









Compact cylinder—ACE Series

In accordance with ISO21287 standard

Product series

| Series name | Mounting type | | | | | | | | Acting type | Bore size | Collocation of sensor switch | | |
|---|---------------|----|----|----|----|----|-----|----|-------------|---------------|------------------------------|-------|-------|
| | Basic | FA | FB | CA | CB | CR | FTC | LB | | | SDB | CS1-E | DS1-E |
| Double acting type: ACE  | • | • | • | • | • | • | • | • | • | Double acting | 12 | • | • |
| Double rod type: ACED  | • | • | • | • | • | • | • | • | • | | 16 | • | • |
| Adjustable stroke type: ACEJ  | • | • | • | • | • | • | • | • | • | | 20 | • | • |
| Single acting type: ASE, ATE  | • | • | • | • | • | • | • | • | • | | 25 | • | • |
| | • | • | • | • | • | • | • | • | • | | 32 | • | • |
| Double acting non-rotating with guide rods: TACE  | • | • | • | • | • | • | • | • | • | Double acting | 40 | • | • |
| Double rod non-rotating with guide rods: TACED  | • | • | • | • | • | • | • | • | • | | 50 | • | • |
| | • | • | • | • | • | • | • | • | • | | 63 | • | • |
| | • | • | • | • | • | • | • | • | • | | 80 | • | • |
| | • | • | • | • | • | • | • | • | • | | 100 | • | • |
| Page | 254 | | | | | | | | 258 | | 419 | | |



Installation and application

- When load changes in the work, the cylinder with abundant output capacity shall be selected.
- Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion.
- Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
- Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of particles into the cylinder.
- The medium used by cylinder shall be filtered to 40 μm or below.
- As both of the front cover and piston of the cylinder are short, typically too large stroke can not be selected.
- Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
- The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life.
- If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports. The front and back cover can not be dismantled, which shall be especially noticed.

Criteria for selection: Cylinder thrust

Unit: Newton(N)

| Bore size (mm) | Rod size (mm) | Acting type | Pressure area (mm ²) | Operating pressure(MPa) | | | | | | | Bore size (mm) | Rod size (mm) | Acting type | Pressure area (mm ²) | Operating pressure(MPa) | | | | | | | | | | |
|----------------|---------------|---------------|----------------------------------|-------------------------|------|-------|-------|-------|-------|-------|----------------|---------------|-------------|----------------------------------|-------------------------|---------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | | | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | | | | |
| 12 | 6 | Single acting | Push side | 131.1 | - | 6.1 | 17.4 | 28.7 | 40.0 | 51.4 | 62.7 | 40 | 12 | Single acting | Push side | 1256.6 | 54.2 | 179.8 | 305.5 | 431.2 | 556.8 | 682.5 | 808.1 | | |
| | | | Pull side | 84.8 | - | 0.5 | 8.9 | 17.4 | 25.9 | 34.4 | 42.9 | | | | Pull side | 1143.5 | 42.9 | 157.2 | 271.6 | 385.9 | 500.3 | 614.6 | 729.0 | | |
| | | Double acting | Push side | 131.1 | 11.3 | 22.6 | 33.9 | 45.2 | 56.5 | 67.9 | 79.2 | | | 50 | 16 | Double acting | Push side | 1256.6 | 125.7 | 251.3 | 377.0 | 502.7 | 628.3 | 754.0 | 879.6 |
| | | | Pull side | 84.8 | 8.5 | 17.0 | 25.4 | 33.9 | 42.4 | 50.9 | 59.4 | | | | | | Pull side | 1143.5 | 114.4 | 228.7 | 343.1 | 457.4 | 571.8 | 686.1 | 800.5 |
| 16 | 8 | Single acting | Push side | 201.1 | - | 18.1 | 38.2 | 58.3 | 78.4 | 98.5 | 118.6 | 63 | 16 | Single acting | Push side | 1963.5 | 90.1 | 286.5 | 482.8 | 679.2 | 875.5 | 1071.9 | 1268.2 | | |
| | | | Pull side | 150.8 | - | 8.1 | 23.1 | 38.2 | 53.3 | 68.4 | 83.5 | | | | Pull side | 1762.4 | 70.0 | 246.3 | 422.5 | 598.8 | 775.0 | 951.3 | 1127.5 | | |
| | | Double acting | Push side | 201.1 | 20.1 | 40.2 | 60.3 | 80.4 | 100.5 | 120.6 | 140.7 | | | 80 | 20 | Double acting | Push side | 1963.5 | 196.3 | 392.7 | 589.0 | 785.4 | 981.7 | 1178.1 | 1374.4 |
| | | | Pull side | 150.8 | 15.1 | 30.2 | 45.2 | 60.3 | 75.4 | 90.5 | 105.6 | | | | | | Pull side | 1762.4 | 176.2 | 352.5 | 528.7 | 705.0 | 881.2 | 1057.5 | 1233.7 |
| 20 | 10 | Single acting | Push side | 314.2 | - | 33.1 | 64.5 | 96.0 | 127.4 | 158.8 | 190.2 | 100 | 20 | Single acting | Push side | 3117.2 | 173.6 | 485.3 | 797.1 | 1108.8 | 1420.5 | 1732.2 | 2044.0 | | |
| | | | Pull side | 235.6 | - | 17.4 | 41.0 | 64.5 | 88.1 | 111.7 | 135.2 | | | | Pull side | 2916.2 | 153.5 | 445.1 | 736.8 | 1028.4 | 1320.0 | 1611.6 | 1903.2 | | |
| | | Double acting | Push side | 314.2 | 31.4 | 62.8 | 94.2 | 125.7 | 157.1 | 188.5 | 219.9 | | | 125 | 25 | Double acting | Push side | 3117.2 | 311.7 | 623.4 | 935.2 | 1246.9 | 1558.6 | 1870.3 | 2182.1 |
| | | | Pull side | 235.6 | 23.6 | 47.1 | 70.7 | 94.2 | 117.8 | 141.4 | 164.9 | | | | | | Pull side | 2916.2 | 291.6 | 583.2 | 874.9 | 1166.5 | 1458.1 | 1749.7 | 2041.3 |
| 25 | 10 | Single acting | Push side | 490.9 | 13.8 | 62.9 | 112.0 | 161.0 | 210.1 | 259.2 | 308.3 | 125 | 25 | Single acting | Push side | 5026.5 | 305.6 | 808.2 | 1310.9 | 1813.5 | 2316.2 | 2818.8 | 3321.5 | | |
| | | | Pull side | 412.3 | 5.9 | 47.2 | 88.4 | 129.6 | 170.9 | 212.1 | 253.3 | | | | Pull side | 4712.4 | 274.1 | 745.4 | 1216.6 | 1687.9 | 2159.1 | 2630.3 | 3101.6 | | |
| | | Double acting | Push side | 490.9 | 49.1 | 98.2 | 147.3 | 196.3 | 245.4 | 294.5 | 343.6 | | | 100 | 20 | Double acting | Push side | 5026.5 | 502.7 | 1005.3 | 1508.0 | 2010.6 | 2513.3 | 3015.9 | 3518.6 |
| | | | Pull side | 412.3 | 41.2 | 82.5 | 123.7 | 164.9 | 206.2 | 247.4 | 288.6 | | | | | | Pull side | 4712.4 | 471.2 | 942.5 | 1413.7 | 1885.0 | 2356.2 | 2827.4 | 3298.7 |
| 32 | 12 | Single acting | Push side | 804.2 | 30.8 | 111.2 | 191.7 | 272.1 | 352.5 | 432.9 | 513.4 | 100 | 20 | Single acting | Push side | 7854.0 | 499.1 | 1284.5 | 2069.9 | 2855.3 | 3640.7 | 4426.1 | 5211.5 | | |
| | | | Pull side | 691.2 | 19.5 | 88.6 | 157.7 | 226.9 | 296.0 | 365.1 | 434.2 | | | | Pull side | 7539.8 | 467.7 | 1221.7 | 1975.7 | 2729.6 | 3483.6 | 4237.6 | 4991.6 | | |
| | | Double acting | Push side | 804.2 | 80.4 | 160.8 | 241.3 | 321.7 | 402.1 | 482.5 | 563.0 | | | 125 | 25 | Double acting | Push side | 7854.0 | 785.4 | 1570.8 | 2356.2 | 3141.6 | 3927.0 | 4712.4 | 5497.8 |
| | | | Pull side | 691.2 | 69.1 | 138.2 | 270.3 | 350.7 | 431.1 | 511.5 | 591.9 | | | | | | Pull side | 7539.8 | 754.0 | 1508.0 | 2262.0 | 3015.9 | 3769.9 | 4523.9 | 5277.9 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |



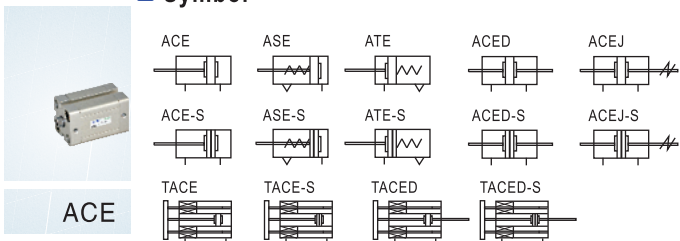
Compact cylinder



ACE Series



Symbol



Product feature

- In accordance with ISO21287 standard, the mounting size is vogue.
- The cylinder body connects with the threads of the front and back cover, forming high strength and convenient maintenance.
- The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
- The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of oil reservation.
- Compact structure can effectively save fifty percent installation space with ISO15552 standard cylinder.
- There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
- Bumper is available and it can availably absorb excrement energy.
- Installing accessories with various specifications are optional.

Specification

| | | | | | | | | | | | |
|--------------------|---|----|----|----|----|------|----|----|----|-----|------|
| Bore size(mm) | 12 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 |
| Acting type | Double acting | | | | | | | | | | |
| | Single acting-Push type, Single acting-Pull type | | | | | | | | | | |
| Fluid | Air(to be filtered by 40 μm filter element) | | | | | | | | | | |
| Operating pressure | 0.1~1.0MPa(14~145psi) | | | | | | | | | | |
| Double acting | 0.2~1.0MPa(28~145psi) | | | | | | | | | | |
| Single acting | 1.5MPa(215psi) | | | | | | | | | | |
| Proof pressure | -20~80 | | | | | | | | | | |
| Temperature °C | Double acting: 30~500 | | | | | | | | | | |
| Speed range mm/s | Single acting: 50~500 | | | | | | | | | | |
| Stroke tolerance | Stroke ≤ 150 + ^{1.0} / ₀ Stroke > 150 + ^{1.4} / ₀ | | | | | | | | | | |
| Cushion type | Bumper | | | | | | | | | | |
| Port size ① | M5 × 0.8 | | | | | G1/8 | | | | | G1/4 |

① PT thread, NPT thread and G thread are available. Add) Refer to P419~442 for detail of sensor switch.

Stroke

| Bore size (mm) | Standard stroke (mm) | | | | | | | | | | | Max. std. stroke | | | | | | | | | | | | | | | |
|----------------|----------------------|---|----|----|----|----|----|----|----|----|----|------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 12 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 50 | | | | | | | | | | | | | | | |
| | Single acting | 5 | 10 | 10 | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 75 | 75 | | | | | | | | | | | |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 20 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 100 | | | | | | | | | |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 25 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 150 | | | | | |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 32 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 200 | | |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 40 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 250 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 50 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 250 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 63 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 300 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 80 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 300 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 100 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 300 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |
| 125 | Double acting | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 160 | 175 | 200 | 225 | 250 | 300 |
| | Single acting | 5 | 10 | 15 | 20 | 25 | 25 | | | | | | | | | | | | | | | | | | | | |

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

| |
|--|
| ACE 20 × 30 S B <input type="checkbox"/> <input type="checkbox"/> |
| ACED 20 × 30 S B <input type="checkbox"/> <input type="checkbox"/> |
| ACEJ 20 × 30-30 S B <input type="checkbox"/> <input type="checkbox"/> |

Model

- ACE: Compact cylinder(Double acting)
- ASE: Compact cylinder (Single acting-push)
- ATE: Compact cylinder (Single acting-pull)
- ACED: Compact cylinder(Double rod)
- ACEJ: Compact cylinder (Adjustable stroke)
- TACED: Compact cylinder (Double acting non-rotating with yoke)
- TACEJ: Compact cylinder (Double rod non-rotating with yoke)

Thread type ①

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

Mounting type ②

| Model | Mounting type |
|-----------|-----------------------|
| All model | Blank: No accessories |
| ACE | FA: FA type |
| | FB: FB type |
| | CA: CB type |
| | CB: CB type |
| | CR: CR type |
| | FTC: FTC type |
| ACED | LB: LB type |
| | SDB: SDB type |
| | FA: FA type |
| | FTC: FTC type |
| ACEJ | LB: LB type |
| | FTC: FTC type |
| TACE | FB: FB type |
| | CA: CB type |
| | CB: CB type |
| | CR: CR type |
| TACED | FTC: FTC type |
| | FB: FB type |

Rod type

| Model | Rod type |
|-------------|----------------------|
| ACE/ASE/ATE | Blank: Female thread |
| ACED/ACEJ | B: Male thread |
| | N: No thread |
| TACE/TACED | No this code |

Magnet

- Blank: Without magnet
- S: With magnet

Bore size

| Model | Bore size |
|------------|-------------------|
| ACE | 12 16 20 25 32 40 |
| ACED/ACEJ | 50 63 80 100 125 |
| ASE/ATE | 12 16 20 25 32 40 |
| TACE/TACED | 50 63 80 100 |

Adjustable stroke

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

Refer to stroke table for details

① Standard thread is blank here.

② Please refer to page 258 for accessory parts; CR must be used with CA, FTC must be used with TCM2.

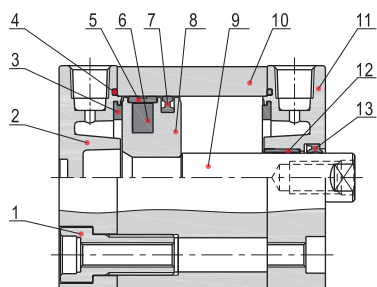


Compact cylinder

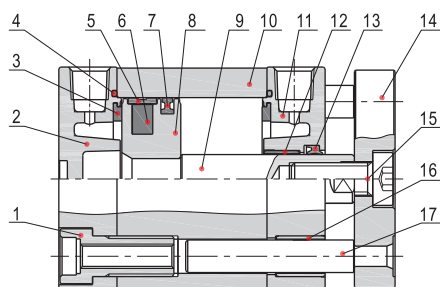
ACE Series

Inner structure and material of major parts

ACE-S



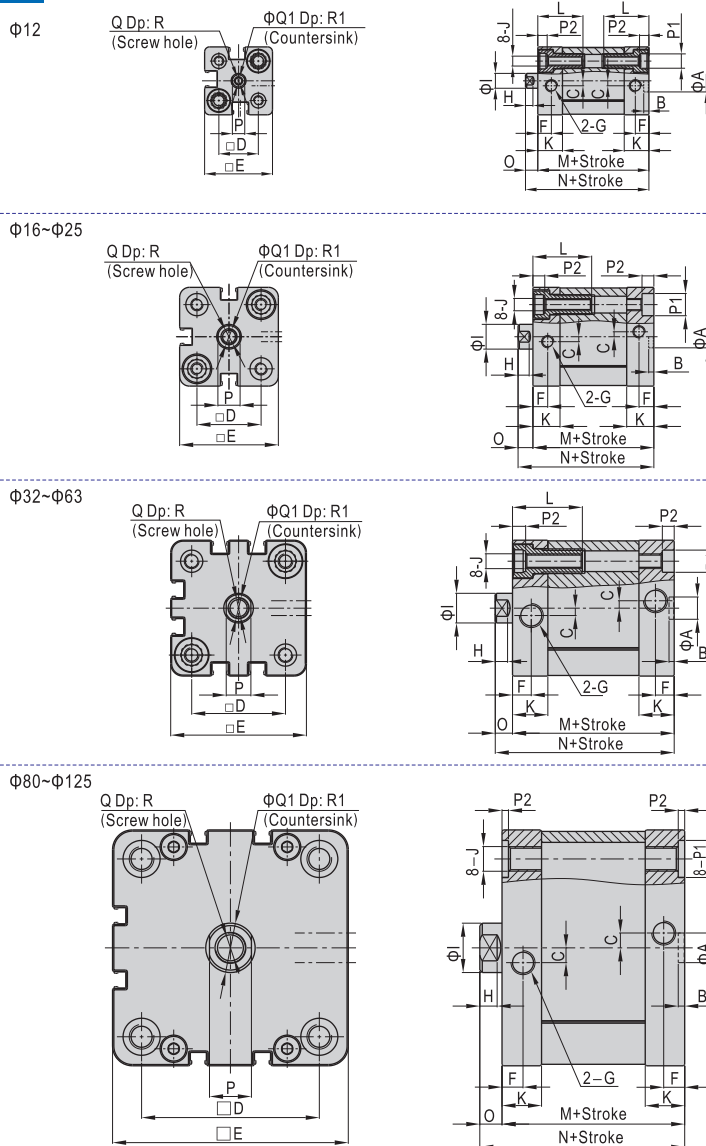
TACE-S



| NO. | Item | Material |
|-----|---------------------|--|
| 1 | Screw | Carbon steel |
| 2 | Back cover | Aluminum alloy |
| 3 | Bumper | TPU |
| 4 | O-ring | NBR |
| 5 | Wear ring | No(Φ 12~20)\Wear resistant material(Others) |
| 6 | Magnet | Sintered metal(Neodymium-iron-boron)(Φ 12~20) Plastic(Others) |
| 7 | Piston seal | NBR |
| 8 | Piston | Aluminum alloy |
| 9 | Piston rod | Stainless steel(Φ 12~25)\S45C(Others) |
| 10 | Body | Aluminum alloy |
| 11 | Front cover | Aluminum alloy |
| 12 | Bushing | No(Φ 12~25)\Wear resistant material(Others) |
| 13 | Front cover packing | NBR |
| 14 | Panel | Aluminum alloy |
| 15 | Screw | Carbon steel |
| 16 | Bushing | Wear resistant material |
| 17 | Guide rod | Stainless steel(Φ 12~40)\S45C(Others) |

Dimensions

ACE



| Bore size\Item | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----------------|----|-----|---|------|-------|------|----------|-----|----|------------|------|------|------|------|
| 12 | 9 | 2.1 | 2 | 16 | 27.5 | 5.5 | M5 × 0.8 | 3.7 | 6 | M4 × 0.7 | 10 | 18.3 | 35 | 40 |
| 16 | 9 | 2.1 | 2 | 18 | 30 | 5.5 | M5 × 0.8 | 3.7 | 8 | M4 × 0.7 | 10 | 18.3 | 35 | 40 |
| 20 | 9 | 2.1 | 2 | 22 | 35.5 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 10.5 | 23.8 | 37 | 43 |
| 25 | 9 | 2.1 | 2 | 26 | 40 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 11 | 23.8 | 39 | 45 |
| 32 | 9 | 2.1 | 3 | 32.5 | 49.5 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14 | 28.3 | 44 | 51 |
| 40 | 9 | 2.1 | 3 | 38 | 55 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14.3 | 28.3 | 45.5 | 52.5 |
| 50 | 12 | 2.6 | 3 | 46.5 | 65.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 14.3 | 30.3 | 45.5 | 53.5 |
| 63 | 12 | 2.6 | 4 | 56.5 | 75.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 15 | 30.3 | 49 | 57 |
| 80 | 12 | 2.6 | 6 | 72 | 95.5 | 8.5 | G1/8 | 7 | 20 | M10 × 1.5 | 16 | — | 54 | 63 |
| 100 | 12 | 2.6 | 7 | 89 | 113.5 | 10.5 | G1/8 | 7 | 20 | M10 × 1.5 | 19 | — | 67 | 76 |
| 125 | 12 | 2.6 | 8 | 110 | 134.5 | 10.5 | G1/4 | 9 | 25 | M12 × 1.75 | 20 | — | 81 | 92 |

| Bore size\Item | O | P | P1 | P2 | Q | Q1 | R | R1 |
|----------------|----|----|----|-----|------------|------|----|-----|
| 12 | 5 | 5 | 6 | 3.5 | M3 × 0.5 | 3.3 | 8 | 1.5 |
| 16 | 5 | 7 | 6 | 3.5 | M4 × 0.7 | 4.5 | 10 | 1.5 |
| 20 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 25 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 32 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 40 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 50 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 63 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 80 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |
| 100 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |
| 125 | 11 | 21 | — | — | M16 × 2.0 | 16.5 | 25 | 7 |

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder. Please refer to page 257 for male thread dimensions.



ACE

Compact cylinder



ACE Series

ASE

Q Dp: R (Screw hole) Φ Q1 Dp: R1(Countersink)

ASE Dimensions:

| Bore size\Item | A | B | C | D | E | F | G | H | I | J | K |
|----------------|----|-----|---|------|-------|------|----------|-----|----|-----------|------|
| 12 | 9 | 2.1 | 2 | 16 | 27.5 | 5.5 | M5 × 0.8 | 3.7 | 6 | M4 × 0.7 | 10 |
| 16 | 9 | 2.1 | 2 | 18 | 30 | 5.5 | M5 × 0.8 | 3.7 | 8 | M4 × 0.7 | 10 |
| 20 | 9 | 2.1 | 2 | 22 | 35.5 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 10.5 |
| 25 | 9 | 2.1 | 2 | 26 | 40 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 11 |
| 32 | 9 | 2.1 | 3 | 32.5 | 49.5 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14 |
| 40 | 9 | 2.1 | 3 | 38 | 55 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14.3 |
| 50 | 12 | 2.6 | 3 | 46.5 | 65.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 14.3 |
| 63 | 12 | 2.6 | 4 | 56.5 | 75.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 15 |
| 80 | 12 | 2.6 | 6 | 72 | 95.5 | 8.5 | G1/8 | 7 | 20 | M10 × 1.5 | 16 |
| 100 | 12 | 2.6 | 7 | 89 | 113.5 | 10.5 | G1/8 | 7 | 20 | M10 × 1.5 | 19 |

| Bore size\Item | L | M | N | O | P | P1 | P2 | Q | Q1 | R | R1 |
|----------------|------|------|------|---|----|----|-----|------------|------|----|-----|
| 12 | 18.3 | 35 | 40 | 5 | 5 | 6 | 3.5 | M3 × 0.5 | 3.3 | 8 | 1.5 |
| 16 | 18.3 | 35 | 40 | 5 | 7 | 6 | 3.5 | M4 × 0.7 | 4.5 | 10 | 1.5 |
| 20 | 23.8 | 37 | 43 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 25 | 23.8 | 39 | 45 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 32 | 28.3 | 44 | 51 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 40 | 28.3 | 45.5 | 52.5 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 50 | 30.3 | 45.5 | 53.5 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 63 | 30.3 | 49 | 57 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 80 | - | 54 | 63 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |
| 100 | - | 67 | 76 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder. Please refer to page 257 for male thread dimensions.

ATE

Q Dp: R (Screw hole) Φ Q1 Dp: R1(Countersink)

ATE Dimensions:

| Bore size\Item | A | B | C | D | E | F | G | H | I | J | K |
|----------------|----|-----|---|------|-------|------|----------|-----|----|-----------|------|
| 12 | 9 | 2.1 | 2 | 16 | 27.5 | 5.5 | M5 × 0.8 | 3.7 | 6 | M4 × 0.7 | 10 |
| 16 | 9 | 2.1 | 2 | 18 | 30 | 5.5 | M5 × 0.8 | 3.7 | 8 | M4 × 0.7 | 10 |
| 20 | 9 | 2.1 | 2 | 22 | 35.5 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 10.5 |
| 25 | 9 | 2.1 | 2 | 26 | 40 | 6 | M5 × 0.8 | 4.5 | 10 | M5 × 0.8 | 11 |
| 32 | 9 | 2.1 | 3 | 32.5 | 49.5 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14 |
| 40 | 9 | 2.1 | 3 | 38 | 55 | 7.6 | G1/8 | 5 | 12 | M6 × 1.0 | 14.3 |
| 50 | 12 | 2.6 | 3 | 46.5 | 65.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 14.3 |
| 63 | 12 | 2.6 | 4 | 56.5 | 75.5 | 7.6 | G1/8 | 6 | 16 | M8 × 1.25 | 15 |
| 80 | 12 | 2.6 | 6 | 72 | 95.5 | 8.5 | G1/8 | 7 | 20 | M10 × 1.5 | 16 |
| 100 | 12 | 2.6 | 7 | 89 | 113.5 | 10.5 | G1/8 | 7 | 20 | M10 × 1.5 | 19 |

| Bore size\Item | L | M | N | O | P | P1 | P2 | Q | Q1 | R | R1 |
|----------------|------|------|------|---|----|----|-----|------------|------|----|-----|
| 12 | 18.3 | 35 | 40 | 5 | 5 | 6 | 3.5 | M3 × 0.5 | 3.3 | 8 | 1.5 |
| 16 | 18.3 | 35 | 40 | 5 | 7 | 6 | 3.5 | M4 × 0.7 | 4.5 | 10 | 1.5 |
| 20 | 23.8 | 37 | 43 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 25 | 23.8 | 39 | 45 | 6 | 9 | 9 | 4.8 | M6 × 1.0 | 6.5 | 14 | 2.6 |
| 32 | 28.3 | 44 | 51 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 40 | 28.3 | 45.5 | 52.5 | 7 | 10 | 9 | 4.8 | M8 × 1.25 | 8.5 | 16 | 3.3 |
| 50 | 30.3 | 45.5 | 53.5 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 63 | 30.3 | 49 | 57 | 8 | 13 | 11 | 4.8 | M10 × 1.5 | 10.5 | 20 | 4.7 |
| 80 | - | 54 | 63 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |
| 100 | - | 67 | 76 | 9 | 17 | 15 | 2.6 | M12 × 1.75 | 12.5 | 20 | 6.1 |

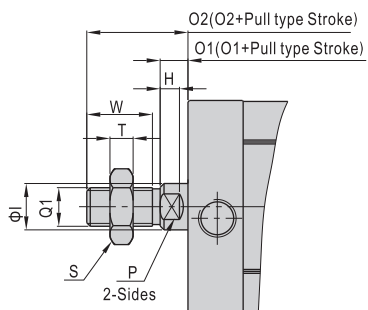
Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder. Please refer to page 257 for male thread dimensions.



Compact cylinder

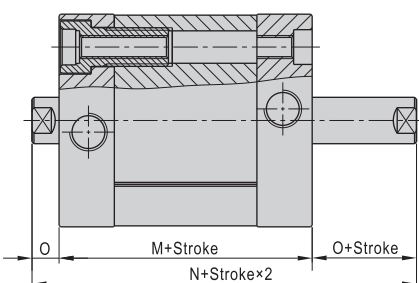
ACE Series

Male thread

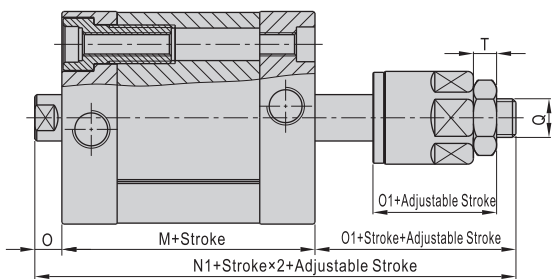


| Bore size\Item | O1 | O2 | W | S | T | Q1 | H | I | P |
|----------------|----|----|----|----|----|------------|-----|----|----|
| 12 | 5 | 15 | 9 | 8 | 4 | M5 × 0.8 | 3.7 | 6 | 5 |
| 16 | 5 | 17 | 11 | 10 | 5 | M6 × 1.0 | 3.7 | 8 | 7 |
| 20 | 6 | 22 | 15 | 12 | 6 | M8 × 1.25 | 4.5 | 10 | 9 |
| 25 | 6 | 22 | 15 | 12 | 6 | M8 × 1.25 | 4.5 | 10 | 9 |
| 32 | 7 | 26 | 17 | 17 | 6 | M10 × 1.25 | 5 | 12 | 10 |
| 40 | 7 | 26 | 17 | 17 | 6 | M10 × 1.25 | 5 | 12 | 10 |
| 50 | 8 | 30 | 20 | 17 | 7 | M12 × 1.25 | 6 | 16 | 13 |
| 63 | 8 | 30 | 20 | 17 | 7 | M12 × 1.25 | 6 | 16 | 13 |
| 80 | 9 | 37 | 26 | 23 | 8 | M16 × 1.5 | 7 | 20 | 17 |
| 100 | 9 | 37 | 26 | 23 | 8 | M16 × 1.5 | 7 | 20 | 17 |
| 125 | 11 | 51 | 38 | 26 | 10 | M20 × 1.5 | 9 | 25 | 21 |

ACED



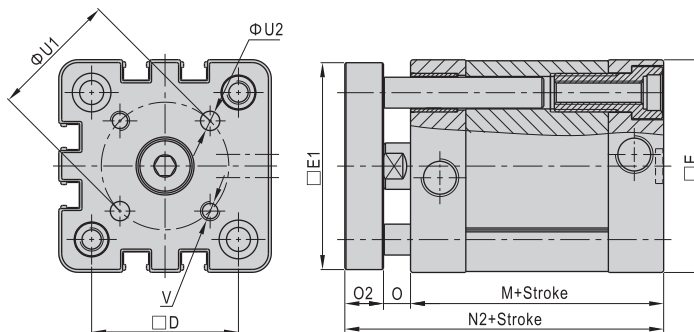
ACEJ



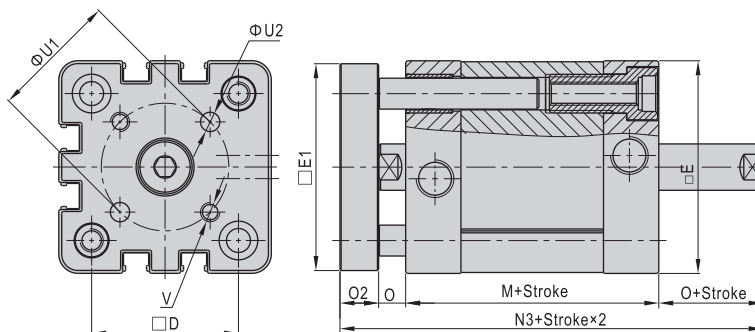
| Bore size\Item | M | N | N1 | O | O1 | T | Q |
|----------------|------|------|-------|----|------|----|------------|
| 12 | 35 | 45 | 57 | 5 | 17 | 4 | M5 × 0.8 |
| 16 | 35 | 45 | 61 | 5 | 21 | 5 | M6 × 1.0 |
| 20 | 37 | 49 | 68 | 6 | 25 | 6 | M8 × 1.25 |
| 25 | 39 | 51 | 70 | 6 | 25 | 6 | M8 × 1.25 |
| 32 | 44 | 58 | 78 | 7 | 27 | 6 | M10 × 1.25 |
| 40 | 45.5 | 59.5 | 79.5 | 7 | 27 | 6 | M10 × 1.25 |
| 50 | 45.5 | 61.5 | 81.5 | 8 | 28 | 7 | M12 × 1.25 |
| 63 | 49 | 65 | 85 | 8 | 28 | 7 | M12 × 1.25 |
| 80 | 54 | 72 | 92 | 9 | 29 | 8 | M16 × 1.5 |
| 100 | 67 | 85 | 105 | 9 | 29 | 8 | M16 × 1.5 |
| 125 | 81 | 103 | 127.5 | 11 | 35.5 | 10 | M20 × 1.5 |

Remark:
 1. The unmarked dimension is the same as ACE standard type
 2. The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

TACE



TACED



| Bore size\Item | D | E | E1 | M | N2 | N3 | O | O2 | U1 | U2 | V |
|----------------|------|-------|------|------|------|------|---|----|----|----|-----------|
| 12 | 16 | 27.5 | 26.5 | 35 | 46 | 51 | 5 | 6 | 12 | 3 | M3 × 0.5 |
| 16 | 18 | 30 | 29 | 35 | 46 | 51 | 5 | 6 | 14 | 3 | M3 × 0.5 |
| 20 | 22 | 35.5 | 34.5 | 37 | 51 | 57 | 6 | 8 | 17 | 4 | M4 × 0.7 |
| 25 | 26 | 40 | 39 | 39 | 53 | 59 | 6 | 8 | 22 | 5 | M5 × 0.8 |
| 32 | 32.5 | 49.5 | 48 | 44 | 61 | 68 | 7 | 10 | 28 | 5 | M5 × 0.8 |
| 40 | 38 | 55 | 53.5 | 45.5 | 62.5 | 69.5 | 7 | 10 | 33 | 5 | M5 × 0.8 |
| 50 | 46.5 | 65.5 | 64 | 45.5 | 65.5 | 73.5 | 8 | 12 | 42 | 6 | M6 × 1.0 |
| 63 | 56.5 | 75.5 | 74 | 49 | 69 | 77 | 8 | 12 | 50 | 6 | M6 × 1.0 |
| 80 | 72 | 95.5 | 94 | 54 | 77 | 86 | 9 | 14 | 65 | 8 | M8 × 1.25 |
| 100 | 89 | 113.5 | 112 | 67 | 90 | 99 | 9 | 14 | 80 | 10 | M10 × 1.5 |

Remark:
 1. The unmarked dimension is the same as ACE standard type
 2. The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

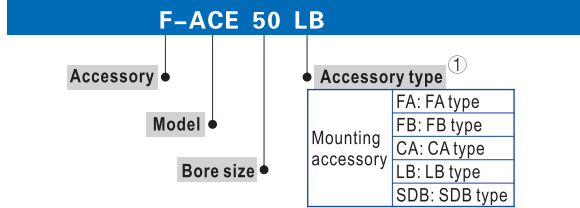


ACE

Compact cylinder

Accessories

Ordering code



① The listed accessories are for ACE cylinder. Accessories that are adaptable to other cylinders are not shown. Please refer to accessory list on P260 for selection and ordering information.

Accessory selection

| Cylinder model | Accessories | | | | Mounting accessory | | | | |
|----------------|-------------|----|----|----|--------------------|----|-----|-----|------|
| | LB | FA | FB | CA | CB | CR | SDB | FTC | TCM2 |
| ACE | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ASE/ATE | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| ACED/ACEJ | ● | ● | × | × | × | × | × | ● | ● |
| TACE | × | × | ● | ● | ● | ● | ● | ● | ● |
| TACED | × | × | ● | × | × | × | × | × | × |



ACE

| Cylinder model | Accessories | Knuckle ① | | | | Sensor switch ② | | |
|----------------|---------------|-----------|---|---|---|-----------------|-------|---|
| | | I | Y | F | U | CS1-E | DS1-E | |
| ACE | Female thread | Standard | × | × | × | × | × | × |
| | With magnet | × | × | × | × | ● | ● | ● |
| Male thread | Standard | ● | ● | ● | ● | × | × | × |
| | With magnet | ● | ● | ● | ● | ● | ● | ● |
| ASE/ATE | Female thread | Standard | × | × | × | × | × | × |
| | With magnet | × | × | × | × | ● | ● | ● |
| Male thread | Standard | ● | ● | ● | ● | × | × | × |
| | With magnet | ● | ● | ● | ● | ● | ● | ● |
| ACED/ACEJ | Female thread | Standard | × | × | × | × | × | × |
| | With magnet | × | × | × | × | ● | ● | ● |
| Male thread | Standard | ● | ● | ● | ● | × | × | × |
| | With magnet | ● | ● | ● | ● | ● | ● | ● |
| TACE/TACED | Female thread | Standard | × | × | × | × | × | × |
| | With magnet | × | × | × | × | ● | ● | ● |

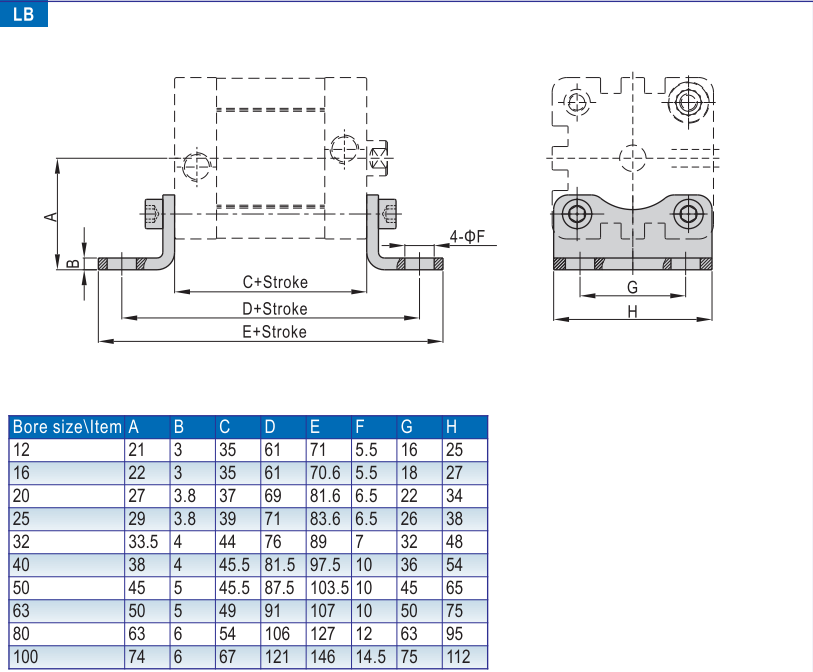
① The I knuckle and Y knuckle for bore $\Phi 12$ are adaptable to ACQ cylinders, and other knuckles are common parts. Please refer to P415-418 for knuckle detail.
② Please refer to P419-442 for detail of sensor switch.

Material of accessories

| Bore size | Accessories | | | | Mounting accessory | | | | Knuckle | | | | |
|-----------|-------------|----|----|----|--------------------|----|-----|-----|---------|---|---|---|---|
| | LB | FA | FB | CA | CB | CR | SDB | FTC | TCM2 | I | Y | F | U |
| 12~25 | △ | ● | ● | ◇ | ◇ | - | △ | ■ | ● | □ | □ | □ | □ |
| 32~100 | △ | ● | ● | ◇ | ◇ | ◇ | - | ■ | ● | □ | □ | □ | □ |
| 125 | - | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | ■ | ● | □ | □ | □ | □ |

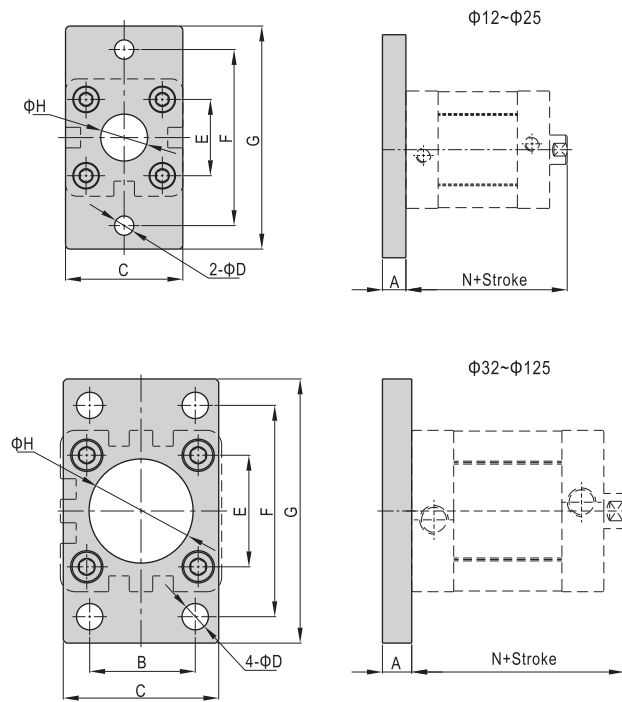
●—Aluminum alloy; ■—Cast iron;
◇—Ductile Iron; △—SPCC; □—Carbon Steel;

Dimensions



Note) Valve C in the above table is only for ACE series. Please refer to relevant content for valve C of other series.

FA/IB



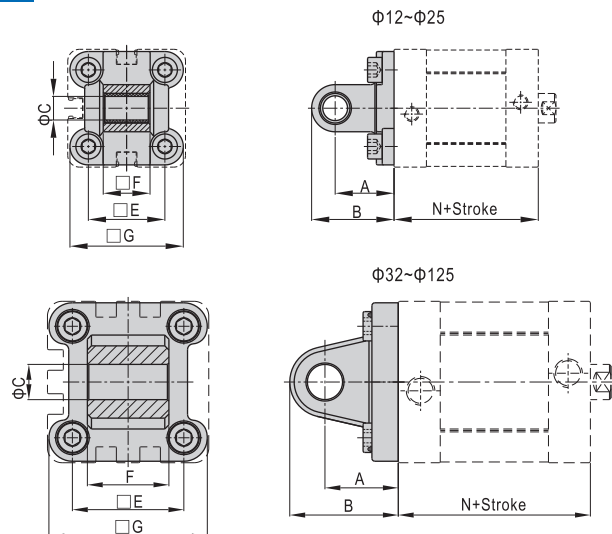
| Bore size\Item | A | B | C | D | E | F | G | H | N |
|----------------|----|----|------|------|------|-----|-----|------|------|
| 12 | 8 | - | 25 | 5.5 | 16 | 40 | 55 | 10 | 40 |
| 16 | 8 | - | 30 | 5.5 | 18 | 43 | 55 | 10 | 40 |
| 20 | 8 | - | 35 | 6.6 | 22 | 55 | 68 | 16 | 43 |
| 25 | 8 | - | 39.5 | 6.6 | 26 | 60 | 76 | 16 | 45 |
| 32 | 10 | 32 | 47 | 7 | 32.5 | 64 | 80 | 30.5 | 51 |
| 40 | 10 | 36 | 53 | 9 | 38 | 72 | 90 | 35.5 | 52.5 |
| 50 | 12 | 45 | 65 | 9 | 46.5 | 90 | 108 | 40.5 | 53.5 |
| 63 | 12 | 50 | 75 | 9 | 56.5 | 100 | 118 | 45.5 | 57 |
| 80 | 16 | 63 | 95 | 12.5 | 72 | 126 | 150 | 45.5 | 63 |
| 100 | 16 | 75 | 115 | 14.5 | 89 | 150 | 176 | 55.5 | 76 |
| 125 | 20 | 90 | 139 | 16.5 | 110 | 180 | 218 | 60.5 | 92 |



Compact cylinder

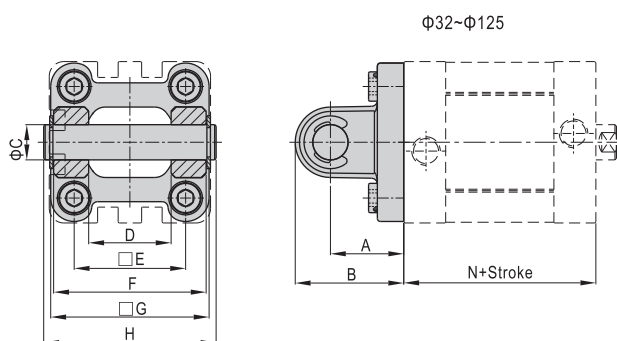
Accessories

CA



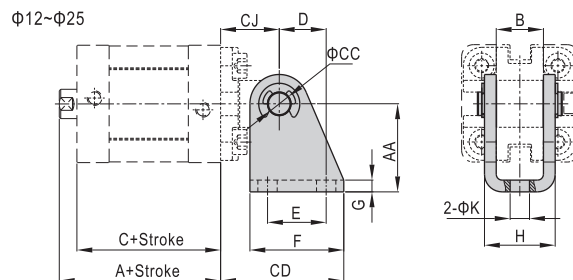
| Bore size\Item | A | B | C | E | F | G | N |
|----------------|----|------|----|------|------|------|------|
| 12 | 16 | 22 | 6 | 16 | 11.9 | 24 | 40 |
| 16 | 16 | 22 | 6 | 18 | 11.9 | 28.5 | 40 |
| 20 | 20 | 28 | 8 | 22 | 15.9 | 34.5 | 43 |
| 25 | 20 | 28 | 8 | 26 | 15.9 | 38.5 | 45 |
| 32 | 22 | 32.5 | 10 | 32.5 | 25.8 | 46.5 | 51 |
| 40 | 25 | 37 | 12 | 38 | 27.8 | 54 | 52.5 |
| 50 | 27 | 39 | 12 | 46.5 | 31.7 | 64 | 53.5 |
| 63 | 32 | 47 | 16 | 56.5 | 39.7 | 75 | 57 |
| 80 | 36 | 51.5 | 16 | 72 | 49.7 | 93 | 63 |
| 100 | 41 | 61 | 20 | 89 | 59.7 | 110 | 76 |
| 125 | 50 | 74 | 25 | 110 | 69.7 | 134 | 92 |

CB



| Bore size\Item | A | B | C | D | E | F | G | H | N |
|----------------|----|------|----|----|------|-----|------|-----|------|
| 32 | 22 | 32.5 | 10 | 26 | 32.5 | 45 | 46.5 | 51 | 51 |
| 40 | 25 | 37 | 12 | 28 | 38 | 52 | 54 | 59 | 52.5 |
| 50 | 27 | 39 | 12 | 32 | 46.5 | 60 | 64 | 67 | 53.5 |
| 63 | 32 | 47 | 16 | 40 | 56.5 | 70 | 75 | 77 | 57 |
| 80 | 36 | 51.5 | 16 | 50 | 72 | 90 | 93 | 97 | 63 |
| 100 | 41 | 61 | 20 | 60 | 89 | 110 | 110 | 119 | 76 |
| 125 | 50 | 74 | 25 | 70 | 110 | 130 | 134 | 139 | 92 |

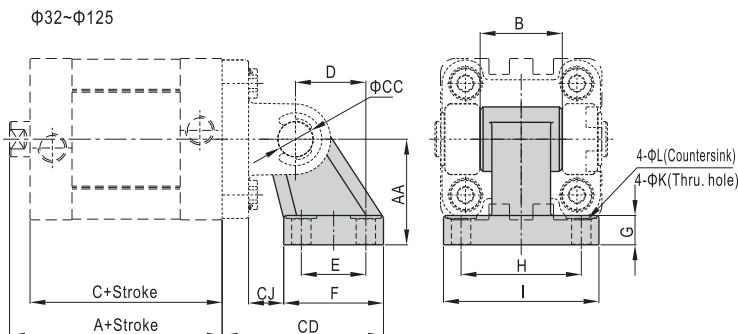
SDB



| Bore size\Item | A | AA | B | C | CC | CD | CJ | D | E | F | G | H | K |
|----------------|----|----|------|----|----|----|----|----|----|----|---|------|-----|
| 12 | 40 | 27 | 12.1 | 35 | 6 | 34 | 16 | 13 | 15 | 25 | 3 | 18.1 | 5.5 |
| 16 | 40 | 27 | 12.1 | 35 | 6 | 34 | 16 | 13 | 15 | 25 | 3 | 18.1 | 5.5 |
| 20 | 43 | 30 | 16.1 | 37 | 8 | 42 | 20 | 16 | 20 | 32 | 4 | 24.1 | 6.6 |
| 25 | 45 | 30 | 16.1 | 39 | 8 | 42 | 20 | 16 | 20 | 32 | 4 | 24.1 | 6.6 |

Note) SDB can't be used alone, it must be used with CA.

CR



| Bore size\Item | A | AA | B | C | CC | CD | CJ | D | E | F | G | H | I | K | L |
|----------------|------|----|----|------|----|-----|----|----|----|----|----|----|-----|-----|----|
| 32 | 51 | 32 | 26 | 44 | 10 | 50 | 10 | 21 | 18 | 31 | 8 | 38 | 51 | 6.6 | 11 |
| 40 | 52.5 | 36 | 28 | 45.5 | 12 | 56 | 12 | 24 | 22 | 35 | 10 | 41 | 54 | 6.6 | 11 |
| 50 | 53.5 | 45 | 32 | 45.5 | 12 | 68 | 13 | 33 | 30 | 45 | 12 | 50 | 65 | 9 | 14 |
| 63 | 57 | 50 | 40 | 49 | 16 | 77 | 17 | 37 | 35 | 50 | 12 | 52 | 67 | 9 | 14 |
| 80 | 63 | 63 | 50 | 54 | 16 | 93 | 19 | 47 | 40 | 60 | 14 | 66 | 86 | 11 | 17 |
| 100 | 76 | 71 | 60 | 67 | 20 | 106 | 22 | 55 | 50 | 70 | 15 | 76 | 96 | 11 | 17 |
| 125 | 92 | 90 | 70 | 81 | 25 | 135 | 26 | 70 | 60 | 90 | 20 | 94 | 124 | 14 | 20 |

Note) CR can't be used alone, it must be used with CB.



ACE

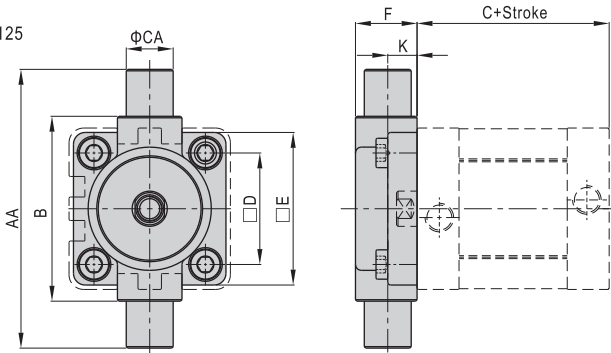
Compact cylinder



Accessories

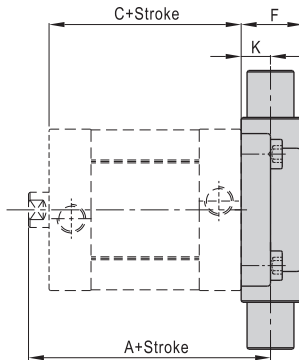
FTC

Φ32-Φ125



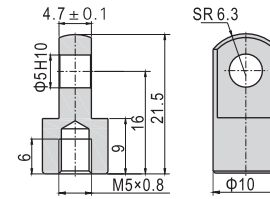
| Bore size\Item | A | AA | B | C | CA |
|----------------|------|-----|-----|------|----|
| 32 | 63 | 74 | 50 | 44 | 12 |
| 40 | 66.5 | 95 | 63 | 45.5 | 16 |
| 50 | 71.5 | 107 | 75 | 45.5 | 16 |
| 63 | 77 | 130 | 90 | 49 | 20 |
| 80 | 85 | 150 | 110 | 54 | 20 |
| 100 | 102 | 185 | 132 | 67 | 25 |
| 125 | 124 | 210 | 160 | 81 | 25 |

| Bore size\Item | D | E | F | K |
|----------------|------|-----|----|----|
| 32 | 32.5 | 46 | 19 | 10 |
| 40 | 38 | 52 | 21 | 10 |
| 50 | 46.5 | 64 | 26 | 12 |
| 63 | 56.5 | 74 | 28 | 12 |
| 80 | 72 | 94 | 31 | 16 |
| 100 | 89 | 114 | 35 | 16 |
| 125 | 110 | 139 | 43 | 20 |



I knuckle

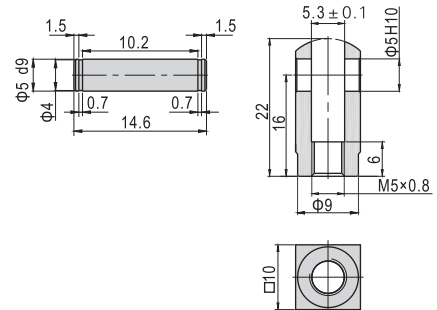
F-ACQ12I



Note) Other I knuckles are common parts .Please refer to P417 for knuckle detail,

Y knuckle

F-ACQ12Y



Note) Other Y knuckles are common parts .Please refer to P418 for knuckle detail,

List for ordering code of accessories

| Bore size | Accessories | | | | Mounting accessory | | | |
|-----------|-------------|-----------|-----------|-----------|--------------------|-------|----|----|
| | LB | FA/FB | CA | CB | LB | FA/FB | CA | CB |
| 12 | F-ACE12LB | F-ACE12FA | F-ACE12CA | - | | | | |
| 16 | F-ACP12LB | F-ACE16FA | F-ACE16CA | - | | | | |
| 20 | F-ACP20LB | F-ACE20FA | F-ACE20CA | - | | | | |
| 25 | F-ACP25LB | F-ACE25FA | F-ACE25CA | - | | | | |
| 32 | F-ACE32LB | F-SI32FA | F-SE32CA | F-SE32CB | | | | |
| 40 | F-ACE40LB | F-SI40FA | F-SE40CA | F-SE40CB | | | | |
| 50 | F-ACE50LB | F-SI50FA | F-SE50CA | F-SE50CB | | | | |
| 63 | F-ACE63LB | F-SI63FA | F-SE63CA | F-SE63CB | | | | |
| 80 | F-ACE80LB | F-SI80FA | F-SE80CA | F-SE80CB | | | | |
| 100 | F-ACE100LB | F-SI100FA | F-SE100CA | F-SE100CB | | | | |
| 125 | - | F-SI125FA | F-SE125CA | F-SE125CB | | | | |

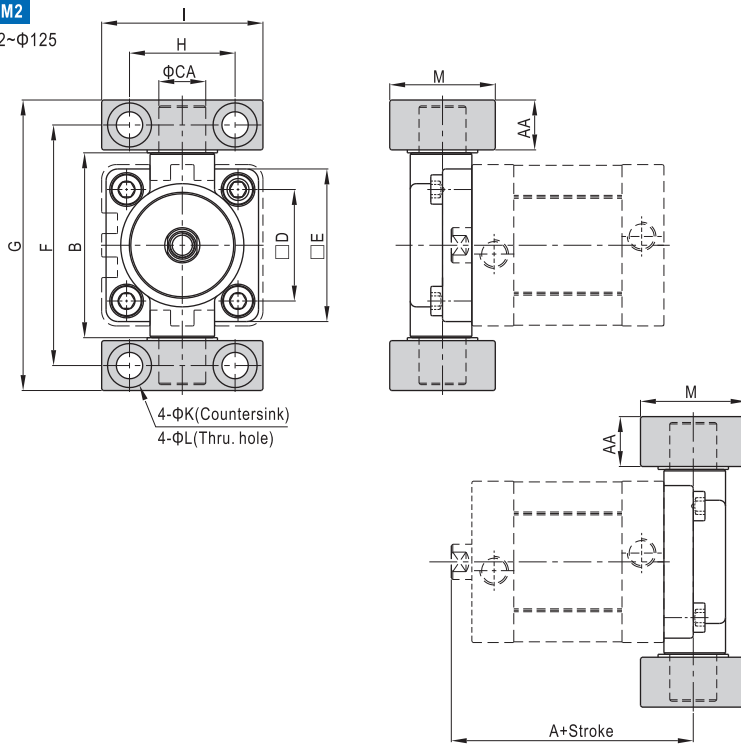
| Bore size | Accessories | | | | Mounting accessory | | | |
|-----------|-------------|-----------|------------|-------------|--------------------|-----|-----|------|
| | CR | SDB | FTC | TCM2 | CR | SDB | FTC | TCM2 |
| 12 | - | F-MI12SDB | - | - | | | | |
| 16 | - | F-MI12SDB | - | - | | | | |
| 20 | - | F-MI20SDB | - | - | | | | |
| 25 | - | F-MI20SDB | - | - | | | | |
| 32 | F-SI32CR | - | F-SI32FTC | F-SI32TCM2 | | | | |
| 40 | F-SI40CR | - | F-SI40FTC | F-SI40TCM2 | | | | |
| 50 | F-SI50CR | - | F-SI50FTC | F-SI40TCM2 | | | | |
| 63 | F-SI63CR | - | F-SI63FTC | F-SI63TCM2 | | | | |
| 80 | F-SI80CR | - | F-SI80FTC | F-SI63TCM2 | | | | |
| 100 | F-SI100CR | - | F-SI100FTC | F-SI125TCM2 | | | | |
| 125 | F-SI125CR | - | F-SI125FTC | F-SI125TCM2 | | | | |

| Bore size | Accessories | | | | Knuckle | | | |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | I: I Knuckle | Y: Y Knuckle | F: F Knuckle | U: U Knuckle | I: I Knuckle | Y: Y Knuckle | F: F Knuckle | U: U Knuckle |
| 12 | F-ACQ12I | F-ACQ12Y | F-M5X080F | F-M5X080U | | | | |
| 16 | F-M6X100I | F-M6X100Y | F-M6X100F | F-M6X100U | | | | |
| 20 | | | | | | | | |
| 25 | F-M8X125I | F-M8X125Y | F-M8X125F | F-M8X125U | | | | |
| 32 | | | | | | | | |
| 40 | F-M10X125I | F-M10X125Y | F-M10X125F | F-M10X125U | | | | |
| 50 | | | | | | | | |
| 63 | F-M12X125I | F-M12X125Y | F-M12X125F | F-M12X125U | | | | |
| 80 | | | | | | | | |
| 100 | F-M16X150I | F-M16X150Y | F-M16X150F | F-M16X150U | | | | |
| 125 | F-M20X150I | F-M20X150Y | F-M20X150F | F-M20X150U | | | | |

| Bore size | Accessories | | Sensor switch | |
|-----------|-------------|-------|---------------|-------|
| | CS1-E | DS1-E | CS1-E | DS1-E |
| 12-125 | CS1-E | | DS1-E | |

TCM2

Φ32-Φ125



| Bore size\Item | A | AA | B | CA | D | E | F | G | H | I | K | L | M |
|----------------|------|------|-----|----|------|-----|-------|-----|----|----|----|----|----|
| 32 | 63 | 14 | 52 | 12 | 32.5 | 46 | 66 | 80 | 32 | 46 | 11 | 7 | 30 |
| 40 | 66.5 | 17 | 65 | 16 | 38 | 52 | 82 | 99 | 36 | 55 | 15 | 9 | 36 |
| 50 | 71.5 | 17 | 75 | 16 | 46.5 | 64 | 94 | 111 | 36 | 55 | 15 | 9 | 36 |
| 63 | 77 | 20.5 | 90 | 20 | 56.5 | 74 | 113.5 | 134 | 42 | 65 | 18 | 11 | 40 |
| 80 | 85 | 20.5 | 112 | 20 | 72 | 94 | 133.5 | 154 | 42 | 65 | 18 | 11 | 40 |
| 100 | 102 | 24.5 | 135 | 25 | 89 | 114 | 159.5 | 184 | 50 | 75 | 20 | 14 | 50 |
| 125 | 124 | 24.5 | 170 | 25 | 110 | 139 | 187.5 | 212 | 50 | 75 | 20 | 14 | 50 |

Note) TCM2 can't be used alone, it must be used with FTC.

The installation position of the accessories can not be adjusted arbitrarily.



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