

A51 - Non-magnetic



A52 - Magnetic

AIR CYLINDER

Series A51, A52

Cat No A51 - 03

AIR CYLINDERS Double Acting (Ø12 - 25 mm)

As per ISO 6432 / CETOP RP52P standards

Features

- Elastomer cushioning at both ends
- Wide varieties of mountings
- Low friction
- Long life



Technical Specifications

| | | | | |
|---------------------------|---|----|----|----|
| Cylinder bore Ø (mm) | 12 | 16 | 20 | 25 |
| Standard strokes * (mm) | 10 25 40 50 80 100 125 160 200 250 300 | | | |
| Medium | Compressed air - filtered - lubricated | | | |
| Working pressure | 0.5 - 10 bar | | | |
| Ambient temperature | -10° to +60° C | | | |
| Medium temperature | +5° to +50° C | | | |
| Materials of construction | Aluminium, Brass, Nitrile, Polyurethane, Steel, Acetal | | | |
| Mountings | Front foot mounting, Double foot mounting, Front flange, Rear flange, Front trunnion, Rear trunnion | | | |
| Accessories | Clevis foot bracket, Trunnion bracket, Rod end fork, Rod end aligner | | | |

* For Non standard or longer stroke cylinders, contact your regional dealer or **JANATICS**

Output force (force in N : 1N = 0.1 kgf)

| Cylinder bore Ø (in mm) | Rod Ø (in mm) | | Working pressure in bar | | | | | | | | |
|-------------------------|---------------|---------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 12 | 6 | Extend | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| | | Retract | 15 | 22 | 30 | 38 | 46 | 53 | 61 | 68 | 76 |
| 16 | 6 | Extend | 36 | 54 | 72 | 90 | 108 | 126 | 144 | 162 | 180 |
| | | Retract | 31 | 46 | 62 | 78 | 94 | 108 | 124 | 140 | 156 |
| 20 | 8 | Extend | 56 | 84 | 112 | 140 | 169 | 196 | 224 | 254 | 282 |
| | | Retract | 47 | 71 | 95 | 118 | 142 | 166 | 189 | 214 | 237 |
| 25 | 10 | Extend | 88 | 132 | 176 | 220 | 264 | 308 | 352 | 396 | 440 |
| | | Retract | 74 | 111 | 148 | 185 | 222 | 260 | 296 | 334 | 371 |

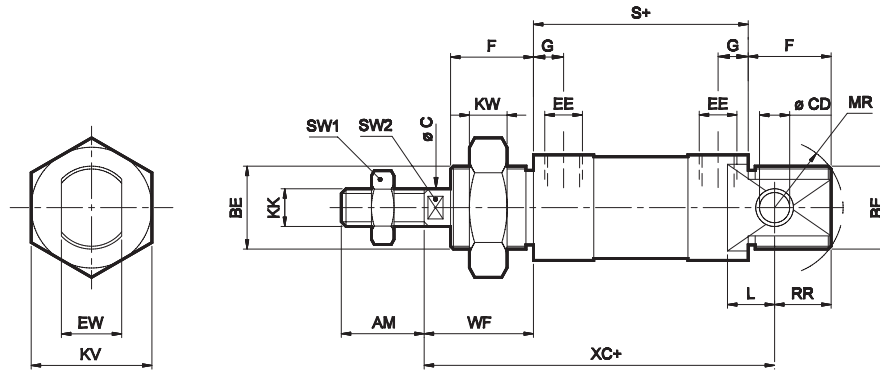
(Above values have been worked out taking frictional loss into consideration)

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Basic cylinder

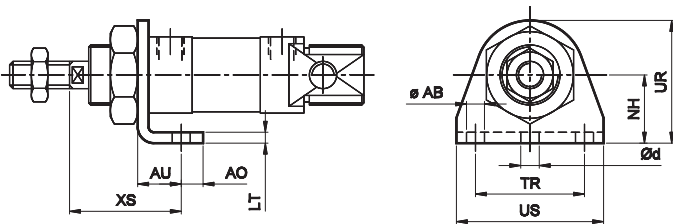


+ Add stroke

| Cylinder bore Ø | MR | BE | F | CD H9 | RR | L | G | EE | S | KW | C | SW1 | SW2 | KK | AM | WF ±1.2 | XC ±1 | EW d13 | KV | Stroke tol | |
|-----------------|----|---------|----|-------|----|----|---|--------|--------------------|----|----|-----|-----|----------|----|---------|-------|--------|----|--------------|--------------|
| | | | | | | | | | | | | | | | | | | | | 10 - 100 | Above 100 |
| 12 | 17 | M16x1.5 | 17 | 6 | 15 | 9 | 6 | M5x0.8 | 51 ^{+0.5} | 8 | 6 | 10 | 5 | M6x1 | 16 | 22 | 75 | 12 | 24 | + 1.5 + 0 | + 2.5 + 0 |
| 16 | 17 | M16x1.5 | 17 | 6 | 15 | 9 | 6 | M5x0.8 | 58 ^{+0.5} | 8 | 6 | 10 | 5 | M6x1 | 16 | 22 | 82 | 12 | 24 | | |
| 20 | 20 | M22x1.5 | 20 | 8 | 16 | 12 | 8 | G1/8 | 67 ^{+0.7} | 10 | 8 | 13 | 7 | M8x1.25 | 20 | 24 | 95 | 16 | 32 | | |
| 25 | 21 | M22x1.5 | 22 | 8 | 17 | 12 | 8 | G1/8 | 71 ^{+0.7} | 10 | 10 | 17 | 9 | M10x1.25 | 22 | 28 | 104 | 16 | 32 | | |

MOUNTINGS FOR AIR CYLINDER Series A51

Front Foot Mounting

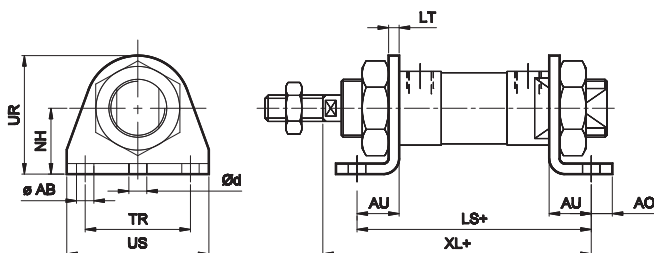


+ Add stroke

| Cylinder bore Ø | LT | AU | AO | d* | XS ±1.4 | NH ±0.3 | TR Js14 | US | AB H13 | UR | Ordering no. |
|-----------------|----|----|----|-----|---------|---------|---------|----|--------|----|--------------|
| 12 | 2 | 12 | 6 | 4.8 | 32 | 20 | 32 | 42 | 5.5 | 33 | ML016 |
| 16 | 2 | 12 | 6 | 4.8 | 32 | 20 | 32 | 42 | 5.5 | 33 | ML016 |
| 20 | 4 | 16 | 8 | 5.8 | 36 | 25 | 40 | 54 | 6.6 | 45 | ML022 |
| 25 | 4 | 16 | 8 | 5.8 | 40 | 25 | 40 | 54 | 6.6 | 45 | ML022 |

* Suitable for reaming

Double Foot Mounting



+ Add stroke

| Cylinder bore Ø | UR | AB H13 | TR Js14 | NH ±0.3 | AO | AU | d* | LT | US | LS | XL ±1 | Ordering no. |
|-----------------|----|--------|---------|---------|----|----|-----|----|----|---------------------|-------|--------------|
| 12 | 33 | 5.5 | 32 | 20 | 6 | 12 | 4.8 | 2 | 42 | 75 ^{+0.7} | 85 | MS016 |
| 16 | 33 | 5.5 | 32 | 20 | 6 | 12 | 4.8 | 2 | 42 | 82 ^{+0.7} | 92 | MS016 |
| 20 | 45 | 6.6 | 40 | 25 | 8 | 16 | 5.8 | 4 | 54 | 99 ^{+0.9} | 107 | MS022 |
| 25 | 45 | 6.6 | 40 | 25 | 8 | 16 | 5.8 | 4 | 54 | 103 ^{+0.9} | 115 | MS022 |

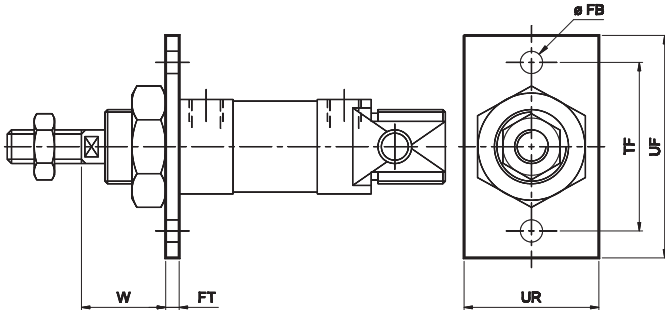
* Suitable for reaming

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Series A51, A52

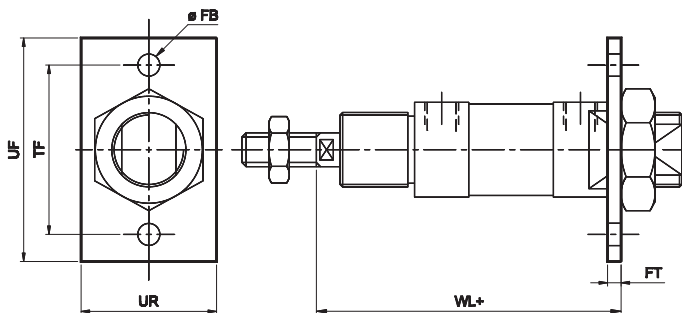
Cat No A51 - 03

Front flange



| Cylinder bore Ø | TF Js14 | UF | UR | FB H13 | FT | W ±1.4 | Ordering no. |
|-----------------|---------|----|----|--------|----|--------|--------------|
| 12 | 40 | 50 | 30 | 5.5 | 4 | 18 | MF016 |
| 16 | 40 | 50 | 30 | 5.5 | 4 | 18 | MF016 |
| 20 | 50 | 66 | 40 | 6.6 | 5 | 19 | MF022 |
| 25 | 50 | 66 | 40 | 6.6 | 5 | 23 | MF022 |

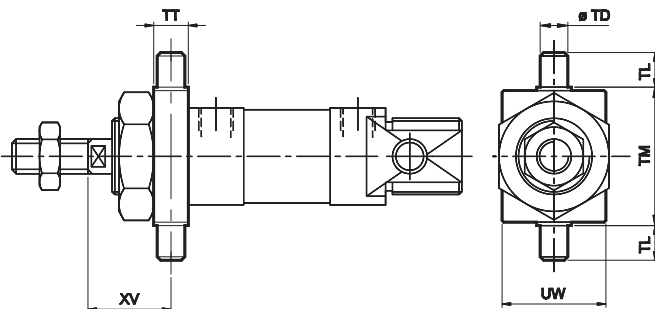
Rear flange



| Cylinder bore Ø | TF Js14 | UF | UR | FB H13 | FT | WL ±1.2 | Ordering no. |
|-----------------|---------|----|----|--------|----|---------|--------------|
| 12 | 40 | 50 | 30 | 5.5 | 4 | 77 | MF016 |
| 16 | 40 | 50 | 30 | 5.5 | 4 | 84 | MF016 |
| 20 | 50 | 66 | 40 | 6.6 | 5 | 96 | MF022 |
| 25 | 50 | 66 | 40 | 6.6 | 5 | 104 | MF022 |

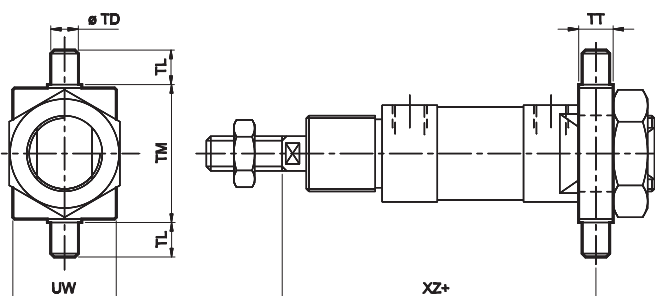
+ Add stroke

Front trunnion



| Cylinder bore Ø | TM h14 | UW | TD e9 | TT | XV ±1.4 | TL h14 | Ordering no. |
|-----------------|--------|----|-------|----|---------|--------|--------------|
| 12 | 30 | 25 | 6 | 8 | 18 | 10 | MT016 |
| 16 | 30 | 25 | 6 | 8 | 18 | 10 | MT016 |
| 20 | 40 | 30 | 8 | 10 | 19 | 10 | MT022 |
| 25 | 40 | 30 | 8 | 10 | 23 | 10 | MT022 |

Rear trunnion



| Cylinder bore Ø | TM h14 | UW | TD e9 | TT | XZ ±1.2 | TL h14 | Ordering no. |
|-----------------|--------|----|-------|----|---------|--------|--------------|
| 12 | 30 | 25 | 6 | 8 | 77 | 10 | MT016 |
| 16 | 30 | 25 | 6 | 8 | 84 | 10 | MT016 |
| 20 | 40 | 30 | 8 | 10 | 96 | 10 | MT022 |
| 25 | 40 | 30 | 8 | 10 | 104 | 10 | MT022 |

+ Add stroke

For trunnion brackets see "Accessories"

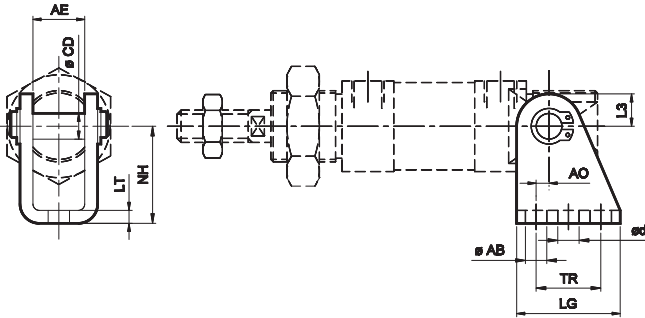
AIR CYLINDER

Series A51, A52

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Accessories for Air Cylinder series A51, A52

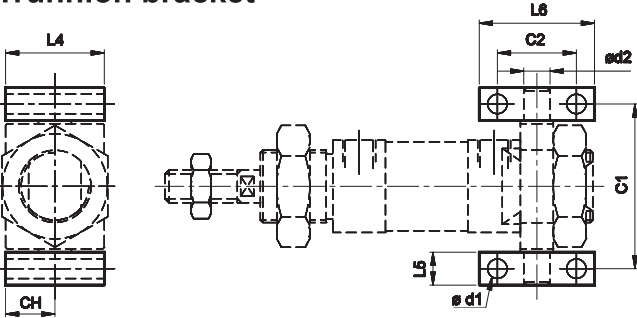
Clevis foot bracket (CETOP - RP 107 P)



| Cylinder bore Ø | AE | AB H13 | LT | NH | L3 | CD e8 | d* | TR Js14 | LG | AO | Ordering no. |
|-----------------|------|--------|----|----|----|-------|-----|---------|----|----|--------------|
| 12 | 12.1 | 5.5 | 2 | 27 | 7 | 6 | 3.8 | 15 | 25 | 2 | AA016 |
| 16 | 12.1 | 5.5 | 2 | 27 | 7 | 6 | 3.8 | 15 | 25 | 2 | AA016 |
| 20 | 16.1 | 6.6 | 4 | 30 | 10 | 8 | 4.8 | 20 | 32 | 4 | AA022 |
| 25 | 16.1 | 6.6 | 4 | 30 | 10 | 8 | 4.8 | 20 | 32 | 4 | AA022 |

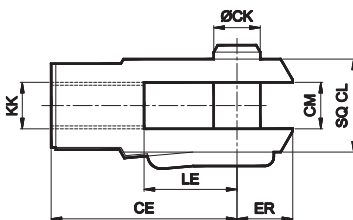
* Suitable for reaming

Trunnion bracket



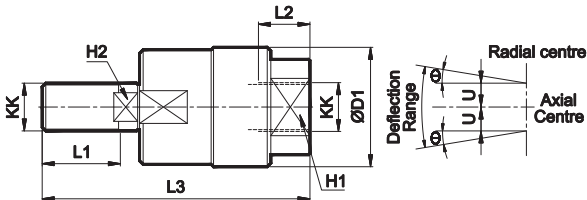
| Cylinder bore Ø | C1 | C2 Js14 | d1 H13 | L4 | L5 | L6 | CH | d2 H9 | Ordering no. |
|-----------------|----|---------|--------|----|----|----|----|-------|--------------|
| 12 | 38 | 20 | 4.3 | 25 | 8 | 30 | 16 | 6 | AT016 |
| 16 | 38 | 20 | 4.3 | 25 | 8 | 30 | 16 | 6 | AT016 |
| 20 | 50 | 24 | 6.6 | 30 | 10 | 35 | 20 | 8 | AT022 |
| 25 | 50 | 24 | 6.6 | 30 | 10 | 35 | 20 | 8 | AT022 |

Rod end Fork (ISO 8140)



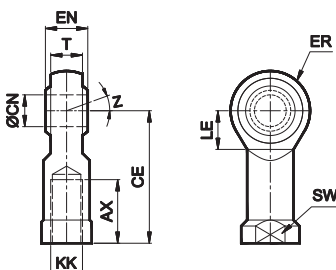
| Cylinder bore Ø | KK | LE | CM B12 | CE | CK f8 | CL | ER | Ordering no. |
|-----------------|----------|----|--------|----|-------|----|-----|--------------|
| 12 | M6X1 | 12 | 6 | 24 | 6 | 12 | 9.5 | AF006 |
| 16 | M6X1 | 12 | 6 | 24 | 6 | 12 | 9.5 | AF006 |
| 20 | M8X1.25 | 16 | 8 | 32 | 8 | 16 | 13 | AF008 |
| 25 | M10X1.25 | 20 | 10 | 40 | 10 | 20 | 16 | AF010 |

Rod end Aligner



| Cylinder bore Ø | KK | L1 | L2 | L3 | D1 | H1 | H2 | ± θ° | U | Ordering no. |
|-----------------|----------|----|----|----|----|----|----|------|------|--------------|
| 12 / 16 | M6X1 | 12 | 8 | 38 | 18 | 10 | 4 | 5 | 0.75 | AR006 |
| 20 | M8X1.25 | 15 | 10 | 48 | 20 | 12 | 7 | 5 | 0.75 | AR008 |
| 25 | M10X1.25 | 20 | 14 | 65 | 28 | 17 | 8 | 5 | 0.75 | AR010 |

Rod end spherical eye



| Cylinder bore Ø | KK | CN H9 | T | EN h12 | CE | LE min | ER max | AX | SW h13 | Z | Ordering no. |
|-----------------|----------|-------|------|--------|----|--------|--------|----|--------|-----|--------------|
| 12 / 16 | M6X1 | 6 | 6.75 | 9 | 30 | 11 | 10 | 12 | 11 | 13° | AP006 |
| 20 | M8X1.25 | 8 | 9 | 12 | 36 | 13 | 12 | 16 | 13/14 | | AP008 |
| 25 | M10X1.25 | 10 | 10.5 | 14 | 43 | 15 | 14 | 20 | 17 | | AP010 |

AIR CYLINDER

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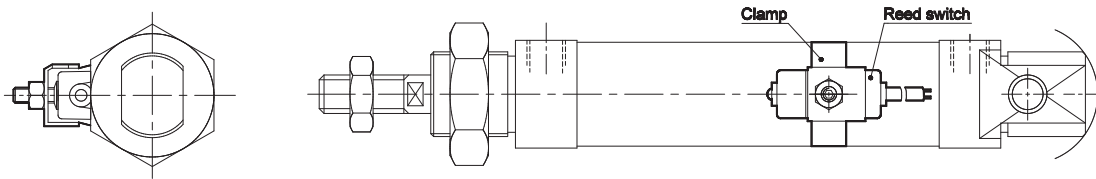
ACCESSORIES FOR MAGNETIC CYLINDERS Series A52, A55

REED SWITCH



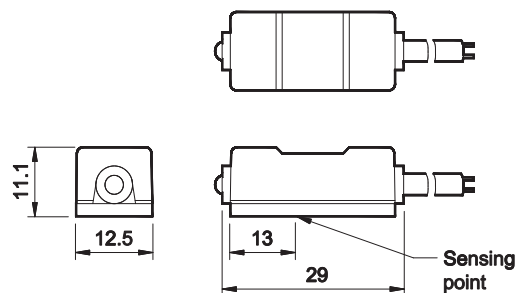
Function

The reed switch and clamping kit assembly is mounted on the Air cylinder (Series A52, A55), for proximity sensing. The piston of the cylinder is equipped with a permanent magnet which activates the reed switch on approaching it. The reed switch closes the circuit giving an electrical signal, which could be used further as required. The accuracy of the sensing distance depends on the speed of operation of the piston.

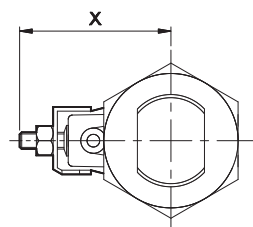


Technical Specifications - Reed Switch

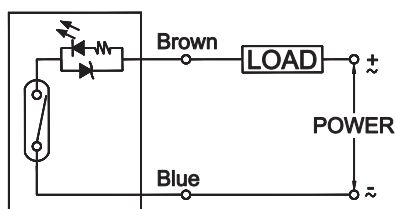
| | |
|-----------------------|---------------------|
| Model | 880006 |
| Operating voltage | DC / AC 5 - 240V |
| Switching current | 100mA max |
| Switch rating | 10 W max |
| Voltage drop | 3.5V max. |
| Response time | On + off <1ms |
| Switching logic | SPST, Normally open |
| Operating temperature | -10° to +70° C |
| Shock | 30 G |
| Vibration | 9 G |
| Protection circuit | None |
| Type of protection | IEC 529, IP67 |
| Colour of LED | Green |
| Cable | Ø4, 2C, 2meter |



| Bore Dia | X | Ordering no. for Clamp (a) | Ordering no. for Reed Switch (b) | Ordering no. (a+b) |
|----------|----|----------------------------|----------------------------------|--------------------|
| 12 | 32 | 810000 | 880006 | AM1012 |
| 16 | 34 | 810001 | | AM1016 |
| 20 | 36 | 810002 | | AM1020 |
| 25 | 38 | 810003 | | AM1025 |



Circuit and connect diagram



AIR CYLINDER

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How to order

| A | | 51 | | 016 | | 050 | | D | |
|-------|-------------------|-------------|--------|-------------|-------|-----------|------------------------|---|--|
| Model | | Bore Ø (mm) | | Stroke (mm) | | Mountings | | | |
| 51 | Standard cylinder | 012 | - Ø 12 | 010 | - 10 | O | - Basic | | |
| 52 | Magnetic cylinder | 016 | - Ø 16 | 025 | - 25 | L | - Front Foot Mounting | | |
| | | 020 | - Ø 20 | 040 | - 40 | D | - Double Foot Mounting | | |
| | | 025 | - Ø 25 | 050 | - 50 | F | - Front Flange | | |
| | | | | 080 | - 80 | R | - Rear Flange | | |
| | | | | 100 | - 100 | M | - Front Trunnion | | |
| | | | | 125 | - 125 | N | - Rear Trunnion | | |
| | | | | 160 | - 160 | | | | |
| | | | | 200 | - 200 | | | | |
| | | | | 250 | - 250 | | | | |
| | | | | 300 | - 300 | | | | |

Example:

Ordering no. for standard cylinder with 16 dia bore, 50 mm stroke with Double foot mounting : **A51 016 050 D**



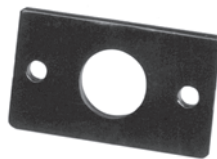
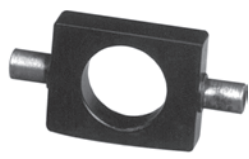
Note:

If ordered as 16 dia, 50 mm stroke cylinder, Basic cylinder **A51 016 050 O** will be supplied.

For repeat order when the details are taken from cylinder nameplate, mention the mounting style separately.

For ordering **Accessories**: mention part numbers in corresponding tables.

For ordering individual **Mounting** kits (If needed separately): mention the ordering numbers as below

| Cylinder bore Ø | Front Foot mounting | Double Foot mounting | Flange (Front or Rear) | Trunnion (Front or Rear) |
|-----------------|---|---|--|---|
| |  |  |  |  |
| 12 | ML016 | MS016 | MF016 | MT016 |
| 16 | ML016 | MS016 | MF016 | MT016 |
| 20 | ML022 | MS022 | MF022 | MT022 |
| 25 | ML022 | MS022 | MF022 | MT022 |

For your special requirements of cylinders or for further informations contact your regional dealer or **JANATICS**