



Standard cylinder—SGC Series

In accordance with ISO15552 standard

Compendium of SGC Series

ISO15552(Original ISO6431) Standard cylinder

Bore size:125, 160, 200, 250

Multi-kinds of Seals Material

Adjustable air buffer

With adjustable air buffer on the front and back cover

Tie rod cylinder

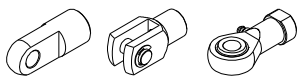
The cylinder barrel and front/rear cap are jointed by tie rods with high reliability.

Convenient and fast fix sensor switch

Sensor switch can be directly fixed onto the cylinder, which is convenient and fast. the counterpart sensor switch type is: CMSG、DMSG、EMSG

Multi-mounting accessories

Three kinds of cylinder joints



I Knuckle Y Knuckle Universal Joint

Multi-type cylinder

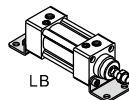


SGC: Double acting type

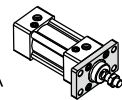
SGCD: Double rod type



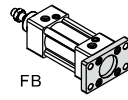
SGCJ: Adjustable stroke type



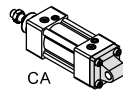
LB



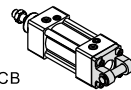
FA



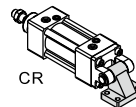
FB



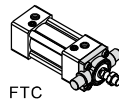
CA



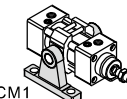
CB



CR



FTC



TCM1



TCM2



TC

Criteria for selection: Cylinder thrust

Unit: Newton(N)

| Bore size | Rod size | Acting type | Pressure area(mm ²) | Operating pressure(MPa) | | | | | | | | |
|-----------|----------|------------------|---------------------------------|-------------------------|--------|---------|---------|---------|---------|---------|---------|---------|
| | | | | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| 125 | 32 | Double Push side | 12272 | 1227.2 | 2454.4 | 3681.6 | 4908.8 | 6136.0 | 7363.2 | 8590.4 | 9817.6 | 11044.8 |
| | | acting Pull side | 11468 | 1146.8 | 2293.6 | 3440.4 | 4587.2 | 5734.0 | 6880.8 | 8027.6 | 9174.4 | 10321.2 |
| 160 | 40 | Double Push side | 20106 | 2010.6 | 4021.2 | 6031.8 | 8042.4 | 10053.0 | 12063.6 | 14074.2 | 16084.8 | 18095.4 |
| | | acting Pull side | 18849 | 1884.9 | 3769.8 | 5654.7 | 7539.6 | 9424.5 | 11309.4 | 13194.3 | 15079.2 | 16964.1 |
| 200 | 40 | Double Push side | 31416 | 3141.6 | 6283.2 | 9424.8 | 12566.4 | 15708.0 | 18849.6 | 21991.2 | 25132.8 | 28274.4 |
| | | acting Pull side | 30157 | 3015.7 | 6031.4 | 9047.1 | 12062.8 | 15078.5 | 18094.2 | 21109.9 | 24125.6 | 27141.3 |
| 250 | 50 | Double Push side | 49086 | 4908.6 | 9817.2 | 14725.8 | 19634.4 | 24543.0 | 29451.6 | 34360.2 | 39268.8 | 44177.4 |
| | | acting Pull side | 47123 | 4712.3 | 9424.6 | 14136.9 | 19045.5 | 23757.8 | 28470.1 | 33182.4 | 37894.7 | 42607.0 |

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 40μm or below.
- Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
- The cylinder shall be carried out test run without load before application. Prior to run, buffer shall be turned to the minimum and gradually released to avoid the damage on cylinder caused by excessive impact.
- 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.



SGC Series

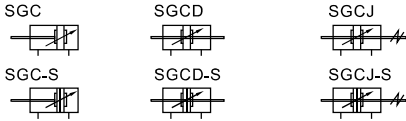


Specification

| Bore size(mm) | 125 | 160 | 200 | 250 |
|---------------------------|--|--|--|-----|
| Acting type | Double acting | | | |
| Fluid | Air(to be filtered by 40μm filter element) | | | |
| Mounting type | SGC | Basic FA FB CA CB CR LB TC FTC TCM1 TCM2 | | |
| | SGCD、SGCJ | Basic FA LB TC FTC TCM1 TCM2 | | |
| Operating pressure | 0.15~1.0MPa(22~145psi)(1.5~10.0bar) | | | |
| Proof pressure | 1.5MPa(215psi)(15bar) | | | |
| Temperature °C | -20~70 | | | |
| Speed range mm/s | 30~500 | | | |
| Stroke tolerance | 0~250 ^{+1.0} ₀ | 251~1000 ^{+1.5} ₀ | 1001~1500 ^{+2.0} ₀ | |
| Cushion type | Variable cushion | | | |
| Adjustable cushion stroke | 40 | 50 | 60 | |
| Port size [Note1] | 1/2" | 3/4" | 1" | |

[Note1] G thread is available.
Add) Refer to P590 for detail of sensor switch.

Symbol



Product feature

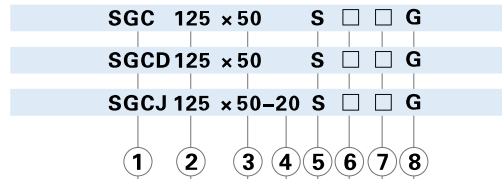
- ISO15552 (original ISO6431) standard cylinder.
- The seal of piston adopts heterogeneous two way seal structure. It's dimension is tight and it has the function of oil reservation.
- SGC series cylinders are made of aluminum pipe.
- The buffer adjustment of cylinder is smooth and steady.
- Cylinders and accessories for installation with several specifications are optional.
- The seal material with high temperature resistance is adopted, operating temperature range is 0~150°C.

Stroke

| Bore size (mm) | Standard stroke (mm) | | | | | | | | | | | | | | | | Max.std stroke | Max. stroke | | | | | |
|----------------|----------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|-------------|-----|-----|------|------|------|
| 125 | 25 | 50 | 75 | 80 | 100 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1500 | 1800 |
| 160 | 25 | 50 | 75 | 80 | 100 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1500 | 2000 |
| 200 | 25 | 50 | 75 | 80 | 100 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1500 | 2000 |
| 250 | 25 | 50 | 75 | 80 | 100 | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1500 | 2000 |

[Note] Consult us for non-standard stroke.

Ordering code



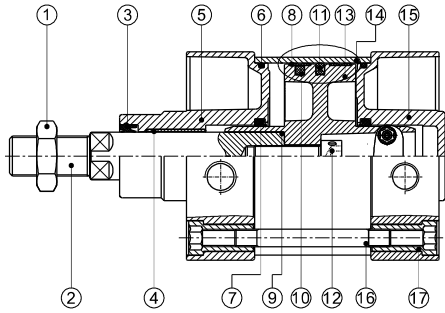
| ① Model | ② Bore size | ③ Stroke | ④ Adjustable stroke | ⑤ Magnet | ⑥ Mounting type[Note1] | ⑦ Seals Material | ⑧ Thread type |
|--|--------------------------|-----------------------------------|---|---|-----------------------------------|--|---------------|
| SGC: Double acting type (Aluminum barrel) | 125 160 200 250 | Refer to stroke table for details | No this code | Blank: Without magnet S: With magnet | Blank | Blank: TPU [Note2] H: Viton N: NBR | G: G Thread |
| SGCD: Double rod type (Aluminum barrel) | | | | | LB | | |
| SGCJ: Adjustable stroke type (Aluminum barrel) | | | | | FA | | |
| | | | 10 20 30 40 50 75 100 | | FB CA CB CR FTC TC | | |

[Note1] CR is used with CB. FTC, TC are used with TCM1, TCM2. Please refer to page 305~307 for details. [Note2] TPU seals are not available for SGC250.

SGC Series

Inner structure and material of major parts

SGC

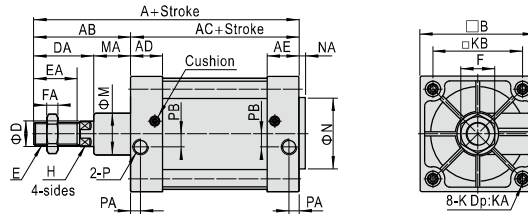


| NO. | Item | Material |
|-----|---------------------|--------------------------------------|
| 1 | Rod nut | Carbon steel |
| 2 | Piston rod | Carbon steel with 20μm chrome plated |
| 3 | Front cover packing | NBR(SGC250)\TPU(Other) |
| 4 | Bushing | Wear resistant material |
| 5 | Front cover | Aluminum alloy |
| 6 | O-ring | NBR |
| 7 | Buffer gasket | NBR(SGC250)\TPU(Other) |
| 8 | Wear ring | Wear resistant material |
| 9 | O-ring | NBR |
| 10 | Magnet | Rubber |
| 11 | Piston Seal | NBR |
| 12 | Screw | Carbon steel |
| 13 | Piston | Aluminum alloy |
| 14 | Barrel | Aluminum alloy |
| 15 | Back cover | Aluminum alloy |
| 16 | Tie-rod | Carbon steel |
| 17 | Tie-rod nut | Carbon steel |

Note: inner structure & material data sheet is based on certain bore size.
Please contact AirTAC if you need inner structure & material data sheet for specific bore size.

Dimensions

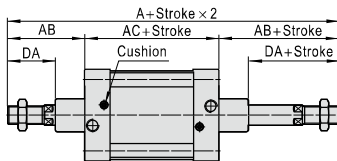
SGC



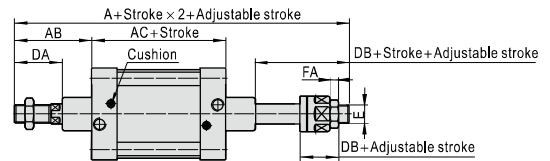
| Bore size\Item | A | AB | AC | AD | AE | B | D | DA | E | EA | F | FA | H | K | KA | KB | M | MA | N | NA | P | PA | PB |
|----------------|-----|-----|-----|----|----|-----|----|-----|---------|----|----|------|----|-----|----|-----|----|----|----|----|------|----|----|
| 125 | 279 | 119 | 160 | 46 | 46 | 140 | 32 | 74 | M27×2.0 | 54 | 41 | 13.5 | 27 | M12 | 31 | 110 | 60 | 45 | 60 | 4 | 1/2" | 23 | 14 |
| 160 | 332 | 152 | 180 | 50 | 50 | 180 | 40 | 94 | M36×2.0 | 72 | 55 | 18 | 36 | M16 | 30 | 140 | 65 | 58 | 65 | 4 | 3/4" | 25 | 15 |
| 200 | 347 | 167 | 180 | 50 | 50 | 220 | 40 | 100 | M36×2.0 | 72 | 55 | 18 | 36 | M16 | 30 | 175 | 75 | 67 | 75 | 5 | 3/4" | 25 | 15 |
| 250 | 389 | 189 | 200 | 58 | 58 | 282 | 50 | 111 | M42×2.0 | 84 | 65 | 21 | 46 | M20 | 35 | 220 | 90 | 78 | 90 | 8 | 1" | 31 | 22 |

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

SGCD



SGCJ



| Bore size\Item | A | | AB | AC | DA | DB | E | FA |
|----------------|------|-------|-----|-----|-----|------|---------|------|
| | SGCD | SGCJ | | | | | | |
| 125 | 398 | 366.5 | 119 | 160 | 74 | 42.5 | M27X2.0 | 13.5 |
| 160 | 484 | 458 | 152 | 180 | 94 | 68 | M36X2.0 | 18 |
| 200 | 514 | 482 | 167 | 180 | 100 | 68 | M36X2.0 | 18 |
| 250 | 578 | 547 | 189 | 200 | 111 | 80 | M42X2.0 | 21 |

Remark:

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

SGC Series—Accessories

List for ordering code of accessories

| Accessories | Mounting accessories | | | | | | | | | |
|-------------|----------------------|-----------|-----------|-----------|-----------|-----------|------------|-------------|-------------|------|
| | Bore size | LB | FA/FB | CA | CB | CR | TC | FTC | TCM1 | TCM2 |
| 125 | F-SI125LB | F-SI125FA | F-SE125CA | F-SE125CB | F-SI125CR | F-SG125TC | F-SI125FTC | F-SI125TCM1 | F-SI125TCM2 | |
| 160 | F-SI160LB | F-SI160FA | F-SI160CA | F-SI160CB | F-SI160CR | F-SG160TC | F-SI160FTC | F-SI160TCM1 | F-SI160TCM2 | |
| 200 | F-SI200LB | F-SI200FA | F-SI200CA | F-SI200CB | F-SI200CR | F-SG200TC | F-SI200FTC | F-SI200TCM1 | F-SI160TCM2 | |
| 250 | F-SG250LB | F-SG250FA | F-SG250CA | F-SG250CB | - | F-SG250TC | - | F-SG250TCM1 | F-SG250TCM2 | |

| Accessories | Knuckle | | | | Sensor switch | | | |
|-------------|------------|--------------|--------------|--------------|---------------|------|------|------|
| | Bore size | I: I Knuckle | Y: Y Knuckle | F: F Knuckle | U: U Knuckle | CMSG | DMSG | EMSG |
| 125 | F-M27X200I | F-M27X200Y | F-M27X200F | F-M27X200U | | | | |
| 160 | F-M36X200I | F-M36X200Y | F-M36X200F | F-M36X200U | | | | |
| 200 | F-M36X200I | F-M36X200Y | F-M36X200F | F-M36X200U | | | | |
| 250 | F-M42X200I | F-M42X200Y | - | - | | | | |

Accessory selection

| Accessories | Cylinder model | Mounting accessories | | | | | | | | | | Knuckle [Note1] | | | Sensor switch | | | |
|-------------|----------------|----------------------|----|----|----|----|----|----|-----|------|------|-----------------|---|---|---------------|------|------|---|
| | | LB | FA | FB | CA | CB | CR | TC | FTC | TCM1 | TCM2 | I | Y | U | CMSG | DMSG | EMSG | |
| SGC | Standard | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | With magnet | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| SGCD | Standard | ● | ● | × | × | × | × | ● | ● | ● | ● | ● | ● | ● | × | × | × | |
| | With magnet | ● | ● | × | × | × | × | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| SGCJ | Standard | ● | ● | × | × | × | × | ● | ● | ● | ● | ● | ● | ● | × | × | × | |
| | With magnet | ● | ● | × | × | × | × | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |

[Note1] Please refer to P586-589 for knuckle detail.

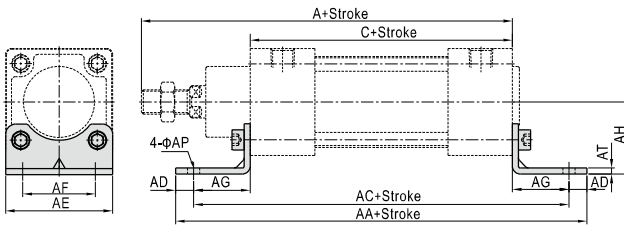
Material of accessories

| Accessories | Bore size | Mounting accessories | | | | | | | | | | Knuckle | | | |
|-------------|-----------|----------------------|----|----|----|----|----|----|-----|------|------|---------|---|---|---|
| | | LB | FA | FB | CA | CB | CR | TC | FTC | TCM1 | TCM2 | I | Y | U | |
| 125-200 | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ● | ■ | ■ | □ |
| 250 | | ■ | ■ | ■ | ■ | ■ | × | × | ■ | ■ | ■ | ■ | ■ | × | |

●—Aluminum alloy, ■—Nodular cast iron, □—Carbon steel, ×—No this type.

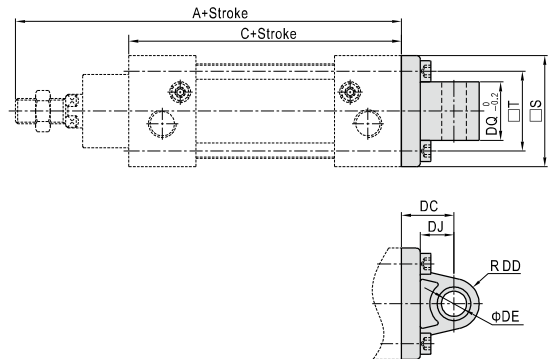
Dimensions

LB



| Bore size\Item | A | C | AA | AC | AD | AE | AF | AG | AH | AP | AT |
|----------------|-----|-----|-----|-----|----|-----|-----|----|-----|------|----|
| 125 | 279 | 160 | 290 | 250 | 20 | 140 | 90 | 45 | 90 | 16.5 | 8 |
| 160 | 332 | 180 | 340 | 300 | 20 | 180 | 115 | 60 | 115 | 18.5 | 8 |
| 200 | 347 | 180 | 380 | 320 | 30 | 220 | 135 | 70 | 135 | 24 | 9 |
| 250 | 389 | 200 | 410 | 350 | 30 | 275 | 165 | 75 | 165 | 28 | 19 |

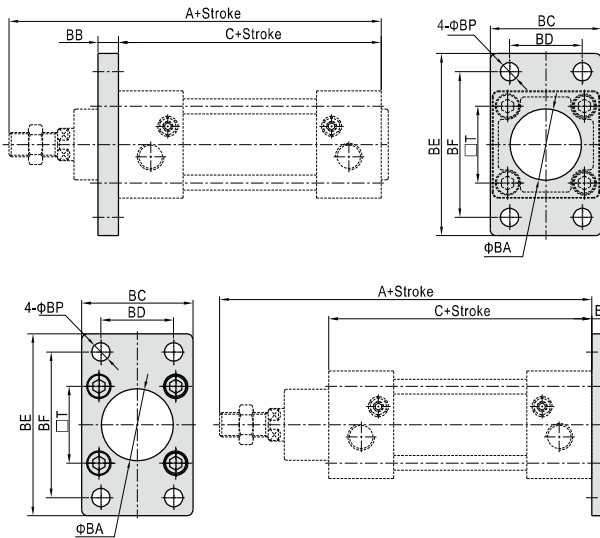
CA



| Bore size\Item | A | C | S | T | DC | DD | DE | DJ | DQ |
|----------------|-----|-----|-----|-----|----|----|----|------|-------|
| 125 | 279 | 160 | 139 | 110 | 50 | 22 | 25 | 33 | 69.7 |
| 160 | 332 | 180 | 180 | 140 | 55 | 30 | 30 | 35.5 | 89.7 |
| 200 | 347 | 180 | 220 | 175 | 60 | 30 | 30 | 37 | 89.7 |
| 250 | 389 | 200 | 270 | 220 | 70 | 35 | 40 | 46 | 109.5 |

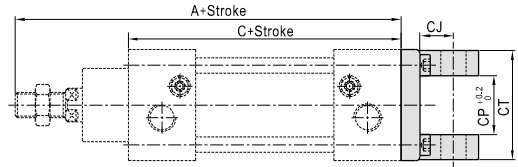
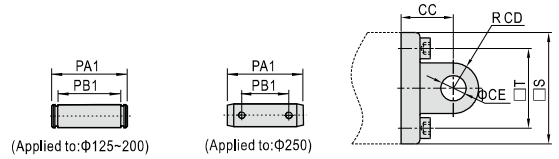
Dimensions

FA/FB



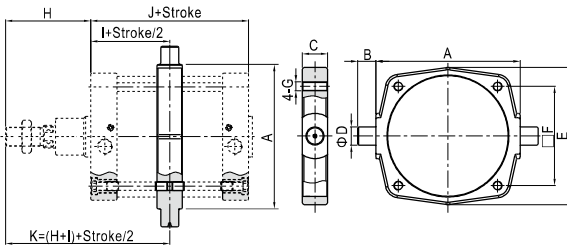
| Bore size\Item | A | C | BA | BB | BC | BD | BE | BF | BP | T |
|----------------|-----|-----|------|----|-----|-----|-----|-----|------|-----|
| 125 | 279 | 160 | 60.5 | 20 | 139 | 90 | 218 | 180 | 16.5 | 110 |
| 160 | 332 | 180 | 65.5 | 20 | 180 | 115 | 280 | 230 | 18.5 | 140 |
| 200 | 347 | 180 | 75.5 | 25 | 220 | 135 | 320 | 270 | 24 | 175 |
| 250 | 389 | 200 | 90.5 | 25 | 267 | 165 | 376 | 330 | 26 | 220 |

CB



| Bore size\Item | A | C | CC | CD | CE | CJ | CP | CT | PA1 | PB1 | S | T |
|----------------|-----|-----|----|------|----|------|-------|-----|-----|-------|-----|-----|
| 125 | 279 | 160 | 50 | 21.5 | 25 | 31 | 70 | 130 | 139 | 130.5 | 139 | 110 |
| 160 | 332 | 180 | 55 | 30 | 30 | 35.5 | 90 | 170 | 181 | 170.5 | 180 | 140 |
| 200 | 347 | 180 | 60 | 30 | 30 | 36 | 90 | 170 | 181 | 170.5 | 220 | 175 |
| 250 | 389 | 200 | 70 | 35 | 40 | 46 | 110.3 | 200 | 230 | 208 | 270 | 220 |

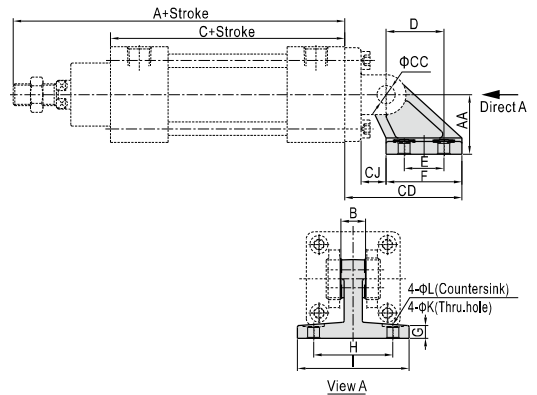
TC



| Bore size\Item | A | B | C | D | E | F | G | H | I | J | K |
|----------------|-----|----|----|----|-------|-----|-----|-----|-----|-----|-----|
| 125 | 160 | 25 | 40 | 25 | 158.5 | 110 | M12 | 119 | 80 | 160 | 199 |
| 160 | 200 | 32 | 46 | 32 | 197.5 | 140 | M16 | 152 | 90 | 180 | 242 |
| 200 | 250 | 32 | 46 | 32 | 245 | 175 | M16 | 167 | 90 | 180 | 257 |
| 250 | 320 | 40 | 56 | 40 | 304 | 220 | M20 | 189 | 100 | 200 | 289 |

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

CR



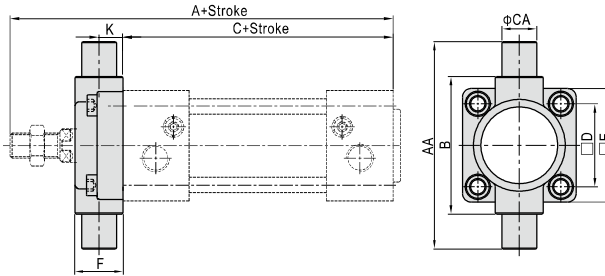
| Bore size\Item | A | AA | B | C | CC | CD | CJ | D | E | F | G | H | I | K | L |
|----------------|-----|-----|----|-----|----|-----|------|-----|----|-----|----|-----|-----|----|----|
| 125 | 279 | 90 | 70 | 160 | 25 | 134 | 29 | 70 | 60 | 88 | 20 | 94 | 122 | 14 | 20 |
| 160 | 332 | 115 | 90 | 180 | 30 | 171 | 25.5 | 97 | 88 | 126 | 25 | 118 | 156 | 14 | 20 |
| 200 | 347 | 135 | 90 | 180 | 30 | 185 | 31 | 105 | 90 | 130 | 30 | 122 | 162 | 18 | 26 |

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

ISO15552 Standard cylinder

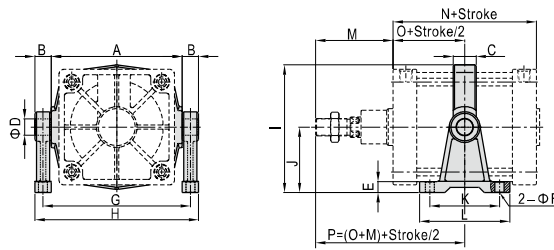
SGC Series—Accessories

FTC



| Bore size\Item | A | C | AA | B | CA | D | E | F | K |
|----------------|-----|-----|-----|-----|----|-----|-----|----|----|
| 125 | 279 | 160 | 210 | 160 | 25 | 110 | 139 | 43 | 25 |
| 160 | 332 | 180 | 264 | 200 | 32 | 140 | 179 | 56 | 30 |
| 200 | 347 | 180 | 314 | 250 | 32 | 175 | 218 | 64 | 30 |

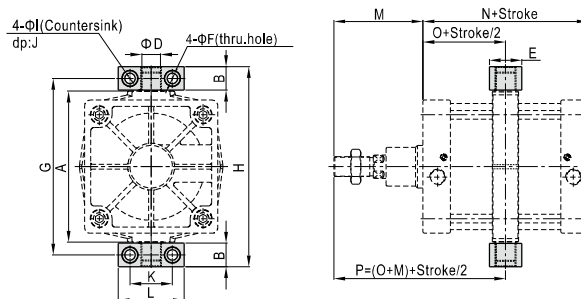
TCM1



| Bore size\Item | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|----------------|-----|----|----|----|----|----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|
| 125 | 160 | 25 | 40 | 25 | 19 | 18 | 185 | 213 | 169.3 | 90 | 115 | 155 | 119 | 160 | 80 | 199 |
| 160 | 200 | 32 | 46 | 32 | 24 | 22 | 232 | 267 | 208.8 | 110 | 140 | 190 | 152 | 180 | 90 | 242 |
| 200 | 250 | 32 | 46 | 32 | 27 | 22 | 282 | 317 | 257.5 | 135 | 150 | 200 | 167 | 180 | 90 | 257 |
| 250 | 320 | 40 | 56 | 40 | 28 | 22 | 360 | 400 | 312 | 160 | 170 | 220 | 189 | 200 | 100 | 289 |

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

TCM2



| Bore size\Item | A | B | D | E | F | G | H | I | J | K | L | M | N | O | P |
|----------------|-----|------|----|----|----|-------|-----|----|------|----|-----|-----|-----|-----|-----|
| 125 | 160 | 24.5 | 25 | 50 | 14 | 187.5 | 212 | 20 | 14 | 50 | 75 | 119 | 160 | 80 | 199 |
| 160 | 200 | 30 | 32 | 60 | 18 | 234 | 264 | 26 | 17.5 | 60 | 92 | 152 | 180 | 90 | 242 |
| 200 | 250 | 30 | 32 | 60 | 18 | 284 | 314 | 26 | 17.5 | 60 | 92 | 167 | 180 | 90 | 257 |
| 250 | 320 | 50 | 40 | 70 | 22 | 374 | 424 | 33 | 22 | 90 | 140 | 189 | 200 | 100 | 289 |

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