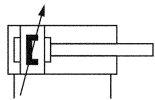


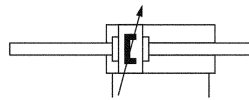
Pneumatic cylinders series XL

Double acting with magnetic piston, ISO 15552

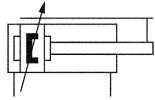
G1/8 to G1/2 • piston Ø 32 to 125 mm



000, 050



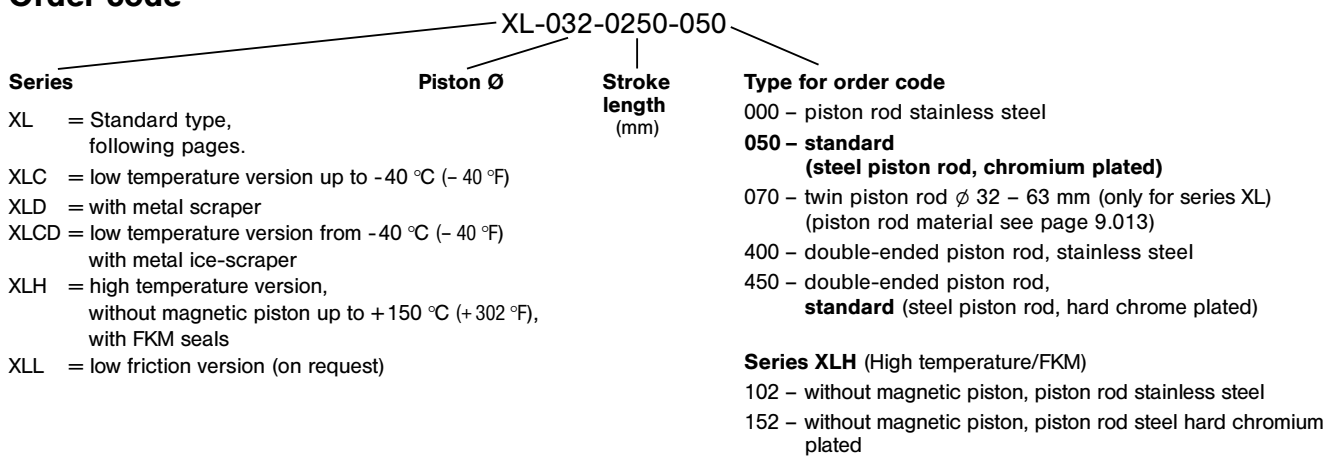
400, 450



070



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 13 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-... |
|--|--|------------|------------|------------|------------|------------|------------|
| Piston Ø (mm) | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Connection | G1/8 | G1/4 | G1/4 | G3/8 | G3/8 | G1/2 | G1/2 |
| Piston rod thread | 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 |
| Cushioning length (mm)¹⁾ | 27 | 29 | 32 | 32 | 32 | 32 | 42 |
| Operating pressure | 1 ... 10 bar (14.5 ... 145 psi) | | | | | | |
| Temperature range | XL, XLD, XLL – 20 °C ... + 80 °C (-4 °F ... + 176 °F) XLH – 10 °C ... + 150 °C (+14 °F ... 302 °F) XLC, XLCD – 40 °C ... + 80 °C (-40 °F ... + 176 °F) | | | | | | |
| Medium | Compressed air in accordance with ISO 8573-1:2001, Class 7 4 – and free of aggressive additives | | | | | | |
| Standard stroke lengths (mm)²⁾ | 25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, max. 2800 (type 070 max. 500 mm) | | | | | | |
| Materials | Cylinder tube: Al-profile (anodized) End caps: Al-die-cast (painted) Piston rod: steel hard chrome plated (standard) – stainless steel (see order code) Seals: PU/NBR | | | | | | |

¹⁾ = cylinder type 070: front cushion length at Ø 32 is 21 mm, at Ø 40 is 20 mm, at Ø 50 and 63 is 27 mm.

²⁾ = refer to "Critical Load Diagram" on page 9.240 to determine critical values on the piston rod.

Pneumatic cylinders series XL
 Double acting with magnetic piston, ISO 15552
 G1/8 to G1/2 • piston Ø 32 to 125 mm

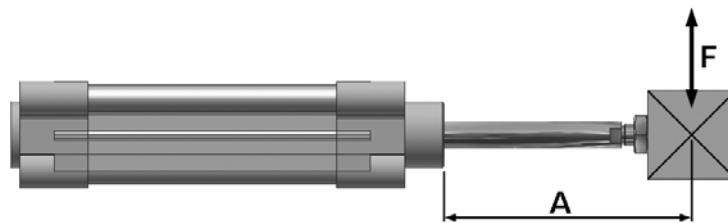


Force chart for series XL

| Piston Ø (mm) | Extension | | Retraction | |
|---------------|-----------|---------------|------------|---------------|
| 32 | 434 N | (97.6 lbf.) | 373 N | (83.8 lbf.) |
| 40 | 678 N | (152.4 lbf.) | 570 N | (128.1 lbf.) |
| 50 | 1060 N | (238.3 lbf.) | 890 N | (200.1 lbf.) |
| 63 | 1682 N | (378.1 lbf.) | 1513 N | (340.1 lbf.) |
| 80 | 2713 N | (609.9 lbf.) | 2448 N | (550.4 lbf.) |
| 100 | 4239 N | (953.0 lbf.) | 3974 N | (893.4 lbf.) |
| 125 | 6623 N | (1489.0 lbf.) | 6189 N | (1391.4 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.) |

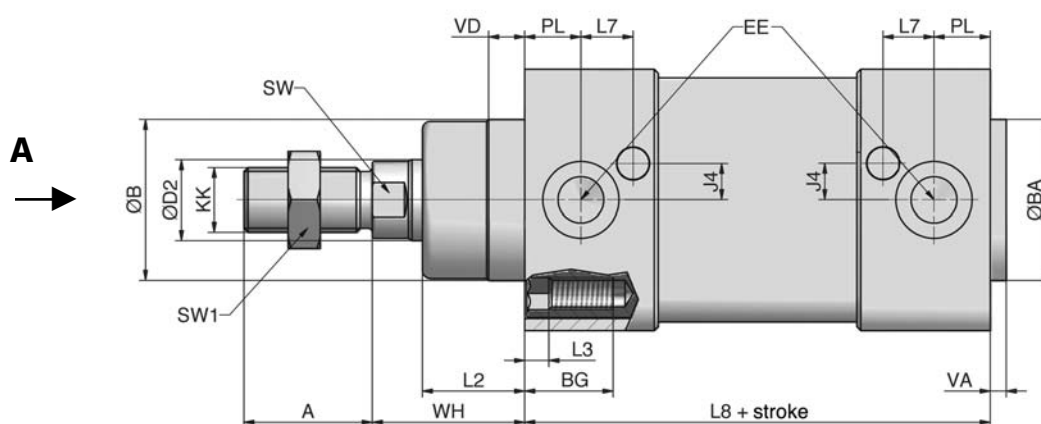
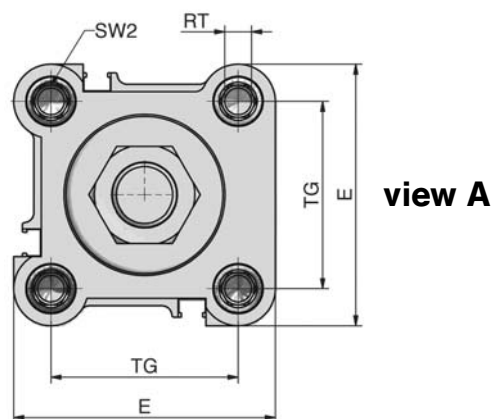
Pneumatic cylinders series XL

Double acting with magnetic piston, ISO 15552

G1/8 to G1/2 • piston Ø 32 to 125 mm



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 | G1/8 | 6 | M10 x 1.25 | 18 | 5 |
| 40 | 24 | 35 | 35 | 16.5 | 16 | 54 | G1/4 | 9 | M12 x 1.25 | 22 | 5 |
| 50 | 32 | 40 | 40 | 17.5 | 20 | 63 | G1/4 | 8 | M16 x 1.5 | 25.5 | 5 |
| 63 | 32 | 45 | 45 | 17.5 | 20 | 74 | G3/8 | 9.5 | M16 x 1.5 | 25 | 5 |
| 80 | 40 | 45 | 45 | 17.5 | 25 | 93.5 | G3/8 | 14 | M20 x 1.5 | 35 | 0 |
| 100 | 40 | 55 | 55 | 17.5 | 25 | 110 | G1/2 | 15 | M20 x 1.5 | 38 | 0 |
| 125 | 54 | 60 | 60 | 20.5 | 32 | 137.5 | G1/2 | 15 | M27 x 2 | 46 | 0 |
| | -2 | d11 | d11 | | f 7 | | | | | | |

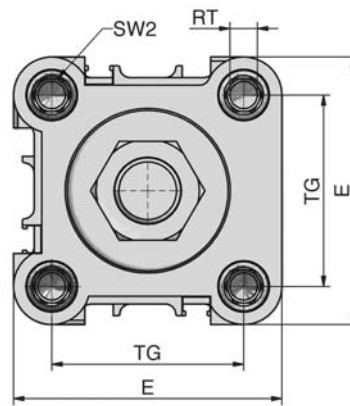
| Piston Ø | L7 | L8 | PL | RT | SW | SW1 | SW2 | TG | VA | VD | WH |
|----------|-------|-----|------|-----|----|-----|-----|------|----|-----|----|
| 32 | 11.5 | 94 | 12.5 | M6 | 10 | 17 | 6 | 32.5 | 4 | 9.5 | 26 |
| 40 | 13 | 105 | 14 | M6 | 13 | 19 | 6 | 38 | 4 | 9.5 | 30 |
| 50 | 12.75 | 106 | 14 | 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.) |

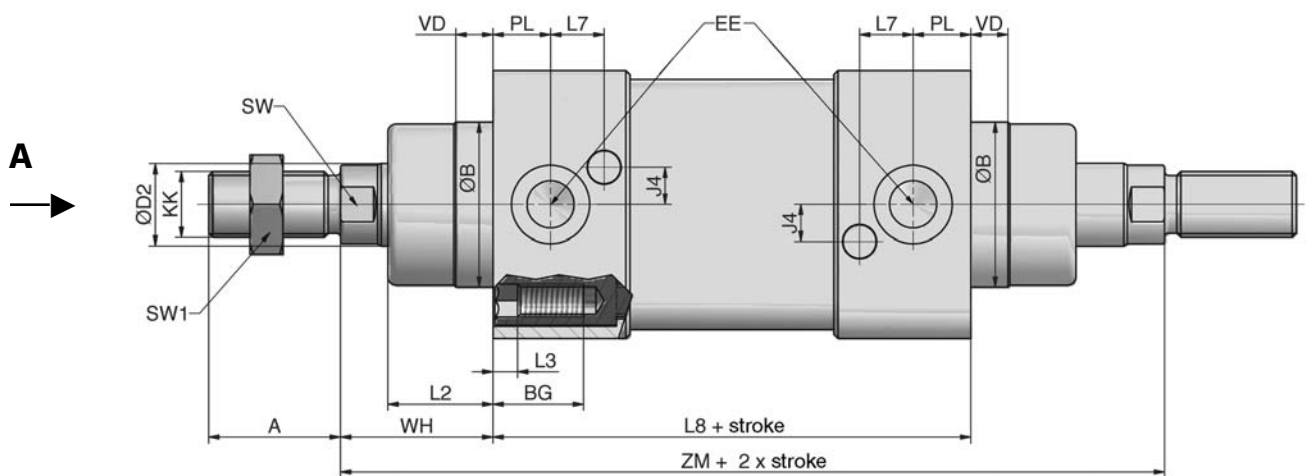
Pneumatic cylinders series XL
with double-ended piston rod, ISO 15552
G1/8 to G1/2 • piston Ø 32 to 125 mm



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



view A



| Piston Ø | A | Ø B | BG | Ø D2 | E | EE | J4 | KK | L2 | L3 |
|----------|----|-----|------|------|-------|------|-----|------------|------|----|
| 32 | 22 | 30 | 16.5 | 12 | 47 | G1/8 | 6 | M10 x 1.25 | 18 | 5 |
| 40 | 24 | 35 | 16.5 | 16 | 54 | G1/4 | 9 | M12 x 1.25 | 22 | 5 |
| 50 | 32 | 40 | 17.5 | 20 | 63 | G1/4 | 8 | M16 x 1.5 | 25.5 | 5 |
| 63 | 32 | 45 | 17.5 | 20 | 74 | G3/8 | 9.5 | M16 x 1.5 | 25 | 5 |
| 80 | 40 | 45 | 17.5 | 25 | 93.5 | G3/8 | 14 | M20 x 1.5 | 35 | 0 |
| 100 | 40 | 55 | 17.5 | 25 | 110 | G1/2 | 15 | M20 x 1.5 | 38 | 0 |
| 125 | 54 | 60 | 20.5 | 32 | 137.5 | G1/2 | 15 | M27 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 | 11 | 65 | 290 |

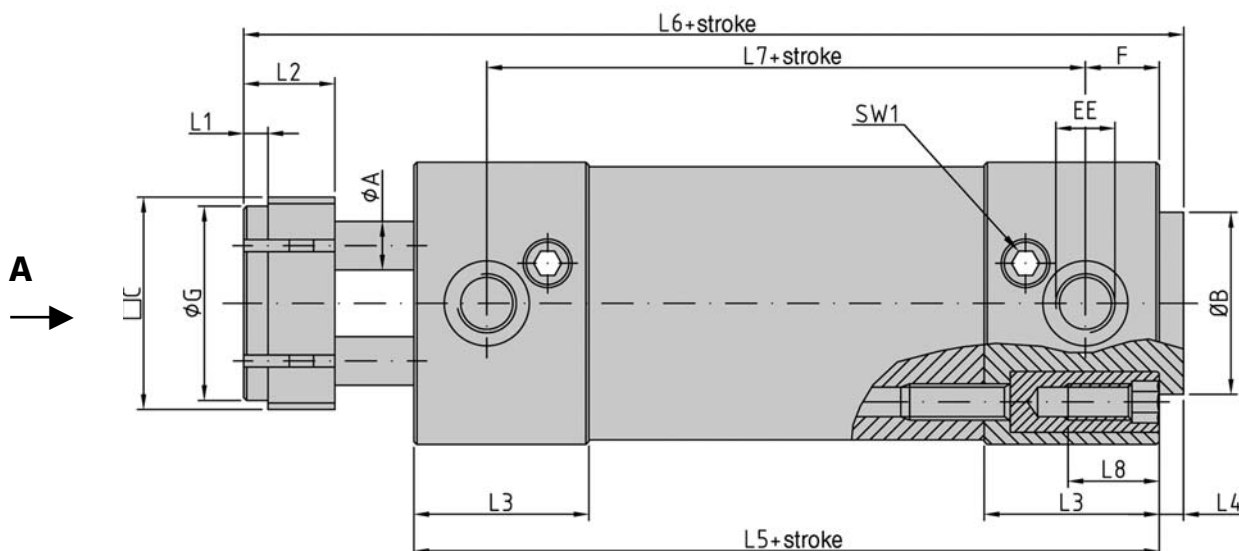
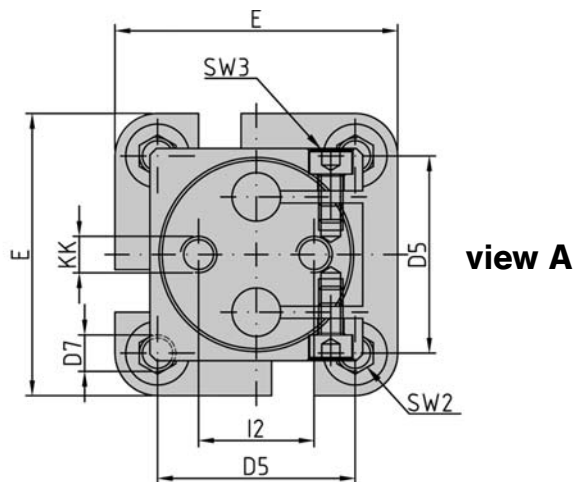
| Piston Ø | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|
| Mass at 0 mm stroke in kg | 0.702 (1.548 lbs.) | 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 series XL

with double piston rod, ISO 15552
G1/8 to G1/2 • piston Ø 32 to 125 mm



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 | G1/8 | 12 | 32 | 19 | M6 |
| 40 | 10 | 35 | 45 | 38 | M6 | 53 | G1/4 | 13 | 40 | 22.5 | M8 |
| 50 | 12 | 40 | 55 | 46.5 | M8 | 65 | G1/4 | 14 | 50 | 30 | M8 |
| 63 | 16 | 45 | 65 | 56.5 | M8 | 75 | G3/8 | 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 | 16.5 | 3 | 6 | 3 |
| 40 | 4 | 15 | 33 | 4 | 114 | 142 | 88 | 16.5 | 3 | 6 | 3 |
| 50 | 5 | 18 | 34 | 4 | 116 | 151 | 88 | 17.5 | 3 | 8 | 4 |
| 63 | 5 | 22 | 35.2 | 4 | 124 | 161 | 96 | 17.5 | 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 (hard chrome plated)

Piston rod accessories



Flexible coupling
FK
Page 9.212



Rod eye
FO + RO
Page 9.212



Rod clevis with pin
FD + RD
Page 9.211



Piston rod nut
FE + RL
Page 9.212

Mounting accessories



Foot mount
XLB-Ø-01
Page 9.016



Flange mount
XLB-Ø-02
Page 9.016



Clevis mount with bushing
XLB-Ø-04
Page 9.016



Swivel mount
XLB-Ø-05
Page 9.017



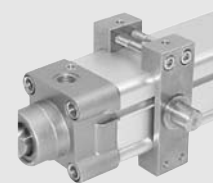
Swivel mount 90°
XLB-Ø-06
Page 9.017



Clevis pin
XLB-Ø-08
Page 9.017



Bearing block
XLB-Ø-09
Page 9.018



Trunnion mount
XLB-Ø-10
Page 9.018



Trunnion flange mount
XLB-Ø-11
Page 9.018



Swivel mount with spherical bearing
XLB-Ø-12
Page 9.019

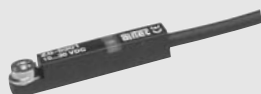


Small clevis mount with non rotating pin
XLB-Ø-14
Page 9.019



Linear guides
LE-
Page 9.201

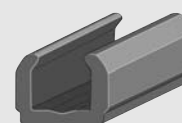
Proximity sensors



Sensors
ZS-
Page 9.220



Connecting cable
KA-
Page 9.221



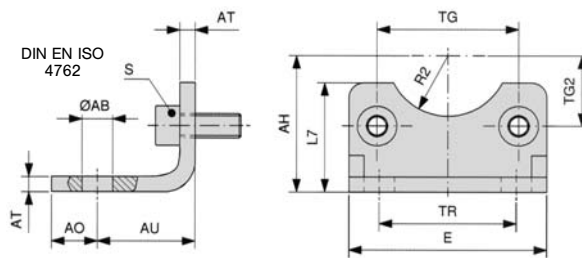
Cover for sensor groove
XLB-011 0,5 m

Seal kits see page 9.045.

Mounting accessories for series XL



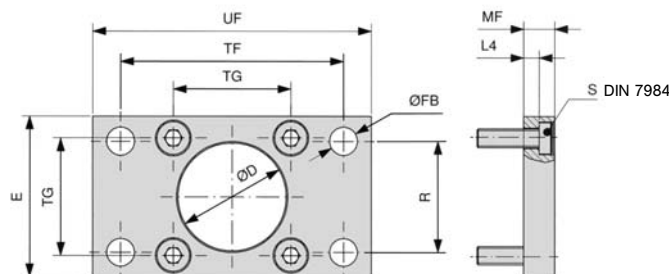
Foot mount 1 pair



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 | M6 x 20 | 32.5 | 16.25 | 32 |
| XLB-040-01 | 10 | 36 | 8 | 28 | 4 | 52 | 30 | 17.5 | M6 x 20 | 38 | 19 | 36 |
| XLB-050-01 | 10 | 45 | 15 | 32 | 5 | 65 | 36 | 20 | M8 x 20 | 46.5 | 23.25 | 45 |
| XLB-063-01 | 10 | 50 | 13 | 32 | 5 | 75 | 35 | 22.5 | M8 x 20 | 56.5 | 28.25 | 50 |
| XLB-080-01 | 12 | 63 | 14 | 41 | 6 | 95 | 47 | 22.5 | M10 x 20 | 72 | 36 | 63 |
| XLB-100-01 | 14.5 | 71 | 16 | 41 | 6 | 115 | 53 | 27.5 | M10 x 20 | 89 | 44.5 | 75 |
| XLB-125-01 | 16.5 | 90 | 25 | 45 | 8 | 140 | 70 | 30 | M12 x 25 | 110* | 55 | 90 |
| | H14 | JS16 | | ± 0,2 | | | | H15 | | ± 0,2 *± 0,3 | | JS14 |

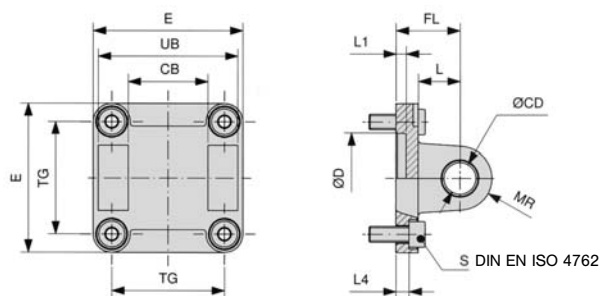
Flange mount



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 | M6 x 20 | 64 | 32.5 | 80 |
| XLB-040-02 | 35 | 52 | 9 | 5 | 10 | 36 | M6 x 20 | 72 | 38 | 90 |
| XLB-050-02 | 40 | 65 | 9 | 6.5 | 12 | 45 | M8 x 20 | 90 | 46.5 | 110 |
| XLB-063-02 | 45 | 75 | 9 | 6.5 | 12 | 50 | M8 x 20 | 100 | 56.5 | 120 |
| XLB-080-02 | 45 | 95 | 12 | 9 | 16 | 63 | M10 x 25 | 126 | 72 | 150 |
| XLB-100-02 | 55 | 115 | 14 | 9 | 16 | 75 | M10 x 25 | 150 | 89 | 170 |
| XLB-125-02 | 60 | 140 | 16 | 10.5 | 20 | 90 | M12 x 25 | 180 | 110* | 205 |
| | H11 | | H13 | - 0,5 | JS14 | JS14 | | JS14 | ± 0,2 *± 0,3 | |

Clevis mount with bushing



Order number **XLB-xxx-48**
includes the mounting pin.

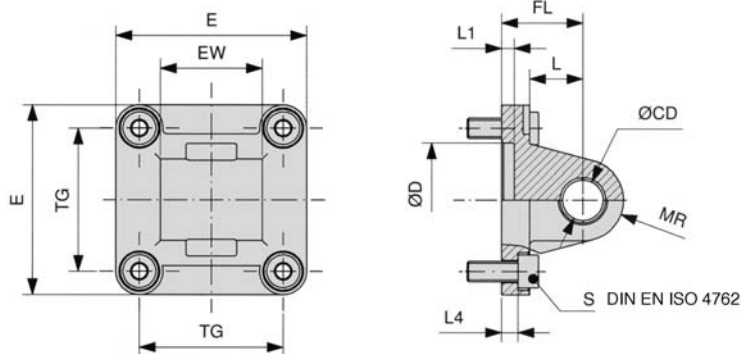
Material: Al

| 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 | M6 x 20 | 32.5 | 45 |
| XLB-040-04 | 28 | 12 | 35 | 52 | 25 | 16 | 5 | 5.5 | 12 | M6 x 20 | 38 | 52 |
| XLB-050-04 | 32 | 12 | 40 | 65 | 27 | 16 | 5 | 6.5 | 12 | M8 x 20 | 46.5 | 60 |
| XLB-063-04 | 40 | 16 | 45 | 75 | 32 | 21 | 5 | 6.5 | 16 | M8 x 20 | 56.5 | 70 |
| XLB-080-04 | 50 | 16 | 45 | 95 | 36 | 22 | 5 | 10 | 16 | M10 x 25 | 72 | 90 |
| XLB-100-04 | 60 | 20 | 55 | 115 | 41 | 27 | 5 | 10 | 20 | M10 x 25 | 89 | 110 |
| XLB-125-04 | 70 | 25 | 60 | 140 | 50 | 30 | 7 | 10 | 25 | M12 x 25 | 110* | 130 |
| | H14 | H9 | H11 | | ± 0,2 | | | ± 0,5 | | | ± 0,2 *± 0,3 | h13 |

Mounting accessories for series XL



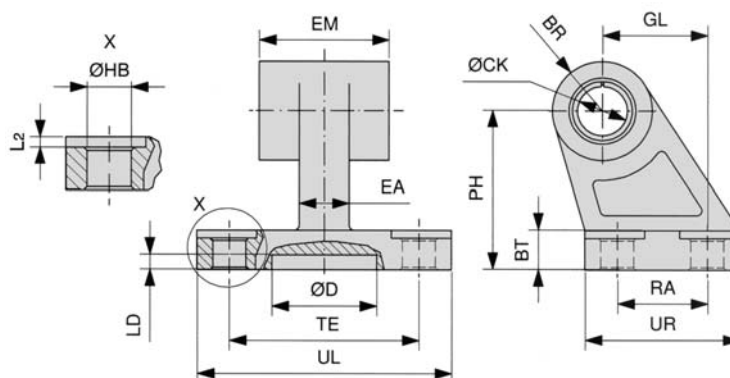
Swivel mount



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 | M6 x 20 | 32.5 |
| XLB-040-05 | 12 | 35 | 52 | 28 | 25 | 16 | 5 | 5.5 | 12 | M6 x 20 | 38 |
| XLB-050-05 | 12 | 40 | 65 | 32 | 27 | 16 | 5 | 6.5 | 12 | M8 x 20 | 46.5 |
| XLB-063-05 | 16 | 45 | 75 | 40 | 32 | 21 | 5 | 6.5 | 16 | M8 x 20 | 56.5 |
| XLB-080-05 | 16 | 45 | 95 | 50 | 36 | 22 | 5 | 10 | 16 | M10 x 25 | 72 |
| XLB-100-05 | 20 | 55 | 115 | 60 | 41 | 27 | 5 | 10 | 20 | M10 x 25 | 89 |
| XLB-125-05 | 25 | 60 | 140 | 70 | 50 | 30 | 7 | 10 | 25 | M12 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 | 11 | 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 | | |

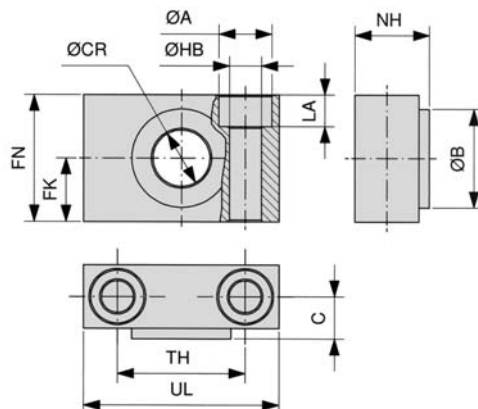
Clevis pin



| 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 | |

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

Bearing block (1 pair)

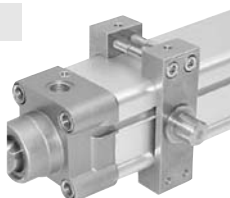


Order number = 1 pair
Material: steel (zinc-plated), bronze

| 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 | |

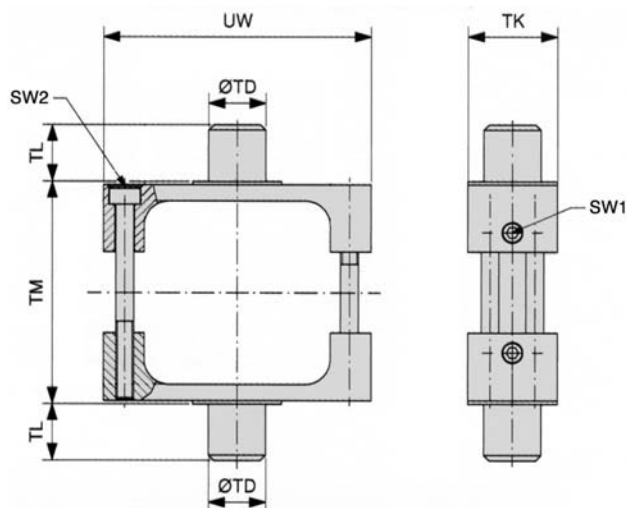
Trunnion mount

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 |
| | | EN ISO 4762 | e 9 | | h14 | h14 | |

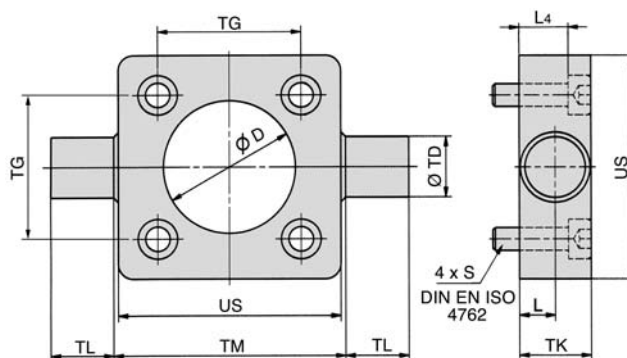


Trunnion flange mount

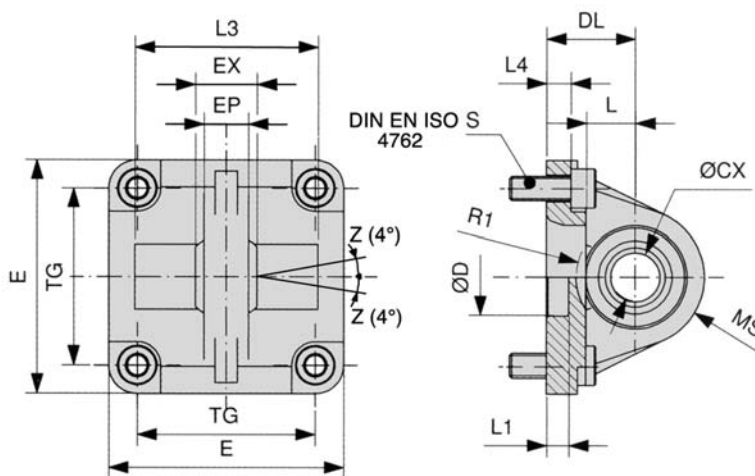


Material: steel (zinc-plated)

| Order number | D | L | L4 | S | TD | TG | TK | TL | Ø TM | US |
|--------------|-----|-------|----|----------|----|-------|----|-----|------|-----|
| XLB-032-11 | 30 | 6.5 | 8 | M6 x 20 | 12 | 32.5 | 14 | 12 | 50 | 46 |
| XLB-040-11 | 35 | 9 | 13 | M6 x 25 | 16 | 38 | 19 | 16 | 63 | 59 |
| XLB-050-11 | 40 | 9 | 11 | M8 x 25 | 16 | 46.5 | 19 | 16 | 75 | 69 |
| XLB-063-11 | 45 | 11.5 | 16 | M8 x 30 | 20 | 56.5 | 24 | 20 | 90 | 84 |
| XLB-080-11 | 45 | 11.5 | 14 | M10 x 30 | 20 | 72 | 24 | 20 | 110 | 102 |
| XLB-100-11 | 55 | 14 | 19 | M10 x 35 | 25 | 89 | 29 | 25 | 132 | 125 |
| | H11 | + 0.2 | | | e9 | ± 0.2 | | h14 | h14 | |



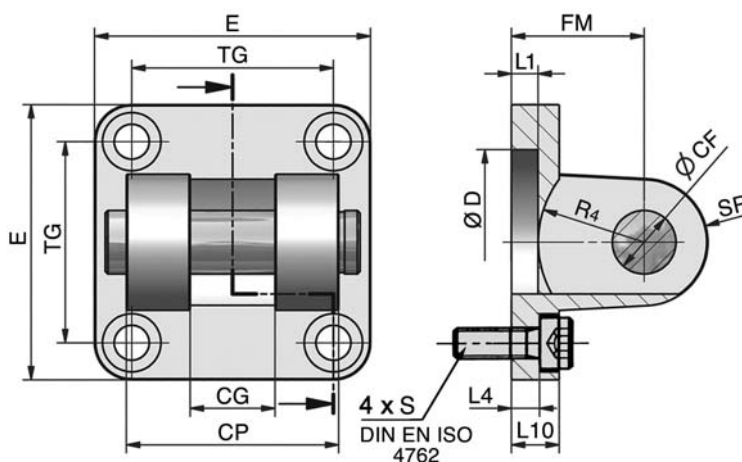
Swivel mount with spherical bearing



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 | - | M6 x 20 | 32.5 |
| XLB-040-12 | 12 | 35 | 25 | 52 | 12 | 16 | 15 | 7 | - | 5.5 | 18 | - | M6 x 20 | 38 |
| XLB-050-12 | 16 | 40 | 27 | 65 | 15 | 21 | 15 | 7 | 51 | 6.5 | 21 | 19 | M8 x 20 | 46.5 |
| XLB-063-12 | 16 | 45 | 32 | 75 | 15 | 21 | 20 | 7 | - | 6.5 | 23 | - | M8 x 20 | 56.5 |
| XLB-080-12 | 20 | 45 | 36 | 95 | 18 | 25 | 20 | 9 | 74 | 10 | 28 | 24 | M10 x 25 | 72 |
| XLB-100-12 | 20 | 55 | 41 | 115 | 18 | 25 | 25 | 9 | - | 10 | 30 | - | M10 x 25 | 89 |
| XLB-125-12 | 30 | 60 | 50 | 140 | 25 | 37 | 30 | 9 | - | 10 | 40 | - | M12 x 25 | 110* |
| | H7 | H11 | ± 0.2 | | | ± 0.1 | | | | ± 0.5 | | | | ± 0.2 * ± 0.3 |

Small clevis mount with non rotating pin

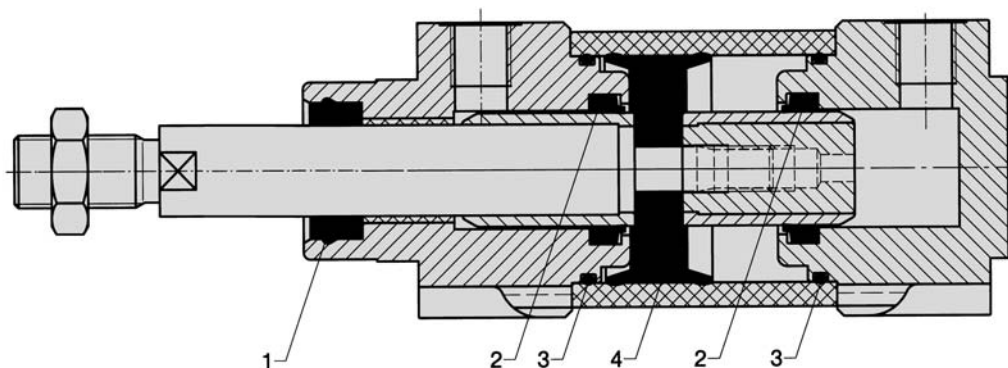


Material of clevis: Al
of pin: steel (zinc-plated)

| 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 | M6 x 20 | 10 | 32.5 |
| XLB-040-14 | 12 | 16 | 40 | 35 | 52 | 25 | 5 | 5.5 | 9 | 20 | M6 x 20 | 12 | 38 |
| XLB-050-14 | 16 | 21 | 45 | 40 | 65 | 27 | 5 | 6.5 | 11 | 22 | M8 x 20 | 14 | 46.5 |
| XLB-063-14 | 16 | 21 | 51 | 45 | 75 | 32 | 5 | 6.5 | 11 | 25 | M8 x 20 | 18 | 56.5 |
| XLB-080-14 | 20 | 25 | 65 | 45 | 95 | 36 | 5 | 10 | 14 | 30 | M10 x 25 | 20 | 72 |
| XLB-100-14 | 20 | 25 | 75 | 55 | 115 | 41 | 5 | 10 | 14 | 32 | M10 x 25 | 22 | 89 |
| XLB-125-14 | 30 | 37 | 97 | 60 | 140 | 50 | 7 | 10 | 20 | 42 | M12 x 25 | 25 | 110* |
| | F7 | D10 | d 12 | H11 | | ± 0.2 | | ± 0.5 | | | | | ± 0.2 * ± 0.3 |

Seal kits for series XL, XG, CX*

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 |
| VS-XG-160-01 | 160 mm |
| VS-XG-200-01 | 200 mm |
| VS-XG-250-01 | 250 mm |
| VS-XG-320-01 | 320 mm |

Seal kits – Viton

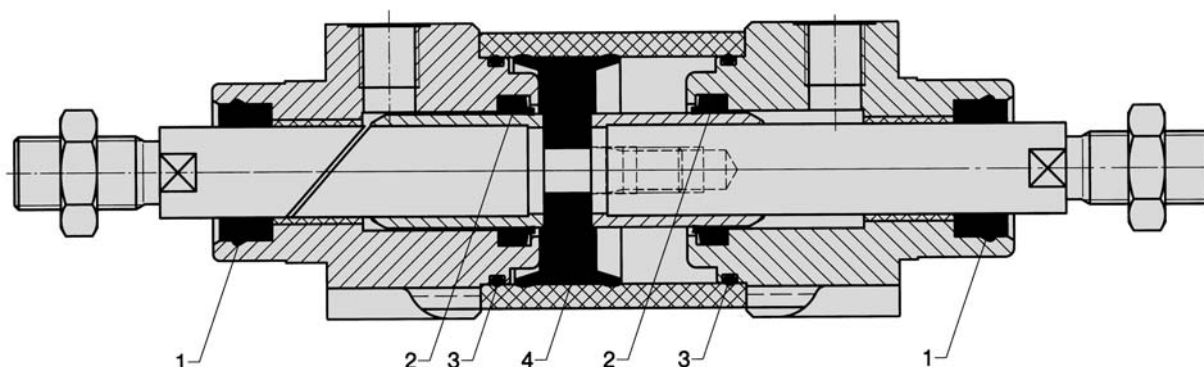
| Order number | Ø |
|--------------|--------|
| VS-XL-032-02 | 32 mm |
| VS-XL-040-02 | 40 mm |
| VS-XL-050-02 | 50 mm |
| VS-XL-063-02 | 63 mm |
| VS-XL-080-02 | 80 mm |
| VS-XL-100-02 | 100 mm |
| VS-XL-125-02 | 125 mm |
| VS-XG-160-02 | 160 mm |
| VS-XG-200-02 | 200 mm |
| VS-XG-250-02 | 250 mm |
| VS-XG-320-02 | 320 mm |

Content

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

* Repair kits for CX from Ø 32 to Ø 100 are identical with XL.

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 |
| VS-XG-160-03 | 160 mm |
| VS-XG-200-03 | 200 mm |
| VS-XG-250-03 | 250 mm |
| VS-XG-320-03 | 320 mm |

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 |
| VS-XG-160-04 | 160 mm |
| VS-XG-200-04 | 200 mm |
| VS-XG-250-04 | 250 mm |
| VS-XG-320-04 | 320 mm |

Content

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

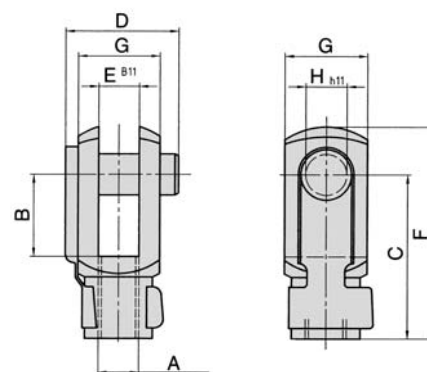
* Repair kits for CX from Ø 32 to Ø 100 are identical with XL.

Assignment to series

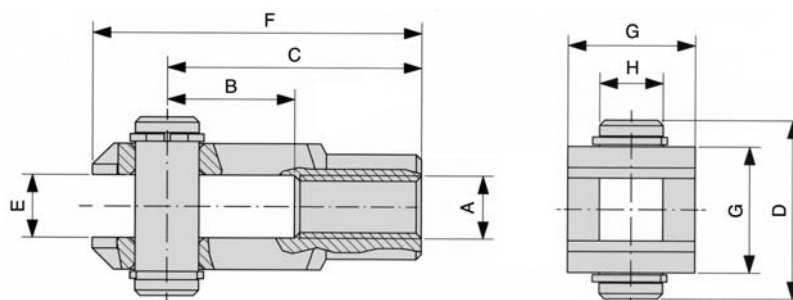
| Series | Cylinder Ø | Piston rod thread | Rod clevis | Piston rod nut | Flexible coupling | Rod eye |
|-------------|---------------|-------------------|------------|----------------|-------------------|------------|
| HE and HM | Ø 8 and 10 | M4 | RD-10 | RL-10 | - | - |
| NXD and NXE | Ø 12 | M6 | RD-16 | RL-16 | FK-16 | RO-16 |
| HE and HM | Ø 12 and 16 | | | | | |
| NXD and NXE | Ø 16 | M8 | RD-20 | RL-20 | FK-20 | RO-20 |
| HE and HM | Ø 20 | | | | | |
| NYD and NYE | Ø 20 and 25 | | | | | |
| NXD and NXE | Ø 20 to 40 | M10 x 1.25 | RD-25 | RL-25 | FK-32 | RO-25 |
| HE and HM | Ø 25 | | | | | |
| XL | Ø 32 | | | | | |
| NYD and NYE | Ø 32 and 40 | | | | | |
| NXD and NXE | Ø 50 and 63 | M12 x 1.25 | FD-40 | FE-40 | FK-40 | FO-40 |
| XL | Ø 40 | | | | | |
| NYD and NYE | Ø 50 and 63 | | | | | |
| NXD and NXE | Ø 80 | M16 x 1.5 | FD-63 | FE-63 | FK-63 | FO-63 |
| XL | Ø 50 and 63 | | | | | |
| NYD and NYE | Ø 80 and 100 | | | | | |
| NXD and NXE | Ø 100 | M20 x 1.5 | FD-80 | FE-80 | FK-80 | FO-80 |
| XL | Ø 80 and 100 | | | | | |
| XL | Ø 125 | M27 x 2 | FD-125 | FE-125 | FK-125 | FO-125 |
| XG | Ø 160 and 200 | M36 x 2 | FD-200 | FE-200 | FK-200 | FO-160/200 |
| XG | Ø 250 | M42 x 2 | FD-250 | FE-250 | - | - |
| XG | Ø 320 | M48 x 2 | FD-320 | FE-320 | - | - |

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 | M10 x 1.25 | 20 | 40 | 26 | 10 | 52 | 20 | 10 |
| RD-32 | M10 | 20 | 40 | 26 | 10 | 52 | 20 | 10 |
| RD-40 | M12 | 24 | 48 | 32 | 12 | 62 | 24 | 12 |
| RD-63 | M16 | 32 | 64 | 36 | 16 | 83 | 32 | 16 |
| FD-40 | M12 x 1.25 | 24 | 48 | 32 | 12 | 62 | 24 | 12 |
| FD-63 | M16 x 1.5 | 32 | 64 | 40 | 16 | 83 | 32 | 16 |
| FD-80 | M20 x 1.5 | 40 | 80 | 50 | 20 | 105 | 40 | 20 |
| FD-125 | M27 x 2 | 54 | 110 | 65 | 30 | 148 | 55 | 30 |
| FD-200 | M36 x 2 | 72 | 144 | 84 | 35 | 188 | 70 | 35 |
| FD-250 | M42 x 2 | 84 | 168 | 104.5 | 40 | 232 | 85 | 40 |
| FD-320 | M48 x 2 | 96 | 192 | 117.5 | 50 | 265 | 96 | 50 |



Material: steel (zinc-plated)
spring steel

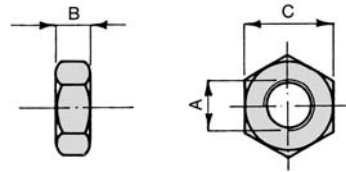


Rod clevis FD-125 to FD-320, pin with snap rings.

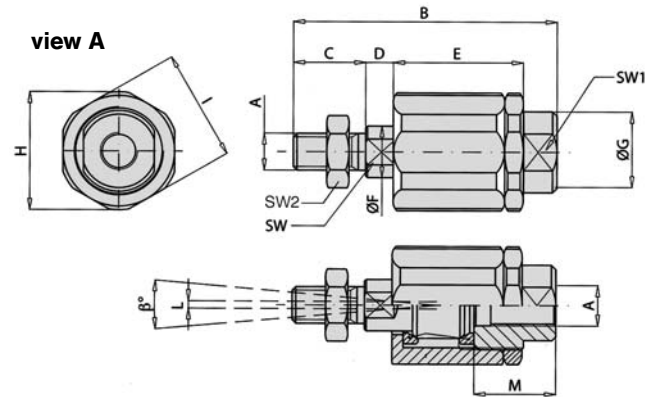
Piston rod accessories

Piston rod nut

| Order number | A | B | C |
|--------------|------------|------|----|
| RL-10 | M4 | 3.2 | 7 |
| RL-16 | M6 | 4 | 10 |
| RL-20 | M8 | 5 | 13 |
| RL-25 | M10 x 1.25 | 5 | 17 |
| RL-32 | M10 | 5 | 17 |
| RL-40 | M12 | 6 | 19 |
| RL-50/63 | M16 | 8 | 24 |
| FE-40 | M12 x 1.25 | 6 | 19 |
| FE-63 | M16 x 1.5 | 8 | 24 |
| FE-80 | M20 x 1.5 | 10 | 30 |
| FE-125 | M27 x 2 | 13.5 | 41 |
| FE-200 | M36 x 2 | 18 | 55 |
| FE-250 | M42 x 2 | 21 | 65 |
| FE-320 | M48 x 2 | 24 | 75 |



Material: steel (zinc-plated)



Flexible coupling



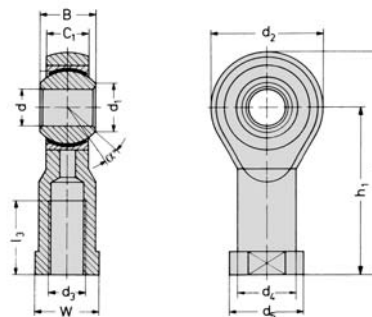
Material: steel (zinc-plated)

| Order number | A | B | C | D | E | Ø F | Ø G | Ø H | I | L | M | SW | SW1 | SW2 | β° |
|--------------|------------|------|----|------|------|-----|------|------|----|---|------|----|-----|-----|----|
| FK-16 | M6 | 35 | 11 | 2.5 | 17.5 | 6 | 8.5 | 14.5 | 13 | 1 | 12.5 | 5 | 7 | 10 | 6° |
| FK-20 | M8 | 57 | 21 | 5 | 26 | 8 | 12.5 | 19 | 17 | 2 | 16 | 7 | 11 | 13 | 8° |
| FK-32 | M10 x 1.25 | 71.5 | 20 | 7.5 | 35 | 14 | 22 | 32 | 30 | 2 | 22 | 12 | 19 | 17 | 8° |
| FK-33 | M10 | 71.5 | 20 | 7.5 | 35 | 14 | 22 | 32 | 30 | 2 | 22 | 12 | 19 | 17 | 8° |
| FK-40 | M12 x 1.25 | 75.5 | 24 | 7.5 | 35 | 14 | 22 | 32 | 30 | 2 | 22 | 12 | 19 | 19 | 8° |
| FK-41 | M12 | 75.5 | 24 | 7.5 | 35 | 14 | 22 | 32 | 30 | 2 | 22 | 12 | 20 | 19 | 9° |
| FK-63 | M16 x 1.5 | 104 | 32 | 10 | 53 | 22 | 32 | 45 | 41 | 2 | 30 | 20 | 27 | 24 | 6° |
| FK-80 | M20 x 1.5 | 119 | 40 | 10 | 53 | 22 | 32 | 45 | 41 | 2 | 37 | 20 | 27 | 30 | 6° |
| FK-125 | M27 x 2 | 147 | 54 | 10 | 60 | 32 | 57 | 70 | 65 | 2 | 48 | 24 | 54 | 41 | 8° |
| FK-200 | M36 x 2 | 190 | 72 | 15.5 | 77 | 39 | 57 | 75 | 70 | 2 | 68 | 32 | 54 | 55 | 8° |

Rod eye



Material: steel (zinc-plated)
stainless steel



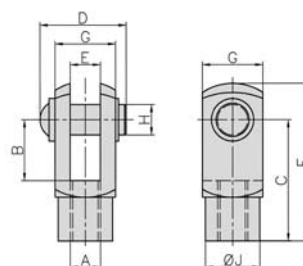
| Order number | d ₃ | d | d ₁ | d ₂ | d ₄ | d ₅ | B | C ₁ | W | L ₃ | L ₄ | h ₁ | α |
|--------------|----------------|----|----------------|----------------|----------------|----------------|----|----------------|----|----------------|----------------|----------------|----|
| RO-16 | M6 | 6 | 8.9 | 20 | 10 | 13 | 9 | 6.75 | 11 | 12 | 40 | 30 | 13 |
| RO-20 | M8 | 8 | 10.4 | 24 | 12.5 | 16 | 12 | 9 | 14 | 16 | 48 | 36 | 14 |
| RO-25 | M10 x 1.25 | 10 | 12.9 | 28 | 15 | 19 | 14 | 10.5 | 17 | 20 | 57 | 43 | 13 |
| RO-32 | M10 | 10 | 12.9 | 28 | 15 | 19 | 14 | 10.5 | 17 | 20 | 57 | 43 | 13 |
| RO-40 | M12 | 12 | 15.4 | 32 | 17.5 | 22 | 16 | 12 | 19 | 22 | 66 | 50 | 13 |
| RO-50 | M16 | 16 | 19.3 | 42 | 22 | 27 | 21 | 15 | 22 | 28 | 85 | 64 | 15 |
| FO-40 | M12 x 1.25 | 12 | 15.4 | 32 | 17.5 | 22 | 16 | 12 | 19 | 22 | 66 | 50 | 13 |
| FO-63 | M16 x 1.5 | 16 | 19.3 | 42 | 22 | 27 | 21 | 15 | 22 | 28 | 85 | 64 | 15 |
| FO-80 | M20 x 1.5 | 20 | 24.3 | 50 | 27.5 | 34 | 25 | 18 | 30 | 33 | 102 | 77 | 14 |
| FO-125 | M27 x 2 | 30 | 34.8 | 70 | 40 | 50 | 37 | 25 | 41 | 51 | 145 | 110 | 17 |
| FO-160/200 | M36 x 2 | 35 | 37.7 | 80 | 46 | 58 | 43 | 28 | 50 | 56 | 165 | 125 | 16 |
| FO-250 | M42 x 2 | 40 | 45.1 | 91 | 53 | 65 | 49 | 33 | 55 | 60 | 187 | 142 | 16 |
| FO-320 | M48 x 2 | 50 | 56.6 | 117 | 65 | 75 | 60 | 45 | 65 | 65 | 218 | 162 | 14 |

Piston rod accessories stainless steel

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 | M10 x 1.25 | PD-25 | PL-25 | PO-25 |
| CX-32 | | | | |
| CX-40 | M12 x 1.25 | PD-40 | PL-40 | PO-40 |
| CX-50 | M16 x 1.5 | PD-63 | PL-63 | PO-63 |
| CX-63 | | | | |
| CX-80 | M20 x 1.5 | PD-80 | PL-80 | PO-80 |
| CX-100 | | | | |

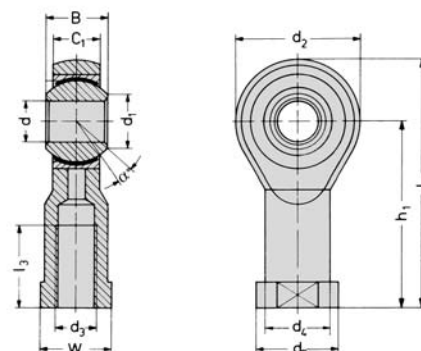
Rod clevis with pin



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 | M10 x 1.25 | 20 | 40 | 25 | 10 | 52 | 20 | 10 | 18 |
| PD-40 | M12 x 1.25 | 24 | 48 | 30 | 12 | 62 | 24 | 12 | 20 |
| PD-63 | M16 x 1.5 | 32 | 64 | 39 | 16 | 83 | 32 | 16 | 26 |
| PD-80 | M20 x 1.5 | 40 | 80 | 48 | 20 | 105 | 40 | 20 | 34 |
| | | | ± 0,3 | | | | | h ₁₁ | |

Rod eye

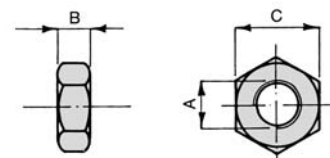


Material Body: stainless steel 1.4057
 Bearing housing: stainless steel 1.4571 PTFE coated
 Inner ring: stainless steel 1.4034 hardened

| Order number | d ₃ | d | d ₁ | d ₂ | d ₄ | d ₅ | B | C ₁ | W | L ₃ | L ₄ | h ₁ | 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 | M10 x 1.25 | 10 | 12.9 | 28 | 15 | 19 | 14 | 10.5 | 17 | 20 | 57 | 43 | 13 |
| PO-40 | M12 x 1.25 | 12 | 15.4 | 32 | 17.5 | 22 | 16 | 12 | 19 | 22 | 66 | 50 | 13 |
| PO-63 | M16 x 1.5 | 16 | 19.3 | 42 | 22 | 27 | 21 | 15 | 22 | 28 | 85 | 64 | 15 |
| PO-80 | M20 x 1.5 | 20 | 24.3 | 50 | 27.5 | 34 | 25 | 18 | 32 | 33 | 102 | 77 | 15 |

Piston rod nut

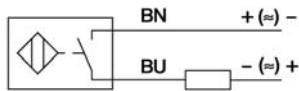
| Order number | A | B | C |
|--------------|------------|-----|----|
| PL-16 | M6 | 3.2 | 10 |
| PL-20 | M8 | 4 | 13 |
| PL-25 | M10 x 1.25 | 5 | 17 |
| PL-40 | M12 x 1.25 | 6 | 19 |
| PL-63 | M16 x 1.5 | 8 | 24 |
| PL-80 | M20 x 1.5 | 10 | 30 |



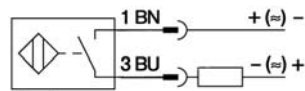
Material: stainless steel 1.4301

Proximity sensors

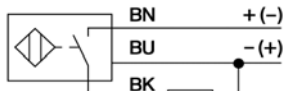
Wiring diagram



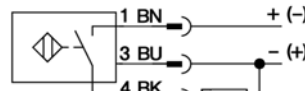
Reed
ZS-5600



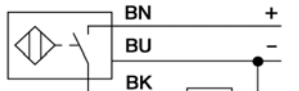
Reed
ZS-5601



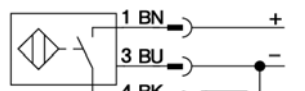
Reed
ZS-5700, ZS-5700-10



Reed
ZS-5701

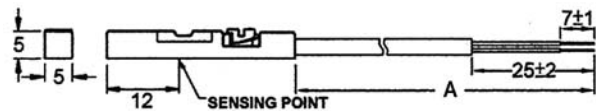


PNP
ZS-6700, ZS-7300



PNP
ZS-6701, ZS-7302 (dimensions for ZS-7302, page 9.221)

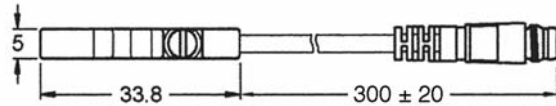
Dimensions



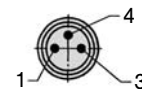
ZS-5600, ZS-6700, ZS-7300; A = 3.000 ± 20

ZS-5700; A = 5.000 ± 20

ZS-5700-10; A = 10.000 ± 20



ZS-5601, ZS-5701, ZS-6701



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.

Proximity sensors Reed contact



| Order number | ZS-5600 | ZS-5601 | ZS-5700 | ZS-5700-10 | ZS-5701 |
|--|---|------------------|--------------------------------------|------------|---------|
| Design | 2-pole Reed sensor (non-polarized) normally open | | 3-pole Reed sensor* normally open | | |
| Cable | ø 2.8, PUR | | | | |
| Cable cross section | n/a | | | | |
| Cable length | 3 m | 0.3 m | 5 m | 10 m | 0.3 m |
| Cable plug | - | M8 | - | - | M8 |
| Overtravel speed | n/a | | | | |
| Max. absolute hysteresis | n/a | | | | |
| Temperature drift | n/a | | | | |
| min. absolute repeat accuracy | n/a | | | | |
| Operating temperature | - 10 °C ... + 70 °C | | | | |
| Degree of protection | IP 67 | | | | |
| Housing material | Plastic | | | | |
| Switching status indication | LED red | | LED yellow | | |
| Rated operational voltage | 5 ... 240 V AC/DC | 5 ... 60 V AC/DC | 5 ... 30 V DC | | |
| Rated operational current I_E | 3 ... 100 mA | | ≤ 500 mA | | |
| | 3 ... 100 mA | | ≤ 500 mA | | |
| Breaking capacity | ≤ 10 W | | | | |
| No-load current | n/a | | ≤ 10 mA | | |
| Max. OFF-state current | 0 mA | | | | |
| Max. switching frequency | ≤ 0.2 kHz | | | | |
| Rated insulation voltage | n/a | | | | |
| Short-circuit protection | no | | | | |
| Max. voltage drop at I_E | ≤ 2.5 V | | ≤ 0.1 V | | |
| Wire breakage | no | | | | |
| Reverse polarity protection | yes | | | | |
| Vibration resistance | 9 g (1.5 mm, 10 – 55 Hz – 10 Hz) | | | | |
| Shock resistance | 30 g (11 ms) | | | | |
| Explosion proof | - | | | | |

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

Proximity sensors

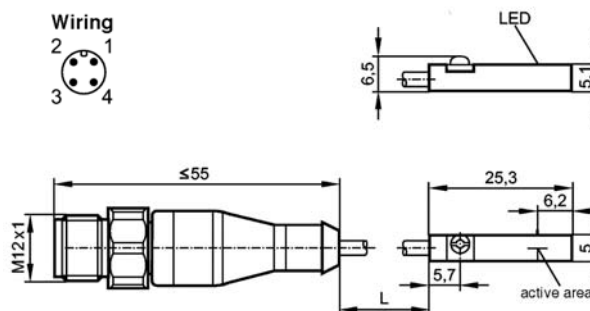
Mounting bracket for round cylinder Ø 8 – 63 mm



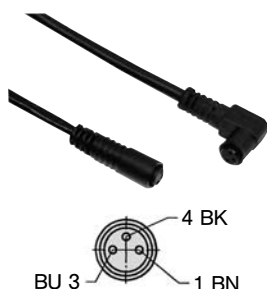
Material: metal,
plastic PA GI/6T

| Order number | Piston Ø |
|--------------|-------------|
| NT-250 | 8 to 25 mm |
| NT-500 | 32 to 63 mm |

Dimensions for ZS-7302



Connecting cable for ZS-5601, ZS-5701 and ZS-6701



Cable: PUR, black, 3 x 0.25 mm², 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-6700 | ZS-6701 | ZS-7300 | ZS-7302 |
|--|--|---------|---|---------------------------------|
| Design | electronic, magnet-induktive sensor, normally open PNP output | | | |
| Cable | Ø 2,8, PUR | | n/a | |
| Cable cross section | n/a | | 3 x 0,14 mm ² | |
| Cable lengths | 3 m | 0,3 m | 6 m | 0,3 m |
| Cable plug | - | M8 | - | M12 |
| Overtravel speed | n/a | | ≤ 10 m/s | |
| Max. absolute hysteresis | n/a | | n/a | |
| Temperatur drift | n/a | | ≤ 0,1 mm | |
| Min. absolute repeat accuracy | n/a | | ≤ 0,2 mm | |
| Operating temperature | - 10 °C ... + 70 °C | | - 25 °C ... + 60 °C | |
| Degree of protection | IP 67 | | IP65/IP67 | IP 67 |
| Housing material | Plastic | | Body: PA; Mounting band: stainless steel | |
| Switching status indication | LED green | | LED yellow | |
| Rated operational voltage | 5 ... 30 V DC | | 10 ... 30 V DC | |
| Rated operational current I_E | ≤ 200 mA | | ≤ 100 mA | |
| DC | - | | - | |
| AC | - | | - | |
| Breaking capacity | 6 W | | n/a | |
| No-load current | ≤ 10 mA | | ≤ 10 mA | |
| Max. OFF-state current | n/a | | n/a | |
| Max. switching frequency | ≤ 1 kHz | | > 6.000 Hz | > 10.000 Hz |
| Rated insulation voltage | n/a | | n/a | |
| Short-circuit protection | yes | | yes | |
| Max. voltage drop at I_E | ≤ 1,0 V | | ≤ 2,5 V | |
| Wire breakage | yes | | n/a | |
| Reverse polarity protection | yes | | yes | |
| Vibration resistance | 9 g (1.5 mm, 10 – 55 Hz – 10 Hz) | | n/a | |
| Shock resistance | 50 g (11 ms) | | n/a | |
| Explosion proof | - | | EX II 3G Ex nA T4 X EX II 3D Ex tD A22 IP67 T125°C X | EX II 3D Ex tc IIIC T125°C Dc X |

Force chart

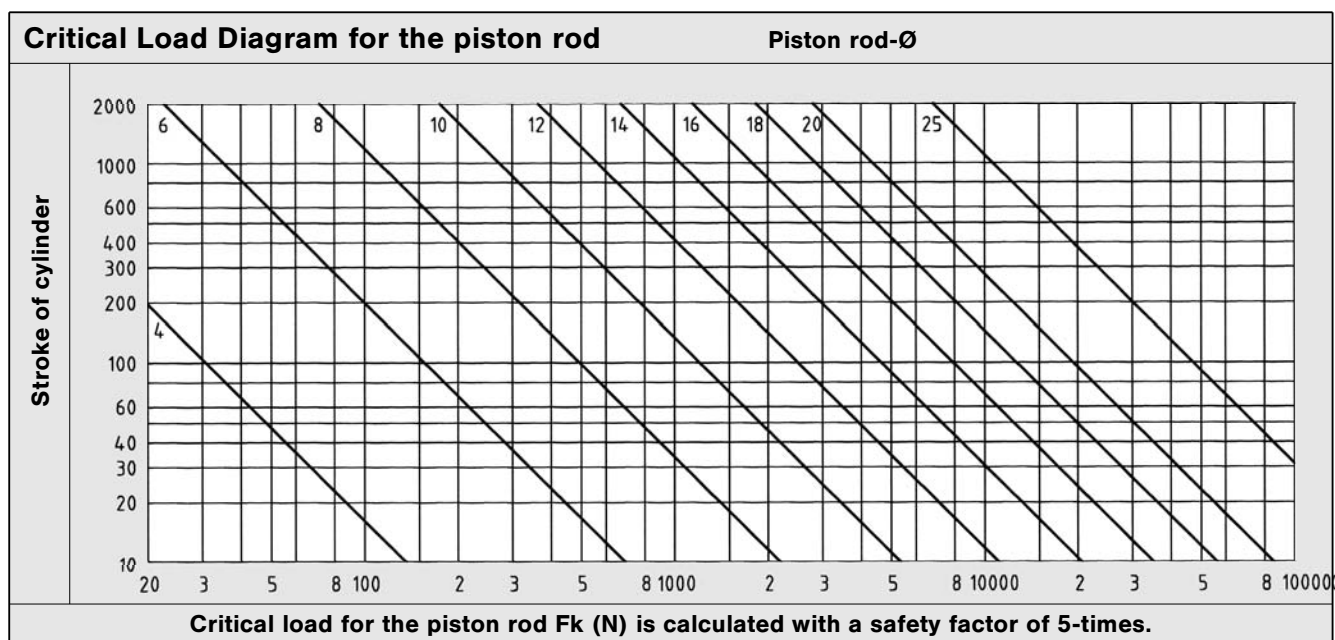
The chart shows extension and retraction forces for double acting cylinders in N. A correction factor of 0,9 for the internal friction is already calculated. Minor influences based on the cushioning bushings are disregarded.

| Cylinder Ø | Cylinder series | Rod diameter Ø | Piston area [cm ²] | Pressure in bar | | | | | | | |
|------------|------------------|----------------|--------------------------------|-----------------|-------|-------|-------|-------|-------|-------|--|
| | | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 8 | HM | 4 | Extension force 0,50 | 9 | 14 | 18 | 23 | 27 | 32 | 36 | |
| | | | Retraction force 0,38 | 7 | 10 | 14 | 17 | 20 | 24 | 27 | |
| 10 | HM | 4 | Extension force 0,79 | 14 | 21 | 28 | 35 | 42 | 49 | 57 | |
| | | | Retraction force 0,66 | 12 | 18 | 24 | 30 | 36 | 42 | 47 | |
| 12 | HM | 6 | Extension force 1,13 | 20 | 31 | 41 | 51 | 61 | 71 | 81 | |
| | | | Retraction force 0,85 | 15 | 23 | 31 | 38 | 46 | 53 | 61 | |
| 16 | HM, CM | 6 | Extension force 2,01 | 36 | 54 | 72 | 90 | 109 | 127 | 145 | |
| | | | Retraction force 1,73 | 31 | 47 | 62 | 78 | 93 | 109 | 124 | |
| | NXD | 8 | Retraction force 1,51 | 27 | 41 | 54 | 68 | 81 | 95 | 109 | |
| 20 | HM, CM | 8 | Extension force 3,14 | 57 | 85 | 113 | 141 | 170 | 198 | 226 | |
| | | | Retraction force 2,64 | 47 | 71 | 95 | 119 | 142 | 166 | 190 | |
| | NXD, NYD, LX | 10 | Retraction force 2,36 | 42 | 64 | 85 | 106 | 127 | 148 | 170 | |
| 25 | HM, NXD, NYD, CM | 10 | Extension force 4,91 | 88 | 132 | 177 | 221 | 265 | 309 | 353 | |
| | | | Retraction force 4,12 | 74 | 111 | 148 | 185 | 223 | 260 | 297 | |
| | LX | 12 | Retraction force 3,78 | 68 | 102 | 136 | 170 | 204 | 238 | 272 | |
| 32 | XL, NXD, NYD, CX | 12 | Extension force 8,04 | 145 | 217 | 289 | 362 | 434 | 506 | 579 | |
| | | | Retraction force 6,91 | 124 | 187 | 249 | 311 | 373 | 435 | 497 | |
| | LX | 16 | Retraction force 6,03 | 109 | 163 | 217 | 271 | 326 | 380 | 434 | |
| 40 | NXD, NYD | 12 | Extension force 12,56 | 226 | 339 | 452 | 565 | 678 | 791 | 904 | |
| | | | Retraction force 11,43 | 206 | 309 | 411 | 514 | 617 | 720 | 823 | |
| | XL, LX, CX | 16 | Retraction force 10,55 | 190 | 285 | 380 | 475 | 570 | 665 | 760 | |
| 50 | NXD, NYD | 16 | Extension force 19,63 | 353 | 530 | 707 | 883 | 1060 | 1236 | 1413 | |
| | | | Retraction force 17,62 | 317 | 476 | 634 | 793 | 951 | 1110 | 1268 | |
| | XL, LX, CX | 20 | Retraction force 16,49 | 297 | 445 | 593 | 742 | 890 | 1039 | 1187 | |
| 63 | NXD, NYD | 16 | Extension force 31,16 | 561 | 841 | 1122 | 1402 | 1682 | 1963 | 2243 | |
| | | | Retraction force 29,15 | 525 | 787 | 1049 | 1312 | 1574 | 1836 | 2099 | |
| | XL, LX, CX | 20 | Retraction force 28,02 | 504 | 756 | 1009 | 1261 | 1513 | 1765 | 2017 | |
| 80 | NXD, NYD | 20 | Extension force 50,24 | 904 | 1356 | 1809 | 2261 | 2713 | 3165 | 3617 | |
| | | | Retraction force 47,10 | 848 | 1272 | 1696 | 2120 | 2543 | 2967 | 3391 | |
| | XL, CX | 25 | Retraction force 45,33 | 816 | 1224 | 1632 | 2040 | 2448 | 2856 | 3264 | |
| 100 | XL, NXD, | 25 | Extension force 78,50 | 1413 | 2120 | 2826 | 3533 | 4239 | 4946 | 5652 | |
| | NYD, CX | | Retraction force 73,59 | 1325 | 1987 | 2649 | 3312 | 3974 | 4636 | 5299 | |
| 125 | XL | 32 | Extension force 122,66 | 2208 | 3312 | 4416 | 5520 | 6623 | 7727 | 8831 | |
| | | | Retraction force 114,62 | 2063 | 3095 | 4126 | 5158 | 6189 | 7221 | 8252 | |
| 160 | XG | 40 | Extension force 200,96 | 3617 | 5426 | 7235 | 9043 | 10852 | 12660 | 14469 | |
| | | | Retraction force 188,40 | 3391 | 5087 | 6782 | 8478 | 10174 | 11869 | 13565 | |
| 200 | XG | 40 | Extension force 314,00 | 5652 | 8478 | 11304 | 14130 | 16956 | 19782 | 22608 | |
| | | | Retraction force 301,44 | 5426 | 8139 | 10852 | 13565 | 16278 | 18991 | 21704 | |
| 250 | XG | 50 | Extension force 490,63 | 8831 | 13247 | 17663 | 22078 | 26494 | 30909 | 35325 | |
| | | | Retraction force 471,00 | 8478 | 12717 | 16956 | 21195 | 25434 | 29673 | 33912 | |
| 320 | XG | 63 | Extension force 803,84 | 14469 | 21704 | 28938 | 36173 | 43407 | 50642 | 57876 | |
| | | | Retraction force 772,68 | 13908 | 20862 | 27817 | 34771 | 41725 | 48679 | 55633 | |

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/mm²)
- I = moment of inertia (mm⁴)
- L_k = effective length of critical load
- S = security

Elastic cases of buckling according to Euler

