







Air Cylinder Series CG1

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

Variations

| Series | Action | Rod | Cushion | Basic | Variation | | | | | Bore size (mm) | Page |
|--|---------------|--|---|-------|------------------------|---------------|-----------|--------------|-------------|----------------|--------|
| | | | | | With One-touch fitting | With rod boot | Air-hydro | Clean series | Copper free | | |
| Standard/Series CG1  | Double acting | Single rod | Rubber | • | • | • | • | • | 20 to 100 | 1.6-2 | |
| | | Double rod | Air | • | • | • | • | • | | 1.6-14 | |
| Standard/Series CG1  | Single acting | Single rod (Spring return/ Spring extend) | Rubber | • | | | | | 20 to 40 | 1.6-20 | |
| Non-rotating rod Series CG1K  | Double acting | Single rod | Rubber | • | | | | • | 20 to 63 | 1.6-26 | |
| | | Double rod | Air | • | | | | | 40 to 63 | | |
| | | Double rod | Rubber | • | | | | | | 20 to 63 | 1.6-30 |
| Direct mount Series CG1R  | Double acting | Single rod | Rubber | • | | | | • | 20 to 63 | 1.6-35 | |
| Direct mount/Non-rotating rod Series CG1KR  | Double acting | Single rod | Rubber | • | | | | | 20 to 63 | 1.6-40 | |
| Low friction Series CG1□Q  | Double acting | Single rod | No cushion (ø20 to ø63) Rubber (ø80, ø100) | • | | | | | 20 to 100 | 1.6-43 | |

| |
|------------|
| CJ1 |
| CJP |
| CJ2 |
| CM2 |
| C85 |
| CG1 |
| MB |
| C95 |
| CA1 |
| CS1 |

Applicable auto switch

| Auto switch model | Band mounting |
|---------------------------|--|
| Reed switch | D-C7/8, D-C73C/C80C D-B5/B6, D-B59W |
| Solid state switch | D-H7□, D-H7□W, D-H7□F D-H7BAL, D-H7C, D-G5/K5 D-G5□W/K59W, D-G59F, D-G5NTL |

Made to Order

Refer to p.5.4-1 for made to order products of series CG1

Standard: Double Acting Single Rod

Series CG1

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Standard CG1 L N 25 100

With auto switch CDG1 L N 25 100 B53

With auto switch (magnet)

Mounting

| | |
|----|----------------|
| B | Basic |
| L | Axial foot |
| F | Front flange |
| G | Rear flange |
| U* | Front trunnion |
| T* | Rear trunnion |
| D | Clevis |

* Not available for bore sizes ø80 and ø100.
** Mounting brackets are included, not mounted.

Cushion

| | |
|---|---------------|
| N | Rubber bumper |
| A | Air cushion |

Bore size

| | | | |
|----|------|-----|-------|
| 20 | 20mm | 50 | 50mm |
| 25 | 25mm | 63 | 63mm |
| 32 | 32mm | 80 | 80mm |
| 40 | 40mm | 100 | 100mm |

Number of auto switches

| | |
|---|---|
| — | 2 |
| S | 1 |
| n | n |

Auto switch

| | |
|---|---------------------------------------|
| — | Without auto switch (Built-in magnet) |
|---|---------------------------------------|

* Refer to the table below for selecting applicable auto switches.

Rod boot (at one side)

| | |
|---|--------------------------|
| — | Without rod boot |
| J | Nylon tarpaulin |
| K | Heat resistant tarpaulin |

* In case of foot brackets and front flanges, rod boots are mounted when shipped.

Cylinder stroke (mm)
Refer to p.1.6-3 for Standard Stroke Table.

Applicable Auto Switches/Refer to p.5.3-2 for further information on auto switch.

| Style | Special function | Electrical entry | Indicator | Wiring (Output) | Load voltage | | Auto switch model | | Lead wire (m)* | | | | Applicable load | | | | |
|--|------------------|------------------|-----------|-----------------|--------------|-----------------------------|----------------------|--------------|----------------|-------|-------|----------|-----------------|----|-----------|---|-----|
| | | | | | DC | AC | Applicable bore size | | 0.5 (-) | 3 (L) | 5 (Z) | None (N) | | | | | |
| | | | | | | | ø20 to ø63 | ø20 to ø100 | | | | | | | | | |
| Reed switch | — | Grommet | Yes | 3 wire (NPN) | — | 5V | — | C76 | — | ● | ● | — | — | IC | Relay PLC | | |
| | | | | 2 wire | 24V | 200V or less | — | — | B53 | ● | ● | ● | — | — | | — | PLC |
| | | | | | | | 12V | 100V | C73 | ● | ● | ● | — | — | | — | — |
| | | | | | | | 5V, 12V | 100V or less | C80 | ● | ● | — | — | — | | — | IC |
| | | Connector | No | Yes | No | 12V | — | C73C | — | ● | ● | ● | ● | — | | — | — |
| | | | | | | 5V, 12V | 24V or less | C80C | — | ● | ● | ● | ● | — | | — | IC |
| | | | | | | — | — | B59W | ● | ● | — | — | — | — | | — | |
| Solid state switch | — | Grommet | Yes | 3 wire (NPN) | 5V, 12V | — | — | H7A1 | G59 | ● | ● | ○ | — | IC | Relay PLC | | |
| | | | | 3 wire (PNP) | | | | H7A2 | G5P | ● | ● | ○ | — | — | | — | |
| | | Connector | No | Yes | No | 2 wire | 12V | — | — | H7B | K59 | ● | ● | ○ | | — | — |
| | | | | | | — | | | | H7C | — | ● | ● | ● | | ● | — |
| | | Grommet | Yes | No | No | 3 wire (NPN) | 5V, 12V | — | — | H7NW | G59W | ● | ● | ○ | | — | IC |
| | | | | | | 3 wire (PNP) | | | | H7PW | G5PW | ● | ● | ○ | | — | — |
| | | | | | | 2 wire | | | | H7BW | K59W | ● | ● | ○ | | — | — |
| | | | | | | Water resistant (2 color) | | | | H7BA | G5BA | — | ● | ○ | | — | — |
| | | | | | | With timer | | | | — | G5NT | — | ● | ○ | | — | — |
| | | | | | | Diagnostic output (2 color) | | | | H7NF | G59F | ● | ● | ○ | | — | — |
| Latch with diagnostic output (2 color) | H7LF | — | ● | ● | ○ | — | — | — | | | | | | | | | |

* Lead wire length 0.5m..... e.g.) C73C 5m.....Z e.g.) C73CZ
3m.....L C73CL None.....N C73CN

* Solid state switches marked with "○" are manufactured upon receipt of order.

Standard: Double Acting Single Rod **Series CG1**

Substantially shorter length:

ø20 to ø40: -15 to -30mm
 (in comparison with CM2 Series)
ø40 to ø63: -17 to -28mm
 (in comparison with CA1 Series)
ø80 to ø100: -9 to -33mm
 (in comparison with CA1 Series)

High speed operation: 1000mm/s
 (ø80 and ø100 operate at 700mm/s)

Provided with an air cushion as standard

Two cushions are available:
 an air cushion or rubber bumper

Weight reduction of 10 to 50%
 (50mm stroke, in-house comparison)

Highly accurate mounting brackets

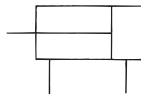
(Axial foot, front flange)



Standard stroke

JIS symbol

Double acting



Made to Order

Refer to p.5.4-1 for made to order products of series CG1.

Mounting Bracket

Refer to p.1.6-4 for part numbers for the mounting brackets.

Auto Switch Mounting Band

Refer to p.1.6-4 for part numbers for the mounting bands.

Specifications

| Bore size (mm) | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|-------------------------------|--|----|----|----|----|----|--|-----|
| Action | Double acting/Single rod | | | | | | | |
| Lubrication | Non-lube | | | | | | | |
| Fluid | Air | | | | | | | |
| Proof pressure | 1.5MPa | | | | | | | |
| Max. operating pressure | 1.0MPa | | | | | | | |
| Min. operating pressure | 0.05MPa | | | | | | | |
| Ambient and fluid temperature | Without auto switch: -10 to +70°C (No freezing) | | | | | | | |
| | With auto switch: -10 to +60°C (No freezing) | | | | | | | |
| Piston speed | 50 to 1000mm/s | | | | | | 50 to 700mm/s | |
| Stroke tolerance | Up to 1000 ^{+1.4} ₀ mm, Up to 1200 ^{+1.8} ₀ mm | | | | | | Up to 1000 ^{+1.4} ₀ mm Up to 1500 ^{+1.8} ₀ mm | |
| Thread tolerance | JIS class 2 | | | | | | | |
| Cushion | Rubber bumper/Air cushion | | | | | | | |
| Mounting* | Basic, Axial foot, Front flange, Rear flange, Front trunnion, Rear trunnion, Clevis (Used for changing the port location by 90° degrees.) | | | | | | | |

CJ1

CJP

CJ2

CM2

C85

CG1

MB

C95

CA1

CS1

Front/Rear trunnion styles are not available for bore sizes ø80 and ø100.

Accessories

| Mounting | | Basic | Axial foot | Front flange | Rear flange | Front trunnion | Rear trunnion | Clevis |
|----------|---------------------------------------|-------|------------|--------------|-------------|----------------|---------------|--------|
| Standard | Rod end nut | ● | ● | ● | ● | ● | ● | ● |
| | Clevis pin | — | — | — | — | — | — | ● |
| Option | Single knuckle joint | ● | ● | ● | ● | ● | ● | ● |
| | Double knuckle joint** (With pins) | ● | ● | ● | ● | ● | ● | ● |
| | Pivot bracket | — | — | — | — | ●* | ●* | ● |
| | Rod boot | ● | ● | ● | ● | ● | ● | ● |

* Pivot bracket is not available for bore sizes ø80 and ø100.

** Pins and snap rings for double knuckle joint are included, not mounted.

Stroke

| Bore size (mm) | Standard stroke (1) (mm) | Long stroke (2) (mm) | Max stroke (mm) |
|----------------|--|----------------------|-----------------|
| 20 | 25, 50, 75, 100, 125, 150, 200 | 201 to 350 | 1500 |
| 25 | | 301 to 400 | |
| 32 | | 301 to 450 | |
| 40 | 25, 50, 75, 100, 125, 150, 200, 250, 300 | 301 to 800 | |
| 50/63 | | 301 to 1200 | |
| 80 | | 301 to 1400 | |
| 100 | | 301 to 1500 | |

Note 1) Other intermediate strokes can be manufactured upon receipt of order. Spacers are not used for the intermediate strokes. Refer to p.1.6-8 to 1.6-10 for dimensions.

Note 2) Long stroke applies to the axial foot and the front flange style. If other mounting brackets are used or the length exceeds the stroke limit, the stroke should be determined based on the stroke selection table in the technical data.

Minimum Strokes for Auto Switch Mounting

| Auto switch model | Number of switches | |
|---------------------------------------|--------------------|------|
| | 2 | 1 |
| D-C7/C8 D-B5/B6 D-H7 D-G5/K5 | 15mm | 10mm |
| D-B59W | 20mm | 15mm |
| D-H7LF | 20mm | 10mm |

Rod Boot Materials

| Symbol | Material | Max. operating temp |
|--------|--------------------------|---------------------|
| J | Nylon tarpaulin | 70°C |
| K | Heat resistant tarpaulin | 110°C* |

* Maximum ambient temperature for the rod boot only.

Series CG1


Mounting Bracket Part No.

| Mounting bracket | Bore size (mm) | | | | | | | |
|------------------|----------------|------------|------------|------------|------------|------------|------------|------------|
| | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| Axial foot* | CG-L020 | CG-L025 | CG-L032 | CG-L040 | CG-L050 | CG-L063 | CG-L080 | CG-L100 |
| Flange | CG-F020 | CG-F025 | CG-F032 | CG-F040 | CG-F050 | CG-F063 | CG-F080 | CG-F100 |
| Trunnion | CG-T020 | CG-T025 | CG-T032 | CG-T040 | CG-T050 | CG-T063 | — | — |
| Clevis** | CG-D020 | CG-D025 | CG-D032 | CG-D040 | CG-D050 | CG-D063 | CG-D080 | CG-D100 |
| Pivot bracket | CG-020-24A | CG-025-24A | CG-032-24A | CG-040-24A | CG-050-24A | CG-063-24A | CG-080-24A | CG-100-24A |

* Order two foot brackets per a cylinder.
 ** Clevis pins, snap rings and mounting bolts are attached for the clevis.
 *** Mounting bolts are attached for the foot type and the flange type.

Auto Switch Mounting Bracket Part No.

| Auto switch model | Bore size (mm) | | | | | | | |
|-------------------|----------------|----------|----------|----------|----------|----------|-------|-------|
| | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| D-C7/C8 | BMA2-020 | BMA2-025 | BMA2-032 | BMA2-040 | BMA2-050 | BMA2-063 | — | — |
| D-H7 | | | | | | | | |
| D-B5/B6 | BA-01 | BA-02 | BA-32 | BA-04 | BA-05 | BA-06 | BA-08 | BA-10 |
| D-G5/K5 | | | | | | | | |

 * A set of following stainless steel mounting screws is attached.
 (A switch mounting band is not attached. Please order the band separately.)
 BBA3: D-B5/B6/G5 types
 BBA4: D-C7/C8/H7 types
 • "D-G5BAL" and "D-H7BAL" switches are set on the cylinder with the screws above when shipped.
 When a switch only is shipped, "BBA3" or "BBA4" screws are attached.

Weight

| Bore size (mm) | | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
|-------------------------------------|------------|------|------|------|------|------|------|------|------|
| Basic weight | Basic | 0.10 | 0.17 | 0.26 | 0.41 | 0.77 | 1.07 | 2.04 | 3.17 |
| | Axial foot | 0.21 | 0.30 | 0.42 | 0.63 | 1.25 | 1.79 | 3.00 | 4.92 |
| | Flange | 0.18 | 0.27 | 0.40 | 0.61 | 1.11 | 1.57 | 2.75 | 4.52 |
| | Trunnion | 0.11 | 0.19 | 0.29 | 0.46 | 0.91 | 1.21 | — | — |
| | Clevis | 0.15 | 0.25 | 0.41 | 0.64 | 1.17 | 1.75 | 2.75 | 4.45 |
| Pivot bracket | | 0.08 | 0.09 | 0.17 | 0.25 | 0.44 | 0.80 | 0.98 | 1.75 |
| Single knuckle joint | | 0.05 | 0.09 | 0.09 | 0.10 | 0.22 | 0.22 | 0.39 | 0.57 |
| Double knuckle joint (with pins) | | 0.05 | 0.09 | 0.09 | 0.13 | 0.26 | 0.26 | 0.64 | 1.31 |
| Additional weight by each 50 stroke | | 0.05 | 0.07 | 0.09 | 0.15 | 0.22 | 0.26 | 0.35 | 0.49 |
| Additional weight by air cushion | | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 |
| Additional weight by long stroke | | 0.01 | 0.01 | 0.02 | 0.03 | 0.06 | 0.10 | 0.19 | 0.26 |

Calculation example: **CG1LA20-100**
 (Foot, ø20, 100 stroke)

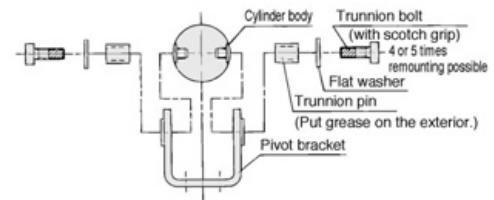
- Basic weight.....0.21 (Foot, ø20)
 - Additional weight.....0.05/50 stroke
 - Cylinder stroke.....100 stroke
 - Additional weight by air cushion...0.01kg
- 0.21+0.05 X 100/50+0.014=0.32kg

Mounting Procedures

Trunnion

Follow the procedures below when mounting a pivot bracket on the trunnion.

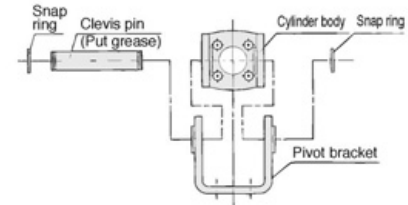
ø20 to ø63



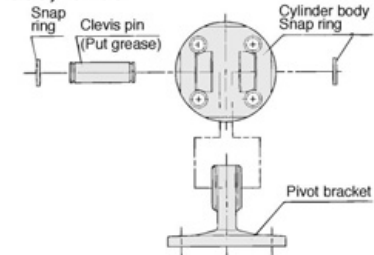
Clevis

Follow the procedures below when mounting a pivot bracket on the clevis.

ø20 to ø63

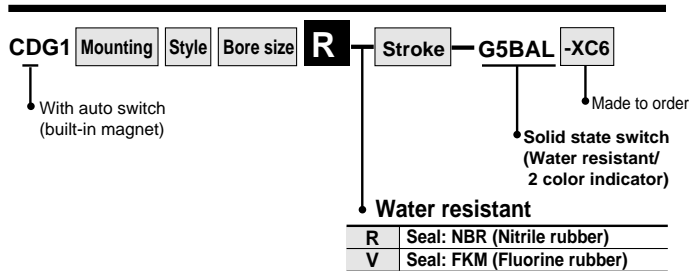


ø80, ø100



Series CG1

Water Resistant



Ideal for use in a machine tool environment exposed to coolant mist. Also suited for use in areas in which water splashes, such as food processing equipment or car washers.

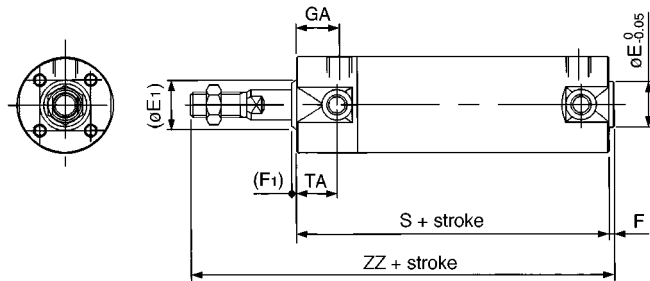
Specifications

| | |
|-----------------------------|---|
| Action | Double acting/Single rod |
| Bore size (mm) | ø32, ø40, ø50, ø63, ø80, ø100 |
| Cushion | Rubber bumper/Air cushion |
| Auto switch mounting method | Band mounting |
| Made to order | Material of the piston rod and rod end nut is stainless steel. (-XC6) |

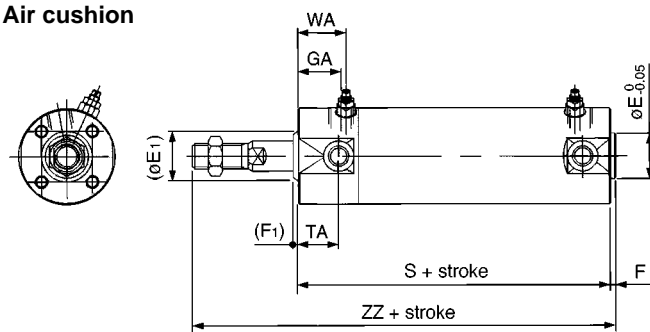
* Other specifications are the same as the standard model.

Dimensions

Rubber bumper



Air cushion



(mm)

| Bore (mm) | (E1) | E* | (F1) | F* | GA | S | TA | WA | ZZ |
|-----------|------|----|------|----|----|-----------|----|----|-----------|
| 32 | 17 | 18 | 2 | 2 | 18 | 77 (85) | 17 | 20 | 119 (127) |
| 40 | 21 | 25 | 2 | 2 | 19 | 84 (93) | 18 | 21 | 136 (145) |
| 50 | 26 | 30 | 2 | 2 | 21 | 97 (109) | 20 | 23 | 157 (169) |
| 63 | 26 | 32 | 2 | 2 | 21 | 97 (109) | 20 | 23 | 157 (169) |
| 80 | 32 | 40 | 3 | 3 | 28 | 116 (130) | — | 30 | 190 (204) |
| 100 | 37 | 50 | 3 | 3 | 29 | 117 (131) | — | 31 | 191 (205) |

* These dimensions and other dimensions not indicated here are the same as standard.
Note) (): Long stroke

Precautions

Be sure to read before handling.
Refer to p.0-39 to 0-46 for Safety Instructions and common precautions.

Precautions on handling

Warning

- Do not operate the cushion valve in the fully closed or fully opened state.
 - Using it in the fully closed state will cause the cushion seal to be damaged. Using it in the fully opened state will cause the piston rod assembly or the cover to be damaged.
- Operate within the specified cylinder speed.
 - Failure to do so will damage the cylinder and the seals.

Caution

- Do not use the air cylinder as an air-hydro cylinder. This will cause an oil leak.
- Install without twisting the bellows.
 - If the cylinder is installed with its bellows twisted, it could damage the bellows.

Disassembly/Replacement

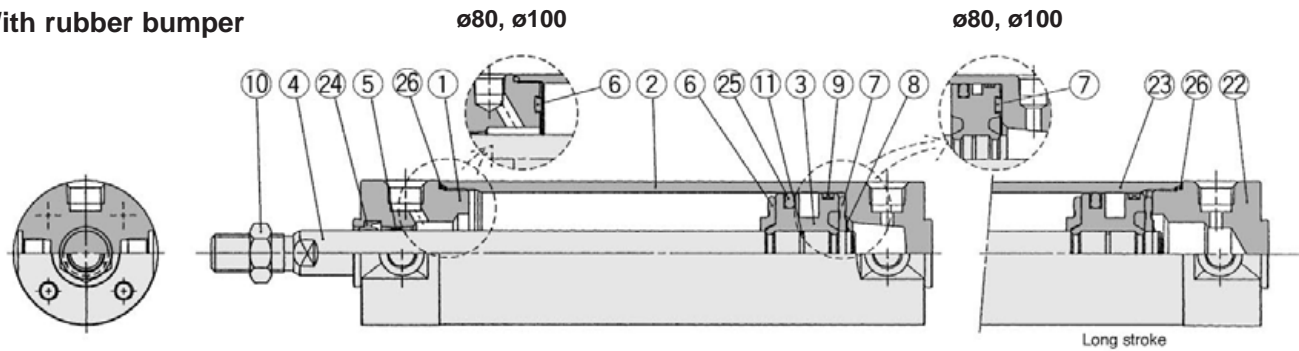
Caution

- Do not replace the bushings or the cushion seals.
 - The bushings and the cushion seals are press-fit. To replace them, they must be replaced together with the cover assembly.
- To replace a seal, apply grease to the new seal before installing it.
 - If the cylinder is put into operation without applying grease to the seal, it could cause the seal to wear significantly, leading to premature air leakage.
- Do not replace One-touch fittings.
 - Because pipe fittings are press-fit, they must be replaced together with the cover assembly.
- Those with a bore of ø50 or more cannot be disassembled.
 - When disassembling a cylinder with a bore of ø20 to ø40, use a vise or the like to hold the wrench flats portion of the tube cover or the rod cover on one side, while placing a wrench or an adjustable wrench on the other side to loosen and remove the cover. To replace, tighten it an additional 28 from the installed position. (Those with a bore of ø50 or more cannot be disassembled because they have been tightened with greater torque. If they must be disassembled, contact SMC.)

Standard: Double Acting Single Rod **Series CG1**

Construction

With rubber bumper



CJ1

CJP

CJ2

CM2

C85

CG1

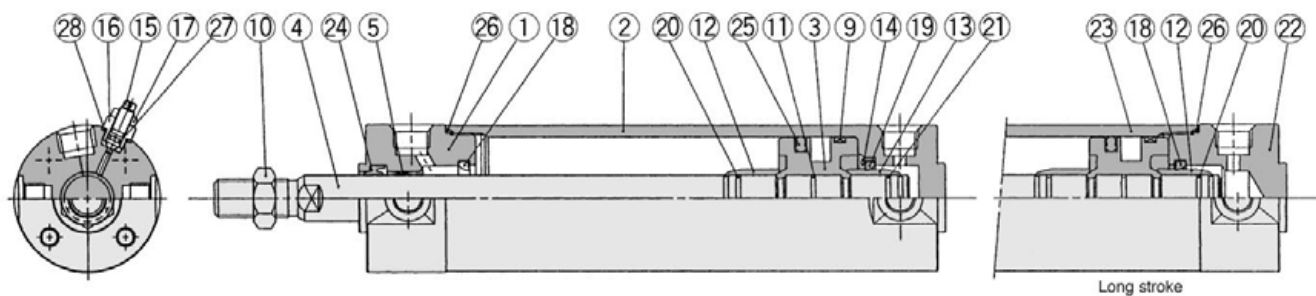
MB

C95

CA1

CS1

With air cushion



Component Parts

| No. | Description | Material | Note |
|-----|-----------------------|--------------------------------|--------------------------------------|
| ① | Rod cover | Aluminum alloy | White hard anodized |
| ② | Tube cover | Aluminum alloy | White hard anodized |
| ③ | Piston | Aluminum alloy | Chromated |
| ④ | Piston rod | Carbon steel | Hard chrome plated |
| ⑤ | Bushing | Oil impregnated sintered alloy | ø40 or larger: Lead bronze cast |
| ⑥ | Bumper A | Urethane | |
| ⑦ | Bumper B | Urethane | ø40 or larger: the same as damper A |
| ⑧ | Snap ring | Stainless steel | Except for ø80 and ø100 |
| ⑨ | Wear ring | Resin | |
| ⑩ | Rod end nut | Rolled steel | Nickel plated |
| ⑪ | Piston gasket | NBR | |
| ⑫ | Cushion ring A | Brass | |
| ⑬ | Cushion ring B | Brass | ø32 or more: the same as A |
| ⑭ | Seal retainer | Rolled steel | Nickel plated/Except for long stroke |
| ⑮ | Cushion valve | Rolled steel | Electroless nickel plated |
| ⑯ | Valve retainer | Rolled steel | Electroless nickel plated |
| ⑰ | Lock nut | Rolled steel | Nickel plated |
| ⑱ | Cushion seal A | Urethane | |
| ⑲ | Cushion seal B | Urethane | ø32 or larger: the same as A * |
| ⑳ | Cushion ring gasket A | NBR | |
| ㉑ | Cushion ring gasket B | NBR | ø32 or larger: the same as A |
| ㉒ | Head cover | Aluminum alloy | White hard anodized |
| ㉓ | Cylinder tube | Aluminum alloy | Hard anodized |

Note) A magnet is equipped on the piston of the cylinder with auto switch.

* The material is stainless steel on auto switch equipped styles ø20 and ø25.

Replacement Parts/With rubber bumper

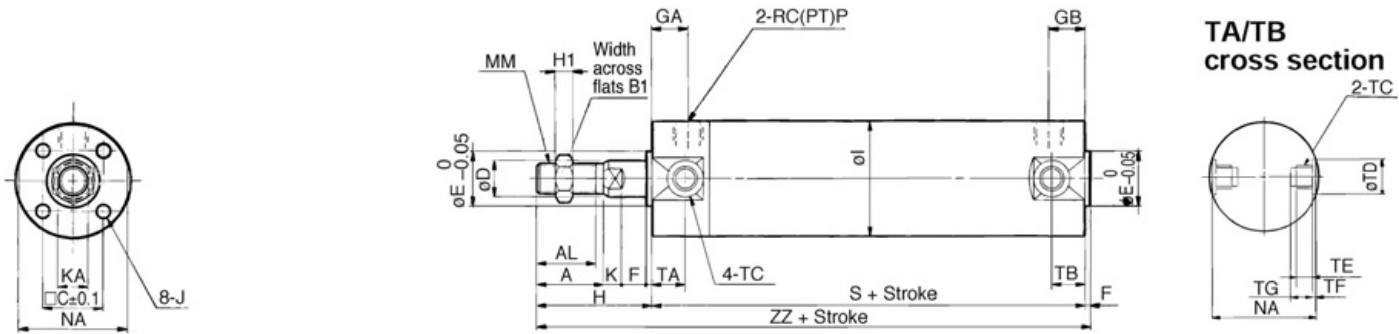
| No. | Description | Material | Bore size (mm)/Part No. | | | | | | | |
|-----|-------------|----------|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | | ø20 | ø25 | ø32 | ø40 | ø50 | ø63 | ø80 | ø100 |
| ㉔ | Rod seal | NBR | PDU-8Z | PDU-10Z | PDU-12LZ | PDU-16Z | PDU-20Z | PDU-20Z | PDU-25Z | PDU-30Z |
| ㉕ | Piston seal | NBR | PPD-20 | PPD-25-19 | PPD-32 | PPD-40 | PPD-50 | PPD-63 | PPD-80 | PPD-100 |
| ㉖ | Tube gasket | NBR | CM-020-16-123 | CM-025-16-124 | CM-032-16-126 | CM-040-16-127 | CM-050-16-128 | CM-063-16-129 | CM-080-16-152 | CM-100-16-153 |

With air cushion (Parts ㉔ to ㉖ are the same as rubber bumper style.)

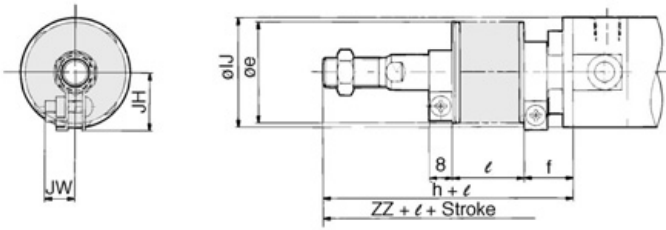
| | | | | | |
|---|---------------------------|-----|---------------------------|---------------------------|--------------------------|
| ㉗ | Valve seal | NBR | O ring ø4.5 X ø2.5 X ø1 | O ring ø5.5 X ø3.5 X ø1 | O ring ø6.5 X ø4.5 X ø1 |
| ㉘ | Gasket for valve retainer | NBR | O ring ø6.4 X ø5.2 X ø0.6 | O ring ø7.4 X ø5.8 X ø0.8 | O ring ø11.4 X ø9.4 X ø1 |

Series CG1

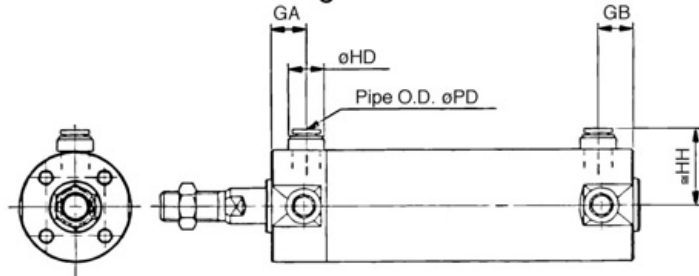
Basic/CG1BN: With Rubber Bumper



Basic: With rod boot

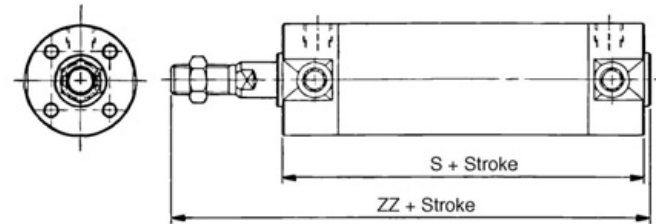


Built-in One-touch fitting



Other dimensions are the same as standard.

Air-hydro



Other dimensions are the same as the long stroke standard.

(mm)

| Bore (mm) | Standard stroke (mm) | Long stroke (mm) | A | AL | B1 | C | D | E | F | GA | GB | H | H1 | I | J | K | KA | MM | NA | P | S | TA | TB | ZZ |
|-----------|----------------------|------------------|----|------|----|------|----|----|---|----|---------|----|----|-----|---------------------|-----|----|------------|------|-----|-----------|----|---------|-----------|
| 20 | Up to 200 | 201 to 350 | 18 | 15.5 | 13 | 14 | 8 | 12 | 2 | 12 | 10 (12) | 35 | 5 | 26 | M4 X 0.7 Depth 7 | 5 | 6 | M8 X 1.25 | 24 | 1/8 | 69 (77) | 11 | 11 | 106 (114) |
| 25 | Up to 300 | 301 to 400 | 22 | 19.5 | 17 | 16.5 | 10 | 14 | 2 | 12 | 10 (12) | 40 | 6 | 31 | M5 X 0.8 Depth 7.5 | 5.5 | 8 | M10 X 1.25 | 29 | 1/8 | 69 (77) | 11 | 11 | 111 (119) |
| 32 | Up to 300 | 301 to 450 | 22 | 19.5 | 17 | 20 | 12 | 18 | 2 | 12 | 10 (12) | 40 | 6 | 38 | M5 X 0.8 Depth 8 | 5.5 | 10 | M10 X 1.25 | 35.5 | 1/8 | 71 (79) | 11 | 10 (11) | 113 (121) |
| 40 | Up to 300 | 301 to 800 | 30 | 27 | 19 | 26 | 16 | 25 | 2 | 13 | 10 (13) | 50 | 8 | 47 | M6 X 1 Depth 12 | 6 | 14 | M14 X 1.5 | 44 | 1/8 | 78 (87) | 12 | 10 (12) | 130 (139) |
| 50 | Up to 300 | 301 to 1200 | 35 | 32 | 27 | 32 | 20 | 30 | 2 | 14 | 12 (14) | 58 | 11 | 58 | M8 X 1.25 Depth 16 | 7 | 18 | M18 X 1.5 | 55 | 1/4 | 90 (102) | 13 | 12 (13) | 150 (162) |
| 63 | Up to 300 | 301 to 1200 | 35 | 32 | 27 | 38 | 20 | 32 | 2 | 14 | 12 (14) | 58 | 11 | 72 | M10 X 1.5 Depth 16 | 7 | 18 | M18 X 1.5 | 69 | 1/4 | 90 (102) | 13 | 12 (13) | 150 (162) |
| 80 | Up to 300 | 301 to 1400 | 40 | 37 | 32 | 50 | 25 | 40 | 3 | 20 | 16 (20) | 71 | 13 | 89 | M10 X 1.5 Depth 22 | 10 | 22 | M22 X 1.5 | 80 | 3/8 | 108 (122) | — | — | 182 (196) |
| 100 | Up to 300 | 301 to 1500 | 40 | 37 | 41 | 60 | 30 | 50 | 3 | 20 | 16 (20) | 71 | 16 | 110 | M12 X 1.75 Depth 22 | 10 | 26 | M26 X 1.5 | 100 | 1/2 | 108 (122) | — | — | 182 (196) |

Note 1) (): Long stroke

Note 2) Trunnion mounting taps with width across flats NA are not attached for bore size 80 and 100.

| Basic style | CG1BN32.....SCG132, #1 | CG1BN63.....SCG163, #1 |
|------------------------|------------------------|--------------------------|
| CG1BN20.....SCG120, #1 | CG1BN40.....SCG140, #1 | CG1BN80.....SCG180, #1 |
| CG1BN25.....SCG125, #1 | CG1BN50.....SCG150, #1 | CG1BN100.....SCG1100, #1 |

TA/TB cross section

(mm)

| Bore (mm) | TC* | TDH9 | TE | TF | TG |
|-----------|------------|----------------------------------|------|------|------|
| 20 | M5 X 0.8 | 8 ^{+0.08} ₀ | 4 | 0.5 | 5.5 |
| 25 | M6 X 0.75 | 10 ^{+0.08} ₀ | 5 | 1 | 6.5 |
| 32 | M8 X 1.0 | 12 ^{+0.08} ₀ | 5.5 | 1 | 7.5 |
| 40 | M10 X 1.25 | 14 ^{+0.08} ₀ | 6 | 1.25 | 8.5 |
| 50 | M12 X 1.25 | 16 ^{+0.08} ₀ | 7.5 | 2 | 10 |
| 63 | M14 X 1.5 | 18 ^{+0.08} ₀ | 11.5 | 3 | 14.5 |
| 80 | — | — | — | — | — |
| 100 | — | — | — | — | — |

With rod boot

(mm)

| Bore (mm) | e | f | h | IJ | JH | JW | l | ZZ |
|-----------|----|----|----|-----------|--------|----|---|-----------|
| 20 | 30 | 16 | 55 | 27 (14.5) | (11.5) | — | — | 126 (134) |
| 25 | 30 | 17 | 62 | 32 (17.5) | (11.5) | — | — | 133 (141) |
| 32 | 35 | 17 | 62 | 38 (19.5) | (11.5) | — | — | 135 (143) |
| 40 | 35 | 17 | 70 | 48 (22.5) | (13) | — | — | 150 (159) |
| 50 | 40 | 17 | 78 | 59 (25) | (13) | — | — | 170 (182) |
| 63 | 40 | 18 | 78 | 72 (25) | (13) | — | — | 170 (182) |
| 80 | 52 | 10 | 80 | 59 | — | — | — | 191 (205) |
| 100 | 62 | 7 | 80 | 71 | — | — | — | 191 (205) |

Built-in One-touch fitting

| Bore (mm) | GA | GB | HD | HH | PD | Bore (mm) | S | ZZ |
|-----------|----|---------|----|------|----|-----------|----|-----|
| 20 | 12 | 10 (12) | 13 | 24.2 | 6 | 20 | 70 | 107 |
| 25 | 12 | 10 (12) | 13 | 26.7 | 6 | 25 | 70 | 112 |
| 32 | 12 | 10 (12) | 13 | 30.2 | 6 | 32 | 72 | 114 |
| 40 | 12 | 10 (12) | 16 | 34.6 | 8 | 40 | 80 | 132 |
| 50 | 13 | 13 | 20 | 40.6 | 10 | 50 | 95 | 155 |
| 63 | 13 | 13 | 20 | 47.1 | 10 | 63 | 95 | 155 |

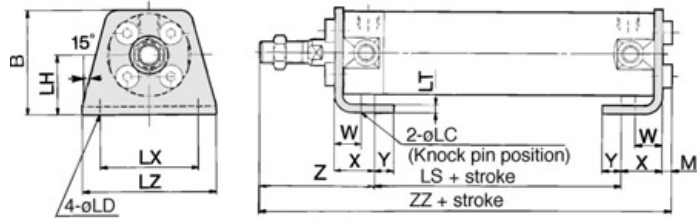
* The minimum stroke for rod boot equipped style is 20mm. Note) (): Long stroke

Standard: Double Acting Single Rod *Series CG1*

With Mounting Bracket



Axial foot/CGNLN

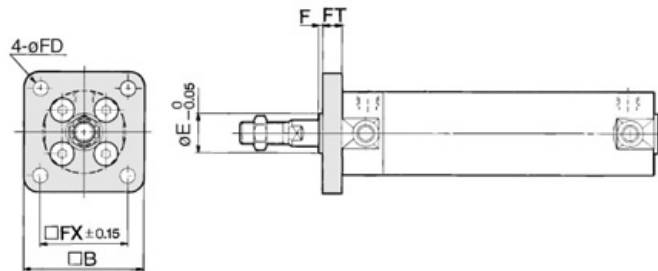


Axial foot

| Bore (mm) | B | LC | LD | LH | LS | LT | LX | LZ | M | W | X | Y | Z | | ZZ | |
|------------|------|----|-----|----|---------|-----|-----|-----|-----|------|------|-----|------------------|-------------------|------------------|----------------------------|
| | | | | | | | | | | | | | Without rod boot | With rod boot | Without rod boot | With rod boot |
| | | | | | | | | | | | | | 20 | 34 | 4 | 6 |
| 25 | 38.5 | 4 | 6 | 22 | 45 (53) | 3 | 36 | 49 | 3.5 | 10 | 15 | 7 | 52 | 74 [±] | 115.5 (123.5) | 137.5 (145.5) [±] |
| 32 | 45 | 4 | 6.6 | 25 | 45 (53) | 3 | 44 | 58 | 3.5 | 10 | 16 | 8 | 53 | 75 [±] | 117.5 (125.5) | 139.5 (147.5) [±] |
| 40 | 54.5 | 4 | 6.6 | 30 | 51 (60) | 3 | 54 | 71 | 4 | 10 | 16.5 | 8.5 | 63.5 | 83.5 [±] | 135 (144) | 155 (164) [±] |
| 50 | 70.5 | 5 | 9 | 40 | 55 (67) | 4.5 | 66 | 86 | 5 | 17.5 | 22 | 11 | 75.5 | 95.5 [±] | 157.5 (169.5) | 177.5 (189.5) [±] |
| 63 | 82.5 | 5 | 11 | 45 | 55 (67) | 4.5 | 82 | 106 | 5 | 17.5 | 22 | 13 | 75.5 | 95.5 [±] | 157.5 (169.5) | 177.5 (189.5) [±] |
| 80 | 101 | 6 | 11 | 55 | 60 (74) | 4.5 | 100 | 125 | 5 | 20 | 28.5 | 14 | 95 | 104 [±] | 188.5 (202.5) | 197.5 (211.5) [±] |
| 100 | 121 | 6 | 14 | 65 | 60 (74) | 6 | 120 | 150 | 7 | 20 | 30 | 16 | 95 | 104 [±] | 192 (206) | 201 (215) [±] |

Note) () : Long stroke

Front flange/CG1FN



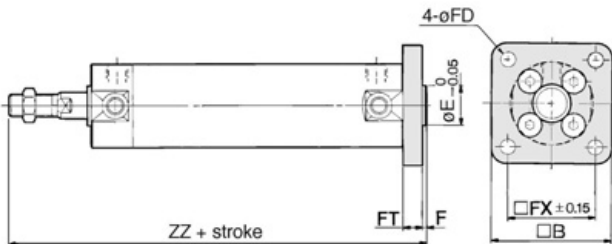
Flange

| Bore (mm) | Stroke range | | B | E | F | FX | FD | FT | Rear flange ZZ | |
|------------|--------------|-----------|-----|----|---|-----|-----|----|------------------|------------------------|
| | Front | Rear | | | | | | | Without rod boot | With rod boot |
| | 20 | Up to 350 | | | | | | | Up to 200 | 40 |
| 25 | Up to 400 | Up to 300 | 44 | 14 | 2 | 32 | 5.5 | 7 | 118 | 140 [±] |
| 32 | Up to 450 | Up to 300 | 53 | 18 | 2 | 38 | 6.6 | 7 | 120 | 142 [±] |
| 40 | Up to 800 | Up to 500 | 61 | 25 | 2 | 46 | 6.6 | 8 | 138 (147) | 158 (167) [±] |
| 50 | Up to 1200 | Up to 600 | 76 | 30 | 2 | 58 | 9 | 9 | 159 (171) | 179 (191) [±] |
| 63 | Up to 1200 | Up to 600 | 92 | 32 | 2 | 70 | 11 | 9 | 159 (171) | 179 (191) [±] |
| 80 | Up to 1400 | Up to 750 | 104 | 40 | 3 | 82 | 11 | 11 | 193 (207) | 202 (216) [±] |
| 100 | Up to 1500 | Up to 750 | 128 | 50 | 3 | 100 | 14 | 14 | 196 (210) | 202 (219) [±] |

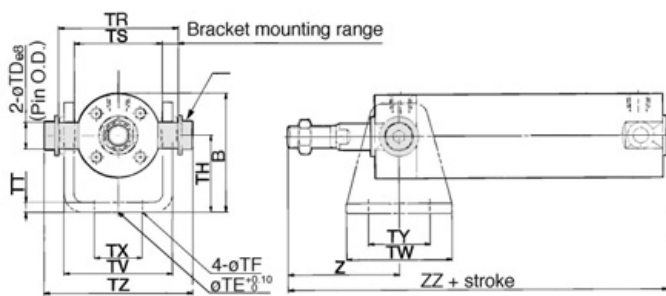
Note 1) () : Long stroke

Note 2) End boss is machined on the flange for øE.

Rear flange/CG1UN



Front trunnion/CG1UN



Trunnion

| Bore (mm) | Stroke range | | B | TDe8 | TE | TF | TH | TR | TS | TT | TV |
|-----------|--------------|-----------|------|----------------------------|----|-----|----|------|----|-----|------|
| | Front | Rear | | | | | | | | | |
| 20 | Up to 200 | Up to 200 | 38 | 8 ^{-0.025/0.047} | 10 | 5.5 | 25 | 39 | 28 | 3.2 | 35.8 |
| 25 | Up to 300 | Up to 300 | 45.5 | 10 ^{-0.025/0.047} | 10 | 5.5 | 30 | 43 | 33 | 3.2 | 39.8 |
| 32 | Up to 300 | Up to 300 | 54 | 12 ^{-0.032/0.059} | 10 | 6.6 | 35 | 54.5 | 40 | 4.5 | 49.4 |
| 40 | Up to 500 | Up to 500 | 63.5 | 14 ^{-0.032/0.059} | 10 | 6.6 | 40 | 65.5 | 49 | 4.5 | 58.4 |
| 50 | Up to 600 | Up to 600 | 79 | 16 ^{-0.032/0.059} | 20 | 9 | 50 | 80 | 60 | 6 | 72.4 |
| 63 | Up to 600 | Up to 600 | 96 | 18 ^{-0.032/0.059} | 20 | 11 | 60 | 98 | 74 | 8 | 90.4 |

| Bore (mm) | TW | TX | TY | TZ | Front | | Rear | | | |
|-----------|----|----|----|-------|------------------|-----------------|------------------|------------------------|-----------|------------------------|
| | | | | | Z | | ZZ | | | |
| | | | | | Without rod boot | With rod boot | Without rod boot | With rod boot | | |
| 20 | 42 | 16 | 28 | 47.6 | 46 | 66 [±] | 93 | 113 [±] | 114 | 134 [±] |
| 25 | 42 | 20 | 28 | 53 | 51 | 73 [±] | 98 | 120 [±] | 119 | 141 [±] |
| 32 | 48 | 22 | 28 | 67.7 | 51 | 73 [±] | 101 | 123 [±] | 125 | 147 [±] |
| 40 | 56 | 30 | 30 | 78.7 | 62 | 82 [±] | 118 (125) | 138 (145) [±] | 146 (153) | 166 (173) [±] |
| 50 | 64 | 36 | 36 | 98.6 | 71 | 91 [±] | 136 (147) | 156 (167) [±] | 168 (179) | 188 (199) [±] |
| 63 | 74 | 46 | 46 | 119.2 | 71 | 91 [±] | 136 (147) | 156 (167) [±] | 173 (184) | 193 (204) [±] |

* Consists of pins, flat washer and hexagon socket head cap bolt.

Note 1) () : Long stroke

Note 2) Refer to p.1.6-11 for pivot bracket.

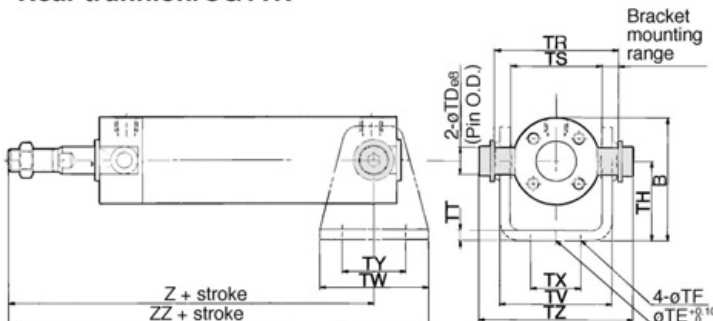


Basic
 CG1□N20.....SCG120, #1
 CG1□N25.....SCG125, #1
 CG1□N32.....SCG132, #1
 CG1□N40.....SCG140, #1
 CG1□N50.....SCG150, #1
 CG1□N63.....SCG163, #1
 CG1□N80.....SCG180, #1
 CG1□N100.....SCG1100, #1

Mounting

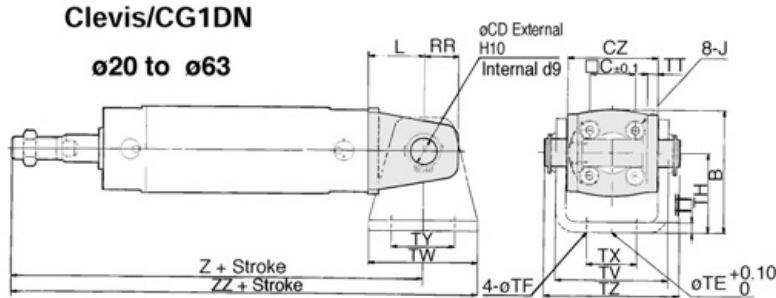
Foot : Add #2
 Front flange : Add #3
 Rear flange : Add #4
 Front trunnion : Add #5
 Rear trunnion : Add #6

Rear trunnion/CG1TN

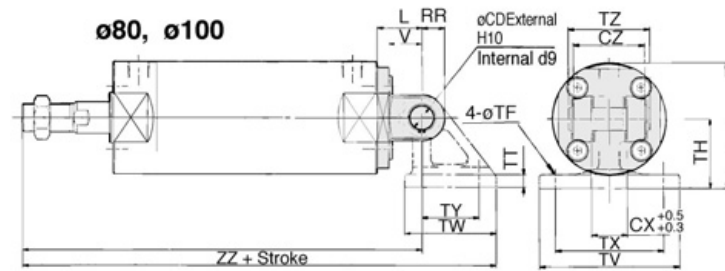


Series CG1

With Mounting Bracket



(The above shows the case port location is changed by 90° degrees.)



* Clevis pins and snap rings are attached for the clevis style.

Clevis

| Bore (mm) | Stroke range (mm) | B | CD | CX | CZ | L | RR | V | TE | TF | TH |
|-----------|-------------------|------|----|----|----|----|----|----|----|------|----|
| 20 | Up to 200 | 38 | 8 | — | 29 | 14 | 11 | — | 10 | 5.5 | 25 |
| 25 | Up to 300 | 45.5 | 10 | — | 33 | 16 | 13 | — | 10 | 5.5 | 30 |
| 32 | Up to 300 | 54 | 12 | — | 40 | 20 | 15 | — | 10 | 6.6 | 35 |
| 40 | Up to 500 | 63.5 | 14 | — | 49 | 22 | 18 | — | 10 | 6.6 | 40 |
| 50 | Up to 600 | 79 | 16 | — | 60 | 25 | 20 | — | 20 | 9 | 50 |
| 63 | Up to 600 | 96 | 18 | — | 74 | 30 | 22 | — | 20 | 11 | 60 |
| 80 | Up to 750 | 99.5 | 18 | 28 | 56 | 35 | 18 | 26 | — | 11 | 55 |
| 100 | Up to 750 | 120 | 22 | 32 | 64 | 43 | 22 | 32 | — | 13.5 | 65 |

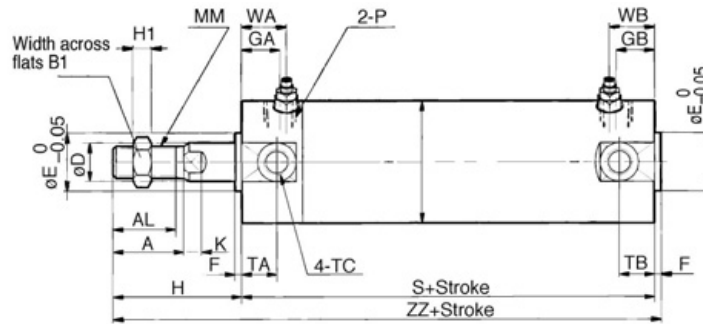
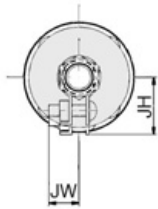
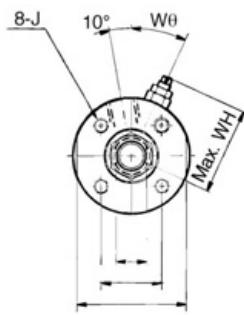
| Bore (mm) | TT | TV | TW | TX | TY | TZ | Z | ZZ | With rod boot | | Applicable pin part no. |
|-----------|-----|------|----|-----|----|-------|-----------|---------------|--------------------------------------|--|-------------------------|
| | | | | | | | | | Z | ZZ | |
| 20 | 3.2 | 35.8 | 42 | 16 | 28 | 43.4 | 118 | 139 | 138 [±] | 159 [±] | CD-G02 |
| 25 | 3.2 | 39.8 | 42 | 20 | 28 | 48 | 125 | 146 | 147 [±] | 168 [±] | CD-G25 |
| 32 | 4.5 | 49.4 | 48 | 22 | 28 | 59.4 | 131 | 155 | 153 [±] | 177 [±] | CD-G03 |
| 40 | 4.5 | 58.4 | 56 | 30 | 30 | 71.4 | 150 (159) | 178 (187) | 170 [±] (179 [±]) | 198 [±] (207 [±]) | CD-G04 |
| 50 | 6 | 72.4 | 64 | 36 | 36 | 86 | 173 (185) | 205 (217) | 193 [±] (205 [±]) | 225 [±] (237 [±]) | CD-G05 |
| 63 | 8 | 90.4 | 74 | 46 | 46 | 105.4 | 178 (190) | 215 (227) | 198 [±] (210 [±]) | 235 [±] (247 [±]) | CD-G06 |
| 80 | 11 | 110 | 72 | 85 | 45 | 64 | 214 (228) | 272.5 (286.5) | 223 [±] (237 [±]) | 281.5 [±] (295.5 [±]) | IY-G08 |
| 100 | 12 | 130 | 93 | 100 | 60 | 72 | 222 (236) | 298.5 (312.5) | 231 [±] (245 [±]) | 307.5 [±] (321.5 [±]) | IY-G10 |

Note 1) (): Long stroke

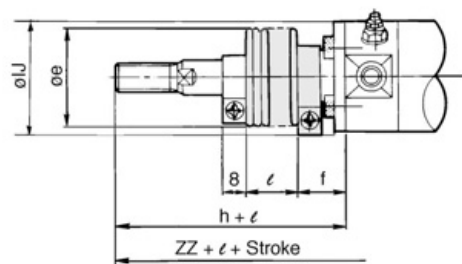
Note 2) Refer to p.1.6-11 for pivot bracket.

| CAD | Basic | | Add #7 | Basic | | Add #7 |
|-----|-------------------------|-------------------------|--------|-------------------------|---------------------------|--------|
| | CG1DN20.....SCG1 20, #1 | CG1DN25.....SCG1 25, #1 | | CG1DN50.....SCG1 50, #1 | CG1DN63.....SCG1 63, #1 | |
| | CG1DN32.....SCG1 32, #1 | CG1DN40.....SCG1 40, #1 | | CG1DN80.....SCG1 80, #1 | CG1DN100.....SCG1 100, #1 | |

Basic/With Air Cushion: CG1BA



With rod boot



With rod boot

| Bore (mm) | e | f | h | IJ | JH | JW | ℓ | ZZ |
|-----------|----|----|----|----|--------|--------|---|-----------|
| 20 | 30 | 16 | 55 | 27 | (14.5) | (11.5) | | 126 (134) |
| 25 | 30 | 17 | 62 | 32 | (17.5) | (11.5) | | 133 (141) |
| 32 | 35 | 17 | 62 | 38 | (19.5) | (11.5) | | 135 (143) |
| 40 | 35 | 17 | 70 | 48 | (22.5) | (13) | | 150 (159) |
| 50 | 40 | 17 | 78 | 59 | (25) | (13) | | 170 (182) |
| 63 | 40 | 18 | 78 | 72 | (25) | (13) | | 170 (182) |
| 80 | 52 | 10 | 80 | 59 | — | — | | 191 (205) |
| 100 | 62 | 7 | 80 | 71 | — | — | | 191 (205) |

* The minimum stroke for rod boot equipped type is 20mm.

| Bore (mm) | Standard stroke range (mm) | Long stroke range (mm) | A | AL | B ₁ | C | D | E | F | GA | GB | H | H ₁ | I | J | K | KA | MM | NA | P | S | TA | TB | TC* | ZZ | WA | WB | WH | Wθ |
|-----------|----------------------------|------------------------|----|------|----------------|------|----|----|---|----|---------|----|----------------|-----|---------------------|-----|----|------------|------|-----------|-----------|----|---------|------------|-----------|----|---------|------|-----|
| 20 | Up to 200 | 201to350 | 18 | 15.5 | 13 | 14 | 8 | 12 | 2 | 12 | 10 (12) | 35 | 5 | 26 | M4 X 0.7 Depth 7 | 5 | 6 | M8 X 1.25 | 24 | M5 X 0.8 | 69 (77) | 11 | 11 | M5 X 0.8 | 106 (114) | 16 | 15 (16) | 23 | 30° |
| 25 | Up to 300 | 301to400 | 22 | 19.5 | 17 | 16.5 | 10 | 14 | 2 | 12 | 10 (12) | 40 | 6 | 31 | M5 X 0.8 Depth 7.5 | 5.5 | 8 | M10 X 1.25 | 29 | M5 X 0.8 | 69 (77) | 11 | 11 | M6 X 0.75 | 111 (119) | 16 | 15 (16) | 25 | 30° |
| 32 | Up to 300 | 301to450 | 22 | 19.5 | 17 | 20 | 12 | 18 | 2 | 12 | 10 (12) | 40 | 6 | 38 | M5 X 0.8 Depth 8 | 5.5 | 10 | M10 X 1.25 | 35.5 | Rc(PT)1/8 | 71 (79) | 11 | 10 (11) | M8 X 1.0 | 113 (121) | 16 | 15 (16) | 28.5 | 25° |
| 40 | Up to 300 | 301to800 | 30 | 27 | 19 | 26 | 16 | 25 | 2 | 13 | 10 (13) | 50 | 8 | 47 | M6 X 1 Depth 12 | 6 | 14 | M14 X 1.5 | 44 | Rc(PT)1/8 | 78 (87) | 12 | 10 (12) | M10 X 1.25 | 130 (139) | 16 | 15 (16) | 33 | 20° |
| 50 | Up to 300 | 301to1200 | 35 | 32 | 27 | 32 | 20 | 30 | 2 | 14 | 12 (14) | 58 | 11 | 58 | M8 X 1.25 Depth 16 | 7 | 18 | M18 X 1.5 | 55 | Rc(PT)1/4 | 90 (102) | 13 | 12 (13) | M12 X 1.25 | 150 (162) | 18 | 17 (18) | 40.5 | 20° |
| 63 | Up to 300 | 301to1200 | 35 | 32 | 27 | 38 | 20 | 32 | 2 | 14 | 12 (14) | 58 | 11 | 72 | M10 X 1.5 Depth 16 | 7 | 18 | M18 X 1.5 | 69 | Rc(PT)1/4 | 90 (102) | 13 | 12 (13) | M14 X 1.5 | 150 (162) | 18 | 17 (18) | 47.5 | 20° |
| 80 | Up to 300 | 301to1400 | 40 | 37 | 32 | 50 | 25 | 40 | 3 | 20 | 16 (20) | 71 | 13 | 89 | M10 X 1.5 Depth 22 | 10 | 22 | M22 X 1.5 | 80 | Rc(PT)3/8 | 108 (122) | — | — | — | 182 (196) | 22 | 22 | 60.5 | 20° |
| 100 | Up to 300 | 301to1500 | 40 | 37 | 41 | 60 | 30 | 50 | 3 | 20 | 16 (20) | 71 | 16 | 110 | M12 X 1.75 Depth 22 | 10 | 26 | M26 X 1.5 | 100 | Rc(PT)1/2 | 108 (122) | — | — | — | 182 (196) | 22 | 22 | 71 | 20° |

Note 1) (): Long stroke

Note 2) Trunnion mounting taps with width across flats NA are not attached for bore size ø80 and ø100.

Note 3) Refer to p.1.6-11 for mounting brackets.

Series CG1

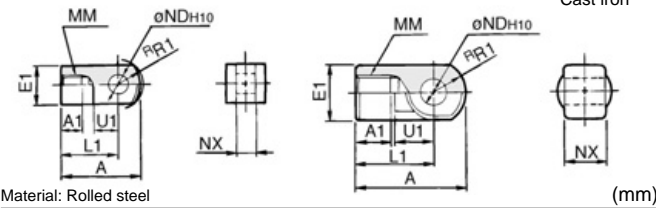
Accessory Dimensions

Single Knuckle Joint

I-G02, G03

I-G04, G05, G08, G10

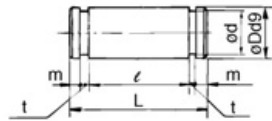
Material: Cast iron



Material: Rolled steel

| Part No. | Bore size (mm) | A | A1 | E1 | L1 | MM | R1 | U1 | NDH10 | NX |
|----------|----------------|----|------|-----|----|------------|------|------|-----------------------------------|------------------------------------|
| I-G02 | 20 | 34 | 8.5 | □16 | 25 | M8 X 1.25 | 10.3 | 11.5 | 8 ^{+0.058} ₀ | 8 ^{-0.2} _{-0.4} |
| I-G03 | 25, 32 | 41 | 10.5 | □20 | 30 | M10 X 1.25 | 12.8 | 14 | 10 ^{+0.058} ₀ | 10 ^{-0.2} _{-0.4} |
| I-G04 | 40 | 42 | 14 | ∅22 | 30 | M14 X 1.5 | 12 | 14 | 10 ^{+0.058} ₀ | 18 ^{-0.3} _{-0.5} |
| I-G05 | 50, 63 | 56 | 18 | ∅28 | 40 | M18 X 1.5 | 16 | 20 | 14 ^{+0.070} ₀ | 22 ^{-0.3} _{-0.5} |
| I-G08 | 80 | 71 | 21 | ∅38 | 50 | M22 X 1.5 | 21 | 27 | 18 ^{+0.070} ₀ | 28 ^{-0.3} _{-0.5} |
| I-G10 | 100 | 79 | 21 | ∅44 | 55 | M26 X 1.5 | 24 | 31 | 22 ^{+0.084} ₀ | 32 ^{-0.3} _{-0.5} |

Knuckle Pin



Material: Carbon steel

| Part No. | Bore size (mm) | Dd9 | L | d | l | m | t | Applicable snap ring |
|----------|----------------|--|------|------|------|------|------|----------------------|
| IY-G02 | 20 | 8 ^{-0.040} _{-0.076} | 21 | 7.6 | 16.2 | 1.5 | 0.9 | C-8 type for pivot |
| IY-G03 | 25, 32 | 10 ^{-0.040} _{-0.076} | 25.6 | 9.6 | 20.2 | 1.55 | 1.15 | C-10 type for pivot |
| IY-G04 | 40 | 10 ^{-0.040} _{-0.076} | 41.6 | 9.6 | 36.2 | 1.55 | 1.15 | C-10 type for pivot |
| IY-G05 | 50, 63 | 14 ^{-0.050} _{-0.093} | 50.6 | 13.4 | 44.2 | 2.05 | 1.15 | C-14 type for pivot |
| IY-G08 | 80 | 18 ^{-0.050} _{-0.093} | 64 | 17 | 56.2 | 2.55 | 1.35 | C-18 type for pivot |
| IY-G10 | 100 | 22 ^{-0.065} _{-0.117} | 72 | 21 | 64.2 | 2.55 | 1.35 | C-22 type for pivot |

Clevis Pin

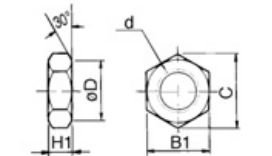


Material: Carbon steel

| Part No. | Bore size (mm) | Dd9 | L | d | l | m | t | Applicable snap ring |
|----------|----------------|--|-------|------|------|------|------|----------------------|
| CD-G02 | 20 | 8 ^{-0.040} _{-0.076} | 43.4 | 7.6 | 38.6 | 1.5 | 0.9 | C-8 type for pivot |
| CD-G25 | 25 | 10 ^{-0.040} _{-0.076} | 48 | 9.6 | 42.6 | 1.55 | 1.15 | C-10 type for pivot |
| CD-G03 | 32 | 12 ^{-0.050} _{-0.093} | 59.4 | 11.5 | 54 | 1.55 | 1.15 | C-12 type for pivot |
| CD-G04 | 40 | 14 ^{-0.050} _{-0.093} | 71.4 | 13.4 | 65 | 2.05 | 1.15 | C-14 type for pivot |
| CD-G05 | 50 | 16 ^{-0.050} _{-0.093} | 86 | 15.2 | 79.6 | 2.05 | 1.15 | C-16 type for pivot |
| CD-G06 | 63 | 18 ^{-0.050} _{-0.093} | 105.4 | 17 | 97.8 | 2.45 | 1.35 | C-18 type for pivot |

* Clevis pins and knuckle pins are common for bore size ∅80 and ∅100.

Rod End Nut



Material: Rolled steel

| Part No. | Bore size (mm) | d | H1 | B1 | C | D |
|----------|----------------|------------|----|----|--------|------|
| NT-02 | 20 | M8 X 1.25 | 5 | 13 | (15) | 12.5 |
| NT-03 | 25, 32 | M10 X 1.25 | 6 | 17 | (19.6) | 16.5 |
| NT-G04 | 40 | M14 X 1.5 | 8 | 19 | (21.9) | 18 |
| NT-05 | 50, 63 | M18 X 1.5 | 11 | 27 | (31.2) | 26 |
| NT-08 | 80 | M22 X 1.5 | 13 | 32 | (37.0) | 31 |
| NT-10 | 100 | M26 X 1.5 | 16 | 41 | (47.3) | 39 |

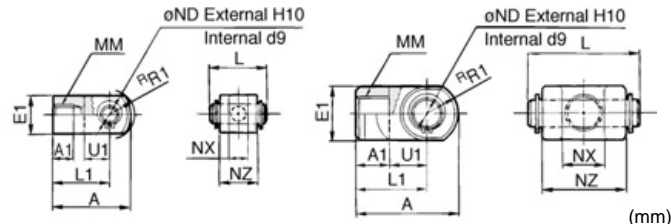
Double Knuckle Joint

Y-G02, G03

Material: Rolled steel

Y-G04, G05, G08, G10

Material: Cast iron



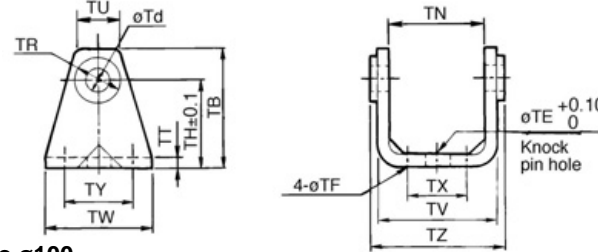
| Part No. | Bore size (mm) | A | A1 | E1 | L1 | MM | R1 | U1 | ND | NX | NZ | L | Applicable pin |
|----------|----------------|----|------|-----|----|------------|------|------|----|------------------------------------|----|------|----------------|
| Y-G02 | 20 | 34 | 8.5 | □16 | 25 | M8 X 1.25 | 10.3 | 11.5 | 8 | 8 ^{+0.4} _{+0.2} | 16 | 21 | IY-G02 |
| Y-G03 | 25, 32 | 41 | 10.5 | □20 | 30 | M10 X 1.25 | 12.8 | 14 | 10 | 10 ^{+0.4} _{+0.2} | 20 | 25.6 | IY-G03 |
| Y-G04 | 40 | 42 | 16 | ∅22 | 30 | M14 X 1.5 | 12 | 14 | 10 | 18 ^{+0.5} _{+0.3} | 36 | 41.6 | IY-G04 |
| Y-G05 | 50, 63 | 56 | 20 | ∅28 | 40 | M18 X 1.5 | 16 | 20 | 14 | 22 ^{+0.5} _{+0.3} | 44 | 50.6 | IY-G05 |
| Y-G08 | 80 | 71 | 23 | ∅38 | 50 | M22 X 1.5 | 21 | 27 | 18 | 28 ^{+0.5} _{+0.3} | 56 | 64 | IY-G08 |
| Y-G10 | 100 | 79 | 24 | ∅44 | 55 | M26 X 1.5 | 24 | 31 | 22 | 32 ^{+0.5} _{+0.3} | 64 | 72 | IY-G10 |

* Knuckle pins and snap rings are attached.

Pivot Bracket

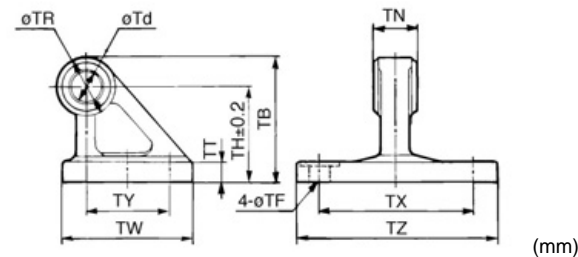
∅20 to ∅63

Material: Rolled steel



∅80 to ∅100

Material: Cast iron



| Part No. | Bore size (mm) | TB | Td | TE | TF | TH | TN | TR | TT |
|------------|----------------|----|----|----|------|----|-----------------------------------|----|-----|
| CG-020-24A | 20 | 36 | 8 | 10 | 5.5 | 25 | (29.3) | 13 | 3.2 |
| CG-025-24A | 25 | 43 | 10 | 10 | 5.5 | 30 | (33.1) | 15 | 3.2 |
| CG-032-24A | 32 | 50 | 12 | 10 | 6.6 | 35 | (40.4) | 17 | 4.5 |
| CG-040-24A | 40 | 58 | 14 | 10 | 6.6 | 40 | (49.2) | 21 | 4.5 |
| CG-050-24A | 50 | 70 | 16 | 20 | 9 | 50 | (60.4) | 24 | 6 |
| CG-063-24A | 63 | 82 | 18 | 20 | 11 | 60 | (74.6) | 26 | 8 |
| CG-080-24A | 80 | 73 | 18 | — | 11 | 55 | 28 ^{-0.1} _{0.3} | 36 | 11 |
| CG-100-24A | 100 | 90 | 22 | — | 13.5 | 65 | 32 ^{-0.1} _{0.3} | 50 | 12 |

| Part No. | Bore size (mm) | TU | TV | TW | TX | TY | TZ | Applicable pin O.D. |
|------------|----------------|------|------|----|-----|----|------|--|
| CG-020-24A | 20 | 18.1 | 35.8 | 42 | 16 | 28 | 38.3 | 8d9 ^{-0.040} _{-0.076} |
| CG-025-24A | 25 | 20.7 | 39.8 | 42 | 20 | 28 | 42.1 | 10d9 ^{-0.040} _{-0.076} |
| CG-032-24A | 32 | 23.6 | 49.4 | 48 | 22 | 28 | 53.8 | 12d9 ^{-0.050} _{-0.093} |
| CG-040-24A | 40 | 27.3 | 58.4 | 56 | 30 | 30 | 64.6 | 14d9 ^{-0.050} _{-0.093} |
| CG-050-24A | 50 | 29.7 | 72.4 | 64 | 36 | 36 | 79.2 | 16d9 ^{-0.050} _{-0.093} |
| CG-063-24A | 63 | 34.3 | 90.4 | 74 | 46 | 46 | 97.2 | 18d9 ^{-0.050} _{-0.093} |
| CG-080-24A | 80 | — | — | 72 | 85 | 45 | 110 | 18d9 ^{-0.050} _{-0.093} |
| CG-100-24A | 100 | — | — | 93 | 100 | 60 | 130 | 22d9 ^{-0.065} _{-0.117} |

Accessory.....SCG1 Bore size #11

- CJ1
- CJP
- CJ2
- CM2
- C85
- CG1**
- MB
- C95
- CA1
- CS1

Series CDG1

Auto Switch Specifications

Refer to p.5.3-2 for details of the auto switch.



Applicable auto switch

| | Auto switch model | Electrical entry (Function) | Applicable bore size | Page |
|--------------------|---------------------|---|----------------------|--------|
| Reed switch | D-C7, C8 | Grommet | ø20 to ø63 | 5.3-9 |
| | D-C73C, C80C | Connector | | 5.3-11 |
| | D-B5, B6 | Grommet | ø20 to ø100 | 5.3-10 |
| | D-B59W | Grommet (2 color indicator) | | 5.3-25 |
| Solid state switch | D-H7□ | Grommet | ø20 to ø63 | 5.3-29 |
| | D-H7□W | Grommet (2 color) | | 5.3-42 |
| | D-H7LF | Grommet (2 color, Latch with diagnostic output) | | 5.3-49 |
| | D-H7NF | Grommet (2 color, Diagnostic output) | | 5.3-50 |
| | D-H7BA | Grommet (2 color, Water resistant) | | 5.3-55 |
| | D-H7C | Connector | 5.3-31 | |
| | D-G5, K5 | Grommet | ø20 to ø100 | 5.3-30 |
| | D-G5□W, K59W | Grommet (2 color) | | 5.3-43 |
| | D-G59F | Grommet (2 color, Diagnostic output) | | 5.3-51 |
| | D-G5NT | Grommet (With timer) | | 5.3-59 |
| | D-G5BA | Grommet (2 color, Water resistant) | | 5.3-56 |

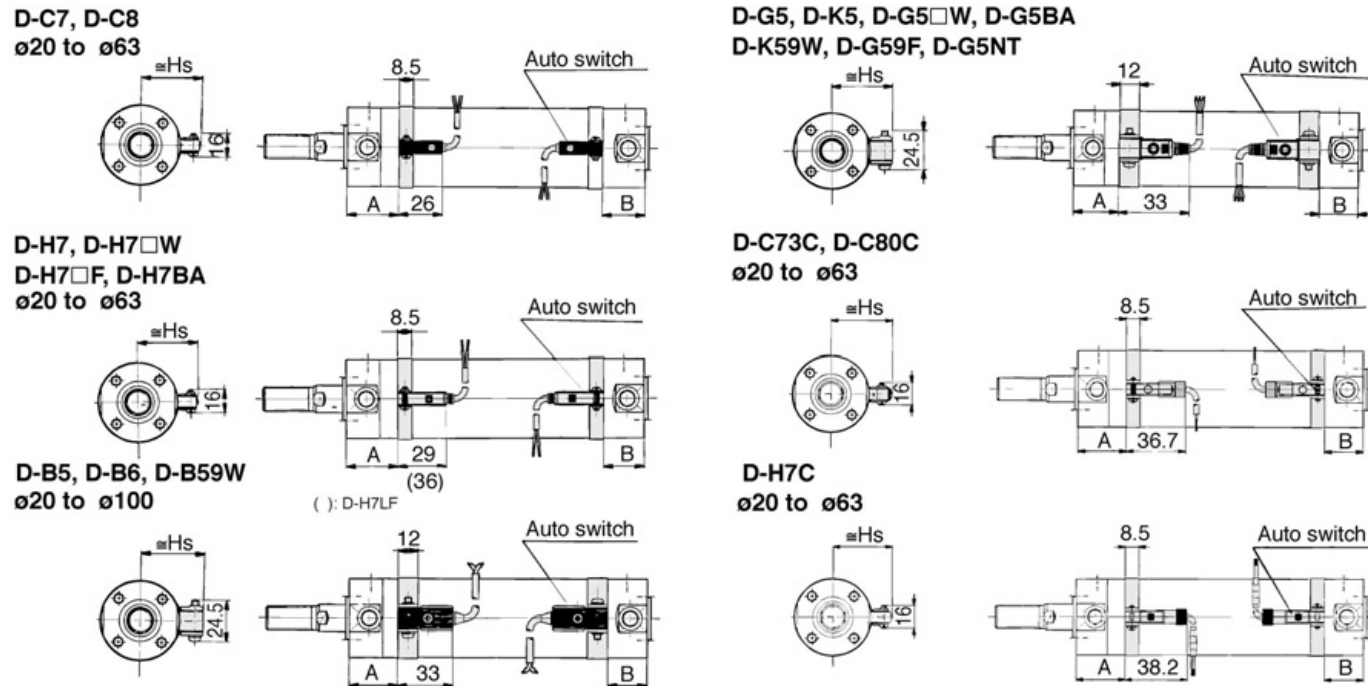


Precautions

Be sure to read before handling.
Refer to p.0-44 to 0-46 for Safety Instructions and common precautions.

Standard: Double Acting Single Rod **Series CG1**

Auto Switch Mounting Position and Mounting Height



- CJ1
- CJP
- CJ2
- CM2
- C85
- CG1**
- MB
- C95
- CA1
- CS1

Auto Switch Mounting Position

(mm) Mounting Height

| Auto switch model | D-C7,C8 D-C73C D-C80C | | D-B5,B6 D-G5□W, K59W D-G59F D-G5BAL | | D-B59W | | D-H7□ D-H7C | | D-H7□W D-H7□F D-H7BAL | | D-G5 D-K5 D-G5NTL | | D-C7,C8 D-H7□ D-H7□W D-H7□F D-H7BAL | D-C73C D-C80C | D-B5,B6 D-B59W D-G5, K5 D-G5□W D-K59W | D-G5NTL D-G59F D-H7C D-G5BAL |
|-------------------|-----------------------------|----------------|--|----------------|--------|----------------|----------------|----------------|-----------------------------|----------------|-------------------------|----------------|---|------------------|---|---------------------------------------|
| | A | B | A | B | A | B | A | B | A | B | A | B | HS | HS | HS | |
| 20 | 30 | 20.5 (28.5) | 24 | 15 (22.5) | 27 | 17.5 (25.5) | 29 | 19.5 (27.5) | 27.5 | 18 (26) | 25.5 | 16 (24) | 24.5 | 27 | 27.5 | |
| 25 | 30 | 20.5 (28.5) | 24 | 15 (22.5) | 27 | 17.5 (25.5) | 29 | 19.5 (27.5) | 27.5 | 18 (26) | 25.5 | 16 (24) | 27 | 29.5 | 30 | |
| 32 | 31 | 21.5 (29.5) | 25 | 15.5 (23.5) | 28 | 18.5 (26.5) | 30 | 20.5 (28.5) | 28.5 | 19 (27) | 26.5 | 17 (25) | 30.5 | 33 | 33.5 | |
| 40 | 35.5 | 24 (33) | 29.5 | 18 (27) | 32.5 | 21 (30) | 34.5 | 23 (32) | 33 | 21.5 (30.5) | 31 | 19.5 (28.5) | 35 | 37.5 | 38 | |
| 50 | 43 | 28.5 (40.5) | 37 | 22.5 (34.5) | 40 | 25.5 (37.5) | 42 | 27.5 (39.5) | 40.5 | 26 (38) | 38.5 | 24 (36) | 40.5 | 43 | 43.5 | |
| 63 | 43 | 28.5 (40.5) | 37 | 22.5 (34.5) | 40 | 25.5 (37.5) | 42 | 27.5 (39.5) | 40.5 | 26 (38) | 38.5 | 24 (36) | 47.5 | 50 | 50.5 | |
| 80 | — | — | 46.5 | 31 (45) | 49.5 | 34 (48) | — | — | — | — | 48 | 32.5 (46.5) | — | — | 59 | |
| 100 | — | — | 46.5 | 31 (45) | 49.5 | 34 (48) | — | — | — | — | 48 | 32.5 (46.5) | — | — | 69.5 | |

(): Long stroke, bore size ø20 to ø100, Double rod

Auto Switch Mounting Bracket and Surface

St: Stroke (mm)

| Mounting bracket | Basic/Foot/Flange/Clevis | | | Trunnion* | | |
|--|--------------------------|------------------------------|----------------------------|--------------|------------------------------|----------------------------|
| | 1 (Front side) | 2 (On different surfaces) | 2 (On the same surface) | 1 | 2 (On different surfaces) | 2 (On the same surface) |
| Mounting surface | Surface with port | Surface with port | Surface with port | | | |
| Auto switch model | | | | | | |
| D-C7, C8 | 10st or more | 15 to 49st | 50st or more | 10st or more | 15 to 49st | 50st or more |
| D-H7□, H7□W D-H7BA, H7NF | 10st or more | 15 to 59st | 60st or more | 10st or more | 15 to 59st | 60st or more |
| D-C73C, C80C, H7C | 10st or more | 15 to 64st | 65st or more | 10st or more | 15 to 64st | 65st or more |
| D-H7LF | 10st or more | 20 to 64st | 65st or more | 10st or more | 20 to 64st | 65st or more |
| D-B5, B6, G5□, K5 D-G5□W, K59W, G5BA D-G59F, G5NT | 10st or more | 15 to 74st | 75st or more | 10st or more | 15 to 74st | 75st or more |
| D-B59W | 15st or more | 20 to 74st | 75st or more | 15st or more | 20 to 74st | 75st or more |

* Trunnion style is not available for bore sizes 80 and 100.