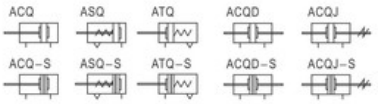
## Specification

| Bore size(mm) | | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acting type | | Double acting | | | | | | | | | |
| | | Single acting-Push type, Single acting-Pull type | | | | | | | | – | |
| Fluid | | Air(to be filtered by 40 μ m filter element) | | | | | | | | | |
| Operating pressure | Double acting | 0.1~1.0MPa(15~145psi)(1.0~10.0bar) | | | | | | | | | |
| | Single acting | 0.2~1.0MPa(28~145psi)(2.0~10.0bar) | | | | | | | | | |
| Proof pressure | | 1.5MPa(215psi)(15bar) | | | | | | | | | |
| Temperature ℃ | | -20~80 | | | | | | | | | |
| Speed range mm/s | | Double acting: 30~500 Single acting: 50~500 | | | | | | | | | |
| Stroke tolerance | | $0\sim150^{+1.0}_{0}$ $>150^{+1.4}_{0}$ | | | | | | | | | |
| Cushion type | | Bumper | | | | | | | | | |
| Port size ① | | M5 × 0.8 | | | | 1/8" | | 1/4" | | 3/8" | |

① PT thread, NPT thread and G thread are available. Add) Refer to P397~420 for detail of sensor switch.

## Symbol




ACQ

## Product feature

1. JIS standard is implemented.
2. C clip is adopted to connect the cylinder body and back cover or front cover, and riveted structure is adopted to connect piston and piston rod to make it compact and reliable.
3. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
4. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.
5. Compact structure can effectively save installation space.
6. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
7. Installing accessories with various specifications are optional.

## Stroke

| Bore size (mm) | | Standard stroke (mm) | Max. std stroke | Max. stroke | |
|---|---|---|---|---|---|
| | | | | Without magnet | With magnet |
| 12 | Double acting | 5 10 15 20 25 30 35 40 45 50 | 50 | 80 | 70 |
| | Single acting | 5 10 15 20 | 20 | – | - |
| 16 | Double acting | 5 10 15 20 25 30 35 40 45 50 55 60 | 60 | 80 | 70 |
| | Single acting | 5 10 15 20 | 20 | - | - |
| 20 | Double acting | 5 10 15 20 25 30 35 40 45 50 60 70 75 80 90 100 | 100 | 140 | 130 |
| 25 | Single acting | 5 10 15 20 25 30 | 30 | - | - |
| 32 40 | Double acting | 5 10 15 20 25 30 35 40 45 50 60 70 75 80 90 100 | 100 | 100 | 100 |
| 50 63 | Single acting | 5 10 15 20 25 30 | | | |
| 80 100 | Double acting | 5 10 15 20 25 30 35 40 45 50 60 70 75 80 90 100 | 100 | - | - |

Note) 1. Please contact the company for other special strokes.
2. The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

## Ordering code

ACQ 20 × 30 S B □ □

ACQD 20 × 30 S B □ □

ACQJ 20 × 30~30 S B □ □

**Model**

| |
|---|
| ACQ: Compact cylinder(Double acting) |
| ASQ: Compact cylinder (Single acting-push) |
| ATQ: Compact cylinder (Single acting-pull) |
| ACQD: Compact cylinder(Double rod) |
| ACQJ: Compact cylinder (Adjustable stroke) |

**Bore size**

| Model | Bore size |
|---|---|
| ACQ | 12 16 20 25 32 40 50 63 80 100 |
| ASQ | 12 16 20 25 32 40 50 63 |
| ATQ | 12 16 20 25 32 40 50 63 |
| ACQD | 12 16 20 25 32 40 50 63 80 100 |
| ACQJ | 12 16 20 25 32 40 50 63 80 100 |

**Stroke**

Refer to stroke table for details

**Adjustable stroke**

| Model | Adjustable stroke |
|---|---|
| ACQJ | 10: 10mm |
| | 20: 20mm |
| | 30: 30mm |
| | 40: 40mm |
| | 50: 50mm |
| | 75: 75mm |
| | 100: 100mm |
| Others | No this code |

**Thread type** ②

| |
|---|
| Blank: PT |
| T: NPT |
| G: G |

**Mounting type** ①

| Model | Mounting type |
|---|---|
| ACQ ASQ ATQ | Blank: No accessories |
| | FA: FA type |
| | FB: FB type |
| | CB: CB type |
| | LB: LB type |
| ACQD ACQJ | Blank: No accessories |
| | FA: FA type |
| | FB: FB type |
| | LB: LB type |

**Rod type**

| |
|---|
| Blank: Female thread |
| B: Male thread |

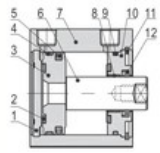
**Magnet**

| |
|---|
| Blank: Without magnet |
| S: With magnet |

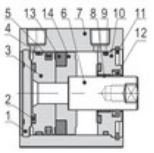
① Please refer to page 261 for accessory parts.
② Standard thread is blank here.

## Inner structure and material of major parts

ACQ



ACQS

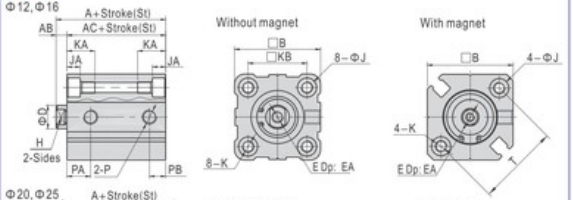


| NO. | Item | | Material |
|---|---|---|---|
| 1 | Back cover | | No(Φ12, 16)\Aluminum alloy(Others) |
| 2 | Bumper | | TPU(Φ12~25)NBR(Others) |
| 3 | Piston | | Brass(Φ12, 16)\Aluminum alloy(Others) |
| 4 | Wear ring | | No(Φ12~32)\Wear resistant material(Others) |
| 5 | Piston seal | | NBR |
| 6 | Piston rod | | Carbon steel with 20 μ m chrome plated |
| 7 | Body | | Aluminum alloy |
| 8 | Bushing | | No(Φ12~32)\Wear resistant material(Others) |
| 9 | O-ring | | NBR |
| 10 | Front cover | | Aluminum alloy |
| 11 | C clip | | Spring steel |
| 12 | Front cover packing | | NBR |
| 13 | Magnet | Φ12~25 | Sintered metal(Neodymium-iron-boron) |
| | | Others | Plastic |
| 14 | Magnet holder | | Brass(Φ12, 16)Aluminum alloy(Others) |

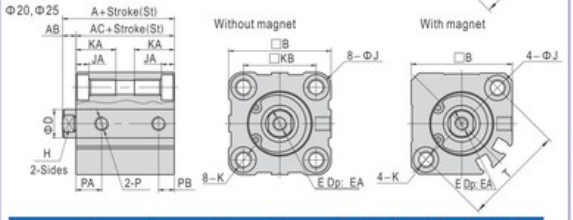
## Dimensions

ACQ

Φ12, Φ16



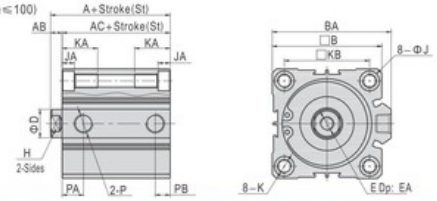

Φ20, Φ25




| Bore size\Item | A | | | AC | | | PA | PB | A | AC | PA | PB | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Without magnet | | | | | | | | With magnet | | | | |
| | St≤50 | St=55 | St≥60 | St≤50 | St=55 | St≥60 | – | – | | | | | |
| 12 | 20.5 | - | - | 17 | - | - | 7.5 | 5 | 31.5 | 28 | 9 | 7 | 3.5 |
| 16 | 22 | 22 | - | 18.5 | 18.5 | - | 8 | 5.5 | 34 | 30.5 | 9.5 | 5.5 | 3.5 |
| 20 | 24 | - | 34 | 19.5 | - | 29.5 | 9 | 5.5 | 36 | 31.5 | 9.5 | 5.5 | 4.5 |
| 25 | 27.5 | - | 37.5 | 22.5 | - | 32.5 | 11 | 5.5 | 37.5 | 32.5 | 11 | 5.5 | 5 |

| Bore size\Item | B | D | E | EA | H | J | JA | K | KA | KB | P | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 25 | 6 | M3×0.5 | 6 | 5 | 6.5 | 3.5 | M4×0.7 Thru.hole: Φ3.4 | 11 | 15.5 | M5×0.8 | 22 |
| 16 | 29 | 8 | M4×0.7 | 8 | 6 | 6.5 | 3.5 | M4×0.7 Thru.hole: Φ3.4 | 11 | 20 | M5×0.8 | 28 |
| 20 | 36 | 10 | M5×0.8 | 7 | 8 | 9 | 7 | M6×1.0 Thru.hole: Φ5.2 | 17 | 25.5 | M5×0.8 | 36 |
| 25 | 40 | 12 | M6×1.0 | 12 | 10 | 9 | 7 | M6×1.0 Thru.hole: Φ5.2 | 17 | 28 | M5×0.8 | 40 |

Φ32~Φ100 (Stroke≤100)




| Item | A | | AC | | A | AC | | | | | | EA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Without magnet | | | | With magnet | | AB | B | BA | D | E | |
| Bore size\Stroke | St≤50 | St≥60 | St≤50 | St≥60 | - | - | | | | | | |
| 32 | 30 | 40 | 23 | 33 | 40 | 33 | 7 | 45 | 49.5 | 16 | M8×1.25 | 13 |
| 40 | 36.5 | 46.5 | 29.5 | 39.5 | 46.5 | 39.5 | 7 | 53 | 57 | 16 | M8×1.25 | 13 |
| 50 | 38.5 | 48.5 | 30.5 | 40.5 | 48.5 | 40.5 | 8 | 64 | 71 | 20 | M10×1.5 | 15 |
| 63 | 44 | 54 | 36 | 46 | 54 | 46 | 8 | 77 | 84 | 20 | M10×1.5 | 15 |
| 80 | 53.5 | 63.5 | 43.5 | 53.5 | 63.5 | 53.5 | 10 | 98 | 104 | 25 | M16×2.0 | 20 |
| 100 | 65 | 75 | 53 | 63 | 75 | 63 | 12 | 117 | 123.5 | 32 | M20×2.5 | 26 |

| Bore size\Item | | H | J | JA | K | KA | KB | P | PA | PB | PA | PB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Without magnet | | With magnet | |
| 32 | St=5 | 14 | 9 | 7 | M6×1.0 Thru.hole: Φ5.2 | 17 | 34 | 1/8" | 7.5 | 6.5 | 10.5 | 7.5 |
| | St>5 | | | | | | | | 10.5 | 7.5 | | |
| 40 | | 14 | 9 | 7 | M6×1.0 Thru.hole: Φ5.2 | 17 | 40 | 1/8" | 11 | 8 | 11 | 8 |
| 50 | St=5 | 17 | 11 | 8 | M8×1.25 Thru.hole: Φ6.8 | 22 | 50 | 1/4" | 9 | 9 | 10.5 | 10.5 |
| | St>5 | | | | | | | | 10.5 | 10.5 | | |
| 63 | St=5 | 17 | 14 | 10.5 | M10×1.5 Thru.hole: Φ8.5 | 28.5 | 60 | 1/4" | 14 | 9.5 | 15 | 10.5 |
| | St>5 | | | | | | | | 15 | 10.5 | | |
| 80 | | 22 | 17.5 | 13.5 | M12×1.75 Thru.hole: Φ10.3 | 35.5 | 77 | 3/8" | 16 | 14 | 16 | 14 |
| 100 | | 27 | 17.5 | 13.5 | M12×1.75 Thru.hole: Φ10.3 | 35.5 | 94 | 3/8" | 20 | 17.5 | 20 | 17.5 |