springs while bringing about considerable savings.

Thanks to the control panel, pressure modification is carried out easily.

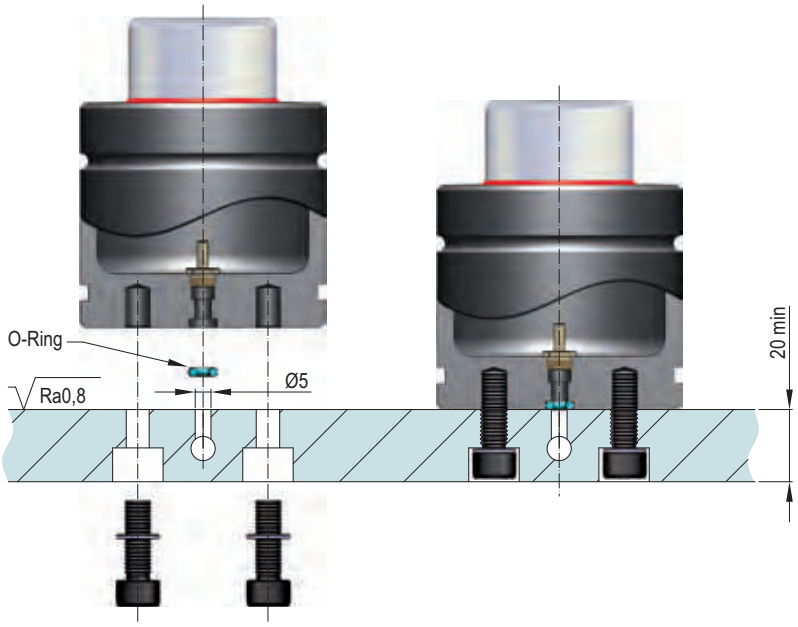
In this system, the gas springs are fixed with screws to the base plate and they are all intercommunicated by means of the connection holes bored into the plate. Sealing between gas spring and plate may be obtained by means of a racord-connector or a specific seal.

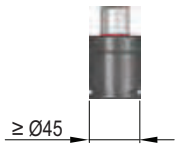
There is a wide variety of combinations of models, forces and strokes thanks to the fact that standard gas springs are used.
ECO MANIFOLD systems guarantee sealing to a considerable extent, and have easy maintenance (just like that of standard gas springs) as well as a longer durability without maintenance.
The simple construction of the plates makes them easily manufacturable by the customer.

ECO MANIFOLD ADVANTAGES

- ✓ Good alternative to standard manifold systems
- ✓ Maximum saving
- ✓ Maximum sealing guarantee
- ✓ Makes hoses and racords unnecesary
- ✓ Very short manufacturing deadlines
- ✓ Easy maintenance
- ✓ Very compact plate dimensions
- ✓ Use of standard gas springs in acordance with 97/23/EC
- ✓ Same force in all contact points

ECO MANIFOLD CA



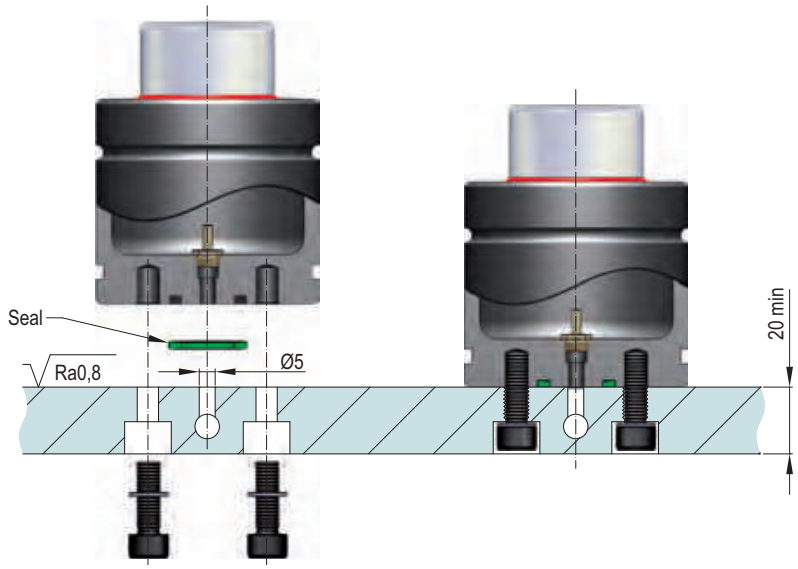


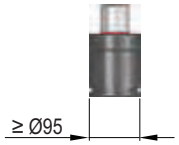
Available series:

MICRO
TITAN
TPK
TPC
TPCT
TPS

Use safety washers or anaerobic thread fixtures

ECO MANIFOLD CB





Available series:

MICRO
TPK
TPC
TPCT
TPS

Use safety washers or anaerobic thread fixtures

How to order

ECO MANIFOLD CA ➜ Cylinder reference + CA

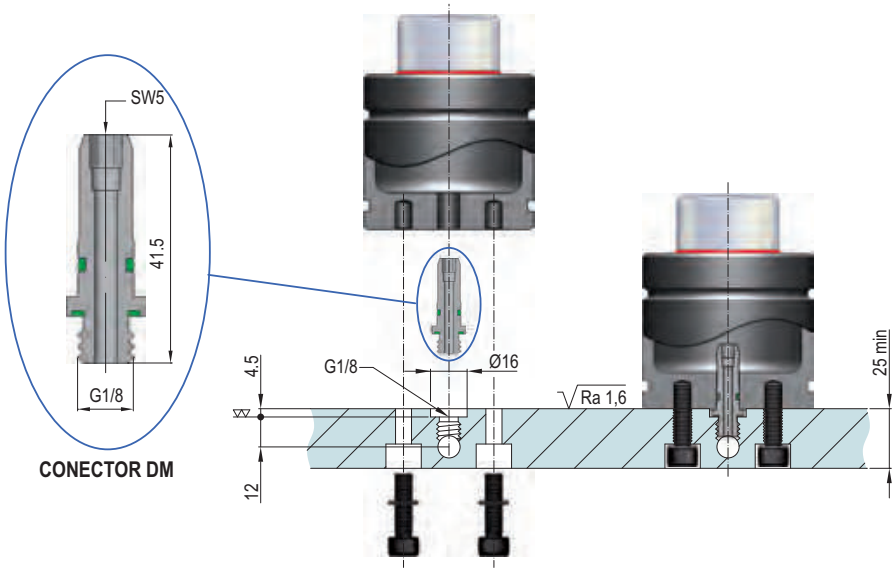
ECO MANIFOLD CB ➜ Cylinder reference + CB

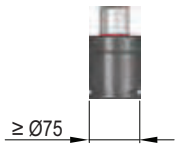
Please consult our Technical Department

MICRO 75 x 80 - CB

Model | Stroke | Eco-manifold type (DA / DB)

ECO MANIFOLD DM



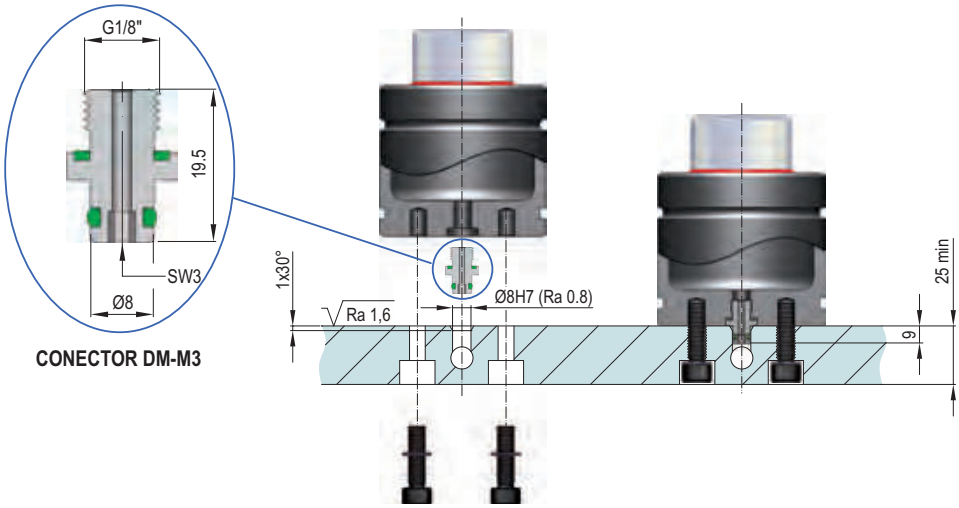


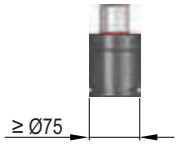
Available series:

MICRO
TITAN
TPH
TPK
TPC
TPCT
TPF
TPS

Use safety washers or anaerobic thread fixtures

ECO MANIFOLD DM-M3



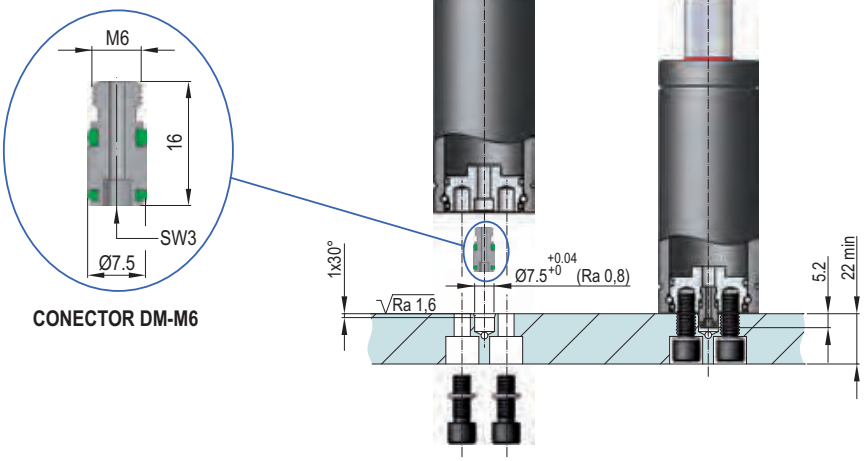


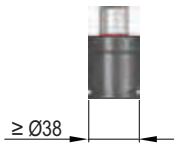
Available series:

MICRO
TITAN
TPH
TPK
TPC
TPCT
TPF
TPS

Use safety washers or anaerobic thread fixtures

ECO MANIFOLD DM-M6



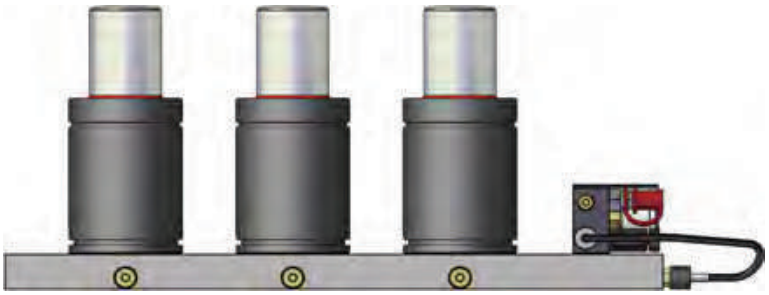


Available series:

TPF
TPH

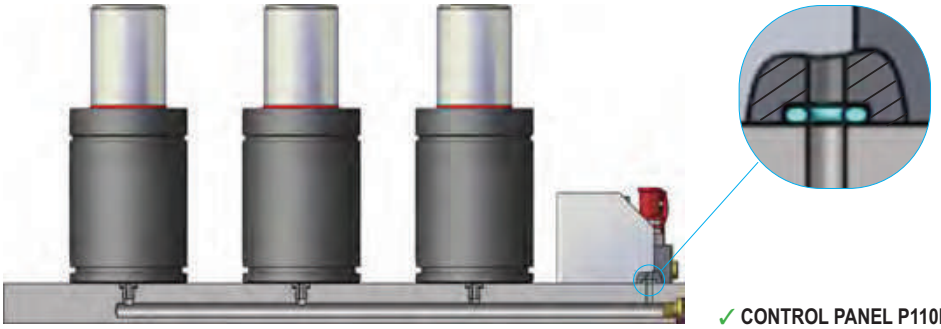
Use safety washers or anaerobic thread fixtures

ECO MANIFOLD SAMPLE



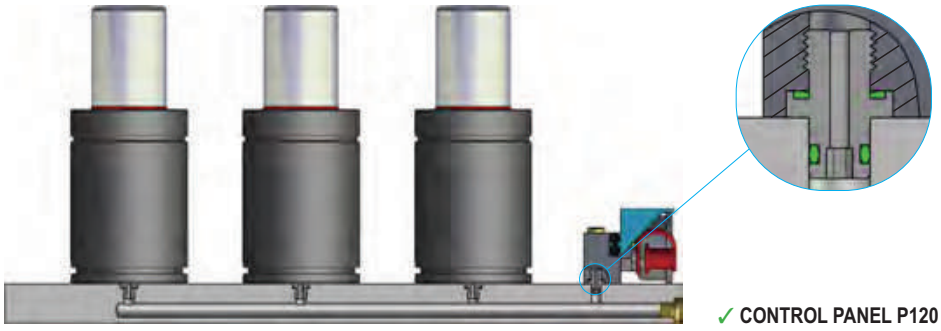
✓ CONTROL PANEL P110 · P120 + HOSE

ECO MANIFOLD SAMPLE



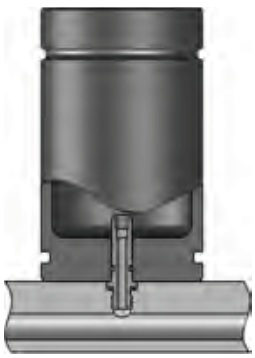
✓ CONTROL PANEL P110M · P110EC (SEAL)

ECO MANIFOLD SAMPLE



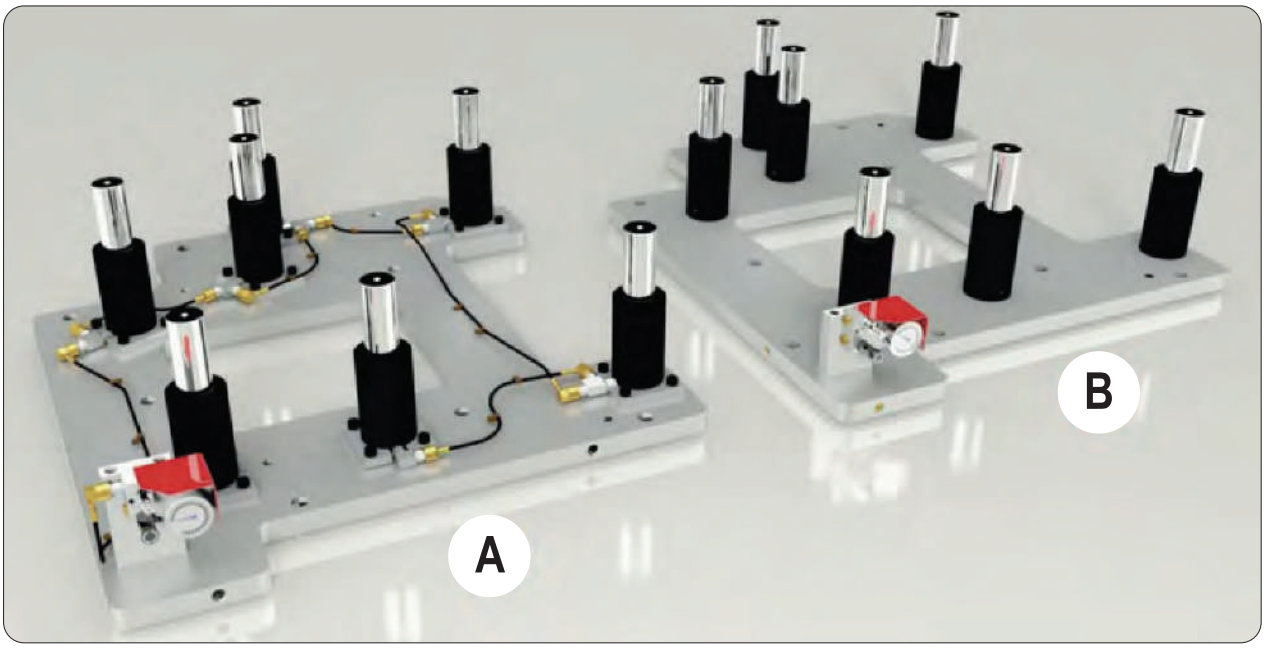
✓ CONTROL PANEL P120 + ADAPTER

ECO MANIFOLD TANK



Thanks to compensation tanks, the compression of the eco-manifold system is reduced to a low values than they usually have in a standard work.

Please consult our Technical Department



ECO MANIFOLD ADVANTAGES

Comparison between gas springs linked by hoses **A** and with eco-manifod plate system **B**

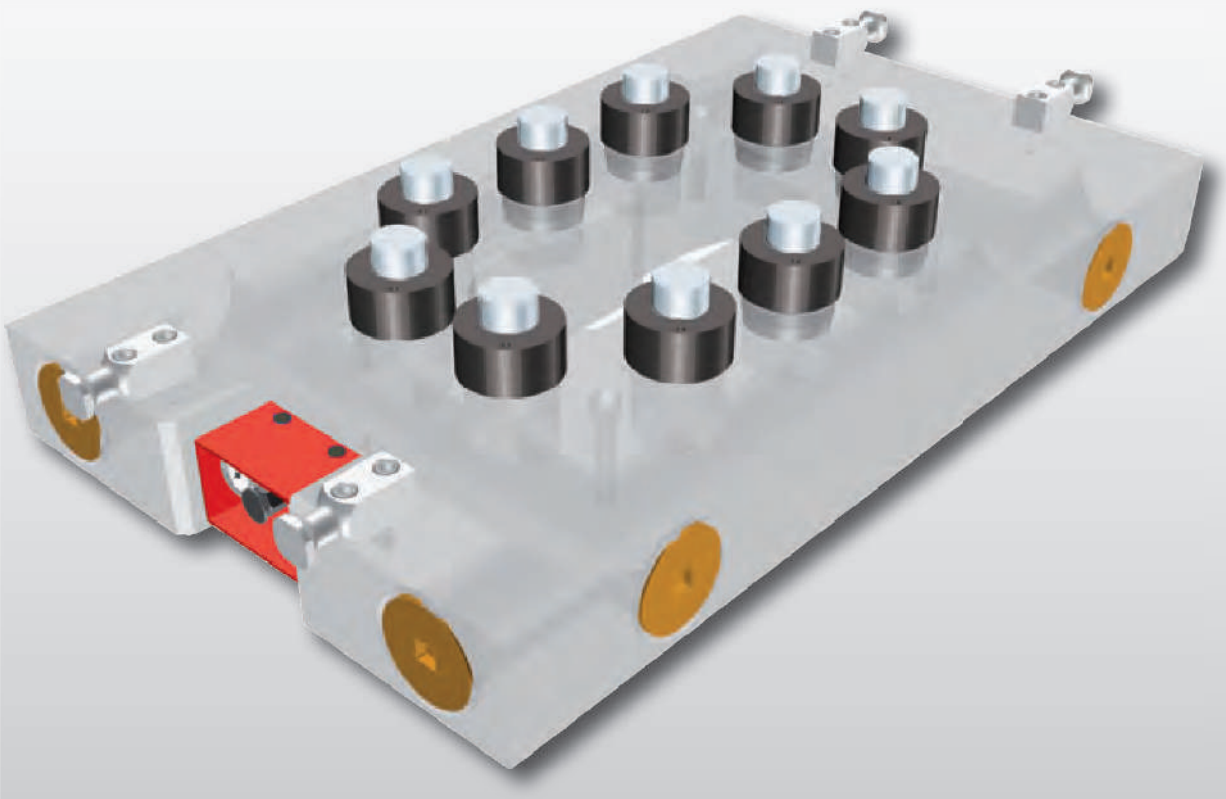
✓ Compact design

✓ Cost-efficient

✓ Lower machining operation is required

✓ Production according to the current legal requirements and technical regulations

✓ Easy installation



Standard Manifold systems

Code	ØBody mm	Strokes mm	Fa daN
TPM 1000	42	25 - 100	1000
TPM 2000	54	25 - 100	2000
TPM 4500	78	25 - 100	4500
TPM 7500	100	25 - 100	7500
TPMS 1000	42	25 - 100	1000
TPMS 2000	54	25 - 100	2000
TPMS 4500	78	25 - 100	4500
TPMS 7500	100	25 - 100	7500

MICRO
TITAN
TPH
TPS
TPSP
TPF
TPK
TPC
TPR
TPB
TPHC
TPA
TPG
TPCT
TPSL
STOP CYLINDER
STOP CYLINDER
TPSR
TPSRS
TPNS
TPHT

The TPM and TPMS series gas springs presented in this section solve problems that can appear during the transmission of force to an elastic organ needing a lot of power and working stroke.

The gas springs are screwed directly onto the manifold plate by means of collector holes and will thus transmit a considerable push. The pressure of the system can easily be regulated by means of a control panel adapted to the plate.

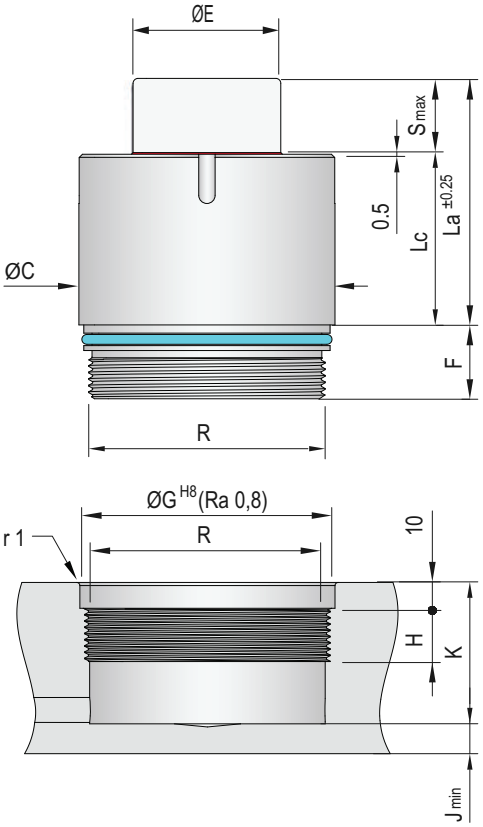
The execution of the various mutually interconnected holes within the plate will depend on the calculation of the necessary gas volume to avoid overpressures while guaranteeing good functioning with the objective of obtaining minimum variations of force during the working stroke of the stem.

The plate should work as a gas lung-type deposit in order to obtain a slight (10%-20%) increase in pressure and force.

For the manufacturing of the plate it is necessary to use nonporous materials devoid of any kind of cracks, which are to be subjected to ultrasonic testing.

If necessary, TECAPRES can supply the manifold plate as per the customer's drawings and in accordance with the specifications of the European Directive 97/23/EC on pressure devices.

PED 2014/68/UE

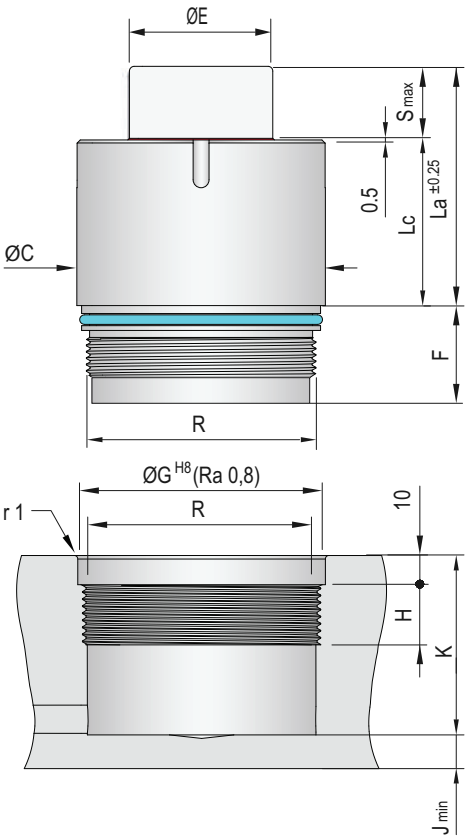


Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	20 m/min
Recommended max. strokes/min	20-40 spm
Maintenance kit **TPM 1000**	Kit M1000
Maintenance kit **TPM 2000**	Kit M2000
Maintenance kit **TPM 4500**	Kit M4500
Maintenance kit **TPM 7500**	Kit M7500

- Other models and strokes available under order
- Possibility of manufacturing manifold plate according to customer specifications

Code	Smax mm	La mm	Lc mm	Fa daN	P Bar	Piston seal area cm^2	Ø E mm	Ø C mm	Ø G mm	F mm	H mm	J mm	K mm	R
TPM 1000x25	25	78	53	1000 ±5% (20°C)	150 (20°C)	7,07	18	42	39	22	17	10	32	M36x2
TPM 1000x38	38	104	66											
TPM 1000x50	50	128	78											
TPM 1000x75	75	178	103											
TPM 1000x100	100	228	128											
TPM 2000x25	25	78	53	2000 ±5% (20°C)	150 (20°C)	12,57	30	54	51	22	17	10	32	M48x2
TPM 2000x38	38	104	66											
TPM 2000x50	50	128	78											
TPM 2000x75	75	178	103											
TPM 2000x100	100	228	128											
TPM 4500x25	25	78	53	4500 ±5% (20°C)	150 (20°C)	31,17	45	78	75	22	17	10	32	M74x2
TPM 4500x38	38	104	66											
TPM 4500x50	50	128	78											
TPM 4500x75	75	178	103											
TPM 4500x100	100	228	128											
TPM 7500x25	25	82	57	7500 ±5% (20°C)	150 (20°C)	50,26	60	100	97	30	26	15	42	M94x2
TPM 7500x38	38	108	70											
TPM 7500x50	50	132	82											
TPM 7500x75	75	182	107											
TPM 7500x100	100	232	132											

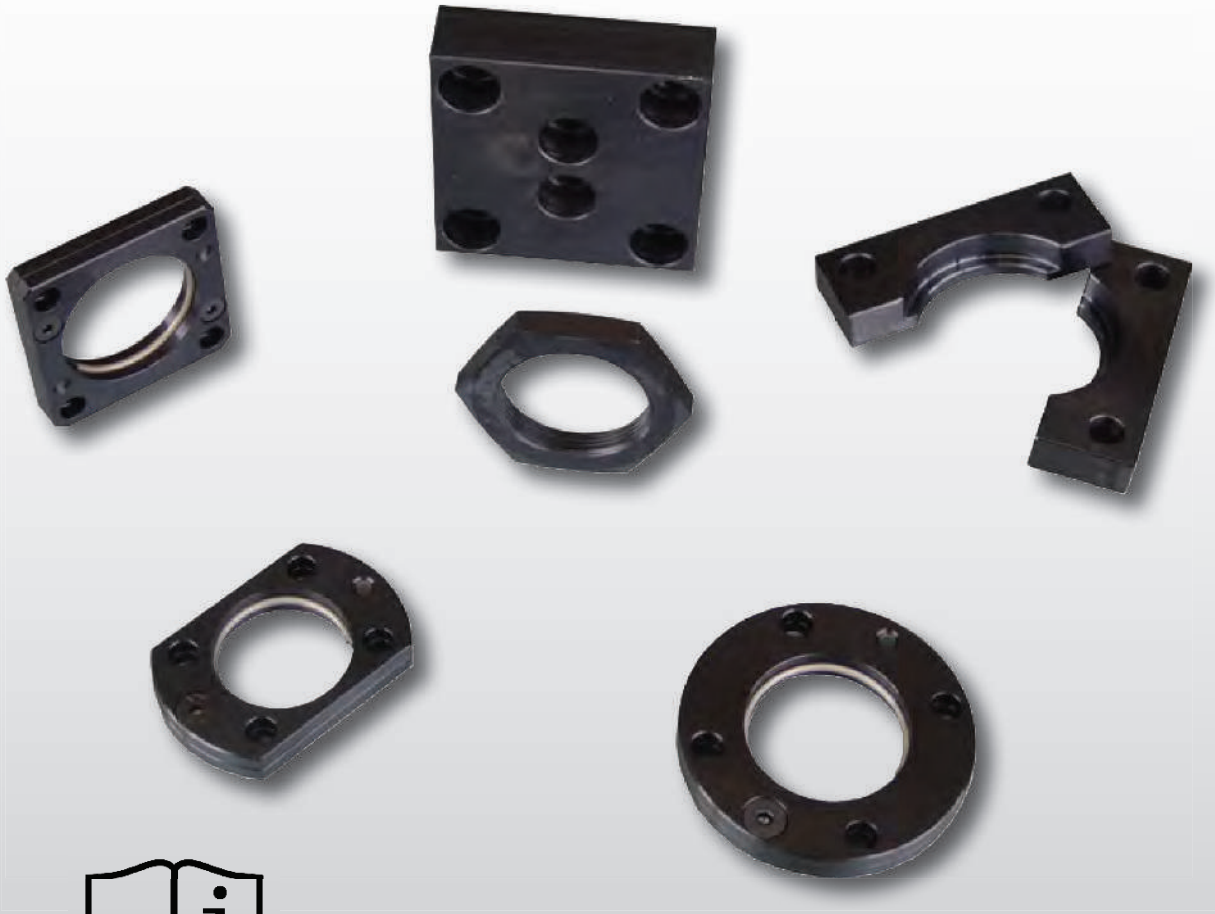
PED 2014/68/UE



Pressure medium	Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Operating temperature	0ºC - 80ºC
Force increase by temperature	0,33 %/ºC
Max. stem speed	20 m/min
Recommended max. strokes/min	20 - 40 spm
Maintenance kit **TPMS 1000**	Kit MS1000
Maintenance kit **TPMS 2000**	Kit MS2000
Maintenance kit **TPMS 4500**	Kit MS4500
Maintenance kit **TPMS 7500**	Kit MS7500

- Other models and strokes available under order
- Posibility to manufacturing manifold plate according to customer specifications

Code	Smax mm	La mm	Lc mm	Fa daN	P Bar	Piston seal area cm^2	Ø E mm	Ø C mm	Ø G mm	F mm	H mm	J mm	K mm	R
TPMS 1000x25	25	60	35	1000 ±5% (20ºC)	150 (20ºC)	7,07	18	42	39	40	17	10	43	M36x2
TPMS 1000x38	38	73								53			56	
TPMS 1000x50	50	85								65			68	
TPMS 1000x75	75	110								90			93	
TPMS 1000x100	100	135								115			118	
TPMS 2000x25	25	65	40	2000 ±5% (20ºC)	150 (20ºC)	12,57	30	54	51	35	17	10	38	M48x2
TPMS 2000x38	38	78								48			51	
TPMS 2000x50	50	90								60			63	
TPMS 2000x75	75	115								85			88	
TPMS 2000x100	100	140								110			113	
TPMS 4500x25	25	65	40	4500 ±5% (20ºC)	150 (20ºC)	31,17	45	78	75	35	17	10	38	M74x2
TPMS 4500x38	38	78								48			51	
TPMS 4500x50	50	90								60			63	
TPMS 4500x75	75	115								85			88	
TPMS 4500x100	100	140								110			113	
TPMS 7500x25	25	70	45	7500 ±5% (20ºC)	150 (20ºC)	50,26	60	100	97	42	26	15	45	M94x2
TPMS 7500x38	38	83								55			58	
TPMS 7500x50	50	95								67			70	
TPMS 7500x75	75	120								92			95	
TPMS 7500x100	100	145								117			120	



Follow guidelines

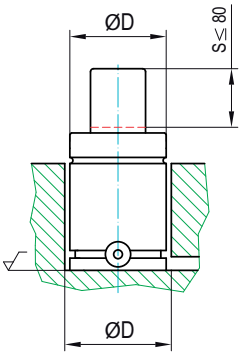
Flanges for attaching gas springs to tools

Code	Type
FS	
FSC	
FP	
FPR	
FB	
FI	
FI / 1	
FR	
FRS	

POCKET ASSEMBLY · MONTAJE EN CAJERA

A flat surface is to be guaranteed for the base of the cylinder. Inadequate fixtures produce structural damage or reduce gas spring useful life. This type of installation is not possible for interconnected gas springs.

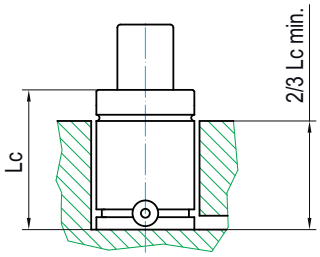
Se debe asegurar un apoyo plano contra la base del cilindro. Alojamientos inadecuados causan daños estructurales o reducen la vida útil del cilindro. Este tipo de instalación no es posible para cilindros intercomunicados.



TOLERANCE / TOLERANCIA

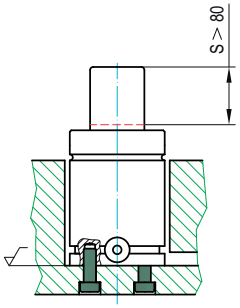
D≤95 - ØD $^{+1.0}_{+0.5}$

D≤120 - ØD $^{+1.5}_{+1.0}$



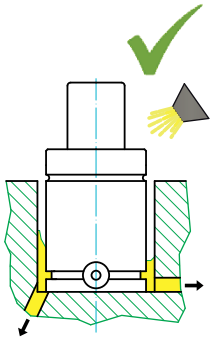
Hole dimensioning

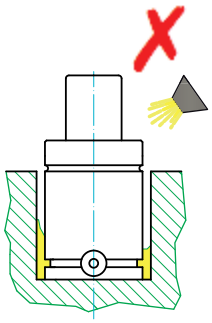
Dimensionado cajera



For strokes bigger than 80mm use clamping screws

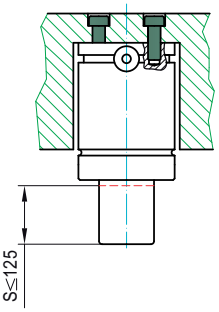
Para carreras superiores a 80mm utilizar tornillos de amarre





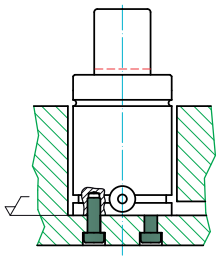
The hole is to be equipped with drainage and conducts are to be cleaned regularly

Proveer de orificios de drenaje a la cajera, y limpiar con regularidad



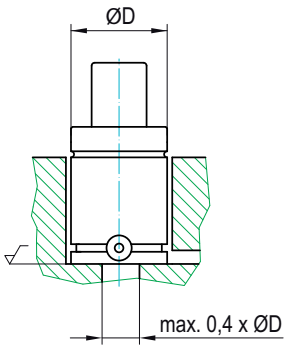
In upside down pockets always mandatory clamping screws

En cajeras invertidas, obligatorio siempre amarre con tornillos



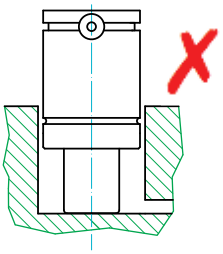
The use of screws is recomended even in drop-in assemblys

Incluso en montajes en cajera, se recomienda la utilizacion de tornillos



In drop-in assemblys respecte the maximum diameter

En cajeras pasante, respetar diametro maximo



Never install a cylinder in a pocket in an inverted position

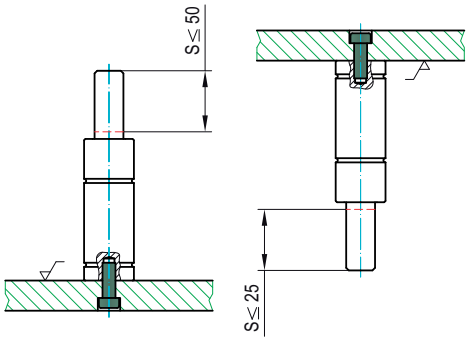
Nunca instalar un cilindro en cajera en posicion invertida

ASSEMBLY WITH SCREWS · MONTAJE CON TORNILLOS

Secure the gas spring to the tool firmly. If possible, we recommend using the fixture holes in the gas spring to secure it with screws. This type of fixture is the most recommended for interconnected gas springs as vibrations and damage to the connecting elements are thus avoided.
In order to ensure a better grip of the gas spring to the tool, you should follow these guidelines:

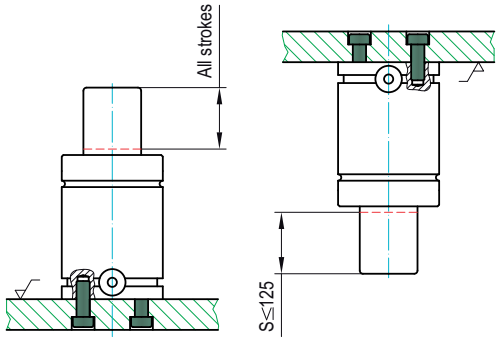
Fijar el cilindro al útil sólidamente. Si es posible, se recomienda usar los agujeros de amarre del cilindro para fijarlo con tornillos. Esta fijación de los cilindros es la más recomendable para cilindros intercomunicados, ya que evitan vibraciones y daños en los elementos de conexión.

Con el fin de asegurar la mejor sujeción del cilindro al útil, es recomendable seguir las siguientes indicaciones:



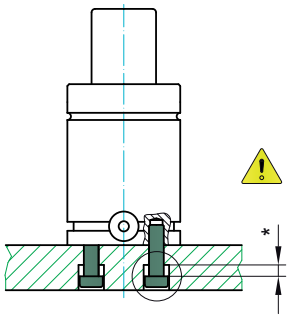
Fastening with a single central screw

Amarre con un solo tornillo central



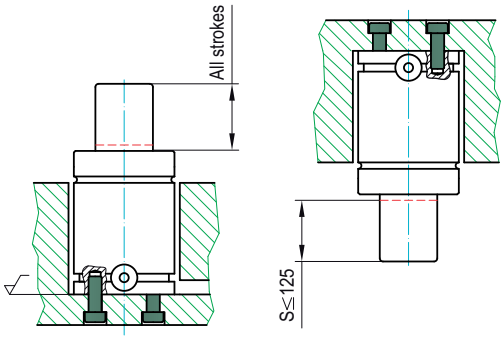
Fastening with multiple screws

Amarre con múltiples tornillos



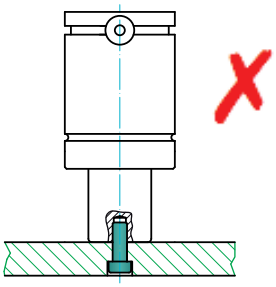
The screws must have the rigth size

Los tornillos deben tener la longitud adecuada



In inverted position, the cylinder must always be secured with screws

En posicion invertida el cilindro siempre amarrado con tornillos

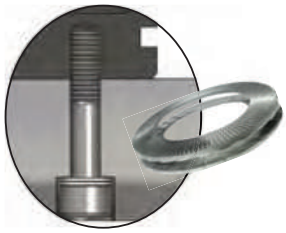


Only for maintenance and transport

Usar solo para mantenimiento y transporte

The stem thread should only be used for maintenance or transportation operations

La rosca del vástago solo debe usarse para mantenimiento o transporte



The use of safety washers is recommended in all screwed fixtures or anaerobic thread fixtures.

Se recomienda utilizar arandelas de seguridad en todas las uniones atornilladas o fijadores de rosca anaeróbicos.

Torque references for SHCS-type threaded screws:

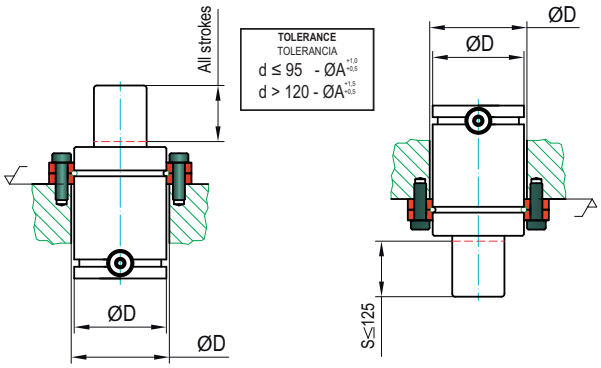
- **Quality 8.8**
- **Without lubrication**
- **New thread**
- **Torque coefficient μ = 0,14**

Diameter Diámetro	Torque (Nm)
M6	10
M8	25
M10	49
M12	85
M16	210

Valores de referencia de apriete para tornillos roscados tipo SHCS:

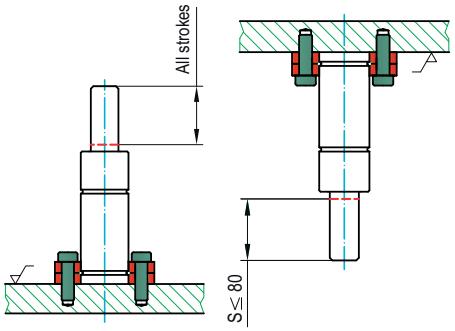
- Calidad 8.8
- Sin lubricación
- Rosca nueva
- Coeficiente de apriete μ = 0,14

FS / FSC / FRS FLANGE ASSEMBLY · MONTAJE CON BRIDA FS / FSC / FRS



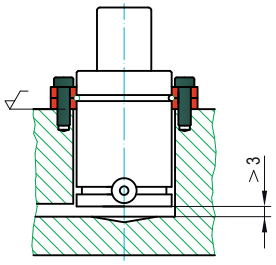
Respect maximum stroke in inverted position

Respetar carrera máxima en posicion invertida



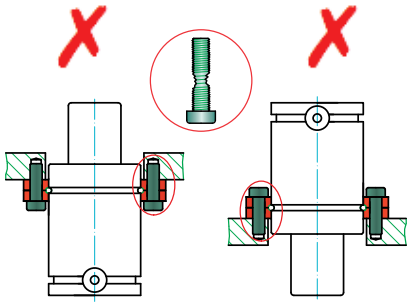
Take into account maximum stroke for instalation in inverted position

Tener en cuenta la carrera máxima para instalación en posición invertida



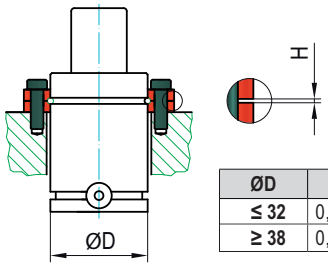
Leave enough space at the base

Dejar espacio suficiente en la base



The screws must not withstand the effort of the cylinder

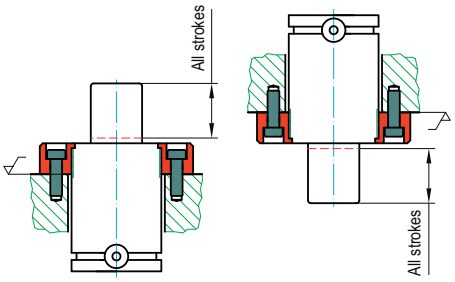
Los tornillos no deben soportar el esfuerzo del clindro



ØD	H
≤ 32	0,1 ÷ 0,3
≥ 38	0,3 ÷ 0,6

According to VDI regulation, there is a gap between the flage parts

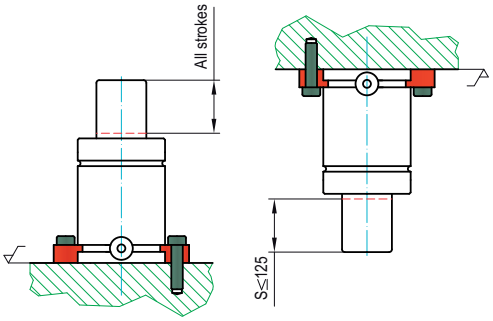
Según normativa VDI, existe un gap entre las partes de la brida



FRS FLANGE
(Threaded flange with permanent seal)

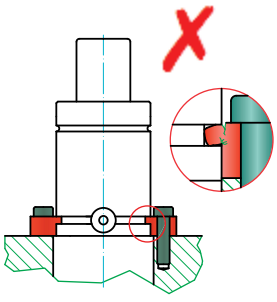
(Brida roscada con sellado permanente)

FP / FPR LOWER FLANGE ASSEMBLY · BRIDA CON MONTAJE INFERIOR FP / FPR



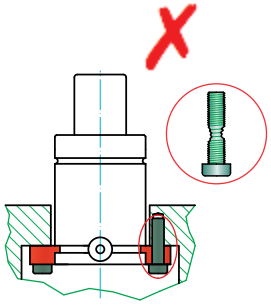
Respect maximum stroke in inverted position

Respetar carrera máxima en posicion invertida



Provide enough support to the entire cylinder base

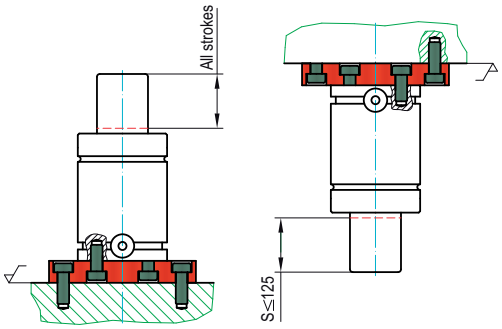
Proveer de apoyo suficiente a toda la base del cilindro



The clamping screws must not withstand the effort of the cylinder

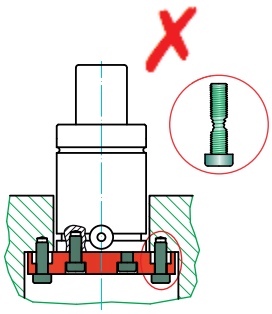
Los tornillos de amarre no deben soportar el esfuerzo del cilindro

ASSEMBLY WITH FB BASE FLANGE · MONTAJE CON BRIDA BASE FB



Respect maximum stroke in inverted position

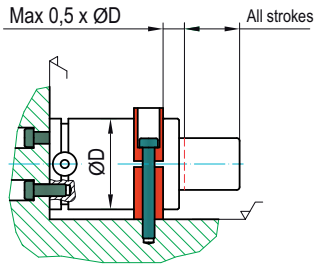
Respetar carrera máxima en posición invertida

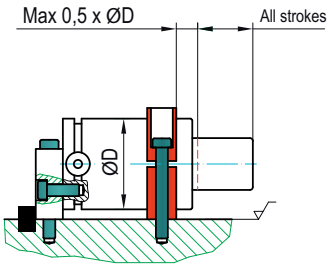


Respect maximum stroke in inverted position

Respetar carrera máxima en posición invertida

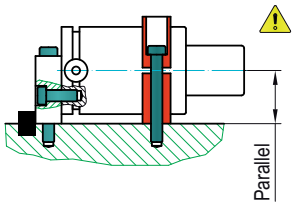
ASSEMBLY WITH FI / FI/1 TYPE FLANGE · MONTAJE CON BRIDA LATERAL FI / FI/1





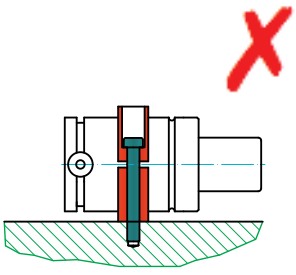
The cylinder must be supported on its base correctly

El cilindro debe estar soportado en su base correctamente



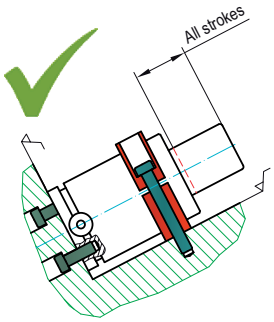
The cylinder support surface must be completely parallel

La superficie de apoyo del cilindro debe ser completamente paralela



The cylinder flange is not enough to withstand the effort of the cylinder

La brida del cilindro no es suficiente para soportar el esfuerzo del cilindro



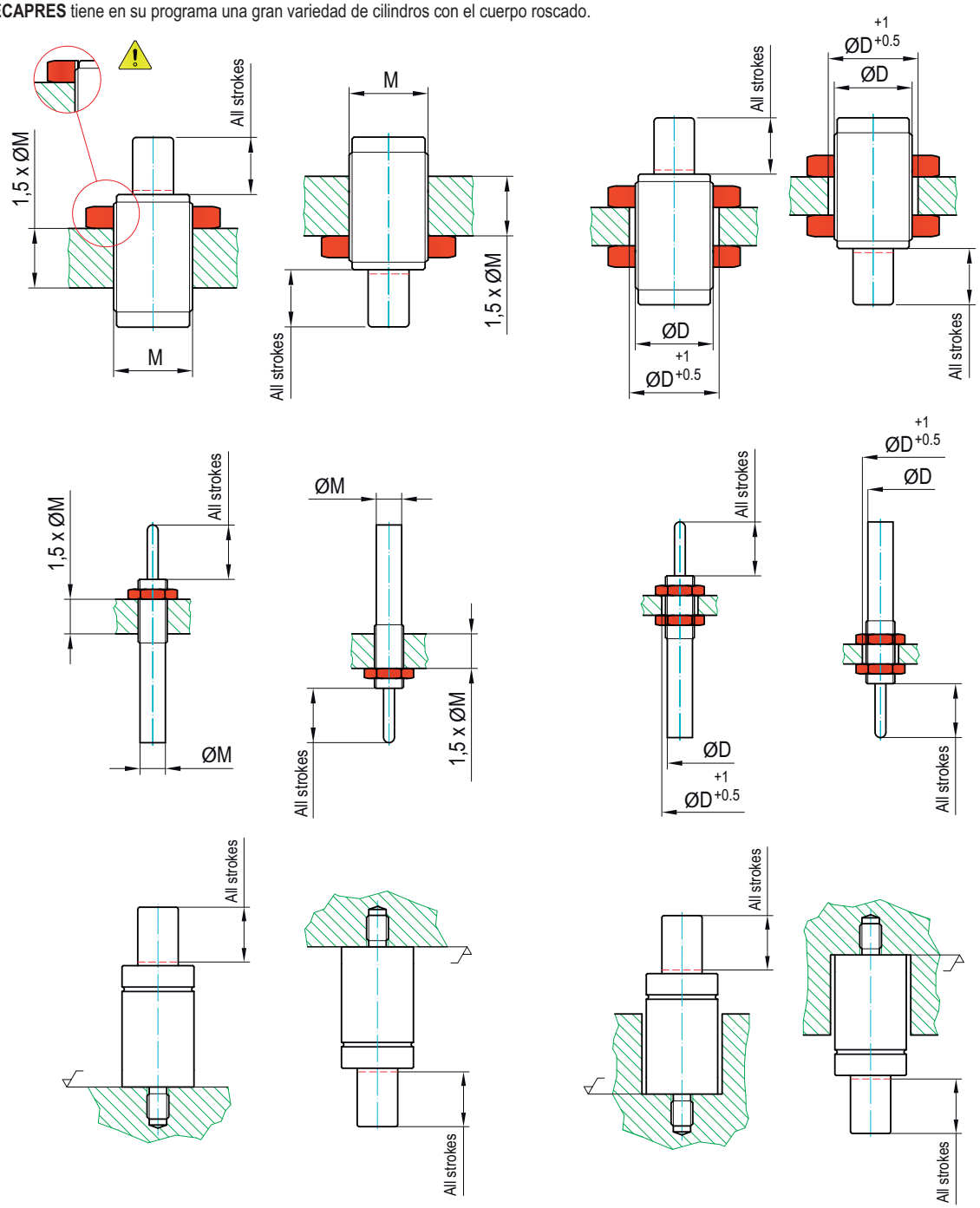
The cylinder must be supported on its base correctly

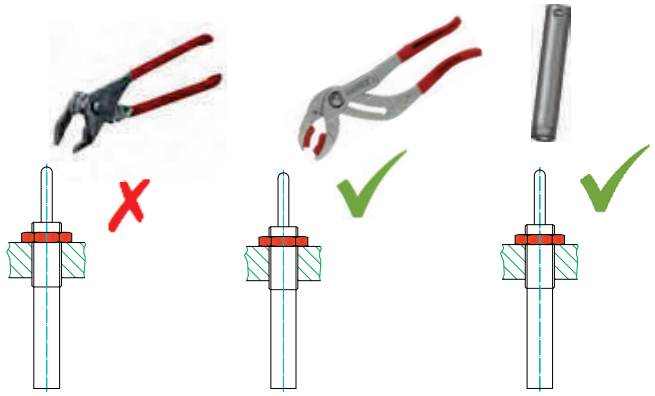
El cilindro debe estar soportado en su base correctamente

ASSEMBLY WITH THREADED GAS SPRINGS · MONTAJE CON CILINDROS ROSCADOS

TECAPRES has a wide variety of threaded body gas springs in its program.

TECAPRES tiene en su programa una gran variedad de cilindros con el cuerpo roscado.

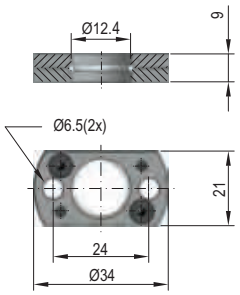




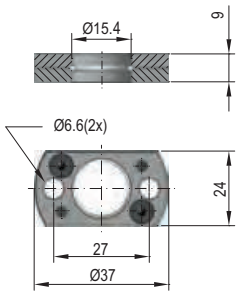
The use of chemical thread locker is recommended. This prevents the gas cylinder from coming loose due to vibrations and shocks

Se recomienda la utilizacion de fijadores de rosca quimicos. Esto evita que el cilindro de gas se pueda soltar debido a vibraciones y golpes.

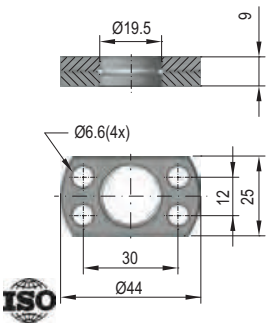
FS 12



FS 15



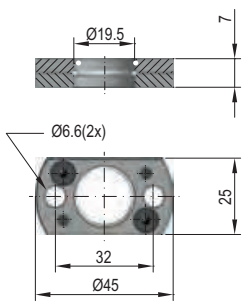
FS 19



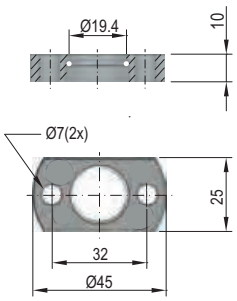
ISO

VDI

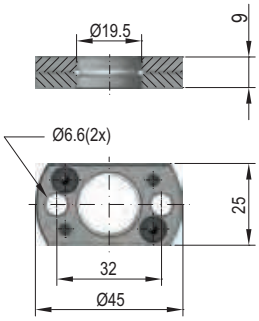
FS 19/1



FS 19/2

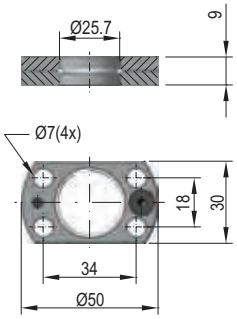


FS 19/3



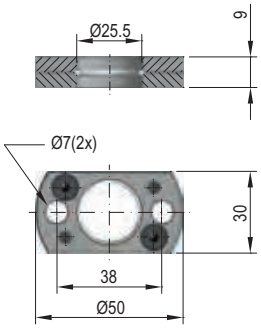
VDI

FS 25/1



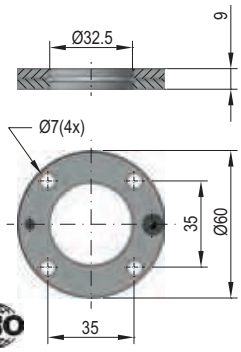
ISO

FS 25/2



VDI

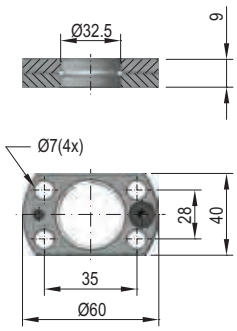
FS 32



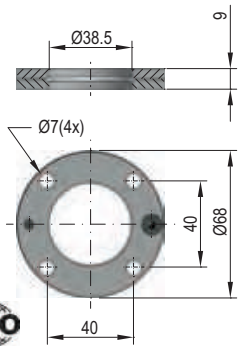
ISO

VDI

FS 32/1



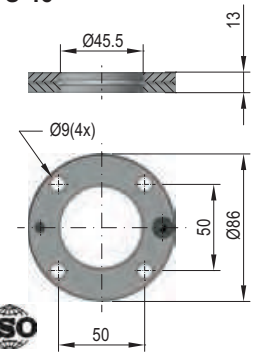
FS 38



ISO

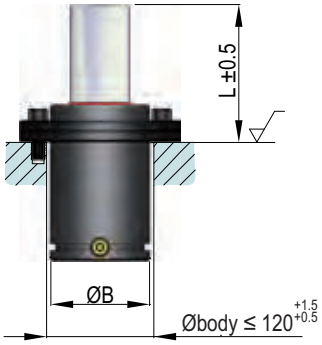
VDI

FS 45

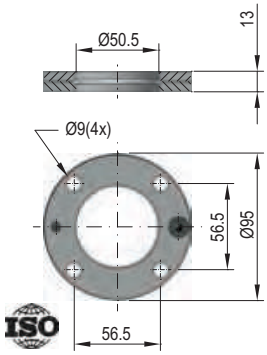


ISO

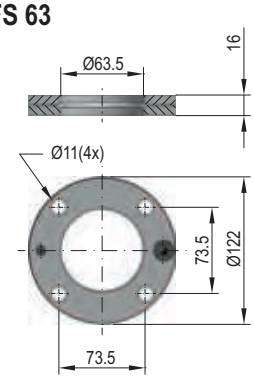
VDI



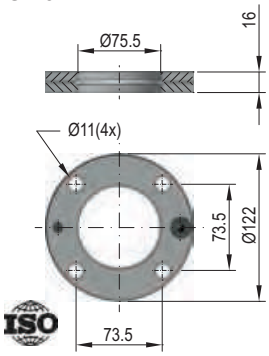
FS 50



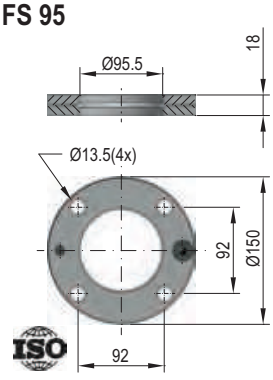
FS 63



FS 75



FS 95



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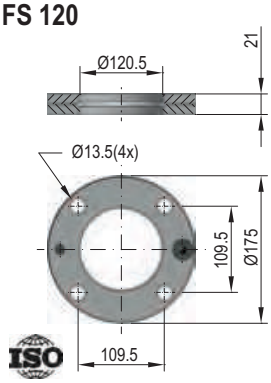

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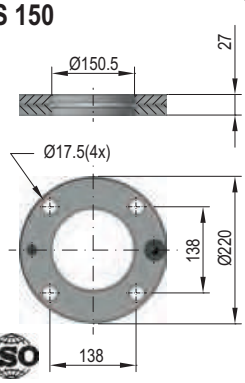
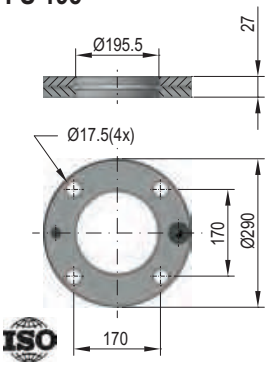
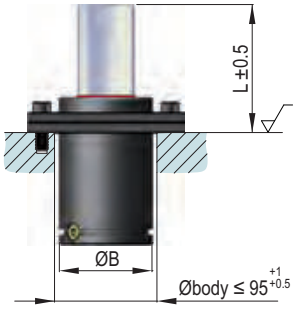
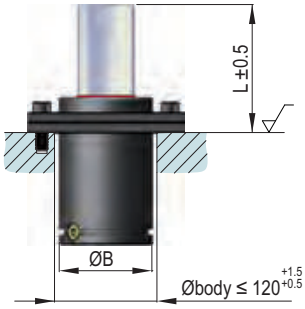
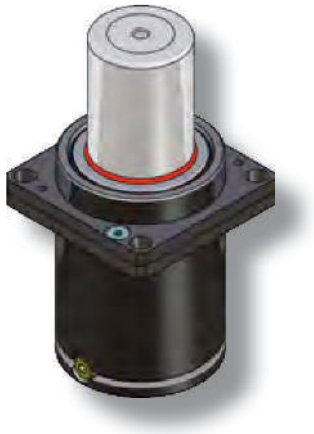


FS 195

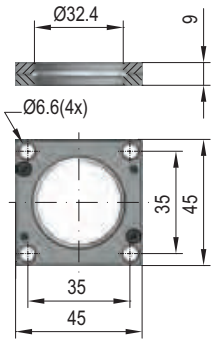






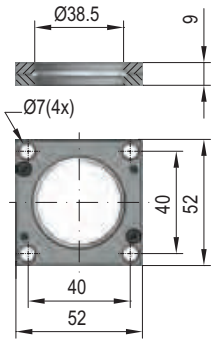


FSC 32



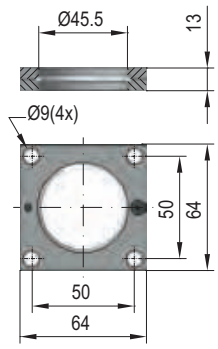
VDI

FSC 38



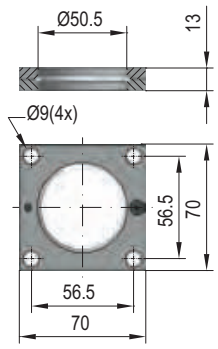
ISO VDI

FSC 45



ISO VDI

FSC 50



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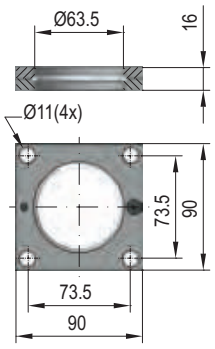
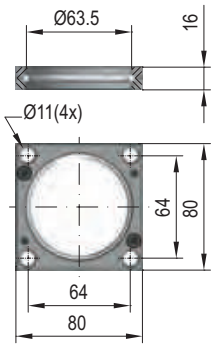
FSC 63



VDI

FSC 63/1



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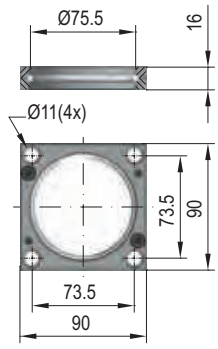
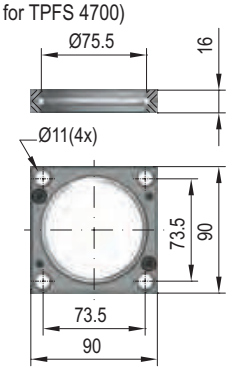


ISO VDI

FSCS 75

(only for TPFS 4700)



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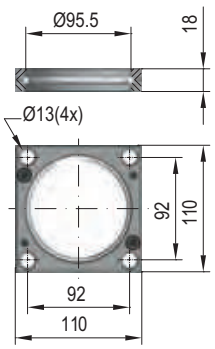

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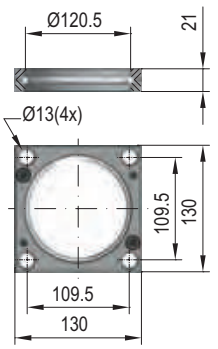

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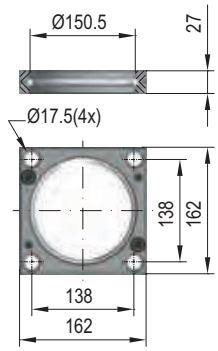

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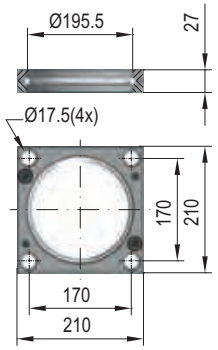

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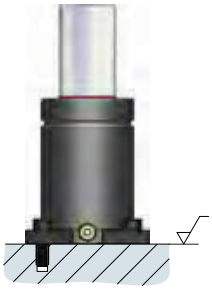
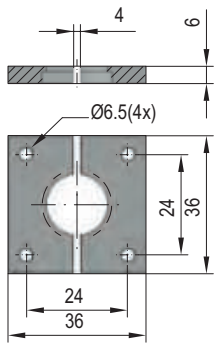


FP 20



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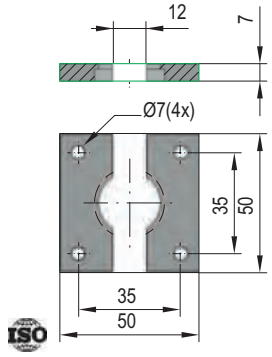

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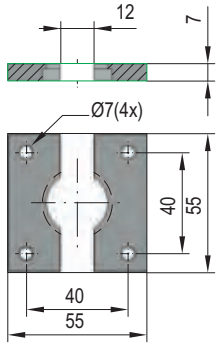

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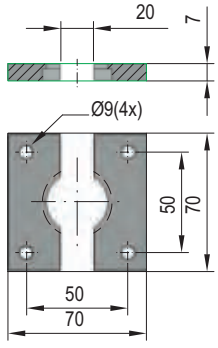

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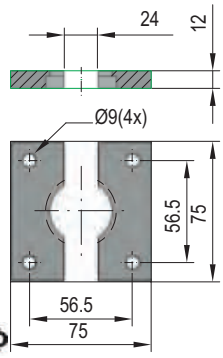

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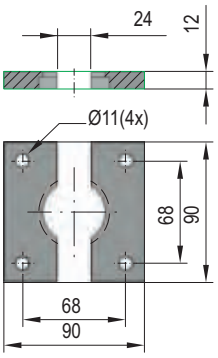
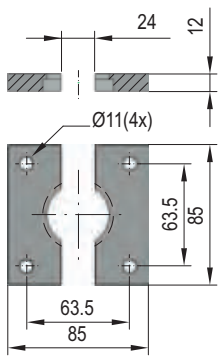
FP 63



FP 63/1



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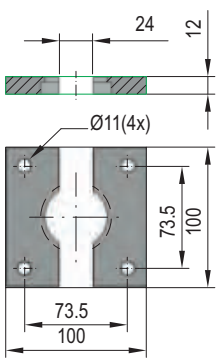

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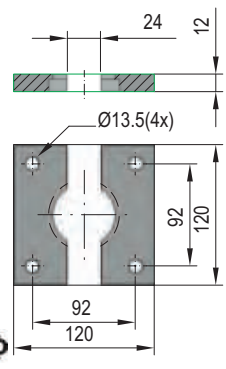
FP 95



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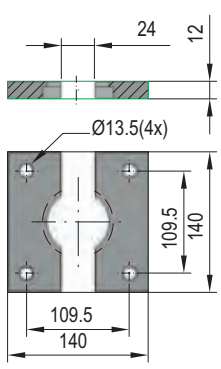

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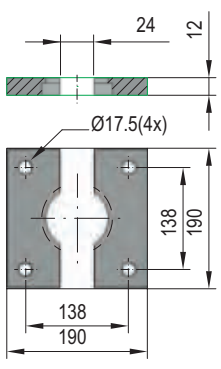

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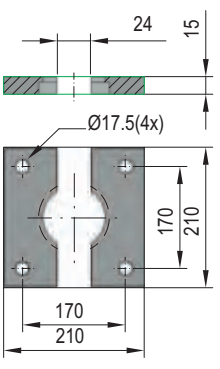

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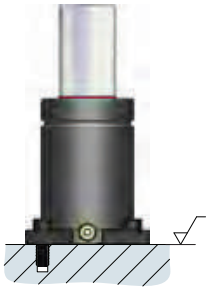

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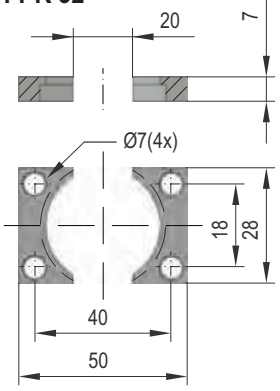

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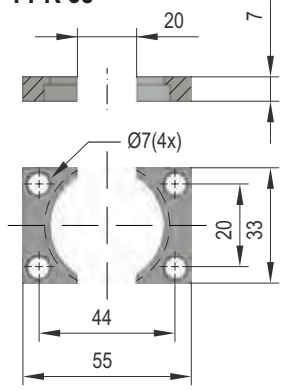

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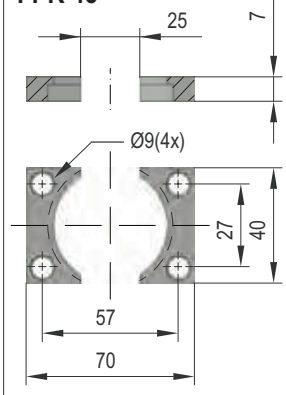

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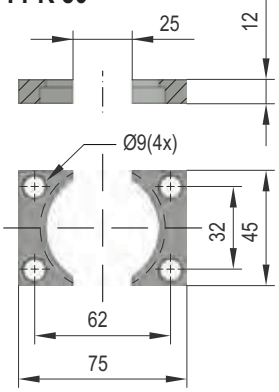

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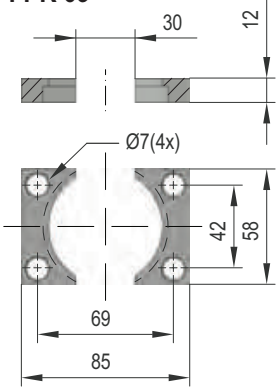

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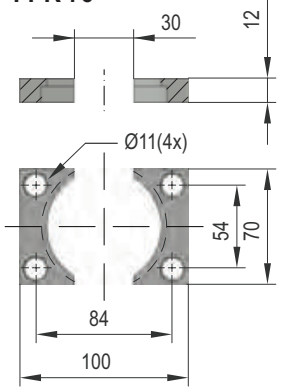

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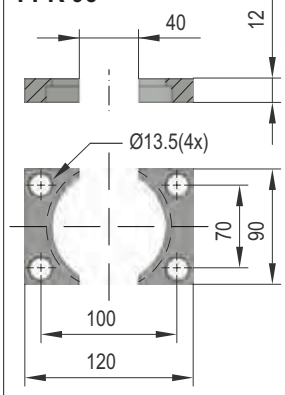

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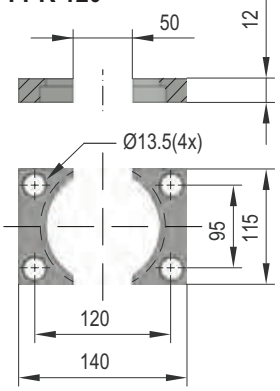

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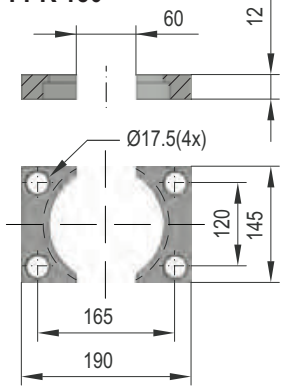

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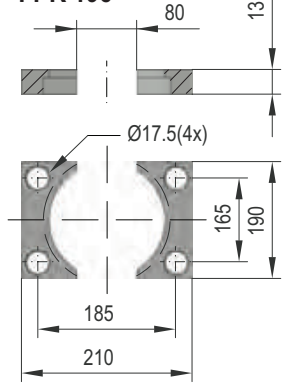

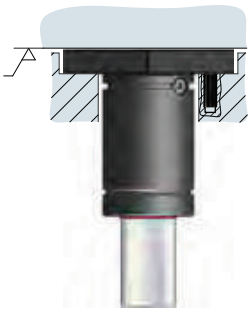

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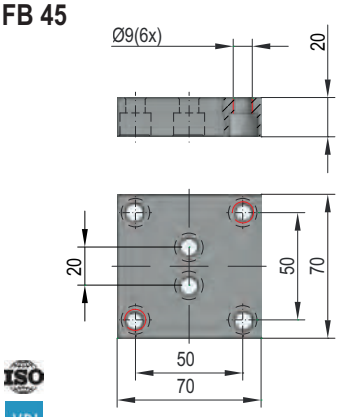

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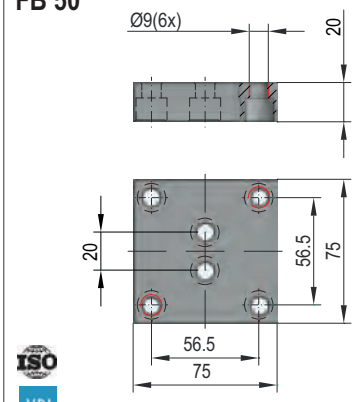

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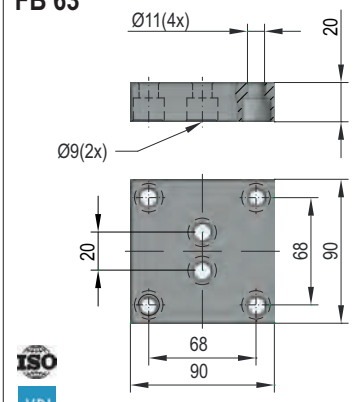

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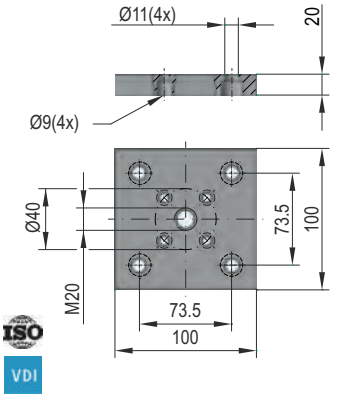

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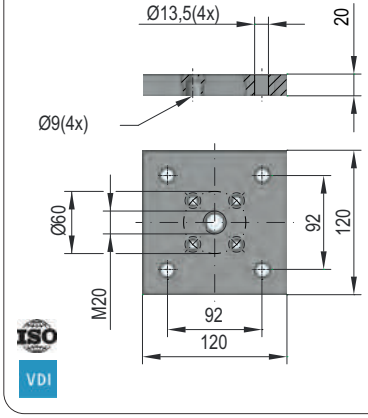

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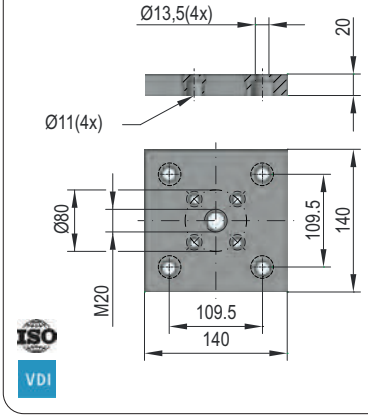

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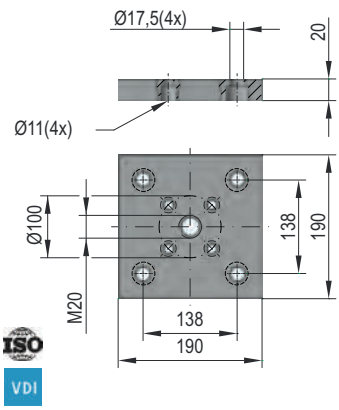

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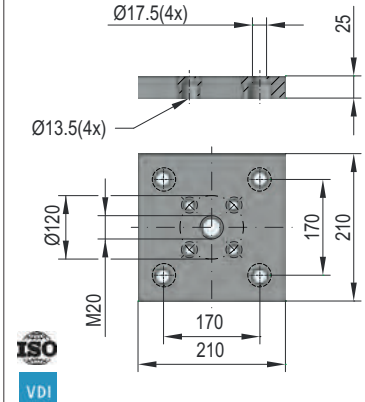
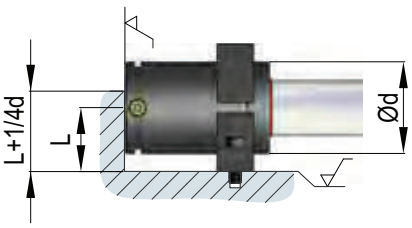
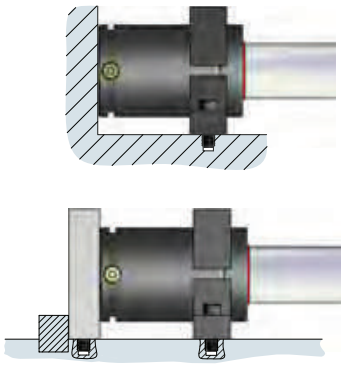
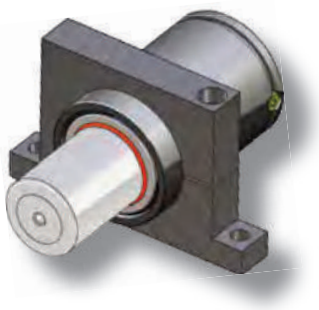
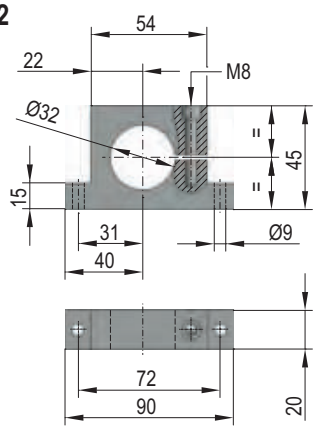








FI 32



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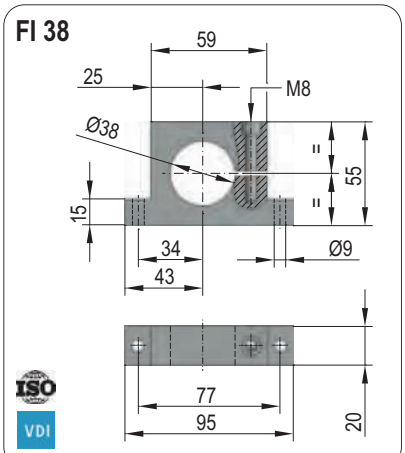

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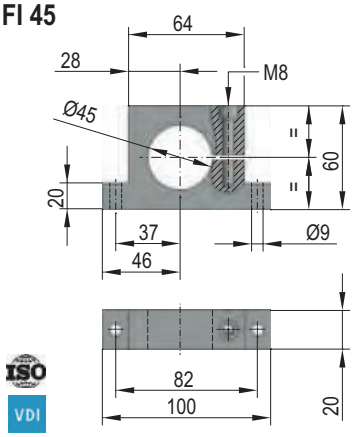
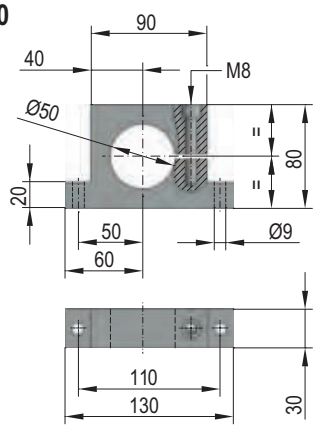
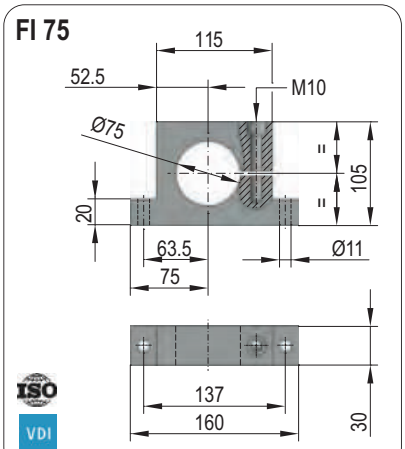


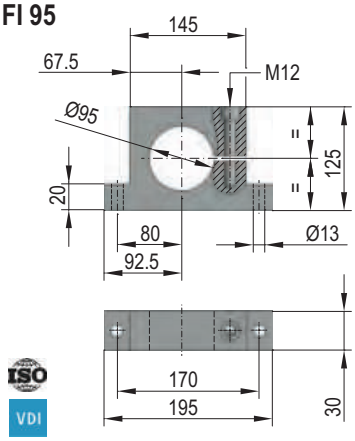
FI 50



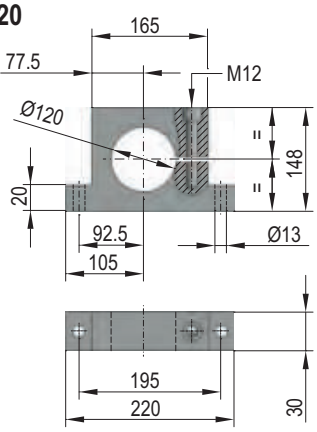
FI 75



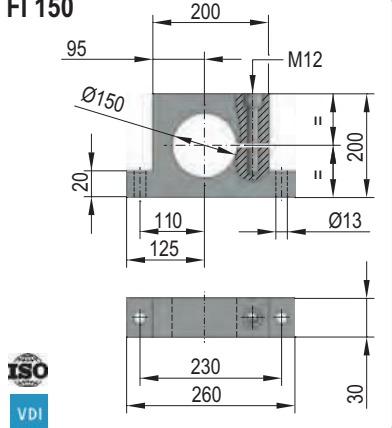
FI 95

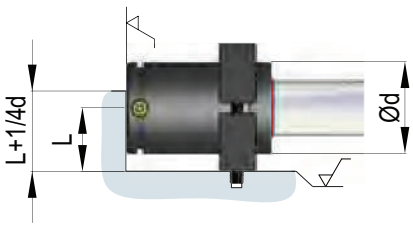


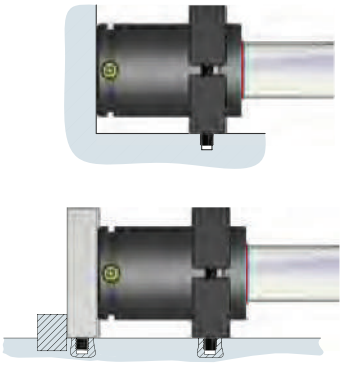
FI 120

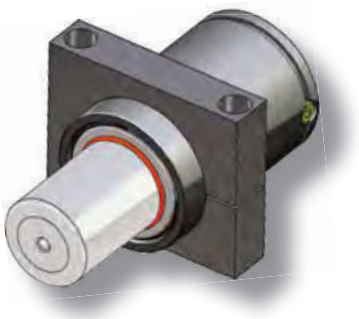


FI 150

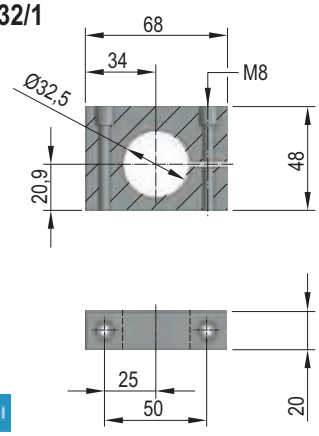




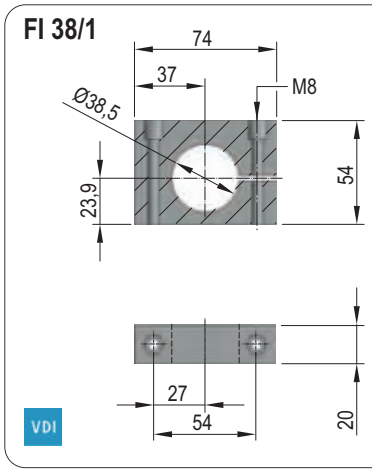




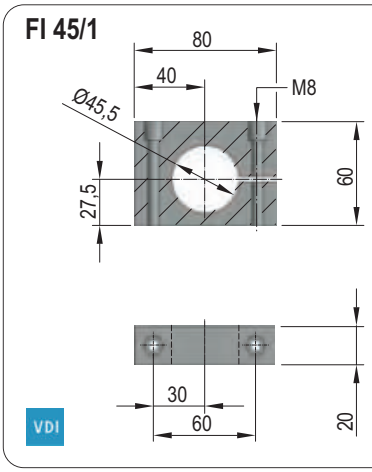
FI 32/1



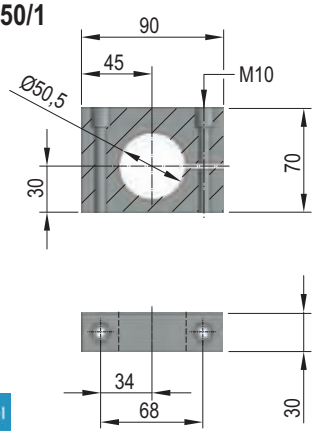
FI 38/1



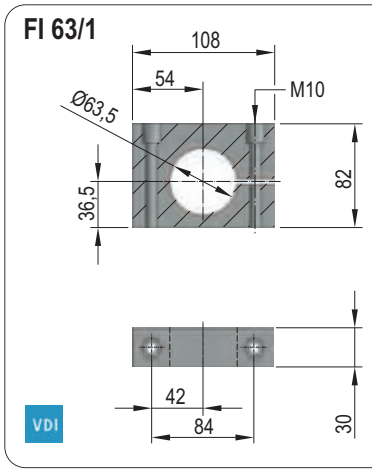
FI 45/1



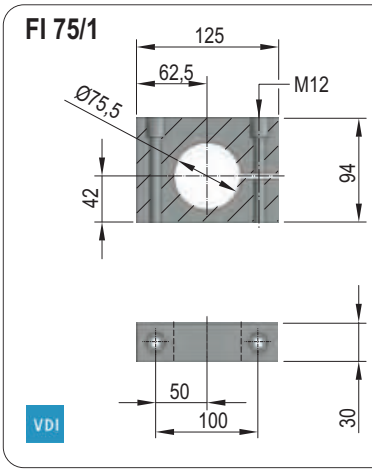
FI 50/1



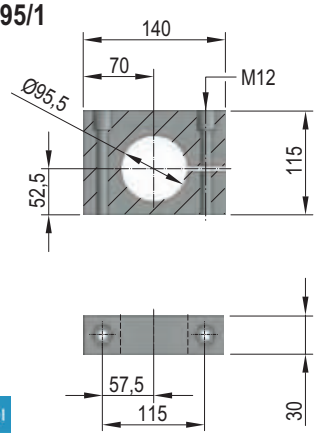
FI 63/1



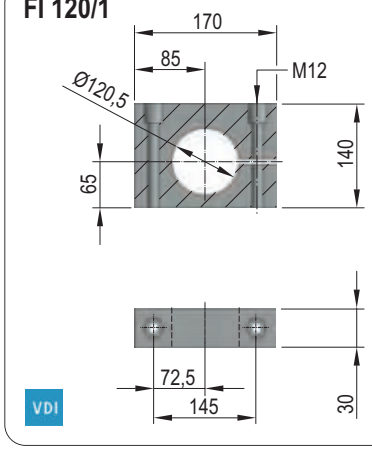
FI 75/1



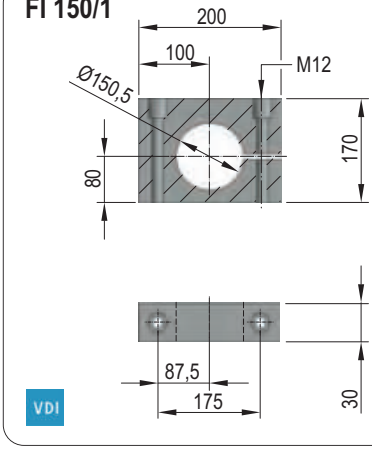
FI 95/1

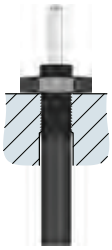


FI 120/1

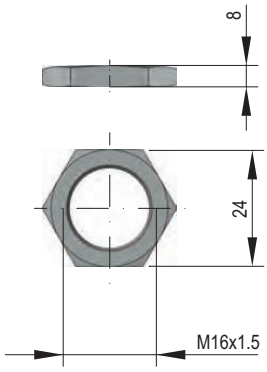


FI 150/1

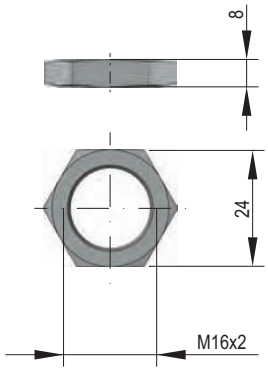




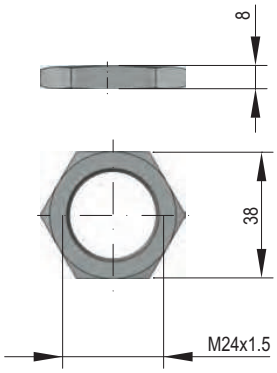
FR 16



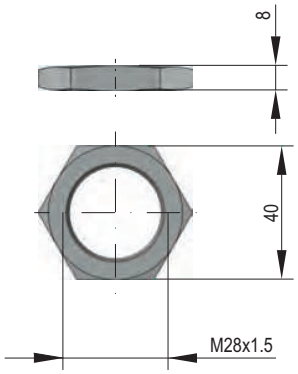
FRC 16.1



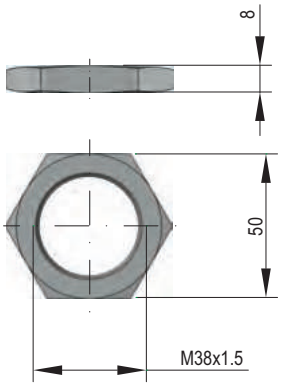
FR 24



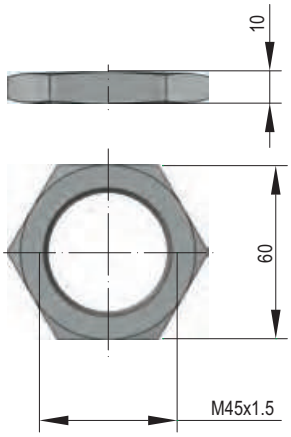
FR 28



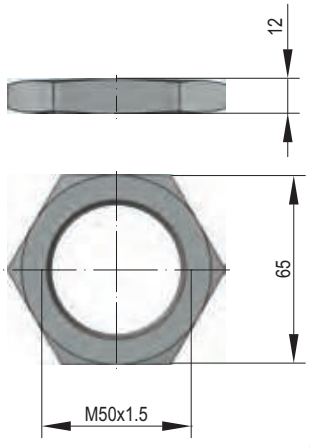
FR 38

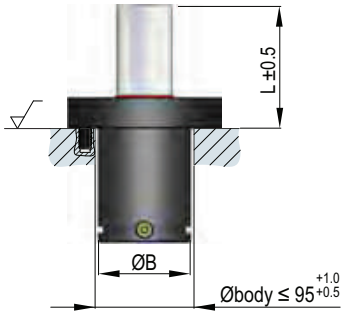


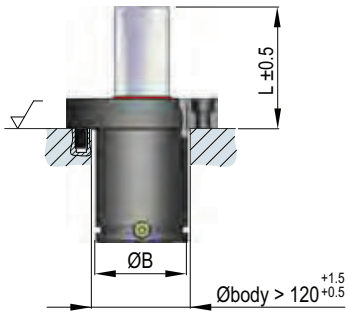
FR 45



FR 50

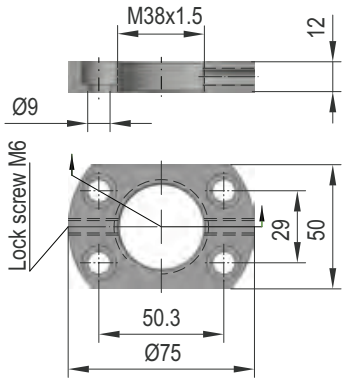






It should be assembled only at factory: no removable flange

FRS 38



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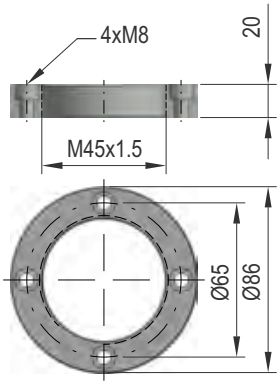

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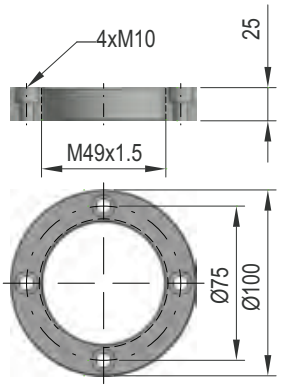
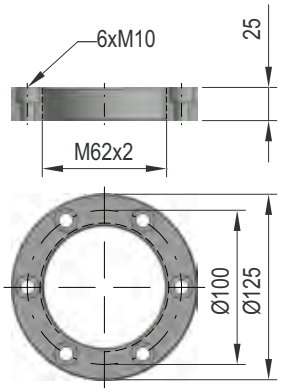
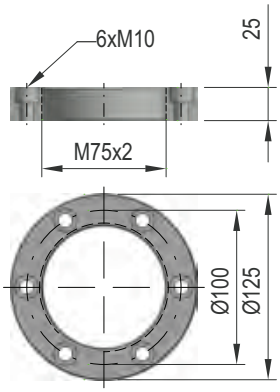


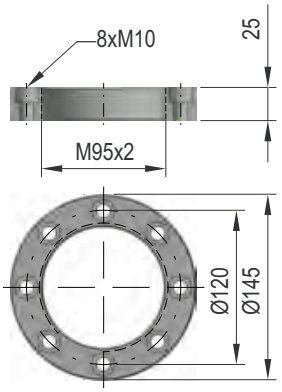
FRS 63



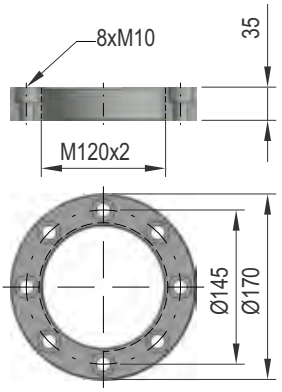
FRS 75



FRS 95



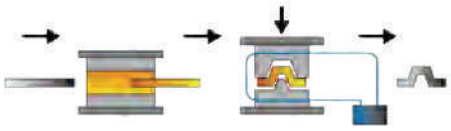
FRS 120

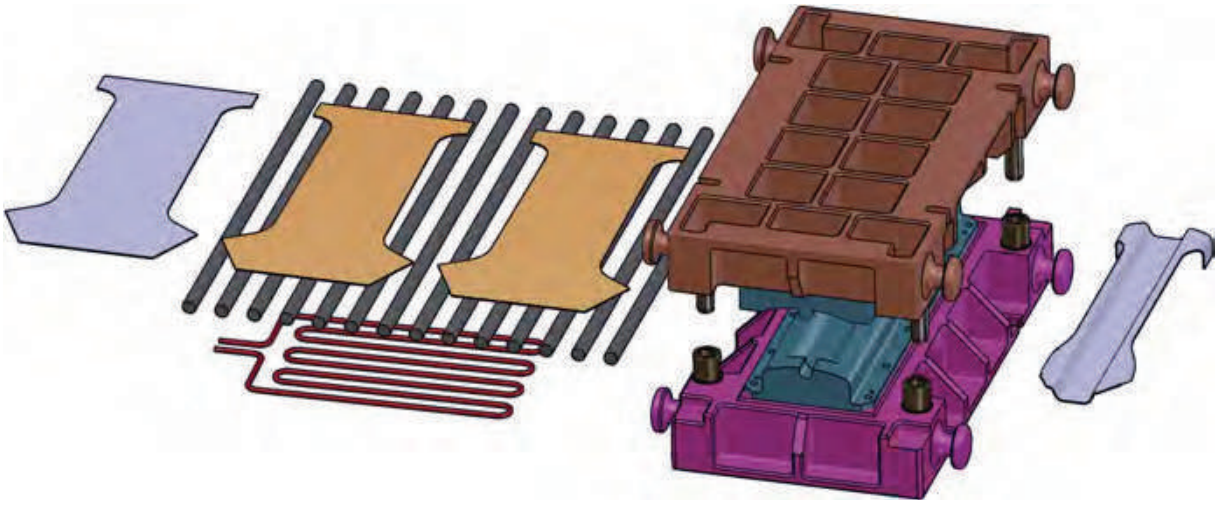


- ► Excellent protection against both liquid and solid pollution
- ► Facilitates having gas springs working in any position
- ► Cost savings

Due to the increasingly frequent use of high-elastic-limit steels in hot forming processes in the automobile industry, and to the consequent increase in demand for gas springs working under adverse enviromental conditions, the **TECAPRES** research team has studied, designed and subsequently developed a range of specific products for both liquid and solid extreme pollution mechanic enviromental conditions.

HOT STAMPING





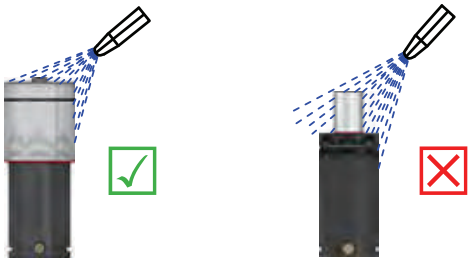
- ✓ **Sealed rod protection cup**
- ✓ **Surfaces protected against corrosion in metal components**
- ✓ **Designed to work in any position**
- ✓ **VDI safety features**

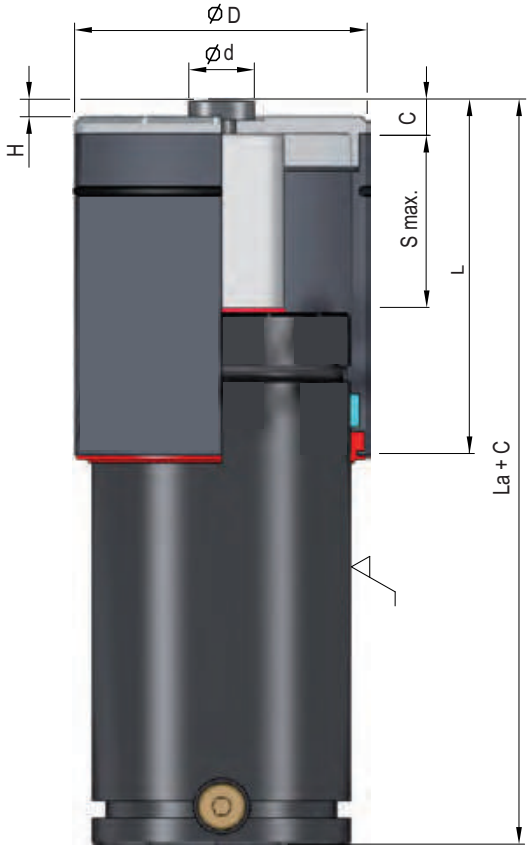
ROD-PROTECTION CAP

TECAPRES offers the possibility of incorporating this device onto TPS and MICRO series gas springs in order to protect rods.

This is particularly recommendable in those cases in which where there are extreme pollution or corrosive working enviroments, in order to ensure proper functioning of gas springs, thus guaranteeing a longer service life.

- ✓ Excellent protection against both liquid and solid pollution
- ✓ Excellent protection in corrosive working enviroments
- ✓ It facilitates having the gas spring working in any position
- ✓ Cost savings.
- ✓ Surface protection against corrosion in metal components.





Gas spring	Smax mm	ØD mm	Ød mm	L mm	C mm	H mm
TPS 750	100% Smax	60	22.5	44 + S	10	5
MICRO 50VS	Smax (-4)	60	22.5	36 + S	10	5
MICRO 63V	Smax (-4)	74	22.5	43 + S	10	5
TPS 1500.1	100% Smax	86	35	53 + S	11	5
MICRO 75.1	100% Smax	86	35	42 + S	11	5
TPS 3000	100% Smax	106	35	58 + S	13	5
MICRO 95	Smax (-4)	106	35	56 + S	13	5
TPS 5000	100% Smax	136	35	65 + S	15	5
MICRO 120V	Smax (-4)	136	35	61.5 + S	15	5

Please check the Smax specification for each model in the catalogue (Other models under order)

How to order

TPS 3000 x **100** **RP**

Model | Stroke | With rod-protection

Assembly possibilities

Follow guidelines Page 287

DROP-IN | SCREWS | FP FLANGE | FB FLANGE

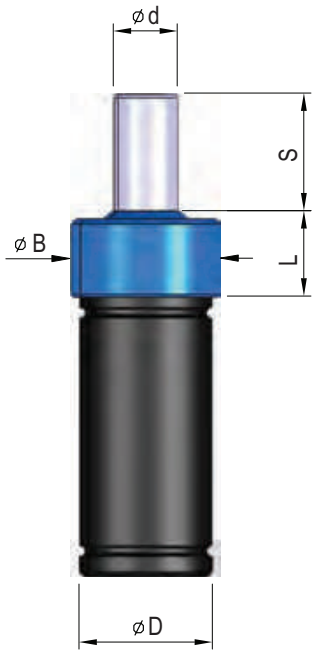
SHIELD-SCRAPER

The function of the shield-scraper is to avoid penetration of particles and substances inside the cylinder, like liquids, metal specks, impurities, etc, thus significantly lengthening gas spring useful life when it is working in highly-polluted conditions.

This cleaning function is attained thanks to an over-dimensioning of diameters, which ensures a tight fit of the scraper onto the cylinder wall.

This polyurethane shield-scraper provides a technically clean tight fit on the stem. Besides, the cleaning lip allows for excess lubricant to seep out from the inside of the gas spring.

- ✓ Excellent protection against both liquid and solid pollution with medium incidence
- ✓ Simple assembly in the gas spring (page 308)
- ✓ It facilitates having the gas spring working in any position
- ✓ Cost savings
- ✓ Minimal loss of working stroke length
- ✓ Compatible with all kind of flanges



Code	Gas spring code	Ød mm	ØD mm	S mm	L mm	ØB mm
RE-6-12	TPC 12	6	12	Smax (-3)	13	14,8
RE-6-14	TPC 14	6	14	Smax (-3)	13	16,8
RE-8-15	MICRO 15	8	15	Smax (-3)	13	17,8
RE-8-19	TPC 19.1	8	19	Smax (-3)	13	21,9
RE-11-19	MICRO 19V1	11	19	Smax (-3)	13	21,9
RE-12-25	TPF 420	12	25	Smax (-2,5)	16,5	28,8
	TPC 25			Smax (-2,5)	16,5	28,8
	TPCT 25			Smax (-2,5)	16,5	28,8
	TPA 25			Smax (-2,5)	16,5	28,8
	TPG 25			Smax (-4,5)	16,5	28,8
RE-14-25	MICRO 25	14	25	Smax (-2,5)	16,5	29,0
	MICRO 25H			Smax (-2,5)	16,5	29,0
	MICRO 25R			Smax (-2,5)	16,5	29,0
RE-15-25	MICRO 25V1	15	25	Smax (-2,5)	16,5	29,0
RE-16-32	MICRO 32VS	16	32	Smax (-4,0)	16,0	36,4
	MICRO 32V			Smax (-4,0)	16,0	36,4
	MICRO 32C			Smax (-4,0)	16,0	36,4
	TPSP 300.1			Smax (-4,0)	16,0	36,4
	TPKR 32			Smax (-3,0)	16,0	36,4
	TPKN 32			Smax (-3,0)	16,0	36,4
	TPCT 300			Smax (-3,0)	16,0	36,4
	TPG 32			Smax (-4,0)	16,0	36,4
RE-18-32	MICRO 32	18	32	Smax (-4,0)	18,0	36,4
	MICRO 32R			Smax (-4,0)	18,0	36,4
	MICRO 32H			Smax (-4,0)	18,0	36,4
	TITAN 32			Smax (-4,0)	18,0	36,4
	TPF 750			Smax (-3,0)	18,0	36,4
	TPK 32			Smax (-3,0)	18,0	36,4
	TPC 350.1			Smax (-3,0)	18,0	36,4
	TPGP 32			Smax (-4,0)	18,0	36,4

How to order

TPC 25 x **50** **RE** **BL**

Model | Stroke | With Shield-scraper | Color code

GAS SPRING WITH SHIELD SCRAPER

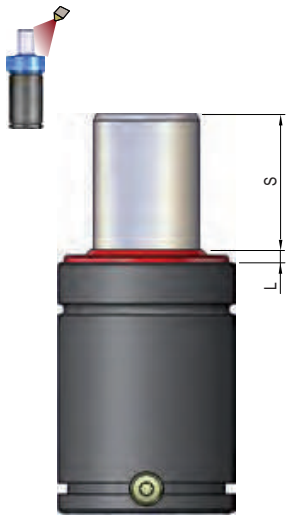
RE-12-25

Code

ONLY SHIELD SCRAPER

Please check the Smax specification for each model in the catalogue
(Other models under order)

SHIELD-SCRAPER



How to order

MICRO 63V x 75 RE

- MICRO 63V: Model
- 75: Stroke
- RE: With Shield-scraper

GAS SPRING WITH SHIELD-SCRAPER

RE-36-50

- RE-36-50: Code

ONLY SHIELD-SCRAPER

MICRO 95 x 50 CR RE

- MICRO 95: Model
- 50: Stroke
- CR: With chromed stem
- RE: With Shield-scraper

GAS SPRING WITH SHIELD-SCRAPER AND CHROMED STEM TO PROTECT AGAINST CORROSION

Please check the Smax specification for each model in the catalogue (Other models under order)

- ✓Excellent protection against both liquid and solid pollution with medium incidence
- ✓ Simple assembly in the gas spring (page 308)
- ✓ It makes it possible to have gas springs working in any position
- ✓ Cost savings.
- ✓ Compatible with all kinds of flanges
- ✓ (CR) optional chromed stem.

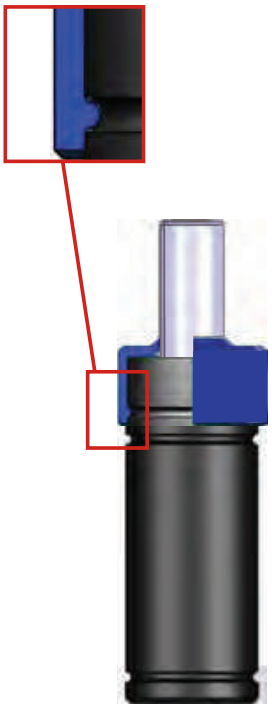
Code	Gas spring code	L mm	S mm
RE-15-32	TPS 250	4,5	Smax (-4,5)
RE-20-32	MICRO 38V MICRO 38VS MICRO 38C TPSP 500.1 TPR 38.1	4,5	Smax (-4,5)
RE-20-35	TPS 500.2 TPKF 500	4,5	Smax (-4,5)
RE-22-32	MICRO 38 MICRO 38R MICRO 38H TITAN 38 TPK 600 TPC 500 TPCR 500 TPCT 500 TPG 500	4,5	Smax (-4,5)
RE-25-35	MICRO 45 MICRO 45V MICRO 45C MICRO 45CF TPSP 750 TPKS 750 TPR 45	5,0	Smax (-5,0)
RE-25-40	TPS 750 TPKF 750	5,0	Smax (-5,0)
RE-28-38	TITAN 45	5,0	Smax (-5,0)
RE-28-40	MICRO 50VS MICRO 50CS MICRO 50CF TPSP 1000.1 TPKFR 1000	5,0	Smax (-5,0)
RE-28-40.1	MICRO 50.1	5,0	Smax (-5,0)
RE-30-40	TPKS 1000 TPC 1000 TPSP 1000.1 TPR 50 MICRO 50V MICRO 50C.1	5,0	Smax (-5,0)
RE-32-43	TITAN 50	5,5	Smax (-5,5)
RE-36-50	MICRO 63V MICRO 63CF MICRO 63C TPK 1500.1 TPKN 1500 TPC 1500 TPSP 1500	6,0	Smax (-6,0)

Code	Gas spring code	L mm	S mm
RE-36-63	TPS 1500.1	6,0	Smax (-6,0)
RE-40-55	MICRO 63	5,5	Smax (-5,5)
RE-42-55	TITAN 63	5,5	Smax (-5,5)
RE-45-63	MICRO 75.1 TPSP 2400 TPKFR 2400	6,0	Smax (-6,0)
RE-45-65	MICRO 75CF MICRO 75CS TPK 2500 TPC 2500 TPMCS 1500 TPSB 1500 TPMCS 2400 TPSB 2400	7,5	Smax (-7,5)
RE-50-65	TPK 3000 TITAN 75 TPC 3000 TPCT 2500 TPCT 3000	7,5	Smax (-7,5)
RE-50-80	TPS 3000 TPKF 3000	7,5	Smax (-7,5)
RE-60-80	MICRO 95 TPKFR 4200 TPK 4250 TPC 4000 TPCT 5000 TPSP 4200 TPMCS 3000 TPSB 3000 TPMCA 4500 TPSB 4000	7,5	Smax (-7,5)
RE-65-100	TPS 5000	6,0	Smax (-6,0)
RE-75-100	MICRO 120V MICRO 120.1 TPC 6500 TPSP 6600 TPMCA 6500 TPSB 6000	6,0	Smax (-6,0)
RE-80-125	TPS 7500	7,5	Smax (-7,5)
RE-90-125	MICRO 150 TPC 10000	7,5	Smax (-7,5)

ASSEMBLY ILUSTRATIONS · ILUSTRACIONES DE MONTAJE

Select the correct gas spring and the SHIELD-SCRAPER model.

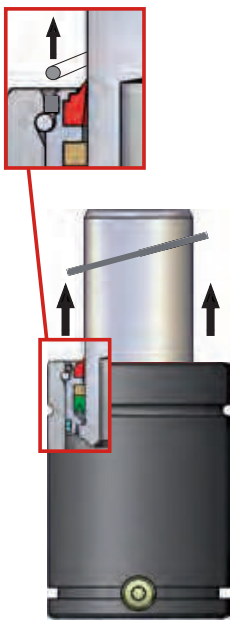
Introduce the SHIELD-SCRAPER into the stem.



Press the SHIELD-SCRAPER into the correct position.

ASSEMBLY ILUSTRATIONS · ILUSTRACIONES DE MONTAJE

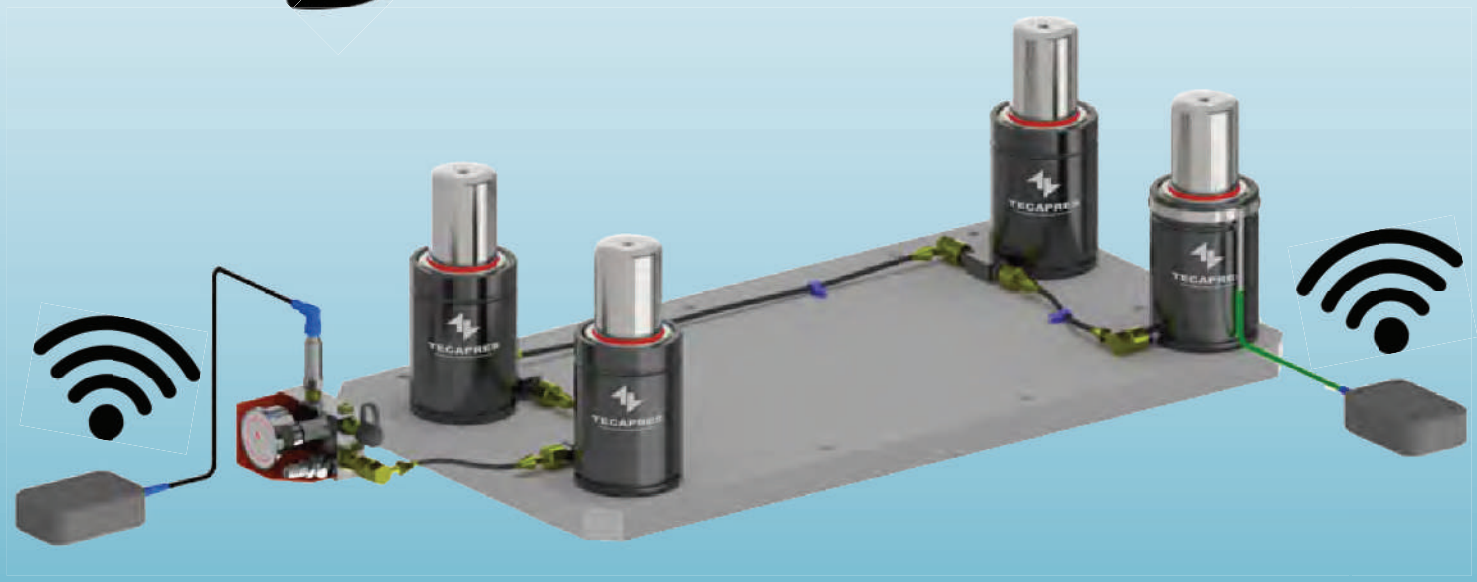
Select the correct gas spring and the SHIELD-SCRAPER model.



Remove the dust cover o-ring.

Introduce the SHIELD-SCRAPER into the stem.

Press the SHIELD-SCRAPER to the correct position.



WIRELESS CONTROL SYSTEM

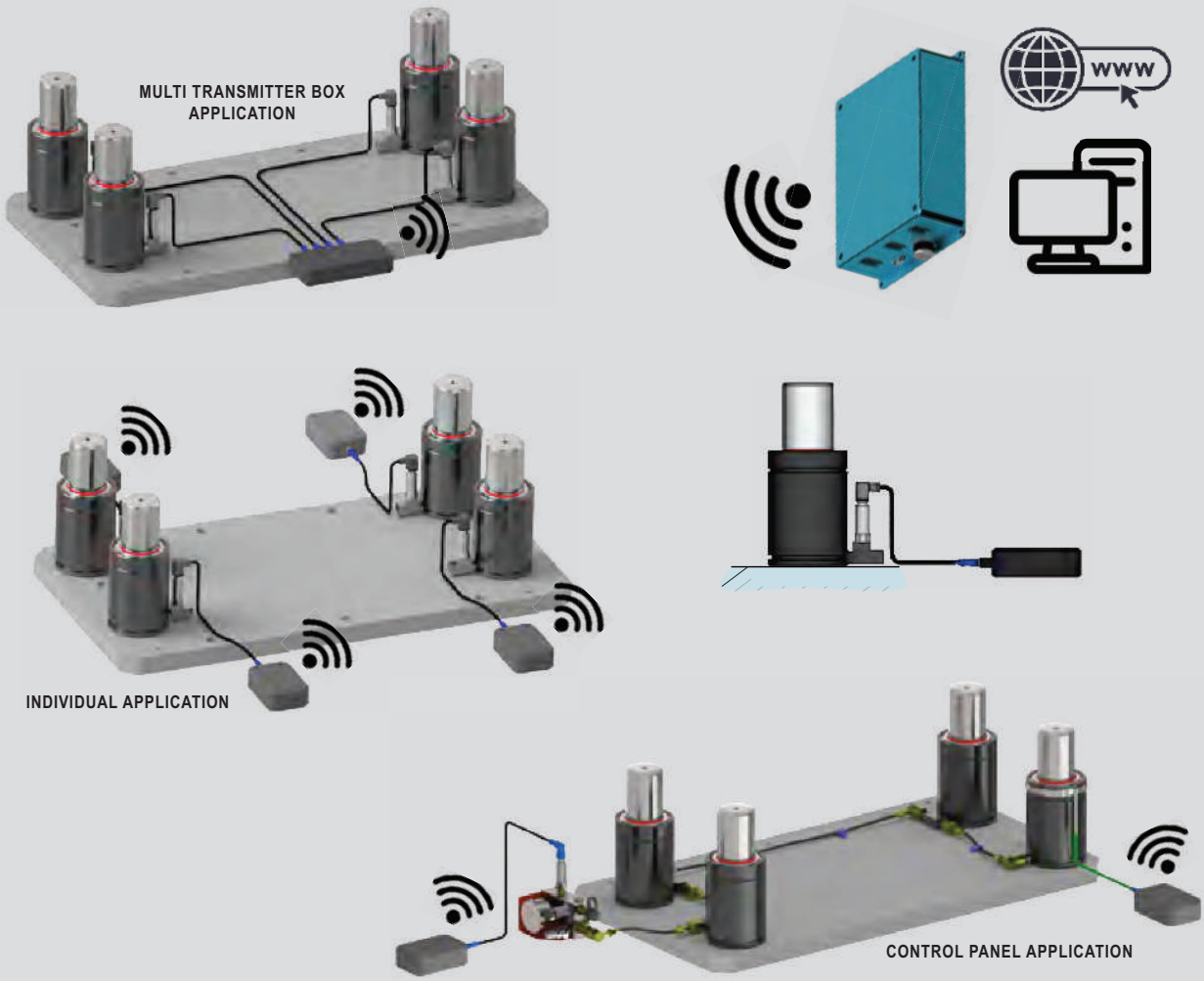
...Resilience, Productivity and Sustainability

Companies and all kind of organisations are making increasing use of the equipment needed to take accurate measurements. They do this to measure presure valves or monitor the temperature of products during stamping process.

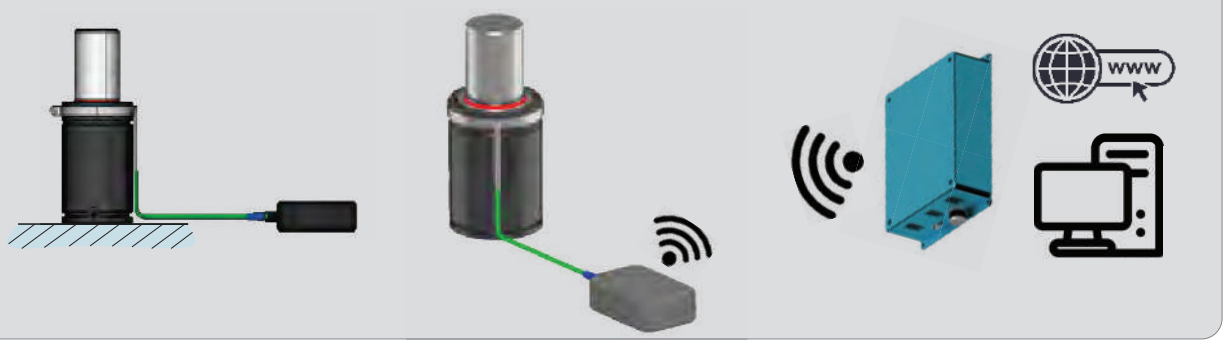
There are plenty of situations where there is a need od reliable data. The Tecapres® Wireles Control System helps to safeguard quality and ensure safety, to get a better grip on the situation and to become more efficient. Measurements data has value. The Tecapres® Wireles Control System-Platform helps you to achieve this.

The Tecapres® Wireles Control System is an open system, wich mean various different interfaces can be connected to it. Would you like to make use of your own sensors or would you like to develop your own user application? Both are possible with the platform.

PRESSURE SENSOR ASSEMBLY EXAMPLES



TEMPERATURE SENSOR ASSEMBLY EXAMPLES



WIRELESS BASE STATION TPWB-1

The Wireles Value Base Station TPWB-1 collects data from all paired sensors.The received data can be read with MODBUS over TPC/IP. Configuration is carried out with SensorGraph.

TECHNICAL INFORMATION	
Operating Temp.	0 ºC to + 60ºC
Power	8 V - 30 V DC
Wireless Range	1.000 meter (free line of sight)
Protection Class	IP 40
Dimensions	180(l) x 130(b) x 66(h) mm excluding antenna
Interface	Ethernet (MODBUS over IP)
Max. Network Size	100 Sensors
Antenna	External
Configuration	Wireless Value Online Portal /SensorGraph
Buffer	Build in SD cart
Ethernet	Auto-detect 10/100 mbps, RJ45
Endpoint	MODBUS network, computer with SensorGraph
Network Settings	Configurable with SensorGraph
Alarm Relais	1A 30 V

WIRELESS MODULE TPWT-1

The Wirless Value TPWT-1 measures process signals and transmits data to the base station. Sensing is performed using any available sensor with 0-25 mA output. This allows connectiom of numerous commerecially available sensors to monitor a wide variety of measurement parameters such as flow, level, pressure etc.

TECHNICAL INFORMATION	
Range	0 - 25 mA
Accuracy	+/- 0.25 % of range
Resolution	10 µA
Input Impedance	43.2 Ohm
Overload Protection	+100mA, reverse polarity protected
Measurement Interval	Configurable between 1sec - 255min
Operating limits	-20ºC to +80ºC
Power	AA 3.6 V lithium batery or mains power supply
Memory	10.000 measurements
Range	1.000 m with free line os sight
Potection Class	IP 65
Dimensions	105(l) x 70 (w) x 34 (h) mm

PRESSURE SENSOR TPPS-1

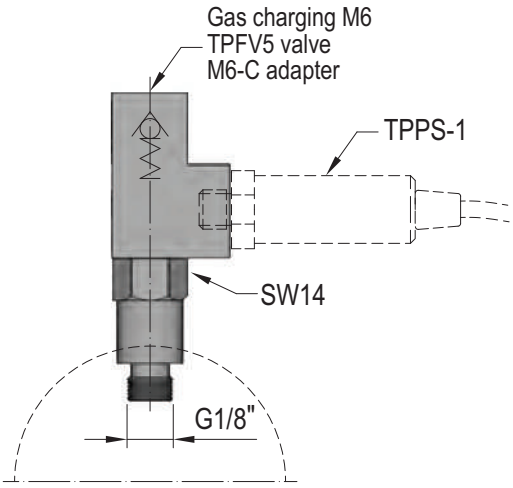
The pressure transmitters TPPS-1 have no internal seal and a high insulation voltage of 300 VDC, and are extremely resistant to environmental influences.The sophisticated compensation circuit makes it possible to specify a narrow total error band.

- Compensated over the entire temperature range
- Compact Design for space-critical applications
- Robust stainless steel housing
- High Long term stability

TECHNICAL INFORMATION	
Analog Interface	4-20 mA
Power	8-28 V
Conexion	1/8" Gas-Male
Materials in contact with media	Stainless Steel AISI 316L
Connector	M12-H.4p / 2m Cable. Pvc Ø 5mm
Media Temperature	125 ºC
Protection Class	IP65
Pressure Range	0 - 600bar

Mating plug to M12, angled to 90º socket, 2 meters cable.

RACORD TPCR-1



TEMPERATURE SENSOR TPTS-1

TECHNICAL INFORMATION	
Operating Temp.	-196 ºC to + 350ºC
Materials in contact with media	Stainless Steel AISI 304
Dimensions	Ø 30 - 500 mm
Sensor	Pt-100
Electric conexion	Polarized Connector

Thermocouple or resistance thermometer sensor TPTS-1 for temperature measurement in cylinders of any size.

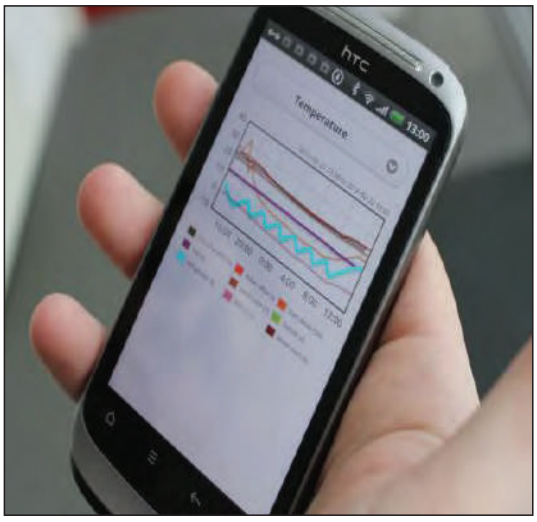
Adjusting the clamp to the cylinder is made in situ using an adjustment screw. Complete stainless steel manufacturing.

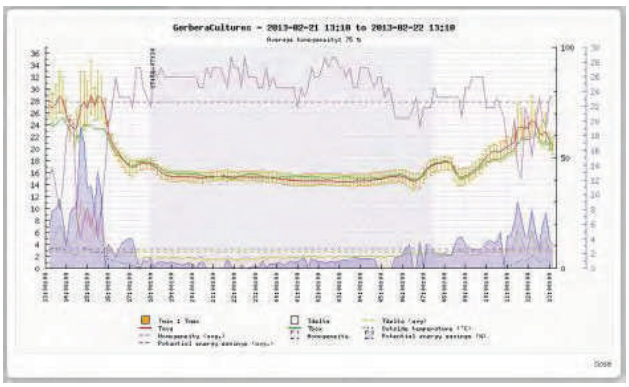
With the Tecapres® Wireles Control System the user has two options when it comes to presentation, logging, alarming etc. He can select a local PC version called SensorGraph or a web based application called WebSensys.

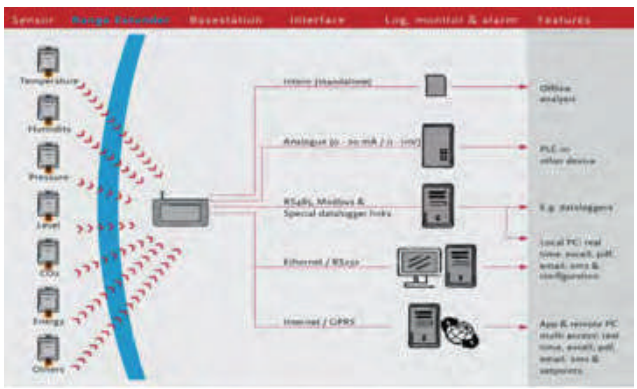
The Tecapres® Wireles Control System wireless technology enables users to immediately view all measurement results in a clear dashboard system.

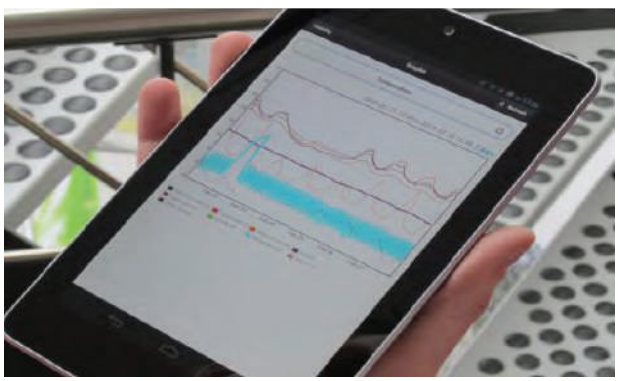
SensorGraph is a PC based application and is meant for single-site monitoring. In general most of the applications will work with a system containing one base station together with a number of sensors. However, it is possible to connect more base stations within one application.

WebSensys is a web-based multi-site application. Via authorization levels it is possible to allocate the data to different user profiles. This means you can access the database by a number of persons and allows them to see whatever is relevant for their position.



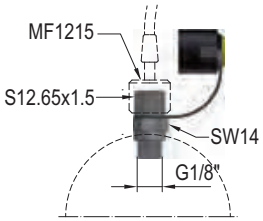




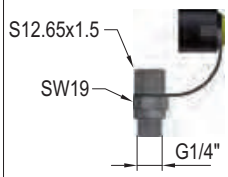



TECAPRES
ENERPAC

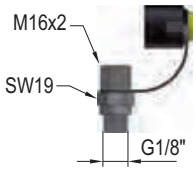
RMF-D1



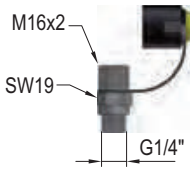
RMF-D2



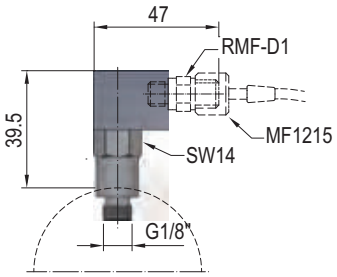
RMF-D3



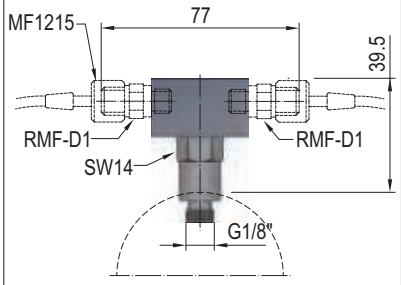
RMF-D4



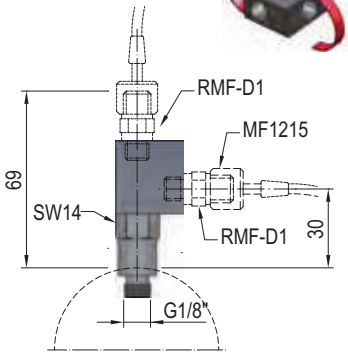
RMF-C



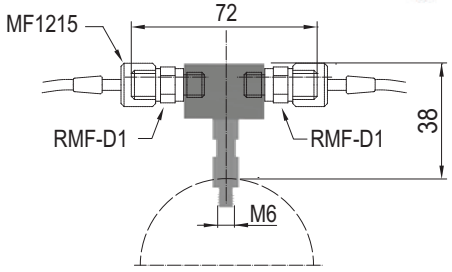
RMF-T



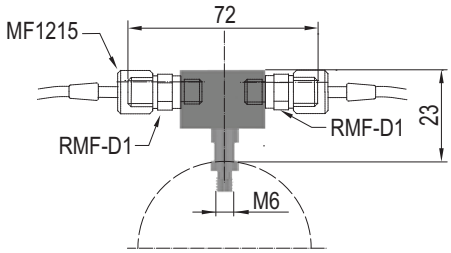
RMF-L



RMF-T-M6L



RMF-T-M6C



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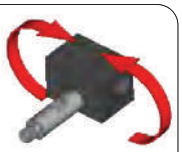

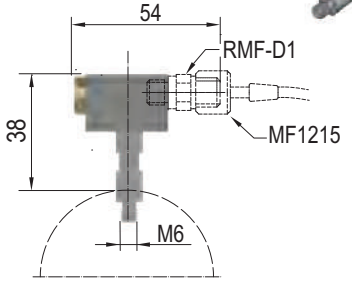

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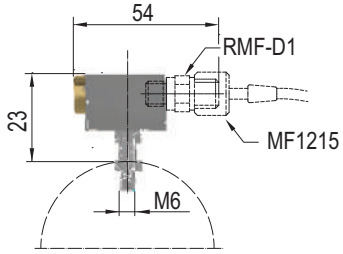
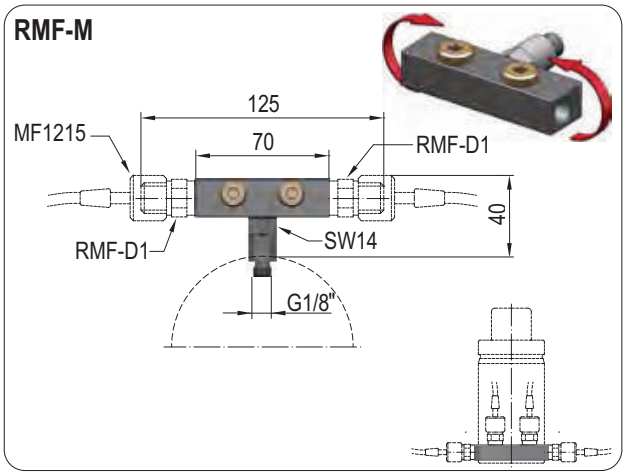
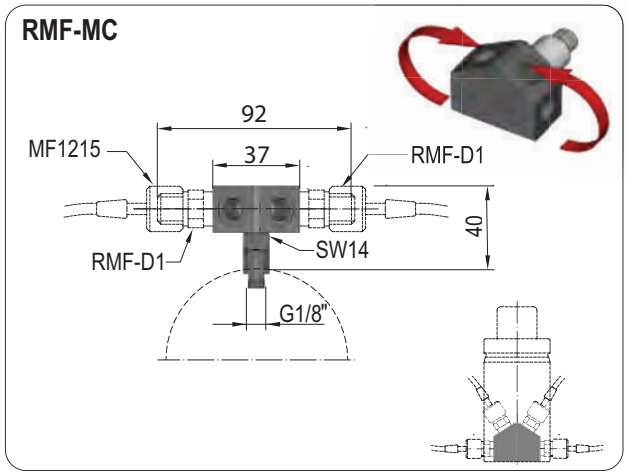


RMF-M

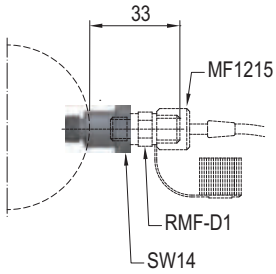


RMF-MC



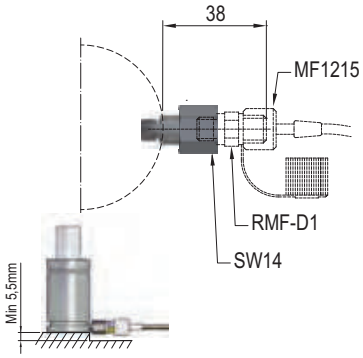
RMF-R

G1/8 male - G1/8 female

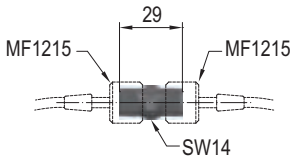


RMF-R-M6

M6 male - G1/8 female



RMF-FH



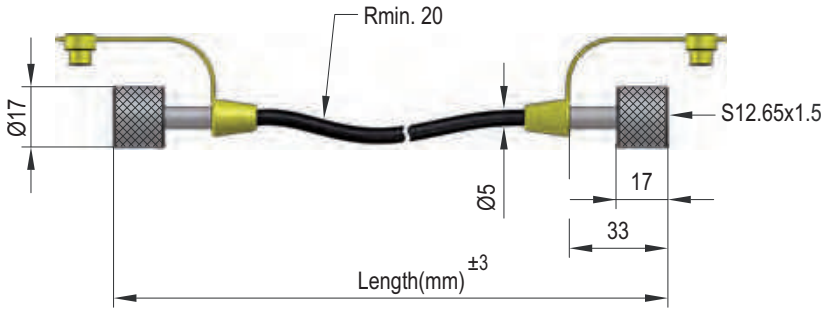
Installation sample
Gas spring (linked) + RMF-T

Installation sample
Gas spring (linked) + RMF-C

Installation sample
Gas spring (linked) + RMF-L

Installation sample
Gas spring (linked) + RMF-T-M6L

FLEXIBLE HOSE
MF 1215-RR



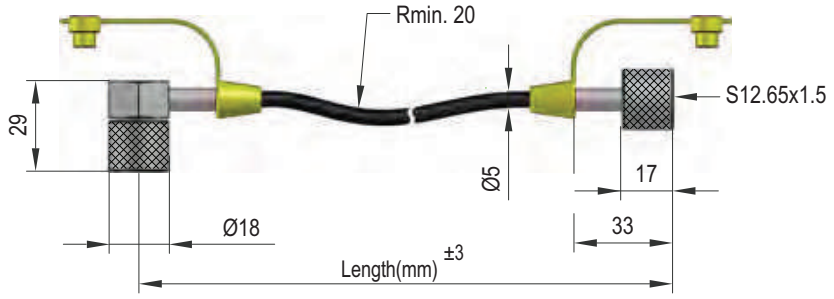
How to order

MF1215-RR - 500

Code | Length

TECHNICAL INFORMATION	
Max. working pressure	630 Bar
Max. working temperature	100 ºC
Minimum length	100 mm

FLEXIBLE HOSE
MF 1215-RC



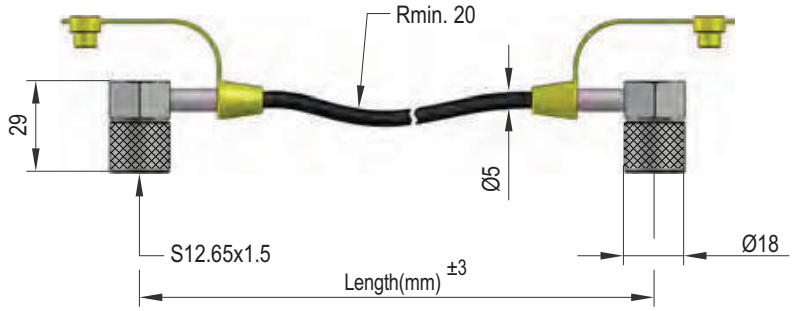
How to order

MF1215-RC - 350

Code | Length

TECHNICAL INFORMATION	
Max. working pressure	630 Bar
Max. working temperature	100 ºC
Minimum length	120 mm

FLEXIBLE HOSE
MF 1215-CC



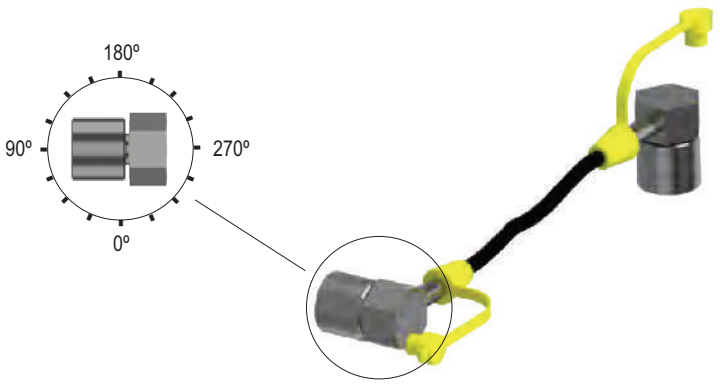
How to order

MF1215-CC - 250

Code | Length

TECHNICAL INFORMATION	
Max. working pressure	630 Bar
Max. working temperature	100 ºC
Minimum length	120 mm

FLEXIBLE HOSE
Other Configurations

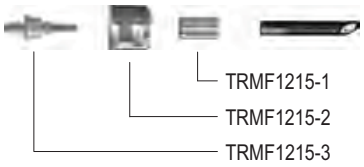


How to order

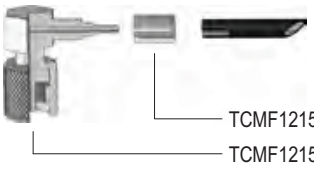
MF1215-CC - 250 - 90º

Code | Length | Angle

STRAIGHT CONNECTION
TRMF1215



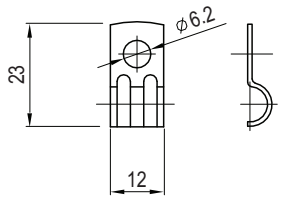
ANGLE CONNECTION
TCMF1215



HOSE
HMF1215

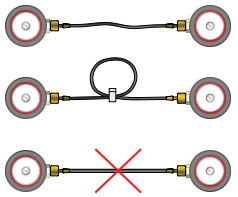
2mm 5mm 630Bar

FLANGE FOR HOSE FIXTURE
BL-1

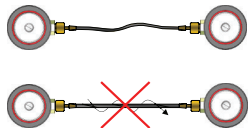


HOSE INSTALLATION GUIDELINES

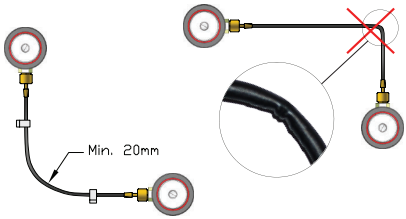
Avoid any Type of damage on the hoses. Working with high pressure equipment is a serious task and should be done with a lot of respect. Accidents can be avoid with the necessary knowledge and caution.



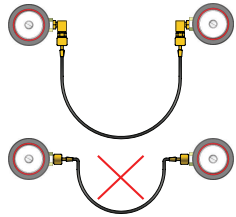
Hose length should be a little more than the exact length (10 or 20% more)



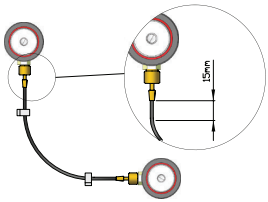
The hose must not be twisted during the installation process



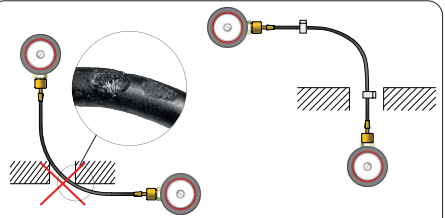
During the installation a minimum curve radius (20mm)should be respected.



Select hose racords that avoid sharp bends in the hose

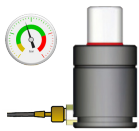


There should be at least an initial straight 15mm, to avoid damage in the connection



Flange the hose so as to avoid mechanical damage due to vibration, with a BL-1 flange

Don´t hold the cylinder by the hose

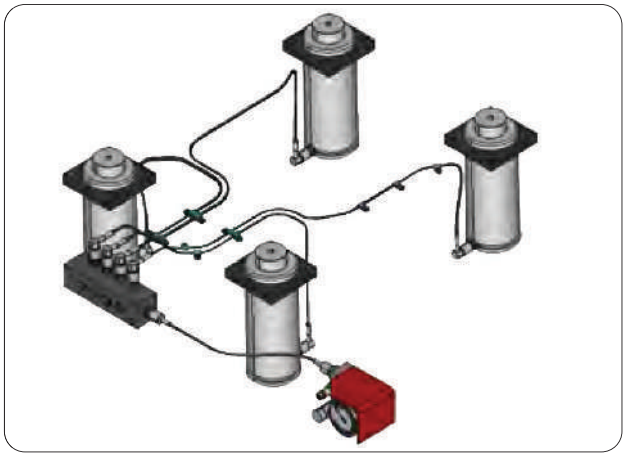


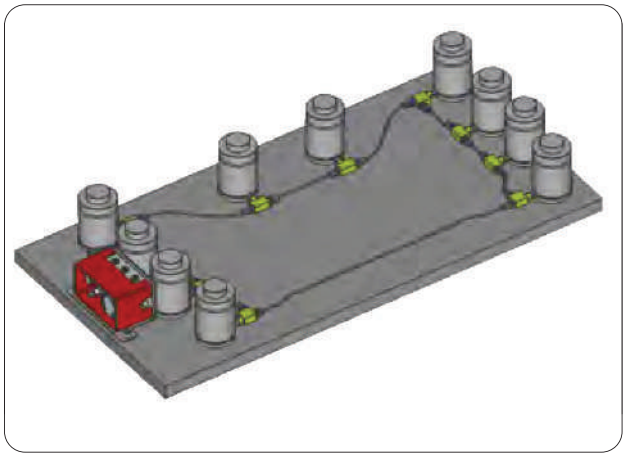
Respect the maximum loading pressures

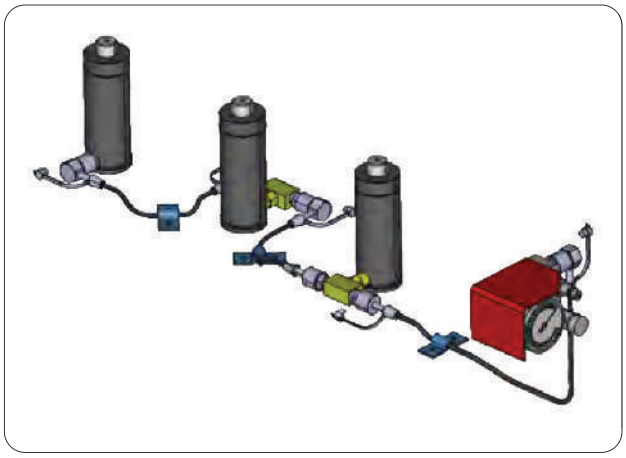
The hoses must be free of weight

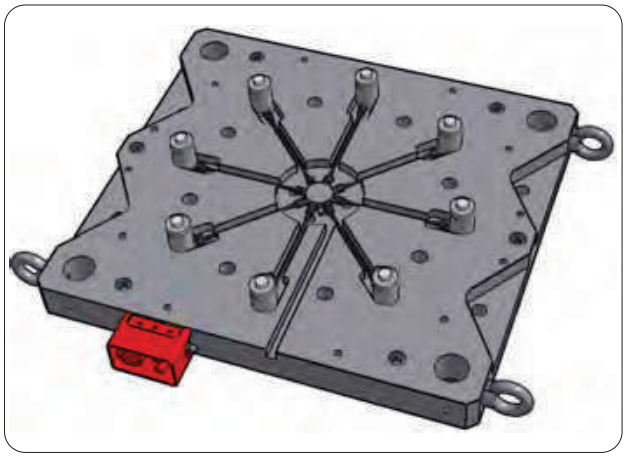
When connecting pressurized gas cylinders together, to control panels or to distribution blocks,we must must always screw both ends simultaneusly

EXAMPLES OF INTERCONNECTED GAS SPRINGS





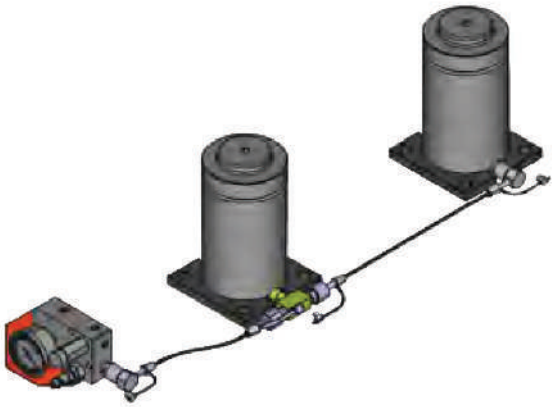


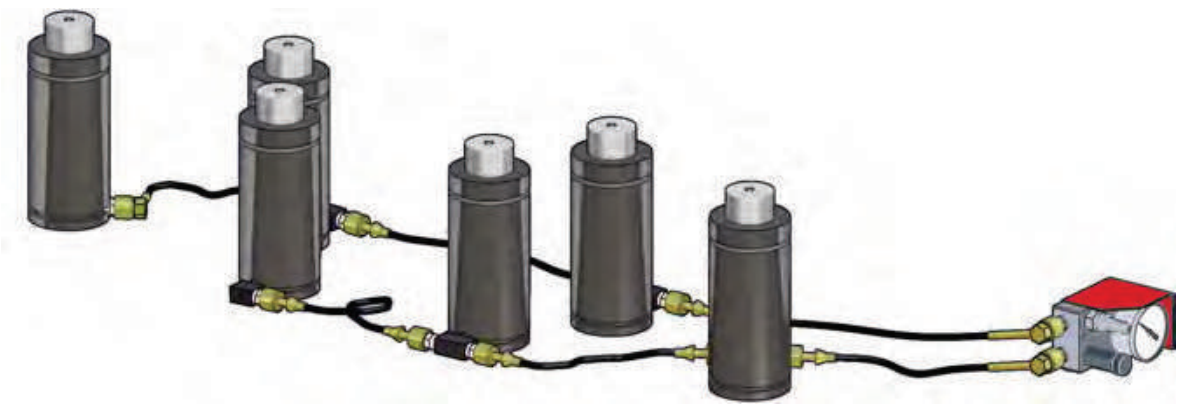


PARTS LIST:

- 6 off GAS SPRING TPS series
- 6 off racord RMF-T
- 12 off racord RMF-D1
- 1 off control panel P110
- 4 off MF1215-RR-200
- 1 off MF1215-RC-180
- 1 off MF1215-CC-600
- 1 off MF1215-CC-780

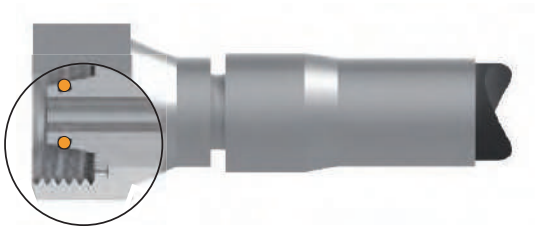
EXAMPLES OF INTERCONNECTED GAS SPRINGS



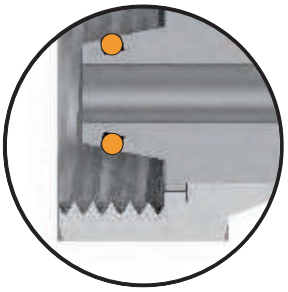


Seal 24º series

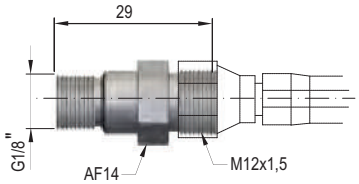
The new seal 24º series system, provides a completly sealed solution for conecting cylinder systems thogether. Standard G1/8 charging ports, in addition to the vast amount of racords and hose layouts available, always manages to find a solution for your need.



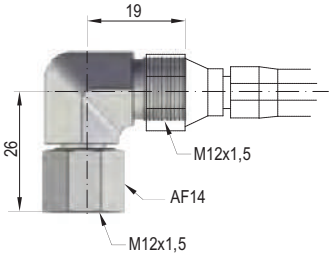
A-A detail



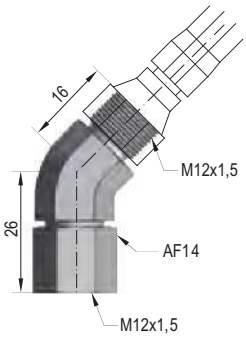
RC24-1



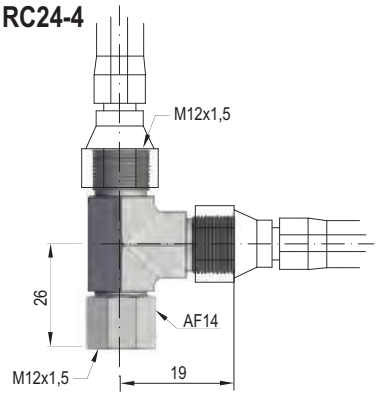
RC24-2



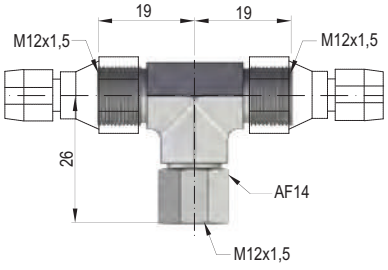
RC24-3



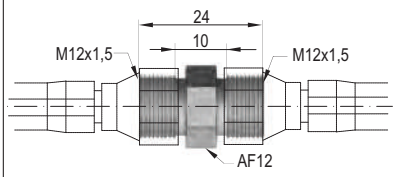
RC24-4



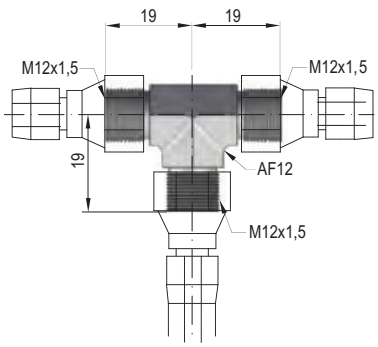
RC24-5



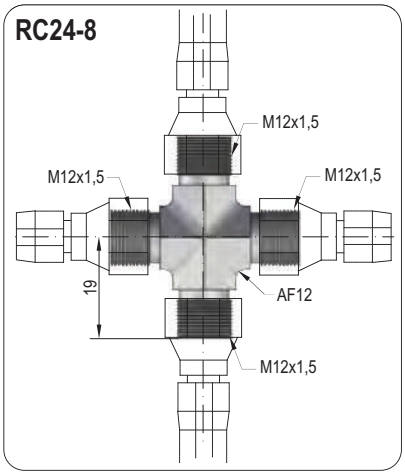
RC24-6



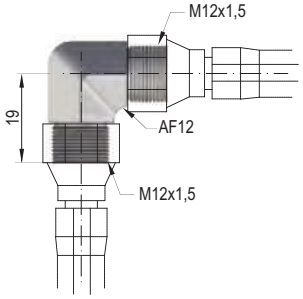
RC24-7



RC24-8



RC24-9

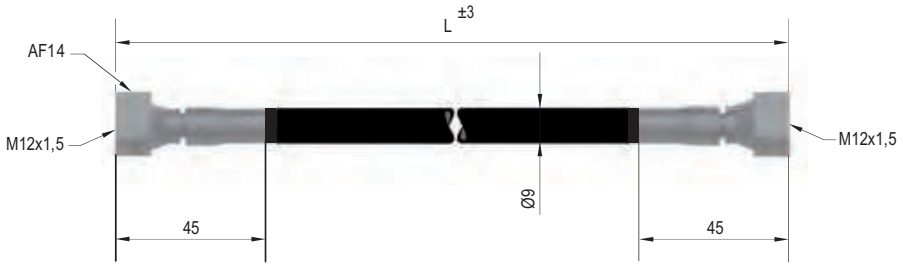


H24-RR

How to order

H24-RR - 500

Code | Length

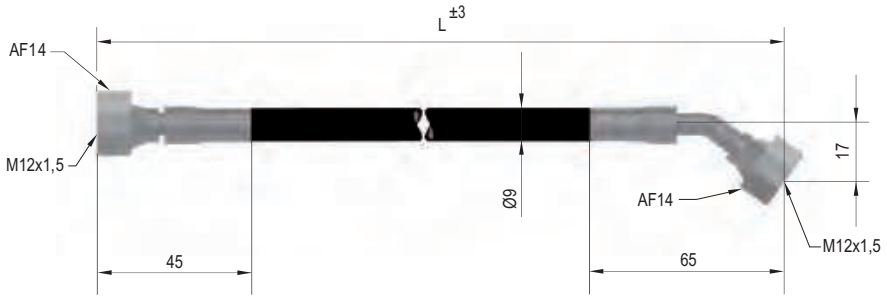


H24-R45

How to order

H24-R45 - 600

Code | Length

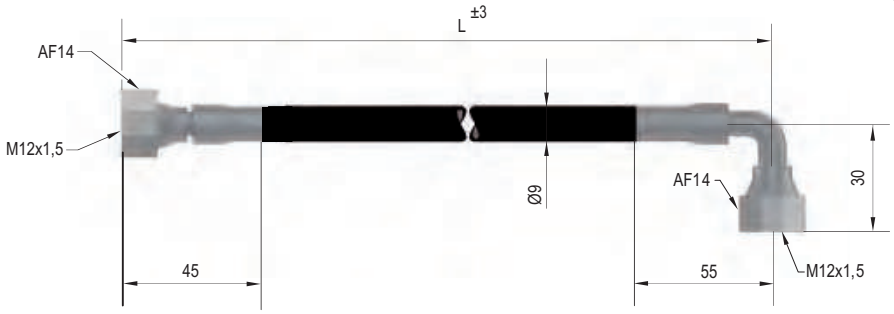


H24-RC

How to order

H24-RC - 400

Code | Length

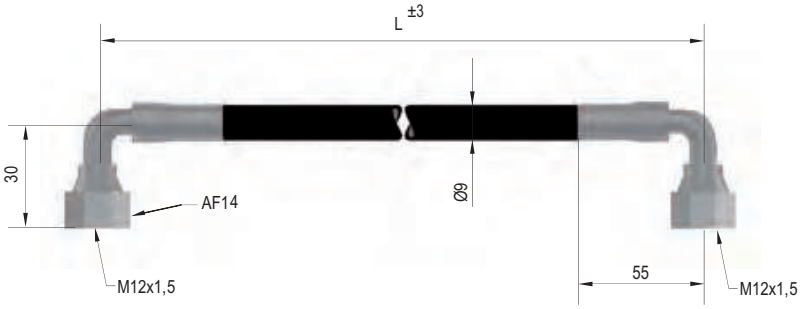


H24-CC

How to order

H24-CC - 1000

Code | Length

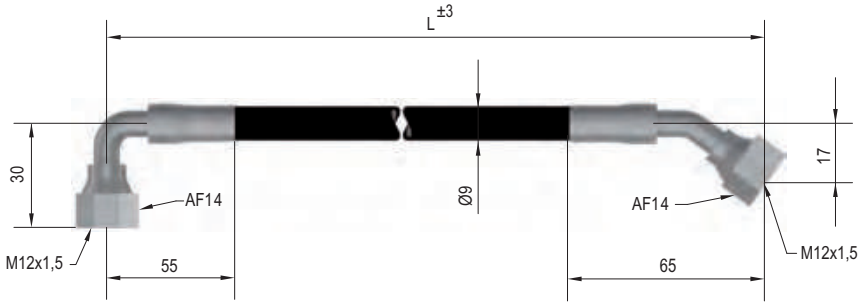


H24-C45

How to order

H24-C45 - 800

Code | Length



H24 - HOSE SPECIFICATIONS

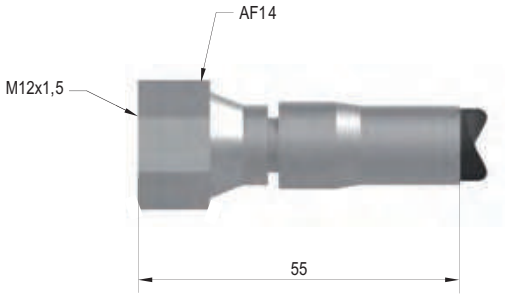
5 mm

9 mm

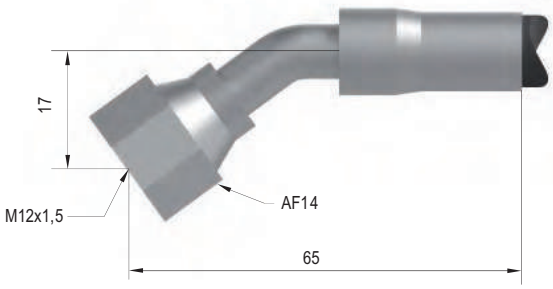
350 bar

40 mm

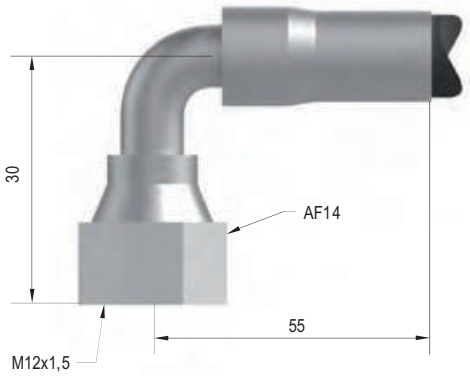
H24-TR



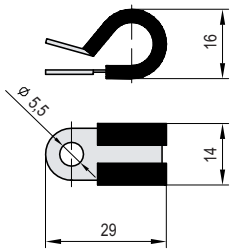
H24-T45



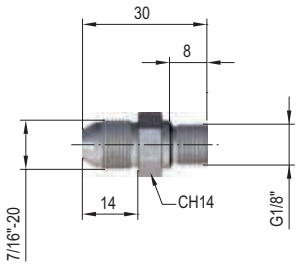
H24-TC



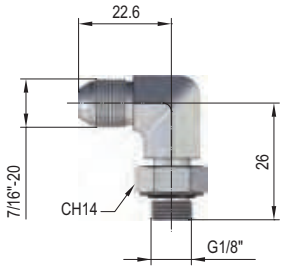
FLANGE FOR HOSE FIXTURE **BMP**



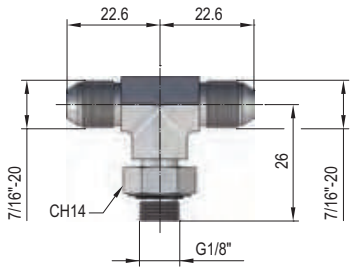
RCF-1



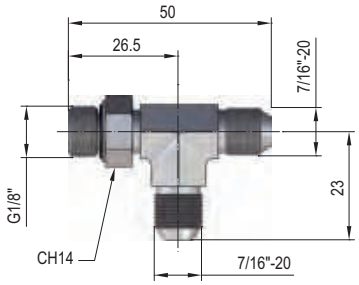
RCF-2



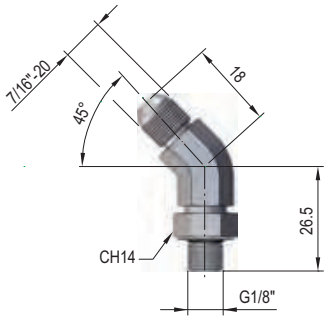
RCF-3



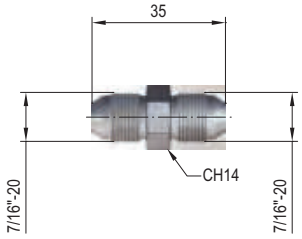
RCF-4



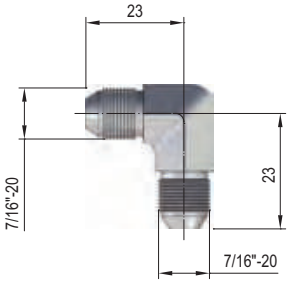
RCF-5



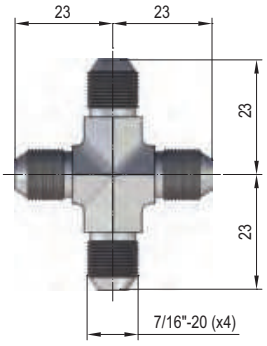
RCF-6



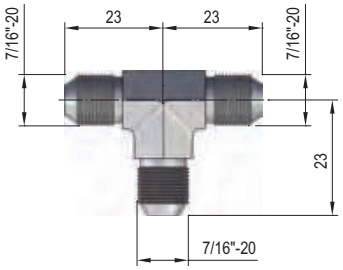
RCF-7



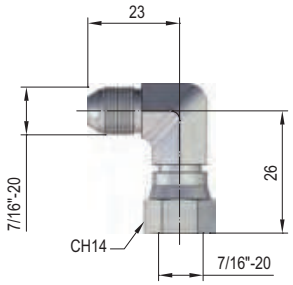
RCF-8



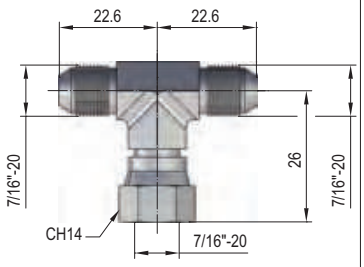
RCF-9



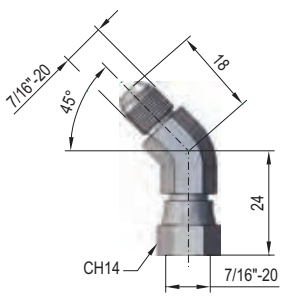
RCF-10



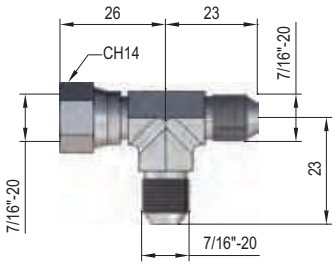
RCF-11



RCF-12



RCF-13



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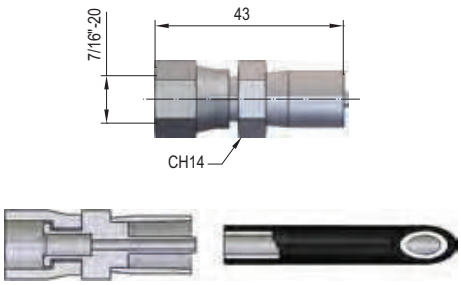


MPF HOSE SPECIFICATIONS

3,6 mm

8,1 mm

400 bar

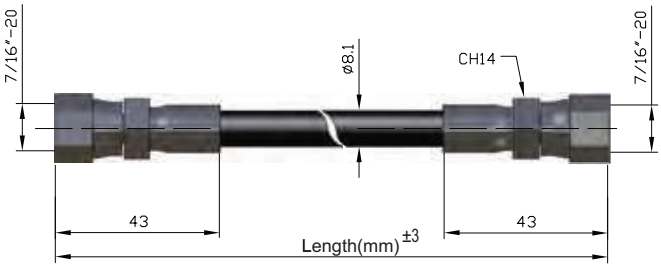
12,7 mm

MP HOSE

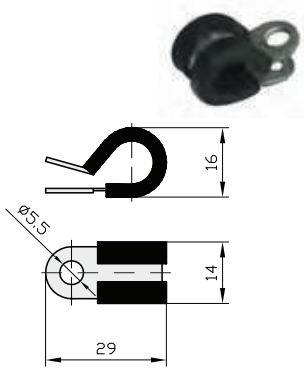
How to order

MP-RR - 500

Code | Length

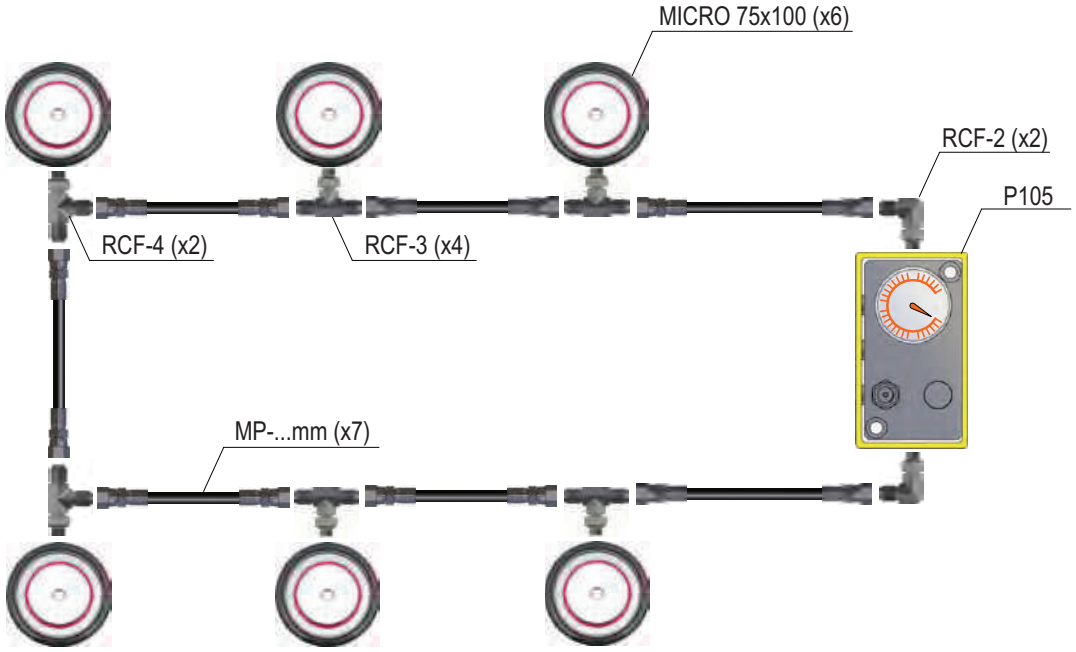


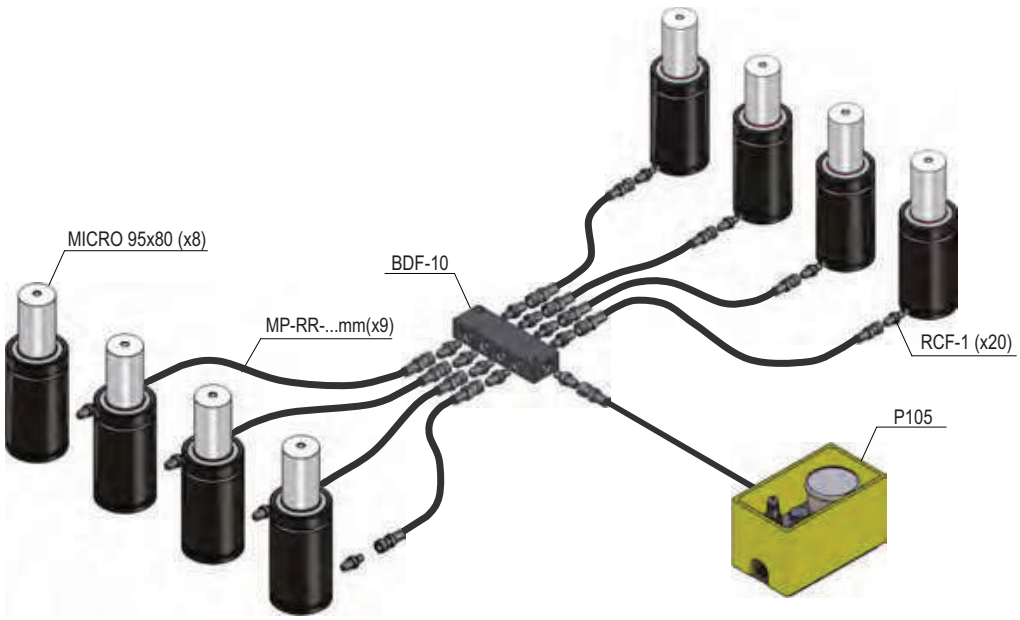
FLANGE FOR HOSE FIXTURE **BMP**



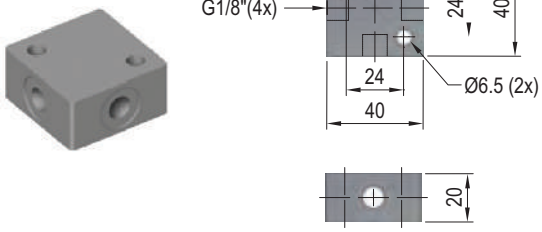
EXAMPLES OF INTERCONNECTED GAS SPRINGS

JIC 37º SYSTEMS





DISTRIBUTION BLOCK
BD 4



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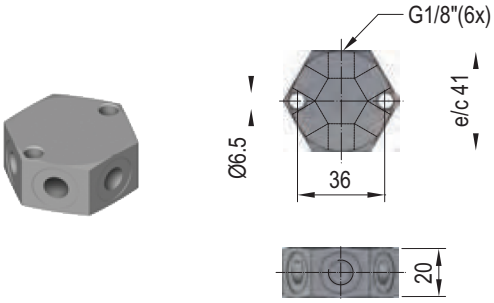
BD 6 HEX



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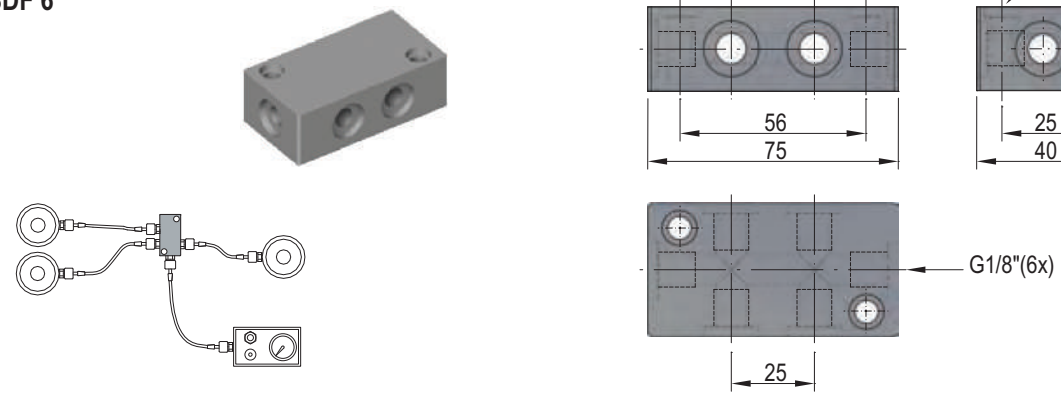
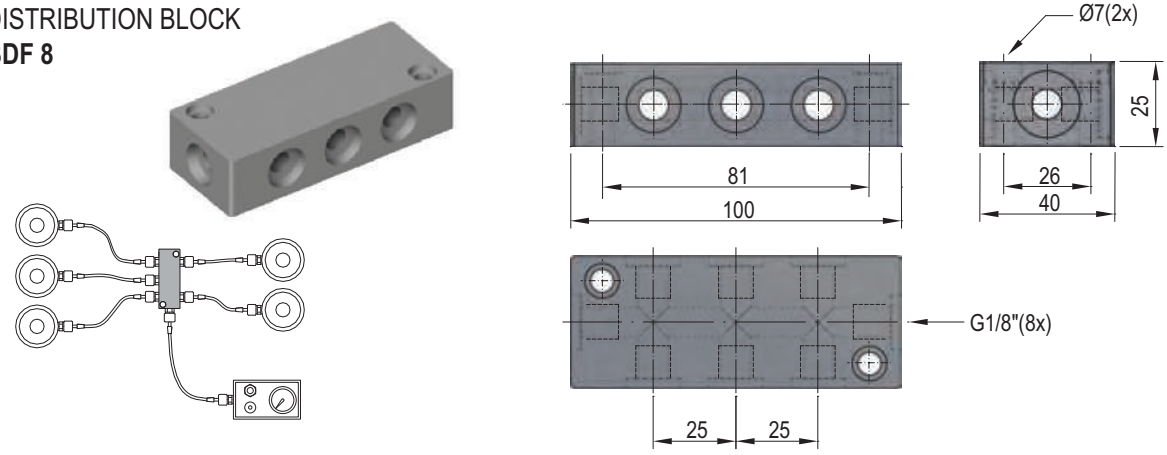
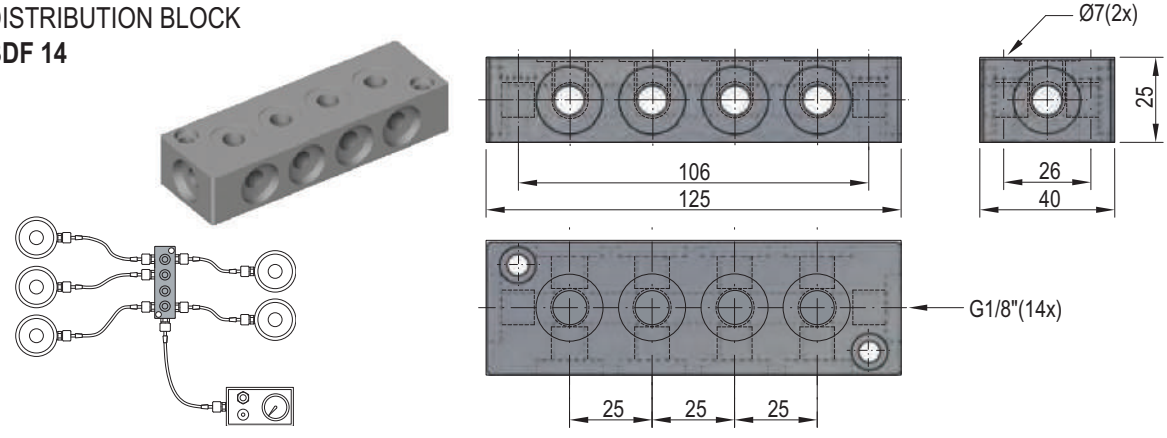
BDF 6



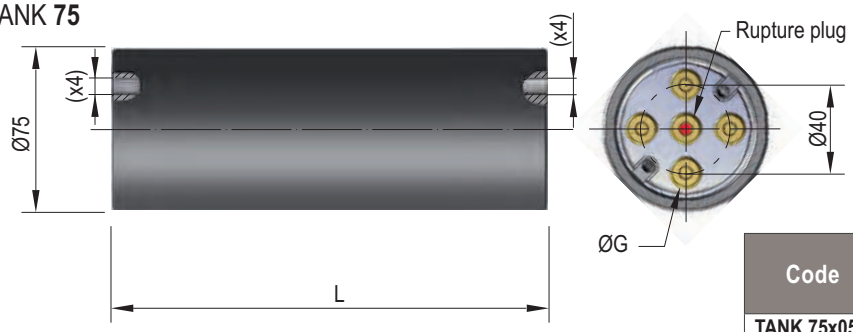
DISTRIBUTION BLOCK
BDF 8



DISTRIBUTION BLOCK
BDF 14



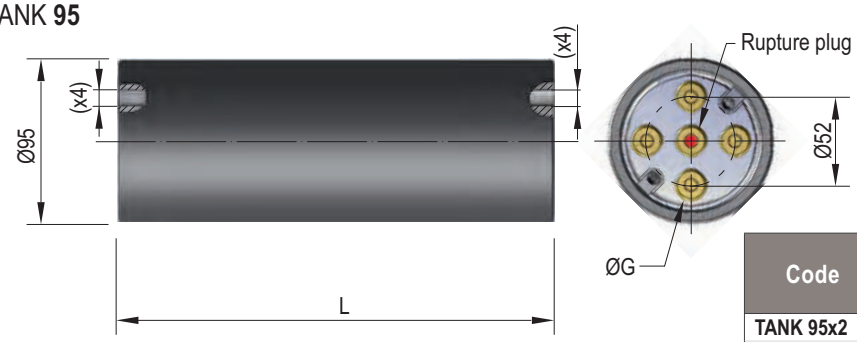
TANK **75**



Code	Vol l	L mm	P Bar	ØG
TANK 75x05	0,5	200	300 max!	G1/8"
TANK 75x1	1,0	360		
TANK 75x05-1	0,5	200		G1/4"
TANK 75x1-1	1,0	360		

Use only with racords and hoses JIC 37º / H24º

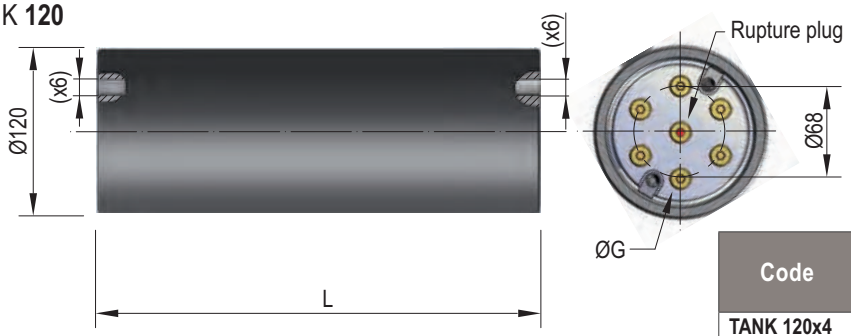
TANK **95**



Code	Vol l	L mm	P Bar	ØG
TANK 95x2	2,0	410	300 max!	G1/8"
TANK 95x3	3,0	650		
TANK 95x2-1	2,0	410		G1/4"
TANK 95X3-1	3,0	650		

Use only with racords and hoses JIC 37º / H24º

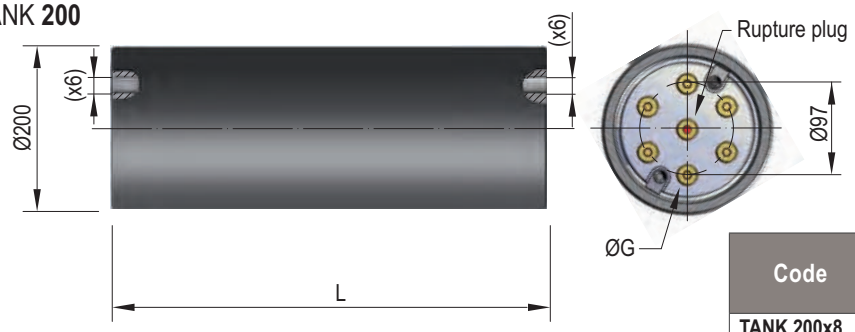
TANK **120**



Code	Vol l	L mm	P Bar	ØG
TANK 120x4	4,0	560	300 max!	G1/8"
TANK 120x5	5,0	690		
TANK 120x4-1	4,0	560		G1/4"
TANK 120x5-1	5,0	690		

Use only with racords and hoses JIC 37º / H24º

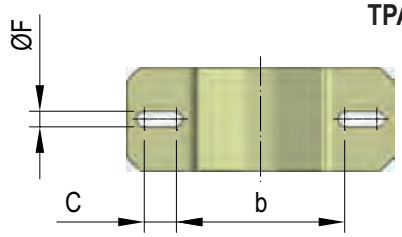
TANK **200**

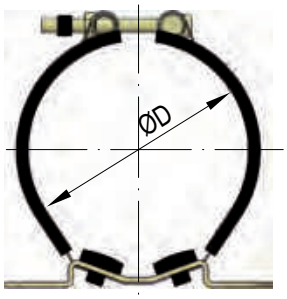


Code	Vol l	L mm	P Bar	ØG
TANK 200x8	8,0	415	300 max!	G1/8"
TANK 200x10	10,0	500		
TANK 200x8-1	8,0	415		G1/4"
TANK 200x10-1	10,0	500		

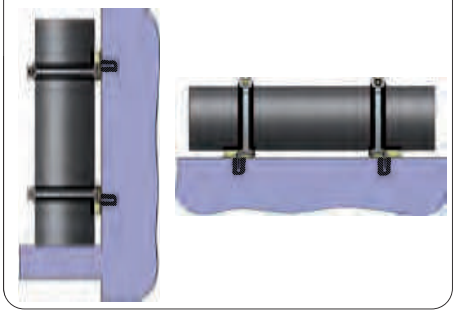
Use only with racords and hoses JIC 37º / H24º

TANK CLAMPS
TPAT





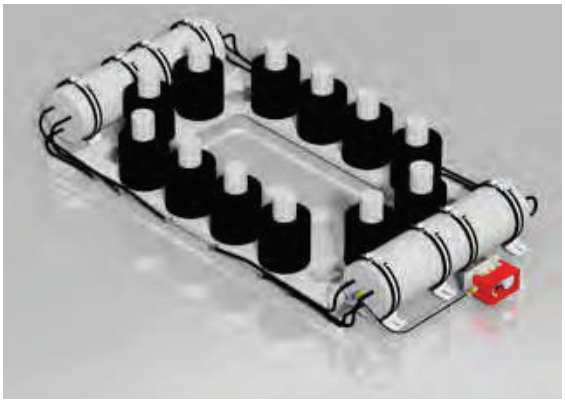
Assembly possibilities



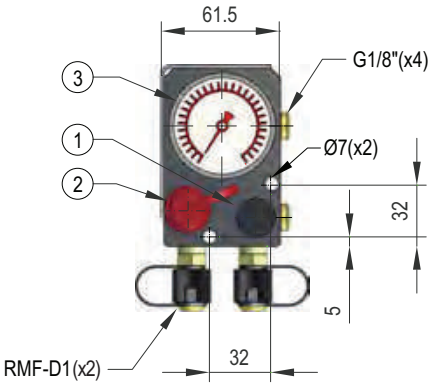
Code	Tank model	ØD mm	b mm	C mm	ØF mm
TPAT 75	TANK 75	75	85	8	9
TPAT 95	TANK 95	95	85	8	9
TPAT 120	TANK 120	120	100	18	9
TPAT 200	TANK 200	200	152	32	9

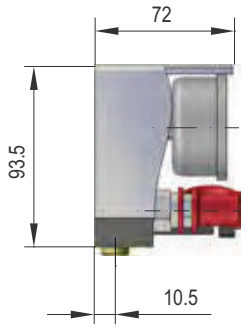
Examples of application

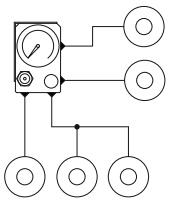
Design & manufacture



MINI CONTROL PANEL P110







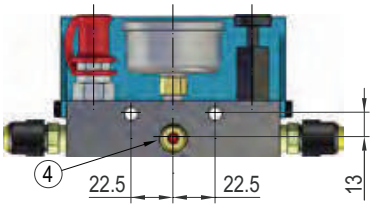
Max. 4 connectors

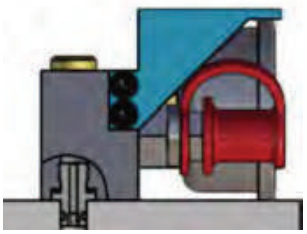
1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge

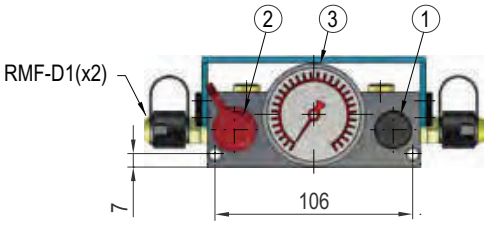
Mini-control panel: this small-sized device is used for the permanent control of gas-spring pressure. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. P110 control panels have up to 4 G1/8" outlets for a gas spring interconnection. Pressure gauge range is from 0 to 400 Bar.

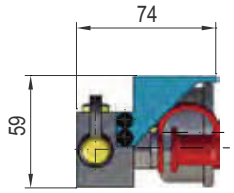
COMPACT CONTROL PANEL P120

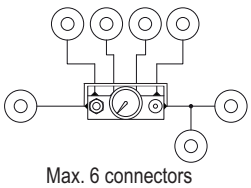
✓ **EASY WAY TO USE WITH ECO-MANIFOLD SYSTEM!**



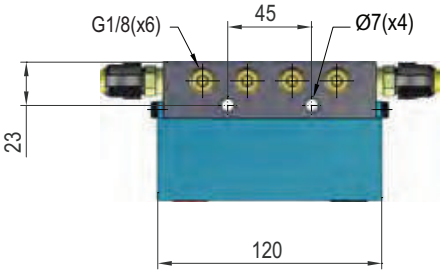








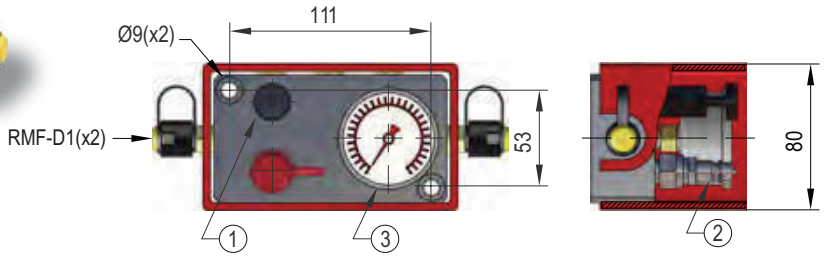
Max. 6 connectors

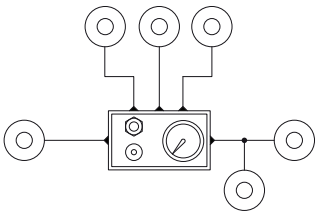


1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge
4. Eco-manifold port

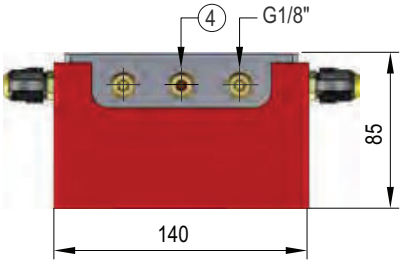
Compact control panel: this compact-sized device is used for the permanent control of gas-spring pressure. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. P120 control panels have up to 7 G1/8" outlets for a gas spring interconnection. Pressure gauge range is from 0 to 400 Bar.

CONTROL PANEL P100





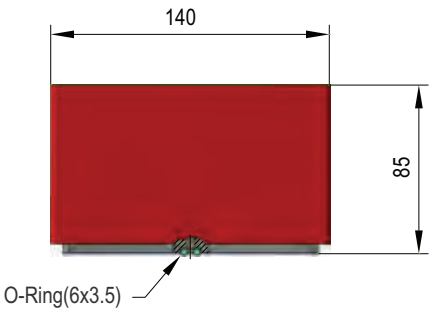
Max. 5 connectors



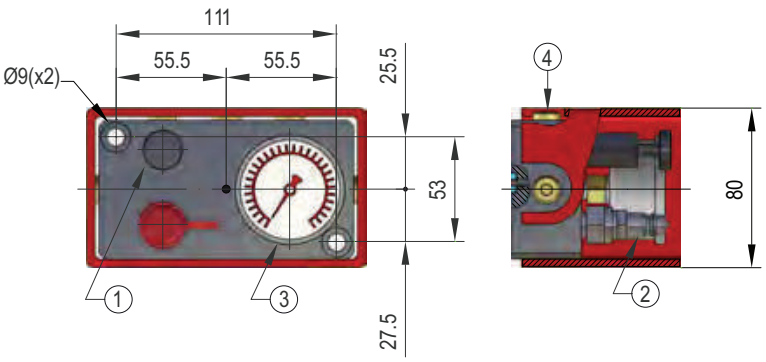
1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge
4. Over-pressure safety plug

Standard control panel. This device is used for permanently controlling gas spring pressure. It is equipped with a quick-fit socket and discharging valve for decompression. The P100 control panel has up to 5 G1/8 outlets for interconnecting gas springs. Pressure gauge range is from 0 to 400 Bar.

CONTROL PANEL FOR MANIFOLD PLATE P100M

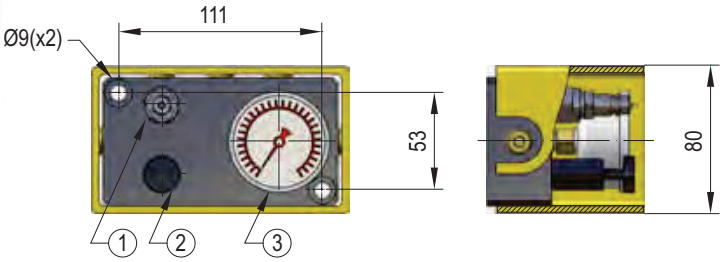


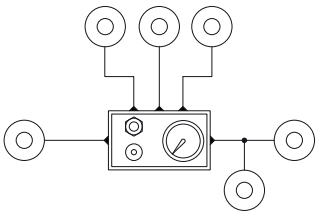
1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge
4. Over-pressure safety plug



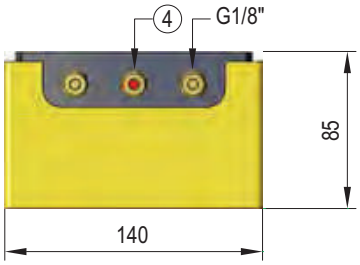
Standard control panel with a rear outlet for manifold plates: this device is used for the permanent control of gas springs interconnected by means of a manifold plate. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. Pressure gauge range is from 0 to 400 Bar.

CONTROL PANEL P105





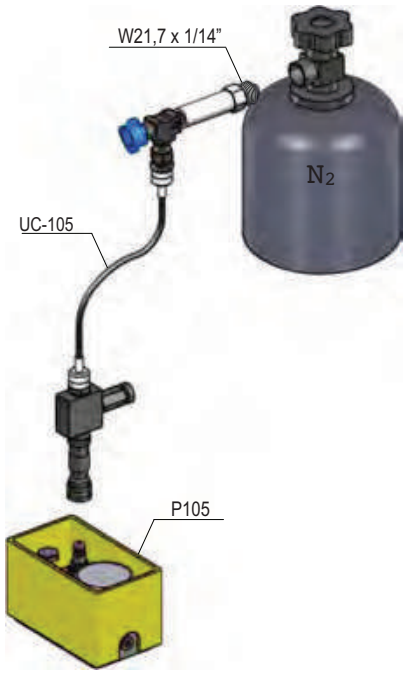
Max. 5 connectors



1. Quick coupling for charging **ERMF**
2. Discharging **VD-1** valve
3. Pressure **MP-1** gauge
4. Over-pressure safety plug

Standard control panel. This device is used for permanently controlling gas spring pressure. It is equipped with a quick-fit socket and discharging valve for decompression. The P105 control panel has up to 5 G1/8 outlets for interconnecting gas springs. Pressure gauge range is from 0 to 400 Bar.

CHARGING UNIT FOT P105 CONTROL PANEL UC-105



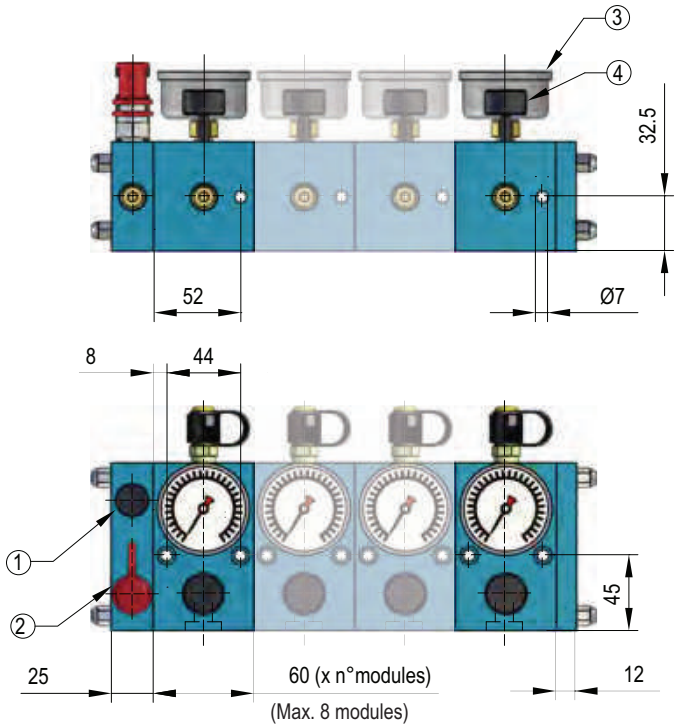
The UC-105 charging unit is a charging device for gas springs that are interconnected through P105 or PM201-F control panels.

MULTIPLE CONTROL PANEL PM201

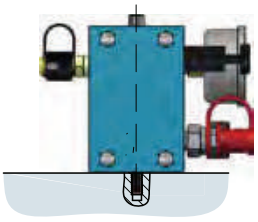
This is the PM201 modular multiple control panel, for controlling linked systems or single gas springs with different working pressure in the same tool, or only to check the pressure individually, for better control.

Each module is manufactured in aluminium and includes pressure gauge and open-closed valve.

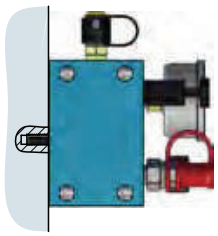
A maximum of 8 modules can be connected together with a common filling quick coupling.



1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM / ERMF**
3. Pressure **MP-1** gauge
4. 2 position modular valve



Horizontal mounting



Vertical mounting

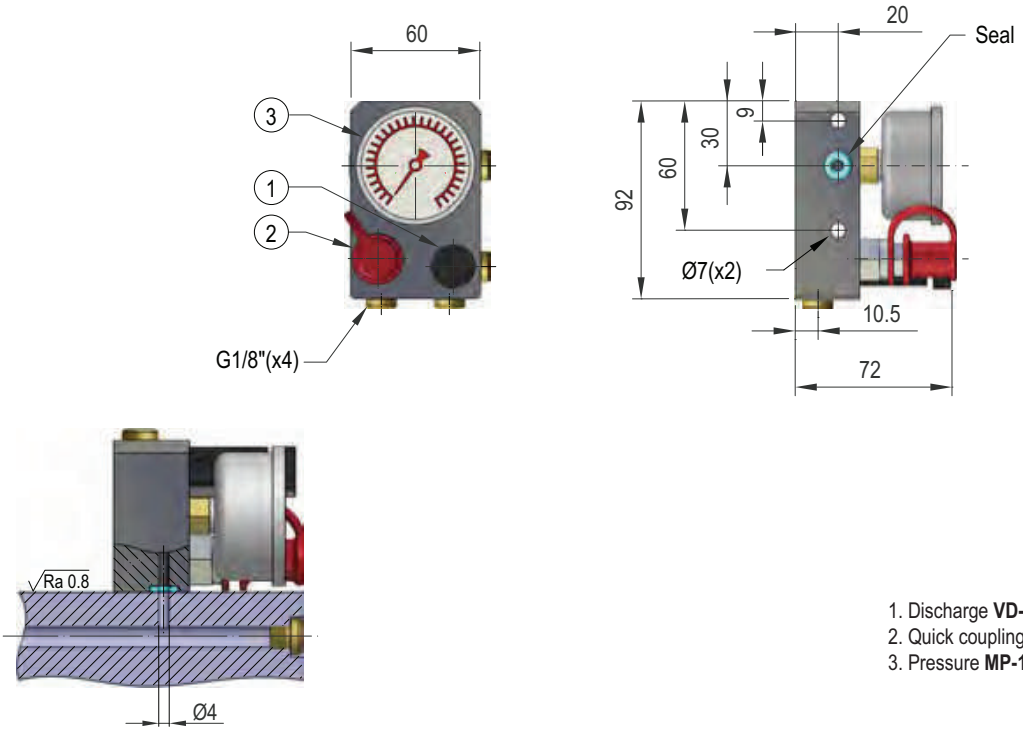
How to order

PM201	-	3	C
Code		Number of modules (Max. 8)	Filling valve

Filling valve type:
PM201 - ... - C ERM quick coupling
PM201 - ... - F ERMF quick coupling

CHARACTERISTICS: each module has three G1/8 outlets for interconnection. The control panel can be assembled on its lower base or on its back. Each model has pressure gauge with a range from 0 to 400 Bar.

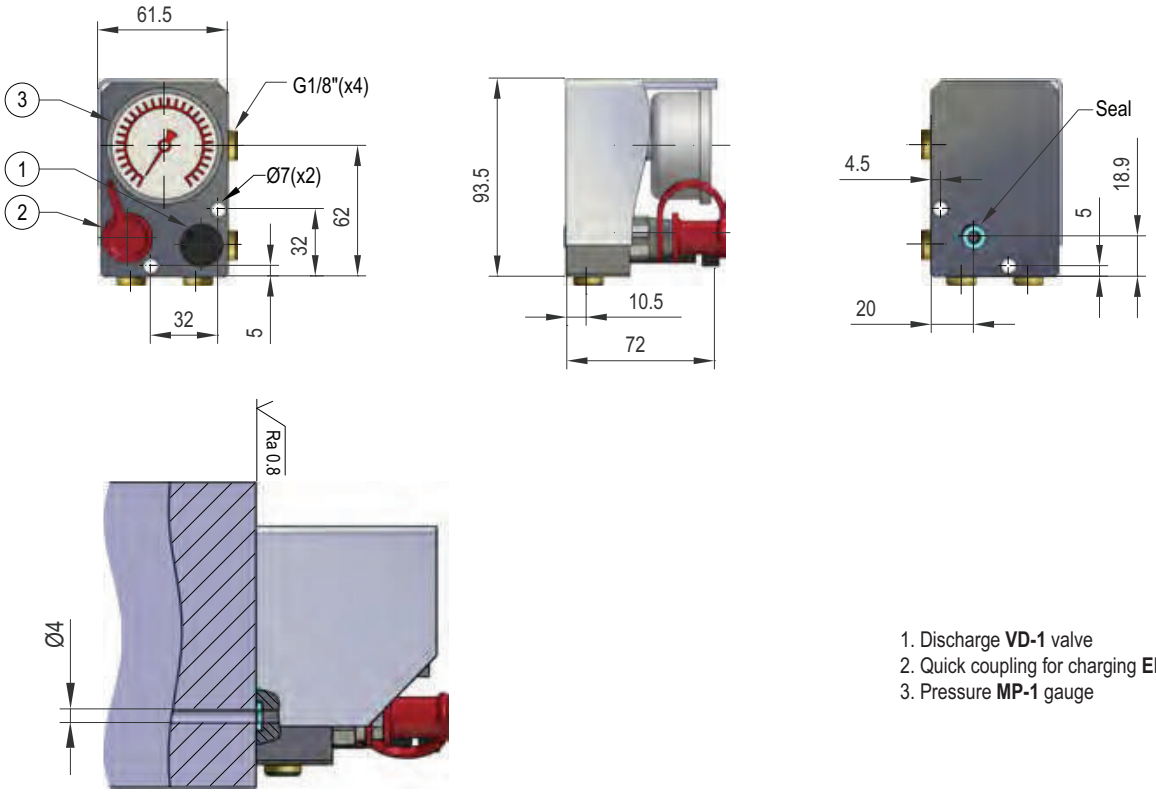
CONTROL PANEL FOR ECO-FANIFOLD PLATES P110 M



1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge

Mini control panel with a side outlet for manifold plates: this device is used for the permanent control of gas springs interconnected by means of a manifold plate. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. Pressure gauge range is from 0 to 400 Bar

CONTROL PANEL FOR ECO-FANIFOLD PLATES P110 EC

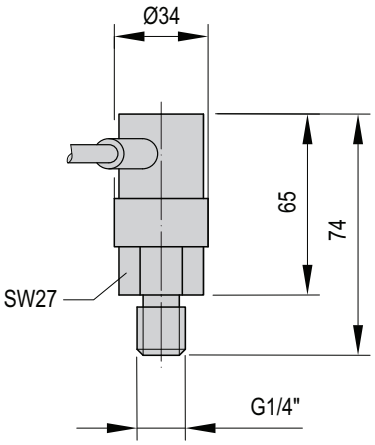


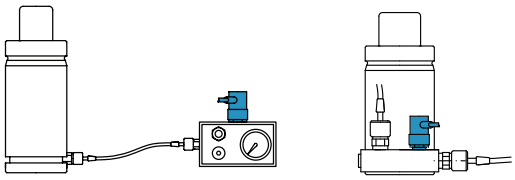
1. Discharge **VD-1** valve
2. Quick coupling for charging **ERM**
3. Pressure **MP-1** gauge

Mini control panel with a rear outlet for manifold plates: this device is used for the permanent control of gas springs interconnected by means of a manifold plate. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. Pressure gauge range is from 0 to 400 Bar.

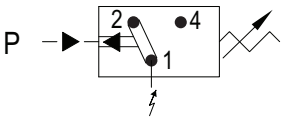
PRESSURE SWITCH

PRESSURE SWITCH PS-1



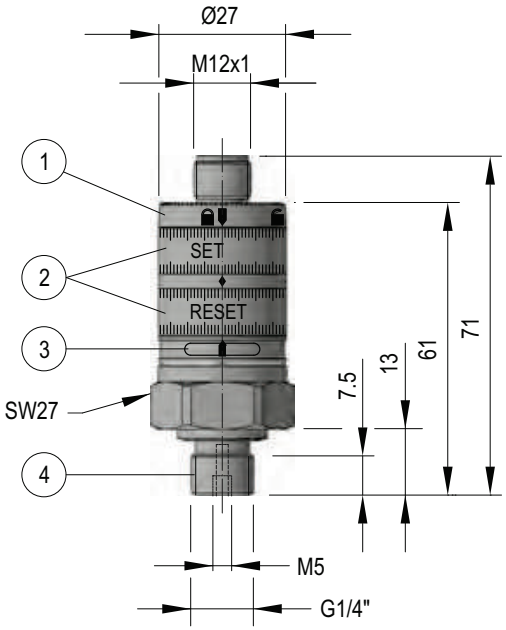


✓ LOWEST COST PRESSURE SWITCH

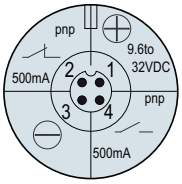


TECHNICAL INFORMATION	
Work field	50 - 200 Bar
Working temperature	-30ºC · +100ºC
Operation voltage	4A / 250V
Operating frecuency	< 200min^{-1}
Mechanical life	10^6 operating cycles
IP protection	IP 65

PRESSURE SWITCH PS-2



① Locking ring
② Setting ring (manually adjustable after unlocking)
③ Green LED: supply voltage OK
Yellow LED: Set1 value reached, output = ON
④ Tightening torque 25Nm



✓ LOW COST PRESSURE SWITCH FOR PRESSURE CONTROL IN LINKED GAS SPRINGS SYSTEM

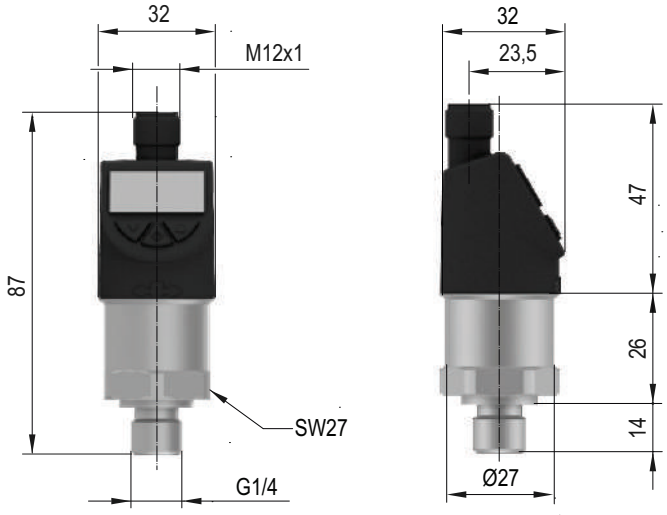
✓ EASY TO CONNECT TO THE CONTROL PANEL

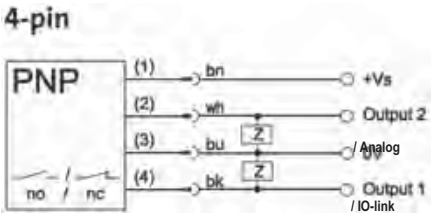
TECHNICAL INFORMATION	
Work field	0 - 400 Bar
Working temperature	-25ºC · +80ºC
Operation voltage	9.6 to 32 VDC, <25mA
Operating frecuency	< 100Hz
Mechanical life	50^6 operating cycles
IP protection	IP 67
Wiring terminations	4 pin M12 electrical connector

ELECTRONIC PRESSURE SWITCH PS-5

PS-5 pressure switch offers a high level of operating comfort.
Their distiguishing characteristic is a slim and compact size, this makes installing easy due to the little space required. It is equipped with a G1/4 inch connection with an outside thread and it can support pressures UP to +600bar.

The display can be parameterised such that the light goes green when the value is within the defined pressure and red if not, this allows to determine if the system is operating correctly.
Following installation, the display head can be rotated through 335º and the display tilted electronicaly though 180º, so that the pressure display is always aligned towards the user.
Among other things, the switching points, realease positions, output logic and time delay can be programmed via the membrane keyboard.





Output 2, selectable between switching, analog and alarm output

Socket M12 connector, 4-pin

Straight

Angle

TECHNICAL INFORMATION	
Output signal	PNP - Analog (4-20 mA /DC 0-10V) - IO-link (optional)
Switching outputs	OUT1 / OUT2
Pressure range	600 Bar
Operating voltage	15 - 32V DC, <600 mA
Output current (max. load)	250 mA
Switching time	1s
Repeat accuracy	≤ ± 0.1% of span
Operating temperature	-25ºC - +85ºC
IP protection	IP 65
Connection	M12-connector, 4-pin

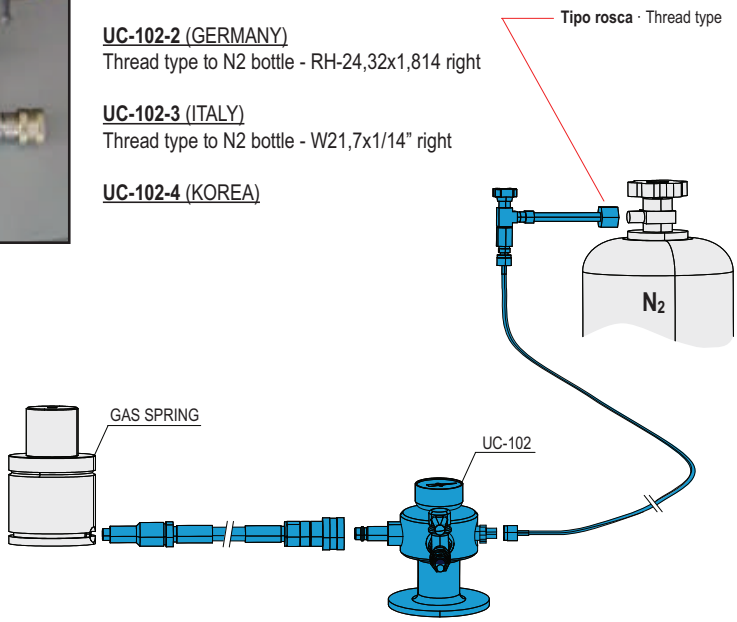
CHARGING UNIT FOR AUTONOMOUS GAS SPRINGS UC-102

UC-102-1 (SPAIN)
Thread type to N2 bottle - M21,7x1,814 right

UC-102-2 (GERMANY)
Thread type to N2 bottle - RH-24,32x1,814 right

UC-102-3 (ITALY)
Thread type to N2 bottle - W21,7x1/14" right

UC-102-4 (KOREA)

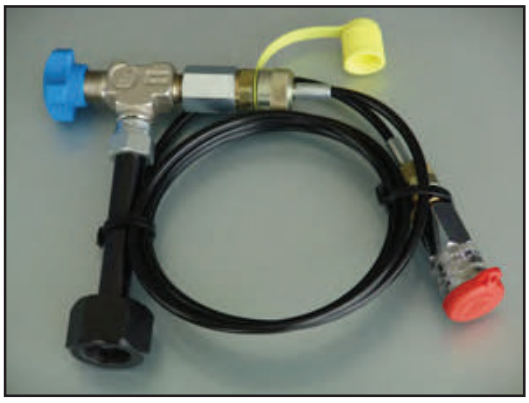


How to order

UC-102	-	2
Code		Type

The UC-102 charging unit is a charging device for autonomous gas springs. It is supplied with G1/8, M6A, M6-C and M8 hoses and charging couplings.

CHARGING UNIT FOR CONTROL PANEL UC-103

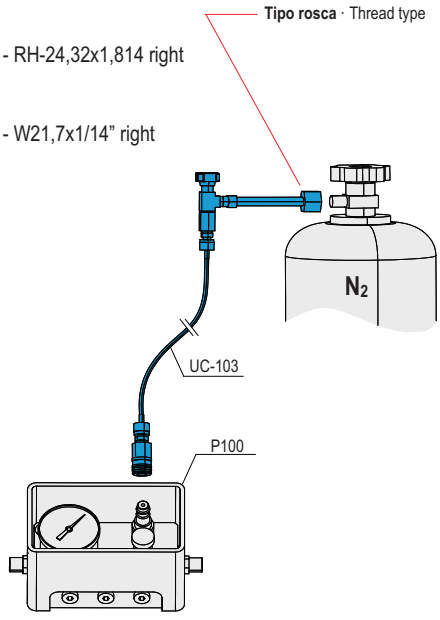


UC-103-1 (SPAIN)
Thread type to N2 bottle - M21,7x1,814 right

UC-103-2 (GERMANY)
Thread type to N2 bottle - RH-24,32x1,814 right

UC-103-3 (ITALY)
Thread type to N2 bottle - W21,7x1/14" right

UC-103-4 (KOREA)



How to order

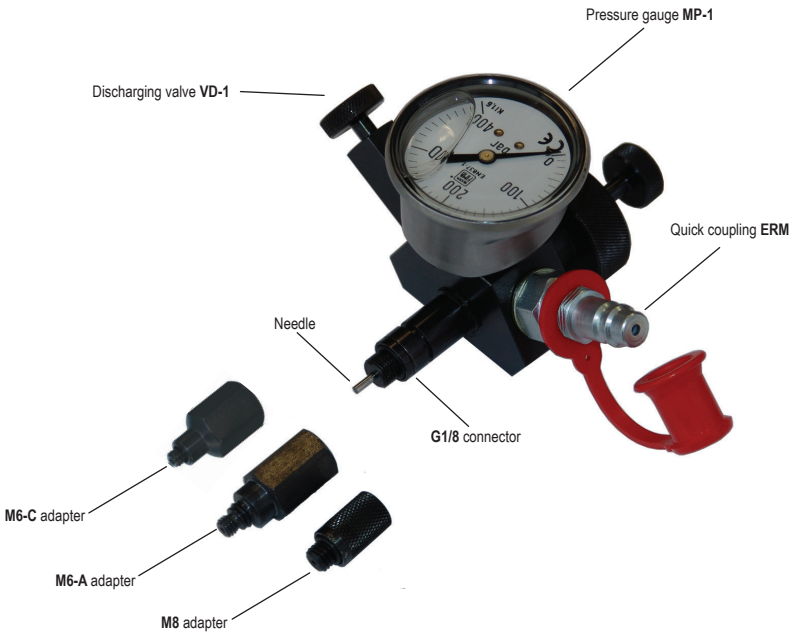
UC-103	-	1
Code		Type

The UC-103 charging unit is a charging device for gas springs that are interconnected through a control panel.

CONTROL UNIT FOR AUTONOMOUS GAS SPRING UC-101.1

The UC 101.1 control unit will allow for charging for all gas springs and also pressure control for gas springs by means of a G1/8 charging port. During pressure-checking operations, there is an approximate 10% gas loss.

- ✓ **FOR GAS SPRING PRESSURE MONITORING BY MEANS OF A G1/8 CHARGING PORT**
- ✓ **FOR ALL GAS SPRINGS (UC-103 NECESSARY)**



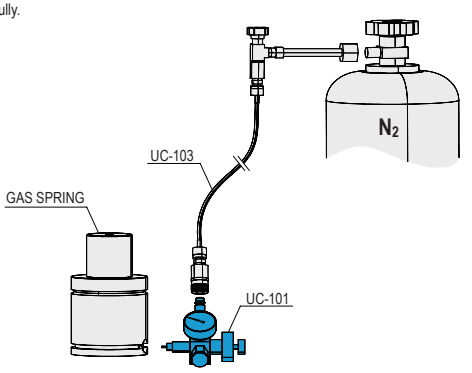
UC-101.1 instructions for use as a charging unit

For gas springs with a G1/8" charging port

- Step 1: Unscrew the G1/8"spindle half-way until the needle goes in fully.
- Step 2: Screw the gas spring on to the G1/8"connector.

For gas springs with a M6 or M8 thread

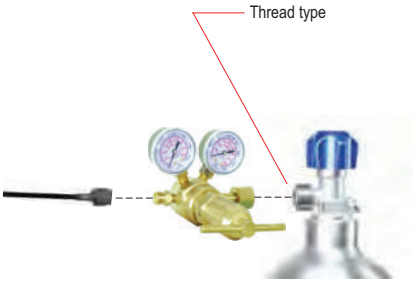
- Step 1: Screw an M6-A or M8 adaptor (as necessary) onto the G1/8" connector thread. If necessary, also screw in a M6-B or M6-C adaptor to the M6-A adaptor.
- Step 2: Screw the gas spring in the charging tool on to the M6-A or M6-B or M6-C or M8 connector (as necessary).
- Step 3: Plug the UC-103 charging hose into the quick coupling fitting.
- Step 4: Slowly open the valve in the UC-103 charging hose until the desired pressure is attained in the pressure gauge. Close the valve.
- Step 5: The gas spring valve closes automatically. In order to evacuate remaining pressure in the charging unit, turn the screw of the waste valve slowly until the remaining pressure is released (when the pressure gauge shows 0 bar). Turn the waste valve screw back to its initial position.
- Step 6: Take the gas spring out of the tool.



HIGH PRESSURE NITROGEN REGULATOR PR-1

✓ Single stage construction with 2 gauges

✓ The nitrogen regulator with safety relief valve is set for safe operation



How to order

PR-1	-	2
Code		Thread type

PR-1 (SPAIN)
Thread type to N2 bottle - M21,7x1,814 right

PR-2 (GERMANY)
Thread type to N2 bottle - RH-24,32x1,814 right

TECHNICAL INFORMATION	
Max. Inlet pressure	315 Bar
Max. delivery pressure	210 Bar
Weight	2 Kg

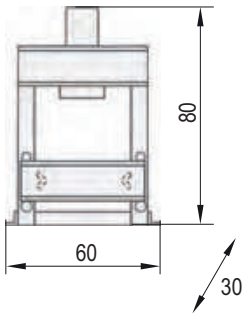
CHARGING & CHECKING STAND SAMPLE

For further information, do not hesitate to get in touch with our technical department

+34 945 121 845
+34 945 250 827
support@tecapres.com

UM-102 PRESS (TABLETOP VERSION)

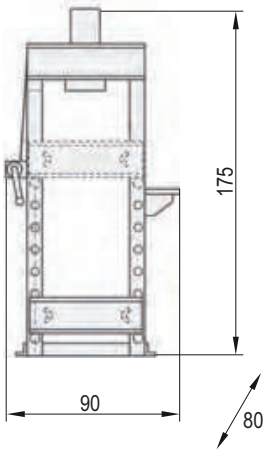
This is a specific small-sized tool for measuring gas spring force. It is quick and simple to use, and reliable.



TECHNICAL INFORMATION	
Power AC	85V - 265V AC 50/60 Hz
Measuring capacity	0 - 10Ton
Resolution	5 daN
Maximum gas spring height	380 mm
Press weight	53 Kg

UM-103 PRESS (STANDING VERSION)

This is an specific large-sized tool for measuring gas spring force. It is quick and simple to use, and reliable. Available in two versions, to measure up to 10Ton, and up to 23Ton.



How to order

UM-103	-	10
Code		Capacity

TECHNICAL INFORMATION	
Power AC	85V - 265V AC 50/60 Hz
Resolution	5 daN
Maximum gas spring height	800 mm
Press weight	180 Kg

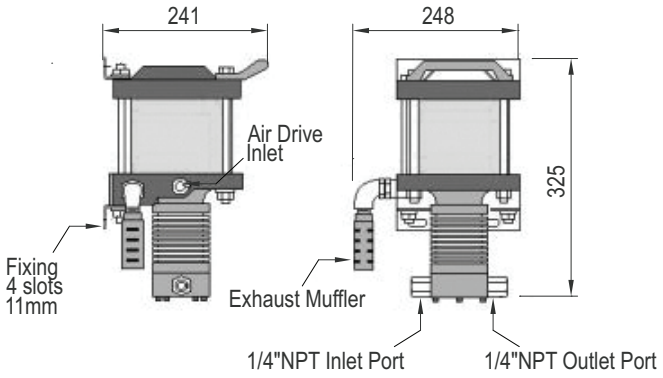
MODEL	MEASURING CAPACITY
UM-103-10	0 - 10Ton
UM-103-23	0 - 23Ton

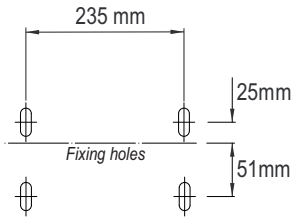
NITROGEN GAS BOOSTER TPN2-AA30

The TPN2-AA30 nitrogen gas charger allows for an optimum use of nitrogen bottles until a residual pressure of 20 bar is reached. Simple and safe to use, it has been designed to charge or complete gas charging for gas springs or manifold systems.

The TPN2-AA30 charger uses pressurised air (nominal working pressure 7 Bar) and is composed of a hydro-mechanic pump, the piston accumulator for the compression of nitrogen, inlet and release decompression valves.

The system is assembled on a base with handles for easy transportation.





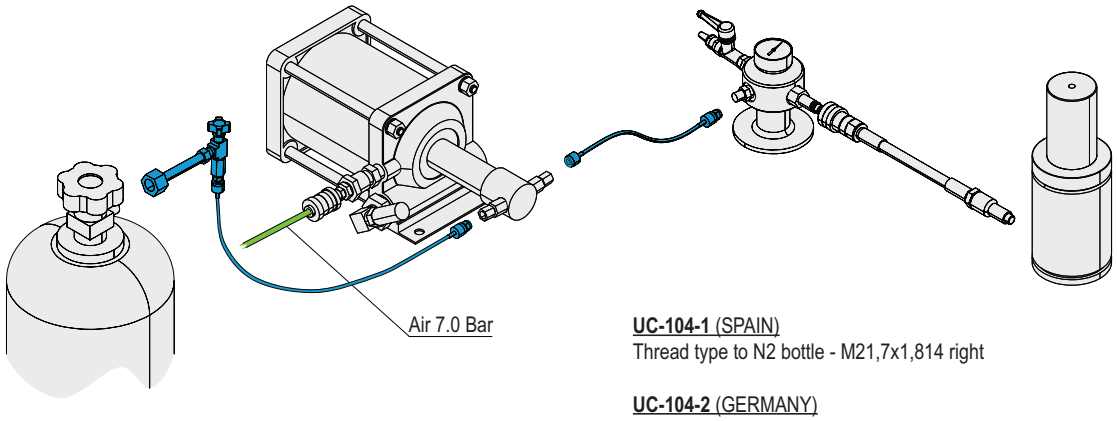
✓ **Control of maximum pressure by means of inexpensive air drive pressure regulators**

✓ **Single acting, single stage air pressure amplifier with pressure outputs up to 4500 psi (310 bar).**

✓ **Maximum Po ("Stall")=Pa x Ratio**

TECHNICAL INFORMATION	
Min. air drive pressure	2,8 Bar
Max. air drive pressure	10,3 Bar
Min. inlet gas pressure	6,9 Bar
Max. inlet gas pressure	300 Bar
Max. outlet pressure	200 Bar
Max. compression ratio	30:1
Weight	12 Kg

CHARGING EQUIPMENT FOR BOOSTER UC-104



How to order

UC-104 - **2**

Code | Thread type

UC-104-1 (SPAIN)
Thread type to N2 bottle - M21,7x1,814 right

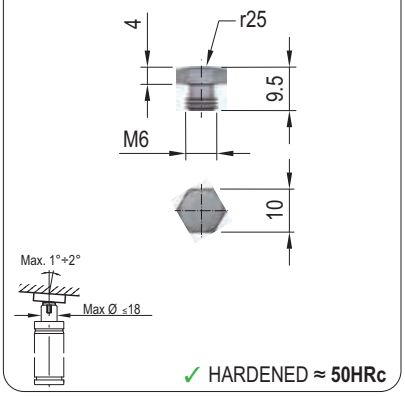
UC-104-2 (GERMANY)
Thread type to N2 bottle - RH-24,32x1,814 right

UC-104-3 (ITALY)
Thread type to N2 bottle - W21,7x1/14" right

UC-104-4 (KOREA)

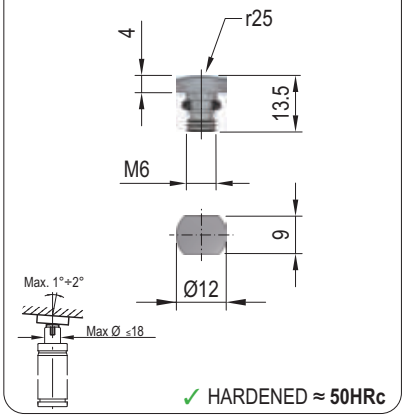
UC-104 charging equipment is made up of different connection lines and fittings with which to Connect the nitrogen cylinder tank bottle to the TPN2-AA30 booster, and this, in turn, is connected to the UC-102 charging unit.

THRUST PLATE **TPSC-M6**



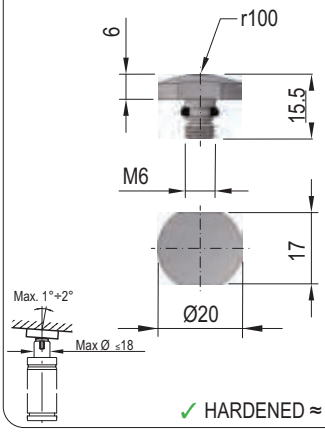
✓ HARDENED ≈ **50HRc**

THRUST PLATE **TPSC-M6OR**



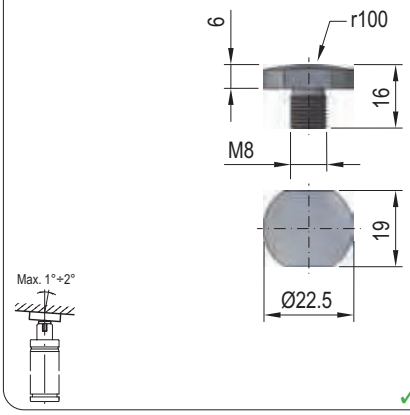
✓ HARDENED ≈ **50HRc**

THRUST PLATE **TPSC-M6OR-2**



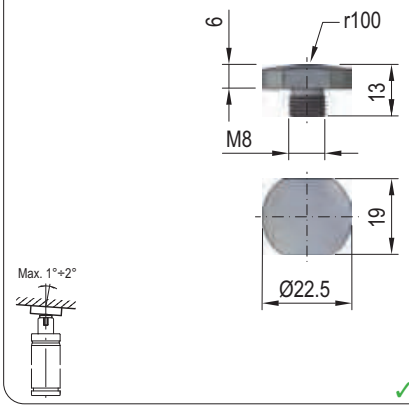
✓ HARDENED ≈ **50HRc**

THRUST PLATE **TPSC-M8L**



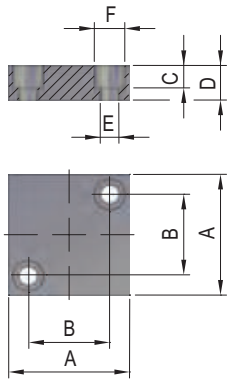
✓ HARDENED ≈ **50HRc**

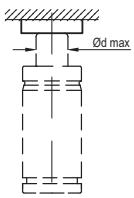
THRUST PLATE **TPSC-M8C**



✓ HARDENED ≈ **50HRc**

PRESS PLATE **TPSP**

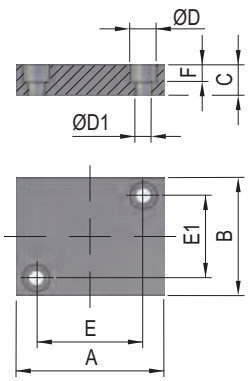


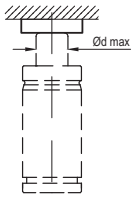


Code	Ød mm	A mm	B mm	C mm	D mm	E mm	F mm
TPSP 22	22	40	21	10	15	9	15
TPSP 36	36	56	32	13	20	11	20
TPSP 65	65	71	48	13	20	11	20
TPSP 95	95	84	60	13	25	11	25

✓ HARDENED ≈ **50HRc**

PRESS PLATE **TPSPR**

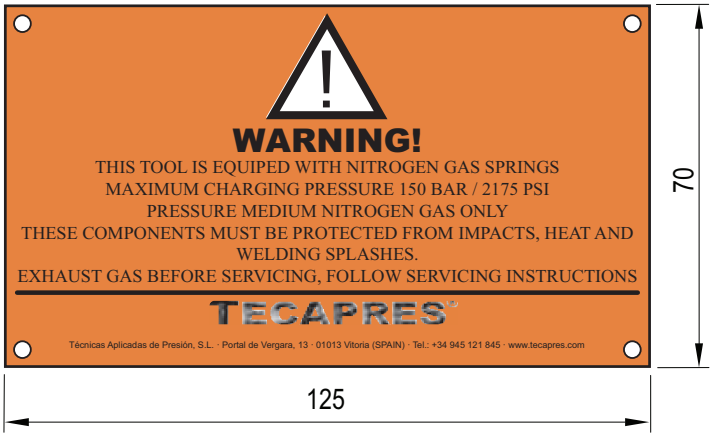




Code	Ød mm	A mm	B mm	C mm	ØD1 mm	ØD mm	E mm	E1 mm	F mm
TPSPR-1	15	50	25	12	7	11	32	8	7
TPSPR-2	20	55	30	12	7	11	40	14	7
TPSPR-3	25	70	35	15	9	15	48	14	9
TPSPR-4	36	75	50	15	9	15	56	30	9
TPSPR-5	50	85	60	15	9	15	66	40	9
TPSPR-6	65	100	80	20	11	18	72	56	11
TPSPR-7	80	110	100	20	11	18	85	75	11

✓ HARDENED ≈ **50HRc**

TIP-1 IDENTIFICATION PLATE



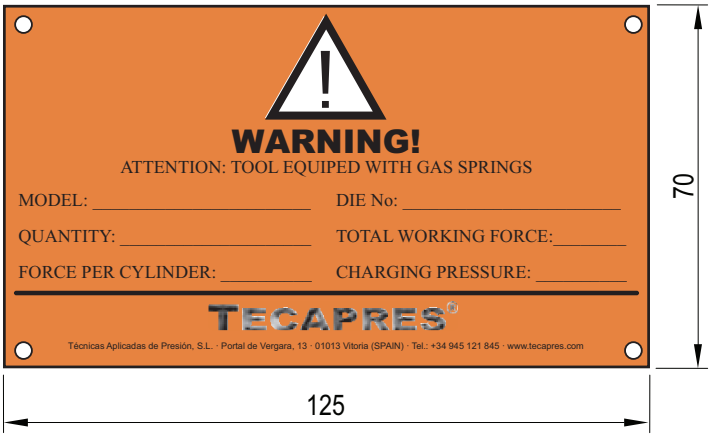
How to order

TIP-1 - **DE**

Code | Language

ES - Spanish	**PT** - Portuguese	**CH** - Chinese
EN - English	**SK** - Slovakian	**KR** - Korean
DE - German	**DK** - Danish	**PL** - Polish
FR - French	**SE** - Sweden	**HU** - Hungarian
IT - Italian	**CZ** - Czech	

TIP-2 IDENTIFICATION PLATE



How to order

TIP-2 - **EN**

Code | Language

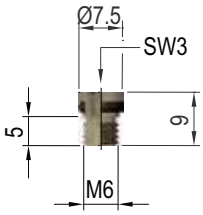
ES - Spanish	**PT** - Portuguese	**CH** - Chinese
EN - English	**SK** - Slovakian	**KR** - Korean
DE - German	**DK** - Danish	**PL** - Polish
FR - French	**SE** - Sweden	**HU** - Hungarian
IT - Italian	**CZ** - Czech	

FILLING VALVE **TPFV1**

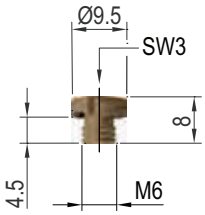
FILLING VALVE **TPFV3**

FILLING VALVE **TPFV5**

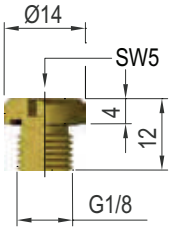
THREADED PLUG **M6-1**



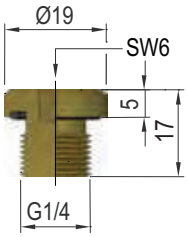
THREADED PLUG **M6-2**



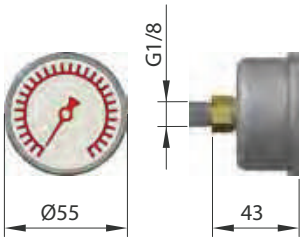
THREADED PLUG **G1/8**



THREADED PLUG **G1/4**

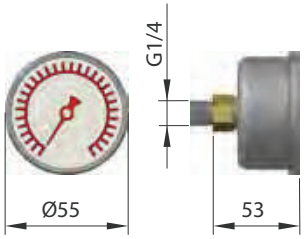


PRESSURE GAUGE **MP-1**



TECHNICAL INFORMATION	
Scale	0 - 400 Bar
Resolution	5 Bar
Maximum pressure	400 Bar

PRESSURE GAUGE **MP-2**



TECHNICAL INFORMATION	
Scale	0 - 400 Bar
Resolution	5 Bar
Maximum pressure	400 Bar

MALE QUICK-COUPLING FOR CONTROL PANEL

ERM **ERMF**

FEMALE QUICK-COUPLING FOR CONTROL PANEL

ERH **ERHF**

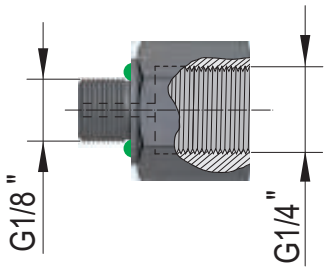
DISCHARGING VALVE FOR CONTROL PANEL

VD-1

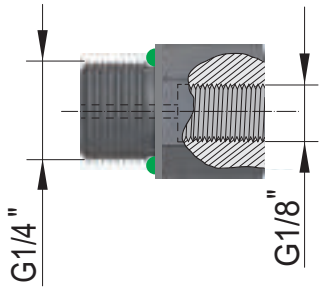
METAL RUBBER WASHER
G1/8

METAL RUBBER WASHER
G1/4

ADAPTER
TP-100



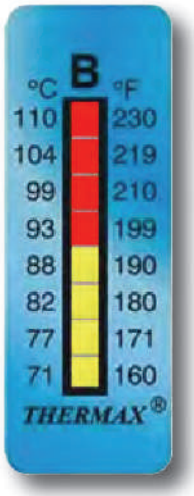
ADAPTER
TP-101



OVERPRESSURE
M6 RUPTURE PLUG
TP-102

OVERPRESSURE
G1/8 RUPTURE PLUG
TP-103

TEMPERATURE STICKER
TP-104



This sticker is designed to track the correct working temperature of the cylinder ensuing that it is not exceeded and guaranteeing optimal operation.

These temperature indicators are made on adhesive paper, where each point is made of a heat-sensitive material and calibrated based on the temperature it marks. Subsequently, a transparent polyester is overlaid, which acts as a protector against water, steam or oil. This allows the indicator to be used in places susceptible to receiving water or grease.

EXTRACTOR KEY
E-M6

EXTRACTOR KEY
E-M8

VALVE DEVICE
DV-M6

VALVE DEVICE
DV-V5

VALVE DEVICE
DV-G1/8

GAS LEAK DETECTOR SPRAY

GAS SPRING MAINTENANCE KIT

There is a complete maintenance kit for every gas spring model. Please find the reference code in the technical information.

Includes: Fully assembled bushing (applies for most models), filling valve, piston guide (if applicable), lubricating oil and instruction & service manual.

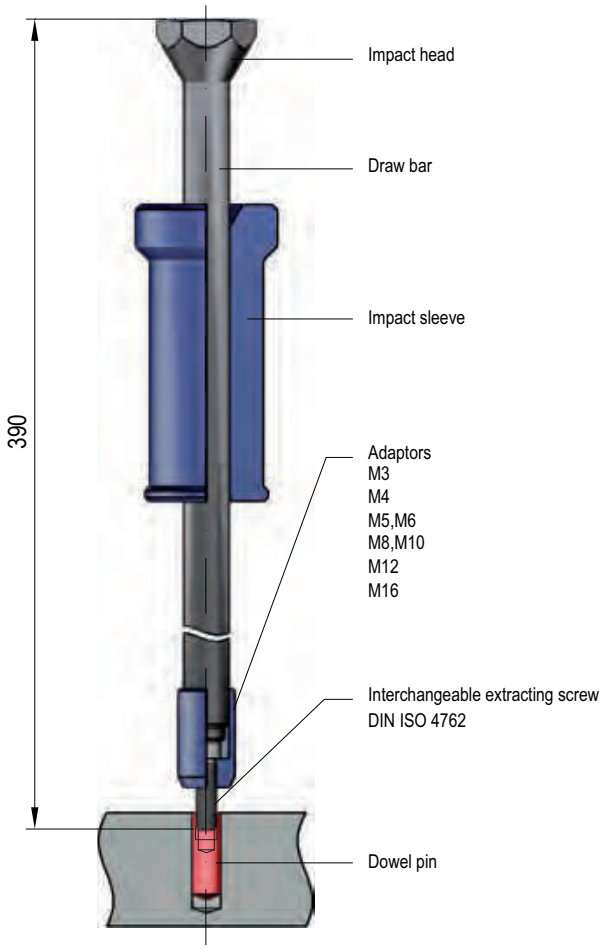
CHARGING ADAPTER
G1/8

CHARGING ADAPTER
M8

CHARGING ADAPTER
M6-A

CHARGING ADAPTER
M6-C

DOWEL PIN EXTRACTOR EXP-01



Content:

- 355 mm draw bar
- Sliding impact sleeve
- Adaptor with interchangeable screw M3 (DIN ISO 4762)
- Adaptor with interchangeable screw M4 (DIN ISO 4762)
- Adaptor with interchangeable screw M5 y M6 (DIN ISO 4762)
- Adaptor with interchangeable screw M8 y M10 (DIN ISO 4762)
- M12 adaptor
- M16 adaptor

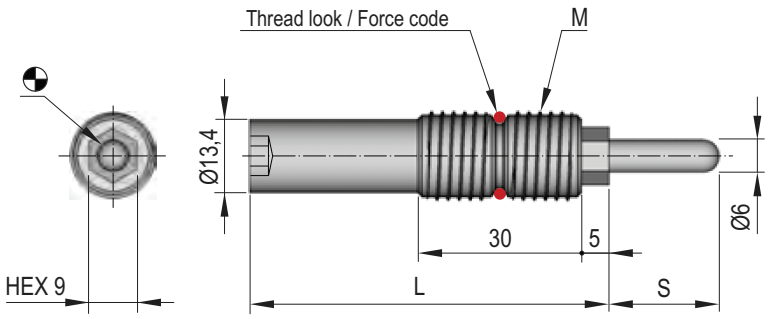
CRIMPING PRESS PMES-01

✓ **Transportable compact hydraulic manual pump for flexible hoses MF1215**

✓ **Indicator of measuring for maximum pressure**

INFORMATION	
Dimensions	25x28x25 cm
Weight	12,3 Kg


TECAPRES
TECAPRES
TECAPRES

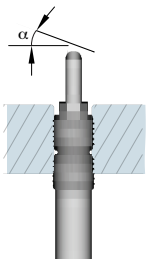


SP1L Standard spring load (Red)

Code	S mm	M	L mm	Preloading approx. (N)	Compressed approx. (N)
SP1L x 10	10	M16 x 1,5	60	4	13
SP1L x 15	15		60	10	40
SP1L x 20	20		80	7	34
SP1L x 30	30		80	7	45
SP1L x 30/1	30		120	18	40
SP1L x 40	40		150	13	37
SP1L x 50	50		150	13	43
SP1L x 60	60		150	13	49
SP1L x 70	70		200	10	40
SP1L x 80	80		200	10	45

SP1F Heavy spring load (Yellow)

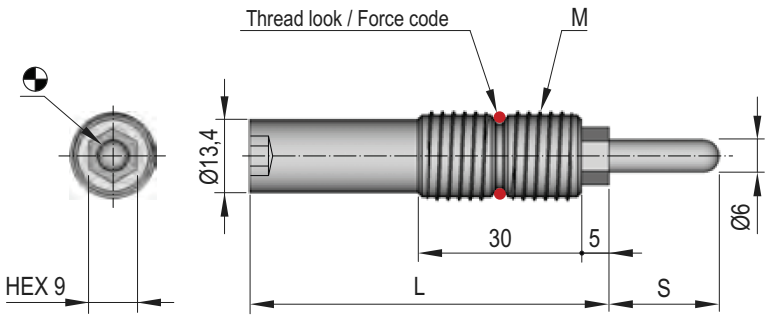
Code	S mm	M	L mm	Preloading approx. (N)	Compressed approx. (N)
SP1F x 10	10	M16 x 1,5	60	13	45
SP1F x 15	15		60	15	56
SP1F x 20	20		80	15	75
SP1F x 20/1	20		80	34	172
SP1F x 30	30		120	20	80
SP1F x 30/1	30		150	56	132
SP1F x 40	40		150	56	158
SP1F x 50	50		200	19	100
SP1F x 60	60		200	19	116
SP1F x 70	70		200	19	132
SP1F x 80	80		200	25	100



Stroke (s)	Max α°
10 to 20	20°
30 to 50	15°
60 to 80	10°

Max. stem speed	1,6 m/s
Maximum rate	60 - 120spm
Operating temperature	-10°C - +80°C
Operating average life	300.000cycles
Body: free cutting black oxide steel	
Bolt: free cutting steel, case-hardened	

SP-KEY



SP2L

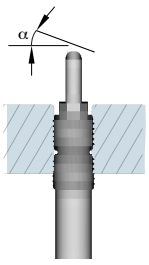
Standard spring load (Red)

Code	S mm	M	L mm	Preloading approx. (N)	Compressed approx. (N)
SP2L x 10	10	M16 x 2	60	4	13
SP2L x 15	15		60	10	40
SP2L x 20	20		80	7	34
SP2L x 30	30		80	7	45
SP2L x 30/1	30		120	18	40
SP2L x 40	40		150	13	37
SP2L x 50	50		150	13	43
SP2L x 60	60		150	13	49
SP2L x 70	70		200	10	40
SP2L x 80	80		200	10	45

SP2F

Heavy spring load (Yellow)

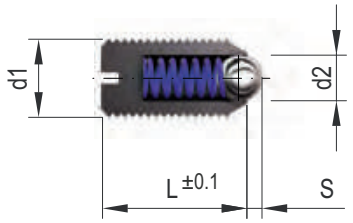
Code	S mm	M	L mm	Preloading approx. (N)	Compressed approx. (N)
SP2F x 10	10	M16 x 2	60	13	45
SP2F x 15	15		60	15	56
SP2F x 20	20		80	15	75
SP2F x 20/1	20		80	34	172
SP2F x 30	30		120	20	80
SP2F x 30/1	30		150	56	132
SP2F x 40	40		150	56	158
SP2F x 50	50		200	19	100
SP2F x 60	60		200	19	116
SP2F x 70	70		200	19	132
SP2F x 80	80		200	25	100



Stroke (s)	Max α°
10 to 20	20°
30 to 50	15°
60 to 80	10°

Max. stem speed	1,6 m/s
Maximum rate	60 - 120spm
Operating temperature	-10°C - +80°C
Operating average life	300.000cycles
Body: free cutting black oxide steel	
Bolt: free cutting steel, case-hardened	

SP-KEY



Material
Body: free cutting black oxide steel
Ball:stainless steel, hardened to 62Hrc

d1	d2 mm	L mm	S mm
M4	2,5	9	0,8
M5	3	12	0,9
M6	3,5	14	1
M8	4,5	16	1,5
M10	6	19	2
M12	8	22	2,5
M16	10	24	3,5
M20	12	30	4,5
M24	15	34	5,5

ER-20L

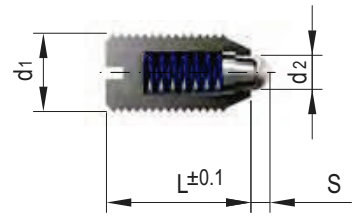
Standard spring load

Code	Spring force Initial (N)	Spring force Final (N)
ER-20L-M4	6	12
ER-20L-M5	7	13
ER-20L-M6	9	15
ER-20L-M8	20	35
ER-20L-M10	25	45
ER-20L-M12	35	60
ER-20L-M16	65	110
ER-20L-M20	80	120
ER-20L-M24	100	150

ER-20F

Heavy spring load

Code	Spring force Initial (N)	Spring force Final (N)
-	-	-
ER-20F-M5	13	30
ER-20F-M6	40	40
ER-20F-M8	40	60
ER-20F-M10	60	90
ER-20F-M12	75	115
ER-20F-M16	115	190
ER-20F-M20	115	210
ER-20F-M24	125	240



Material
Body: free cutting black oxide steel
Bolt: free cutting hardened, black oxide steel

d1	d2 mm	L mm	S mm
M4	1,8	9	1,5
M5	2,4	12	2
M6	2,7	14	2
M8	4	16	2
M10	4,5	19	2,5
M12	6	22	3,5
M16	8,5	24	4,5
M20	10	30	6,5
M24	13	34	8

ER-21L

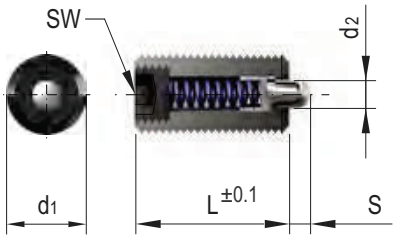
Standard spring load

Code	Spring force Initial (N)	Spring force Final (N)
ER-21L-M4	6	16
ER-21L-M5	6	17
ER-21L-M6	7	18
ER-21L-M8	20	35
ER-21L-M10	20	45
ER-21L-M12	25	60
ER-21L-M16	50	95
ER-21L-M20	80	140
ER-21L-M24	80	160

ER-21F

Heavy spring load

Code	Spring force Initial (N)	Spring force Final (N)
-	-	-
-	-	-
ER-21F-M6	13	40
ER-21F-M8	40	70
ER-21F-M10	40	80
ER-21F-M12	60	115
ER-21F-M16	60	150
ER-21F-M20	100	200
ER-21F-M24	110	230



Material
Body: free cutting black oxide steel
Bolt: free cutting, hardened, black oxide steel

d1	d2 mm	L mm	S mm	SW mm
M4	1,5	15	1,5	1,3
M5	2,4	18	2,3	1,5
M6	2,7	20	2,5	2
M8	3,5	22	3	2,5
M10	4	22	3	3
M12	6	28	4	4
M16	7,5	32	5	5
M20	10	40	7	6

ER-40L

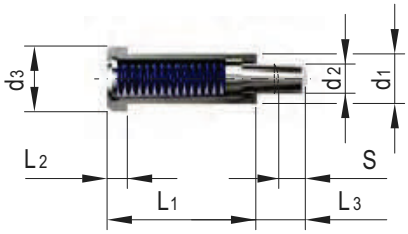
Standard spring load

Code	Spring force Initial (N)	Spring force Final (N)
ER-40L-M4	5	15
ER-40L-M5	7	20
ER-40L-M6	7	20
ER-40L-M8	9	35
ER-40L-M10	9	35
ER-40L-M12	15	55
ER-40L-M16	45	100
ER-40L-M20	70	140

ER-40F

Heavy spring load

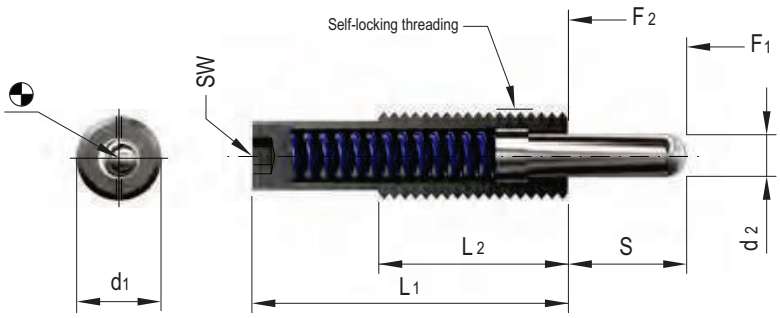
Code	Spring force Initial (N)	Spring force Final (N)
-	-	-
ER-40F-M5	13	45
ER-40F-M6	18	50
ER-40F-M8	25	70
ER-40F-M10	25	70
ER-40F-M12	45	110
ER-40F-M16	60	160
ER-40F-M20	90	200



Material
Body: free cutting black oxide steel
Ball:stainless steel, hardened to 62Hrc

ER-60

Code	d_1 mm	d_2 mm	d_3 mm	L_1 mm	L_2 mm	L3 mm	S mm	Spring force Initial (N)	Spring force Final (N)
ER-60-06	6	2,6	8	20	3,2	6	3,5	10	22
ER-60-08	8	3,8	10	24	3,2	8	4,5	30	90
ER-60-10	10	5,9	13	30	4	10	5,5	42	110
ER-60-12	12	7,8	16	36	5	12	6,5	50	130



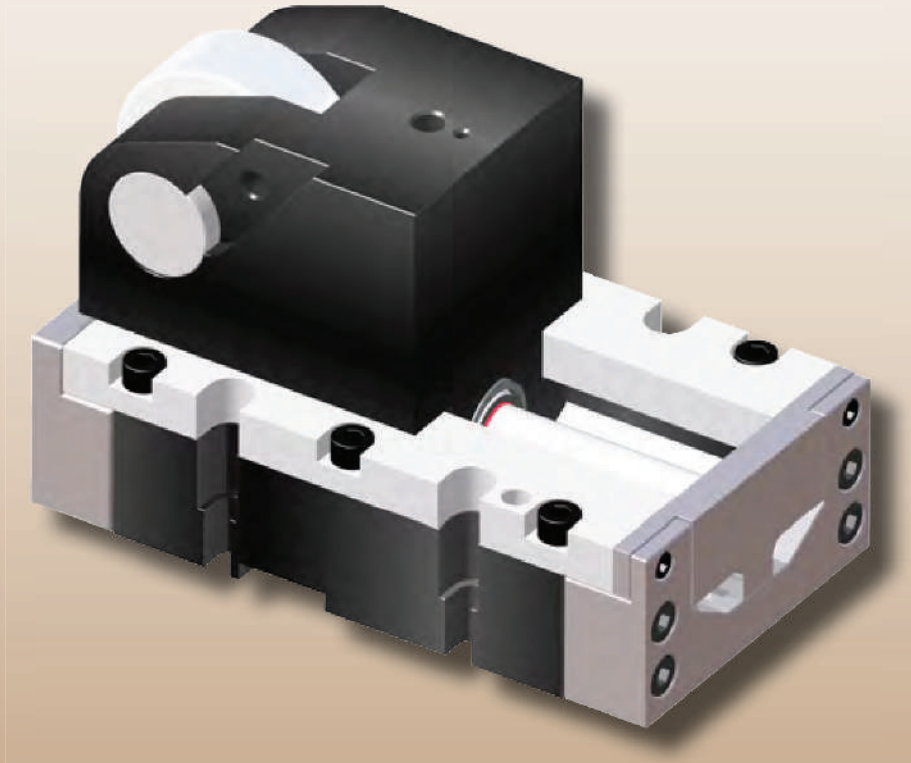
Material
Body: free cutting black oxide steel
Bolt: free cutting steel, case-hardened

ER-L Standard spring load

Code	d_1	S mm	d_2 mm	L_1 mm	L_2 mm	SW mm	Spring force F_1 Initial (N)	Spring force F_2 Final (N)
ER 12-10L	M12 x 1,75	10	5,5	43	35	4	4	20
ER 16-10LS	M16 x 2	10	8	50	35	5	10	50
ER 16-10L	M16 x 2	10	8	60	35	5	13	40
ER 16-15L	M16 x 2	15	8	60	35	5	10	40
ER 16-20L	M16 x 2	20	8	60	35	5	13	40
ER 16-30L	M16 x 2	30	8	125	35	5	18	40
ER 16-40L	M16 x 2	40	8	125	35	5	18	40
ER 16-50L	M16 x 2	50	8	155	35	5	20	50
ER 16-60L	M16 x 2	60	8	159	35	5	18	40
ER 16-70L	M16 x 2	70	8	185	35	5	20	50
ER 16-80L	M16 x 2	80	8	185	35	5	20	50
ER 24-15L	M24 x 3	15	10	60	45	8	20	100
ER 30-20L	M30 x 3,5	20	15	70	45	12	30	150

ER-H Heavy spring load

Code	d_1	S mm	d_2 mm	L_1 mm	L_2 mm	SW mm	Spring force F_1 Initial (N)	Spring force F_2 Final (N)
ER 12-10H	M12 x 1,75	10	5,5	43	35	4	7	40
ER 16-10HS	M16 x 2	10	8	50	35	5	20	100
ER 16-10H	M16 x 2	10	8	60	35	5	27	80
ER 16-15H	M16 x 2	15	8	60	35	5	15	80
ER 16-20H	M16 x 2	20	8	85	35	5	17	80
ER 16-30H	M16 x 2	30	8	125	35	5	20	80
ER 16-40H	M16 x 2	40	8	125	35	5	20	80
ER 16-50H	M16 x 2	50	8	155	35	5	30	100
ER 16-60H	M16 x 2	60	8	159	35	5	20	80
ER 16-70H	M16 x 2	70	8	185	35	5	30	150
ER 16-80H	M16 x 2	80	8	185	35	5	30	150
ER 24-15H	M24 x 3	15	10	60	45	8	40	200
ER 30-20H	M30 x 3,5	20	15	70	45	12	50	300



Roller cams

Code	Working punch stroke mm	Max. punching force daN
TPRC 2000	50	2000
TPRC 3000	50, 80	3000
TPRCS 3000	50, 80	3000
TPRC 5000	50, 80, 100	5000
TPRCS 5000	50, 80, 100	5000
TPRCS 15000	50, 80, 100	15000

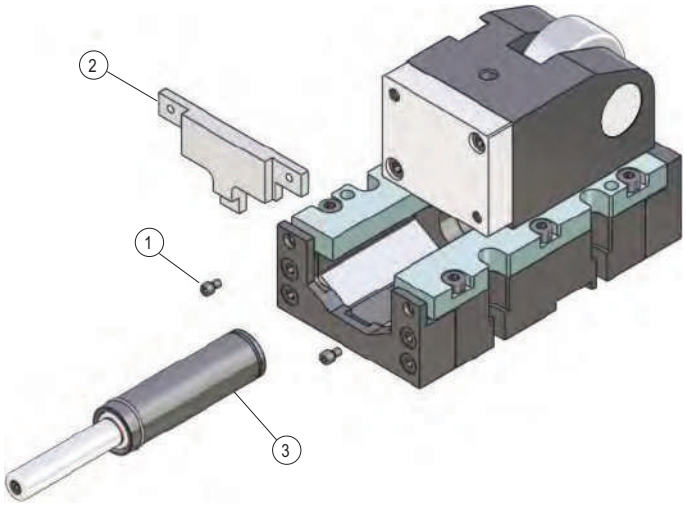
Sintered sliding elements

In order to satisfy demand for modern tools a new sintered steel material has been developed that combines lower rates of wear and tear in sliding plates with a long useful life and less maintenance.

This new generation of sliding elements is made of an iron-based porous sintered metal which provides a sliding element with a higher degree of solidity. This material is characterised by its solidity in medium-to-high speeds.

Characteristics	Bronze	Sintered metal
Maximum sliding speed	15 m/min	70 m/min
Frictional coefficient	0,05 - 0,15	0,05 - 0,15
Surface pressure normal	35 N/mm^2	70 N/mm^2
Brinell hardness HB 10	190 - 220 HB S10/3000	-
Hardness of the sliding film	-	HRB60 - HRC20
Hardness of the base material	-	HRB80 - HRC40
Operating temperature	< 150 ºC	< 250 ºC
Maximal unlubricated operating time	1000	3000
Integrated lubricant	Graphit	Fe + Cu + Graphit + MoS2
Portion of lubricant	20 - 35%	15 - 20%

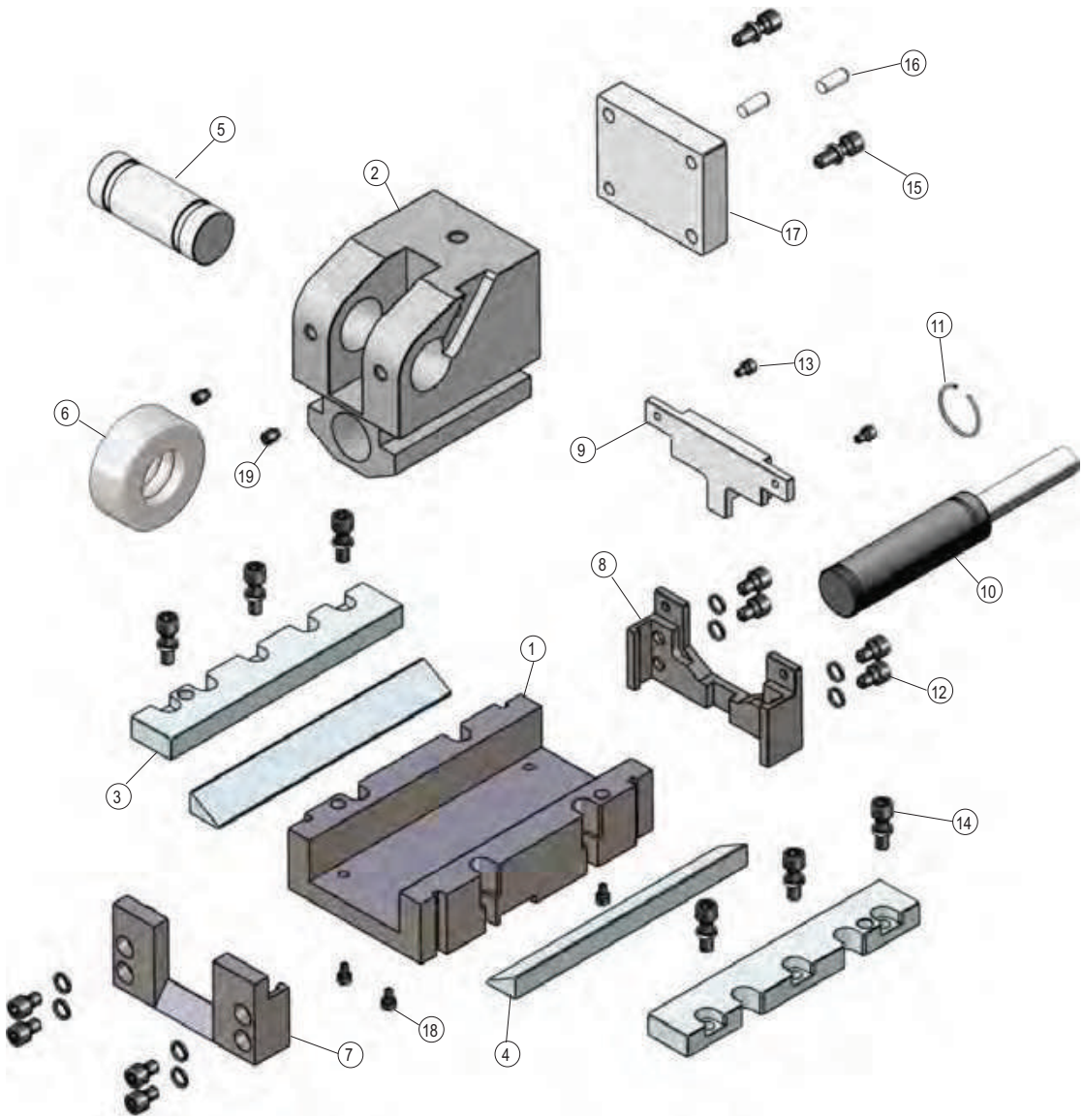
Cylinder extraction - Punch adjustement operation



Remove the screws (1) of the front plate and remove the gas spring stopper plate (2). The gas spring (3) is now free and can be removed from the cam.

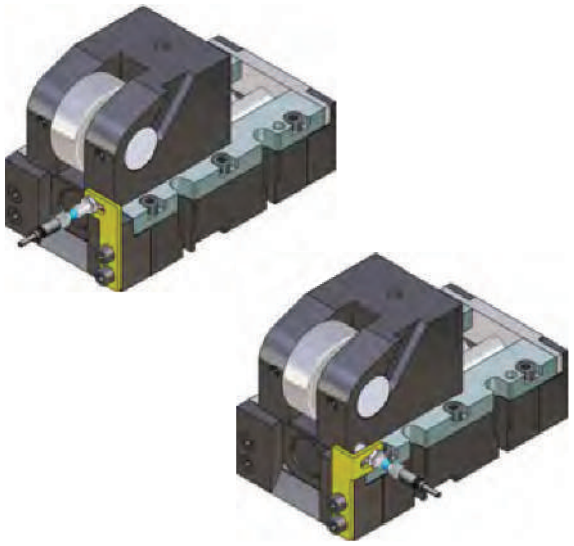
Once the gas spring has been extracted, the cam slide can be manually operated for adjustment operations. The slide will provide a sliding resistance on the baseplate of 20-40 daN.

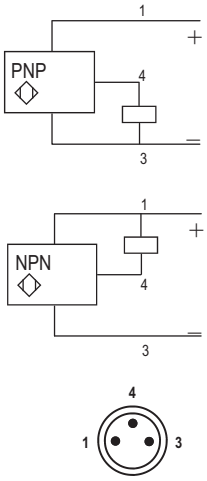
NOTE: The dismounting of the gas spring allows an easier movement of the cam slide at the adjustement of the Roller cam units.



Part no.	Description	Quantity
1	**Baseplate** *(no spare part)*	1
2	**Cam slide** *(no spare part)*	1
3	**Cover bar**	2
4	**Prismatic bar**	2
5	**Rod**	1
6	**Roll**	1
7	**Back limit plate**	1
8	**Limit plate in front**	1
9	**Insert pressure plate**	1
10	**Gas spring**	1
11	**Retainer ring**	1
12	**Screw ISO 4762**	8
13	**Screw ISO 7984**	2
14	**Screw ISO 4762**	6
15	**Screw ISO 4762**	2
16	**Dowel pin**	2
17	**Punch holder (C45)**	1
18	**Screw ISO 4762**	4 / 6
19	**Screw ISO 4028**	2

Pasive return device **DRP**





In order to better detect that the Roller Cam has returned to its initial position, TECAPRES recommends the use of a DRP inductive sensor as a passive return device. Thus, in case the slider does not return when the press goes back up due to gas spring failure, an alarm, or a press shutdown, can be activated.

How to order

DRP-1 - **R**

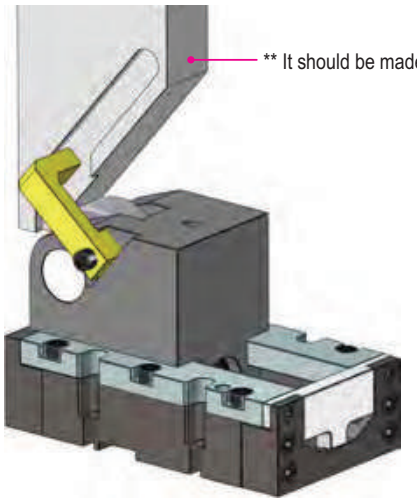
Code | Connector

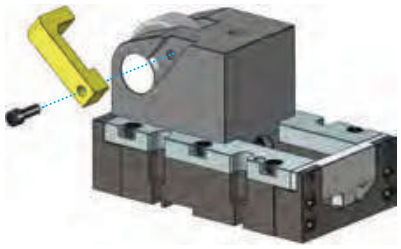
Connectors

Length of the cable 2m, 5m, 10m

Reference	Type	Function	Nominal sensing distance	Supply voltage	Switching capacity
DRP-1	PNP	NO	2 mm	12 ... 24 VDC	200 mA
DRP-2		NC			
DRP-3	NPN	NO			
DRP-4		NC			

Active return device **DRA**

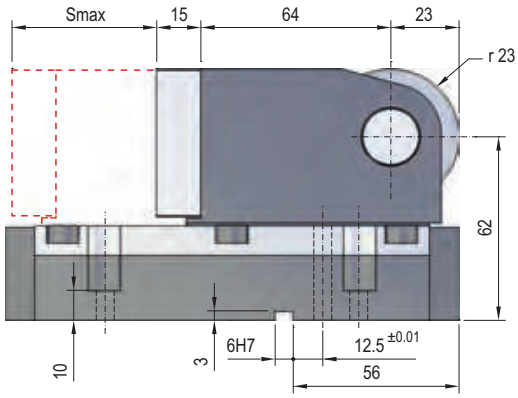


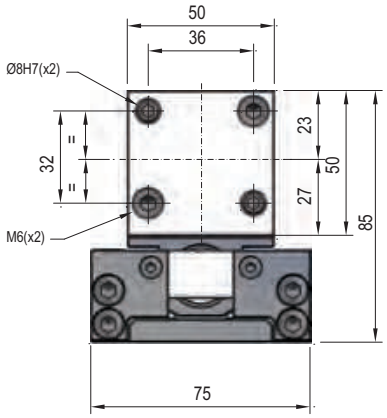


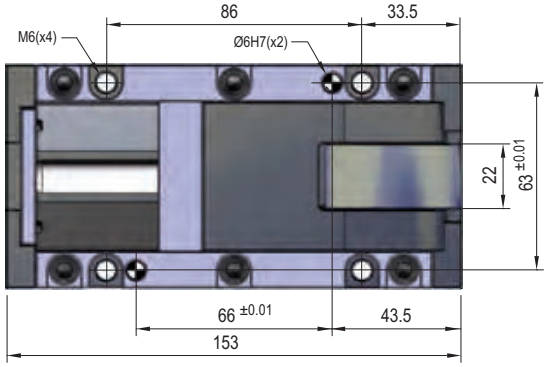
Reference	Type
DRA-3-1	TPRC 3000 / TPRCS 3000
DRA-5-1	TPRC 5000 / TPRCS 5000
DRA-15-1	TPRCS 15000

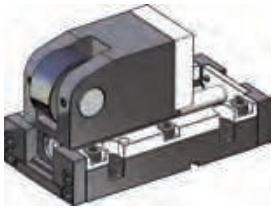
A gas spring is used to achieve cam retraction. The force is adjusted in such a way that it is sufficient to be able to slide the carriage back to its starting position. Depending on the operation, preparing an active return can contribute to a higher degree of safety. For this purpose, cams already have an opening in the slide, which has been introduced to accommodate an extractor hook for the active return, with which the cam slider is pulled backwards with higher separating forces, coming into operation in case of gas spring failure.

For this purpose, the extractor hook is fitted into its housing and secured with a screw, as shown. Active return execution is only a proposal which may be constructed differently. The customer is responsible for the construction of the pusher support. The extractor hook is available as an accessory at TECAPRES.



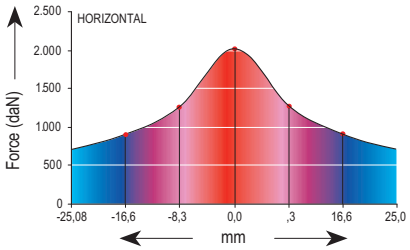


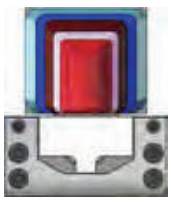


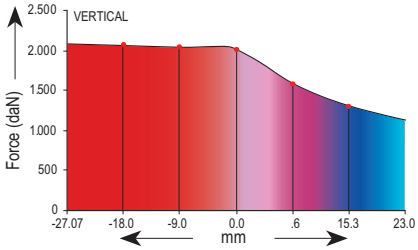


Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRC 2000x50	50	2000 daN	170	≈ 300	MICRO 19V1x50 YW	✓	0,5 m/s	35 spm	25 mm	3,95

Working force distribution







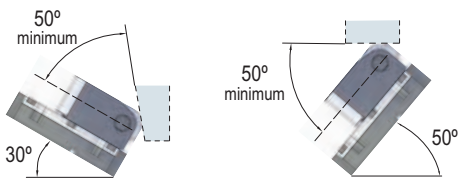
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

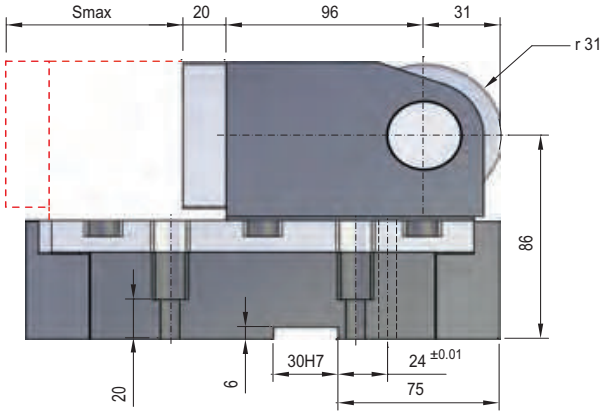
How to order

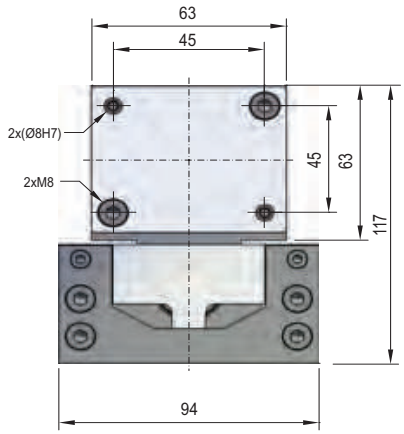
TPRC 2000 x 50

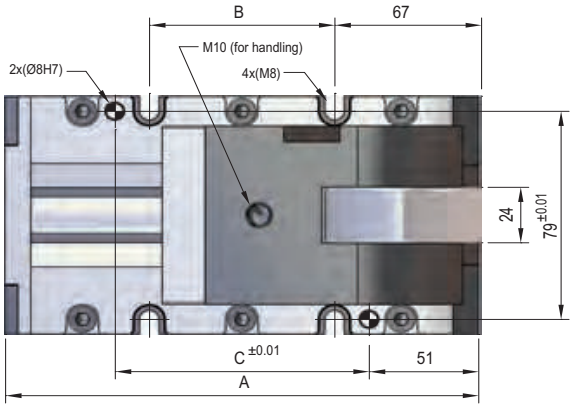
Code — Stroke

Maximum inclination





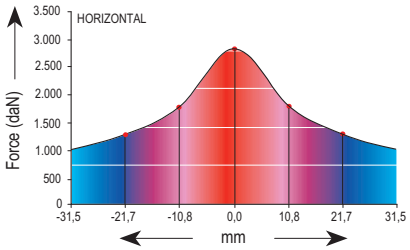


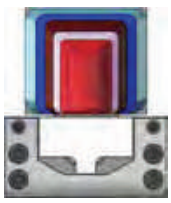


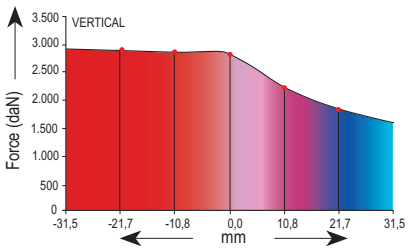
Code	A mm	B mm	C mm
TPRC 3000x50	190	56	88
TPRC 3000x80	220	86	118

Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRC 3000x50-1	50	3000 daN	400	≈ 600	TPK 32x50 YW		0,5 m/s	40 spm	35 mm	9,2
TPRC 3000x50-2			200	≈ 270	TPS 32x50.2 YW	✓				
TPRC 3000x50-3			350	≈ 520	MICRO32VSx50 YW	✓				
TPRC 3000x80-1	80		400	≈ 600	TPK 32x80 YW			35 spm		10,0
TPRC 3000x80-2			200	≈ 270	TPS 32x80.2 YW	✓				
TPRC 3000x80-3			350	≈ 520	MICRO32VSx80 YW	✓				

Working force distribution







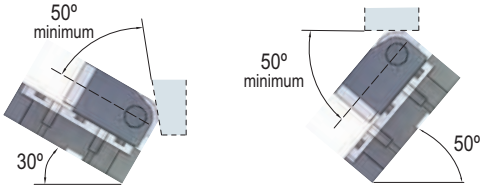
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

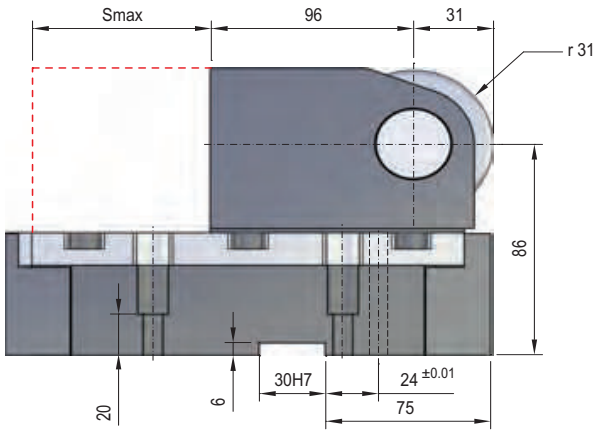
How to order

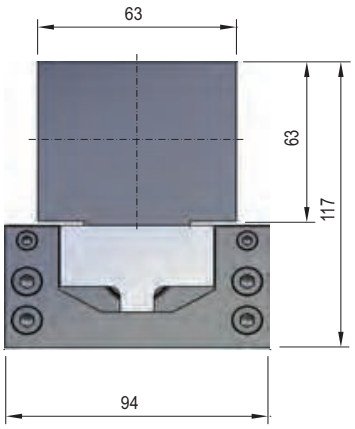
TPRC 3000 x 80 - 1

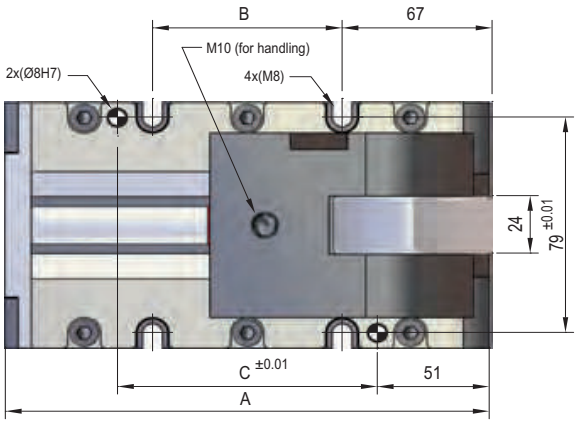
Code	Stroke	Gas spring model
		TPK 32 TPS 32.2 MICRO 32VS

Maximum inclination





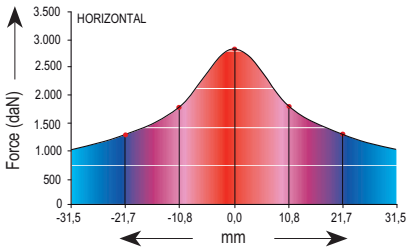


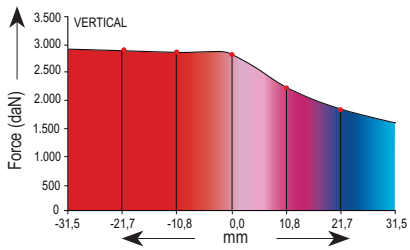


Code	A mm	B mm	C mm
TPRCS 3000x50	190	56	88
TPRCS 3000x80	220	86	118

Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRCS 3000x50-1	50	3000 daN	400	≈ 600	TPK 32x50 YW		0,5 m/s	40 spm	35 mm	9,2
TPRCS 3000x50-2			200	≈ 270	TPS 32x50.2 YW	✓				
TPRCS 3000x50-3			350	≈ 520	MICRO32VSx50 YW	✓				
TPRCS 3000x80-1	80		400	≈ 600	TPK 32x80 YW			35 spm		10,0
TPRCS 3000x80-2			200	≈ 270	TPS 32x80.2 YW	✓				
TPRCS 3000x80-3			350	≈ 520	MICRO32VSx80 YW	✓				

Working force distribution





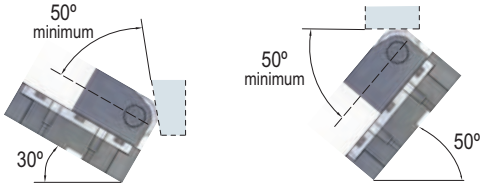
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

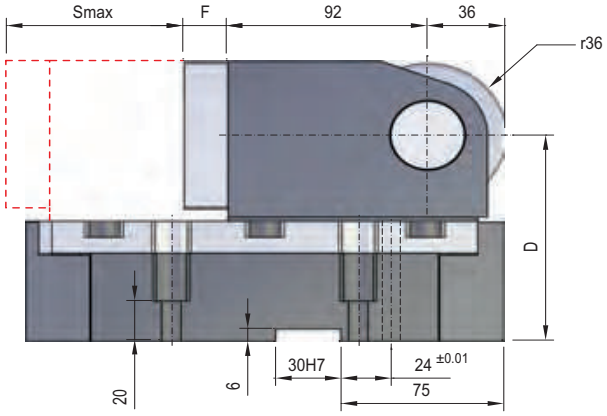
How to order

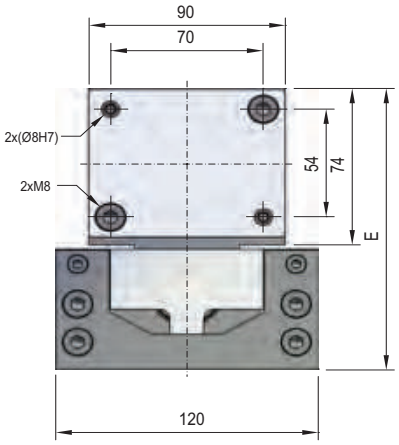
TPRCS 3000 x 50 - 1

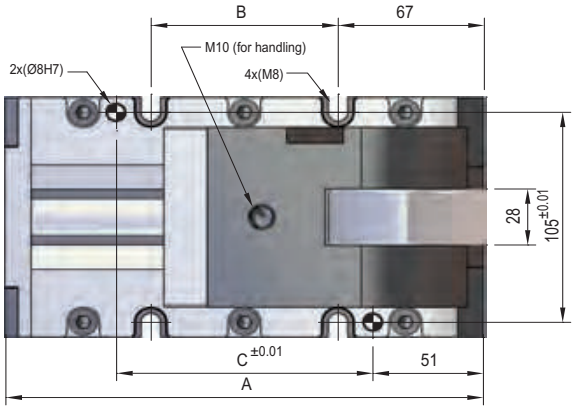
Code	Stroke	Gas spring model
		TPK 32 TPS 32.2 MICRO 32VS

Maximum inclination





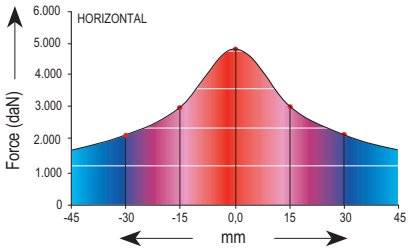


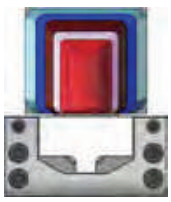


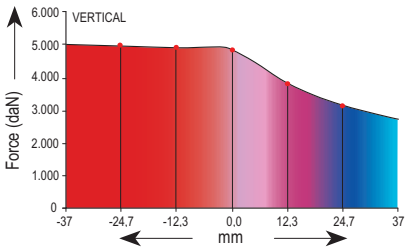
Code	A mm	B mm	C mm	D mm	E mm	F mm
TPRC 5000x50	190	56	88	103	140	20
TPRC 5000x80	220	86	118	103	140	20
TPRC 5000x100	260	126	158	120	157	30

Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRC 5000x50-1			400	≈ 600	TPK 32x50 YW					
TPRC 5000x50-2	50		200	≈ 270	TPS 32x50.2 YW	✓		40 spm		14,2
TPRC 5000x50-3			350	≈ 520	MICRO32VSx50 YW	✓				
TPRC 5000x80-1			400	≈ 600	TPK 32x80 YW					
TPRC 5000x80-2	80	5000 daN	200	≈ 270	TPS 32x80.2 YW	✓	0,5 m/s	35 spm	40 mm	15,0
TPRC 5000x80-3			350	≈ 520	MICRO32VSx80 YW	✓				
TPRC 5000x100-1			400	≈ 600	TPK 32x100 YW					
TPRC 5000x100-2	100		200	≈ 270	TPS 32x100.2 YW	✓		25 spm		21,0
TPRC 5000x100-3			350	≈ 520	MICRO32VSx100 YW	✓				

Working force distribution







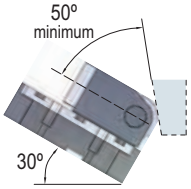
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

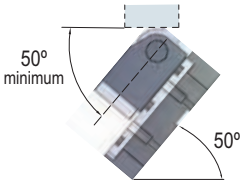
How to order

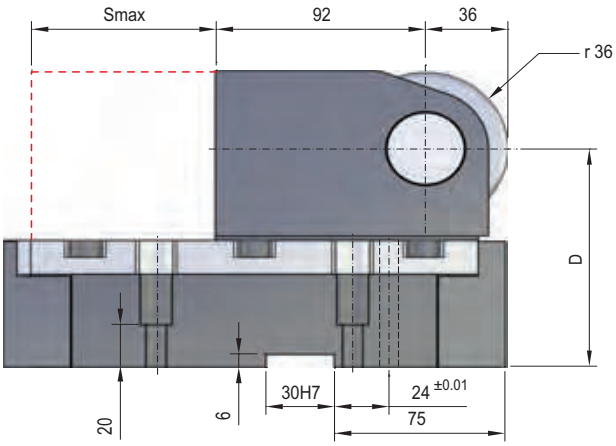
TPRC 5000 x 100 - 1

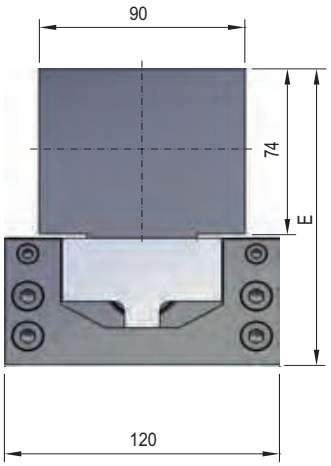
Code: TPRC 5000 | Stroke: 100 | Gas spring model: 1 (TPK 32, TPS 32.2, MICRO 32VS)

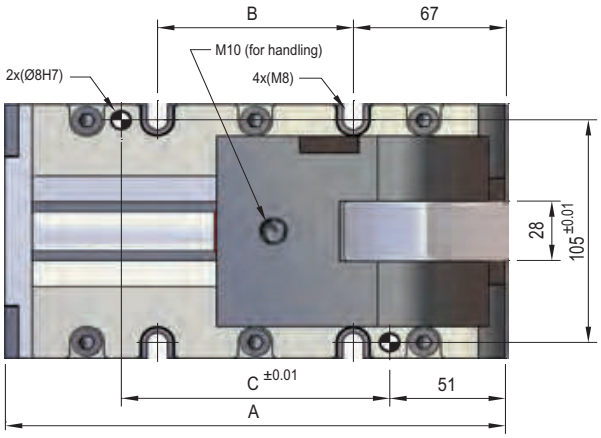
Maximum inclination







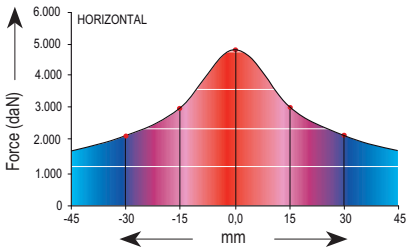


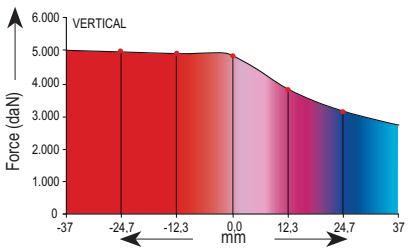


Code	A mm	B mm	C mm	D mm	E mm	F mm
TPRCS 5000x50	190	56	88	103	140	20
TPRCS 5000x80	220	86	118	103	140	20
TPRCS 5000x100	260	126	158	120	157	30

Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRCS 5000x50-1			400	≈ 600	TPK 32x50 YW					
TPRCS 5000x50-2	50		200	≈ 270	TPS 32x50.2 YW	✓		40 spm		14,2
TPRCS 5000x50-3			350	≈ 520	MICRO32VSx50 YW	✓				
TPRCS 5000x80-1			400	≈ 600	TPK 32x80 YW					
TPRCS 5000x80-2	80	5000 daN	200	≈ 270	TPS 32x80.2 YW	✓	0,5 m/s	35 spm	40 mm	15,0
TPRCS 5000x80-3			350	≈ 520	MICRO32VSx80 YW	✓				
TPRCS 5000x100-1			400	≈ 600	TPK 32x100 YW					
TPRCS 5000x100-2	100		200	≈ 270	TPS 32x100.2 YW	✓		25 spm		21,0
TPRCS 5000x100-3			350	≈ 520	MICRO32VSx100 YW	✓				

Working force distribution





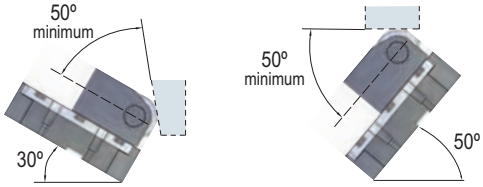
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

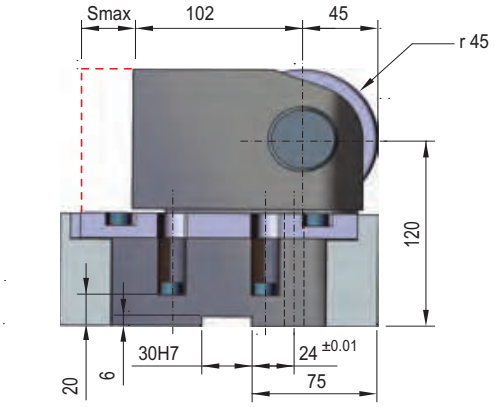
How to order

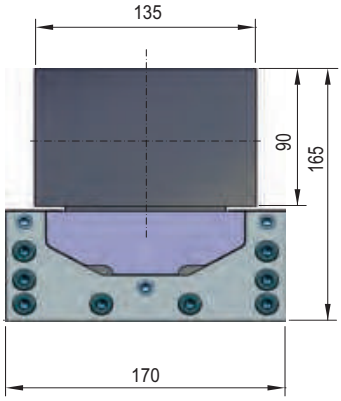
TPRCS 5000 x 80 - 2

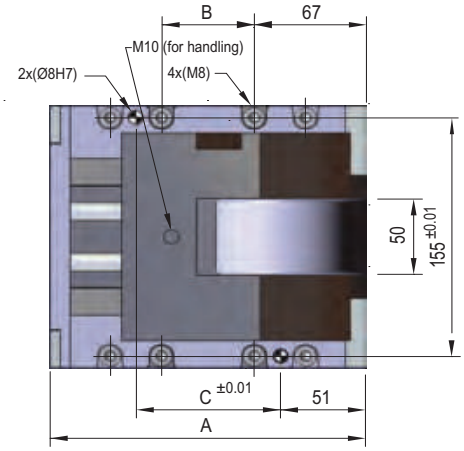
Code	Stroke	Gas spring model
		TPK 32 TPS 32.2 MICRO 32VS

Maximum inclination





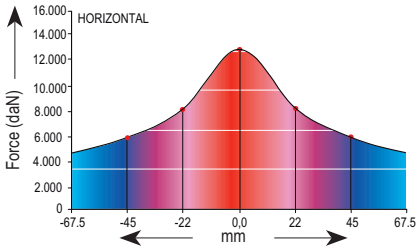


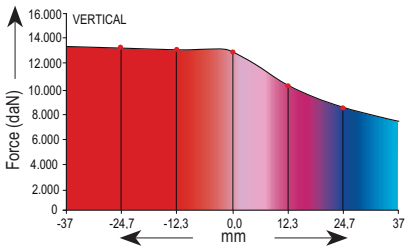


Code	A mm	B mm	C mm
TPRCS 15000x50	190	56	88
TPRCS 15000x80	220	86	118
TPRCS 15000x100	260	126	158

Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	ISO VDI	Max. working specs		Max. width of driver	Kg
			Initial daN	Final daN			Velocity	Strokes / min		
TPRCS 15000x50-1	50	15000 daN	400	≈ 580	2x TPC 25x50.1 YW	✓	0,5 m/s	35 spm	65 mm	26,3
TPRCS 15000x50-2			640	≈ 1050	2x MICRO25V1x50 YW					
TPRCS 15000x80-1	80		400	≈ 580	2x TPC 25x80.1 YW	✓		25 spm		27,6
TPRCS 15000x80-2			640	≈ 1050	2x MICRO25V1x80 YW					
TPRCS 15000x100-1	100		400	≈ 580	2x TPC 25x100.1 YW	✓		20 spm		30,8
TPRCS 15000x100-2			640	≈ 1050	2x MICRO25V1x100 YW					

Working force distribution





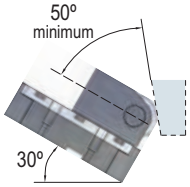
Maximum force that can be applied to the punch depending on eccentricity, so that the stress in the assembly is the same as it was when the punch was completely centred.

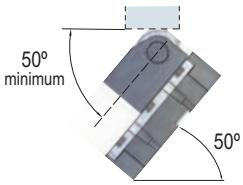
How to order

TPRCS 15000 x 50 - 1

Code: TPRCS 15000 | Stroke: 50 | Gas spring model: 1 (TPC 25.1, MICRO 25V1)

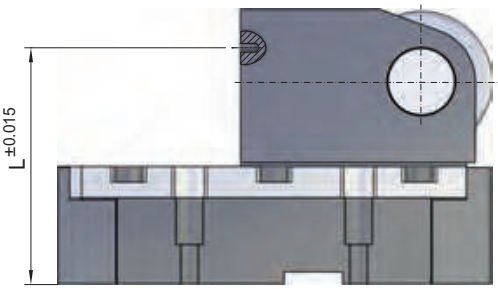
Maximum inclination

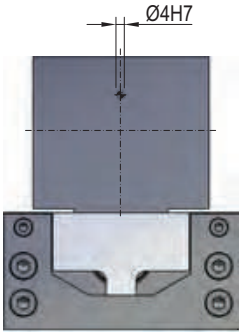


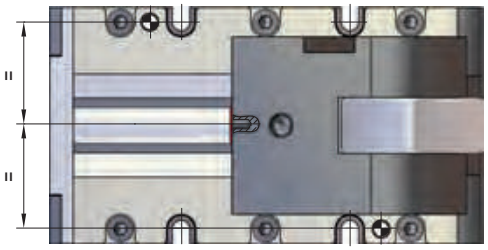


Program zero

TPRCS - Type P1







How to order

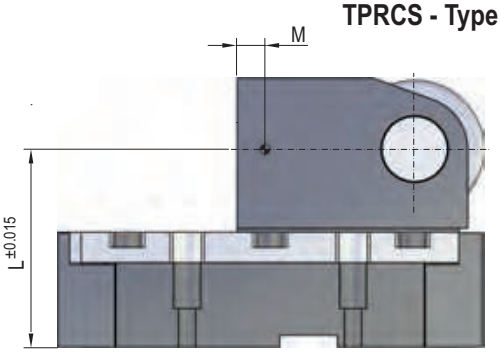
TPRCS 3000 x 50 - P1

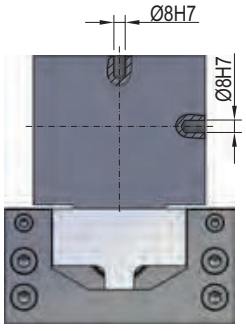
Code | Stroke | Type

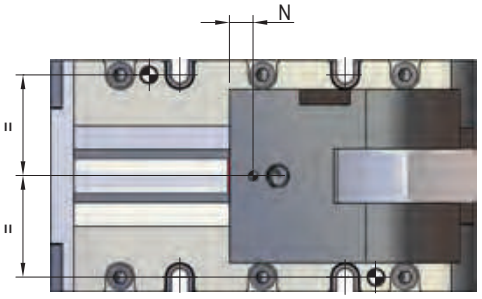
Reference	L mm
TPRCS 3000x50	107
TPRCS 3000x80	107
TPRCS 5000x50	130
TPRCS 5000x80	130
TPRCS 5000x100	147
TPRCS 15000x50	155
TPRCS 15000x80	155
TPRCS 15000x100	155

Program zero

TPRCS - Type P2





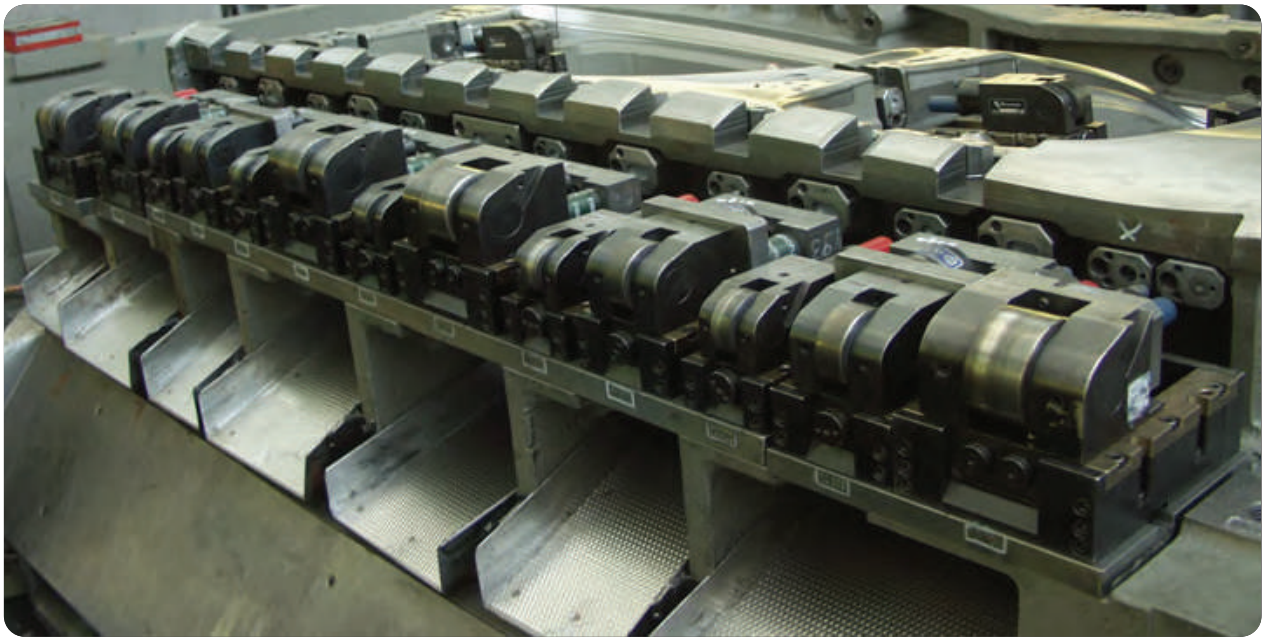


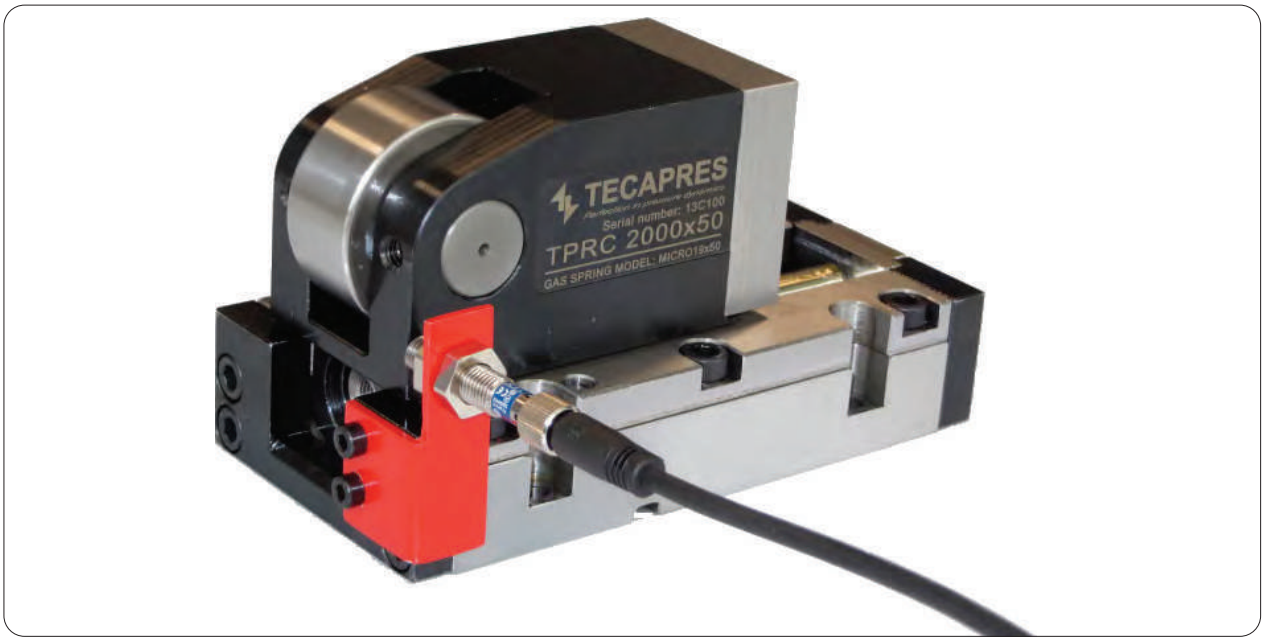
How to order

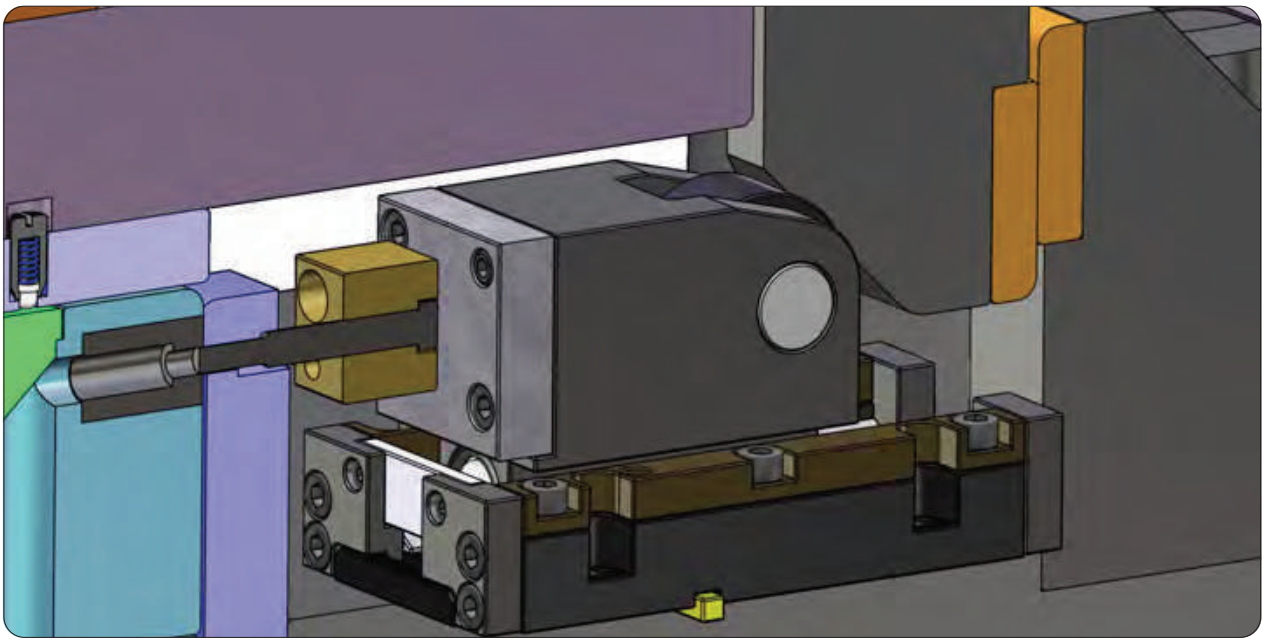
TPRCS 5000 x 80 - P2

Code | Stroke | Type

Reference	L mm	M mm	N mm
TPRCS 3000x50	86	15	15
TPRCS 3000x80	86	15	15
TPRCS 5000x50	103	10	10
TPRCS 5000x80	103	10	10
TPRCS 5000x100	120	10	10
TPRCS 15000x50	120	15	15
TPRCS 15000x80	120	15	15
TPRCS 15000x100	120	15	15



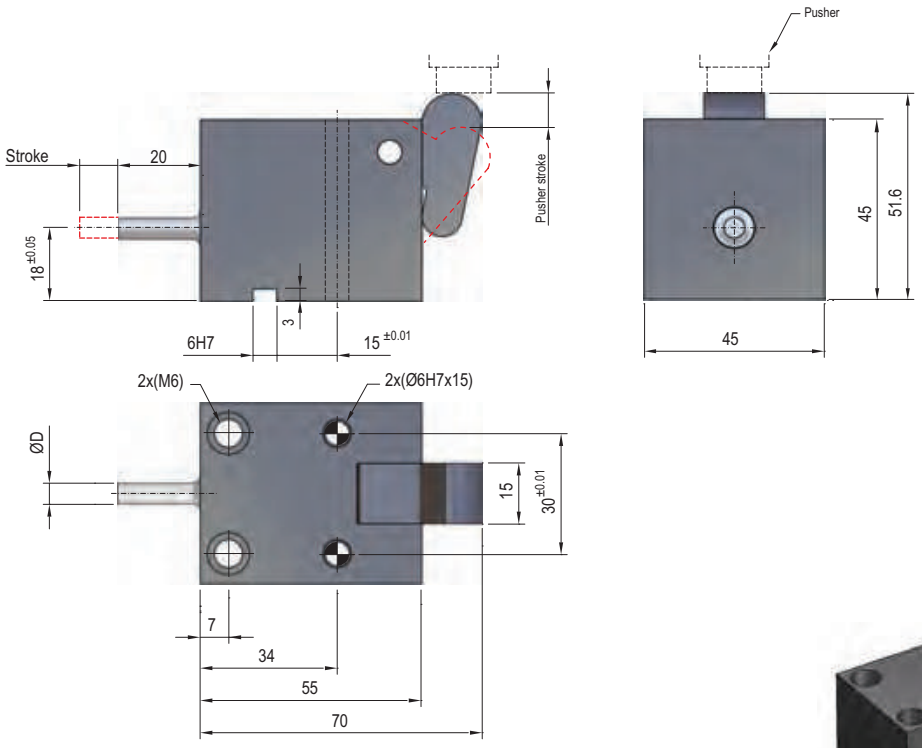




- ► Compact cams
- ► Eco-series
- ► Long life service
- ► Return activated with gas spring

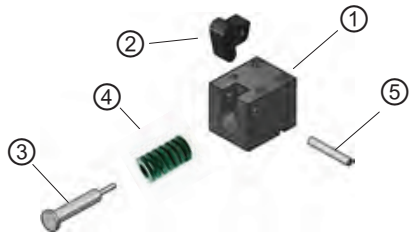
Lateral punching units with lever cam system

Code	Working punch stroke mm	Max. punching force daN
TPUL 7,5	9	750
TPUL 1500x15	15	1500
TPUL 3500x25	25	3500
TPUD 3500x25	25	3500
TPUL 5000x38	38	5000
TPUD 5000x38	38	5000
TPUL 7000x50	50	7000
TPUD 7000x50	50	7000
TPUL 10000x63	63	10000
TPUD 10000x63	63	10000



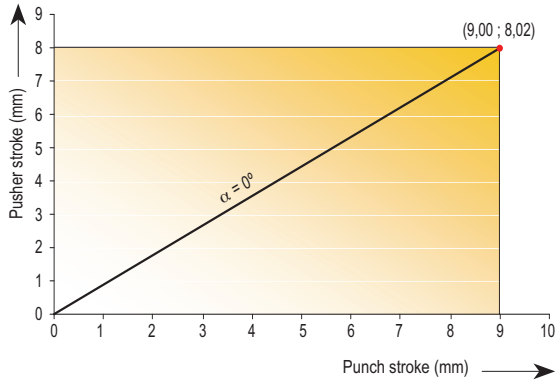
Code	Smax mm	Max. punching force	Punch diameter		Spring return force	Punch characteristics		Kg
			ØD min	ØD max		Hardness	Punch shape	
TPUL 7,5	9	750 daN	3,5 mm	7 mm	≈ 50daN	62 ± 2 HRc	Round	0,8

Description



Part no.	Description
1	**Body**
2	**Cam**
3	**Punch**
4	**Return spring**
5	**Rod**

Punch / pusher stroke rate

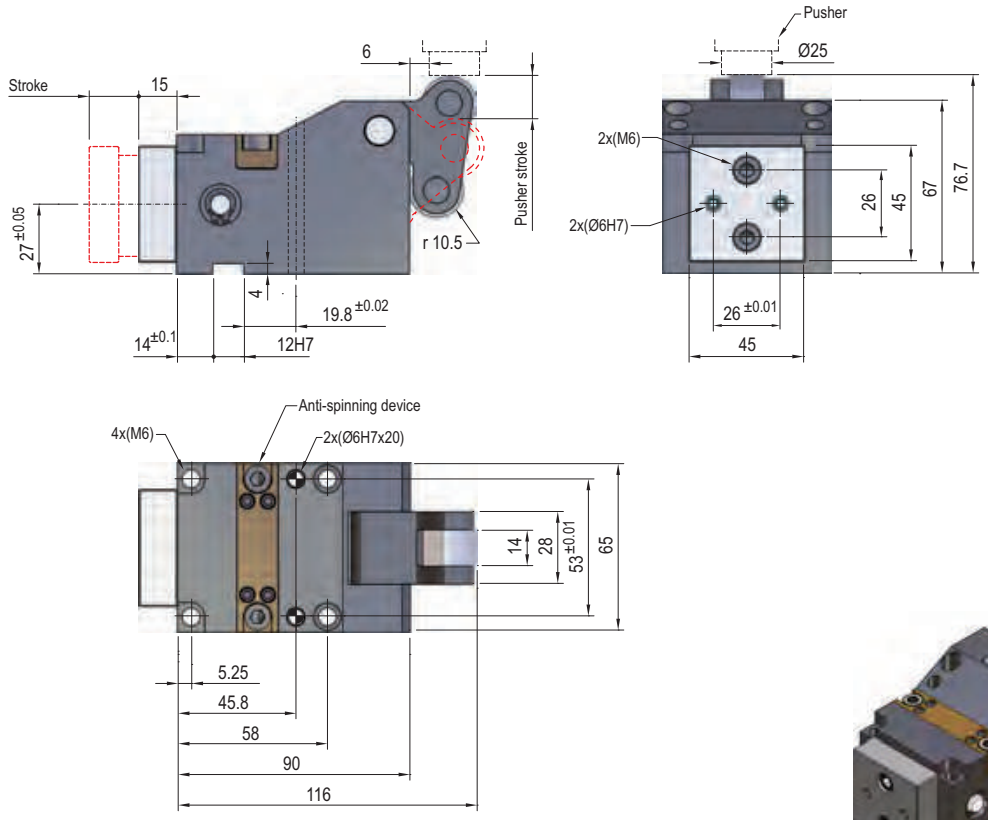


Assembly possibilities

How to order

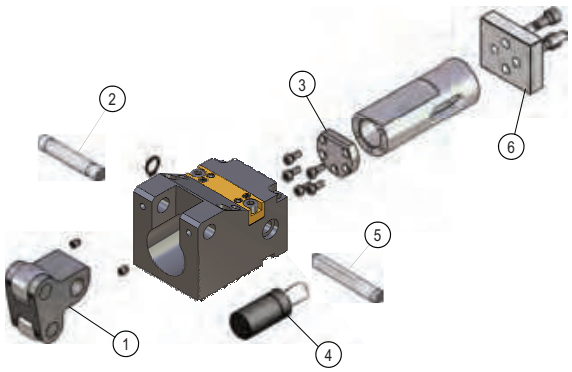
TPUL 7,5 x **5,2**

Code — Ø Punch



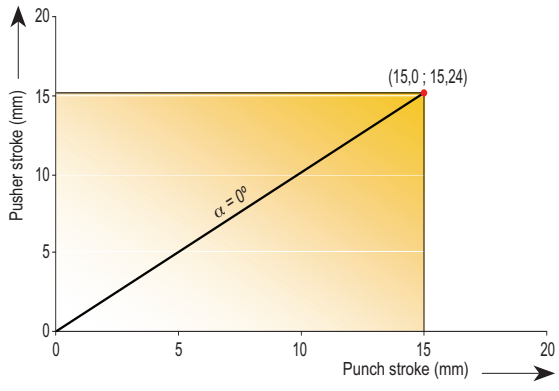
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUL 1500x15	15	1500 daN	170 daN	≈ 270 daN	MICRO 19V1x15 YW	0,5 m/s	40 spm	Round and shaped	2,8

Spare parts

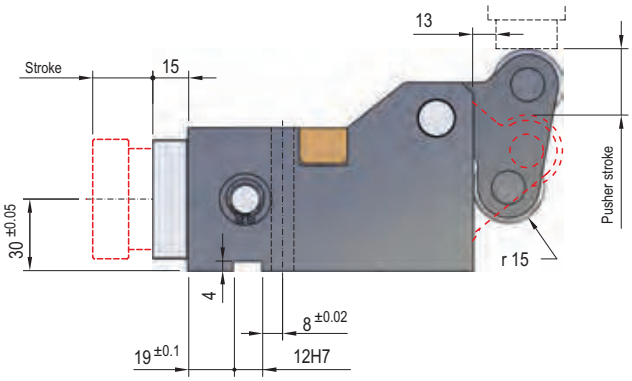


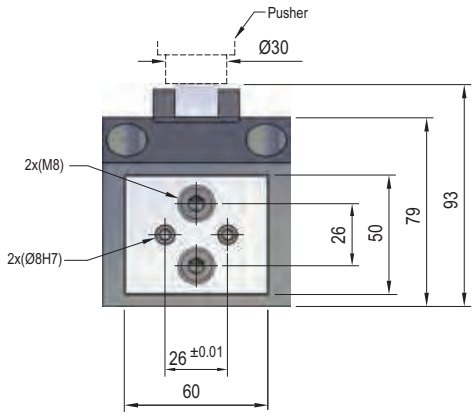
Part no.	Description	Part code
1	**Cam**	TPUL1500-1
2	**Rod**	TPUL1500-2
3	**End cap**	TPUL1500-3
4	**Gas spring**	MICRO 19V1x15 YW
5	**Rod pin**	TPUL1500-5
6	**Punch holder (C45)**	TPUL1500-6

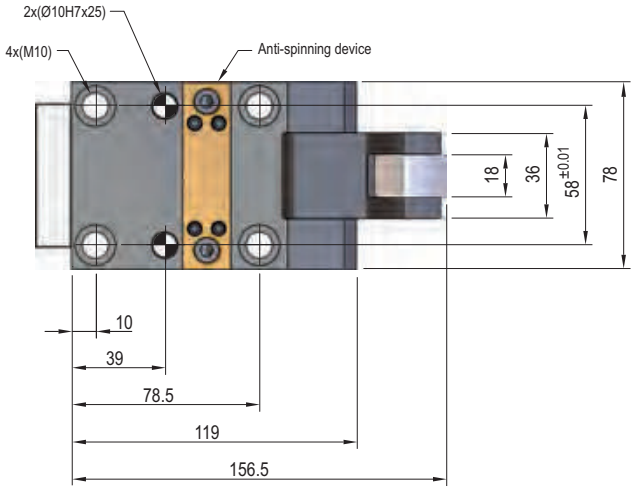
Punch / pusher stroke rate



Maximum inclination

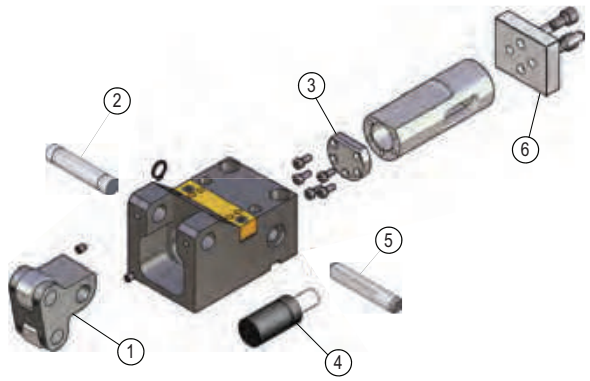






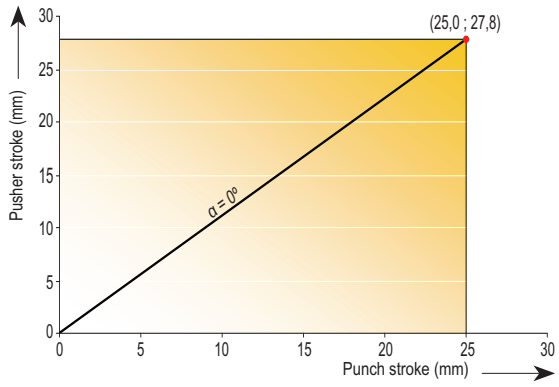
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUL 3500x25	25	3500 daN	300 daN	≈ 465 daN	MICRO 25V1x25 YW	0,5 m/s	45 spm	Round and shaped	5,1

Spare parts

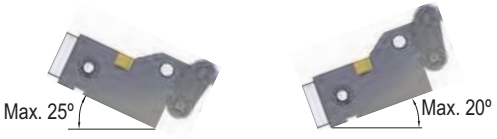


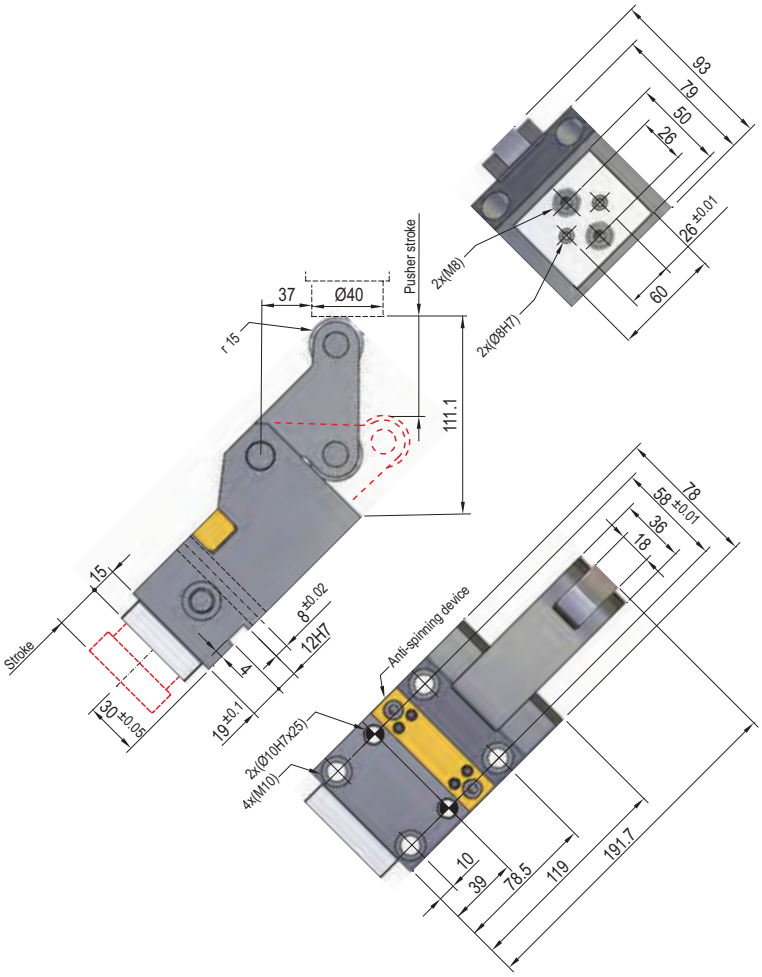
Part no.	Description	Part code
1	**Cam**	TPUL3500-1
2	**Rod**	TPUL3500-2
3	**End cap**	TPUL3500-3
4	**Gas spring**	MICRO 25V1x25 YW
5	**Rod pin**	TPUL3500-5
6	**Punch holder (C45)**	TPUL3500-6

Punch / pusher stroke rate



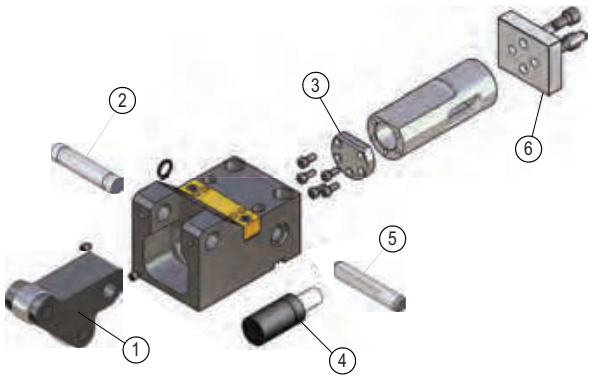
Maximum inclination





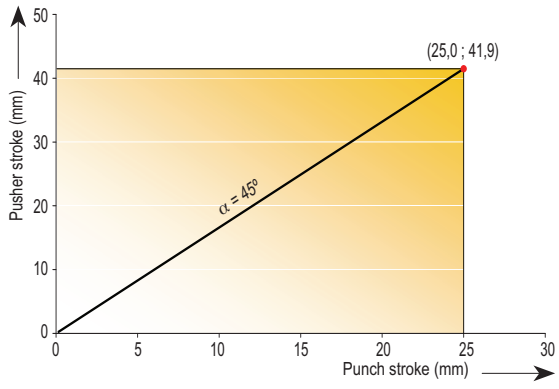
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUD 3500x25	25	3500 daN	300 daN	≈ 465 daN	MICRO 25V1x25 YW	0,5 m/s	45 spm	Round and shaped	5,2

Spare parts

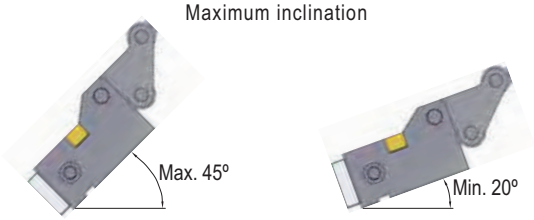


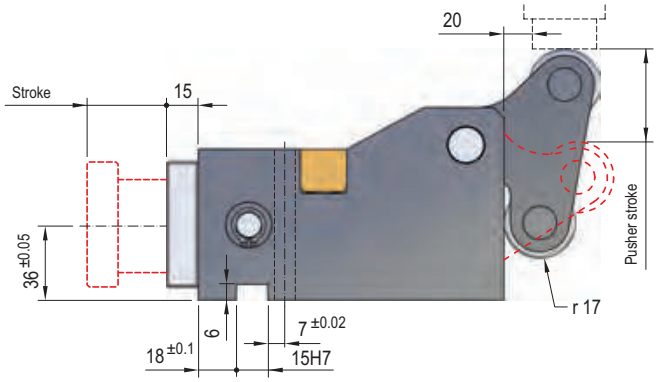
Part no.	Description	Part code
1	**Cam**	TPUD3500-1
2	**Rod**	TPUL3500-2
3	**End cap**	TPUL3500-3
4	**Gas spring**	MICRO 25V1x25 YW
5	**Rod pin**	TPUL3500-5
6	**Punch holder (C45)**	TPUL3500-6

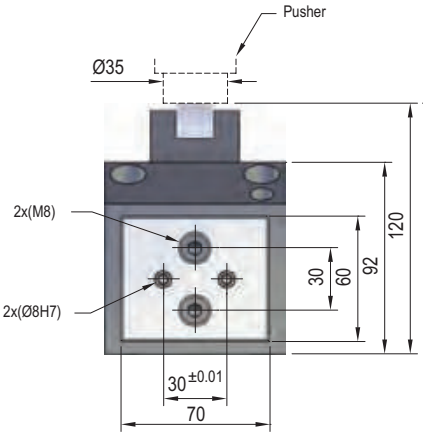
Punch / pusher stroke rate

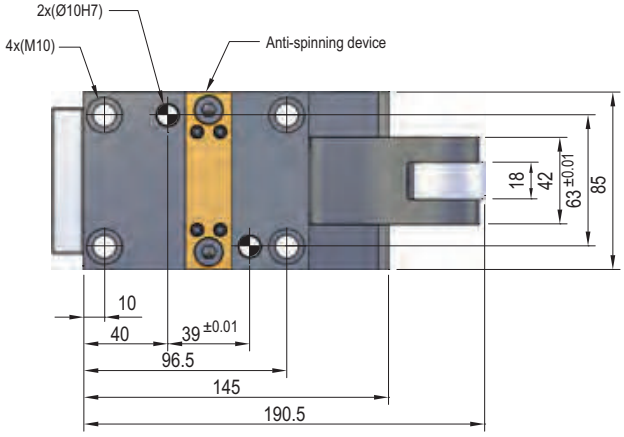


Maximum inclination



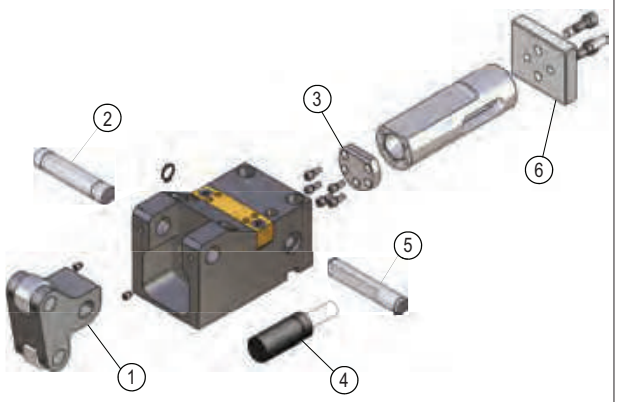






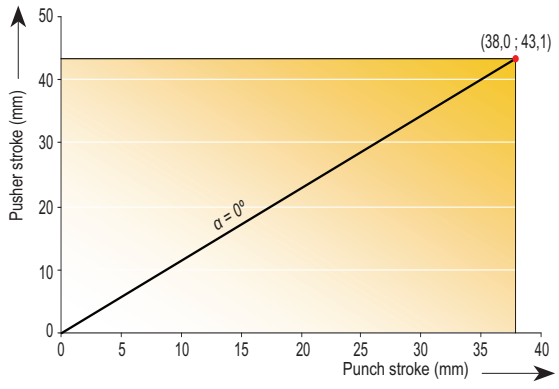
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUL 5000x38	38	5000 daN	300 daN	≈ 465 daN	MICRO 25V1x38 YW	0,5 m/s	40 spm	Round and shaped	7,2

Spare parts

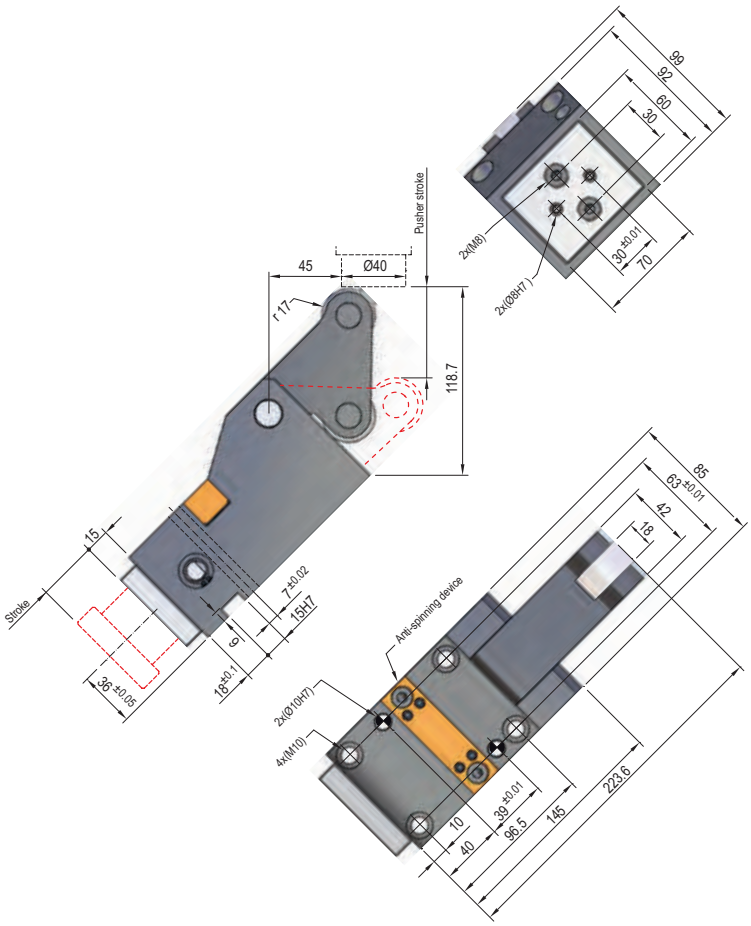


Part no.	Description	Part code
1	**Cam**	TPUL5000-1
2	**Rod**	TPUL5000-2
3	**End cap**	TPUL5000-3
4	**Gas spring**	MICRO 25V1x38 YW
5	**Rod pin**	TPUL5000-5
6	**Punch holder (C45)**	TPUL5000-6

Punch / pusher stroke rate

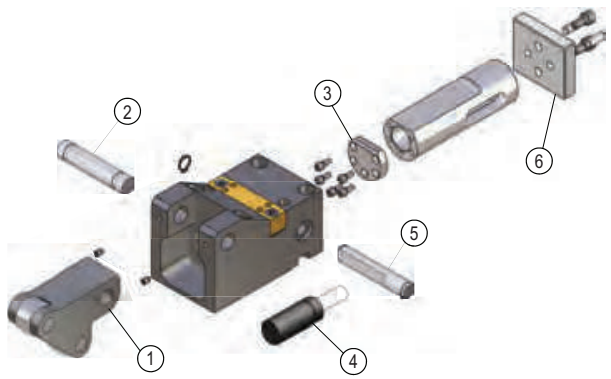


Maximum inclination



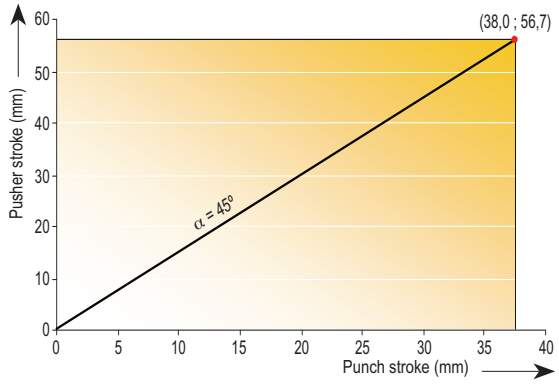
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUD 5000x38	38	5000 daN	300 daN	≈ 465 daN	MICRO 25V1x38 YW	0,5 m/s	40 spm	Round and shaped	7,4

Spare parts

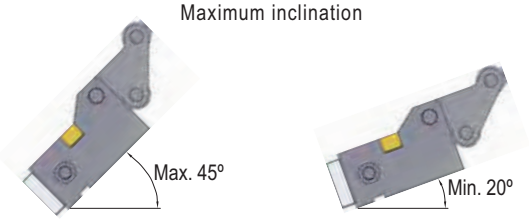


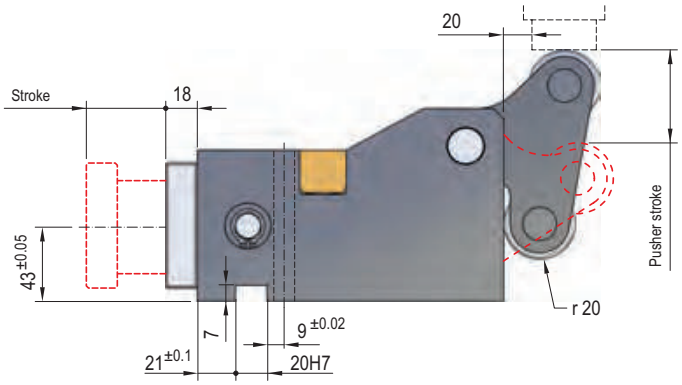
Part no.	Description	Part code
1	**Cam**	TPUD5000-1
2	**Rod**	TPUL5000-2
3	**End cap**	TPUL5000-3
4	**Gas spring**	MICRO 25V1x38 YW
5	**Rod pin**	TPUL5000-5
6	**Punch holder (C45)**	TPUL5000-6

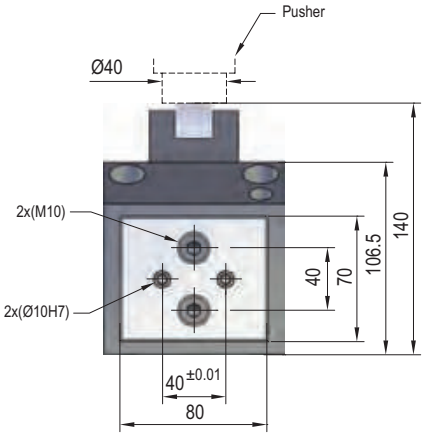
Punch / pusher stroke rate

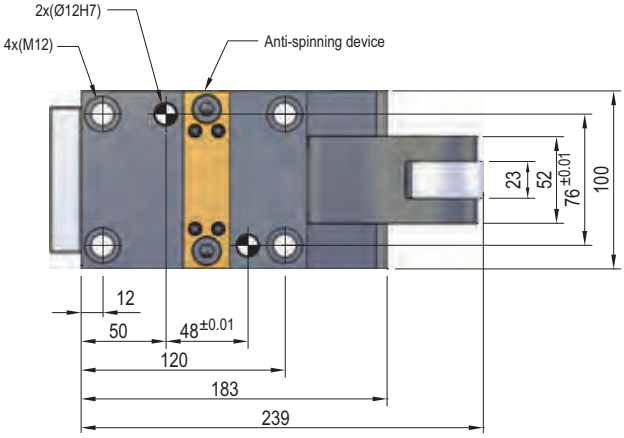


Maximum inclination



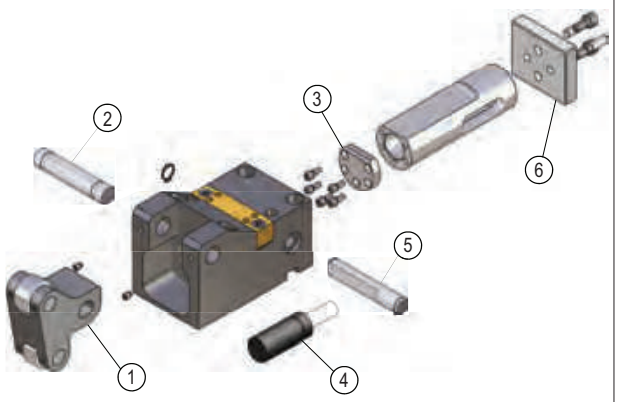






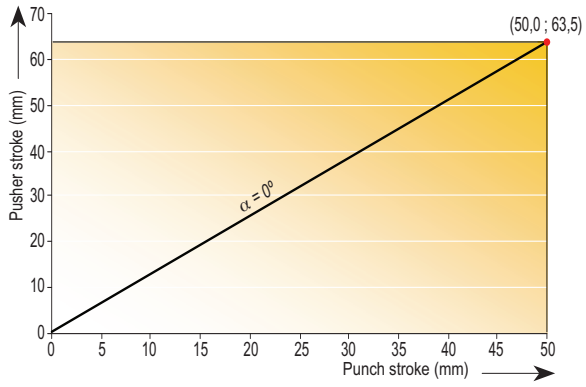
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUL 7000x50	50	7000 daN	400 daN	≈ 620 daN	TPK 32x50 YW	0,5 m/s	35 spm	Round and shaped	13,3

Spare parts

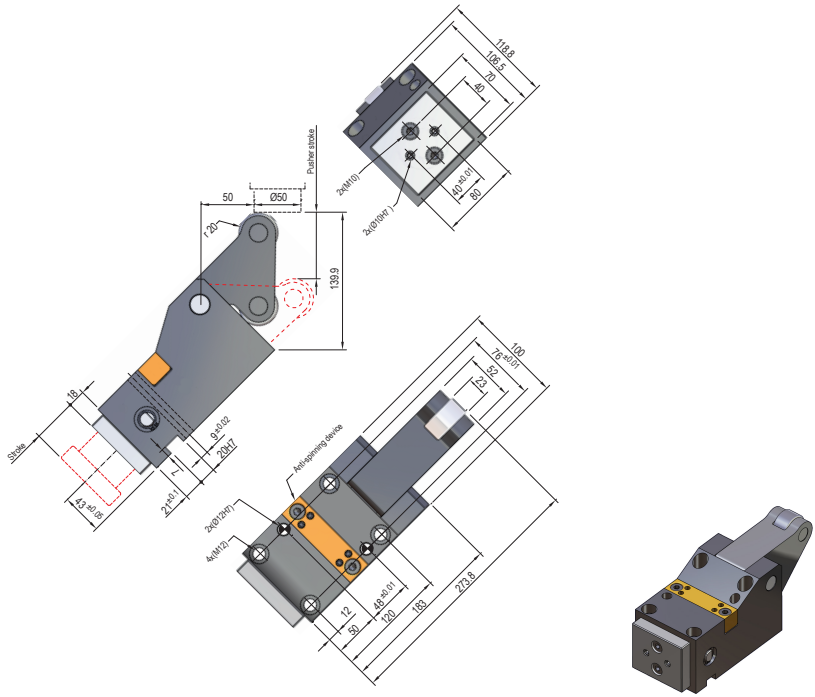


Part no.	Description	Part code
1	**Cam**	TPUL7000-1
2	**Rod**	TPUL7000-2
3	**End cap**	TPUL7000-3
4	**Gas spring**	TPK 32x50 YW
5	**Rod pin**	TPUL7000-5
6	**Punch holder (C45)**	TPUL7000-6

Punch / pusher stroke rate

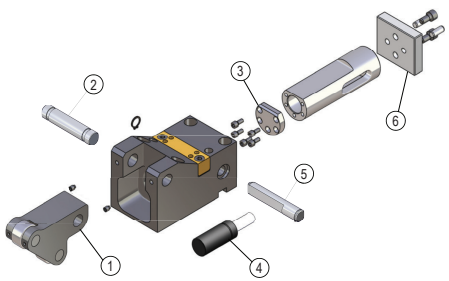


Maximum inclination



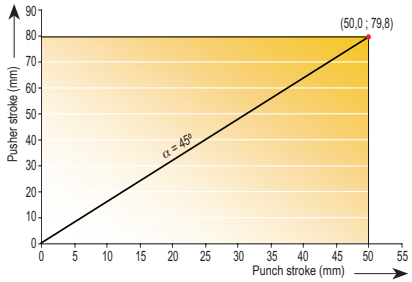
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUD 7000x50	50	7000 daN	400 daN	≈ 620 daN	TPK 32x50 YW	0,5 m/s	35 spm	Round and shaped	13,5

Spare parts

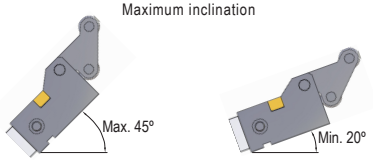


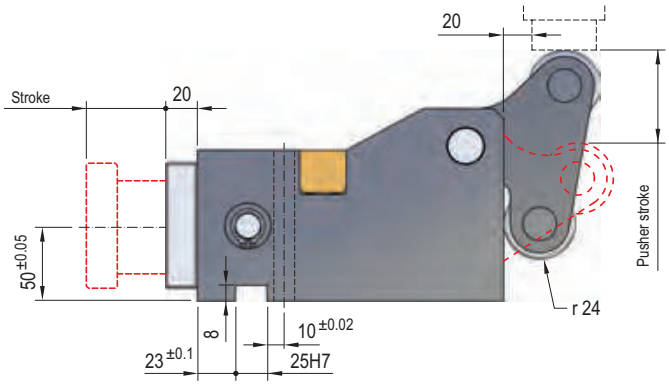
Part no.	Description	Part code
1	**Cam**	TPUD7000-1
2	**Rod**	TPUL7000-2
3	**End cap**	TPUL7000-3
4	**Gas spring**	TPK 32x50 YW
5	**Rod pin**	TPUL7000-5
6	**Punch holder (C45)**	TPUL7000-6

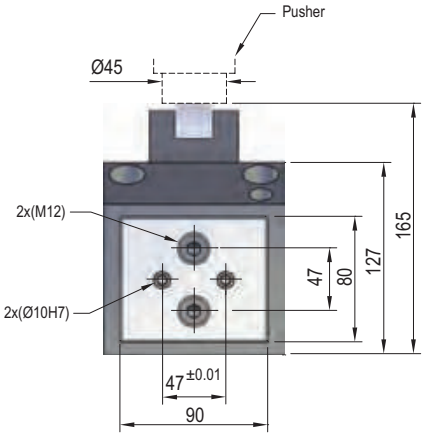
Punch / pusher stroke rate

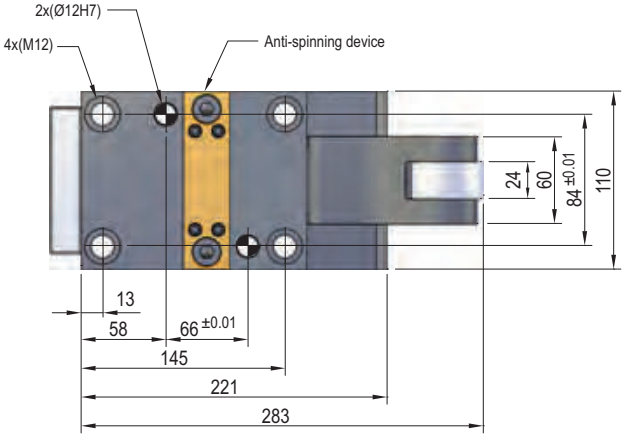


Maximum inclination



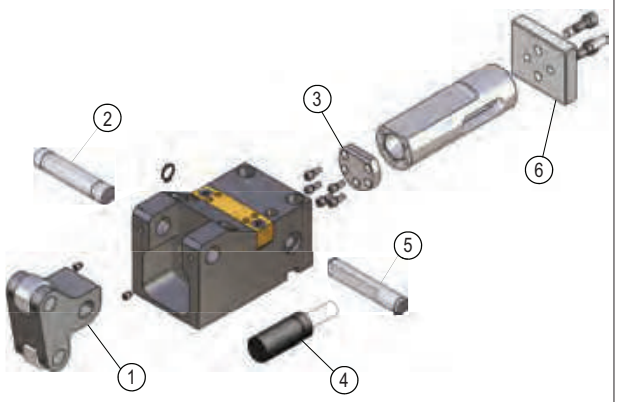






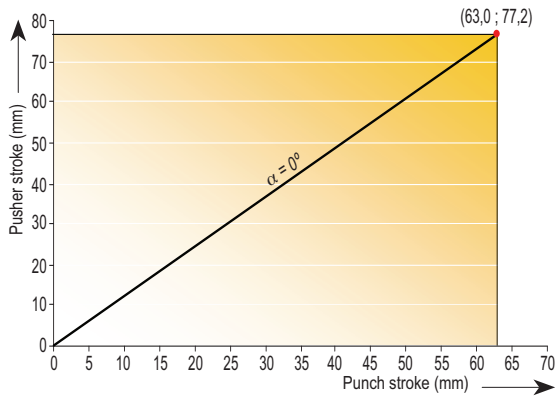
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUL 10000x63	63	10000 daN	600 daN	≈ 880 daN	TPK 600x63	0,5 m/s	30 spm	Round and shaped	20,5

Spare parts

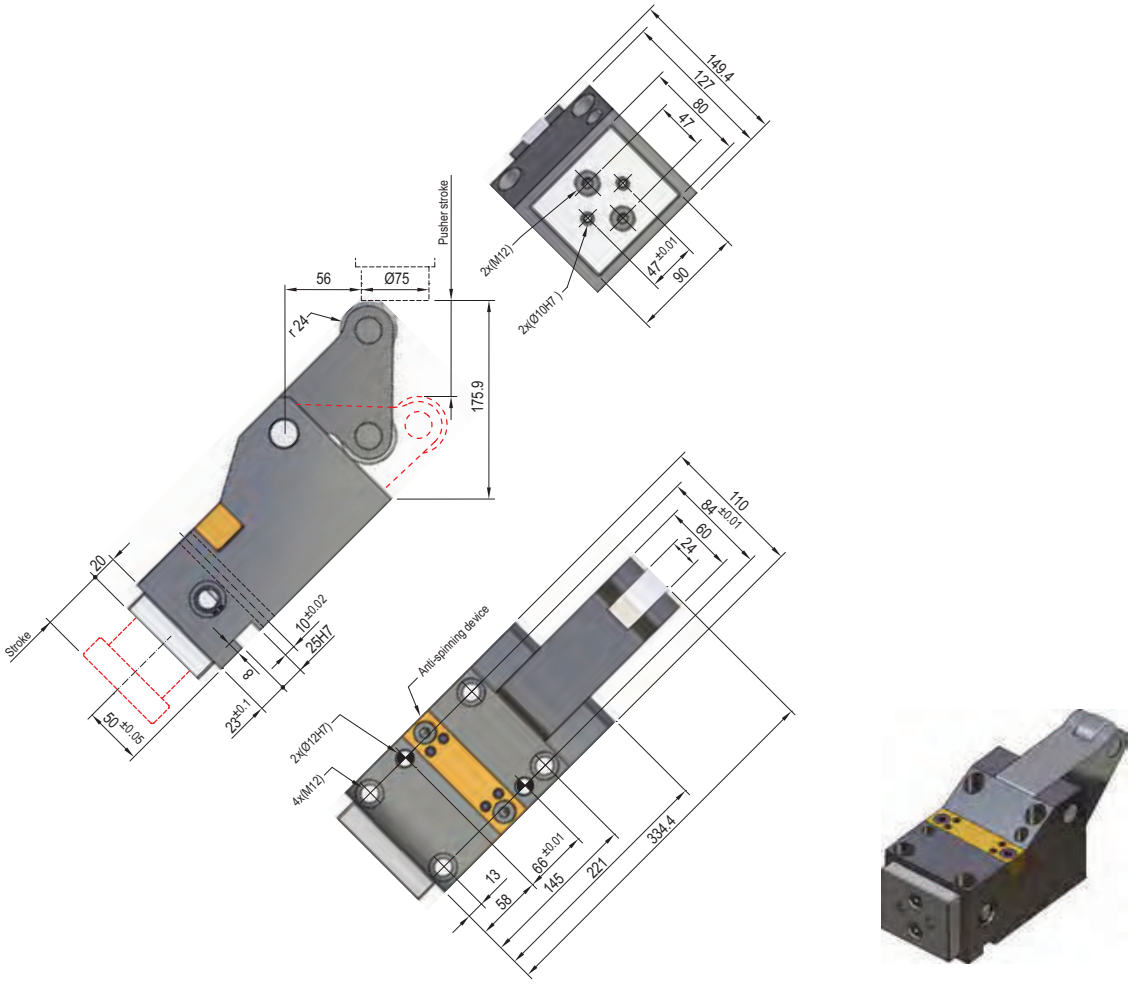


Part no.	Description	Part code
1	**Cam**	TPUL10000-1
2	**Rod**	TPUL10000-2
3	**End cap**	TPUL10000-3
4	**Gas spring**	TPK 600x63
5	**Rod pin**	TPUL10000-5
6	**Punch holder (C45)**	TPUL10000-6

Punch / pusher stroke rate

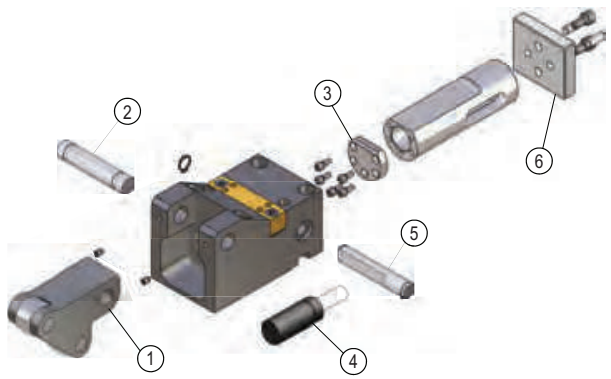


Maximum inclination



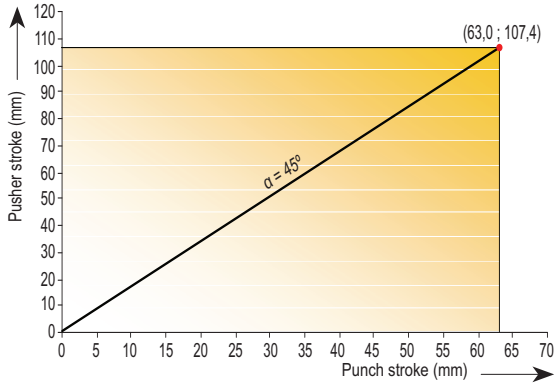
Code	Smax mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application	Kg
			Initial	Final		Velocity	Strokes / min		
TPUD 10000x63	63	10000 daN	600 daN	≈ 880 daN	TPK 600x63	0,5 m/s	30 spm	Round and shaped	20,7

Spare parts

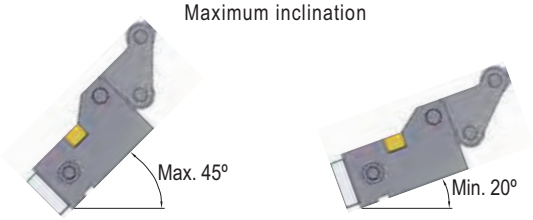


Part no.	Description	Part code
1	**Cam**	TPUD10000-1
2	**Rod**	TPUL10000-2
3	**End cap**	TPUL10000-3
4	**Gas spring**	TPK 600x63
5	**Rod pin**	TPUL10000-5
6	**Punch holder (C45)**	TPUL10000-6

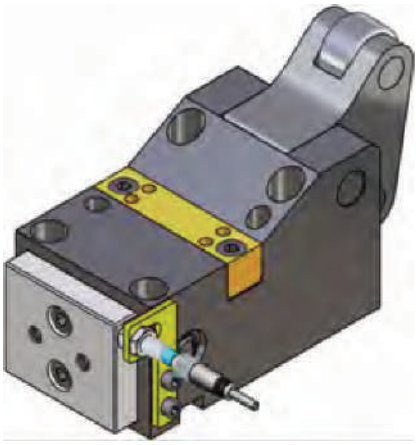
Punch / pusher stroke rate

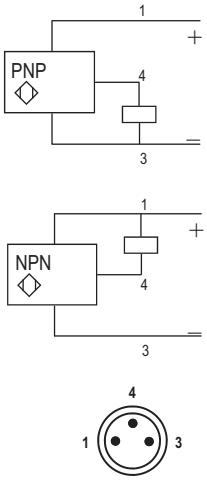


Maximum inclination



Pasive return device **DRP**





In order to better detect that the punching unit has returned to its initial position, TECAPRES recommends the use of a DRP inductive sensor as a passive return device. Thus, in the case that the cam does not return when the press goes back up due to a gas spring failure, a signal is activated, which can be used with an alarm, or cause a press shutdown, etc.

How to order

DRP-1 - **R**

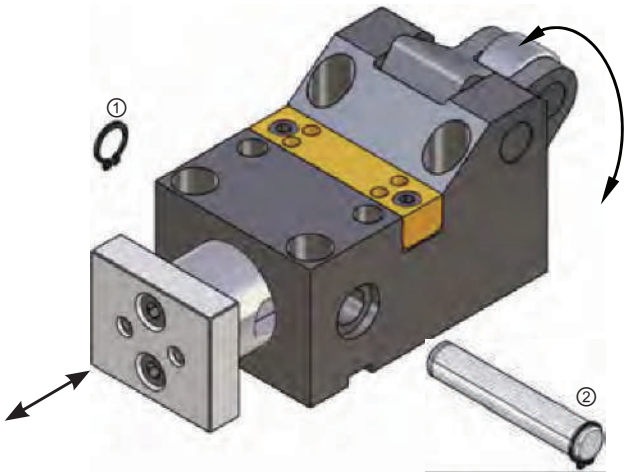
Code | Connector

Connectors

Length of the cable 2m, 5m, 10m

Reference	Type	Function	Nominal sensing distance	Supply voltage	Switching capacity
DRP-1	PNP	NO	2 mm	12 ... 24 VDC	200 mA
DRP-2		NC			
DRP-3	NPN	NO			
DRP-4		NC			

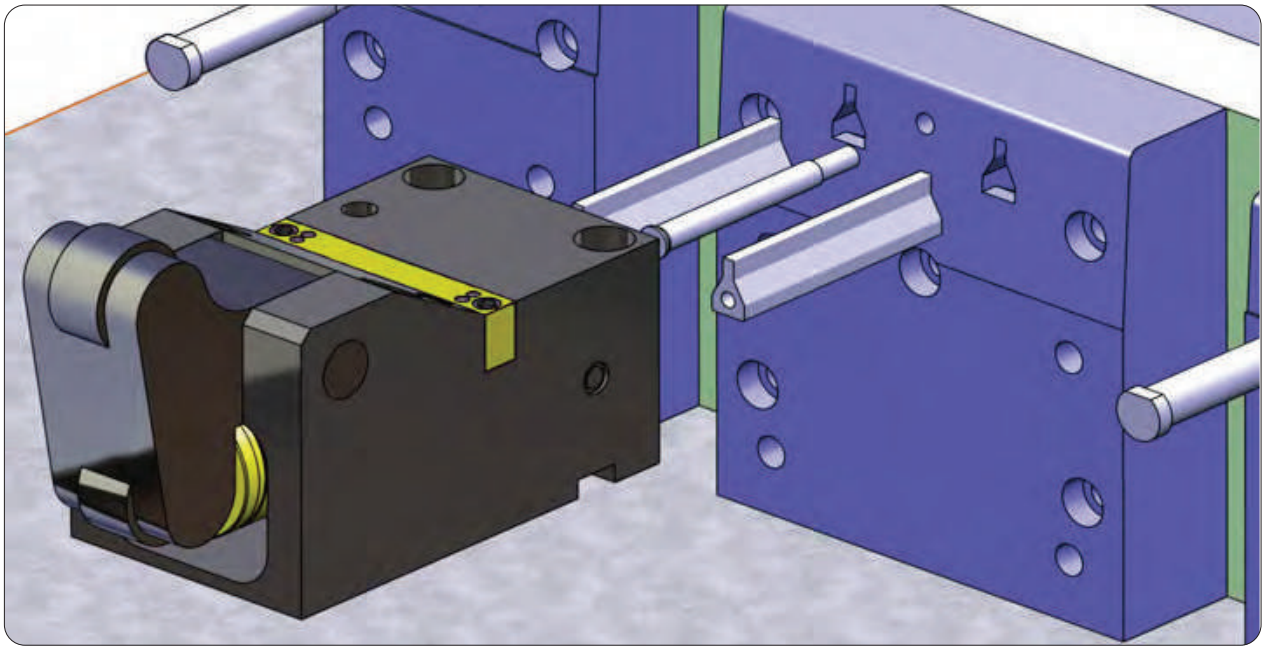
Punch adjustment operation

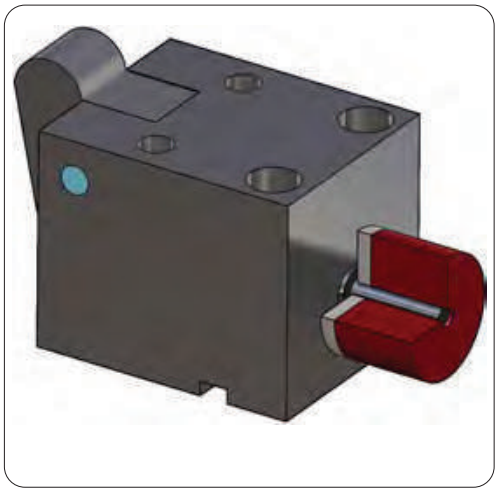


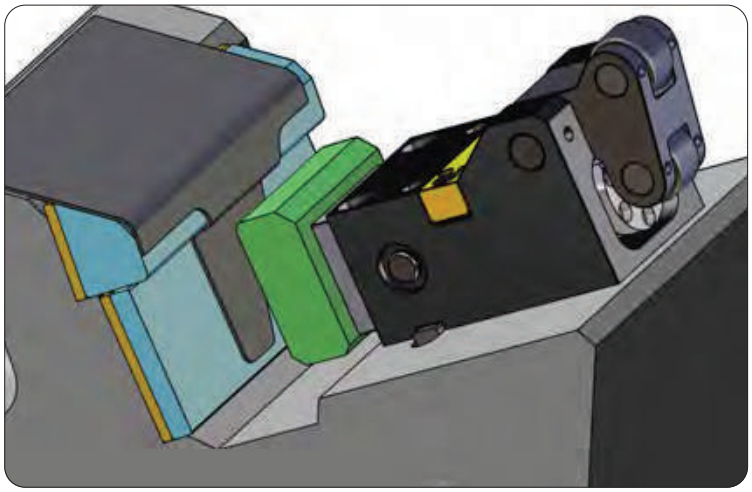
For punch adjustment operations, the punching unit can be manually operated as illustrated in the diagram.

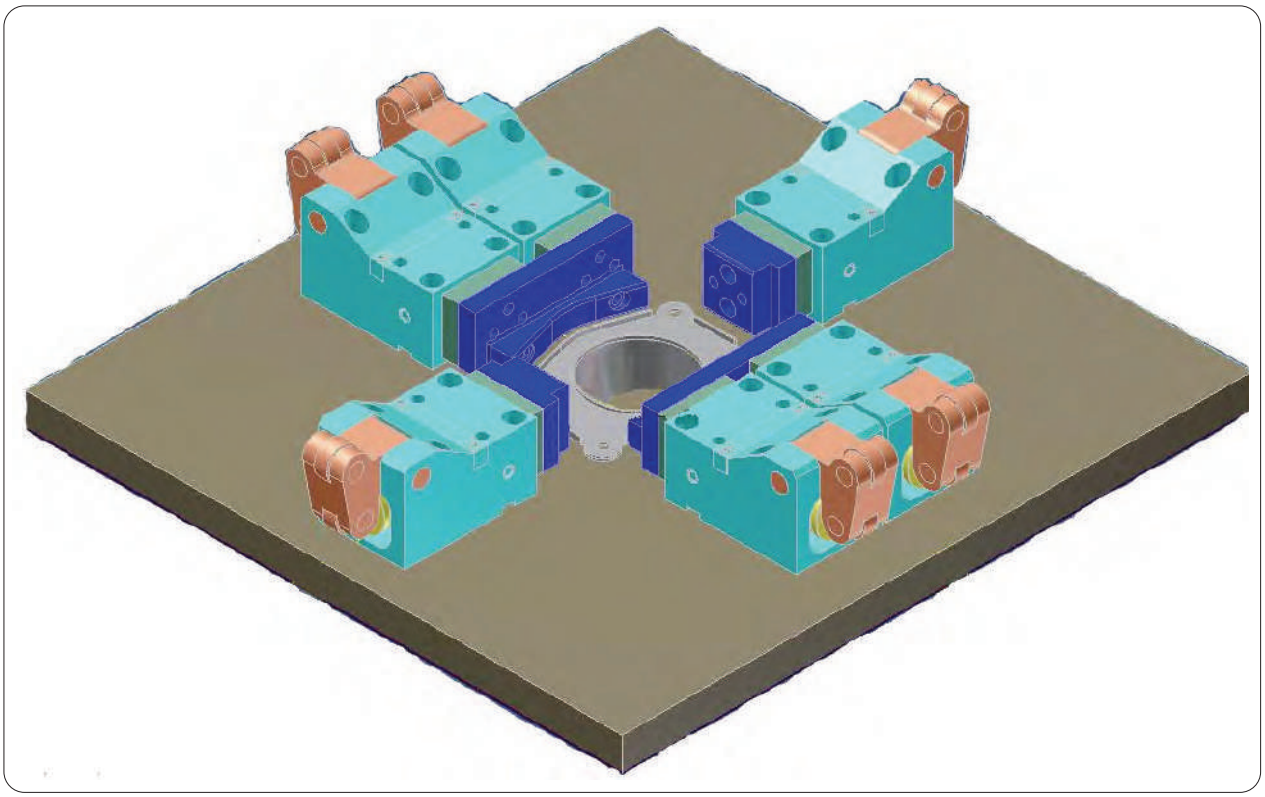
To do this one must first remove the bolt circlip (1).
It is then necessary to remove the cylinder stop bolt (2).

In this way it is now possible to freely move the stem.







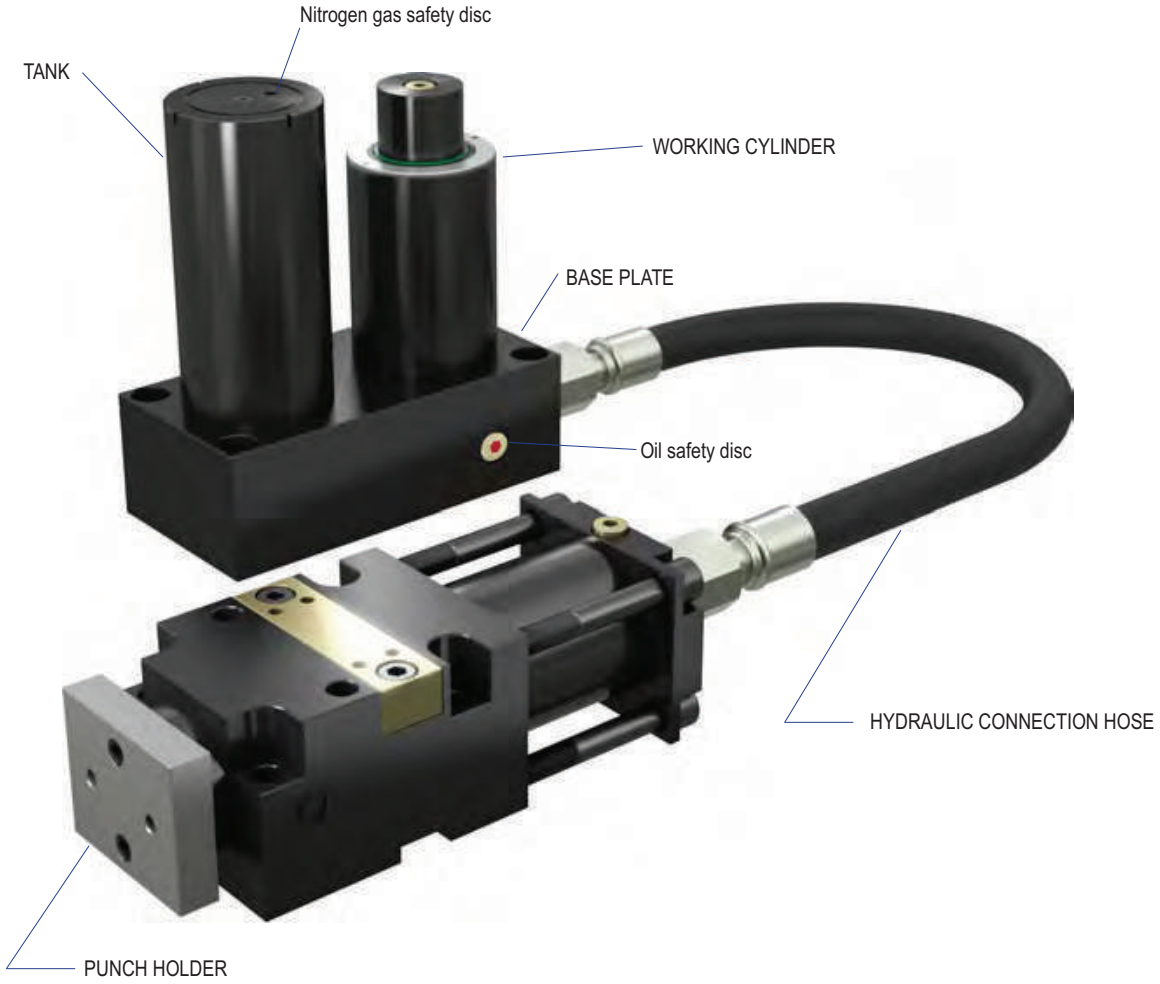


Hydraulic cams

Code	Working punch stroke mm	Max. punching force daN
TPCH 3000	25, 50, 80	3000
TPCH 7500	25, 50, 80	7500
TPCH 12000	25, 50, 63	12000

Description

Hydraulic cams can freely operate in any position and at any angle in space for stamping, folding, punching operations, etc.. thanks to the flexible distribution of forces.



DRIVE UNIT

The drive unit supplies the working pressure by means of oil. It consists of the following elements:

- Working cylinder
- Pressure accumulator (tank)
- Manifold plate

The accumulator is capable of absorbing all the volume displaced by the working cylinder if the cam stroke is blocked.

WORKING CAM

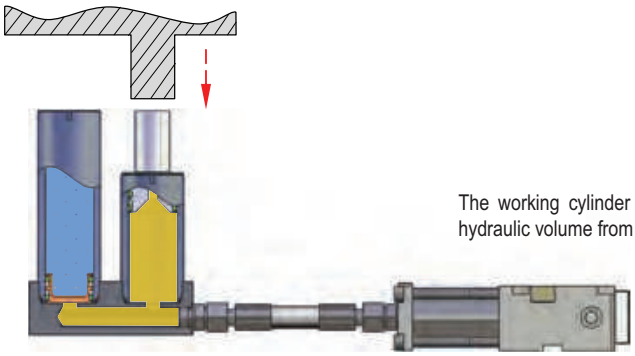
The working cam is controlled through the drive unit. It has a gas spring that produces the recoil force.

It is suitable for working applications with both round punches and punches with other shapes, thanks to its anti-turning device.

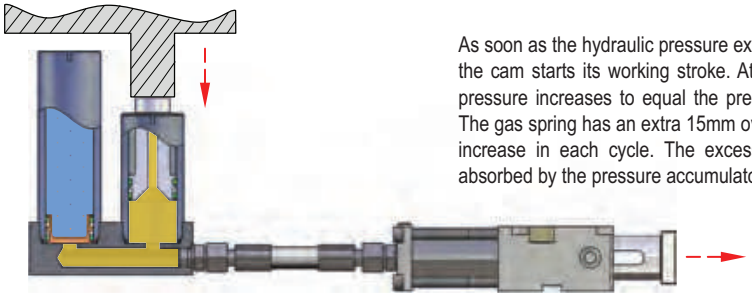
HYDRAULIC CONNECTION HOSE

There is a high pressure hose that connects the drive unit with the working cam. Fittings with O-rings are used to guarantee a perfect fix of the elements to avoid leaking.

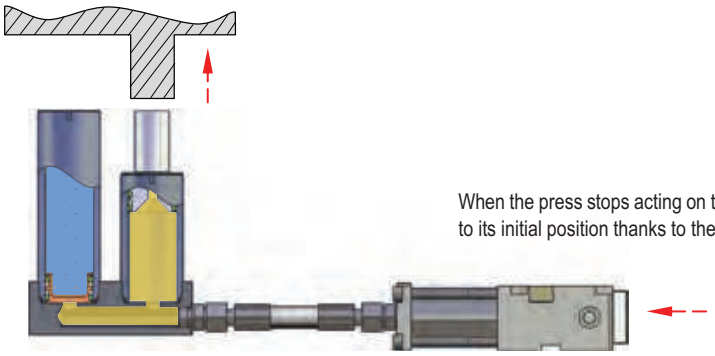
Operation



The working cylinder is made to work by the movement of the press, moving the hydraulic volume from the drive unit to the working cam through the hoses.

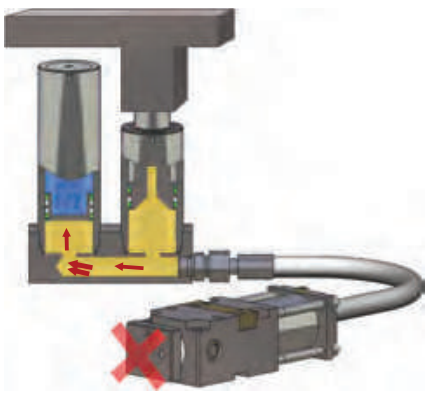


As soon as the hydraulic pressure exceeds the counterforce exerted by the gas spring, the cam starts its working stroke. At the end of the cam working stroke, the system pressure increases to equal the pressure of the nitrogen gas pressure accumulator. The gas spring has an extra 15mm overstroke capacity to ensure an identical pressure increase in each cycle. The excess volume of oil produced by the overstroke is absorbed by the pressure accumulator.



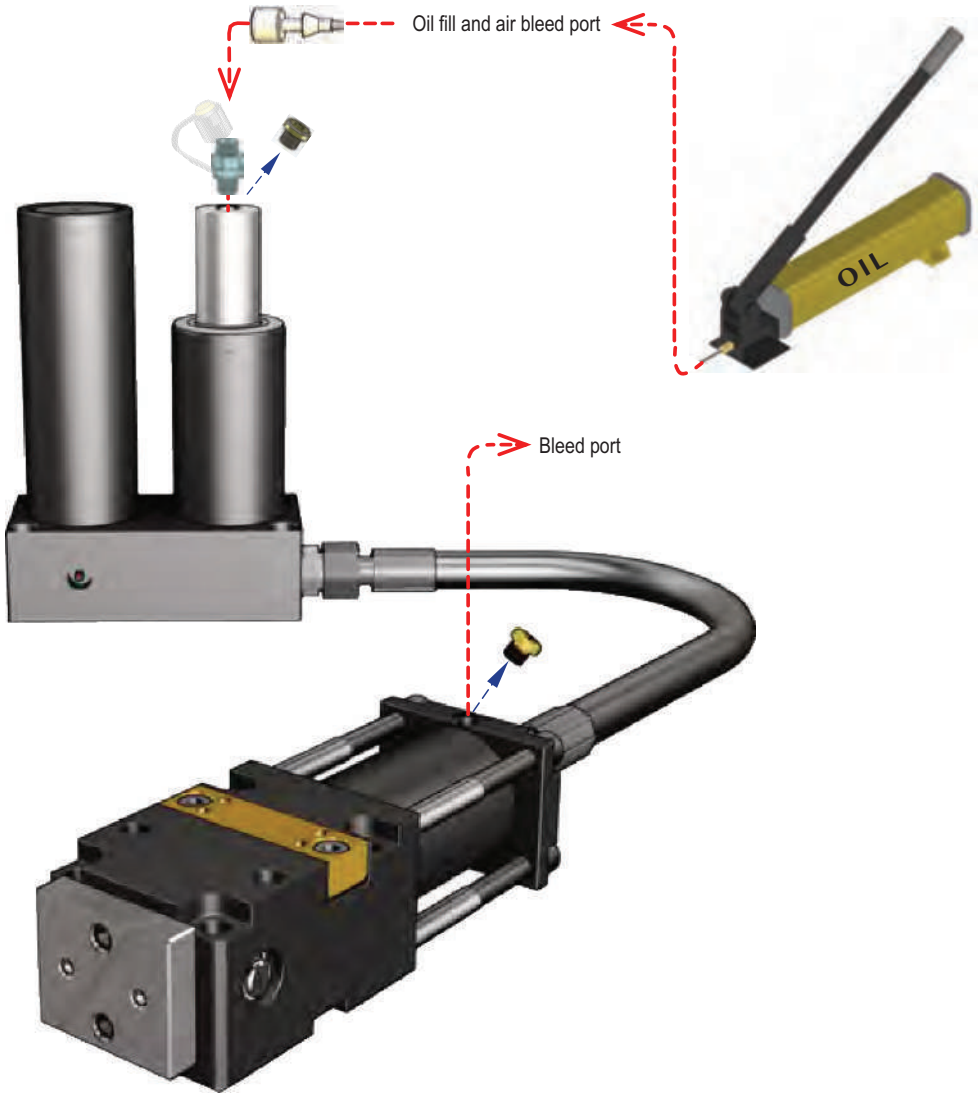
When the press stops acting on the working gas spring of the drive unit, the cam returns to its initial position thanks to the recoil of the gas spring.

Safety function



In the event that the cam working stroke is partially or completely hindered, the accumulator can completely absorb the displaced oil thereby avoiding any risk of breakage or explosion.

Oil refilling instructions



Installation instructions

Once the assembly of all components has been completed, proceed as follows:

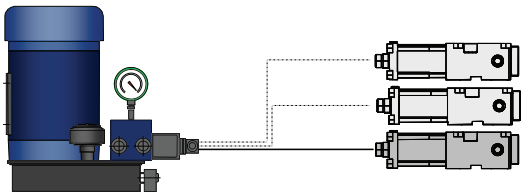
1 - Remove the cap from the oil filler hole
2 - Remove the cap from the oil drain hole
3 - Connect the oil pump minimess hose terminal to the oil filling hole
4 - Charge with oil by making it circulate throughout the system, until it is free of air bubbles, by purging such air bubbles through the outlet.
5 - Remove the oil filler items and close the oil charging and oil draining holes with the corresponding safety screws.
6 - The system is now ready for operation

How to order

TPCH 3000 x 50

- TPCH 3000 — Code
- TPCH 7500 — Code
- TPCH 12000 — Code
- 25mm — Stroke
- 50mm — Stroke
- 63mm(only TPCH 12000) — Stroke
- 80mm(only TPCH 3000 & TPCH 7500) — Stroke

Alternative driver



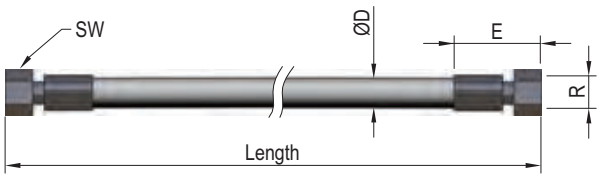
As an alternative to normal operation in presses, working cams also can be made to work by means of a hydraulic group that sends pressurized oil to the cams.

CONNECTION HOSE
TFRR

How to order

TFRR.01 - 500

Code / Length



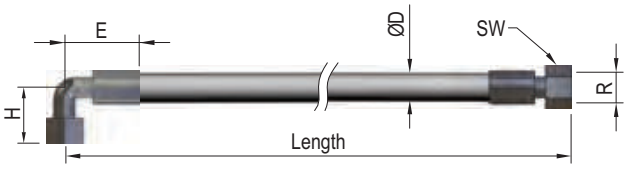
Code	TPCH model	ØD mm	E mm	R	SW mm
TFRR.01	TPCH 3000	21,2	≈ 63,5	M24x1,5	30
TFRR.02	TPCH 7500	28,2	≈ 76,5	M30x2	36
TFRR.03	TPCH 12000	36,1	≈ 100,5	M36x2	41

CONNECTION HOSE
TFRC

How to order

TFRC.03 - 750

Code / Length



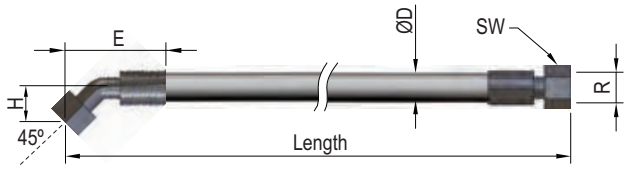
Code	TPCH model	ØD mm	H mm	E mm	R	SW mm
TFRC.01	TPCH 3000	21,2	≈ 45	≈ 69	M24x1,5	30
TFRC.02	TPCH 7500	28,2	≈ 55	≈ 94	M30x2	36
TFRC.03	TPCH 12000	36,1	≈ 67	≈ 128	M36x2	41

CONNECTION HOSE
TFCC

How to order

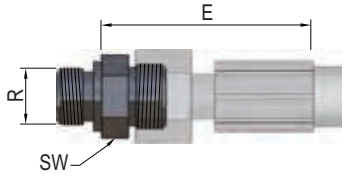
TFCC.02 - 325

Code / Length



Code	TPCH model	ØD mm	H mm	E mm	R	SW mm
TFCC.01	TPCH 3000	21,2	≈ 29	≈ 85	M24x1,5	30
TFCC.02	TPCH 7500	28,2	≈ 36	≈ 125	M30x2	36
TFCC.03	TPCH 12000	36,1	≈ 40	≈ 130	M36x2	41

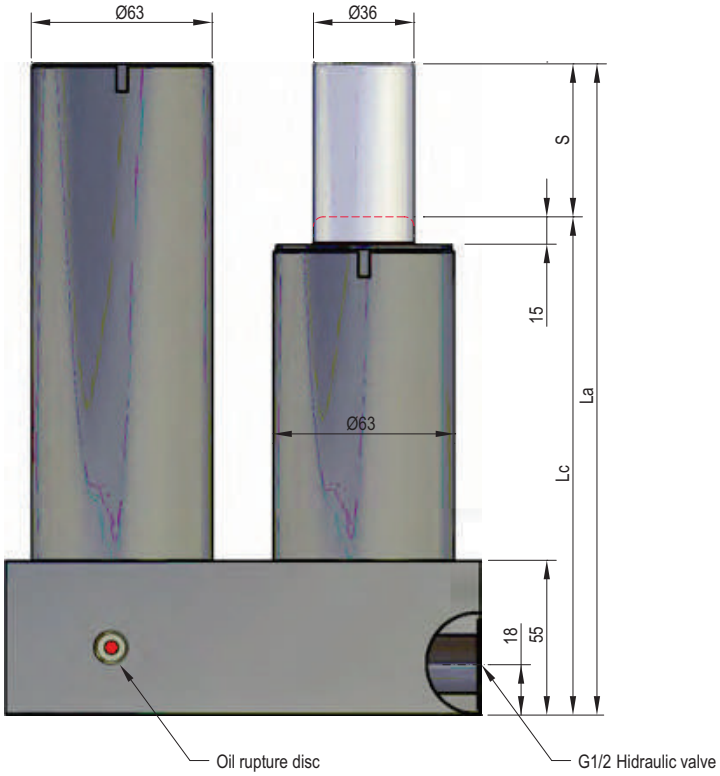
CONNECTION RACORD
RMTF

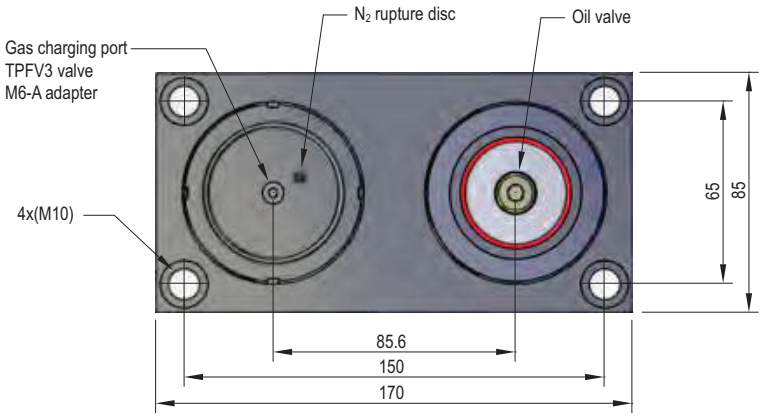


Code	TPCH model	E mm	R	SW mm
RMTF.01	TPCH 3000	≈ 85	1/2"	27
RMTF.02	TPCH 7500	≈ 90	3/4"	32
RMTF.03	TPCH 12000	≈ 108	1"	41

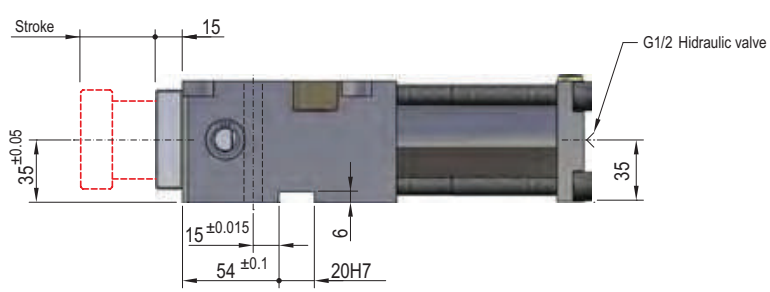
TF HOSE

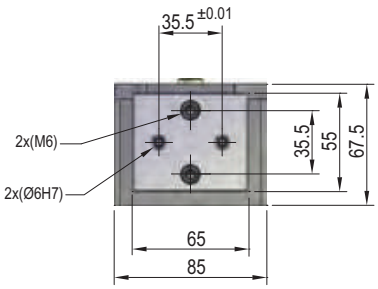
Code	TPCH model	ØD mm	Min. curvature radius mm	Working pressure Bar	Breakage pressure Bar
TF... .01	TPCH 3000	21,2	90	345	1380
TF... .02	TPCH 7500	28,2	160	280	1120
TF... .03	TPCH 12000	36,1	210	200	950

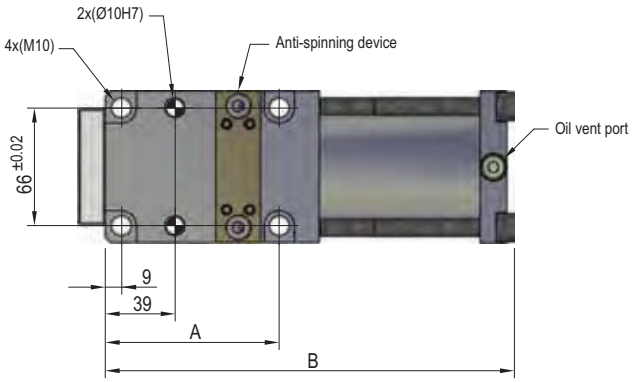




Code	Smax mm	La mm	Lc mm	Max. operation force	Charging N_2 pressure		Max. working specifications		Max. working temperature
					Min.	Max.	Velocity	Strokes / min	
TPCH 3000x25	25	183	158	3000 daN	50 Bar	150 Bar	20 m/min	40 spm	60 ºC
TPCH 3000x50	50	233	183					30 spm	
TPCH 3000x80	80	293	213					20 spm	

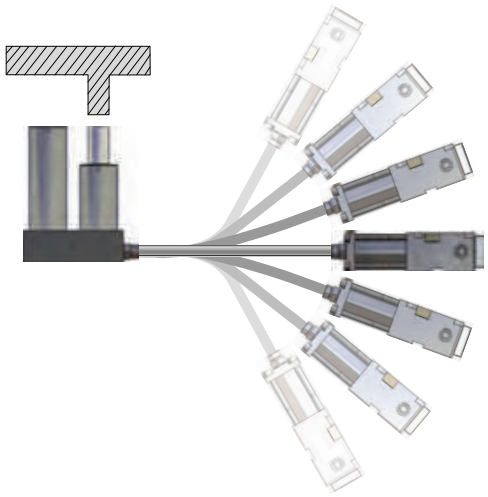






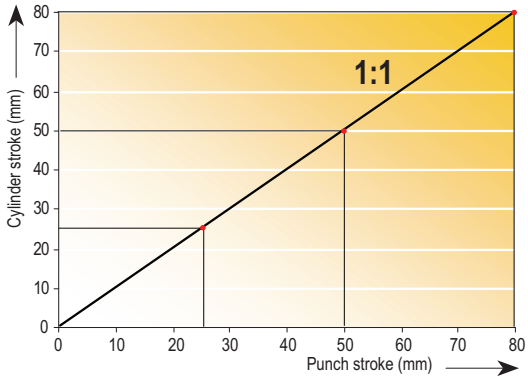
Code	Smax mm	A mm	B mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application
					Initial	Final		Velocity	Strokes / min	
TPCH 3000x25	25	83,5	187	3000 daN	300 daN	≈465 daN	MICRO 25V1x25 YW	20 m/min	40 spm	Round and shaped
TPCH 3000x50	50	97,5	225				MICRO 25V1x50 YW		30 spm	
TPCH 3000x80	80	125,5	285				MICRO 25V1x80 YW		20 spm	

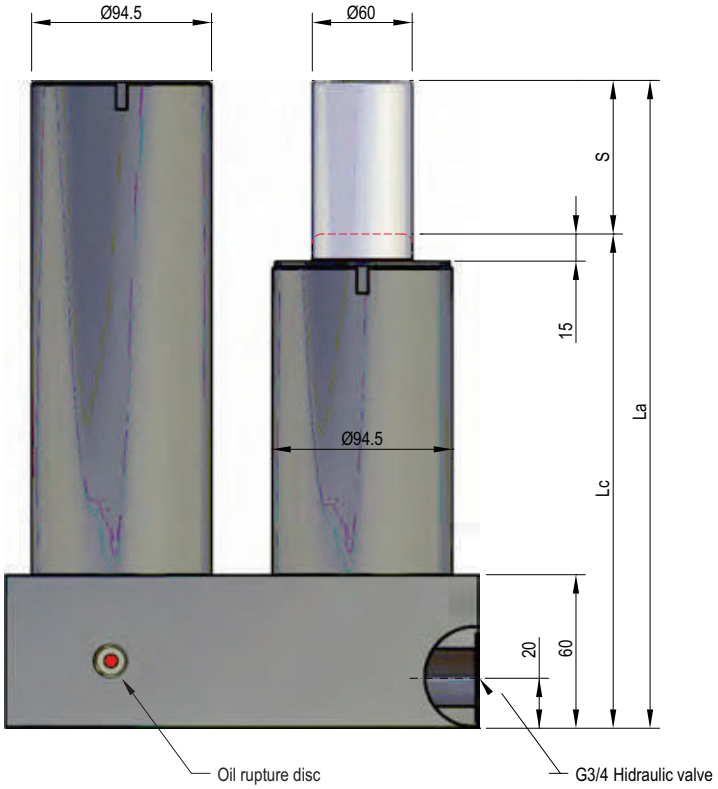
Working angle

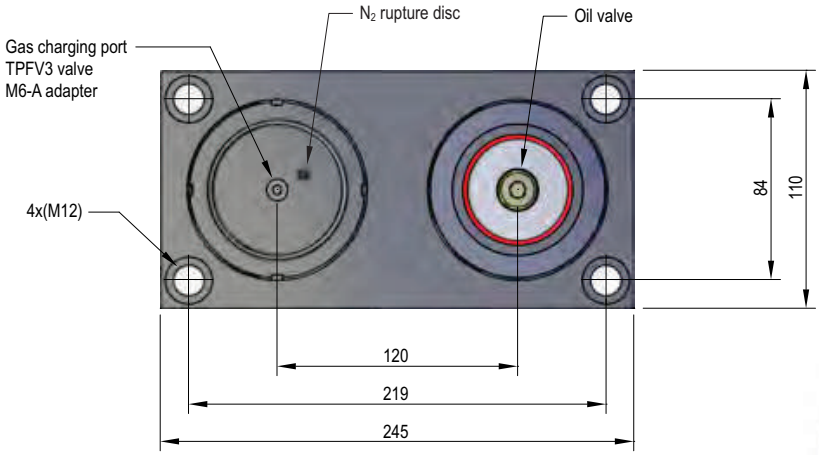


The working cam can work freely in space, at any angle and in any position.

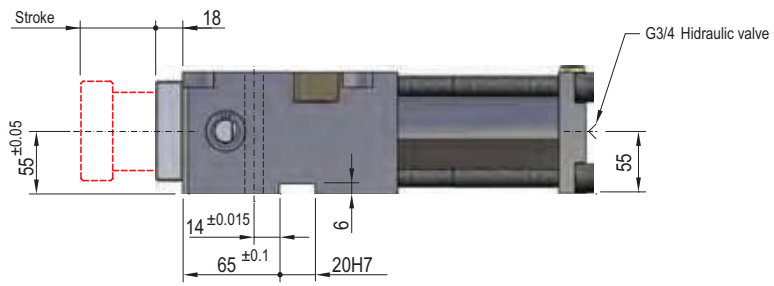
Working cam / drive unit cylinder stroke ratio

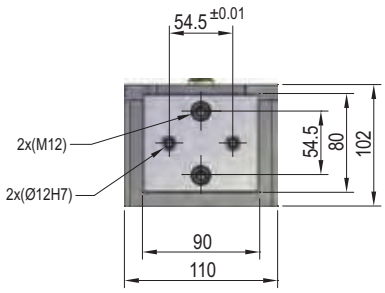


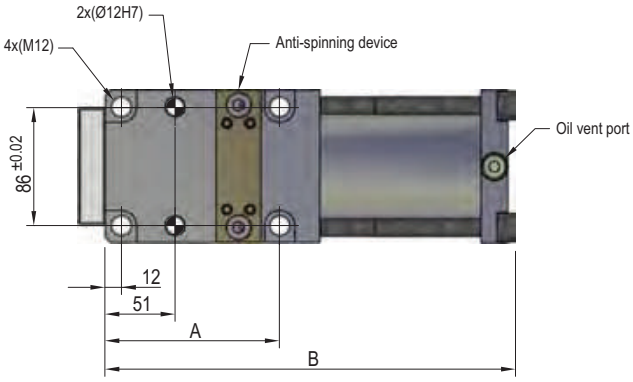




Code	Smax mm	La mm	Lc mm	Max. operation force	Charging N_2 pressure		Max. working specifications		Max. working temperature
					Min.	Max.	Velocity	Strokes / min	
TPCH 7500x25	25	205	180	7500 daN	50 Bar	150 Bar	20 m/min	40 spm	60 ºC
TPCH 7500x50	50	255	205					30 spm	
TPCH 7500x80	80	315	235					20 spm	

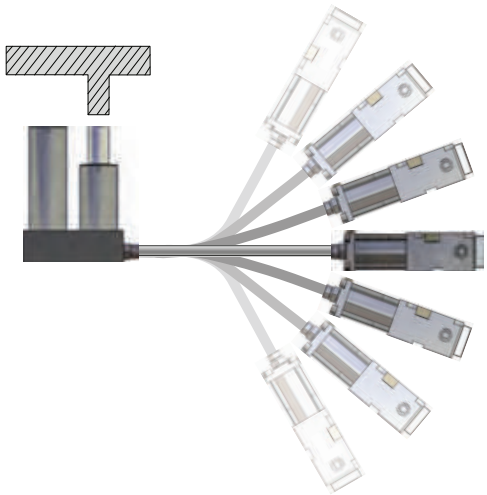






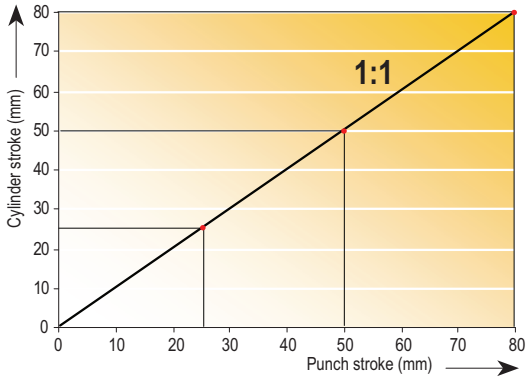
Code	Smax mm	A mm	B mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application
					Initial	Final		Velocity	Strokes / min	
TPCH 7500x25	25	110	230	7500 daN	600 daN	≈860 daN	TPK 600x25	20 m/min	40 spm	Round and shaped
TPCH 7500x50	50	110	255				TPK 600x50		30 spm	
TPCH 7500x80	80	140	315				TPK 600x80		20 spm	

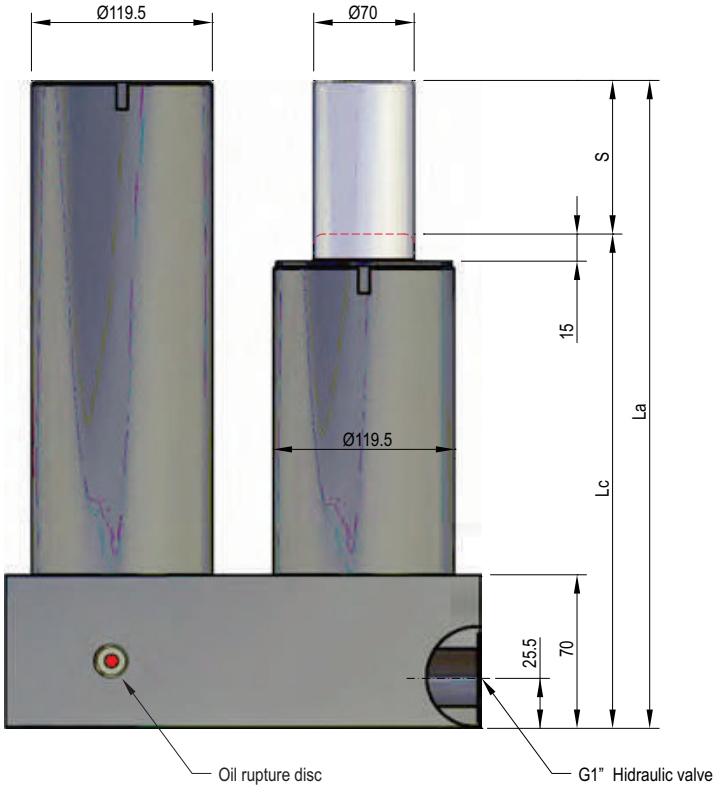
Working angle

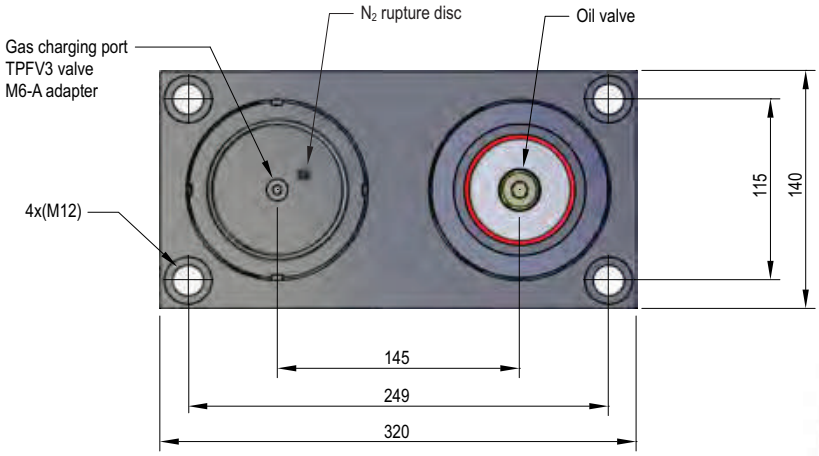


The working cam can work freely in space, at any angle and in any position.

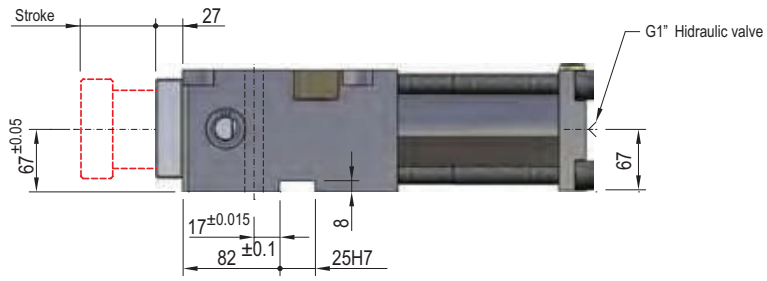
Working cam / drive unit cylinder stroke ratio

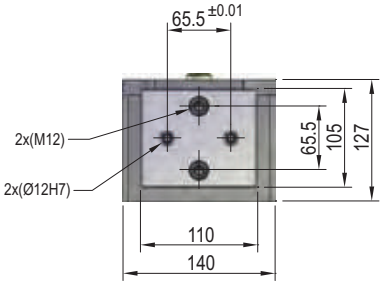


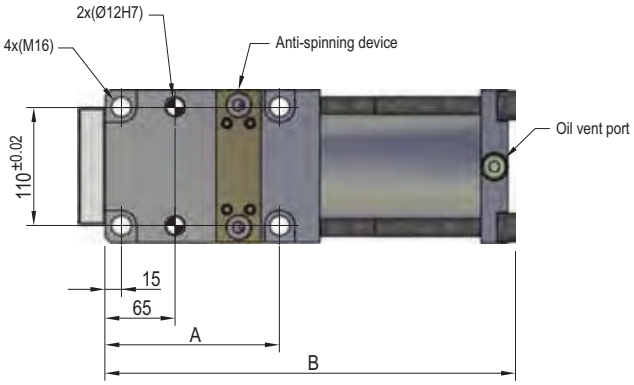




Code	Smax mm	La mm	Lc mm	Max. operation force	Charging N_2 pressure		Max. working specifications		Max. working temperature
					Min.	Max.	Velocity	Strokes / min	
TPCH 12000x25	25	216	191	12000 daN	50 Bar	150 Bar	20 m/min	40 spm	60 ºC
TPCH 12000x50	50	266	216					30 spm	
TPCH 12000x63	63	292	229					20 spm	

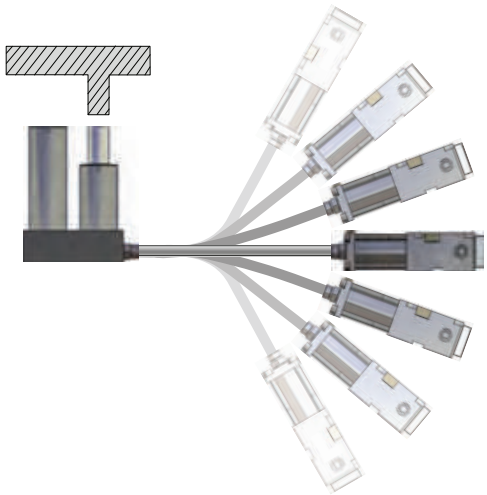






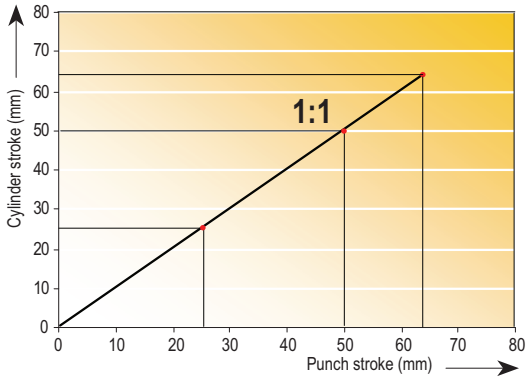
Code	Smax mm	A mm	B mm	Max. punching force	Gas spring force		Gas spring model	Max. working specifications		Application
					Initial	Final		Velocity	Strokes / min	
TPCH 12000x25	25	132	263	12000 daN	750 daN	≈1190 daN	MICRO 45x25	20 m/min	40 spm	Round and shaped
TPCH 12000x50	50	132	288				MICRO 45x50		30 spm	
TPCH 12000x63	63	132	314				MICRO 45x63		20 spm	

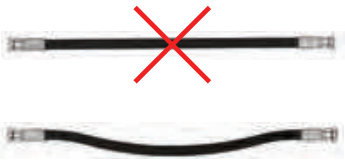
Working angle



The working cam can work freely in space, at any angle and in any position.

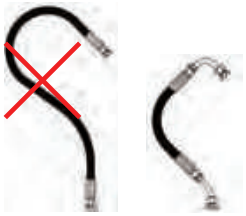
Working cam / drive unit cylinder stroke ratio



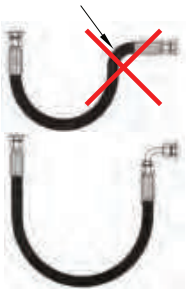


The length of the hose should have a certain amount of slack (10 or 20% excess)

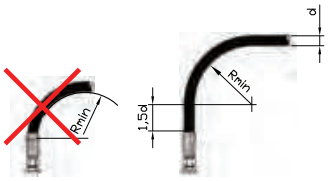
Make sure the hose is not twisted during the installation process.



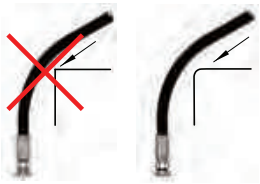
Select the appropriate fittings so that the hoses are not forced. A proper use of fittings prevents excessive hose length



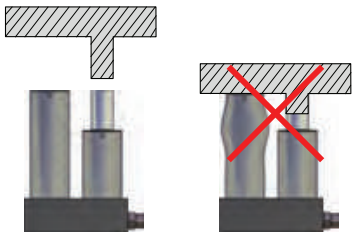
The installation process must comply with the minimum hose curvature radius.



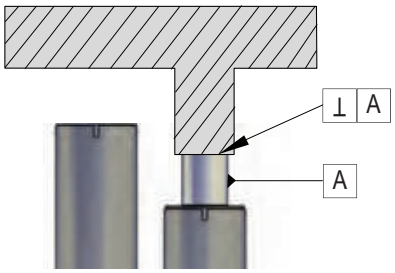
Before starting a curvature, a minimum straight length must be respected to avoid damage to the joint.



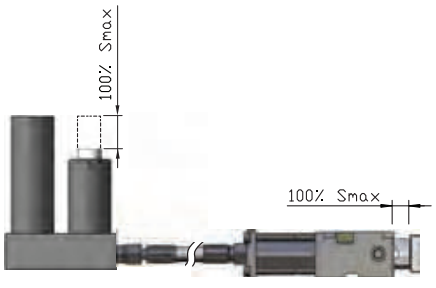
External mechanical influence on the hose should be avoided, even the rubbing against a nearby element. It is recommendable to use clamps for this process



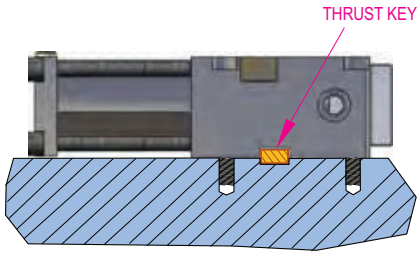
To avoid accidents or serious damage to the pressure accumulator, the press ram should have the necessary adequate dimensions.



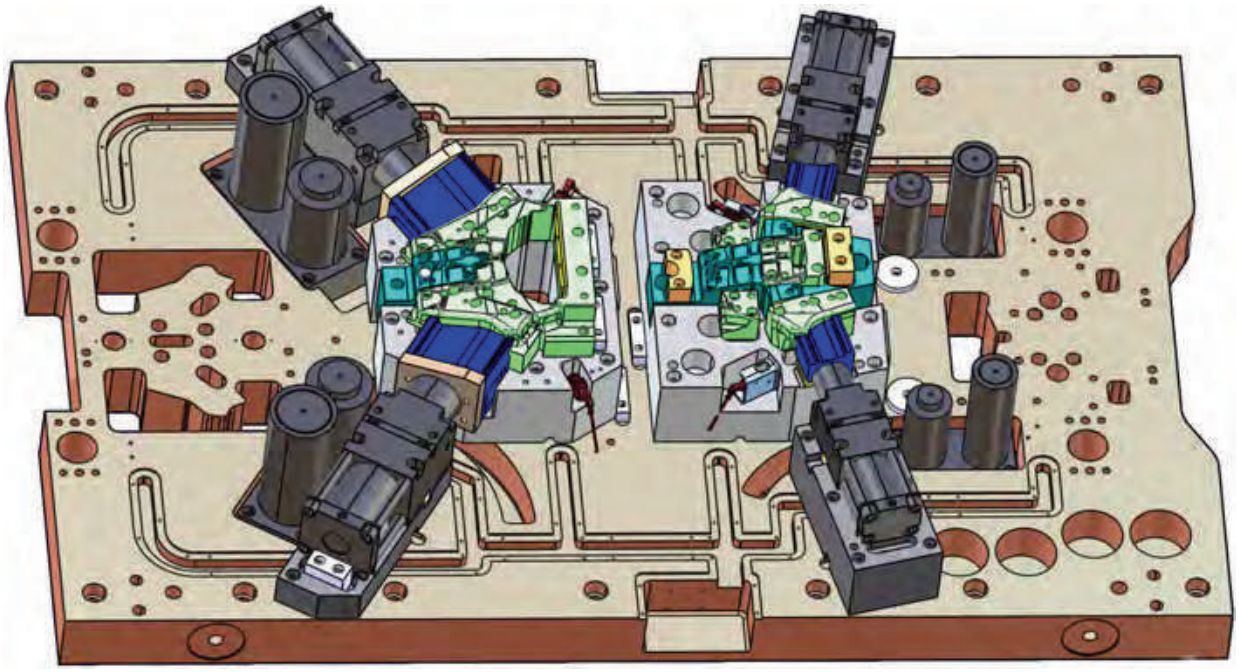
The working gas spring should be completely perpendicular to the working surface

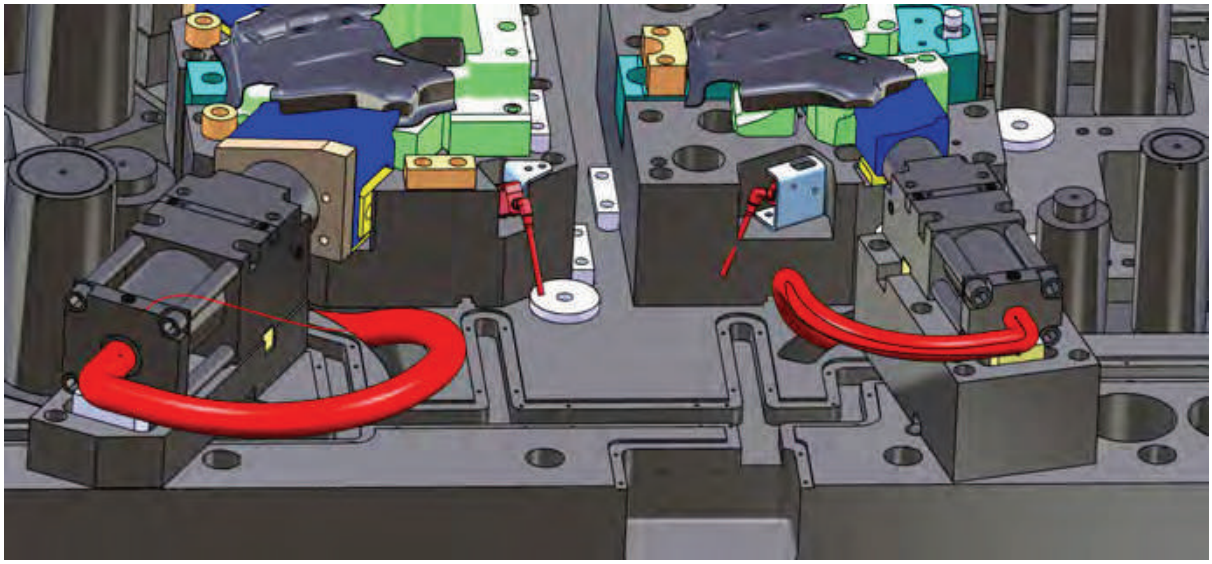


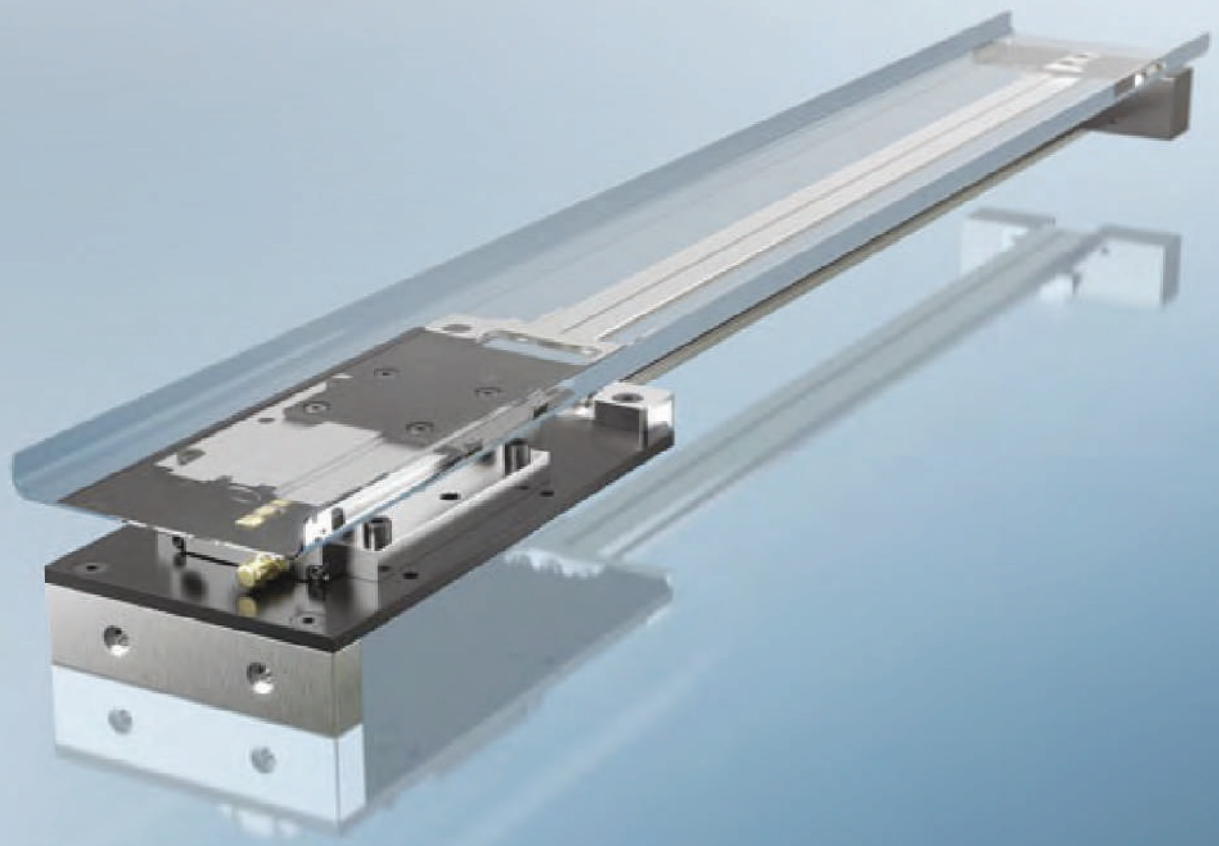
All models are prepared to work at 100% of their specified stroke. There is also a 15mm safety reserve stroke.



It is necessary to choose conveniently the length of fixing screws. All working cams have a groove for the mounting of a positioning pin.







Pneumatic part conveyors

Code	Maximum load N	Maximum parts load Kg
TPTN-18	180	15
TPTN-25	250	22
TPTN-35	350	30
TPTN-65	650	53

Application and use

This pneumatic part conveyor is a linear conveyor, which transports stampings of all kinds and shapes even out of extremely narrowed waste disposers.

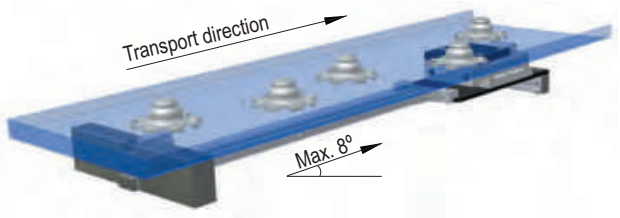
The simple handling of the conveyors allows for rapid and trouble-free operation both in the series as in the large-quantity production. The conveyor is robust and needs little maintenance.

Operation

Linear conveyors work according to the principle of the relation between velocity and frictional resistance. Thereby different front or back acceleration values are used to transport a part on a groove made of steel sheet. It even allow us to transport parts with a negative inclination (max. 8º).

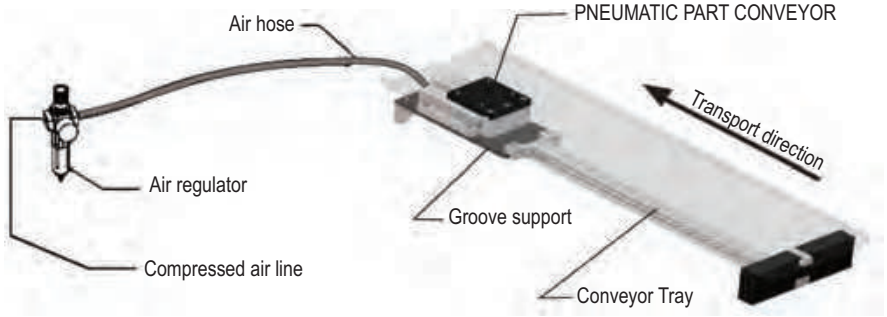
By adjusting stroke frequency, the transport velocity can optimally be accommodated to the conditions on the spot.

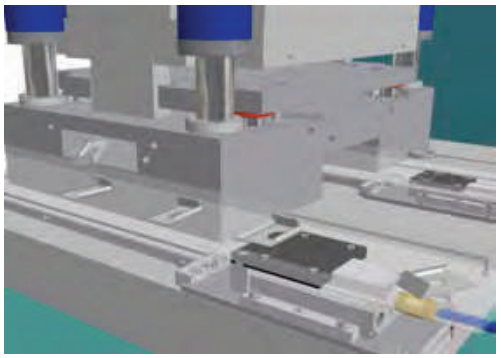
The transport groove can be arranged individually and a high wear of the conveyor band is avoided. Stampings which are fouled by oil can optionally be carried away on a corrugated transportation steel sheet.

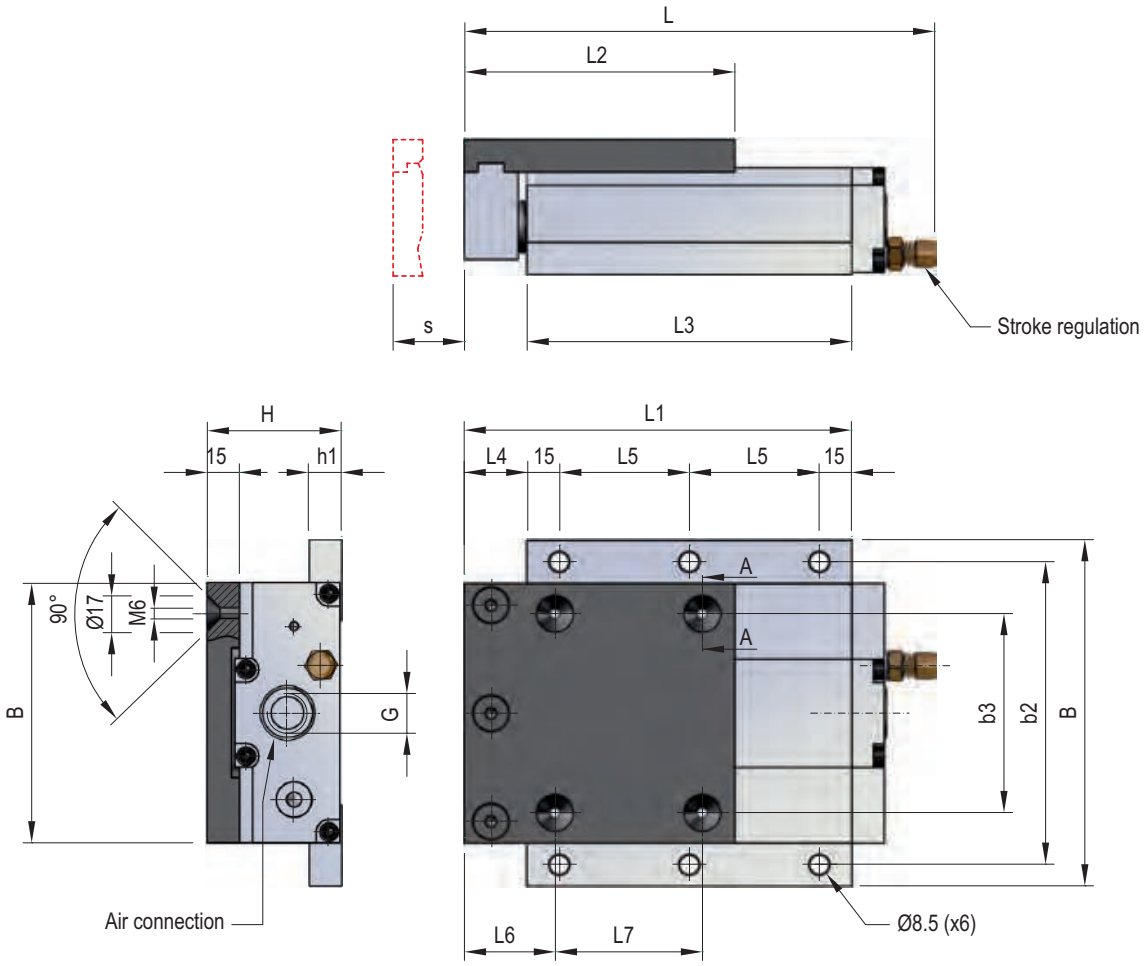


The conveyors work with oiled air pressure which is supplied by means of the maintenance unit and the oiler. The stroke frequency adjustment rate lies, depending on the type of the conveyor, between 10–180 strokes/minute.

The vibrations of the transport groove have to be secured by groove supports. Transport velocity can be increased by a slight incline of the transport groove.



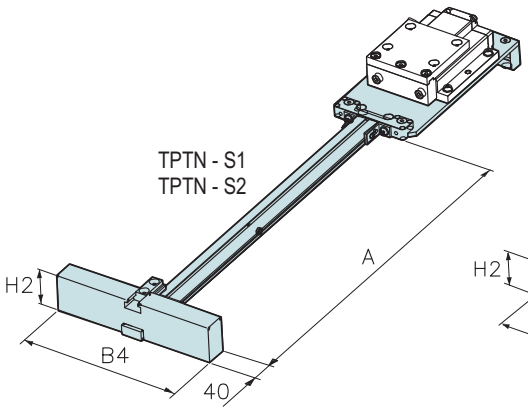


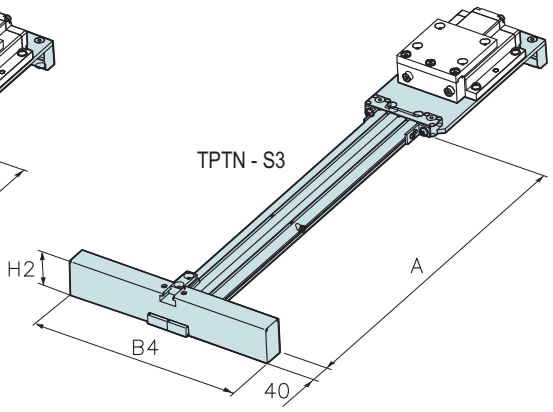


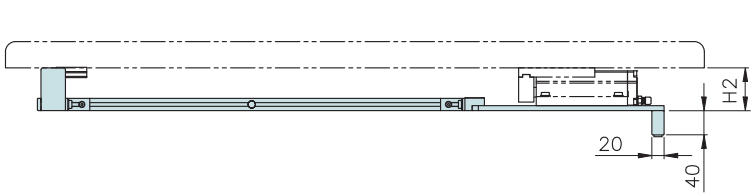
Code	L mm	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	L6 mm	L7 mm	B mm	B1 mm	b2 mm	b3 mm	H mm	h1 mm	G mm	s mm	Kg
TPTN - 18	211	188	100	150	23	60	30	60	125	85	105	60	40	10	R 3/8"	27	2,1
TPTN - 25															R 3/8"		2,1
TPTN - 35	218	194	125	150	29	60	42	68	160	120	140	92	62	15	R 3/8"	30	4,3
TPTN - 65															R 1/2"		4,5

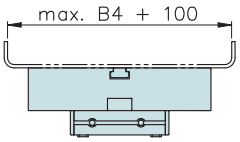
Code	Maximum load with support N	Maximum incline of the transport groove	Maximum weight of support Kg
TPTN - 18	180	8º	3
TPTN - 25	250	8º	3
TPTN - 35	350	8º	5
TPTN - 65	650	8º	7

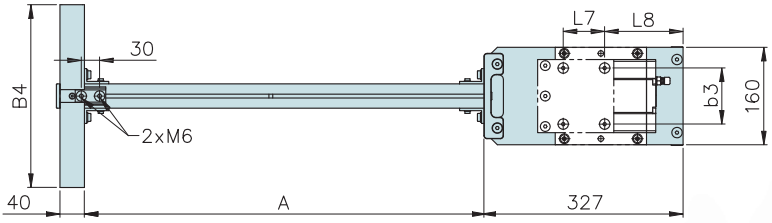
Code	Working pressure Bar	Min internal diam. hose mm	Air consumption l/min	Rate of feed m/min	Noise level dB(A)
TPTN - 18	3,9 - 4,5	6	1 - 2	0,8 - 4	< 70
TPTN - 25	3,9 - 4,6	6	1,5 - 2,5	0,8 - 4	< 70
TPTN - 35	4,2 - 4,7	8	2 - 5	0,8 - 3	< 70
TPTN - 65	4,2 - 4,7	8	3 - 7	0,8 - 3	< 70

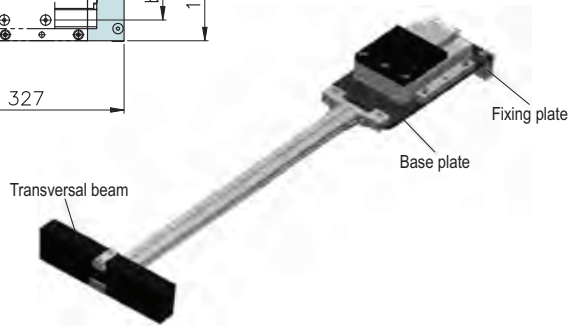






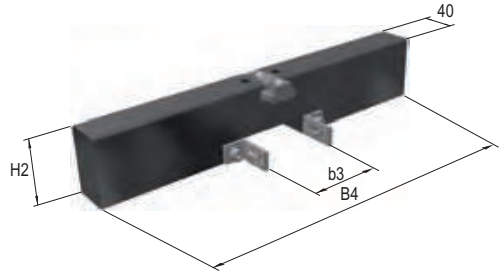






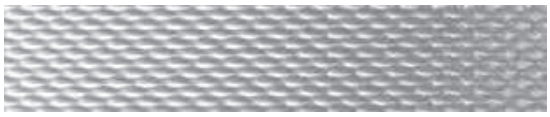
Code	A mm	B4 mm	H2 mm	L7 mm	L8 mm	b3 mm	Pneumatic part conveyor model
TPTN-S1	700	160	48	60	148	60	TPTN-18 / TPTN-25
		200					
		300					
	1000	160	48	60	148	60	TPTN-18 / TPTN-25
		200					
		300					
TPTN-S2	700	160	70	68	134	92	TPTN-35 / TPTN-65
		300					
		500					
	1000	160	70	68	134	92	TPTN-35 / TPTN-65
		300					
		500					
TPTN-S3	700	300	70	68	134	92	TPTN-35 / TPTN-65
		400					
		500					
	1000	300	70	68	134	92	TPTN-35 / TPTN-65
		400					
		500					

Support



Code	B4 mm	H2 mm	b3 mm
	160		
TPTN-S1-S	200	48	40
	300		
	160		
TPTN-S2-S	300	70	40
	500		
	300		
TPTN-S3-S	400	70	80
	500		

Transport groove



For transport grooves we recommend, particularly for badly oiled/ greased parts, the using of structured sheet steel of the SM-5WL (1.4301) type.

The transport groove has to be made by the customer.

Sliding T nut

TPTN-T

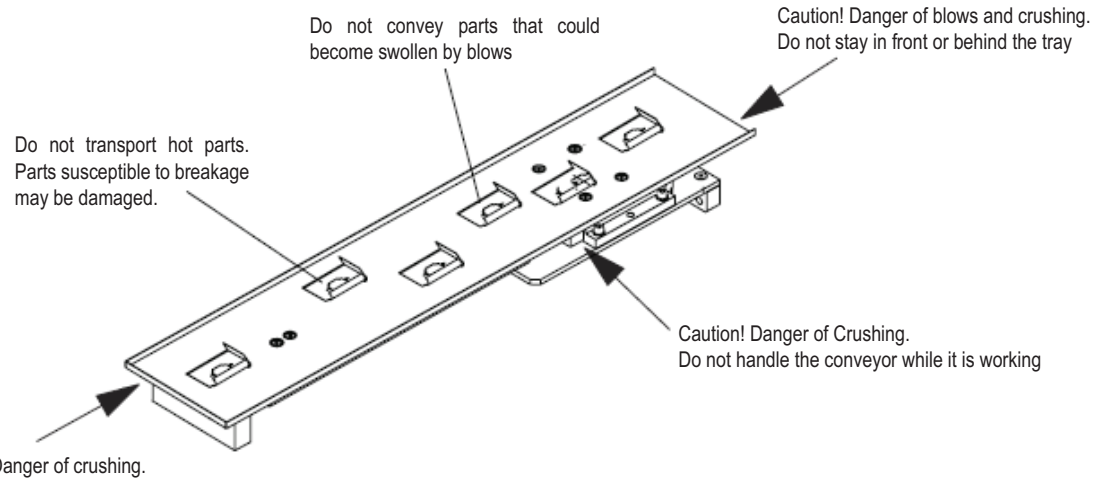
Safety

In principle, conveyor capacity depends on the surface of the parts that are to be conveyed, on the tray surface and on the adjusted stroke frequency. Conveyor transport capacity with the conveyor tray is indicated in catalogue specifications.

In order to prevent tool breakage and other defects due to a pneumatic conveyor stop during the automatic manufacturing process, a control device has to be foreseen that transmits a signal that initiates a tool emergency stop in case of unit malfunction or stoppage.

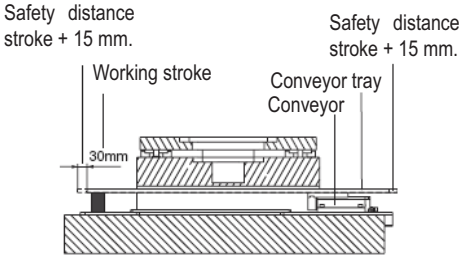
In order to obtain a long service life without breakdowns, the unit has to be properly handled and all the assembly instructions described in this manual are to be observed. Pay attention to the following safety indications, as an inadequate use may cause injury to people and damage to the equipment among other things.

Conveyors are to be fixed on to the tool in such a way they are protected by safety devices such as protection grids.



Safety distances as shown in the figure imply the corresponding safety installations that exclude the possibility of blows or crushing.
Henceforward safety distances in accordance with DIN EN 349 should be respected.

Stroke distance should be taken into account when carrying out conveyor assembly. It is for this reason that the tray should not be placed too near possible obstacles. Stroke distance may increase due to the weight of the tray - be especially careful with this.

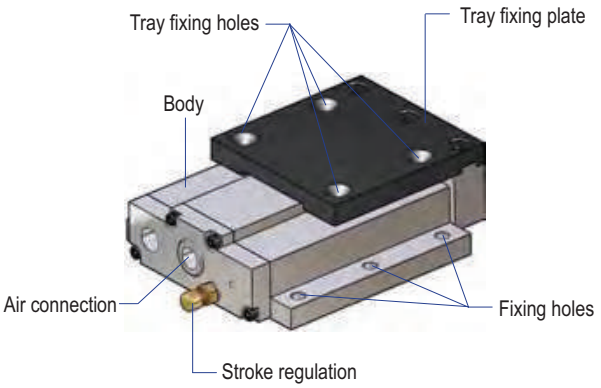


Installation

The pneumatic part conveyor is composed of a moving plate, on which the conveyor tray is fixed. The conveyor is connected to the air mains (maximum 4.7 bar) through a R3/8" or R1/2" connection that can be regulated by a pressure regulator with a lubricator . The interior diameter of the connection hose is to be kept at 10 mm, otherwise the unit will malfunction because of insufficient air flow.

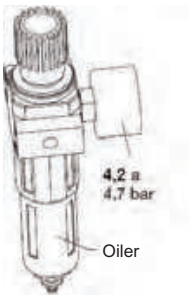
There can only be one conveyor per pressure regulator.
Upon initial functioning add some drops of oil to the air connection. Fix the conveyor with at least 4xM8 screws to the substructure (tool base plate). The screws are to be equipped with a safety washer.

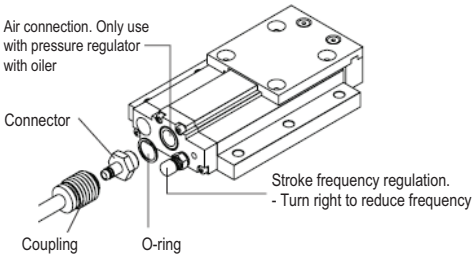
The construction of the substructure is to be dimensioned in such a way that the support surface is flat and without misalignments.
Fix the conveyor tray with four countersunk screws on the tray support plate. Make sure the length of the screws, depending on the thickness of the tray plate plus that of the base plate, have adequate dimensions so that the screw ends do not stick out over the tray.
The longer the conveyor tray plate is, the more wear and tear the equipment will have to undergo.
By holding the edges, plates with thicknesses below 1mm can have a higher rigidity.



Use supports in the front and back areas to project the conveyor tray from vibrations or leaning. Only extremely short trays (length of the device + 150 mm), which are very light, do not require supports.
The groove support assembly must avoid interfering with the conveyor guide. The conveyor groove must not become bulged.

Connect the air mains to the necessary connection elements.
Adjust the pressure regulator to an adequate pressure and fill it with oil.
Use only appropriate oil for the compressed air.
We recommend approximately 1 drop of oil per minute for 60 strokes.

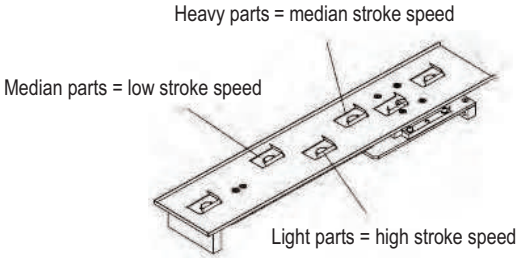


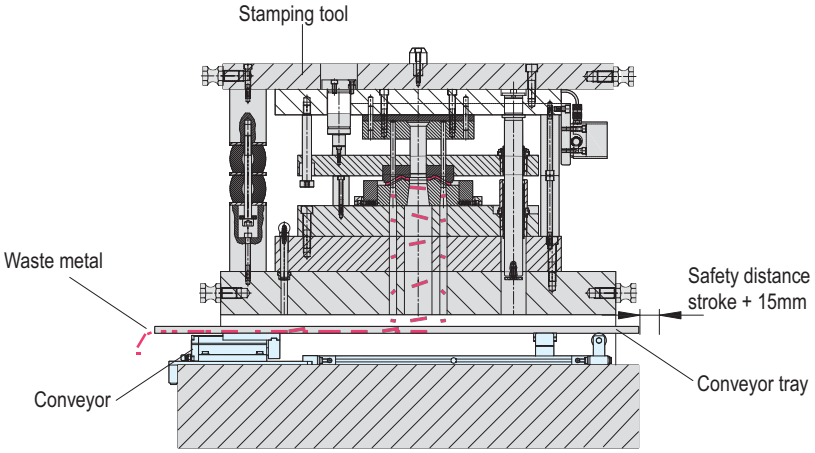


Conveyor speed will depend on stroke frequency. The conveyor can be regulated from 10 strokes/min. up to 180 strokes/min. approximately. Depending on the form of the pieces to be conveyed, optimal transport speed may be determined by trying out different stroke frequencies.

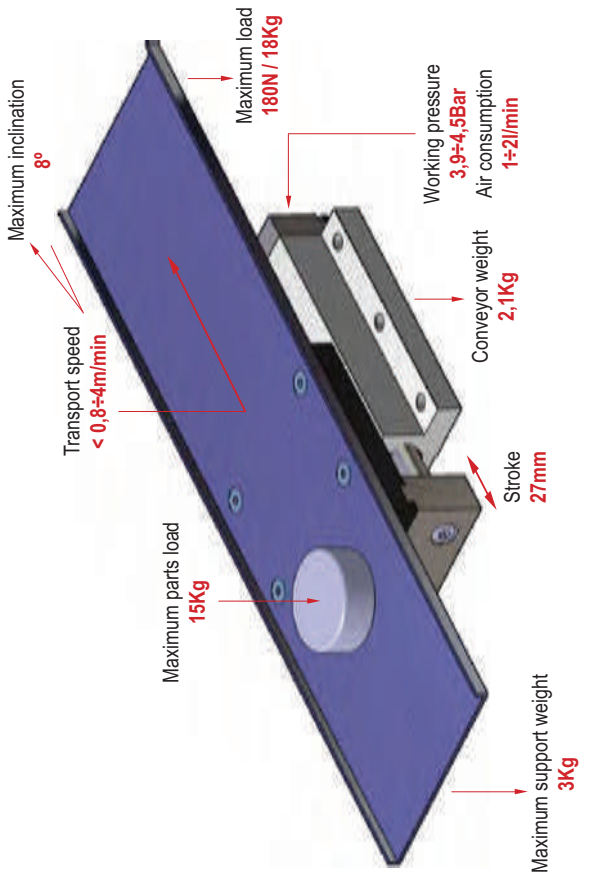
High stroke frequency does not necessarily produce a higher transport speed. An excessively high stroke frequency may even lead to the cancellation of transport, with the pieces simply vibrating on the tray.

Stroke frequency regulation is carried out by means of the adjustment screw placed at the front of the conveyor.

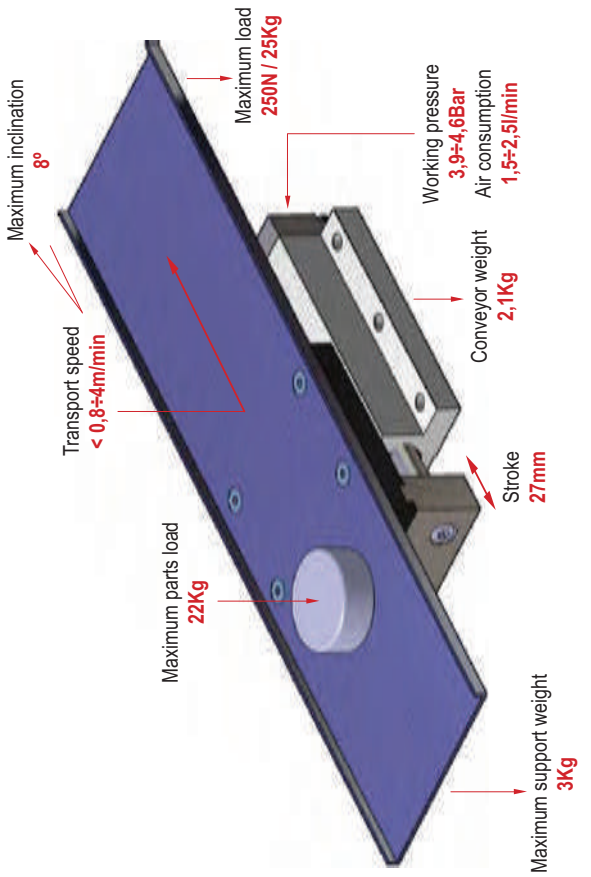




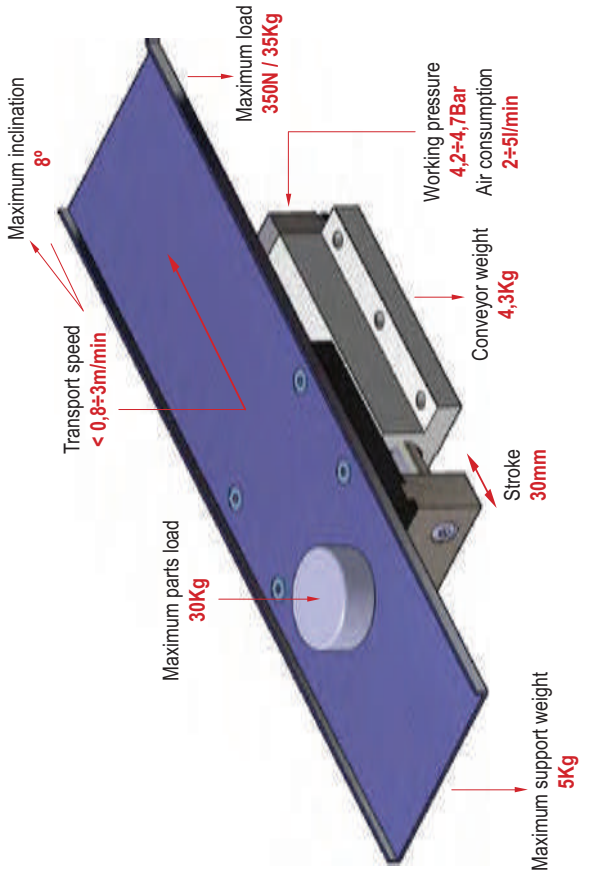
TPTN-18



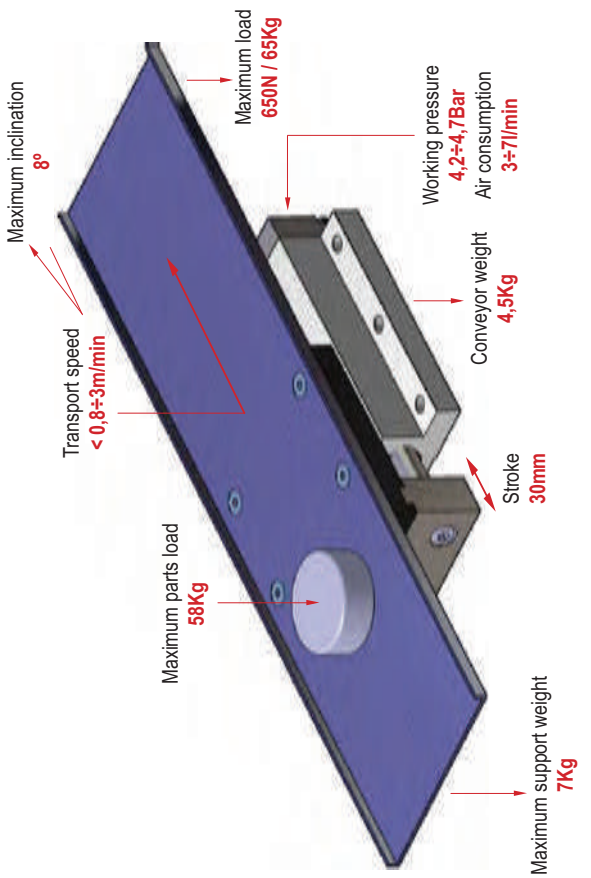
TPTN-25



TPTN-35



TPTN-65



Incorrect funtioning

The conveyor plate does not move:

☑ Check air supply and check that the pressure is correct

☑ Check the inside diameter of the air hose

☑ Check the oiler of the pressure regulator (if necessary apply a drop of oil on the air connection)

☑ Check that the conveyor tray moves freely or if it is blocked or lopsided.

Stroke frequency cannot be regulated correctly:

☑ If the conveyor has not been used for some time, we recommend an empty running period of about 10 minutes.

The conveyor stops alter some time in use:

☑ Lubrication is not sufficient (check the oiler). Before starting the conveyor apply a little oil in the air connection.

Maintenance

Operate the conveyor only with the pressure regulator and oiler!

Optimum oiling is to be guaranteed by the pressure regulator.
Adjust necessary lubrication according to the stroke frequency used.

Amount guidance:

1 DROP OF OIL PER MINUTE
for 60 strokes per minute.

☑ Use emulsified and very fluid oil to guarantee optimum oiling.

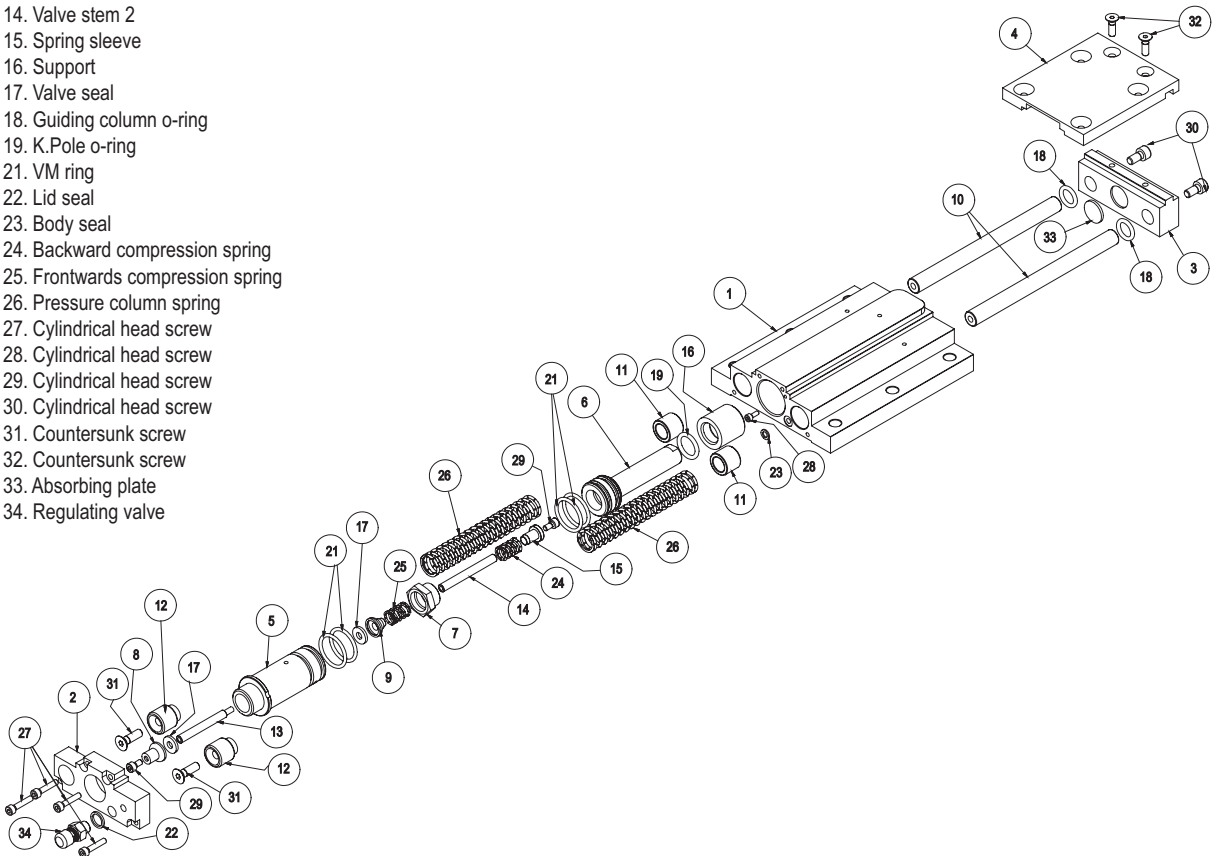
☑ Clean the pressure regulator water separator every day.

☑ Do not use the pneumatic part conveyor subjecting it to high temperatures, as this can alter lubrication and damage the closing seals.

The conveyor has been adjusted by the manufacturer, for this reason it should not be opened.

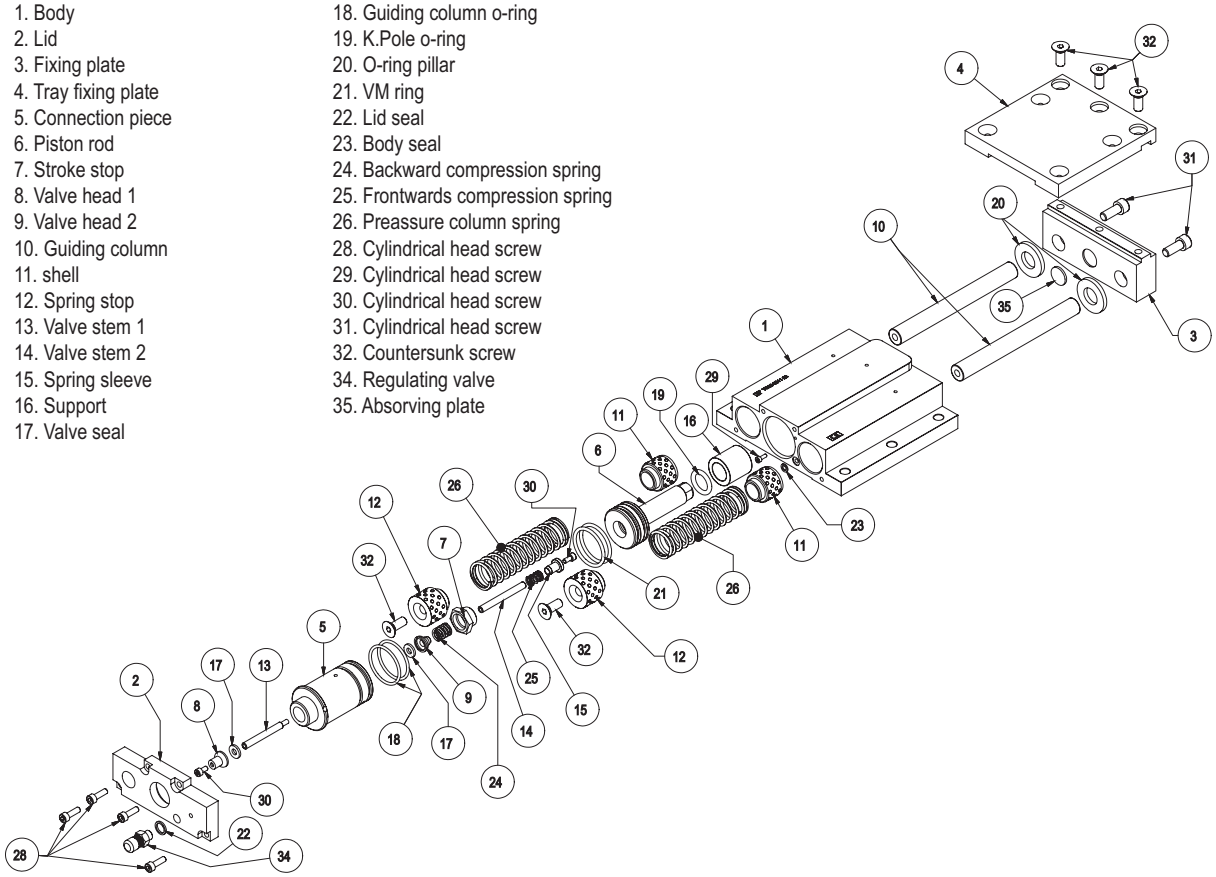
Spare parts TPTN-18 / TPTN-25

1. Body
2. Lid
3. Fixing plate
4. Tray fixing plate
5. Connection piece
6. Piston rod
7. Stroke stop
8. Valve head 1
9. Valve head 2
10. Guiding column
11. shell
12. Spring stop
13. Valve stem 1
14. Valve stem 2
15. Spring sleeve
16. Support
17. Valve seal
18. Guiding column o-ring
19. K.Pole o-ring
21. VM ring
22. Lid seal
23. Body seal
24. Backward compression spring
25. Frontwards compression spring
26. Pressure column spring
27. Cylindrical head screw
28. Cylindrical head screw
29. Cylindrical head screw
30. Cylindrical head screw
31. Countersunk screw
32. Countersunk screw
33. Absorbing plate
34. Regulating valve



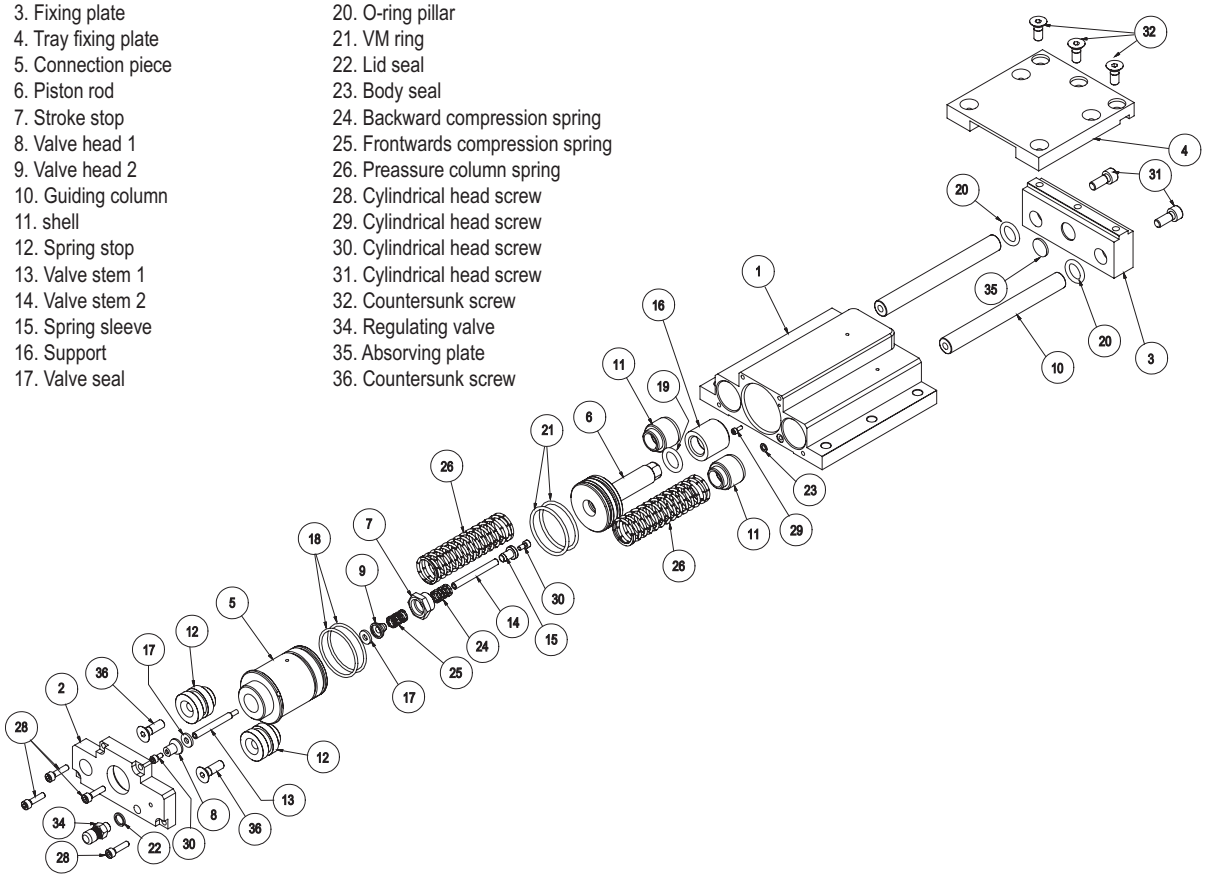
Spare parts TPTN-35

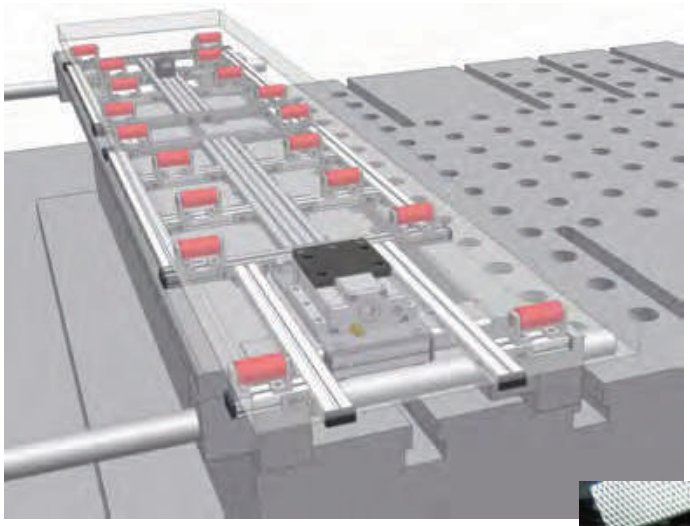
1. Body
2. Lid
3. Fixing plate
4. Tray fixing plate
5. Connection piece
6. Piston rod
7. Stroke stop
8. Valve head 1
9. Valve head 2
10. Guiding column
11. shell
12. Spring stop
13. Valve stem 1
14. Valve stem 2
15. Spring sleeve
16. Support
17. Valve seal
18. Guiding column o-ring
19. K.Pole o-ring
20. O-ring pillar
21. VM ring
22. Lid seal
23. Body seal
24. Backward compression spring
25. Frontwards compression spring
26. Preassure column spring
28. Cylindrical head screw
29. Cylindrical head screw
30. Cylindrical head screw
31. Cylindrical head screw
32. Countersunk screw
34. Regulating valve
35. Absorving plate

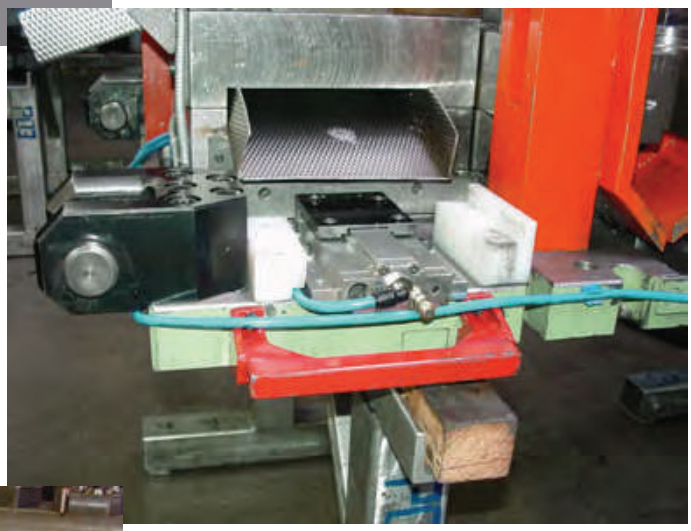


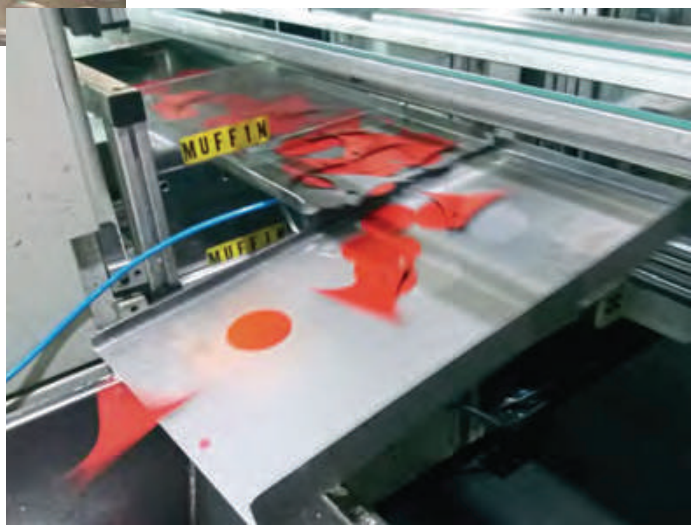
Spare parts TPTN-65

1. Body
2. Lid
3. Fixing plate
4. Tray fixing plate
5. Connection piece
6. Piston rod
7. Stroke stop
8. Valve head 1
9. Valve head 2
10. Guiding column
11. shell
12. Spring stop
13. Valve stem 1
14. Valve stem 2
15. Spring sleeve
16. Support
17. Valve seal
18. Guiding column o-ring
19. K.Pole o-ring
20. O-ring pillar
21. VM ring
22. Lid seal
23. Body seal
24. Backward compression spring
25. Frontwards compression spring
26. Preassure column spring
28. Cylindrical head screw
29. Cylindrical head screw
30. Cylindrical head screw
31. Cylindrical head screw
32. Countersunk screw
34. Regulating valve
35. Absorving plate
36. Countersunk screw

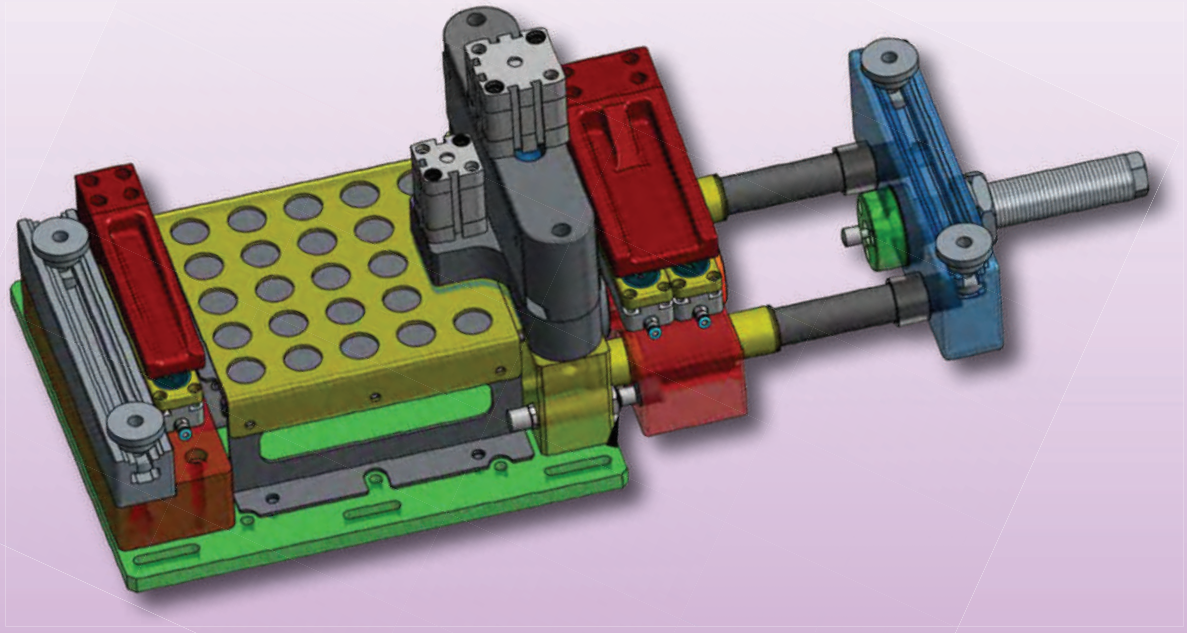







MUFFIN

- Long service life
- Thickness control unit
- Dumping movement system



Pneumatic linear feeder, developed, manufactured and tested by “Estampaciones Garces”, a corporation with 50 years of experience in the field of excentric press metal part stamping.

For any inquiries, please contact:

Estampaciones Garces .S.L.
+34 943 66 71 77
info@troqueles-gaco.com
www.troqueles-gaco.com

Metal band feeder

Code	Maximum band width mm	Maximum machine step mm
TPAB 160	160	100
TPAB 550	550	200

PRESSURE UNITS · UNIDADES DE PRESION

	kgf/cm²	Pa	PSI	bar
1 kgf/cm²		9,81 x 10^{4}	14,223	0,981
1 Pa	1,01 x 10^{-5}		14,49 x 10^{-5}	1e^{-5}
1 PSI	0,0703	6894,76		0,0689
1 bar	1,0196	10^{5}	14,503	

FORCE UNITS · UNIDADES DE FUERZA

	kgf	N	daN
1 kgf		9,81	0,98
1 N	0,98		0,1
1 daN	1,019	10	

TECAPRES
PERFECTION IN PRESSURE DYNAMICS

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