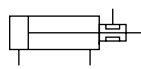

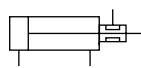

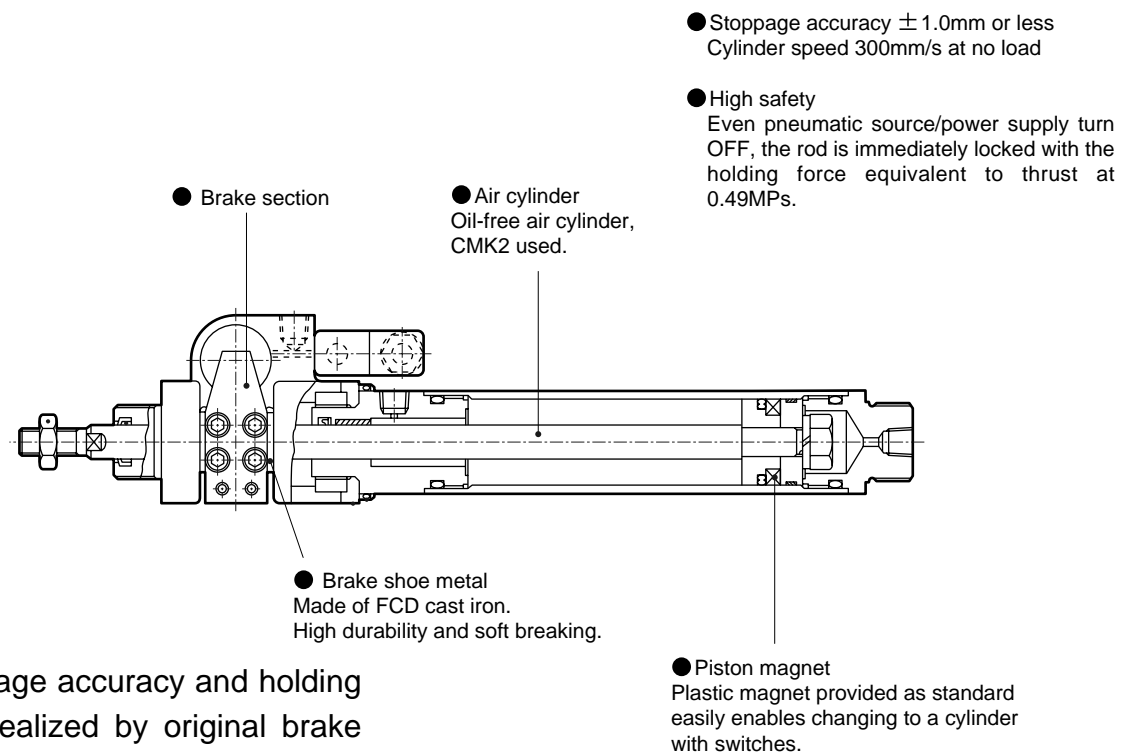


● Standard, ◎: Option, ■: Not available

| Variation | Model no. JIS symbol | Bore size (mm) | Standard stroke length (mm) | | | | | | | | | | Min. stroke length (mm) | Max. stroke length (mm) | Custom stroke length (per mm) | Mounting style | | | | | | | Option | | | | | Accessory | | | Switch | Page | | | | |
|--|--|------------------------|-----------------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-------------------------|-------------------------|-------------------------------|----------------|-----------------|---------------------|------------------|-----------|-----------------------|------------------------|-----------------|-----------------|----------------------------|--------------------|-------------|-------------------------|---------|------------|--------|------|-----------------------|---|------|------|
| | | | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | | | | Basic type | Axial foot type | Rod end flange type | Eye bracket type | Fixed eye | Rod end trunnion type | Head end trunnion type | Bellows (100°C) | Bellows (250°C) | Piston rod material change | Same port position | Boss cut of | With brake cover Note 1 | Rod eye | Rod clevis | | | Clevis bracket Note 1 | | | |
| | | | 00 | LB | FA | CA | CC | TA | TB | J | L | M | | | | P | V | U | I | Y | B2 | | | | | | | | | | | | | | | |
| Caulking type, double acting | JSK2  | φ 20, φ 25, φ 32, φ 40 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 5 | 700 | 1 | ● | ● | ● | ● | ● | ● | ● | ◎ | ◎ | ◎ | ■ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1230 |
| Caulking type, double acting with valve | JSK2-V  | φ 20, φ 25, φ 32, φ 40 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 5 | 700 | 1 | ● | ● | ● | ● | ● | ● | ● | ◎ | ◎ | ◎ | ■ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1230 | |
| Can be disassembled, double acting | JSM2  | φ 20, φ 30, φ 40 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 1 | 700 | 1 | ● | ● | ● | ● | ■ | ● | ● | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1244 | |
| Can be disassembled, double acting, with valve | JSM2-V  | φ 20, φ 30, φ 40 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 1 | 700 | 1 | ● | ● | ● | ● | ■ | ● | ● | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 1244 | |

Note 1: When the mounting style "TA" is selected, the type with brake cover "U" and the clevis bracket "B2" cannot be selected simultaneously as they will interfere.

Product introduction (JSK2)



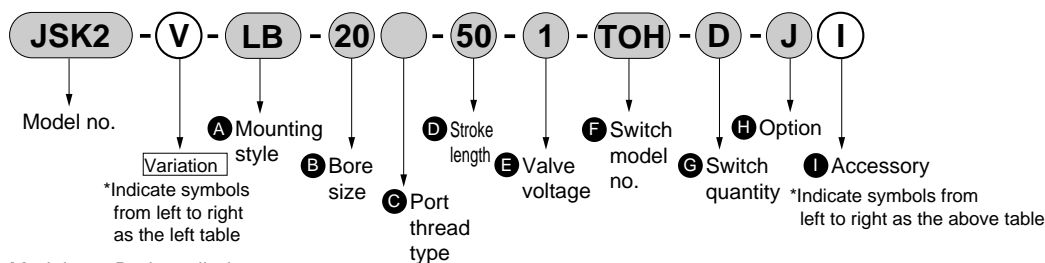
High stoppage accuracy and holding force are realized by original brake mechanism.
This increases safety.

Variation and option selection table

- : Standard
- ◎ : Option
- : Available (custom order)
- △ : Available depending on conditions (Consult with CKD)
- X : Not available

| Code | Code | Variation | | Port thread | | Option | | | | | | |
|-------------|-------------------------------------|------------------|-------|-------------|-------|--------|-------|-------|-------|-------|-------|-------|
| | | Symbol | No | V | N | G | J | L | M | N | V | U |
| | | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank | Blank |
| Variation | Double acting basic type | Blank | Blank | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |
| Variation | With valve | V | ● | ○ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |
| Port thread | NPT | N | ○ | ○ | X | ○ | ○ | ○ | ○ | ○ | ○ | |
| Port thread | G | G | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Option | Polyolefin with bellows | J | ○ | ○ | ○ | X | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | Silicone rubber with bellows | L | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | Piston rod material stainless steel | M | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | |
| | Customized piston rod end form | N | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | ◎ | |
| | Boss cut off | V | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | ◎ | |
| | With brake cover | U | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ◎ | |
| Accessory | Cylinder switch | Listed on Ending | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |
| | Rod eye | I | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |
| | Rod clevis | Y | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |
| | B2 bracket | B2 | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | ○ | ◎ | ◎ | |

<Example of model number>



Model no.: Brake cylinder

- Variation: With valve
- A Mounting style : Axial foot type
- B Bore size : ϕ 20mm
- C Port thread type : Rc thread
- D Stroke length : 50mm
- E Valve voltage : 100 VAC
- F Switch model no.: Reed TOH switch, lead wire 1m
- G Switch quantity : Two
- H Option : Bellows max. ambient temperature 100°C
- I Accessory : Rod eye



Pneumatic components

Safety precautions

Always read this section before starting use.

Refer to Intro 71 for general precautions of the cylinder, and to Intro 78 for general precautions of the cylinder switch.

Brake cylinder JSK2/JSM2 Series

Design & Selection

⚠ WARNING

■ Structure so that nothing directly touches the driven object or movable sections of the cylinder with brakes. Provide a protective cover so that no human-body directly touches the unit. If parts contact is possible, provide safety measures by placing a sensor to stop the cylinder or sound a warning to report danger.

■ Use a balance circuit considering piston rod protrusion.

When activating brakes at any position in the stroke, if pneumatic pressure is applied to only one side of the cylinder, the piston protrudes at high speed when brakes are released. This involves risk to personnel and equipment. Use a balance circuit, such as the recommended pneumatic pressure circuit, to prevent protrusion.

This brake cylinder has oilless specifications. Do not lubricate this cylinder. Otherwise braking faults may occur. Brake malfunction is caused.

When using the low hydraulic pressure type brake cylinder, always apply the brakes with the pneumatic pressure.

■ Holding force (maximum static load) refers to performance to hold a static load without vibration or impact when brakes are activated in a no-load state. Take care when constantly using near the upper limit of the holding force.

■ During braking, kinetic energy is large and the braking distance is long. Thus, avoid using when brakes may be applied at the stroke end.

Even if a cushion is provided, the back pressure is released and the cushions may not function.

If kinetic energy is large, overrun distance increases and stopping accuracy drops.

■ Do not apply loads with impact, strong vibration, or torque while brakes are activated.

If a load with impact, strong vibration, or torque is applied externally, holding force drops.

■ Consider stopping accuracy and overrun distance when braking.

A mechanical lock is applied, so the cylinder does not stop instantly when the stop signal is issued, but stops with a time-wise delay. The stroke at which the cylinder slides due to this delay is the overrun distance. The maximum and minimum width of overrun distance is stopping accuracy.

● To achieve the required stop position, move the limit switch forward by the overrun distance.

● The limit switch must have a detection length (dog length) equivalent to the overrun distance + α .

● When using the CKD cylinder switch, the working range is 7 to 16 mm, depending on the switch. If overrun distance exceeds this, provide self holding of the contact at the switch load.

■ To improve stopping accuracy, minimize the time from stop signal output to brake stoppage.

Use a high response DC control electricity circuit or solenoid valve, and set the solenoid valve as close to the cylinder as possible.

■ Stopping accuracy is affected by changes in piston speed.

If piston speed changes due to load fluctuation or disturbance during cylinder reciprocation, stop position dispersion increases. Take measures to keep piston speed constant just before the stop position. Speed changes are large during the acceleration range, compared to during the cushion stroke and when starting operation, so dispersion in the stop position increases.

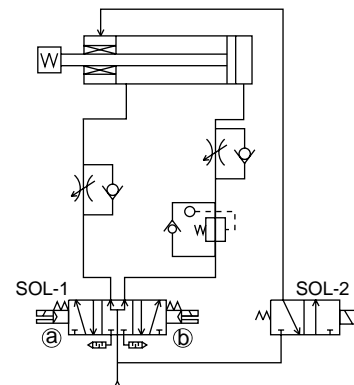
■ Precautions for basic circuits

When using this cylinder for position locking or emergency stop, use the circuits below. The 2-position valve cannot be used since cylinder thrust is also applied to brakes when stopped. Balance thrust and load with the circuit below. Brakes may not be released when load is applied to brakes.

● For horizontal load

If piping is as shown in Fig. 1, equalizing pressure is applied to both ends of the piston when stopped to prevent the rod from protruding when brakes are released. Place a regulator with a check valve on the head to balance thrust.

Fig. 1



| a SOL-1 b | | SOL-2 | Operational status |
|-----------|-----|-------|--------------------|
| OFF | OFF | OFF | Stop |
| ON | OFF | ON | Return |
| OFF | ON | ON | Advance |

| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

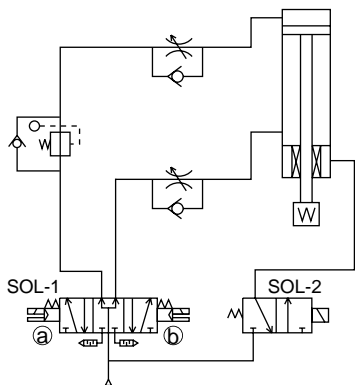
Brake cylinder (small bore size)
With brake

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2**
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

● For downward vertical load

If load faces downward as shown in Fig. 2, the rod malfunctions in the load direction when brakes are released. Place a regulator with a check valve on the head to reduce thrust in the load direction and balance the load.

Fig. 2

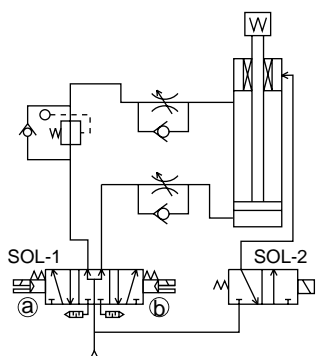


| ① SOL-1 ② | | SOL-2 | Operational status |
|-----------|-----|-------|--------------------|
| OFF | OFF | OFF | Stop |
| ON | OFF | ON | Down |
| OFF | ON | ON | Up |

● For upward vertical load

If the load faces upward as shown in Fig. 3, the rod malfunctions in the load direction when brakes are released. Place a regulator with a check valve on the rod to reduce thrust in the load direction and balance the load.

Fig. 3



| ① SOL-1 ② | | SOL-2 | Operational status |
|-----------|-----|-------|--------------------|
| OFF | OFF | OFF | Stop |
| ON | OFF | ON | Down |
| OFF | ON | ON | Up |

WARNING

■ Drain

If the piping capacity is larger than the cylinder capacity, the compressed air in the cylinder will not be completely exhausted when changing with the solenoid valve. This compressed air will condense, form water drops, and cause drainage. This drainage will cause lubricant to flow and cause lubrication faults, temporarily block the passage, corrode the inside of the brakes, cause faulty brake operation, obstruct the stopping accuracy, or prevent application or release of the brakes, etc.

Calculate the working compressed air's atmospheric dew point from the piping capacity magnification A in respect to the cylinder capacity. Install a dryer and adjust the air quality so that the value is kept below the following values and drainage is not formed. This can also be done by adjusting the port size and length of the tube from the release port to the solenoid valve to match the working compressed air's atmospheric dew point so that the following conditions are satisfied.

- Magnification $A < 1$: atmospheric dew point -20°C or less
- $1 \leq$ magnification $A < 2$: atmospheric dew point -25°C or less
- Magnification $A \geq 2$: atmospheric dew point -30°C or less

Calculation of magnification A of piping volume for cylinder volume

$$A = \frac{V_t + V_1}{V_0 (10P + 1)}$$

V_t : Piping volume (mm^3)
 V_0 : Brake release cylinder volume (mm^3)
 V_1 : Brake release cylinder blank volume (mm^3)
 P : Working pressure (MPa)

| | V_0 (mm^3) | V_1 (mm^3) |
|--------------------|-------------------------|-------------------------|
| JSK2-20 JSM2-20 | 754 | 754 |
| JSK2-25 JSM2-30 | 1963 | 1865 |
| JSK2-40 JSM2-40 | 4021 | 3860 |

Example) Piping bore size up to JSK2-20, brake release port $\phi 4$ /length 1.5m working pressure 0.5MPa
 Piping volume V_t = cross section x length = $4 \times 4 \times \pi / 4 \times 1500 \approx 18850\text{mm}^3$

$$A = \frac{18850 + 754}{754 \times (10 \times 0.5 + 1)} = 4.3$$

Adjust the air quality so that the atmospheric pressure dew point is -30°C or less.

- If adjustments are difficult, consider using a cylinder with valve (JSK2-V, JSM2-V).
- Release brakes faster than cylinder operation. If the cylinder operates first, brakes may not be released.
- If back pressure is applied to the locking mechanism, the lock may be released. Use the brake release valve as a single unit, or use an individual exhaust manifold.
- Use a 3-position P/A/B connection (pressurization on both sides) valve for the cylinder drive to prevent the piston from protruding when starting.
- Use a regulator with a check valve on the side with large thrust to balance thrust, including load.

CAUTION

■ Caution on stoppage accuracy

- Stop pitch and load factor
- Stopping accuracy differs with stop pitch and load ratio. The load ratio below is recommended for achieving specified stopping accuracy.

| Stop pitch | Load ratio |
|----------------|---------------|
| 50mm or less | 20% of thrust |
| 50mm to 100mm | 40% of thrust |
| 100mm and over | 60% of thrust |

- Solenoid valve for brake selection
- Stopping accuracy and overrun distance change with the responsiveness of the valve for braking. Refer to the JSK2-V and JSM2-V brake valve electric specifications and select. To improve the stopping accuracy, connect a solenoid valve to the brake port.

| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

Brake cylinder (small bore size)
With brake

● When using PLC

If a PLC is used as the electric control unit for the solenoid valve for brake, stopping accuracy drops due to scan time (computing time). When using a PLC, do not assemble the solenoid valve for brake into the PLC circuit.

- Do not make major changes in load weight when stopped with brakes, or the stopping position may change.

- When the mounting style "TA" is selected, the type with brake cover and the clevis bracket cannot be selected simultaneously as they will interfere.

- The reed switch's contact life is generally several hundred thousand times, although this may differ according to the working conditions. The contact life range will be reached in a short time if the working device is used continuously night and day, or is operated at a high frequency. In this case, use a proximity switch with no contact section.

Installation & Adjustment

⚠ WARNING

- Release brakes before coupling the load to the end of the rod.

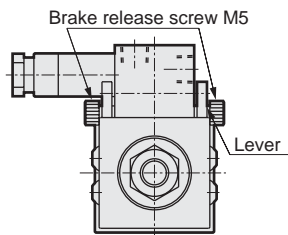
If coupled while brakes are applied, torque or load exceeding holding force may be applied to the piston rod and damage the brake mechanism.

- If brakes are released when air is pressurized on only one side of the cylinder, the piston may protrude at high speed, causing a hazard. Observe the points below when releasing brakes for adjustment, etc.

- Check that no one is in the movable range of the load and that no problem arises if the load moves when brakes are released.
- Take the following measures to prevent the load from dropping when brakes are released:
 - Set the load at the lowering end.
 - Pressurize both sides.
 - Set a support column.
- Confirm that air is not pressured on only 1 side of the cylinder when releasing brakes.

■ Manual brake release method

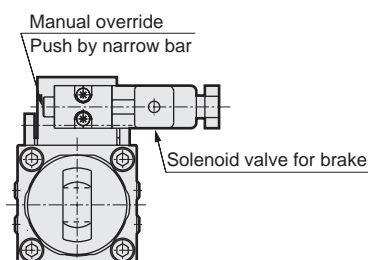
- When there is no air pressure or power supply



The brakes can be released by turning the levers on both sides two or three turns past the point where the lever feels heavy as shown above.

- Note 1. The brakes will not be applied if the levers are screwed in too far.
2. Always remove the screws before starting normal operation.

- Manually operating the solenoid valve for brakes (When there is air pressure)



The brakes will be released when the manual device on the solenoid valve is pushed with a thin rod.

Note that a non-locking method is incorporated, so the brakes will be applied when the manual device is released.

- Brakes can be released with manual releasing operations or by applying air pressure to the brake release port. With a load, the load may drop if brakes are left released with either of these operations. Before attaching the load, check that brakes can be applied from the initial state when using manual release or from when air is not applied to the brake release port.

- Do not apply torque to the rod when brakes are applied because holding force may drop, presenting a hazard. Use a rod that does not rotate.

- Do not apply brake holding force to the cylinder exceeding that indicated in the catalog.

- With the JSM2, the brakes can be manually released by screwing in a hexagon socket bolt into the brake release female thread on the top or side of the brakes. However, the brakes may be damaged if screwed in too far, so use the bolt enclosed with the product, or follow the appropriate screw in amount of the release bolt shown below when using a regular bolt.

| Inner diameter | No. of bolt rotations |
|----------------|-----------------------|
| φ20 | 8 to 9 rotations |
| φ25 | 11 to 12 rotations |
| φ30 | |
| φ32 | |
| φ40 | 14 to 15 rotations |

φ20 to φ40: Use a M5 x 15 or larger bolt.

- If there is any play, such as looseness, in the brake signal dog, stopping accuracy is affected. Securely fix to eliminate play, etc.

- If cylinder speed is fast, the detection dog must be long enough to match relay response time. If the dog is short, the stop signal is not output and operation does not stop.

| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

⚠ CAUTION

■ Adjust the cylinder air balance.

With brakes released, place a load on the cylinder and balance the load by adjusting air pressure applied to the cylinder rod and head. Faults such as cylinder protrusion during brake release or improper brake release are prevented by accurately balancing the load.

■ Check the installation position of detectors such as the cylinder switch.

When using braking, consider overrun distance for the required stopping position, and adjust the position of detectors such as the cylinder switch.

■ Load fluctuation during the cylinder reciprocation stroke leads to changes in the piston speed, which in turn increases dispersion in the stop position. Place and adjust so the load does not change just before stopping in the cylinder reciprocation stroke.

■ Speed changes are large during the acceleration range compared to during the cushion stroke and when starting operation, so dispersion in the stop position increases. Accuracy in specifications may therefore not be attained in step operation with a short stroke from the starting position to the next position.

■ Load onto piston rod

Compared to using a general-purpose air cylinder, check that load applied totally to the piston rod is applied in the axial direction. Limit load movement using guides so play or torsion does not occur.

■ Maintenance of rod sliding section

Check that scratches and dents are not made on the piston rod's sliding section. These can result in damage to packing, leaks, or brake faults.

■ The terminal box is shipped facing inward (ϕ 20: downward) when shipped to prevent damage. Change the direction to the required direction when wiring the terminal box.

During Use & Maintenance

1. Common

⚠ WARNING

■ The brake section can be removed from the cylinder body. Do not disassemble or inspect brakes or hazards may result when brakes are used again.

■ The required grease is applied to brakes. Avoid applying extra grease and do not wipe grease off.

■ The required grease is applied when brakes are replaced, so there is no need to apply grease to rods.

■ To prevent faults, use a dust cover during operation except when manually releasing brakes.

⚠ CAUTION

■ If the air supply pipe is thin or long, stoppage accuracy drops.

■ Frictional resistance increases and causes the piston speed to change when the cylinder has been stopped for a long time, such as when using first thing in the morning or afternoon. This may impair stoppage accuracy. Conduct break-in operation to obtain stable stoppage accuracy.

2. Common (T type with switch)

⚠ CAUTION

■ Shifting the switch position in the stroke direction

● The 1 color indicator switch is line-tuned by ± 3 mm from the default. If the adjustment range exceeds 3 mm, or when adjusting the 2 color indicator switch, move the band position.

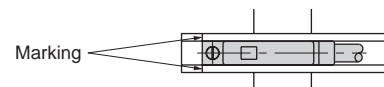
● Loosen the switch fixing screw, move the switch along the rail, and tighten at the required position.

When using T2, T3, T0, or T5, use a flat-tip screwdriver (screwdriver for clocks, precision screwdriver, etc.) with a 5 to 6 mm grip diameter, with a 2.4 mm or smaller tip, and 0.3 mm thick or less. Tighten with a tightening torque of 0.1 to 0.2 N·m. Tighten T*C, T1, T2J, T2Y, T3Y, T2YF, T3YF, T2YM, T3YM or T8 with a tightening torque of 0.5 to 0.7 N·m.

● The switch rail has markings at 4 mm from the rail end. Use this as a guide for the mounting position when replacing the switch.

Markings on the switch rail are set to the switch's maximum sensitivity position at the factory.

The maximum sensitivity changes when the switch type is changed or when the band is changed, so adjust the position accordingly.

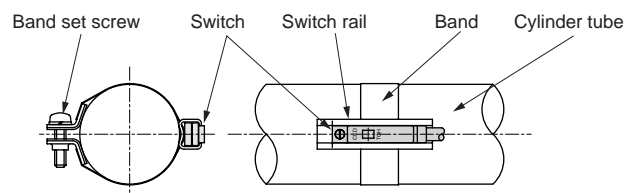


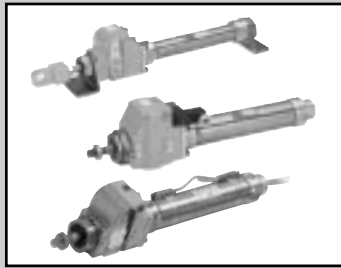
■ If a switch position is caused a circumference direction movement.

● Loosen the band fixing screw, shift the switch rail in the circumference direction, and tighten at the specified position. Tightening torque is 0.6 to 0.8N·m.

■ Shifting the band position

● Loosen the band fixing screw, shift the switch rail and band along the cylinder tube, and tighten at the specified position. Tightening torque is 0.6 to 0.8N·m.





Brake cylinder Small bore size caulking type double acting/double acting with valve

JSK2/JSK2-V Series

● Bore size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$

JIS symbol ● Double acting



Specifications

| Descriptions | | JSK2 | | | | JSK2-V | | | |
|-----------------------------|---------------|---|-----------|-----------|-----------|-------------------------------------|-----------|-----------|-----------|
| Bore size | mm | $\phi 20$ | $\phi 25$ | $\phi 32$ | $\phi 40$ | $\phi 20$ | $\phi 25$ | $\phi 32$ | $\phi 40$ |
| Actuation | | Double acting (option) | | | | Double acting (standard) with valve | | | |
| Working fluid | | Compressed air | | | | | | | |
| Max. working pressure | MPa | 1.0 | | | | 0.6 | | | |
| Min. working pressure | MPa | 0.35 | | | | 0.35 | | | |
| Withstanding pressure | MPa | 1.6 | | | | | | | |
| Ambient temperature range | °C | -10 to 60 (no freezing) | | | | -10 to 50 (no freezing) | | | |
| Port size | Brake section | M5 | Rc1/8 | | | M5 | Rc1/8 | | |
| | Cylinder port | Rc1/8 | | | | Rc1/8 | | | |
| Stroke tolerance | mm | $^{+2.0}_0$ (to 200), $^{+2.4}_0$ (200 to) | | | | | | | |
| Working piston speed | mm/s | 50 to 500 | | | | | | | |
| Cushion | | Rubber cushion | | | | | | | |
| Lubrication | | Not required (when lubricating, use turbine oil Class 1 ISO VG32) | | | | | | | |
| Stoppage accuracy | mm | ± 1.0 (300mm/s loadless) | | | | | | | |
| Holding force | N | 186 | 431 | 431 | 765 | 186 | 431 | 431 | 765 |
| Allowable energy absorption | J | 0.166 | 0.308 | 0.424 | 0.639 | 0.166 | 0.308 | 0.424 | 0.639 |

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm) |
|----------------|---|-------------------------|-------------------------|
| $\phi 20$ | 20, 50, 75, 100, 125, 150, 175, 200, 250, 300 | 700 | 5 |
| $\phi 25$ | | | |
| $\phi 30$ | | | |
| $\phi 40$ | | | |

The min. stroke length may differ depending on installation method of switch. Refer to the table below.

Min. stroke length of type with switch

(Unit: mm)

| Switch quantity | 1 | | | | 2 | | | | 3 | | | |
|-----------------|-----------|----------|--------|----|-----------|----------|--------|----|-----------|----------|--------|----|
| | Proximity | | Reed | | Proximity | | Reed | | Proximity | | Reed | |
| | T2, T3 | T1, T*Y* | T0, T5 | T8 | T2, T3 | T1, T*Y* | T0, T5 | T8 | T2, T3 | T1, T*Y* | T0, T5 | T8 |
| $\phi 20$ | 10 | | | | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| $\phi 25$ | 10 | | | | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| $\phi 32$ | 10 | | | | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |
| $\phi 40$ | 10 | | | | 25 | 35 | 25 | 35 | 50 | 55 | 50 | 55 |

Note 1: Switches cannot be installed more than three.

Switch specifications

- 1 color/2 color indicator

*The T0/T5 switch can be used with 220 VAC. Consult with CKD for working conditions.

| Descriptions | Proximity 2 wire | | | Proximity 3 wire | | | Reed 2 wire | | | | | | | |
|-----------------|--|-----------------------|-------------------------|--------------------------------|-----------------------------|-------------------------|--------------------------------|-------------------|---|-------------------------|--------------------------------|-------------------|-----------|-----------|
| | T1H/T1 V | T2H/T2V/ T2JH/T2JV | T2YH/ T2YV | T3H/ T3V | T3PH/T3PV (Custom order) | T3YH/ T3YV | T0H/T0V | | T5H/T5V | | T8H/T8V | | | |
| Applications | Programmable controller relay, small solenoid valve | | Programmable controller | Programmable controller, relay | | | Programmable controller, relay | | Programmable controller, relay, IC circuit (w/o indicator light), serial connection | | Programmable controller, relay | | | |
| Output method | - | | | NPN output | PNP output | NPN output | - | | | | | | | |
| Power voltage | - | | | 10 to 28 VDC | | | - | | | | | | | |
| Load voltage | 85 to 265 VAC | | 10 to 30 VDC | | 30 VDC or less | | 12/24 VDC | 110 VAC | 5/12/24 VDC | 110 VAC | 12/24 VDC | 110 VAC | 220 VAC | |
| Load current | 5 to 100mA | | 5 to 20mA (Note 1) | | 100mA or less | | 50mA or less | 5 to 50mA | 7 to 20mA | 50mA or less | 20mA or less | 5 to 50mA | 7 to 20mA | 7 to 10mA |
| Light | LED (ON lighting) | | LED (ON lighting) | Red/green LED (ON lighting) | LED (ON lighting) | Green LED (ON lighting) | Red/green LED (ON lighting) | LED (ON lighting) | | Without indicator light | | LED (ON lighting) | | |
| Leakage current | 1mA or less with 100 VAC 2mA or less with 200 VAC | | 1mA or less | | 10 μA or less | | | 0mA | | | | | | |

- With preventive maintenance output

| Descriptions | Proximity 3 wire | | Proximity 4 wire | | Proximity 3 wire | | Proximity 4 wire | | | |
|-------------------------------|--|---------------|--------------------------------|--|-------------------------|--|--------------------------------|--|--------------------------|--|
| | T2YFH/V | | T3YFH/V | | T2YMH/V | | T3YMH/V | | | |
| Applications | Programmable controller | | Programmable controller, relay | | Programmable controller | | Programmable controller, relay | | | |
| Output method | NPN output | | | | | | | | | |
| Light | Red/green LED (ON lighting) | | | | | | | | | |
| | Installation position adjustment section | | - | | | | | | Yellow LED (ON lighting) | |
| Regular Output | Preventive maintenance output | | - | | | | | | - | |
| | Power voltage | | - | | 10 to 28 VDC | | - | | 10 to 28 VDC | |
| | Load voltage | | 10 to 30 VDC | | 30 VDC or less | | 10 to 30 VDC | | 30 VDC or less | |
| | Load current | | 5 to 20mA | | 50mA or less | | 5 to 20mA | | 50mA or less | |
| Preventive maintenance Output | Leakage current | | 1mA or less | | 10 μA or less | | 1.2mA or less | | 10 μA or less | |
| | Load voltage | | 30 VDC or less | | | | | | - | |
| | Load current | | 20mA or less | | 50mA or less | | 5 to 20mA or less | | 50mA or less | |
| Leakage current | | 10 μA or less | | | | | | | | |

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20mA at 25°C. The current will be lower than 20mA if ambient temperature around switch is higher than 25°C. (5 to 10mA at 60°C)

Valve electric specifications for brake

| Descriptions | JSK2-V-VALVE-KIT-[Voltage] | | |
|---------------------------|----------------------------|-------------------|--------|
| Rated voltage (V) | 100 VAC (50/60Hz) | 200 VAC (50/60Hz) | 24 VDC |
| Starting current (A) | 0.056/0.044 | 0.028/0.022 | 0.075 |
| Holding current (A) | 0.028/0.022 | 0.014/0.011 | |
| Power consumption (W) | 1.8/1.4 | 1.8/1.4 | 1.8 |
| Voltage fluctuation range | ±10% | | |
| Insulation class | Class B molded coil | | |

- Note 1: 100/200 VAC coil is available for 110/220 VAC (60Hz).
- Note 2: Refer to "Pneumatic Valves (No. CB-23SA)" about details of valves (P5136 Series).

Cylinder weight

- JSK2

| Descriptions, mounting style | Product weight when stroke length (S) = 0mm | | | | | | Switch weight | Switch rail | Additional weight per S = 10mm |
|------------------------------|---|----------------------|------------------|------------------|------------------|--------------------|---------------|---------------|--------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA) | Clevis type (CA) | Clevis type (CC) | Trunnion type (TA) | Grommet | + band weight | |
| φ 20 | 0.67 | 0.82 | 0.73 | 0.82 | 0.68 | 0.72 | 0.018 | 0.005 | 0.01 |
| φ 25 | 1.18 | 1.44 | 1.33 | 1.42 | 1.18 | 1.28 | 0.018 | 0.005 | 0.01 |
| φ 32 | 1.22 | 1.48 | 1.37 | 1.46 | 1.22 | 1.32 | 0.018 | 0.009 | 0.02 |
| φ 40 | 1.91 | 2.17 | 2.06 | 2.15 | 1.93 | 2.07 | 0.018 | 0.009 | 0.02 |

- JSK2-V (with valve)

| Descriptions, mounting style | Product weight when stroke length (S) = 0mm | | | | | | Switch weight | Switch rail | Additional weight per S = 10mm |
|------------------------------|---|----------------------|------------------|------------------|------------------|--------------------|---------------|---------------|--------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA) | Clevis type (CA) | Clevis type (CC) | Trunnion type (TA) | Grommet | + band weight | |
| φ 20 | 0.72 | 0.87 | 0.78 | 0.87 | 0.73 | 0.77 | 0.018 | 0.005 | 0.01 |
| φ 25 | 1.23 | 1.49 | 1.38 | 1.47 | 1.23 | 1.33 | 0.018 | 0.005 | 0.01 |
| φ 32 | 1.27 | 1.53 | 1.42 | 1.51 | 1.27 | 1.37 | 0.018 | 0.009 | 0.02 |
| φ 40 | 1.96 | 2.22 | 2.11 | 2.20 | 1.98 | 2.12 | 0.018 | 0.009 | 0.02 |

(Example) JSK2-V-LB-20-100-2-T0H-D

Product weight when S = 0mm 0.87kg
 Additional weight when S = 100mm $0.01 \times \frac{100}{10} = 0.1\text{kg}$
 Weight of 2 switches 0.036kg
 Weight of switch rail + 2 bands 0.018kg
 Product weight $0.87\text{kg} + 0.1\text{kg} + 0.036\text{kg} + 0.018\text{kg} = 0.924\text{kg}$

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
 JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC

Ending
 Brake cylinder (small bore size)
 With brake

JSK2/JSK2-V Series

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2**
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

How to order

Without switch

JSK2-V - **LB** - **20** - **50** - **1** - **J** **I**

With switch

JSK2-V - **LB** - **20** - **50** - **1** - **T0H** - **R** - **J** **I**

A Model no.
Note 1

B Mounting style
Note 2

C Bore size

D Port thread type

E Stroke length

F Valve voltage

G Switch model no.

H Switch quantity
Note 6

I Option
Note 4
Note 5

J Accessory
Note 6

Note on model no. selection

Note 1: Low hydraulic type is available as custom order. In model no., JSK2-H and JSK2-VH are provided.

Note 2: When the mounting style "TA" is selected, the type with brake cover and the clevis bracket cannot be selected simultaneously as they will interfere.

Note 3: Refer to page 1230 for the min. stroke length with switch.

Note 4: For bellows J, the min. stroke length is 25mm. If less than 25mm stroke, consult with CKD.

Note 5: Instantaneous max. temperature is the temperature when spark and spatter etc., instantaneously contacts to bellows.

Note 6: "I" and "Y" can not be selected at the same time.

Note 7: Up to three switches can be mounted. If more than four switches are required, switch mounting brackets for the extra switches must be prepared separately.

<Example of model number>

JSK2-V-LB-20-50-1- T0H-R-JI

Model: Brake cylinder with valve

- A** Model no. : With valve
- B** Mounting style : Axial foot type
- C** Bore size : ϕ 20mm
- D** Port thread type : Rc thread
- E** Stroke length : 50mm
- F** Valve voltage : 100 VAC
- G** Switch model no. : Reed switch T0H, lead wire 1m
- H** Switch quantity : One on rod end
- I** Option : Bellows
Max. ambient temperature 100°C, instantaneous max. temperature 200°C
- J** Accessory : Rod eye

A Model no.

Double acting
With valve V

Symbol Descriptions

| B Mounting style | | Double acting | With valve V |
|------------------|------------------------|---------------|--------------|
| 00 | Basic type | ● | ● |
| LB | Axial foot type | ● | ● |
| FA | Rod end flange type | ● | ● |
| CA | Eye bracket type | ● | ● |
| CC | Fixed eye | ● | ● |
| TA | Rod end trunnion type | ● | ● |
| TB | Head end trunnion type | ● | ● |

C Bore size (mm)

| | | | |
|----|-----------|---|---|
| 20 | ϕ 20 | ● | ● |
| 25 | ϕ 25 | ● | ● |
| 32 | ϕ 32 | ● | ● |
| 40 | ϕ 40 | ● | ● |

D Port thread type

| | | | |
|-------|---|--|--|
| Blank | Rc thread | | |
| NN | NPT thread (ϕ 25 and over) (custom order) | | |
| GN | G thread (ϕ 25 and over) (custom order) | | |

E Stroke length (mm)

| Bore size | Stroke length Note 3 | Custom stroke length |
|-----------|----------------------|----------------------|
| ϕ 20 | 5 to 700 | 1 mm increment |
| ϕ 25 | 5 to 700 | |
| ϕ 32 | 5 to 700 | |
| ϕ 40 | 5 to 700 | |

F Valve voltage

| | | | |
|---|-------------------|--|---|
| 1 | 100 VAC (50/60Hz) | | ● |
| 2 | 200 VAC (50/60Hz) | | ● |
| 3 | 24 VDC | | ● |

G Switch model no.

| Axial lead wire | Radial lead wire | Contact | Indicator | Lead wire |
|-----------------|------------------|-----------|---|-----------|
| T0H* | T0V* | Reed | 1 color indicator type | 2-wire |
| T5H* | T5V* | | Without indicator light | |
| T8H* | T8V* | | 1 color indicator type | 2-wire |
| T1H* | T1V* | Proximity | 1 color indicator type | 2-wire |
| T2H* | T2V* | | 1 color indicator type | 2-wire |
| T3H* | T3V* | | 1 color indicator type | 3-wire |
| T3PH* | T3PV* | | 1 color indicator type (custom order) | 3-wire |
| T2YH* | T2YV* | | 2 color indicator type | 2-wire |
| T3YH* | T3YV* | | 2 color indicator type | 3-wire |
| T2YFH* | T2YFV* | | 2 color indicator type (without indicator light for preventive maintenance output) | 3-wire |
| T3YFH* | T3YFV* | | 2 color indicator type (without indicator light for preventive maintenance output) | 4-wire |
| T2YMH* | T2YMV* | | 2 color indicator type (with indicator light for preventive maintenance output (1 color)) | 3-wire |
| T3YMH* | T3YMV* | | 2 color indicator type (with indicator light for preventive maintenance output (1 color)) | 4-wire |
| T2JH* | T2JV* | | Off-delay type | 2-wire |

*Lead wire length

| | | | |
|-------|---------------|---|---|
| Blank | 1m (standard) | ● | ● |
| 3 | 3m (option) | ● | ● |
| 5 | 5m (option) | ● | ● |

H Switch quantity

| | | | |
|---|---|---|---|
| R | One on rod end | ● | ● |
| H | One on head end | ● | ● |
| D | Two | ● | ● |
| T | Three | ● | ● |
| 4 | Four (If more than 4 switches, indicate switch quantity.) | ● | ● |

I Option

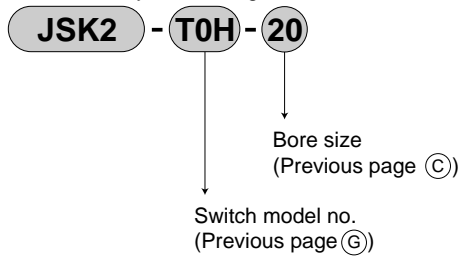
| | | Max. ambient temperature | Instantaneous max. temperature | | |
|---|---------------------------------------|--------------------------|--------------------------------|---|---|
| J | Bellows | 100°C | 200°C | ● | ● |
| L | Bellows | 250°C | 400°C | ● | ● |
| M | Piston rod material (stainless steel) | | | ● | ● |
| V | Boss cut off | | | ● | ● |
| U | With brake cover | | | ● | ● |

J Accessory

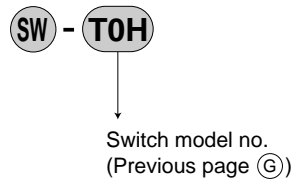
| | | | |
|----|---|---|---|
| I | Rod eye | ● | ● |
| Y | Rod clevis (pin, washer and split pin attached) | ● | ● |
| B2 | Clevis bracket (pin and snap ring attached) | ● | ● |

How to order switch

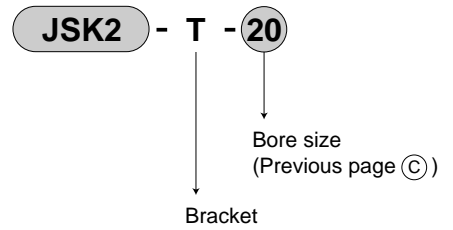
● Switch body + mounting bracket



● Only switch body



● Mounting bracket



How to order valve for brake



How to order mounting bracket

| Bore size (mm) | $\phi 20$ | $\phi 25$ | $\phi 32$ | $\phi 40$ |
|-----------------------|-----------|-----------|-----------|-----------|
| Mounting bracket | | | | |
| Axial foot type (LB) | M1-LB-20 | M1-LB-30 | M1-LB-30 | M1-LB-30 |
| Flange type (FA) | M1-FA-20 | M1-FA-30 | M1-FA-30 | M1-FA-30 |
| Eye bracket type (CA) | M1-CA-20 | M1-CA-30 | M1-CA-30 | M1-CA-30 |
| Trunnion type (TA/TB) | M1-TA-20 | M1-TA-30 | M1-TA-30 | M1-TA-40 |

Note 1: Mounting nut and toothed washer are attached to each mounting bracket.

Note 2: The foot type mounting bracket is supplied as a one-piece set.

| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

Brake cylinder (small bore size)
With brake

JSK2/JSK2-V Series

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

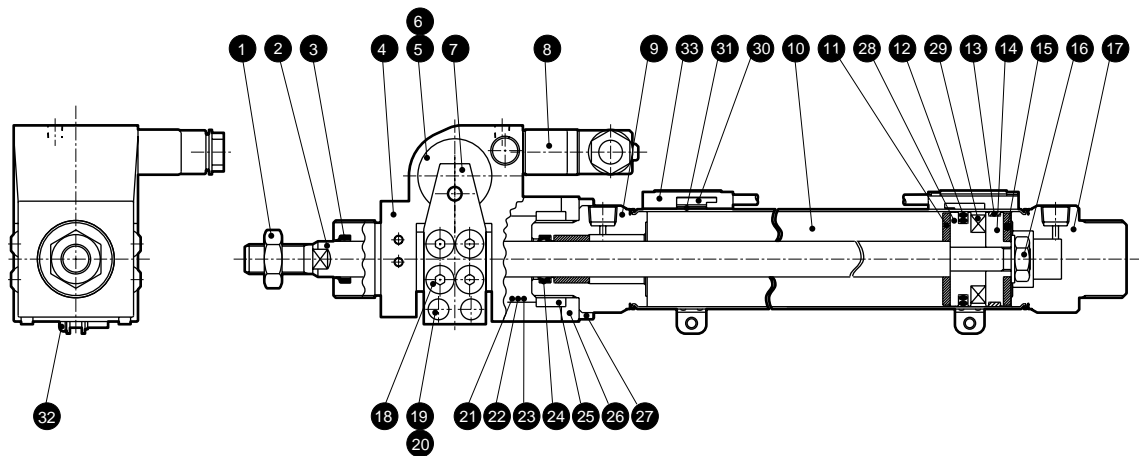
Mounting bracket material

| Mounting style | Material | Remarks |
|----------------|--------------|---------------|
| LB | Steel | Zinc chromate |
| FA | Steel | Zinc chromate |
| TA/TB | Carbon steel | Zinc chromate |
| CA | Steel | Zinc chromate |

Note: The mounting bracket is shipped with the product.

Internal structure and parts list

- JSK2-V (with valve/with switch)
- JSK2 (with switch)



Note: This caulking type cannot be disassembled.

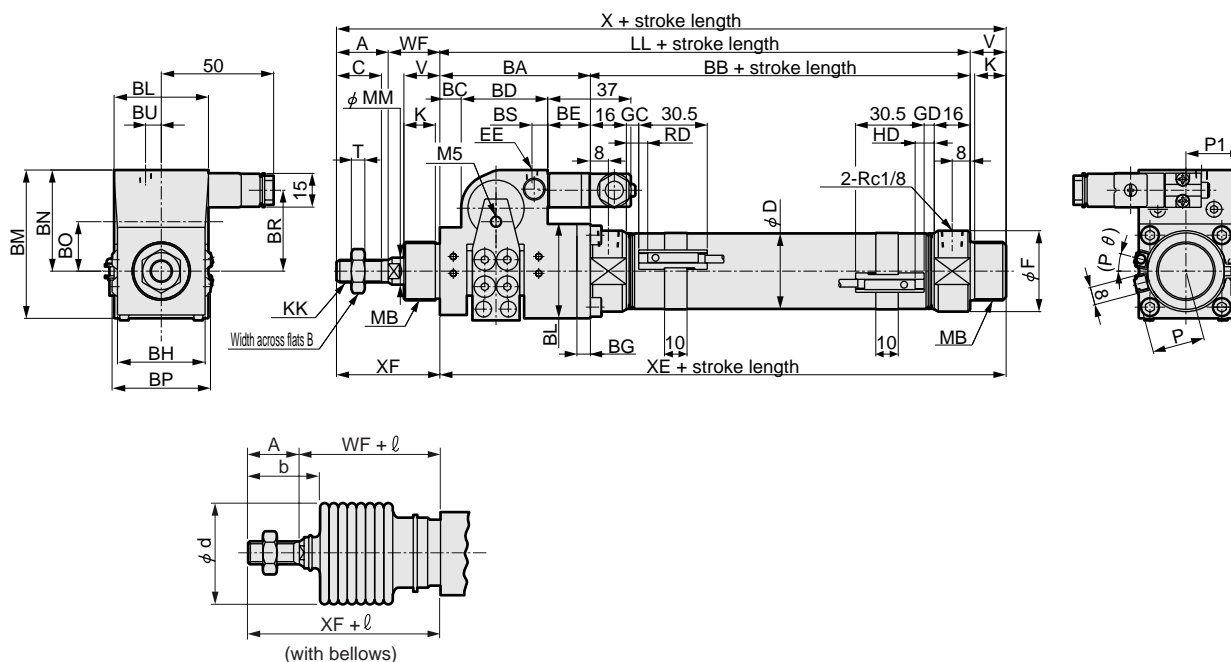
Part list

| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|---------------------|------------------------------------|---------------------------|-------------|------------------------------|-----------------|----------------------|
| 1 | Rod nut | Steel | Zinc chromate | 18 | Hexagon socket head cap bolt | Alloy copper | Blackening treatment |
| 2 | Piston rod | $\phi 20, \phi 25$ stainless steel | Industrial chrome plating | 19 | Hexagon socket head cap bolt | Alloy copper | Blackening treatment |
| | | $\phi 32, \phi 40$ steel | | 20 | Brake spring | Steel | Blackening treatment |
| 3 | Scraper | Nitrile rubber | | 21 | Brake shoe metal | Cast iron | |
| 4 | Brake main body | Cast iron | Zinc chromate | 22 | Bush | DU bush | |
| 5 | Brake piston | Bronze casting | | 23 | Ring | DU ring | |
| 6 | Piston packing seal | Nitrile rubber | | 24 | Rod packing seal | Nitrile rubber | |
| 7 | Lever | Steel | Zinc chromate | 25 | Fixing ring | Steel | Zinc chromate |
| 8 | Brake release valve | — | P5136MO | 26 | Square flange | Steel | Zinc chromate |
| 9 | Rod cover | Aluminum alloy | | 27 | Hexagon socket head cap bolt | Alloy copper | Blackening treatment |
| 10 | Cylinder tube | Stainless steel | | 28 | Piston A | Aluminum alloy | |
| 11 | Cushion rubber | Urethane rubber | | 29 | Magnet | Plastic | |
| 12 | Piston packing seal | Nitrile rubber | | With switch | | | |
| 13 | Wear ring | Polyacetal resin | | 30 | Switch body | — | |
| 14 | Piston B | Aluminum alloy | Blackening treatment | 31 | Band | Stainless steel | |
| 15 | Piston nut | Steel | Zinc chromate | 32 | Pan head machine screw | Stainless steel | |
| 16 | Spring washer | Steel | Zinc chromate | 33 | Switch rail | Stainless steel | |
| 17 | Head cover | Aluminum alloy | | | | | |

Dimensions



● Basic type (00)



RD: Rod end max. sensitive position

HD: Dead end max. sensitive position

Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Note 2: Brake section exhaust port size is the same as EE dimensions.

Note 3: l dimensions below decimal point are rounded up.

Note 4: Refer to page 1254 for accessory dimensions.

| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|----|----|----|-----|------|----|----|----|----|------|------|----|------|------|----|-----|----|------|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BH | BL | BM | BN | BO | BP | BR | BS | BU | C | D |
| φ 20 | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 34 | 55 | 38 | 19 | 38 | 29 | 4 | 3.8 | 18 | 21.4 |
| φ 25 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 26.4 |
| φ 32 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 33.6 |
| φ 40 | 25 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 50 | 50 | 80.5 | 55.5 | 25 | 52 | 39.5 | 7 | 7 | 22 | 41.6 |

| Symbol | Basic dimensions | | | | | | | | | | | | | With switch | | | |
|----------------|------------------|----|----|------------|-----|-----------|----|---|----|----|-----|-----|----|-------------|-----|------|------|
| Bore size (mm) | EE | F | K | KK | LL | MB | MM | T | V | WF | X | XE | XF | GC | GD | RD | HD |
| φ 20 | M5 | 28 | 12 | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 138 | 44 | 4.0 | 3.0 | 8.0 | 7.0 |
| φ 25 | Rc1/8 | 32 | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 |
| φ 32 | Rc1/8 | 36 | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 |
| φ 40 | Rc1/8 | 45 | 14 | M12 x 1.5 | 147 | M26 x 1.5 | 14 | 7 | 16 | 23 | 211 | 163 | 48 | 7.0 | 6.5 | 11.5 | 10.5 |

| Symbol | With bellows | | | | | |
|----------------|--------------|------|-------|----|----|--------------------------|
| Bore size (mm) | P | P1 | (Pθ)° | b | d | ℓ |
| φ 20 | 17.3 | 19.5 | 22 | 30 | 30 | (Stroke length/3) + 6 |
| φ 25 | 19.8 | 22.0 | 18 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 32 | 24.3 | 25.5 | 15 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 40 | 28.3 | 29.5 | 12 | 34 | 46 | (Stroke length/3.25) + 7 |

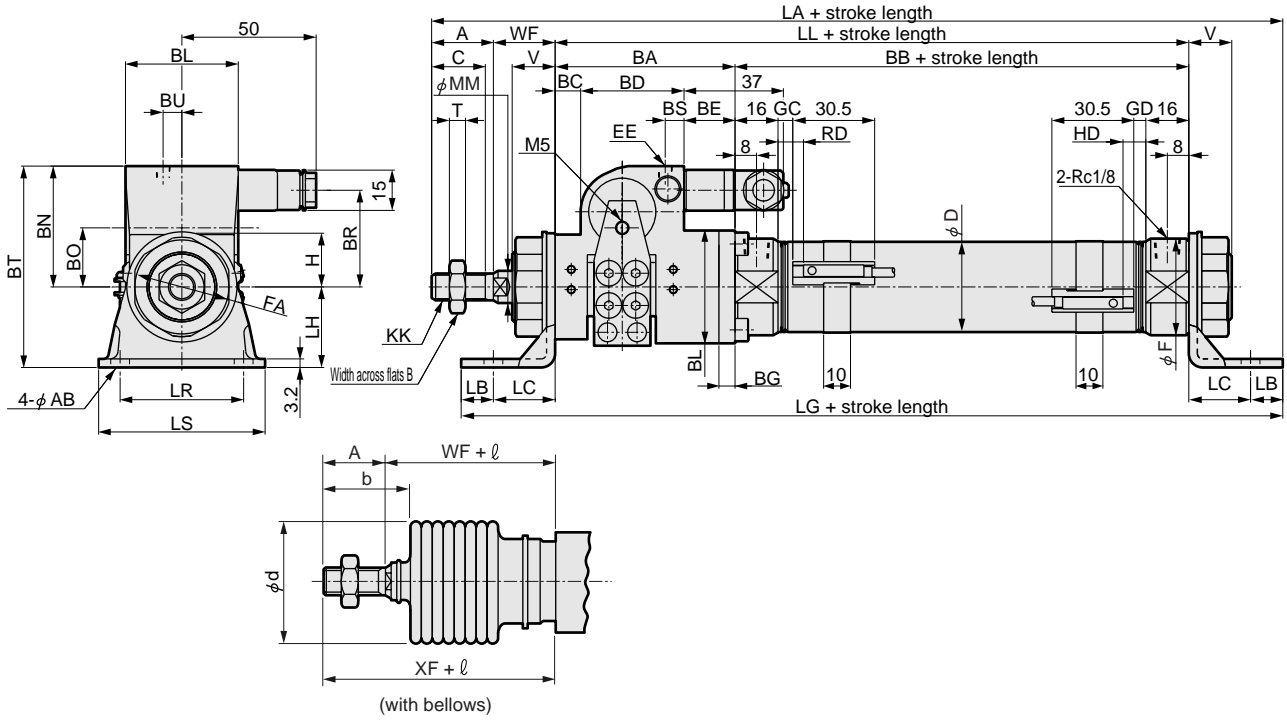
| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

Brake cylinder (small bore size)
With brake

Dimensions



● Axial foot type (LB)



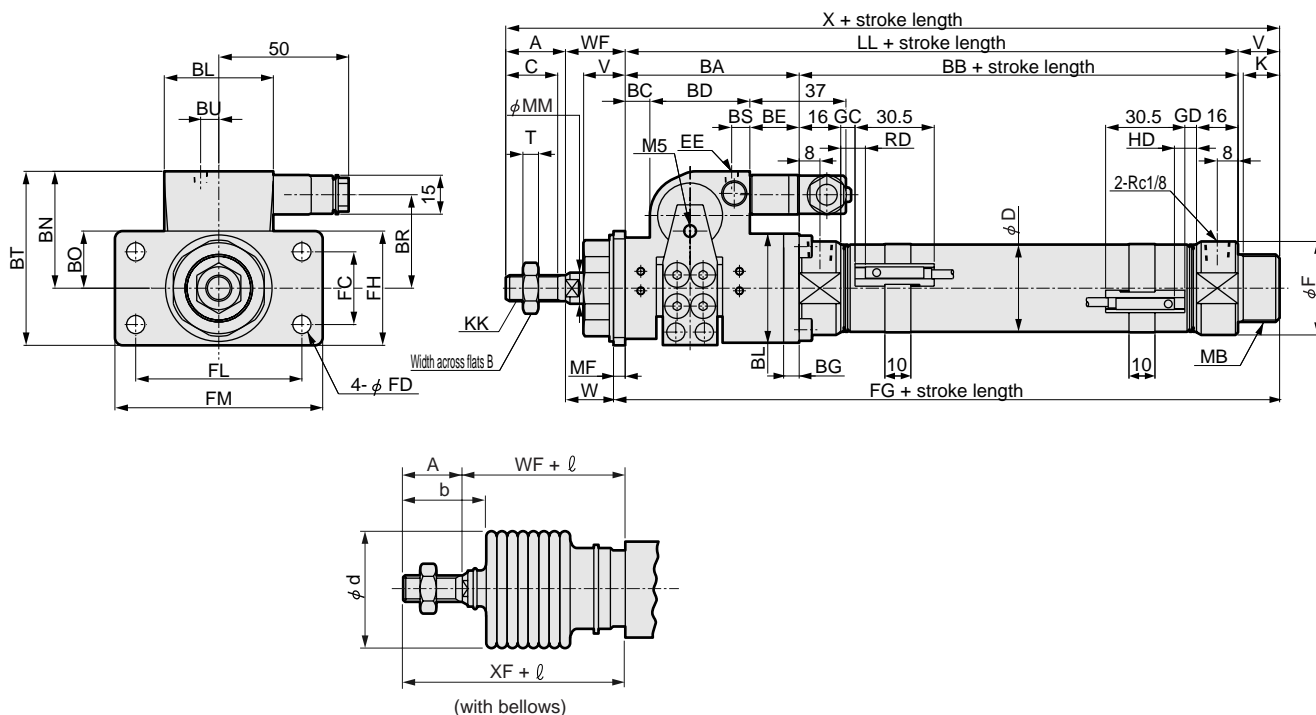
Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.
 Note 2: Brake section exhaust port size is the same as EE dimensions.
 Note 3: ℓ dimensions below decimal point are rounded up.
 Note 4: Refer to page 1254 for accessory dimensions.

| Symbol | Axial foot type (LB) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|---------------------------------------|------|------|------------|-----|-----|--------------------------|----|----|-----|-------------|------|-----|------|----|-----|-----|------|-------|--|
| Bore size (mm) | A | AB | B | BA | BB | BC | BD | BE | BG | BL | BT | BN | BO | BR | BS | BU | C | D | EE | |
| φ 20 | 20 | 6 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 34 | 63 | 38 | 19 | 29 | 4 | 3.8 | 18 | 21.4 | M5 | |
| φ 25 | 23 | 7 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 75 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 26.4 | Rc1/8 | |
| φ 32 | 23 | 7 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 75 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 33.6 | Rc1/8 | |
| φ 40 | 25 | 7 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 50 | 85.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 41.6 | Rc1/8 | |
| Symbol | Installation dimensions | | | | | | | | | | With switch | | | | | | | | | |
| Bore size (mm) | F | FA | H | KK | LL | MM | T | V | WF | LA | LB | LC | LG | LH | LR | LS | GC | GD | RD | |
| φ 20 | 28 | 26 | 15 | M8 x 1.0 | 124 | 10 | 5 | 14 | 24 | 196 | 10 | 18 | 160 | 25 | 30 | 44 | 4.0 | 3.0 | 8.0 | |
| φ 25 | 32 | 35 | 20 | M10 x 1.25 | 136 | 12 | 6 | 16 | 23 | 217 | 12 | 23 | 182 | 30 | 46 | 62 | 5.5 | 4.5 | 9.5 | |
| φ 32 | 36 | 35 | 20 | M10 x 1.25 | 136 | 12 | 6 | 16 | 23 | 217 | 12 | 23 | 182 | 30 | 46 | 62 | 5.5 | 4.5 | 9.5 | |
| φ 40 | 45 | 35 | 20 | M12 x 1.5 | 147 | 14 | 7 | 16 | 23 | 230 | 12 | 23 | 193 | 30 | 46 | 62 | 7.0 | 6.5 | 11.5 | |
| Symbol | With bellows | | | | | | | | | | | | | | | | | | | |
| Bore size (mm) | HD | P | P1 | (Pθ°) | b | d | ℓ | | | | | | | | | | | | | |
| φ 20 | 7.0 | 17.3 | 19.5 | 22 | 30 | 30 | (Stroke length/3) + 6 | | | | | | | | | | | | | |
| φ 25 | 8.5 | 19.8 | 22.0 | 18 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | |
| φ 32 | 8.5 | 24.3 | 25.5 | 15 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | |
| φ 40 | 10.5 | 28.3 | 29.5 | 12 | 34 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | |

Dimensions



● Rod end flange type (FA)



Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Note 2: Brake section exhaust port size is the same as EE dimensions.

Note 3: ℓ dimensions below decimal point are rounded up.

Note 4: Refer to page 1254 for accessory dimensions.

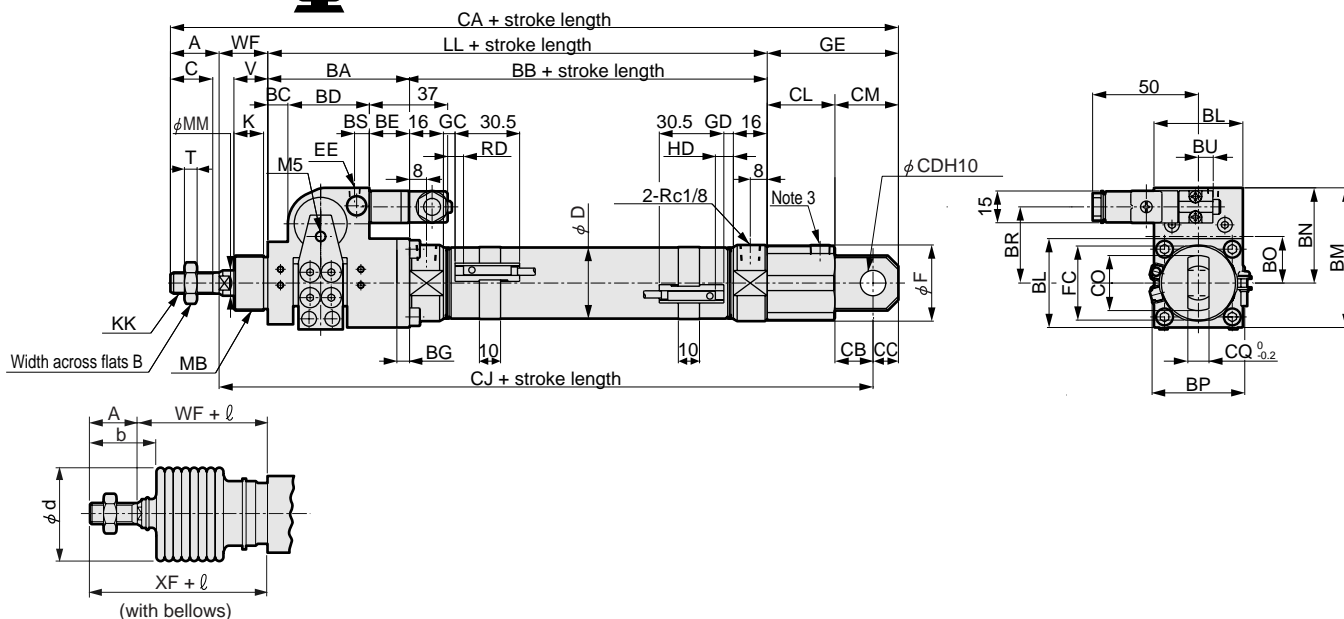
| Symbol | Rod end flange type (FA) basic dimensions | | | | | | | | | | | | | | | | | | | | |
|----------------|---|-----------|--------------------------|----|-----|------|------|----|------|----|-------------|-------|------|----|-----|-----|------|-------|------|----|------------|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BT | BL | BN | BO | BR | BS | BU | C | D | EE | F | K | KK |
| φ 20 | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 55 | 34 | 38 | 19 | 29 | 4 | 3.8 | 18 | 21.4 | M5 | 28 | 12 | M8 x 1.0 |
| φ 25 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 67 | 42 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 26.4 | Rc1/8 | 32 | 14 | M10 x 1.25 |
| φ 32 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 67 | 42 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 33.6 | Rc1/8 | 36 | 14 | M10 x 1.25 |
| φ 40 | 25 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 77.5 | 50 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 41.6 | Rc1/8 | 45 | 14 | M12 x 1.5 |
| Symbol | Installation dimensions | | | | | | | | | | With switch | | | | | | | | | | |
| Bore size (mm) | LL | MB | MF | MM | T | V | W | WF | X | FC | FD | FG | FH | FL | FM | GC | GD | RD | HD | | |
| φ 20 | 124 | M18 x 1.5 | 3.2 | 10 | 5 | 14 | 20.8 | 24 | 182 | 20 | 6 | 141.2 | 34 | 40 | 54 | 4.0 | 3.0 | 8.0 | 7.0 | | |
| φ 25 | 136 | M26 x 1.5 | 4.5 | 12 | 6 | 16 | 18.5 | 23 | 198 | 28 | 7 | 156.5 | 44 | 64 | 80 | 5.5 | 4.5 | 9.5 | 8.5 | | |
| φ 32 | 136 | M26 x 1.5 | 4.5 | 12 | 6 | 16 | 18.5 | 23 | 198 | 28 | 7 | 156.5 | 44 | 64 | 80 | 5.5 | 4.5 | 9.5 | 8.5 | | |
| φ 40 | 147 | M26 x 1.5 | 4.5 | 14 | 7 | 16 | 18.5 | 23 | 211 | 28 | 7 | 167.5 | 44 | 64 | 80 | 7.0 | 6.5 | 11.5 | 10.5 | | |
| Symbol | With bellows | | | | | | | | | | | | | | | | | | | | |
| Bore size (mm) | b | d | ℓ | | | | | | | | | | | | | | | | | | |
| φ 20 | 30 | 30 | (Stroke length/3) + 6 | | | | | | | | | | | | | | | | | | |
| φ 25 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | | | | | |
| φ 32 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | | | | | |
| φ 40 | 34 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | | | | | |

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2**
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

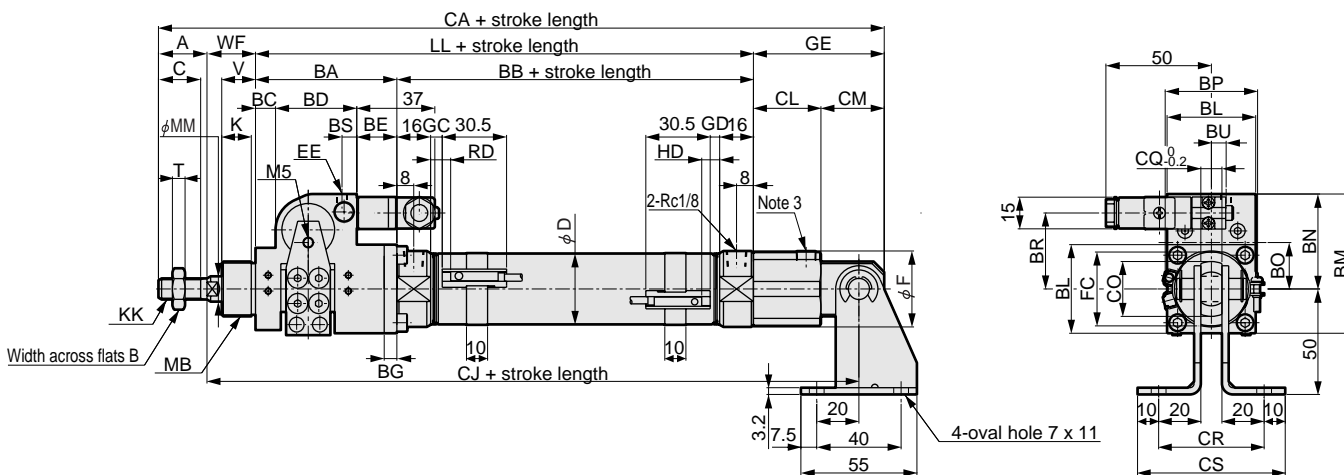
Brake cylinder (small bore size)
With brake

Dimensions

● Eye bracket type (CA)



● Eye bracket (CA) with bracket (option)



Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Note 2: Brake section exhaust port size is the same as EE dimensions.

Note 3: This is not a piping port.

Note 4: l dimensions below decimal point are rounded up.

Note 5: Refer to page 1254 for accessory dimensions.

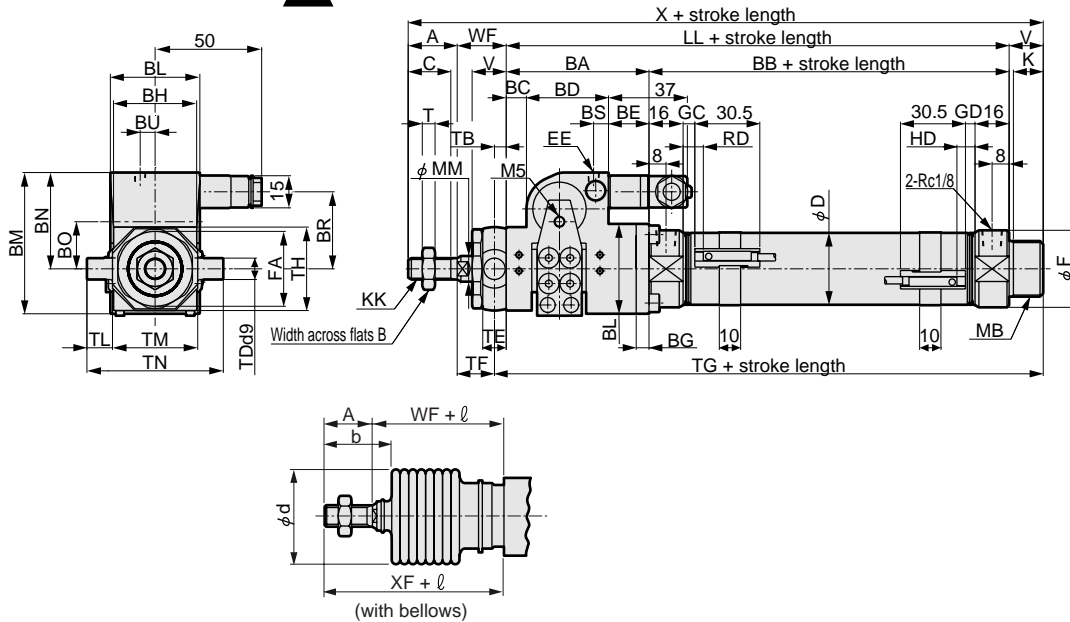
| Symbol | Eye bracket type (CA) basic dimensions | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|----|----|----|-----|------|----|----|----|------|------|----|------|------|----|-----|----|------|-------|----|----|----|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BL | BM | BN | BO | BP | BR | BS | BU | C | D | EE | F | FC | GE |
| φ 20 | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 34 | 55 | 38 | 19 | 38 | 29 | 4 | 3.8 | 18 | 21.4 | M5 | 28 | 26 | 55 |
| φ 25 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 26.4 | Rc1/8 | 32 | 35 | 62 |
| φ 32 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 33.6 | Rc1/8 | 36 | 35 | 62 |
| φ 40 | 25 | 19 | 73 | 73 | 8 | 48 | 18 | 8 | 50 | 80.5 | 55.5 | 25 | 52 | 39.5 | 7 | 7 | 22 | 41.6 | Rc1/8 | 45 | 35 | 62 |

| Symbol | Installation dimensions | | | | | | | | | | | | | | | | | | |
|----------------|-------------------------|------------|-----|-----------|----|---|----|----|-----|----|----|----|-----|----|----|----|----|----|----|
| Bore size (mm) | K | KK | LL | MB | MM | T | V | WF | CA | CB | CC | CD | CJ | CL | CM | CO | CQ | CR | CS |
| φ 20 | 12 | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 223 | 14 | 10 | 10 | 193 | 31 | 24 | 22 | 8 | 48 | 68 |
| φ 25 | 14 | M10 x 1.25 | 135 | M26 x 1.5 | 12 | 6 | 16 | 23 | 244 | 18 | 12 | 12 | 209 | 32 | 30 | 26 | 10 | 50 | 70 |
| φ 32 | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 244 | 18 | 12 | 12 | 209 | 32 | 30 | 26 | 10 | 50 | 70 |
| φ 40 | 14 | M12 x 1.5 | 147 | M26 x 1.5 | 14 | 7 | 16 | 23 | 257 | 18 | 12 | 12 | 220 | 32 | 30 | 26 | 10 | 50 | 70 |

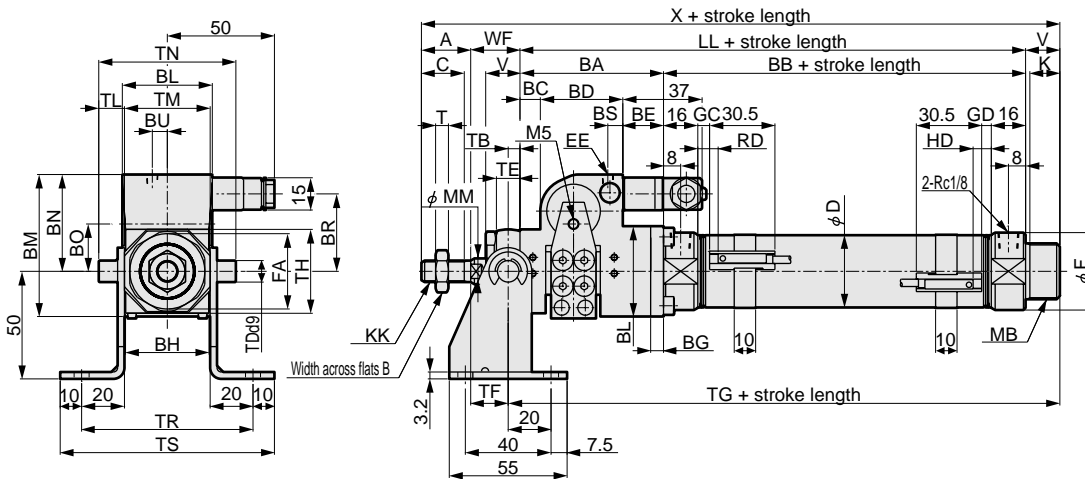
| Symbol | With switch | | | | With bellows | | |
|----------------|-------------|-----|------|------|--------------|----|--------------------------|
| Bore size (mm) | GC | GD | RD | HD | b | d | l |
| φ 20 | 4.0 | 3.0 | 8.0 | 7.0 | 30 | 30 | (Stroke length/3) + 6 |
| φ 25 | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 32 | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 40 | 7.0 | 6.5 | 11.5 | 10.5 | 34 | 46 | (Stroke length/3.25) + 7 |

Dimensions

● Rod end trunnion type (TA)



● Rod end trunnion type (TA) with bracket (option)



Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.

Note 2: Brake section exhaust port size is the same as EE dimensions.

Note 3: ℓ dimensions below decimal point are rounded up.

Note 4: The with bracket can not select for "U" with brake cover.

Note 5: Refer to page 1254 for accessory dimensions.

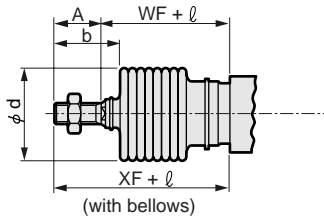
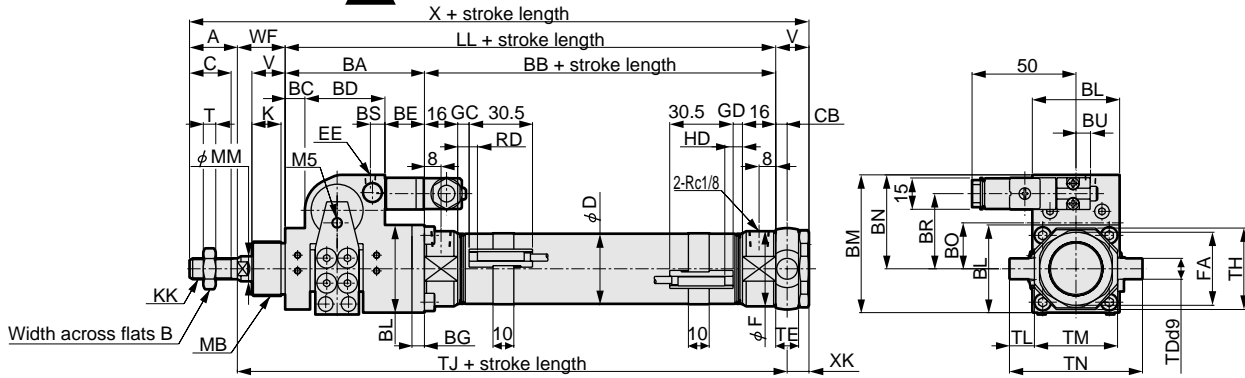
| Symbol | Rod end trunnion type (TA) | | | | | | | | | | | | | | | | | | | | | |
|-----------|----------------------------|----|----|----|-----|------|----|----|----|----|------|------|----|------|----|-----|----|------|-------|----|----|----|
| | A | B | BA | BB | BC | BD | BE | BG | BH | BL | BM | BN | BO | BR | BS | BU | C | D | EE | F | FA | K |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 34 | 55 | 38 | 19 | 29 | 4 | 3.8 | 18 | 21.4 | M5 | 28 | 26 | 12 |
| $\phi 25$ | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 26.4 | Rc1/8 | 32 | 35 | 14 |
| $\phi 32$ | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 33.6 | Rc1/8 | 36 | 35 | 14 |
| $\phi 40$ | 25 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 50 | 50 | 80.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 41.6 | Rc1/8 | 45 | 35 | 14 |

| Symbol | Installation dimensions | | | | | | | | | | | | | | | | | | |
|-----------|-------------------------|-----|-----------|----|---|-----|----|----|-----|----|----|-----|-----|----|----|------|-------|------|-----|
| | KK | LL | MB | MM | T | TL | TM | TR | TS | V | WF | X | TB | TD | TE | TF | TG | TH | TL |
| $\phi 20$ | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 8 | 30 | 70 | 90 | 14 | 24 | 182 | 4.5 | 8 | 9 | 19.5 | 142.5 | 29.5 | 8 |
| $\phi 25$ | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 12 | 40 | 80 | 100 | 16 | 23 | 198 | 5.5 | 10 | 11 | 17.5 | 157.5 | 39 | 12 |
| $\phi 32$ | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 12 | 40 | 80 | 100 | 16 | 23 | 198 | 5.5 | 10 | 11 | 17.5 | 157.5 | 39 | 12 |
| $\phi 40$ | M12 x 1.5 | 147 | M26 x 1.5 | 14 | 7 | 9.5 | 53 | 93 | 113 | 16 | 23 | 211 | 5.5 | 10 | 11 | 17.5 | 168.5 | 44 | 9.5 |

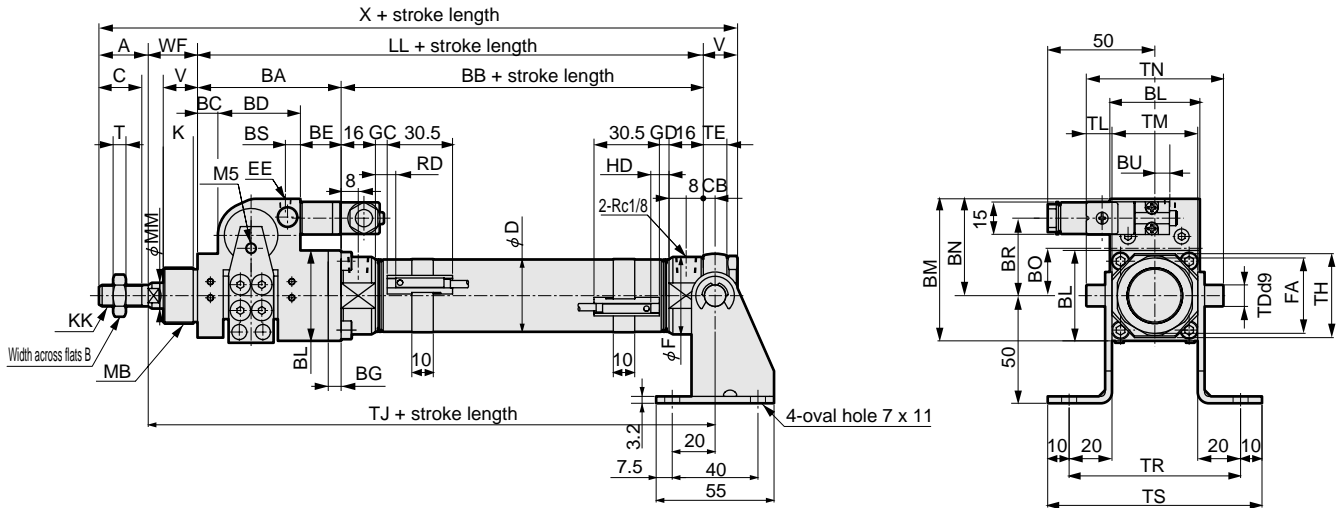
| Symbol | With switch | | | | | | With bellows | | ϕ |
|-----------|-------------|----|-----|-----|------|------|--------------|----|--------------------------|
| | TM | TN | GC | GD | RD | HD | b | d | |
| $\phi 20$ | 30 | 46 | 4.0 | 3.0 | 8.0 | 7.0 | 30 | 30 | (Stroke length/3) + 6 |
| $\phi 25$ | 40 | 64 | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| $\phi 32$ | 40 | 64 | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| $\phi 40$ | 53 | 72 | 7.0 | 6.5 | 11.5 | 10.5 | 34 | 46 | (Stroke length/3.25) + 7 |

Dimensions

● Head end trunnion type (TB)



● Head end trunnion type (TB) with bracket (option)



Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.
 Note 2: Brake section exhaust port size is the same as EE dimensions.
 Note 3: l dimensions below decimal point are rounded up.
 Note 4: Refer to page 1254 for accessory dimensions.

| Symbol | Head end trunnion type (TB) basic dimensions | | | | | | | | | | | | | | | | | | | | |
|----------------|--|------------|------|-----------|--------------|------|--------------------------|----|-----|------|------|-------------------------|------|-------|-----|----|-----|------|-------|----|----|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BL | BM | BN | BO | BR | BS | BU | C | CB | D | EE | F | FA |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 34 | 55 | 38 | 19 | 29 | 4 | 3.8 | 18 | 4.5 | 21.4 | M5 | 28 | 26 |
| $\phi 25$ | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 66 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 5.5 | 26.4 | Rc1/8 | 32 | 35 |
| $\phi 32$ | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 42 | 66 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 5.5 | 33.6 | Rc1/8 | 36 | 35 |
| $\phi 40$ | 25 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 50 | 80.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 5.5 | 41.6 | Rc1/8 | 45 | 35 |
| Symbol | Head end trunnion type (TB) basic dimensions | | | | | | | | | | | Installation dimensions | | | | | | | | | |
| Bore size (mm) | K | KK | LL | MB | MM | T | V | WF | X | XK | TD | TE | TH | TJ | TL | TM | TN | TR | TS | | |
| $\phi 20$ | 12 | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 9.5 | 8 | 9 | 29.5 | 152.5 | 8 | 30 | 46 | 70 | 90 | | |
| $\phi 25$ | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 10.5 | 10 | 11 | 39 | 164.5 | 12 | 40 | 64 | 80 | 100 | | |
| $\phi 32$ | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 10.5 | 10 | 11 | 39 | 164.5 | 12 | 40 | 64 | 80 | 100 | | |
| $\phi 40$ | 14 | M12 x 1.5 | 147 | M26 x 1.5 | 14 | 7 | 16 | 23 | 211 | 10.5 | 10 | 11 | 44 | 175.5 | 9.5 | 53 | 72 | 93 | 113 | | |
| Symbol | With switch | | | | With bellows | | | | | | | | | | | | | | | | |
| Bore size (mm) | GC | GD | RD | HD | b | d | l | | | | | | | | | | | | | | |
| $\phi 20$ | 4.0 | 3.0 | 8.0 | 7.0 | 30 | 30 | (Stroke length/3) + 6 | | | | | | | | | | | | | | |
| $\phi 25$ | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | |
| $\phi 32$ | 5.5 | 4.5 | 9.5 | 8.5 | 32 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | |
| $\phi 40$ | 7.0 | 6.5 | 11.5 | 10.5 | 34 | 46 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | |

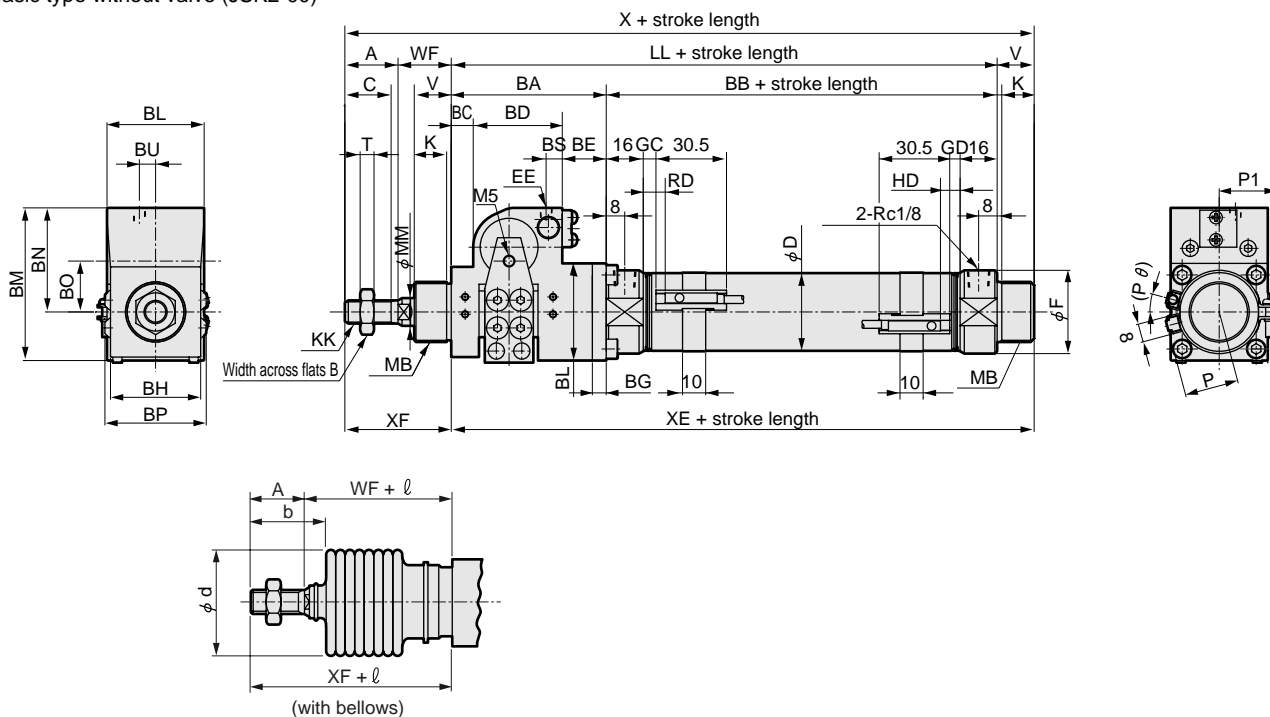
- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2**
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Brake cylinder (small bore size)
With brake

Dimensions



● basic type without valve (JSK2-00)



Note 1: Refer to page 1243 for T* and T*8 switch 2 color indicator, HD/RD dimensions and projection dimensions of the switch with preventive maintenance output.
 Note 1: Dimensions of each mounting style are same as JSK2-V (with valve). Refer to pages 1236 to 1241.
 Note 3: l dimensions below decimal point are rounded up.
 Note 4: Refer to page 1254 for accessory dimensions.

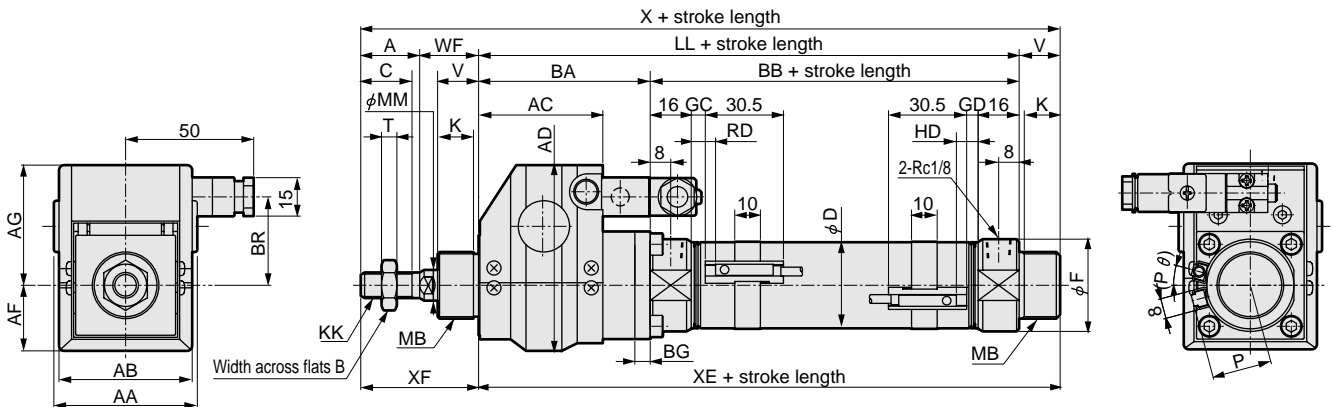
| Symbol | Basic type without valve (JSK2-00) basic dimensions | | | | | | | | | | | | | | | | | | |
|----------------|---|----|----|----|-----|------|----|----|----|----|------|------|----|------|----|-----|----|------|-------|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BH | BL | BM | BN | BO | BP | BS | BU | C | D | EE |
| φ 20 | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 34 | 55 | 38 | 19 | 38 | 4 | 3.8 | 18 | 21.4 | M5 |
| φ 25 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 43.8 | 7 | 7 | 20 | 26.4 | Rc1/8 |
| φ 32 | 23 | 17 | 67 | 69 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 43.8 | 7 | 7 | 20 | 33.6 | Rc1/8 |
| φ 40 | 25 | 19 | 74 | 73 | 8 | 48 | 18 | 8 | 50 | 50 | 80.5 | 55.5 | 25 | 52 | 7 | 7 | 22 | 41.6 | Rc1/8 |

| Symbol | With switch | | | | | | | | | | | | | | | | | | |
|----------------|-------------|----|------------|-----|-----------|----|---|----|----|-----|-----|----|-----|-----|------|------|------|------|-------|
| Bore size (mm) | F | K | KK | LL | MB | MM | T | V | WF | X | XE | XF | GC | GD | RD | HD | P | P1 | (Pθ)° |
| φ 20 | 28 | 12 | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 138 | 44 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 19.5 | 22 |
| φ 25 | 32 | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 22.0 | 18 |
| φ 32 | 36 | 14 | M10 x 1.25 | 136 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 25.5 | 15 |
| φ 40 | 45 | 14 | M12 x 1.5 | 147 | M26 x 1.5 | 14 | 7 | 16 | 23 | 211 | 163 | 48 | 7.0 | 6.5 | 11.5 | 10.5 | 28.3 | 29.5 | 12 |

| Symbol | With bellows | | |
|----------------|--------------|----|--------------------------|
| Bore size (mm) | b | d | ℓ |
| φ 20 | 30 | 30 | (Stroke length/3) + 6 |
| φ 25 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 32 | 32 | 46 | (Stroke length/3.25) + 7 |
| φ 40 | 34 | 46 | (Stroke length/3.25) + 7 |

Dimensions

- Brake section with cover (U) basic type (JSK2-00)



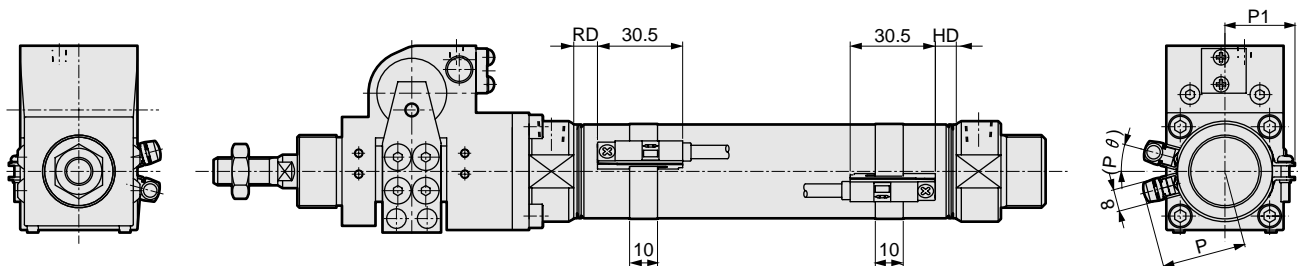
RD: Rod end max. sensitive position
 HD: Head end max. sensitive position

| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|----|----|------|-------|-------|------|----|----|----|----|------|----|------|----|----|------------|-----|
| Bore size (mm) | A | AA | AB | AC | AD | AF | AG | B | BA | BB | BG | BR | C | D | F | K | KK | LL |
| φ 20 | 20 | 51 | 47 | 39 | 58.5 | 19.5 | 39 | 13 | 58 | 66 | 5 | 29 | 18 | 21.4 | 28 | 12 | M8 x 1.0 | 124 |
| φ 25 | 23 | 56 | 52 | 48.5 | 72.5 | 25 | 47.5 | 17 | 67 | 69 | 6 | 34.5 | 20 | 26.4 | 32 | 14 | M10 x 1.25 | 136 |
| φ 32 | 23 | 56 | 52 | 48.5 | 72.5 | 25 | 47.5 | 17 | 67 | 69 | 6 | 34.5 | 20 | 33.6 | 36 | 14 | M10 x 1.25 | 136 |
| φ 40 | 25 | 69 | 65 | 56 | 85.75 | 28.75 | 57 | 19 | 74 | 73 | 8 | 39.5 | 22 | 41.6 | 45 | 14 | M12 x 1.5 | 147 |

| Symbol | With switch | | | | | | | | | | | | | |
|----------------|-------------|----|---|----|----|-----|-----|----|-----|-----|------|------|------|-------|
| Bore size (mm) | MB | MM | T | V | WF | X | XE | XF | GC | GD | RD | HD | P | (Pθ)° |
| φ 20 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 138 | 44 | 4.0 | 3.0 | 8.0 | 7.0 | 17.3 | 22 |
| φ 25 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 | 19.8 | 18 |
| φ 32 | M26 x 1.5 | 12 | 6 | 16 | 23 | 198 | 152 | 46 | 5.5 | 4.5 | 9.5 | 8.5 | 24.3 | 15 |
| φ 40 | M26 x 1.5 | 14 | 7 | 16 | 23 | 211 | 163 | 48 | 7.0 | 6.5 | 11.5 | 10.5 | 28.3 | 12 |

JSK2 series common (2 color indicator type, with preventive maintenance output with switch) dimensions

- JSK2-**-**-T₃²YH/V, T₃²YFH/V, T₃²YMH/V



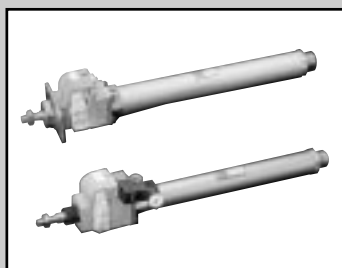
2 color indicator type, preventive maintenance output switch installation dimensions

| Symbol | 1 color indicator (T1, T8) 2 color indicator (T ₃ ² Y, T ₃ ² Y _M ^F) | | | | | | | | |
|----------------|--|-----|--|-----|------|-----------------------------------|---|------|-------------------|
| | RD Note 1 | | HD Note 2 | | P | | | P1 | (Pθ) _i |
| | T1, T ₃ ² Y, T ₃ ² Y _M ^F | T8 | T1, T ₃ ² Y, T ₃ ² Y _M ^F | T8 | T1 | T ₃ ² Y, T8 | T ₃ ² Y _M ^F | | |
| Bore size (mm) | | | | | | | | | |
| φ20 | 7.0 | 2.0 | 6.0 | 1 | 28.5 | 23.1 | 28.1 | 19.5 | 22 |
| φ25 | 8.5 | 3.5 | 7.5 | 2.5 | 31.0 | 25.6 | 30.6 | 22.0 | 18 |
| φ32 | 8.5 | 3.5 | 7.5 | 2.5 | 35.5 | 30.1 | 35.1 | 25.5 | 15 |
| φ40 | 10.5 | 5.5 | 9.5 | 4.5 | 39.5 | 34.1 | 39.1 | 29.5 | 12 |

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending

Brake cylinder (small bore size)
 With brake

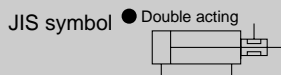
SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
 JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending



Brake cylinder Small bore size disassembled double acting/double acting with valve

JSM2/JSM2-V Series

● Bore size: ϕ 20, ϕ 30, ϕ 40



Specifications

| Descriptions | | JSM2 | | | JSM2-V | | |
|-----------------------------|------------------|---|-----------|-----------|--------------------------|-----------|-----------|
| Bore size | mm | ϕ 20 | ϕ 30 | ϕ 40 | ϕ 20 | ϕ 30 | ϕ 40 |
| Actuation | | Double acting | | | Double acting with valve | | |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure | MPa | 0.7 | | | 0.6 | | |
| Min. working pressure | Brake section | 0.35 | | | | | |
| | Cylinder section | 0.10 | | | | | |
| Withstanding pressure | MPa | 1.05 | | | | | |
| Ambient temperature | °C | -10 to 60 (no freezing) | | | -10 to 50 (no freezing) | | |
| Port size | Brake section | M5 | Rc1/8 | | M5 | Rc1/8 | |
| | Cylinder section | Rc1/8 | | | | | |
| Stroke tolerance | mm | $^{+1.0}_0$ (to 200) | | | $^{+1.2}_0$ (to 1000) | | |
| Working piston speed | mm/s | 50 to 500 | | | | | |
| Cushion | | No | | | | | |
| Lubrication | | Not required (when lubricating, use turbine oil Class 1 ISOVG 32) | | | | | |
| Stoppage accuracy | mm | ± 1.0 (300mm/s loadless) | | | | | |
| Holding force | N | 186 | 431 | 765 | 186 | 431 | 765 |
| Allowable energy absorption | J | 0.024 | 0.05 | 0.093 | 0.024 | 0.05 | 0.093 |

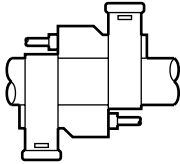
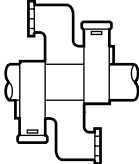
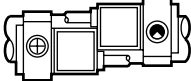
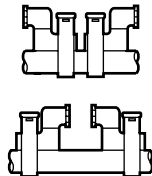
Note: This product can not absorb a large energy generated by an external load. We recommend to use an external shock absorber together.

Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm) |
|----------------|--|-------------------------|-------------------------|
| ϕ 20 | 20, 50, 75, 100, 125, 150, 175, 200, 250, 300 | 700 | 1 |
| ϕ 30 | | | |
| ϕ 40 | | | |

● For the types with switch, min. stroke length varies depending on the installation method. Refer to the table below.
 Custom stroke length is available per 1mm increment.

Min. stroke length of type with switch

| Rough sketch | Different surface installation | | Same surface installation | |
|--------------|---|---|--|---|
| |  |  |  |  |
| Descriptions | Grommet | Terminal box | Grommet | Terminal box |
| ϕ 20 | 15mm | 15mm | 30mm | 32mm installation A 80mm installation B |
| ϕ 30 | | | | |
| ϕ 40 | | | | |

Note 1: When one switch is installed, the min. stroke length is 10mm.

Switch specifications

| Descriptions | Proximity 2 wire | | | Proximity 3 wire | |
|--------------------------|--|---------------------------|------------------------------|--|------------------------------|
| | R1 | R2 | R2Y (2 color indicator type) | R3 | R3Y (2 color indicator type) |
| Applications | Programmable controller, relay, small solenoid valve | Programmable controller | | Programmable controller, relay, IC circuit, solenoid valve | |
| Output method | ————— | | | NPN output | |
| Power voltage | ————— | | | 4.5 to 28 VDC | |
| Load voltage/current | 85 to 265 VAC 5 to 100mA | 10 to 30 VDC 5 to 30mA | 30 VDC or less | | |
| | | | 200mA or less | 150mA or less | |
| Light | LED (ON lighting) | | Red/green LED (ON lighting) | LED (ON lighting) | Red/green LED (ON lighting) |
| Leakage current | 1mA or less with 100 VAC 2mA or less with 200 VAC | 1mA or less | 1.2mA or less | 10 μA or less | |
| Maximum shock resistance | 980m/s ² | | | | |

| Descriptions | Reed 2 wire | | | |
|--------------------------|---|--|---|---|
| | R0 | R4 | R5 | R6 |
| Applications | Relay, programmable controller | High capacity relay, solenoid valve | Programmable controller, relay, IC circuit (without indicator light), serial connection | Programmable controller (with DC self hold) |
| Power voltage | ————— | ————— | ————— | ————— |
| Load voltage/current | 12/24VDC, 5 to 50mA 110 VAC, 7 to 20mA 220 VAC, 7 to 10mA | 110 VAC, 20 to 200mA 220 VAC, 10 to 200mA | 5/12/24 VDC, 50mA or less 110 VAC, 20mA or less 220 VAC, 10mA or less | 24 VDC, 5 to 50mA |
| Light | LED ON lighting | Neon light OFF lighting | None | LED ON lighting |
| Leakage current | 0mA | 1mA or less | 0mA | 0.1mA or less |
| Maximum shock resistance | 294m/s ² | | | |

Note 1: Refer to Ending 1 for other switch specifications.

Valve electric specifications for brake

| Descriptions | JSM2-V-VALVE-KIT-[Voltage] | | |
|---------------------------|----------------------------|-------------------|--------|
| Rated voltage (V) | 100 VAC (50/60Hz) | 200 VAC (50/60Hz) | 24 VDC |
| Starting current (A) | 0.056/0.044 | 0.034/0.026 | 0.075 |
| Holding current (A) | 0.028/0.022 | 0.017/0.013 | |
| Power consumption (W) | 1.8/1.4 | 2.1/1.6 | 1.8 |
| Voltage fluctuation range | ±10% | | |
| Insulation class | Class B molded coil | | |

Note 1: 100/200 VAC coil is available for 110/220 VAC (60Hz).

Note 2: Refer to "Pneumatic Valves (No. CB-23SA)" about details of valves (P5136 Series).

Cylinder weight

| Descriptions, mounting style | Product weight when stroke length (S) = 0mm | | | | | Switch weight | | Valve weight | Additional weight per S = 10mm |
|------------------------------|---|----------------------|------------------|------------------|-----------------------|---------------|--------------|--------------|--------------------------------|
| | Basic type (00) | Axial foot type (LB) | Flange type (FA) | Clevis type (CA) | Trunnion type (TA/TB) | Grommet | Terminal box | | |
| φ 20 | 0.58 | 0.73 | 0.64 | 0.71 | 0.63 | 0.04 | 0.03 | 0.07 | 0.01 |
| φ 30 | 1.14 | 1.40 | 1.29 | 1.35 | 1.24 | 0.04 | 0.03 | | 0.014 |
| φ 40 | 1.91 | 2.17 | 2.06 | 2.13 | 2.07 | 0.04 | 0.03 | | 0.02 |

(Example) JSM2-V-LB-20-100-2-R0-D

Product weight when S = 0mm 0.73kg
 Additional weight when S = 100mm $0.01 \times \frac{100}{10} = 0.1\text{kg}$
 Weight of two switches 0.08kg
 Product weight $0.73\text{kg} + 0.1\text{kg} + 0.08\text{kg} = 0.9\text{kg}$

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending

Brake cylinder (small bore size)
 With brake

JSM2/JSM2-V Series

How to order

Without switch

JSM2-V - **LB** - **20** - **50** - **1** - **P** **I**

With switch

JSM2-V - **LB** - **20** - **50** - **1** - **R0** - **R** - **P** **I**

A Model no.

| | |
|--------------------|-------------------|
| Double acting JSM2 | With valve JSM2-V |
|--------------------|-------------------|

| Symbol | Descriptions | Double acting JSM2 | With valve JSM2-V |
|--------|--------------|--------------------|-------------------|
|--------|--------------|--------------------|-------------------|

| B Mounting style | | | |
|------------------|------------------------|---|---|
| 00 | Basic type | ● | ● |
| LB | Axial foot type | ● | ● |
| FA | Rod end flange type | ● | ● |
| CA | Eye bracket type | ● | ● |
| TA | Rod end trunnion type | ● | ● |
| TB | Head end trunnion type | ● | ● |

| C Bore size (mm) | | | |
|------------------|------|---|---|
| 20 | φ 20 | ● | ● |
| 30 | φ 30 | ● | ● |
| 40 | φ 40 | ● | ● |

| D Stroke length (mm) | | | |
|----------------------|----------------------|----------------------|--|
| Bore size | Stroke length Note 2 | Custom stroke length | |
| φ 20 | 1 to 700 | 1 mm increment | |
| φ 30 | 1 to 700 | | |
| φ 40 | 1 to 700 | | |

| E Valve voltage | | | |
|-----------------|-------------------|---|---|
| 1 | 100 VAC (50/60Hz) | ● | ● |
| 2 | 200 VAC (50/60Hz) | ● | ● |
| 3 | 24 VDC | ● | ● |

| F Switch model no. | | | | | | |
|--------------------|-------------------|--------------|-----------|-------------------------|-----------|---|
| Grommet type | Terminal box type | | Contact | Indicator | Lead wire | |
| | Standard type | Splash-proof | | | | |
| R1* | R1B | R1A | Proximity | 1 color indicator type | 2-wire | ● |
| R2* | R2B | R2A | | 2 color indicator type | | ● |
| R2Y* | R2YB | R2YA | Proximity | 1 color indicator type | 3-wire | ● |
| R3* | R3B | R3A | | 2 color indicator type | | ● |
| R3Y* | R3YB | R3YA | Reed | 1 color indicator type | 2-wire | ● |
| R0* | R0B | R0A | | Without indicator light | | ● |
| R4* | R4B | R4A | Reed | 1 color indicator type | 2-wire | ● |
| R5* | R5B | R5A | | Without indicator light | | ● |
| R6* | R6B | R6A | Reed | 1 color indicator type | 2-wire | ● |

| *Lead wire length | | | |
|-------------------|---------------|---|---|
| Blank | 1m (standard) | ● | ● |
| 3 | 3m (option) | ● | ● |
| 5 | 5m (option) | ● | ● |

| G Switch quantity | | | |
|-------------------|---|---|---|
| R | One on rod end | ● | ● |
| H | One on head end | ● | ● |
| D | Two | ● | ● |
| T | Three | ● | ● |
| 4 | Four (If more than 4 switches, indicate switch quantity.) | ● | ● |

| H Option | | | | |
|----------|---------------------------------------|--------------------------|--------------------------------|---|
| | | Max. ambient temperature | Instantaneous max. temperature | |
| J | Bellows | 100°C | 200°C | ● |
| L | Bellows | 250°C | 400°C | ● |
| M | Piston rod material (stainless steel) | | | ● |
| P | Same port position | | | ● |
| U | With brake cover | | | ● |

| I Accessory | | | |
|-------------|---|---|---|
| I | Rod eye | ● | ● |
| Y | Rod clevis (pin, washer and split pin attached) | ● | ● |
| B2 | Clevis bracket (pin and snap ring attached) | ● | ● |

B Mounting style

C Bore size

D Stroke length

E Valve voltage

F Switch model no.

G Switch quantity

H Option Note 3

I Accessory Note 3

Note on model no. selection

- Note 1: Low hydraulic type is available as custom order. In model no., JSM2-H and JSM2-VH are provided.
- Note 2: Refer to page 1244 for the min. stroke length with switch.
- Note 3: When the mounting style "TA" is selected, the type with brake cover "U" and the clevis bracket "B2" cannot be selected simultaneously as they will interfere.

<Example of model number>

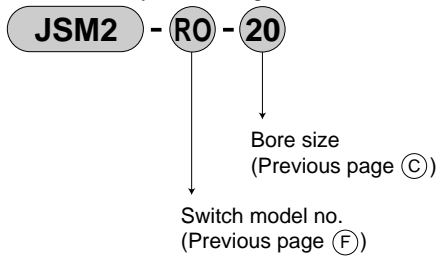
JSM2-V-LB-20-50-1-R0-R-PI

Model: Brake cylinder with valve

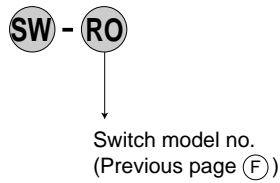
- A Model no. : With valve
- B Mounting style : Axial foot type
- C Bore size : φ 20mm
- D Stroke length : 50mm
- E Valve voltage : 100 VAC
- F Switch model no. : Reed switch R0
- G Switch quantity : One on rod end
- H Option : Same port position
- I Accessory : Rod eye

How to order switch

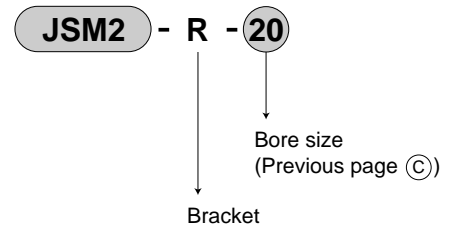
- Switch body + mounting bracket



- Only switch body



- Mounting bracket



- Only terminal box

· R * B

SW - **RB**

· R * A

SW - **RA**

How to order valve for brake



How to order mounting bracket

| Bore size (mm) | ϕ 20 | ϕ 30 | ϕ 40 |
|-----------------------|-----------|-----------|-----------|
| Axial foot type (LB) | M1-LB-20 | M1-LB-30 | M1-LB-30 |
| Flange type (FA) | M1-FA-20 | M1-FA-30 | M1-FA-30 |
| Eye bracket type (CA) | M1-CA-20 | M1-CA-30 | M1-CA-30 |
| Trunnion type (TA/TB) | M1-TA-20 | M1-TA-30 | M1-TA-40 |

Note 1: Mounting nut and toothed washer are attached to each mounting bracket.

Note 2: The foot type mounting bracket is supplied as a one-piece set.

| |
|---------------|
| SCP*2 |
| CMK2 |
| CMA2 |
| SCM |
| SCG |
| SCA2 |
| SCS |
| CKV2 |
| CA/OV2 |
| SSD |
| CAT |
| MDC2 |
| MVC |
| SMD2 |
| MSD* |
| FC* |
| STK |
| ULK* |
| JSK/M2 |
| JSG |
| JSC3 |
| USSD |
| USC |
| JSB3 |
| LMB |
| STG |
| STS/L |
| LCS |
| LCG |
| LCM |
| LCT |
| LCY |
| STR2 |
| UCA2 |
| HCM |
| HCA |
| SRL2 |
| SRG |
| SRM |
| SRT |
| MRL2 |
| MRG2 |
| SM-25 |
| CAC3 |
| UCAC |
| RCC2 |
| MFC |
| SHC |
| GLC |
| Ending |

Brake cylinder (small bore size)
With brake

JSM2/JSM2-V Series

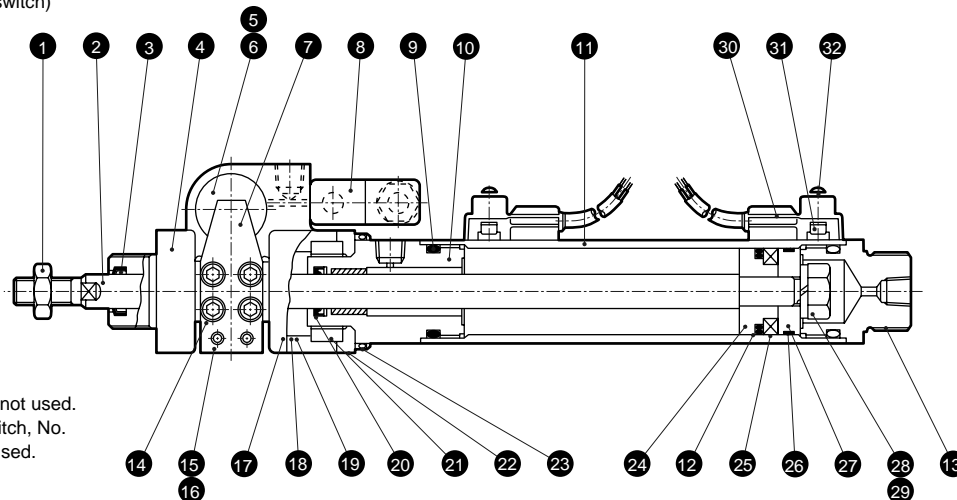
Mounting bracket material

| Mounting style | Material | Remarks |
|----------------|--------------|---------------|
| LB | Steel | Zinc chromate |
| FA | Steel | Zinc chromate |
| TA/TB | Carbon steel | Zinc chromate |
| CA | Steel | Zinc chromate |

Note: The mounting bracket is shipped with the product.

Internal structure and parts list

- JSM2 (double acting with switch)
- JSM2-V (with valve/with switch)



- Note: For JSM2, No. (8) is not used.
- Note: For types without switch, No. (31) to (33) are not used.


Part list

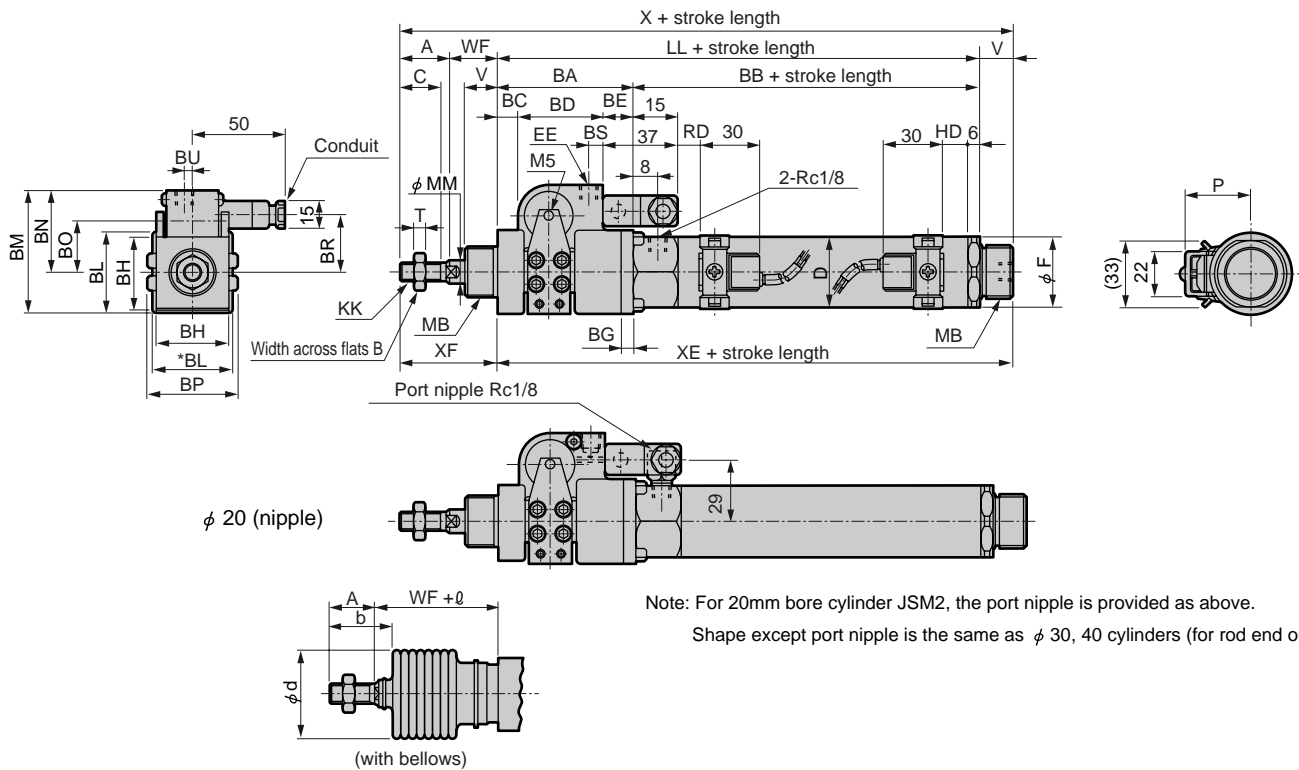
| No. | Parts name | Material | Remarks | No. | Parts name | Material | Remarks |
|-----|------------------------------|--|---------------------------|-------------|------------------------------|------------------|---------------|
| 1 | Rod nut | Steel | Zinc chromate | 17 | Brake shoe metal | Cast iron | |
| 2 | Piston rod | $\phi 20, \phi 30$ stainless steel $\phi 40$ carbon steel | Industrial chrome plating | 18 | Bush | DU bush | |
| 3 | Scraper | Nitrile rubber | | 19 | Ring | DU ring | |
| 4 | Brake main body | Cast iron | Zinc chromate | 20 | Rod packing seal | Nitrile rubber | |
| 5 | Brake piston | Bronze casting | | 21 | Fixing ring | Steel | Zinc chromate |
| 6 | Piston packing seal | Nitrile rubber | | 22 | Square flange | Steel | Zinc chromate |
| 7 | Lever | Steel | Zinc chromate | 23 | Hexagon socket head cap bolt | Steel | Blackening |
| 8 | Brake release valve | — | P5136MO | 24 | Piston A | Aluminum alloy | Chromate |
| 9 | Cylinder gasket | Nitrile rubber | | 25 | Magnet | Plastic | |
| 10 | Rod cover | Steel | Zinc chromate | 26 | Wear ring | Polyacetal resin | |
| 11 | Cylinder tube | Aluminum alloy | Alumite | 27 | Piston B | Aluminum alloy | Chromate |
| 12 | Piston packing seal | Nitrile rubber | | 28 | Piston nut | Steel | Zinc chromate |
| 13 | Head cover | Steel | Zinc chromate | 29 | Spring washer | Steel | Zinc chromate |
| 14 | Hexagon socket head cap bolt | Steel | Blackening | With switch | | | |
| 15 | Hexagon socket head cap bolt | Steel | Blackening | 30 | Switch body | — | |
| 16 | Brake spring | Steel | Blackening | 31 | Band | Stainless steel | |
| | | | | 32 | Pan head machine screw | Steel | Zinc chromate |

Repair parts list

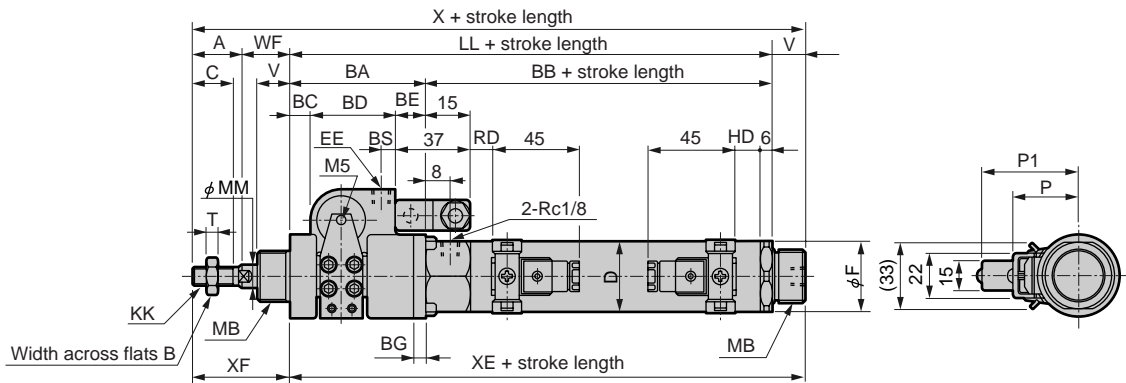
| No. and parts name | Kit No. | Repair parts number |
|--------------------|----------|---------------------|
| Bore size (mm) | | |
| $\phi 20$ | JSM2-20K | 3 9 12 |
| $\phi 30$ | JSM2-30K | 20 27 |
| $\phi 40$ | JSM2-40K | |

Dimensions

- basic type with R type switch (00) 



- basic type with R type terminal box (00)



RD: Rod end max. sensitive position

HD: Head end max. sensitive position

Note 1: Brake section exhaust port size is the same as EE dimensions.

Note 2: For φ 30, 40 cylinders, conduit of valve terminal box is provided on the opposite side of this figure.

Note 3: Refer to page 1254 for accessory dimensions.

Note 4: ℓ dimensions below decimal point are rounded up.

| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|------------|-----|-----------|-----|------|----|----|-----|-----|------|------|----|-------------|------|----|-----|--------------|----|-------|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BH | BL | BM | BN | BO | BP | BR | BS | BU | C | D | EE |
| φ 20 | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 34 | 55 | 38 | 19 | 38 | 29 | 4 | 3.8 | 18 | 25 | M5 |
| φ 30 | 23 | 17 | 67 | 72 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 35 | Rc1/8 |
| φ 40 | 25 | 19 | 74 | 74 | 8 | 48 | 18 | 8 | 50 | 50 | 80.5 | 55.5 | 25 | 52 | 39.5 | 7 | 7 | 22 | 45 | Rc1/8 |
| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | With switch | | | | With bellows | | |
| Bore size (mm) | F | KK | LL | MB | MM | T | V | WF | X | XE | XF | HD | P | P1 | RD | b | d | | | |
| φ 20 | 26 | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 138 | 44 | 7.5 | 28 | 48 | 7.5 | 30 | 30 | | | |
| φ 30 | 35 | M10 x 1.25 | 139 | M26 x 1.5 | 12 | 6 | 16 | 23 | 201 | 155 | 46 | 10.5 | 34 | 54 | 10.5 | 32 | 46 | | | |
| φ 40 | 46 | M12 x 1.5 | 148 | M26 x 1.5 | 14 | 7 | 16 | 23 | 212 | 164 | 48 | 11.5 | 39 | 59 | 11.5 | 34 | 46 | | | |
| Symbol | With bellows | | | | | | | | | | | | | | | | | | | |
| Bore size (mm) | ℓ | | | | | | | | | | | | | | | | | | | |
| φ 20 | (Stroke length/3) + 6 | | | | | | | | | | | | | | | | | | | |
| φ 30 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | | | | | | |
| φ 40 | (Stroke length/3.25) + 7 | | | | | | | | | | | | | | | | | | | |

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USD
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC

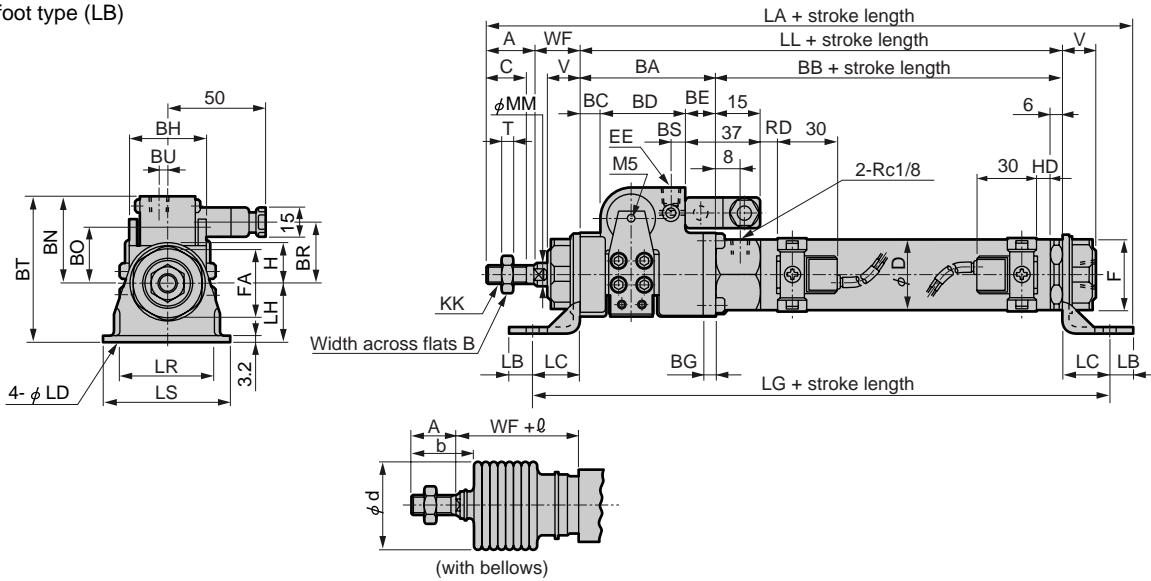
Ending

Brake cylinder (small bore size)
With brake

Dimensions



● Axial foot type (LB)



Note 1: Brake section exhaust port size is the same as EE dimensions.

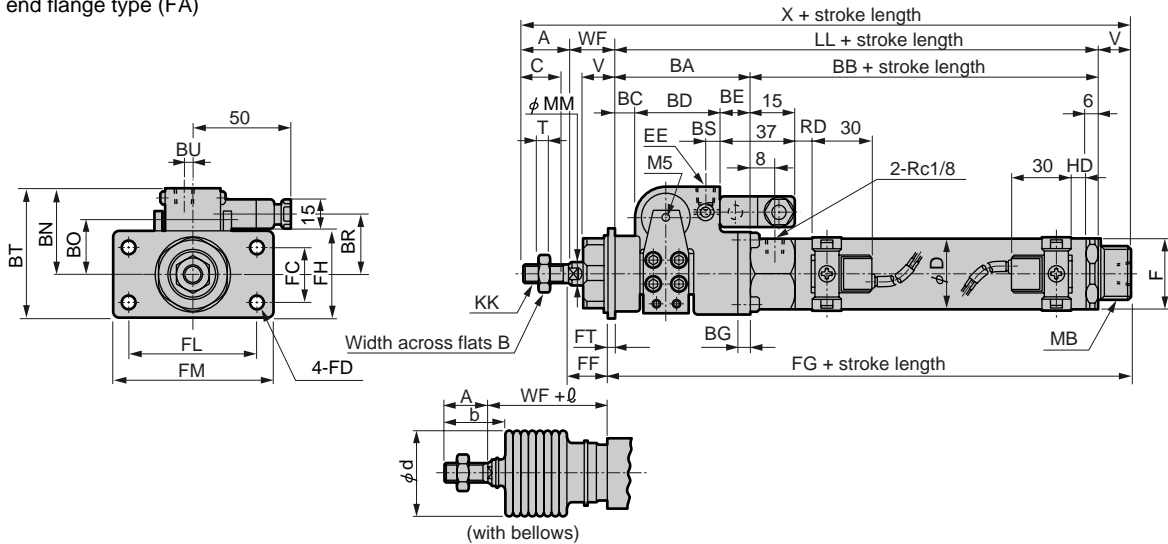
Note 3: \varnothing dimensions below decimal point are rounded up.

Note 2: Refer to page 1254 for accessory dimensions.

| Symbol | Axial foot type (LB) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|---------------------------------------|----|----|----|-----|------|----|----|----|------|------|----|------|----|-----|----|----|-------|----|----|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BH | BT | BN | BO | BR | BS | BU | C | D | EE | F | FA |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 63 | 38 | 19 | 29 | 4 | 3.8 | 18 | 25 | M5 | 26 | 26 |
| $\phi 30$ | 23 | 17 | 67 | 72 | 9.5 | 38.5 | 19 | 6 | 39 | 75 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 35 | Rc1/8 | 35 | 35 |
| $\phi 40$ | 25 | 19 | 74 | 74 | 8 | 48 | 18 | 8 | 50 | 85.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 45 | Rc1/8 | 46 | 35 |

| Symbol | Installation dimensions | | | | | | | | | | | | | | | With switch | | | With bellows | | |
|----------------|-------------------------|------------|-----|----|---|----|----|-----|----|----|----|-----|----|----|----|-------------|----|------|--------------|----|--------------------------|
| Bore size (mm) | H | KK | LL | MM | T | V | WF | LA | LB | LC | LD | LG | LH | LR | LS | HD | P | RD | b | d | \varnothing |
| $\phi 20$ | 15 | M8 x 1.0 | 124 | 10 | 5 | 14 | 24 | 196 | 10 | 18 | 6 | 160 | 25 | 30 | 44 | 7.5 | 28 | 7.5 | 30 | 30 | (Stroke length/3) + 6 |
| $\phi 30$ | 20 | M10 x 1.25 | 139 | 12 | 6 | 16 | 23 | 220 | 12 | 23 | 7 | 185 | 30 | 46 | 62 | 10.5 | 34 | 10.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| $\phi 40$ | 20 | M12 x 1.5 | 148 | 14 | 7 | 16 | 23 | 231 | 12 | 23 | 7 | 194 | 30 | 46 | 62 | 11.5 | 39 | 11.5 | 34 | 46 | (Stroke length/3.25) + 7 |

● Rod end flange type (FA)



Note 1: Brake section exhaust port size is the same as EE dimensions.

Note 3: \varnothing dimensions below decimal point are rounded up.

Note 2: Refer to page 1254 for accessory dimensions.

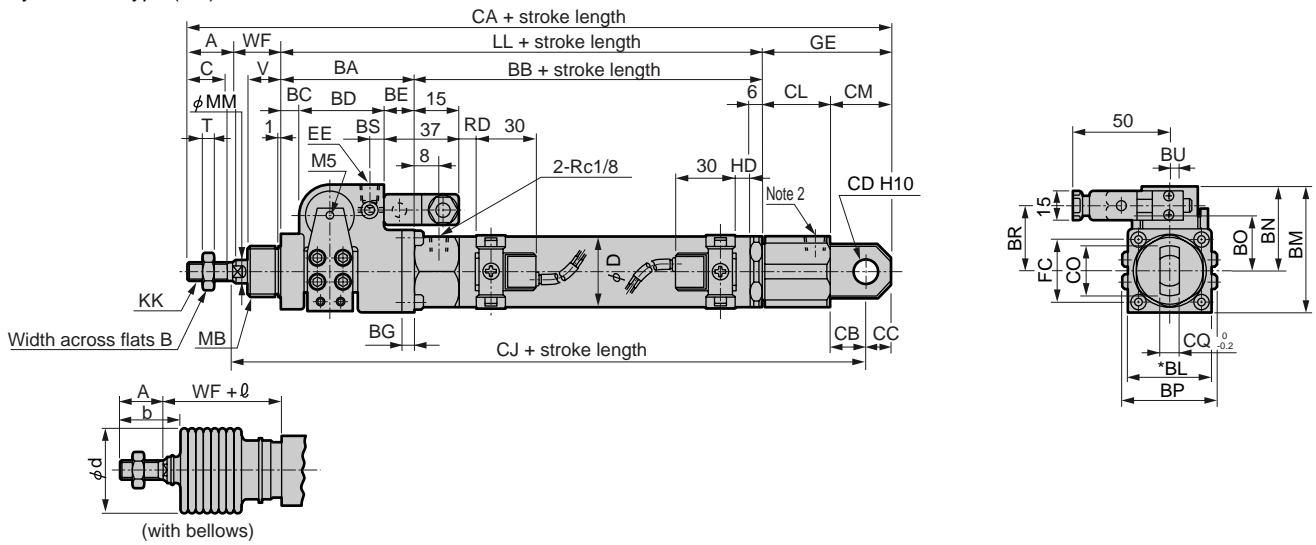
| Symbol | Rod end flange type (FA) basic dimensions | | | | | | | | | | | | | | | | | | | |
|----------------|---|----|----|----|-----|------|----|----|------|------|----|------|----|-----|----|----|-------|----|------------|-----|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BT | BN | BO | BR | BS | BU | C | D | EE | F | KK | LL |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 55 | 38 | 19 | 29 | 4 | 3.8 | 18 | 25 | M5 | 26 | M8 x 1.0 | 124 |
| $\phi 30$ | 23 | 17 | 67 | 72 | 9.5 | 38.5 | 19 | 6 | 67 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 35 | Rc1/8 | 35 | M10 x 1.25 | 139 |
| $\phi 40$ | 25 | 19 | 74 | 74 | 8 | 48 | 18 | 8 | 77.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 45 | Rc1/8 | 46 | M12 x 1.5 | 148 |

| Symbol | Installation dimensions | | | | | | | | | | | | | | | With switch | | | With bellows | | |
|----------------|-------------------------|----|---|----|----|-----|----|----|------|-------|----|----|----|-----|------|-------------|------|----|--------------|--------------------------|--|
| Bore size (mm) | MB | MM | T | V | WF | X | FC | FD | FF | FG | FH | FL | FM | FT | HD | P | RD | b | d | \varnothing | |
| $\phi 20$ | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 20 | 6 | 20.8 | 141.2 | 34 | 40 | 54 | 3.2 | 7.5 | 28 | 7.5 | 30 | 30 | (Stroke length/3) + 6 | |
| $\phi 30$ | M26 x 1.5 | 12 | 6 | 16 | 23 | 201 | 28 | 7 | 18.5 | 159.5 | 44 | 64 | 80 | 4.5 | 10.5 | 34 | 10.5 | 32 | 46 | (Stroke length/3.25) + 7 | |
| $\phi 40$ | M26 x 1.5 | 14 | 7 | 16 | 23 | 212 | 28 | 7 | 18.5 | 168.5 | 44 | 64 | 80 | 4.5 | 11.5 | 39 | 11.5 | 34 | 46 | (Stroke length/3.25) + 7 | |

Dimensions



● Eye bracket type (CA)

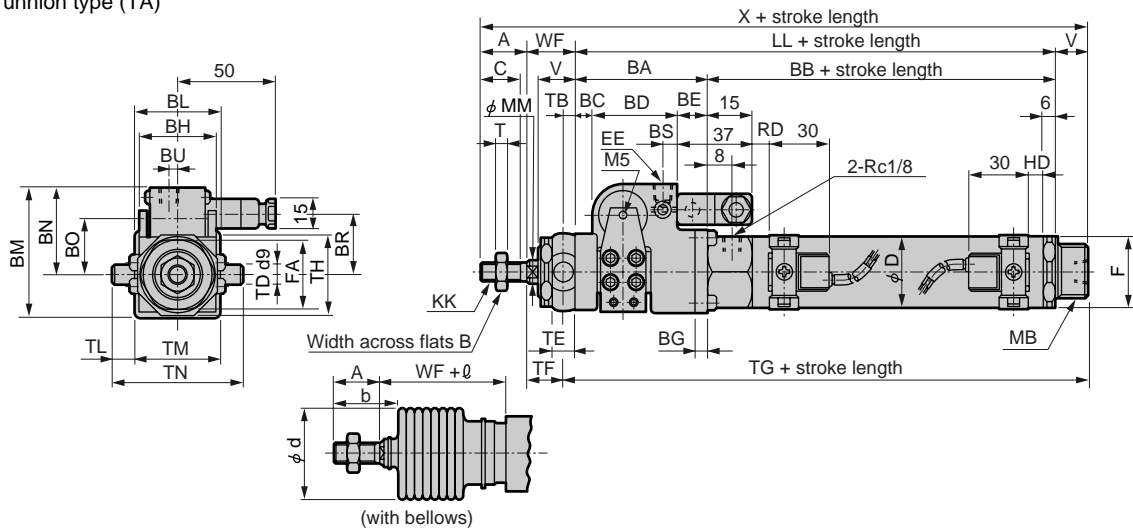


Note 1: Brake section exhaust port size is the same as EE dimensions. Note 2: This is not a piping port. Note 3: Refer to page 1254 for accessory dimensions. Note 4: l dimensions below decimal point are rounded up.

| Symbol | Eye bracket type (CA) basic dimensions | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|----|----|----|-----|------|----|----|----|------|------|----|------|------|----|-----|----|----|-------|----|----|------------|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BL | BM | BN | BO | BP | BR | BS | BU | C | D | EE | FC | GE | KK |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 34 | 55 | 38 | 19 | 38 | 29 | 4 | 3.8 | 18 | 25 | M5 | 26 | 55 | M8 x 1.0 |
| $\phi 30$ | 23 | 17 | 67 | 72 | 9.5 | 38.5 | 19 | 6 | 42 | 66 | 45.5 | 22 | 43.8 | 34.5 | 7 | 7 | 20 | 35 | Rc1/8 | 35 | 62 | M10 x 1.25 |
| $\phi 40$ | 25 | 19 | 74 | 74 | 8 | 48 | 18 | 8 | 50 | 80.5 | 55.5 | 25 | 52 | 39.5 | 7 | 7 | 22 | 45 | Rc1/8 | 35 | 62 | M12 x 1.5 |

| Symbol | Installation dimensions | | | | | | | | | | | | | With switch | | | With bellows | | | | | |
|----------------|-------------------------|-----------|----|---|----|----|-----|----|----|----|-----|----|----|-------------|----|----|--------------|----|------|----|----|--------------------------|
| Bore size (mm) | LL | MB | MM | T | V | WF | CA | CB | CC | CD | CJ | CL | CM | CN | CO | CQ | HD | P | RD | b | d | l |
| $\phi 20$ | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 223 | 14 | 10 | 10 | 193 | 31 | 24 | 8 | 22 | 8 | 7.5 | 28 | 7.5 | 30 | 30 | (Stroke length/3) + 6 |
| $\phi 30$ | 139 | M26 x 1.5 | 12 | 6 | 16 | 23 | 247 | 18 | 12 | 12 | 212 | 32 | 30 | 7 | 26 | 10 | 10.5 | 34 | 10.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| $\phi 40$ | 148 | M26 x 1.5 | 14 | 7 | 16 | 23 | 258 | 18 | 12 | 12 | 221 | 32 | 30 | 7 | 26 | 10 | 11.5 | 39 | 11.5 | 34 | 46 | (Stroke length/3.25) + 7 |

● Rod end trunnion type (TA)



Note 1: Brake section exhaust port size is the same as EE dimensions. Note 2: Refer to page 1254 for accessory dimensions. Note 3: l dimensions below decimal point are rounded up.

| Symbol | Rod end trunnion type (TA) basic dimensions | | | | | | | | | | | | | | | | | | | | |
|----------------|---|----|----|----|-----|------|----|----|----|----|------|------|----|------|----|-----|----|----|-------|----|----|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BH | BL | BM | BN | BO | BR | BS | BU | C | D | EE | F | FA |
| $\phi 20$ | 20 | 13 | 58 | 66 | 9 | 30 | 19 | 5 | 29 | 34 | 55 | 38 | 19 | 29 | 4 | 3.8 | 18 | 25 | M5 | 26 | 26 |
| $\phi 30$ | 23 | 17 | 67 | 72 | 9.5 | 38.5 | 19 | 6 | 39 | 42 | 66 | 45.5 | 22 | 34.5 | 7 | 7 | 20 | 35 | Rc1/8 | 35 | 35 |
| $\phi 40$ | 25 | 19 | 74 | 74 | 8 | 48 | 18 | 8 | 50 | 50 | 80.5 | 55.5 | 25 | 39.5 | 7 | 7 | 22 | 45 | Rc1/8 | 46 | 35 |

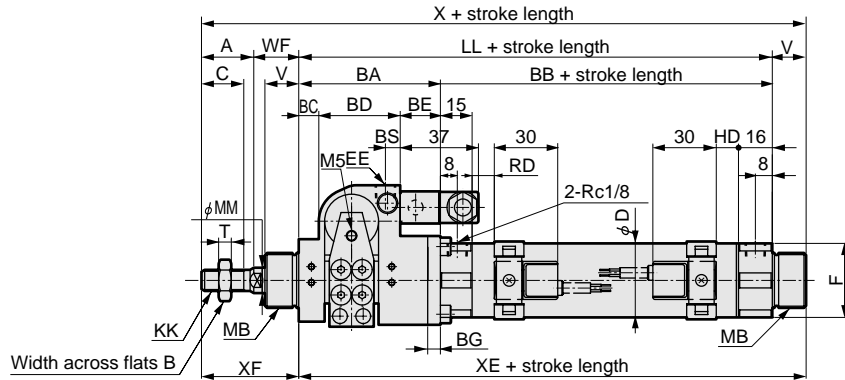
| Symbol | Installation dimensions | | | | | | | | | | | | | With switch | | | With bellows | | | | | | |
|----------------|-------------------------|-----|-----------|----|---|----|----|-----|-----|----|----|------|-------|-------------|-----|----|--------------|------|----|------|----|----|--------------------------|
| Bore size (mm) | KK | LL | MB | MM | T | V | WF | X | TB | TD | TE | TF | TG | TH | TL | TM | TN | HD | P | RD | b | d | l |
| $\phi 20$ | M8 x 1.0 | 124 | M18 x 1.5 | 10 | 5 | 14 | 24 | 182 | 4.5 | 8 | 9 | 19.5 | 142.5 | 29.5 | 8 | 30 | 46 | 7.5 | 28 | 7.5 | 30 | 30 | (Stroke length/3) + 6 |
| $\phi 30$ | M10 x 1.25 | 139 | M26 x 1.5 | 12 | 6 | 16 | 23 | 201 | 5.5 | 10 | 11 | 17.5 | 160.5 | 39 | 12 | 40 | 64 | 10.5 | 34 | 10.5 | 32 | 46 | (Stroke length/3.25) + 7 |
| $\phi 40$ | M12 x 1.5 | 148 | M26 x 1.5 | 14 | 7 | 16 | 23 | 212 | 5.5 | 10 | 11 | 17.5 | 169.5 | 44 | 9.5 | 53 | 72 | 11.5 | 39 | 11.5 | 34 | 46 | (Stroke length/3.25) + 7 |

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2**
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Brake cylinder (small bore size)
With brake

Dimensions

- Same port position (P) basic type (JSM2-00)

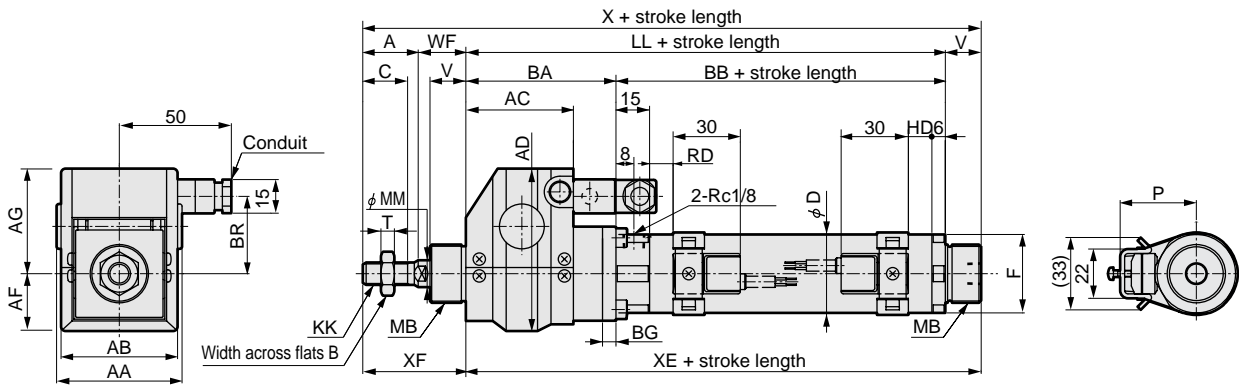


RD: Rod end max. sensitive position
 HD: Head end max. sensitive position

| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|----|----|----|-----|------|----|----|----|----|----|-------|----|------------|-----|-----------|----|---|
| Bore size (mm) | A | B | BA | BB | BC | BD | BE | BG | BS | C | D | EE | F | KK | LL | MB | MM | T |
| φ 20 | 20 | 13 | 58 | 76 | 9 | 30 | 19 | 5 | 4 | 18 | 25 | M5 | 26 | M8 x 1.0 | 134 | M18 x 1.5 | 10 | 5 |
| φ 30 | 23 | 17 | 67 | 82 | 9.5 | 38.5 | 19 | 6 | 7 | 20 | 35 | Rc1/8 | 35 | M10 x 1.25 | 149 | M26 x 1.5 | 12 | 6 |
| φ 40 | 25 | 19 | 74 | 84 | 8 | 48 | 18 | 8 | 7 | 22 | 45 | Rc1/8 | 46 | M12 x 1.5 | 158 | M26 x 1.5 | 14 | 7 |

| Symbol | With switch | | | | | | |
|----------------|-------------|----|-----|-----|----|------|------|
| Bore size (mm) | V | WF | X | XE | XF | HD | RD |
| φ 20 | 14 | 24 | 192 | 138 | 44 | 7.5 | 7.5 |
| φ 30 | 16 | 23 | 211 | 155 | 46 | 10.5 | 10.5 |
| φ 40 | 16 | 23 | 222 | 164 | 48 | 11.5 | 11.5 |

- Brake section with cover (U) basic type (JSM2-00)



| Symbol | Basic type (00) basic dimensions | | | | | | | | | | | | | | | | | | |
|----------------|----------------------------------|----|----|------|-------|-------|------|----|----|----|----|------|----|----|----|------------|-----|-----------|----|
| Bore size (mm) | A | AA | AB | AC | AD | AF | AG | B | BA | BB | BG | BR | C | D | F | KK | LL | MB | MM |
| φ 20 | 20 | 51 | 47 | 39 | 58.5 | 19.5 | 39 | 13 | 58 | 66 | 5 | 29 | 18 | 25 | 26 | M8 x 1.0 | 124 | M18 x 1.5 | 10 |
| φ 30 | 23 | 56 | 52 | 48.5 | 72.5 | 25 | 47.5 | 17 | 67 | 72 | 6 | 34.5 | 20 | 35 | 35 | M10 x 1.25 | 139 | M26 x 1.5 | 12 |
| φ 40 | 25 | 69 | 65 | 56 | 85.75 | 28.75 | 57 | 19 | 74 | 74 | 8 | 39.5 | 22 | 45 | 46 | M12 x 1.5 | 148 | M26 x 1.5 | 14 |

| Symbol | With switch | | | | | | | | |
|----------------|-------------|----|----|-----|-----|----|------|----|------|
| Bore size (mm) | T | V | WF | X | XE | XF | HD | P | RD |
| φ 20 | 5 | 14 | 24 | 182 | 138 | 44 | 7.5 | 28 | 7.5 |
| φ 30 | 6 | 16 | 23 | 201 | 155 | 46 | 10.5 | 34 | 10.5 |
| φ 40 | 7 | 16 | 23 | 212 | 164 | 48 | 11.5 | 39 | 11.5 |

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending

Brake cylinder (small bore size)
 With brake

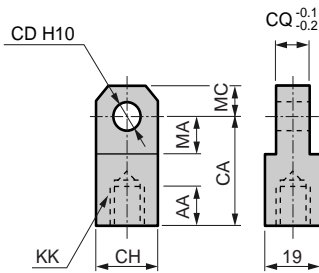
JSK2/JSM2 Series

JSK2/JSM2 common accessory dimensions (rod eye/clevis/bracket/pin)

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD*
- FC*
- STK
- ULK*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

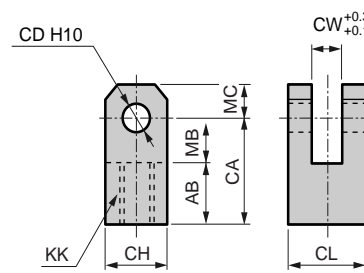
● Rod eye (I)

Material: Steel



● Rod clevis (Y)

Material: Steel



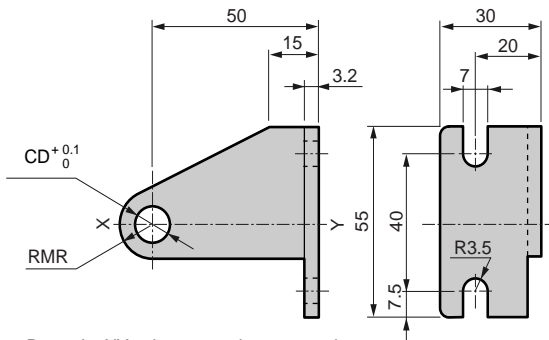
A pin, washer and split pin are attached.

| Model no. | Applicable bore size (mm) | AA | CA | CD | CH | CQ | KK | MA | MC | Weight (g) |
|-----------|---------------------------|----|----|------------------------|----|----|------------|----|----|------------|
| M1-I-20 | 20 | 14 | 30 | 10 ^{+0.058/0} | 19 | 8 | M8 x 1.0 | 13 | 10 | 60 |
| M1-I-30 | 25, 30, 32 | 16 | 36 | 12 ^{+0.070/0} | 25 | 10 | M10 x 1.25 | 16 | 12 | 106 |
| M1-I-40 | 40 | 16 | 36 | 12 ^{+0.070/0} | 25 | 10 | M12 x 1.5 | 16 | 12 | 100 |

| Model no. | Applicable bore size (mm) | AB | CA | CD | CH | CL | CW | KK | MB | MC | Weight (g) |
|-----------|---------------------------|----|----|------------------------|----|----|----|------------|----|----|------------|
| M1-Y-20 | 20 | 17 | 30 | 10 ^{+0.058/0} | 19 | 19 | 8 | M8 x 1.0 | 13 | 10 | 99 |
| M1-Y-30 | 25, 30, 32 | 20 | 36 | 12 ^{+0.070/0} | 25 | 25 | 10 | M10 x 1.25 | 16 | 12 | 197 |
| M1-Y-40 | 40 | 20 | 36 | 12 ^{+0.070/0} | 25 | 25 | 10 | M12 x 1.5 | 16 | 12 | 193 |

● Clevis bracket (B2)

Material: Steel



Note: Regard a XY axis symmetric as a couple.

| Model no. | Applicable model | Applicable bore size (mm) | CD | MR | Weight (g) |
|-------------|------------------|---------------------------|----|----|------------|
| M1-B2-20-CC | JSK2-CC | 20, 25 | 8 | 8 | 145 |
| M1-B2-30-CC | | 32 | 10 | 11 | 163 |
| M1-B2-40-CC | | 40 | 12 | 11 | 170 |
| M1-B2-20-CA | JSK2-CA | 20 | 10 | 11 | 158 |
| M1-B2-30-CA | JSM2-CA | 25, 32, 40 | 12 | 11 | 162 |
| M1-B2-20-TA | JSK2-TA/TB | 20 | 8 | 8 | 132 |
| M1-B2-30-TA | JSM2-TA/TB | 25, 32, 40 | 10 | 11 | 142 |

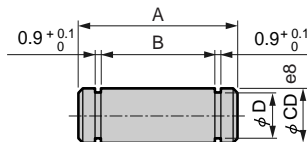
Note 1: Snap ring and pin are attached.

(Not attached for trunnion type)

Note 2: Not compatible with mounting style TA with brake section cover (U).

● Pin for clevis bracket (P1) (P2)

Material: Steel



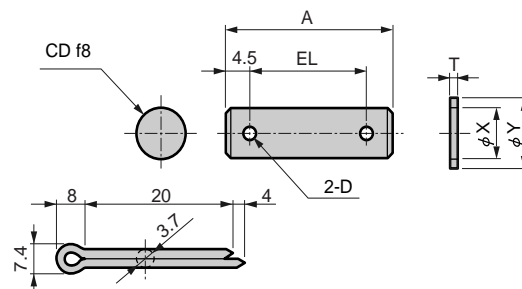
| Model no. | Applicable model and Applicable bore size (mm) | A | B | CD | D | Uses. Snap ring | Weight (g) |
|-----------|--|----|----|----|---|-----------------|------------|
| M1-P1-20 | JSK2-CC-20/25 | 33 | 28 | 8 | 7 | E type 7 | 13 |
| M1-P1-30 | JSK2-CC-32 | 33 | 28 | 10 | 9 | E type 9 | 21 |
| M1-P1-40 | JSK2-CC-40 | 37 | 32 | 12 | 9 | E type 9 | 32 |
| M1-P2-20 | JSK2-CA-20 JSM2-CA-20 | 25 | 20 | 10 | 9 | E type 9 | 16 |
| M1-P2-30 | JSK2-CA-25/32/40 JSM2-CA-30/40 | 27 | 22 | 12 | 9 | E type 9 | 24 |

Note: For bracket type, pin and snap ring are attached to the product.

(Not attached for trunnion type)

● Pin for rod clevis (P)

Material: Steel



| Model no. | Applicable bore size (mm) | A | D | CD | EL | T | X | Y | Weight (g) |
|-----------|---------------------------|----|---|----------------------------|----|-----|------|----|------------|
| M1-P-20 | 20 | 37 | 4 | 10 ^{-0.013/0.035} | 28 | 2 | 10.5 | 18 | 29 |
| M1-P-30 | 25, 30, 32, 40 | 46 | 4 | 12 ^{-0.016/0.043} | 37 | 2.5 | 13 | 21 | 50 |

Note: For rod clevis type, pin, washer and split pin are attached to the product.