



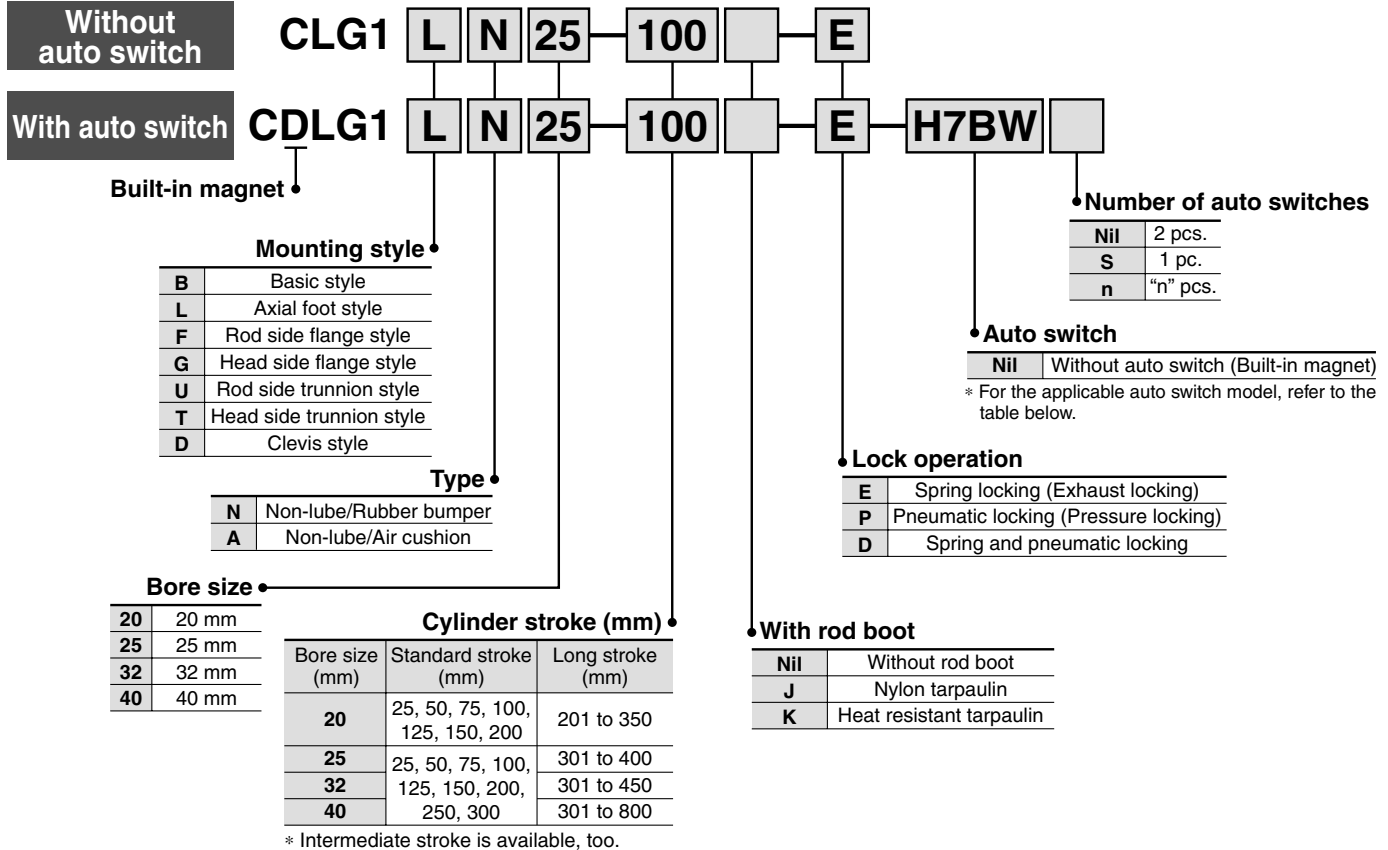
Fine Lock Cylinder

Double Acting, Single Rod

Series *CLG1*

ø20, ø25, ø32, ø40

How to Order



* Intermediate stroke is available, too.

Applicable Auto Switch/Refer to page 9-15-1 for further information on auto switches.

| Type | Special function | Electrical entry | Indicator light | Wiring (Output) | Load voltage | | Auto switch model | Lead wire (m) * | | | | Pre-wire connector | Applicable load | | |
|---|--|------------------|-----------------|-------------------------|--------------|-----------|-------------------|-----------------|-------|-------|----------|--------------------|-----------------|------------|--------------|
| | | | | | DC | AC | | 0.5 (Nil) | 3 (L) | 5 (Z) | None (N) | | IC circuit | Relay, PLC | |
| Reed switch | — | Grommet | Yes | 3-wire (NPN equivalent) | — | 5 V | — | C76 | ● | ● | — | — | — | IC circuit | — |
| | | | | 2-wire | 24 V | 12 V | 100 V, 200 V | B54 | ● | ● | ● | — | — | — | Relay, PLC |
| | — | 100 V | C73 | | | ● | ● | ● | — | — | | | | | |
| | Diagnostic indication (2-color indication) | Grommet | — | — | — | — | C73C | ● | ● | ● | ● | — | — | — | — |
| Solid state switch | — | Grommet | Yes | 3-wire (NPN) | 24 V | 5 V, 12 V | — | H7A1 | ● | ● | ○ | — | ○ | IC circuit | Relay, PLC |
| | | | | 3-wire (PNP) | | | | H7A2 | ● | ● | ○ | — | ○ | | |
| | 2-wire | H7B | ● | ● | ○ | — | ○ | — | | | | | | | |
| | 3-wire (NPN) | H7C | ● | ● | ○ | ● | — | — | | | | | | | |
| | 3-wire (PNP) | H7NW | ● | ● | ○ | — | ○ | IC circuit | | | | | | | |
| | 2-wire | H7PW | ● | ● | ○ | — | ○ | — | | | | | | | |
| | 2-wire | H7BW | ● | ● | ○ | — | ○ | — | | | | | | | |
| | 4-wire (NPN) | H7BA | — | ● | ○ | — | ○ | — | | | | | | | |
| Diagnostic indication (2-color indication) | Grommet | — | — | — | — | H7NF | ● | ● | ○ | — | ○ | IC circuit | — | | |
| Water resistant (2-color indication) | Grommet | — | Yes | 2-wire | 24 V | 5 V, 12 V | — | H7BA | — | ● | ○ | — | ○ | — | |
| With diagnostic output (2-color indication) | | | | | | | | | | | | | | | 4-wire (NPN) |

* Lead wire length symbols: 0.5 m..... Nil (Example) C73C
 3 m..... L (Example) H73CL
 5 m..... Z (Example) C73CZ
 None..... N (Example) C73CN

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

- Since there are other applicable auto switches than listed, refer to page 9-2-29 for details.
- For details about auto switches with pre-wire connector, refer to page 9-15-66.

CL

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

MLGP

RLQ

MLU

ML1C

D-

-X

20-

Data

Series CLG1

Provided with a compact lock mechanism, it is suitable for intermediate stop, emergency stop, and drop prevention.

Locking in both directions

The piston rod can be locked in either direction of its cylinder stroke.



Made to Order Specifications
(For details, refer to page 9-16-1.)

| Symbol | Specifications |
|--------|-------------------------|
| -XA□ | Change of rod end shape |

Weight

(kg)

| Bore size (mm) | | 20 | 25 | 32 | 40 |
|--|------------------|------|------|------|------|
| Basic weight | Basic style | 0.61 | 0.97 | 1.06 | 1.35 |
| | Axial foot style | 0.72 | 1.10 | 1.22 | 1.57 |
| | Flange style | 0.73 | 1.15 | 1.23 | 1.58 |
| | Trunnion style | 0.62 | 0.99 | 1.09 | 1.40 |
| | Clevis style | 0.66 | 1.05 | 1.21 | 1.58 |
| Rod side pivot bracket | | 0.11 | 0.13 | 0.20 | 0.27 |
| Head side pivot bracket | | 0.08 | 0.09 | 0.17 | 0.25 |
| Single knuckle joint | | 0.05 | 0.09 | 0.09 | 0.10 |
| Double knuckle joint (with pin) | | 0.05 | 0.09 | 0.09 | 0.13 |
| Additional weight per each 50 mm of stroke | | 0.05 | 0.07 | 0.09 | 0.15 |
| Additional weight with air cushion | | 0.01 | 0.01 | 0.02 | 0.02 |
| Additional weight for long stroke | | 0.01 | 0.01 | 0.02 | 0.03 |

Calculation: (Example)

CLG1LA20-100 (Foot, ø20, 100 st)

- Basic weight..... 0.72
 - Additional weight..... 0.05/50 st
 - Air cylinder stroke..... 100 st
 - Additional weight of air cushion..... 0.01 kg
- 0.72 + 0.05 x 100/50 + 0.01 = 0.83 kg

Model

| Series | Type | Action | Cushion | Piston seal | Bore size (mm) | Lock operation |
|--------|----------|---------------|---------------|--------------|----------------|--|
| CLG1□N | Non-lube | Double acting | Rubber bumper | Special seal | 20, 25 | Spring locking (Exhaust locking) Pneumatic locking (Pressure locking) Spring and pneumatic locking |
| CLG1□A | | | Air cushion | | 32, 40 | |

Specifications

| | |
|-------------------------------|--|
| Fluid | Air |
| Proof pressure | 1.5 MPa |
| Maximum operating pressure | 1 MPa |
| Minimum operating pressure | 0.08 MPa |
| 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 500 mm/sec * |
| Thread tolerance | JIS Class 2 |
| Stroke length tolerance | Up to 800 st $^{+1.4}_0$ mm |
| Mounting ** | Basic style, Axial foot style, Rod side flange style, Head side flange style, Rod side trunnion style, Head side trunnion style, Clevis style (Used when port position is changed to 90°.) |

* Constraints associated with the allowable kinetic energy are imposed on the speeds at which the piston can be locked.

The maximum speed of 1000 mm/s can be accommodated if the piston is to be locked in the stationary state for the purpose of drop prevention.

** The long stroke style is applicable to the basic style, the axial foot style, and the rod side flange style.

Fine Lock Specifications

| Lock operation | Spring locking (Exhaust locking) | Spring and pneumatic locking | Pneumatic locking (Pressure locking) |
|----------------------------|----------------------------------|------------------------------|--------------------------------------|
| Fluid | Air | | |
| Maximum operating pressure | 0.5 MPa | | |
| Unlocking pressure | 0.3 MPa or more | 0.1 MPa or more | |
| Lock starting pressure | 0.25 MPa or less | | 0.05 MPa or more |
| Locking direction | Both directions | | |

Accessory

| Mounting | | Basic style | Axial foot style | Rod side flange style | Head side flange style | Rod side trunnion style | Head side trunnion style | Clevis style |
|--------------------|---------------------------------|-------------|------------------|-----------------------|------------------------|-------------------------|--------------------------|--------------|
| Standard equipment | Rod end nut | ● | ● | ● | ● | ● | ● | ● |
| | Clevis pin | — | — | — | — | — | — | ● |
| Option | Single knuckle joint | ● | ● | ● | ● | ● | ● | ● |
| | Double knuckle joint (With pin) | ● | ● | ● | ● | ● | ● | ● |
| | Pivot bracket | — | — | — | — | ● | ● | ● |
| | Rod boot | ● | ● | ● | ● | ● | ● | ● |

Standard Stroke

| Bore size (mm) | Standard stroke (mm) | Long stroke (mm) | Maximum manufacturable stroke (mm) |
|----------------|--------------------------------|--|------------------------------------|
| 20 | 25, 50, 75, 100, 125, 150, 200 | 201 to 350 | 1500 |
| | 25 | 25, 50, 75, 100, 125, 150, 200, 250, 300 | |
| 32 | | | |
| | 40 | | |

* Intermediate stroke is available, too.

Rod Boot Material

| Symbol | Rod boot material | Maximum ambient temperature |
|--------|--------------------------|-----------------------------|
| J | Nylon tarpaulin | 70°C |
| K | Heat resistant tarpaulin | 110°C * |

* Maximum ambient temperature for the rod boot itself.

Minimum Stroke for Auto Switch Mounting

Due to the space requirements for installing auto switches, the minimum cylinder strokes are as shown in the table below.

| Auto switch model | No. of auto switches mounted | |
|--|------------------------------|-------|
| | 1 | 2 |
| D-B5□/B64 D-C7□/C80 D-H7□ D-G5□/K5□ | 10 mm | 15 mm |
| D-B59W | 15 mm | 20 mm |

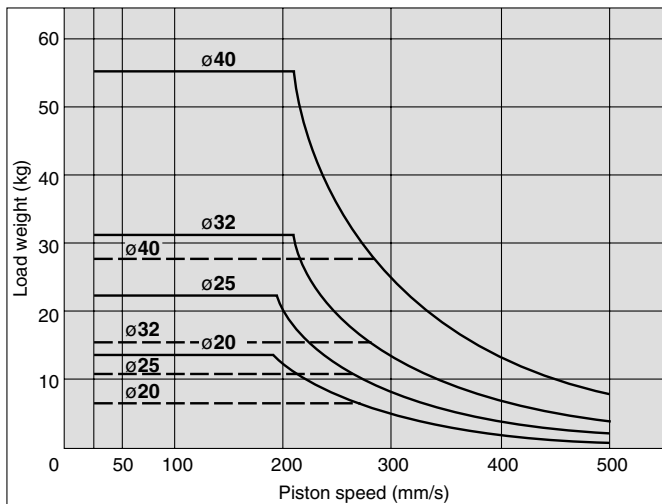
Fine Lock Cylinder Double Acting, Single Rod Series CLG1

⚠ Caution/Allowable Kinetic Energy when Locking

| Bore size (mm) | 20 | 25 | 32 | 40 |
|------------------------------|------|------|------|------|
| Allowable kinetic energy (J) | 0.26 | 0.42 | 0.67 | 1.19 |

- In terms of specific load conditions, the allowable kinetic energy indicated in the table above is equivalent to a 50% load ratio at 0.5 MPa, and a piston speed of 300 mm/sec. Therefore, if the operating conditions are below these values, calculations are unnecessary.
- Apply the following formula to obtain the kinetic energy of the load.

$$E_k = \frac{1}{2} m v^2$$
 Ek: Kinetic energy of load (J)
 m: Load weight (kg)
 v: Piston speed (m/s) (Average speed x 1.2 times)
- The piston speed will exceed the average speed immediately before locking. To determine the piston speed for the purpose of obtaining the kinetic energy of load, use 1.2 times the average speed as a guide.
- The relation between the speed and the load of the respective tube bores is indicated in the diagram below. Use the cylinder in the range below the line.
- During locking, the lock mechanism must sustain the thrust of the cylinder itself, in addition to absorbing the energy of the load. Therefore, even within a given allowable kinetic energy level, there is an upper limit to the size of the load that can be sustained. Thus, a horizontally mounted cylinder must be operated below the solid line, and a vertically mounted cylinder must be operated below the dotted line.

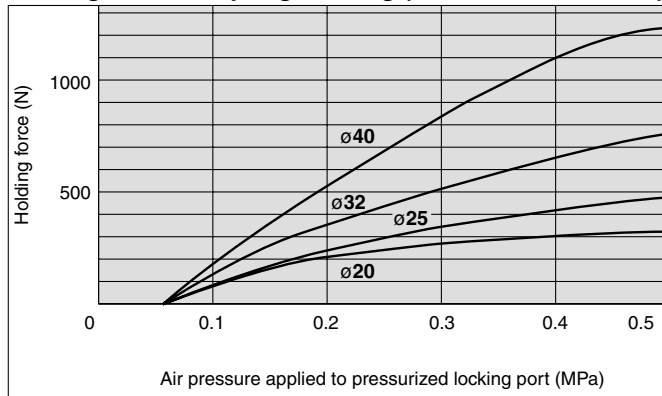


Holding Force of Spring Locking (Maximum static load)

| Bore size (mm) | 20 | 25 | 32 | 40 |
|-------------------|-----|-----|-----|-----|
| Holding force (N) | 196 | 313 | 443 | 784 |

(Note) Holding force at piston rod extended side decreases approximately 15%.

Holding Force of Spring Locking (Maximum static load)



⚠ Caution

Caution when Locking

The holding force is the lock's ability to hold a static load that does not involve vibrations or impacts, when it is locked without a load. Therefore, when normally using the cylinder near the upper limit of the holding force, be aware of the points described below.

- If the piston rod slips because the lock's holding force has been exceeded, the brake shoe could be damaged, resulting in a reduced holding force or shortened life.
- To use the lock for drop prevention purposes, the load to be attached to the cylinder must be within 35% of the cylinder's holding force.
- Do not use the cylinder in the locked state to sustain a load that involves impact.

Stopping Accuracy (Not including tolerance of control system.) (mm)

| Locking method | Piston speed (mm/s) | | | |
|--|---------------------|------|------|------|
| | 50 | 100 | 300 | 500 |
| Spring locking (Exhaust locking) | ±0.4 | ±0.5 | ±1.0 | ±2.0 |
| Pneumatic locking (Pressure locking) Spring and pneumatic locking | ±0.2 | ±0.3 | ±0.5 | ±1.5 |

Condition/load: 25% of thrust force at 0.5 MPa Solenoid valve: Mounted to the lock port

⚠ Caution

Recommended Pneumatic Circuit/Caution on Handling

For detailed specifications of the fine lock cylinder, Series CLG1 mentioned above, refer to pages 9-2-4 to 9-2-7.

Regarding the installation position and the mounting height of the auto switch, refer to page of Series CDG1 air cylinder (Double acting, Single rod), since the dimensions are the same.

Auto Switch Mounting Bracket Part No.

| Auto switch model | Bore size (mm) | | | |
|------------------------|----------------|----------|----------|----------|
| | 20 | 25 | 32 | 40 |
| D-B5□/B64 D-G5□/K5□ | BA-01 | BA-02 | BA-32 | BA-04 |
| D-C7□/C80 D-H7□ | BMA2-020 | BMA2-025 | BMA2-032 | BMA2-040 |

* Mounting screws set made of stainless steel
 The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment.

(A switch mounting band is not included, so please order it separately.)

BBA3: For D-B5/B6/G5

BBA4: For D-C7/C8/H7

"D-H7BAL" switch is set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, "BBA4" screws are attached.

Mounting Bracket Part No.

| Auto switch model | Bore size (mm) | | | |
|-------------------------|----------------|------------|------------|------------|
| | 20 | 25 | 32 | 40 |
| Axial foot * | CLG-L020 | CLG-L025 | CLG-L032 | CLG-L040 |
| Flange | CLG-F020 | CLG-F025 | CLG-F032 | CLG-F040 |
| Trunnion pin | CG-T020 | CG-T025 | CG-T032 | CG-T040 |
| Clevis ** | CG-D020 | CG-D025 | CG-D032 | CG-D040 |
| Rod side pivot bracket | CLG-020-24 | CLG-025-24 | CLG-032-24 | CLG-040-24 |
| Head side pivot bracket | CG-020-24A | CG-025-24A | CG-032-24A | CG-040-24A |

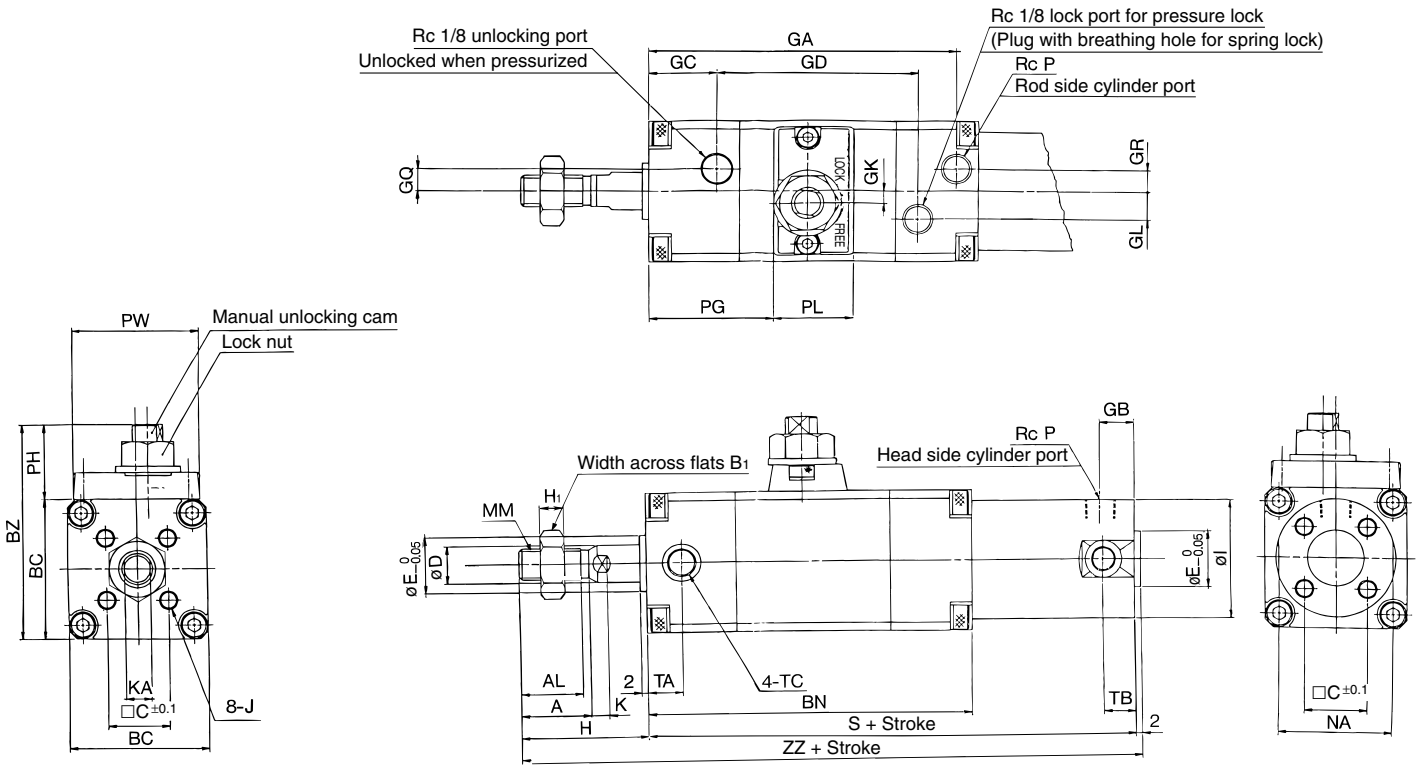
* When ordering foot bracket, order 2 pieces per cylinder.

** Clevis pin and snap ring are shipped together with clevis style.

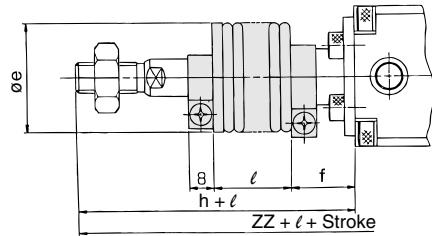
CL
CL1
MLGC
CNG
MNB
CNA
CNS
CLS
CLQ
MLGP
RLQ
MLU
ML1C
D-
-X
20-
Data

Series CLG1

Basic Style: CLG1BN



With rod boot



| Bore size (mm) | Stroke range | AL | A | B ₁ | BC | BN | BZ | C | D | E | GA | GB | GC | GD | GK | GL | GQ | GR | I | J | K | KA | MM |
|----------------|--------------|------|----|----------------|----|-----|------|------|----|----|-----|----|----|----|-----|-----|----|----|----|--------------------|-----|----|------------|
| 20 | Up to 200 | 15.5 | 18 | 13 | 38 | 91 | 57.5 | 14 | 8 | 12 | 84 | 12 | 19 | 54 | 3.5 | 5.5 | 4 | 4 | 26 | M4 x 0.7 depth 7 | 4 | 6 | M8 x 1.25 |
| 25 | Up to 300 | 19.5 | 22 | 17 | 45 | 101 | 69 | 16.5 | 10 | 14 | 94 | 12 | 20 | 62 | 4 | 9 | 7 | 7 | 31 | M5 x 0.8 depth 7.5 | 5 | 8 | M10 x 1.25 |
| 32 | Up to 300 | 19.5 | 22 | 17 | 45 | 102 | 69 | 20 | 12 | 18 | 95 | 11 | 21 | 62 | 4 | 9 | 7 | 7 | 38 | M5 x 0.8 depth 8 | 5.5 | 10 | M10 x 1.25 |
| 40 | Up to 300 | 27 | 30 | 19 | 52 | 111 | 76 | 26 | 16 | 25 | 103 | 12 | 23 | 67 | 4 | 11 | 8 | 8 | 47 | M6 x 1 depth 12 | 6 | 14 | M14 x 1.5 |

| Bore size (mm) | Stroke range | H ₁ | NA | P | PG | PH | PL | PW | S | TA | TB | TC | Without rod boot | | With rod boot | | | | |
|----------------|--------------|----------------|----|--------|----|------|----|----|-----|----|----|------------|------------------|-----|---------------|----|----|-------------|-----|
| | | | | | | | | | | | | | H | ZZ | e | f | h | l | ZZ |
| 20 | Up to 200 | 5 | 24 | Rc 1/8 | 33 | 19.5 | 20 | 38 | 141 | 11 | 11 | M5 x 0.8 | 35 | 178 | 30 | 16 | 55 | 0.25 stroke | 198 |
| 25 | Up to 300 | 6 | 29 | Rc 1/8 | 38 | 24 | 24 | 41 | 151 | 11 | 11 | M6 x 0.75 | 40 | 193 | 30 | 17 | 62 | | 215 |
| 32 | Up to 300 | 6 | 36 | Rc 1/8 | 39 | 24 | 24 | 41 | 154 | 11 | 10 | M8 x 1 | 40 | 196 | 35 | 17 | 62 | | 218 |
| 40 | Up to 300 | 8 | 44 | Rc 1/8 | 44 | 24 | 24 | 41 | 169 | 12 | 10 | M10 x 1.25 | 50 | 221 | 35 | 17 | 70 | | 241 |

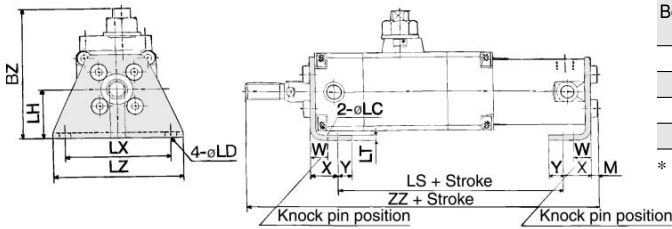
* For long stroke refer to page 9-2-32.



Fine Lock Cylinder Double Acting, Single Rod Series **CLG1**

With Mounting Bracket

Foot style: CLG1LN

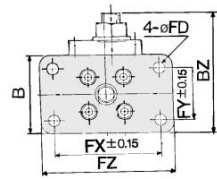


Foot Style

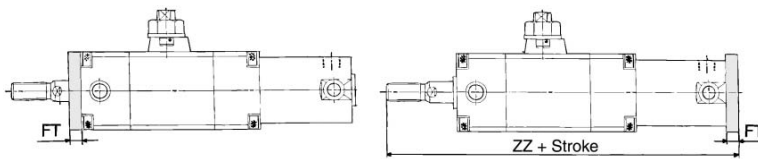
| Bore size (mm) | BZ | M | W | X | Y | LC | LD | LH | LS | LT | LX | LZ | Without rod boot | With rod boot |
|----------------|------|-----|----|------|-----|----|-----|----|-----|----|----|----|------------------|---------------|
| | | | | | | | | | | | | | ZZ | ZZ |
| 20 | 63.5 | 3 | 10 | 15 | 7 | 4 | 6 | 25 | 117 | 3 | 50 | 62 | 182 | 202 |
| 25 | 74.5 | 3.5 | 10 | 15 | 7 | 4 | 6 | 28 | 127 | 3 | 57 | 70 | 197.5 | 219.5 |
| 32 | 74.5 | 3.5 | 10 | 16 | 8 | 4 | 6.6 | 28 | 128 | 3 | 60 | 74 | 200.5 | 222.5 |
| 40 | 83 | 4 | 10 | 16.5 | 8.5 | 4 | 6.6 | 33 | 142 | 3 | 68 | 84 | 226 | 246 |

* For long stroke, refer to page 9-2-32.

Rod side flange style: CLG1FN



Head side flange style: CLG1GN



Rod Side Flange Style

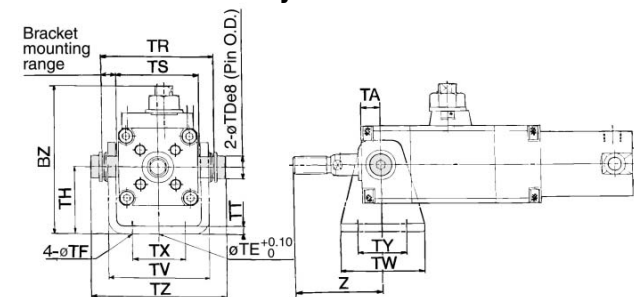
| Bore size (mm) | B | BZ | FD | FT | FX | FY | FZ |
|----------------|----|------|-----|----|----|----|----|
| 20 | 38 | 57.5 | 5.5 | 6 | 52 | 25 | 65 |
| 25 | 45 | 69 | 5.5 | 7 | 60 | 30 | 75 |
| 32 | 45 | 69 | 6.6 | 7 | 60 | 30 | 75 |
| 40 | 52 | 76 | 6.6 | 8 | 66 | 36 | 82 |

* For long stroke, refer to page 9-2-32.

Head Side Flange Style

| Bore size (mm) | Without rod boot | With rod boot |
|----------------|------------------|---------------|
| | ZZ | ZZ |
| 20 | 182 | 202 |
| 25 | 198 | 220 |
| 32 | 201 | 223 |
| 40 | 227 | 247 |

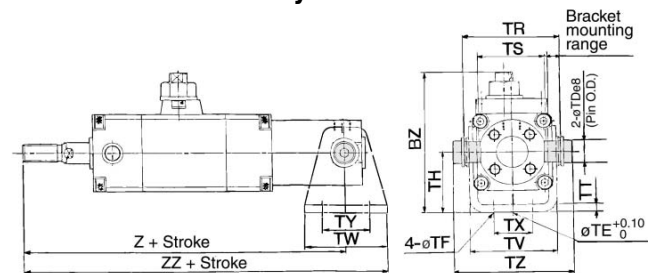
Rod side trunnion style: CLG1UN



Rod Side Trunnion Style

| Bore size (mm) | BZ | TDe8 | TE | TF | TH | TR | TS | TT | TV | TW | TX | TY | TZ | Without rod boot | With rod boot |
|----------------|------|-----------------------------|----|-----|------|------|----|-----|------|----|----|----|------|------------------|---------------|
| | | | | | | | | | | | | | | Z | Z |
| 20 | 69.5 | 8 ^{-0.025/-0.047} | 10 | 5.5 | 31 | 51 | 40 | 3.2 | 47.8 | 42 | 26 | 28 | 59.6 | 46 | 66 |
| 25 | 83.5 | 10 ^{-0.025/-0.047} | 10 | 5.5 | 37 | 58 | 47 | 3.2 | 54.8 | 42 | 28 | 28 | 68 | 51 | 73 |
| 32 | 85 | 12 ^{-0.032/-0.059} | 10 | 6.6 | 38.5 | 62.5 | 47 | 4.5 | 57.4 | 48 | 28 | 28 | 75.7 | 51 | 73 |
| 40 | 92.5 | 14 ^{-0.032/-0.059} | 10 | 6.6 | 42.5 | 72.5 | 54 | 4.5 | 65.4 | 56 | 36 | 30 | 85.7 | 62 | 82 |

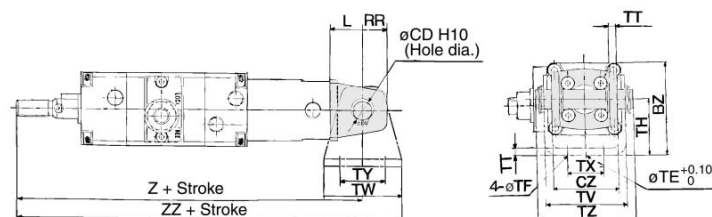
Head side trunnion style: CLG1TN



Head Side Trunnion Style

| Bore size (mm) | BZ | TDe8 | TE | TF | TH | TR | TS | TT | TV | TW | TX | TY | TZ | Without rod boot | With rod boot | | |
|----------------|------|-----------------------------|----|-----|----|------|----|-----|------|----|----|----|------|------------------|---------------|-----|-----|
| | | | | | | | | | | | | | | Z | ZZ | Z | ZZ |
| 20 | 63.5 | 8 ^{-0.025/-0.047} | 10 | 5.5 | 25 | 39 | 28 | 3.2 | 35.8 | 42 | 16 | 28 | 47.6 | 165 | 186 | 185 | 206 |
| 25 | 76.5 | 10 ^{-0.025/-0.047} | 10 | 5.5 | 30 | 43 | 33 | 3.2 | 39.8 | 42 | 20 | 28 | 53 | 180 | 201 | 202 | 223 |
| 32 | 81.5 | 12 ^{-0.032/-0.059} | 10 | 6.6 | 35 | 54.5 | 40 | 4.5 | 49.4 | 48 | 22 | 28 | 67.7 | 184 | 208 | 206 | 230 |
| 40 | 90 | 14 ^{-0.032/-0.059} | 10 | 6.6 | 40 | 65.5 | 49 | 4.5 | 58.4 | 56 | 30 | 30 | 78.7 | 209 | 237 | 229 | 257 |

Clevis style: CLG1DN



Clevis Style

| Bore size (mm) | BZ | CDH10 | CZ | L | RR | TE | TF | TH | TT | TV | TW | TX | TY | TZ |
|----------------|------|------------------------|-----------------------|----|----|----|-----|-----|-----|------|------|----|----|------|
| | 20 | 44 | 8 ^{-0.058/0} | 29 | 14 | 11 | 10 | 5.5 | 25 | 3.2 | 35.8 | 42 | 16 | 28 |
| 25 | 52.5 | 10 ^{-0.058/0} | 33 | 16 | 13 | 10 | 5.5 | 30 | 3.2 | 39.8 | 42 | 20 | 28 | 48 |
| 32 | 57.5 | 12 ^{-0.070/0} | 40 | 20 | 15 | 10 | 6.6 | 35 | 4.5 | 49.4 | 48 | 22 | 28 | 59.4 |
| 40 | 66 | 14 ^{-0.070/0} | 49 | 22 | 18 | 10 | 6.6 | 40 | 4.5 | 58.4 | 56 | 30 | 30 | 71.4 |

* Clevis pin and snap ring are attached.

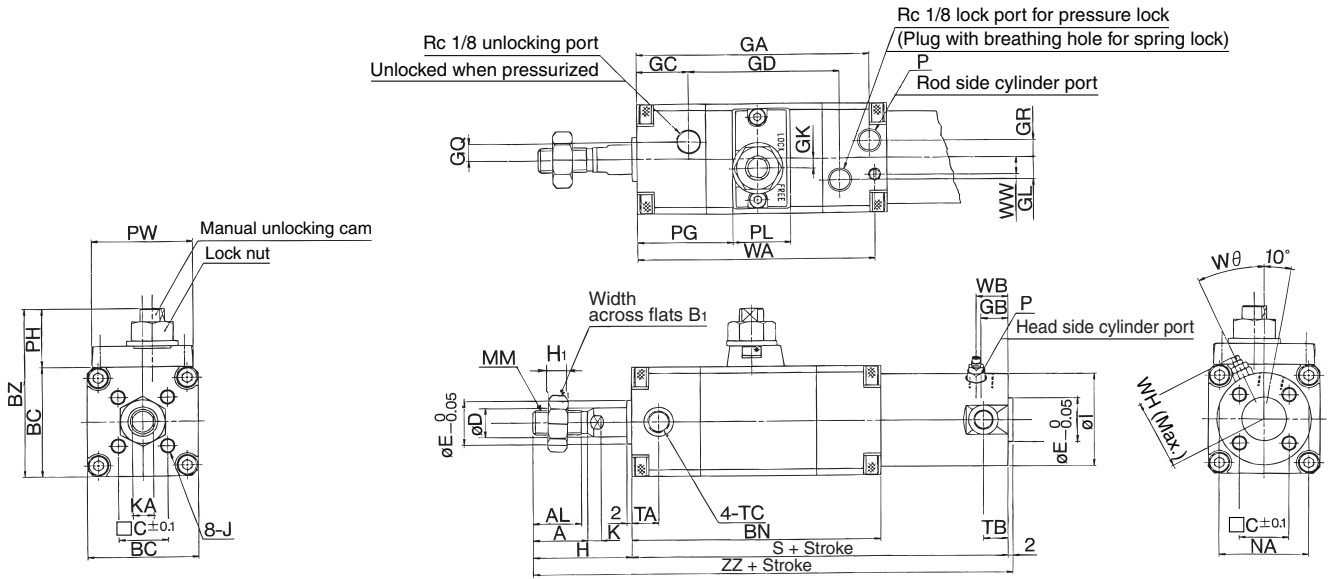
| Bore size (mm) | Without rod boot | With rod boot | | |
|----------------|------------------|---------------|-----|-----|
| | Z | ZZ | Z | ZZ |
| 20 | 190 | 211 | 210 | 231 |
| 25 | 207 | 228 | 229 | 250 |
| 32 | 214 | 238 | 236 | 260 |
| 40 | 241 | 269 | 261 | 289 |

- CL
- CL1
- MLGC
- CNG
- MNB
- CNA
- CNS
- CLS
- CLQ
- MLGP
- RLQ
- MLU
- ML1C
- D-
- X
- 20-
- Data

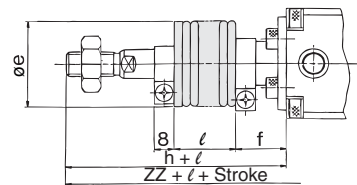
Series CLG1

Basic Style with Air Cushion: CLG1BA

* Refer to page 9-2-31 for mounting bracket, since the dimensions except GA, P, WA, WB, WH, WW, Wθ are the same.



With rod boot

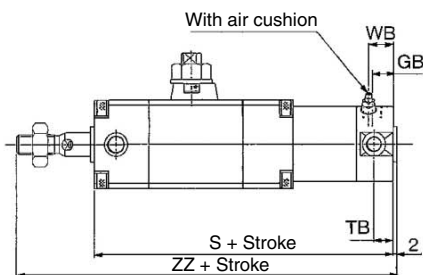


| Bore size (mm) | Stroke range | AL | A | B ₁ | BC | BN | BZ | C | D | E | GA | GB | GC | GD | GK | GL | GQ | GR | I | J | K | KA | MM | NA |
|----------------|--------------|------|----|----------------|----|-----|------|------|----|----|-----|----|----|----|-----|-----|----|----|----|--------------------|-----|----|------------|----|
| 20 | Up to 200 | 15.5 | 18 | 13 | 38 | 91 | 57.5 | 14 | 8 | 12 | 85 | 12 | 19 | 54 | 3.5 | 5.5 | 4 | 4 | 26 | M4 x 0.7 depth 7 | 4 | 6 | M8 x 1.25 | 24 |
| 25 | Up to 300 | 19.5 | 22 | 17 | 45 | 101 | 69 | 16.5 | 10 | 14 | 95 | 12 | 20 | 62 | 4 | 9 | 7 | 7 | 31 | M5 x 0.8 depth 7.5 | 5 | 8 | M10 x 1.25 | 29 |
| 32 | Up to 300 | 19.5 | 22 | 17 | 45 | 102 | 69 | 20 | 12 | 18 | 95 | 11 | 21 | 62 | 4 | 9 | 7 | 7 | 38 | M5 x 0.8 depth 8 | 5.5 | 10 | M10 x 1.25 | 36 |
| 40 | Up to 300 | 27 | 30 | 19 | 52 | 111 | 76 | 26 | 16 | 25 | 103 | 12 | 23 | 67 | 4 | 11 | 8 | 8 | 47 | M6 x 1 depth 12 | 6 | 14 | M14 x 1.5 | 44 |

| Bore size (mm) | Stroke range | H ₁ | P | PG | PH | PL | PW | S | TA | TB | TC | WA | WW | WB | WH | Wθ | Without rod boot | | With rod boot | | | |
|----------------|--------------|----------------|----------|----|------|----|----|-----|----|----|------------|-------|-----|----|------|-----|------------------|-----|---------------|----|----|-----------------|
| | | | | | | | | | | | | | | | | | H | ZZ | e | f | h | ℓ |
| 20 | Up to 200 | 5 | M5 x 0.8 | 33 | 19.5 | 20 | 38 | 141 | 11 | 11 | M5 x 0.8 | 86 | 5.5 | 14 | 23 | 30° | 35 | 178 | 30 | 16 | 55 | 198 |
| 25 | Up to 300 | 6 | M5 x 0.8 | 38 | 24 | 24 | 41 | 151 | 11 | 11 | M6 x 0.75 | 96 | 7 | 14 | 25 | 30° | 40 | 193 | 30 | 17 | 62 | 0.25 stroke 215 |
| 32 | Up to 300 | 6 | Rc 1/8 | 39 | 24 | 24 | 41 | 154 | 11 | 10 | M8 x 1 | 97 | 7 | 13 | 28.5 | 25° | 40 | 196 | 35 | 17 | 62 | 218 |
| 40 | Up to 300 | 8 | Rc 1/8 | 44 | 24 | 24 | 41 | 169 | 12 | 10 | M10 x 1.25 | 105.5 | 9 | 14 | 33 | 20° | 50 | 221 | 35 | 17 | 70 | 241 |

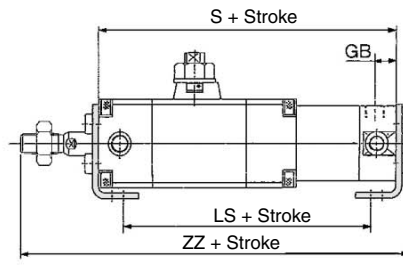
Long Stroke/Refer to pages 9-2-30 to 9-2-32 for mounting dimensions except the table below.

Basic style



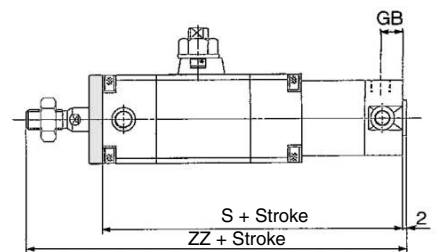
| Bore size (mm) | Stroke range | GB | S | Without rod boot | | TB | WB |
|----------------|--------------|----|-----|------------------|-----|----|----|
| | | | | ZZ | ZZ | | |
| 20 | 201 to 350 | 12 | 149 | 186 | 206 | 11 | 14 |
| 25 | 301 to 400 | 12 | 159 | 201 | 223 | 11 | 14 |
| 32 | 301 to 450 | 12 | 162 | 204 | 226 | 11 | 14 |
| 40 | 301 to 800 | 13 | 178 | 230 | 250 | 12 | 15 |

Foot style



| Bore size (mm) | Stroke range | GB | S | LS | Without rod boot | | With rod boot |
|----------------|--------------|----|-----|-----|------------------|-------|---------------|
| | | | | | ZZ | ZZ | |
| 20 | 201 to 350 | 12 | 149 | 125 | 190 | 210 | |
| 25 | 301 to 400 | 12 | 159 | 135 | 205.5 | 227.5 | |
| 32 | 301 to 450 | 12 | 162 | 136 | 208.5 | 230.5 | |
| 40 | 301 to 800 | 13 | 178 | 151 | 235 | 255 | |

Rod side flange style

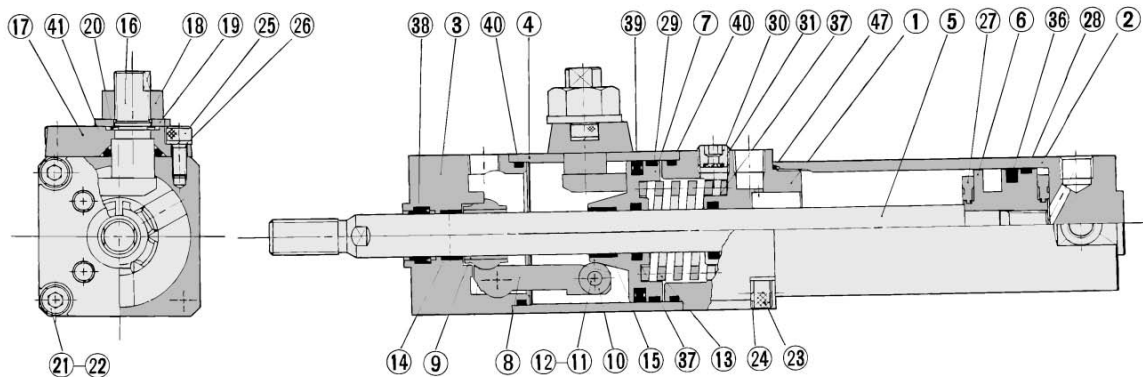


| Bore size (mm) | Stroke range | GB | S | Without rod boot | | With rod boot |
|----------------|--------------|----|-----|------------------|-----|---------------|
| | | | | ZZ | ZZ | |
| 20 | 201 to 350 | 12 | 149 | 186 | 206 | |
| 25 | 301 to 400 | 12 | 159 | 201 | 223 | |
| 32 | 301 to 450 | 12 | 162 | 204 | 226 | |
| 40 | 301 to 800 | 13 | 178 | 230 | 250 | |

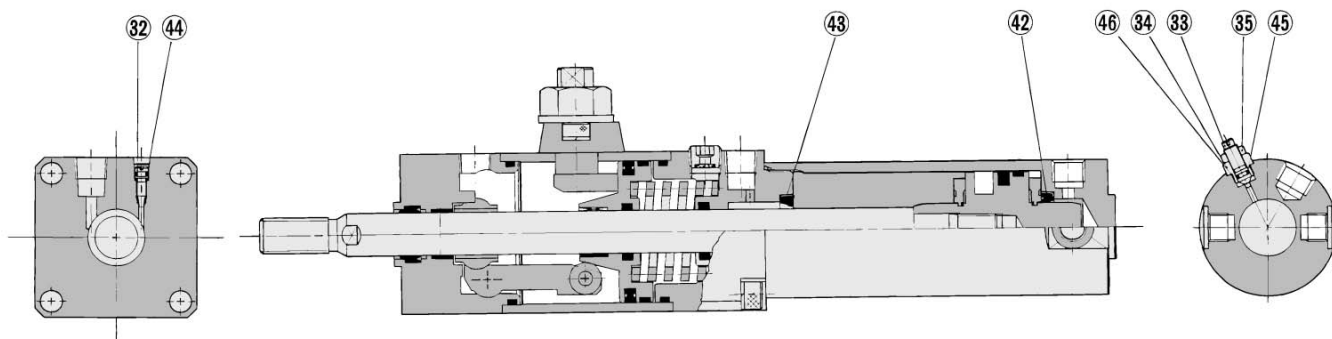
Fine Lock Cylinder Double Acting, Single Rod Series **CLG1**

Construction

With rubber bumper: CLG1BN



With air cushion: CLG1BA



Component Parts

| No. | Description | Material | Note |
|-----|-------------------------|--------------------------------|--|
| ① | Rod cover | Aluminum alloy | Black hard anodized |
| ② | Tube cover | Aluminum alloy | Hard anodized |
| ③ | Cover | Carbon steel | Nitrided |
| ④ | Intermediate cover | Aluminum alloy | Black hard anodized |
| ⑤ | Piston rod | Carbon steel * | Hard chrome plated |
| ⑥ | Piston | Aluminum alloy | Chromated, Hard anodized (With air cushion) |
| ⑦ | Brake piston | Carbon steel | Nitrided |
| ⑧ | Brake arm | Carbon steel | Nitrided |
| ⑨ | Brake shoe | Special friction material | |
| ⑩ | Roller | Carbon steel | Nitrided |
| ⑪ | Pin | Carbon steel | Heat treated |
| ⑫ | Snap ring | Carbon tool steel | Nickel plated |
| ⑬ | Brake spring | Spring steel wire | Dacrodized |
| ⑭ | Bushing | Oil-impregnated sintered alloy | |
| ⑮ | Bushing | Oil-impregnated sintered alloy | |
| ⑯ | Manual lock release cam | Chromium molybdenum steel | Nickel plated |
| ⑰ | Cam guide | Carbon steel | Nitrided, painted |

* In the $\phi 20$ and $\phi 25$ cylinders with auto switches, the piston rod is made of stainless steel.

| No. | Description | Material | Note |
|-----|-------------------------------|---------------------------|---------------------------|
| ⑱ | Lock nut | Rolled steel | Nickel plated |
| ⑲ | Flat washer | Rolled steel | Nickel plated |
| ⑳ | Snap ring | Carbon tool steel | Nickel plated |
| ㉑ | Hexagon socket head cap screw | Chromium molybdenum steel | Black zinc chromated |
| ㉒ | Spring washer | Steel wire | Black zinc chromated |
| ㉓ | Hexagon socket head cap screw | Chromium molybdenum steel | Black zinc chromated |
| ㉔ | Spring washer | Steel wire | Black zinc chromated |
| ㉕ | Hexagon socket head cap screw | Chromium molybdenum steel | Black zinc chromated |
| ㉖ | Spring washer | Steel wire | Black zinc chromated |
| ㉗ | Bumper | Urethane | |
| ㉘ | Wear ring | Resin | |
| ㉙ | Wear ring | Resin | |
| ㉚ | Hexagon socket head plug | Carbon steel | Type E only |
| ㉛ | Element | Bronze | Type E only |
| ㉜ | Cushion valve A | Brass | Electroless nickel plated |
| ㉝ | Cushion valve B | Rolled steel | Electroless nickel plated |
| ㉞ | Cushion valve retainer | Rolled steel | Electroless nickel plated |
| ㉟ | Lock nut | Carbon steel | Nickel plated |

| No. | Description | Material |
|-----|---------------------------|----------|
| ㉞ | Piston seal | NBR |
| ㉟ | Rod seal A | NBR |
| ㊱ | Rod seal B | NBR |
| ㊲ | Brake piston seal | NBR |
| ㊳ | Intermediate cover gasket | NBR |
| ㊴ | Cam gasket | NBR |
| ㊵ | Cushion seal A | NBR |
| ㊶ | Cushion seal B | NBR |
| ㊷ | Valve seal A | NBR |
| ㊸ | Valve seal B | NBR |
| ㊹ | Valve retaining gasket | NBR |
| ㊺ | Cylinder tube gasket | NBR |

Note) Please contact SMC if the fine lock unit must be disassembled.

CL

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

MLGP

RLQ

MLU

ML1C

D-

-X

20-

Data

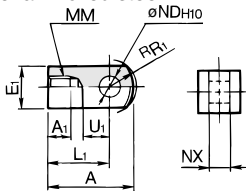
Series CLG1

Accessory Bracket Dimensions

Single Knuckle Joint

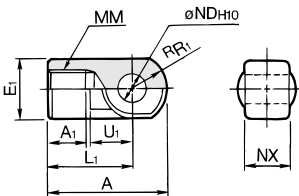
I-G02/G03

Material: Rolled steel



I-G04

Material: Cast iron

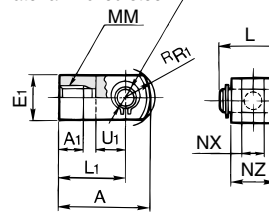


| Part no. | Applicable bore size (mm) | A | A ₁ | E ₁ | L ₁ | MM | R _{R1} | U ₁ | NDH ₁₀ | NX |
|----------|---------------------------|----|----------------|----------------|----------------|------------|-----------------|----------------|-----------------------------------|------------------------------------|
| 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} |

Double Knuckle Joint * Knuckle pin and snap ring are packaged.

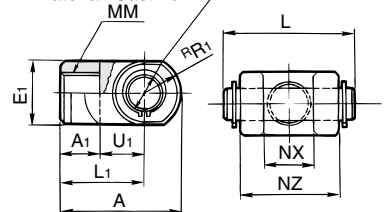
Y-G02/G03

Material: Rolled steel



Y-G04

Material: Cast iron

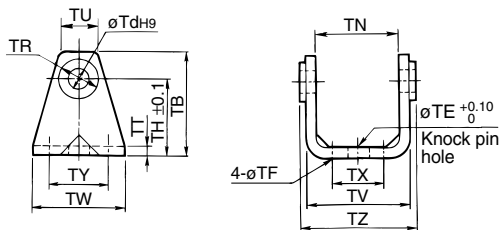


| Part no. | Applicable bore size (mm) | A | A ₁ | E ₁ | L ₁ | MM | R _{R1} | U ₁ | NDH ₁₀ | NX | NZ | L | Applicable pin part no. |
|----------|---------------------------|----|----------------|----------------|----------------|------------|-----------------|----------------|-----------------------------------|------------------------------------|----|------|-------------------------|
| Y-G02 | 20 | 34 | 8.5 | □16 | 25 | M8 x 1.25 | 10.3 | 11.5 | 8 ^{+0.058} ₀ | 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 ^{+0.058} ₀ | 10 ^{-0.4} _{-0.2} | 20 | 25.6 | IY-G03 |
| Y-G04 | 40 | 42 | 16 | ∅22 | 30 | M14 x 1.5 | 12 | 14 | 10 ^{+0.058} ₀ | 18 ^{-0.5} _{-0.3} | 36 | 41.6 | IY-G04 |

Rod Side Pivot Bracket

∅20 to ∅40

Material: Rolled steel



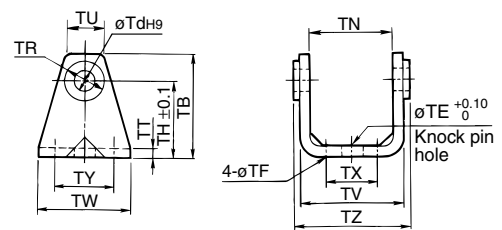
| Part no. | Applicable bore size (mm) | TB | TdH9 | TE | TF | TH | TN |
|------------|---------------------------|----|-----------------------------------|----|-----|------|----|
| CLG-020-24 | 20 | 42 | 8 ^{+0.036} ₀ | 10 | 5.5 | 31 | 40 |
| CLG-025-24 | 25 | 48 | 10 ^{+0.036} ₀ | 10 | 5.5 | 37 | 47 |
| CLG-032-24 | 32 | 53 | 12 ^{+0.043} ₀ | 10 | 6.6 | 38.5 | 47 |
| CLG-040-24 | 40 | 60 | 14 ^{+0.043} ₀ | 10 | 6.6 | 42.5 | 55 |

| Part no. | Applicable bore size (mm) | TR | TT | TU | TV | TW | TX | TY | TZ |
|------------|---------------------------|----|-----|------|------|----|----|----|------|
| CLG-020-24 | 20 | 13 | 3.2 | 21.2 | 47.8 | 42 | 26 | 28 | 50 |
| CLG-025-24 | 25 | 15 | 3.2 | 21.3 | 54.8 | 42 | 28 | 28 | 57 |
| CLG-032-24 | 32 | 17 | 4.5 | 25.6 | 57.4 | 48 | 28 | 28 | 61.4 |
| CLG-040-24 | 40 | 21 | 4.5 | 26.3 | 65.4 | 56 | 36 | 30 | 71.4 |

Head Side Pivot Bracket

∅20 to ∅40

Material: Rolled steel

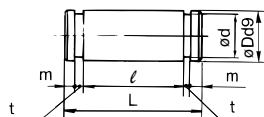


| Part no. | Applicable bore size (mm) | TB | Td | TE | TF | TH | TN |
|------------|---------------------------|----|----|----|-----|----|--------|
| CG-020-24A | 20 | 36 | 8 | 10 | 5.5 | 25 | (29.3) |
| CG-025-24A | 25 | 43 | 10 | 10 | 5.5 | 30 | (33.1) |
| CG-032-24A | 32 | 50 | 12 | 10 | 6.6 | 35 | (40.4) |
| CG-040-24A | 40 | 58 | 14 | 10 | 6.6 | 40 | (49.2) |

| Part no. | Applicable bore size (mm) | TR | TT | TU | TV | TW | TX | TY | TZ |
|------------|---------------------------|----|-----|------|------|----|----|----|------|
| CG-020-24A | 20 | 13 | 3.2 | 18.1 | 35.8 | 42 | 16 | 28 | 38.3 |
| CG-025-24A | 25 | 15 | 3.2 | 20.7 | 39.8 | 42 | 20 | 28 | 42.1 |
| CG-032-24A | 32 | 17 | 4.5 | 23.6 | 49.4 | 48 | 22 | 28 | 53.8 |
| CG-040-24A | 40 | 21 | 4.5 | 27.3 | 58.4 | 56 | 30 | 30 | 64.6 |

Knuckle Pin

Material: Carbon steel

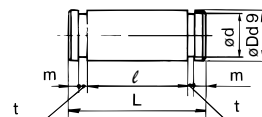


| Part no. | Applicable bore size (mm) | Dd9 | L | d |
|----------|---------------------------|--|------|-----|
| IY-G02 | 20 | 8 ^{-0.040} _{-0.076} | 21 | 7.6 |
| IY-G03 | 25, 32 | 10 ^{-0.040} _{-0.076} | 25.6 | 9.6 |
| IY-G04 | 40 | 10 ^{-0.040} _{-0.076} | 41.6 | 9.6 |

| Part no. | ℓ | m | t | Applicable snap ring |
|----------|------|------|------|----------------------|
| IY-G02 | 16.2 | 1.5 | 0.9 | Type C 8 for axis |
| IY-G03 | 20.2 | 1.55 | 1.15 | Type C 10 for axis |
| IY-G04 | 36.2 | 1.55 | 1.15 | Type C 10 for axis |

Clevis Pin

Material: Carbon steel

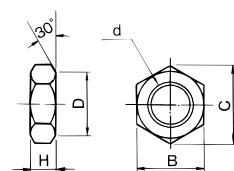


| Part no. | Applicable bore size (mm) | Dd9 | L | d |
|----------|---------------------------|--|------|------|
| CD-G02 | 20 | 8 ^{-0.040} _{-0.076} | 43.4 | 7.6 |
| CD-G25 | 25 | 10 ^{-0.040} _{-0.076} | 48 | 9.6 |
| CD-G03 | 32 | 12 ^{-0.050} _{-0.093} | 59.4 | 11.5 |
| CD-G04 | 40 | 14 ^{-0.050} _{-0.093} | 71.4 | 13.4 |

| Part no. | ℓ | m | t | Applicable snap ring |
|----------|------|------|------|----------------------|
| CD-G02 | 38.6 | 1.5 | 0.9 | Type C 8 for axis |
| CD-G25 | 42.6 | 1.55 | 1.15 | Type C 10 for axis |
| CD-G03 | 54 | 1.55 | 1.15 | Type C 12 for axis |
| CD-G04 | 65 | 2.05 | 1.15 | Type C 14 for axis |

Rod End Nut

Material: Carbon steel



| Part no. | Applicable bore size (mm) | B | C | D | d | H |
|----------|---------------------------|----|------|------|------------|---|
| NT-02 | 20 | 13 | 15.0 | 12.5 | M8 x 1.25 | 5 |
| NT-03 | 25, 32 | 17 | 19.6 | 16.5 | M10 x 1.25 | 6 |
| NT-G04 | 40 | 19 | 21.9 | 18 | M14 x 1.5 | 8 |