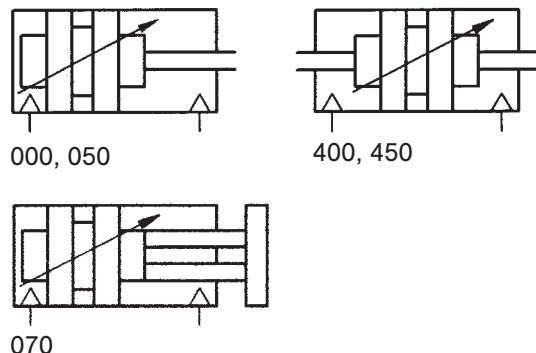


**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**according to DIN ISO 6431/VDMA 24562**

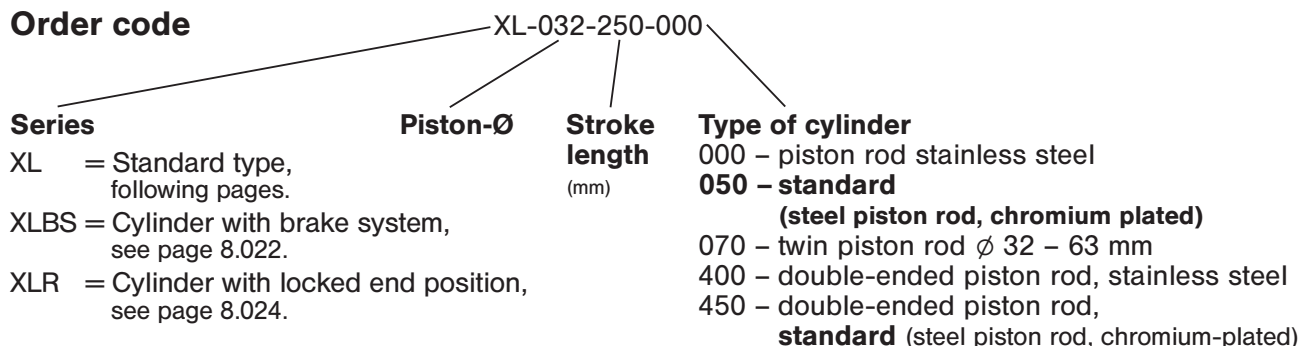


**Technical data for series**

**XL**



**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. 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	44
<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 mm<sup>2)</sup></b>	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  $\varnothing$  32 is 21 mm, at  $\varnothing$  40 is 20 mm, at  $\varnothing$  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**  
**according to DIN ISO 6431/VDMA 24562**



**Technical data for series**

**XL**

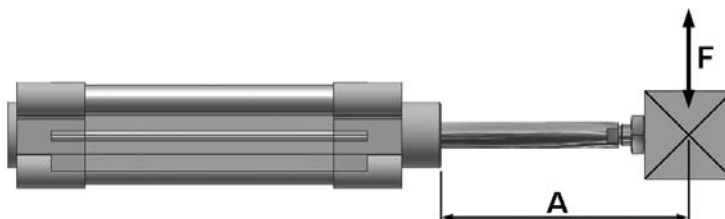


**Force chart for series XL**

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)**



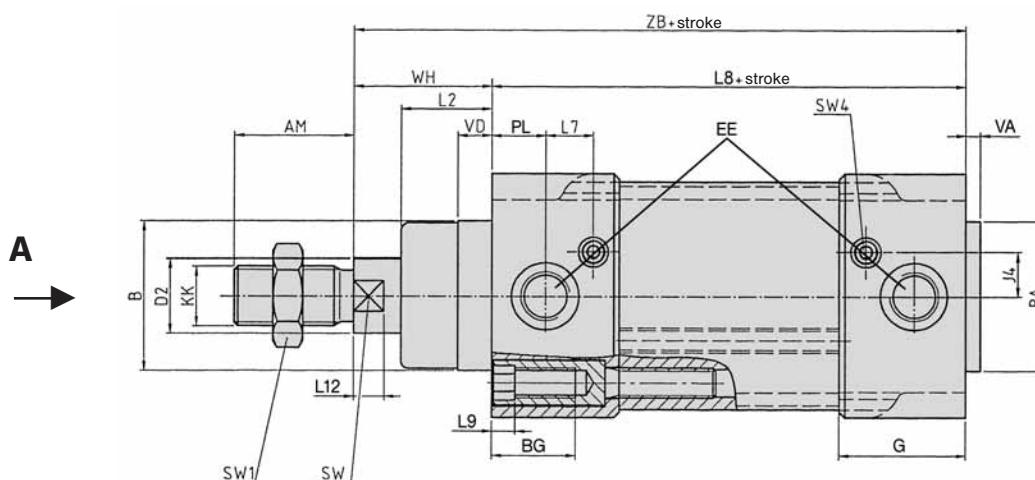
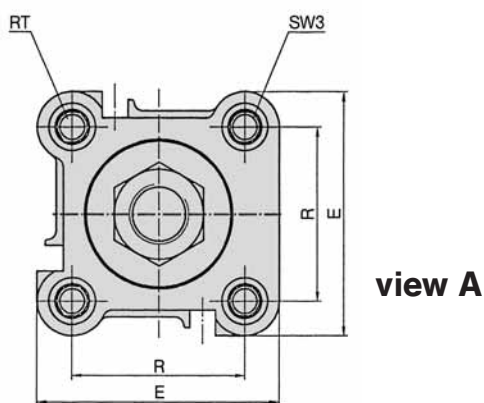
Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75 N (16.9 lbf.)	55 N (12.4 lbf.)	50 N (11.2 lbf.)	40 N (9.0 lbf.)	34 N (7.6 lbf.)	28 N (6.3 lbf.)	23 N (5.2 lbf.)	20 N (4.5 lbf.)	16 N (3.6 lbf.)	12 N (2.7 lbf.)	9 N (2.0 lbf.)	7 N (1.6 lbf.)
40	175 N (39.3 lbf.)	150 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**  
**according to DIN ISO 6431/VDMA 24562**



**Dimensions for series**

**XL**



Piston-Ø	AM	Ø B Ø BA	BG	Ø D2	E	EE	G	J4	KK	L2	L7	L8
32	22	30	16.5	12	47	G 1/8	30	6	M 10 x 1.25	18	11.5	94
40	24	35	16.5	16	54	G 1/4	33	9	M 12 x 1.25	22	13	105
50	32	40	22	20	63	G 1/4	33.75	8	M 16 x 1.5	25.5	12.75	106
63	32	45	22	20	74	G 3/8	38	9.5	M 16 x 1.5	25	14.5	121
80	40	45	24.5	25	93.5	G 3/8	39.75	14	M 20 x 1.5	35	13.75	128
100	40	55	24.5	25	110	G 1/2	43.5	15	M 20 x 1.5	38	15.5	138
125	54	60	22.5	32	137.5	G 1/2	52.5	15	M 27 x 2	46	20	160
	-2	e11		f7								

Piston-Ø	L9	L12	PL	R	RT	SW	SW1	SW3	SW4	VA	VD	WH	ZB
32	5	6	13	32.5	M6	10	17	6	3	4	9.5	26	120
40	5	6.5	14	38	M6	13	19	6	3	4	9.5	30	135
50	6	8	14	46.5	M8	16	24	8	3	4	9.5	37	143
63	6	8	16.5	56.5	M8	16	24	8	3	4	9.5	37	158
80	7	10	17	72	M10	21	30	10	4	4	10	46	174
100	7	10	18	89	M10	21	30	10	4	4	10	51	189
125	9	13	18	110	M12	27	41	12	4	6	11	65	225
										-1		+/-1	

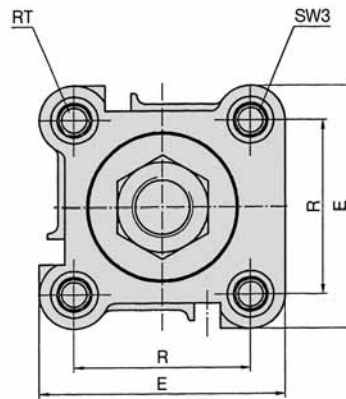
Piston-Ø	32	40	50	63	80	100	125
Mass at 0 mm stroke in kg	0.617 (1.360 lbs.)	0.925 (2.039 lbs.)	1.421 (3.133 lbs.)	1.950 (4.299 lbs.)	3.250 (7.165 lbs.)	4.396 (9.691 lbs.)	6.391 (14.089 lbs.)
add-on per 100 mm stroke	0.286 (0.630 lb.)	0.403 (0.888 lb.)	0.528 (1.164 lbs.)	0.597 (1.316 lbs.)	0.861 (1.898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

**Pneumatic cylinders, piston-Ø 32 – 125 mm**  
**Double acting with magnetic piston**  
**according to DIN ISO 6431/VDMA 24562**

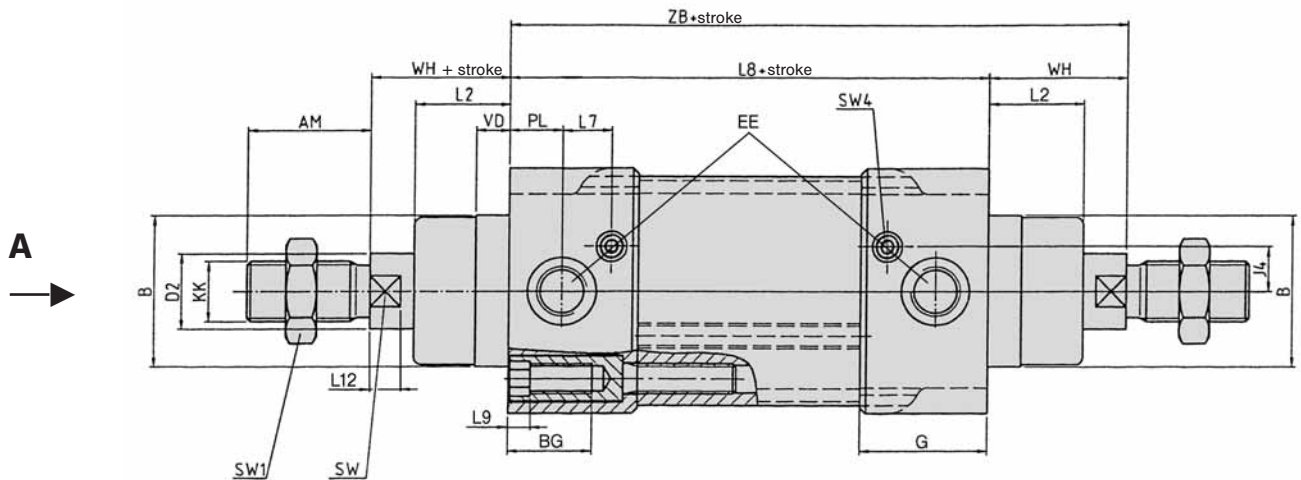


Dimensions for series

**XL**



view A



Piston-Ø	AM	Ø B	BG	Ø D2	E	EE	G	J4	KK	L2	L7
32	22	30	16.5	12	47	G 1/8	30	6	M 10 x 1.25	18	11.5
40	24	35	16.5	16	54	G 1/4	33	9	M 12 x 1.25	22	13.0
50	32	40	22	20	63	G 1/4	33.75	8	M 16 x 1.5	25.5	12.75
63	32	45	22	20	74	G 3/8	38	9.5	M 16 x 1.5	25	14.5
80	40	45	24.5	25	93.5	G 3/8	39.75	14	M 20 x 1.5	35	13.75
100	40	55	24.5	25	110	G 1/2	43.5	15	M 20 x 1.5	38	15.5
125	54	60	22.5	32	137.5	G 1/2	52.5	15	M 27 x 2	46	20
	-2	e11		f7							

Piston-Ø	L8	L9	L12	PL	R	RT	SW	SW1	SW3	SW4	VD	WH	ZB
32	94	5	6	13	32.5	M6	10	17	6	3	9.5	26	120
40	105	5	6.5	14	38	M6	13	19	6	3	9.5	30	135
50	106	6	8	14	46.5	M8	16	24	8	3	9.5	37	143
63	121	6	8	16.5	56.5	M8	16	24	8	3	9.5	37	158
80	128	7	10	17	72	M10	21	30	10	4	10	46	174
100	138	7	10	18	89	M10	21	30	10	4	10	51	189
125	160	9	13	18	110	M12	27	41	12	4	11	65	225
												+/-1	

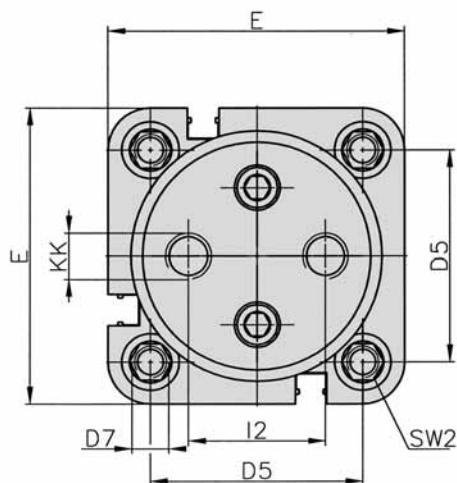
Piston-Ø	32	40	50	63	80	100	125
Mass at 0 mm stroke in kg	0.702 (1.548 lbs.)	1.065 (2.348 lbs.)	1.713 (3.776 lbs.)	2.208 (4.868 lbs.)	3.780 (8.333 lbs.)	5.057 (11.149 lbs.)	9.387 (20.694 lbs.)
add-on per 100 mm stroke	0.374 (0.824 lb.)	0.559 (1.232 lbs.)	0.768 (1.693 lbs.)	0.837 (1.845 lbs.)	1.243 (2.740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

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

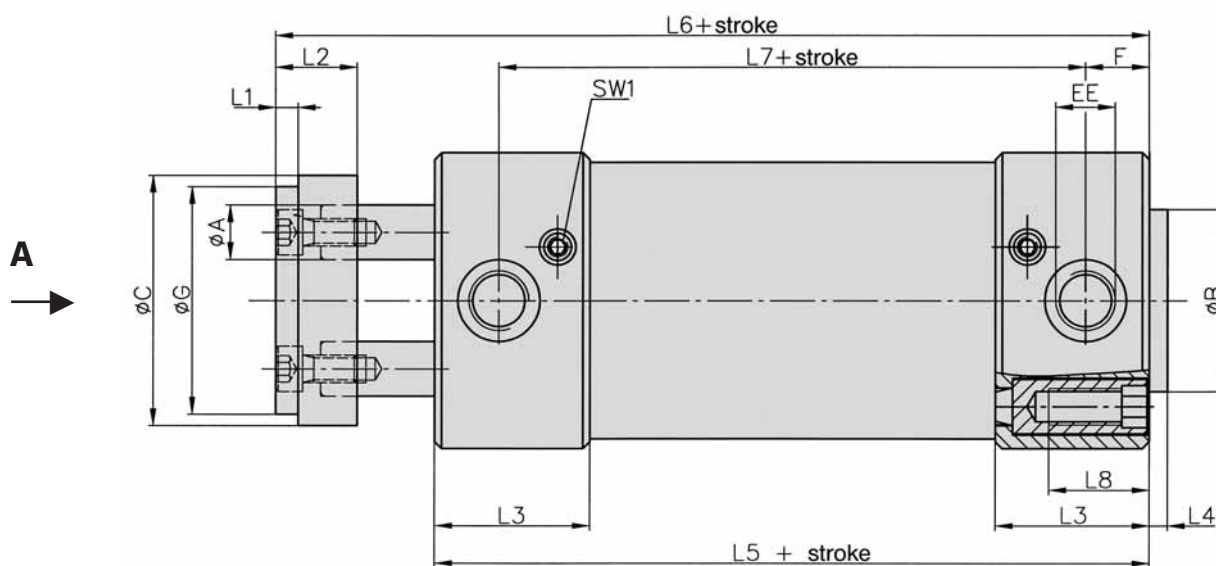


## Dimensions for series

# XL



view A



Piston-Ø	Ø A	Ø B	Ø 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	70	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
32	4	15	28.8	4	100	128	76	16.5	3	6
40	4	15	33	4	114	142	88	16.5	3	6
50	5	18	33.8	4	116	151	88	22	3	8
63	5	22	35	4	124	161	96	22	3	8

Piston-Ø	32	40	50	63
Mass at 0 mm stroke in kg	0.725 (1.598 lbs.)	1.088 (2.398 lbs.)	1.575 (3.472 lbs.)	2.597 (5.725 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.)

## Accessories

### Accessories for series

# XL

#### Piston rod accessories



Flexible coupling  
**FK**  
Page 8.203



Rod eye  
**FO + RO**  
Page 8.203



Rod clevis with pin  
**FD + RD**  
Page 8.202



Piston rod nut  
**FE + RL**  
Page 8.202

#### Mounting accessories



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



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



Clevis mount  
**XLB-Ø-03**  
Page 8.017



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



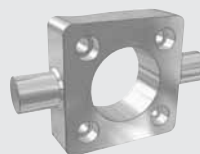
Swivel mount  
**XLB-Ø-05**  
Page 8.018



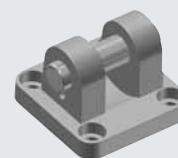
Swivel mount 90°  
**XLB-Ø-06**  
Page 8.018



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

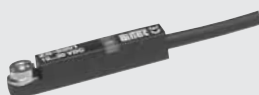


Trunnion mount  
**XLB-Ø-10**  
Page 8.020



Linear guides  
**LE-**  
Page 8.180

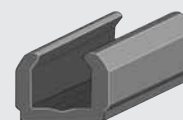
#### Proximity sensors



Sensors  
**ZS-**  
Page 8.220



Connecting cable  
**KA-**  
Page 8.221



Cover for sensor groove  
**XLB-11** 0.5 m

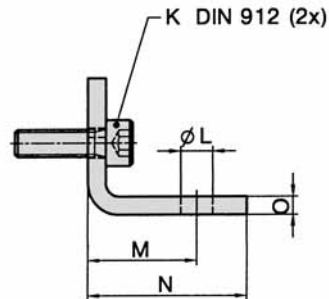
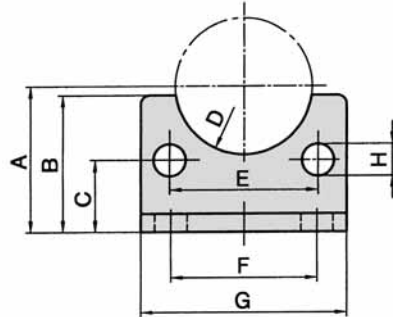
Seal kits see page 8.046.

# Accessories

## Mounting accessories for series

# XL

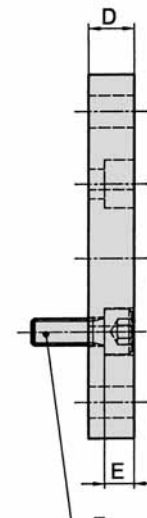
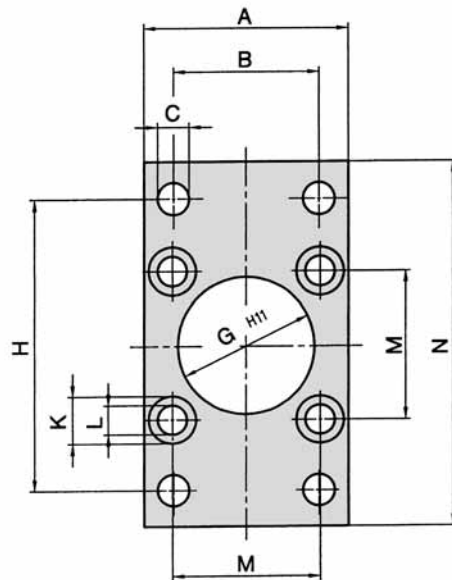
### Foot mount 1 pair



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	O
XLB-032-01	32	30	15.75	R 15	32.5	32	45	7	M 6 x 20	7	24	35	4
XLB-040-01	36	30	17	R 17.5	38	36	52	7	M 6 x 20	9	28	36	4
XLB-050-01	45	36	21.75	R 20	46.5	45	65	9	M 8 x 25	9	32	47	5
XLB-063-01	50	35	21.75	R 22.5	56.5	50	75	9	M 8 x 25	9	32	45	5
XLB-080-01	63	47	27	R 22.5	72	63	95	11	M 10 x 25	12	41	55	6
XLB-100-01	71	53	26.5	R 27.5	89	75	115	11	M 10 x 30	14	41	57	6
XLB-125-01	90	70	35	R 30	110	90	140	14	M 12 X 30	16	45	70	8
	JS 15	+ 2					- 0.2						± 0.5

### Flange mount



Material: steel (zinc-plated)

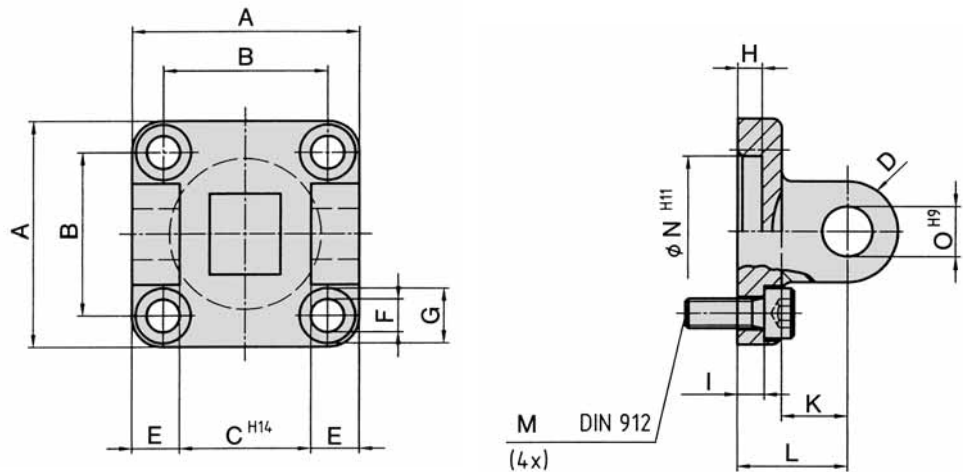
Order number	A	B	C	D	E	F	G	H	K	L	M	N
XLB-032-02	45	32	7	10	6.5	M 6 x 20	30	64	10.5	6.5	32.5	80
XLB-040-02	52	36	9	10	6.5	M 6 x 20	35	72	10.5	6.5	38	90
XLB-050-02	65	45	9	12	8.5	M 8 x 20	40	90	13.5	8.5	46.5	110
XLB-063-02	75	50	9	12	8.5	M 8 x 20	45	100	13.5	8.5	56.5	120
XLB-080-02	95	63	12	16	10.5	M 10 x 25	45	126	16.5	10.5	72	150
XLB-100-02	115	75	14	16	10.5	M 10 x 25	55	150	16.5	10.5	89	170
XLB-125-02	140	90	16	20	12.5	M 12 x 30	60	180	20	13.5	110	205

## Accessories

### Mounting accessories for series

# XL

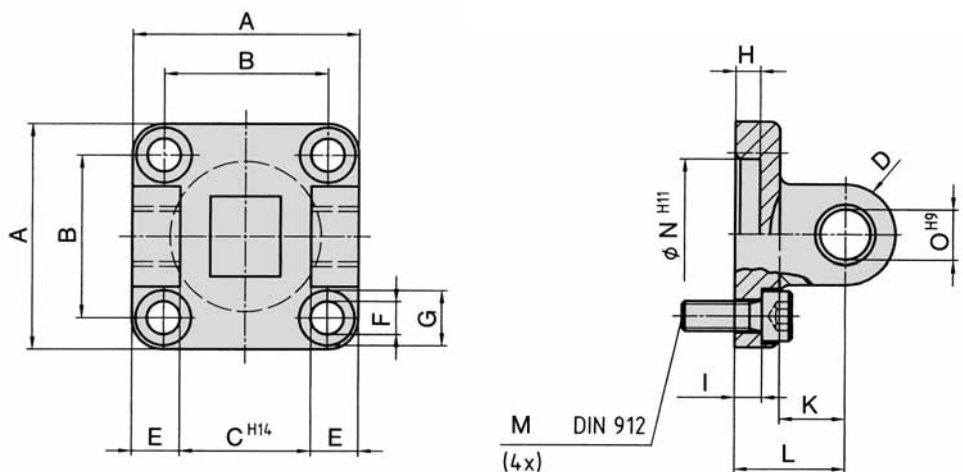
#### Clevis mount



Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	O
XLB-032-03	45	32.5	26	10	9.5	6.6	11	5	5.5	13	22	M 6 x 20	30	10
XLB-040-03	52	38	28	12	12	6.6	11	5	5.5	16	25	M 6 x 20	35	12
XLB-050-03	65	46.5	32	12	14	9	15	5	6.5	16	27	M 8 x 20	40	12
XLB-063-03	75	56.5	40	16	15	9	15	5	6.5	21	32	M 8 x 20	45	16
XLB-080-03	95	72	50	16	20	11	18	5	10	22	36	M 10 x 30	45	16
XLB-100-03	115	89	60	20	25	11	18	5	10	27	41	M 10 x 30	55	20
XLB-125-03	140	110	70	25	30	14	20	7	10	30	50	M 12 x 30	60	25

#### Clevis mount with bushing



Material: Al

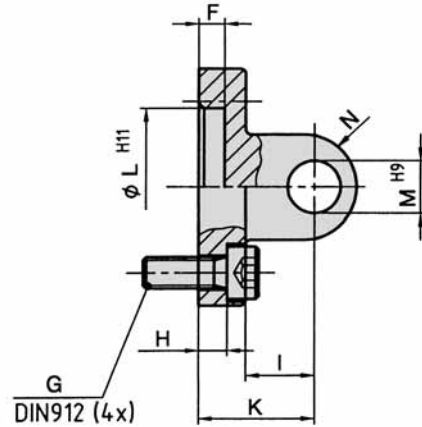
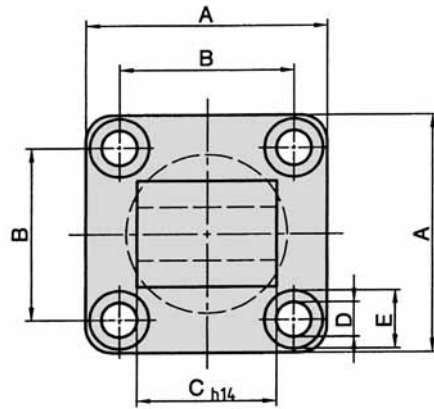
Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	O
XLB-032-04	45	32.5	26	10	9.5	6.6	11	5	5.5	13	22	M 6 x 20	30	10
XLB-040-04	52	38	28	12	12	6.6	11	5	5.5	16	25	M 6 x 20	35	12
XLB-050-04	65	46.5	32	12	14	9	15	5	6.5	16	27	M 8 x 20	40	12
XLB-063-04	75	56.5	40	16	15	9	15	5	6.5	21	32	M 8 x 20	45	16
XLB-080-04	95	72	50	16	20	11	18	5	10	22	36	M 10 x 30	45	16
XLB-100-04	115	89	60	20	25	11	18	5	10	27	41	M 10 x 30	55	20
XLB-125-04	140	110	70	25	30	14	20	7	10	30	50	M 12 x 30	60	25

# Accessories

## Mounting accessories for series

# XL

### Swivel mount



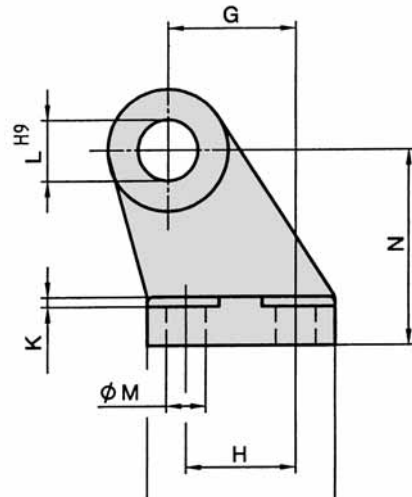
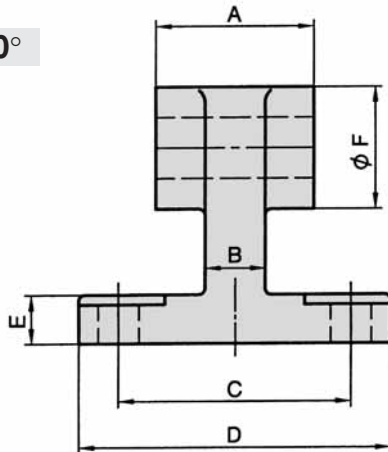
Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
XLB-032-05	45	32.5	26	6.6	11	5	M 6 x 20	5.5	13	22	30	10	10
XLB-040-05	52	38	28	6.6	11	5	M 6 x 20	5.5	16	25	35	12	12
XLB-050-05	65	46.5	32	9	15	5	M 8 x 20	6.5	16	27	40	12	12
XLB-063-05	75	56.5	40	9	15	5	M 8 x 20	6.5	21	32	45	16	16
XLB-080-05	95	72	50	11	18	5	M 10 x 30	10	22	36	45	16	16
XLB-100-05	115	89	60	11	18	5	M 10 x 30	10	27	41	55	20	20
XLB-125-05	140	110	70*	14	20	7	M 12 x 30	10	30	50	60	25	25

- 0.2  
- 0.6

\* tolerance -0.5 ... -1.2

### Swivel mount 90°



Material: Al

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
XLB-032-06	26	10	38	51	8	20	21	18	31	1.6	10	6.6	32
XLB-040-06	28	15	41	54	10	22	24	22	35	1.6	12	6.6	36
XLB-050-06	32	16	50	65	12	26	33	30	45	1.6	12	9	45
XLB-063-06	40	16	52	67	14	30	37	35	50	1.6	16	9	50
XLB-080-06	50	20	66	86	14	30	47	40	60	2.5	16	11	63
XLB-100-06	60	20	76	96	17	38	55	50	70	2.5	20	11	71
XLB-125-06	70*	30	94	124	20	45	70	60	90	3.2	25	14	90

- 0.2  
- 0.6

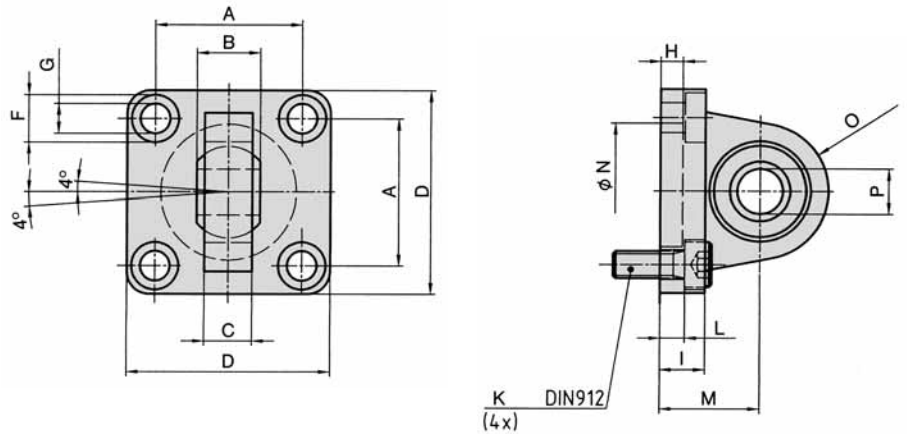
\* tolerance -0.5 ... -1.2

## Accessories

### Mounting accessories for series

# XL

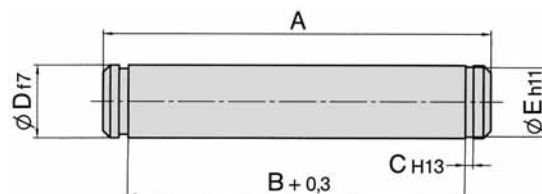
#### Swivel mount with spherical bearing



Material: Al

Order number	A	B	C	D	F	G	H	I	K	L	M	N	O	P
XLB-032-12	32.5	14	10.5	45	11	6.6	5	9	M 6 x 20	4.5	22	30	R 16	10
XLB-040-12	38.0	16	12	52	11	6.6	5	9	M 6 x 20	4.5	25	35	R 19	12
XLB-050-12	46.5	21	15	65	15	9	5	11	M 8 x 20	4.5	27	40	R 21	16
XLB-063-12	56.5	21	15	75	15	9	5	11	M 8 x 20	4.5	32	45	R 24	16
XLB-080-12	72.0	25	18	95	18	11	5	14	M 10 x 25	4	36	45	R 28.5	20
XLB-100-12	89.0	25	18	115	18	11	5	13	M 10 x 25	4	41	55	R 30	20
XLB-125-12	110	37	25	140	20	13.5	7	20	M 12 x 30	10	50	60	R 40	30
	± 0.2	- 0.1			H13	H13					JS15	H11	max.	H7

#### Clevis pin



Material: steel (zinc-plated)

Snap rings are included.

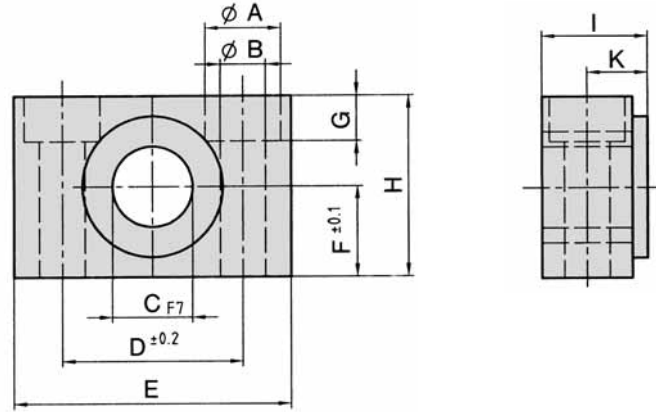
Order number	A	B	C	D	E
XLB-032-08	53	46	1.1	10	9.6
XLB-040-08	60	53	1.1	12	11.5
XLB-050-08	68	61	1.1	12	11.5
XLB-063-08	78	71	1.1	16	15.2
XLB-080-08	98	91	1.1	16	15.2
XLB-100-08	118	111	1.3	20	19.0
XLB-125-08	139	132	1.3	25	23.9

## Accessories

### Mounting accessories for series

# XL

#### Bearing block (1 pair)

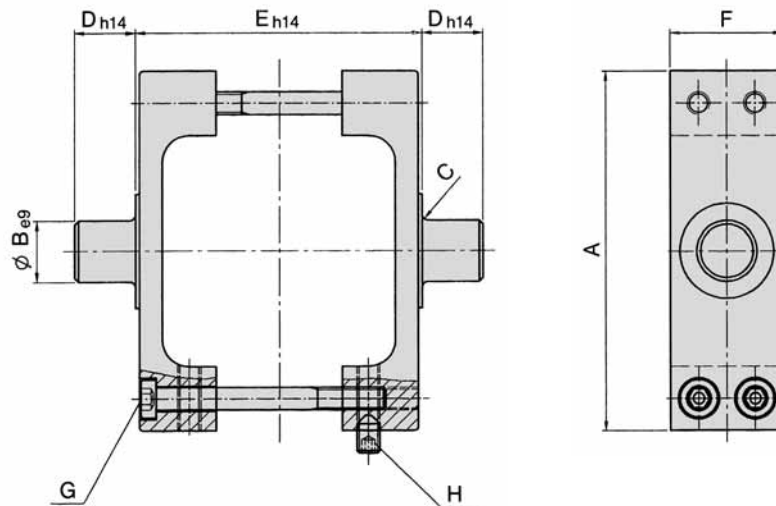
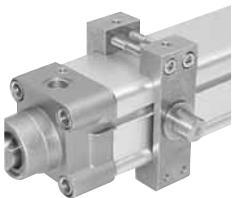


Order number = 1 pair

Material: steel (zinc-plated), bronze

Order number	A	B	C	D	E	F	G	H	I	K
XLB-032-09	11	6.6	12	32	46	15	7	30	18	10.5
XLB-040-09	15	9	16	36	55	18	9	36	21	12
XLB-063-09	18	11	20	42	65	20	11	40	23	13
XLB-100-09	20	14	25	50	75	25	13	50	28.5	16

#### Trunnion mount



Material: steel (zinc-plated)

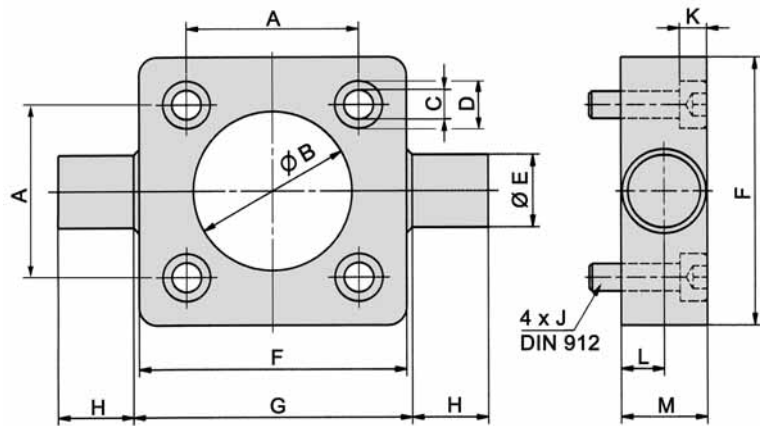
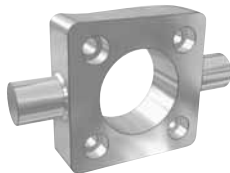
Order number	A	B	C	D	E	F	G DIN 7984	H
XLB-032-10	65	12	1	12	50	25	SW 4	SW 3
XLB-040-10	75	16	1.5	16	63	25	SW 4	SW 3
XLB-050-10	95	16	1.6	16	75	30	SW 4	SW 3
XLB-063-10	105	20	1.6	20	90	30	SW 4	SW 3
XLB-080-10	130	20	1.6	20	110	30	SW 4	SW 3
XLB-100-10	145	25	2	25	132	40	SW 5	SW 3
XLB-125-10	175	25	2	25	160	40	SW 6 DIN 912	SW 4

## Accessories

### Mounting accessories for series

# XL

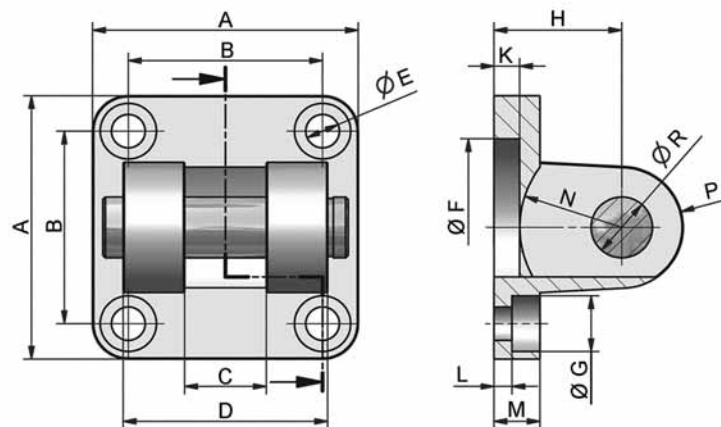
#### Trunnion flange mount



Material: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	J	K	L	M
XLB-032-11	32.5	30	6.5	10.5	12	46	50	12	M 6 x 20	6	6.5	14
XLB-040-11	38	35	6.5	10.5	16	59	63	16	M 6 x 25	6	9	19
XLB-050-11	46.5	40	8.5	13.5	16	69	75	16	M 8 x 25	8	9	19
XLB-063-11	56.5	45	8.5	13.5	20	84	90	20	M 8 x 25	8	11.5	24
XLB-080-11	72	45	10.5	16.5	20	102	110	20	M 10 x 25	10	11.5	24
XLB-100-11	89	55	10.5	16.5	25	125	132	25	M 10 x 30	10	14	29
	$\pm 0.2$	H11			e9	max.	h14	h14		+ 0.5	+ 0.2	

#### Small clevis mount with non rotating pin



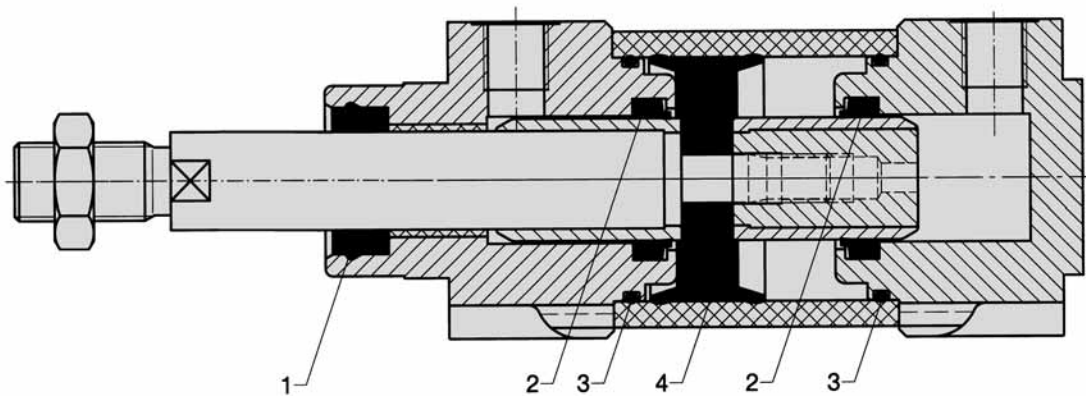
Material of clevis: Al  
of pin: steel (zinc-plated)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	P	R
XLB-032-14	45	32.5	14	34	6.6	30	11	22	5	5.5	9	17	10	10
XLB-040-14	52	38	16	40	6.6	35	11	25	5	5.5	9	20	12	12
XLB-050-14	65	46.5	21	45	9	40	15	27	5	6.5	11	22	14	16
XLB-063-14	75	56.5	21	51	9	45	15	32	5	6.5	11	25	18	16
XLB-080-14	95	72	25	65	11	45	18	36	5	10	14	30	20	20
XLB-100-14	115	89	25	75	11	55	18	41	5	10	14	32	22	20
XLB-125-14	140	110	37	97	14	60	20	50	7	10	20	42	25	30
	$\pm 0.5$	$\pm 0.2$	H14	d 12	+ 0.4 - 0.2	H12		$\pm 0.2$	+ 1	$\pm 0.5$		min.	+ 1	f7

# 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

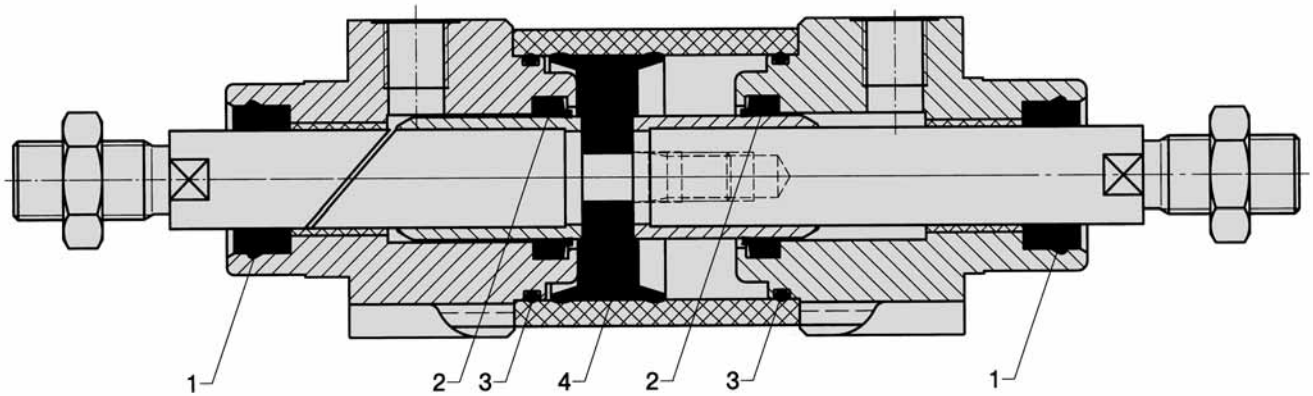
## Seal kits – Viton

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

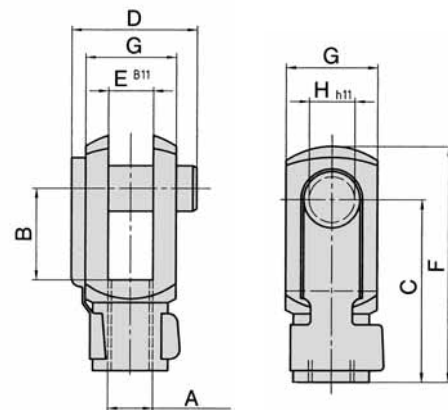
## Piston rod accessories

### 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	Ø 16 Ø 20	M8	RD-20	RL-20	FK-20	RO-20
NXD HM XL	Ø 20 to 40 Ø 25 Ø 32	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	Ø 50 and 63 Ø 40	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	Ø 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

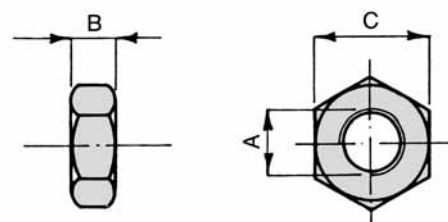


Material: steel (zinc-plated)  
spring steel

\* Bolt with snaprings

### Piston rod nut

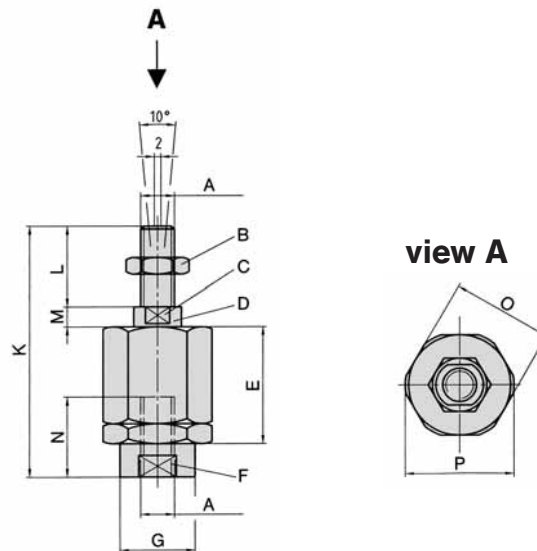
Order number	A	B	C
RL-10	M4	3.2	7
RL-16	M6	5	10
RL-20	M8	6.5	13
RL-25	M 10 x 1.25	6	17
RL-32	M 10	6	17
RL-40	M 12	7	19
RL-63	M 16	8	24
FE-40	M 12 x 1.25	7	19
FE-63	M 16 x 1.5	8	24
FE-80	M 20 x 1.5	9	30
FE-125	M 27 x 2	12	41
FE-200	M 36 x 2	14	55



Material: steel (zinc-plated)

# Piston rod accessories

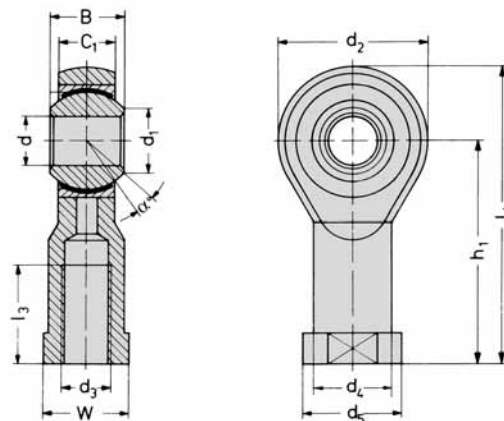
## Flexible coupling



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

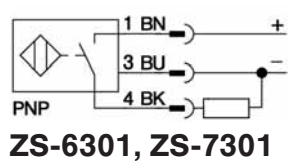
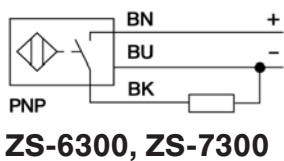
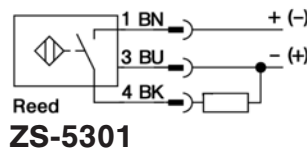
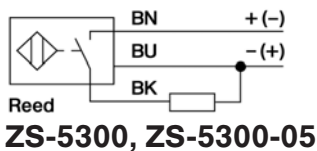
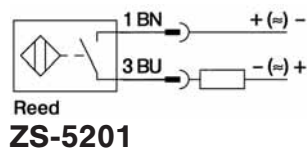
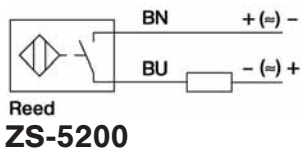


Material: steel (zinc-plated)  
stainless steel

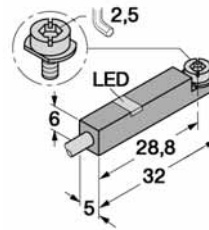
Order number	d <sub>3</sub>	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	d <sub>5</sub>	B	C <sub>1</sub>	W	L <sub>3</sub>	L <sub>4</sub>	h <sub>1</sub>	α
RO-16	M6	6	8.9	20	10	13	9	6.75	11	12	40	30	13
RO-20	M8	8	10.4	24	12.5	16	12	9	13	16	48	36	13
RO-25	M 10 x 1.25	10	12.9	28	15	19	14	10.5	17	20	57	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

# Proximity sensors

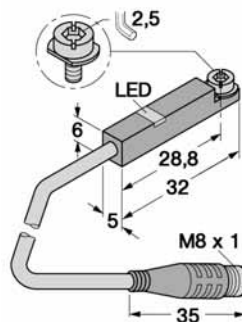
## Wiring diagram



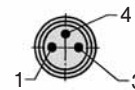
## Dimensions



**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

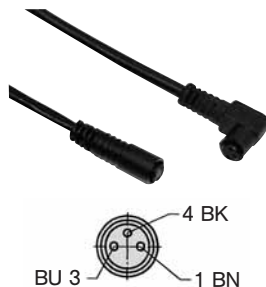
Material: PA, steel zinc plated



Order number	Piston-Ø
NT-0810	8 and 10 mm
NT-1216	12 and 16 mm
NT-2025	20 and 25 mm
NT-0032	32 mm
NT-0040	40 mm
NT-0050	50 mm
NT-0063	63 mm

### 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°

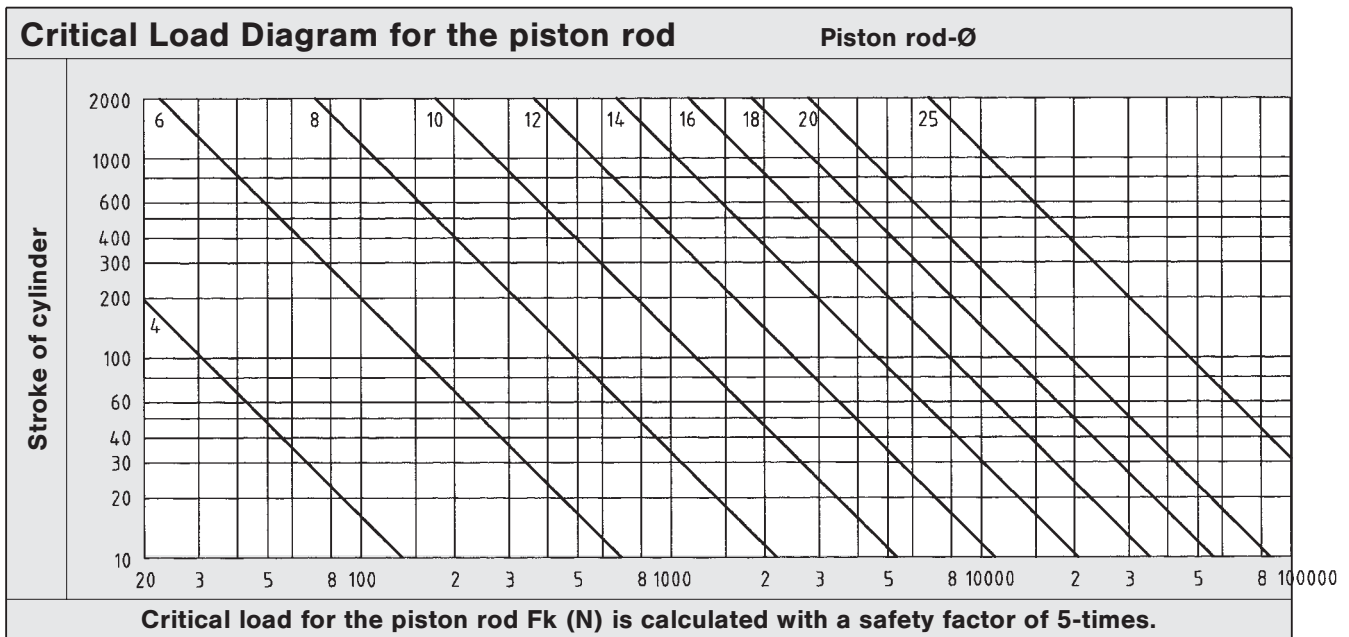
### Proximity sensors electronic

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“

