

L1-N

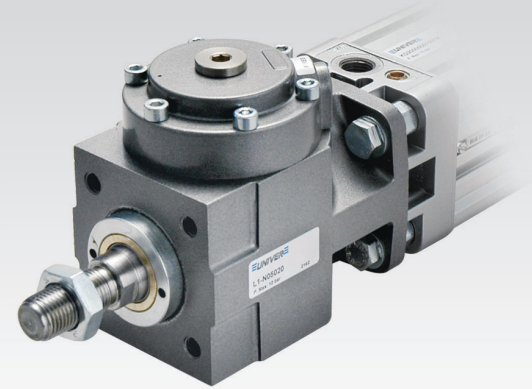
Locking unit for cylinders and rods

A product that combines the familiar and traditional appearance of the UNIVER locking unit to a new and revolutionary "elastic heart", which is able to improve performance under all points of view:

- maximum clamping force
- excellent response time
- high dissipable kinetic energy
- extreme locking repeatability
- excellent resistance to shocks and vibrations
- static locking and dynamic braking in a single component

Available ATEX version upon request

CE Ex II 2Gc IIC T5 II 2Dc T100°C



TECHNICAL CHARACTERISTICS

| | |
|---------------------|--------------------------------------------------------|
| Ambient temperature | -20 ÷ 80 °C |
| Fluid | filtered air, with or without lubrication |
| Working pressure | 4 ÷ 10 bar |
| Cylinders bore | Ø 16 - 20 - 25 - 32 - 40 - 50 - 63 - 80 - 100 - 125 mm |

CONSTRUCTIVE CHARACTERISTICS

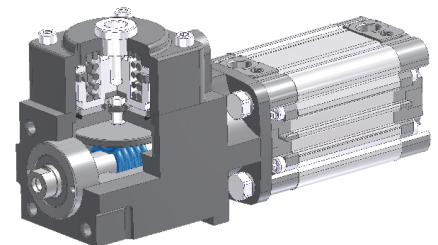
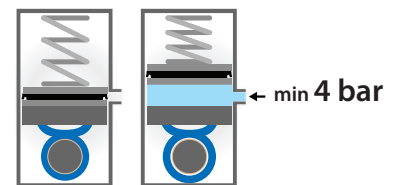
| | |
|---------|----------------------|
| Body | die-cast aluminium |
| Cover | die-cast aluminium |
| Piston | aluminium |
| Seals | nitrile rubber (NBR) |
| Springs | special steel |

CODIFICATION KEY

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|--|
| L | 1 | - | N | 0 | 6 | 3 | 2 | 0 | | |
| | 1 | | | 2 | | 3 | | 4 | 5 | |

| 1 Series | 2 Cylinder bore (mm) | 3 Piston rod bore (mm) | 4 Option | 5 ATEX option |
|--------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| L1-N = Locking unit for cylinders and rods | 016 = Ø16 020 = Ø20 025 = Ø25 032 = Ø32 040 = Ø40 | 050 = Ø50 063 = Ø63 080 = Ø80 100 = Ø100 125 = Ø125 | 06 = Ø6 08 = Ø8 10 = Ø10 12 = Ø12 16 = Ø16 20 = Ø20 25 = Ø25 32 = Ø32 | K = Metallic piston rod scraper (upon request) X = ATEX (upon request) See ATEX Catalogue for types and versions |

Working principle



Cylinders series M, KL, KE/K, KD, RS



Main features:

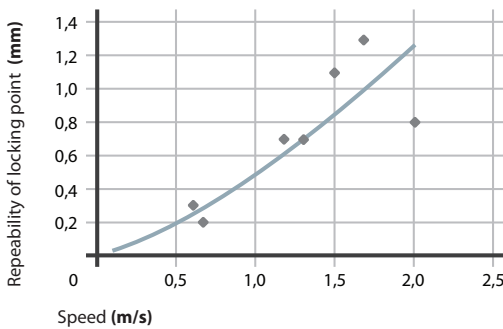
- Suitable only for chromium-plated rods and guiding shafts
- The locking unit stands variation and sudden application of payloads.
- No slipping even in case of greasy or oily rods and guiding shafts.
- The air pressure can be used only to release the unit (4 bar)
- Locking takes place in static or dynamic braking conditions

Main performances and characteristics

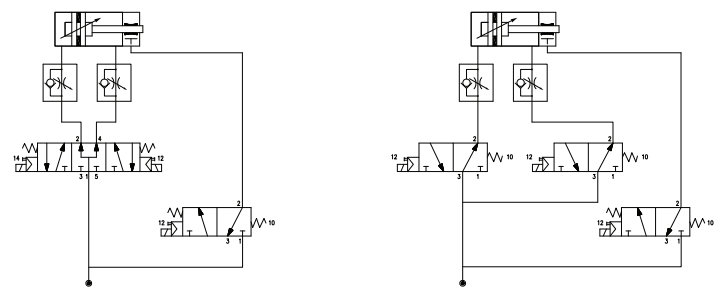
| Ø | Ø Rod (mm) | Static locking force | Pressure on the equivalent cylinder | Dynamic braking force | Response time at 6 bar | Stopping point repeatability | Vibration resistance | Shock resistance | Minimum release pressure* |
|-----|------------|----------------------|-------------------------------------|---------------------------------|------------------------|-------------------------------------|---------------------------------------------|------------------|---------------------------|
| | | N | bar | at 1m/s | ms | < 1 mm at 1 m/s (see diagram below) | 10 g (10-55 Hz) for 30 minutes on each axis | J | bar |
| 16 | 6 | 200 | 10 | 40% of the static locking force | 12 | | | 2 | 4 |
| 20 | 8 | 314 | 10 | | 12 | | | 3 | 4 |
| 25 | 10 | 490 | 10 | | 15 | | | 4 | 4 |
| 32 | 12 | 800 | 10 | | 20 | | | 5 | 4 |
| 40 | 16 | 1260 | 10 | | 20 | | | 8 | 4 |
| 50 | 20 | 2000 | 10 | | 25 | | | 11 | 4 |
| 63 | 20 | 3100 | 10 | | 25 | | | 15 | 4 |
| 80 | 25 | 5000 | 10 | | 30 | | | 21 | 4 |
| 100 | 25 | 7850 | 10 | | 30 | | | 29 | 4 |
| 125 | 32 | 12300 | 10 | | 40 | | | 40 | 4 |

* = For release pressure values under 4 bar, the reaction of the locking unit cannot be foreseen

Stop point



Scheme of working principle



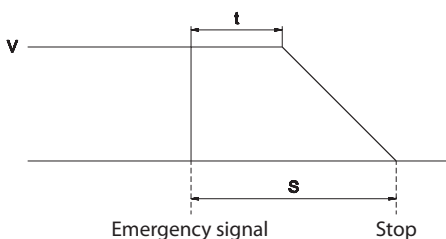
Breaking distance

In some applications, it could be necessary to know the piston rod strokes between the receipt of an emergency signal and its stop. This value (S) depends on the following values:

- V = speed at emergency signal in m/s
- t = locking system response time in seconds
- m = displacing mass (Kg)
- f = breaking force under dynamic conditions in N (see table performances and characteristics)

$$S = (V \cdot t) + \frac{m V^2}{2 f} = (0,7 \cdot 0,02) + \frac{10 \cdot 0,7^2}{2 \cdot 756} = 0,017 \text{ m}$$

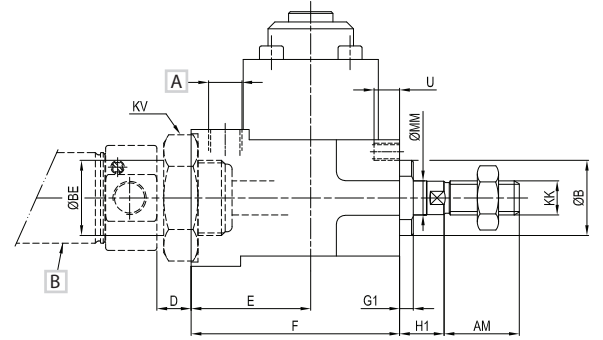
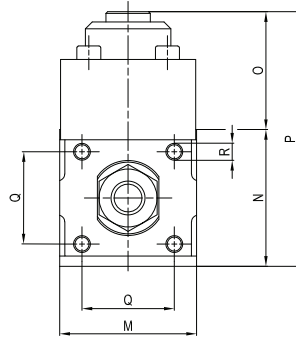
Example: locking unit size 40 with dynamic load 10 kg at a speed of 0,7 m/s



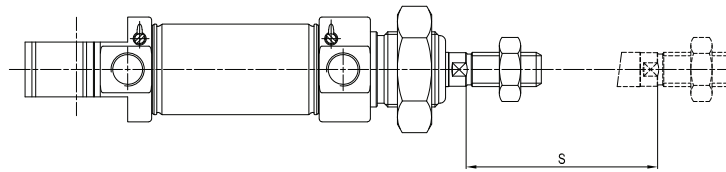
Mass

| Ø | g |
|-----|-------|
| 16 | 430 |
| 20 | 430 |
| 25 | 380 |
| 32 | 650 |
| 40 | 850 |
| 50 | 1350 |
| 63 | 2100 |
| 80 | 3800 |
| 100 | 6300 |
| 125 | 10000 |

Locking unit for microcylinders Ø 16 ÷ 25 mm



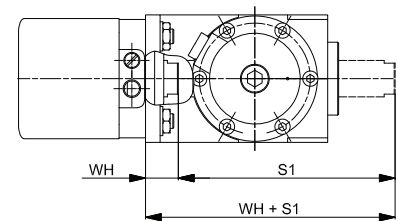
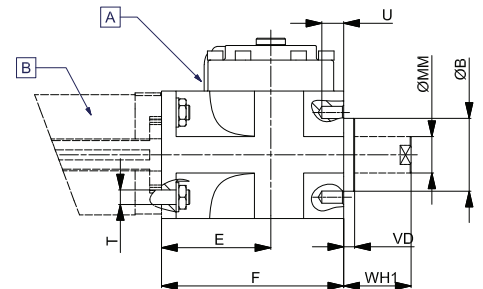
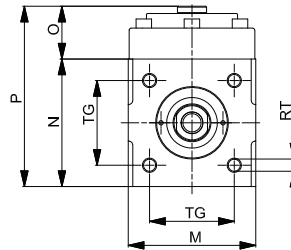
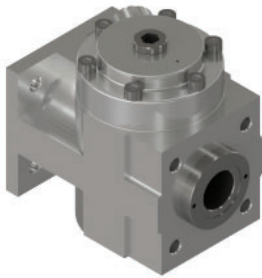
> Additional length to standard rod



A | G1/8 pneumatic release
B | ISO microcylinder

| Ø | AM | B | BE | D | E | F | G1 | H1 | KK | KV | M | MM | N | O | P | Q | R | S | U |
|----|----|----|-----------|----|----|----|-----|----|------------|--------|----|----|----|------|------|----|----|----|-----|
| 16 | 16 | 16 | M16 x 1,5 | 10 | 35 | 61 | 1,5 | 7 | M6 x 1 | es. 24 | 40 | 6 | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |
| 20 | 20 | 22 | M22 x 1,5 | 10 | 35 | 61 | 4 | 9 | M8 x 1,25 | es. 32 | 40 | 8 | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |
| 25 | 22 | 22 | M22 x 1,5 | 10 | 35 | 61 | 4 | 13 | M10 x 1,25 | es. 32 | 40 | 10 | 40 | 34,5 | 74,5 | 27 | M5 | 55 | 7,5 |

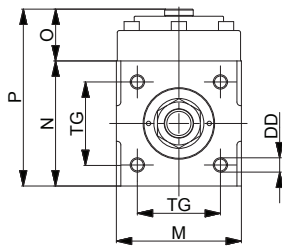
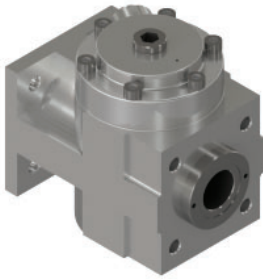
Locking unit for compact cylinders STRONG Ø 32 ÷ 100 mm



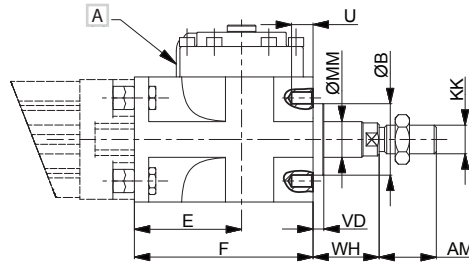
A | G1/8 pneumatic release
B | STRONG cylinder

| Ø | B | RT | E | F | M | MM | N | O | P | TG | S1 | U | T | VD | WH | WH1 |
|-----|----|-----|------|-----|-----|----|-----|------|-------|------|-----|----|------|----|----|-----|
| 32 | 30 | M6 | 54,5 | 84 | 50 | 12 | 50 | 29,5 | 79,5 | 32,5 | 82 | 10 | 6,5 | 6 | 14 | 26 |
| 40 | 35 | M6 | 58 | 90 | 58 | 16 | 58 | 29,5 | 87,5 | 38 | 90 | 9 | 6,5 | 6 | 14 | 30 |
| 50 | 40 | M8 | 60 | 100 | 70 | 20 | 70 | 29 | 99 | 46,5 | 100 | 10 | 8,5 | 6 | 18 | 37 |
| 63 | 45 | M8 | 65 | 110 | 85 | 20 | 85 | 37 | 122 | 56,5 | 110 | 13 | 8,5 | 6 | 18 | 37 |
| 80 | 45 | M10 | 75 | 125 | 100 | 25 | 100 | 40,5 | 140,5 | 72 | 125 | 16 | 10,5 | 8 | 32 | 46 |
| 100 | 55 | M10 | 90 | 152 | 116 | 25 | 116 | 59 | 179 | 89 | 152 | 18 | 10,5 | 8 | 32 | 51 |

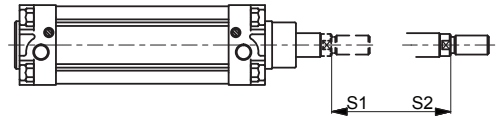
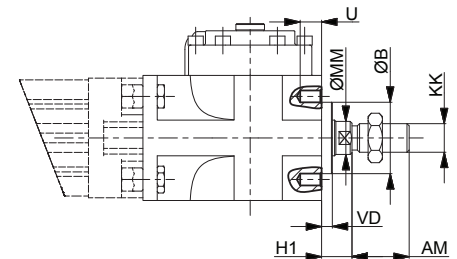
Locking units for ISO cylinders $\varnothing 32 \div 125$ mm



ISO protrusion



Reduced protrusion



Additional length to standard rod

S₁ for ISO protrusion

S₂ for reduced protrusion

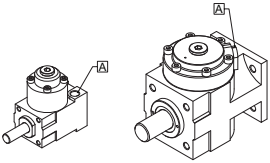
A G1/8 pneumatic release

| Ø | AM | B | DD | E | F | H1 | KK | M | MM | N | O | P | S1 | S2 | TG | U | VD | WH |
|-----|----|----|-----|-------|-----|----|------------|-----|----|-----|------|-------|-----|-----|------|----|-----|----|
| 32 | 22 | 30 | M6 | 54,5 | 84 | 16 | M10 x 1,25 | 50 | 12 | 50 | 29,5 | 79,5 | 85 | 75 | 32,5 | 10 | 6 | 26 |
| 40 | 24 | 35 | M6 | 58 | 90 | 15 | M12 x 1,25 | 58 | 16 | 58 | 29,5 | 87,5 | 90 | 75 | 38 | 9 | 6 | 30 |
| 50 | 32 | 40 | M8 | 60 | 100 | 17 | M16 x 1,5 | 70 | 20 | 70 | 29 | 99 | 100 | 80 | 46,5 | 10 | 6 | 37 |
| 63 | 32 | 45 | M8 | 65 | 110 | 17 | M16 x 1,5 | 85 | 20 | 85 | 37 | 122 | 110 | 90 | 56,5 | 13 | 6 | 37 |
| 80 | 40 | 45 | M10 | 75 | 125 | 21 | M20 x 1,5 | 100 | 25 | 100 | 40,5 | 140,5 | 125 | 100 | 72 | 16 | 8 | 46 |
| 100 | 40 | 55 | M10 | 90 | 152 | 26 | M20 x 1,5 | 116 | 25 | 116 | 59 | 179 | 150 | 125 | 89 | 18 | 8 | 51 |
| 125 | 54 | 60 | M12 | 112,5 | 185 | 35 | M27 x 2 | 145 | 32 | 145 | 62 | 207 | 185 | 155 | 110 | 22 | 9,5 | 65 |

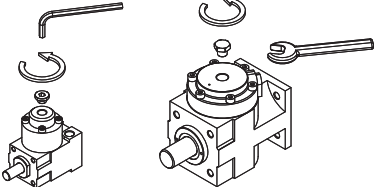
2

Assembly instruction for rods

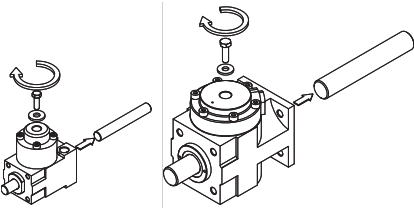
Pneumatic release (mechanic)

- 1**
- 
- With 6 bar compressed air prepare to feed safety the release port (e.g. check valve or reservoir)
Supply with pressurized air to clear the false rod off.
Ensure the safe and controlled removal of the false rod.
- A = Supply

Manual release (mechanic)

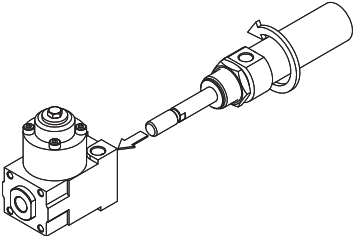
- 1**
- 
- Remove the protective cap from manual control, by using a hex key for $\varnothing 16 \div 25$ or a wrench for $\varnothing 32 \div 125$.

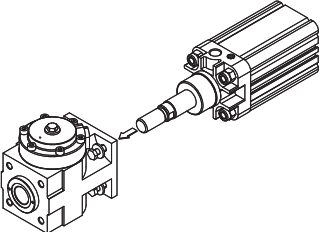
| \varnothing | Screw | Washer UNI 6593 |
|---------------|-------|-----------------|
| 16 | | |
| 20 | M5x15 | 6,6x12,5 |
| 25 | | |

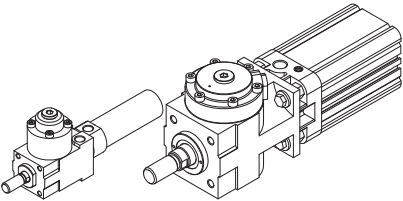
- 2**
- 
- Tighten in the threaded screw M (see tables) until the jaws are released (at this point the block is deactivated) and extract the false rod.

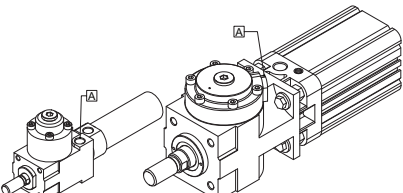
| \varnothing | Screw | Washer UNI 6593 |
|---------------|--------|-----------------|
| 32 | M5x15 | 6,6x12,5 |
| 40 | | |
| 50 | M6x15 | 9x17 |
| 63 | | |
| 80 | M8x20 | |
| 100 | | |
| 125 | M10x35 | 11x21 |

Assembling instruction for cylinders

- 1**
- 
- $\varnothing 16 \div 25$**
Insert the cylinder rod into the locking unit and tighten it in, orienting it to the correct position.
Reset the locking functions (mechanical or pneumatic) and proceed by fully tightening the fixing nut.

- 1**
- 
- $\varnothing 32 \div 125$**
Insert the cylinder rod into the locking unit and pre-fix it onto the end cap by means of the appropriate screws supplied. Reset the locking functions (mechanical or pneumatic) and fully tighten the fixing screws.

- 2**
- 
- Remove the threaded screw used to release the jaws and reposition the protective cap (mechanical).

- 3**
- 
- Ensure it is correctly working in both locking and release conditions by performing different actions.
- A = Supply

Fixing screws $\varnothing 32 \div 63$ mm
for **STRONG Compact Cylinders**

Grain UNI 5923, washer and nut UNI 5589

| \varnothing | Small parts | Q.ty | Dimensions | Part no. * |
|---------------|-------------|------|------------|----------------|
| 32 | Grain | 4 | M6x30 | AZ4-VS0630 |
| | Washer | 4 | 6,4x16 | AZ4-SR06,41,6 |
| | Nut | 4 | M6x1 | AZ4-SO0064 |
| 40 | Grain | 4 | M6x30 | AZ4-VS0630 |
| | Washer | 4 | 6,4x16 | AZ4-SR06,41,6 |
| | Nut | 4 | M6x1 | AZ4-SO0064 |
| 50 | Grain | 4 | M8x40 | AZ4-VS0840 |
| | Washer | 4 | 8,4x1,6 | AZ4-SR841,6 |
| | Nut | 4 | M8x1,25 | AZ4-SH08125 |
| 63 | Grain | 4 | M8x40 | AZ4-VS0840 |
| | Washer | 4 | 8,4x1,6 | AZ4-SR8,41,6 |
| | Nut | 4 | M8x1,25 | AZ4-SH08125 |
| 80 | Grain | 4 | M10x45 | AZ4-VS0010-45 |
| | Washer | 4 | 10x18 | AZ4-SR10,018,2 |
| | Nut | 4 | M10x1,5 | AZ4-SN010A |
| 100 | Grain | 4 | M10x50 | AZ4-VS0010-50 |
| | Washer | 4 | 10x18 | AZ4-SR10,018,2 |
| | Nut | 4 | M10x1,5 | AZ4-SN010A |

* = Package 100 pz.

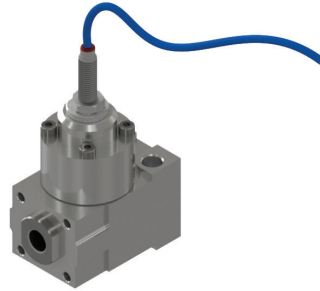
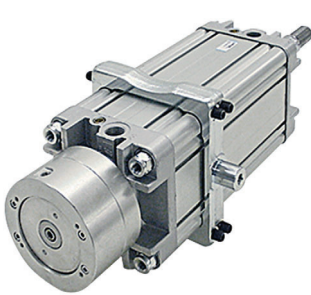
Fixing screws $\varnothing 32 \div 125$ mm
for **ISO Cylinders**

Screw with hexagonal head UNI 5739 and washer UNI 6592 for assembling locking unit to ISO cylinder

| \varnothing | Small parts | Q.ty | Dimensions | Part no. * |
|---------------|-------------|------|------------|---------------|
| 32 | Screws | 4 | M6x16 | AZ4-VE0616 |
| | Washer | 4 | 6,4x1,6 | AZ4-SR06,41,6 |
| 40 | Screws | 4 | M6x20 | AZ4-VE0620 |
| | Washer | 4 | 6,4x1,6 | AZ4-SR06,41,6 |
| 50 | Screws | 4 | M8x20 | AZ4-VE0820 |
| | Washer | 4 | 8,4x1,6 | AZ4-SR08,41,6 |
| 63 | Screws | 4 | M8x25 | AZ4-VE0825 |
| | Washer | 4 | 8,4x1,6 | AZ4-SR08,41,6 |
| 80 | Screws | 4 | M10x30 | AZ4-VE1030 |
| | Washer | 4 | 10,5x2 | AZ4-SR10,52,0 |
| 100 | Screws | 4 | M10x30 | AZ4-VE1030 |
| | Washer | 4 | 10,5x2 | AZ4-SR10,52,0 |
| 125 | Screws | 4 | M12x35 | AZ4-VE1235 |
| | Washer | 4 | 13x2,5 | AZ4-SR13,02,5 |

* = Package 100 pz.

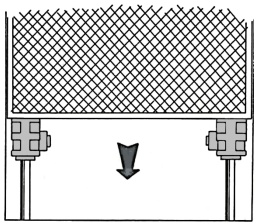
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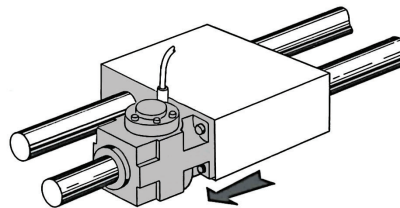
NFZ 160/200
ISO 15552 cylinders with
integrated locking unit

Locking unit with M8 inductive
position sensor

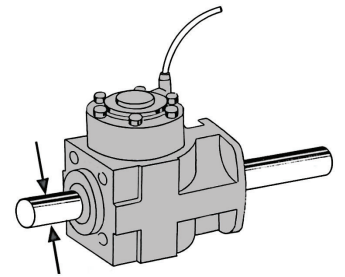
Other examples of locking unit applications



For bulkheads



For carriages



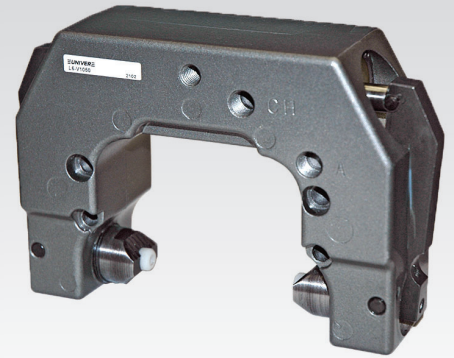
| f8 | f8 |
|-----------------------------------------|----------------------------|
| $\varnothing 6 - 8 - 10 - 12 - 14 - 16$ | $\varnothing 20 - 25 - 32$ |

For chrome-plated rods
Shafts with F8-F7 tolerance are to
be used

L6

Locking Units for rodless cylinders S5 - VL1

UNIVER Locking Units for rodless cylinders perform the function of keeping the carriage in any intended point of its stroke and allow high locking accuracy. They can be mounted on both sides of the carriage and the mechanical braking force can be further increased by means of an additional pneumatic override.



TECHNICAL CHARACTERISTICS

| | |
|---------------------|-------------------------------------------|
| Ambient temperature | -20 ÷ 80 °C |
| Fluid | filtered air, with or without lubrication |
| Working pressure | 4,5 ÷ 10 bar |
| Cylinder bore | Ø 25- 32- 40 - 50 mm |

CONSTRUCTIVE CHARACTERISTICS

| | |
|----------------|----------------------|
| Body | die-cast aluminium |
| Seals | nitrile rubber (NBR) |
| Internal parts | brass/aluminium |

CODIFICATION KEY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| L | 6 | - | S | 5 | 0 | 3 | 2 |
| 1 | | | | 2 | | | |

1 Series

L6-S5 = Locking Units for S5 series rodless cylinder
L1-V1 = Locking Units for VL1 series rodless cylinder

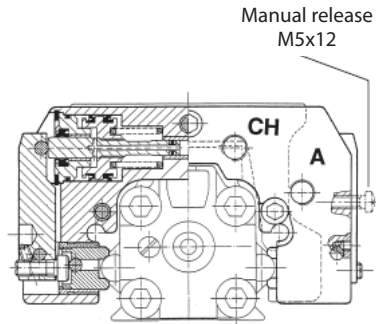
2 Cylinder bore (mm)

025 = Ø25
032 = Ø32
040 = Ø40
050 = Ø50

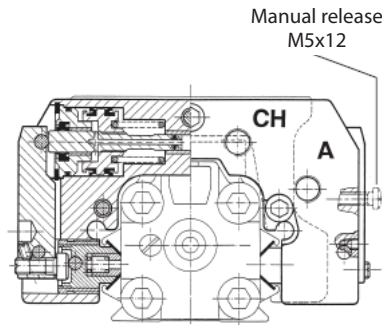
Main features:

- Min release pressure 4,5 bar
- Able to keep the carriage in position in both directions
- Easy installation, possible by both the carriage sides indifferently.
- Permanent manual release by tightening two M5 screws.
- Locking by means of mechanic springs acting over the carriage in event of lack of air pressure (A).
- To increase the locking force, this unit is ready for an additional pneumatic override (CH).

■ S5 series with L6 locking unit



■ VL1 series with L6 locking unit



2

Static locking force* (N)

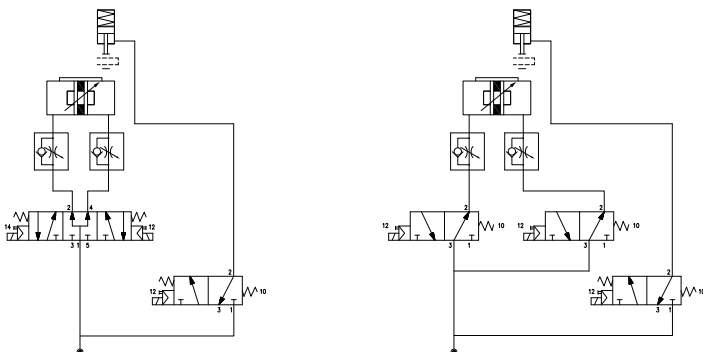
| Ø | Force | | A = CH |
|----|-----------------|------------------|--------|
| | Locking unit S5 | Locking unit VL1 | |
| 25 | 810 | 520 | M5 |
| 32 | 1185 | 745 | G1/8 |
| 40 | 825 | 1465 | G1/8 |
| 50 | 1235 | 2365 | G1/8 |

* = Braking force is equivalent to 40% the static locking force
 A = Pneumatic release
 CH = Additional pneumatic override

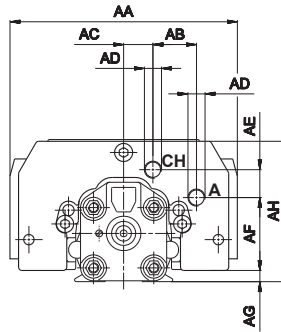
S5/VL1 mass

| Ø | Locking unit S5 | | Locking unit VL1 | |
|----|-----------------|----------|------------------|----------|
| | g | | g | |
| | Stroke 0 | Part no. | Stroke 0 | Part no. |
| 25 | 350 | L6-S5025 | 350 | L6-V1025 |
| 32 | 460 | L6-S5032 | 460 | L6-V1032 |
| 40 | 820 | L6-S5040 | 820 | L6-V1040 |
| 50 | 1450 | L6-S5050 | 1450 | L6-V1050 |

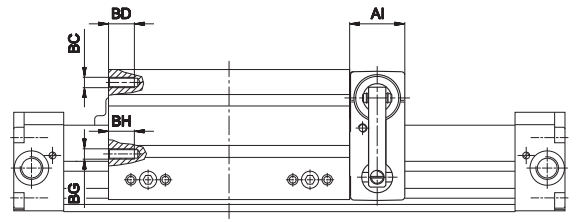
Scheme of working principle



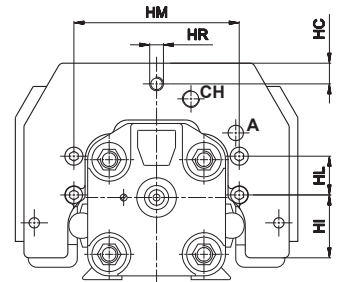
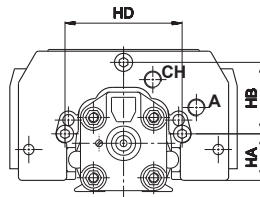
Locking unit for S5 series $\varnothing 25 \div 50$ mm



> Fixing $\varnothing 25 - 32 - 40$



> Fixing $\varnothing 50$

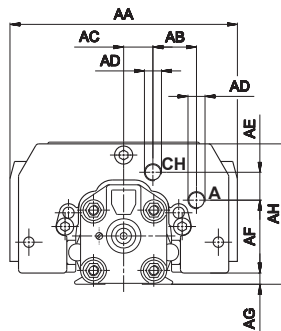
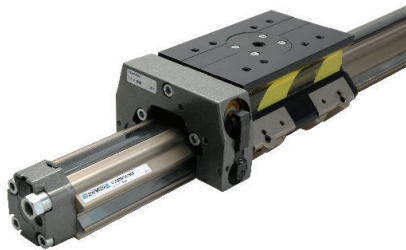


A = Pneumatic release
CH = Additional pneumatic override

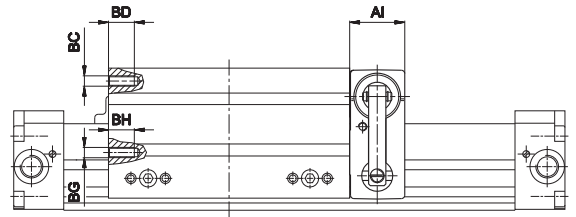


| \varnothing | AA | AB | AC | AD | AE | AF | AG | AH | AI | BC | BD | BG | BH | HA | HB | HC | HD | HI | HL | HM | HR |
|---------------|-----|------|------|------|------|------|------|-------|----|----|----|----|----|------|------|----|------|------|------|----|-------|
| 25 | 120 | 24,5 | 12,5 | M5 | 16,5 | 34,5 | 5 | 71,5 | 32 | M6 | 15 | M6 | 15 | 24,7 | 34,8 | - | 59,5 | - | - | - | - |
| 32 | 132 | 25,3 | 17 | G1/8 | 16,2 | 42,3 | 6,5 | 81,5 | 32 | M6 | 15 | M6 | 15 | 27 | 41,5 | - | 68 | - | - | - | - |
| 40 | 150 | 26 | 17 | G1/8 | 18,2 | 58,3 | 10 | 106 | 40 | M6 | 15 | M6 | 15 | 45,3 | 43,8 | - | 81,5 | - | - | - | - |
| 50 | 164 | 26 | 20 | G1/8 | 19,8 | 72,5 | 12,7 | 125,7 | 51 | M8 | 16 | M6 | 15 | - | - | 12 | - | 36,5 | 22,5 | 96 | M8x14 |

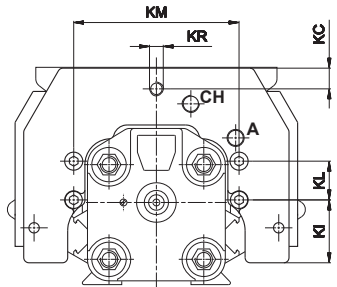
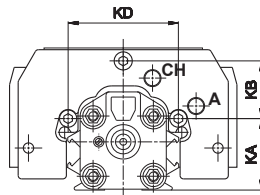
Locking unit for VL1 series $\varnothing 25 \div 50$ mm



> Fixing $\varnothing 25 - 32 - 40$



> Fixing $\varnothing 50$



A = Pneumatic release
CH = Additional pneumatic override

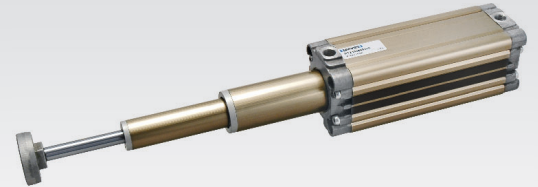
| \varnothing | AA | AB | AC | AD | AE | AF | AG | AH | AI | BC | BD | BE | BF | KA | KB | KC | KD | KI | KL | KM | KR |
|---------------|-----|------|------|------|------|------|------|-------|----|----|----|----|----|------|------|----|------|------|------|----|-------|
| 25 | 120 | 24,5 | 12,5 | M5 | 16,5 | 34,5 | 7,1 | 73,6 | 32 | M6 | 10 | M6 | 10 | 31,5 | 28 | - | 52 | - | - | - | - |
| 32 | 132 | 25,3 | 17 | G1/8 | 16,2 | 42,3 | 6,5 | 81,5 | 32 | M6 | 10 | M6 | 10 | 35 | 33,5 | - | 64 | - | - | - | - |
| 40 | 150 | 26 | 17 | G1/8 | 18,2 | 58,3 | 9 | 105 | 40 | M6 | 15 | M6 | 15 | 45,3 | 43,8 | - | 81,5 | - | - | - | - |
| 50 | 164 | 26 | 20 | G1/8 | 19,8 | 72,5 | 12,7 | 125,7 | 51 | - | - | M6 | 12 | - | - | 12 | - | 36,5 | 22,5 | 96 | M8x14 |

RT

Ø 25 ÷ 63 mm - 2/3 stage Telescopic Pneumatic Cylinders

UNIVER Original design and technology
 Industrialized components and advanced technology
 Reduced dimensions: 60% less than standard cylinders
 Non-rotating standard supplied
 Magnetic version on stage 1 standard supplied (on stage 2 and 3 upon request)
 Slide unit for two-stages version available (J64RT)

Available ATEX version upon request
 II 2Gc IIC T5 II 2Dc T100°C



TECHNICAL CHARACTERISTICS

| | |
|---------------------|----------------------------------------------------------------|
| Ambient temperature | -20 ÷ 80 °C |
| Fluid | filtered air, with or without lubrication |
| Working pressure | 1,5 ÷ 10 bar |
| Bore | 2 stages: Ø 25 - 32 - 40 - 50 - 63 3 stages: Ø 40 - 50 - 63 |

CONSTRUCTIVE CHARACTERISTICS

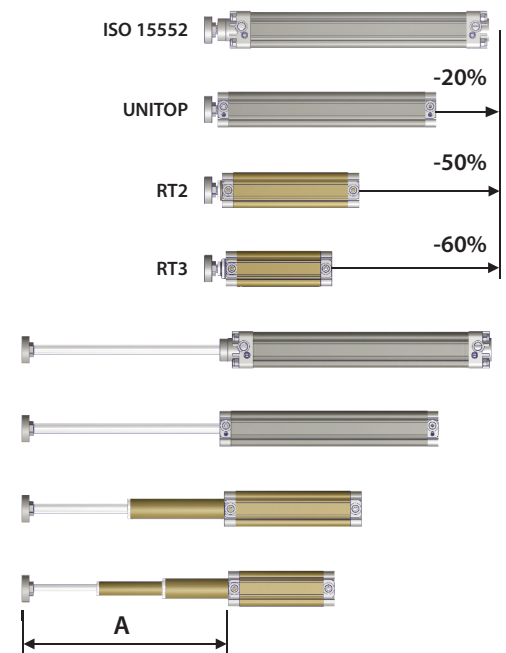
| | |
|---------------------------|------------------------------------------------------------------------------------------------------|
| End-caps | die-cast aluminium |
| Barrel | anodized aluminium |
| Piston | aluminium |
| Guide slide | acetalic resin |
| Piston rod | non-rotating, chromium-plated steel, with flange (female piston rod) stainless steel upon request |
| Piston seal | nitrile rubber |
| Guide bush for piston rod | acetalic resin |
| Shock absorber seals | nitrile rubber |
| Magnet | standard supplied (stage 1) |

CODIFICATION KEY

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|--|--|
| R | T | 2 | 2 | 0 | 0 | 3 | 2 | 0 | 6 | 0 | 0 | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | |

Comparison of overall dimensions

Stroke 300 mm (A)



2
HIGH-TECH

| 1 Series | 2 Rod | 3 Stages | 4 Type |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------|
| RT = Ø 25÷63 mm - 2/3 Stage Telescopic Pneumatic Cylinders (with non-rotating piston rod and elastic shock absorber seals) | 1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod | 2 = 2 stages 3 = 3 stages | 0 = D.A. Female piston rod 3 = D.A. Male piston rod D.A. = Double acting |

| 5 Bore (mm) | 6 Stroke (mm) | 7 Option | 8 Atex option |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 2 stages 025 = Ø25 032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63 3 stages 040 = Ø40 050 = Ø50 063 = Ø63 | 2 stages 0100 - 0120 - 0160 - 0180 - 0200 - 0300 - 0400 - 0500 0600 - 0700 - 0800 - 0900 - 1000 - 1100 - 1200 Max stroke: 0300 (Ø25) 0900 (Ø50) 0400 (Ø32) 1200 (Ø63) 0600 (Ø40) | I = Without flange (only for female piston rod) L = Freely rotating piston rod (without flange) M = With telescopic magnetic shaft (stage 2-3) except for Ø 25, only for female piston rod | X = Atex (upon request) For types and versions, see ATEX catalogue |
| | 3 stages 0150 - 0180 - 0210 - 0240 - 0270 - 0300 - 0360 - 0450 0600 - 0750 - 900 - 1050 - 1200 - 1500 - 1800 Max stroke: 1200 (Ø40) 1500 (Ø50) 1800 (Ø63) | | |

Bore combinations

| Ø | Ø | | |
|----|---------|----------|----------|
| | 1 stage | 2 stages | 3 stages |
| 25 | 25 | 16 | - |
| 32 | 32 | 20 | - |
| 40 | 40 | 25 | 16 |
| 50 | 50 | 32 | 20 |
| 63 | 63 | 40 | 25 |

Stroke tolerances Maximum torque (Nm)
for non-rotating rod

| Ø | Tolerance | | Torque | |
|----|-----------|----------|----------|----------|
| | mm | | Nm | |
| | 2 stages | 3 stages | 2 stages | 3 stages |
| 25 | +2 - 0 | +4 - 0 | 0,5 | - |
| 32 | +3,2 - 0 | +4 - 0 | 0,8 | - |
| 40 | +3,2 - 0 | +4 - 0 | 1 | 0,5 |
| 50 | +3,2 - 0 | +4 - 0 | 2 | 0,8 |
| 63 | +3,2 - 0 | +4 - 0 | 3 | 1 |

2-stage telescopic cylinders

Theoretical forces (N) at a certain working pressure (bar)

| Ø | Surface area | | Working pressure | | | | | | | | | |
|----|-----------------|----------|------------------|-----|-----|------|------|----------|-----|-----|-----|------|
| | mm ² | | bar | | | | | | | | | |
| | Thrust | Traction | Thrust | | | | | Traction | | | | |
| | | | 2 | 4 | 6 | 8 | 10 | 2 | 4 | 6 | 8 | 10 |
| 25 | 201 | 111 | 41 | 82 | 123 | 164 | 205 | 22 | 43 | 65 | 87 | 108 |
| 32 | 314 | 201 | 64 | 128 | 192 | 256 | 320 | 41 | 82 | 123 | 164 | 205 |
| 40 | 490 | 377 | 100 | 200 | 300 | 400 | 500 | 77 | 154 | 231 | 308 | 384 |
| 50 | 804 | 603 | 164 | 328 | 492 | 656 | 820 | 123 | 246 | 369 | 492 | 615 |
| 63 | 1256 | 1055 | 256 | 512 | 769 | 1025 | 1281 | 215 | 430 | 649 | 861 | 1076 |

2

3-stage telescopic cylinders

Theoretical forces (N) at a certain working pressure (bar)

| Ø | Surface area | | Working pressure | | | | | | | | | |
|----|-----------------|----------|------------------|-----|-----|-----|-----|----------|-----|-----|-----|-----|
| | mm ² | | bar | | | | | | | | | |
| | Thrust | Traction | Thrust | | | | | Traction | | | | |
| | | | 2 | 4 | 6 | 8 | 10 | 2 | 4 | 6 | 8 | 10 |
| 40 | 201 | 111 | 41 | 82 | 123 | 164 | 205 | 22 | 43 | 65 | 87 | 108 |
| 50 | 314 | 201 | 64 | 128 | 192 | 256 | 320 | 41 | 82 | 123 | 164 | 205 |
| 63 | 490 | 377 | 100 | 200 | 300 | 400 | 500 | 77 | 154 | 231 | 308 | 384 |

Mass 2-stage cylinder RT220/RT220I/RT220M/RT223

| Ø | Cylinder - stroke 0 | | | | Increase per mm stroke for 1/2 stroke | | | | Moving element - stroke 0 | | | | Increase for mm stroke for 1/2 stroke | | | |
|----|---------------------|--------|--------|-------|---------------------------------------|--------|--------|-------|---------------------------|--------|--------|-------|---------------------------------------|--------|--------|-------|
| | g | | | | g | | | | g | | | | g | | | |
| | RT220 | RT220I | RT220M | RT223 | RT220 | RT220I | RT220M | RT223 | RT220 | RT220I | RT220M | RT223 | RT220 | RT220I | RT220M | RT223 |
| 25 | 232 | 206 | - | 230 | 2,02 | 2,02 | - | 2,02 | 75 | 68 | - | 80 | 1,02 | 1,02 | - | 1,02 |
| 32 | 252 | 228 | 254 | 250 | 3,00 | 3,00 | 3,01 | 3,00 | 125 | 100 | 138 | 130 | 1,38 | 1,38 | 1,39 | 1,38 |
| 40 | 377 | 342 | 379 | 364 | 3,74 | 3,74 | 3,75 | 3,74 | 182 | 143 | 189 | 173 | 1,59 | 1,59 | 1,60 | 1,59 |
| 50 | 597 | 540 | 599 | 585 | 5,20 | 5,20 | 5,21 | 5,20 | 314 | 246 | 318 | 291 | 2,52 | 2,52 | 2,53 | 2,52 |
| 63 | 913 | 819 | 915 | 870 | 6,31 | 6,31 | 6,32 | 6,31 | 480 | 385 | 487 | 430 | 2,70 | 2,70 | 2,71 | 2,70 |

Mass 3-stage cylinder RT230/RT230I/RT230M/RT233

| Ø | Cylinder - stroke 0 | | | | Increase per mm stroke for 1/3 stroke | | | | Moving element - stroke 0 | | | | Increase for mm stroke for 1/3 stroke | | | |
|----|---------------------|--------|--------|-------|---------------------------------------|--------|--------|-------|---------------------------|--------|--------|-------|---------------------------------------|--------|--------|-------|
| | g | | | | g | | | | g | | | | g | | | |
| | RT230 | RT230I | RT230M | RT233 | RT230 | RT230I | RT230M | RT233 | RT230 | RT230I | RT230M | RT233 | RT230 | RT230I | RT230M | RT233 |
| 40 | 367 | 337 | 369 | 362 | 3,88 | 3,88 | 3,90 | 3,88 | 162 | 137 | 191 | 168 | 1,73 | 1,73 | 1,75 | 1,73 |
| 50 | 510 | 486 | 512 | 511 | 5,00 | 5,00 | 5,02 | 5,00 | 265 | 226 | 307 | 257 | 2,32 | 2,32 | 2,34 | 2,32 |
| 63 | 810 | 775 | 812 | 810 | 6,32 | 6,32 | 6,34 | 6,32 | 417 | 349 | 459 | 380 | 2,71 | 2,71 | 2,73 | 2,71 |

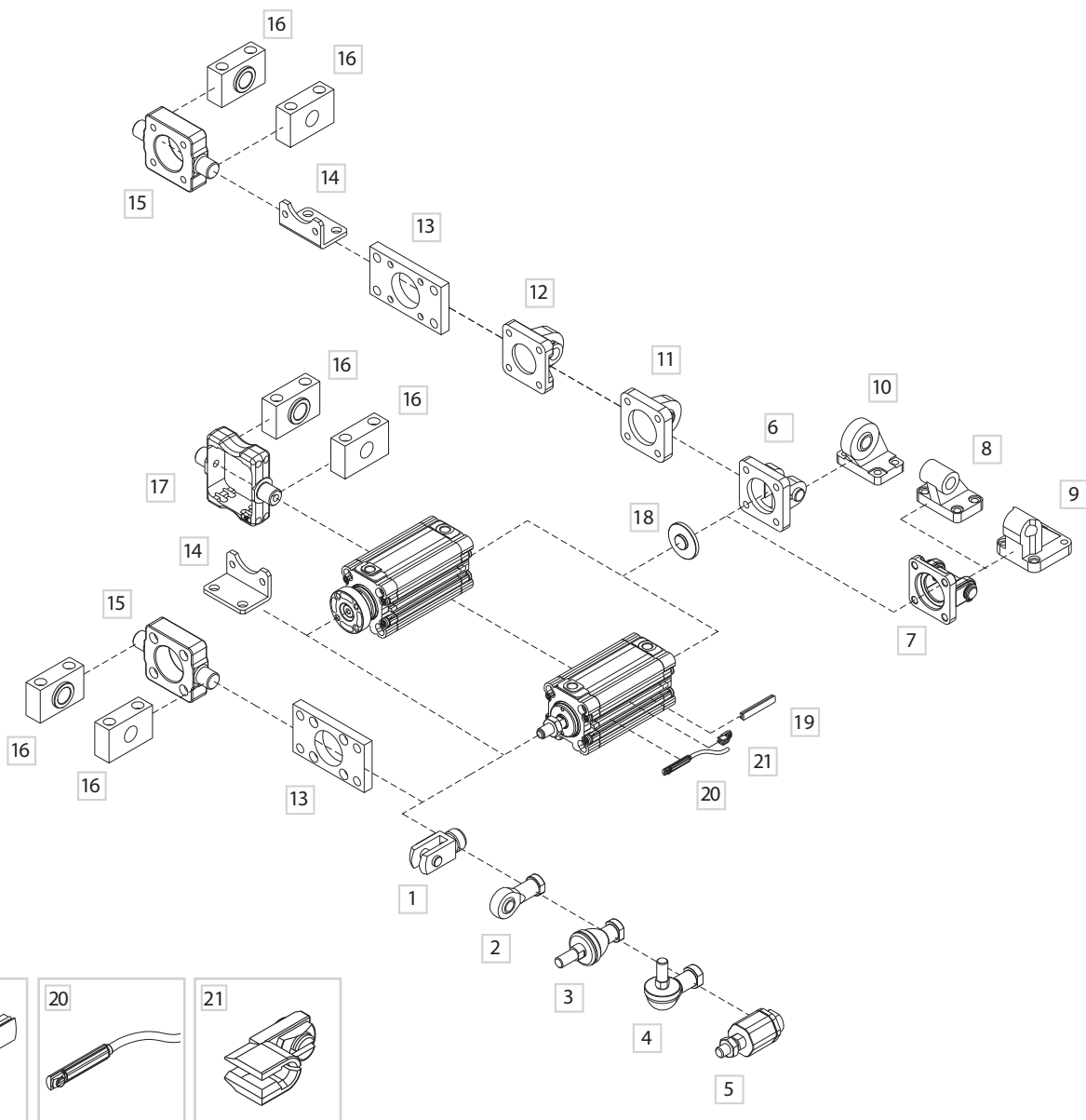
Precautions for use and assembly

The telescopic cylinder works in optimal conditions when the load is axial, i.e. with the cylinder placed vertically, upwards and downwards.

Naturally it can horizontally and cantilevered. However in this case:

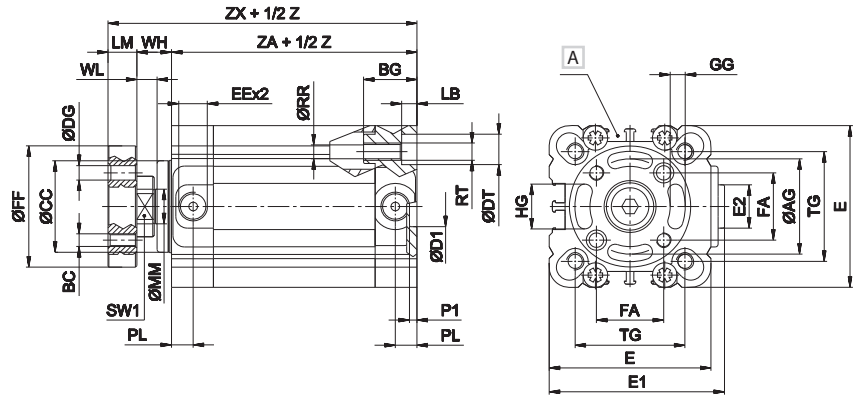
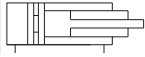
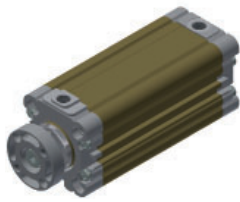
- the maximum strokes have to be reduced by 50% as compared to the maximum rated ones;
- request cylinders with slide units;
- the radial load has to be supported by other systems (carriage, slides, sliding guides);
- max. speed 0,5m/sec is recommended.

Fixing elements and accessories

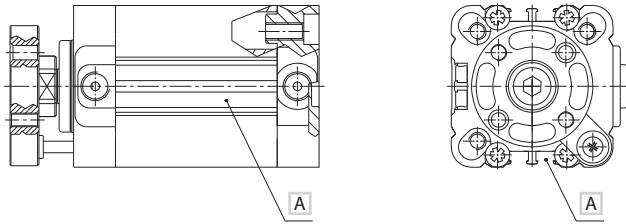
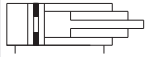


| DESCRIPTION | PART NO. |
|---------------------------------------------|---------------------|
| 1 Female fork with clips | KF-15___ |
| 2 Articulated self-lubricating fork | KF-17___ |
| 3 Fork with axially mounted articulated pin | KF-22___ |
| 4 Fork with angle-mounted articulated pin | KF-23___ |
| 5 Floating joint | KF-24___ |
| 6 Female hinge with pin | KF-10___ A |
| 7 Narrow female hinge with pin | KF-10___ AS |
| 8 Counter hinge 90° (AB7) | KF-19___ CTA |
| 9 Counter hinge 90° | KF-19___ |
| 10 Articulated counter hinge | KF-19___ SC |
| 11 Male hinge with articulated head | KF-11___ S |
| 12 Rear male hinge | KF-11___/RPF-11___ |
| 13 Front/rear flange | KF-12___/RTF-12___ |
| 14 Angle bracket | KF-13___/RTF-13___ |
| 15 Front/rear hinge with floating pin | KF-14___ AP |
| 16 Hinge support | KF-41___ |
| 17 ISO intermediate hinge | KDF-14___/RPF-14___ |
| 18 Centering adaptor ring | RSF-09___ |
| 19 DHF covering strip | DHF-0020100 |
| 20 DF sensor | DF-___ |
| 21 Cable clamping for DF sensor | DF-001 |

2 stages with flange RT220...

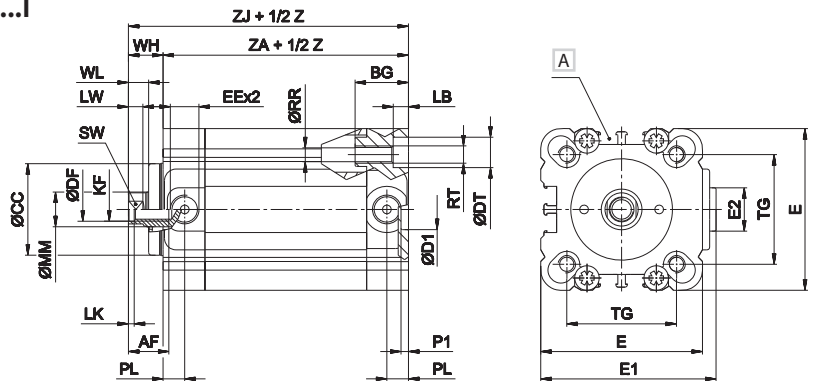
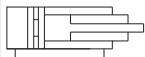
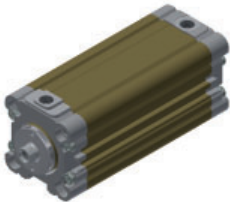


2 stages with flange, magnetic version RT220...M

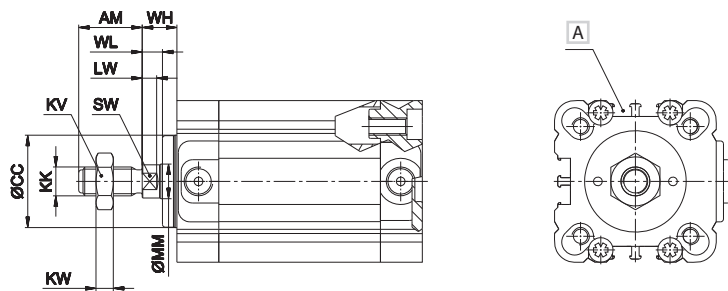
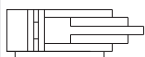
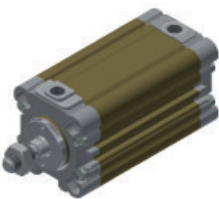


A = the magnetic sensor DF... may only be placed near the telescopic magnet holder stem (as shown in the drawing)

2 stages, female piston rod RT220...



2 stages, male piston rod RT223...



A Groove for sensor

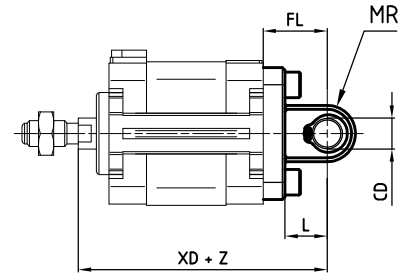
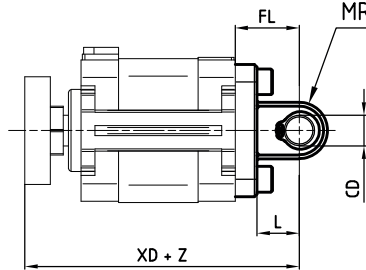
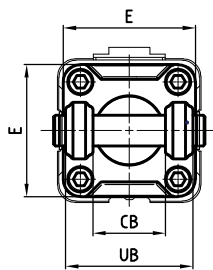
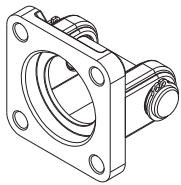
Z = Stroke

| Ø | AF | AG | AM | BC | BG | CC | DF | DG | DT | D1 H11 | E | E1 | E2 | EE | FA | FF | GG | HG | KF | KK |
|----|----|----|-----|----|----|-----|------|-----|-----|-----------|----|------|-----|------|------|----|-----|----|-----|----------|
| 25 | 10 | 22 | 22 | M5 | 16 | 22 | 6,1 | 5 | 8 | 2 | 37 | 39 | 18 | M5 | 15,6 | 30 | 5 | 9 | M6 | M10x1,25 |
| 32 | 12 | 28 | 22 | M5 | 18 | 26 | 8,2 | 5 | 9 | 14 | 46 | 50,5 | 16 | G1/8 | 19,8 | 37 | 5,2 | 11 | M8 | M10x1,25 |
| 40 | 12 | 33 | 22 | M5 | 18 | 32 | 8,2 | 5 | 9 | 14 | 56 | 60,5 | 16 | G1/8 | 23,3 | 42 | 5,2 | 15 | M8 | M10x1,25 |
| 50 | 16 | 42 | 24 | M6 | 24 | 40 | 10,2 | 6 | 11 | 18 | 66 | 70,5 | 16 | G1/8 | 29,7 | 52 | 6,2 | 19 | M10 | M12x1,25 |
| 63 | 16 | 50 | 24 | M6 | 24 | 48 | 10,2 | 6 | 11 | 18 | 79 | 83,5 | 38 | G1/8 | 35,4 | 64 | 6,2 | 25 | M10 | M12x1,25 |
| Ø | KV | KW | LB | LK | LM | LW | MM | PL | P1 | RR | RT | SW | SW1 | TG | WH | WL | ZA | ZJ | ZX | |
| 25 | 17 | 3 | 4,5 | 1 | 8 | 4,5 | 10 | 8 | 8 | 4,2 | M5 | 8 | - | 26 | 17 | 7 | 48 | 65 | 73 | |
| 32 | 17 | 4 | 5,3 | 2 | 10 | 5 | 12 | 7,5 | 2,5 | 5,2 | M6 | 10 | 17 | 32,5 | 13 | 7 | 58 | 71 | 81 | |
| 40 | 17 | 4 | 5,3 | 2 | 10 | 5 | 12 | 7,5 | 2,5 | 5,2 | M6 | 10 | 19 | 38 | 12 | 7 | 60 | 72 | 82 | |
| 50 | 19 | 5 | 6,5 | 2 | 12 | 6 | 16 | 7,5 | 2,5 | 6,6 | M8 | 13 | 24 | 46,5 | 15 | 8 | 61 | 76 | 88 | |
| 63 | 19 | 5 | 6,5 | 2 | 12 | 6 | 16 | 7,5 | 2,5 | 6,6 | M8 | 13 | 24 | 56,5 | 15 | 8 | 65 | 80 | 92 | |

Female hinge with pin (ISO MP2)

> Standard version (with flange)

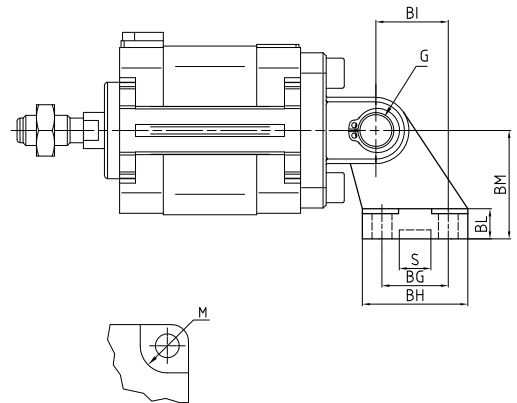
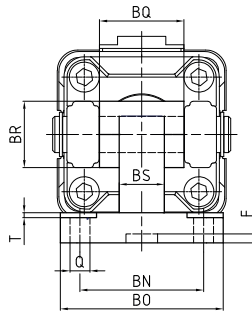
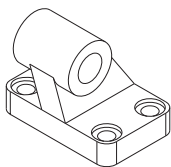
> Male piston rod version



Material: Aluminium Z = Stroke

| Ø | CB | CD | E | FL | L | MR | UB | XD (standard version) | | XD (male piston rod version) | | Mass g | Part no. |
|----|-----|----|----|-------|-----|-----|-----|-----------------------|-------|------------------------------|-------|--------|-----------|
| | H14 | H9 | | ± 0,2 | min | Max | H14 | | | | | | |
| 25 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 26 | 10 | 48 | 22 | 12 | 11 | 45 | 103 | ±1,25 | 93 | ±1,25 | 75 | KF-10032A |
| 40 | 28 | 12 | 54 | 25 | 15 | 13 | 52 | 107 | ±1,25 | 97 | ±1,25 | 110 | KF-10040A |
| 50 | 32 | 12 | 65 | 27 | 15 | 13 | 60 | 115 | ±1,25 | 103 | ±1,25 | 150 | KF-10050A |
| 63 | 40 | 16 | 75 | 32 | 20 | 17 | 70 | 124 | ±1,6 | 112 | ±1,6 | 270 | KF-10063A |

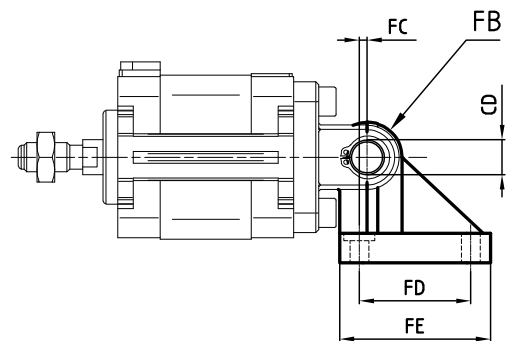
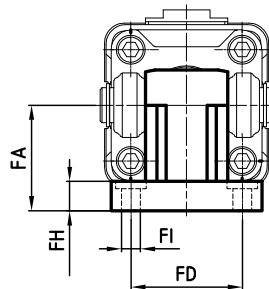
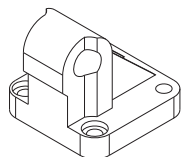
Counter hinge 90° (AB7)



Material: Aluminium

| Ø | Q | M | BG | BH | BI | BL | BM | BN | BO | BS | BR | T | G | S | F | BQ | Mass g | Part no. |
|----|-----|-----|-------|-----|-------|-------|-------|-----|-----|-----|-----|-----|------------------------------|------------------------------|---|----|--------|-------------|
| | H13 | H13 | JS 14 | Max | JS 14 | JS 15 | JS 14 | Max | Max | Max | Max | H9 | ^{+0,5} ₀ | ^{+0,5} ₀ | | | | |
| 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 6,6 | 11 | 18 | 31 | 21 | 8 | 32 | 38 | 51 | 10 | 20 | 1,6 | 10 | 10,5 | 3 | 26 | 56 | KF-19032CTA |
| 40 | 6,6 | 11 | 22 | 35 | 24 | 10 | 36 | 41 | 54 | 15 | 22 | 1,6 | 12 | 10,5 | 3 | 28 | 139 | KF-19040CTA |
| 50 | 9 | 15 | 30 | 45 | 33 | 12 | 45 | 50 | 65 | 16 | 26 | 1,6 | 12 | 10,5 | 3 | 32 | 142 | KF-19050CTA |
| 63 | 9 | 15 | 35 | 50 | 37 | 14 | 50 | 52 | 67 | 16 | 30 | 1,6 | 16 | 10,5 | 3 | 40 | 200 | KF-19063CTA |

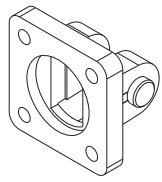
Counter hinge 90°



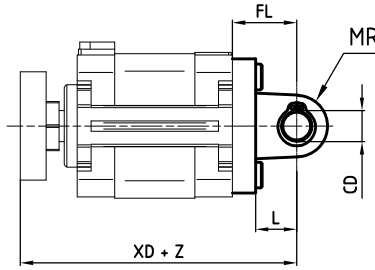
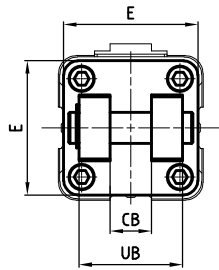
Material: Aluminium

| Ø | CD | FA | FB | FC | FD | FE | FH | FI | Mass g | Part no. |
|----|----|----|----|-----|------|------|------|-----|--------|----------|
| | H9 | | | | | | | | | |
| 25 | - | - | - | - | - | - | - | - | - | - |
| 32 | 10 | 32 | 10 | 1,2 | 32,5 | 46,5 | 9 | 6,5 | 90 | KF-19032 |
| 40 | 12 | 36 | 12 | 2,6 | 38 | 51,5 | 9 | 6,5 | 120 | KF-19040 |
| 50 | 12 | 45 | 12 | 0,3 | 46,5 | 63,5 | 9 | 8,5 | 200 | KF-19050 |
| 63 | 16 | 50 | 16 | 3,3 | 56,5 | 73 | 10,5 | 8,5 | 320 | KF-19063 |

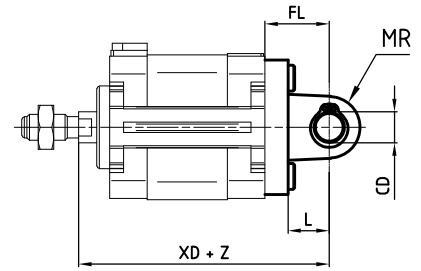
Narrow female hinge with pin (DIN 648K)



> Standard version (with flange)



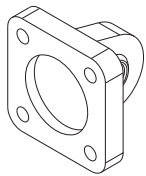
> Male piston rod version



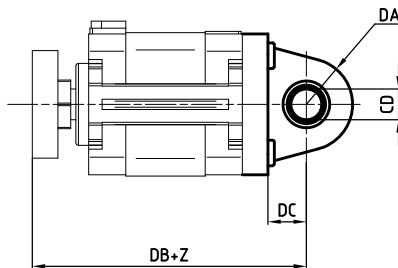
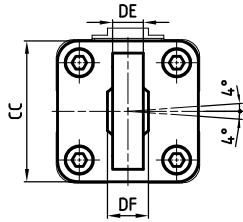
Material: Aluminium Z = Stroke

| Ø | CB H14 | CD H9 | E | FL ± 0,2 | L min | MR Max | UB H14 | XD (standard version) | XD (male piston rod version) | Mass g | Part no. | | |
|----|-----------|----------|----|-------------|----------|-----------|-----------|-----------------------|------------------------------|-----------|----------|-----|------------|
| 25 | - | - | - | - | - | - | - | - | - | - | - | | |
| 32 | 14 | 10 | 45 | 22 | 13 | 10 | 34 | 103 | ±1,25 | 93 | ±1,25 | 68 | KF-10032AS |
| 40 | 16 | 12 | 52 | 25 | 16 | 12 | 40 | 107 | ±1,25 | 97 | ±1,25 | 112 | KF-10040AS |
| 50 | 21 | 16 | 65 | 27 | 16 | 14 | 45 | 115 | ±1,25 | 113 | ±1,25 | 196 | KF-10050AS |
| 63 | 21 | 16 | 75 | 32 | 21 | 18 | 51 | 124 | ±1,6 | 112 | ±1,6 | 288 | KF-10063AS |

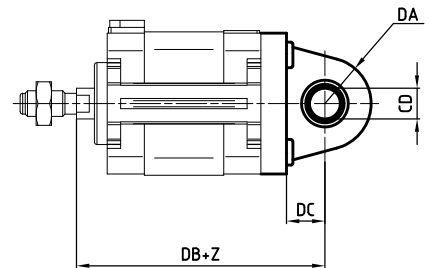
Articulated male rear hinge (ISO MP6)



> Standard version (with flange)



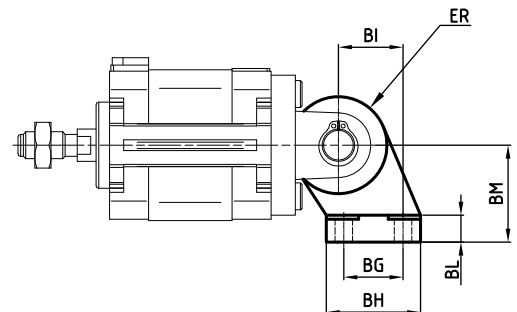
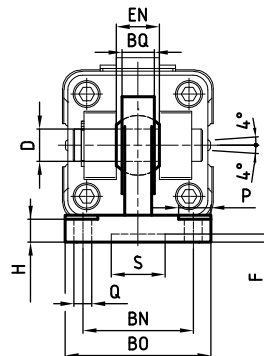
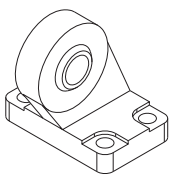
> Male piston rod version



Material: Aluminium Z = Stroke

| Ø | CC | CD H9 | DA | DB (standard version) | DB (male piston rod version) | DC | DE | DF | Mass g | Part no. |
|----|----|----------|----|-----------------------|------------------------------|------|------|----|-----------|-----------|
| 25 | - | - | - | - | - | - | - | - | - | - |
| 32 | 48 | 10 | 15 | 115 | 95 | 14 | 10,5 | 14 | 100 | KF-11032S |
| 40 | 54 | 12 | 18 | 118,5 | 98,5 | 16,5 | 12 | 16 | 200 | KF-11040S |
| 50 | 65 | 12 | 20 | 129 | 105,5 | 17,5 | 12 | 16 | 300 | KF-11050S |
| 63 | 75 | 16 | 21 | 137,5 | 113,5 | 21,5 | 15 | 21 | 350 | KF-11063S |

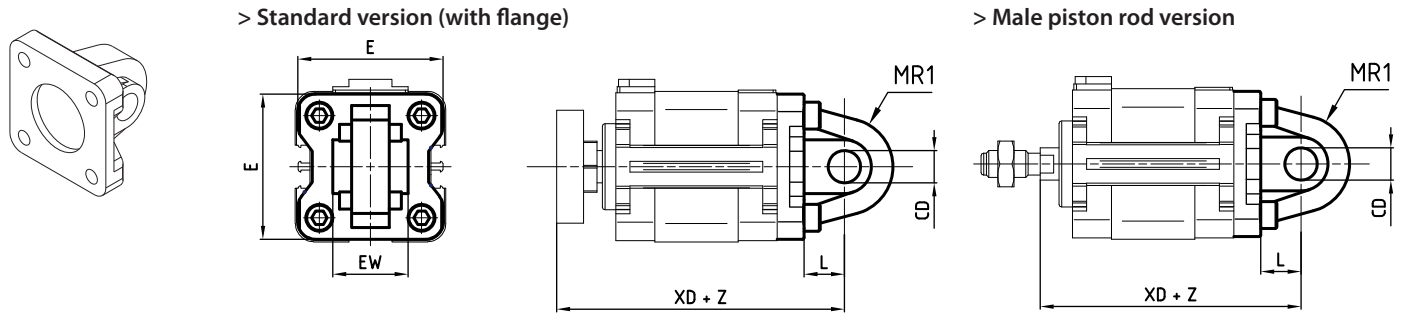
Articulated counter hinge (DIN 648K)



Material: Zinc-plated steel

| Ø | Q H13 | P H13 | BG JS14 | BH Max | BI JS15 | BL | BM JS15 | BN JS14 | BO Max | EN -0,1 | ER Max | BQ Max | D H7 | H +0,5 | S H13 | F | Mass g | Part no. |
|----|----------|----------|------------|-----------|------------|----|------------|------------|-----------|------------|-----------|-----------|---------|-----------|----------|---|-----------|------------|
| 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 6,6 | 11 | 18 | 31 | 21 | 10 | 32 | 38 | 51 | 14 | 15 | 10,5 | 10 | 8,5 | 20 | 3 | 178 | KF-19032SC |
| 40 | 6,6 | 11 | 22 | 35 | 24 | 10 | 36 | 41 | 54 | 16 | 18 | 12 | 12 | 8,5 | 20 | 3 | 268 | KF-19040SC |
| 50 | 9 | 15 | 30 | 45 | 33 | 12 | 45 | 50 | 65 | 21 | 20 | 15 | 16 | 10,5 | 20 | 3 | 458 | KF-19050SC |
| 63 | 9 | 15 | 35 | 50 | 37 | 12 | 50 | 52 | 67 | 21 | 23 | 15 | 16 | 10,5 | 20 | 3 | 550 | KF-19063SC |

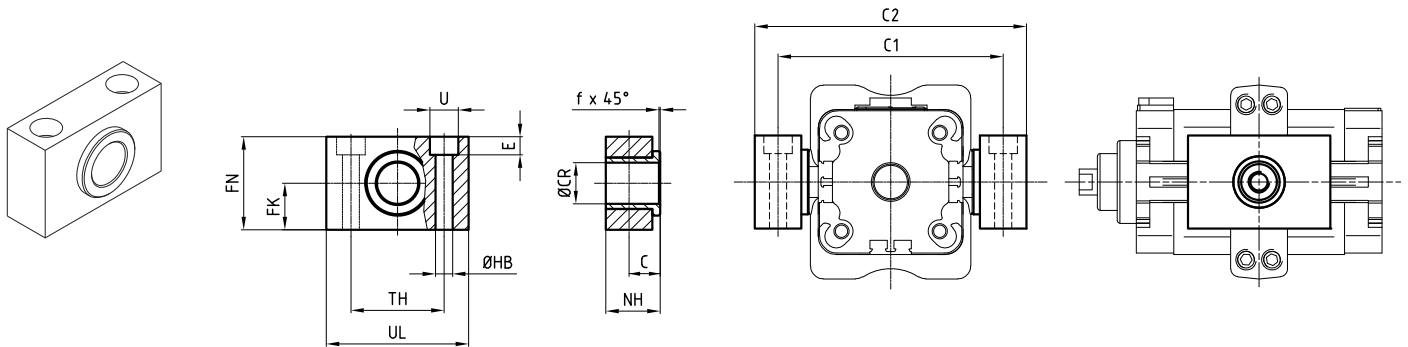
Rear male hinge (ISO MP4)



Material: Aluminium Z = Stroke

| Ø | CD H9 | E | EW | L min | MR1 Max | XD (standard version) | XD (male piston rod version) | Mass g | Part no. |
|----|----------|----|--------------|----------|------------|-----------------------|------------------------------|-----------|-----------|
| 25 | 8 | 38 | 16 -0,2/-0,6 | 14 | 8 | 85 ±1,25 | 75 ±1,25 | 43 | RPF-11025 |
| 32 | 10 | 48 | 26 -0,2/-0,6 | 12 | 15 | 113 ±1,25 | 103 ±1,25 | 80 | KF-11032 |
| 40 | 12 | 54 | 28 -0,2/-0,6 | 15 | 18 | 117 ±1,25 | 107 ±1,25 | 100 | KF-11040 |
| 50 | 12 | 65 | 32 -0,2/-0,6 | 15 | 20 | 127 ±1,25 | 125 ±1,25 | 170 | KF-11050 |
| 63 | 16 | 75 | 40 -0,2/-0,6 | 20 | 23 | 136 ±1,6 | 124 ±1,6 | 250 | KF-11063 |

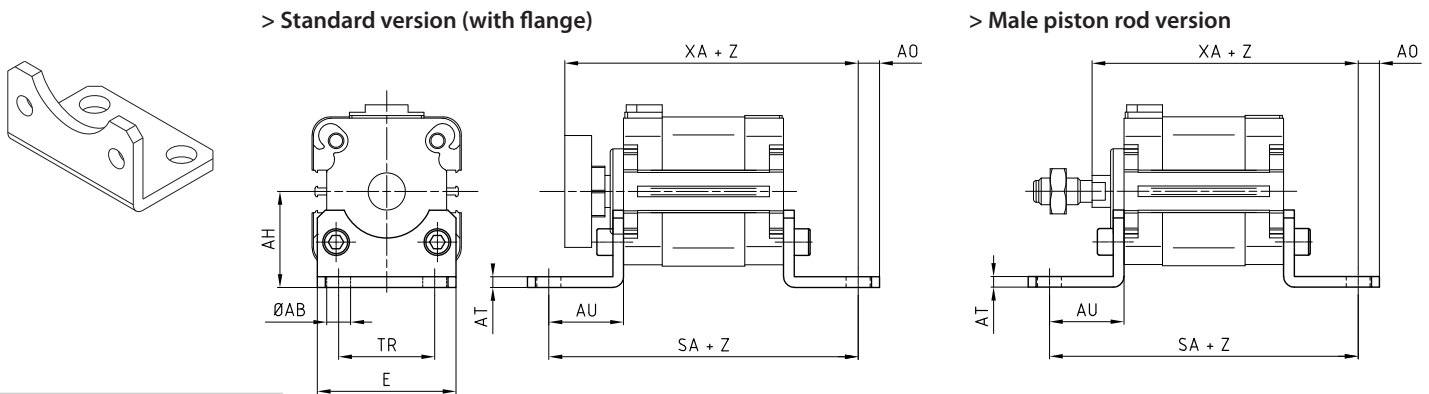
Hinge support



Material: Anodized aluminium and brass bushing

| Ø | C | CR F7 | FK ±0,1 | FN | HB | NH | TH ±0,1 | UL | U | E ±0,5 | f | C1 | C2 | Mass g | Part no. |
|----|------|----------|------------|----|-----|----|------------|----|----|-----------|-----|-----|-----|-----------|-------------|
| 25 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 10,2 | 12 | 15 | 30 | 6,6 | 18 | 32 | 46 | 11 | 7 | 1 | 71 | 86 | 110 | KF-41032 |
| 40 | 12 | 16 | 18 | 36 | 9 | 21 | 36 | 55 | 15 | 9 | 1,6 | 87 | 105 | 200 | KF-41040050 |
| 50 | 12 | 16 | 18 | 36 | 9 | 21 | 36 | 55 | 15 | 9 | 1,6 | 99 | 117 | 200 | KF-41040050 |
| 63 | 13 | 20 | 20 | 40 | 11 | 23 | 42 | 65 | 18 | 11 | 1,6 | 116 | 136 | 267 | KF-41063080 |

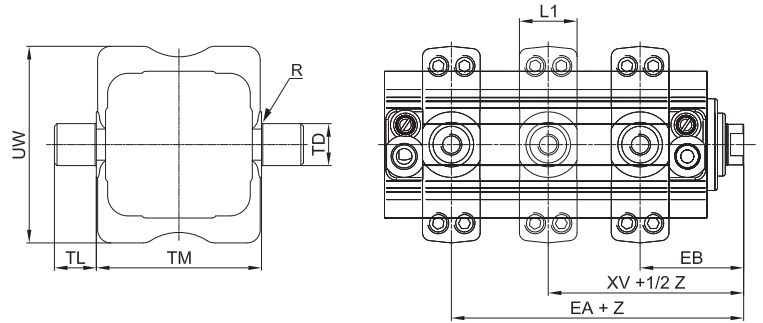
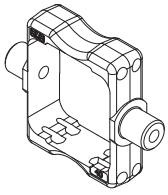
Angle bracket



Material: Zinc-plated steel Z = Stroke

| Ø | Ø AB Ø H13 | AH JS15 | AO | AT | AU ±0,2 | E Max | SA | TR | XA | Mass g | Part no. |
|----|---------------|------------|----|----|------------|----------|-----|----|-----|-----------|-----------|
| 25 | 6,6 | 30 | 6 | 4 | 16 | 40 | 80 | 26 | 89 | 40 | RTF-13025 |
| 32 | 7 | 32 | 11 | 4 | 24 | 50 | 106 | 32 | 105 | 70 | KF-13032 |
| 40 | 9 | 36 | 15 | 4 | 28 | 58 | 116 | 36 | 110 | 100 | KF-13040 |
| 50 | 9 | 45 | 15 | 5 | 32 | 70 | 125 | 45 | 120 | 150 | RTF-13050 |
| 63 | 9 | 50 | 15 | 5 | 32 | 85 | 129 | 50 | 124 | 250 | RTF-13063 |

ISO intermediate hinge



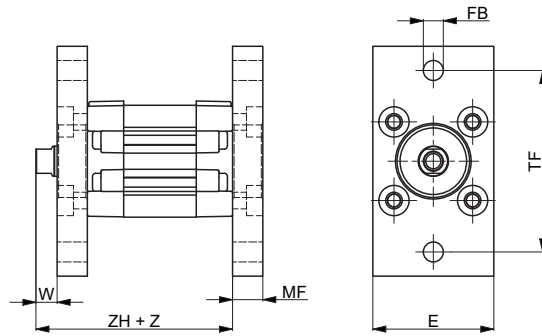
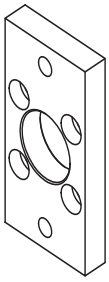
Material: Zinc-plated steel

Z = Stroke

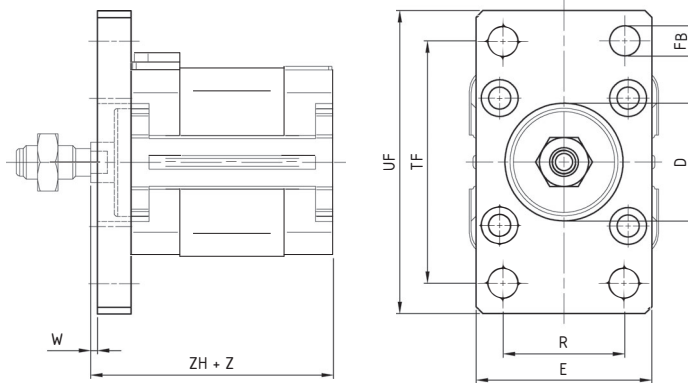
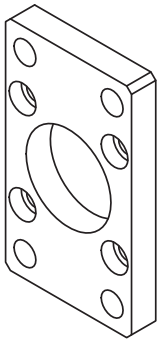
| Ø | EA Max | EB min | L1 Max | R Max | TD e9 | TL h14 | TM h14 | UW Max | XV | Mass g | Part No. |
|----|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|------|-----------|-----------|
| 25 | - | - | - | - | - | - | - | - | - | - | - |
| 32 | 24 | 34 | 22 | 0,5 | 12 | 12 | 50 | 65 | 29 | 130 | KDF-14032 |
| 40 | 25 | 34 | 22 | 0,5 | 16 | 16 | 63 | 75 | 29,5 | 240 | RPF-14040 |
| 50 | 26 | 35 | 22 | 1 | 16 | 16 | 75 | 95 | 30,5 | 320 | RPF-14050 |
| 63 | 27 | 38 | 28 | 1 | 20 | 20 | 90 | 105 | 32,5 | 470 | RPF-14063 |

Front/rear flange

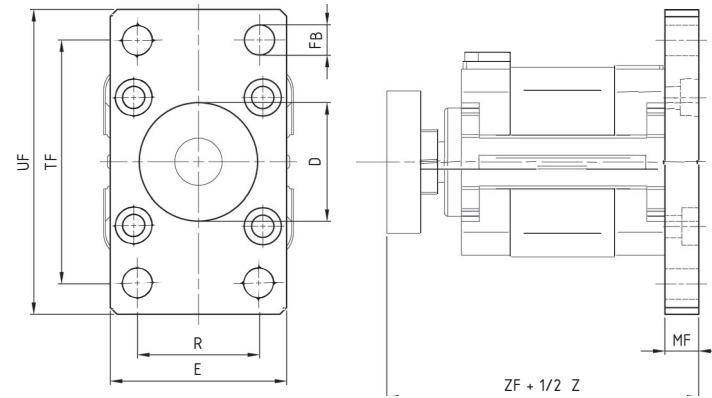
> Front/rear assembly Ø25 mm



> Front assembly Ø32 ÷ 63 mm



> Rear assembly Ø32 ÷ 63 mm

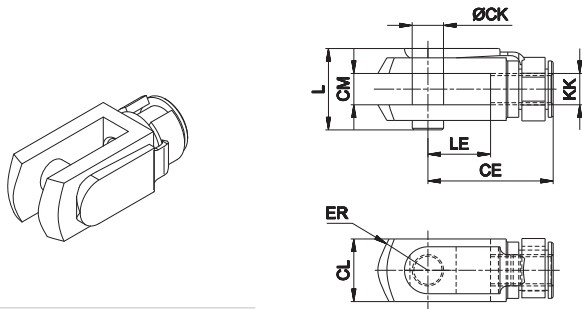


Material: Zinc-plated steel

Z = Stroke

| Ø | ØD H11 | E | ØFB H13 | MF | R JS14 | TF JS14 | UF | W | ZF | ZH | Mass g | Part No. |
|----|-----------|----|------------|----|-----------|------------|-----|---|-----|----|-----------|-----------|
| 25 | 24 | 40 | 6,6 | 10 | - | 60 | 76 | 7 | 83 | 58 | 180 | RTF-12025 |
| 32 | 30 | 45 | 7 | 10 | 32 | 64 | 80 | 3 | 91 | 68 | 200 | KF-12032 |
| 40 | 35 | 52 | 9 | 10 | 36 | 72 | 90 | 2 | 92 | 70 | 250 | KF-12040 |
| 50 | 44 | 65 | 9 | 12 | 45 | 90 | 110 | 3 | 100 | 73 | 500 | RTF-12050 |
| 63 | 52 | 75 | 9 | 12 | 50 | 100 | 120 | 3 | 104 | 77 | 650 | RTF-12063 |

Female fork with clips

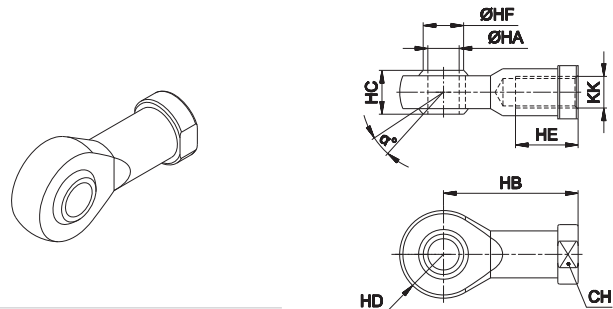


Material: Zinc-plated steel

| Cylinder Ø | CE | CK | CL | CM | ER | KK | L | LE | Mass g | Part no. |
|------------|----|----|----|----|----|----------|----|----|--------|----------|
| 25-32-40 | 40 | 10 | 20 | 10 | 16 | M10x1,25 | 26 | 20 | 90 | KF-15032 |
| 50-63 | 48 | 12 | 24 | 12 | 19 | M12x1,25 | 32 | 24 | 150 | KF-15040 |

Fork with pin suitable for piston rod according to ISO 8140 standard

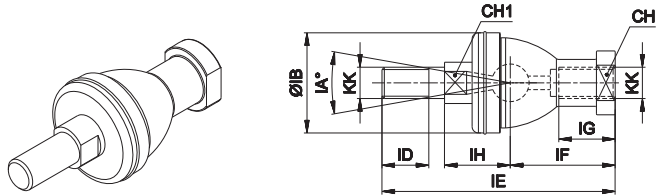
Articulated self-lubricating fork



Material: Zinc-plated steel

| Cylinder Ø | α° | CH | KK | HA | HB | HC | HD | HE | HF | Mass g | Part no. |
|------------|----|----|----------|----|----|----|----|----|------|--------|----------|
| 25-32-40 | 13 | 17 | M10x1,25 | 10 | 43 | 14 | 14 | 20 | 12,9 | 76 | KF-17032 |
| 50-63 | 13 | 19 | M12x1,25 | 12 | 50 | 16 | 16 | 22 | 15,4 | 110 | KF-17040 |

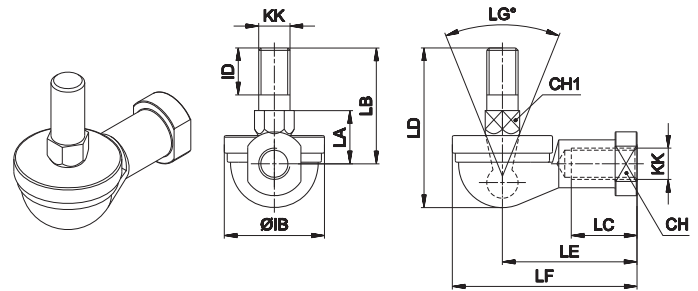
Fork with axially mounted articulated pin



Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | IA° | KK | IH | IB | ID | IE | IF | IG | Mass g | Part no. |
|------------|----|-----|-----|----------|-----------|----|----|------|----|----|--------|----------|
| 25-32-40 | 17 | 11 | 30 | M10x1,25 | 19,5 ±0,3 | 32 | 15 | 74,5 | 35 | 18 | 120 | KF-22025 |
| 50-63 | 19 | 17 | 30 | M12x1,25 | 22 | 36 | 17 | 84 | 40 | 20 | 185 | KF-22040 |

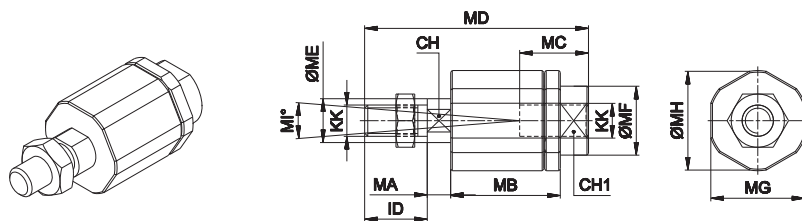
Fork with angle mounted articulated pin



Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | LG° | KK | IB | ID | LA | LB | LC | LD | LE | LF | Mass g | Part no. |
|------------|----|-----|-----|----------|----|----|----|----|----|------|----|----|--------|----------|
| 25-32-40 | 17 | 11 | 50 | M10x1,25 | 32 | 15 | 17 | 37 | 21 | 50,5 | 43 | 57 | 110 | KF-23025 |
| 50-63 | 19 | 17 | 50 | M12x1,25 | 36 | 17 | 19 | 42 | 27 | 57,5 | 50 | 66 | 165 | KF-23040 |

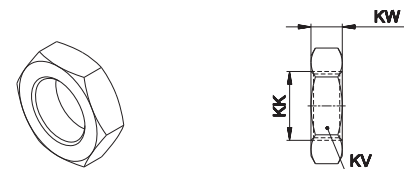
Floating joint



Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | ID | KK | MA | MB | MC | MD | ME | MF | MG | MH | MIP° | Mass g | Part no. |
|------------|----|-----|----|----------|----|----|----|----|----|----|----|----|------|--------|----------|
| 25-32-40 | 12 | 19 | 71 | M10x1,25 | 5 | 35 | 20 | 71 | 14 | 22 | 30 | 32 | 8 | 220 | KF-24032 |
| 50-63 | 12 | 19 | 75 | M12x1,25 | 5 | 35 | 20 | 75 | 14 | 22 | 30 | 32 | 8 | 230 | KF-24040 |

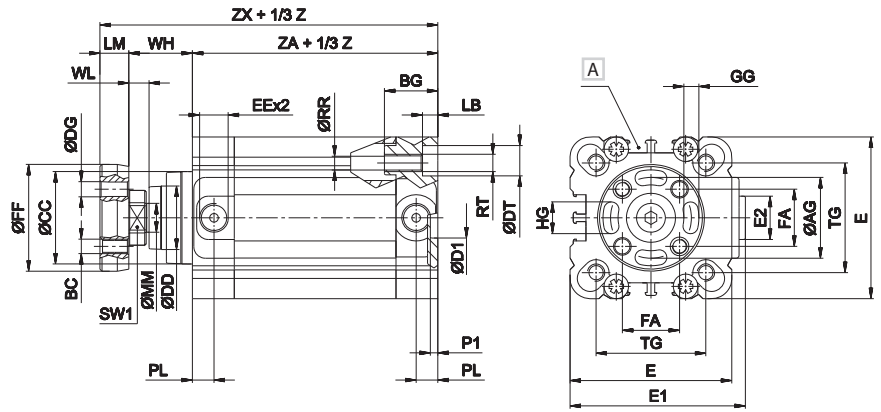
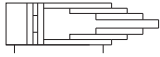
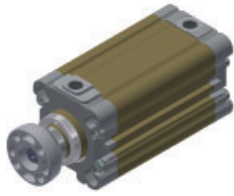
Piston rod locknut (zinc-plated steel)



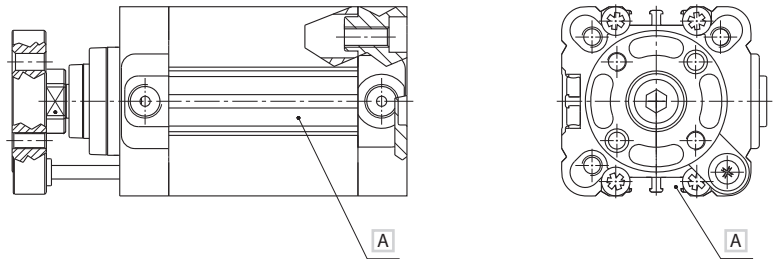
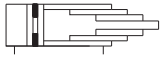
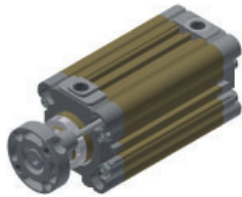
Material: Zinc-plated steel

| Cylinder Ø | KK | KV | KW | Mass g | Part no. |
|------------|----------|----|----|--------|----------|
| 25-32-40 | M10x1,25 | 17 | 6 | 5 | KF-16032 |
| 50-63 | M12x1,25 | 19 | 7 | 10 | KF-16040 |

3 stages with flange RT230...

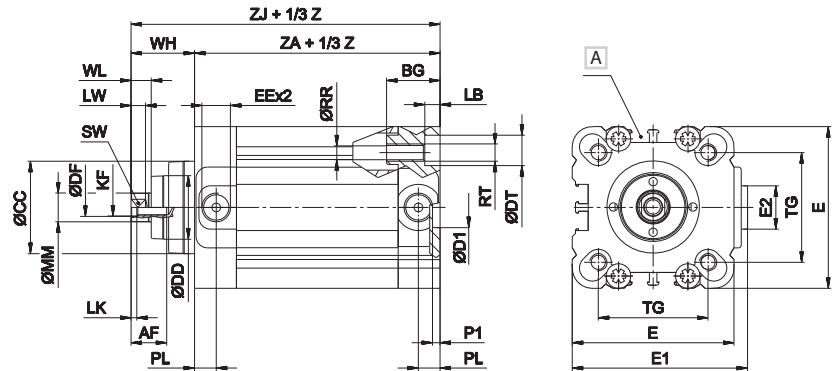
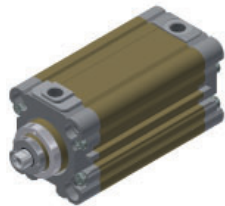


3 stages, magnetic version RT230...M

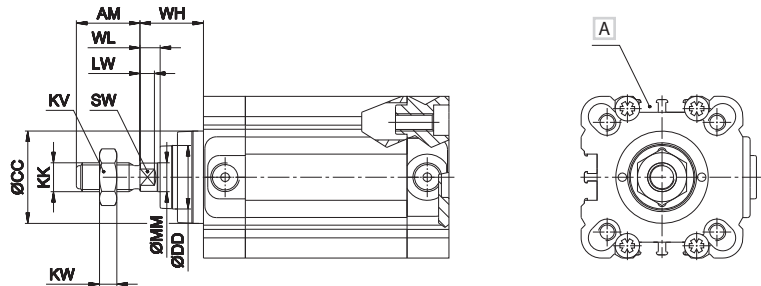
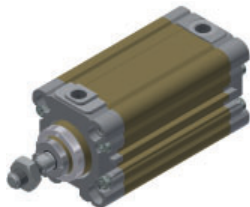


A = the magnetic sensor DF... may only be placed near the telescopic magnet holder stem (as shown in the drawing).

3 stages, female piston rod RT230...I



3 stages, male piston rod RT233...



A Groove for sensor

Z = Stroke

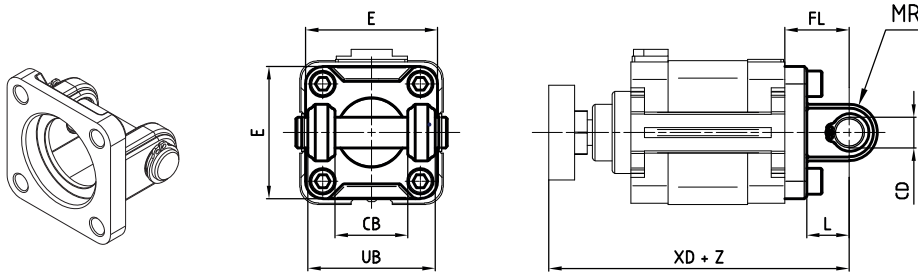
| Ø | AF | AG | AM | BC | BG | CC | DF | DG | DT | D1 | E | E1 | E2 | EE | FA | FF | GG | HG | KF | KK | KV | KW | LB | LK | LM |
|----|----|----|----|----|----|----|------|----|----|----|----|------|----|------|------|----|-----|----|----|----------|----|----|-----|----|----|
| 40 | 12 | 33 | 22 | M5 | 18 | 32 | 8,2 | 5 | 9 | 14 | 56 | 60,5 | 16 | G1/8 | 19,8 | 37 | 5,2 | 15 | M6 | M10x1,25 | 17 | 4 | 5,3 | 2 | 10 |
| 50 | 16 | 42 | 24 | M5 | 24 | 40 | 10,2 | 5 | 11 | 18 | 66 | 70,5 | 16 | G1/8 | 19,8 | 37 | 6,2 | 19 | M8 | M10x1,25 | 19 | 5 | 6,5 | 2 | 10 |
| 63 | 16 | 50 | 24 | M5 | 24 | 48 | 10,2 | 5 | 11 | 18 | 79 | 83,5 | 38 | G1/8 | 23,3 | 42 | 6,2 | 25 | M8 | M10x1,25 | 19 | 5 | 6,5 | 2 | 10 |

Dimensional variations for RT230...M series

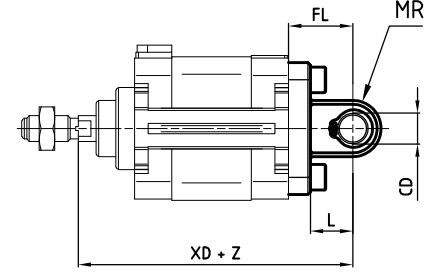
| Ø | LW | MM | PL | P1 | RR | RT | SW | SW1 | TG | WH | WL | ZA | ZJ | ZX | Ø | AG | BC | DG | FA | FF | GG | HG | LM | SW2 | ZX |
|----|----|----|-----|-----|-----|----|----|-----|------|----|----|----|----|-----|----|----|----|----|------|----|-----|----|----|-----|-----|
| 40 | 5 | 10 | 7,5 | 2,5 | 5,2 | M6 | 10 | 17 | 38 | 22 | 7 | 60 | 82 | 92 | 40 | 33 | M5 | 5 | 23,3 | 42 | 5,2 | 15 | 10 | 19 | 92 |
| 50 | 6 | 12 | 7,5 | 2,5 | 6,6 | M8 | 13 | 17 | 46,5 | 24 | 7 | 61 | 85 | 95 | 50 | 42 | M6 | 6 | 29,7 | 52 | 6,2 | 19 | 12 | 24 | 97 |
| 63 | 6 | 12 | 7,5 | 2,5 | 6,6 | M8 | 13 | 19 | 56,5 | 25 | 7 | 65 | 90 | 100 | 63 | 50 | M6 | 6 | 35,4 | 64 | 6,2 | 25 | 12 | 24 | 102 |

Female hinge with pin (ISO MP2)

> Standard version (with flange)



> Male piston rod version

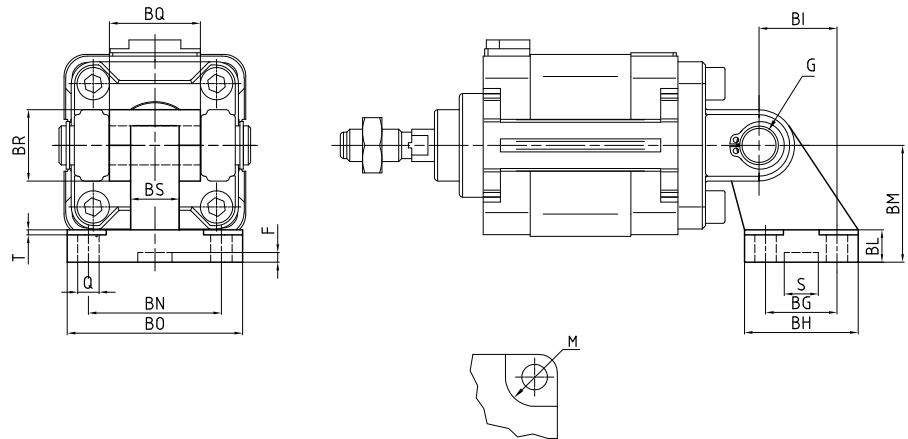
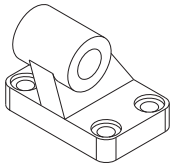


Material: Aluminium

Z = Stroke

| Ø | CB | CD | E | FL | L | MR | UB | XD | | Mass | Part no. |
|----|-----|----|----|--------------------|----|----|----|---------------------------|-------|------|-----------|
| | H14 | H9 | | (standard version) | | | | (male piston rod version) | g | | |
| 40 | 28 | 12 | 54 | ± 0,2 | 15 | 13 | 52 | 107 | ±1,25 | 110 | KF-10040A |
| 50 | 32 | 12 | 65 | 27 | 15 | 13 | 60 | 115 | ±1,25 | 150 | KF-10050A |
| 63 | 40 | 16 | 75 | 32 | 20 | 17 | 70 | 124 | ±1,6 | 270 | KF-10063A |

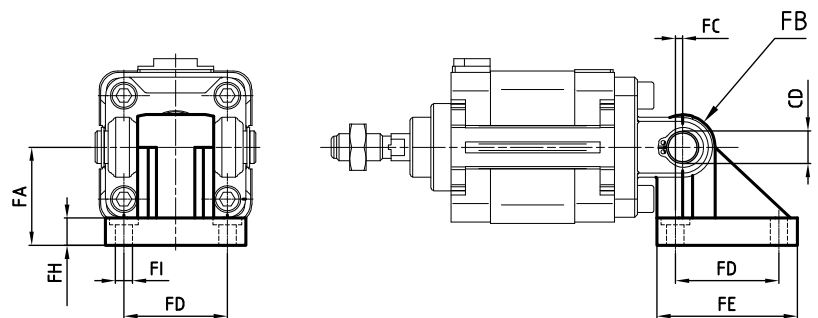
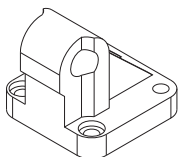
Counter hinge 90° (AB7)



Material: Aluminium

| Ø | Q | M | BG | BH | BI | BL | BM | BN | BO | BS | BR | T | G | S | F | BQ | Mass | Part no. |
|----|-----|-----|-------|-----|-------|-------|-------|-----|-----|-----|-----|-----|------------------------------|------------------------------|---|----|------|-------------|
| | H13 | H13 | JS 14 | Max | JS 14 | JS 15 | JS 14 | Max | Max | Max | Max | H9 | ^{+0,5} ₀ | ^{+0,5} ₀ | g | | | |
| 40 | 6,6 | 11 | 22 | 35 | 24 | 10 | 36 | 41 | 54 | 15 | 22 | 1,6 | 12 | 10,5 | 3 | 28 | 139 | KF-19040CTA |
| 50 | 9 | 15 | 30 | 45 | 33 | 12 | 45 | 50 | 65 | 16 | 26 | 1,6 | 12 | 10,5 | 3 | 32 | 142 | KF-19050CTA |
| 63 | 9 | 15 | 35 | 50 | 37 | 14 | 50 | 52 | 67 | 16 | 30 | 1,6 | 16 | 10,5 | 3 | 40 | 200 | KF-19063CTA |

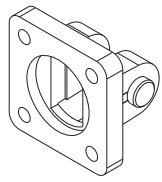
Counter hinge 90°



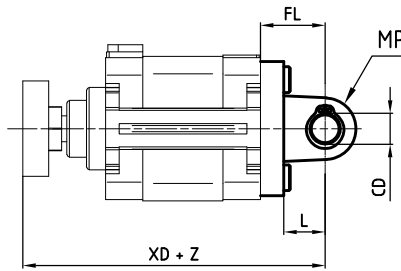
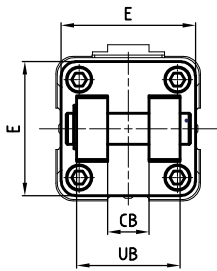
Material: Aluminium

| Ø | CD | FA | FB | FC | FD | FE | FH | FI | Mass | Part no. |
|----|----|----|----|-----|------|------|------|-----|------|----------|
| | H9 | | | | | | | g | | |
| 40 | 12 | 36 | 12 | 2,6 | 38 | 51,5 | 9 | 6,5 | 120 | KF-19040 |
| 50 | 12 | 45 | 12 | 0,3 | 46,5 | 63,5 | 9 | 8,5 | 200 | KF-19050 |
| 63 | 16 | 50 | 16 | 3,3 | 56,5 | 73 | 10,5 | 8,5 | 320 | KF-19063 |

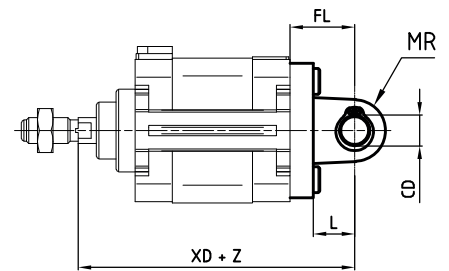
Narrow female hinge with pin (DIN 648K)



> Standard version (with flange)



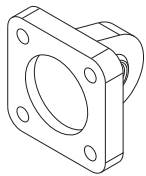
> Male piston rod version



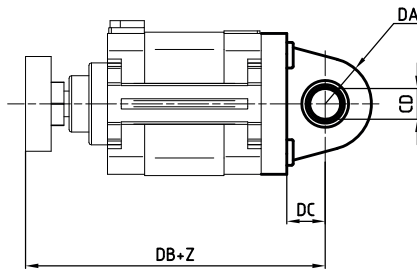
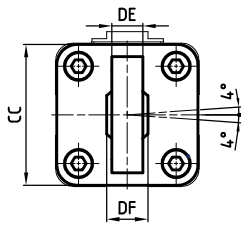
Material: Aluminium Z = Stroke

| Ø | CB H14 | CD H9 | E | FL ± 0,2 | L min | MR Max | UB H14 | XD (standard version) | XD (male piston rod version) | Mass g | Part no. |
|----|-----------|----------|----|-------------|----------|-----------|-----------|-----------------------|------------------------------|-----------|------------|
| 40 | 16 | 12 | 52 | 25 | 16 | 12 | 40 | 107 ±1,25 | 97 ±1,25 | 112 | KF-10040AS |
| 50 | 21 | 16 | 65 | 27 | 16 | 14 | 45 | 115 ±1,25 | 103 ±1,25 | 196 | KF-10050AS |
| 63 | 21 | 16 | 75 | 32 | 21 | 18 | 51 | 124 ±1,6 | 112 ±1,6 | 288 | KF-10063AS |

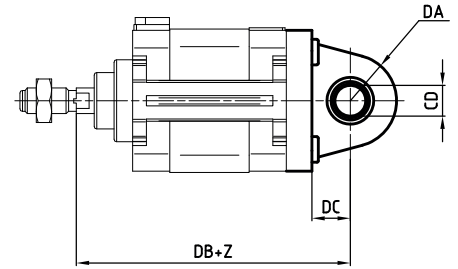
Articulated male rear hinge (ISO MP6)



> Standard version (with flange)



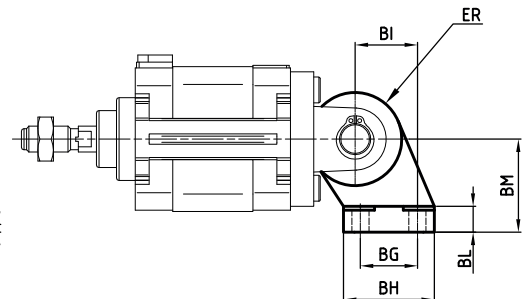
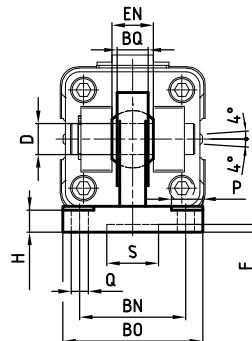
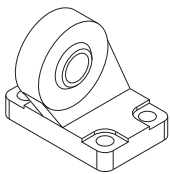
> Male piston rod version



Material: Aluminium Z = Stroke

| Ø | CC | CD H9 | DA | DB (standard version) | DB (male piston rod version) | DC | DE | DF | Mass g | Part no. |
|----|----|----------|----|-----------------------|------------------------------|------|----|----|-----------|-----------|
| 40 | 54 | 12 | 18 | 107 | 97 | 16,5 | 12 | 16 | 200 | KF-11040S |
| 50 | 65 | 12 | 20 | 115 | 103 | 17,5 | 12 | 16 | 300 | KF-11050S |
| 63 | 75 | 16 | 21 | 124 | 112 | 21,5 | 15 | 21 | 350 | KF-11063S |

Articulated counter hinge (DIN 648K)



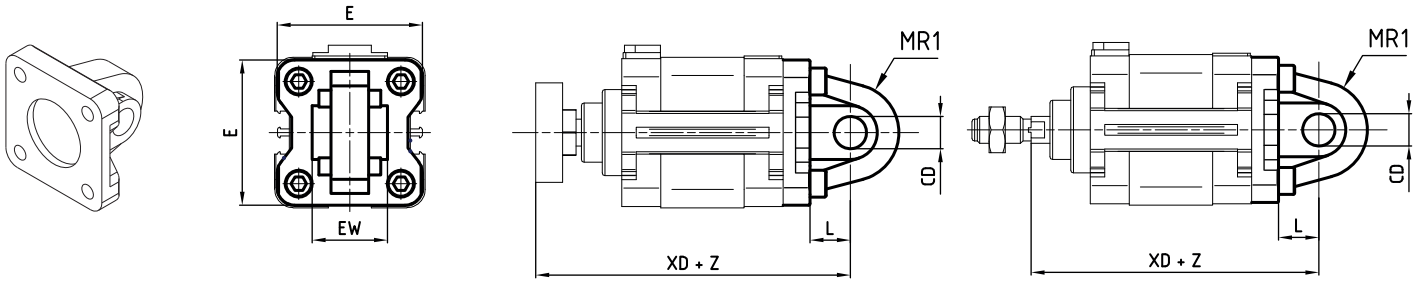
Material: Zinc-plated steel

| Ø | Q H13 | P H13 | BG JS14 | BH Max | BI JS15 | BL | BM JS15 | BN JS14 | BO Max | EN 0,1 | ER Max | BQ Max | D H7 | H +0,5 | S H13 | F | Mass g | Part no. |
|----|----------|----------|------------|-----------|------------|----|------------|------------|-----------|-----------|-----------|-----------|---------|-----------|----------|---|-----------|------------|
| 40 | 6,6 | 11 | 22 | 35 | 24 | 10 | 36 | 41 | 54 | 16 | 18 | 12 | 12 | 8,5 | 20 | 3 | 268 | KF-19040SC |
| 50 | 9 | 15 | 30 | 45 | 33 | 12 | 45 | 50 | 65 | 21 | 20 | 15 | 16 | 10,5 | 20 | 3 | 458 | KF-19050SC |
| 63 | 9 | 15 | 35 | 50 | 37 | 12 | 50 | 52 | 67 | 21 | 23 | 15 | 16 | 10,5 | 20 | 3 | 550 | KF-19063SC |

Rear male hinge (ISO MP4)

> Standard version (with flange)

> Male piston rod version

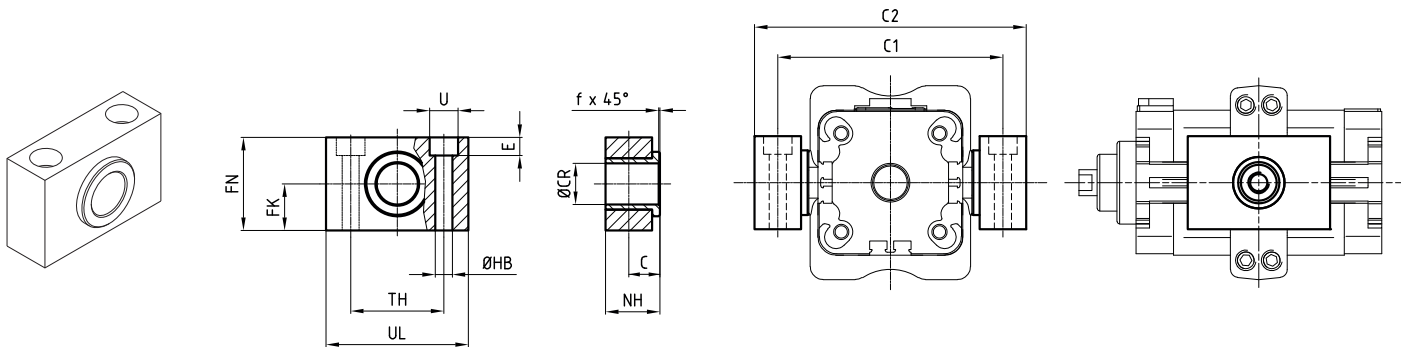


Material: Aluminium

Z = Stroke

| Ø | CD H9 | E | EW | L min | MR1 Max | XD (standard version) | | XD (male piston rod version) | | Mass g | Part no. | |
|----|----------|----|----|-----------|------------|-----------------------|-----|------------------------------|-----|-----------|----------|----------|
| | | | | | | | ± | | ± | | | |
| 40 | 12 | 54 | 28 | -0,2/-0,6 | 15 | 18 | 107 | ±1,25 | 97 | ±1,25 | 100 | KF-11040 |
| 50 | 12 | 65 | 32 | -0,2/-0,6 | 15 | 20 | 115 | ±1,25 | 103 | ±1,25 | 170 | KF-11050 |
| 63 | 16 | 75 | 40 | -0,2/-0,6 | 20 | 23 | 124 | ±1,6 | 112 | ±1,6 | 250 | KF-11063 |

Hinge support



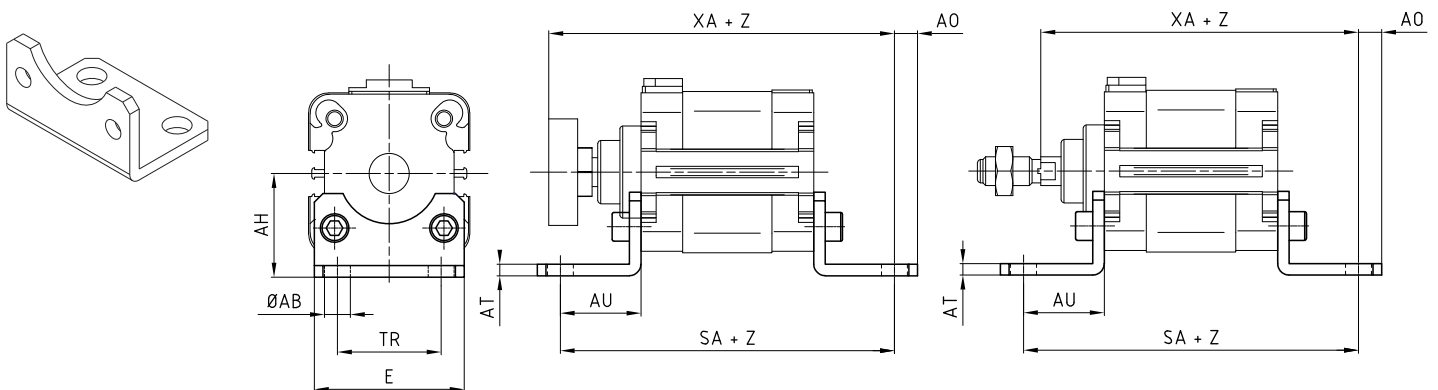
Material: Anodized aluminium and brass bushing

| Ø | C | CR F7 | FK ±0,1 | FN | HB | NH | TH ±0,1 | UL | U | E ±0,5 | F | C1 | C2 | Mass g | Part no. |
|----|----|----------|------------|----|----|----|------------|----|----|-----------|-----|-----|-----|-----------|-------------|
| | | | | | | | | | | | | | | | |
| 50 | 12 | 16 | 18 | 36 | 9 | 21 | 36 | 55 | 15 | 9 | 1,6 | 99 | 117 | 200 | KF-41040050 |
| 63 | 13 | 20 | 20 | 40 | 11 | 23 | 42 | 65 | 18 | 11 | 1,6 | 116 | 136 | 267 | KF-41063080 |

Angle bracket

> Standard version (with flange)

> Male piston rod version

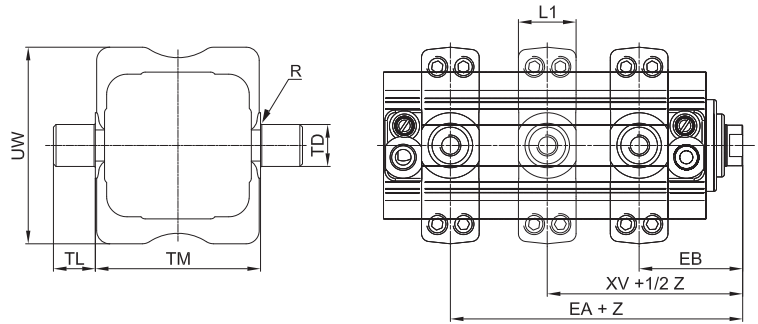
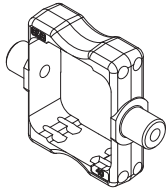


Material: Zinc-plated steel

Z = Stroke

| Ø | Ø AB Ø H13 | AH JS15 | AO | AT | AU ±0,2 | E Max | SA | TR | XA | Mass g | Part no. |
|----|---------------|------------|----|----|------------|----------|-----|----|-----|-----------|-----------|
| | | | | | | | | | | | |
| 50 | 9 | 45 | 15 | 5 | 32 | 70 | 125 | 45 | 120 | 150 | RTF-13050 |
| 63 | 9 | 50 | 15 | 5 | 32 | 85 | 129 | 50 | 124 | 250 | RTF-13063 |

ISO intermediate hinge

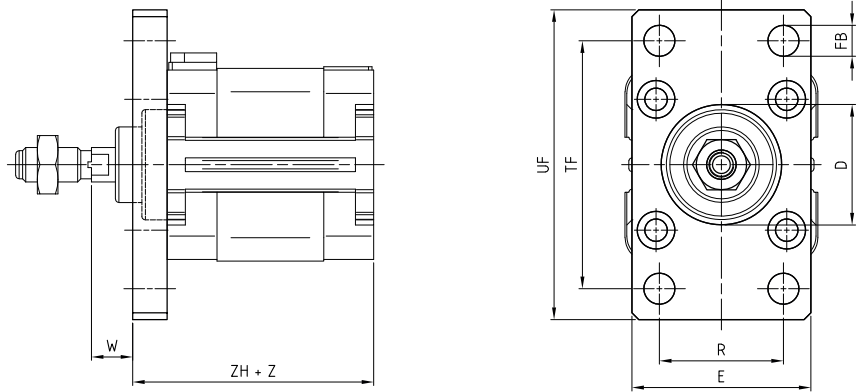
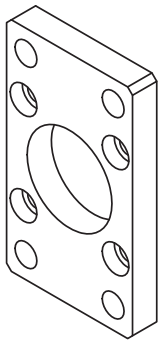


Material: Zinc-plated steel

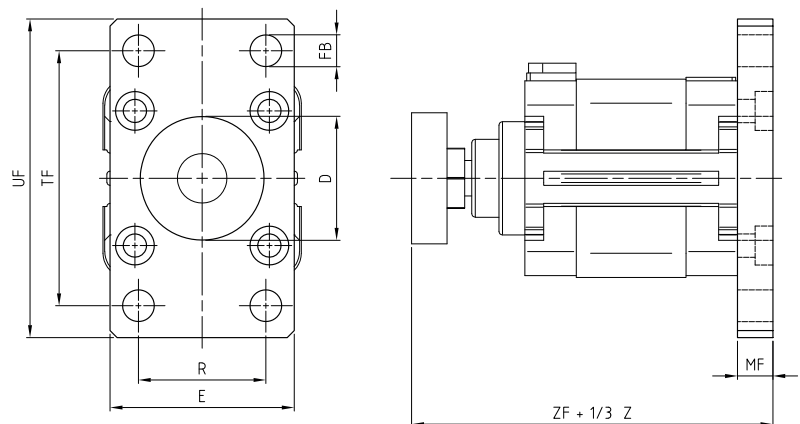
| Ø | EA | EB | L1 | R | TD | TL | TM | UW | XV | Mass | Part no. |
|----|-----|-----|-----|-----|----|-----|-----|-----|------|------|------------|
| | Max | min | Max | Max | e9 | h14 | h14 | Max | Max | | |
| 40 | 25 | 34 | 22 | 0,5 | 16 | 16 | 63 | 75 | 29,5 | 268 | KF-19040SC |
| 50 | 26 | 35 | 22 | 1 | 16 | 16 | 75 | 95 | 30,5 | 458 | KF-19050SC |
| 63 | 27 | 38 | 28 | 1 | 20 | 20 | 90 | 105 | 32,5 | 550 | KF-19063SC |

Front/rear flange

> Front assembly



> Rear assembly

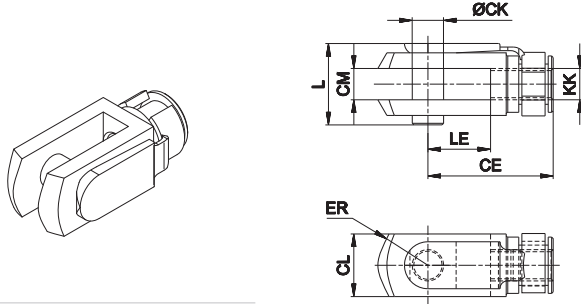


Material: Zinc-plated steel

Z = Stroke

| Ø | ØD | E | ØFB | MF | R | TF | UF | W | ZF | ZH | Mass | Part No. |
|----|-----|----|-----|----|------|------|-----|---|-----|----|------|-----------|
| | H11 | | H13 | | JS14 | JS14 | | | | | | |
| 40 | 35 | 52 | 9 | 10 | 36 | 72 | 90 | 2 | 92 | 70 | 250 | KF-12040 |
| 50 | 44 | 65 | 9 | 12 | 45 | 90 | 110 | 3 | 100 | 73 | 500 | RTF-12050 |
| 63 | 52 | 75 | 9 | 12 | 50 | 100 | 120 | 3 | 104 | 77 | 650 | RTF-12063 |

Female fork with clips

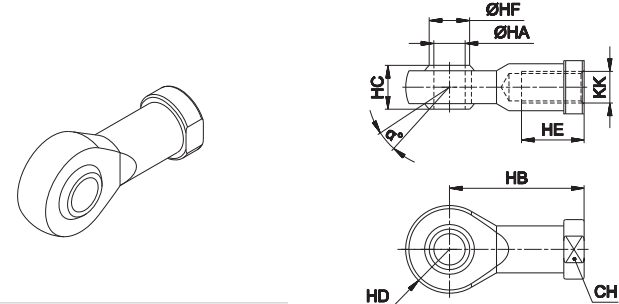


Material: Zinc-plated steel

| Cylinder Ø | CE | CK | CL | CM | ER | KK | L | LE | Mass g | Part no. |
|------------|----|----|----|----|----|----------|----|----|--------|----------|
| 40 | 40 | 10 | 20 | 10 | 16 | M10x1,25 | 26 | 20 | 90 | KF-15032 |
| 50 - 63 | 48 | 12 | 24 | 12 | 19 | M12x1,25 | 32 | 24 | 150 | KF-15040 |

Fork with pin suitable for piston rod according to ISO 8140 standard

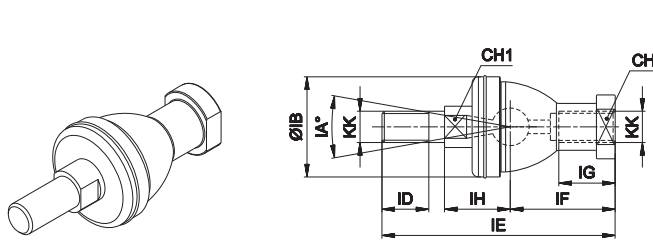
Articulated self-lubricating fork



Material: Zinc-plated steel

| Cylinder Ø | α° | CH | KK | HA | HB | HC | HD | HE | HF | Mass g | Part no. |
|------------|----|----|----------|----|----|----|----------------------|----|------|--------|----------|
| 40 | 13 | 17 | M10x1,25 | 10 | 43 | 14 | 14 ^{0-0,12} | 20 | 12,9 | 76 | KF-17032 |
| 50 - 63 | 13 | 19 | M12x1,25 | 12 | 50 | 16 | 16 | 22 | 15,4 | 110 | KF-17040 |

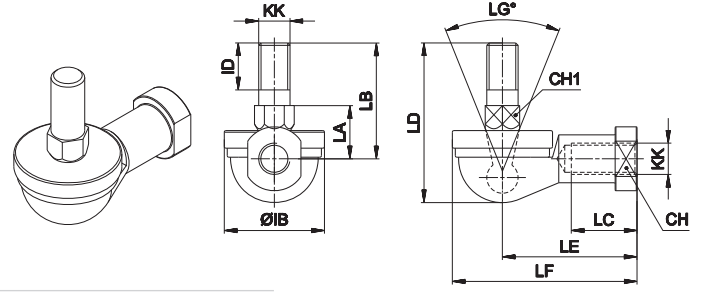
Fork with axially mounted articulated pin



Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | IA° | KK | IH | IB | ID | IE | IF | IG | Mass g | Part no. |
|------------|----|-----|-----|----------|-----------|----|----|------|----|----|--------|----------|
| 40 | 17 | 11 | 30 | M10x1,25 | 19,5 ±0,3 | 32 | 15 | 74,5 | 35 | 18 | 120 | KF-22025 |
| 50 - 63 | 19 | 17 | 30 | M12x1,25 | 22 | 36 | 17 | 84 | 40 | 20 | 185 | KF-22040 |

Fork with angle mounted articulated pin

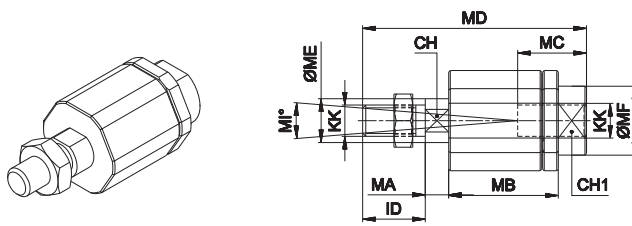


Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | LG° | KK | IB | ID | LA | LB | LC | LD | LE | LF | Mass g | Part no. |
|------------|----|-----|-----|----------|----|----|---------|----|----|------|----|----|--------|----------|
| 40 | 17 | 11 | 50 | M10x1,25 | 32 | 15 | 17 ±0,3 | 37 | 21 | 50,5 | 43 | 57 | 110 | KF-23025 |
| 50 - 63 | 19 | 17 | 50 | M12x1,25 | 36 | 17 | 19 | 42 | 27 | 57,5 | 50 | 66 | 165 | KF-23040 |

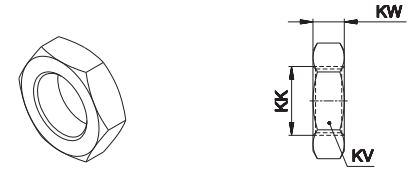
Floating joint

Piston rod locknut (zinc-plated steel)



Material: Zinc-plated steel

| Cylinder Ø | CH | CH1 | ID | KK | MA | MB | MC | MD | ME | MF | MG | MH | MI° | Mass g | Part no. |
|------------|----|-----|----|----------|----|----|----|----|----|----|----|----|-----|--------|----------|
| 40 | 12 | 19 | 71 | M10x1,25 | 5 | 35 | 20 | 71 | 14 | 22 | 30 | 32 | 8 | 220 | KF-24032 |
| 50 - 63 | 12 | 19 | 75 | M12x1,25 | 5 | 35 | 20 | 75 | 14 | 22 | 30 | 32 | 8 | 230 | KF-24040 |



Material: Zinc-plated steel

| Cylinder Ø | KK | KV | KW | Mass g | Part no. |
|------------|----------|----|----|--------|----------|
| 40 | M10x1,25 | 17 | 6 | 5 | KF-16032 |
| 50 - 63 | M12x1,25 | 19 | 7 | 10 | KF-16040 |

NTZ

Pneumatic actuator with integrated digital measuring system and safety locking device

- High repeatability and intervention speed (16 m/s).
- Piston rod holding force (without axial backlash): ≥ 3 times the thrust of a cylinder with air supply at 6 bar.
- Locking device passive functioning, in absence of signal and/or air supply.



TECHNICAL CHARACTERISTICS

| | |
|--------------------------------|------------------------------------|
| Ambient temperature | -10 ÷ 70°C |
| Fluid | 30 µm filtered air |
| Working pressure | 2 ÷ 10 bar |
| Min. pressure (locking system) | >3 bar |
| Max speed | 1 m/s |
| Intervention speed | 16 m/s |
| Precision of repeatability | ± 0,3 mm |
| Bores | Ø 32 - 40 - 50 - 63 mm |
| Cushioning | adjustable pneumatic on both sides |

CONSTRUCTIVE CHARACTERISTICS

| | |
|---------------------------|------------------------------------|
| End caps | die-cast aluminium alloy |
| Barrel | extruded barrel in aluminium alloy |
| Piston | aluminium |
| Guide slide | acetalic resin |
| Piston rod | chromium-plated steel |
| Piston seal | double-lip seal in nitrile rubber |
| Guide bush for piston rod | acetalic resin |
| Shock absorber seals | nitrile rubber |
| Magnet | ferrite rubber (standard) |

ELECTRIC CHARACTERISTICS

| | |
|-----------------------------|-------------------------------|
| Voltage | 5 ÷ 24 V DC |
| Output | level L < 0,5 V - level HV CC |
| Limit frequency | 60 KHz |
| Impedance | 2 Kohm |
| Power consumption | 40 mA max |
| Time of upstroke/downstroke | <1 µS |
| Pulse rate | 500 |
| Resolution | ± 0,01 pulses/turn |

CODIFICATION KEY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N | T | Z | 0 | 3 | 2 | 0 | 3 | 5 | 0 |
| 1 | | 2 | | | 3 | | | | |

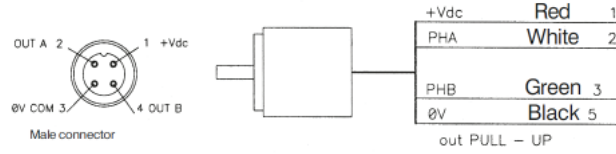
| 1 Series | 2 Bore (mm) | 3 Max stroke (mm) |
|--------------------------------------------------------------------------------------------------------|-------------|-------------------|
| NTZ = Pneumatic actuator with integrated digital measuring system and safety locking device Ø 32÷63 mm | 032 = Ø32 | 350 (Ø32) |
| | 040 = Ø40 | 450 (Ø40) |
| | 050 = Ø50 | 600 (Ø50) |
| | 063 = Ø63 | 750 (Ø63) |

When the detector is used in environments with electromagnetic disturbances exceeding those allowed by the EN50081-2 standard, it is requested the adapter TAE011A10305 (our production) or suppressors of electromagnetic interferences available on the market.

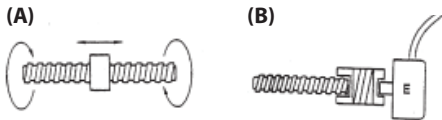
Theoretical forces (N)

Scheme of encoder

| ∅ | Thrust |
|----|--------|
| | 6 bar |
| 32 | 400 |
| 40 | 600 |
| 50 | 960 |
| 63 | 1600 |



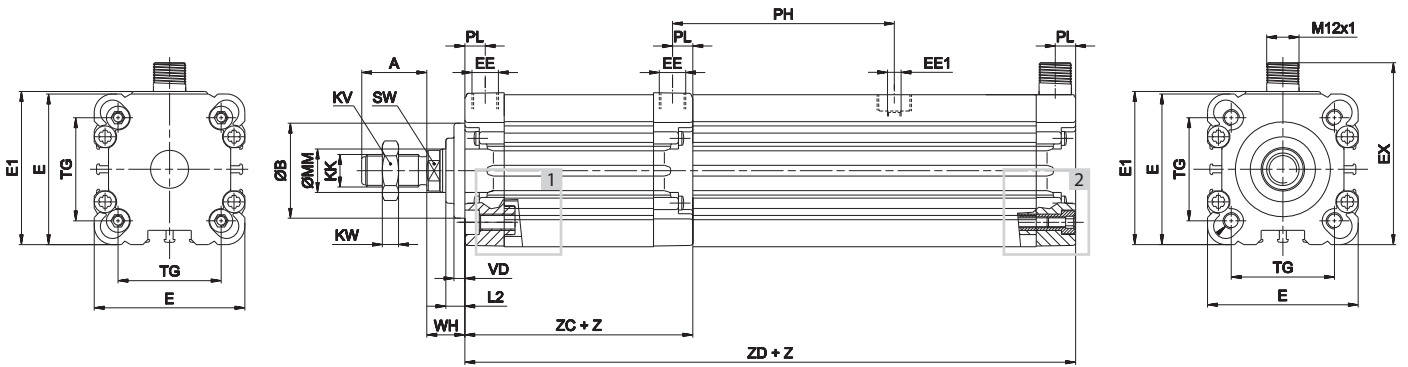
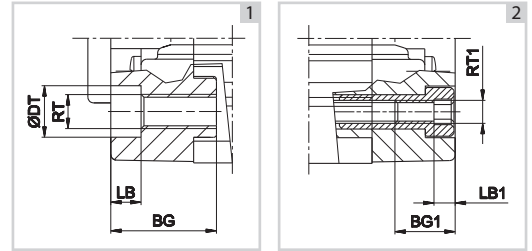
This product is the result of having linked to a pneumatic actuator both the digital position detector and the integrated safety locking system. The system does not need to be connected to the moving part of the mechanism as it generates by itself the movement by means of an internal pusher with bidirectional pneumatic function. This pusher, operated by a 5-way microvalve, moves autonomously until it meets the obstacle and measures the position. The detection of the position is obtained by transforming the translation movement of the piston rod in a rotation movement of the screw (B) by means of the coupling of screw-female screw (A); the encoder transforms the rotation (mechanical size) in sequences of electric pulses and establishes the relation between number of turns and number of pulses. The piston and the body of the encoder of the actuator must necessarily be fixed, i.e. must not move as regards to the rotation of the screw and for this reason has been used the cylinder with octagonal piston and non-rotating piston rod adequately modified.



The speed of the impact against the obstacle is limited by appropriate calibrated reducers which are built into the detector, whilst it is possible to adequately regulate the translation speed by means of a normal pressure regulator. In order to guarantee a reading with the indicated repeatability, the translation speed must be as constant as possible.

The main sectors of application are:
Mechanization, palletization, automation of operating machines.

NTZ Ø 32 ÷ 63 mm



Z = Stroke

| Ø | A | B | BG | BG1 | DT | E | EE | EX | E1 | EE1 | KK | KV | KW |
|----|----|----|----|-----|----|----|------|----|----|-----|----------|----|----|
| 32 | 22 | 30 | 18 | 6,5 | 9 | 46 | G1/8 | 57 | 47 | M5 | M10x1,25 | 17 | 6 |
| 40 | 24 | 35 | 18 | 6,5 | 9 | 56 | G1/8 | 67 | 57 | M5 | M12x1,25 | 19 | 7 |
| 50 | 32 | 40 | 24 | 6,5 | 11 | 66 | G1/8 | 77 | 67 | M5 | M16x1,5 | 24 | 8 |
| 63 | 32 | 45 | 24 | 6,5 | 11 | 79 | G1/8 | 90 | 80 | M5 | M16x1,5 | 24 | 8 |

| Ø | LB | LB1 | L2 | MM | PH | PL | RT | RT1 | SW | TG | VD | WH | ZC | ZD |
|----|-----|-----|----|----|------|-----|----|-----|----|------|----|----|-----|-----|
| 32 | 5,3 | 3,5 | 7 | 12 | 55,5 | 7,5 | M6 | M4 | 10 | 32,5 | 4 | 14 | 84 | 177 |
| 40 | 5,3 | 3,5 | 7 | 16 | 58 | 7,5 | M6 | M6 | 13 | 38 | 4 | 14 | 89 | 185 |
| 50 | 6,5 | 3,5 | 10 | 20 | 63 | 7,5 | M8 | M6 | 17 | 46,5 | 5 | 18 | 94 | 194 |
| 63 | 6,5 | 3,5 | 10 | 20 | 63 | 7,5 | M8 | M6 | 17 | 56,5 | 5 | 18 | 114 | 214 |

- For magnetic sensor DF series see chapter 5 Accessories
- Fixing elements and accessories: same as for STRONG series cylinders

NQZ

Pneumatic actuator with integrated digital measuring system

Pneumatic actuators with digital measuring system are particularly suitable for:

- Detection of stopping position.
- Anti-collision control in critical sequencing cycles.
- Level control in palletization / de-palletization of piled objects.
- Identification, classification and dimensional selection of objects (tolerances and rejects).
- Certification stations of machined pieces or tool breaking on machines for chip removal.



TECHNICAL CHARACTERISTICS

| | | | | | |
|----------------------------|---------------------------------------|----|----|------|----|
| Ambient temperature | -10 ÷ 70°C | | | | |
| Fluid | 30 µm filtered air | | | | |
| Working pressure | 2 ÷ 10 bar | | | | |
| Thread of the screw | Ø | 32 | 40 | 50 | 63 |
| | mm/turn | 12 | 16 | 20,5 | |
| Max speed | 0,2 m/s (detector) 0,8 m/s (actuator) | | | | |
| Precision of repeatability | ± 0,02 mm | | | | |
| Bores | Ø 32 - 40 - 50 - 63 mm | | | | |
| Cushioning | adjustable pneumatic on both sides | | | | |

CONSTRUCTIVE CHARACTERISTICS

| | |
|---------------------------|------------------------------------|
| End caps | die-cast aluminium alloy |
| Barrel | extruded barrel in aluminium alloy |
| Piston | aluminium |
| Guide slide | acetalic resin |
| Piston rod | chromium-plated steel |
| Piston seal | double-lip seal in nitrile rubber |
| Guide bush for piston rod | acetalic resin |
| Shock absorber seals | nitrile rubber |
| Magnet | ferrite rubber (standard) |

ELECTRIC CHARACTERISTICS

| | |
|-----------------------------|-------------------------------|
| Voltage | 5 ÷ 24 V DC |
| Output | level L < 0,5 V - level HV CC |
| Limit frequency | 60 Khz |
| Impedance | 2 Kohm |
| Power consumption | 40 mA max |
| Time of upstroke/downstroke | <1 µS |
| Pulse rate | 500 |
| Resolution | ± 0,01 pulses/turn |

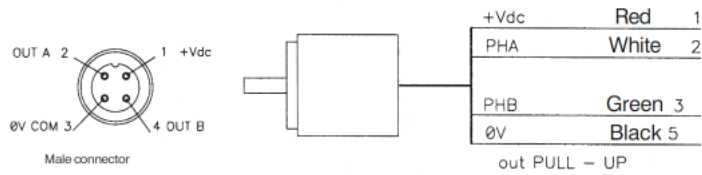
CODIFICATION KEY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N | Q | Z | 0 | 3 | 2 | 0 | 3 | 5 | 0 |
| 1 | | 2 | | | 3 | | | | |

| 1 Series | 2 Bore (mm) | 3 Max stroke (mm) |
|---------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| NQZ = Pneumatic actuator with integrated digital measuring system Ø 32÷63 mm | 032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63 | 350 (Ø32) 450 (Ø40) 600 (Ø50) 750 (Ø63) |

When the detector is used in environments with electromagnetic disturbances exceeding those allowed by the EN50081-2 standard, it is requested the adapter TAE011A10305 (our production) or suppressors of electromagnetic interferences available on the market.

Scheme of encoder



The pneumatic cylinders with digital measuring of the position derive from the respective fluidic axes with numerical control and are particularly suitable for:

- **Detection of stopping**
- **Anticollision control for cycles with critical sequence**
- **Level control relating to the palletization and/or depalletization of objects placed one onto the other**
- **Identification, classification and dimensional choice of objects (tolerances and rejects)**
- **Certification stations of machined pieces or breaking of tools on machines due to chip removal.**

The device can be used in two different ways:

- **As digital measuring detector**
- **As pneumatic actuator with digital detection of the position**

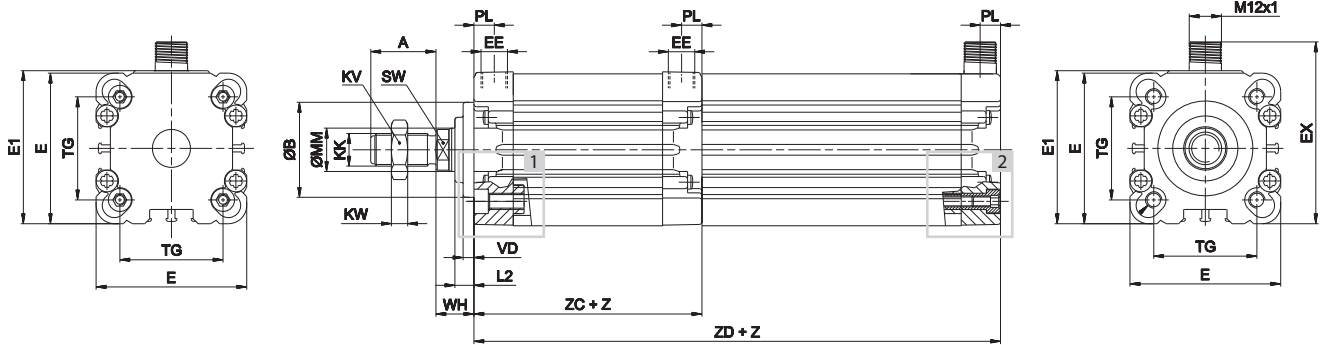
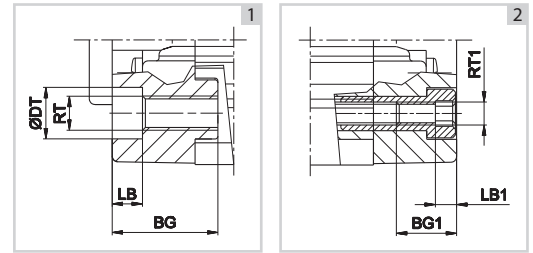
In the first case the system does not need to be connected to the moving part of the mechanism as it generates by itself the movement by means of an internal pusher with bidirectional pneumatic function at low pressure. This pusher, operated by a 5-way microvalve, moves autonomously until it meets the obstacle and measures the position by means of the encoder whose indication may be visualized on a digital display with centesimal resolution. The precision repeatability is $\pm 0,02$ mm.

The speed of the impact against the obstacle is limited by appropriate calibrated reducers which are built into the detector, whilst it is possible to adequately regulate the translation speed by means of a normal pressure regulator.

In order to guarantee a reading with the indicated repeatability, the translation speed must be as constant as possible.

In the second case the air supply of the device is effected by means of the network pressure adequately regulated according to the necessity; it depends on the load to be moved or is prearranged to exert the desired thrust once reached the object to be detected.

NQZ Ø 32 ÷ 63 mm



Z = Stroke

| Ø | A | B | BG | BG1 | DT | E | EE | EX | E1 | KK | KV | KW |
|----|----|----|----|-----|----|----|------|----|----|----------|----|----|
| 32 | 22 | 30 | 18 | 6,5 | 9 | 46 | G1/8 | 57 | 47 | M10x1,25 | 17 | 6 |
| 40 | 24 | 35 | 18 | 6,5 | 9 | 56 | G1/8 | 67 | 57 | M12x1,25 | 19 | 7 |
| 50 | 32 | 40 | 24 | 6,5 | 11 | 66 | G1/8 | 77 | 67 | M16x1,5 | 24 | 8 |
| 63 | 32 | 45 | 24 | 6,5 | 11 | 79 | G1/8 | 90 | 80 | M16x1,5 | 24 | 8 |

| Ø | LB | LB1 | L2 | MM | PL | RT | RT1 | SW | TG | VD | WH | ZC | ZD |
|----|-----|-----|----|----|-----|----|-----|----|------|----|----|-----|-----|
| 32 | 5,3 | 3,5 | 7 | 12 | 7,5 | M6 | M4 | 10 | 32,5 | 4 | 14 | 84 | 186 |
| 40 | 5,3 | 3,5 | 7 | 16 | 7,5 | M6 | M6 | 13 | 38 | 4 | 14 | 89 | 194 |
| 50 | 6,5 | 3,5 | 10 | 20 | 7,5 | M8 | M6 | 17 | 46,5 | 5 | 18 | 94 | 204 |
| 63 | 6,5 | 3,5 | 10 | 20 | 7,5 | M8 | M6 | 17 | 56,5 | 5 | 18 | 114 | 223 |

- For magnetic sensor DF series see chapter 5 Accessories
- Fixing elements and accessories: same as for STRONG series cylinders

NFZ

Pneumatic actuator with integrated safety locking device

- Locking device embodied in the cylinder rear part in axial position
- High repeatability and intervention speed (16 m/s)
- Recommended use: emergency braking intervention at the speed allowed by the cylinder; for repeated functioning, as locking unit or braking intervention ≤ 50 mm/s
- Piston rod holding force (without axial backlash): ≥ 3 times the thrust of a cylinder supplied at 6 bar
- Locking force independent from ambient conditions or piston rod maintenance
- Locking device passive functioning, in absence of signal and/or air supply



TECHNICAL CHARACTERISTICS

| | |
|------------------------------|------------------------------------|
| Ambient temperature | -10 ÷ 70°C |
| Fluid | 30 µm filtered air |
| Working pressure | 3 ÷ 10 bar |
| Min. pressure locking system | ≥ 3 bar |
| Max speed | 1 m/s |
| Intervention speed | 16 m/s |
| Precision of repeatability | $\pm 0,3$ mm |
| Bores | Ø 32 - 40 - 50 - 63 mm |
| Cushioning | adjustable pneumatic on both sides |

CONSTRUCTIVE CHARACTERISTICS

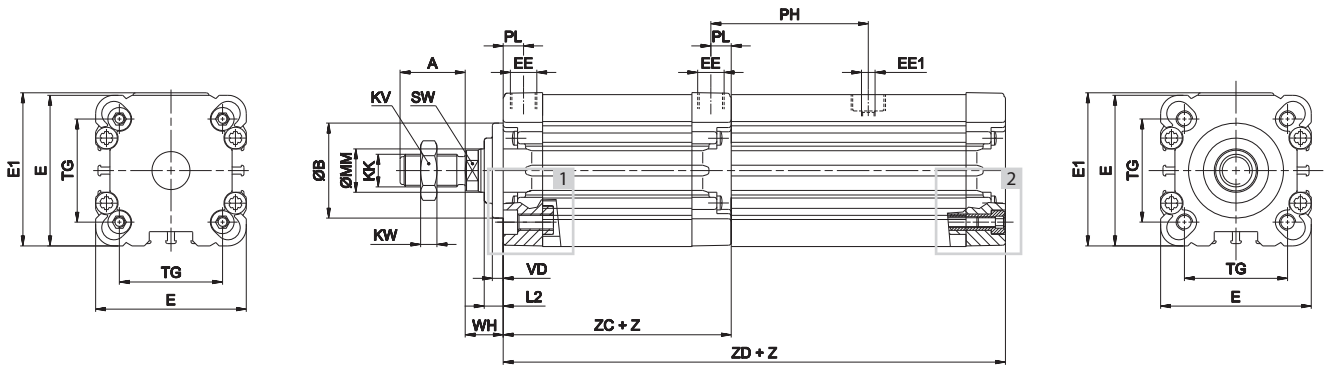
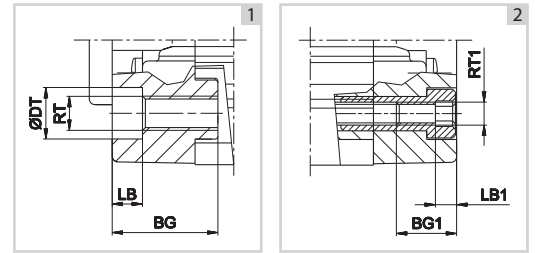
| | |
|---------------------------|------------------------------------|
| End caps | die-cast aluminium alloy |
| Barrel | extruded barrel in aluminium alloy |
| Piston | aluminium |
| Guide slide | acetalic resin |
| Piston rod | chromium-plated steel |
| Piston seal | double-lip seal in nitrile rubber |
| Guide bush for piston rod | acetalic resin |
| Shock absorber seals | nitrile rubber |
| Magnet | ferrite rubber (standard) |

CODIFICATION KEY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N | F | Z | 0 | 3 | 2 | 0 | 3 | 5 | 0 |
| 1 | | 2 | | 3 | | | | | |

| 1 Series | 2 Bore (mm) | 3 Max stroke (mm) |
|-----------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| NFZ = Ø 32÷63 mm - Pneumatic actuator with integrated safety locking device | 032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63 | 350 (Ø32) 450 (Ø40) 600 (Ø50) 750 (Ø63) |

NFZ Ø 32 ÷ 63 mm



Z = Stroke

| Ø | A | B | BG | BG1 | DT | E | EE | E1 | EE1 | KK | KV | KW | LB |
|----|----|----|----|-----|----|----|------|----|-----|----------|----|----|-----|
| 32 | 22 | 30 | 18 | 6,5 | 9 | 46 | G1/8 | 47 | M5 | M10x1,25 | 17 | 6 | 5,3 |
| 40 | 24 | 35 | 18 | 6,5 | 9 | 56 | G1/8 | 57 | M5 | M12x1,25 | 19 | 7 | 5,3 |
| 50 | 32 | 40 | 24 | 6,5 | 11 | 66 | G1/8 | 67 | M5 | M16x1,5 | 24 | 8 | 6,5 |
| 63 | 32 | 45 | 24 | 6,5 | 11 | 79 | G1/8 | 80 | M5 | M16x1,5 | 24 | 8 | 6,5 |

| Ø | LB1 | L2 | MM | PH | PL | RT | RT1 | SW | TG | VD | WH | ZC | ZD |
|----|-----|----|----|------|-----|----|-----|----|------|----|----|-----|-----|
| 32 | 3,5 | 7 | 12 | 55,5 | 7,5 | M6 | M4 | 10 | 32,5 | 4 | 14 | 84 | 177 |
| 40 | 3,5 | 7 | 16 | 58 | 7,5 | M6 | M6 | 13 | 38 | 4 | 14 | 89 | 185 |
| 50 | 3,5 | 10 | 20 | 63 | 7,5 | M8 | M6 | 17 | 46,5 | 5 | 18 | 94 | 194 |
| 63 | 3,5 | 10 | 20 | 63 | 7,5 | M8 | M6 | 17 | 56,5 | 5 | 18 | 114 | 214 |

- For magnetic sensor DF series see chapter 5 Accessories
- Fixing elements and accessories: same as for STRONG series cylinders

YMA11

Angular Pneumatic Gripper

- Bore: Ø 10 - 16 - 20 - 25
- Large angular opening: $-10 \div 30^\circ$
- Standard version double acting and magnetic piston (upon request single acting version)
- Flush-mounted sensor switch DF-T series
- Possible fixing on three sides



TECHNICAL CHARACTERISTICS

| | | | | | |
|----------------------------|--------------------------------------------|-----------|-----------|-----------|------------|
| Ambient temperature | | | | | -5 ÷ 60 °C |
| Acting type | double acting (upon request single acting) | | | | |
| Fluid | filtered air, with or without lubrication | | | | |
| Bore (mm) | 10 | 16 | 20 | 25 | |
| Working pressure (bar) | | | | | 1,5 ÷ 7 |
| Opening angle | | | | | +30° -10° |
| Max frequency (cycles/min) | | | | | 180 |
| Max arm length (mm) - L | 30 | 40 | 60 | 70 | |
| Gripping force (Nm)* | closing | 0,2 | 0,45 | 0,85 | 1,7 |
| | opening | 0,25 | 0,6 | 1,15 | 2,25 |

* = Gripping force at 5 bar
L = Gripping point 30 mm

CONSTRUCTIVE CHARACTERISTICS

| | |
|-------------------------|-----------------|
| Body/bottom plate | aluminium |
| Piston rod | stainless steel |
| Seals | nitrile rubber |
| Piston | aluminium |
| Magnet | plastroferrite |
| Screws | stainless steel |
| Fingers | carbon steel |
| Plate for fingers guide | stainless steel |
| Pivots | stainless steel |

CODIFICATION KEY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | M | A | 1 | 1 | - | 1 | 0 |
| | | 1 | | | 2 | | |

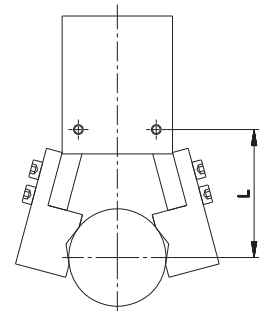
1 Series

YMA11 = Angular Pneumatic Gripper

2 Bore (mm)

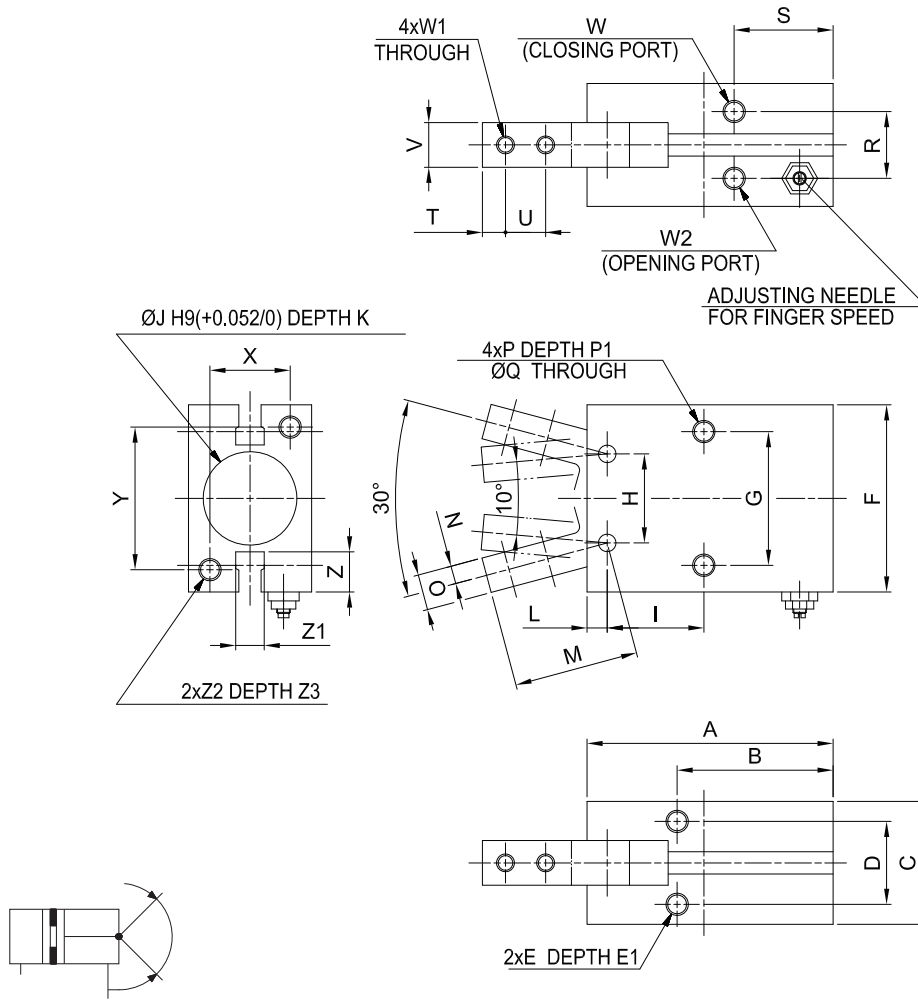
- 10 = Ø10
- 16 = Ø16
- 20 = Ø20
- 25 = Ø25

Length of gripping point



| | | | | | |
|-------------|------|------|------|------|------|
| Ø | 10 | 16 | 20 | 25 | 32 |
| Weight (Kg) | 0,05 | 0,10 | 0,19 | 0,33 | 0,53 |

Overall dimensions



2

| Part No. | A | B | C | D | E | E1 | F | G | H | I | ØJ | K | L | M | N | O | P | P1 | Q | R | S | T |
|----------|------|------|------|------|--------|----|------|----|----|------|----|-----|-----|------|-----|----|--------|----|-----|------|------|-----|
| YMA11-10 | 36,8 | 27 | 16,4 | 11,4 | M3x0,5 | 6 | 23 | 16 | - | 15,6 | 11 | 1,5 | - | - | 2 | 4 | M3x0,5 | 5 | - | 10,4 | 18,8 | 3 |
| YMA11-16 | 44,6 | 30 | 23,6 | 16 | M4x0,7 | 8 | 30,6 | 24 | - | 20,1 | 17 | 1,5 | - | - | 3,5 | 7 | M4x0,7 | 8 | - | 13 | 18,3 | 4 |
| YMA11-20 | 55,2 | 35 | 27,6 | 18,6 | M5x0,8 | 8 | 42 | 30 | 20 | 21,7 | 21 | 1,5 | 4,5 | 28 | 4 | 8 | M5x0,8 | 10 | 4,3 | 15 | 22,2 | 5,2 |
| YMA11-25 | 60,4 | 36,5 | 33,6 | 22 | M6x1 | 10 | 52 | 36 | 25 | 25,8 | 26 | 1,5 | 4,6 | 37,5 | 5 | 10 | M6x1 | 12 | 5,1 | 20 | 23,5 | 8 |

| Part No. | U | V | W | W1 | W2 | X | Y | Z | Z1 | Z2 | Z3 |
|----------|-----|-----|--------|-----------|--------|----|----|------|-----|--------|----|
| YMA11-10 | 5,7 | 6,4 | M3x0,5 | M2,5x0,45 | M3x0,5 | 12 | 18 | 5,4 | 6,2 | M3x0,5 | 5 |
| YMA11-16 | 7 | 8 | M5x0,8 | M3x0,5 | M5x0,8 | 15 | 22 | 5,8 | 6,2 | M4x0,7 | 8 |
| YMA11-20 | 9 | 10 | M5x0,8 | M4x0,7 | M5x0,8 | 18 | 32 | 9 | 6,4 | M5x0,8 | 10 |
| YMA11-25 | 12 | 12 | M5x0,8 | M5x0,8 | M5x0,8 | 22 | 40 | 11,5 | 6,4 | M6 | 12 |

For technical data on the DF-T sensor, see chapter 5 Accessories

YMA20

180° Angular Pneumatic Gripper

- Bore sizes: Ø 10 - 16 - 20 - 25
- Compact design and light
- Gripping forces via piston/cam design
- Precision references points on body and fingers are standard
- Maximum installation flexibility with mounting options on 4 sides and recessed auto switch grooves on either side of the gripper
- Resistant to Dusty Environments



TECHNICAL CHARACTERISTICS

| | | | | |
|----------------------------|-------------------------------------------|----|----|----|
| Ambient temperature | -10 ÷ 60 °C | | | |
| Acting type | double acting | | | |
| Fluid | filtered air, with or without lubrication | | | |
| Bore Ø (mm) | 10 | 16 | 20 | 25 |
| Working pressure (bar) | 1 ÷ 6 | | | |
| Opening angle | +180°~182° / -3° | | | |
| Max frequency (cycles/min) | 60 | | | |
| Repeatability (mm) | ± 0,2 | | | |
| Max arm length (mm) - L | 60 | 70 | 80 | 90 |
| Gripping force (N)* | 6 | 20 | 36 | 78 |

* = Gripping force at 5 bar
L = Gripping point 30 mm

CONSTRUCTIVE CHARACTERISTICS

| | |
|-------------------------|---------------------------------------|
| Body/Bottom plate | aluminium |
| Piston rod | stainless steel |
| Seals | nitrile rubber |
| Piston | Ø10 stainless steel, Ø16÷25 aluminium |
| Magnet | plastroferrite |
| Screws | stainless steel |
| Fingers | stainless steel |
| Plate for fingers guide | stainless steel |
| Pivots | stainless steel |

CODIFICATION KEY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | M | A | 2 | 0 | - | 1 | 0 |
| 1 | | | | 2 | | | |

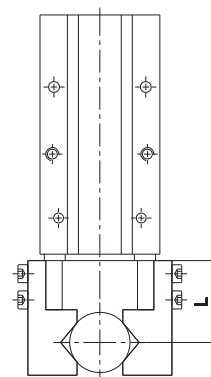
1 Series

YMA20 = 180° Angular Pneumatic Gripper

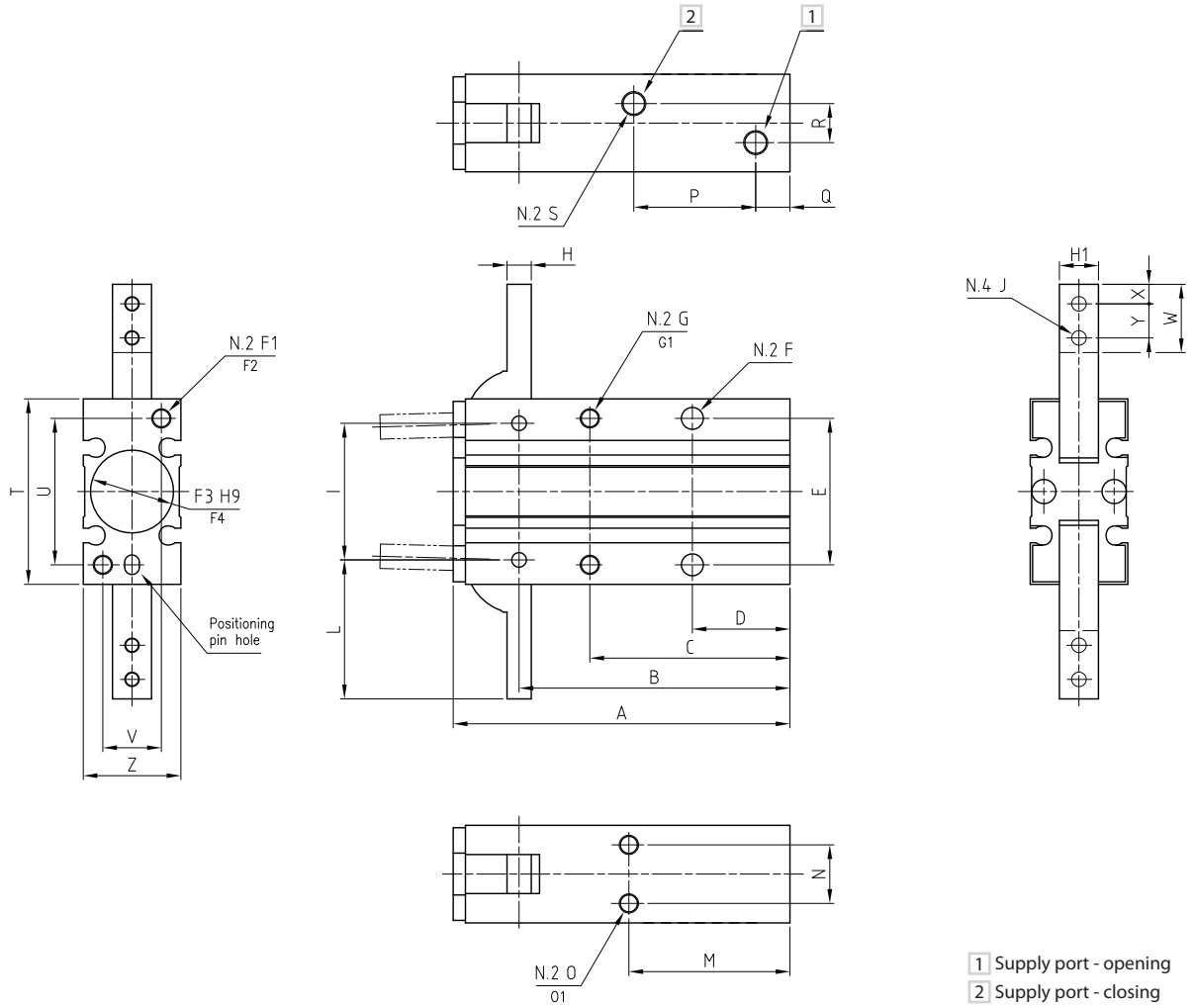
2 Bore (mm)

- 10 = Ø10
- 16 = Ø16
- 20 = Ø20
- 25 = Ø25

Length of gripping point



Overall dimensions



| Part No. | A | B | C | D | E | ØF | F1 | F2 | ØF3 | F4 | G | G1 | H | H1 | I | J | L | M | N | O |
|----------|-----|------|----|----|----|-----|--------|----|-----|-----|--------|----|----|----|----|--------|------|----|----|--------|
| YMA20-10 | 58 | 47,5 | 35 | 18 | 24 | 3,4 | M3x0,5 | 6 | 11 | 1,5 | M3x0,5 | 6 | 4 | 6 | 22 | M3x0,5 | 23,5 | 30 | 9 | M3x0,5 |
| YMA20-16 | 69 | 55,5 | 41 | 20 | 30 | 4,5 | M4x0,7 | 8 | 17 | 1,5 | M4x0,7 | 8 | 5 | 8 | 28 | M3x0,5 | 28,5 | 33 | 12 | M4x0,7 |
| YMA20-20 | 86 | 69 | 50 | 25 | 36 | 5,5 | M5x0,8 | 10 | 21 | 1,5 | M5x0,8 | 10 | 8 | 10 | 36 | M4x0,7 | 37 | 42 | 14 | M5x0,8 |
| YMA20-25 | 107 | 86 | 60 | 30 | 42 | 6,6 | M6x1 | 12 | 26 | 1,5 | M6x1 | 12 | 10 | 12 | 45 | M5x0,8 | 45 | 50 | 16 | M6x1 |

| Part No. | O1 | P | Q | R | S | T | U | V | W | X | Y | Z |
|----------|----|----|---|----|--------|----|----|----|------|---|----|----|
| YMA20-10 | 4 | 23 | 7 | 3 | M5x0,8 | 30 | 24 | 9 | 12 | 3 | 6 | 15 |
| YMA20-16 | 5 | 25 | 7 | 8 | M5x0,8 | 38 | 30 | 12 | 14 | 4 | 7 | 20 |
| YMA20-20 | 8 | 32 | 8 | 12 | M5x0,8 | 48 | 38 | 16 | 18 | 5 | 9 | 26 |
| YMA20-25 | 10 | 42 | 8 | 14 | M5x0,8 | 58 | 46 | 18 | 22,5 | 6 | 12 | 30 |

For technical data on the DF-T sensor, see chapter 5 Accessories

YMP20

Parallel Pneumatic Gripper with Linear Guide

- Bore sizes: Ø 10 - 16 - 20 - 25 - 32 - 40
- Standard version: double acting and magnetic piston (upon request single acting)



TECHNICAL CHARACTERISTICS

| | | | | | | | |
|-----------------------------|--------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----|
| Ambient temperature | -10 ÷ 60 °C | | | | | | |
| Acting type | double acting (upon request single acting) | | | | | | |
| Fluid | filtered air, with or without lubrication | | | | | | |
| Bore Ø (mm) | 10 | 16 | 20 | 25 | 32 | 40 | |
| Working pressure (bar) | 2 ÷ 7 | 1 ÷ 7 | 1 ÷ 7 | 1 ÷ 7 | 1 ÷ 7 | 1 ÷ 7 | |
| Max frequency (cycles/min) | 180 | 180 | 180 | 180 | 60 | 60 | |
| Repeatability (mm) | ± 0,01 | ± 0,01 | ± 0,01 | ± 0,01 | ± 0,02 | ± 0,02 | |
| Opening/Closing stroke (mm) | 4 | 6 | 10 | 14 | 22 | 30 | |
| Gripping force (N)* | closing | 11 | 32 | 42 | 67 | 160 | 260 |
| | opening | 16 | 44 | 65 | 110 | 193 | 318 |

* = Gripping force at 5 bar, gripping point 30 mm

CONSTRUCTIVE CHARACTERISTICS

| | |
|-------------------|---------------------------|
| Body/Bottom plate | aluminium |
| Piston rod | stainless steel |
| Seals | nitrile rubber |
| Piston | copper |
| Magnet | plastroferrite |
| Fingers | stainless steel (SUS 440) |
| Fingers base | stainless steel (SUS 440) |
| Pivots | carbon steel |

CODIFICATION KEY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | M | P | 2 | 0 | - | 1 | 0 |
| | | | 1 | | | | 2 |

1 Series

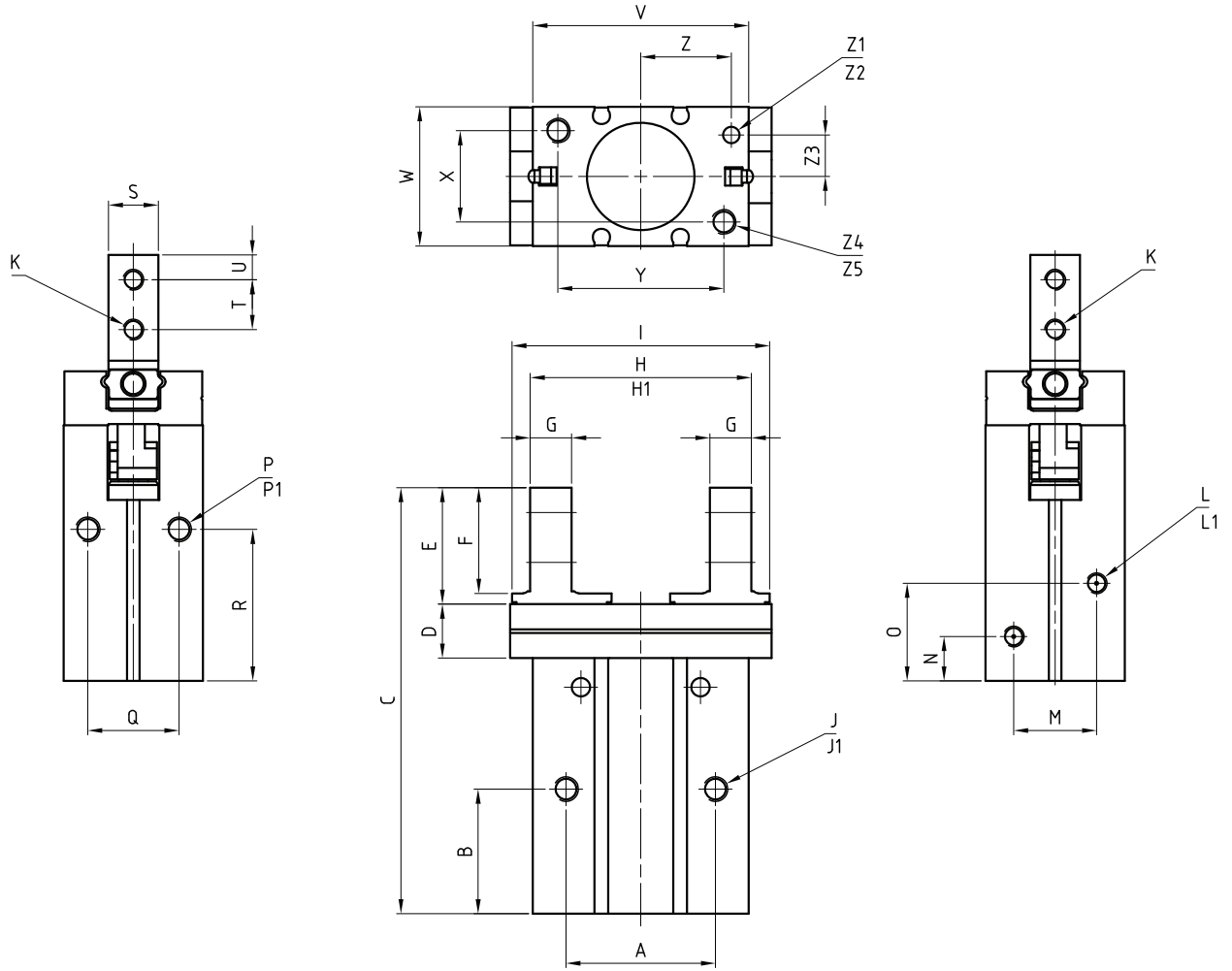
YMP20 = Parallel Pneumatic Gripper with Linear Guide

2 Bore (mm)

- 10 = Ø10
- 16 = Ø16
- 20 = Ø20
- 25 = Ø25
- 32 = Ø32
- 40 = Ø40

| | | | | | | |
|-------------|------|------|------|------|------|------|
| Ø | 10 | 16 | 20 | 25 | 32 | 40 |
| Weight (Kg) | 0,06 | 0,14 | 0,27 | 0,49 | 0,81 | 1,37 |

Overall dimensions



2

| Part no. | A | B | C | D | E | F | G | H | H1 | I | J | J1 | K | L | L1 | M | N | O | P | P1 |
|----------|----|------|-------|------|------|------|----|------|------|-----|---------|-----|-----------|--------|-----|----|------|------|---------|-----|
| YMP20-10 | 16 | 23 | 57 | 8 | 12 | 12 | 4 | 23,2 | 19,2 | 29 | M3x0,5 | 5,5 | M2,5x0,45 | M3x0,5 | 5,5 | 9 | 9 | 19 | M3x0,5 | 6 |
| YMP20-16 | 24 | 24,5 | 67,5 | 9,5 | 17,5 | 15 | 5 | 30,9 | 24,9 | 38 | M4x0,7 | 8 | M3x0,5 | M5x0,8 | 8 | 13 | 7,5 | 19 | M4x0,7 | 4,5 |
| YMP20-20 | 30 | 29 | 84,8 | 11,5 | 22,5 | 20 | 8 | 42,3 | 32,3 | 50 | M5x0,8 | 10 | M4x0,7 | M5x0,8 | 8 | 15 | 10 | 23 | M5x0,8 | 8 |
| YMP20-25 | 36 | 30 | 102,7 | 13 | 28,1 | 25 | 10 | 53,3 | 39,3 | 63 | M6x1 | 12 | M5x0,8 | M5x0,8 | 8 | 20 | 10,7 | 23,5 | M6x1 | 10 |
| YMP20-32 | 46 | 40 | 113 | 14 | 34 | 29,5 | 12 | 72 | 50 | 97 | M6x1 | 13 | M6x1 | M5x0,8 | 8 | 24 | 11 | 31 | M6x1 | 10 |
| YMP20-40 | 56 | 49 | 139 | 16 | 41 | 36 | 14 | 88 | 58 | 119 | M8x1,25 | 13 | M8x1,25 | M5x0,8 | 8 | 28 | 12 | 38 | M8x1,25 | 13 |

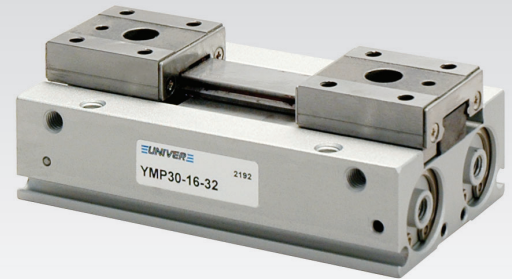
| Part no. | Q | R | S | T | U | V | W | X | Y | Z | ØZ1 | Z2 | Z3 | Z4 | Z5 |
|----------|------|------|----|-----|---|------|------|----|----|------|-----|----|-----|---------|----|
| YMP20-10 | 11 | 27 | 5 | 5,7 | 3 | 23 | 16,4 | 12 | 18 | 7,5 | 2 | 3 | 5,2 | M3x0,5 | 6 |
| YMP20-16 | 16 | 30 | 8 | 7 | 4 | 30,6 | 23,6 | 15 | 22 | 11 | 3 | 3 | 6,5 | M4x0,7 | 8 |
| YMP20-20 | 18,6 | 35 | 10 | 9 | 5 | 42 | 27,6 | 18 | 32 | 16,8 | 4 | 4 | 7,5 | M5x0,8 | 10 |
| YMP20-25 | 22 | 36,5 | 12 | 12 | 6 | 52 | 33,6 | 22 | 40 | 21,8 | 4 | 4 | 10 | M6x1 | 12 |
| YMP20-32 | 26 | 48 | 15 | 14 | 7 | 60 | 40 | 26 | 46 | 23 | 5 | 5 | 12 | M6x1 | 13 |
| YMP20-40 | 32 | 58 | 18 | 17 | 9 | 72 | 48 | 32 | 56 | 29 | 5 | 5 | 14 | M8x1,25 | 15 |

For technical data on the DF-T sensor, see chapter 5 Accessories

YMP30

Low Profile Parallel Pneumatic Gripper with Linear Guide

- Bore sizes: Ø 12 - 16 - 20



TECHNICAL CHARACTERISTICS

| | | | | |
|-----------------------------|---------|-------------------------------------------|--------------|--------------|
| Ambient temperature | | -5 ÷ 60 °C | | |
| Acting type | | double acting | | |
| Fluid | | filtered air, with or without lubrication | | |
| Bore Ø (mm) | | 12 | 16 | 20 |
| Working pressure (bar) | | 1,5 ÷ 7 | | |
| Max frequency (cycles/min) | | 180 | | |
| Opening/Closing stroke (mm) | | 12 - 24 - 48 | 16 - 32 - 64 | 20 - 40 - 80 |
| Gripping force (N)* | closing | 48 | 91 | 138 |
| | opening | 48 | 91 | 138 |

* = Gripping force at 5 bar, gripping point 30 mm

CONSTRUCTIVE CHARACTERISTICS

| | |
|---------------------|-----------------|
| Body/Front-End caps | aluminium |
| Slide rail | stainless steel |
| Slide | stainless steel |
| Rack | stainless steel |
| Pinion | carbon steel |
| Seal | nitrile rubber |
| Piston | aluminium |
| Screws | steel |
| Magnet | plastroferrite |

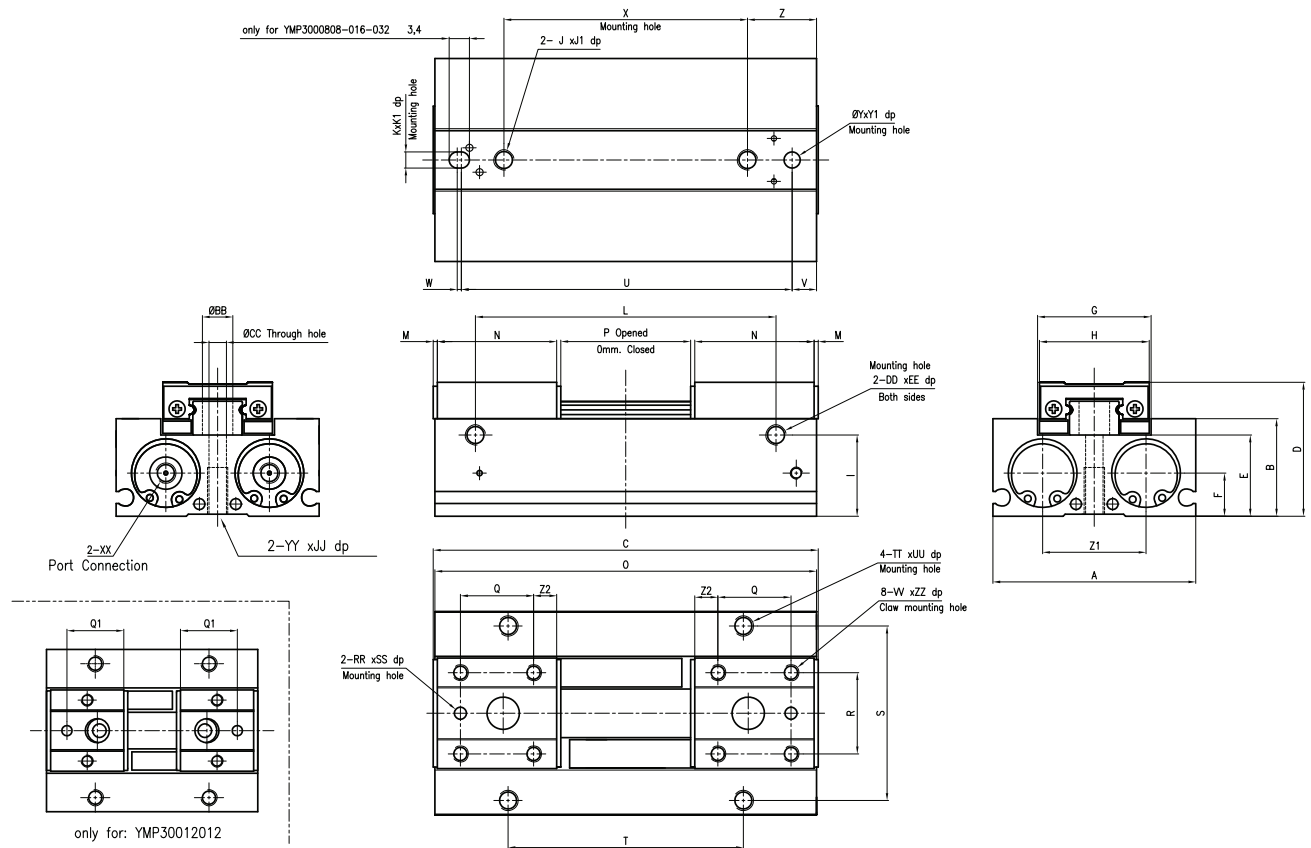
CODIFICATION KEY

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y | M | P | 3 | 0 | 0 | 1 | 2 | 0 | 2 | 4 |
| | | | 1 | | 2 | | | 3 | | |

| 1 Series | 2 Bore (mm) | 2 Stroke (mm) |
|------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------|
| YMP30 = Low Profile Parallel Pneumatic Gripper with Linear Guide | 012 = Ø12 016 = Ø16 020 = Ø20 | 012 = 12 048 = 48 016 = 16 064 = 64 020 = 20 080 = 80 024 = 24 032 = 32 040 = 40 |

| Ø | 12 | | | 16 | | | 20 | | |
|-------------|------|------|------|------|------|------|------|------|------|
| Stroke (mm) | 12 | 24 | 48 | 16 | 32 | 64 | 20 | 40 | 80 |
| Weight (Kg) | 0,16 | 0,19 | 0,28 | 0,35 | 0,45 | 0,65 | 0,65 | 0,85 | 1,23 |

Overall dimensions



| Part no. | A | B | $\emptyset BB$ | C | $\emptyset CC$ | D | DD | E | EE | F | G | H | I | J | JJ | J1 | K |
|-------------|----|----|----------------|-------|----------------|----|--------|------|-----|------|----|----|----|--------|----|----|---|
| YMP30012012 | 40 | 19 | 5,5 | 52 | 3,4 | 25 | M4x0,7 | 14,8 | 5 | 7,7 | 21 | 20 | 15 | M4x0,7 | 10 | 10 | 3 |
| YMP30012024 | 40 | 19 | 5,5 | 68 | 3,4 | 25 | M4x0,7 | 14,8 | 5 | 7,7 | 21 | 20 | 15 | M4x0,7 | 10 | 10 | 3 |
| YMP30012048 | 40 | 19 | 5,5 | 104 | 3,4 | 25 | M4x0,7 | 14,8 | 5 | 7,7 | 21 | 20 | 15 | M4x0,7 | 10 | 10 | 3 |
| YMP30016016 | 50 | 24 | 7,5 | 72 | 4,3 | 33 | M5x0,8 | 20 | 5,5 | 10,6 | 28 | 27 | 20 | M5x0,8 | 12 | 12 | 4 |
| YMP30016032 | 50 | 24 | 7,5 | 94,8 | 4,3 | 33 | M5x0,8 | 20 | 5,5 | 10,6 | 28 | 27 | 20 | M5x0,8 | 12 | 12 | 4 |
| YMP30016064 | 50 | 24 | 7,5 | 142,8 | 4,3 | 33 | M5x0,8 | 20 | 5,5 | 10,6 | 28 | 27 | 20 | M5x0,8 | 12 | 12 | 4 |
| YMP30020020 | 62 | 30 | 10 | 86,8 | 5,2 | 41 | M6x1,0 | 25 | 6 | 13 | 33 | 32 | 25 | M6x1,0 | 15 | 15 | 5 |
| YMP30020040 | 62 | 30 | 10 | 116,8 | 5,2 | 41 | M6x1,0 | 25 | 6 | 13 | 33 | 32 | 25 | M6x1,0 | 15 | 15 | 5 |
| YMP30020080 | 62 | 30 | 10 | 176,8 | 5,2 | 41 | M6x1,0 | 25 | 6 | 13 | 33 | 32 | 25 | M6x1,0 | 15 | 15 | 5 |

| Part no. | K1 | L | M | N | O | P | Q | Q1 | R | $\emptyset RR$ | S | SS | T | TT | U | UU | V |
|-------------|----|-----|---|------|------|----|----|----|----|----------------|----|-----|-----|--------|-------|-----|---|
| YMP30012012 | 3 | 38 | 1 | 18 | 52 | 12 | 9 | 14 | 15 | 2,5 | 33 | 2,5 | 28 | M4x0,7 | 43,5 | 5 | 4 |
| YMP30012024 | 3 | 54 | 1 | 21 | 68 | 24 | 12 | - | 15 | 2,5 | 33 | 2,5 | 44 | M4x0,7 | 59,5 | 5 | 4 |
| YMP30012048 | 3 | 90 | 1 | 27 | 104 | 48 | 18 | - | 15 | 2,5 | 33 | 2,5 | 80 | M4x0,7 | 95,5 | 5 | 4 |
| YMP30016016 | 3 | 52 | 1 | 25,4 | 70,8 | 16 | 15 | - | 20 | 3 | 43 | 3 | 36 | M5x0,8 | 59,5 | 5,5 | 6 |
| YMP30016032 | 3 | 74 | 1 | 29,4 | 94 | 32 | 18 | - | 20 | 3 | 43 | 3 | 58 | M5x0,8 | 81,5 | 5,5 | 6 |
| YMP30016064 | 3 | 122 | 1 | 37,4 | 142 | 64 | 26 | - | 20 | 3 | 43 | 3 | 106 | M5x0,8 | 129,5 | 5,5 | 6 |
| YMP30020020 | 4 | 56 | 1 | 31,4 | 86 | 20 | 16 | - | 24 | 3 | 52 | 3 | 40 | M6x1,0 | 73,5 | 6 | 6 |
| YMP30020040 | 4 | 84 | 1 | 36,4 | 114 | 40 | 20 | - | 24 | 3 | 52 | 3 | 68 | M6x1,0 | 101,5 | 6 | 6 |
| YMP30020080 | 4 | 144 | 1 | 46,4 | 174 | 80 | 30 | - | 24 | 3 | 52 | 3 | 128 | M6x1,0 | 161,5 | 6 | 6 |

| Part no. | VV | W | X | XX | $\emptyset Y$ | YY | Y1 | ZZ | Z | Z1 | Z2 |
|-------------|--------|---|----|----|---------------|--------|----|----|----|------|-----|
| YMP30012012 | M3x0,5 | 1 | 26 | M5 | 3 | M4x0,7 | 3 | 4 | 13 | 19,6 | - |
| YMP30012024 | M3x0,5 | 1 | 42 | M5 | 3 | M4x0,7 | 3 | 4 | 13 | 19,6 | 4,5 |
| YMP30012048 | M3x0,5 | 1 | 26 | M5 | 3 | M4x0,7 | 3 | 4 | 13 | 19,6 | 4,5 |
| YMP30016016 | M4x0,7 | 1 | 38 | M5 | 4 | M5x0,8 | 3 | 4 | 17 | 25,5 | 5,2 |
| YMP30016032 | M4x0,7 | 1 | 60 | M5 | 4 | M5x0,8 | 3 | 4 | 17 | 25,5 | 5,7 |
| YMP30016064 | M4x0,7 | 1 | 36 | M5 | 4 | M5x0,8 | 3 | 4 | 17 | 25,5 | 5,7 |
| YMP30020020 | M4x0,7 | 1 | 38 | M5 | 5 | M6x1,0 | 4 | 4 | 24 | 33,6 | 7,7 |
| YMP30020040 | M4x0,7 | 1 | 66 | M5 | 5 | M6x1,0 | 4 | 4 | 24 | 33,6 | 8,2 |
| YMP30020080 | M4x0,7 | 1 | 42 | M5 | 5 | M6x1,0 | 4 | 4 | 24 | 33,6 | 8,2 |

For technical data on the DF-T sensor, see chapter 5 Accessories

YMP40

Wide-type Parallel Pneumatic Gripper

- Bore sizes: Ø 10 - 16 - 20 - 25 - 32
- Finger motion synchronization by a rack and pinion mechanism
- The double piston construction materializes a compact parallel grippers with great holding force and wide range strokes
- All shafts are equipped with two-point support type self-lubricated bearings
- The dust seals are contained for protecting the rods thresholds from dust



TECHNICAL CHARACTERISTICS

| | | | | | | |
|-----------------------------|---------|-------------------------------------------|----------|-----------|------------|------------|
| Ambient temperature | | -10 ÷ 60 °C | | | | |
| Acting type | | double acting | | | | |
| Fluid | | filtered air, with or without lubrication | | | | |
| Bore Ø (mm) | | 10 | 16 | 20 | 25 | 32 |
| Working pressure (bar) | | 1 ÷ 6,1 | | | | |
| Max frequency (cycles/min) | | 40 | 40 | 40 | 40 | 20 |
| Repeatability (mm) | | ± 0,1 | | | | |
| Opening/Closing stroke (mm) | | 20-40-60 | 30-60-80 | 40-80-100 | 50-100-120 | 70-120-160 |
| Gripping force (N)* | closing | 14 | 44 | 77 | 128 | 227 |
| | opening | 14 | 44 | 77 | 128 | 227 |

* = Gripping force at 5 bar, gripping point 30 mm

CONSTRUCTIVE CHARACTERISTICS

| | |
|------------|-----------------|
| Body | aluminium |
| Piston rod | stainless steel |
| Piston | brass |
| Rack | stainless steel |
| Pinion | carbon steel |
| Seal | nitrile rubber |
| Magnet | plastroferrite |
| Fingers | aluminium |

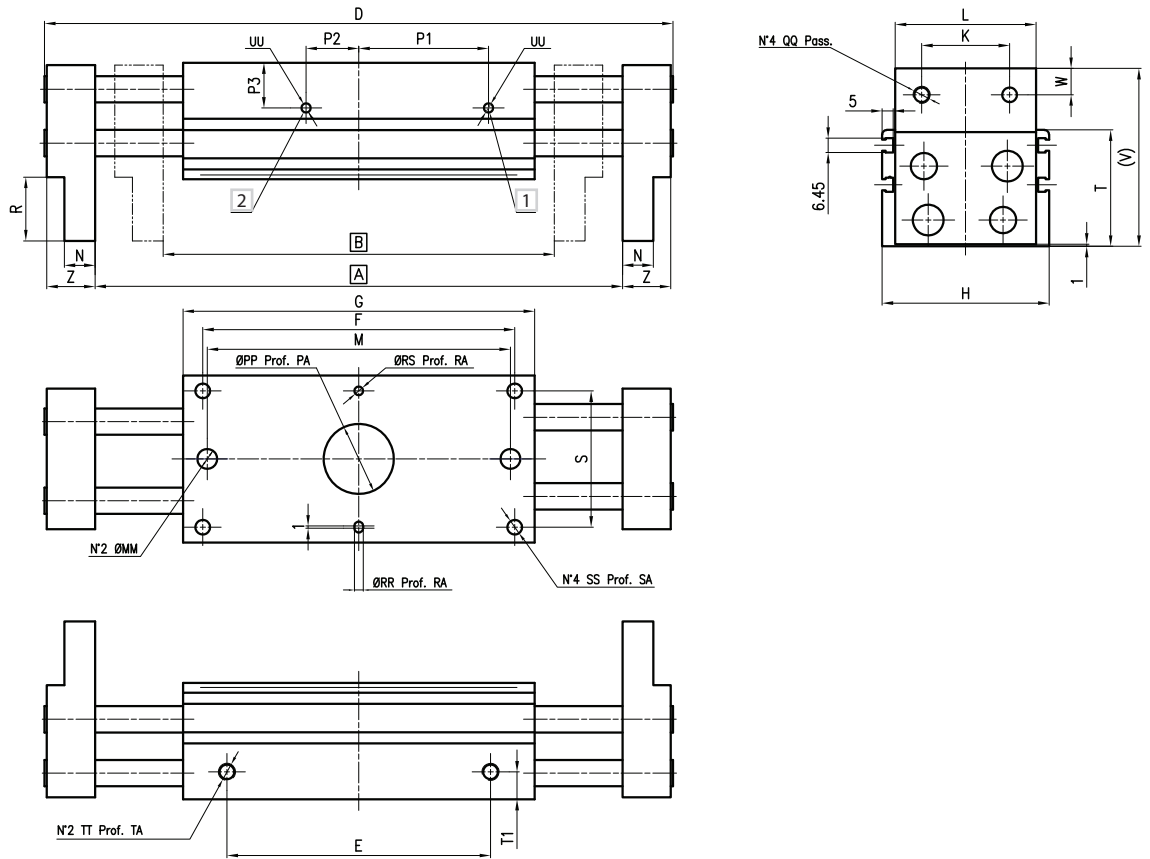
CODIFICATION KEY

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|--|
| Y | M | P | 4 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | |
| | | | 1 | | 2 | | | | 3 | | |

| 1 Series | 2 Bore (mm) | 3 Stroke (mm) | |
|----------------------------------------------|-------------|---------------|-----------|
| YMP40 = Wide-type Parallel Pneumatic Gripper | 010 = Ø10 | 020 = 20 | 070 = 70 |
| | 016 = Ø16 | 030 = 30 | 080 = 80 |
| | 020 = Ø20 | 040 = 40 | 100 = 100 |
| | 025 = Ø25 | 050 = 50 | 120 = 120 |
| | 032 = Ø32 | 060 = 60 | 160 = 160 |

| Ø | 10 | | | 16 | | | 20 | | | 25 | | | 32 | | |
|-------------|------|------|------|------|------|------|------|------|------|------|-----|-----|------|------|-----|
| Stroke (mm) | 20 | 40 | 60 | 30 | 60 | 80 | 40 | 80 | 100 | 50 | 100 | 120 | 70 | 120 | 160 |
| Weight (Kg) | 0,28 | 0,35 | 0,43 | 0,62 | 0,80 | 0,94 | 1,03 | 1,50 | 1,69 | 1,69 | 2,8 | 3,0 | 3,15 | 4,36 | 5,4 |

Overall dimensions



- 1 Supply port - opening
- 2 Supply port - closing

| Part no. | Stroke | A | B | D | E | F | G | M | P1 | P2 |
|----------|--------|-----|-----|-----|-----|-----|-----|-----|------|------|
| YMP40010 | 20 | 76 | 56 | 100 | 26 | 36 | 51 | 38 | 12 | 12 |
| | 40 | 118 | 78 | 142 | 42 | 52 | 67 | 54 | 19,5 | 19,5 |
| | 60 | 156 | 96 | 180 | 60 | 70 | 85 | 72 | 28,5 | 28,5 |
| YMP40016 | 30 | 98 | 68 | 128 | 28 | 45 | 60 | 40 | 14,4 | 14,4 |
| | 60 | 170 | 110 | 200 | 58 | 75 | 90 | 70 | 29,4 | 29,4 |
| YMP40020 | 80 | 210 | 130 | 240 | 78 | 95 | 110 | 90 | 39,4 | 39,4 |
| | 40 | 122 | 82 | 160 | 38 | 58 | 71 | 54 | 16,9 | 16,9 |
| | 80 | 222 | 142 | 260 | 80 | 100 | 113 | 96 | 34,4 | 34,4 |
| YMP40025 | 100 | 262 | 162 | 300 | 100 | 120 | 133 | 116 | 44,4 | 44,4 |
| | 50 | 150 | 100 | 196 | 48 | 70 | 88 | 66 | 23 | 23 |
| | 100 | 282 | 182 | 328 | 102 | 124 | 142 | 120 | 50 | 23 |
| YMP40032 | 120 | 320 | 200 | 366 | 120 | 142 | 160 | 138 | 59 | 24 |
| | 70 | 220 | 150 | 272 | 60 | 86 | 110 | - | 28 | 28 |
| YMP40032 | 120 | 318 | 198 | 370 | 108 | 134 | 158 | - | 52 | 52 |
| | 160 | 402 | 242 | 454 | 152 | 178 | 202 | - | 74 | 74 |

| Part no. | H | K | L | N | MM | PA | PP | P3 | QQ | R | RA | RR |
|----------|----|----|----|------|-----|-----|----|----|---------|----|----|----|
| YMP40010 | 44 | 20 | 34 | 7 | 4,5 | 1,5 | 18 | 9 | M4x0,7 | 15 | 3 | 3 |
| YMP40016 | 55 | 25 | 43 | 9 | 5,5 | 1,5 | 23 | 10 | M5x0,8 | 19 | 3 | 3 |
| YMP40020 | 65 | 30 | 54 | 12,5 | 6,6 | 1,5 | 27 | 11 | M6x1,0 | 24 | 4 | 4 |
| YMP40025 | 76 | 40 | 64 | 14 | 9 | 1,5 | 32 | 16 | M8x1,25 | 29 | 4 | 4 |
| YMP40032 | 82 | 50 | 70 | 15 | - | 2,5 | 35 | 16 | M10x1,5 | 32 | 8 | 6 |

| Part no. | RS | S | SA | SS | T | T1 | TA | TT | UU | V | W | Z |
|----------|----|----|----|---------|----|------|----|---------|------------|------|----|----|
| YMP40010 | 3 | 34 | 8 | M4x0,7 | 31 | 9 | 5 | M4x0,7 | M5x0,8 | 46,5 | 7 | 10 |
| YMP40016 | 3 | 42 | 10 | M5x0,8 | 39 | 10 | 7 | M5x0,8 | M5x0,8 | 58 | 8 | 13 |
| YMP40020 | 4 | 52 | 12 | M6x1,0 | 46 | 11 | 7 | M4x1,0 | M5x0,8 | 70 | 10 | 17 |
| YMP40025 | 4 | 62 | 16 | M8x1,25 | 52 | 12,5 | 7 | M8x1,25 | M5x0,8 | 81 | 12 | 21 |
| YMP40032 | 6 | 64 | 16 | M8x1,25 | 68 | 22 | 11 | M8x1,25 | RC(PT)1/8" | 100 | 15 | 24 |

For technical data on the DF-T sensor, see chapter 5 Accessories

YMP50

Self-centering 3 Jaw Pneumatic Gripper

- Bore sizes: Ø 16 - 25 - 32 - 40 - 50 - 63 - 80 - 100 - 125
- Pinholes are incorporated as standard, facilitating accurate mounting which is achieved through either body tapped or through hole mounting
- Auto switches can be simply attached via the standard built-in grooves
- The 3-jaw grippers is designed in lower height with long stroke



TECHNICAL CHARACTERISTICS

| | | | | | | | | | | | |
|-----------------------------|-------------------------------------------|----|----|-----|----|-----|-----|-----|-----|-----|------|
| Ambient temperature | -10 ÷ 60 °C | | | | | | | | | | |
| Acting type | double acting | | | | | | | | | | |
| Fluid | filtered air, with or without lubrication | | | | | | | | | | |
| Bore Ø (mm) | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | |
| Working pressure (bar) | 2÷6 | | | 1÷6 | | | | | | | |
| Max frequency (cycles/min) | 120 | | | 60 | | | | 30 | | | |
| Repeatability (mm) | ± 0,1 | | | | | | | | | | |
| Opening/Closing stroke (mm) | 4 | 4 | 6 | 8 | 8 | 12 | 16 | 20 | 24 | 32 | |
| Gripping force (N)* | closing | 14 | 25 | 42 | 74 | 118 | 187 | 335 | 500 | 750 | 1270 |
| | opening | 16 | 28 | 47 | 82 | 130 | 204 | 359 | 525 | 780 | 1320 |

* = Gripping force at 5 bar, gripping point 20 mm (Ø16-25) 30 mm (Ø 32÷63) 50 mm (Ø 80 ÷125)

CONSTRUCTIVE CHARACTERISTICS

| | |
|---------|-----------------|
| Body | aluminium |
| Cam | carbon steel |
| Piston | aluminium |
| Seal | nitrile rubber |
| Screws | stainless steel |
| Magnet | plastroferrite |
| Fingers | carbon steel |

CODIFICATION KEY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Y | M | P | 5 | 0 | - | 1 | 6 |
| 1 | | | | | | 2 | |

1 Series

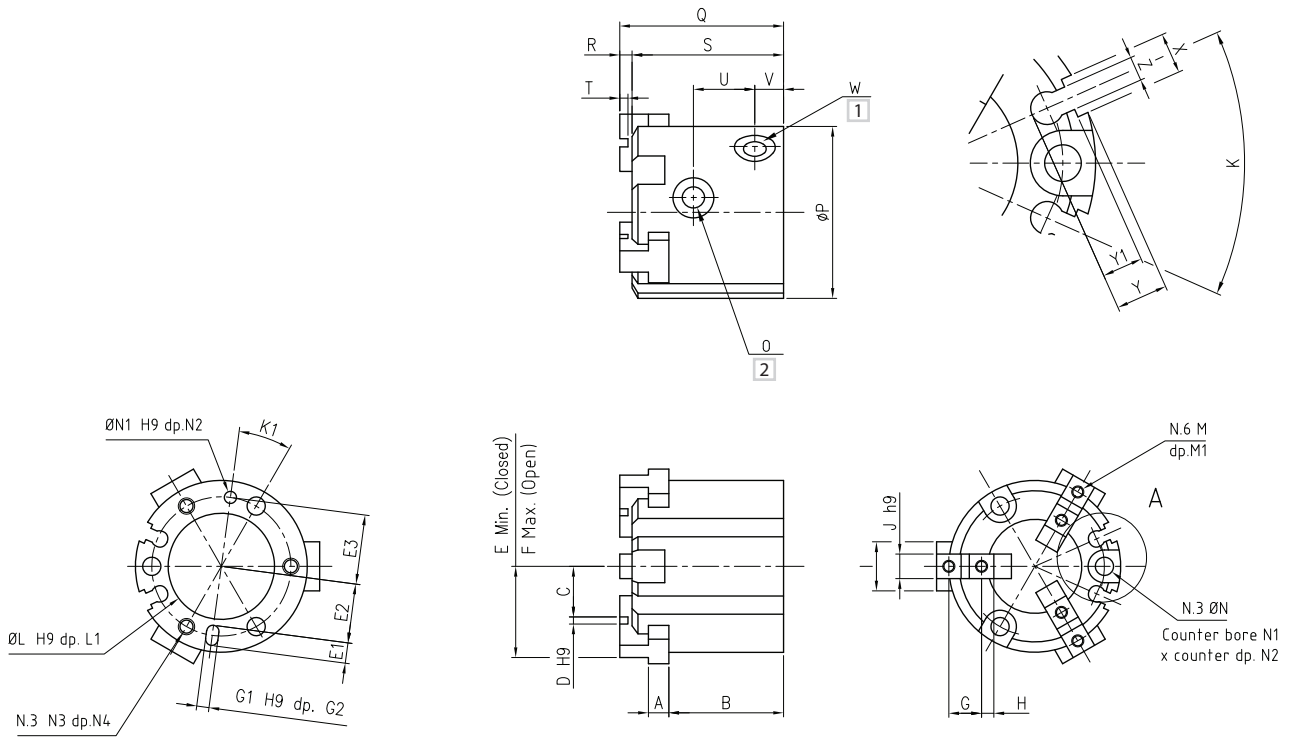
YMP50 = Self-centering 3 Jaw Pneumatic Gripper

2 Bore (mm)

| | |
|----------|------------|
| 16 = Ø16 | 50 = Ø50 |
| 20 = Ø20 | 63 = Ø63 |
| 25 = Ø25 | 80 = Ø80 |
| 32 = Ø32 | 100 = Ø100 |
| 40 = Ø40 | 125 = Ø125 |

| | | | | | | | | | | |
|-------------|------|-----|------|------|------|------|----|------|------|------|
| Ø | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Weight (Kg) | 0,06 | 0,1 | 0,15 | 0,24 | 0,35 | 0,54 | 1 | 1,85 | 3,34 | 6,46 |

Ø16÷25



- 1 Supply port - opening
- 2 Supply port - closing

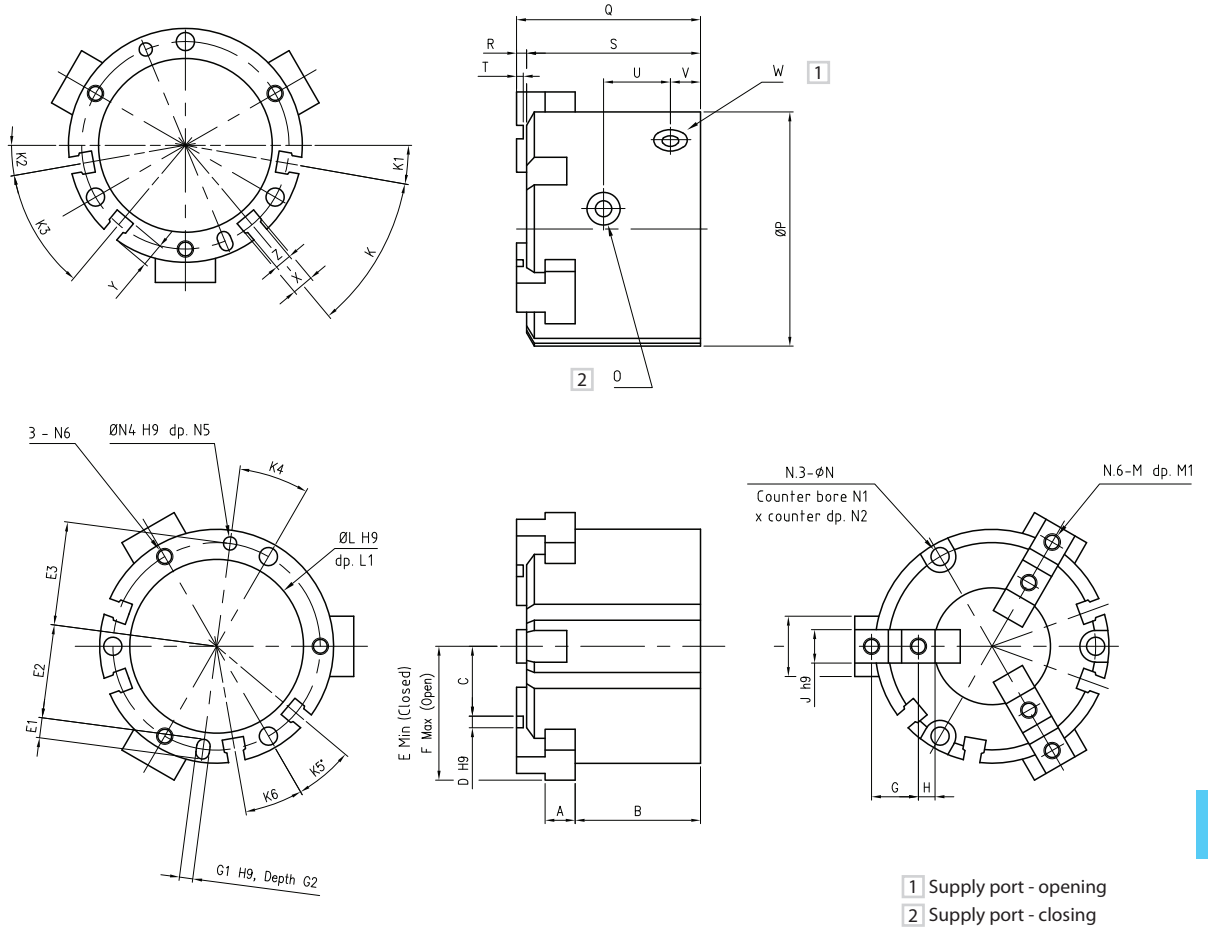
| Part no. | A | B | C | D | E | E1 | E2 | E3 | F | G | G1 | G2 | H | I | J | K | K1 |
|----------|---|----|----|---|----|----|------|------|----|---|----|----|-----|----|---|----|------|
| YMP50-16 | 4 | 25 | 9 | 2 | 15 | 3 | 11 | 12,5 | 17 | 6 | 2 | 2 | 2 | 8 | 5 | 54 | 22,5 |
| YMP50-20 | 5 | 27 | 11 | 2 | 18 | 3 | 13 | 14,5 | 20 | 7 | 2 | 2 | 2,5 | 10 | 6 | 50 | 22,5 |
| YMP50-25 | 5 | 28 | 13 | 2 | 21 | 5 | 14,5 | 17 | 24 | 8 | 3 | 3 | 3 | 12 | 6 | 50 | 22,5 |

| Part no. | L | L1 | M | M1 | N | N1 | N2 | O | P | Q | R | S | T | U | V | W | X |
|----------|----|-----|--------|----|-----|-----|----|--------|----|----|---|----|---|----|---|--------|---|
| YMP50-16 | 17 | 1,5 | M3x0,5 | 5 | 6,5 | 8 | 25 | M3x0,5 | 30 | 35 | 3 | 32 | 2 | 11 | 7 | M3x0,5 | - |
| YMP50-20 | 21 | 1,5 | M3x0,5 | 6 | 6,5 | 9,5 | 29 | M5x0,8 | 36 | 38 | 3 | 35 | 2 | 13 | 7 | M5x0,8 | 5 |
| YMP50-25 | 26 | 1,5 | M3x0,5 | 6 | 8 | 10 | 34 | M5x0,8 | 42 | 40 | 3 | 37 | 2 | 15 | 7 | M5x0,8 | 5 |

| Part no. | Y | Y1 | Z | Z1 |
|----------|-----|----|---|----|
| YMP50-16 | - | 5 | 3 | 4 |
| YMP50-20 | 6,5 | 5 | 3 | 4 |
| YMP50-25 | 6,5 | 5 | 3 | 4 |

For technical data on the DF-T sensor, see chapter 5 Accessories

Ø32÷80



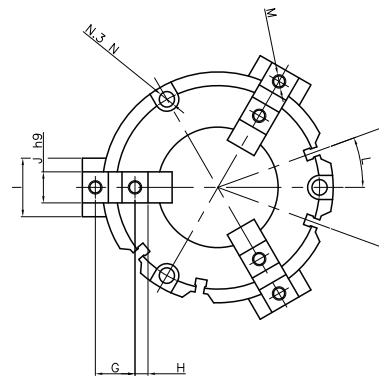
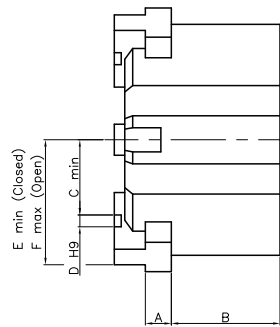
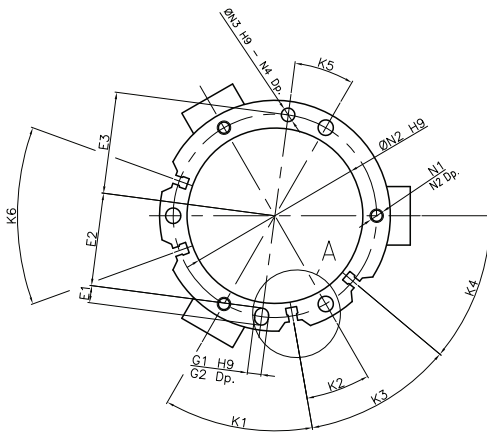
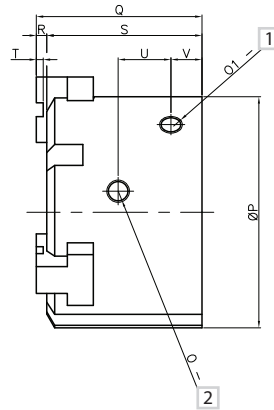
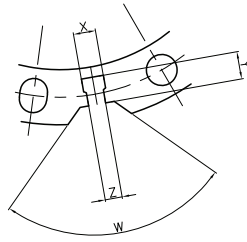
| Part no. | A | B | C | D | E | E1 | E2 | E3 | F | G | G1 | G2 | H | I | J | K | K1 |
|----------|----|------|------|---|------|----|------|------|------|----|----|----|-----|----|----|----|----|
| YMP50-32 | 6 | 30,5 | 17 | 2 | 28 | 5 | 19,5 | 22 | 32 | 11 | 3 | 3 | 4,5 | 14 | 8 | 40 | 10 |
| YMP50-40 | 7 | 32 | 19 | 3 | 31 | 6 | 23,5 | 26,5 | 35 | 12 | 4 | 4 | 4,5 | 16 | 8 | 40 | 10 |
| YMP50-50 | 9 | 37,5 | 21 | 4 | 35 | 6 | 28 | 31 | 41 | 14 | 4 | 4 | 5 | 18 | 10 | 40 | 10 |
| YMP50-63 | 11 | 44 | 26 | 6 | 43 | 7 | 34,5 | 38 | 51 | 17 | 5 | 5 | 5,5 | 24 | 12 | 40 | 10 |
| YMP50-80 | 12 | 56 | 33,5 | 8 | 53,5 | 8 | 43,5 | 47,5 | 63,5 | 20 | 6 | 6 | 6 | 28 | 14 | 40 | 10 |

| Part no. | K2 | K3 | K4 | K5 | K6 | L | L1 | M | M1 | N | N1 | N2 | O | P | Q | R | S |
|----------|----|----|------|----|----|----|-----|--------|----|-----|-----|----|--------|-----|----|---|----|
| YMP50-32 | 10 | 40 | 22,5 | 20 | 20 | 34 | 2 | M4x0,7 | 8 | 4,5 | 8 | 9 | M5x0,8 | 52 | 44 | 3 | 41 |
| YMP50-40 | 10 | 40 | 22,5 | 20 | 20 | 42 | 2 | M4x0,7 | 8 | 5,5 | 9,5 | 9 | M5x0,8 | 62 | 47 | 3 | 44 |
| YMP50-50 | 10 | 40 | 22,5 | 20 | 20 | 52 | 2 | M5x0,8 | 10 | 5,5 | 9,5 | 12 | M5x0,8 | 70 | 55 | 3 | 52 |
| YMP50-63 | 10 | 40 | 22,5 | 20 | 20 | 65 | 2,5 | M5x0,8 | 10 | 6,6 | 11 | 14 | M5x0,8 | 86 | 66 | 4 | 62 |
| YMP50-80 | 10 | 40 | 22,5 | 20 | 20 | 82 | 3 | M6x1 | 12 | 6,5 | 11 | 19 | 1/8 | 106 | 82 | 5 | 77 |

| Part no. | T | U | V | W | X | Y | Z |
|----------|---|----|------|--------|-----|-----|---|
| YMP50-32 | 2 | 16 | 8 | M5x0,8 | 6,4 | 6 | 5 |
| YMP50-40 | 2 | 17 | 9 | M5x0,8 | 6,4 | 8 | 5 |
| YMP50-50 | 2 | 20 | 9 | M5x0,8 | 6,4 | 7 | 5 |
| YMP50-63 | 3 | 22 | 12 | M5x0,8 | 6,4 | 7,5 | 5 |
| YMP50-80 | 4 | 27 | 13,5 | 1/8 | 6,4 | 9 | 5 |

For technical data on the DF-T sensor, see chapter 5 Accessories

Ø100-125



- 1 Supply port - opening
- 2 Supply port - closing

| Part no. | A | B | C | D | E | E1 | E2 | E3 | F | G | H | I | J | K | K1 | K2 | K3 |
|-----------|----|----|----|----|----|----|----|----|----|----|------|----|----|----|----|----|----|
| YMP50-100 | 15 | 63 | 43 | 8 | 66 | 10 | 54 | 59 | 78 | 23 | 7,5 | 34 | 18 | 40 | 40 | 20 | 40 |
| YMP50-125 | 18 | 84 | 50 | 10 | 82 | 12 | 68 | 74 | 98 | 31 | 10,5 | 40 | 22 | 40 | 40 | 20 | 40 |

| Part no. | K4 | K5 | K6 | L | M | N | O | O1 | P | Q | R | S | T | U | V | W | X |
|-----------|----|------|----|----|---------|----|-----|-----|-----|-----|---|-----|---|------|------|----|-----|
| YMP50-100 | 40 | 22,5 | 40 | 20 | M8x1,25 | 9 | 1/4 | 1/4 | 134 | 96 | 6 | 90 | 4 | 30,6 | 18 | 90 | 6,4 |
| YMP50-125 | 40 | - | 40 | 20 | M10x1,5 | 11 | 3/8 | 3/8 | 166 | 122 | 8 | 114 | 6 | 38 | 23,5 | 90 | 6,4 |

| Part no. | Y | Z |
|-----------|---|---|
| YMP50-100 | 8 | 5 |
| YMP50-125 | 8 | 5 |

For technical data on the DF-T sensor, see chapter 5 Accessories