

FEATURES

- Excellent resistance to corrosive media (stainless steel barrel and rod)
- Mountings integrated in the front and MP4 cap in the rear cover for trunnion mounting
- Compact threaded mount for direct attachment of front or rear covers on machine
- Double acting cylinders with or without pneumatic cushioning

GENERAL

| | |
|----------------------------|---|
| Detection | Equipped for magnetic position detectors |
| Fluid | Air or inert gas, filtered, lubricated or not |
| Operating pressure | [1 bar = 100 kPa] |
| single acting | 2 to 10 bar |
| double acting | 10 bar, max. |
| Ambient temperature | -10°C to +70°C |
| Optimal max. speed | ≤ 1 m/s (for optimal service life) |
| Max. speed rate | 2 m/s |
| Standards | ISO 6432 |



B

CONSTRUCTION

| | |
|----------------------------------|---|
| Barrel | Non-magnetic stainless steel |
| Rod | Stainless steel |
| Front and rear ends | Anodised light alloy (stainless steel: SSC option) |
| Cushioning seals | PUR (polyurethane) |
| Cushioning ^(a) | Pneumatic, adjustable from both sides with captive screw |
| Rod nut / neck nut | Galvanised steel |
| Piston | Light alloy POM (polyacetal) fitted with an annular permanent magnet |
| Piston seals | PUR (polyurethane) |
| Dismounting | Cannot be dismounted |

| |
|---|
| Double acting ^(a) cushioning length |
| Ø 16 mm = 12,5 mm |
| Ø 20 mm = 17,5 mm |
| Ø 25 mm = 18 mm |

^(a) CSH option

HOW TO ORDER

15-DIGIT PRODUCT CODE

G 435 A - S N - - - - A00

Thread connection
G = ISO 16030

Product series
435

Revision letter
A = Initial release

Diameter (mm)
G = 8 K = 16
H = 10 L = 20
J = 12 M = 25

Rod options 1
S = Double acting
1 = Single acting rod in
2 = Through rod (double acting)
3 = Single acting rod out ⁽¹⁾

⁽¹⁾ Available in bore size: 12, 16, 20 and 25

Rod options 2
N = Stainless steel male thread rod end + rod nut

Options

- A00** = Not cushioned piston, prepared for magnetic detection
- CSH** = Pneumatic cushioned piston, prepared for magnetic detection ⁽²⁾
- SSC** = Not cushioned piston, prepared for magnetic detection, with stainless steel covers ⁽³⁾
- AT1** = Not cushioned piston, prepared for magnetic detection, certified for ATEX 1/21 zones
- AT2** = Not cushioned piston, prepared for magnetic detection, certified for ATEX 2/22 zones

⁽²⁾ Available in bore size: 16, 20 and 25 (double acting only)

⁽³⁾ Available in bore size: 12, 16, 20 and 25 (double acting only)

Recommended standard strokes (mm) ⁽²⁾

| Ø mm | connect. Ø | connect. | | | | | max. stroke |
|------|------------|----------|-----|----|-----|-----|-------------|
| | | 25 | 50 | 80 | 100 | 160 | |
| 8 | M5 | SD | SD | D | D | - | 400 |
| 10 | M5 | SD | SD | D | D | - | 400 |
| 12 | M5 | SDO | SDO | D | D | - | 400 |
| 16 | M5 | SDO | SDO | D | D | - | 400 |
| 20 | G1/8 | SDO | SDO | D | D | D | 400 |
| 25 | G1/8 | SDO | SDO | D | D | D | 900 |

⁽⁴⁾ Other strokes on request. / Min. stroke: 5 mm

D = Double acting only / SD = Single & Double acting




SDO = Single acting rod in + Single acting rod out + Double acting

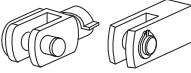


POSITION DETECTORS

Magnetic position detectors must be ordered separately: "T" model (see page P291), reed switch or magneto-resistive type

INSTALLATION

- The cylinders can be mounted in any position without affecting operation
- Each cylinder is delivered with a neck nut and a rod nut
- Mountings: **catalogue number**

| Ø (mm) |  Front or rear flange MF8 | |  High foot (per unit) MS3 | |  Rear trunnion | |
|-----------|---|------------------------|--|------------------------|--|------------------------|
| | steel | st. steel | steel | st. steel | steel | st. steel |
| 8 - 10 | P493AG42A000A00 | - | P493AG425000A00 | - | P493AG42C000A00 | - |
| 12 - 16 | P493AJ42A000A00 | P493AJ42A200A00 | P493AJ425000A00 | P493AJ425200A00 | P493AJ42C000A00 | P493AJ42C200A00 |
| 20 | P493AL42A000A00 | P493AL42A200A00 | P493AL425000A00 | P493AL425200A00 | P493AL42C000A00 | P493AL42C200A00 |
| 25 | P493AL42A000A00 | P493AL42A200A00 | P493AL425000A00 | P493AL425200A00 | P493AL42C000A00 | P493AL42C200A00 |

| Ø (mm) |  female rod clevis ISO 8140 - RP 102 P AP2 | |  spherical rod end ISO 8139 - RP 103 P AP6 | |  front neck nut MR3 | |
|-----------|---|------------------------|---|-----------|---|------------------------|
| | steel | st. steel | steel | st. steel | steel | st. steel |
| 8 - 10 | P493AG431000A00 | - | P493AG432000A00 | - | P493AG42F000A00 | - |
| 12 - 16 | P493AJ431000A00 | P493AJ431200A00 | P493AJ432000A00 | - | P493AJ42F000A00 | P493AJ42F200A00 |
| 20 | P493AL431000A00 | P493AL431200A00 | P493AL432000A00 | - | P493AL42F000A00 | P493AL42F200A00 |
| 25 | P493A3131000A00 | P493AM431200A00 | P493A3132000A00 | - | P493AL42F000A00 | P493AL42F200A00 |

- Pipe connections G 1/8 have standard thread according to ISO 16030
- Installation/maintenance instructions are included with each cylinder

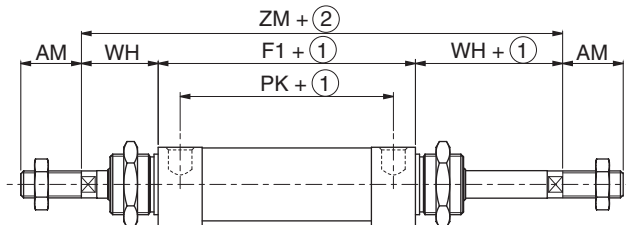
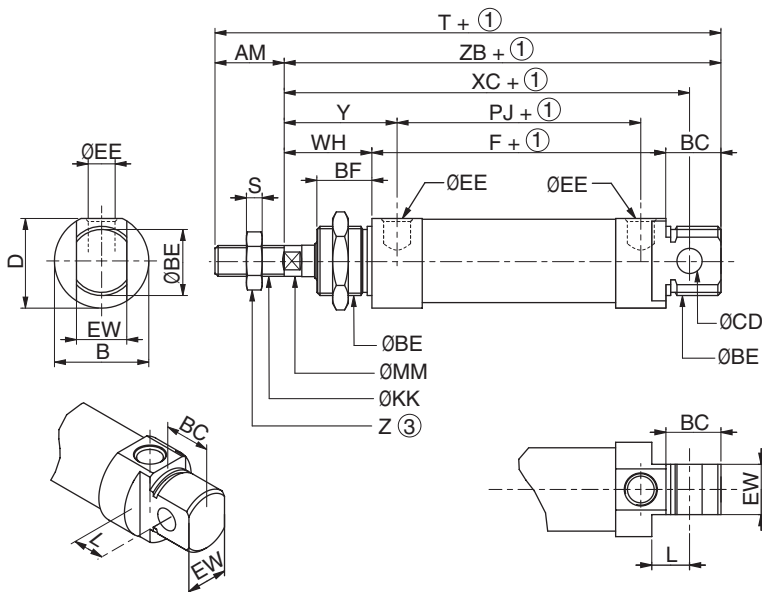
DIMENSIONS (mm), WEIGHT (kg)



SINGLE-ROD TYPE CYLINDER
Bare cylinder, single and double acting
Supplied with front cover nut
ISO 6432



THROUGH-ROD TYPE CYLINDER
Bare cylinder, double acting
Supplied with front cover nut
ISO 6432



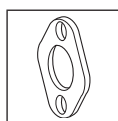
- ① Stroke
- ② Stroke x 2
- ③ Width across flats

| Ø | AM | B | BC | ØBE | BF | ØCD | D | ØEE | EW | F | F1 | ØKK | L | MM | PJ | PK | S | T | WH | XC | Y |
|----|----|----|------|----------|------|--------|------|-------|---------|------|------|----------|----|----|------|------|---|-------|----|-----|------|
| 8 | 12 | 16 | 12 | M12x1,25 | 12 | 4 H 9 | 15 | M5 | 8 d 13 | 46 | - | M4x0,7 | 6 | 4 | 34 | - | 2 | 86 | 16 | 64 | 22 |
| 10 | 12 | 16 | 12 | M12x1,25 | 12 | 4 H 9 | 15 | M5 | 8 d 13 | 46 | - | M4x0,7 | 6 | 4 | 34 | - | 2 | 86 | 16 | 64 | 22 |
| 12 | 16 | 19 | 14 | M16x1,5 | 14 | 6 H 11 | 18 | M5 | 12 d 11 | 48,5 | 48,5 | M6x1 | 9 | 6 | 34,5 | 34,5 | 3 | 100,3 | 22 | 75 | 29 |
| 16 | 16 | 19 | 14 | M16x1,5 | 14 | 6 H 11 | 18 | M5 | 12 d 11 | 55 | 55 | M6x1 | 9 | 6 | 41,5 | 41,5 | 3 | 107 | 22 | 82 | 28,5 |
| 20 | 20 | 27 | 17,5 | M22x1,5 | 17,5 | 8 H 11 | 25,4 | G 1/8 | 16 d 11 | 63,5 | 63,5 | M8x1,25 | 12 | 8 | 47,3 | 47,3 | 4 | 125 | 24 | 95 | 32 |
| 25 | 22 | 30 | 17,5 | M22x1,5 | 17,5 | 8 H 11 | 28,5 | G 1/8 | 16 d 11 | 68,5 | 68,5 | M10x1,25 | 12 | 10 | 52,5 | 52,5 | 5 | 136 | 28 | 104 | 36 |

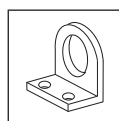
| Ø | Z | ZB | ZM | weight | |
|----|----|------|-------|--------|-------|
| | | | | (4) | (5) |
| 8 | 7 | 74 | - | 0,030 | 0,020 |
| 10 | 7 | 74 | - | 0,030 | 0,040 |
| 12 | 10 | 84,5 | 82,5 | 0,070 | 0,090 |
| 16 | 10 | 91 | 99 | 0,100 | 0,100 |
| 20 | 13 | 105 | 111,5 | 0,170 | 0,160 |
| 25 | 17 | 114 | 124,5 | 0,200 | 0,200 |

(4) Cylinder weight at 0 mm stroke.
(5) Weight to be added per additional 100 mm length.

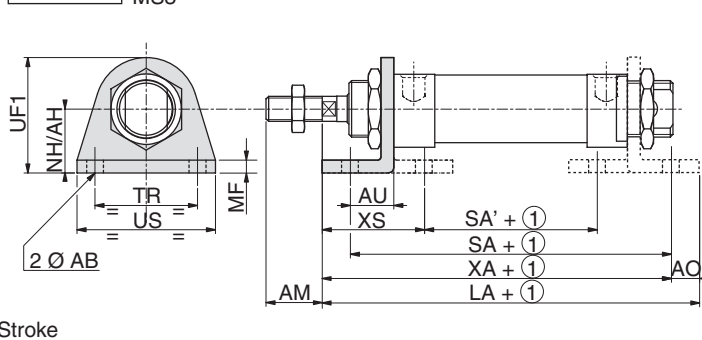
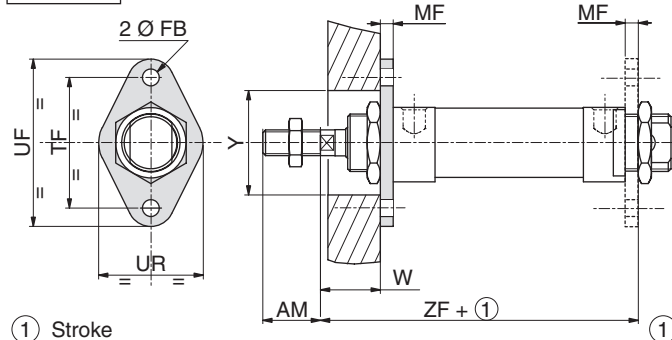
NOTE:
- Single and double acting cylinders Ø 8 to 25 mm have the same dimensions.
- The length of the single acting rod in version is twice the nominal stroke.
- The mountings are always delivered separately



MOUNTING
Front or rear flange
MF8



MOUNTING
High foot
Foot mounting are supplied in single units,
not in pairs
MS3

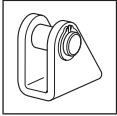


| Ø (mm) | AM | ZF | MF | Y | W | ØFB | UF | TF | UR | weight |
|--------|----|-------|----|----|----|-----|----|----|----|--------|
| 08 | 12 | 65 | 3 | 22 | 13 | 4,5 | 40 | 30 | 22 | 0,020 |
| 10 | 12 | 65 | 3 | 22 | 13 | 4,5 | 40 | 30 | 22 | 0,020 |
| 12 | 16 | 74,5 | 4 | 22 | 18 | 5,5 | 52 | 40 | 30 | 0,020 |
| 16 | 16 | 81,0 | 4 | 22 | 18 | 5,5 | 52 | 40 | 30 | 0,020 |
| 20 | 20 | 92,5 | 5 | 31 | 19 | 6,6 | 64 | 50 | 40 | 0,040 |
| 25 | 22 | 101,5 | 5 | 31 | 23 | 6,6 | 64 | 50 | 40 | 0,040 |

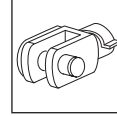
| Ø (mm) | UF1 | NH/AH | TR | US | MF | ØAB | AM | AU | XS | SA | SA' | XA | LA | AO | weight |
|--------|-----|-------|----|----|----|-----|----|----|----|-------|------|-------|-------|----|--------|
| 08 | 26 | 16 | 25 | 35 | 3 | 4,5 | 12 | 11 | 24 | 68 | 30 | 73 | 78 | 5 | 0,030 |
| 10 | 26 | 16 | 25 | 35 | 3 | 4,5 | 12 | 11 | 24 | 68 | 30 | 73 | 78 | 5 | 0,030 |
| 12 | 32 | 20 | 32 | 42 | 4 | 5,5 | 16 | 14 | 32 | 76,5 | 28,5 | 84,5 | 90,5 | 6 | 0,050 |
| 16 | 32 | 20 | 32 | 42 | 4 | 5,5 | 16 | 14 | 32 | 83 | 35 | 91 | 97 | 6 | 0,050 |
| 20 | 45 | 25 | 40 | 54 | 5 | 6,6 | 20 | 17 | 36 | 97,5 | 39,5 | 104,5 | 113,5 | 9 | 0,100 |
| 25 | 45 | 25 | 40 | 54 | 5 | 6,6 | 22 | 17 | 40 | 102,5 | 44,5 | 113,5 | 122,5 | 9 | 0,100 |

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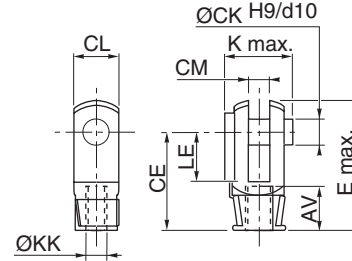
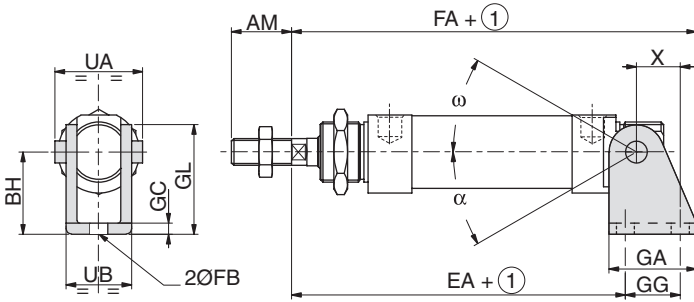
DIMENSIONS (mm), WEIGHT (kg)



MOUNTING
Rear trunnion



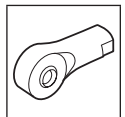
MOUNTING
Female rod clevis
ISO 8140
AP2



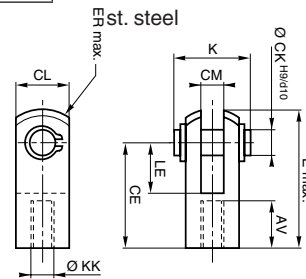
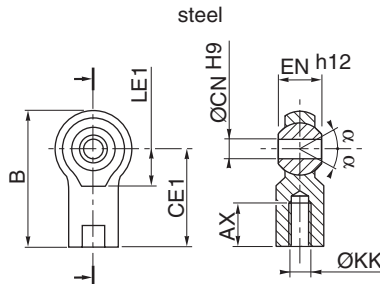
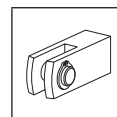
① Stroke

| Ø (mm) | AM | BH | EA | FA | FB | GA | GC | GG | GL | UA | UB | X | α | ω | weight |
|--------|----|----|------|-----|-----|----|-----|------|----|----|----|------|-----|------|--------|
| 8 | 12 | 24 | 62,7 | 79 | 4,5 | 20 | 2,5 | 12,5 | 29 | 18 | 13 | 11,2 | 7° | 160° | 0,020 |
| 10 | 12 | 24 | 62,7 | 79 | 4,5 | 20 | 2,5 | 12,5 | 29 | 18 | 13 | 11,2 | 7° | 160° | 0,020 |
| 12 | 16 | 27 | 72,5 | 93 | 5,5 | 25 | 3 | 16 | 34 | 25 | 18 | 13,5 | 50° | 180° | 0,050 |
| 16 | 16 | 27 | 79,5 | 100 | 5,5 | 25 | 3 | 16 | 34 | 25 | 18 | 13,5 | 47° | 180° | 0,050 |
| 20 | 20 | 30 | 91 | 117 | 6,6 | 32 | 4 | 20 | 40 | 32 | 24 | 16 | 8° | 168° | 0,080 |
| 25 | 20 | 30 | 100 | 126 | 6,6 | 32 | 4 | 20 | 40 | 32 | 24 | 16 | 8° | 168° | 0,080 |

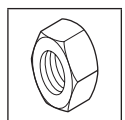
| Ø (mm) | Ø CK | CM | K | AV | LE | CE | CL | ØKK | E max. | weight |
|--------|------|------------------|------|----|----|----|----|----------|--------|--------|
| 8 | 4 | 4 +0,4 +0,1 | 11 | 8 | 8 | 16 | 8 | M4x0,7 | 22,5 | 0,010 |
| 10 | 4 | 4 +0,4 +0,1 | 11 | 8 | 8 | 16 | 8 | M4x0,7 | 22,5 | 0,010 |
| 12 | 6 | 6 +0,4 +0,1 | 16,5 | 12 | 12 | 24 | 12 | M6x1 | 33,5 | 0,020 |
| 16 | 6 | 6 +0,4 +0,1 | 16,5 | 12 | 12 | 24 | 12 | M6x1 | 33,5 | 0,020 |
| 20 | 8 | 8 +0,5 +0,15 | 22 | 15 | 16 | 32 | 16 | M8x1,25 | 45 | 0,050 |
| 25 | 10 | 10 +0,5 +0,15 | 26 | 20 | 20 | 40 | 20 | M10x1,25 | 56 | 0,100 |



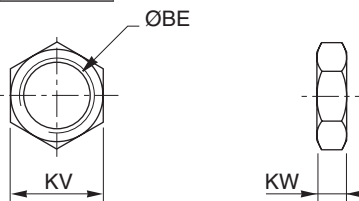
MOUNTING
Spherical rod end
ISO 8139
AP6



| Ø (mm) | AX | B | CE1 | ØCN | LE1 | ØKK | | EN | α | weight |
|--------|----|----|-----|-----|-----|----------|-----------|----|----|--------|
| | | | | | | steel | st. steel | | | |
| 8 | 8 | 36 | 27 | 5 | 10 | M4x0,7 | - | 8 | 4° | 0,020 |
| 10 | 8 | 36 | 27 | 5 | 10 | M4x0,7 | - | 8 | 4° | 0,020 |
| 12 | 12 | 40 | 30 | 6 | 11 | M6x1 | M6x1 | 9 | 4° | 0,030 |
| 16 | 12 | 40 | 30 | 6 | 11 | M6x1 | M8x1 | 9 | 4° | 0,030 |
| 20 | 15 | 48 | 36 | 8 | 13 | M8x1,25 | M8x1,25 | 12 | 4° | 0,050 |
| 25 | 20 | 57 | 43 | 10 | 15 | M10x1,25 | M10x1,25 | 14 | 4° | 0,070 |



MOUNTING
Front neck nut
MR3



| Ø (mm) | ØBE | KV | KW | weight |
|--------|----------|----|----|--------|
| 8 | M12x1,25 | 19 | 6 | 0,010 |
| 10 | M12x1,25 | 19 | 6 | 0,010 |
| 12 | M16x1,5 | 19 | 4 | 0,010 |
| 16 | M16x1,5 | 19 | 4 | 0,010 |
| 20 | M22x1,5 | 27 | 5 | 0,010 |
| 25 | M22x1,5 | 27 | 5 | 0,010 |