

**LINTRA-LITE® Rodless Cylinders**  
**Non-magnetic and Magnetic Piston**  
**Double Acting**  
**Ø 25 to 40 mm**

- **New compact, space-saving design**
- **Proven sealing system**
- **Integral switch mounting**
- **Buffer or adjustable cushioning**
- **Standard foot mountings**


**Technical Data**

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting

Buffer or adjustable cushioning

Magnetic or non-magnetic piston

Operating Pressure:

1 to 8 bar

Operating Temperature:

-30°C\* to +80°C max.

\* Consult our Technical Service for use below +2°C

Cylinder Diameters:

25, 32, 40 mm

Strokes:

6000 mm or 235 inches max.

longer strokes on request

Materials:

Barrel: Anodised aluminium alloy

End covers: Zinc plated steel/aluminium

Yoke: Anodised aluminium alloy

Cover and Pistons: Plastic

Sealing strip: Polyurethane

Cover strip: Polyamide

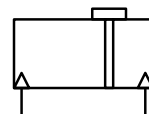
Seals: Nitrile rubber and polyurethane

**Ordering Examples**

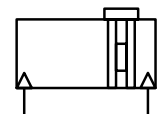
See page N 1.6.005.02

**Mountings and Switches**

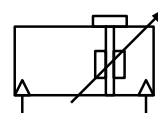
See page N 1.6.005.02



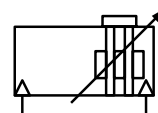
Non-magnetic piston  
Buffer cushioning



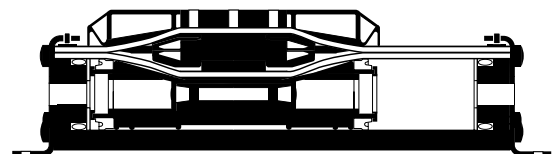
Magnetic piston  
Buffer cushioning



Non-magnetic piston  
Adjustable cushioning



Magnetic piston  
Adjustable cushioning





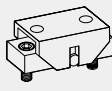

## Model Codes

**A440\*\*AA\*A\*\*\*\*\***

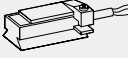
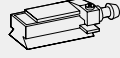
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Cylinder Diameters (mm)</td> <td style="width: 50%; text-align: right;"><b>Substitute</b></td> </tr> <tr> <td></td> <td style="text-align: right;"><b>25, 32 or 40</b></td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Variants</td> <td style="width: 50%; text-align: right;"><b>Substitute</b></td> </tr> <tr> <td>Buffer cushioning, non-magnetic piston</td> <td style="text-align: right;"><b>A</b></td> </tr> <tr> <td>Buffer cushioning, magnetic piston</td> <td style="text-align: right;"><b>B</b></td> </tr> <tr> <td>Adjustable cushioning, non-magnetic piston</td> <td style="text-align: right;"><b>C</b></td> </tr> <tr> <td>Adjustable cushioning, magnetic piston</td> <td style="text-align: right;"><b>D</b></td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Porting</td> <td style="width: 50%; text-align: right;"><b>Substitute</b></td> </tr> <tr> <td>ISO G-thread</td> <td style="text-align: right;"><b>A</b></td> </tr> <tr> <td>NPT-thread</td> <td style="text-align: right;"><b>N</b></td> </tr> </table>	Cylinder Diameters (mm)	<b>Substitute</b>		<b>25, 32 or 40</b>	Variants	<b>Substitute</b>	Buffer cushioning, non-magnetic piston	<b>A</b>	Buffer cushioning, magnetic piston	<b>B</b>	Adjustable cushioning, non-magnetic piston	<b>C</b>	Adjustable cushioning, magnetic piston	<b>D</b>	Porting	<b>Substitute</b>	ISO G-thread	<b>A</b>	NPT-thread	<b>N</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Stroke length in mm for ISO G-thread</td> <td style="width: 50%; text-align: right;">6000 max.</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Stroke length in full inches for NPT-thread</td> <td style="width: 50%; text-align: right;">235 max.</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6">Fractional increments of stroke (inches)</th> </tr> <tr> <th colspan="2">Substitute</th> <th colspan="2">Substitute</th> <th colspan="2">Substitute</th> </tr> <tr> <td>0</td> <td style="text-align: center;"><b>A</b></td> <td>3/8</td> <td style="text-align: center;"><b>G</b></td> <td>3/4</td> <td style="text-align: center;"><b>P</b></td> </tr> <tr> <td>1/16</td> <td style="text-align: center;"><b>B</b></td> <td>7/16</td> <td style="text-align: center;"><b>H</b></td> <td>13/16</td> <td style="text-align: center;"><b>R</b></td> </tr> <tr> <td>1/8</td> <td style="text-align: center;"><b>C</b></td> <td>1/2</td> <td style="text-align: center;"><b>J</b></td> <td>7/8</td> <td style="text-align: center;"><b>S</b></td> </tr> <tr> <td>3/16</td> <td style="text-align: center;"><b>D</b></td> <td>9/16</td> <td style="text-align: center;"><b>K</b></td> <td>15/16</td> <td style="text-align: center;"><b>T</b></td> </tr> <tr> <td>1/4</td> <td style="text-align: center;"><b>E</b></td> <td>5/8</td> <td style="text-align: center;"><b>M</b></td> <td>Special</td> <td style="text-align: center;"><b>X</b></td> </tr> <tr> <td>5/16</td> <td style="text-align: center;"><b>F</b></td> <td>11/16</td> <td style="text-align: center;"><b>N</b></td> <td></td> <td></td> </tr> </table>	Stroke length in mm for ISO G-thread	6000 max.	Stroke length in full inches for NPT-thread	235 max.	Fractional increments of stroke (inches)						Substitute		Substitute		Substitute		0	<b>A</b>	3/8	<b>G</b>	3/4	<b>P</b>	1/16	<b>B</b>	7/16	<b>H</b>	13/16	<b>R</b>	1/8	<b>C</b>	1/2	<b>J</b>	7/8	<b>S</b>	3/16	<b>D</b>	9/16	<b>K</b>	15/16	<b>T</b>	1/4	<b>E</b>	5/8	<b>M</b>	Special	<b>X</b>	5/16	<b>F</b>	11/16	<b>N</b>		
Cylinder Diameters (mm)	<b>Substitute</b>																																																																								
	<b>25, 32 or 40</b>																																																																								
Variants	<b>Substitute</b>																																																																								
Buffer cushioning, non-magnetic piston	<b>A</b>																																																																								
Buffer cushioning, magnetic piston	<b>B</b>																																																																								
Adjustable cushioning, non-magnetic piston	<b>C</b>																																																																								
Adjustable cushioning, magnetic piston	<b>D</b>																																																																								
Porting	<b>Substitute</b>																																																																								
ISO G-thread	<b>A</b>																																																																								
NPT-thread	<b>N</b>																																																																								
Stroke length in mm for ISO G-thread	6000 max.																																																																								
Stroke length in full inches for NPT-thread	235 max.																																																																								
Fractional increments of stroke (inches)																																																																									
Substitute		Substitute		Substitute																																																																					
0	<b>A</b>	3/8	<b>G</b>	3/4	<b>P</b>																																																																				
1/16	<b>B</b>	7/16	<b>H</b>	13/16	<b>R</b>																																																																				
1/8	<b>C</b>	1/2	<b>J</b>	7/8	<b>S</b>																																																																				
3/16	<b>D</b>	9/16	<b>K</b>	15/16	<b>T</b>																																																																				
1/4	<b>E</b>	5/8	<b>M</b>	Special	<b>X</b>																																																																				
5/16	<b>F</b>	11/16	<b>N</b>																																																																						

Note: When specifying NPT ports the stroke should be given in inches  
Part number must retain the given number of digits e.g. A44025AACAA0800 (stroke 800 mm)

## Mountings

	Style 'S'	Style 'V'
		
Cylinder Ø	Page 05	Page 05
25	Q44025AAAAAM337	Q44025AAAAAM332
32	Q44032AAAAAM337	Q44032AAAAAM332
40	Q44040AAAAAM337	Q44040AAAAAM332

## Switches

		
Model		
Reed	M/40	M/40/P
Solid state	M/41, M/42	M/42/P

Model	Reed	Solid state	Voltage a.c.	d.c.	Current Max.	Temperature °C	LED	Features	Cable Length	Cable Type	Plug-in Cable Straight	90°	Catalogue Page
M/40/2	—	—	10 to 240	10 to 170	0,18 A	-20° to +80°	●	—	2 m	PVC 2 x 0,25	—	—	N 4.3.041
M/40/C/2	—	—	10 to 110	10 to 175	0,25 A	-20° to +80°	—	Changeover	2 m	PVC 3 x 0,25	—	—	N 4.3.041
M/40/P	—	—	10 to 60	10 to 75	0,18 A	-20° to +80°	●	—	5 m	PVC 3 x 0,25	M/P34614/5	M/P34615/5	N 4.3.041
—	—	M/41/2	—	10 to 30	0,20 A	-20° to +70°	●	NPN	2 m	PVC 3 x 0,25	—	—	N 4.3.043
—	—	M/42/2	—	10 to 30	0,20 A	-20° to +70°	●	PNP	2 m	PVC 3 x 0,25	—	—	N 4.3.043
—	—	M/42/P	—	10 to 30	0,20 A	-20° to +70°	●	PNP	5 m	PVC 3 x 0,25	M/P34614/5	M/P34615/5	N 4.3.043

Full information on switches (technical data, polyurethane cable, dimensions etc.) please refer to relevant catalogue pages

## Ordering Examples

### Cylinders

To order a 25 mm bore cylinder with adjustable cushioning, magnetic piston and a 800 mm stroke quote:

**A44025AADAA0800**

### Mountings

To order a centre support mounting style 'V' for 25 mm bore cylinder quote: **Q44025AAAAAM332**

### Switches

To order a reed switch with LED and 2 m cable length quote: **M/40**

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical Data'.

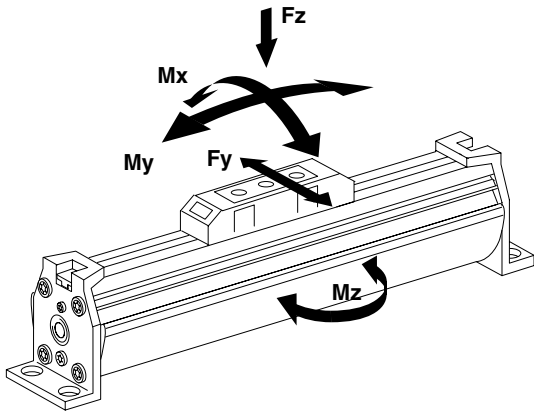
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

**System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.**

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.



### Loading values for LINTRA-LITE® cylinders

The values given in the table below show the forces in the directions Fy and Fz and the maximum moments Mx, My and Mz. All values are applicable for speeds up to 0,2 m/s. A requirement for using these values is a smooth movement of the mass over the whole stroke length of the cylinder. The reference point from which the moments for all cylinders should be calculated is the centre line of the piston.

#### Total loads

When a LINTRA-LITE® cylinder has to take several loads and moments, an additional calculation is necessary using the following formula:

$$\frac{Mx}{Mx \text{ max}} + \frac{My}{My \text{ max}} + \frac{Mz}{Mz \text{ max}} + \frac{Fy}{Fy \text{ max}} + \frac{Fz}{Fz \text{ max}} \leq 1$$

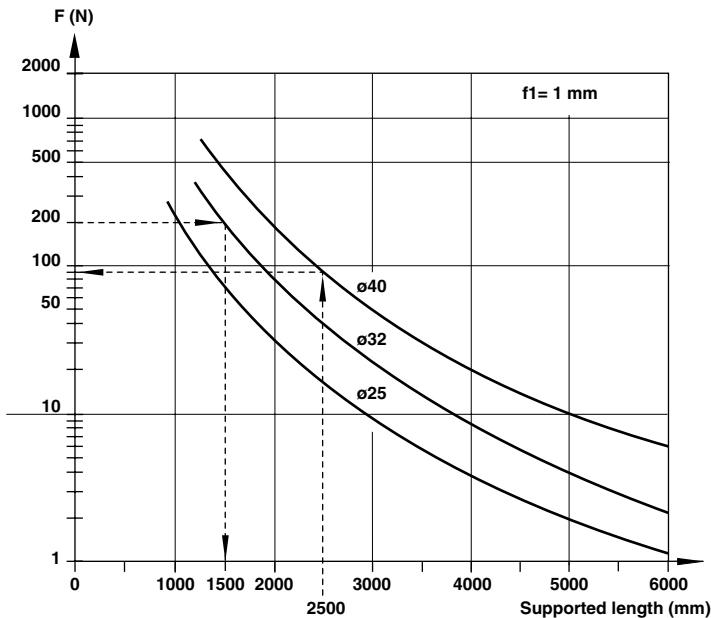
### Thrust • Air consumption • Cushion length • Loading values

Cylinder Ø	Theoretical forces at 6 bar (N)	Air consumption per stroke at 6 bar (l/cm)	Cushion length (mm)	Loading values				
				Fy (N)	Fz (N)	Mx (Nm)	My (Nm)	Mz (Nm)
25	250	0,035	18	90	280	1	13	4
32	410	0,056	23	120	370	2	21	6
40	640	0,088	35	240	720	4	56	16

Loading values applicable to a speed of ≤ 0,2 m/s. Maximum working life is normally reached below a speed of 1 m/s.

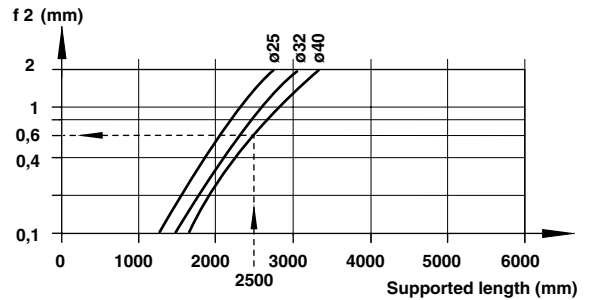
### Cylinder Deflection

Deflection due to external force.



Cylinder Ø 32 mm, stroke length 3500 mm, external load 200 N  
Maximum distance between supports = 1500 mm (see diagram).  
Therefore additional support is required.

Deflection due to cylinder weight.



Cylinder Ø 40 mm, external force 120 N, distance between supports 2500 mm

Required: Total deflection

1. Deflection due to external force (f1):

See diagram → (1mm/90 N) · 120 N

**1,3 mm**

2. Deflection due to cylinder weight (f2): See diagram →

**+0,6 mm**

Total deflection:

**1,9 mm**

**Maximum permitted deflection:**

**f1 + f2 ≤ 1 mm per 1000 mm stroke**

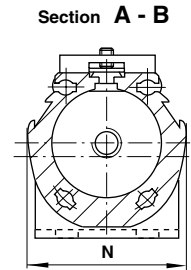
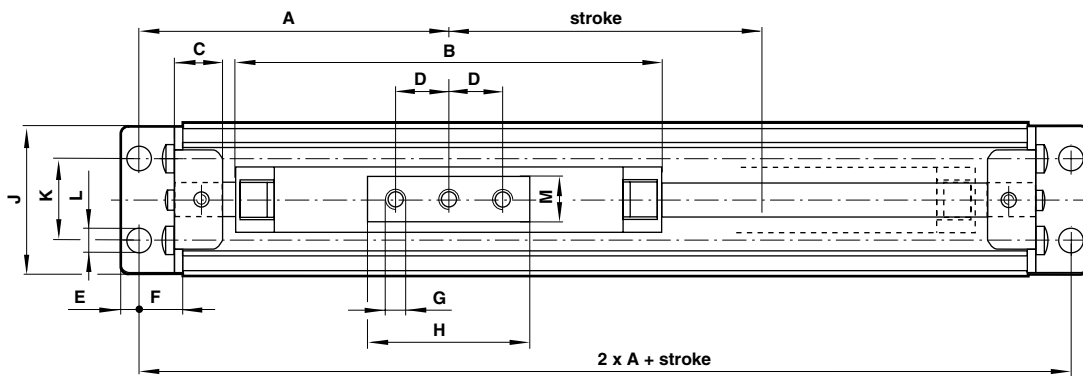
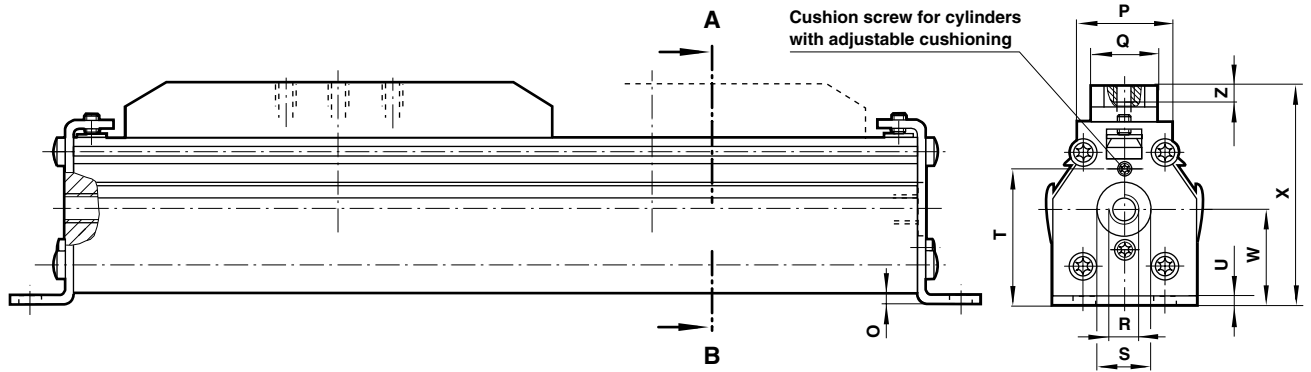
**Result:**

**1,9 mm are below the max. permitted deflection of 2,5 mm**



**BASIC DIMENSIONS**

**A44000 . . . — Standard Cylinders**



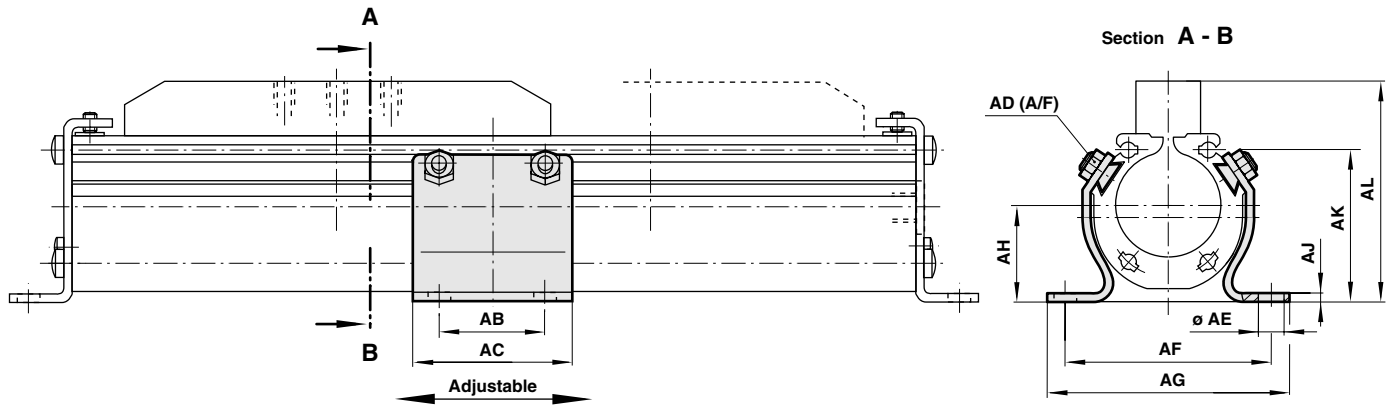
Cylinder $\varnothing$	A	B	C	D	E	F	G	H	J	K	$\varnothing L$	M	N
25	77	100	12	12,5	5	12	M 5	40	36	18	7	18	40
32	93	120	18	15	7	15	M 6	50	48	26	9	20	49,5
40	117,5	165	18	20	7	17	M 6	60	54	30	9	20	57
Cylinder $\varnothing$	O	P	Q	R (Port threads)		$\varnothing S$	T	U	W	X	Z max.	at 0 mm	per 100 mm
25	2,5	28	22	G 1/8	NPT 1/8	12	30,5	2	21,5	53,5	7	0,50 kg	0,15 kg
32	3,5	32	24	G 1/8	NPT 1/8	17	40	3	28,5	70	10	0,80 kg	0,25 kg
40	3,5	36	24	G 1/4	NPT 1/4	20	49,5	3	35	81,5	10	1,30 kg	0,35 kg

\* Optional ISO G or NPT-thread

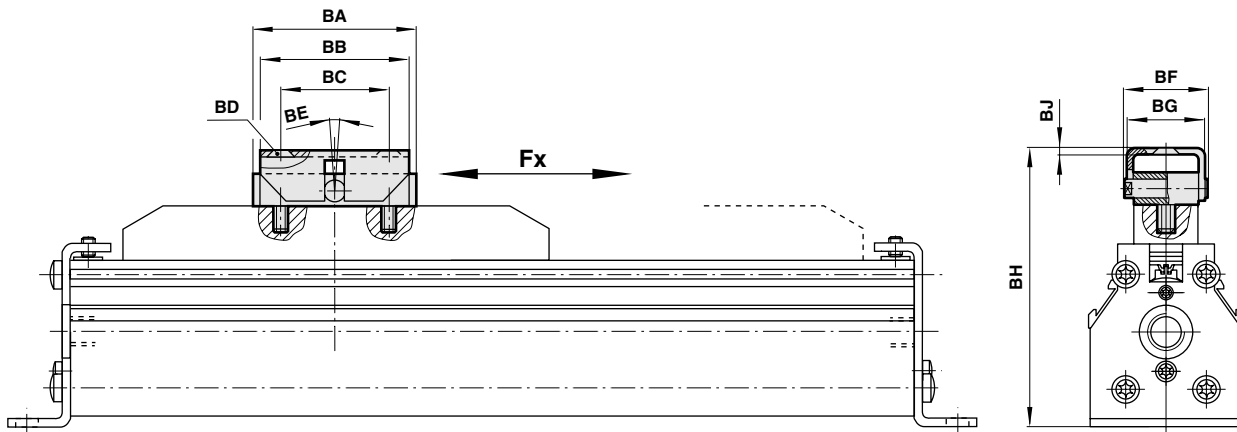


**MOUNTINGS**

**Q44000AAAAM332 — Centre Support Mounting Style ‘V’**



**Q44000AAAAM337 — Swinging Bridge Mounting Style ‘S’**

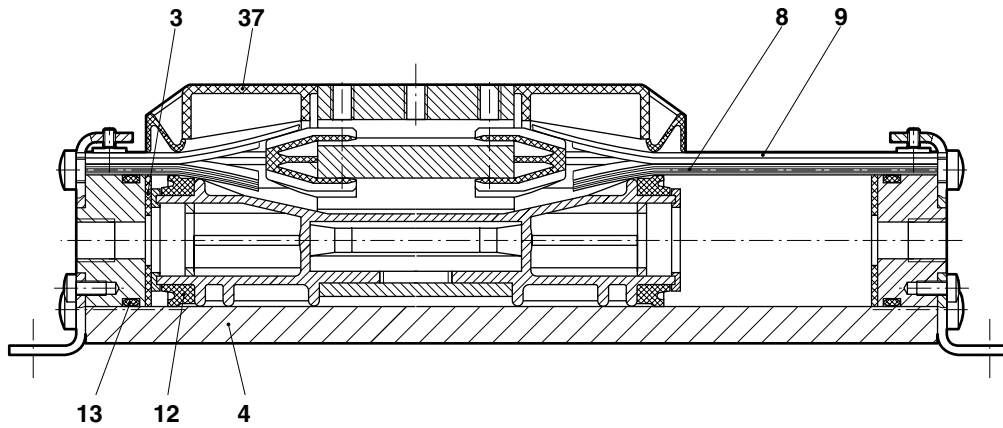


Cylinder $\varnothing$	AB	AC	AD (A/F)	$\varnothing$ AE	AF	AG	AH	AJ	AK	AL	BA
25	25	40	10	6,6	58	70	21,5	3	31	53,5	40
32	30	50	10	9	70	83	28,5	3	43	70	50
40	40	60	10	9	79	92	35	3	55	81,5	60
Cylinder $\varnothing$	BB	BC	BD (DIN 74)	BE	BF	BG	BH	BJ	Fx	Style 'S'	Style 'V'
25	40	28	BM 5	$\pm 8$	29	28	68,5 +5	2	250 N	0,15 kg	0,07 kg
32	55	40	BM 6	$\pm 8$	31	30	87,5 +5	2	410 N	0,20 kg	0,15 kg
40	55	40	BM 6	$\pm 8$	31	30	99,5 +5	2	640 N	0,25 kg	0,25 kg

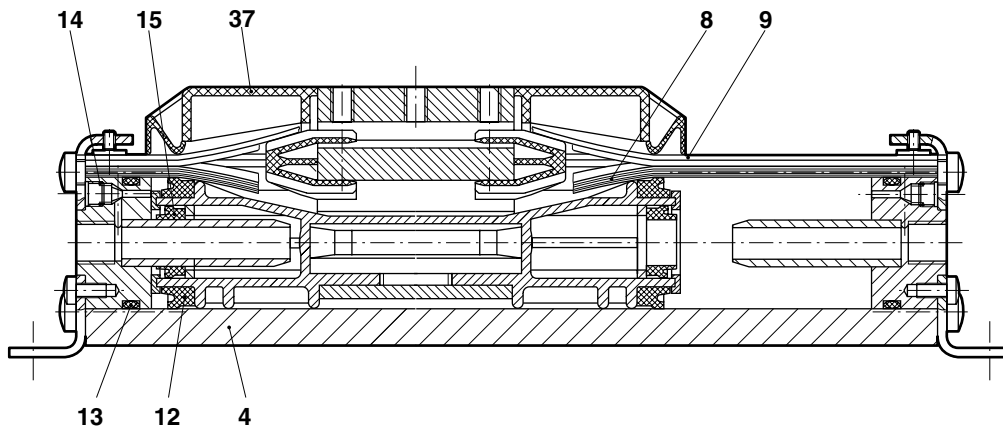


**SPARES**

**Cylinders with buffer cushioning**



**Cylinders with adjustable cushioning**



Cylinder Ø	Model	Spares kit	Comprising			Seal strip Item 8	Cover strip Item 9	Barrel Item 4
			Item	Description	Quantity			
25	A44025AA*AA	Q44025AACAAT788*	3	Buffer	2	M/P 41628/*	M/P 41631/*	M/P 41607/*
32	A44032AA*AA	Q44032AACAAT788*	8/9	Seal/cover strip	1/1	M/P 41629/*	M/P 41632/*	M/P 41613/*
40	A44040AA*AA	Q44040AACAAT788*	12/15	Piston/cushion seal	2/2	M/P 41630/*	M/P 41633/*	M/P 41602/*
			13/14	O-Ring	2/2			
			37	Cover	1			
				Grease	2			

\* Variants A, B, C or D  
\* Insert stroke length

Note: Spares kits are common for all cylinder types  
Please quote the cylinder type number when ordering spare parts