

## Pneumatic cylinders



### Series SL

Double acting with sensor grooves, DIN ISO 15552, piston- $\varnothing$  32 to 100 mm (1 1/4 – 4 in)

Technical data	8.004
Dimensions	8.006
Accessories	8.008

### Series XL

Double acting, DIN ISO 15552, piston- $\varnothing$  32 to 125 mm (1 1/4 – 5 in) with sensor grooves

Technical data	8.010
Dimensions	8.012
Accessories	8.015



### Series XG

Double acting, DIN ISO 15552, piston- $\varnothing$  160 to 320 mm (6 1/4 – 12 1/2 in)

Technical data	8.030
Dimensions	8.031
Accessories	8.033

### Series XLVK

Valve/cylinder combination to DIN ISO 15552, piston- $\varnothing$  32 to 100 mm (1 1/4 – 4 in)

Technical data	8.040
Dimensions	8.042
Accessories	8.044



### Series HE

Single acting cylinders, DIN ISO 6432, piston- $\varnothing$  8 to 25 mm (5/16 – 1 in)

Technical data	8.060
Dimensions	8.061
Accessories	8.084

### Series HM

Double acting cylinders, DIN ISO 6432, piston- $\varnothing$  8 to 63 mm (5/16 – 2 1/2 in)

Technical data	8.080
Dimensions	8.081
Accessories	8.084



### Series NXE

Single acting compact cylinders with sensor grooves, piston- $\varnothing$  12 to 100 mm (1/2 – 4 in)

Technical data	8.100
Dimensions	8.101
Accessories	8.103

### Series NXD

Double acting compact cylinders with sensor grooves, piston- $\varnothing$  12 to 100 mm (1/2 – 4 in)

Technical data	8.120
Dimensions	8.121
Accessories	8.128



## Pneumatic cylinders



### Series XVE + XV

Double acting compact cylinders with sensor grooves  
ISO 21287, piston- $\varnothing$  20 to 100 mm (1/2 – 4 in)

Technical data 8.140 + 8.150  
Dimensions 8.142 + 8.151  
Accessories 8.157

### Series CM

Double acting, stainless steel, DIN ISO 6432,  
piston- $\varnothing$  16 to 25 mm  
(5/8 – 1 in)

Technical data 8.170  
Dimensions 8.171  
Accessories 8.173



### Series CX

Double acting, stainless steel, DIN ISO 15552,  
piston- $\varnothing$  32 to 100 mm  
(1 1/4 – 4 in)

Technical data 8.180  
Dimensions 8.181  
Accessories 8.182

### Series LX

Guided cylinders  
piston- $\varnothing$  20 to 63 mm  
(3/4 – 2 1/2 in)

Technical data 8.191  
Dimensions 8.194



### Series LE

Linear guides  
for pneumatic cylinders

Technical data 8.200  
Dimensions 8.202

### Series HA, HB

Cartridge cylinders,  
single acting,  
piston- $\varnothing$  6, 10, 16 mm  
(1/4, 3/8, 5/8 in)

Technical data 8.210  
Dimensions 8.211



### Proximity switches

8.220

### Selection guide

Air consumption tables  
and critical load diagram  
8.240

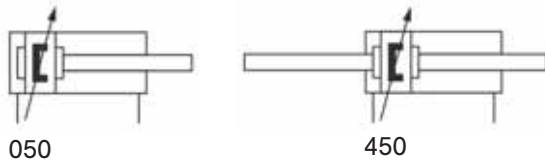
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**Pneumatic cylinders, piston-Ø 32 – 100 mm  
Double acting with magnetic piston  
DIN ISO 15552**

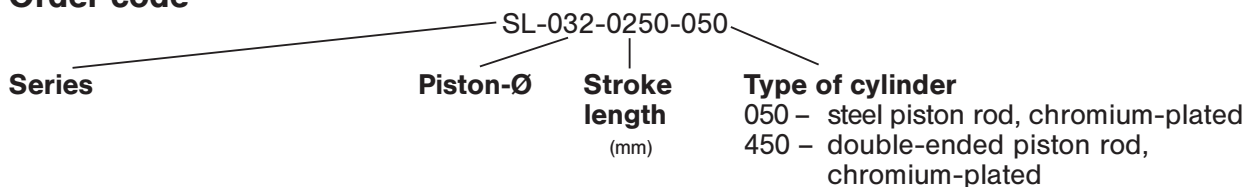


**Technical data for series**

**SL**



**Order code**



**Design and function**

Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and permanent magnet for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile.

Order number Please complete according to order code.	SL-032-...	SL-040-...	SL-050-...	SL-063-...	SL-080-...	SL-100-...
<b>Piston-Ø (mm)</b>	32	40	50	63	80	100
<b>Connection</b>	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
<b>Piston rod thread</b>	M10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5
<b>Cushioning length (mm)</b>	27	29	32	32	32	32
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)					
<b>Temperature range</b>	- 20 °C ... + 80 °C - 4 °F ... + 176 °F					
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air					
<b>Stroke lengths (mm)</b>	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500					
<b>Materials</b>	Cylinder tube: Al-profile (anodized) End caps: Al-die-cast (painted) Piston rod: steel (chromium-plated) Seals: PU/NBR					

**Pneumatic cylinders, piston-Ø 32 – 100 mm  
Double acting with magnetic piston  
DIN ISO 15552**



**Technical data for series**

**SL**

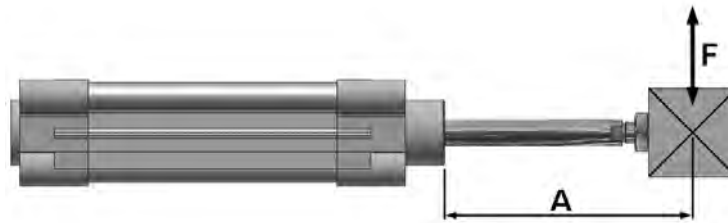


**Force chart for series SL**

Piston-Ø (mm)	Extension	Retraction
32	430 N (96.6 lbf.)	370 N (83.2 lbf.)
40	680 N (152.8 lbf.)	570 N (128.1 lbf.)
50	1060 N (238.3 lbf.)	890 N (200.1 lbf.)
63	1680 N (377.7 lbf.)	1510 N (339.5 lbf.)
80	2700 N (607.0 lbf.)	2550 N (573.3 lbf.)
100	4240 N (953.2 lbf.)	3970 N (892.5 lbf.)

Pressure 6 bar. The internal friction is considered.

**Permissible side load for series SL (N)**



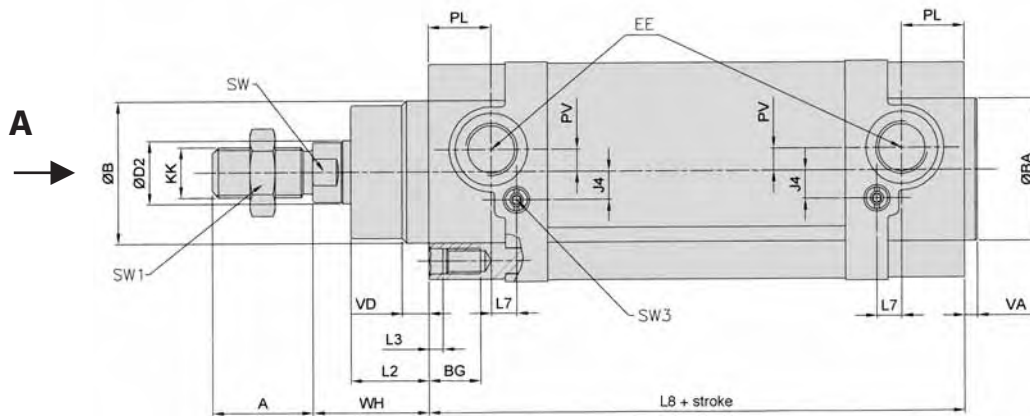
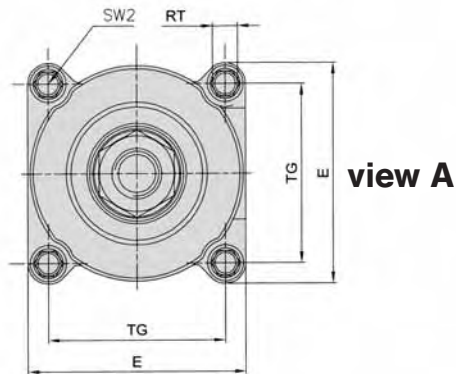
Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75	55	50	40	34	28	23	20	16	12	9	7
40	175	150	130	105	91	78	62	55	45	35	28	21
50 + 63	220	180	170	130	120	105	90	80	65	52	43	33
80 + 100	500	450	400	350	310	270	230	205	180	150	125	100

**Pneumatic cylinders, piston-Ø 32 – 100 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Dimensions for series**

**SL** (Type for order code: -050)



Piston-Ø	A	Ø B Ø BA	BG	Ø D2	E	EE	J4	KK	L2	L3	L7
32	22	30	16.5	12	44	G 1/8	3.5	M 10 x 1.25	18	5	11.5
40	24	35	16.5	16	51	G 1/4	7.5	M 12 x 1.25	22	5	12.5
50	32	40	16.5	20	59.5	G 1/4	5	M 16 x 1.5	25.5	4.5	13.25
63	32	45	16.5	20	69.5	G 3/8	16	M 16 x 1.5	25	4.5	8
80	40	45	17	25	87	G 3/8	20.5	M 20 x 1.5	35	-	9.25
100	40	55	17	25	106.5	G 1/2	21.5	M 20 x 1.5	38	-	8
	-2	d11		f7							

Piston-Ø	L8	PL	PV	RT	SW	SW1	SW2	SW3	TG	VA	VD	WH
32	94	12.5	-	M6	10	17	6	2	32.5	4	8	26
40	105	14	-	M6	13	19	6	2.5	38	4	12	30
50	106	14	-	M8	17	24	8	2.5	46.5	4	10.5	37
63	121	20	7	M8	17	24	8	2.5	56.5	4	8.5	37
80	128	18.5	6.5	M10	22	30	6	4	72	4	10	46
100	138	20	12	M10	22	30	6	4	89	4	12.5	51

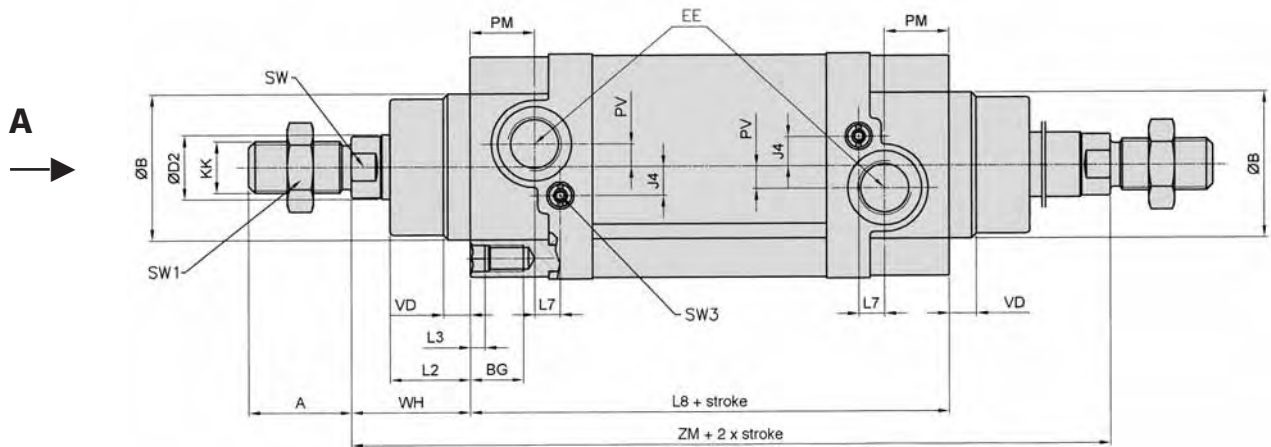
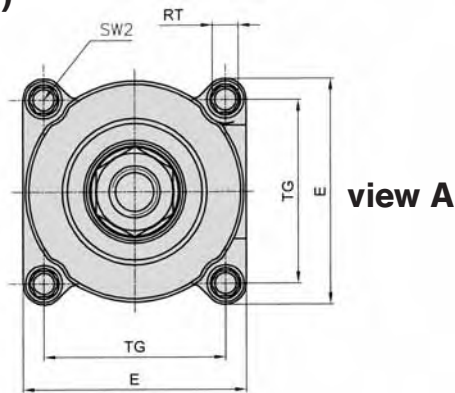
Piston-Ø	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.582	0.861	1.289	1.723	2.873	3.879
add-on per 100 mm stroke	0.208	0.308	0.400	0.421	0.613	0.682

**Pneumatic cylinders, piston-Ø 32 – 100 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Dimensions for series**

**SL** (Type for order code: -450)



Piston-Ø	A	Ø B	BG	Ø D2	E	EE	J4	KK	L2	L3	L7
32	22	30	16.5	12	44	G 1/8	3.5	M 10 x 1.25	18	5	11.5
40	24	35	16.5	16	51	G 1/4	7.5	M 12 x 1.25	22	5	12.5
50	32	40	16.5	20	59.5	G 1/4	5	M 16 x 1.5	25.5	4.5	13.25
63	32	45	16.5	20	69.5	G 3/8	16	M 16 x 1.5	25	4.5	8
80	40	45	17	25	87	G 3/8	20.5	M 20 x 1.5	35	-	9.25
100	40	55	17	25	106.5	G 1/2	21.5	M 20 x 1.5	38	-	8
	-2	d11		f 7							

Piston-Ø	L8	PM	PV	RT	SW	SW1	SW2	SW3	TG	VD	WH	ZM
32	94	12.5	-	M6	10	17	6	2	32.5	8	26	146
40	105	14	-	M6	13	19	6	2.5	38	12	30	165
50	106	14	-	M8	17	24	8	2.5	46.5	10.5	37	180
63	121	20	7	M8	17	24	8	2.5	56.5	8.5	37	195
80	128	18.5	6.5	M10	22	30	6	4	72	10	46	220
100	138	20	12	M10	22	30	6	4	89	12.5	51	240

Piston-Ø	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.654	0.996	1.536	1.996	3.348	4.438
add-on per 100 mm stroke	0.296	0.465	0.645	0.666	0.995	1.064

Accessories for series

# SL

## Piston rod accessories



Flexible coupling  
**FK**  
Page 8.035 and 8.213



Rod eye  
**FO + RO**  
Page 8.035 and 8.213



Rod clevis with pin  
**FD + RD**  
Page 8.035 and 8.212



Piston rod nut  
**FE + RL**  
Page 8.035 and 8.212

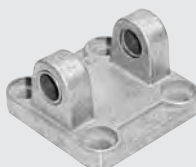
## Mounting accessories



Foot mount  
**XLB-Ø-01**  
Page 8.016



Flange mount  
**XLB-Ø-02**  
Page 8.016



Clevis mount with bushing  
**XLB-Ø-04**  
Page 8.017



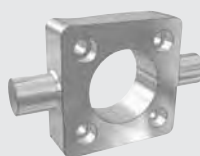
Swivel mount  
**XLB-Ø-05**  
Page 8.018



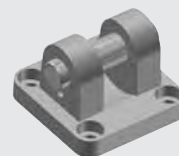
Swivel mount 90°  
**XLB-Ø-06**  
Page 8.018



Swivel mount with spherical bearing  
**XLB-Ø-12**  
Page 8.019



Trunnion flange mount  
**XLB-Ø-11**  
Page 8.021



Small clevis mount with non rotating pin  
**XLB-Ø-14**  
Page 8.021



Clevis pin  
**XLB-Ø-08**  
Page 8.019

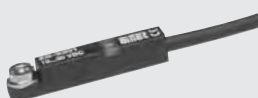


Bearing block  
**XLB-Ø-09**  
Page 8.020



Linear guides  
**LE-**  
Page 8.200

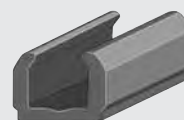
## Proximity sensors



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221



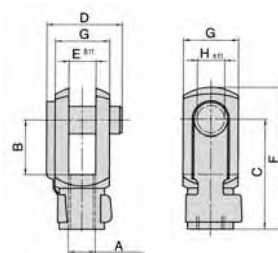
Cover for sensor groove  
**XLB-011** 0.5 m

## Allocation

Series	Cylinders Ø	Screw thread	Rod clevis	Piston rod nut	Flexible coupling	Rod eye
SL	Ø 32	M 10 x 1.25	RD-25	RL-25	FK-32	RO-25
SL	Ø 40	M 12 x 1.25	FD-40	FE-40	FK-40	FO-40
SL	Ø 50 and 63	M 16 x 1.5	FD-63	FE-63	FK-63	FO-63
SL	Ø 80 and 100	M 20 x 1.5	FD-80	FE-80	FK-80	FO-80

## Rod clevis with pin

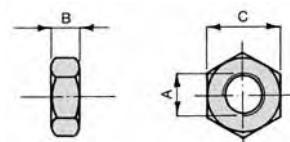
Order number	A	B	C	D	E	F	G	H
RD-25	M 10 x 1.25	20	40	26	10	52	20	10
FD-40	M 12 x 1.25	24	48	32	12	62	24	12
FD-63	M 16 x 1.5	32	64	40	16	83	32	16
FD-80	M 20 x 1.5	40	80	50	20	105	40	20



Material:  
steel (zinc-plated)  
stainless steel

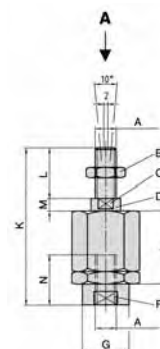
## Piston rod nut

Order number	A	B	C
RL-25	M 10 x 1.25	6	17
FE-40	M 12 x 1.25	7	19
FE-63	M 16 x 1.5	8	24
FE-80	M 20 x 1.5	9	30



Material: steel (zinc-plated)

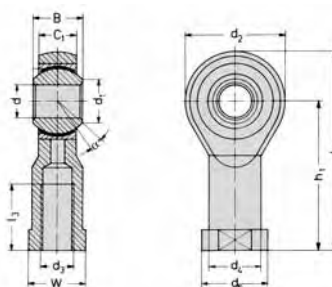
## Flexible coupling



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	K	L	M	N	O	P
FK-32	M 10 x 1.25	SW 17	SW 12	14	35	SW 19	22	71	20	5	20	30	32
FK-40	M 12 x 1.25	SW 19	SW 12	14	35	SW 19	22	75	24	5	20	30	32
FK-63	M 16 x 1.5	SW 24	SW 20	22	54	SW 30	32	103	32	8	32	41	45
FK-80	M 20 x 1.5	SW 30	SW 20	22	54	SW 30	32	119	40	8	40	41	45

## Rod eye



Material: steel (zinc-plated)  
stainless steel

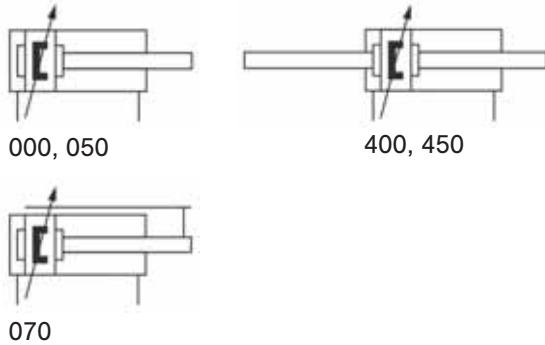
Order number	d <sub>3</sub>	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	d <sub>5</sub>	B	C <sub>1</sub>	W	L <sub>3</sub>	L <sub>4</sub>	h <sub>1</sub>	α
RO-25	M 10 x 1.25	10	12.9	28	15	19	14	10.5	17	20	57	43	13
FO-40	M 12 x 1.25	12	15.4	32	17.5	22	16	12	19	22	66	50	13
FO-63	M 16 x 1.5	16	19.3	42	22	27	21	15	22	28	85	64	15
FO-80	M 20 x 1.5	20	24.3	50	27.5	34	25	18	32	33	102	77	15

**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Technical data for series**

**XL**



**Order code**

XL-032-0250-000

<p><b>Series</b></p> <p>XL = Standard type, following pages.</p> <p>XLBS = Cylinder with brake system, see page 8.022.</p> <p>XLR = Cylinder with locked end position, see page 8.024.</p>	<p><b>Piston-Ø</b></p>	<p><b>Stroke length</b> (mm)</p>	<p><b>Type of cylinder</b></p> <p>000 – piston rod stainless steel</p> <p><b>050 – standard</b> (steel piston rod, chromium plated)</p> <p>070 – twin piston rod <math>\phi</math> 32 – 63 mm (piston rod material see page 8.014)</p> <p>400 – double-ended piston rod, stainless steel</p> <p>450 – double-ended piston rod, <b>standard</b> (steel piston rod, chromium-plated)</p>
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**Design and function**

Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and permanent magnet for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile. Standard stroke lengths in table below, additional lengths on request.

Cylinders of this series are available in explosion proof design in accordance with 94/9/EG (ATEX). For further details see chapter 12 of this catalogue.

Order number Please complete according to order code.	XL-032-...	XL-040-...	XL-050-...	XL-063-...	XL-080-...	XL-100-...	XL-125-...
<b>Piston-Ø mm</b>	32	40	50	63	80	100	125
<b>Connection</b>	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2
<b>Piston rod thread</b>	M10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M27 x 2
<b>Cushioning length mm<sup>1)</sup></b>	27	29	32	32	32	32	42
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)						
<b>Temperature range</b>	– 20 °C ... + 80 °C (– 10 °C ... + 150 °C on request) – 4 °F ... + 176 °F (+14 °F ... 302 °F on request)						
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air						
<b>Standard stroke lengths</b> mm <sup>2)</sup>	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, max. 2800 (type 070 max. 500 mm)						
<b>Materials</b>	Cylinder tube: Al-profile (anodized) End caps: Al-die-cast (painted) Piston rod: chromium-plated (standard) – stainless steel (see order code) Seals: PU/NBR						

<sup>1)</sup> = cylinder type 070: front cushion length at  $\phi$  32 is 21 mm, at  $\phi$  40 is 20 mm, at  $\phi$  50 and 63 is 27 mm.

<sup>2)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Technical data for series**

**XL**

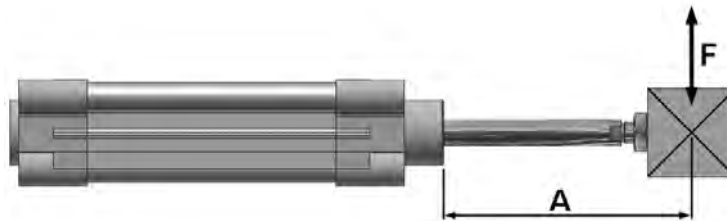


**Force chart for series XL**

Piston-Ø (mm)	Extension	Retraction
32	430 N (96.6 lbf.)	370 N (83.2 lbf.)
40	680 N (152.8 lbf.)	570 N (128.1 lbf.)
50	1060 N (238.3 lbf.)	890 N (200.1 lbf.)
63	1680 N (377.7 lbf.)	1510 N (339.5 lbf.)
80	2700 N (607.0 lbf.)	2550 N (573.3 lbf.)
100	4240 N (953.2 lbf.)	3970 N (892.5 lbf.)
125	6630 N (1490.5 lbf.)	6200 N (1393.8 lbf.)

Pressure 6 bar. The internal friction is considered.

**Permissible side load for series XL (N)**



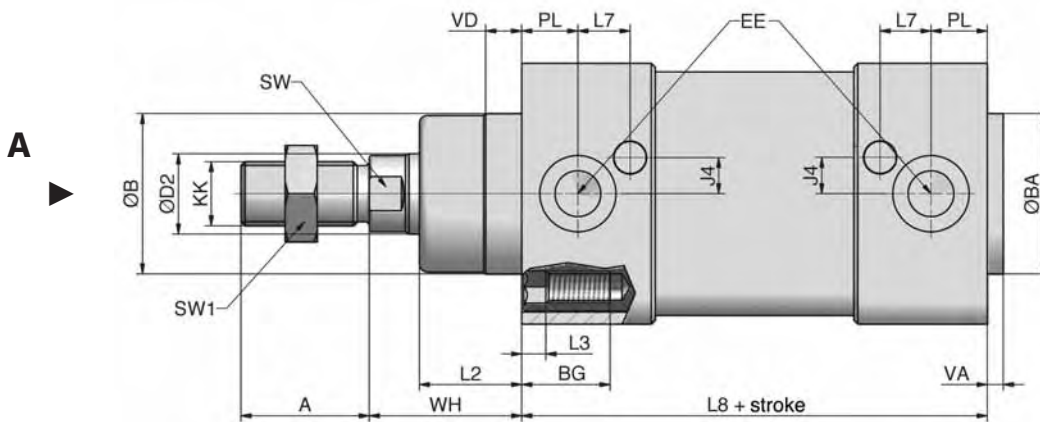
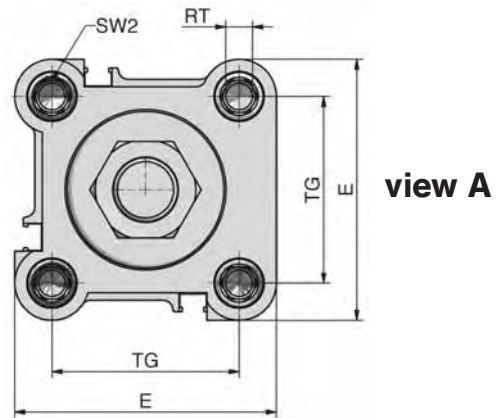
Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75 N (16.9 lbf.)	55 N (12.4 lbf.)	50 N (11.2 lbf.)	40 N (9.0 lbf.)	34 N (7.6 lbf.)	28 N (6.3 lbf.)	23 N (5.2 lbf.)	20 N (4.5 lbf.)	16 N (3.6 lbf.)	12 N (2.7 lbf.)	9 N (2.0 lbf.)	7 N (1.6 lbf.)
40	175 N (39.3 lbf.)	150 N (33.7 lbf.)	130 N (29.2 lbf.)	105 N (23.6 lbf.)	91 N (20.4 lbf.)	78 N (17.5 lbf.)	62 N (13.9 lbf.)	55 N (12.4 lbf.)	45 N (10.1 lbf.)	35 N (7.9 lbf.)	28 N (6.3 lbf.)	21 N (4.7 lbf.)
50 + 63	220 N (49.4 lbf.)	180 N (40.5 lbf.)	170 N (38.2 lbf.)	130 N (29.2 lbf.)	120 N (27.0 lbf.)	105 N (23.6 lbf.)	90 N (20.2 lbf.)	80 N (18.0 lbf.)	65 N (14.6 lbf.)	52 N (11.7 lbf.)	43 N (9.7 lbf.)	33 N (7.4 lbf.)
80 + 100	500 N (112.4 lbf.)	450 N (101.2 lbf.)	400 N (89.9 lbf.)	350 N (78.7 lbf.)	310 N (69.7 lbf.)	270 N (60.7 lbf.)	230 N (51.7 lbf.)	205 N (46.1 lbf.)	180 N (40.5 lbf.)	150 N (33.7 lbf.)	125 N (28.1 lbf.)	100 N (22.5 lbf.)
125	810 N (182.1 lbf.)	710 N (159.6 lbf.)	680 N (152.9 lbf.)	590 N (132.6 lbf.)	520 N (116.9 lbf.)	470 N (105.7 lbf.)	420 N (94.4 lbf.)	390 N (87.7 lbf.)	330 N (74.2 lbf.)	270 N (60.7 lbf.)	230 N (51.7 lbf.)	200 N (45.0 lbf.)

**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Dimensions for series**

**XL** (Type for order code: -000 and -050)



Piston-Ø	A	Ø B	Ø BA	BG	Ø D2	E	EE	J4	KK	L2	L3
32	22	30	30	16.5	12	47	G 1/8	6	M 10 x 1.25	18	5
40	24	35	35	16.5	16	54	G 1/4	9	M 12 x 1.25	22	5
50	32	40	40	17.5	20	63	G 1/4	8	M 16 x 1.5	25.5	5
63	32	45	45	17.5	20	74	G 3/8	9.5	M 16 x 1.5	25	5
80	40	45	45	17.5	25	93.5	G 3/8	14	M 20 x 1.5	35	0
100	40	55	55	17.5	25	110	G 1/2	15	M 20 x 1.5	38	0
125	54	60	60	20.5	32	137.5	G 1/2	15	M 27 x 2	46	0
		d11	d11								

Piston-Ø	L7	L8	PL	RT	SW	SW1	SW2	TG	VA	VD	WH
32	11.5	94	12.5	M6	10	17	6	32.5	4	9.5	26
40	13	105	14	M6	13	19	6	38	4	9.5	30
50	12.75	106	14	M8	17	24	8	46.5	4	9.5	37
63	14.5	121	16.5	M8	17	24	8	56.5	4	9.5	37
80	13.75	128	17	M10	22	30	6	72	4	10	46
100	15.5	138	18	M10	22	30	6	89	4	10	51
125	20	160	18	M12	27	41	8	110	6	11	65

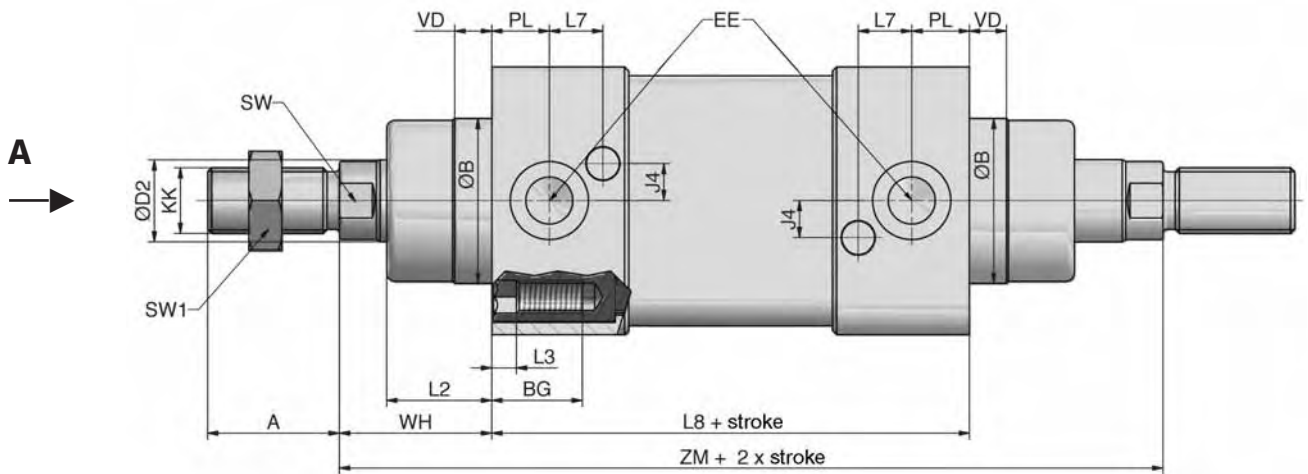
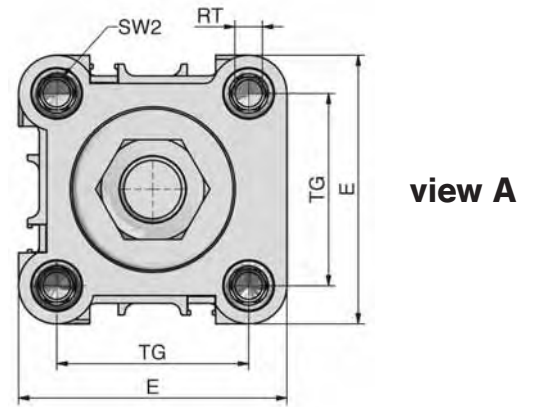
Piston-Ø	32	40	50	63	80	100	125
Mass at 0 mm stroke in kg	0.617 (1.360 lbs.)	0.925 (2.039 lbs.)	1.421 (3.133 lbs.)	1.950 (4.299 lbs.)	3.250 (7.165 lbs.)	4.396 (9.691 lbs.)	6.391 (14.089 lbs.)
add-on per 100 mm stroke	0.286 (0.630 lb.)	0.403 (0.888 lb.)	0.528 (1.164 lbs.)	0.597 (1.316 lbs.)	0.861 (1.898 lbs.)	0.946 (2.085 lbs.)	1.517 (3.344 lbs.)

**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**DIN ISO 15552**



**Dimensions for series**

**XL** (Type for order code: -400 and -450)



Kolben-Ø	A	Ø B	BG	Ø D2	E	EE	J4	KK	L2	L3
32	22	30	16,5	12	47	G 1/8	6	M 10 x 1,25	18	5
40	24	35	16,5	16	54	G 1/4	9	M 12 x 1,25	22	5
50	32	40	17,5	20	63	G 1/4	8	M 16 x 1,5	25,5	5
63	32	45	17,5	20	74	G 3/8	9,5	M 16 x 1,5	25	5
80	40	45	17,5	25	93,5	G 3/8	14	M 20 x 1,5	35	0
100	40	55	17,5	25	110	G 1/2	15	M 20 x 1,5	38	0
125	54	60	20,5	32	137,5	G 1/2	15	M 27 x 2	46	0
	-2	d11		f 7						

Piston-Ø	L7	L8	PL	RT	SW	SW1	SW2	TG	VD	WH	ZM
32	11.5	94	12.5	M6	10	17	6	32.5	9.5	26	146
40	13	105	14	M6	13	19	6	38	9.5	30	165
50	12.75	106	14	M8	17	24	8	46.5	9.5	37	180
63	14.5	121	16.5	M8	17	24	8	56.5	9.5	37	195
80	13.75	128	17	M10	22	30	6	72	10	46	220
100	15.5	138	18	M10	22	30	6	89	10	51	240
125	20	160	18	M12	27	41	8	110	10	65	290

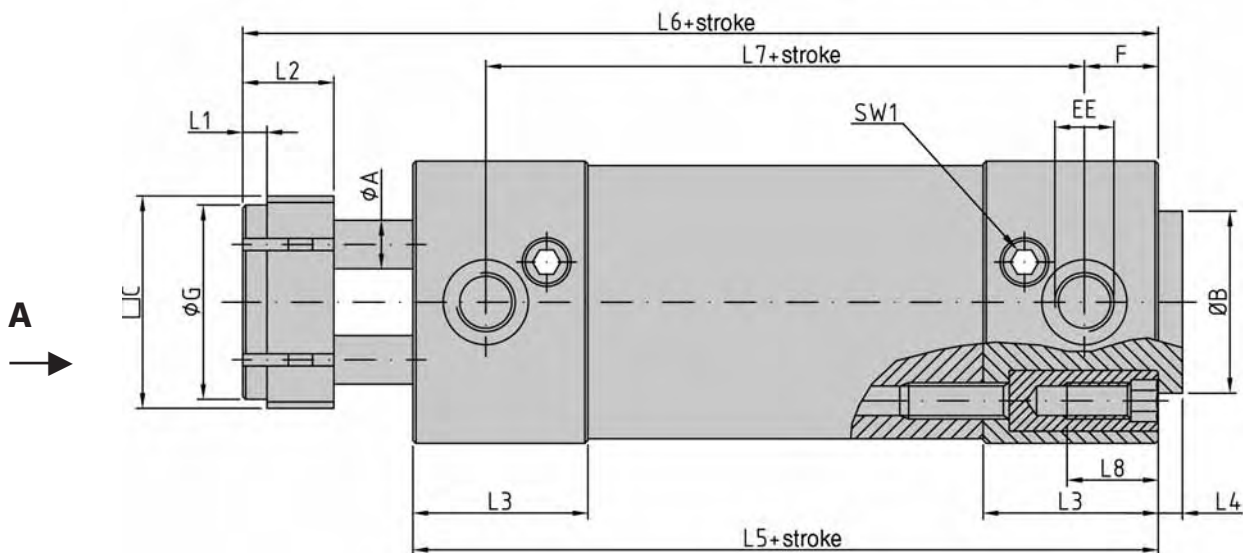
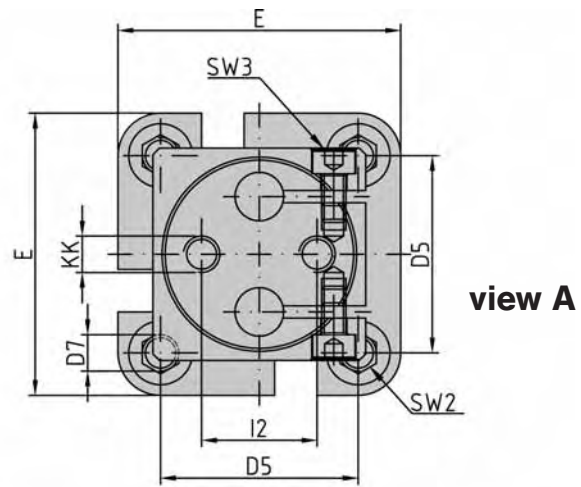
Piston-Ø	32	40	50	63	80	100	125
Mass at 0 mm stroke in kg	0.702 (1.548 lbs.)	1.065 (2.348 lbs.)	1.713 (3.776 lbs.)	2.208 (4.868 lbs.)	3.780 (8.333 lbs.)	5.057 (11.149 lbs.)	9.387 (20.694 lbs.)
add-on per 100 mm stroke	0.374 (0.824 lb.)	0.559 (1.232 lbs.)	0.768 (1.693 lbs.)	0.837 (1.845 lbs.)	1.243 (2.740 lbs.)	1.328 (2.928 lbs.)	2.143 (4.724 lbs.)

# Pneumatic cylinders, piston-Ø 32 – 63 mm with twin piston rod (non-rotating)



## Dimensions for series

# XL

 (Type for order code: -070)


Piston-Ø	Ø A	Ø B	□C	D5	D7	E	EE	F	Ø G	I2	KK
32	8	30	35	32.5	M6	46.5	G 1/8	12	32	19	M6
40	10	35	45	38	M6	53	G 1/4	17	40	22.5	M8
50	12	40	55	46.5	M8	65	G 1/4	14	50	30	M8
63	16	45	65	56.5	M8	75	G 3/8	14	63	38	M10

Piston-Ø	L1	L2	L3	L4	L5	L6	L7	L8	SW 1	SW 2	SW 3
32	4	15	28.8	4	100	128	76	16	3	6	3
40	4	15	33	4	114	142	88	16	3	6	3
50	5	18	33.8	4	116	151	88	21.5	3	8	4
63	5	22	35	4	124	161	96	21.5	3	8	5

Piston-Ø	32	40	50	63
Mass at 0 mm stroke in kg	0.744 (1.640 lbs.)	1.121 (2.471 lbs.)	1.641 (3.618 lbs.)	2.678 (5.904 lbs.)
add-on per 100 mm stroke	0.277 (0.610 lb.)	0.370 (0.815 lb.)	0.464 (1.023 lbs.)	0.669 (1.475 lbs.)

Materials: Piston rod for Ø 32 and 40 mm = stainless steel  
Piston rod for Ø 50 and 63 mm = steel (chromium plated)

Accessories for series

# XL

### Piston rod accessories



Flexible coupling  
**FK**  
Page 8.213



Rod eye  
**FO + RO**  
Page 8.213



Rod clevis with pin  
**FD + RD**  
Page 8.212



Piston rod nut  
**FE + RL**  
Page 8.212

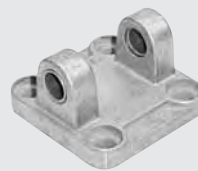
### Mounting accessories



Foot mount  
**XLB-Ø-01**  
Page 8.016



Flange mount  
**XLB-Ø-02**  
Page 8.016



Clevis mount with bushing  
**XLB-Ø-04**  
Page 8.017



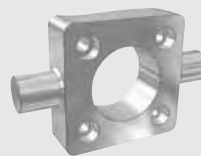
Swivel mount  
**XLB-Ø-05**  
Page 8.018



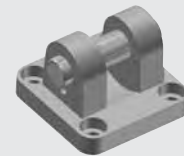
Swivel mount 90°  
**XLB-Ø-06**  
Page 8.018



Swivel mount with spherical bearing  
**XLB-Ø-12**  
Page 8.019



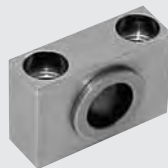
Trunnion flange mount  
**XLB-Ø-11**  
Page 8.021



Small clevis mount with non rotating pin  
**XLB-Ø-14**  
Page 8.021



Clevis pin  
**XLB-Ø-08**  
Page 8.019



Bearing block  
**XLB-Ø-09**  
Page 8.020



Trunnion mount  
**XLB-Ø-10**  
Page 8.020



Linear guides  
**LE-**  
Page 8.200

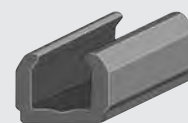
### Proximity sensors



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221

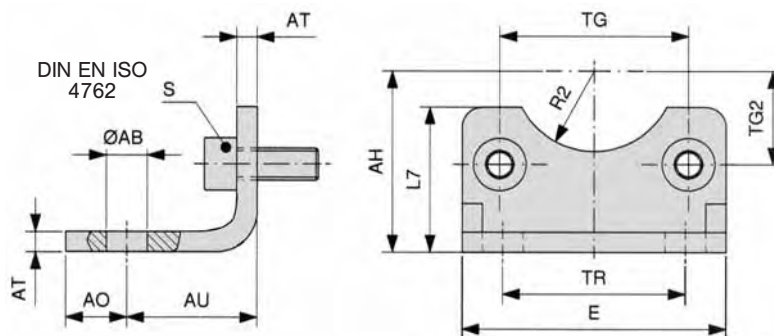


Cover for sensor groove  
**XLB-011 0.5 m**

Seal kits see page 8.046.

## Mounting accessories for series **XL**

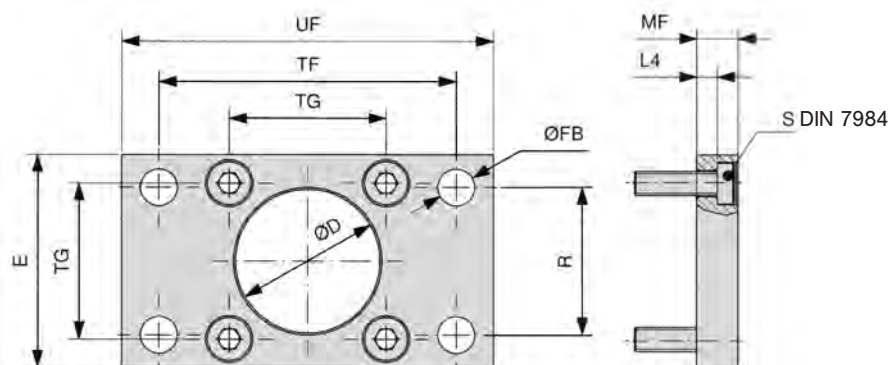
### Foot mount 1 pair



Material: steel (zinc-plated)

Order number	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
XLB-032-01	7	32	11	24	4	45	30	15	M 6 x 20	32.5	16.25	32
XLB-040-01	10	36	8	28	4	52	30	17.5	M 6 x 20	38	19	36
XLB-050-01	10	45	15	32	5	65	36	20	M 8 x 20	46.5	23.25	45
XLB-063-01	10	50	13	32	5	75	35	22.5	M 8 x 20	56.5	28.25	50
XLB-080-01	12	63	14	41	6	95	47	22.5	M 10 x 20	72	36	63
XLB-100-01	14.5	71	16	41	6	115	53	27.5	M 10 x 20	89	44.5	75
XLB-125-01	16.5	90	25	45	8	140	70	30	M 12 x 25	110*	55	90
	H14	JS16		± 0.2				H15		± 0.2 *± 0.3		JS14

### Flange mount

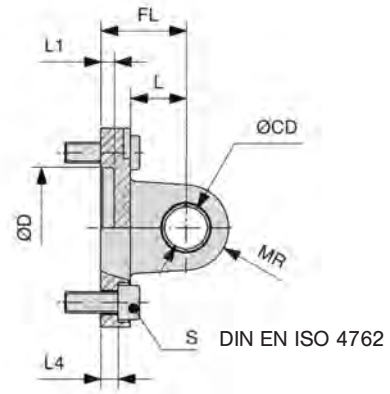
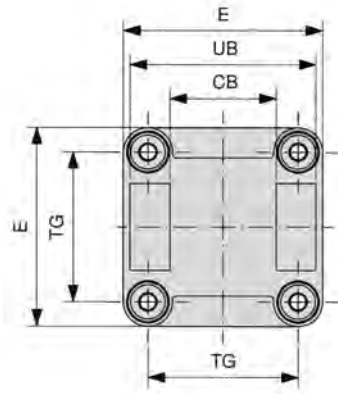


Material: steel (zinc-plated)

Order number	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
XLB-032-02	30	45	7	5	10	32	M 6 x 20	64	32.5	80
XLB-040-02	35	52	9	5	10	36	M 6 x 20	72	38	90
XLB-050-02	40	65	9	6.5	12	45	M 8 x 20	90	46.5	110
XLB-063-02	45	75	9	6.5	12	50	M 8 x 20	100	56.5	120
XLB-080-02	45	95	12	9	16	63	M 10 x 25	126	72	150
XLB-100-02	55	115	14	9	16	75	M 10 x 25	150	89	170
XLB-125-02	60	140	16	10.5	20	90	M 12 x 25	180	110*	205
	H11		H13	- 0.5	JS14	JS14		JS14	± 0.2 *± 0.3	

Mounting accessories for series  
**XL**

**Clevis mount  
with bushing**

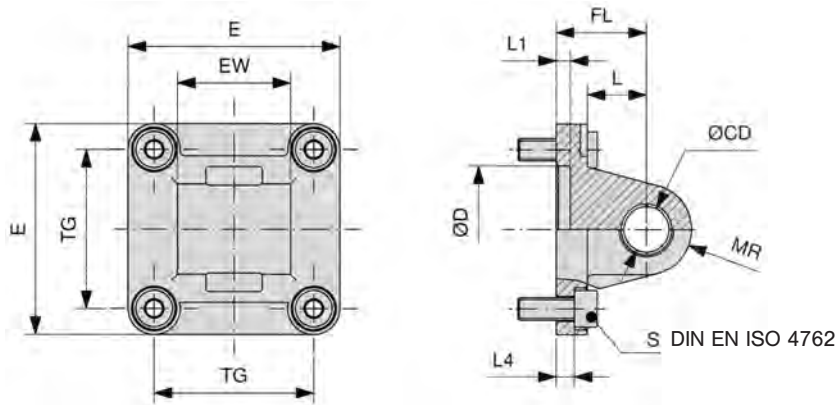


Material: Al

Bestell-Nr.	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
<b>XLB-032-04</b>	26	10	30	45	22	13	5	5.5	10	M 6 x 20	32.5	45
<b>XLB-040-04</b>	28	12	35	52	25	16	5	5.5	12	M 6 x 20	38	52
<b>XLB-050-04</b>	32	12	40	65	27	16	5	6.5	12	M 8 x 20	46.5	60
<b>XLB-063-04</b>	40	16	45	75	32	21	5	6.5	16	M 8 x 20	56.5	70
<b>XLB-080-04</b>	50	16	45	95	36	22	5	10	16	M 10 x 25	72	90
<b>XLB-100-04</b>	60	20	55	115	41	27	5	10	20	M 10 x 25	89	110
<b>XLB-125-04</b>	70	25	60	140	50	30	7	10	25	M 12 x 25	110*	130
	H14	H9	H11		± 0.2			± 0.5			± 0.2 *± 0.3	h13

Mounting accessories for series  
**XL**

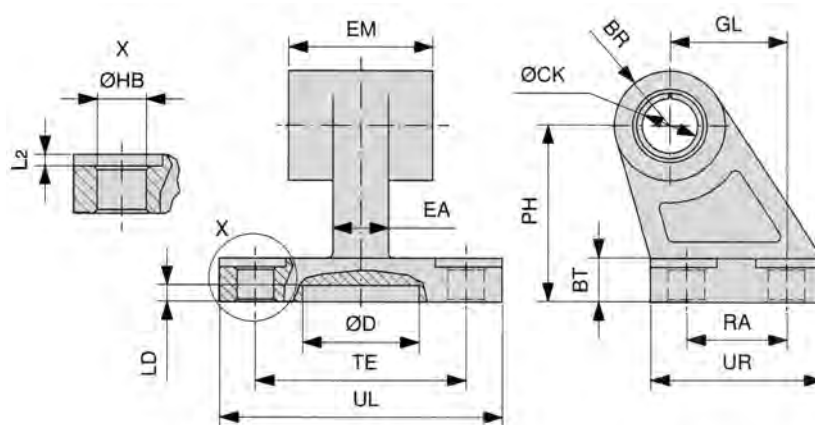
**Swivel mount**



Material: Al

Order number	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
XLB-032-05	10	30	45	26	22	13	5	5.5	10	M 6 x 20	32.5
XLB-040-05	12	35	52	28	25	16	5	5.5	12	M 6 x 20	38
XLB-050-05	12	40	65	32	27	16	5	6.5	12	M 8 x 20	46.5
XLB-063-05	16	45	75	40	32	21	5	6.5	16	M 8 x 20	56.5
XLB-080-05	16	45	95	50	36	22	5	10	16	M 10 x 25	72
XLB-100-05	20	55	115	60	41	27	5	10	20	M 10 x 25	89
XLB-125-05	25	60	140	70	50	30	7	10	25	M 12 x 25	110*
	H9	H11			± 0.2			± 0.5			± 0.2 *± 0.3

**Swivel mount 90°**

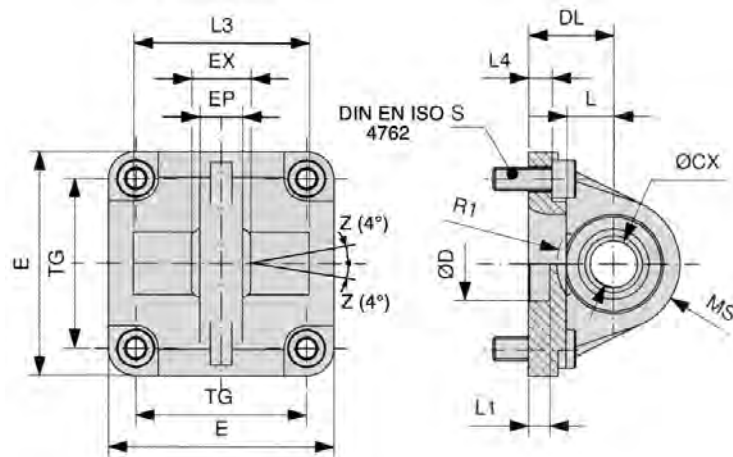


Material: Al

Order number	BR	BT	Ø CK	Ø D	EA	EM	GL	Ø HB	L2	LD	PH	RA	TE	UL	UR
XLB-032-06	10	8	10	21	10	26	21	6.6	1.6	3	32	18	38	51	31
XLB-040-06	11	10	12	21	15	28	24	6.6	1.6	3	36	22	41	54	35
XLB-050-06	13	12	12	21	16	32	33	9	1.6	3	45	30	50	65	45
XLB-063-06	15	14	16	21	16	40	37	9	1.6	3	50	35	52	67	50
XLB-080-06	15	14	16	21	20	50	47	11	2.5	3	63	40	66	86	60
XLB-100-06	19	17	20	21	20	60	55	11	2.5	3	71	50	76	96	70
XLB-125-06	22.5	20	25	21	30	70	70	14	3.2	3	90	60	94	124	90
	H9						JS14	H13			JS15	JS14	JS14		

Mounting accessories for series  
**XL**

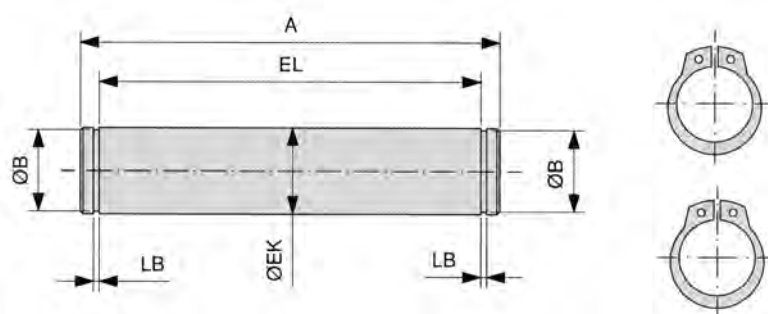
Swivel mount  
with spherical  
bearing



Material: Al

Order number	Ø CX	Ø D	DL	E	EP	EX	L	L1	L3	L4	MS	R1	S	TG
XLB-032-12	10	30	22	45	10.5	14	12	7	-	5.5	16	-	M 6 x 20	32.5
XLB-040-12	12	35	25	52	12	16	15	7	-	5.5	18	-	M 6 x 20	38
XLB-050-12	16	40	27	65	15	21	15	7	51	6.5	21	19	M 8 x 20	46.5
XLB-063-12	16	45	32	75	15	21	20	7	-	6.5	23	-	M 8 x 20	56.5
XLB-080-12	20	45	36	95	18	25	20	9	74	10	28	24	M 10 x 25	72
XLB-100-12	20	55	41	115	18	25	25	9	-	10	30	-	M 10 x 25	89
XLB-125-12	30	60	50	140	25	37	30	9	-	10	40	-	M 12 x 25	110*
	H7	H11	± 0.2			± 0.1				± 0.5				± 0.2 * ± 0.3

Clevis pin

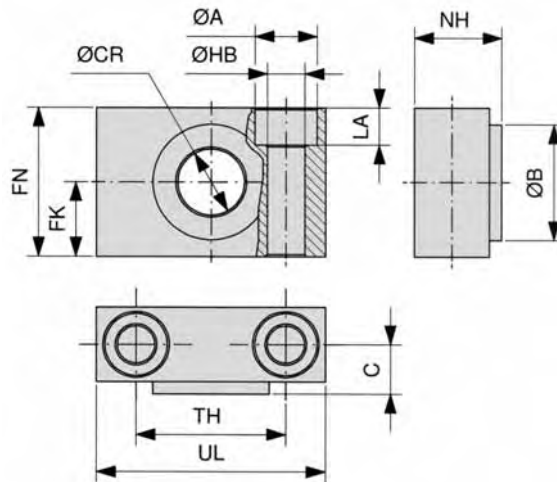


Material: steel (zinc-plated)  
Snap rings are included.

Order number	A	Ø B	Ø EK	EL	LB
XLB-032-08	53	9.6	10	46	1.1
XLB-040-08	60	11.5	12	53	1.1
XLB-050-08	68	11.5	12	61	1.1
XLB-063-08	78	15.2	16	71	1.1
XLB-080-08	98	15.2	16	91	1.1
XLB-100-08	118	19	20	111	1.3
XLB-125-08	139	23.9	25	132*	1.3
			e8	+ 2 * + 3	

Mounting accessories for series  
**XL**

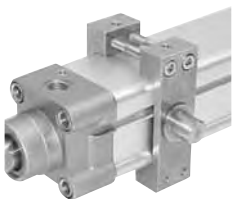
**Bearing block**  
(1 pair)



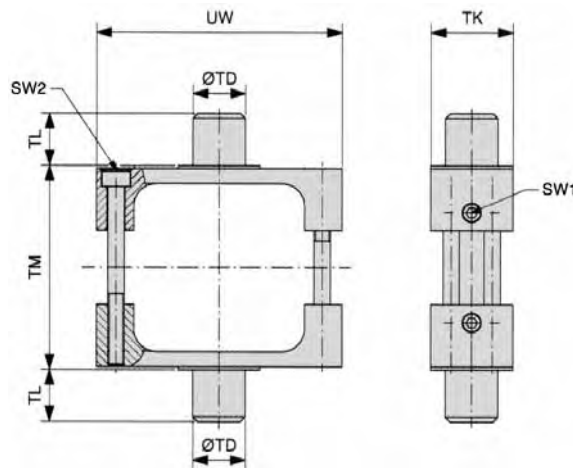
Order number = 1 pair  
Material: steel (zinc-plated), bronze

Order number	Ø A	Ø B	C	Ø CR	FK	FN	Ø HB	LA	NH	TH	UL
XLB-032-09	11	22	10.5	12	15	30	6.6	7	18	32	46
XLB-040-09	15	28	12	16	18	36	9	9	21	36	55
XLB-063-09	18	32	13	20	20	40	11	11	23	42	65
XLB-100-09	20	39	16	25	25	50	14	13	28.5	50	75
				H9	± 0.1		H13			± 0.2	

**Trunnion mount**



Mounting position  
arbitrary.

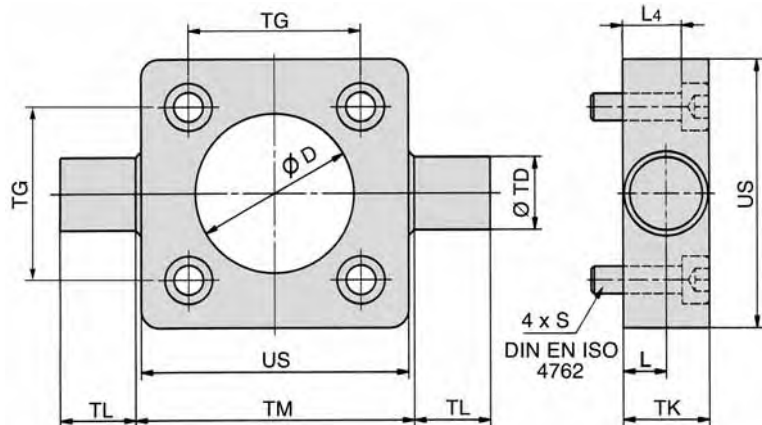
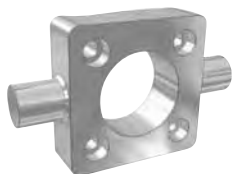


Material: steel (zinc-plated)

Order number	SW1 DIN 914	SW2 DIN 7984	Ø TD	TK	TL	TM	UW
XLB-032-10	3	2.5	12	25	12	50	65
XLB-040-10	3	3	16	25	16	63	75
XLB-050-10	3	4	16	30	16	75	95
XLB-063-10	3	4	20	30	20	90	105
XLB-080-10	3	4	20	30	20	110	130
XLB-100-10	4	5	25	40	25	132	145
XLB-125-10	4	6	25	40	25	160	175
		DIN EN ISO 4762	e 9		h14	h14	

Mounting accessories for series  
**XL**

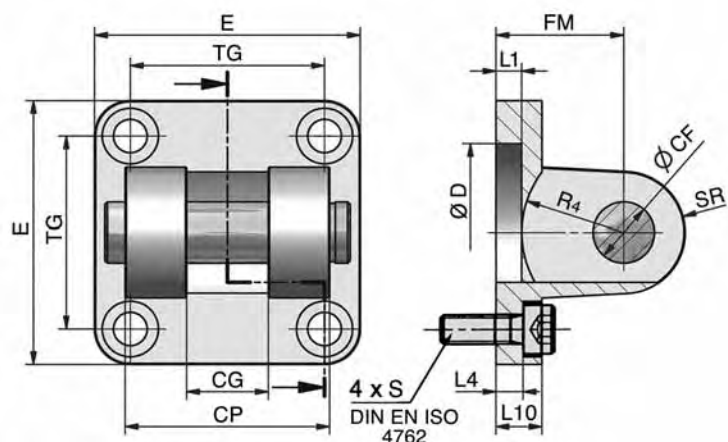
**Trunnion flange mount**



Material: steel (zinc-plated)

Order number	D	L	L4	S	TD	TG	TK	TL	Ø TM	US
XLB-032-11	30	6.5	8	M 6 x 20	12	32.5	14	12	50	46
XLB-040-11	35	9	13	M 6 x 25	16	38	19	16	63	59
XLB-050-11	40	9	11	M 8 x 25	16	46.5	19	16	75	69
XLB-063-11	45	11.5	16	M 8 x 30	20	56.5	24	20	90	84
XLB-080-11	45	11.5	14	M 10 x 30	20	72	24	20	110	102
XLB-100-11	55	14	19	M 10 x 35	25	89	29	25	132	125
	H11	+ 0.2			e9	± 0.2		h14	h14	

**Small clevis mount with non rotating pin**



Material of clevis: Al  
of pin: steel (zinc-plated)

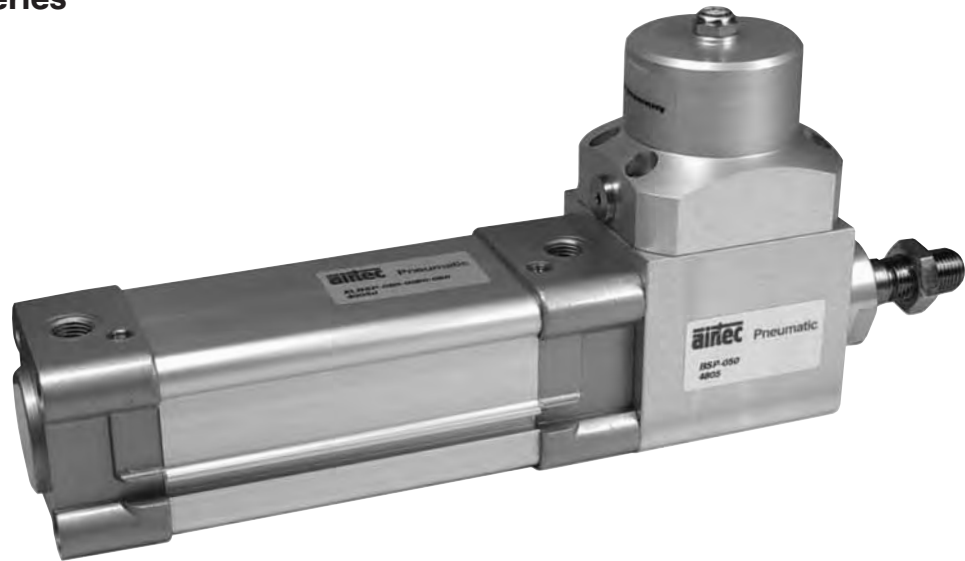
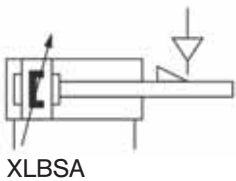
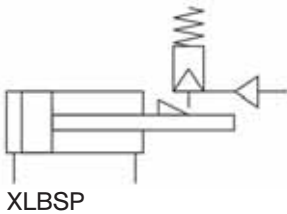
Order number	CF	CG	CP	D	E	FM	L1	L4	L10	R4	S	SR	TG
XLB-032-14	10	14	34	30	45	22	5	5.5	9	17	M 6 x 20	10	32.5
XLB-040-14	12	16	40	35	52	25	5	5.5	9	20	M 6 x 20	12	38
XLB-050-14	16	21	45	40	65	27	5	6.5	11	22	M 8 x 20	14	46.5
XLB-063-14	16	21	51	45	75	32	5	6.5	11	25	M 8 x 20	18	56.5
XLB-080-14	20	25	65	45	95	36	5	10	14	30	M 10 x 25	20	72
XLB-100-14	20	25	75	55	115	41	5	10	14	32	M 10 x 25	22	89
XLB-125-14	30	37	97	60	140	50	7	10	20	42	M 12 x 25	25	110*
	F7	D10	d 12	H11		± 0.2		± 0.5					± 0.2 * ± 0.3

**Pneumatic cylinders series XL with brake system**  
**Piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**



**Technical data for series**

**XLBS**



**Order code**

XLBSP-032-0250-050

**Series**

- XLBSA = with active brake system
- XLBSP = with passive brake system
- XLBSAH1 = with active brake system and pressure switch
- XLBSPH1 = with passive brake system and pressure switch

**Piston-Ø**

**Stroke length**  
(mm)

**Type of cylinder**

**050 – standard**  
(steel piston-rod, chromium plated)

**Design and function**

Double acting Al-profile cylinder with adjustable cushions and permanent magnet. Includes an extended piston rod and a pneumatic-hydraulic brake system which is mounted onto the cylinder. The brake system is designed to hold a cylinders position by clamping onto the piston rod. The brake should only be applied at piston rod speeds of 0.2 m/s or lower. The brake unit is available as either active or passive. The active brake clamps or releases the piston rod when the air pilot port is pressurized. The passive brake remains clamped onto the piston rod and releases only after the pilot port is pressurized. Both versions are available with an optional pressure switch in order to get an electrical signal output.

Please note: The brake forces indicated are only valid for static applications. The XLBS series can only be supplied with the chromium plated steel piston rod (version -050). The XLBS series is not suitable for use as a dynamic brake.

Order number Please complete according to order code.	XLBS... ...-032	XLBS... ...-040	XLBS... ...-050	XLBS... ...-063	XLBS... ...-080	XLBS... ...-100	XLBS... ...-125
<b>Piston-Ø (mm)</b>	32	40	50	63	80	100	125
<b>Force at 6 bar* (87 psi)</b>							
<b>Extension (N)</b>	430	680	1060	1680	2700	4240	6630
<b>Retraction (N)</b>	370	570	890	1510	2550	3970	6200
<b>Active brake system</b>							
<b>Clamp force at 3 bar (43.5 psi) (N)</b>	500	1000	1600	2500	3500	6000	9500
<b>Clamp force at 4 bar (58 psi) (N)</b>	1000	1500	2500	3000	4000	8000	13500
<b>Clamp force at 5 bar (72.5 psi) (N)</b>	1500	1700	3700	4000	5000	11000	17500
<b>Clamp force at 6 bar (87 psi) (N)</b>	2000	2200	4000	4500	6000	13000	20000
<b>Passive brake system</b>							
<b>Clamp force (N)</b>	600	1000	1900	2500	3800	6000	9000
<b>Release pressure</b>	min. 4.5 bar (65.25 psi)						
<b>Temperature range</b>	- 10 °C ... + 50 °C (+14 °F ... +122 °F)						
<b>Operating pressure</b>	Cylinder 1...8 bar (14.5... 116 psi), brake system 3 to max. 6 bar (43.5 to max. 87 psi)						
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air						
<b>Standard stroke lengths</b>	10 ... 2800 mm						
<b>Materials</b>	Cylinder tube: Al-profile (anodized) End caps: Al-die-cast (painted) Piston rod: chromium-plated (standard) Seals: PU/NBR/PTFE/EPDM Brake: Al (anodized), bronze						

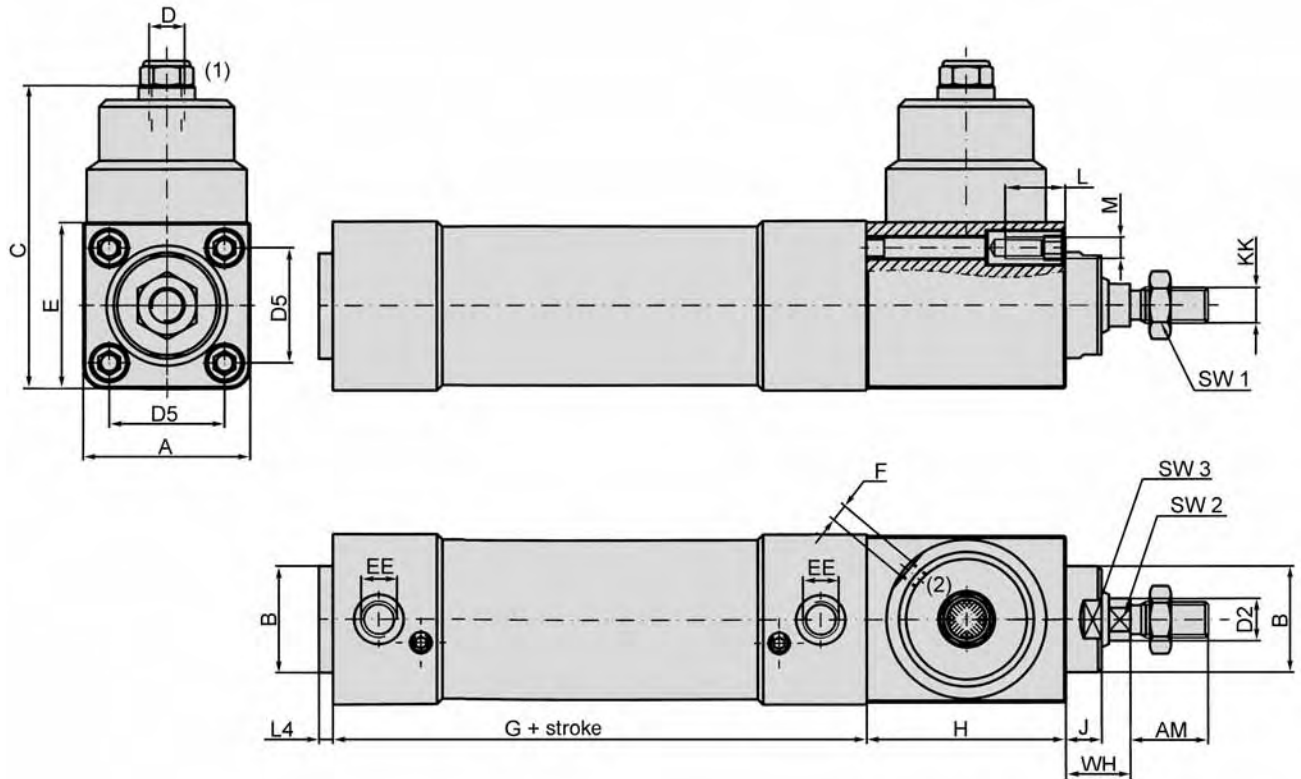
\*The internal friction is considered.

**Pneumatic cylinders series XL with brake system**  
**Piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**



Dimensions for series

# XLBS



**Series XLBSP**

- (1) Exhaust of spring chamber, with muffler.
- (2) Port to release the brake.

**Series XLBSA**

- (1) Port to pressurize the brake.
- (2) Port to release the brake.

Piston-Ø	A	AM	Ø B	C	D	Ø D2	D5	E	EE	F	G
32	47	22	30	103	G 1/8	12	32.5	47	G 1/8	M 5	94
40	52	24	35	108	G 1/8	16	38	52	G 1/4	M 5	105
50	65	32	40	130	G 1/8	20	46.5	70.5	G 1/4	G 1/8	106
63	74	32	45	137	G 1/8	20	56.5	77	G 3/8	G 1/8	121
80	95	40	45	155	G 1/8	25	72	95	G 3/8	G 1/8	128
100	115	40	55	170	G 1/8	25	89	115	G 1/2	G 1/8	138
125	138	54	60	193	G 1/8	32	110	138	G 1/2	G 1/8	160
		- 2	e11			f7					

Piston-Ø	H*	J	KK	L	L4	M	SW1	SW2	SW3	WH
32	56	10	M 10 x 1.25	17	4	M 6	17	10	28	26
40	62	10	M 12 x 1.25	17	4	M 6	19	13	32	30
50	74	20	M 16 x 1.5	20	4	M 8	24	17	36	37
63	74	20	M 16 x 1.5	20	4	M 8	24	17	41	37
80	95	20	M 20 x 1.5	22	4	M 10	30	22	42	46
100	115	15	M 20 x 1.5	22	4	M 10	30	22	50	51
125	138	20	M 27 x 2	25	6	M 12	41	28	50	65
					- 1					

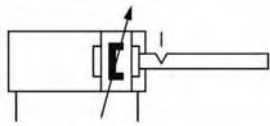
\*Is equivalent to the desired piston rod extension.

**Pneumatic cylinder with locked end position**  
**Piston-Ø 63 – 125 mm**  
**Double acting with magnetic piston**

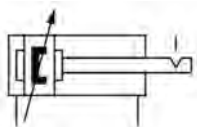


**Technical data for series**

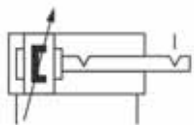
# XLR



Option V



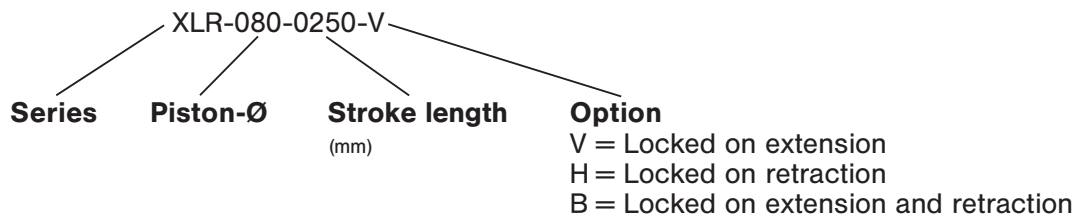
Option H



Option B



**Order code**



**Design and function**

Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushion and permanent magnet for proximity sensors. The XLR series can be supplied with a mechanical locking system at the extended position, retracted position or at both positions. The mechanical locking device prevents the piston rod from moving when the cylinder is in the fully extended or retracted position, even when pressure is lost.

Order number Please complete according to order code.	XLR-063-...	XLR-080-...	XLR-100-...	XLR-125-...
<b>Piston-Ø (mm)</b>	63	80	100	125
<b>Connection</b>	G 3/8	G 3/8	G 1/2	G 1/2
<b>Force at 6 bar in N*</b>				
<b>Extension</b>	1680 (377.7 lbf.)	2700 (607.0 lbf.)	4240 (953.2 lbf.)	6630 (1490.5 lbf.)
<b>Retraction</b>	1510 (339.5 lbf.)	2550 (573.3 lbf.)	3970 (892.5 lbf.)	6200 (1393.8 lbf.)
<b>Locking force (N)</b>	4000 (899.2 lbf.)	6000 (1348.8 lbf.)	7500 (1686.1 lbf.)	10000 (2248.1 lbf.)
<b>Piston rod thread</b>	M 16 x 1.5	M 20 x 1.5	M 20 x 1.5	M 27 x 1.5
<b>Cushioning length (mm)</b>	30	30	30	40
<b>Operating pressure</b>	3 ... 10 bar (43.5 ... 145 psi)			
<b>Temperature range</b>	- 20 °C ... + 80 °C (- 4 °F ... + 176 °F)			
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air			
<b>Standard stroke lengths (mm)</b>	50 – 1000 mm			
<b>Materials</b>	Cylinder tube: Al-profile (anodized) End caps: Al (anodized) Piston rod: Steel chromium-plated Seals: PU/NBR			

\*The internal friction is considered.

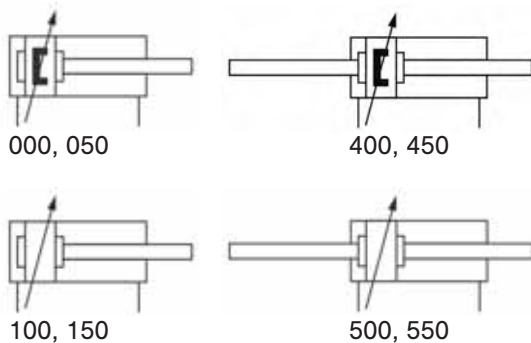


**Pneumatic cylinders, piston-Ø 160, 200, 250 and 320 mm**  
**Double acting with adjustable cushions**  
**DIN ISO 15552**

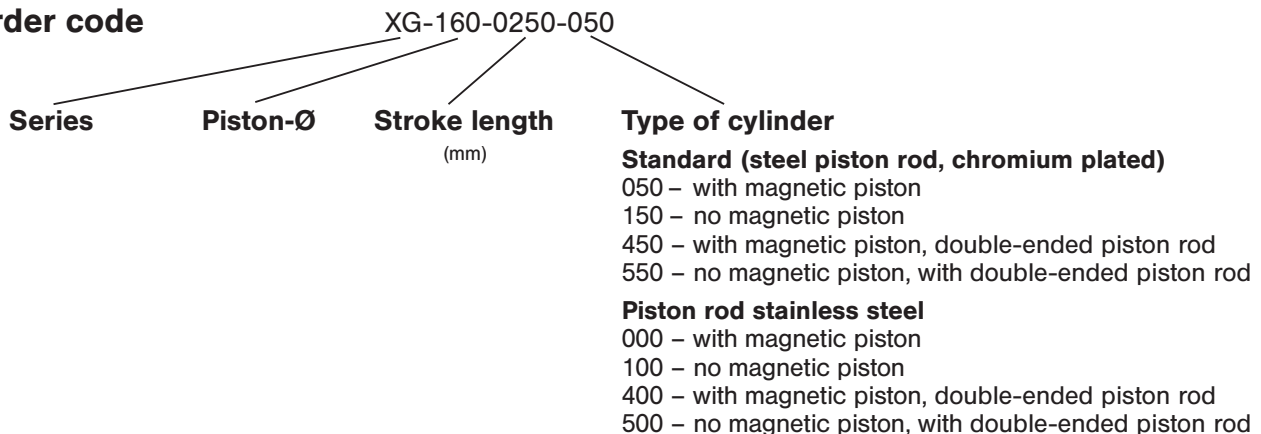


**Technical data for series**

**XG**



**Order code**



**Design and function**

Double acting cylinder with adjustable cushions.  
 Standard stroke lengths in table below, additional lengths on request.

Order number Please complete according to order code.	XG-160-...	XG-200-...	XG-250-...	XG-320-...
<b>Piston-Ø (mm)</b>	160	200	250	320
<b>Force at 6 bar in N**</b>				
<b>Extension</b>	10860 (2441.4 lbf.)	16960 (3812.8 lbf.)	26500 (5957.4 lbf.)	43450 (9767.9 lbf.)
<b>Retraction</b>	10180 (2288.5 lbf.)	16280 (3659.9 lbf.)	25450 (5721.4 lbf.)	41750 (9385.8 lbf.)
<b>Cushioning length (mm)</b>	50		60	65
<b>Connection</b>	G 3/4		G 1	
<b>Piston rod thread</b>	M 36 x 2		M 42 x 2	M 48 x 2
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)			
<b>Temperature range</b>	- 20 °C ... + 80 °C (- 4 °F ... + 176 °F)			
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air. If speeds exceed 1 m/s (3.3 ft/s) lubricated air is recommended.			
<b>Standard stroke lengths (mm)*</b>	25, 50, 80, 100, 125, 160, 200, 250, 320, 350, 400, 500, 600, 700, 800, 900, 1000, max. 2500			
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al-die-cast (painted) Piston rod: chromium-plated (standard) – stainless steel (see order code) Seals: PU/NBR			

\* Refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

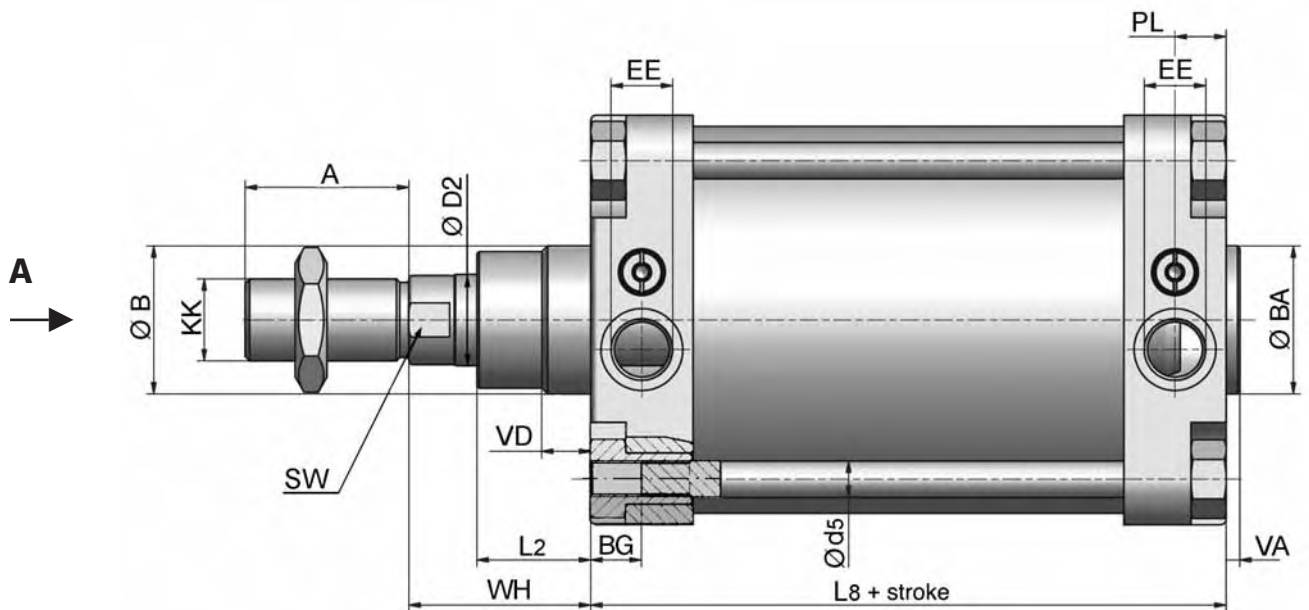
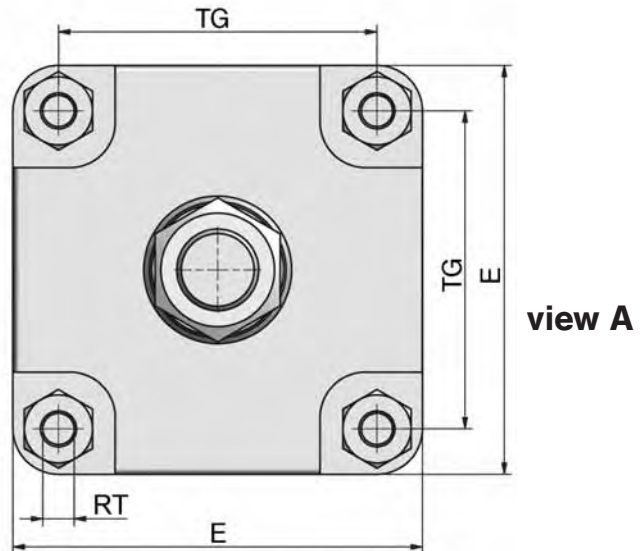
\*\* The internal friction is considered.

Pneumatic cylinders, piston-Ø 160, 200, 250 and 320 mm  
 Double acting with adjustable cushions  
 DIN ISO 15552



Dimensions for series

**XG** (Type for order code: -000, -050, -100 and -150)



Piston-Ø	A	Ø B	Ø BA	BG	Ø D2	Ø d5	E	EE	KK	L2	L8	PL	RT	SW	TG	VA	VD	WH
160	72	65	65	22.5	40	16	180	G 3/4	M36 x 2	50	179.5	22.5	M16	36	140	6	21.5	80
200	72	75	75	22.5	40	16	220	G 3/4	M36 x 2	55	180	22.5	M16	36	175	6	26.5	95
250	84	90	90	25	50	20	268	G 1	M42 x 2	67	200	31	M20	46	220	10	20	105
320	96	110	110	28	63	25	340	G 1	M48 x 2	82	220	31	M24	55	270	10	20	120
	-2	d11	d11															

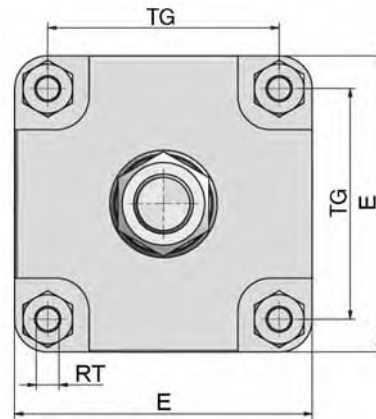
Piston-Ø	160	200	250	320
Weight at 0 mm stroke in kg	15.0 (33.06 lbs.)	20.0 (44.09 lbs.)	28.5 (62.83 lbs.)	48.4 (106.70 lbs.)
Weight per 100 mm stroke	2.0 (4.41 lbs.)	2.5 (5.51 lbs.)	3.8 (8.38 lbs.)	6.2 (13.67 lbs.)

Pneumatic cylinders, piston-Ø 160, 200, 250 and 320 mm  
 Double acting with adjustable cushions  
 DIN ISO 15552

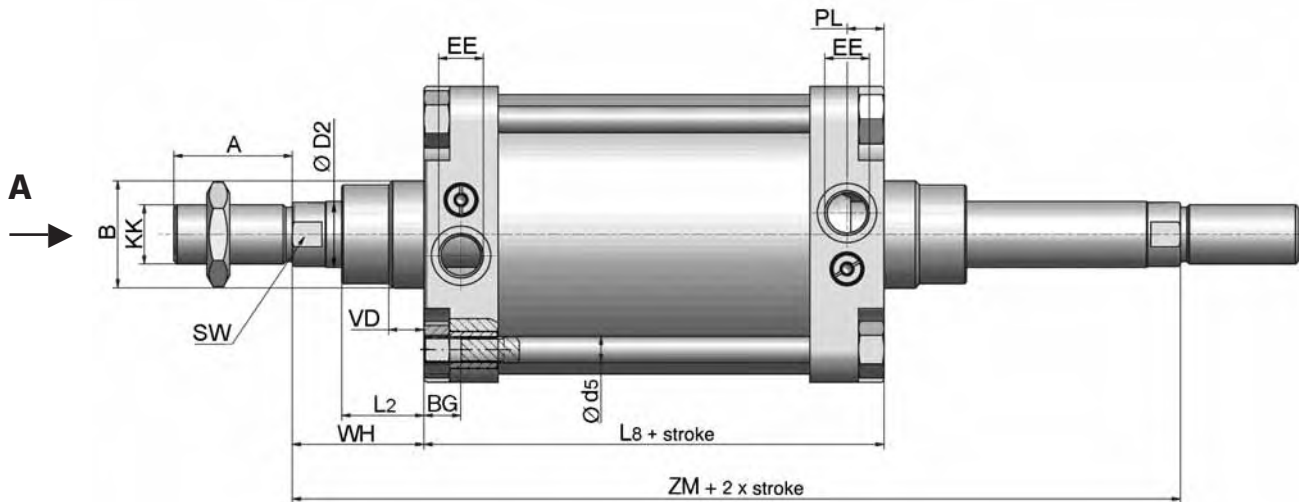


Dimensions for series

**XG** (Type for order code: -400, -450, -500 and -550)



view A



Piston-Ø	A	Ø B	BG	Ø D2	Ø d5	E	EE	KK	L2	L8	PL	RT	SW	TG	VD	WH	ZM
160	72	65	22.5	40	16	180	G 3/4	M36 x 2	50	179.5	22.5	M16	36	140	21.5	80	340
200	72	75	22.5	40	16	220	G 3/4	M36 x 2	55	180	22.5	M16	36	175	26.5	95	370
250	84	90	25	50	20	268	G 1	M42 x 2	67	200	31	M20	46	220	20	105	410
320	96	110	28	63	25	340	G 1	M48 x 2	82	220	31	M24	55	270	20	120	460
	-2	d11															

Piston-Ø	160	200	250	320
Weight at 0 mm stroke in kg	16.9 (37.25 lbs.)	22.5 (49.60 lbs.)	32.3 (71.21 lbs.)	54.8 (120.81 lbs.)
Weight per 100 mm stroke	3.3 (7.27 lbs.)	3.5 (7.71 lbs.)	4.0 (8.82 lbs.)	6.4 (14.11 lbs.)

**Accessories for series**

**XG**

Accessories for piston-Ø 250 and 320 mm are available on request.

**Piston rod accessories**



Rod eye  
**FO-200**  
 page 8.213



Rod clevis with pin  
**FD-200**  
 page 8.212



Piston rod nut  
**FE-200**  
 page 8.212

**Mounting accessories**



Foot mount  
**VLB-Ø-01**  
 page 8.034



Flange mount  
**VLB-Ø-02**  
 page 8.034



Clevis mount  
**VLB-Ø-03**  
 page 8.035



Clevis mount with bushing  
**VLB-Ø-04**  
 page 8.035



Swivel mount  
**VLB-Ø-05**  
 page 8.035



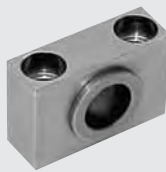
Swivel mount 90°  
**VLB-Ø-06**  
 page 8.036



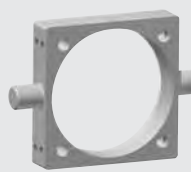
Swivel mount with spherical bearing  
**VLB-Ø-12**  
 page 8.037



Clevis pin  
**VLB-200-08**  
 page 8.036



Bearing block  
**VLB-200-09**  
 page 8.036



Trunnion flange mount  
**VLB-Ø-10**  
 page 8.037

**Proximity sensors**



Sensors  
**ZS-**  
 page 8.220



Connecting cable  
**KA-**  
 page 8.221



Cover for sensor groove  
 Ø 160 and 200 mm  
**NT-1216**  
 page 8.221

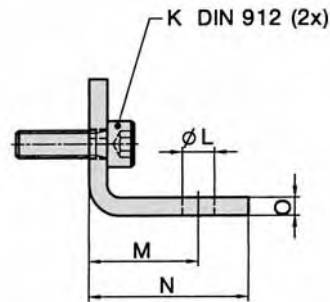
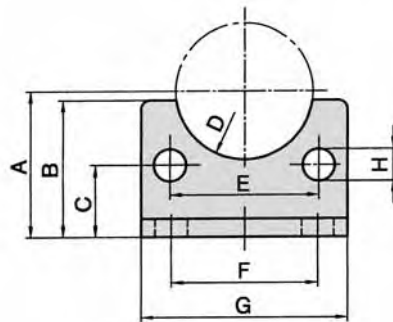


Cover for sensor groove  
 Ø 250 and 320 mm  
**NT-2025**  
 page 8.221

Mounting accessories for series  
**XG**

Accessories for piston-Ø 250 and 320 mm  
are available on request.

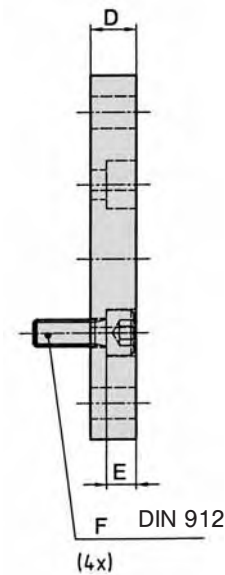
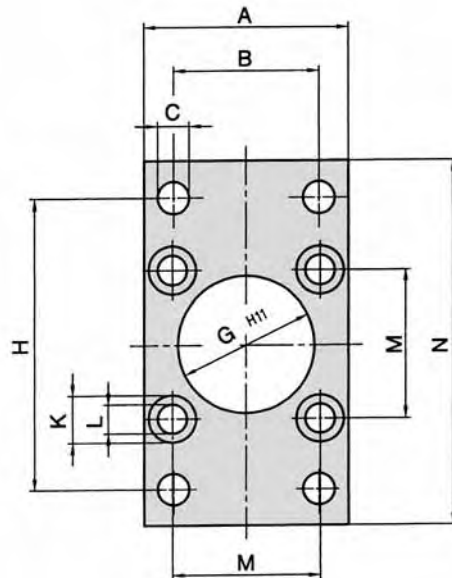
**Foot mount**  
1 pair



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	O	Weight
VLB-160-01	115	100	45	R 32.5	140	115	180	18	M 16 x 30	18	60	75	9	2.68 kg (5.91 lbs.)
VLB-200-01	135	100	47.5	R 37.5	175	135	220	18	M 16 x 30	22	70	100	12	7.20 kg (15.87 lbs.)
	JS15	+ 2	± 0.2	H15	± 0.2	JS14	- 0.2	H14		H14	± 0.2		± 0.5	

**Flange mount**



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	Weight
VLB-160-02	180	115	18	20	16.5	M 16 x 25	65	230	25	17	140	260	6.65 kg (14.66 lbs.)
VLB-200-02	220	135	22	25	16.5	M 16 x 30	75	270	25	17	175	300	1.43 kg (3.15 lbs.)
	JS14	H13	± 0.2					JS14			± 0.2		

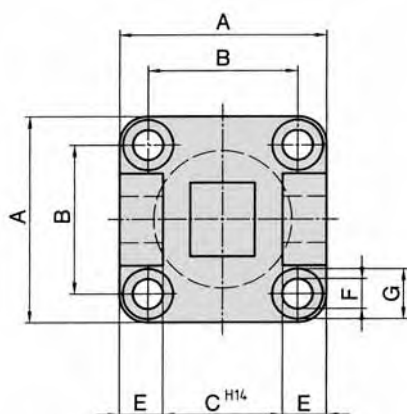
## Mounting accessories for series **XG**

Accessories for piston-Ø 250 and 320 mm  
are available on request.

### Clevis mount



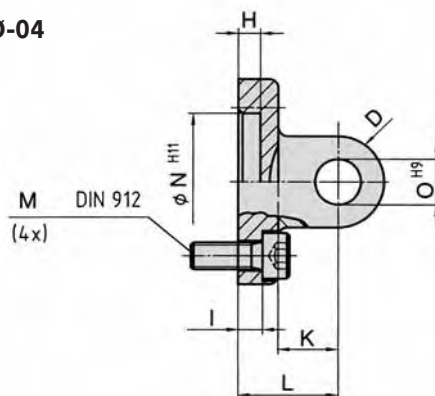
VLB-Ø-03



### Clevis mount with bushing



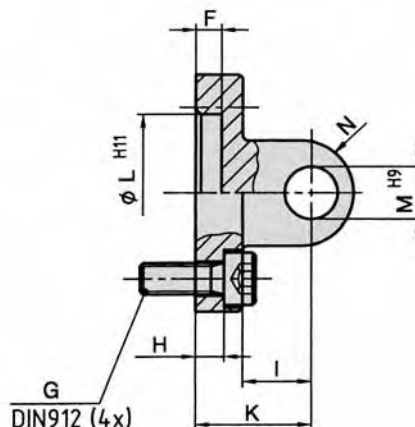
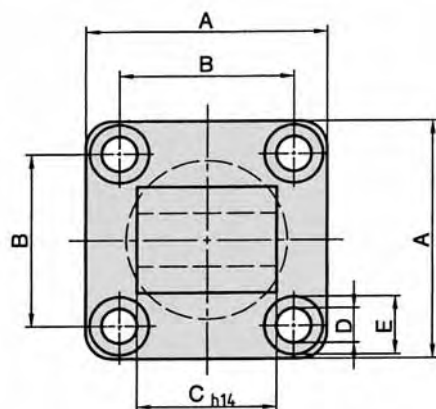
VLB-Ø-04



Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	O	Weight
VLB-160-03	180	140	90	25	40	18	26	7	10	35	55	M 16 x 30	65	30	2.08 kg (4.58 lbs.)
VLB-160-04															
VLB-200-03	220	175	90	25	40	18	26	7	11	35	60	M 16 x 30	75	30	3.20 kg (7.05 lbs.)
VLB-200-04															
		± 0.2		max.			H13	H13		± 0.5	± 0.2				

### Swivel mount



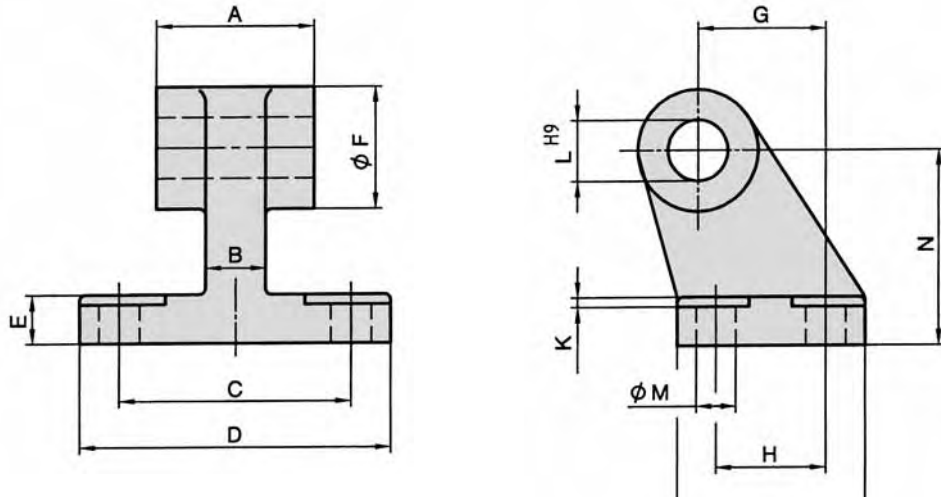
Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	Weight
VLB-160-05	180	140	90	18	26	7	M 16 x 30	10	35	55	65	30	25	2.15 kg (4.74 lbs.)
VLB-200-05	220	175	90	18	26	7	M 16 x 30	11	35	60	75	30	25	3.25 kg (7.16 lbs.)
		± 0.2	- 0.5 - 1.2	H13	H13			± 0.5		± 0.2			max.	

Mounting accessories for series  
**XG**

Accessories for piston-Ø 250 and 320 mm  
are available on request.

**Swivel mount 90°**

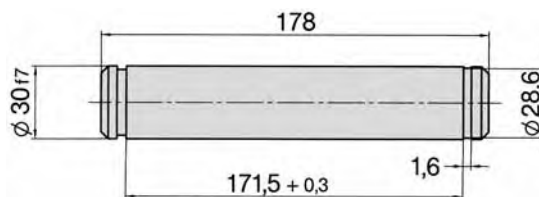


Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	Weight
<b>VLB-160-06</b>	90	36	118	156	25	63	97	88	126	4	30	14	115	2.60 kg (5.73 lbs.)
<b>VLB-200-06</b>	90	40	122	162	30	63	105	90	130	4	30	18	135	3.25 kg (7.16 lbs.)
	- 0.5 - 1.2	max.	JS14	max.		max.	JS14	JS14	max.	max.		H13	JS15	

**Clevis pin**

**VLB-200-08**

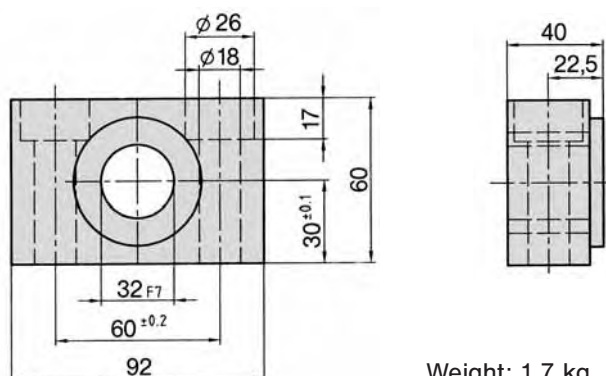


Material: steel (zinc-plated)  
Snap rings are included.

Weight: 0.978 kg (2.176 lbs.)

**Bearing block**

**VLB-200-09**



Order number = 1 pair

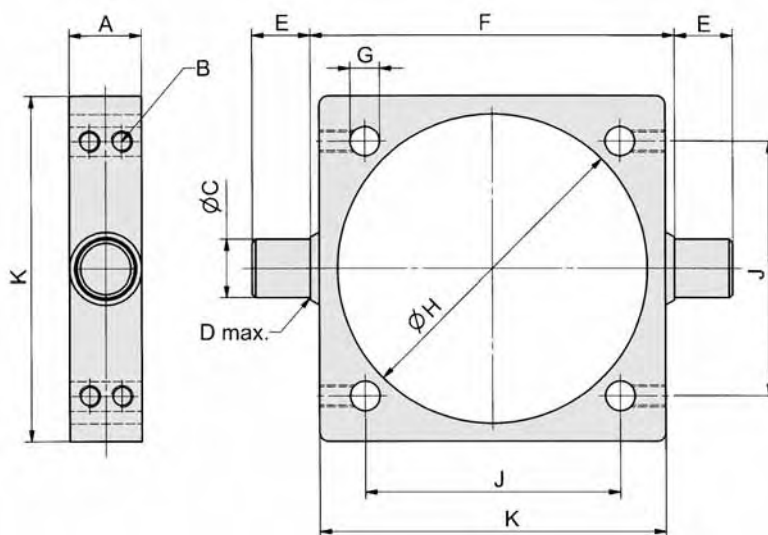
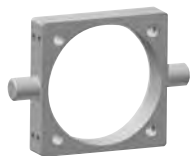
Material: steel (zinc-plated), bronze

Weight: 1.7 kg (3.75 lbs.) (pair)

Mounting accessories for series  
**XG**

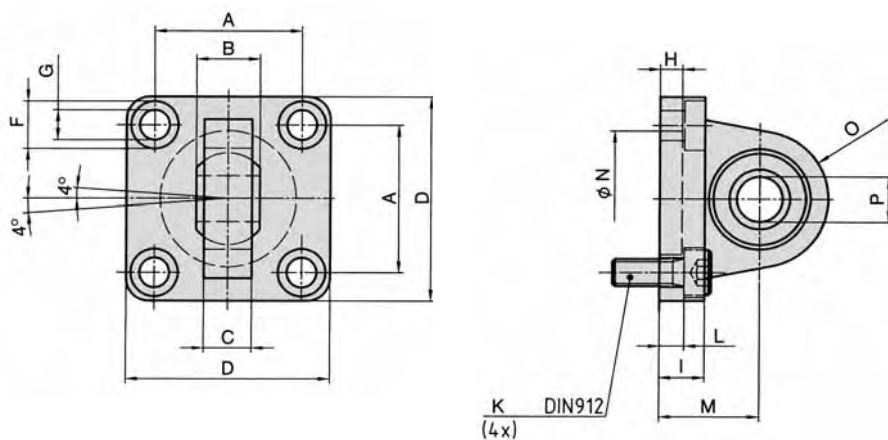
Accessories for piston-Ø 250 and 320 mm  
are available on request.

**Trunnion flange mount**



Order number	A	B	C	D	E	F	G	H	J	K	Weight
VLB-160-10	40	M 12	32	R 2.5	32	200	16.25	170	140	190	4.15 kg (9.15 lbs.)
VLB-200-10	40	M 12	32	R 2.5	32	250	16.25	211	175	240	7.30 kg (16.09 lbs.)
	max.		e 9	max.	h14	h14	+ 0.2 0	+ 0.2 0	± 0.2	max.	

**Swivel mount with spherical bearing**



Material: Al

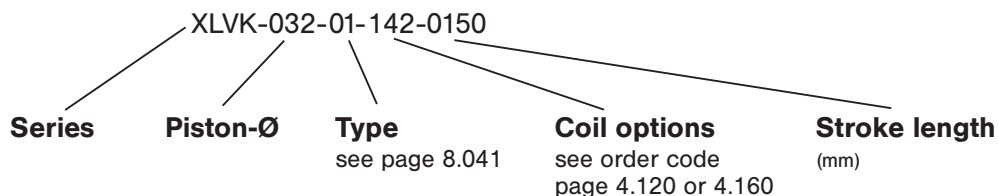
Order number	A	B	C	D	F	G	H	I	K	L	M	N	O	P	Weight
VLB-160-12	140	43	28	180	26	18	7	20	M 16 x 30	10	55	65	45	35	2.72 kg (6.00 lbs.)
VLB-200-12	175	43	28	220	26	18	7	25	M 16 x 30	11	60	75	48	35	4.14 kg (9.13 lbs.)
	± 0.2	- 0.1	max.		H13	H13				± 0.5	JS15	H11	max.	H7	

Technical data for series

# XLVK



Order code



Design and function

Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and permanent magnet for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile. The cylinder includes a 5/2- or 5/3-way valve with a high flow rate and compact dimensions. Alternatively the fittings can include a flow control valve for infinite speed adjustment. Please specify the required voltage when ordering. The valve includes the standard socket 28-ST-01 if not specified. Other coils and socket types are available, see accessories on page 8.045. Standard stroke lengths in table below, additional lengths on request.

Order number Please complete according to order code.	XLVK-032-...	XLVK-040-...	XLVK-050-...	XLVK-063-...	XLVK-080-...	XLVK-100-...	XLVK-125-...	
<b>Piston-Ø mm</b>	32	40	50	63	80	100	125	
<b>Force at 6 bar in N<sup>1)</sup></b>	<b>Extension</b>	430 (96.7 lbf.)	680 (152.9 lbf.)	1060 (238.3 lbf.)	1680 (377.7 lbf.)	2700 (607.0 lbf.)	4240 (953.2 lbf.)	6630 (1490.5 lb.)
	<b>Retraction</b>	370 (83.2 lbf.)	570 (128.1 lbf.)	890 (200.1 lbf.)	1510 (339.5 lbf.)	2550 (573.3 lbf.)	3970 (892.5 lbf.)	6200 (1393.9 lb.)
<b>Valve type</b>	KM-09				KM-10			
<b>Connection</b>	G 1/8				G 1/4			
<b>Nominal size</b>	6 mm (0.2362 in)				9 mm (0.3543 in)			
<b>Piston rod thread</b>	M10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M27 x 2	
<b>Cushioning length mm</b>	27	29	32	32	32	32	42	
<b>Operating pressure</b>	3 ... 10 bar (max. 8 bar at 2.2 W) 43.5 ... 145 psi (max. 116 psi at 2.2 W)				2.5 ... 10 bar (max. 8 bar at 2.2 W) 36 ... 145 psi (max. 116 psi at 2.2 W)			
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air							
<b>Temperature range</b>	- 10 °C ... + 70 °C (+ 14 °F ... + 158 °F)							
<b>Standard stroke lengths</b> mm <sup>2)</sup>	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, max. 2800							
<b>Standard voltage</b>	DC: 12 V, 24 V AC: 24 V, 115 V, 230 V / 50/60 Hz							
<b>Power consumption</b>	DC: 4.2 W, AC: 7.0/4.0 VA special DC 12 V, 24 V mit 2.2 W							
<b>Degree of protection</b>	IP 65 according to EN 60529							

<sup>1)</sup> = The internal friction is considered.

<sup>2)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

**Types of series**

# XLVK

**Cylinder with 5/2-way valve, normally retracted**



- 01 – standard cylinder with valve (air spring return)
- 02 – valve with spring return
- 03 – piston rod in stainless steel
- 04 – valve with spring return, piston rod in stainless steel
- 05 – standard cylinder with flow controls
- 06 – valve with spring return and flow controls
- 07 – piston rod in stainless steel and flow controls
- 08 – valve with spring return, piston rod in stainless steel and flow controls

**Cylinder with 5/2-way valve, piston rod normally extended**



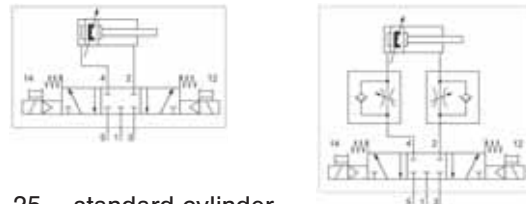
- 10 – standard cylinder with valve (air spring return)
- 11 – valve with spring return
- 12 – piston rod in stainless steel
- 13 – valve with spring return, piston rod in stainless steel
- 15 – standard cylinder with flow controls
- 16 – valve with spring return and flow controls
- 17 – piston rod in stainless steel and flow controls
- 18 – valve with spring return, piston rod in stainless steel and flow controls

**Cylinder with 5/2-way valve, double solenoid**



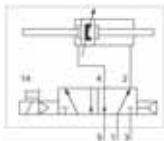
- 20 – standard cylinder
- 21 – piston rod in stainless steel
- 22 – standard cylinder with flow controls
- 23 – piston rod in stainless steel and flow controls

**Cylinder with 5/3-way valve, center position closed**

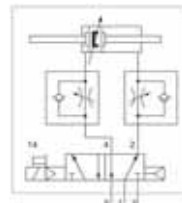


- 25 – standard cylinder
- 26 – piston rod in stainless steel
- 27 – standard cylinder with flow controls
- 28 – piston rod in stainless steel and flow controls

**Cylinder with double-ended piston rod, 5/2-way valve**



- 30 – standard cylinder with valve (air spring return)
- 31 – valve with spring return
- 32 – piston rod in stainless steel
- 33 – valve with spring return, piston rod in stainless steel



- 35 – standard cylinder with flow controls
- 36 – valve with spring return and flow controls
- 37 – piston rod in stainless steel and flow controls
- 38 – valve with spring return, piston rod in stainless steel and flow controls

**Cylinder with double-ended piston rod 5/2-way valve, double solenoid**



- 40 – standard cylinder
- 41 – piston rod in stainless steel
- 42 – standard cylinder with flow controls
- 43 – piston rod in stainless steel and flow controls

**Cylinder with double-ended piston rod 5/3-way valve, center position closed**



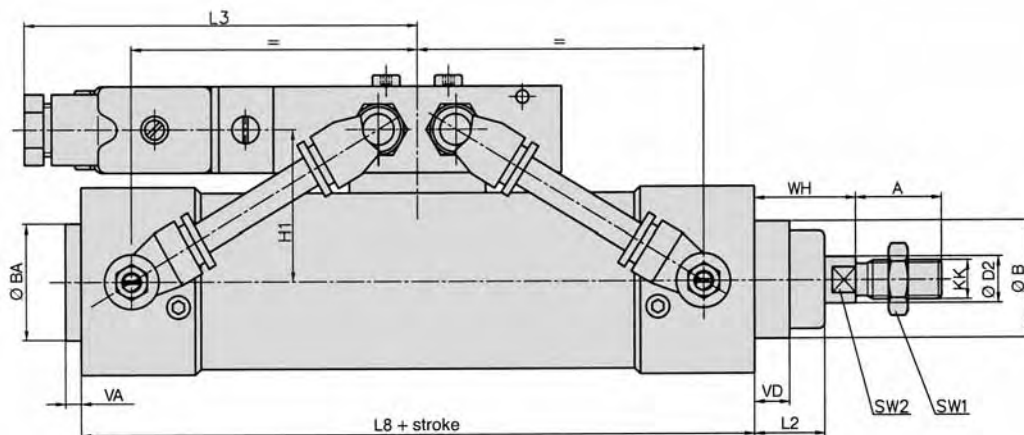
- 45 – standard cylinder
- 46 – piston rod in stainless steel
- 47 – standard cylinder with flow controls
- 48 – piston rod in stainless steel and flow controls

**Further cylinder/valve combinations on request.**

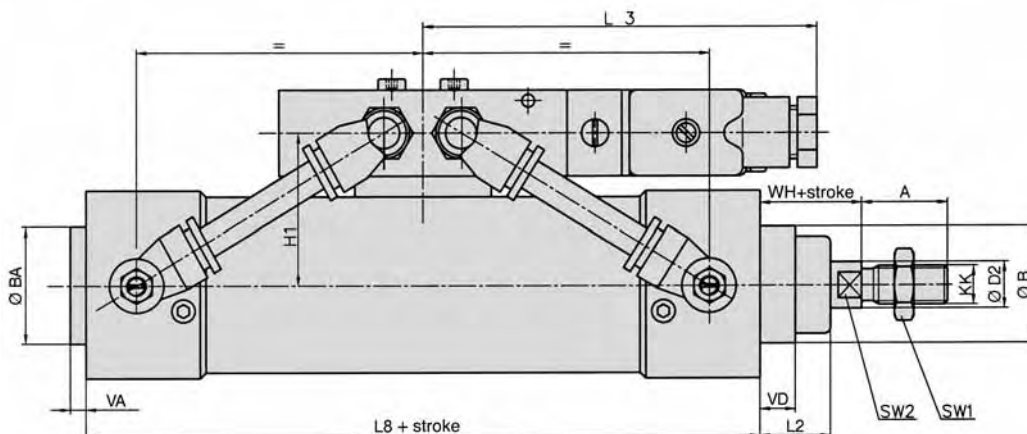
Dimensions for series

# XLVK

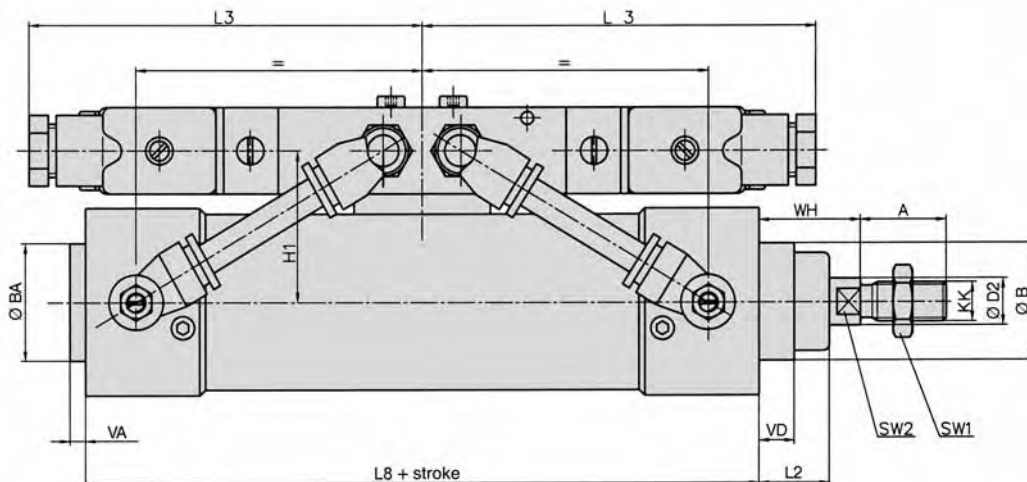
Types with single solenoid valve, normally retracted



Types with single solenoid valve, piston rod normally extended



Types with double solenoid or 5/3-way valves



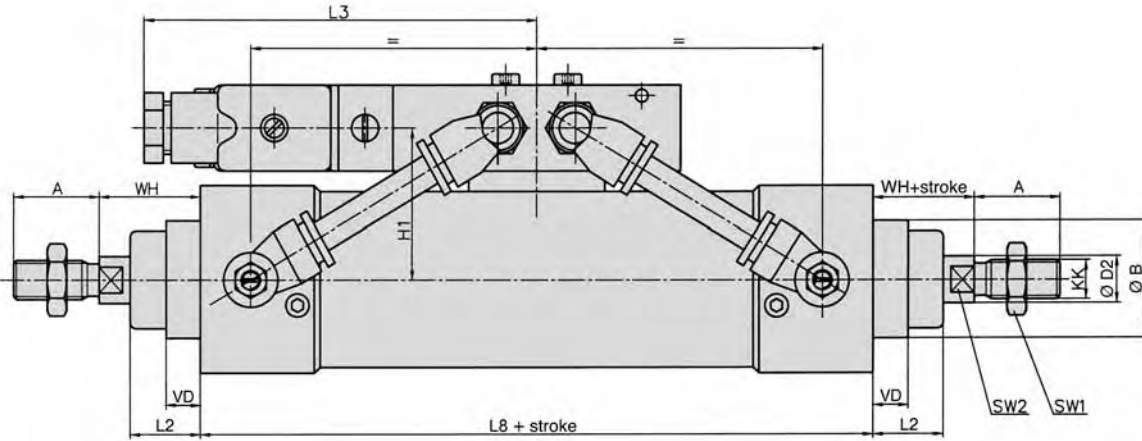
Cylinder/valve combination  
piston-Ø 32 – 100 mm  
cylinder DIN ISO 15552



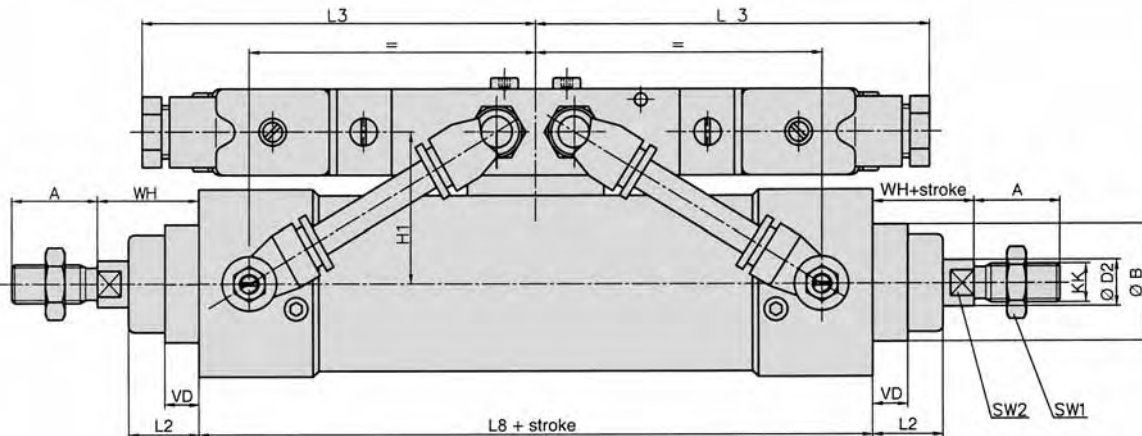
Dimensions for series

# XLVK

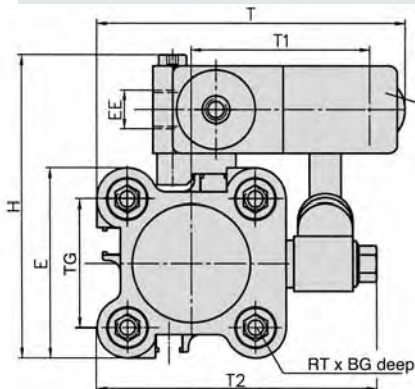
Types with single solenoid valve, double-ended piston rod



Types with double solenoid or 5/3-way valves, double-ended piston rod



Side view for all types



Coil can be repositioned by 3 x 90°.  
Socket can be repositioned by 180°.

All dimensions are for types with adjustable flow controls. For cylinders without throttles, T, T1 and T2 are smaller.

Cyl.-Ø	A	ØB ØBA	BG	ØD2	□E	EE	H
32	22	30	16	12	47	G 1/8	76
40	24	35	16	16	54	G 1/8	83,3
50	32	40	21,5	20	63	G 1/8	92
63	32	45	21,5	20	74	G 1/4	107
80	40	45	17,5	25	93,5	G 1/4	132
100	40	55	17,5	25	110	G 1/4	150
125	54	60	20,5	31	138	G 1/2	178
	-2	d11		f7			

Cyl.-Ø	H 1	KK	L 2	L 3	L 8	RT	SW 1	SW 2	T	T 1	T 2	□TG	VA	VD	WH
32	38,7	M 10 x 1,25	18	101	94	M 6	17	10	78	46	72	32,5	4	9,0	26
40	42,5	M 12 x 1,25	22	101	105	M 6	19	13	83	47	81	38	4	9,0	30
50	46,5	M 16 x 1,5	25,5	101	106	M 8	24	16	94	53	91	46,5	4	9,0	37
63	55	M 16 x 1,5	25	101	121	M 8	24	16	111	65	107	56,5	4	9,0	37
80	66,4	M 20 x 1,5	35	109	128	M 10	30	21	120	64	131	72	4	9,5	46
100	76,8	M 20 x 1,5	38	109	138	M 10	30	21	142	78	155	89	4	7,5	51
125	90,5	M 27 x 2	46	109	160	M 12	41	27	153	73,5	163,5	110	6	11	65

-1

Accessories for series

# XLVK

**Piston rod accessories**



Flexible coupling  
**FK**  
 Page 8.213



Rod eye  
**FO + RO**  
 Page 8.213



Rod clevis with pin  
**FD + RD**  
 Page 8.212



Piston rod nut  
**FE + RL**  
 Page 8.212

**Mounting accessories**



Foot mount  
**XLB-Ø-01**  
 Page 8.016



Flange mount  
**XLB-Ø-02**  
 Page 8.016



Clevis mount with bushing  
**XLB-Ø-04**  
 Page 8.017



Swivel mount  
**XLB-Ø-05**  
 Page 8.018



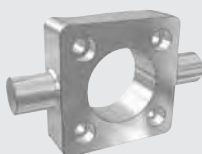
Swivel mount 90°  
**XLB-Ø-06**  
 Page 8.018



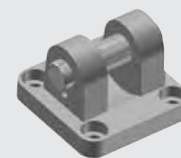
Swivel mount with spherical bearing  
**XLB-Ø-12**  
 Page 8.019



Clevis pin  
**XLB-Ø-08**  
 Page 8.019

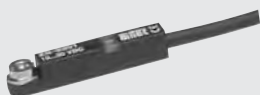


Trunnion flange mount  
**XLB-Ø-11**  
 Page 8.021



Small clevis mount with non rotating pin  
**XLB-Ø-14**  
 Page 8.021

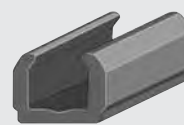
**Proximity sensors**



Sensors  
**ZS-**  
 Page 8.220



Connecting cable  
**KA-**  
 Page 8.221



Cover for sensor groove  
**XLB-011** 0.5m

Seal kits see page 8.046.

Accessories for series

# XLVK

## Solenoid coils, actuators



Standard coil  
**23-SP-011-...**  
Page 4.280



Coil with 2.2 W  
power consumption  
**23-SP-012-...**  
Page 4.280



Coil with M-12 plug  
connector, 4.8 W, LED  
and circuit protection  
**23-SP-011-5-012**  
Page 4.280



Coil with M-12 plug  
connector, 2.5 W, LED  
and circuit protection  
**23-SP-012-5-032**  
Page 4.280



Standard actuator  
**23-R-011**



Low power actuator  
**23-R-012**

## Plug sockets



Standard plug socket  
**28-ST-01**  
Page 4.281



Plug socket with LED  
**28-ST-04-...**  
Page 4.281



Plug socket with LED  
and circuit protection  
**28-ST-06-...**  
Page 4.281



Plug socket with LED, cir-  
cuit protection and cable  
**28-ST-06-K3-...**  
Page 4.281

## User information

Low power consumption coils (2.2 W or 2.5 W) are for pressures up to 8 bar (116 psi) only. Valve actuator 23-R-012 is required. The actuator 23-R-012 is nickel plated. Make sure that the coils with the right power consumption are used.

For outdoor applications or in areas with high humidity, use coil 23-SP-011-1-... or 23-SP-012-1-... (see page 5.120).

### The following types are available on request

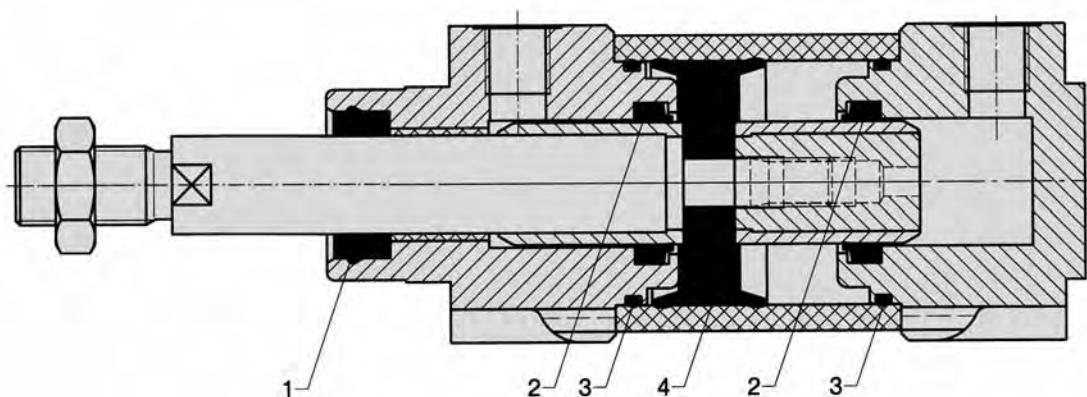
Coils and sockets with contacts according to DIN 175301-803 type B (U-form).

Plug socket with molded cable.

## Seal kits for series XL and XLVK



For cylinders with piston rod on one side



### Seal kits – standard

Order number	Ø
VS-XL-032-01	32 mm
VS-XL-040-01	40 mm
VS-XL-050-01	50 mm
VS-XL-063-01	63 mm
VS-XL-080-01	80 mm
VS-XL-100-01	100 mm
VS-XL-125-01	125 mm

### Content

Pos.	Part	Quantity
1	Wiper and seal element	1
2	Cushion seal	2
3	O-ring	2
4	Piston	1
	Grease	1

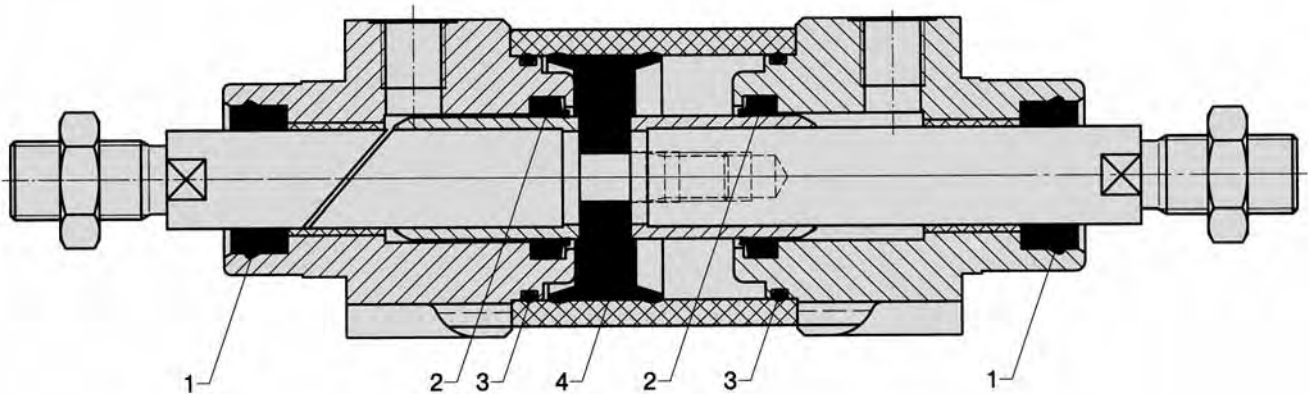
### Seal kits – Viton

Order number	Ø
VS-XL-032-02	32 mm
VS-XL-040-02	40 mm
VS-XL-050-02	50 mm
VS-XL-063-02	63 mm
VS-XL-080-02	80 mm
VS-XL-100-02	100 mm
VS-XL-125-02	125 mm

# Seal kits for series XL and XLVK



For cylinders with piston rod on both sides



### Seal kits – standard

Order number	Ø
VS-XL-032-03	32 mm
VS-XL-040-03	40 mm
VS-XL-050-03	50 mm
VS-XL-063-03	63 mm
VS-XL-080-03	80 mm
VS-XL-100-03	100 mm
VS-XL-125-03	125 mm

### Content

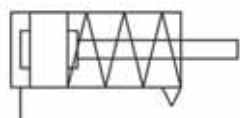
Pos.	Part	Quantity
1	Wiper and seal element	2
2	Cushion seal	2
3	O-ring	2
4	Piston	1
	Grease	1

### Seal kits – Viton

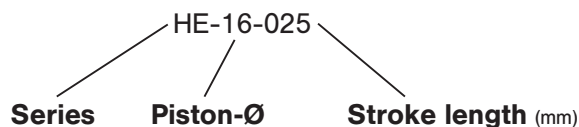
Order number	Ø
VS-XL-032-04	32 mm
VS-XL-040-04	40 mm
VS-XL-050-04	50 mm
VS-XL-063-04	63 mm
VS-XL-080-04	80 mm
VS-XL-100-04	100 mm
VS-XL-125-04	125 mm

Technical data for series

# HE



Order code



**Design and function**

Single acting pneumatic cylinder with built-in cushioning rings.

Order number Please complete according to order code.	HE-08-...	HE-10-...	HE-12-...	HE-16-...	HE-20-...	HE-25-...
<b>Piston-Ø mm</b>	8	10	12	16	20	25
<b>Connection</b>	M5 (10/32 UNF)				G 1/8	
<b>Piston rod thread</b>	M4	M4	M6	M6	M8	M10 x 125
<b>Operating pressure</b>	2 ... 10 bar (29 ... 145 psi)					
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)					
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air					
<b>Standard stroke lengths (mm)<sup>1)</sup></b>	10, 25, 50, max. 50					
<b>Materials</b>	Cylinder tube: stainless steel End caps: Al (anodized) Piston rod: stainless steel Seals: PU					

<sup>1)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

Technical data

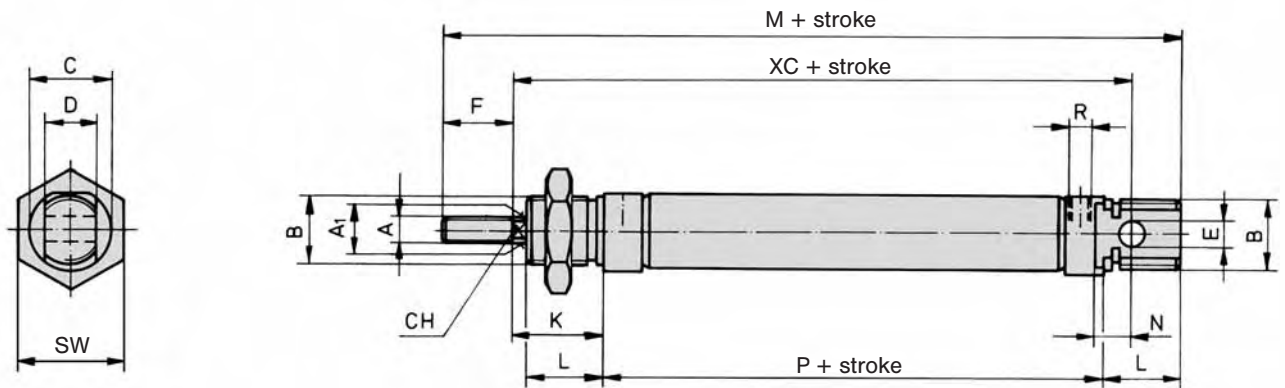
Force chart for series HE

Piston-Ø		stroke 10		stroke 25		stroke 50	
		Min.	Max.	Min.	Max.	Min.	Max.
Ø 8	Extension	19.0	19.7	19.0	20.3	19.0	21.7
	Retraction	4.5	5.2	3.9	5.2	2.5	5.2
Ø 10	Extension	36.0	36.7	36.0	37.3	36.0	38.7
	Retraction	4.5	5.2	3.9	5.2	2.5	5.2
Ø 12	Extension	51.7	52.0	51.7	52.6	51.7	53.6
	Retraction	5.7	6.0	5.1	6.0	4.1	6.0
Ø 16	Extension	87.5	90.0	87.5	93.5	87.5	99.7
	Retraction	15.0	17.5	11.5	17.5	5.3	17.5
Ø 20	Extension	142.8	145.0	142.8	148.3	142.8	153.8
	Retraction	21.3	23.5	18.0	23.5	12.5	23.5
Ø 25	Extension	243.7	245.0	243.7	247.0	243.7	250.3
	Retraction	18.2	19.5	16.2	19.5	12.9	19.5

Pressure 6 bar. The internal friction is considered.

Dimensions for series

# HE



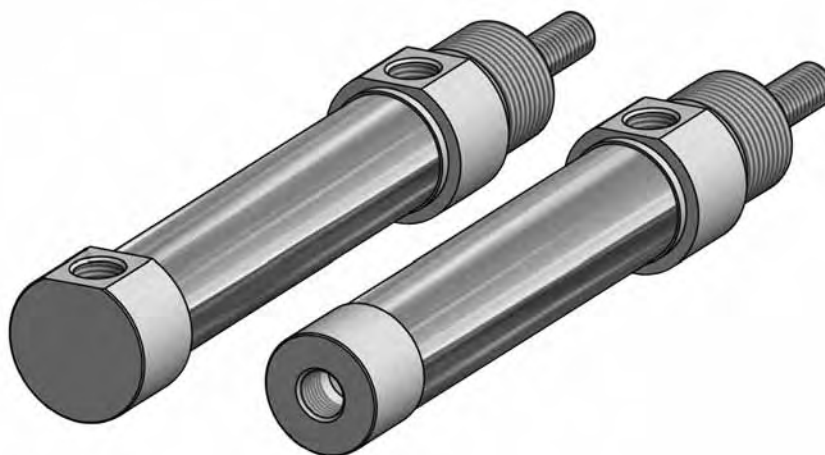
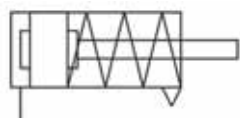
Ø	A <sup>1</sup>	AM	B	C	CD	CH	EE	EW	KK	L	M	N	P	SW	WF	XC
8	4	12	M 12 x 1,25	16	4	-	M5	8	M4	6	86	12	46	19	16	64
10	4	12	M 12 x 1,25	16	4	-	M5	8	M4	6	86	12	46	19	16	64
12	6	16	M 16 x 1,5	19	6	5	M5	12	M6	9	104	18	48	22	22	75
16	6	16	M 16 x 1,5	19	6	5	M5	12	M6	9	109	18	53	22	22	82
20	8	20	M 22 x 1,5	27	8	7	G 1/8	16	M8	12	131	20	67	27	24	95
25	10	22	M 22 x 1,5	30	8	9	G 1/8	16	M10 x 1,25	12	140	22	68	27	28	104

H 9

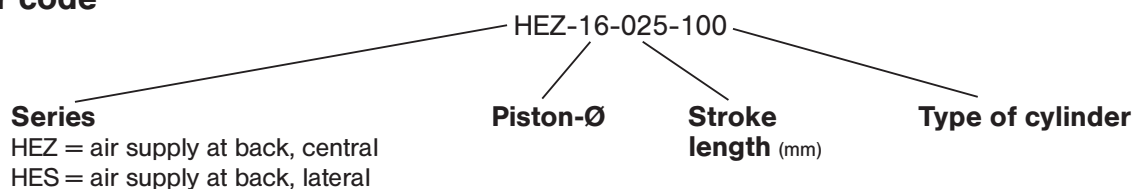
d 13

Technical data for series

# HEZ, HES



## Order code



## Design and function

Single acting pneumatic cylinder with built-in cushioning rings.

Order number Please complete according to order code.	HEZ-16-... HES-16-...	HEZ-20-... HES-20-...	HEZ-25-... HES-25-...
<b>Piston-Ø (mm)</b>	16	20	25
<b>Connection</b>	M 5	G 1/8	G 1/8
<b>Piston rod thread</b>	M 6	M 8	M 10 x 1.25
<b>Operating pressure</b>	2 ... 10 bar (29 ... 145 psi)		
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)		
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air		
<b>Standard stroke lengths (mm)<sup>1)</sup></b>	10, 25, 50, max. 50		
<b>Materials</b>	Cylinder tube: stainless steel End caps: Al (anodized) Piston rod: stainless steel Seals: PU		

<sup>1)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

Technical data

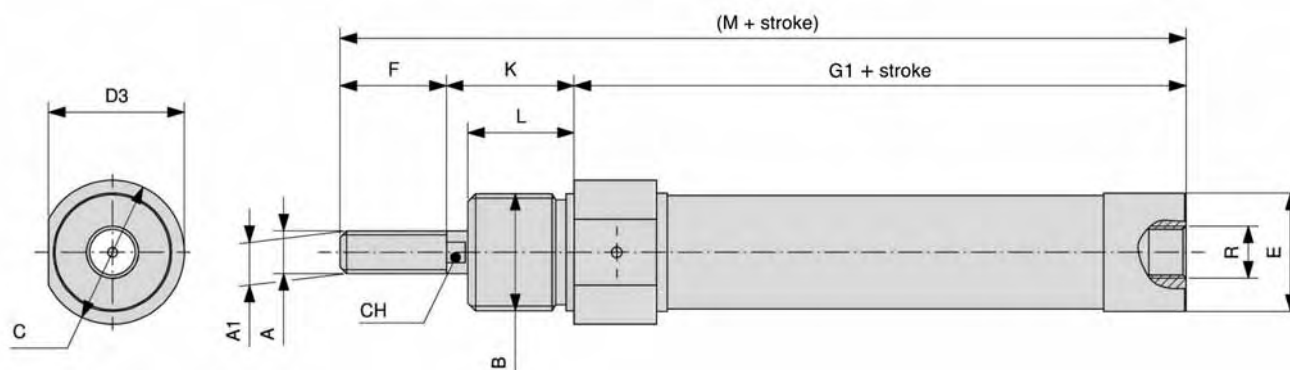
Force chart for series HEZ, HES

Diameter		stroke 10		stroke 25		stroke 50	
		min.	max.	min.	max.	min.	max.
Ø 16	Extension	87.5	90.0	87.5	93.5	87.5	99.7
	Retraction	15.0	17.5	11.5	17.5	5.3	17.5
Ø 20	Extension	142.8	145.0	142.8	148.3	142.8	153.8
	Retraction	21.3	23.5	18.0	23.5	12.5	23.5
Ø 25	Extension	243.7	245.0	243.7	247.0	243.7	250.3
	Retraction	18.2	19.5	16.2	19.5	12.9	19.5

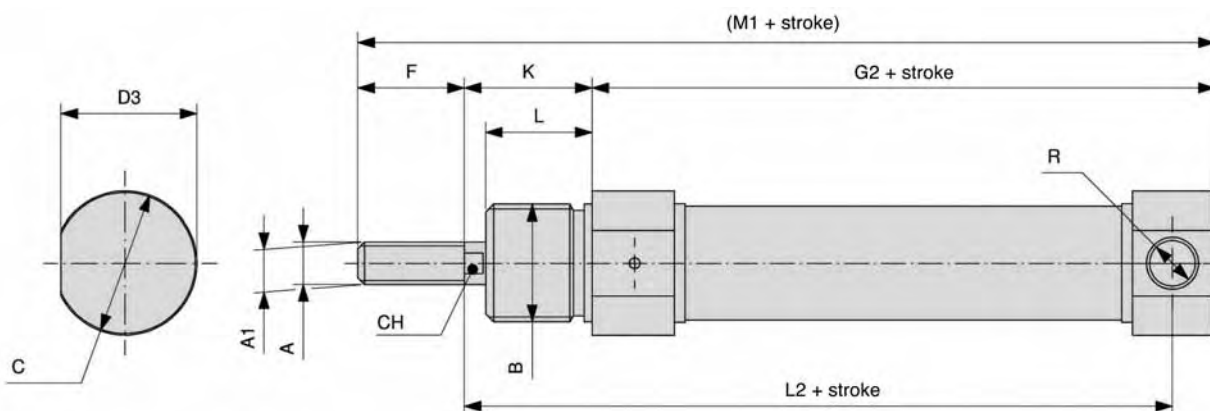
Pressure 6 bar. The internal friction is considered.

Dimensions for series

# HEZ



# HES



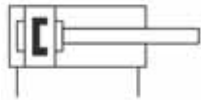
Ø	A	A1	B	C	D3	E	F	G1	G2	K	L	L2	R	M	M1	CH
16	M6	6	M 16 x 1.5	19	18	17.2	16	52	52.5	22	18	70	M5	90	90.5	5
20	M8	8	M 22 x 1.5	27	25.5	22.2	20	65	67	24	20	83	G1/8	109	111	7
25	M10 x 1.25	10	M 22 x 1.5	30	28.5	27	22	66	68	28	22	88	G1/8	116	118	9

**Pneumatic cylinders, piston-Ø 8 – 63 mm**  
**Double acting with magnetic piston**  
**DIN ISO 6432 (up to dia. 25 mm)**

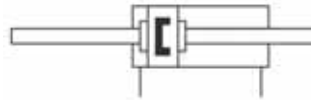


**Technical data for series**

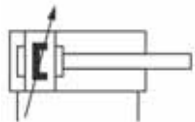
# HM



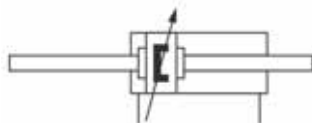
HM



HMDE



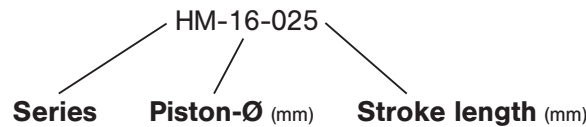
HMP



HMPDE



**Order code**



- HM – standard cylinder
  - HMDE – with double-ended piston rod
  - HMP – with adjustable cushions
  - HMPDE – with double-ended piston rod and adjustable cushions
- } starting at Ø 16 mm

**Design and function**

Double acting pneumatic cylinder with permanent magnet and built-in cushioning rings or adjustable cushions. Standard stroke lengths in table below, additional lengths on request.

For piston-Ø 8, 10 and 12 mm only electronic switches (ZS-6300, ZS-6301, ZS-7000 or ZS-7001) can be used.

Order number Please complete according to order code.	HM-08...	HM-10...	HM-12...	HM-16...	HM-20...	HM-25...	HM-32...	HM-40...	HM-50...	HM-63...
<b>Piston-Ø mm<sup>1)</sup></b>	8	10	12	16	20	25	32	40	50	63
<b>Force at 6 bar in N<sup>2)</sup></b>										
<b>Extension</b>	25	40	60	105	170	265	430	680	1060	1680
<b>Retraction</b>	20	35	45	90	140	220	370	570	890	1510
<b>Connection</b>	M5 (10/32 UNF)				G 1/8	G 1/8	G 1/8	G 1/4	G 1/4	G 3/8
<b>Piston rod thread</b>	M4	M4	M6	M6	M8	M10 x 1.25	M10	M12	M16	M16
<b>Cushioning length mm<sup>3)</sup></b>	–	–	–	15.5	17	19.5	22.5	24.5	29.5	29.5
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)									
<b>Temperature range</b>	– 30 °C ... + 80 °C (– 22 °F ... + 176 °F)									
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air									
<b>Standard stroke lengths mm<sup>4)</sup></b>	Ø 8 ... 10 10, 25, 40, 50, 80, 100, max. 100 Ø 12 ... 16 10, 25, 40, 50, 80, 100, 125, 160, 200, max. 200 Ø 20 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, max. 320 Ø 25 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, max. 500 Ø 32 ... 63 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, max. 900									
<b>Materials</b>	Cylinder tube: stainless steel End caps: Al (anodized) Piston rod: stainless steel Seals: PU									

<sup>1)</sup> = The series HMP, HMDE and HMPDE are not available for dia 8 to 12.

<sup>2)</sup> = The internal friction is considered.

<sup>3)</sup> = for series HMP and HMPDE only.

<sup>4)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

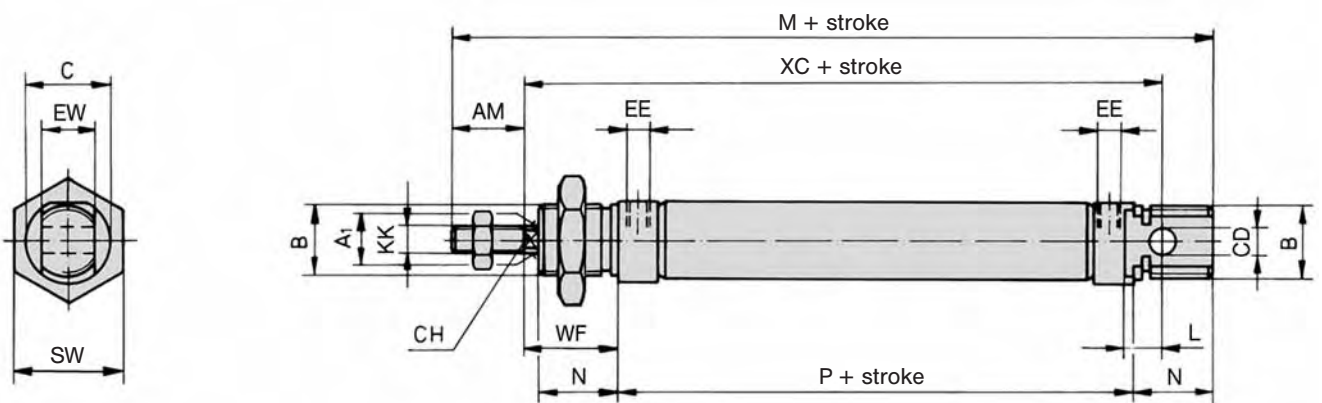
**Pneumatic cylinders, piston-Ø 8 – 25 mm**  
**Double acting with magnetic piston**  
**DIN ISO 6432**



**Dimensions for series**

# HM

Cyl.-Ø	A'	AM	B	C	CD	CH	EE	EW	KK	L	M	N	P	SW	WF	XC	
8	4	12	M 12 x 1.25	16	4	-	M5 (10/32 UNF)	8	M4	6	86	12	46	19	16	64	
10	4	12	M 12 x 1.25	16	4	-	M5 (10/32 UNF)	8	M4	6	86	12	46	19	16	64	
12	6	16	M 16 x 1.5	19	6	5	M5 (10/32 UNF)	12	M6	9	104	18	48	22	22	75	
16	6	16	M 16 x 1.5	19	6	5	M5 (10/32 UNF)	12	M6	9	109	18	53	22	22	82	
20	8	20	M 22 x 1.5	27	8	7	G 1/8	16	M8	12	131	20	67	27	24	95	
25	10	22	M 22 x 1.5	30	8	9	G 1/8	16	M10 x 1.25	12	140	22	68	27	28	104	
								H 9									d 13



**Dimensions for series**

# HMP

Cyl.-Ø	A'	AM	B	C	CD	CH	EE	EW	KK	L	M	N	P	SW	WF	XC	
16	6	16	M 16 x 1.5	21	6	5	M5 (10/32 UNF)	12	M6	9	109	17	53	22	22	82	
20	8	20	M 22 x 1.5	27	8	7	G 1/8	16	M8	12	131	20	67	27	24	95	
25	10	22	M 22 x 1.5	30	8	9	G 1/8	16	M10 x 1.25	12	140	22	68	27	28	104	
								H 9									d 13

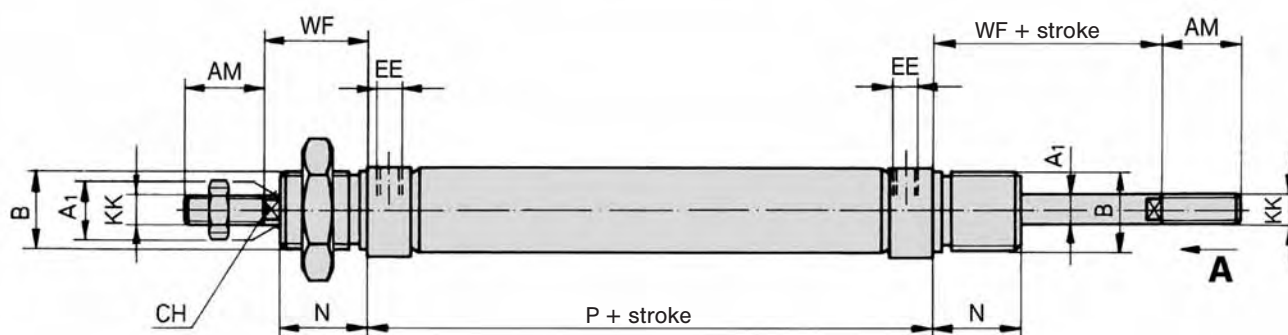
Pneumatic cylinders, piston-Ø 16 – 25 mm  
 Double acting with double-ended piston rod,  
 with magnetic piston DIN ISO 6432



Dimensions for series

# HMDE

Cyl.-Ø	A <sup>1</sup>	AM	B	C	CH	EE	KK	N	P	SW	WF
16	6	16	M 16 x 1.5	19	5	M5 (10/32 UNF)	M6	18	53	22	22
20	8	20	M 22 x 1.5	27	7	G 1/8	M8	20	67	27	24
25	10	22	M 22 x 1.5	30	9	G 1/8	M10 x 1.25	22	68	27	28



Dimensions for series

# HMPDE

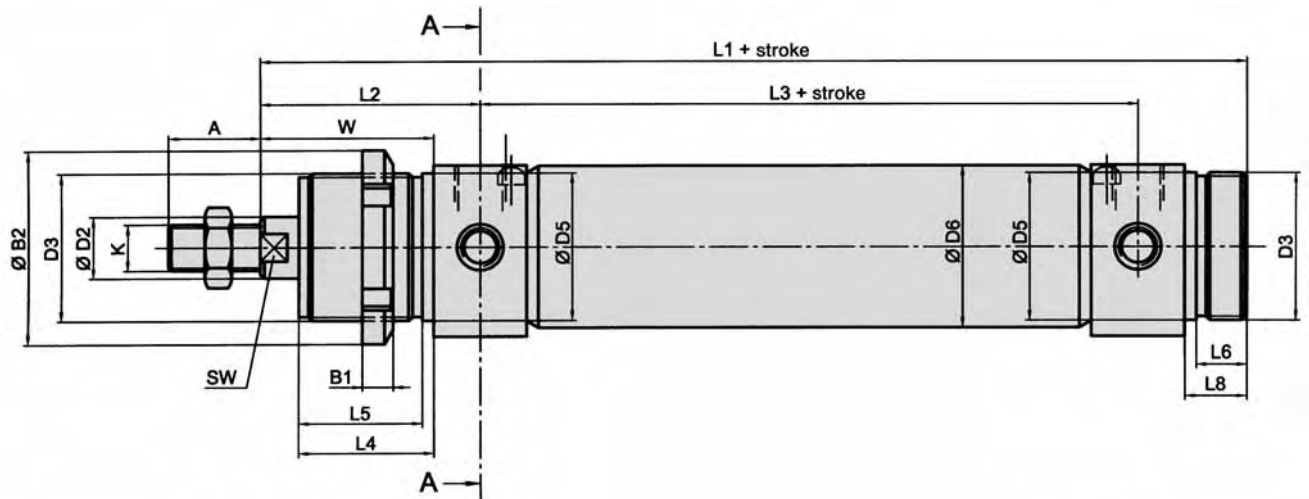
Cyl.-Ø	A <sup>1</sup>	AM	B	C	CH	EE	KK	N	P	SW	WF
16	6	16	M 16 x 1.5	21	5	M5 (10/32 UNF)	M6	17	53	22	22
20	8	20	M 22 x 1.5	27	7	G 1/8	M8	20	67	27	24
25	10	22	M 22 x 1.5	30	9	G 1/8	M10 x 1.25	22	68	27	28

Pneumatic cylinders, piston-Ø 32 – 63 mm  
Double acting with magnetic piston

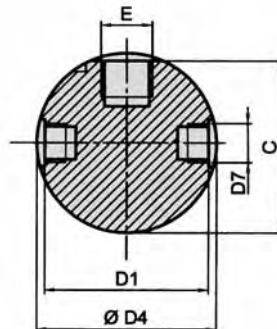


Dimensions for series

# HM, HMP



section A-A



Cyl.-Ø	A	B <sub>1</sub>	B <sub>2</sub>	C	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	D <sub>6</sub>	D <sub>7</sub>
32	20	7	45	36.5	35	12	M 30 x 1.5	38	30	33.6	M 8 x 1
40	24	8	50	44	42	16	M 38 x 1.5	46	38	41.6	M 10 x 1
50	32	9	58	55	53	20	M 45 x 1.5	57	45	52.4	M 12 x 1.5
63	32	9	58	67.5	66	20	M 45 x 1.5	70	45	65.4	M 14 x 1.5
						f <sub>8</sub>			h <sub>9</sub>		

Cyl.-Ø	E	K	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>8</sub>	SW	W
32	G 1/8	M 10	148	47	78	30	27	12	14	10	38
40	G 1/4	M 12	174	57	89	35	32	13	16	13	45
50	G 1/4	M 16	188	62	96	38	35	15	18	17	50
63	G 3/8	M 16	192	63	98	38	35	15	18	17	50
			± 1.5	± 1.5	± 1.5						± 2.5

Accessories for series

# HE, HM

## Piston rod accessories



Rod eye  
**RO-**  
Page 8.213



Flexible coupling  
**FK-**  
Page 8.213



Rod clevis with pin  
**RD-**  
Page 8.212



Piston rod nut  
**RL-**  
Page 8.212

## Mounting accessories



Foot mount  
Ø 8 – 25  
**RA-**  
Page 8.086



Foot mount  
Ø 32 – 63  
**RA-**  
Page 8.086



Clevis mount  
Ø 8 – 63  
**RC-**  
Page 8.087



Threaded bolts  
Ø 32 – 63  
**RG-**  
Page 8.087



Clevis mount  
Ø 10 – 25  
**RH-**  
Page 8.086



Flange mount  
Ø 8 – 25  
**RB-**  
Page 8.086



Mounting nut  
Ø 8 – 25  
**RM-**

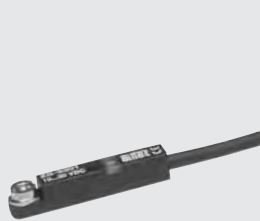


Mounting nut  
Ø 32 – 63  
**RM-**

Accessories for series

# HM

## Proximity sensors



Sensors  
**ZS-**  
Page 8.220

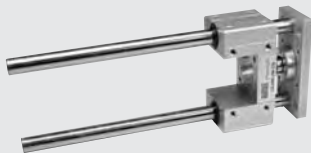


Mounting bracket  
**NT-**  
Page 8.221



Connecting cable  
**KA-**  
Page 8.221

## Linear guides



Linear guides  
**LE-**  
Page 8.200

Piston-Ø	Foot mount	Clevis mount	Threaded bolts	Flange mount	Sensors	Mounting bracket	Rod clevis	Flexible coupling	Rod eye	Mounting nut	Piston rod nut
8	RA-10	RC-10	-	RB-10	ZS-5200	NT-0810	RD-10	-	-	RM-10	RL-10
10	RA-10	RC-10	-	RB-10			ZS-5201	RD-10	-	-	RM-10
12	RA-16	RC-16	-	RB-16	ZS-5300	NT-1216	RD-16	FK-16	RO-16	RM-16	RL-16
16	RA-16	RC-16	-	RB-16	ZS-5300-05		RD-16	FK-16	RO-16	RM-16	RL-16
20	RA-25	RC-30	-	RB-25	ZS-5301	NT-2025	RD-20	FK-20	RO-20	RM-25	RL-20
25	RA-25	RC-30	-	RB-25			RD-25	FK-32	RO-25	RM-25	RL-25
32	RA-32	RC-32	RG-32	-	ZS-6300	NT-0032	RD-32	FK-33	RO-32	RM-32	RL-32
40	RA-40	RC-40	RG-40	-	ZS-6301	NT-0040	RD-40	FK-41	RO-40	RM-40	RL-40
50	RA-50	RC-50	RG-50	-	ZS-7300	NT-0050	RD-63	-	RO-50	RM-63	RL-63
63	RA-63	RC-63	RG-63	-	ZS-7301	NT-0063	RD-63	-	RO-50	RM-63	RL-63

For piston-Ø 8, 10 and 12 mm only electronic switches (ZS-6300, ZS-6301, ZS-7000 or ZS-7001) can be used.

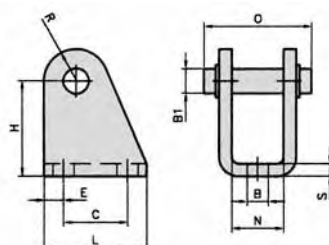


Mounting accessories for series

# HE, HM

## Clevis mount

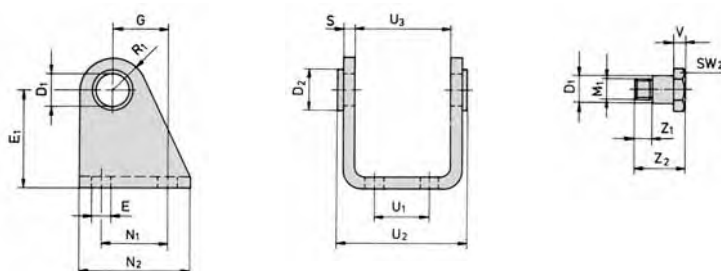
for Ø 8 – 25



Material: steel (zinc-plated)

Order number	for Cyl.-Ø	B	B <sub>1</sub>	C	H	L	N	O	R	S	E
RC-10	8 + 10	4.5	4	12.5	24	20	8.1	17	5	2.5	5
RC-16	12 + 16	5.5	6	15	27	25	12.1	23	7	3	5
RC-30	20 + 25	6.6	8	20	30	32	16.1	30	10	4	6

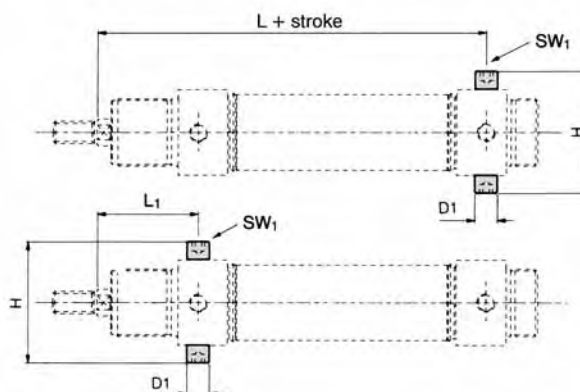
for Ø 32 – 63



Material: steel (zinc-plated)

Order number	D <sub>1</sub>	D <sub>2</sub>	E	E <sub>1</sub>	G	M <sub>1</sub>	N <sub>1</sub>	N <sub>2</sub>	R <sub>1</sub>	S	U <sub>1</sub>	U <sub>2</sub>	U <sub>3</sub>	V	Z <sub>1</sub>	Z <sub>2</sub>	SW <sub>2</sub>
RC-32	10	15	7	35	20	M8 x 1	24	40	12	4	20	50.1	38.1	4	6	18	13
RC-40	12	20	9	40	27	M10 x 1	30	50	13	5	28	60.1	46.1	5	7	21.6	17
RC-50	14	23	9	45	30	M12 x 1.5	34	54	14	6	36	74.1	57.1	6	9	26.4	19
RC-63	16	23	9	50	34	M14 x 1.5	35	65	16	6	42	88.1	70.1	6	16	35	19

## Threaded bolts

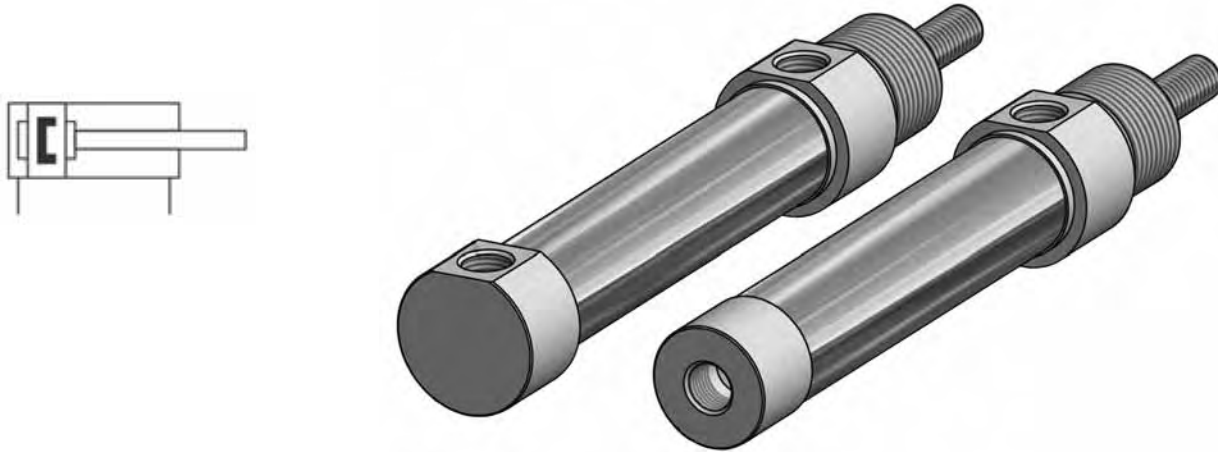


Material: steel (zinc-plated)

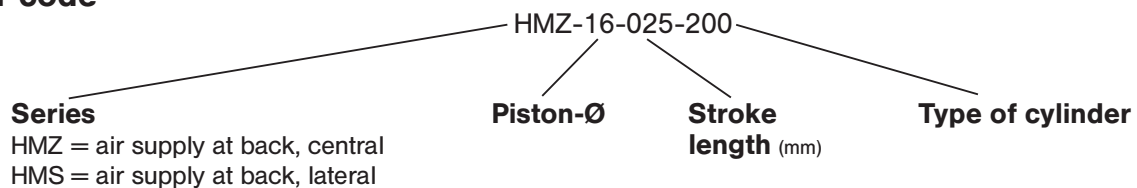
Order number	D <sub>1</sub>	H	L	L <sub>1</sub>	SW <sub>1</sub>
RG-32	10	51	125	47	5
RG-40	12	61	146	57	6
RG-50	14	75	158	62	6
RG-63	16	90	162	64	8

Technical data for series

# HMZ, HMS



## Order code



## Design and function

Single acting pneumatic cylinder with built-in cushioning rings.  
 Standard stroke lengths in table below, additional lengths on request.

Order number Please complete according to order code.	HMZ-16-... HMS-16-...	HMZ-20-... HMS-20-...	HMZ-25-... HMS-25-...
<b>Piston-Ø (mm)</b>	16	20	25
<b>Connection</b>	M 5	G 1/8	G 1/8
<b>Piston rod thread</b>	M 6	M 8	M 10 x 1.25
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)		
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)		
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air		
<b>Standard stroke lengths (mm)<sup>1)</sup></b>	Ø 16 = 10, 25, 40, 50, 80, 100, 125, 160, 200 Ø 20 = 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300, 320 Ø 25 = 10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 300, 320, 400, 500		
<b>Materials</b>	Cylinder tube: stainless steel End caps: Al (anodized) Piston rod: stainless steel Seals: PU		

<sup>1)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

**Pneumatic cylinders, piston-Ø 16 – 25 mm**  
**Double acting**  
**Basis according to DIN ISO 6432**



**Technical data**

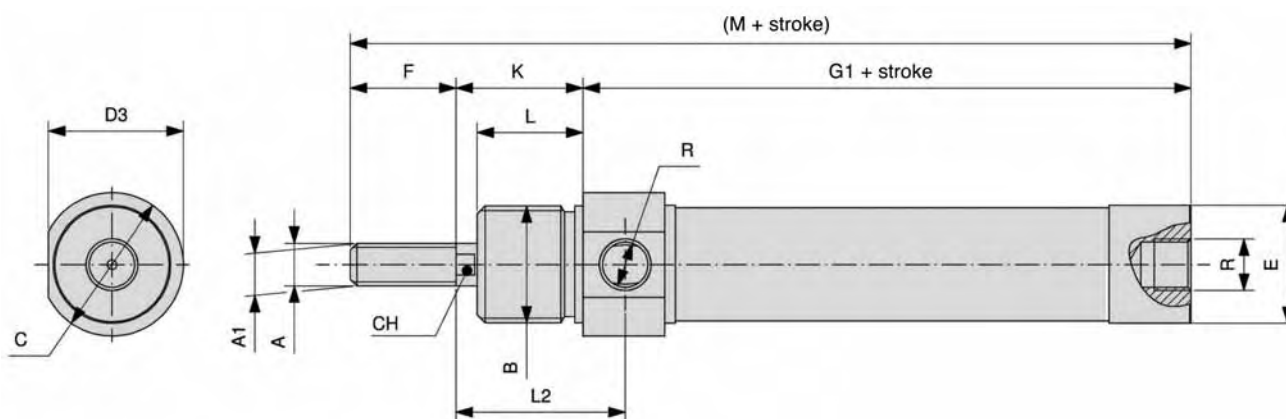
**Force chart for series HMZ, HMS**

Diameter	Extension	Retraction
Ø 16	105	90
Ø 20	170	140
Ø 25	265	220

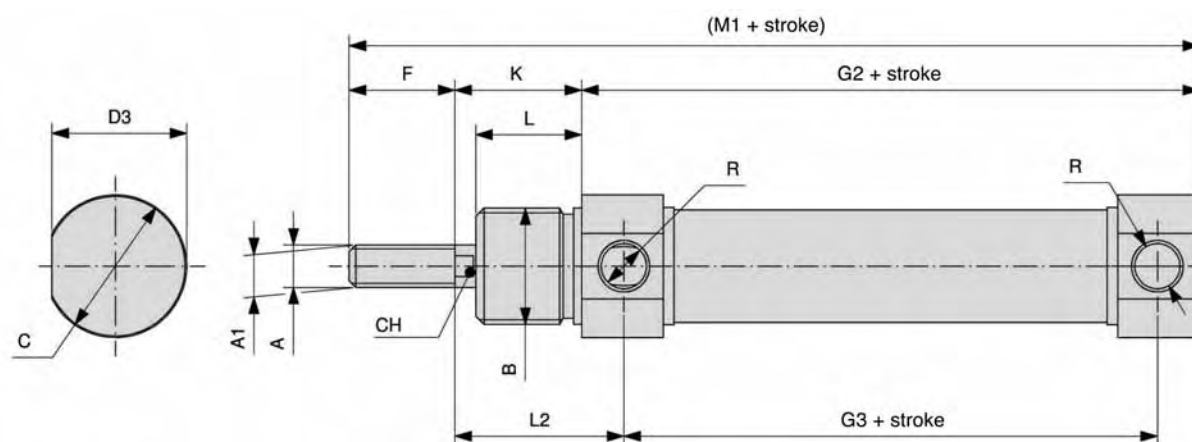
Pressure 6 bar. The internal friction is considered.

**Dimensions for series**

**HMZ**



**HMS**



Ø	A	A1	B	C	D3	E	F	G1	G2	G3	K	L	L2	R	M	M1	CH
16	M6	6	M 16 x 1.5	19	18	17.2	16	52	52.5	43.5	22	18	26.5	M5	90	90.5	5
20	M8	8	M 22 x 1.5	27	25.5	22.2	20	65	67	51	24	20	32	G1/8	109	111	7
25	M10 x 1.25	10	M 22 x 1.5	30	28.5	27	22	66	68	52	28	22	36	G1/8	116	118	9

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Single acting with permanent magnet**

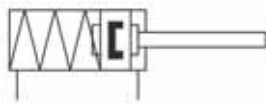


**Technical data for series**

**NXE**



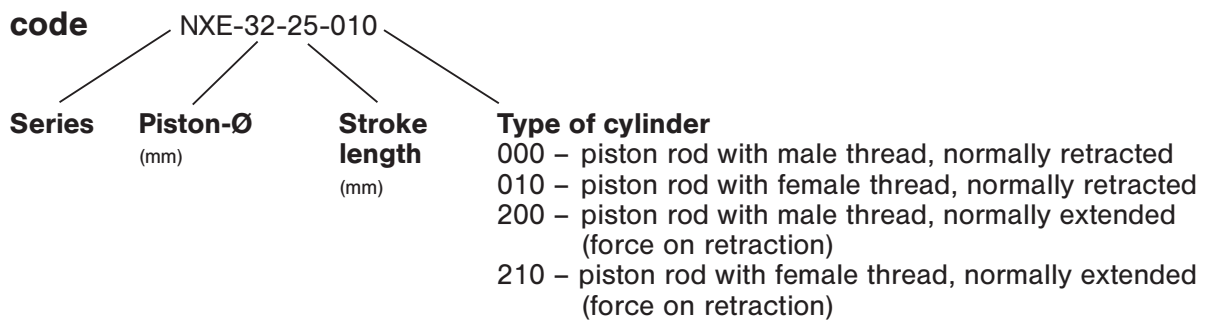
000, 010



200, 210



**Order code**



**Design and function**

Single acting cylinder with permanent magnet for proximity sensors and built-in cushioning rings. Cylinder end caps are connected to the Al-profile by mounting screws.

Order number Please complete according to order code.	NXE-012-...	NXE-016-...	NXE-020-...	NXE-025-...	NXE-032-...	NXE-040-...	NXE-050-...	NXE-063-...	NXE-080-...	NXE-100-...
<b>Piston-Ø mm</b>	16	20	25	32	40	50	63	80	100	
<b>Connection</b>	M 5 (10/32 UNF)				G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/4
<b>Female thread</b>	M 3	M 4	M 5 (10/32 UNF)		M 6	M 6	M 8	M 8	M 10	M 12
<b>Male thread</b>	M 6	M 8	M 10 x 125	M 10 x 125	M 10 x 125	M 10 x 125	M 12 x 125	M 12 x 125	M 16 x 15	M 20 x 15
<b>Operating pressure</b>	2 ... 10 bar (29 ... 145 psi)						1 ... 10 bar (14.5 ... 145 psi)			
<b>Temperature range</b>	– 30 °C ... + 80 °C (– 22 °F ... + 176 °F)									
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air									
<b>Standard stroke lengths (mm)</b>	5, 10, 15, 20, 25				The types 000 and 010 are also available in the stroke lengths of 30, 40 and 50 mm. This will increase dimension U.					
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al (anodized) Piston rod: stainless steel Seals: PU									

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Single acting with permanent magnet**



Force at 6 bar in N for series

# NXE

Retraction type 000 and 010 as well as extension type 200 and 210 (spring force)

Piston- Ø	stroke 5		stroke 10		stroke 15		stroke 20		stroke 25		stroke 30		stroke 40		stroke 50	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
12	26	28	23	28	21	28	19	28	17	28	13	28	19	28	17	28
16	26	28	23	28	21	28	19	28	17	28	13	28	19	28	17	28
20	34	37	31	37	28	37	25	37	22	37	19	37	25	37	22	37
25	38	41	35	41	32	41	29	41	26	41	23	41	29	41	26	41
32	48	52	45	52	41	52	38	52	34	52	30	52	37	52	34	52
40	63	68	58	68	53	68	48	68	43	68	38	68	48	68	43	68
50	63	68	58	68	52	68	47	68	42	68	36	68	47	68	42	68
63	89	95	83	95	77	95	71	95	65	95	59	95	71	95	65	95
80	140	147	134	147	128	147	121	147	115	147	109	147	121	147	115	147
100	200	210	190	210	180	210	170	210	160	210	150	210	170	210	160	210

Extension force for type 000 and 010

Piston- Ø	stroke 5		stroke 10		stroke 15		stroke 20		stroke 25		stroke 30		stroke 40		stroke 50	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
12	81	83	81	86	81	88	81	90	81	92	81	96	81	90	81	92
16	81	83	81	86	81	88	81	90	81	92	81	96	81	90	81	92
20	133	136	133	139	133	142	133	145	133	148	133	151	133	145	133	148
25	224	227	224	230	224	233	224	236	224	239	224	242	224	236	224	239
32	382	386	382	389	382	393	382	397	382	400	382	404	382	397	382	400
40	611	616	611	621	611	626	611	631	611	636	611	641	611	631	611	636
50	992	997	992	1003	992	1008	992	1013	992	1018	992	1024	992	1013	992	1018
63	1588	1594	1588	1600	1588	1606	1588	1612	1588	1618	1588	1624	1588	1612	1588	1618
80	2568	2574	2568	2580	2568	2586	2568	2593	2568	2599	2568	2605	2568	2593	2568	2599
100	4031	4041	4031	4051	4031	4061	4031	4071	4031	4081	4031	4091	4031	4071	4031	4081

Pressure 6 bar. The internal friction is considered.

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Single acting with permanent magnet**



Force at 6 bar in N for series

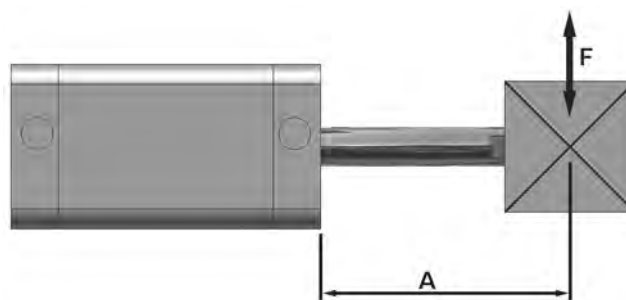
# NXE

## Retraction type 200 and 210

Piston- Ø	stroke 5		stroke 10		stroke 15		stroke 20		stroke 25	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
12	53	55	53	58	53	60	53	62	53	64
16	53	55	53	58	53	60	53	62	53	64
20	90	93	90	96	90	99	90	102	90	105
25	182	185	182	188	182	191	182	194	182	197
32	321	325	321	328	321	332	321	336	321	339
40	549	554	549	559	549	564	549	569	549	574
50	884	889	884	895	884	900	884	905	884	910
63	1480	1486	1480	1492	1480	1498	1480	1504	1480	1510
80	2399	2405	2399	2411	2399	2417	2399	2424	2399	2430
100	3766	3776	3766	3786	3766	3796	3766	3806	3766	3816

Pressure 6 bar. The internal friction is considered.

## Permissible side load (N)



Piston-Ø	Distance A (mm)									
	≤ 25	30	40	50	60	70	80	90	100	125
12 + 16	8	7	6	6	5	5	4	3	2	-
20 + 25	12	11	9	7	6	5	4	3	3	-
32 + 40	23	20	16	12	10	8	7	7	6	4
50 + 63	38	34	28	22	18	15	13	12	11	3
80	49	43	35	28	24	20	18	17	16	12
100	93	82	67	55	46	40	37	34	31	23

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Single acting, female thread**

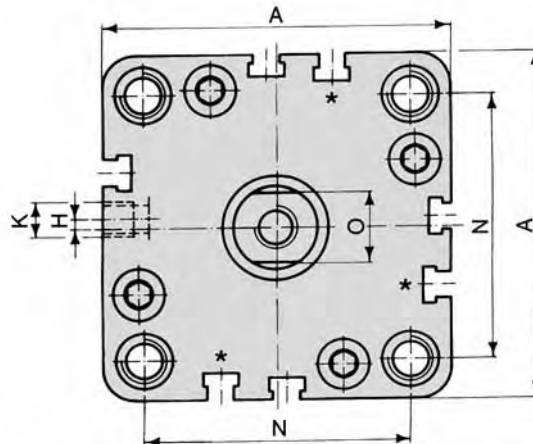
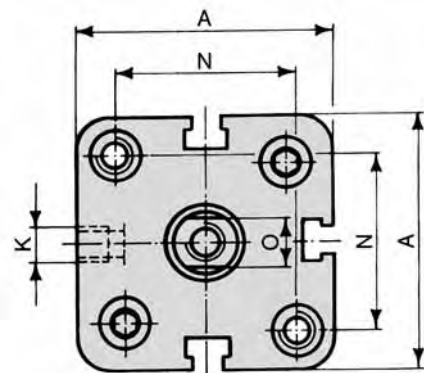
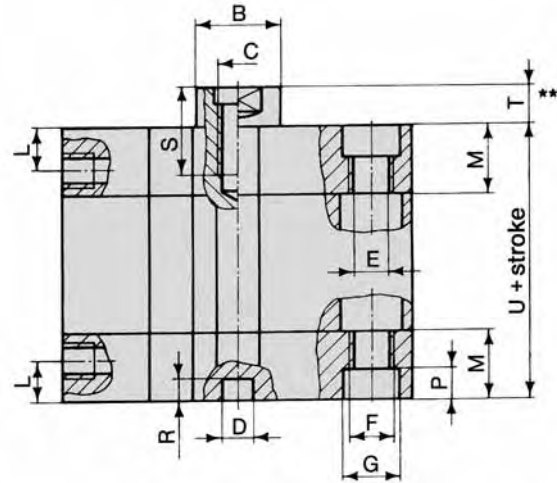
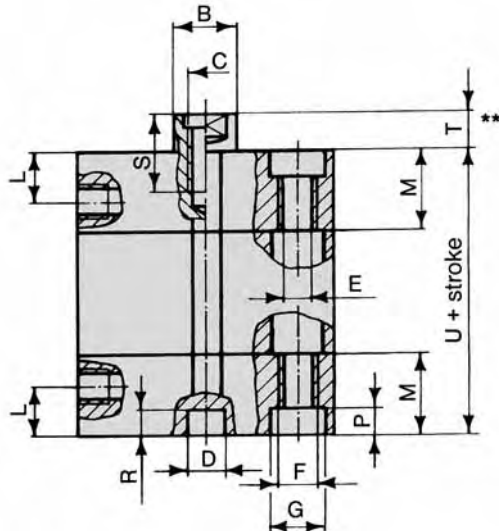


**Dimensions for series**

**NXE** (Type for order code: -010 and -210)

Ø 12 – 25

Ø 32 – 100



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

\*\* Dimension T plus stroke length for type 210 (extended position).

U\*\*\* at stroke 30, 40 and 50.

Piston-Ø	A	Ø B	C	Ø D	Ø E	F	Ø G	H	K	L	M	N	O	P	R	S	T**	U	U***
12	29	8	M3	6	3.3	M4	6	0	M5	8	12.25	18	5	3.5	4	6	4.5	38	48
16	29	8	M4	6	3.3	M4	6	0	M5	8	12.25	18	6	3.5	4	8	4.5	38	48
20	36	10	M5	6	4.2	M5	7.5	0	M5	8	12.25	22	8	4.5	4	10	4.5	38	48
25	40	10	M5	6	4.2	M5	7.5	0	M5	8	12.75	26	8	4.5	4	10	5.5	39.5	59.5
32	50	12	M6	6	5.2	M6	9	4	G 1/8	8	14.5	32	10	5.5	4	12	6	44.5	64.5
40	58	12	M6	6	5.2	M6	9	3	G 1/8	8	14.75	42	10	5.5	4	12	6.5	45.5	65.5
50	67	16	M8	6	6.7	M8	10.5	0	G 1/8	8	14.75	50	13	6.5	4	12	7.5	45.5	65.5
63	80	16	M8	8	8.5	M10	13.5	0	G 1/8	8	14.25	62	13	8.5	4	14	7.5	50	70
80	100	20	M10	8	8.5	M10	13.5	0	G 1/8	8.5	16	82	17	8.5	4	15	8	56	86
100	124	25	M12	8	8.5	M10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	4	20	10	66.5	96.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.074	0.074	0.121	0.139	0.261	0.362	0.481	0.755	1.402	2.560
lbs.	(0.163)	(0.163)	(0.267)	(0.306)	(0.575)	(0.798)	(1.060)	(1.664)	(3.091)	(5.644)
add-on per 100 mm stroke	0.170	0.170	0.270	0.310	0.410	0.500	0.630	0.780	1.180	1.600
	(0.375)	(0.375)	(0.595)	(0.683)	(0.904)	(1.102)	(1.389)	(1.719)	(2.601)	(3.527)

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Single acting, male thread**

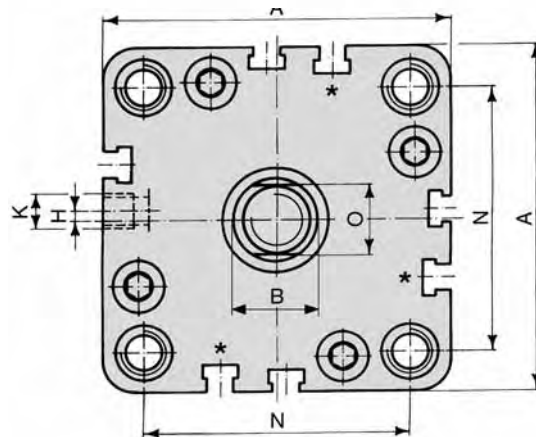
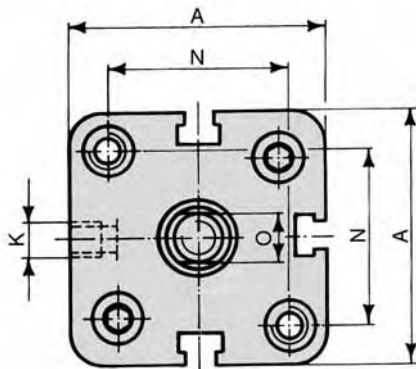
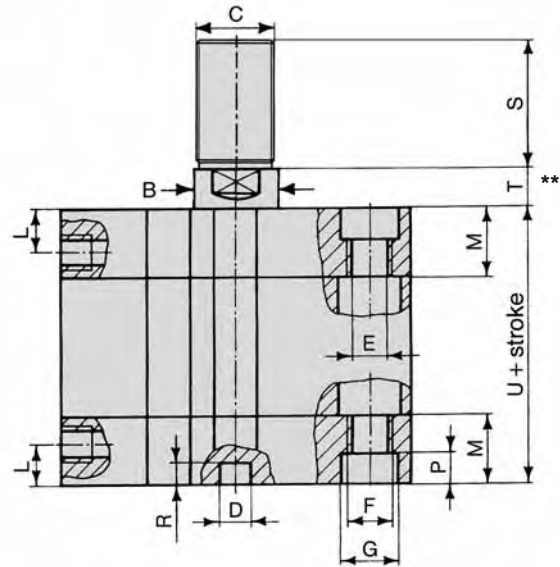
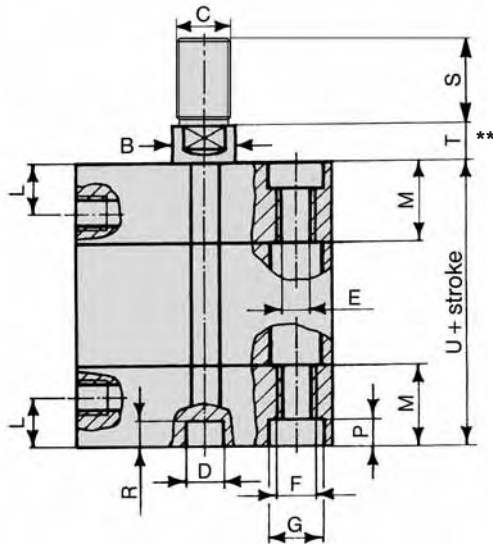


**Dimensions for series**

**NXE** (Type for order code:  
-000 and -200)

Ø 32 – 100

Ø 12 – 25



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

\*\* Dimension T plus stroke length for type 200 (extended position).

U\*\*\* at stroke 30, 40 and 50.

Piston-Ø	A	Ø B	C	Ø D	Ø E	F	Ø G	H	K	L	M	N	O	P	R	S	T**	U	U***
12	29	8	M 6	6	3.3	M 4	6	0	M 5	8	12.25	18	5	3.5	4	16	4.5	38	48
16	29	8	M 8	6	3.3	M 4	6	0	M 5	8	12.25	18	6	3.5	4	20	4.5	38	48
20	36	10	M 10 x 1.25	6	4.2	M 5	7.5	0	M 5	8	12.25	22	8	4.5	4	22	4.5	38	48
25	40	10	M 10 x 1.25	6	4.2	M 5	7.5	0	M 5	8	12.75	26	8	4.5	4	22	5.5	39.5	59.5
32	50	12	M 10 x 1.25	6	5.2	M 6	9	4	G 1/8	8	14.5	32	10	5.5	4	22	6	44.5	64.5
40	58	12	M 10 x 1.25	6	5.2	M 6	9	3	G 1/8	8	14.75	42	10	5.5	4	22	6.5	45.5	65.5
50	67	16	M 12 x 1.25	6	6.7	M 8	10.5	0	G 1/8	8	14.75	50	13	6.5	4	24	7.5	45.5	65.5
63	80	16	M 12 x 1.25	8	8.5	M 10	13.5	0	G 1/8	8	14.25	62	13	8.5	4	24	7.5	50	70
80	100	20	M 16 x 1.5	8	8.5	M 10	13.5	0	G 1/8	8.5	16	82	17	8.5	4	32	8	56	86
100	124	25	M 20 x 1.5	8	8.5	M 10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	4	40	10	66.5	96.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.078	0.082	0.135	0.153	0.275	0.376	0.502	0.776	1.453	2.659
lbs.	(0.172)	(0.181)	(0.298)	(0.337)	(0.606)	(0.829)	(1.107)	(1.711)	(3.203)	(5.862)
add-on per 100 mm stroke	0.170	0.170	0.270	0.310	0.410	0.500	0.630	0.780	1.180	1.600
	(0.375)	(0.375)	(0.595)	(0.683)	(0.904)	(1.102)	(1.389)	(1.719)	(2.601)	(3.527)

Accessories for series  
**NXD, NXE**

**Remark:**  
Accessories for piston rod see page 8.212.

**Mounting accessories**



Foot mount  
**NXB-Ø-01**  
Page 8.129



Flange mount  
**NXB-Ø-02**  
Page 8.129



Swivel mount 90°  
**XLB-Ø-06**  
Page 8.018



Clevis pin  
**XLB-Ø-08**  
Page 8.019



Swivel mount  
**NXB-Ø-04**  
Page 8.130



Clevis mount  
**NXB-Ø-03**  
Page 8.130



Clevis mount  
**RC-Ø**  
Page 8.087

**Proximity sensors**



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221

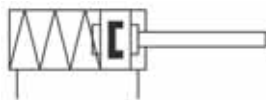
Piston-Ø	Foot mount	Flange mount	Clevis mount	Swivel mount	Clevis mount	Swivel mount 90°	Clevis pin	Sensors	Cable
<b>NX-12</b>	–	NXB-16-02	–	NXB-16-04	RC-16	–	–	ZS-5200 ZS-5201 ZS-5300 ZS-5300-05	KA-30 KA-50
<b>NX-16</b>	–	NXB-16-02	–	NXB-16-04	RC-16	–	–		
<b>NX-20</b>	–	NXB-20-02	–	NXB-20-04	RC-30	–	–		
<b>NX-25</b>	–	NXB-25-02	–	NXB-25-04	RC-30	–	–		
<b>NX-32</b>	NXB-32-01	NXB-32-02	NXB-32-03	–	–	XLB-32-06	XLB-32-08	ZS-5301	KA-51
<b>NX-40</b>	NXB-40-01	NXB-40-02	NXB-40-03	–	–	XLB-40-06	XLB-40-08	ZS-6300	KA-100
<b>NX-50</b>	NXB-50-01	NXB-50-02	NXB-50-03	–	–	XLB-50-06	XLB-50-08	ZS-6301	KA-101
<b>NX-63</b>	NXB-63-01	NXB-63-02	NXB-63-03	–	–	XLB-63-06	XLB-63-08	ZS-7300	
<b>NX-80</b>	NXB-80-01	NXB-80-02	NXB-80-03	–	–	XLB-80-06	XLB-80-08	ZS-7301	
<b>NX-100</b>	NXB-100-01	NXB-100-02	NXB-100-03	–	–	XLB-100-06	XLB-100-08		

# Stopper cylinders, piston-Ø 20 – 50 mm Single acting

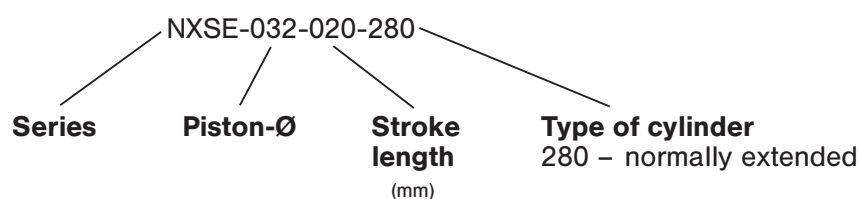


## Technical data for series

# NXSE



## Order code



## Design and function

Single acting compact cylinders with permanent magnet, built-in cushioning rings and return spring. Cylinder end caps are connected to the Al-profile by mounting screws.

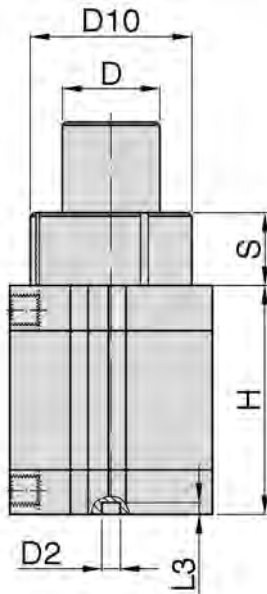
Order number Please complete according to order code.	NXSE-020-015-280	NXSE-032-020-280	NXSE-050-030-280
<b>Piston-Ø (mm)</b>	20	32	50
<b>Connection</b>	M5	G 1/8	G 1/8
<b>Stroke lengths</b>	15	20	30
<b>Mounting position</b>	any		
<b>Operating pressure</b>	2 ... 10 bar (29 ... 145 psi)		
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)		
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air		
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al (anodized) Piston rod: stainless steel Seals: PU/NBR		

# Stopper cylinders, piston-Ø 20 – 50 mm Single acting

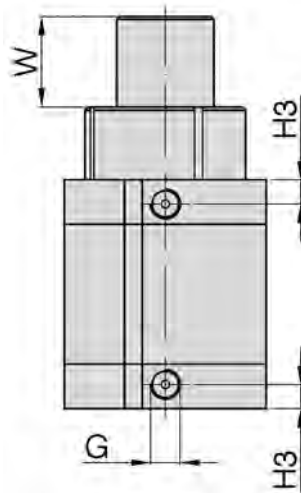


Dimensions for series

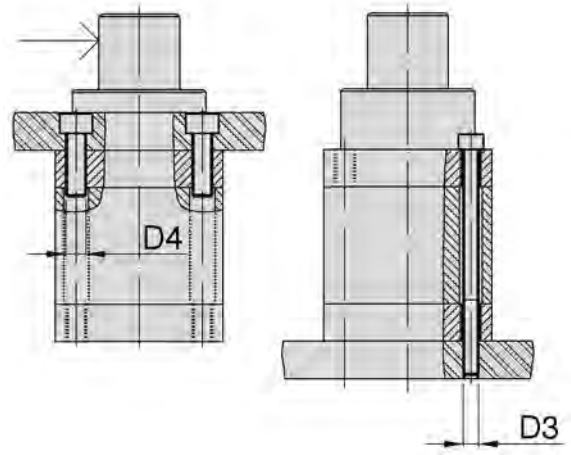
## NXSE



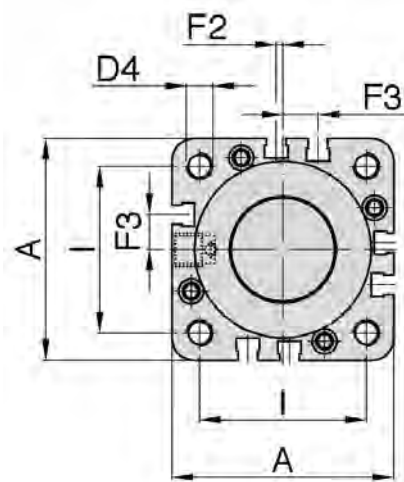
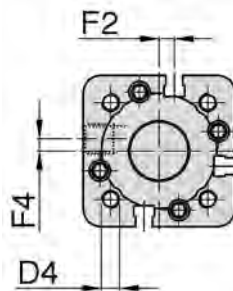
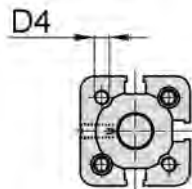
Ø 20



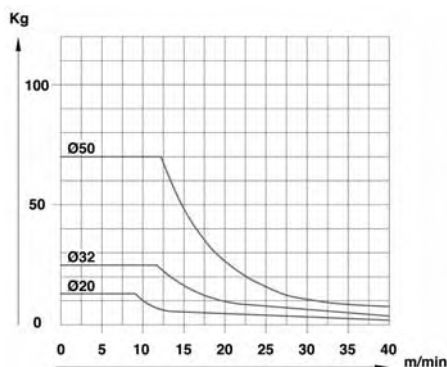
Ø 32



Ø 50



### Load graph



### Spring force (theoretical)

Order number	min. Load (N)	max. Load (N)
NXSE-20-15-280	28.0	36.1
NXSE-32-20-280	36.5	51.2
NXSE-50-30-280	49.2	78.0

\* The cylinders of Ø 20 and Ø 32 mm have three sensor grooves. The cylinders of Ø 50 mm have seven sensor grooves.

Ø	A	Ø D	Ø D2	Ø D3	Ø D4	Ø D10	F2	F3	F4	G	H	H3	I	L3	S	W
20	36	12	6	M4	M5	26	-	-	-	M5	53	8	22	4	11.5	15
32	50	20	6	M5	M6	38	5	-	4	G 1/8	64.5	8	32	4	16	20
50	67	32	6	M6	M8	53	2	10.5	-	G 1/8	75.5	8	50	4	24	30

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting with permanent magnet**

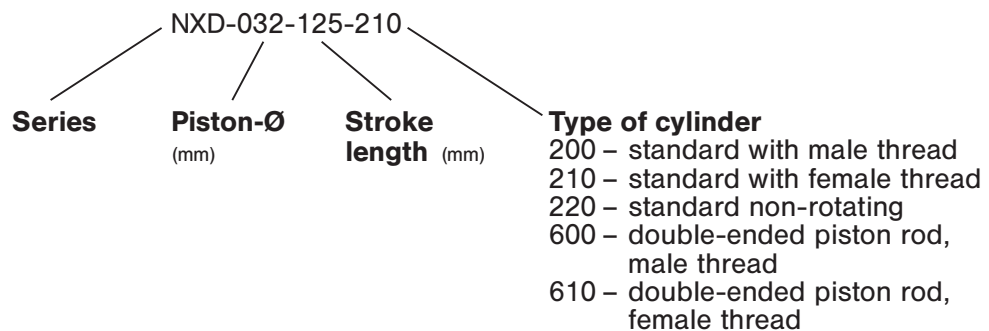


**Technical data for series**

**NXD**



**Order code**



**Design and function**

Double acting pneumatic cylinder with permanent magnet for proximity sensors and built-in cushioning rings. Cylinder end caps are connected with the Al-profile tube by mounting screws.

Order number Please complete according to order code.	NXD-012-...	NXD-016-...	NXD-020-...	NXD-025-...	NXD-032-...	NXD-040-...	NXD-050-...	NXD-063-...	NXD-080-...	NXD-100-...
<b>Piston-Ø mm*</b>	16	20	25	32	40	50	63	80	100	
<b>Connection</b>	M5 (10/32 UNF)				G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/4
<b>Inside thread</b>	M3	M4	M5 (10/32 UNF)		M6	M6	M8	M8	M10	M12
<b>Outer thread</b>	M6	M8	M10x1.25	M10x1.25	M10x1.25	M10x1.25	M12x1.25	M12x1.25	M16x1.5	M20x1.5
<b>Operating pressure</b>	1.5 ... 10 bar (22 ... 145 psi)				1 ... 10 bar (14.5 ... 145 psi)					
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)									
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air									
<b>Standard stroke lengths mm</b>	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, 125, 160, 200, 250 ø 12 – 16 : The maximum stroke length for types 200, 210, 600 and 610 is 200 mm. The maximum stroke length for type 220 is 160 mm.									
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al (anodized) Piston rod: stainless steel Seals: PU									

\* = The non rotating version is not available for piston-Ø 16.

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting with permanent magnet**



**Technical data for series**

**NXD**

**Force table (6 bar)**

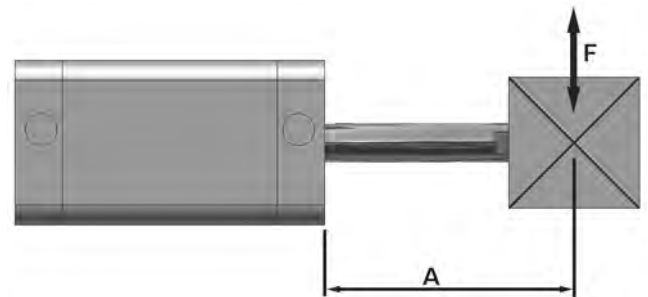
**Retraction**

Piston-Ø	F in N
12	81
16	81
20	127
25	223
32	373
40	617
50	952
63	1575
80	2545
100	3976

**Extension**

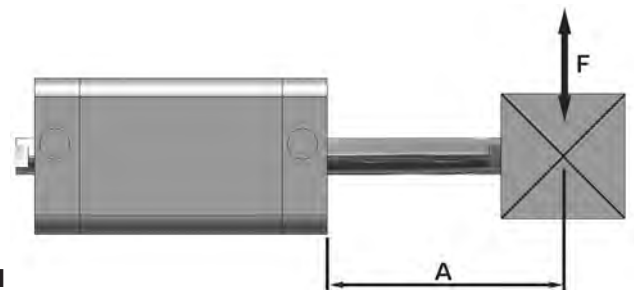
Piston-Ø	F in N
12	109
16	109
20	170
25	265
32	434
40	679
50	1060
63	1683
80	2714
100	4241

The internal friction is considered.



**Permissible side load (N)**

Piston-Ø	Distance A (mm)									
	≤ 25	30	40	50	60	70	80	90	100	125
12 + 16	8	7	6	6	5	5	4	3	2	-
20 + 25	12	11	9	7	6	5	4	3	3	-
32 + 40	23	20	16	12	10	8	7	7	6	4
50 + 63	38	34	28	22	18	15	13	12	11	3
80	49	43	35	28	24	20	18	17	16	12
100	93	82	67	55	46	40	37	34	31	23



**Permissible side load (N) with double-ended piston rod**

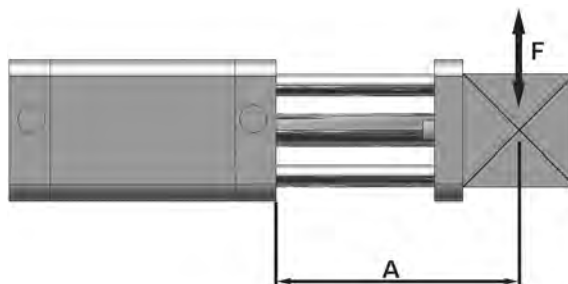
Piston-Ø	Distance (mm)									
	≤ 25	30	40	50	60	70	80	90	100	125
12 + 16	22	20	18	15	13	11	10	10	9	6
20 + 25	32	30	26	21	19	16	14	13	12	9
32 + 40	47	43	38	32	28	26	22	20	18	13
50 + 63	83	78	68	59	51	46	41	38	36	27
80	112	108	93	83	74	67	60	57	54	40
100	194	181	160	144	130	118	108	101	96	72

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting with permanent magnet**



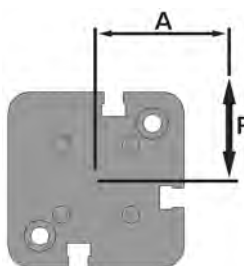
Technical data for series

# NXD



Permissible side load (N) NXD-Ø-stroke-220

Piston-Ø	Distance A (mm)									
	≤ 25	30	40	50	60	70	80	90	100	125
16 + 20	38	33	27	23	20	18	16	14	12	9
25	59	53	43	37	31	27	24	23	22	15
32	76	68	58	49	43	38	35	34	32	24
40	112	101	84	72	62	56	50	47	46	34
50 + 63	145	130	108	92	83	74	66	61	56	42
80 + 100	200	180	155	135	120	110	100	90	80	60



Permissible torque (F x A in Nm) NXD-Ø-stroke-220 at different stroke length

Piston-Ø	Stroke length (mm)											
	≤ 10	15	20	25	30	40	50	60	70	80	90	100
16	0.75	0.7	0.6	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1
20	1.0	0.85	0.8	0.7	0.6	0.4	0.35	0.35	0.3	0.25	0.2	0.2
25	2.0	1.75	1.6	1.3	1.2	0.9	0.75	0.6	0.5	0.45	0.45	0.4
32	2.7	2.5	2.2	2.0	1.8	1.6	1.3	1.1	1.0	0.9	0.9	0.8
40	5.0	4.0	3.5	3.3	3.0	2.5	2.2	2.0	1.8	1.5	1.4	1.3
50	8.8	7.6	6.7	6.0	5.4	4.6	4.0	3.5	3.0	2.8	2.6	2.4
63	10.7	9.4	8.3	7.4	6.7	5.5	4.8	4.2	3.8	3.5	3.2	2.9
80	17.5	15.3	13.7	12.4	11.3	9.6	8.5	7.6	7.0	6.3	5.8	5.3
100	20.0	19.0	17.0	15.5	14.0	12.0	10.5	9.5	8.5	7.7	7.0	6.5

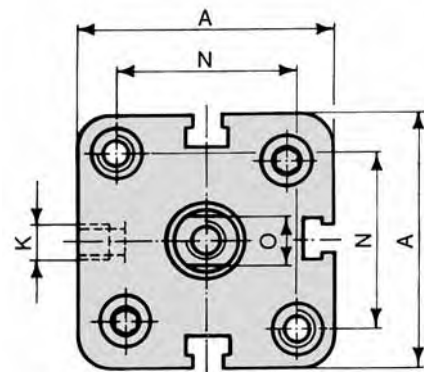
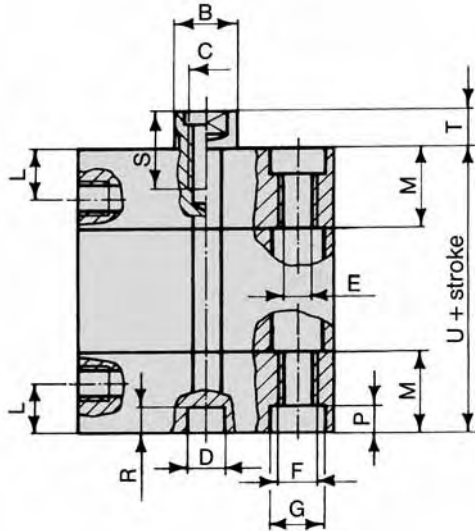
**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting with permanent magnet, female thread**



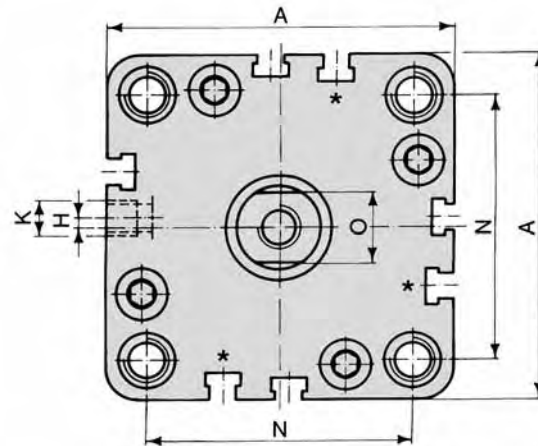
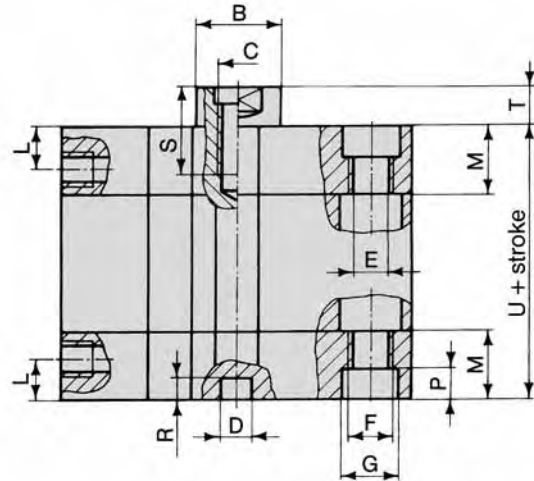
**Dimensions for series**

**NXD** (Type for order code: -210)

Ø 12 – 25



Ø 32 – 100



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

Piston-Ø	A	Ø B	C	Ø D	Ø E	F	Ø G	H	K	L	M	N	O	P	R	S	T	U
12	29	8	M3	6	3.3	M4	6	0	M5	8	12.25	18	5	3.5	4	6	4.5	38
16	29	8	M4	6	3.3	M4	6	0	M5	8	12.25	18	6	3.5	4	8	4.5	38
20	36	10	M5	6	4.2	M5	7.5	0	M5	8	12.25	22	8	4.5	4	10	4.5	38
25	40	10	M5	6	4.2	M5	7.5	0	M5	8	12.75	26	8	4.5	4	10	5.5	39.5
32	50	12	M6	6	5.2	M6	9	4	G 1/8	8	14.5	32	10	5.5	4	12	6	44.5
40	58	12	M6	6	5.2	M6	9	3	G 1/8	8	14.75	42	10	5.5	4	12	6.5	45.5
50	67	16	M8	6	6.7	M8	10.5	0	G 1/8	8	14.75	50	13	6.5	4	12	7.5	45.5
63	80	16	M8	8	8.5	M10	13.5	0	G 1/8	8	14.25	62	13	8.5	4	14	7.5	50
80	100	20	M10	8	8.5	M10	13.5	0	G 1/8	8.5	16	82	17	8.5	4	15	8	56
100	124	25	M12	8	8.5	M10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	4	20	10	66.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.074	0.074	0.121	0.139	0.261	0.362	0.481	0.755	1.402	2.560
lbs.	(0.163)	(0.163)	(0.267)	(0.306)	(0.575)	(0.798)	(1.060)	(1.664)	(3.091)	(5.644)
add-on per 100 mm stroke	0.170	0.170	0.270	0.310	0.410	0.500	0.630	0.780	1.180	1.600
	(0.375)	(0.375)	(0.595)	(0.683)	(0.904)	(1.102)	(1.389)	(1.719)	(2.601)	(3.527)

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting with permanent magnet, male thread**

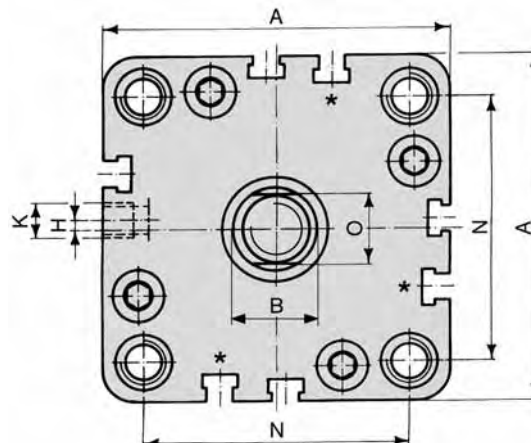
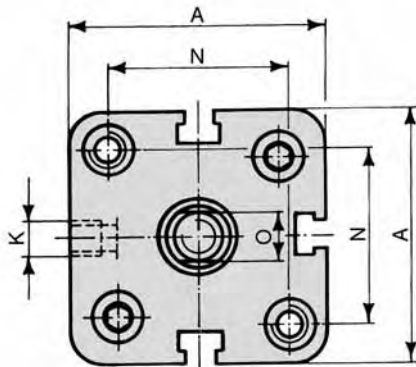
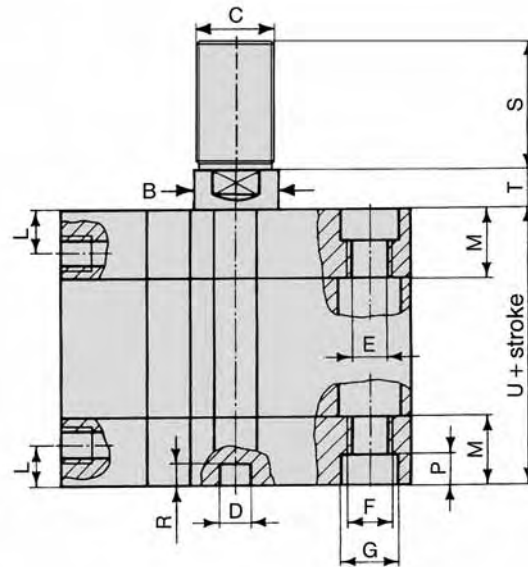
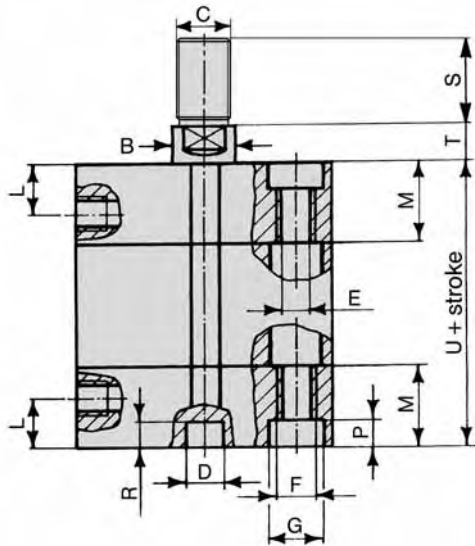


**Dimensions for series**

**NXD** (Type for order code: -200)

Ø 32 – 100

Ø 12 – 25



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

Piston-Ø	A	Ø B	C	Ø D	Ø E	F	Ø G	H	K	L	M	N	O	P	R	S	T	U
12	29	8	M6	6	3.3	M4	6	0	M5	8	12.25	18	5	3.5	4	16	4.5	38
16	29	8	M8	6	3.3	M4	6	0	M5	8	12.25	18	6	3.5	4	20	4.5	38
20	36	10	M10 x 1.25	6	4.2	M5	7.5	0	M5	8	12.25	22	8	4.5	4	22	4.5	38
25	40	10	M10 x 1.25	6	4.2	M5	7.5	0	M5	8	12.75	26	8	4.5	4	22	5.5	39.5
32	50	12	M10 x 1.25	6	5.2	M6	9	4	G 1/8	8	14.5	32	10	5.5	4	22	6	44.5
40	58	12	M10 x 1.25	6	5.2	M6	9	3	G 1/8	8	14.75	42	10	5.5	4	22	6.5	45.5
50	67	16	M12 x 1.25	6	6.7	M8	10.5	0	G 1/8	8	14.75	50	13	6.5	4	24	7.5	45.5
63	80	16	M12 x 1.25	8	8.5	M10	13.5	0	G 1/8	8	14.25	62	13	8.5	4	24	7.5	50
80	100	20	M16 x 1.5	8	8.5	M10	13.5	0	G 1/8	8.5	16	82	17	8.5	4	32	8	56
100	124	25	M20 x 1.5	8	8.5	M10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	4	40	10	66.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.078	0.082	0.135	0.153	0.275	0.376	0.502	0.776	1.453	2.659
lbs.	(0.172)	(0.181)	(0.298)	(0.337)	(0.606)	(0.829)	(1.107)	(1.711)	(3.203)	(5.862)
add-on per 100 mm stroke	0.170	0.170	0.270	0.310	0.410	0.500	0.630	0.780	1.180	1.600
	(0.375)	(0.375)	(0.595)	(0.683)	(0.904)	(1.102)	(1.389)	(1.719)	(2.601)	(3.527)

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm, Double acting with permanent  
magnet and double-ended piston rod, female thread**

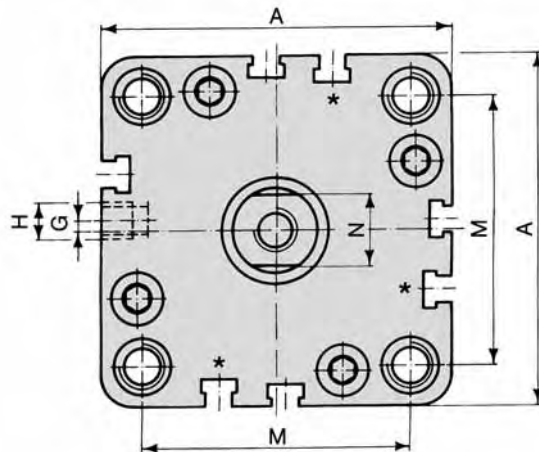
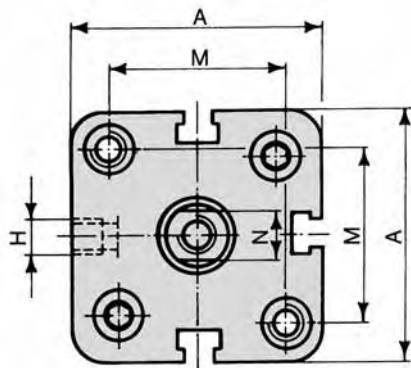
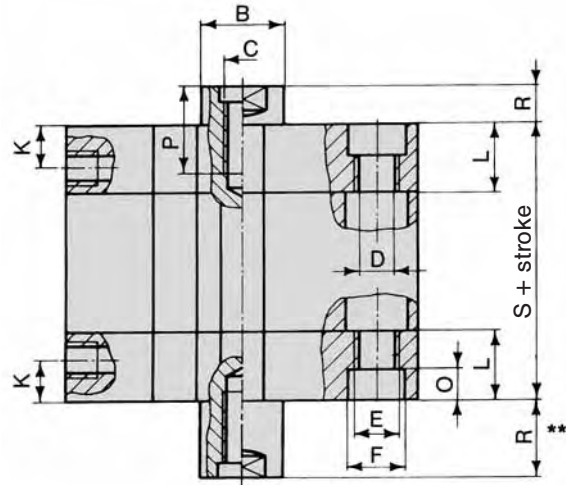
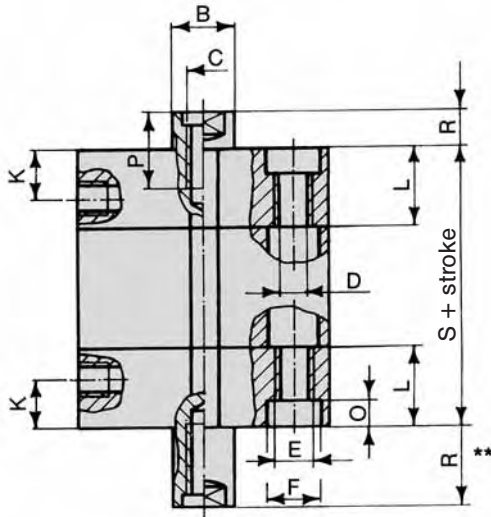


**Dimensions for series**

**NXD** (Type for order code: -610)

Ø 12 – 25

Ø 32 – 100



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

\*\* Dimension R plus stroke length in extended position.

Piston-Ø	A	Ø B	C	Ø D	E	Ø F	G	H	K	L	M	N	O	P	R**	S
12	29	8	M3	3.3	M4	6	0	M5	8	12.25	18	5	3.5	6	4.5	38
16	29	8	M4	3.3	M4	6	0	M5	8	12.25	18	6	3.5	8	4.5	38
20	36	10	M5	4.2	M5	7.5	0	M5	8	12.25	22	8	4.5	10	4.5	38
25	40	10	M5	4.2	M5	7.5	0	M5	8	12.75	26	8	4.5	10	5.5	39.5
32	50	12	M6	5.2	M6	9	4	G 1/8	8	14.5	32	10	5.5	12	6	44.5
40	58	12	M6	5.2	M6	9	3	G 1/8	8	14.75	42	10	5.5	12	6.5	45.5
50	67	16	M8	6.7	M8	10.5	0	G 1/8	8	14.75	50	13	6.5	12	7.5	45.5
63	80	16	M8	8.5	M10	13.5	0	G 1/8	8	14.25	62	13	8.5	14	7.5	50
80	100	20	M10	8.5	M10	13.5	0	G 1/8	8.5	16	82	17	8.5	15	8	56
100	124	25	M12	8.5	M10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	20	10	66.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.092	0.092	0.143	0.161	0.298	0.399	0.548	0.822	1.516	2.760
lbs.	(0.203)	(0.203)	(0.315)	(0.355)	(0.657)	(0.880)	(1.208)	(1.812)	(3.342)	(6.085)
add-on per 100 mm stroke	0.210	0.210	0.330	0.370	0.500	0.590	0.790	0.940	1.430	1.980
	(0.463)	(0.463)	(0.727)	(0.816)	(1.102)	(1.301)	(1.742)	(2.072)	(3.152)	(4.365)

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm, Double acting with permanent  
magnet and double-ended piston rod, male thread**

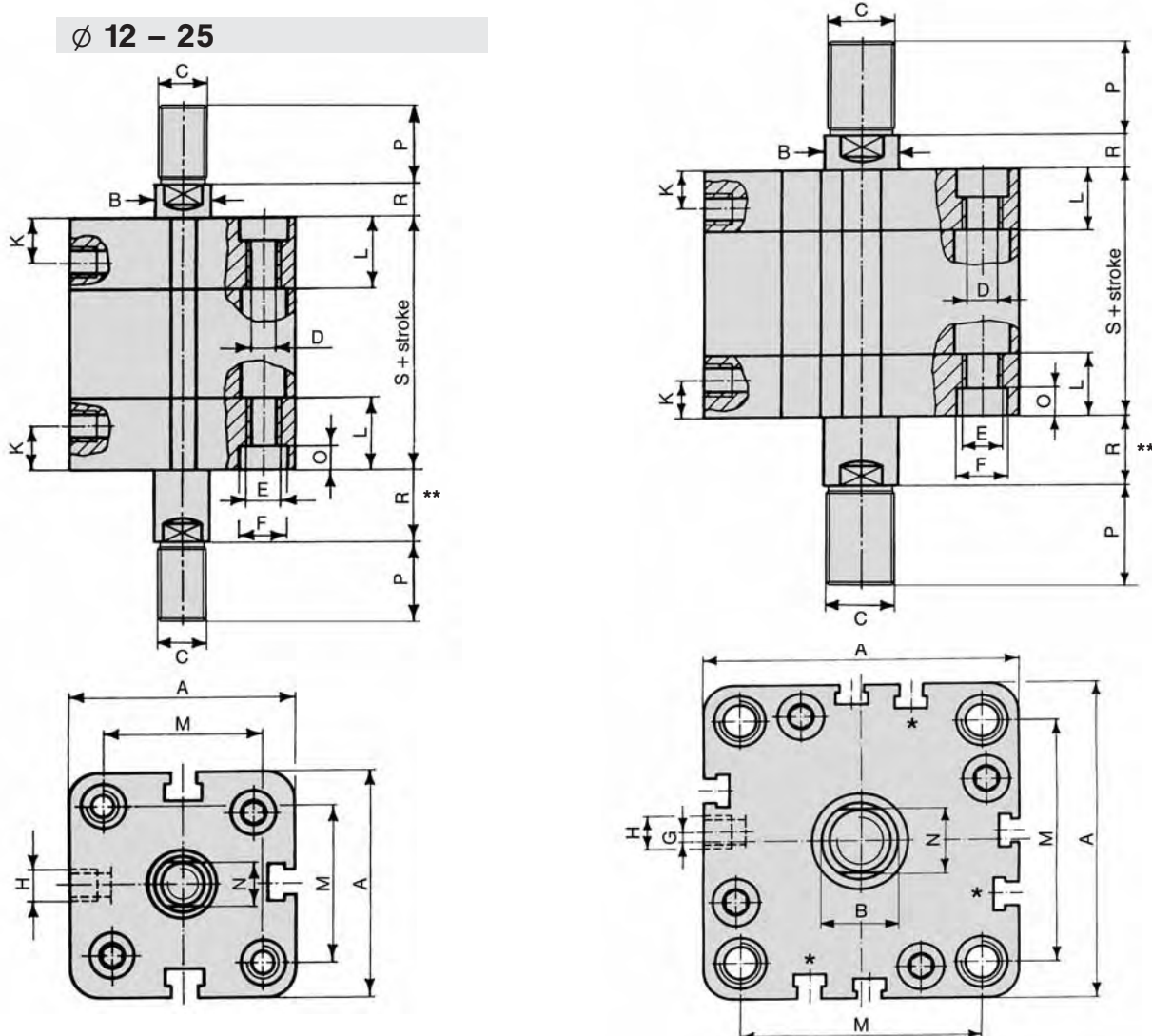


**Dimensions for series**

**NXD** (Type for order code: -600)

Ø 32 – 100

Ø 12 – 25



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

\*\* Dimension R plus stroke length in extended position.

Piston-Ø	A	Ø B	C	Ø D	E	Ø F	G	H	K	L	M	N	O	P	R**	S
12	29	8	M6	3.3	M4	6	0	M5	8	12.25	18	5	3.5	16	4.5	38
16	29	8	M8	3.3	M4	6	0	M5	8	12.25	18	6	3.5	20	4.5	38
20	36	10	M 10 x 1.25	4.2	M5	7.5	0	M5	8	12.25	22	8	4.5	22	4.5	38
25	40	10	M 10 x 1.25	4.2	M5	7.5	0	M5	8	12.75	26	8	4.5	22	5.5	39.5
32	50	12	M 10 x 1.25	5.2	M6	9	4	G 1/8	8	14.5	32	10	5.5	22	6	44.5
40	58	12	M 10 x 1.25	5.2	M6	9	3	G 1/8	8	14.75	42	10	5.5	22	6.5	45.5
50	67	16	M 12 x 1.25	6.7	M8	10.5	0	G 1/8	8	14.75	50	13	6.5	24	7.5	45.5
63	80	16	M 12 x 1.25	8.5	M10	13.5	0	G 1/8	8	14.25	62	13	8.5	24	7.5	50
80	100	20	M 16 x 1.5	8.5	M10	13.5	0	G 1/8	8.5	16	82	17	8.5	32	8	56
100	124	25	M 20 x 1.5	8.5	M10	13.5	0	G 1/4	10.5	19.25	103	22	8.5	40	10	66.5

Piston-Ø	12	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.097	0.108	0.170	0.188	0.325	0.426	0.591	0.865	1.617	2.958
lbs.	(0.214)	(0.238)	(0.375)	(0.414)	(0.716)	(0.939)	(1.303)	(1.907)	(3.565)	(6.521)
add-on per 100 mm stroke	0.210	0.210	0.330	0.370	0.500	0.590	0.790	0.940	1.430	1.980
	(0.463)	(0.463)	(0.727)	(0.816)	(1.102)	(1.301)	(1.742)	(2.072)	(3.152)	(4.365)

**Pneumatic compact cylinders,  
piston-Ø 12 – 100 mm  
Double acting non-rotating**

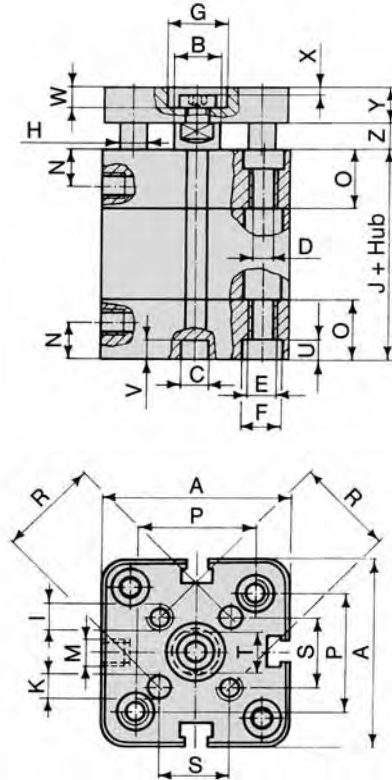


Dimensions for series

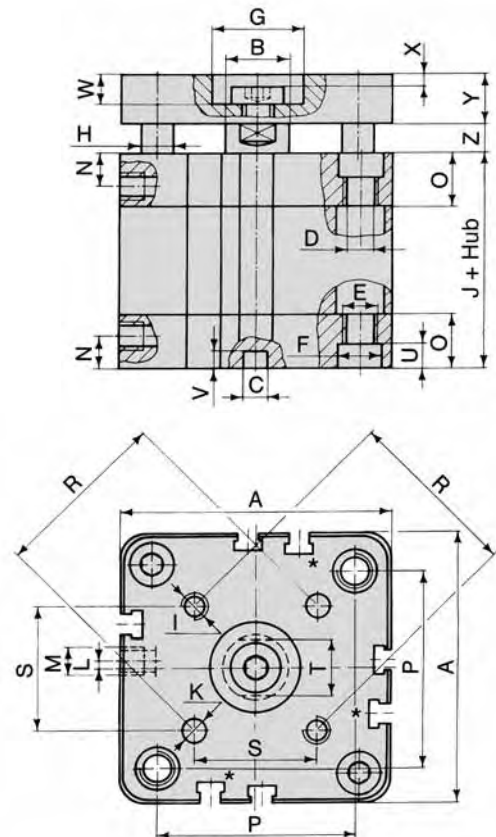
# NXD

(Type for  
order code:  
-220)

Ø 16 – 25



Ø 32 – 100



\* The cylinders of Ø 32 mm and Ø 40 mm have three sensor grooves.

Piston-Ø	A	Ø B	Ø C	Ø D	E	Ø F	Ø G	H	I	J	Ø K	L	M
16	29	8	6	3.3	M4	6	9	5	M3	38	3	0	M5
20	36	10	6	4.2	M5	7.5	11	5	M4	38	4	0	M5
25	40	10	6	4.2	M5	7.5	14	6	M5	39.5	5	0	M5
32	50	12	6	5.2	M6	9	17	8	M5	44.5	5	4	G 1/8
40	58	12	6	5.2	M6	9	17	10	M5	45.5	5	3	G 1/8
50	67	16	6	6.7	M8	10.5	22	10	M6	45.5	6	0	G 1/8
63	80	16	8	8.5	M10	13.5	22	10	M6	50	6	0	G 1/8
80	100	20	8	8.5	M10	13.5	28	14	M8	56	8	0	G 1/8
100	124	25	8	8.5	M10	13.5	30	14	M10	66.5	10	0	G 1/4

Piston-Ø	N	O	P	R	S	T	U	V	W	X	Y	Z
16	8	12.25	18	14	9.9	6	3.5	4	3.8	1	6	4.5
20	8	12.25	22	17	12.0	8	4.5	4	5	1.5	8	4.5
25	8	12.75	26	22	15.6	8	4.5	4	5	1.5	8	5.5
32	8	14.5	32	28	19.8	10	5.5	4	6.5	2.5	10	6
40	8	14.75	42	33	23.3	10	5.5	4	6.5	2.5	10	6.5
50	8	14.75	50	42	29.7	13	6.5	4	7.5	2.5	12	7.5
63	8	14.25	62	50	35.4	13	8.5	4	7.5	2.5	12	7.5
80	8.5	16	82	65	46.0	17	8.5	4	9	3	14	8
100	10.5	19.25	103	80	56.6	22	8.5	4	10	3	14	10

Piston-Ø	16	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg lbs.	0.097 (0.214)	0.150 (0.331)	0.195 (0.430)	0.335 (0.738)	0.461 (1.016)	0.636 (1.402)	0.976 (2.152)	1.845 (4.067)	3.190 (7.033)
add-on per 100 mm stroke	0.200 (0.441)	0.300 (0.661)	0.350 (0.772)	0.530 (1.168)	0.620 (1.367)	0.750 (1.653)	0.900 (1.984)	1.420 (3.130)	1.840 (4.056)

**Accessories for series**

# NXD

**Remark:**  
Accessories for piston rod see page 8.212.

### Mounting accessories



Foot mount  
**NXB-Ø-01**  
Page 8.129



Flange mount  
**NXB-Ø-02**  
Page 8.129



Swivel mount 90°  
**XLB-Ø-06**  
Page 8.018



Clevis pin  
**XLB-Ø-08**  
Page 8.019



Swivel mount  
**NXB-Ø-04**  
Page 8.130



Clevis mount  
**NXB-Ø-03**  
Page 8.130



Clevis mount  
**RC-Ø**  
Page 8.087

### Proximity sensors



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221

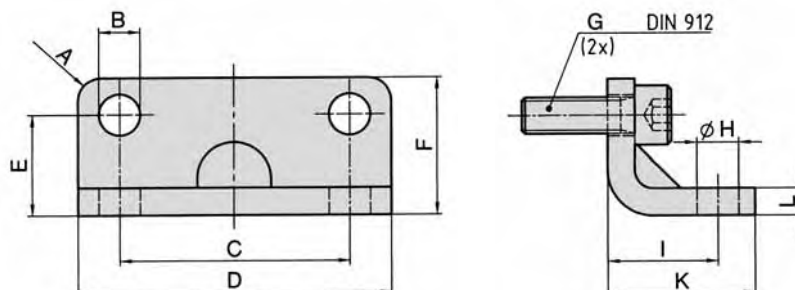
Seal kits see page 8.131.

Piston-Ø	Foot mount	Flange mount	Clevis mount	Swivel mount	Clevis mount	Swivel mount 90°	Clevis pin	Sensors	Cable
<b>NX-12</b>	–	NXB-16-02	–	NXB-16-04	RC-16	–	–	ZS-5200	KA-30 KA-50 KA-51 KA-100 KA-101
<b>NX-16</b>	–	NXB-16-02	–	NXB-16-04	RC-16	–	–		
<b>NX-20</b>	–	NXB-20-02	–	NXB-20-04	RC-30	–	–	ZS-5300	
<b>NX-25</b>	–	NXB-25-02	–	NXB-25-04	RC-30	–	–	ZS-5300-05	
<b>NX-32</b>	NXB-32-01	NXB-32-02	NXB-32-03	–	–	XLB-32-06	XLB-32-08	ZS-5301	
<b>NX-40</b>	NXB-40-01	NXB-40-02	NXB-40-03	–	–	XLB-40-06	XLB-40-08	ZS-6300	
<b>NX-50</b>	NXB-50-01	NXB-50-02	NXB-50-03	–	–	XLB-50-06	XLB-50-08	ZS-6301	
<b>NX-63</b>	NXB-63-01	NXB-63-02	NXB-63-03	–	–	XLB-63-06	XLB-63-08	ZS-7300	
<b>NX-80</b>	NXB-80-01	NXB-80-02	NXB-80-03	–	–	XLB-80-06	XLB-80-08	ZS-7301	
<b>NX-100</b>	NXB-100-01	NXB-100-02	NXB-100-03	–	–	XLB-100-06	XLB-100-08		

Mounting accessories for series

# NXD, NXE

**Foot mount**  
1 pair



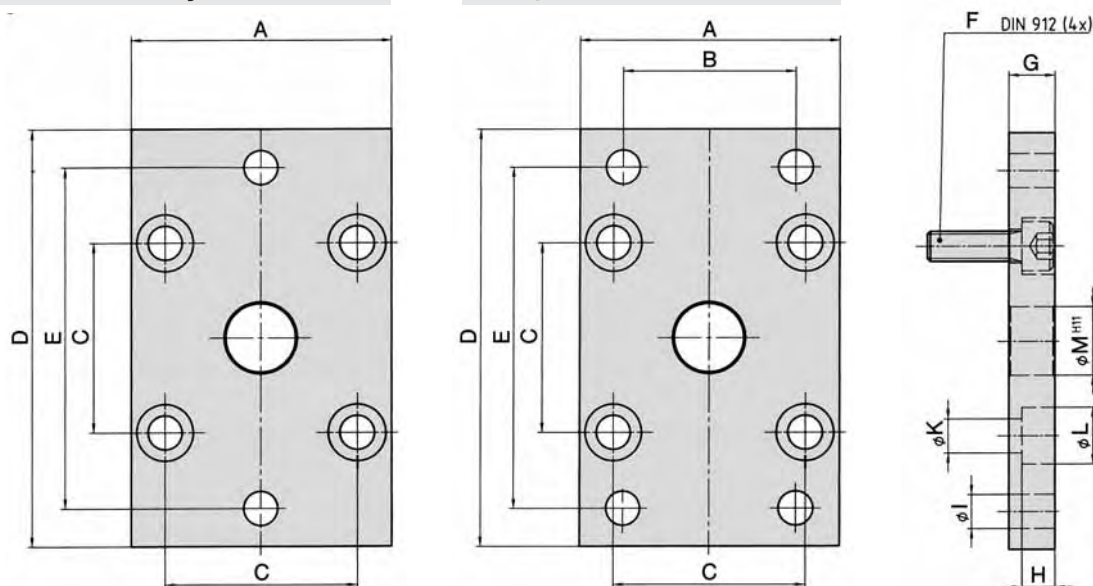
Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	I	K	L
NXB-032-01	R 2	6.6	32	50	16	24	M6 x 20	6.6	18	26	5
NXB-040-01	R 5	6.6	42	60	21.5	29.5	M6 x 20	9	20	28	5
NXB-050-01	R 5	9	50	68	22	30	M8 x 25	9	24	32	6
NXB-063-01	R 5	11	62	84	28.5	39	M10 x 25	11	27	39	6
NXB-080-01	R 5	11	82	102	24.5	36.5	M10 x 25	11	30	42	8
NXB-100-01	R 5	11	103	123	26.5	38.5	M10 x 30	13.5	33	45	8

**Flange mount**

for cyl.-Ø 12 – 25

for cyl.-Ø 32 – 100



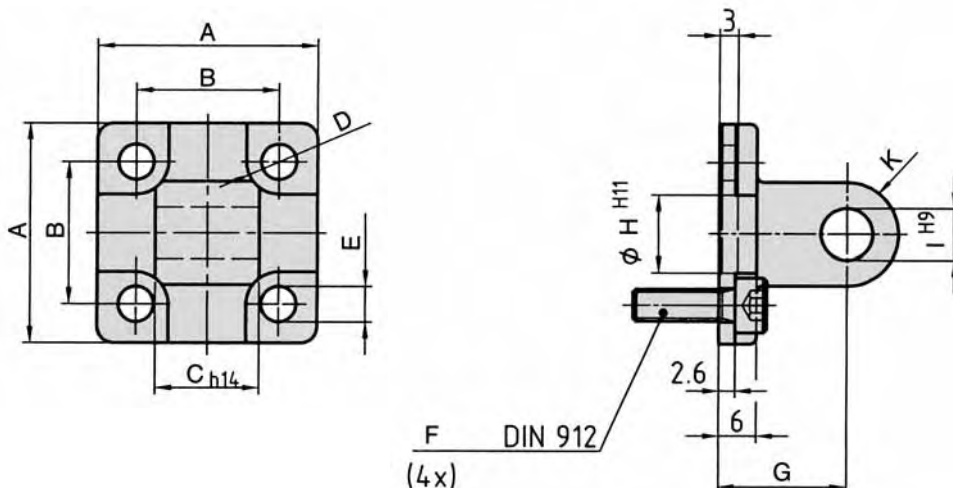
Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	I	K	L	M
NXB-016-02	29	-	18	55	43	M4 x 16	10	5.4	5.5	4.5	9	10
NXB-020-02	36	-	22	70	55	M5 x 20	10	5.4	6.6	5.5	10	12
NXB-025-02	40	-	26	76	60	M5 x 20	10	5.4	6.6	5.5	10	12
NXB-032-02	50	32	32	80	65	M6 x 20	10	6.4	7	6.6	11	14
NXB-040-02	60	36	42	102	82	M6 x 20	10	6.4	9	6.6	11	14
NXB-050-02	68	45	50	110	90	M8 x 25	12	8.6	9	9	15	18
NXB-063-02	87	50	62	130	110	M10 x 25	15	10.6	9	11	18	18
NXB-080-02	107	63	82	160	135	M10 x 25	15	10.6	12	11	18	23
NXB-100-02	128	75	103	190	163	M10 x 30	15	10.6	14	11	18	28

Mounting accessories for series

# NXD, NXE

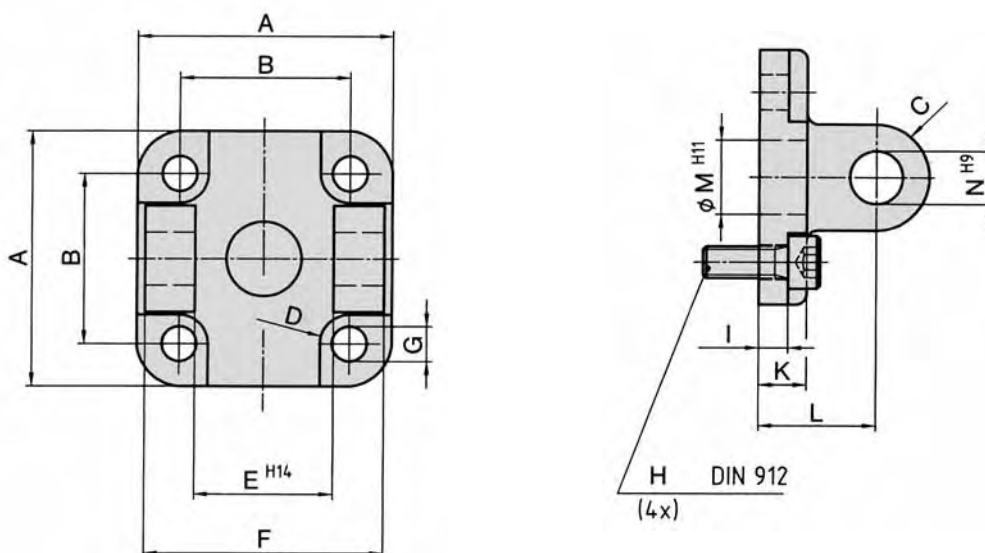
## Swivel mount



Material: Al (anodized)

Order number	A	B	C	D	E	F	G	H	I	K
NXB-016-04	27	18	12	R 4.5	4.5	M4 x 12	16	10	6	6
NXB-020-04	34	22	16	R 5	5.5	M5 x 16	20	12	8	8
NXB-025-04	38	26	16	R 5	5.5	M5 x 16	20	12	8	8

## Clevis mount



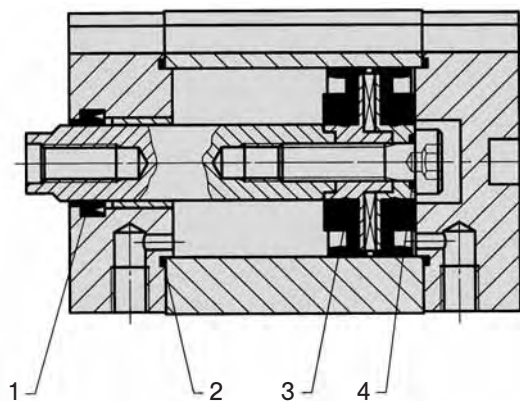
Material: Al (anodized)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
NXB-032-03	48	32	10	R 5.5	26	45	6.6	M6 x 16	5.5	9	22	14	10
NXB-040-03	58	42	12.5	R 5.5	28	52	6.6	M6 x 16	5.5	9	25	14	12
NXB-050-03	66	50	12.5	R 7.5	32	60	9	M8 x 20	6.5	11	27	18	12
NXB-063-03	83	62	15	R 9	40	70	11	M10 x 25	6.5	11	32	18	16
NXB-080-03	102	82	15	R 9	50	90	11	M10 x 30	10	13	36	23	16
NXB-100-03	123	103	20	R 9	60	110	11	M10 x 30	10	15	41	28	20

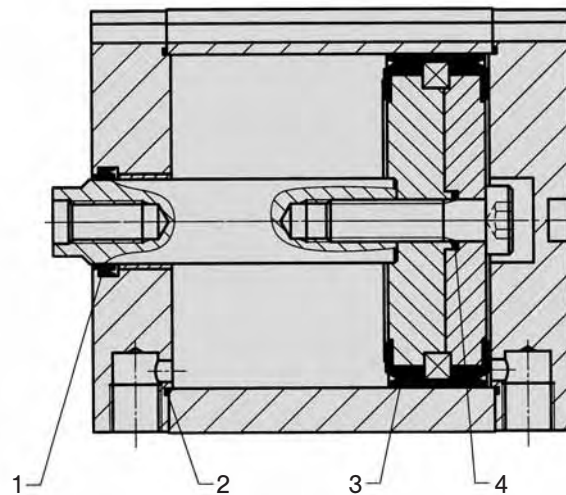
# Seal kits for series NXD, NXE



For cylinders-Ø 12 – 25 mm



For cylinders-Ø 32 – 100 mm



For NXD cylinder types 200, 210 and 220 and all NXE types

## Seal kit

Order number	Piston-Ø
VS-NXD-012-01	12 mm
VS-NXD-016-01	16 mm
VS-NXD-020-01	20 mm
VS-NXD-025-01	25 mm
VS-NXD-032-01	32 mm
VS-NXD-040-01	40 mm
VS-NXD-050-01	50 mm
VS-NXD-063-01	63 mm
VS-NXD-080-01	80 mm
VS-NXD-100-01	100 mm

## Content

Pos.	Part	Quantity
1	Wiper and seal element	1
2	O-ring	2
3	Piston	2
4	O-ring	1
	Grease	1

For NXD cylinder types 600 and 610

## Seal kit

Order number	Piston-Ø
VS-NXD-012-02	12 mm
VS-NXD-016-02	16 mm
VS-NXD-020-02	20 mm
VS-NXD-025-02	25 mm
VS-NXD-032-02	32 mm
VS-NXD-040-02	40 mm
VS-NXD-050-02	50 mm
VS-NXD-063-02	63 mm
VS-NXD-080-02	80 mm
VS-NXD-100-02	100 mm

## Content

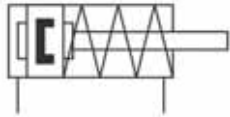
Pos.	Part	Quantity
1	Wiper and seal element	2
2	O-ring	2
3	Piston	2
4	O-ring	1
	Grease	1

# Compact cylinders, piston-Ø 20 – 100 mm Single acting ISO 21287



## Technical data for series

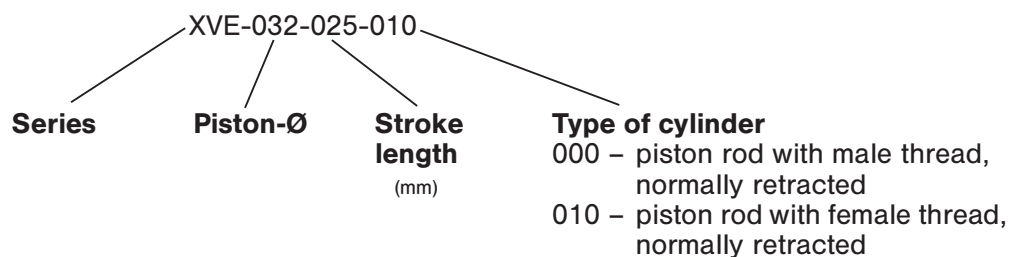
# XVE



000, 010



## Order code



## Design and function

Double acting pneumatic cylinder with permanent magnet for proximity sensors and built-in cushioning rings. Cylinder end caps are connected with the Al-profile tube by mounting screws. The sensors can be installed directly into the sensor grooves of the Al-profile.

Order number Please complete according to order code.	XVE-020-...	XVE-025-...	XVE-032-...	XVE-040-...	XVE-050-...	XVE-063-...	XVE-080-...	XVE-100-...
<b>Piston-Ø (mm)</b>	20	25	32	40	50	63	80	100
<b>Connection</b>	M5	M5	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
<b>Female thread</b>	M5	M5	M6	M6	M8	M8	M10	M12
<b>Male thread</b>	M8	M8	M10x125	M10x125	M12x125	M12x125	M16x1.5	M16x1.5
<b>Operating pressure</b>	2 ... 10 bar (29 ... 145 psi)				1 ... 10 bar (14.5 ... 145 psi)			
<b>Temperature range</b>	- 20 °C ... + 80 °C (- 4 °F ... + 176 °F)							
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air							
<b>Standard stroke lengths (mm)</b>	5, 10, 15, 20, 25, 30							
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al-die-cast Piston rod: stainless steel Seals: PU/NBR							

Force at 6 bar in N for series

# XVE

## Retraction type 000 and 010 (spring force)

Piston- Ø	stroke 5		stroke 10		stroke 15		stroke 20		stroke 25	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
20	8	9	7	9	6	9	5	9	4	9
25	19	22	16	22	13	22	10	22	7	22
32	24	27	21	27	18	27	14	27	11	27
40	33	36	29	36	26	36	23	36	19	36
50	50	54	45	54	41	54	37	54	32	54
63	69	76	62	76	55	76	48	76	41	76
80	87	96	81	96	73	96	66	96	58	96
100	87	95	79	95	71	95	63	95	55	95

## Extension force for type 000 and 010

Piston- Ø	stroke 5		stroke 10		stroke 15		stroke 20		stroke 25	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
20	161	162	161	163	161	164	161	165	161	166
25	243	246	243	249	243	252	243	255	243	258
32	407	410	407	413	407	416	407	420	407	423
40	642	645	642	649	642	652	642	655	642	659
50	1006	1010	1006	1015	1006	1019	1006	1023	1006	1028
63	1606	1613	1606	1620	1606	1627	1606	1634	1606	1641
80	2617	2626	2617	2632	2617	2640	2617	2647	2617	2655
100	4144	4152	4144	4160	4144	4168	4144	4176	4144	4184

Pressure 6 bar. The internal friction is considered.

**Compact cylinders, piston-Ø 20 – 100 mm**  
**Single acting with magnetic piston**  
**ISO 21287, with female thread**

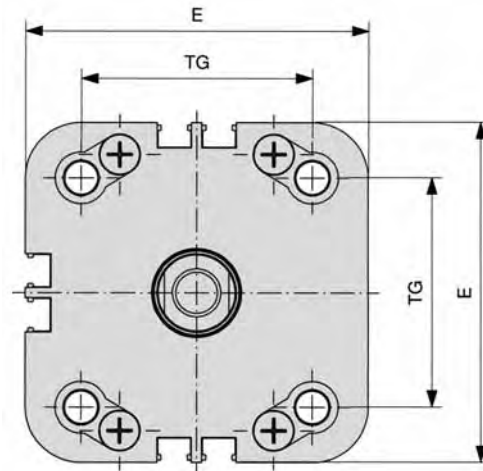
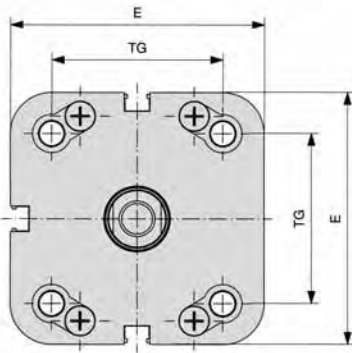
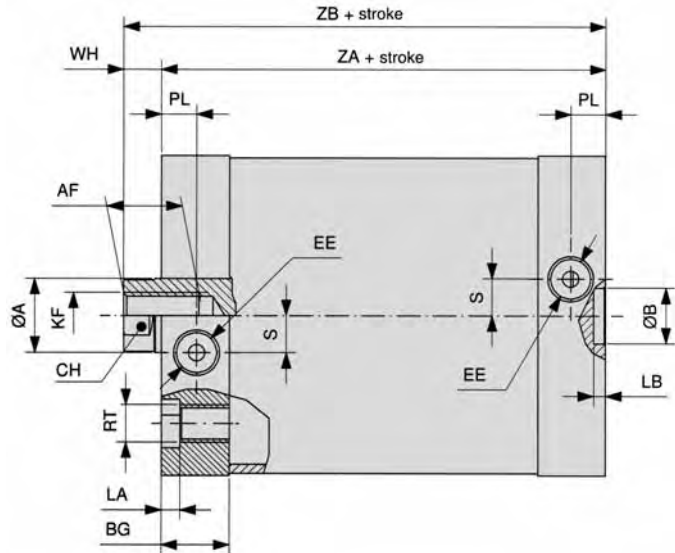
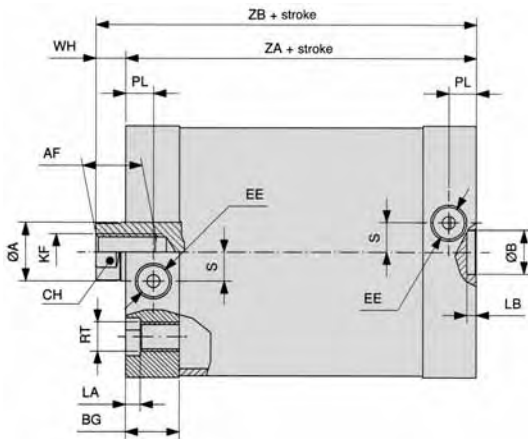


**Dimensions for series**

**XVE** (Type for order code: -010)

Ø 20 – 25

Ø 32 – 100



Ø	ØA	CH	AF	WH	ZA	ZB	KF	EE	BG	TG	E	RT	LA	PL	ØB	LB	S
20	10	9	10	6 ± 1.4	37 ± 0.5	43 ± 1.4	M6	M5	14.25	22 ± 0.4	36	M5	3	7	9	2.1	2.5
25	10	9	10	6 ± 1.4	39 ± 0.5	45 ± 1.4	M6	M5	14	26 ± 0.4	39.5	M5	3	7	9	2.1	2.5
32	12	10	12	7 ± 1.6	44 ± 0.5	51 ± 1.6	M8	G 1/8	15.5	32.5 ± 0.5	49.5	M6	3.5	7.75	9	2.1	6
40	12	10	12	7 ± 1.6	45 ± 0.7	52 ± 1.6	M8	G 1/8	15.5	38 ± 0.5	54	M6	3.5	7.75	9	2.1	8
50	16	13	16	8 ± 1.6	45 ± 0.7	53 ± 1.6	M10	G 1/8	14.5	46.5 ± 0.6	69	M8	4	7.5	12	2.6	8
63	16	13	16	8 ± 1.6	49 ± 0.8	57 ± 1.6	M10	G 1/8	15.5	56.5 ± 0.7	79	M8	4	7.75	12	2.6	11.5
80	20	17	20	10 ± 2.0	54 ± 0.8	64 ± 2.0	M12	G 1/8	17.5	72 ± 0.7	94.5	M10	5	8.75	12	2.6	11.5
100	25	21	20	10 ± 2.0	67 ± 1.0	77 ± 2.0	M12	G 1/8	21	89 ± 0.7	114.5	M10	5	10.5	12	2.6	20

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Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.112	0.140	0.244	0.289	0.483	0.734	1.142	2.191
lbs.	(0.247)	(0.309)	(0.538)	(0.637)	(1.065)	(1.618)	(2.517)	(4.829)
add-on per 100 mm stroke	0.193	0.210	0.324	0.314	0.509	0.559	0.793	1.116
lbs.	(0.425)	(0.463)	(0.714)	(0.692)	(1.122)	(1.232)	(1.748)	(2.460)

**Compact cylinders, piston-Ø 20 – 100 mm**  
**Single acting with magnetic piston**  
**ISO 21287, with male thread**

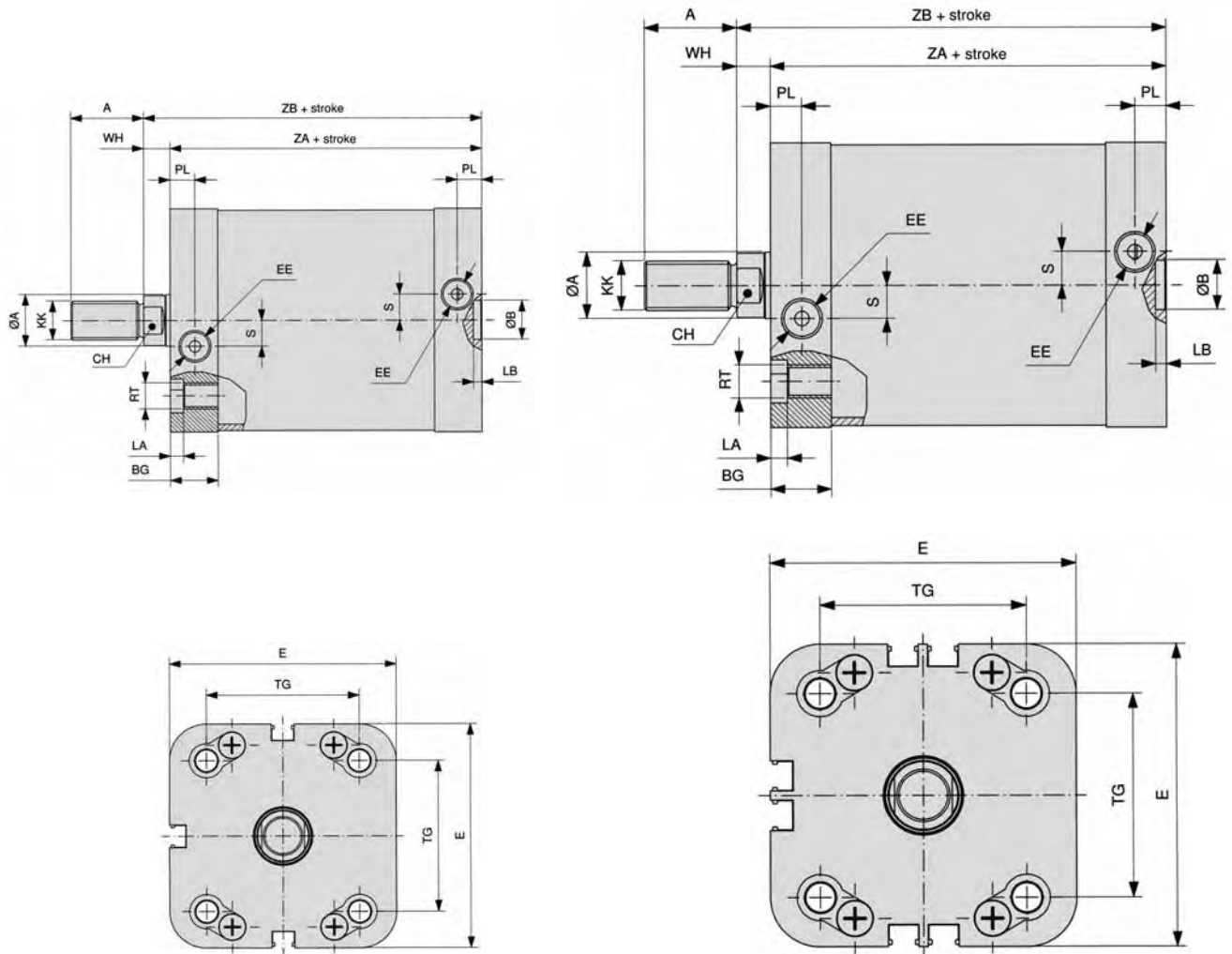


**Dimensions for series**

**XVE** (Type for order code: -000)

**Ø 20 – 25**

**Ø 32 – 100**



Ø	ØA	CH	A	WH	ZA	ZB	KK	EE	BG	TG	E	RT	LA	PL	ØB	LB	S
20	10	9	16	6 ± 1.4	37 ± 0.5	43 ± 1.4	M8	M5	14.25	22 ± 0.4	36	M5	3	7	9	2.1	2.5
25	10	9	16	6 ± 1.4	39 ± 0.5	45 ± 1.4	M8	M5	14	26 ± 0.4	39.5	M5	3	7	9	2.1	2.5
32	12	10	19	7 ± 1.6	44 ± 0.5	51 ± 1.6	M10 x 1.25	G 1/8	15.5	32.5 ± 0.5	49.5	M6	3.5	7.75	9	2.1	6
40	12	10	19	7 ± 1.6	45 ± 0.7	52 ± 1.6	M10 x 1.25	G 1/8	15.5	38 ± 0.5	54	M6	3.5	7.75	9	2.1	8
50	16	13	22	8 ± 1.6	45 ± 0.7	53 ± 1.6	M12 x 1.25	G 1/8	14.5	46.5 ± 0.6	69	M8	4	7.5	12	2.6	8
63	16	13	22	8 ± 1.6	49 ± 0.8	57 ± 1.6	M12 x 1.25	G 1/8	15.5	56.5 ± 0.7	79	M8	4	7.75	12	2.6	11.5
80	20	17	28	10 ± 2.0	54 ± 0.8	64 ± 2.0	M16 x 1.5	G 1/8	17.5	72 ± 0.7	94.5	M10	5	8.75	12	2.6	11.5
100	25	21	28	10 ± 2.0	67 ± 1.0	77 ± 2.0	M16 x 1.5	G 1/8	21	89 ± 0.7	114.5	M10	5	10.5	12	2.6	20

0  
-0.5

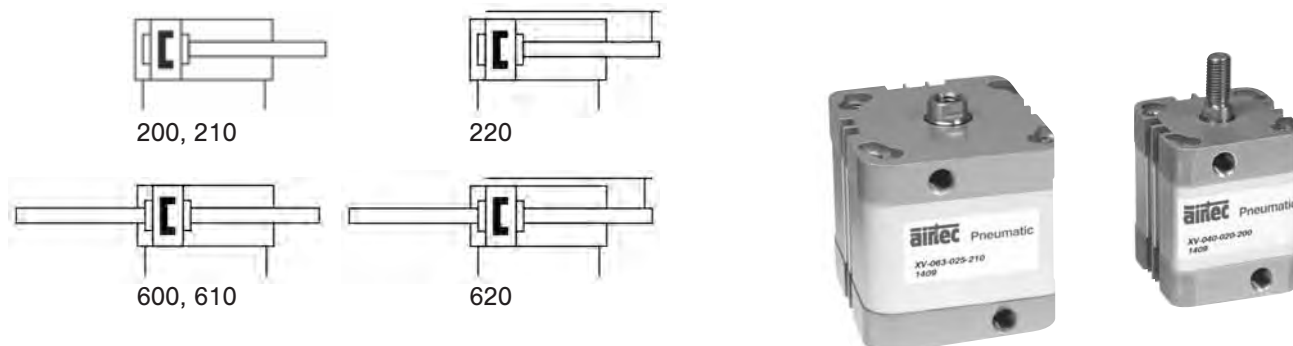
Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.121	0.148	0.259	0.305	0.511	0.762	1.202	2.251
lbs.	(0.267)	(0.326)	(0.571)	(0.672)	(1.126)	(1.679)	(2.649)	(4.961)
add-on per 100 mm stroke	0.193	0.210	0.324	0.314	0.509	0.559	0.793	1.116
lbs.	(0.425)	(0.463)	(0.714)	(0.692)	(1.122)	(1.232)	(1.748)	(2.460)

**Compact cylinders, piston-Ø 20 – 100 mm**  
**Double acting with magnetic piston**  
**ISO 21287**

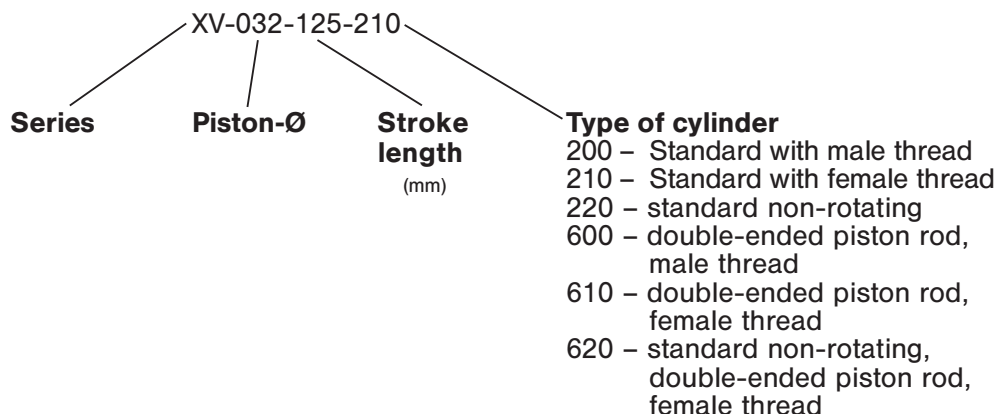


**Technical data for series**

**XV**



**Order code**



**Design and function**

Double acting pneumatic cylinder with permanent magnet for proximity sensors and built-in cushioning rings. Cylinder end caps are connected with the Al-profile tube by mounting screws.

Order number Please complete according to order code.	XV-020-...	XV-025-...	XV-032-...	XV-040-...	XV-050-...	XV-063-...	XV-080-...	XV-100-...
<b>Piston-Ø (mm)</b>	20	25	32	40	50	63	80	100
<b>Connection</b>	M5	M5	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8	G 1/8
<b>Force at 6 bar in N*</b>								
<b>Extension</b>	170	265	434	678	1060	1682	2713	4239
<b>Retraction</b>	127	222	373	617	951	1573	2543	3974
<b>Female thread</b>	M6	M6	M8	M8	M10	M10	M12	M12
<b>Male thread</b>	M8	M8	M10x1,25	M10x1,25	M12x1,25	M12x1,25	M16x1,5	M16x1,5
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)							
<b>Temperature range</b>	- 20 °C ... + 80 °C (- 4 °F ... + 176 °F)							
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air							
<b>Standard stroke length (mm)</b>	Ø 20 + 25 mm = 5, 10, 15, 20, 25, 30, 40, 50, 60, special stroke length up to 300 mm on request. Ø 32 – 100 mm = 5, 10, 15, 20, 25, 30, 40, 50, 60, 80, special stroke length up to 400 mm on request.							
<b>Materials</b>	Cylinder tube: Al (anodized) End caps: Al (anodized) Piston rod: stainless steel Seals: PU + NBR							

\*The internal friction is considered.

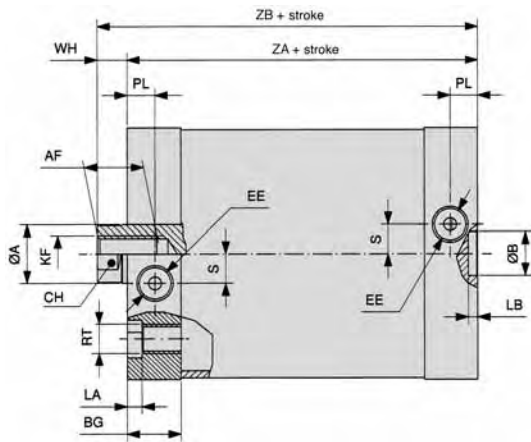
**Compact cylinders, piston-Ø 20 – 100 mm**  
**Double acting with magnetic piston**  
**ISO 21287, with female thread**



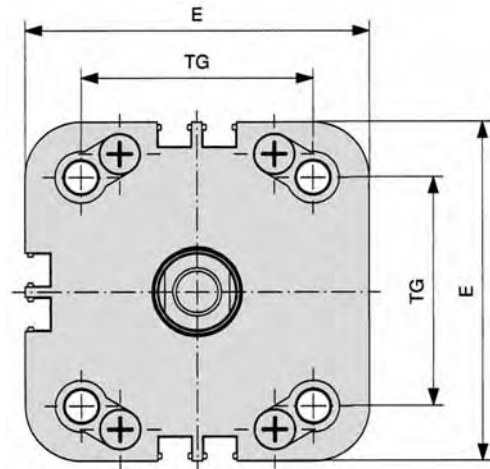
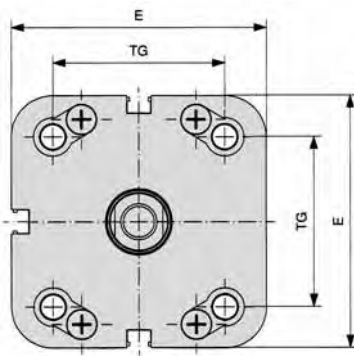
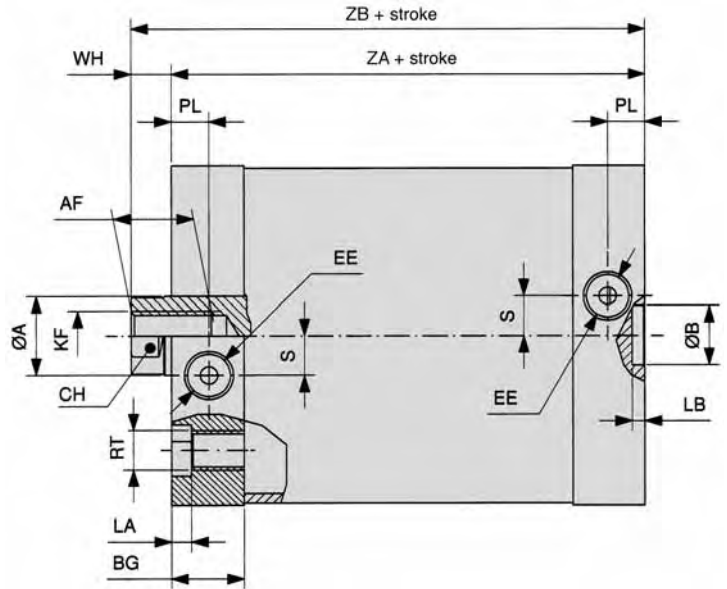
**Dimensions for series**

**XV** (Type for order code: -210)

Ø 20 – 25



Ø 32 – 100



Ø	Ø A	CH	AF	WH	ZA	ZB	KF	EE	BG	TG	E	RT	LA	PL	Ø B	LB	S
20	10	9	10	6 ± 1.4	37 ± 0.5	43 ± 1.4	M 6	M 5	14.25	22 ± 0.4	36	M 5	3	7	9	2.1	2.5
25	10	9	10	6 ± 1.4	39 ± 0.5	45 ± 1.4	M 6	M 5	14	26 ± 0.4	39.5	M 5	3	7	9	2.1	2.5
32	12	10	12	7 ± 1.6	44 ± 0.5	51 ± 1.6	M 8	G 1/8	15.5	32.5 ± 0.5	49.5	M 6	3.5	7.75	9	2.1	6
40	12	10	12	7 ± 1.6	45 ± 0.7	52 ± 1.6	M 8	G 1/8	15.5	38 ± 0.5	54	M 6	3.5	7.75	9	2.1	8
50	16	13	16	8 ± 1.6	45 ± 0.7	53 ± 1.6	M 10	G 1/8	14.5	46.5 ± 0.6	69	M 8	4	7.5	12	2.6	8
63	16	13	16	8 ± 1.6	49 ± 0.8	57 ± 1.6	M 10	G 1/8	15.5	56.5 ± 0.7	79	M 8	4	7.75	12	2.6	11.5
80	20	17	20	10 ± 2.0	54 ± 0.8	64 ± 2.0	M 12	G 1/8	17.5	72 ± 0.7	94.5	M 10	5	8.75	12	2.6	11.5
100	25	21	20	10 ± 2.0	67 ± 1.0	77 ± 2.0	M 12	G 1/8	21	89 ± 0.7	114.5	M 10	5	10.5	12	2.6	20

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.115	0.142	0.240	0.280	0.473	0.675	1.090	2.070
lbs.	(0.253)	(0.313)	(0.529)	(0.617)	(1.042)	(1.488)	(2.402)	(4.562)
add-on per 100 mm stroke	0.193	0.210	0.324	0.314	0.509	0.559	0.793	1.116
lbs.	(0.425)	(0.463)	(0.714)	(0.692)	(1.122)	(1.232)	(1.748)	(2.460)

**Compact cylinders, piston-Ø 20 – 100 mm**  
**Double acting with magnetic piston**  
**ISO 21287, with male thread**

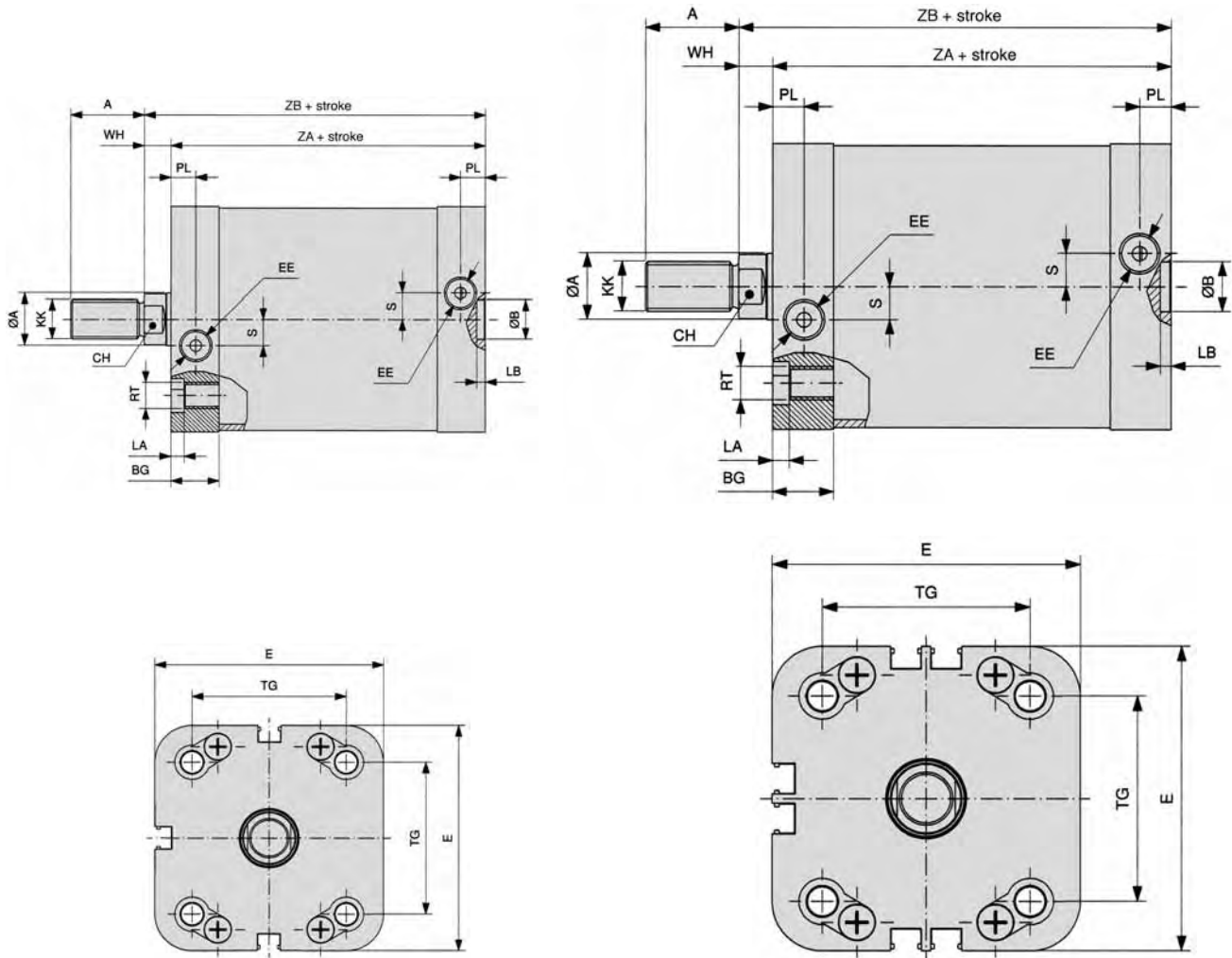


**Dimensions for series**

**XV** (Type for order code: -200)

Ø 20 – 25

Ø 32 – 100



Ø	ØA	CH	A	WH	ZA	ZB	KK	EE	BG	TG	E	RT	LA	PL	ØB	LB	S
20	10	9	16	6 ± 1.4	37 ± 0.5	43 ± 1.4	M8	M5	14.25	22 ± 0.4	36	M5	3	7	9	2.1	2.5
25	10	9	16	6 ± 1.4	39 ± 0.5	45 ± 1.4	M8	M5	14	26 ± 0.4	39.5	M5	3	7	9	2.1	2.5
32	12	10	19	7 ± 1.6	44 ± 0.5	51 ± 1.6	M10 x 1.25	G 1/8	15.5	32.5 ± 0.5	49.5	M6	3.5	7.75	9	2.1	6
40	12	10	19	7 ± 1.6	45 ± 0.7	52 ± 1.6	M10 x 1.25	G 1/8	15.5	38 ± 0.5	54	M6	3.5	7.75	9	2.1	8
50	16	13	22	8 ± 1.6	45 ± 0.7	53 ± 1.6	M12 x 1.25	G 1/8	14.5	46.5 ± 0.6	69	M8	4	7.5	12	2.6	8
63	16	13	22	8 ± 1.6	49 ± 0.8	57 ± 1.6	M12 x 1.25	G 1/8	15.5	56.5 ± 0.7	79	M8	4	7.75	12	2.6	11.5
80	20	17	28	10 ± 2.0	54 ± 0.8	64 ± 2.0	M16 x 1.5	G 1/8	17.5	72 ± 0.7	94.5	M10	5	8.75	12	2.6	11.5
100	25	21	28	10 ± 2.0	67 ± 1.0	77 ± 2.0	M16 x 1.5	G 1/8	21	89 ± 0.7	114.5	M10	5	10.5	12	2.6	20
				<sup>0</sup> / <sub>-0.5</sub>													

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.123	0.150	0.256	0.296	0.501	0.703	1.150	2.130
lbs.	(0.271)	(0.331)	(0.564)	(0.652)	(1.104)	(1.549)	(2.535)	(4.695)
add-on per 100 mm stroke	0.193	0.210	0.324	0.314	0.509	0.559	0.793	1.116
lbs.	(0.425)	(0.463)	(0.714)	(0.692)	(1.122)	(1.232)	(1.748)	(2.460)

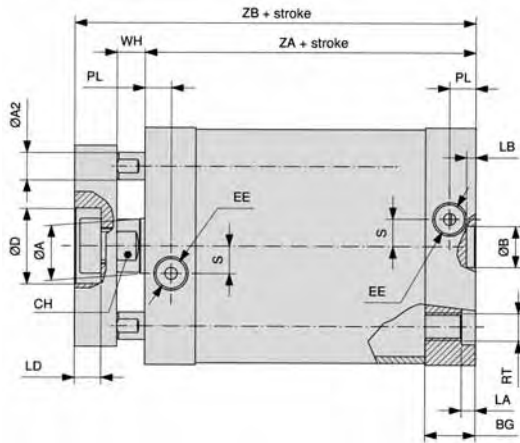
Compact cylinders, piston-Ø 20 – 100 mm  
 Double acting non-rotating  
 ISO 21287



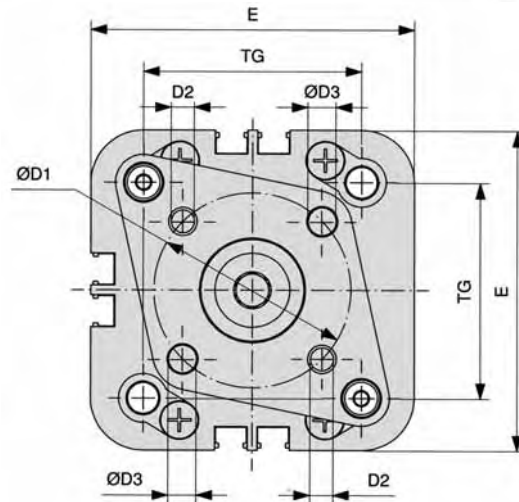
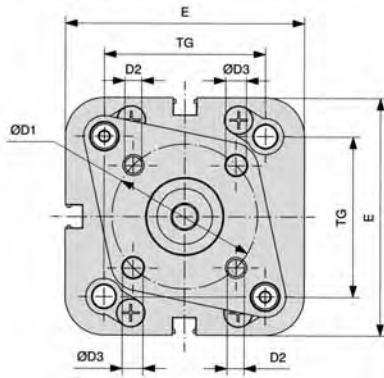
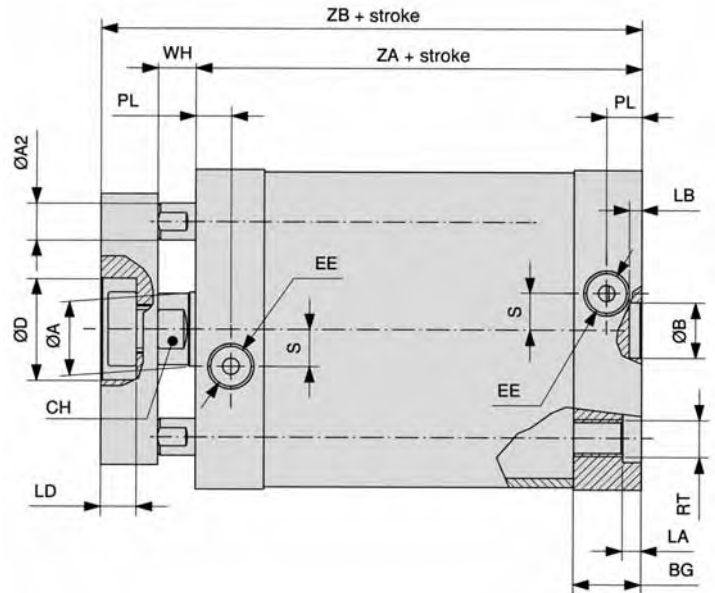
Dimensions for series

**XV** (Type for order code: -220)

Ø 20 – 25



Ø 32 – 100



Ø	Ø A	Ø D	LD	Ø A2	WH	ZA	ZB	EE	PL	S	RT	BG	LA	TG	E	Ø D1	D2	Ø D3	Ø B	LB	CH
20	10	10.5	5.5	5	6	37	51	M5	7	2.5	M5	14.25	3	22	36	17	M4	4	9	2.1	9
25	10	14	5.5	5	6	39	53	M5	7	2.5	M5	14	3	26	39.5	22	M5	5	9	2.1	9
32	12	17	6.5	5	7	44	61	G 1/8	7.75	6	M6	15.5	3.5	32.5	49.5	28	M5	5	9	2.1	10
40	12	17	6	6	7	45	62	G 1/8	7.75	8	M6	15.5	3.5	38	54	33	M5	5	9	2.1	10
50	16	22	7.5	8	8	45	65	G 1/8	7.5	8	M8	14.5	4	46.5	69	42	M6	6	12	2.6	13
63	16	22	7.5	8	8	49	69	G 1/8	7.75	11.5	M8	15.5	4	56.5	79	50	M6	6	12	2.6	13
80	20	24	10.5	10	10	54	78	G 1/8	8.75	11.5	M10	17.5	5	72	94.5	65	M8	8	12	2.6	17
100	25	24	10.5	10	10	67	91	G 1/8	10.5	20	M10	21	5	89	114.5	80	M10	10	12	2.6	21

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg lbs.	0.153 (0.337)	0.183 (0.403)	0.300 (0.661)	0.362 (0.798)	0.626 (1.380)	0.861 (1.898)	1.413 (3.121)	2.492 (5.492)
add-on per 100 mm stroke lbs.	0.224 (0.494)	0.241 (0.531)	0.354 (0.780)	0.357 (0.787)	0.586 (1.292)	0.636 (1.402)	0.914 (2.014)	1.237 (2.726)

**Compact cylinders, piston-Ø 20 – 100 mm**  
**Double acting with double-ended piston rod**  
**ISO 21287, with female thread**

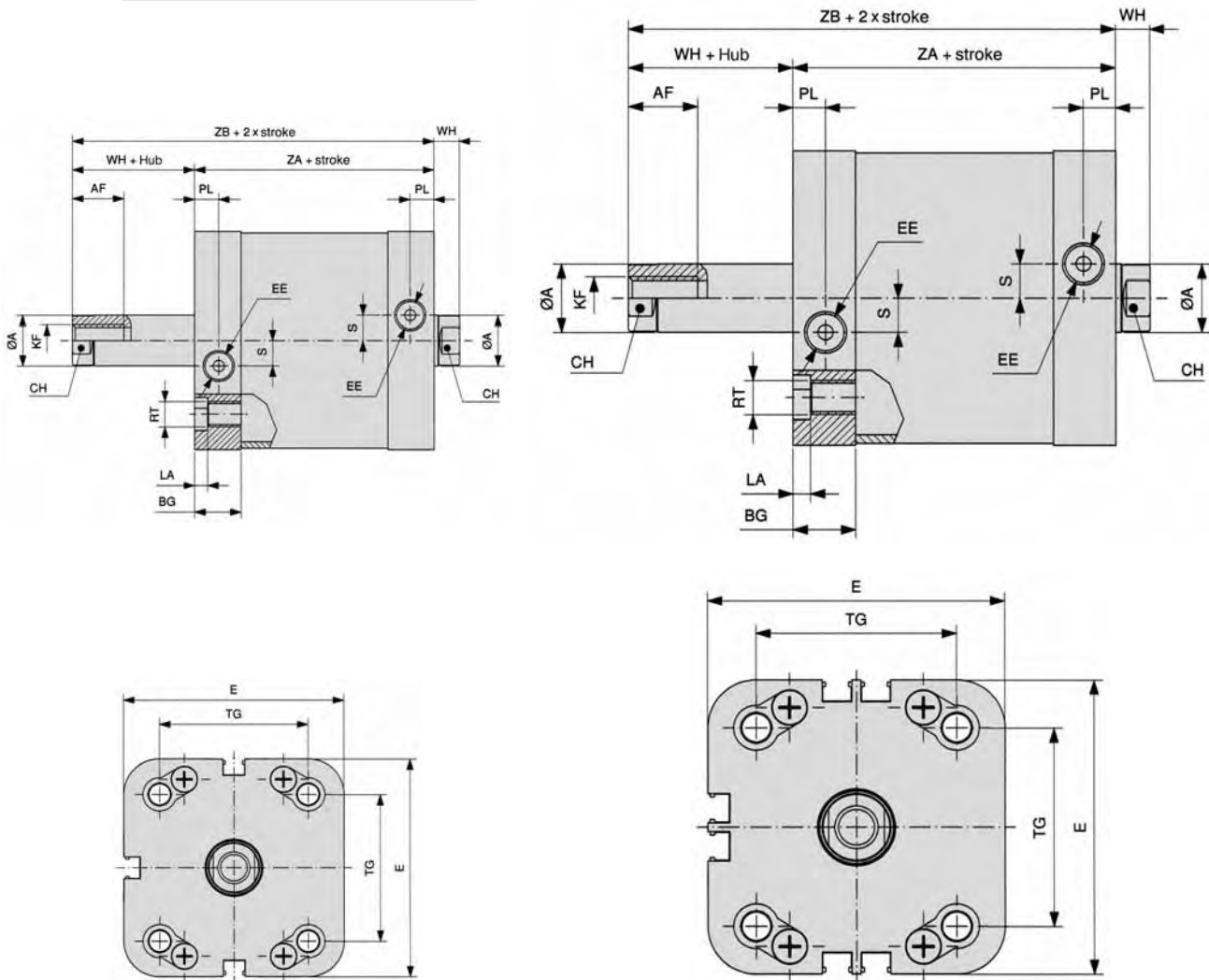


**Dimensions for series**

**XV** (Type for order code: -610)

**Ø 32 – 100**

**Ø 20 – 25**



Ø	ØA	CH	AF	WH	ZA	ZB	KF	EE	BG	TG	E	RT	LA	PL	ØB	LB	S
20	10	9	10	6 ± 1.4	37 ± 0.5	43 ± 1.4	M6	M5	14.25	22 ± 0.4	36	M5	3	7	9	2.1	2.5
25	10	9	10	6 ± 1.4	39 ± 0.5	45 ± 1.4	M6	M5	14	26 ± 0.4	39.5	M5	3	7	9	2.1	2.5
32	12	10	12	7 ± 1.6	44 ± 0.5	51 ± 1.6	M8	G 1/8	15.5	32.5 ± 0.5	49.5	M6	3.5	7.75	9	2.1	6
40	12	10	12	7 ± 1.6	45 ± 0.7	52 ± 1.6	M8	G 1/8	15.5	38 ± 0.5	54	M6	3.5	7.75	9	2.1	8
50	16	13	16	8 ± 1.6	45 ± 0.7	53 ± 1.6	M10	G 1/8	14.5	46.5 ± 0.6	69	M8	4	7.5	12	2.6	8
63	16	13	16	8 ± 1.6	49 ± 0.8	57 ± 1.6	M10	G 1/8	15.5	56.5 ± 0.7	79	M8	4	7.75	12	2.6	11.5
80	20	17	20	10 ± 2.0	54 ± 0.8	64 ± 2.0	M12	G 1/8	17.5	72 ± 0.7	94.5	M10	5	8.75	12	2.6	11.5
100	25	21	20	10 ± 2.0	67 ± 1.0	77 ± 2.0	M12	G 1/8	21	89 ± 0.7	114.5	M10	5	10.5	12	2.6	20

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.154	0.183	0.296	0.336	0.567	0.771	1.256	2.341
lbs.	(0.339)	(0.403)	(0.652)	(0.741)	(1.250)	(1.699)	(2.768)	(5.160)
add-on per 100 mm stroke	0.254	0.271	0.411	0.401	0.663	0.713	1.035	1.496
lbs.	(0.560)	(0.597)	(0.906)	(0.884)	(1.461)	(1.571)	(2.281)	(3.297)

**Compact cylinders, piston-Ø 20 – 100 mm  
Double acting with double-ended piston rod  
ISO 21287, with male thread**

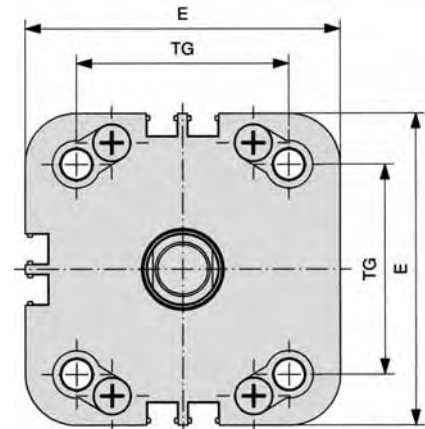
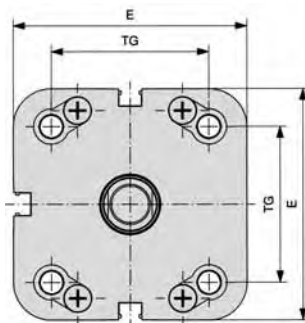
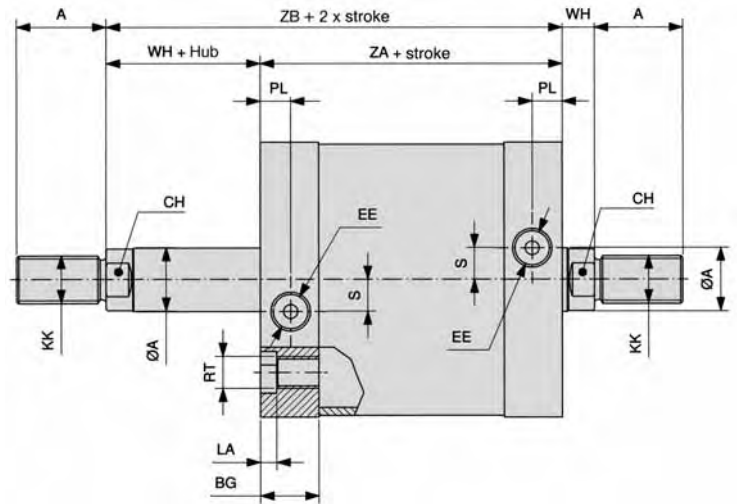
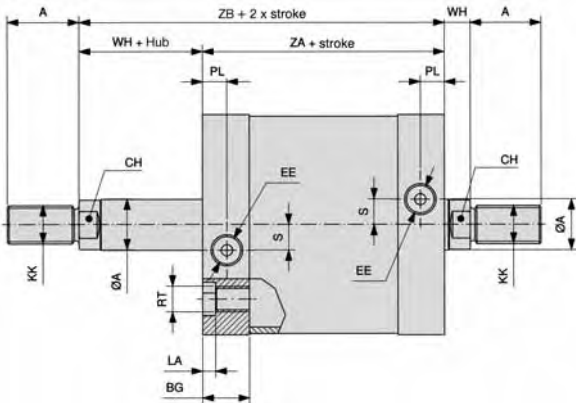


**Dimensions for series**

**XV** (Type for order code: -600)

**Ø 20 – 25**

**Ø 32 – 100**



Ø	ØA	CH	A	WH	ZA	ZB	KK	EE	BG	TG	E	RT	LA	PL	ØB	LB	S
20	10	9	16	6 ± 1,4	37 ± 0,5	43 ± 1,4	M8	M5	14,25	22 ± 0,4	36	M5	3	7	9	2,1	2,5
25	10	9	16	6 ± 1,4	39 ± 0,5	45 ± 1,4	M8	M5	14	26 ± 0,4	39,5	M5	3	7	9	2,1	2,5
32	12	10	19	7 ± 1,6	44 ± 0,5	51 ± 1,6	M10 x 1,25	G 1/8	15,5	32,5 ± 0,5	49,5	M6	3,5	7,75	9	2,1	6
40	12	10	19	7 ± 1,6	45 ± 0,7	52 ± 1,6	M10 x 1,25	G 1/8	15,5	38 ± 0,5	54	M6	3,5	7,75	9	2,1	8
50	16	13	22	8 ± 1,6	45 ± 0,7	53 ± 1,6	M12 x 1,25	G 1/8	14,5	46,5 ± 0,6	69	M8	4	7,5	12	2,6	8
63	16	13	22	8 ± 1,6	49 ± 0,8	57 ± 1,6	M12 x 1,25	G 1/8	15,5	56,5 ± 0,7	79	M8	4	7,75	12	2,6	11,5
80	20	17	28	10 ± 2,0	54 ± 0,8	64 ± 2,0	M16 x 1,5	G 1/8	17,5	72 ± 0,7	94,5	M10	5	8,75	12	2,6	11,5
100	25	21	28	10 ± 2,0	67 ± 1,0	77 ± 2,0	M16 x 1,5	G 1/8	21	89 ± 0,7	114,5	M10	5	10,5	12	2,6	20

0  
-0,5

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg lbs.	0,170 (0.375)	0,199 (0.439)	0,327 (0.721)	0,367 (0.809)	0,622 (1.371)	0,831 (1.832)	1,373 (3.026)	2,459 (5.420)
add-on per 100 mm stroke lbs.	0,254 (0.560)	0,271 (0.597)	0,411 (0.906)	0,401 (0.884)	0,663 (1.461)	0,713 (1.571)	1,035 (2.281)	1,496 (3.297)

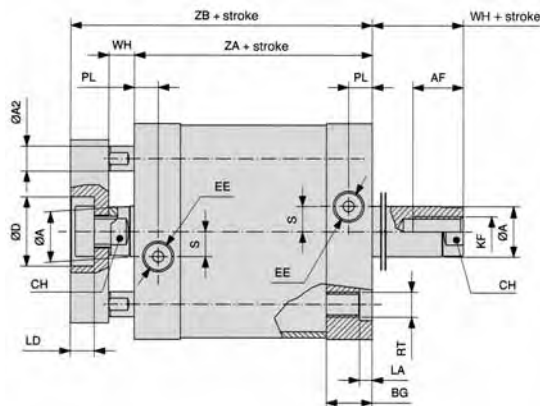
**Compact cylinders, piston-Ø 20 – 100 mm**  
**Double acting, with non rotating**  
**and double-ended piston rod,**  
**ISO 21287, with female thread**



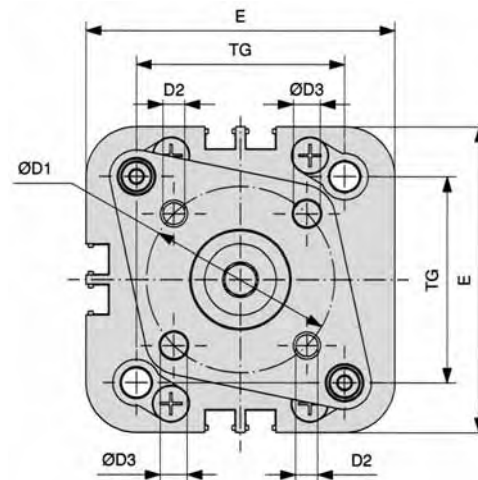
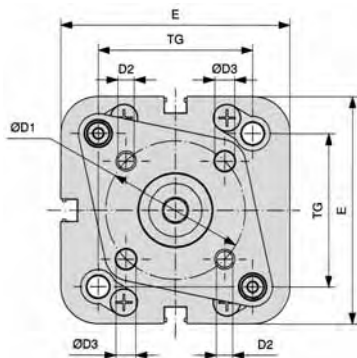
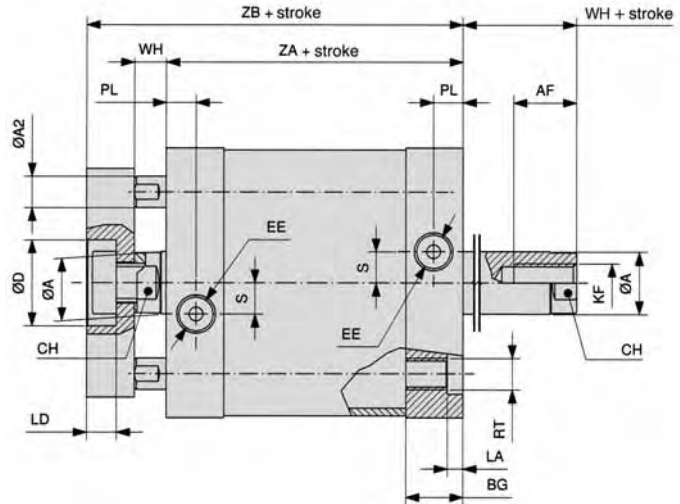
**Dimensions for series**

**XV** (Type for order code: -620)

Ø 20 – 25



Ø 32 – 100



Ø	ØA	KF	AF	ØD	LD	ØA2	WH	ZA	ZB	EE	PL	S	RT	BG	LA	TG	E	ØD1	D2	ØD3	CH
20	10	M6	10	10.5	5.5	5	6	37	51	M5	7	2.5	M5	14.25	3	22	36	17	M4	4	9
25	10	M6	10	14	5.5	5	6	39	53	M5	7	2.5	M5	14	3	26	39.5	22	M5	5	9
32	12	M8	12	17	6.5	5	7	44	61	G1/8	7.75	6	M6	15.5	3.5	32.5	49.5	28	M5	5	10
40	12	M8	12	17	6	6	7	45	62	G1/8	7.75	8	M6	15.5	3.5	38	54	33	M5	5	10
50	16	M10	16	22	7.5	8	8	45	65	G1/8	7.5	8	M8	14.5	4	46.5	69	42	M6	6	13
63	16	M10	16	22	7.5	8	8	49	69	G1/8	7.75	11.5	M8	15.5	4	56.5	79	50	M6	6	13
80	20	M12	20	24	10.5	10	10	54	78	G1/8	8.75	11.5	M10	17.5	5	72	94.5	65	M8	8	17
100	25	M12	20	24	10.5	10	10	67	91	G1/8	10.5	20	M10	21	5	89	114.5	80	M10	10	21

Piston-Ø	20	25	32	40	50	63	80	100
Mass at 0 mm stroke in kg	0.192	0.224	0.356	0.417	0.720	0.951	1.970	2.762
lbs.	(0.423)	(0.494)	(0.785)	(0.919)	(1.587)	(2.096)	(4.342)	(6.087)
add-on per 100 mm stroke	0.285	0.302	0.442	0.445	0.742	0.792	1.158	1.619
lbs.	(0.628)	(0.666)	(0.974)	(0.981)	(1.635)	(1.746)	(2.552)	(3.568)

Accessories for series  
**XV + XVE**

**Piston rod accessories**



Rod clevis with pin  
**FD + RD**  
Page 8.212



Piston rod nut  
**FE + RL**  
Page 8.212



Flexible coupling  
**FK**  
Page 8.213



Rod eye  
**FO + RO**  
Page 8.213

**Mounting accessories**



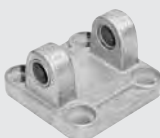
Foot mount  
**XLB-Ø-01** (Ø 32 – 100)  
Page 8.158



Flange mount  
**NXB-Ø-02** (Ø 20 + 25)  
Page 8.158  
**XLB-Ø-02** (Ø 32 – 100)  
Page 8.158



Swivel mount  
**NXB-Ø-04** (Ø 20 + 25)  
Page 8.159  
**XLB-Ø-05** (Ø 32 – 100)  
Page 8.159



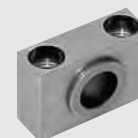
Clevis mount with bushing  
**XLB-Ø-04** (Ø 32 – 100)  
Page 8.159



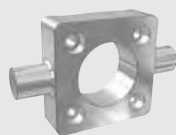
Swivel mount 90°  
**XLB-Ø-06** (Ø 32 – 100)  
Page 8.160



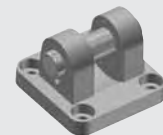
Clevis pin  
**XLB-Ø-08** (Ø 32 – 100)  
Page 8.160



Bearing block  
**XLB-Ø-09** (Ø 32 – 100)  
Page 8.161



Trunnion flange mount  
**XLB-Ø-11** (Ø 32 – 100)  
Page 8.161



Small clevis mount  
with non rotating pin  
**XLB-Ø-14** (Ø 32 – 100)  
Page 8.162

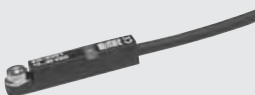


Swivel mount with  
spherical bearing  
**XLB-Ø-12** (Ø 32 – 100)  
Page 8.162



Clevis mount  
**RC-30** (Ø 20 + 25)  
Page 8.163

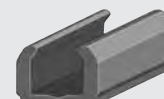
**Proximity sensors**



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221

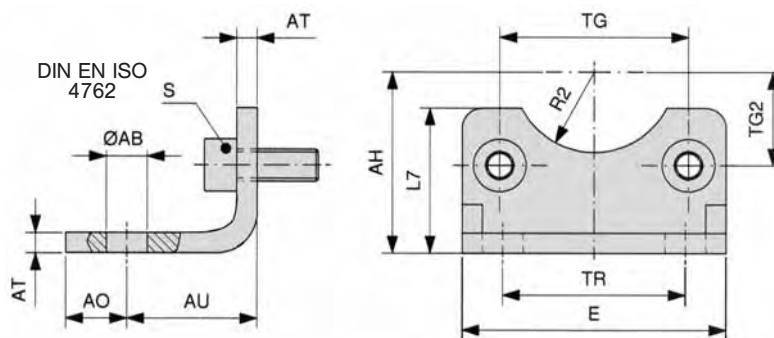


Cover for sensor groove  
**XLB-011** 0,5 m

Mounting accessories for series

# XV

**Foot mount**  
1 pair



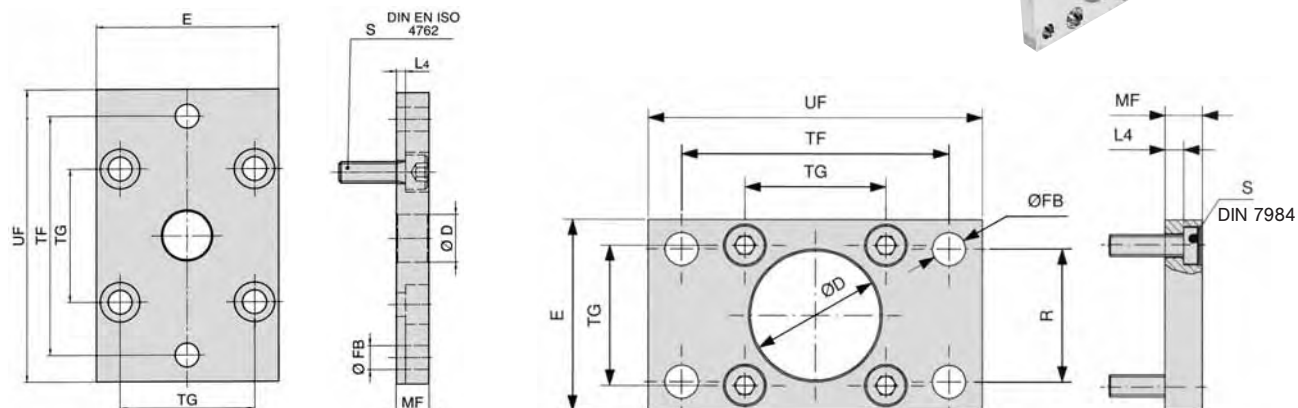
Material: steel (zinc-plated)

Order number	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
<b>XLB-032-01</b>	7	32	11	24	4	45	30	15	M 6 x 20	32,5	16,25	32
<b>XLB-040-01</b>	10	36	8	28	4	52	30	17,5	M 6 x 20	38	19	36
<b>XLB-050-01</b>	10	45	15	32	5	65	36	20	M 8 x 20	46,5	23,25	45
<b>XLB-063-01</b>	10	50	13	32	5	75	35	22,5	M 8 x 20	56,5	28,25	50
<b>XLB-080-01</b>	12	63	14	41	6	95	47	22,5	M 10 x 20	72	36	63
<b>XLB-100-01</b>	14,5	71	16	41	6	115	53	27,5	M 10 x 20	89	44,5	75
	H14	JS16		± 0,2				H15		± 0,2		JS14

**Flange mount**

Ø 20 – 25 = NXB-...

Ø 32 – 100 = XLB-...



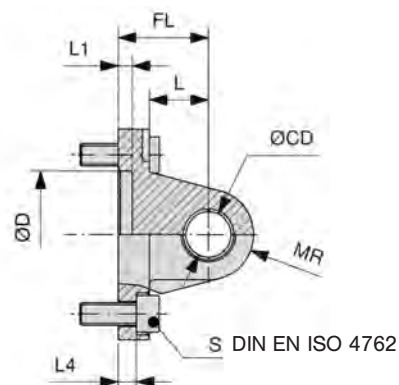
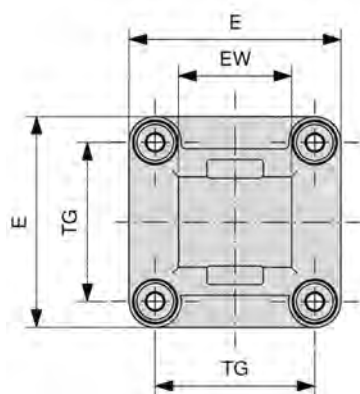
Material: steel (zinc-plated)

Order number	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
<b>NXB-020-02</b>	12	36	6,6	4,6	10	-	M 5 x 20	*55	22	70
<b>NXB-025-02</b>	12	40	6,6	4,6	10	-	M 5 x 20	*60	26	76
<b>XLB-032-02</b>	30	45	7	5	10	32	M 6 x 20	64	32,5	80
<b>XLB-040-02</b>	35	52	9	5	10	36	M 6 x 20	72	38	90
<b>XLB-050-02</b>	40	65	9	6,5	12	45	M 8 x 20	90	46,5	110
<b>XLB-063-02</b>	45	75	9	6,5	12	50	M 8 x 20	100	56,5	120
<b>XLB-080-02</b>	45	95	12	9	16	63	M 10 x 25	126	72	150
<b>XLB-100-02</b>	55	115	14	9	16	75	M 10 x 25	150	89	170
	H11		H13	- 0,5	JS14	JS14		*JS13 JS14	± 0,2	

Mounting accessories for series

# XV

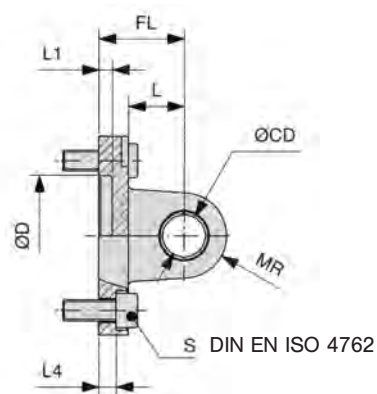
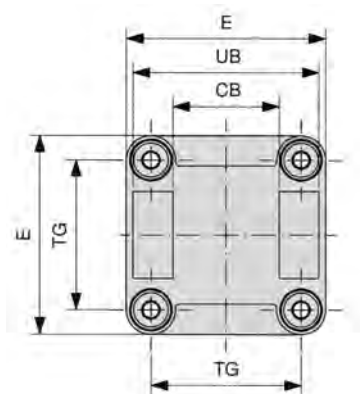
## Swivel mount



Material: Al

Order number	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
NXB-020-04	8	12	34	16	20	14	2,6	*3	8	M 5 x 16	22
NXB-025-04	8	12	38	16	20	14	2,6	*3	8	M 5 x 16	26
XLB-032-05	10	30	45	26	22	13	5	5,5	10	M 6 x 20	32,5
XLB-040-05	12	35	52	28	25	16	5	5,5	12	M 6 x 20	38
XLB-050-05	12	40	65	32	27	16	5	6,5	12	M 8 x 20	46,5
XLB-063-05	16	45	75	40	32	21	5	6,5	16	M 8 x 20	56,5
XLB-080-05	16	45	95	50	36	22	5	10	16	M 10 x 25	72
XLB-100-05	20	55	115	60	41	27	5	10	20	M 10 x 25	89
	H9	H11		- 0,2 - 0,6	± 0,2			*+ 0,3 *± 0,5			± 0,2

## Clevis mount with bushing



Material: Al

Order number	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
XLB-032-04	26	10	30	45	22	13	5	5,5	10	M 6 x 20	32,5	45
XLB-040-04	28	12	35	52	25	16	5	5,5	12	M 6 x 20	38	52
XLB-050-04	32	12	40	65	27	16	5	6,5	12	M 8 x 20	46,5	60
XLB-063-04	40	16	45	75	32	21	5	6,5	16	M 8 x 20	56,5	70
XLB-080-04	50	16	45	95	36	22	5	10	16	M 10 x 25	72	90
XLB-100-04	60	20	55	115	41	27	5	10	20	M 10 x 25	89	110
	H14	H9	H11		± 0,2			± 0,5			± 0,2	h13

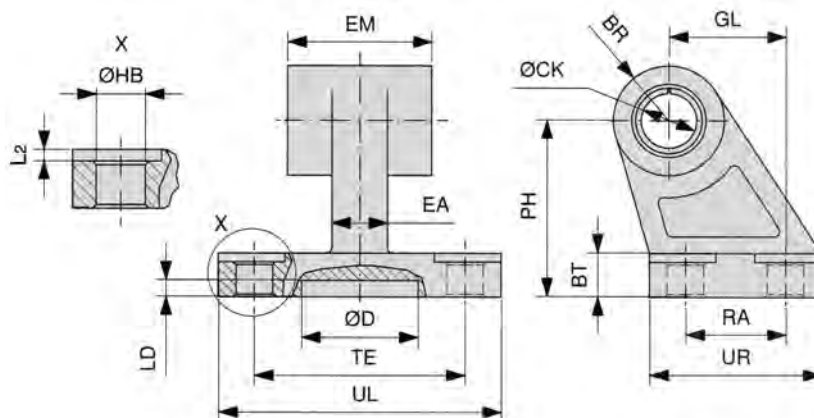
**Accessories for compact cylinders  
series XV and XVE,  
piston-Ø 20 – 100 mm**



**Mounting accessories for series**

**XV**

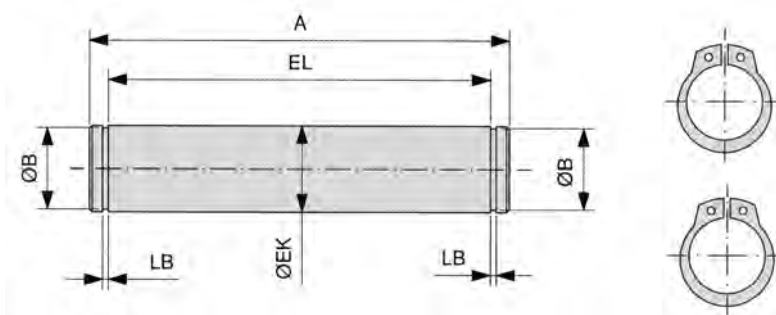
**Swivel mount 90°**



Material: Al

Order number	BR	BT	Ø CK	Ø D	EA	EM	GL	Ø HB	L2	LD	PH	RA	TE	UL	UR
XLB-032-06	10	8	10	21	10	26	21	6,6	1,6	3	32	18	38	51	31
XLB-040-06	11	10	12	21	15	28	24	6,6	1,6	3	36	22	41	54	35
XLB-050-06	13	12	12	21	16	32	33	9	1,6	3	45	30	50	65	45
XLB-063-06	15	14	16	21	16	40	37	9	1,6	3	50	35	52	67	50
XLB-080-06	15	14	16	21	20	50	47	11	2,5	3	63	40	66	86	60
XLB-100-06	19	17	20	11	20	60	55	11	2,5	3	71	50	76	96	70
			H9				JS14	H13			JS15	JS14	JS14		

**Clevis pin**



Material: steel (zinc-plated)

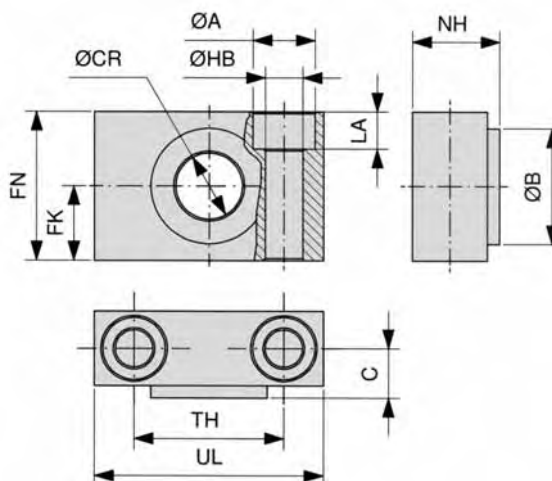
Snap rings are included.

Order number	A	Ø B	Ø EK	EL	LB
XLB-032-08	53	9,6	10	46	1,1
XLB-040-08	60	11,5	12	53	1,1
XLB-050-08	68	11,5	12	61	1,1
XLB-063-08	78	15,2	16	71	1,1
XLB-080-08	98	15,2	16	91	1,1
XLB-100-08	118	19	20	111	1,3
			e8	+ 2	

Mounting accessories for series

# XV

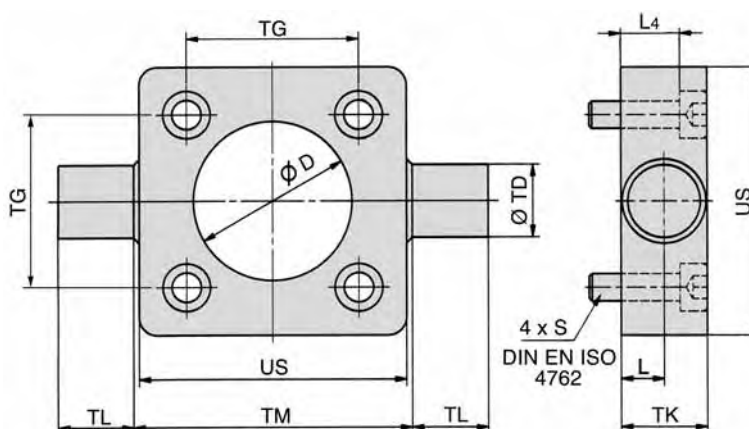
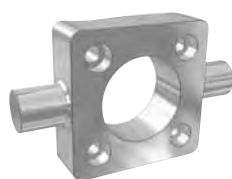
## Bearing block



Order number = 1 pair  
Material: steel (zinc-plated), bronze

Order number	Ø A	Ø B	C	Ø CR	FK	FN	Ø HB	LA	NH	TH	UL
XLB-032-09	11	22	10,5	12	15	30	6,6	7	18	32	46
XLB-040-09	15	28	12	16	18	36	9	9	21	36	55
XLB-063-09	18	32	13	20	20	40	11	11	23	42	65
XLB-100-09	20	39	16	25	25	50	14	13	28,5	50	75
				H9	± 0,1		H13			± 0,2	

## Trunnion flange mount



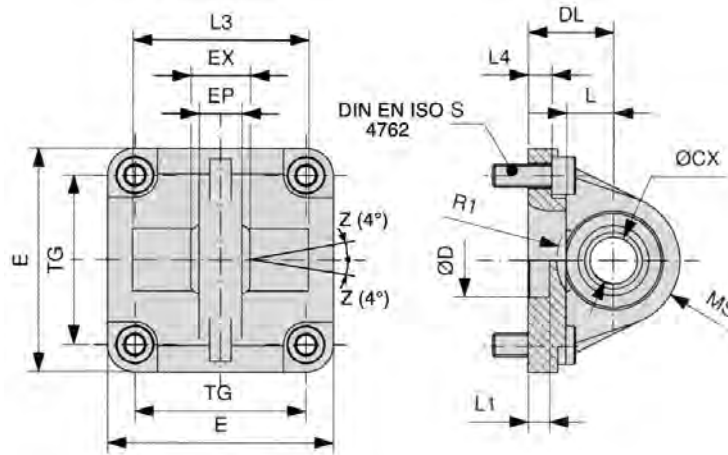
Material: steel (zinc-plated)

Order number	D	L	L4	S	TD	TG	TK	TL	Ø TM	US
XLB-032-11	30	6,5	8	M 6 x 20	12	32,5	14	12	50	46
XLB-040-11	35	9	13	M 6 x 25	16	38	19	16	63	59
XLB-050-11	40	9	11	M 8 x 25	16	46,5	19	16	75	69
XLB-063-11	45	11,5	16	M 8 x 30	20	56,5	24	20	90	84
XLB-080-11	45	11,5	14	M 10 x 30	20	72	24	20	110	102
XLB-100-11	55	14	19	M 10 x 35	25	89	29	25	132	125
	H11	+ 0,2			e9	± 0,2		h14	h14	

Mounting accessories for series

# XV

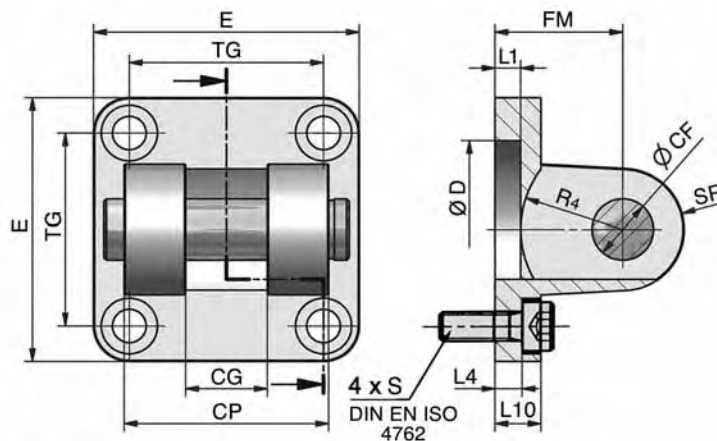
**Swivel mount with spherical bearing**



Material: Al

Order number	Ø CX	Ø D	DL	E	EP	EX	L	L1	L3	L4	MS	R1	S	TG
XLB-032-12	10	30	22	45	10,5	14	12	7	–	5,5	16	–	M 6 x 20	32,5
XLB-040-12	12	35	25	52	12	16	15	7	–	5,5	18	–	M 6 x 20	38
XLB-050-12	16	40	27	65	15	21	15	7	51	6,5	21	19	M 8 x 20	46,5
XLB-063-12	16	45	32	75	15	21	20	7	–	6,5	23	–	M 8 x 20	56,5
XLB-080-12	20	45	36	95	18	25	20	9	74	10	28	24	M 10 x 25	72
XLB-100-12	20	55	41	115	18	25	25	9	–	10	30	–	M 10 x 25	89
	H7	H11	± 0,2			± 0,1				± 0,5				± 0,2

**Small clevis mount with non rotating pin**



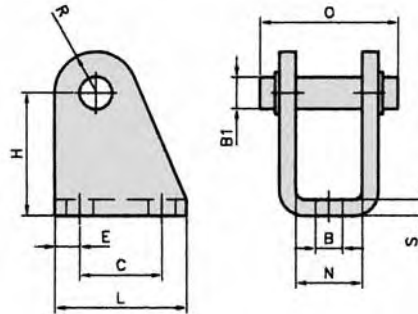
Material of clevis: Al  
of pin: steel (zinc-plated)

Order number	CF	CG	CP	D	E	FM	L1	L4	L10	R4	S	SR	TG
XLB-032-14	10	14	34	30	45	22	5	5,5	9	17	M 6 x 20	10	32,5
XLB-040-14	12	16	40	35	52	25	5	5,5	9	20	M 6 x 20	12	38
XLB-050-14	16	21	45	40	65	27	5	6,5	11	22	M 8 x 20	14	46,5
XLB-063-14	16	21	51	45	75	32	5	6,5	11	25	M 8 x 20	18	56,5
XLB-080-14	20	25	65	45	95	36	5	10	14	30	M 10 x 25	20	72
XLB-100-14	20	25	75	55	115	41	5	10	14	32	M 10 x 25	22	89
	F7	D10	d 12	H11			± 0,2		± 0,5				± 0,2

**Accessories for compact cylinders  
series XV and XVE,  
piston-Ø 20 – 100 mm**



**Clevis mount  
for Ø 20 + 25**



Material: steel (zinc-plated)

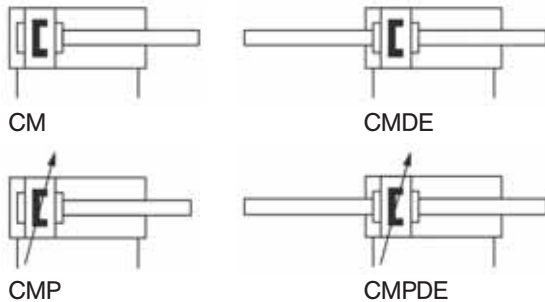
Order number	B	B <sub>1</sub>	C	H	L	N	O	R	S	E
<b>RC-30</b>	6,6	8	20	30	32	16,1	30	10	4	6

**Pneumatic cylinders, piston-Ø 16 – 25 mm  
Double acting DIN ISO 6432,  
stainless steel**

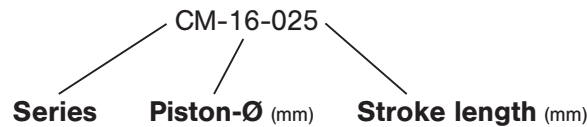


**Technical data for series**

# CM



**Order code**



- CM – standard cylinder
- CMDE – with double-ended piston rod
- CMP – with adjustable cushions
- CMPDE – with double-ended piston rod and adjustable cushions

**Design and function**

Double acting pneumatic cylinder with permanent magnet and built-in cushioning rings. Standard stroke lengths in table below, additional lengths on request.

Order number Please complete according to order code.	CM-16-...	CM-20-...	CM-25-...
<b>Piston-Ø mm</b>	16	20	25
<b>Force at 6 bar in N<sup>1)</sup></b>			
<b>Extension</b>	105	170	265
<b>Retraction</b>	90	140	220
<b>Connection</b>	M5 (10/32 UNF)	G 1/8	G 1/8
<b>Piston rod thread</b>	M6	M8	M10 x 125
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)		
<b>Temperature range</b>	- 30 °C ... + 80 °C (- 22 °F ... + 176 °F)		
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air		
<b>Standard stroke lengths mm<sup>2)</sup></b>	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, max. 250	10, 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, max. 600	
<b>Materials<sup>3)</sup></b>	Cylinder tube: AISI 304 (1.4301) End caps: AISI 304 (1.4301) Piston rod: AISI 316 (1.4404) Seals: PU		

<sup>1)</sup> = The internal friction is considered.

<sup>2)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

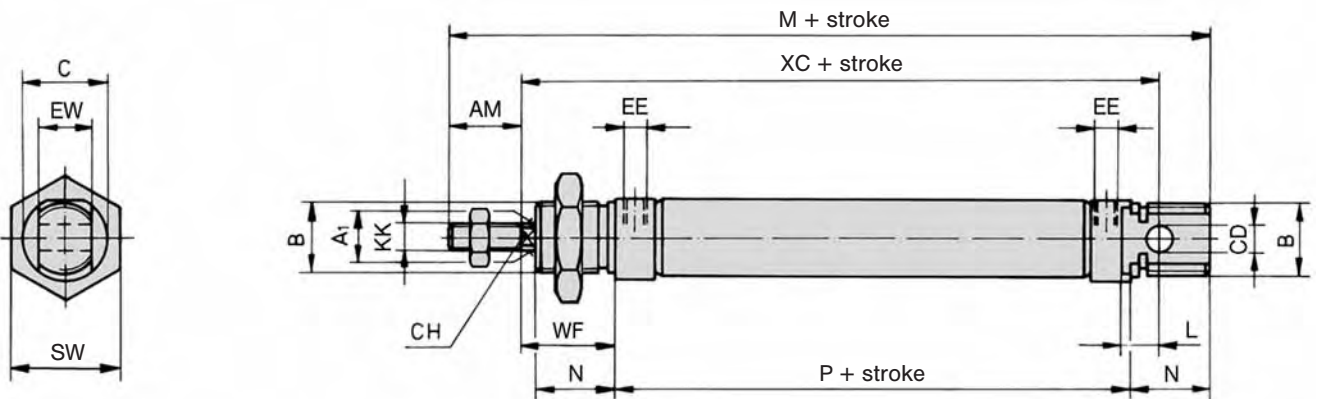
<sup>3)</sup> = other materials on request.

**Pneumatic cylinders, piston-Ø 16 – 25 mm  
Double acting DIN ISO 6432,  
stainless steel**



**Dimensions for series**

# CM



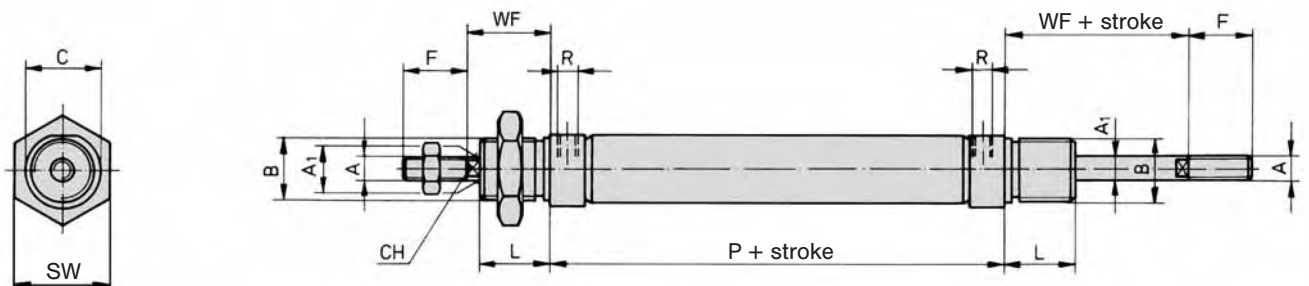
Piston-Ø	A <sup>1</sup>	AM	B	C	CD	CH	EE	EW	KK	L	M	N	P	SW	WF	XC
16	6	16	M 16 x 1,5	21	6	5	M5 (10/32 UNF)	12	M6	9	109	17	53	22	22	82
20	8	20	M 22 x 1,5	27	8	7	G 1/8	16	M8	12	131	20	67	27	24	95
25	10	22	M 22 x 1,5	30	8	9	G 1/8	16	M10 x 1,25	12	140	22	68	27	28	104

H 9
d 13

**Pneumatic cylinders, piston-Ø 8 – 25 mm  
Double acting with double-ended piston rod  
according to DIN ISO 6432, stainless steel**

**Dimensions for series**

# CMDE



Piston-Ø	A	A <sup>1</sup>	B	C	D	E	F	G	L	M	N	P	R	CH	SW	WF
16	M6	6	M 16 x 1,5	19	12	6	16	82	18	109	9	53	M5 (10/32 UNF)	5	22	22
20	M8	8	M 22 x 1,5	27	16	8	20	95	20	131	12	67	G 1/8	7	27	24
25	M 10 x 1,25	10	M 22 x 1,5	30	16	8	22	104	22	140	12	68	G 1/8	9	27	28

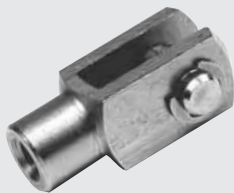
Accessories for series

# CM

## Piston rod accessories



Rod eye  
**PO-**  
Page 8.215



Rod clevis with pin  
**PD-**  
Page 8.214



Piston rod nut  
**PL-**  
Page 8.215

## Mounting accessories



Foot mount  
Ø 16 – 25  
**PA-**  
Page 8.174



Clevis mount  
Ø 16 – 25  
**PC-**  
Page 8.175



Flange mount  
Ø 16 – 25  
**PB-**  
Page 8.174

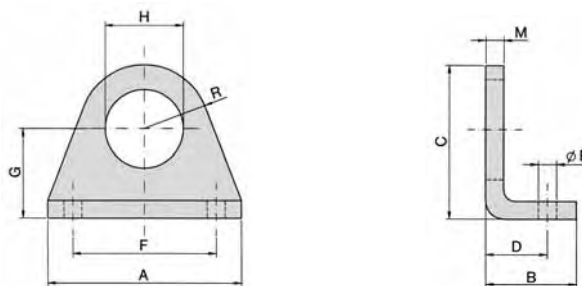


Mounting nut  
Ø 16 – 25  
**PM-**

Mounting accessories for series

# CM

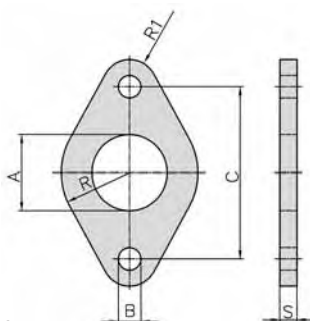
## Foot mount



Material: stainless steel AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	M	R
PA-16	42	20	33	14	5.5	32	20	16.1	4	13
PA-25	54	25	45	17	6.6	40	25	22.1	5	20

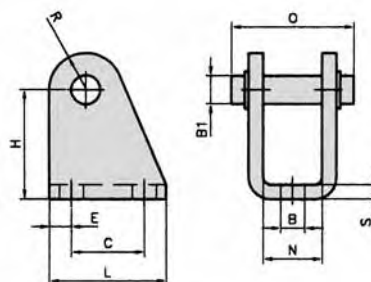
## Flange mount



Material: stainless steel AISI 304 (1.4301)

Order number	A	B	C	R	R <sub>1</sub>	S
PB-16	16.1	5.5	40	15	6	4
PB-25	22.1	6.6	50	20	8	5

## Clevis mount



Material: stainless steel AISI 304 (1.4301)

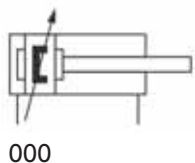
Order number	B	B <sub>1</sub>	C	H	L	N	O	R	S	E
PC-16	5.5	6	15	27	25	12.1	24	7	3	5
PC-25	6.6	8	20	30	32	16.1	30	10	4	6

**Pneumatic cylinders, piston-Ø 32 – 100 mm**  
**Double acting with magnetic piston**  
**DIN ISO 1552, stainless steel**

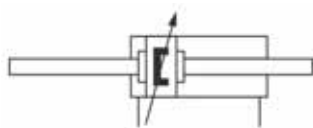


**Technical data for series**

# CX



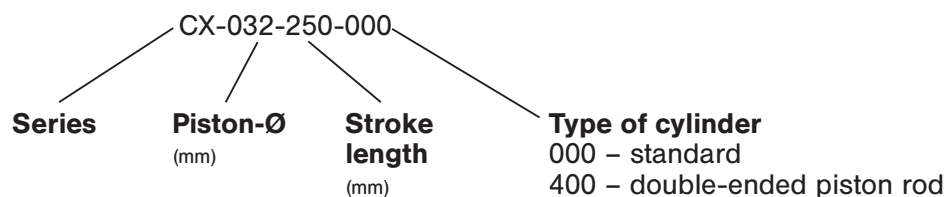
000



400



**Order code**



**Design and function**

Double acting pneumatic cylinder with adjustable cushions and permanent magnet for proximity sensors. Standard stroke lengths in table below, additional lengths on request.

Order number Please complete according to order code.	CX-032-...	CX-040-...	CX-050-...	CX-063-...	CX-080-...	CX-100-...
<b>Piston-Ø mm</b>	32	40	50	63	80	100
<b>Force at 6 bar in N<sup>1)</sup></b>						
<b>Extension</b>	430	680	1060	1680	2700	4240
<b>Retraction</b>	370	570	890	1510	2550	3970
<b>Connection</b>	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
<b>Piston rod thread</b>	M 10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5
<b>Cushioning length mm</b>	27	29	32	32	32	32
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)					
<b>Temperature range</b>	- 20 °C ... + 80 °C (- 10 °C ... + 150 °C on request) - 4 °F ... + 176 °F (+ 14 °F ... + 302 °F on request)					
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air					
<b>Standard stroke lengths</b> mm <sup>2)</sup>	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, max. 1000					
<b>Materials<sup>3)</sup></b>	Cylinder tube: AISI 304 (1.4301) End caps: AISI 304 (1.4301) Piston rod: AISI 316 (1.4404) Seals: PU/NBR					

<sup>1)</sup> = The internal friction is considered.

<sup>2)</sup> = refer to "Critical Load Diagram" on page 8.240 to determine critical values on the piston rod.

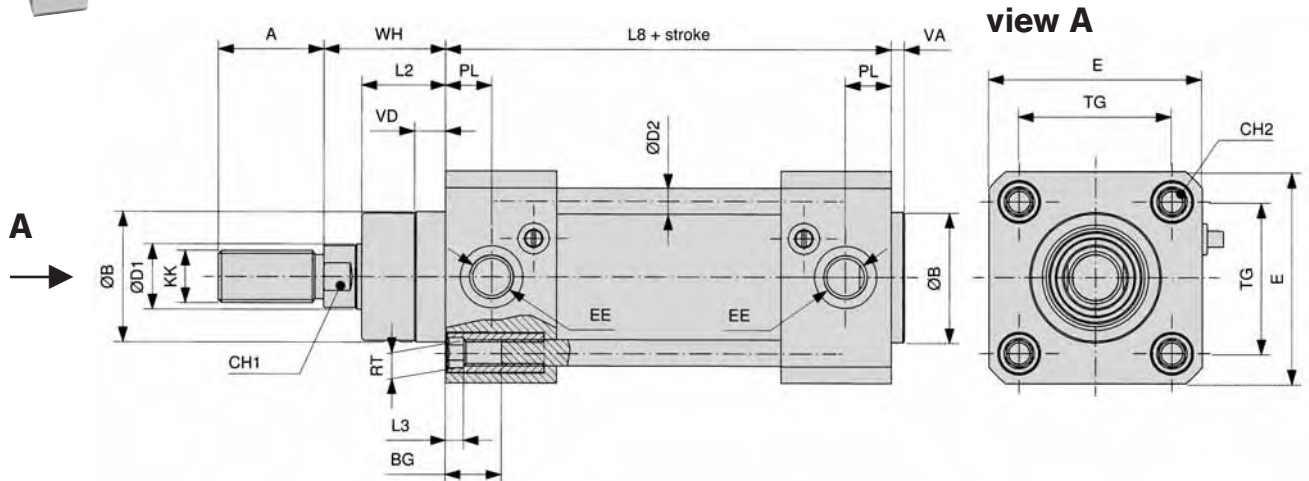
<sup>3)</sup> = other materials on request.

**Pneumatic cylinders, piston-Ø 32 – 100 mm**  
**Double acting with magnetic piston**  
**DIN ISO 1552, stainless steel**



**Dimensions for series**

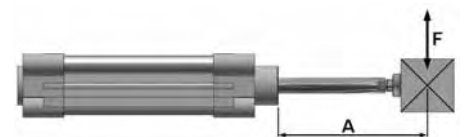
**CX** (Type for order code: -000)



Piston-Ø	A	Ø B	BG	CH1	CH2	Ø D1	Ø D2	E	EE	KK
32	22	30	16.5	10	6	12	6	50	G 1/8	M 10 x 1.25
40	24	35	16.5	13	6	16	6	55	G 1/4	M 12 x 1.25
50	32	40	17.5	17	8	20	8	65	G 1/4	M 16 x 1.5
63	32	45	17.5	17	8	20	8	75	G 3/8	M 16 x 1.5
80	40	45	17.5	22	-	25	10	95	G 3/8	M 20 x 1.5
100	40	55	17.5	22	-	25	10	110	G 1/2	M 20 x 1.5

Piston-Ø	L2	L3	L8	PL	RT	TG	VA	VD	WH
32	18	5	94	13	M6	32.5	4	9.5	26
40	22	5	105	14	M6	38	4	9.5	30
50	25.5	5	106	14	M8	46.5	4	9.5	37
63	25	5	121	16	M8	56.5	4	9.5	37
80	35	-	128	17	M10	72	4	10	46
100	38	-	138	18	M10	89	4	10	51

**Permissible side load (N) for cylinder CX**



Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75	55	50	40	34	28	23	20	16	12	9	7
40	175	150	130	105	91	78	62	55	45	35	28	21
50 + 63	220	180	170	130	120	105	90	80	65	52	43	33
80 + 100	500	450	400	350	310	270	230	205	180	150	125	100

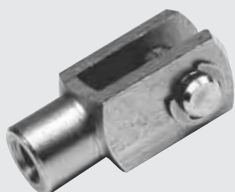
Accessories for series

# CX

Piston rod accessories



Rod eye  
**PO-**  
Page 8.215



Rod clevis with pin  
**PD-**  
Page 8.214



Piston rod nut  
**PL-**  
Page 8.215

Mounting accessories



Foot mount  
**CXB-Ø-01**  
Page 8.183



Flange mount  
**CXB-Ø-02**  
Page 8.183



Clevis mount  
**CXB-Ø-03**  
Page 8.184



Swivel mount  
**CXB-Ø-05**  
Page 8.184



Swivel mount 90°  
**CXB-Ø-06**  
Page 8.185

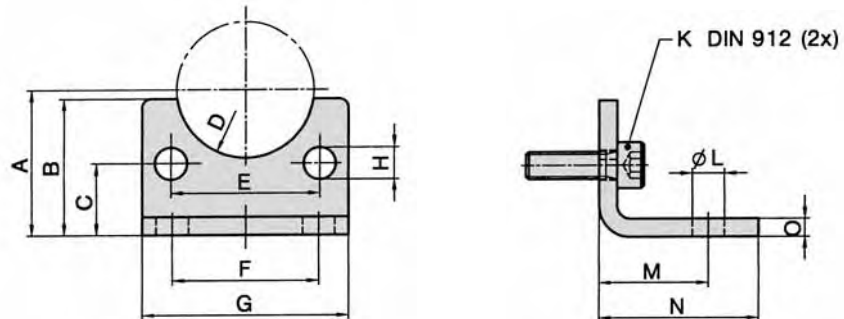


Clevis pin  
**CXB-Ø-08**  
Page 8.185

Mounting accessories for series

# CX

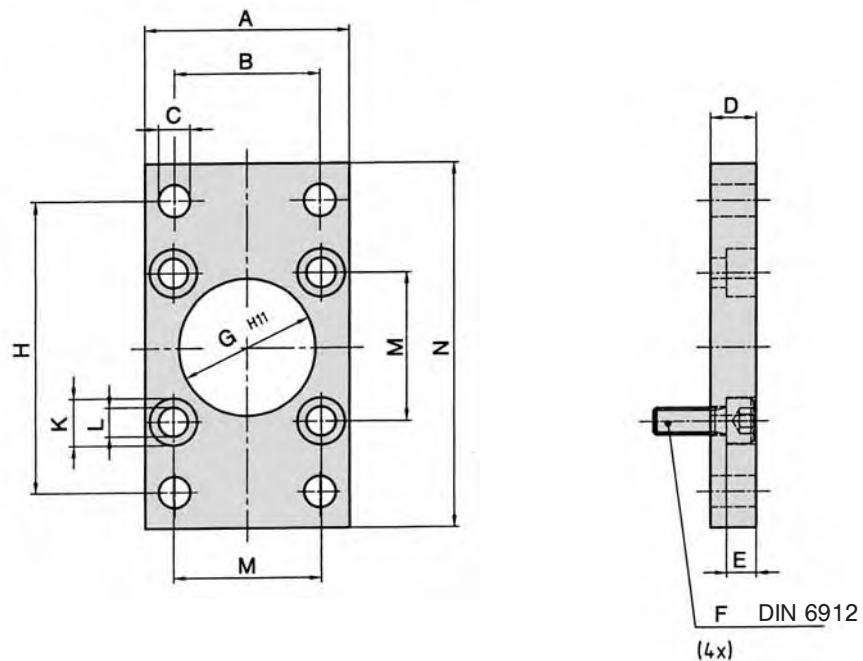
**Foot mount**  
1 pair



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	O
<b>CXB-032-01</b>	32	30	15.75	R 15	32.5	32	45	7	M6 x 20	7	24	35	4
<b>CXB-040-01</b>	36	30	17	R 17.5	38	36	52	7	M6 x 20	9	28	36	4
<b>CXB-050-01</b>	45	36	21.75	R 20	46.5	45	65	9	M8 x 25	9	32	47	5
<b>CXB-063-01</b>	50	35	21.75	R 22.5	56.5	50	75	9	M8 x 25	9	32	45	5
<b>CXB-080-01</b>	63	47	27	R 22.5	72	63	95	11	M10 x 25	12	41	55	6
<b>CXB-100-01</b>	71	53	26.5	R 27.5	89	75	115	11	M10 x 30	14	41	57	6
	JS 15	+2					-0.2						± 0.5

**Flange mount**



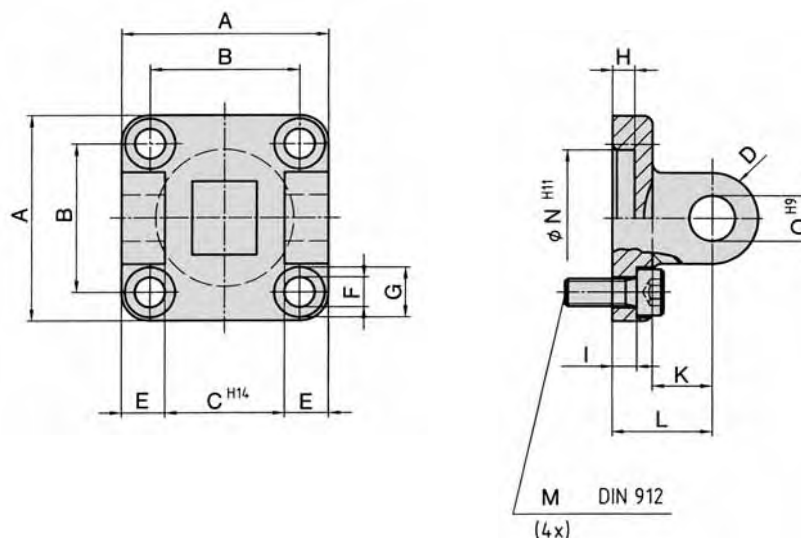
Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	K	L	M	N
<b>CXB-032-02</b>	45	32	7	10	5	M6 x 16	30	64	10.5	6.6	32.5	80
<b>CXB-040-02</b>	52	36	9	10	5	M6 x 16	35	72	11	6.6	38	90
<b>CXB-050-02</b>	65	45	9	12	5.5	M8 x 20	40	90	15	9	46.5	110
<b>CXB-063-02</b>	75	50	9	12	5.5	M8 x 20	45	100	15	9	56.5	120
<b>CXB-080-02</b>	95	63	12	15	8	M10 x 25	45	126	18	11	72	150
<b>CXB-100-02</b>	115	75	14	15	8	M10 x 25	55	150	18	11	89	170

Mounting accessories for series

# CX

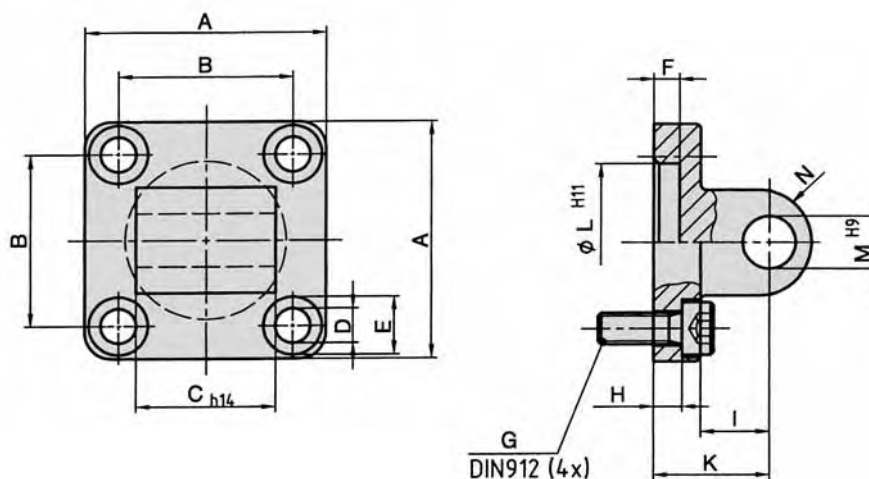
## Clevis mount



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	O
CXB-032-03	45	32.5	26	10	9.5	6.6	11	5	5.5	12	22	M6 x 16	30	10
CXB-040-03	55	38	28	12	12	6.6	11	5	5.5	15	25	M6 x 16	35	12
CXB-050-03	65	46.5	32	12	14	9	15	5	6.5	17	27	M8 x 20	40	12
CXB-063-03	75	56.5	40	16	15	9	15	5	6.5	20	32	M8 x 20	45	16
CXB-080-03	95	72	50	16	20	11	18	14	10	22	36	M10 x 30	45	16
CXB-100-03	115	89	60	20	25	11	18	14	10	25	41	M10 x 30	55	20

## Swivel mount



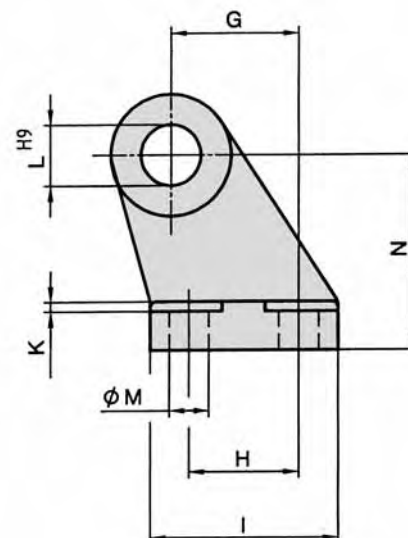
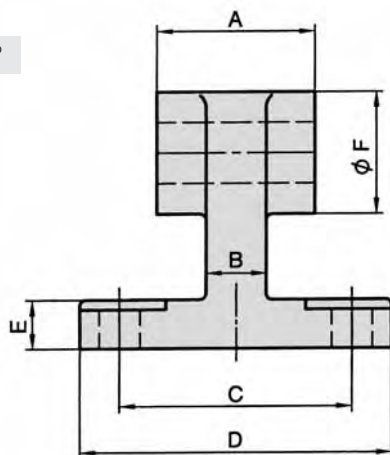
Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
CXB-032-05	45	32.5	26	6.6	11	5	M6 x 16	5.5	12	22	30	10	10
CXB-040-05	55	38	28	6.6	11	5	M6 x 16	5.5	15	25	35	12	12
CXB-050-05	65	46.5	32	9	15	5	M8 x 20	6.5	17	27	40	12	12
CXB-063-05	75	56.5	40	9	15	5	M8 x 20	6.5	20	32	45	16	16
CXB-080-05	95	72	50	11	18	5	M10 x 30	10	22	36	45	16	16
CXB-100-05	115	89	60	11	18	5	M10 x 30	10	25	41	55	20	20

Mounting accessories for series

# CX

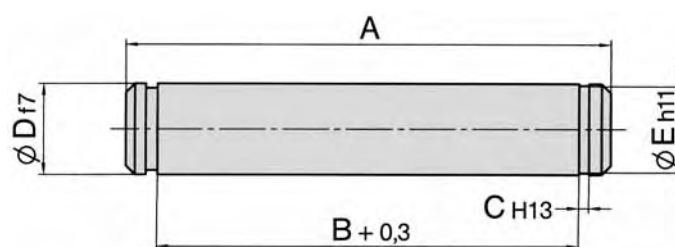
Swivel mount 90°



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
CXB-032-06	26	10	38	51	8	20	21	18	31	1.5	10	6.6	32
CXB-040-06	28	10	41	54	10	22	24	22	35	1.5	12	6.6	36
CXB-050-06	32	14	50	65	12	26	33	30	45	1.5	12	9	45
CXB-063-06	40	14	52	67	12	30	37	35	50	1.5	16	9	50
CXB-080-06	50	18	66	86	14	30	47	40	60	2.5	16	11	63
CXB-100-06	60	20	76	96	15	36	55	50	70	2.5	20	11	71
	- 0.2												
	- 0.6												

Clevis pin



Material: AISI 304 (1.4301)

Snap rings are included.

Order number	A	B	C	D	E
CXB-032-08	53	46	1.1	10	9.6
CXB-040-08	60	53	1.1	12	11.5
CXB-050-08	68	61	1.1	12	11.5
CXB-063-08	78	71	1.1	16	15.2
CXB-080-08	98	91	1.1	16	15.2
CXB-100-08	118	111	1.3	20	19.0

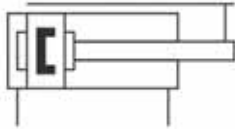


# Guided cylinders, double acting with magnetic piston, piston-Ø 20 – 63 mm

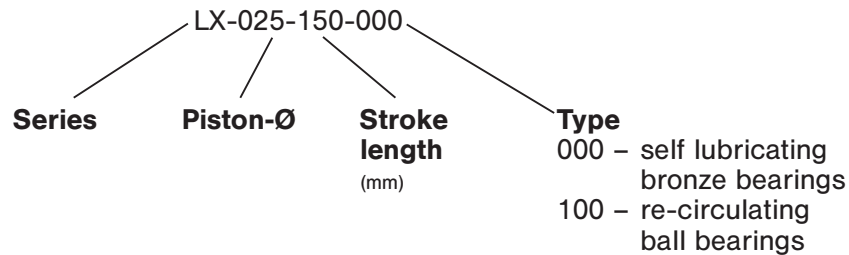


## Technical data for series

# LX



## Order code



## Design and Function

Double acting pneumatic cylinder with permanent magnet and built-in cushioning rings. The sensors can be installed directly into the sensor grooves of the Al-profile.

The integrated cylinder and guide unit ensures precise and accurate movement.

Standard stroke lengths in table below, additional lengths on request.

LX series available with external shock absorbers on request.

Order number Please complete according to order code.	LX-020-...	LX-025-...	LX-032-...	LX-040-...	LX-050-...	LX-063-...	
<b>Piston-Ø (mm)</b>	20	25	32	40	50	63	
<b>Force at 6 bar in N*</b>	<b>Retraction</b>	125	200	320	555	870	1480
	<b>Extension</b>	165	260	425	665	1035	1645
<b>Connection</b>	G 1/8				G 1/4		
<b>Operating pressure</b>	1 ... 10 bar (14.5 ... 145 psi)						
<b>Temperature range</b>	– 20 °C ... + 80 °C (– 4 °F ... + 176 °F)						
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air						
<b>Operating speed</b>	50 ... 500 mm/s						
<b>Standard stroke lengths (mm)</b>	ø 20 and 25 mm: 20, 30, 40, 50, 75, 100, 125, 150, 175, 200 ø 32 ... 63 mm: 25, 50, 75, 100, 125, 150, 175, 200						
<b>Materials</b>	Profile: Al (anodized) Flange plate: steel (zinc-plated) Piston rod: stainless steel Guide rod: Bronze bearing – stainless steel, ball bearing – hardened steel Seals: PUR						

\*The internal friction is considered.

**Guided cylinders,  
double acting with magnetic piston,  
piston-Ø 20 – 63 mm**



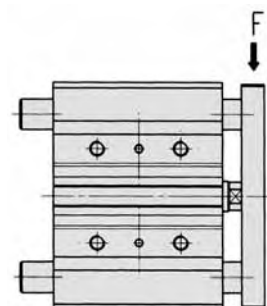
**Technical data for series**

**LX**

**Maximum force in N** (1 lbf. = 4.44822 N)

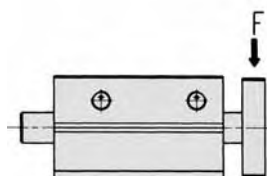
**Bronze bearing type – 000**

Piston- Ø	Stroke length (mm)										
	20	25	30	40	50	75	100	125	150	175	200
20	100	-	93	81	73	114	93	98	85	75	67
25	140	-	120	115	103	165	135	150	131	116	104
32	-	253	-	-	214	225	208	225	198	176	159
40	-	251	-	-	197	215	206	224	196	175	157
50	-	317	-	-	273	267	299	257	225	200	179
63	-	316	-	-	273	267	299	257	225	200	179



**Re-circulating ball bearing type – 100**

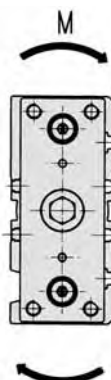
Piston- Ø	Stroke length (mm)										
	20	25	30	40	50	75	100	125	150	175	200
20	110	-	100	125	121	90	86	69	58	49	43
25	142	-	85	154	148	106	82	97	81	70	61
32	-	222	-	-	91	167	129	145	122	104	90
40	-	221	-	-	93	167	128	145	121	104	90
50	-	203	-	-	152	161	193	156	130	110	95
63	-	201	-	-	151	158	195	157	130	110	94



**Maximum torque in Nm** (1 ft. lbf = 1.35582 Nm)

**Bronze bearing type – 000**

Piston- Ø	Stroke length (mm)										
	20	25	30	40	50	75	100	125	150	175	200
20	1.7	-	1.5	1.2	1.0	2.9	2.8	2.6	2.3	2.0	1.8
25	3.4	-	2.9	3.6	3.3	4.2	4.3	3.8	3.2	2.7	2.3
32	-	6.7	-	-	6.5	7.2	7.0	6.6	5.6	4.8	4.1
40	-	8.7	-	-	7.3	9.2	8.8	9.6	8.4	7.5	6.7
50	-	15.4	-	-	12.9	12.6	13.4	12.1	11.3	10.1	9.8
63	-	15.1	-	-	14.3	16.6	17	14	11.3	9.7	9.1



**Re-circulating ball bearing type – 100**

Piston- Ø	Stroke length (mm)										
	20	25	30	40	50	75	100	125	150	175	200
20	3.0	-	2.7	3.4	3.3	2.4	2.3	1.9	1.6	1.3	1.2
25	3.5	-	2.7	4.9	4.7	3.4	2.6	3.1	2.6	2.2	2.0
32	-	6.3	-	-	3.6	6.5	5.1	5.7	4.8	4.1	3.5
40	-	8.5	-	-	4.0	7.2	5.5	6.2	5.2	4.5	3.9
50	-	11.1	-	-	8.3	8.8	10.6	8.6	7.1	6.0	5.2
63	-	8.3	-	-	7.2	9.8	12.1	9.7	8.1	6.8	5.8

Technical data for series

# LX

## Mass in kg

### Bronze bearing type – 000

Piston- Ø	Mass in kg	Stroke length (mm)										
		20	25	30	40	50	75	100	125	150	175	200
20	complete	0.72	–	0.79	0.87	0.94	1.15	1.35	1.55	1.74	1.94	2.14
	moving components	0.36	–	0.38	0.41	0.43	0.50	0.56	0.62	0.68	0.74	0.80
25	complete	1.10	–	1.21	1.31	1.43	1.70	1.98	2.26	2.54	2.81	3.08
	moving components	0.58	–	0.64	0.68	0.72	0.83	0.93	1.03	1.13	1.24	1.33
32	complete	–	1.59	–	–	2.06	2.45	2.84	3.23	3.64	4.03	4.42
	moving components	–	0.93	–	–	1.20	1.36	1.52	1.68	1.85	2.00	2.16
40	complete	–	1.84	–	–	2.36	2.79	3.22	3.65	4.10	4.54	4.97
	moving components	–	0.98	–	–	1.25	1.40	1.56	1.72	1.89	2.05	2.21
50	complete	–	3.27	–	–	3.92	4.58	5.21	5.86	6.49	7.14	7.79
	moving components	–	1.98	–	–	2.24	2.50	2.78	3.00	3.24	3.50	3.75
63	complete	–	4.12	–	–	4.90	5.69	6.44	7.22	7.97	8.75	9.50
	moving components	–	2.31	–	–	2.57	2.84	3.08	3.34	3.58	3.84	4.08

### Re-circulating ball bearing type – 100

Piston- Ø	Mass in kg	Stroke length (mm)										
		20	25	30	40	50	75	100	125	150	175	200
20	complete	0.64	–	0.71	0.79	0.86	1.04	1.23	1.41	1.59	1.78	1.96
	moving components	0.32	–	0.33	0.36	0.37	0.42	0.46	0.52	0.56	0.61	0.65
25	complete	0.88	–	0.98	1.09	1.19	1.43	1.67	1.94	2.17	2.42	2.67
	moving components	0.46	–	0.49	0.54	0.56	0.63	0.70	0.78	0.85	0.92	0.98
32	complete	–	1.42	–	–	1.76	2.14	2.49	2.88	3.24	3.60	3.95
	moving components	–	0.84	–	–	0.95	1.10	1.22	1.38	1.50	1.62	1.73
40	complete	–	1.68	–	–	2.06	2.48	2.87	3.30	3.69	4.09	4.47
	moving components	–	0.88	–	–	1.00	1.15	1.26	1.43	1.55	1.66	1.78
50	complete	–	2.85	–	–	3.42	4.00	4.66	5.22	5.80	6.38	6.96
	moving components	–	1.67	–	–	1.86	2.04	2.31	2.49	2.68	2.86	3.05
63	complete	–	3.70	–	–	4.40	5.11	5.89	6.58	7.29	7.98	8.68
	moving components	–	2.00	–	–	2.18	2.38	2.65	2.83	3.02	3.20	3.38

1 lb = 0.4536 kg

1 kg = 2.2046 lb

## Maximum impact in J

	Piston-Ø					
	20	25	32	40	50	63
Maximum impact in J	0.11	0.18	0.31	0.5	0.95	1.61

The maximum impact speed is calculated by the formula

$$V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$$

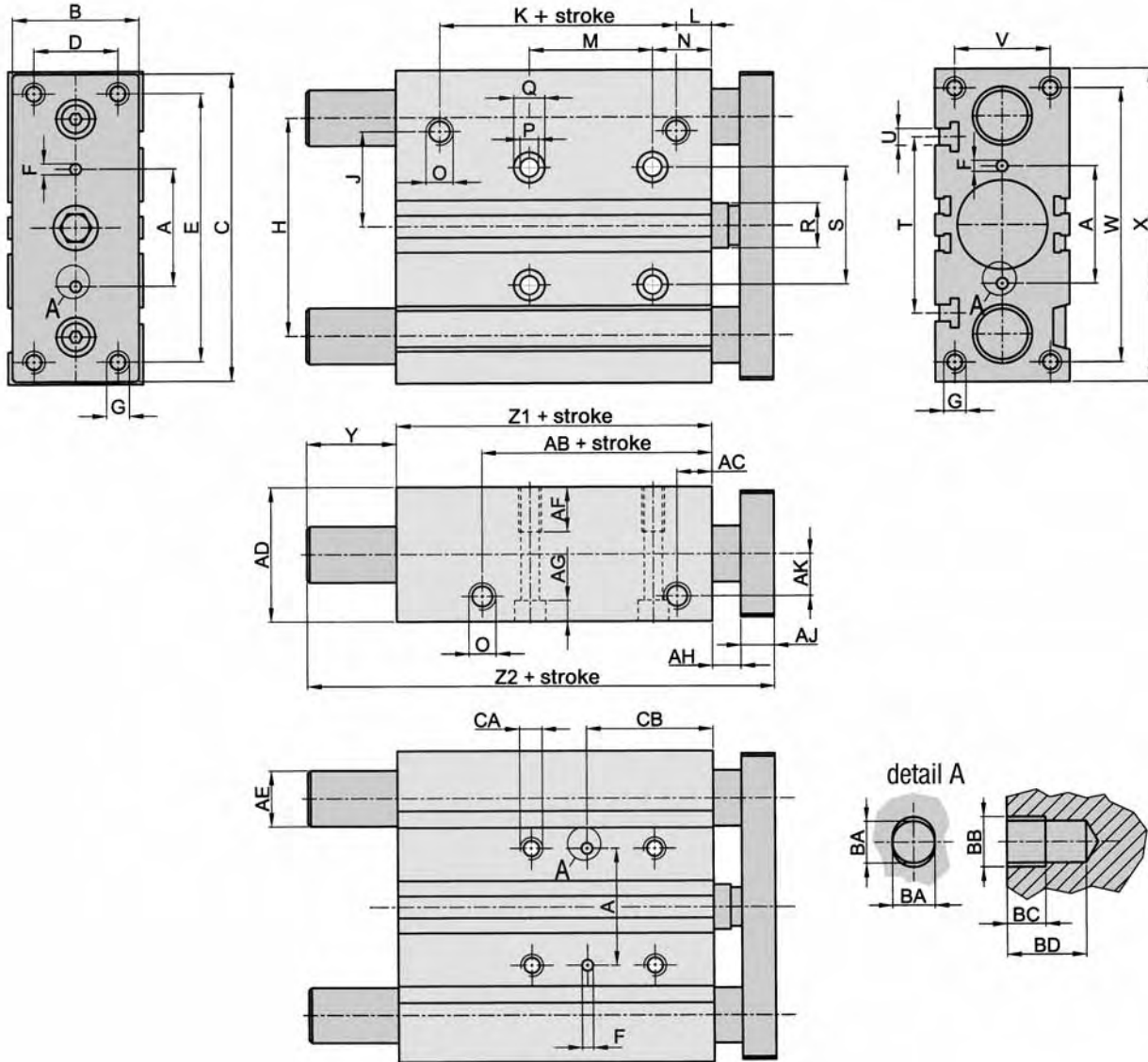
Legend:  $m_1$  = mass (kg) of item to be moved  
 $m_2$  = mass (kg) of moving components  
 $E$  = maximum impact energy

**Guided cylinders,  
double acting with magnetic piston,  
piston-Ø 20 – 63 mm**



**Dimensions for series**

**LX**



Ø	A ± 0,02	B	C	D	E	Ø F H7	G	H	J	K	L	N
20	28	30	81	18	70	3-6 deep	M5-13 deep	54	25	16	10.5	17
25	34	40	91	26	78	4-6 deep	M6-15 deep	64	28.5	18	11.5	17
32	42	45	110	30	96	4-6 deep	M8-20 deep	78	34	15.5	12.5	21
40	50	45	118	30	104	4-6 deep	M8-20 deep	86	38	19	13	22
50	66	60	146	40	130	5-8 deep	M10-22 deep	110	47	19	14	24
63	80	70	158	50	130	5-8 deep	M10-22 deep	124	55	23.1	14.5	24

Ø	O	Ø P	Ø Q	Ø R	S	T	U*	V	W	X	Z 1	AB
20	G 1/8	5.5	9.5	10	28	44	M5	24	72	83	37	12.5
25	G 1/8	5.5	9.5	12	34	50	M5	30	82	93	37.5	12.5
32	G 1/8	6.5	11	16	42	63	M6	34	98	112	37.5	7
40	G 1/8	6.5	11	16	50	72	M6	40	106	120	44	13
50	G 1/4	8.5	14	20	66	92	M8	46	130	148	44	9
63	G 1/4	8.5	14	20	80	110	M10	58	142	162	49	14

\* Groove for hexagonal head screw

Dimensions for series

# LX

Ø	AC	AD	AF	AG	AH	AJ	AK	Ø BA H7	BB	BC	BD	CA
20	10.5	36	12	5.5	6	10	11.5	3	3.5	3	6	M6
25	11.5	42	12	5.5	6	10	13.5	4	4.5	3	6	M6
32	12.5	48	16	7.5	10	12	15	4	4.5	3	6	M8
40	13	54	16	7.5	10	12	18	4	4.5	3	6	M8
50	14	64	20	9	13	15	21.5	5	6	4	8	M10
63	14.5	78	20	9	13	15	28	5	6	4	8	M10

## Specific dimensions

### Bronze bearing type – 000

Ø	Stroke length	Y	Z 2	Ø AE
20	20 – 50	21.5	74.5	12
	75 – 200	26.5	79.5	12
25	20	21	74.5	16
	30 – 50	27	80.5	16
	75 – 200	31.5	85.0	16
32	25	14	73.5	20
	50 – 200	32	91.5	20
40	25	7.5	73.5	20
	50 – 200	25.5	91.5	20
50	25 – 200	26.5	98.5	25
63	25 – 200	21.5	98.5	25

### All types

Ø	Stroke length	M	CB
20	20 – 30	24	29
	40 – 100	44	39
	125 – 200	120	77
25	20 – 30	24	29
	40 – 100	44	39
	125 – 200	120	77
32	0 – 25	24	33
	30 – 100	48	45
	125 – 200	124	83
40	0 – 25	24	34
	30 – 100	48	46
	125 – 200	124	84
50	0 – 25	24	36
	30 – 100	48	48
	125 – 200	124	86
63	0 – 25	28	38
	30 – 100	52	50
	125 – 200	128	88

### Re-circulating ball bearing type – 100

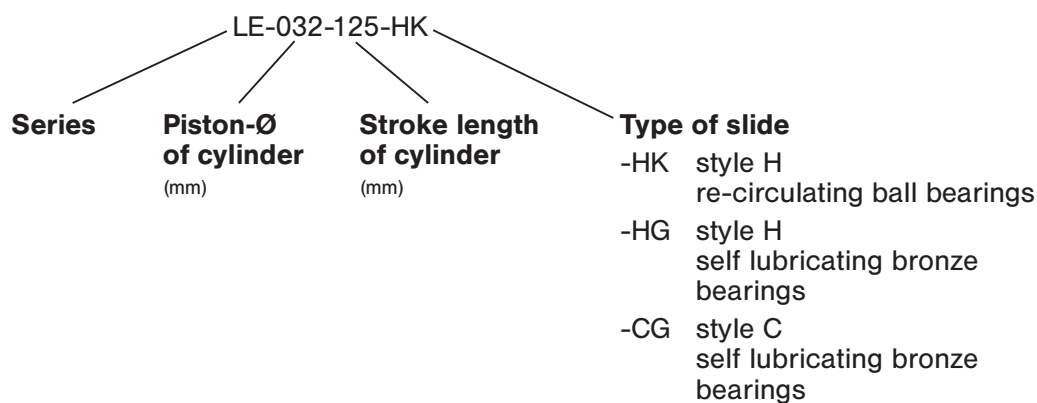
Ø	Stroke length	Y	Z 2	Ø AE
20	20 – 30	19	72	10
	40 – 100	22	75	10
	125 – 200	32	85	10
25	20 – 30	21	74.5	12
	40 – 100	32	85.5	12
	125 – 200	44.5	98	12
32	25 – 50	26.5	86	16
	75 – 100	35.5	95	16
	125 – 200	50.5	110	16
40	25 – 50	20	86	16
	75 – 100	29	95	16
	125 – 200	44	110	16
50	25 – 75	21	93	20
	100 – 200	40	112	20
63	25 – 75	16	93	20
	100 – 200	35	112	20

Technical data for series

# LE



Order code



**Design and function**

Linear guide unit with re-circulating ball bearings or self-lubricating bronze bearing. Suitable for use with HM Ø 12 - 25 mm (ISO 6432) and XL Ø 32 – 100 mm (ISO 6431) series cylinders.

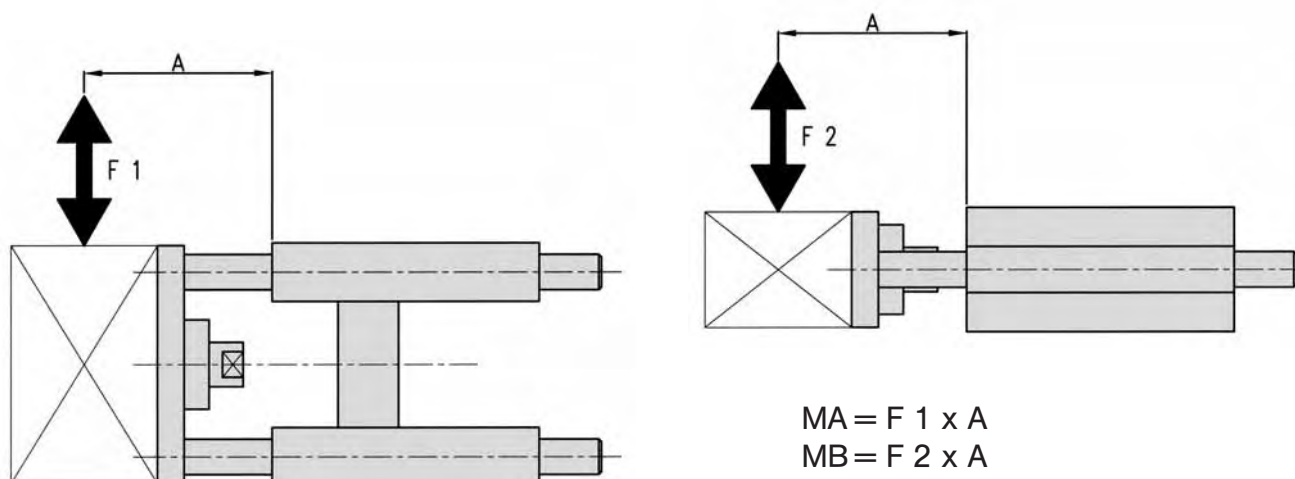
Type CG is designed for low force applications and is only available up to Ø 63 mm.

Cylinders must be ordered separately.

Order number Please complete according to order code.	LE-016-...	LE-025-...	LE-032-...	LE-040-...	LE-050-...	LE-063-...	LE-080-...	LE-100-...
<b>Cylinder-Ø mm</b>	12, 16	20, 25	32	40	50	63	80	100
<b>Cylinder series</b>	HM (DIN ISO 6432)		XL (DIN ISO 15552)					
<b>Temperature range</b>	- 30° C ... + 100° C (- 22 °F ... + 212 °F)							
<b>Max. stroke length</b>	1000 mm							
<b>Materials</b>	Body: Al (anodized), Guide rod: chromium plated steel, Shaft wiper: NBR, Bearing: steel (ball bearing) or sintered bronze							

Technical data for series

# LE



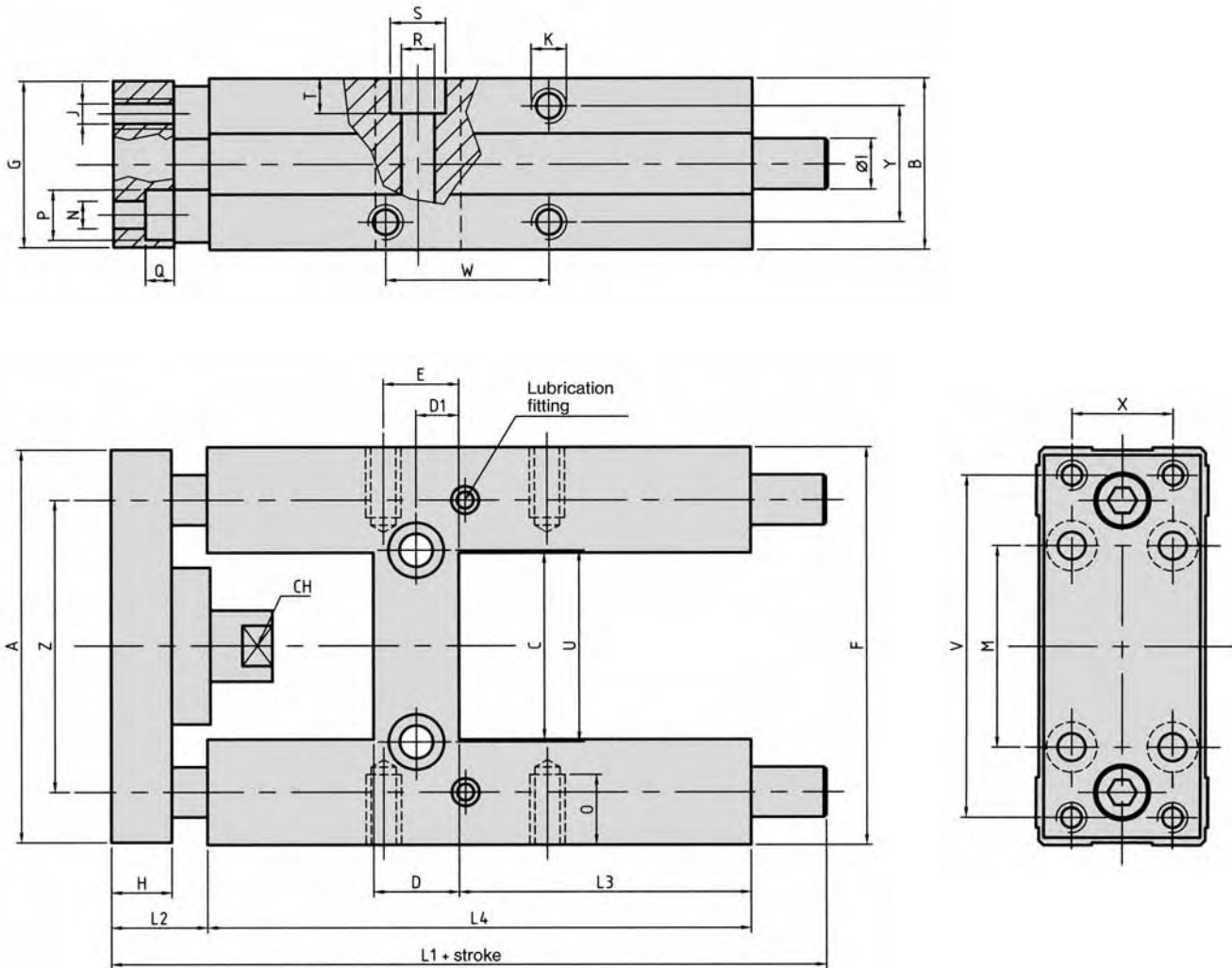
Order number	max. load		mass of unit			
	MA (Nm)	MB (Nm)	0-stroke kg (lb.)		each 100 mm kg (lb.)	
LE-016-STROKE-CG	6	5	0.3	(0.661)	0.12	(0.264)
LE-025-STROKE-CG	13	12	0.5	(1.102)	0.18	(0.397)
LE-032-STROKE-CG	13	12	0.8	(1.764)	0.18	(0.397)
LE-040-STROKE-CG	21	19	1.3	(2.866)	0.32	(0.705)
LE-050-STROKE-CG	21	19	2.3	(5.070)	0.5	(1.102)
LE-063-STROKE-CG	26	23	3.0	(6.614)	0.5	(1.102)
LE-016-STROKE-HG	6.5	5.8	0.4	(0.882)	0.12	(0.264)
LE-025-STROKE-HG	19	17	0.9	(1.984)	0.18	(0.397)
LE-032-STROKE-HG	20	18	1.29	(2.844)	0.18	(0.397)
LE-040-STROKE-HG	35	32	2.4	(5.291)	0.32	(0.705)
LE-050-STROKE-HG	50	45	3.5	(7.716)	0.5	(1.102)
LE-063-STROKE-HG	60	54	4.6	(10.141)	0.5	(1.102)
LE-080-STROKE-HG	72	65	8.4	(18.518)	0.77	(1.697)
LE-100-STROKE-HG	80	72	11.8	(26.014)	0.77	(1.697)
LE-016-STROKE-HK	9	8	0.36	(0.794)	0.08	(0.176)
LE-025-STROKE-HK	11	10	0.84	(1.852)	0.12	(0.264)
LE-032-STROKE-HK	16	14	1.2	(2.645)	0.18	(0.397)
LE-040-STROKE-HK	29	16	2.3	(5.070)	0.32	(0.705)
LE-050-STROKE-HK	42	38	3.4	(7.495)	0.5	(1.102)
LE-063-STROKE-HK	48	43	4.4	(9.700)	0.5	(1.102)
LE-080-STROKE-HK	60	54	8.2	(18.077)	0.77	(1.697)
LE-100-STROKE-HK	60	54	11.6	(25.573)	0.77	(1.697)

The moments "MA" and "MB" are calculated under dynamic conditions. Under static conditions, the values must be doubled.

Dimensions for series

# LE

series H for cyl.-Ø 12 – 25 mm



Only type HK (ball bearing) has a lubrication fitting.

Order number Please complete according to order code.	A	B	C	D	D1	E	F	G	H	Ø I*	J	K	L1	L2	L3	L4
LE-16-...	66	30	30	12	6	8	69	29	10	10*	M4	M4	123	32	46	68
LE-25-...	78	34	37	17	8.5	15	79	32	12	12*	M5	M6	165	15	58	108

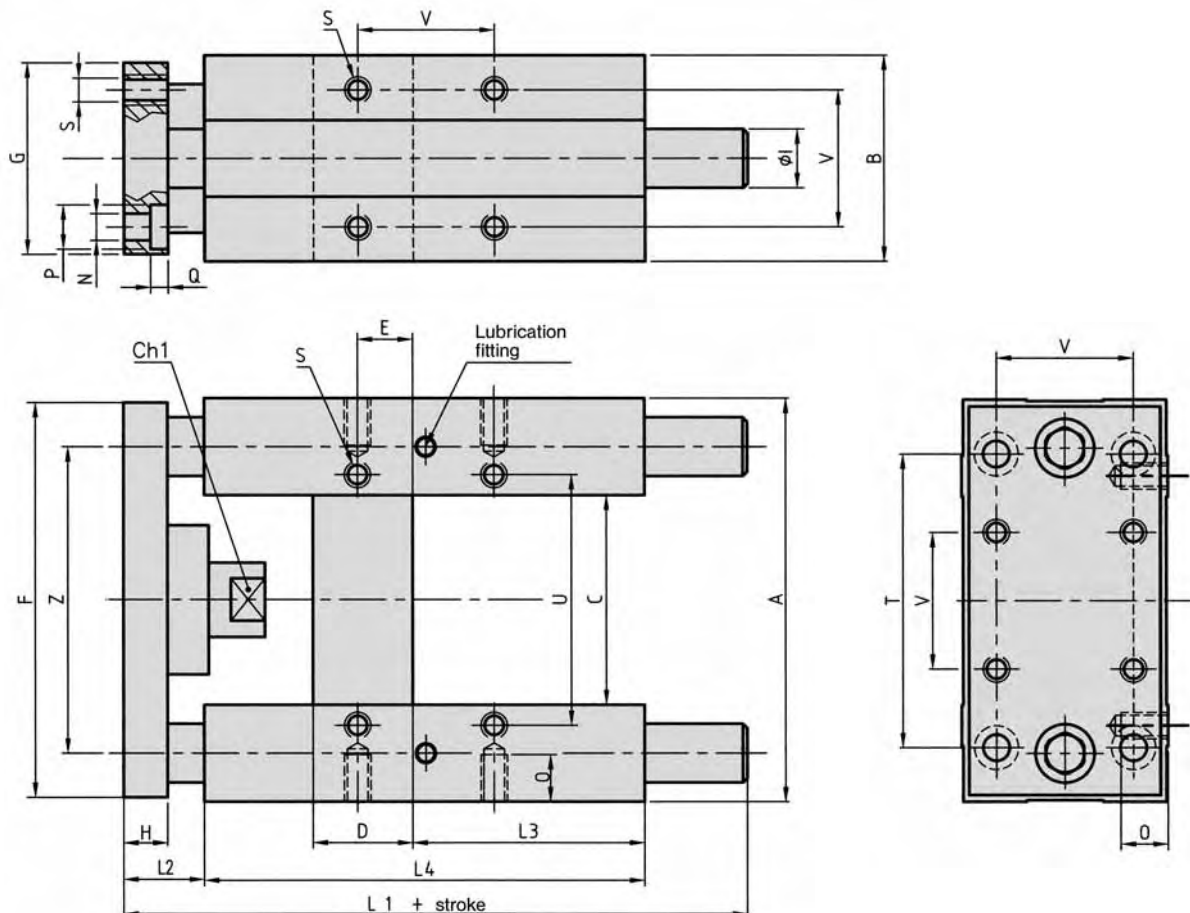
Order number Please complete according to order code.	M	Ø N	O	Ø P	Q	Ø R	Ø S	T	U	V	W	X	Y	Z	CH
LE-16-...	32	4.5	6	8	6	5.5	9	5.5	24	58	18	18	22	49.5	8
LE-25-...	38	5.5	9	10	9	6.5	11	6.5	38	68	32.5	20	23	58	12

\* The guide rod for the unit LE-16- with ball bearing is Ø 8 mm, for LE-25- it is Ø 10 mm.

Dimensions for series

# LE

series H for cyl.-Ø 32 – 100 mm



Only type HK (ball bearing) has a lubrication fitting.

Order number Please complete according to order code.	A	B	C	D	E	F	G	H	Ø I	L1	L2
LE-32-...	97	49	51	24	4.3	93	45	12	12	187	20
LE-40-...	115	58	58.2	28	11	112	55	12	16	207	20
LE-50-...	137	70	70.2	34	18.8	134	65	15	20	223	19
LE-63-...	152	85	85.2	34	15.3	147	80	15	20	243*	19
LE-80-...	189	105	105.5	50	25	180	100	20	25	267	33
LE-100-...	213	130	130.5	55	30	206	120	20	25	290	33

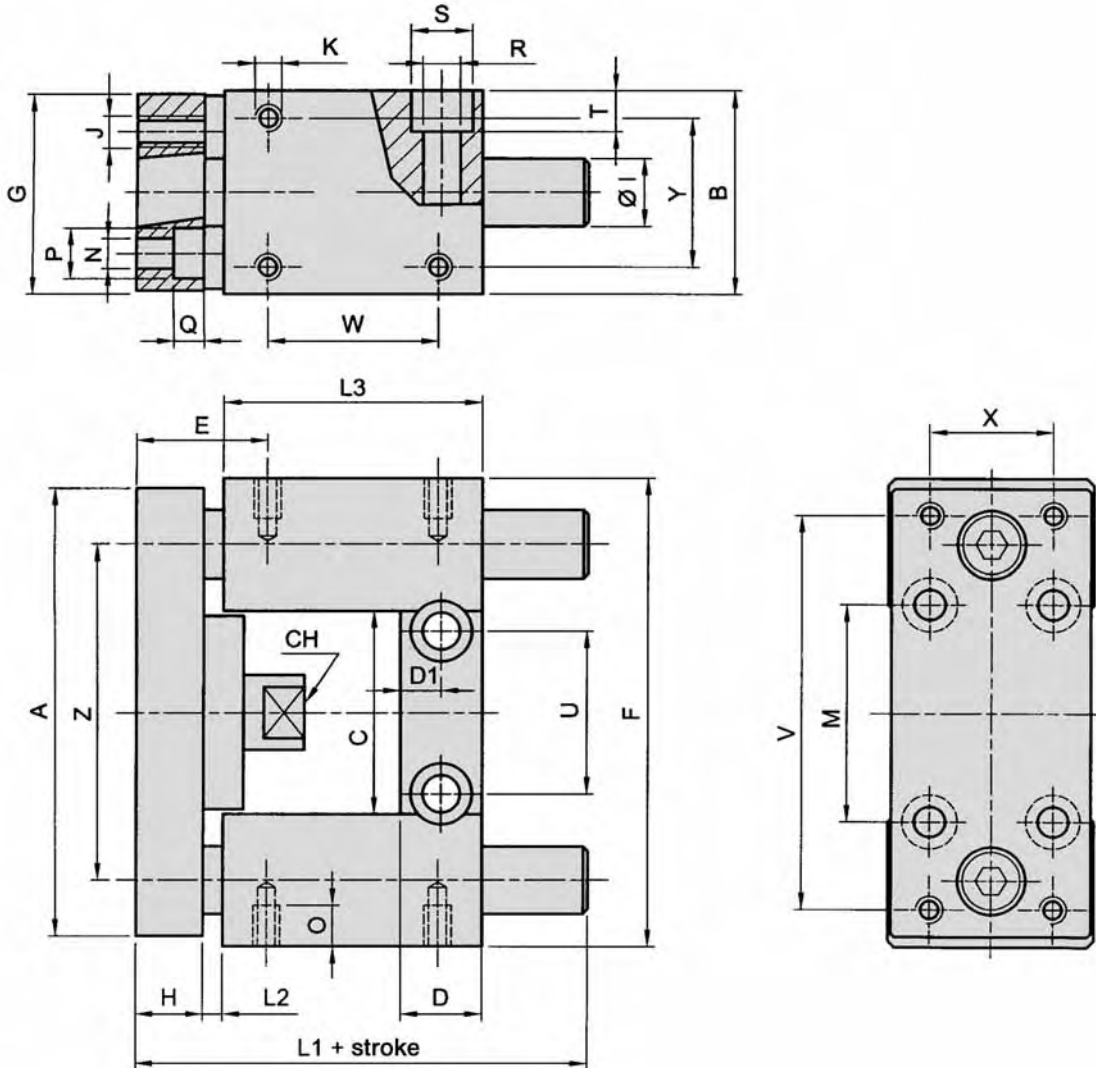
Order number Please complete according to order code.	L3	L4	N	O	P	Q	S	T	U	V	Z	CH 1
LE-32-...	75	125	6.6	12	11	6.5	M6	78	61	32.5	74	15
LE-40-...	80	140	6.6	12	11	6.5	M6	84	69	38	87	15
LE-50-...	78	148	9	16	15	8.5	M8	100	85	46.5	104	20
LE-63-...	106	178	9	16	15	9	M8	105	100	56.5	119	20
LE-80-...	111	195	11	20	18	11	M10	130	130	72	148	26
LE-100-...	128	218	11	20	18	11	M10	150	150	89	173	26

\* Length for ball guide type (HK) is 225 mm.

Dimensions for series

# LE

series C, for cyl-Ø 12 – 25 mm



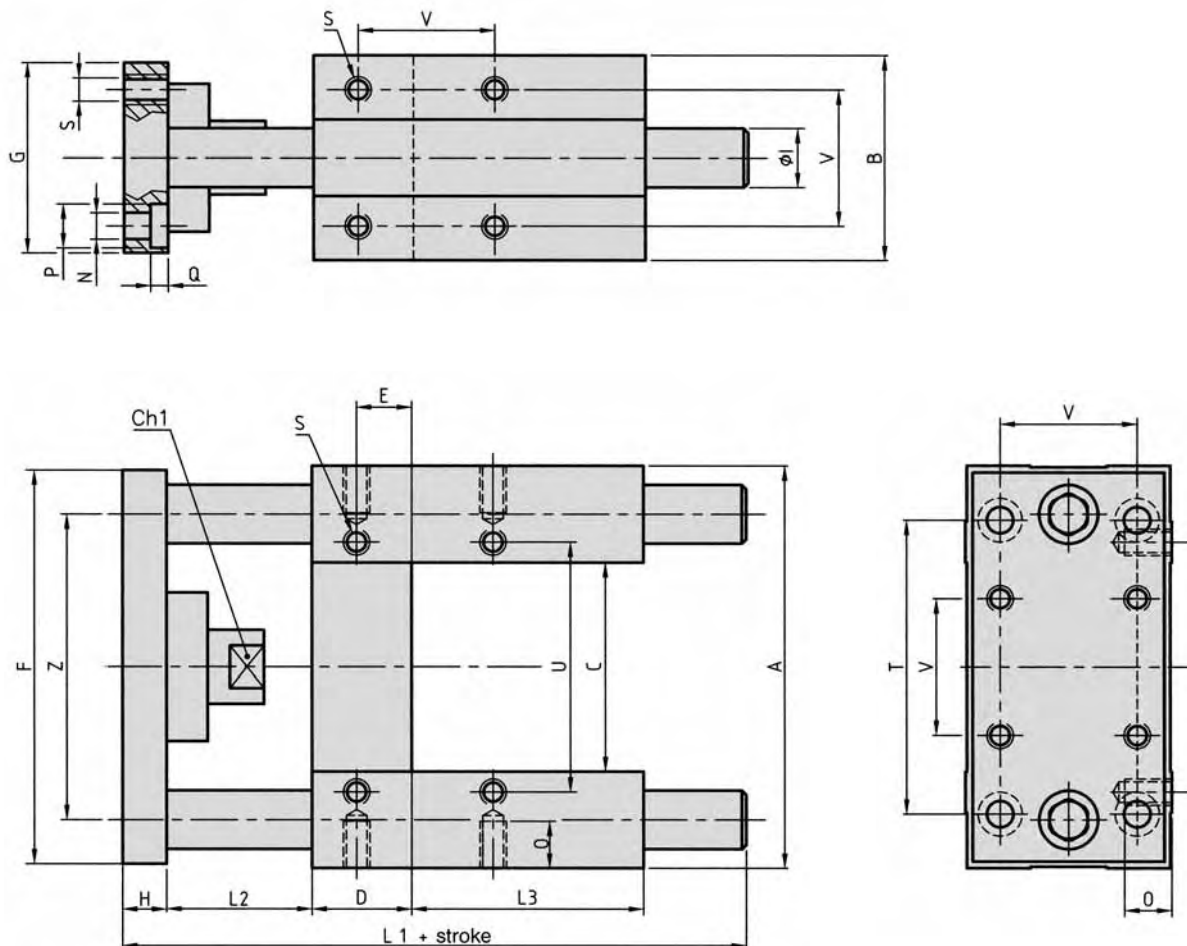
Order number Please complete according to order code.	A	B	C	D	D1	E	F	G	H	Ø I	J	K	L1	L2	L3
LE-16-...	66	30	30	12	6	19.5	69	29	10	10	M4	M4	66.5	3	38
LE-25-...	78	34	37	17	8.5	21.75	79	32	12	12	M5	M6	83	3	48

Order number Please complete according to order code.	M	Ø N	O	Ø P	Q	Ø R	Ø S	T	U	V	W	X	Y	Z	CH
LE-16-...	32	4.5	6	7.5	4.5	5.5	9	6	24	58	25	18	22	49.5	8
LE-25-...	38	5.5	9	10	7.5	6.5	11	7	38	68	32.5	20	23	58	12

Dimensions for series

# LE

series C for cyl.-Ø 32 – 63 mm

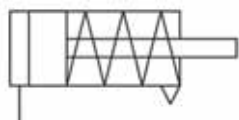


Order number Please complete according to order code.	A	B	C	D	E	F	G	H	Ø I	L1	L2
LE-32-...	97	49	51	17	9.25	93	45	12	12	120	42
LE-40-...	115	58	58.2	21	11	112	55	12	16	130	43
LE-50-...	137	70	70.2	25	18.8	134	65	15	20	143	49
LE-63-...	152	85	85.2	25	15.3	147	80	15	20	161	49

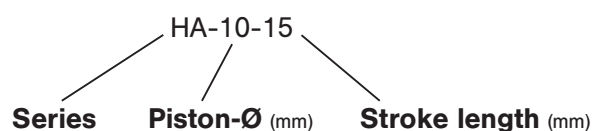
Order number Please complete according to order code.	L3	Ø N	O	Ø P	Q	S	T	U	V	Z	CH 1
LE-32-...	31	6.6	12	11	6.5	M6	78	61	32.5	74	15
LE-40-...	37	6.6	12	11	6.5	M6	84	69	38	87	15
LE-50-...	34	9	16	15	8.5	M8	100	85	46.5	104	20
LE-63-...	51	9	16	15	9	M8	105	100	56.5	119	20

Technical data for series

# HA, HB



### Order code



HA – piston rod threaded  
HB – piston rod unthreaded

### Design and function

Single acting pneumatic cylinder with mechanical spring return.  
Side loads on the piston rod should be avoided.

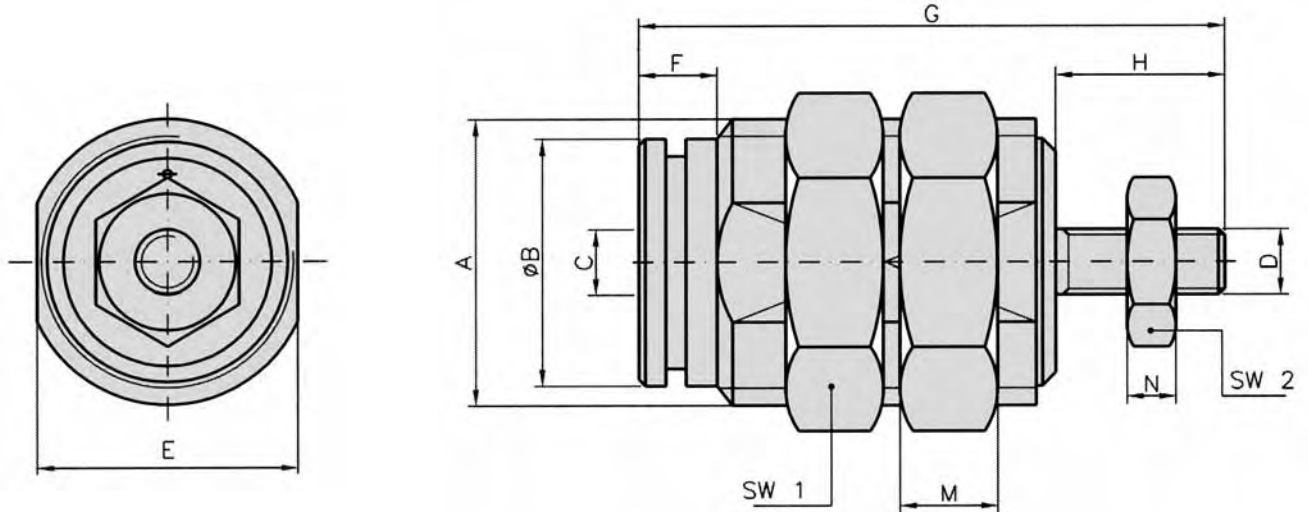
Order number Please complete according to order code.	HA-06-...	HB-06-...	HA-10-...	HB-10-...	HA-16-...	HB-16-...
<b>Piston-Ø mm</b>	6		10		16	
<b>Connection</b>	M5 (10/32 UNF)		M5 (10/32 UNF)		M5 (10/32 UNF)	
<b>Piston rod thread</b>	M3 x 0.5	–	M4 x 0.7	–	M5 x 0.8	–
<b>Operating pressure</b>	2 ... 7 bar (29 ... 101.5 psi)					
<b>Temperature range</b>	– 35 °C ... + 80 °C (– 31 °F ... + 176 °F)					
<b>Medium</b>	filtered/lubricated or filtered/non-lubricated air					
<b>Standard stroke lengths</b>	5, 10, 15 mm					
<b>Materials</b>	Body:		brass (nickel-plated)			
	Piston rod/spring:		stainless steel			
	Seal:		NBR			

**Cartridge cylinders, piston-Ø 6/10/16 mm  
Single acting**



**Dimensions for series**

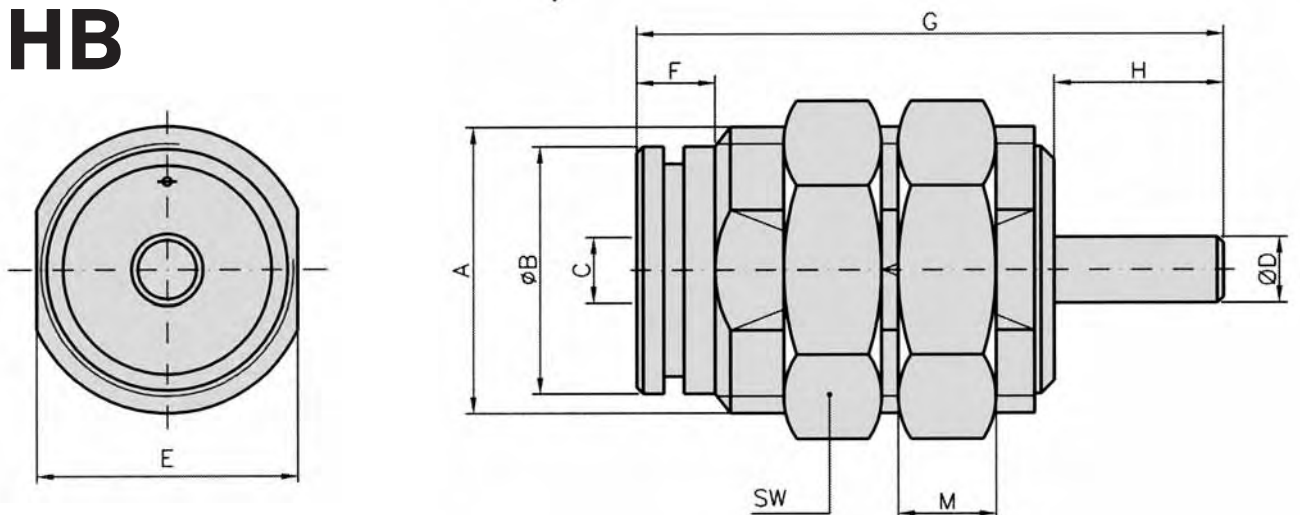
**HA**



Piston- Ø	A	B	C	D	E	F	G at stroke length			H	M	N	SW1	SW2
							5	10	15					
6	M 10 x 1	8.5	M5 (10/32 UNF)	M3	9	5	27.5	34.5	41.5	8	3	2.4	14	5.5
10	M 15 x 1.5	12	M5 (10/32 UNF)	M4	14	7	33.5	40	47	10.5	4	2	19	7
16	M 22 x 1.5	19	M5 (10/32 UNF)	M5 (10/32 UNF)	20	6	40	45	50	13	5	4	27	8

**Dimensions for series**

**HB**



Piston- Ø	A	B	C	D	E	F	G at stroke length			H	M	SW
							5	10	15			
6	M 10 x 1	8.5	M5 (10/32 UNF)	3	9	5	27.5	34.5	41.5	8	3	14
10	M 15 x 1.5	12	M5 (10/32 UNF)	4	14	7	33.5	40	47	10.5	4	19
16	M 22 x 1.5	19	M5 (10/32 UNF)	5	20	6	40	45	50	13	5	27

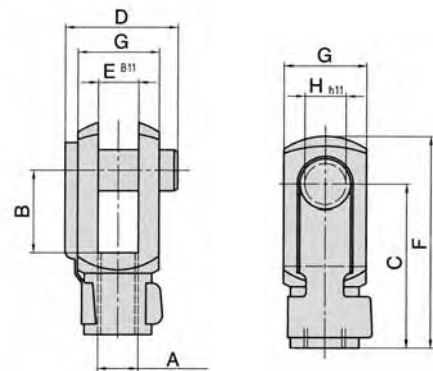
## Piston rod accessories

### Assignment to series

Series	Cylinder Ø mm	Piston rod thread	Rod clevis	Piston rod nut	Flexible coupling	Rod eye
HM	Ø 8 and 10	M4	RD-10	RL-10	-	-
NXD HM	Ø 12 Ø 12 and 16	M6	RD-16	RL-16	FK-16	RO-16
NXD HM XV	Ø 16 Ø 20 Ø 20 and 25	M8	RD-20	RL-20	FK-20	RO-20
NXD HM XL XV	Ø 20 to 40 Ø 25 Ø 32 Ø 32 and 40	M 10 x 1,25	RD-25	RL-25	FK-32	RO-25
HM	Ø 32	M 10	RD-32	RL-32	FK-33	RO-32
HM	Ø 40	M 12	RD-40	RL-40	FK-41	RO-40
HM	Ø 50 and 63	M 16	RD-63	RL-63	-	RO-50
NXD XL XV	Ø 50 and 63 Ø 40 Ø 50 and 63	M 12 x 1,25	FD-40	FE-40	FK-40	FO-40
NXD XL	Ø 80 Ø 50 and 63	M 16 x 1,5	FD-63	FE-63	FK-63	FO-63
NXD XL XV	Ø 100 Ø 80 and 100 Ø 80 and 100	M 20 x 1,5	FD-80	FE-80	FK-80	FO-80
XL	Ø 125	M 27 x 2	FD-125	FE-125	FK-125	FO-125
XG	Ø 160 and 200	M 36 x 2	FD-200	FE-200	-	FO-200

### Rod clevis with pin

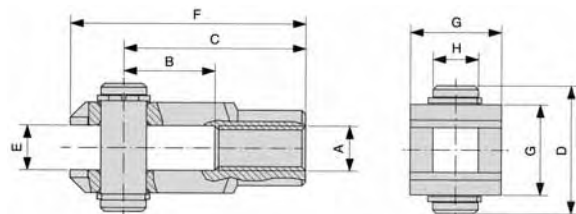
Order number	A	B	C	D	E	F	G	H
RD-10	M4	8	16	11,5	4	21	8	4
RD-16	M6	12	24	16	6	31	12	6
RD-20	M8	16	32	22	8	42	16	8
RD-25	M 10 x 1,25	20	40	26	10	52	20	10
RD-32	M 10	20	40	26	10	52	20	10
RD-40	M 12	24	48	32	12	62	24	12
RD-63	M 16	32	64	36	16	83	32	16
FD-40	M 12 x 1,25	24	48	32	12	62	24	12
FD-63	M 16 x 1,5	32	64	40	16	83	32	16
FD-80	M 20 x 1,5	40	80	50	20	105	40	20
FD-125	M 27 x 2	54	110	65	30	148	55	30
FD-200	M 36 x 2	72	144	84	35	188	70	35



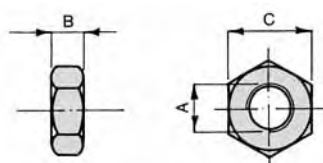
Material: steel (zinc-plated)  
spring steel

### Piston rod nut

Order number	A	B	C
RL-10	M4	3,2	7
RL-16	M6	5	10
RL-20	M8	6,5	13
RL-25	M 10 x 1,25	6	17
RL-32	M 10	6	17
RL-40	M 12	7	19
RL-63	M 16	8	24
FE-40	M 12 x 1,25	7	19
FE-63	M 16 x 1,5	8	24
FE-80	M 20 x 1,5	9	30
FE-125	M 27 x 2	12	41
FE-200	M 36 x 2	14	55



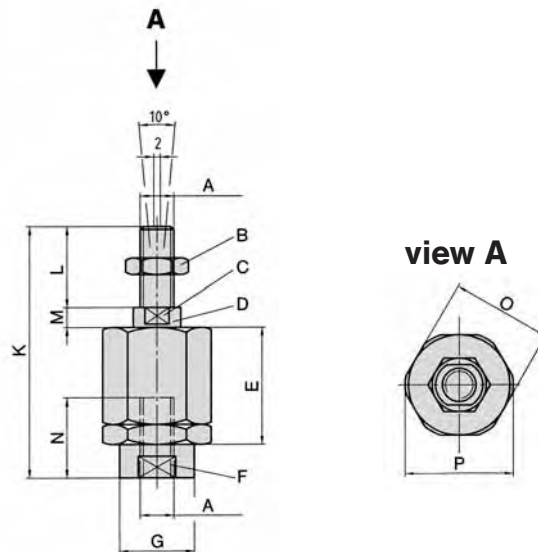
Rod clevis FD-125 and FD-200, pin with snap rings.



Material: steel (zinc-plated)

## Piston rod accessories

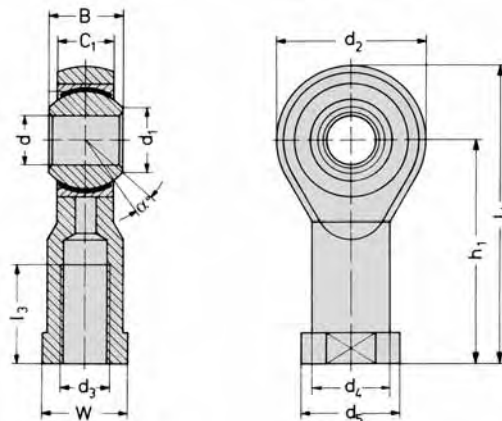
### Flexible coupling



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	K	L	M	N	O	P
FK-16	M6	SW 10	SW 5	6	17.5	SW 7	8.5	35	10	3.5	10	13	15
FK-20	M8	SW 13	SW 7	8	28.5	SW 11	12.5	57	20	4	20	17	19
FK-32	M 10 x 1.25	SW 17	SW 12	14	35	SW 19	22	71	20	5	20	30	32
FK-33	M 10	SW 17	SW 12	14	35	SW 19	22	71	20	5	20	30	32
FK-40	M 12 x 1.25	SW 19	SW 12	14	35	SW 19	22	75	24	5	20	30	32
FK-41	M 12	SW 19	SW 12	14	35	SW 19	22	75	24	5	20	30	32
FK-63	M 16 x 1.5	SW 24	SW 20	22	54	SW 30	32	103	32	8	32	41	45
FK-80	M 20 x 1.5	SW 30	SW 20	22	54	SW 30	32	119	40	8	40	41	45
FK-125	M 27 x 2	SW 46	SW 24	32.2	60	SW 54	57	147	49.5	9.5	40	65	70

### Rod eye



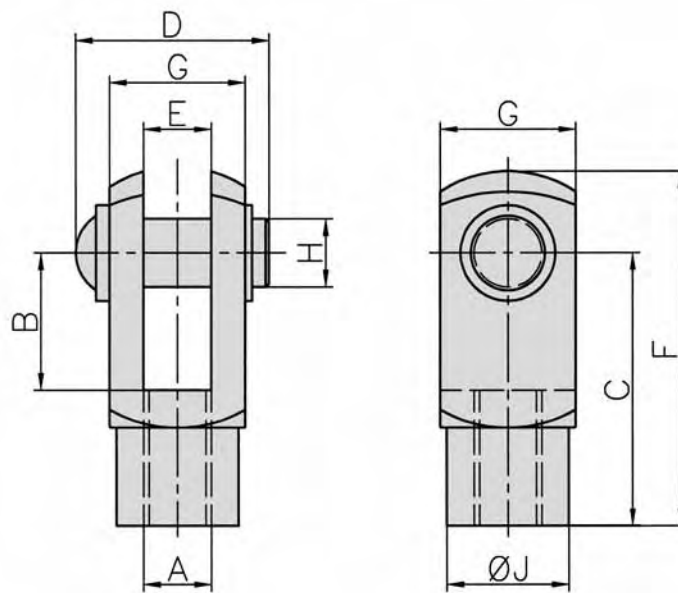
Material: steel (zinc-plated)  
stainless steel

Order number	d <sub>3</sub>	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	d <sub>5</sub>	B	C <sub>1</sub>	W	L <sub>3</sub>	L <sub>4</sub>	h <sub>1</sub>	α
RO-16	M6	6	8.9	20	10	13	9	6.75	11	12	40	30	13
RO-20	M8	8	10.4	24	12.5	16	12	9	13	16	48	36	13
RO-25	M 10 x 1.25	10	12.9	28	15	19	14	10.5	17	20	57	43	13
RO-32	M 10	10	12.9	28	15	19	14	10.5	17	20	57	43	13
RO-40	M 12	12	15.4	32	17.5	22	16	12	19	22	66	50	13
RO-50	M 16	16	19.3	42	22	27	21	15	22	28	85	64	15
FO-40	M 12 x 1.25	12	15.4	32	17.5	22	16	12	19	22	66	50	13
FO-63	M 16 x 1.5	16	19.3	42	22	27	21	15	22	28	85	64	15
FO-80	M 20 x 1.5	20	24.3	50	27.5	34	25	18	32	33	102	77	15
FO-125	M 27 x 2	30	34.8	70	40	51	37	25	41	51	145	110	15
FO-200	M 36 x 2	35	37.7	80	46	56	43	28	50	56	165	125	15

**Assignment to series**

Series	Piston rod thread	Rod clevis	Piston rod nut	Rod eye
CM-16	M6	PD-16	PL-16	PO-16
CM-20	M8	PD-20	PL-20	PO-20
CM-25 CX-32	M 10 x 1.25	PD-25	PL-25	PO-25
CX-40	M 12 x 1.25	PD-40	PL-40	PO-40
CX-50 CX-63	M 16 x 1.5	PD-63	PL-63	PO-63
CX-80 CX-100	M 20 x 1.5	PD-80	PL-80	PO-80

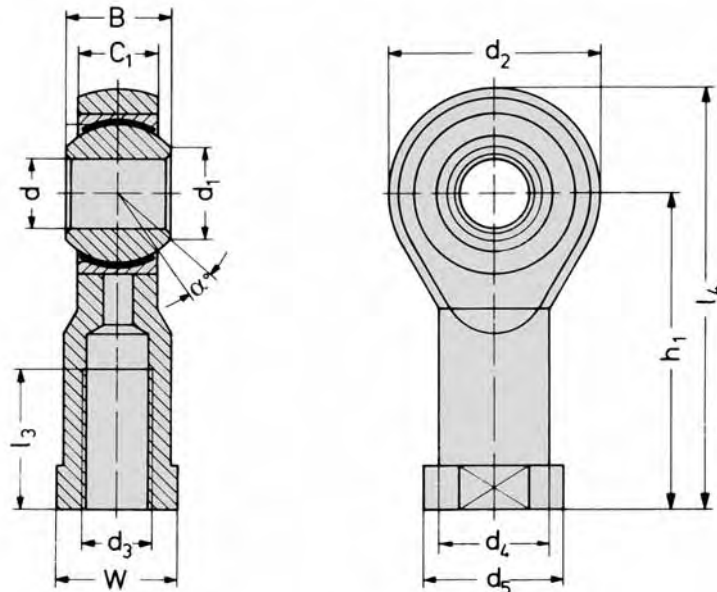
**Rod clevis with pin**



Material: stainless steel 1.4305

Order number	A	B	C	D	E	F	G	H	J
PD-16	M6	12	24	17	6	31	12	6	10
PD-20	M8	16	32	20	8	42	16	8	14
PD-25	M 10 x 1.25	20	40	25	10	52	20	10	18
PD-40	M 12 x 1.25	24	48	30	12	62	24	12	20
PD-63	M 16 x 1.5	32	64	39	16	83	32	16	26
PD-80	M 20 x 1.5	40	80	48	20	105	40	20	34
			± 0.3					h <sub>11</sub>	

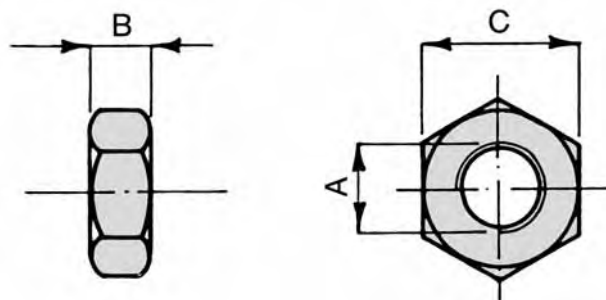
**Rod eye**



Material Body: stainless steel 1.4057  
 Bearing housing: stainless steel 1.4571 PTFE coated  
 Inner ring: stainless steel 1.4034 hardened

Order number	d <sub>3</sub>	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	d <sub>5</sub>	B	C <sub>1</sub>	W	L <sub>3</sub>	L <sub>4</sub>	h <sub>1</sub>	α
PO-16	M6	6	8.9	20	10	13	9	6.75	11	12	40	30	13
PO-20	M8	8	10.4	24	12.5	16	12	9	13	16	48	36	13
PO-25	M 10 x 1.25	10	12.9	28	15	19	14	10.5	17	20	57	43	13
PO-40	M 12 x 1.25	12	15.4	32	17.5	22	16	12	19	22	66	50	13
PO-63	M 16 x 1.5	16	19.3	42	22	27	21	15	22	28	85	64	15
PO-80	M 20 x 1.5	20	24.3	50	27.5	34	25	18	32	33	102	77	15

**Piston rod nut**

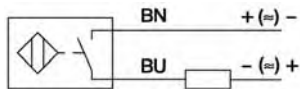


Material: stainless steel 1.4301

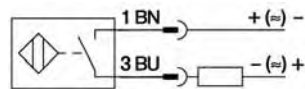
Order number	A	B	C
PL-16	M6	5	10
PL-20	M8	6.5	13
PL-25	M 10 x 1.25	6	17
PL-40	M 12 x 1.25	7	19
PL-63	M 16 x 1.5	8	24
PL-80	M 20 x 1.5	9	30

# Proximity sensors

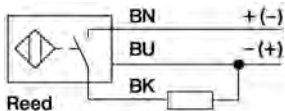
## Wiring diagram



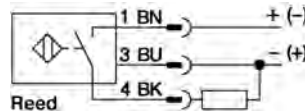
Reed  
**ZS-5200**



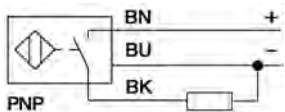
Reed  
**ZS-5201**



Reed  
**ZS-5300, ZS-5300-05**



Reed  
**ZS-5301**

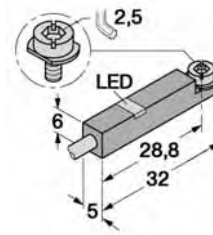


PNP  
**ZS-6300, ZS-7300**

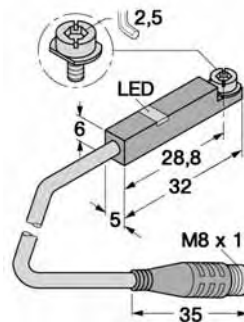


PNP  
**ZS-6301, ZS-7301**

## Dimensions



**ZS-5200, ZS-5300,  
ZS-5300-05,  
ZS-6300, ZS-7300**



**ZS-5201, ZS-5301,  
ZS-6301, ZS-7301**

## Function principles

Magnetic field sensors are actuated by magnetic fields and are especially suited for piston position detection in pneumatic cylinders. Based on the fact that magnetic fields can permeate non-magnetizable metals, it is possible to detect a permanent magnet attached to the piston through the aluminum wall of the cylinder.

## Mounting tip

The sensor is firmly fixed in the groove by clockwise rotation of the screw.

Order number	ZS-5200	ZS-5201	ZS-5300	ZS-5300-05	ZS-5301
<b>Design</b>	2-pole Reed sensor (non-polarized) normally open		3-pole Reed sensor* normally open		
<b>Cable</b>	∅ 3, Lif9Y-11Y, PUR		∅ 3, LifYY-11Y, PUR		
<b>Cable cross section</b>	2 x 0.14 mm <sup>2</sup>		3 x 0.14 mm <sup>2</sup>		
<b>Cable length</b>	3 m	0,3 m	3 m	5 m	0,3 m
<b>Cable plug</b>	-	M8	-	-	M8
<b>Overtravel speed</b>	≤ 10 m/s				
<b>Max. absolute hysteresis</b>	≤ 1 mm				
<b>Temperature drift</b>	≤ 0.1 mm				
<b>Min. absolute repeat accuracy</b>	≤ ± 0.1 mm				
<b>Operating temperature</b>	- 25 °C ... + 70 °C				
<b>Degree of protection</b>	IP 67				
<b>Housing material</b>	Plastic PA 12				
<b>Switching status indication</b>	LED yellow				
<b>Rated operational voltage</b>	3 ... 140 VAC / 4 ... 200 VDC		10 ... 30 V DC*		
<b>Rated operational current I<sub>E</sub></b>	DC ≤ 100 mA AC ≤ 100 mA		≤ 500 mA ≤ 500 mA		
<b>Breaking capacity</b>	10 W				
<b>No-load current</b>	0 mA				
<b>Max. OFF-state current</b>	0 mA				
<b>Max. switching frequency</b>	≤ 0.5 kHz				
<b>Rated insulation voltage</b>	≤ 0.5 kV				
<b>Short-circuit protection</b>	no				
<b>Max. voltage drop at I<sub>E</sub></b>	≤ 3 V		≤ 0.5 V		
<b>Wire breakage</b>	no				
<b>Reverse polarity protection</b>	yes				
<b>Vibration resistance</b>	55 Hz (1 mm)				
<b>Shock resistance</b>	30 g (11 ms)				
<b>Explosion proof</b>	-				

\* Useable as 2-wire contact, voltage 0 ... 30 V AC / 0 ... 30 V DC, LED has no function.

## Proximity sensors

### Mounting bracket for round cylinder Ø 8 – 63 mm



Order number	Piston-Ø
NT-0810	8 and 10 mm
NT-1216	12 and 16 mm (Series XG Ø 160 and 200 mm)
NT-2025	20 and 25 mm (Series XG Ø 250 and 320 mm)
NT-0032	32 mm
NT-0040	40 mm
NT-0050	50 mm
NT-0063	63 mm

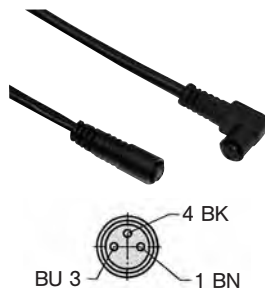
Material: PA,  
steel zinc plated



Order number	Piston-Ø
NT-0825	8 – 25 mm
NT-3263	32 – 63 mm

Material: metal,  
plastic PA GI/6T

### Connecting cable for ZS-5201, ZS-5301, ZS-6301 and ZS-7301



Cable: PUR, black, 3 x 0,25 mm<sup>2</sup>, Ø 3.9, high flexible  
Operating voltage 0 ... 48 V AC/DC

Order number	Length of cable	Connection
KA-30	3 m	8 mm sensor snap-in, straight
KA-50	5 m	8 mm sensor snap-in, straight
KA-51	5 m	8 mm sensor snap-in, 90°
KA-100	10 m	8 mm sensor snap-in, straight
KA-101	10 m	8 mm sensor snap-in, 90°

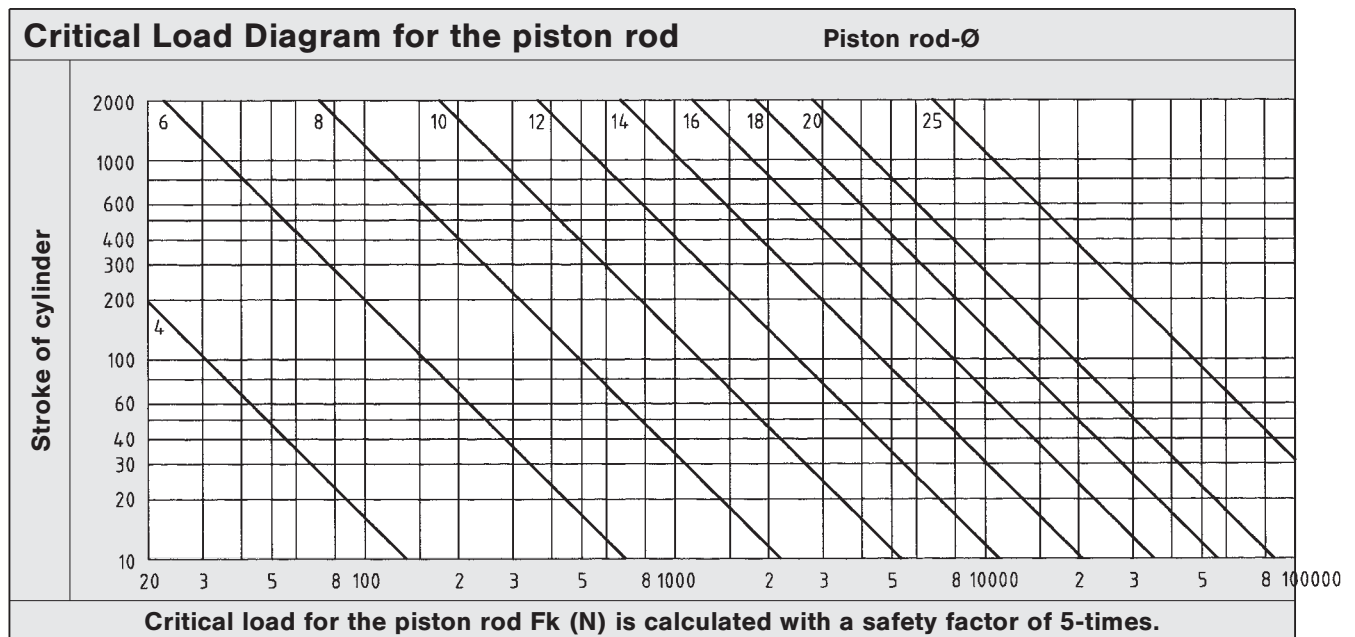
### Proximity sensors electronic

Order number	ZS-6300	ZS-6301	ZS-7300	ZS-7301
<b>Design</b>	electronic, magnet-inductive sensor, normally open PNP output			
<b>Cable</b>	Ø 3, LifYY-11Y, PUR			
<b>Cable cross section</b>	3 x 0.14 mm <sup>2</sup>			
<b>Cable lengths</b>	3 m	0.3 m	3 m	0.3 m
<b>Cable plug</b>	-	M8	-	M8
<b>Overtravel speed</b>	≤ 10 m/s			
<b>Max. absolute hysteresis</b>	≤ 1 mm			
<b>Temperature drift</b>	≤ 0.1 mm			
<b>Min. absolute repeat accuracy</b>	≤ ± 0.1 mm			
<b>Operating temperature</b>	- 25 °C ... + 70 °C			
<b>Degree of protection</b>	IP 67			
<b>Housing material</b>	Plastic, PA 12			
<b>Switching status indication</b>	LED yellow			
<b>Rated operational voltage</b>	10 ... 30 V DC, max. ripple ≤ 10 % U <sub>pp</sub>			
<b>Rated operational current I<sub>E</sub></b>	DC ≤ 200 mA AC -			
<b>Breaking capacity</b>	6 W			
<b>No-load current</b>	≤ 15 mA			
<b>Max. OFF-state current</b>	≤ 0.1 mA			
<b>Max. switching frequency</b>	≤ 1 kHz			
<b>Rated insulation voltage</b>	≤ 0.5 kV			
<b>Short-circuit protection</b>	yes, cyclic			
<b>Max. voltage drop at I<sub>E</sub></b>	≤ 1.8 V			
<b>Wire breakage</b>	yes			
<b>Reverse polarity protection</b>	yes / complete			
<b>Vibration resistance</b>	55 Hz (1 mm)			
<b>Shock resistance</b>	30 g (11 ms)			
<b>Explosion proof</b>	-		II 3 GD EEx nA II T4 X IP 67 T 110 °C	

## Technical charts

This table shows the air consumption for a single stroke of 100 mm. These statements are based upon extension and are in NI.

Piston-Ø mm	Air pressure in bar/psi						
	2 (29 psi)	3 (43.4 psi)	4 (58 psi)	5 (72.5 psi)	6 (87 psi)	7 (101.5 psi)	8 (116 psi)
8	0.02	0.02	0.03	0.03	0.04	0.04	0.05
10	0.02	0.03	0.04	0.05	0.05	0.06	0.07
12	0.03	0.05	0.06	0.07	0.08	0.09	0.10
16	0.06	0.08	0.10	0.12	0.14	0.16	0.18
20	0.09	0.13	0.16	0.19	0.22	0.25	0.28
25	0.15	0.20	0.25	0.29	0.34	0.39	0.44
32	0.24	0.32	0.40	0.48	0.56	0.64	0.72
40	0.38	0.50	0.63	0.75	0.88	1.01	1.13
50	0.59	0.79	0.98	1.18	1.37	1.57	1.77
63	0.94	1.25	1.56	1.87	2.18	2.49	2.81
80	1.51	2.01	2.51	3.02	3.52	4.02	4.52
100	2.36	3.14	3.93	4.71	5.50	6.28	7.07



$$F_k = \frac{\pi^2 EI}{L_k^2 S}$$

$F_k$  = permitted critical force (N)  
 $E$  = elasticity module (N/mm<sup>2</sup>)  
 $I$  = moment of inertia (mm<sup>4</sup>)  
 $L_k$  = effective length of critical load  
 $S$  = security

Elastic cases of buckling according to „Euler“

