

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	✓

TPSR

TPSRS

TPNS

TPHT

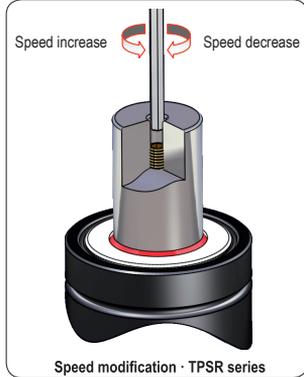


i Gas springs of the TPSR and TPSRC series make it possible to control stem recovery speed when the gas spring opens after its compression. This reduces the blank holder bounce in the high speed presses.

MICRO 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

TPSP 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.

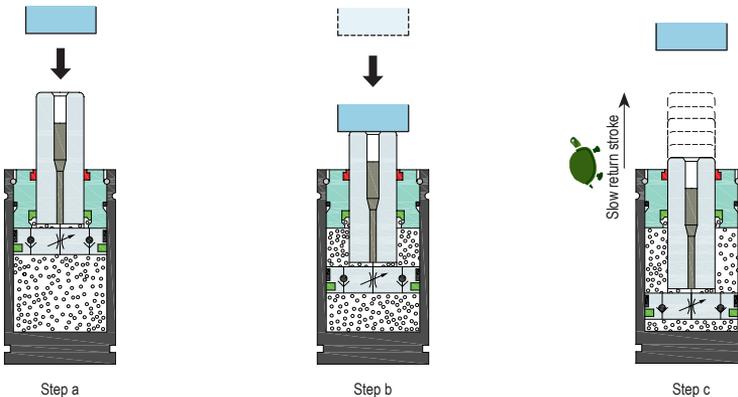
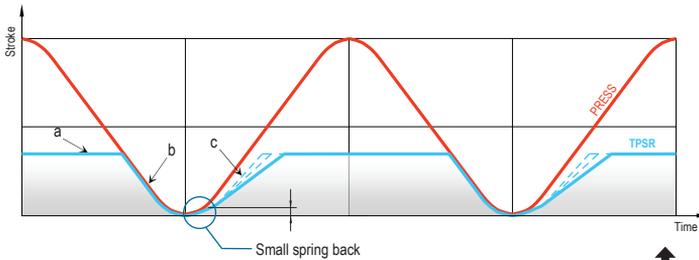


In order to avoid damage in the sealing system due to an increase in temperature, the gas spring stroke rate should be limited. The temperature should not be allowed to go above 80°C. In order to use this product correctly the customer is to provide data as requested.

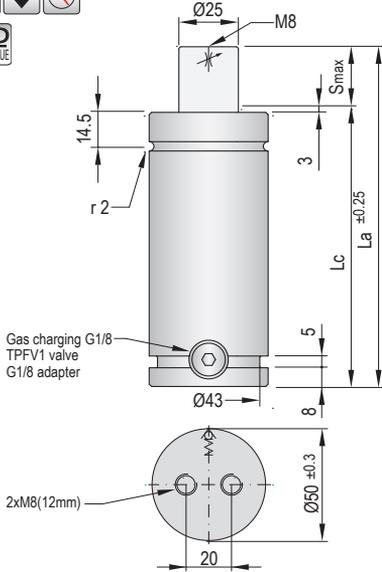


The TPSR and TPSRC series are manufactured in ISO-norm dimensions. They admit operation both in the autonomous mode and connected to a control panel.

Operation graph



VDI SAFETY



i Pressure medium **Nitrogen (N₂)**

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	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		F daN		Fc daN		P Bar	V l		Kg	
TPSR 750x13	12,7	120,4	107,7	740 ±5% (20°C)	740 ±5% (20°C)		880		900		150 (20°C)	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				1020		1065					0,080	1,52
TPSR 750x63	63	222	159				1035		1085					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)

TPSR

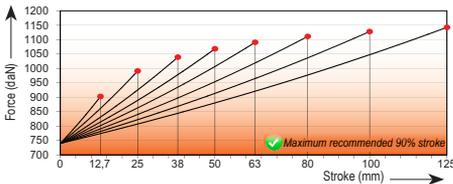
TPSRs

TPNS

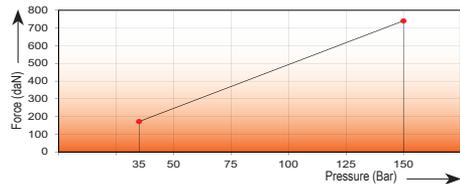
TPHT



Force/stroke ratio



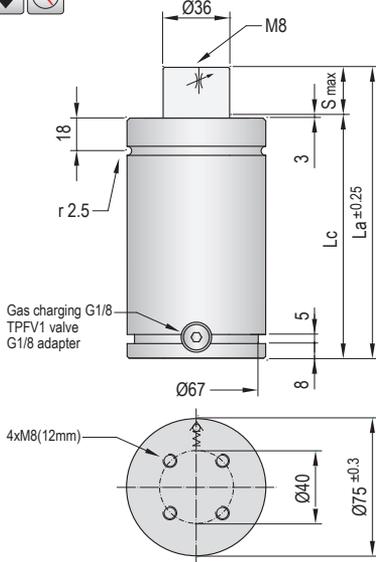
Initial force/charging pressure ratio



Assembly possibilities



VDI SAFETY



i Pressure medium **Nitrogen (N₂)**

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	15 m/min
Maintenance kit	Kit SR1500
Recommended max. strokes/min	5 - 20 spm

ISO
STANDARD
DIMENSIONS



Required data

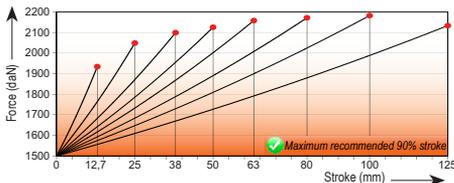
Working stroke	(mm)
Press speed	(m/min)
Maximum production rate	(spm)
Gas spring expansion speed	(m/min)



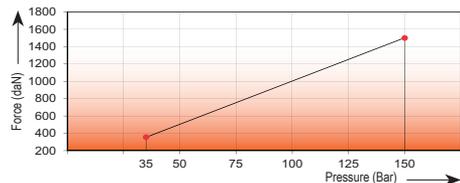
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSR 1500x13	12,7	135,4	122,7	1500 ±5% (20°C)	1890	1940	150 (20°C)	0,058	3,15
TPSR 1500x25	25	160	135		1985	2055		0,095	3,30
TPSR 1500x38	38	186	148		2025	2110		0,136	3,50
TPSR 1500x50	50	210	160		2050	2135		0,173	3,65
TPSR 1500x63	63	237	174		2075	2165		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



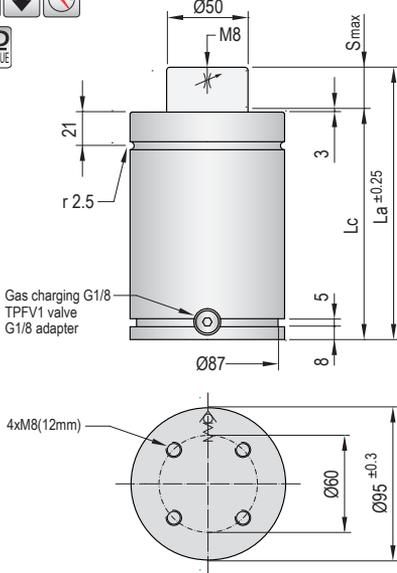
Assembly possibilities



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PED
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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	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% (20°C)	3515	3590	150 (20°C)	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)

TPSR

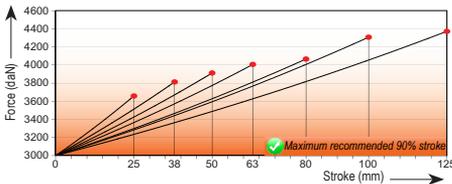
TPSRs

TPNS

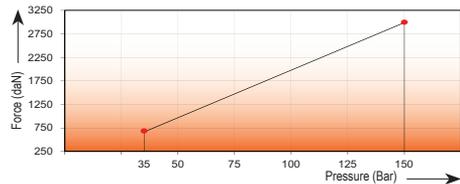
TPHT



Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

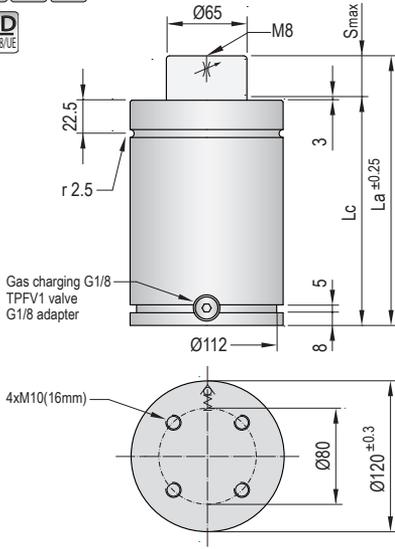
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PED
2014/68/EU



i Pressure medium **Nitrogen (N₂)**

Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	33,18 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	20 m/min
Maintenance kit	Kit SR5000
Recommended max. strokes/min	5 - 20 spm

ISO
STANDARD
DIMENSIONS



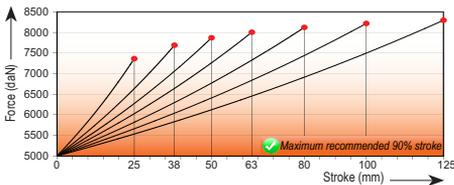
Required data

Working stroke	(mm)
Press speed	(m/min)
Maximum production rate	(spm)
Gas spring expansion speed	(m/min)

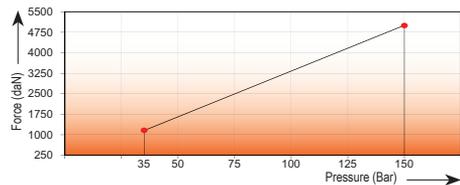


Code	S _{max} mm	L _a mm	L _c mm	F _a daN	90% F daN	100% F _c daN	P Bar	V l	Kg		
TPSR 5000x25	25	190	165	5000 ±5% (20°C)	7000	7330	150 (20°C)	0,258	12,01		
TPSR 5000x38	38	216	178		7265	7655				0,361	12,85
TPSR 5000x50	50	240	190		7410	7835				0,455	13,60
TPSR 5000x63	63	267	204		7515	7970				0,557	14,50
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
<i>(Other strokes under order)</i>											

Force/stroke ratio

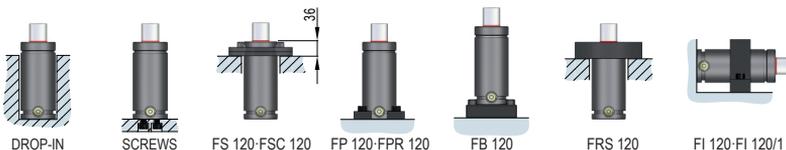


Initial force/charging pressure ratio



Assembly possibilities

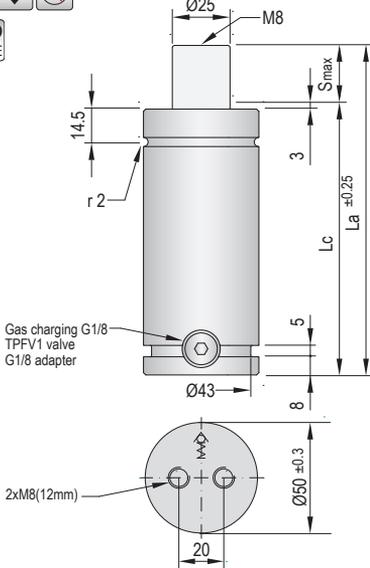
i
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VDI SAFETY



PED
2014/68/UE



Gas charging G1/8
TPFV1 valve
G1/8 adapter

i Pressure medium **Nitrogen (N₂)**

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	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		1015	1055		0,259	2,30
TPSRC 750x200	200	495	295	740 ±5% (20°C)	1030	1080	150	0,309	3,10
TPSRC 750x250	250	595	345		1045	1100	(20°C)	0,372	3,60
TPSRC 750x300	300	695	395		1060	1115		0,435	4,15

(Other strokes under order)

TPSR

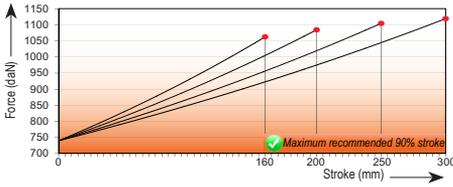
TPSRC

TPNS

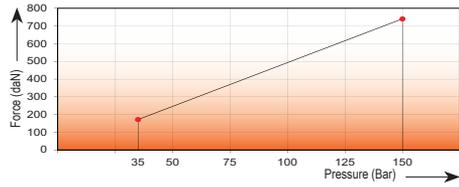
TPHT



Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

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VDI SAFETY



MICRO

TITAN

TPH

TPS

TPSP

TPF

TPK

TPC

TPR

TPB

TPHC

TPA

TPG

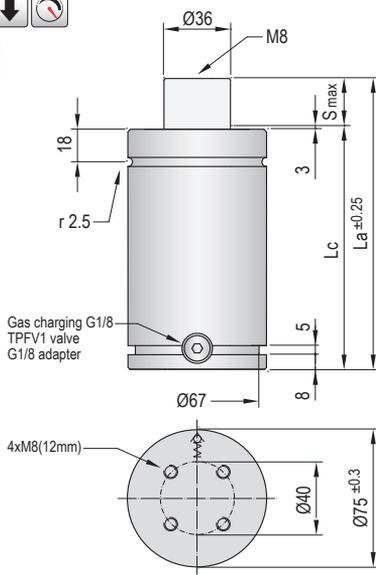
TPCT

TPSL

STOP CYLINDER

STOP CYLINDER

TPSR



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	12 m/min
Maintenance kit	Kit SR1500
Recommended max. strokes/min	2 - 8 spm

ISO
STANDARD
DIMENSIONS



Required data

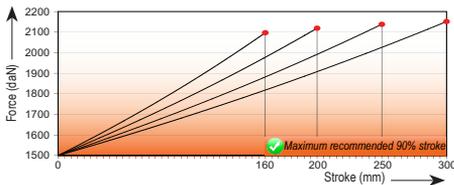
Working stroke	(mm)
Press speed	(m/min)
Maximum production rate	(spm)
Gas spring expansion speed	(m/min)



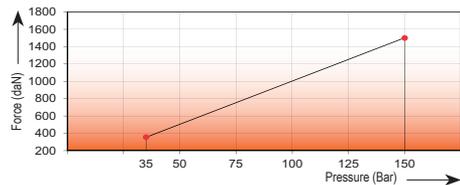
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg		
TPSRC 1500x160	160	430	270	1500 ±5% (20° C)	2025	2105	148 (20°C)	0,572	6,10		
TPSRC 1500x200	200	510	310		2045	2130				0,697	7,15
TPSRC 1500x250	250	610	360		2060	2145				0,853	7,86
TPSRC 1500x300	300	710	410		2070	2160				1,008	8,86

(Other strokes under order)

Force/stroke ratio



Initial force/charging pressure ratio



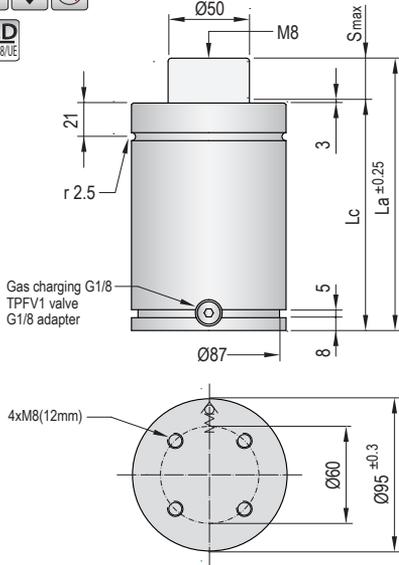
Assembly possibilities



VDI SAFETY



PED
2014/68/EU



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	20 m/min
Maintenance kit	Kit SR3000
Recommended max. strokes/min	2 - 8 spm

ISO
STANDARD
DIMENSIONS



Required data

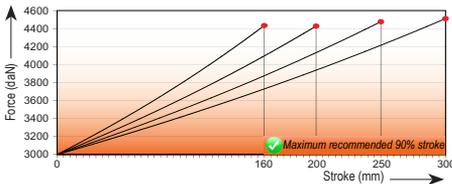
Working stroke	(mm)
Press speed	(m/min)
Maximum production rate	(spm)
Gas spring expansion speed	(m/min)



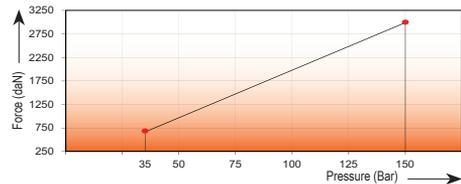
Code	Smax mm	La mm	Lc mm	Fa daN	90% F daN	100% Fc daN	P Bar	V l	Kg
TPSRC 3000x160	160	440	280		4410	4665		0,852	9,24
TPSRC 3000x200	200	520	320	3000 ±5% (20°C)	4270	4495	150 (20°C)	1,138	10,31
TPSRC 3000x250	250	620	370		4320	4555		1,390	11,90
TPSRC 3000x300	300	720	420		4350	4595		1,641	14,87

(Other strokes under order)

Force/stroke ratio



Initial force/charging pressure ratio



Assembly possibilities

Follow guidelines
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TPSR

TPSRC

TPNS

TPHT



