Succeeding the outstanding DNA of the JSC3.

The JSC3 Series brake mechanism popular for its high stopping accuracy, powerful holding force and superb reliability have been incorporated into the new environmentally friendly cylinder SCG Series. This new tie-rod type JSG cylinder with brakes has been freed of harmful substances and is compliant with RoHS Directives. (ϕ 40 to ϕ 100)

Reliable and accomplished brake mechanism

The same mechanism as the popular JSC3 Series has been adopted for the brake section to ensure a reliable durability.

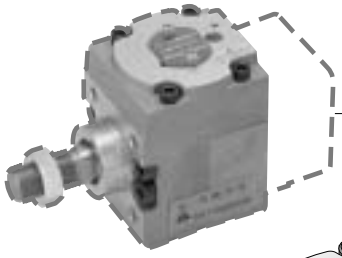
Powerful rod holding force

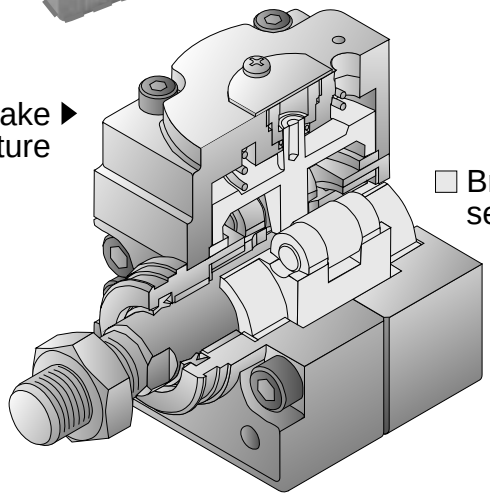
Our original lock mechanism has a rod holding force approximately double the thrust (at working pressure 0.4MPa). The brake stopping accuracy is also high at $\pm$1mm (300mm/s at no load).

Evolving into a smaller, easier-to-use cylinder.

JSG Series
Tie-rod cylinder with brakes

Compact and reliable brake section



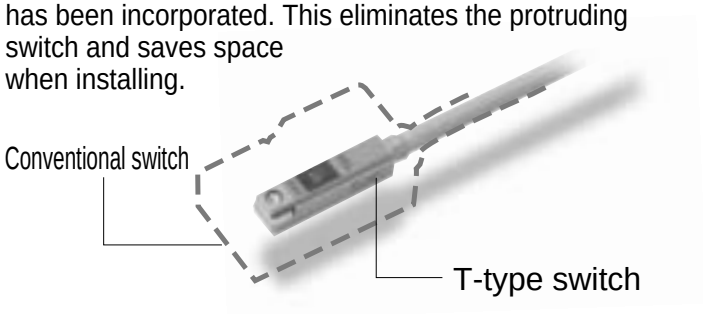


Light weight

The weight has been reduced an average 17% compared to the conventional cylinder.

Built-in compact switch

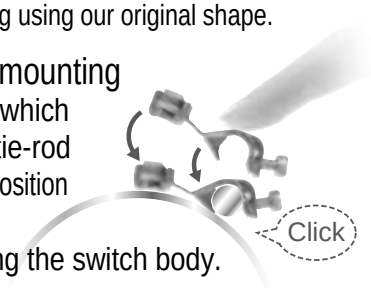
A T-type switch, smaller than the conventional type, has been incorporated. This eliminates the protruding switch and saves space when installing.



New switch mounting method

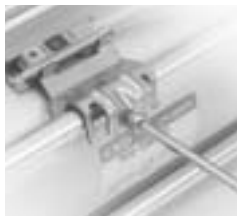
The switch can be easily and smoothly fixed with the switch fitting using our original shape.

(1) Easy switch mounting
The mechanism which sandwiches the tie-rod allows the switch position to be adjusted without supporting the switch body.



(2) Complete fixing with screw
Fixing is completed by adjusting the switch position and then tightening the screw.

The T-type switch in the rail can be finely adjusted.



Ecological products

All substances which could adversely affect the environment, including lead and hexavalent chrome, have been eliminated from the cylinder body and cylinder switch.
This product complies with the RoHS Directive issued by the EU.

Magnet provided as standard

Switches can be additionally mounted on all products.

Space saving

The overall length of the cylinder has been shortened compared to the conventional JSC3 thereby reducing the installation space.

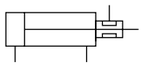
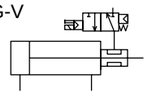
Uniform white color

White has been adopted for the product surface color to match various devices.

JSG Series products

Series variation		Bore size					Stroke length (mm)
		φ40	φ50	φ63	φ80	φ100	25～500
Standard type	JSG	●	●	●	●	●	●
With valve for brake release	JSG-V	●	●	●	●	●	●

●: Standard, ◎: Option, ○: Custom order, : Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm)												Min. stroke length (mm)		Max. stroke length (mm)	Available stroke length (mm)	Custom stroke length (mm)	Mounting style										Cushion		Option		Accessory							Switch	Page
			25	50	75	100	150	200	250	300	350	400	450	500						Basic type	Axial foot type	Rod end flange type	Head end flange type	Eye bracket type	Clevis bracket type	Rod end trunnion type	Head end trunnion type	Center trunnion type	Both sides air cushioned	Both sides rubber cushioned	Bellows (60 ℃)	Piston rod material stainless steel	Rod eye	Rod clevis	Eye bracket	Clevis bracket	Eye bracket	Trunnion type No. 2 bracket		
																				00	LB	FA	FB	CA	CB	TA	TB	TC	B	D	J	M	I	Y	B1	B2	B3	B4		
Double acting single rod type	JSG 	ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1		600 700 800	800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	1266
Double acting, with valve for brake release	JSG-V 	ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1		600 700 800	800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●	●		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	1266

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.

Tie rod type with brake JSG 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 safely 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 cylinder has oil-free specifications. Do not lubricate this cylinder. Otherwise braking faults may occur. Brake malfunction is caused.

■ Holding force (max. 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 the stoppage accuracy and the overrun length during the 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. Maximum and minimum width of overrun distance is the stoppage 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 $+\alpha$.
- 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.

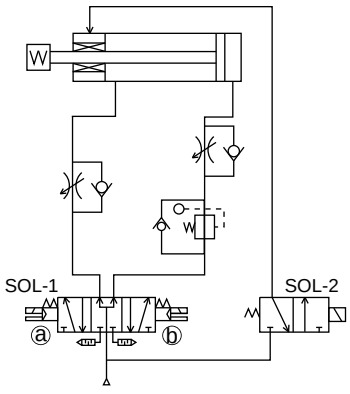
⚠ WARNING

■ Basic circuit
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



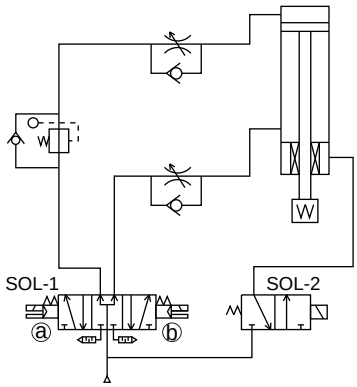
ⓐSOL-1ⓑ		SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Return
OFF	ON	ON	Advance

Design & Selection

● 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

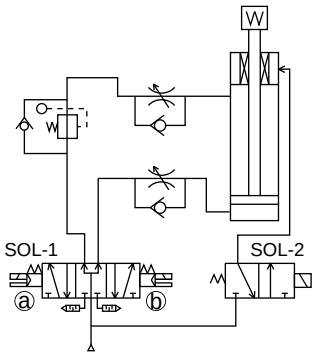


ⓐ SOL-1 ⓑ		SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Down
OFF	ON	ON	Up

● 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



ⓐ SOL-1 ⓑ		SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Down
OFF	ON	ON	Up

⚠ CAUTION

■ Install a flow control valve on the cylinder.

Install a flow control valve on the cylinder.
Use within the piston speed range of each series.

■ 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
	JSG
50mm or less	20% of thrust
50mm to 100mm	40% of thrust
100mm and over	60% of thrust

● Solenoid valve for brake selection

Stoppage accuracy and overrun length changes depending on the responsiveness of the solenoid valve for brake. Refer to the JSG-V brake valve electric specifications and select from the CKD pneumatic valve 4KB2 Series. Couple the valve directly to the brake port to improve stopping accuracy.

● Using PC (PLC)

If a PLC is used as the electric control unit for the solenoid valve for brakes, the stopping accuracy will drop because of the scan time (operation process time). When using a PLC, do not assemble the solenoid valve for brake into the PLC circuit.

■ Do not apply the large lord when brake stopping. Stop position may change.

⚠ CAUTION

■ Either the rubber cushion type or air cushion type cushion mechanism is assembled into the cylinder. The purpose of the air cushion is to absorb the kinetic energy that the piston has by using the air's compressibility, and prevent the piston and cover from colliding at the stroke end. Thus, the cushion is not used to decelerate the piston near the stroke end. The following table shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds these values, or if bouncing caused by the air compressibility is to be avoided, consider using another cushioning unit.

Bore size (mm)	Rubber cushion	Air cushion	
	Allowable energy absorption J	Valid cushion length (mm)	Allowable energy absorption J
ϕ40	0.9	8.6	3.7
ϕ50	1.6	13.4	8.0
ϕ63	1.6	13.4	14.4
ϕ80	3.3	15.4	25.4
ϕ100	5.8	15.4	45.6

Kinetic energy (J) =

$\frac{1}{2}$ X weight (kg) X {speed(m/s)}^{2}

(Note) Calculating of kinetic energy
Cylinder average speed is obtained with $Va = \frac{L}{T}$.

Va : Average speed (m/s)
L : Cylinder stroke (m)
T : Operation time (s)

In respect to this, the cylinder speed just before entering the cushion can be obtained with the following simple expression.

$Vm = \frac{L}{T} \times (1 + 1.5 \times \frac{\omega}{100})$
Vm : Speed just before rush-into the cushion (m/s)
ω : Cylinder load ratio (%)
Use this Vm value as speed to calculate kinetic energy.

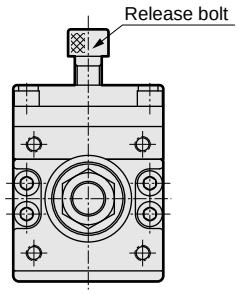
Installation & Adjustment

⚠ 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 one side of the cylinder when releasing brakes.

■ Manual brake release method



Note: Method of brake release
- The brakes will be released when a release bolt is screwed into the female threads (brake release port) at the top of the brakes. (Remove the release bolt during normal use.)

Release bolt size

Bore size	Bolt screw diameter	Bolt length		Adequate screw -in volume
		JSG	JSG-V	
ϕ40	M12 x 1.75	16 and over	40 and over	3 rotations or less
ϕ50	M12 x 1.75	16 and over	40 and over	4 rotations or less
ϕ63	M14 x 2	16 and over	40 and over	4 rotations or less
ϕ80	M16 x 2	20 and over	40 and over	4.5 rotations or less
ϕ100	M18 x 2.5	20 and over	50 and over	5 rotations or less

■ 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.

Installation & Adjustment

⚠ WARNING

■ With the JSG Series, 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, follow the appropriate screw in amount of the release bolt shown below.

Bore size	No. of bolt rotations
ϕ40	3 rotations or less
ϕ50	4 rotations or less
ϕ63	4 rotations or less
ϕ80	4.5 rotations or less
ϕ100	5 rotations or less

■ 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.

⚠ 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.

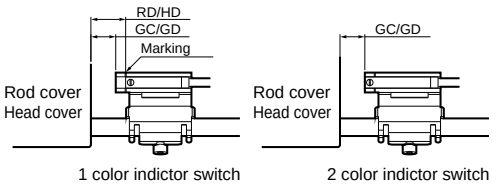
■ Speed changes are large during the acceleration range, compared to during the cushion stroke and when starting operation, so dispersion in the stop position increases. Accuracy in specifications may therefore not be attained in step operation with a short stroke from the starting position to the next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

■ Load to 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.

Note for switch installation

■ Assembling the switch bracket
When assembling the cylinder onto the switch bracket, fit the tie rod to be installed into the bracket, and move the switch so that it is at the center of the operation range (ON range). Then, tighten the fixing bolts with a tightening torque of 0.6 to 0.9N·m. The bracket position (GC, GD) and switch positions (RD, HD) at which the max. sensitivity is attained at both stroke ends are shown in the dimension drawings.



1 color indictor switch　　2 color indictor switch

■ Shifting the switch position in the stroke direction
The 1 color indicator switch can be finely adjusted ±3 mm from the default maximum sensitivity installation position. If the adjustment range exceeds 3 mm, or when adjusting the 2 color indicator switch, loosen fixing bolt of switch mounting bracket and move the bracket position.

■ Switch fixing
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, T2J, T2Y, T3Y. T2YF, T3YF, T2YM, or T3YM with a tightening torque of 0.5 to 0.7 N·m.
The switch bracket rail has a mark at 4 mm from the rail end. Use this as a guide for the mounting position when replacing the switch.
The switch rail markings are set to the default switch max. sensitivity position. The maxi. sensitivity changes when the switch type is changed or when the band is changed, so adjust the position accordingly.

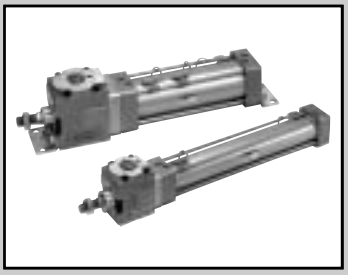
During Use & Maintenance

⚠ 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.



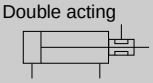
Tie rod cylinder with brake Double acting single rod type/Double acting, with valve for brake release

JSG/JSG-V Series

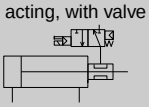
● Bore size: ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol

● Double acting



● Double acting, with valve for brake release



RoHS CAD

Specifications

Descriptions			JSG					JSG-V				
Bore size		mm	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation			Double acting					Double acting with valve				
Working fluid			Compressed air					Compressed air				
Max. working pressure		MPa	1.0					0.7				
Min. working pressure		MPa	0.3					0.3				
Withstanding pressure		MPa	1.6					1.6				
Ambient temperature		℃	-10 to 60 (no freezing)					-10 to 60 (no freezing)				
Port size	Brake section		Rc1/8		Rc1/4		Rc3/8	Rc1/8		Rc1/4		
	Cylinder section		Rc1/4		Rc3/8		Rc1/2	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	Rubber cushioned		$^{+1.4}_{0}$ (To 1000), $^{+1.8}_{0}$ (to 1500)					$^{+1.4}_{0}$ (To 1000), $^{+1.8}_{0}$ (to 1500)				
mm	Air cushioned		$^{+1.0}_{0}$ (to 360), $^{+1.4}_{0}$ (to 1000), $^{+1.8}_{0}$ (to 1500)					$^{+1.0}_{0}$ (to 360), $^{+1.4}_{0}$ (to 1000), $^{+1.8}_{0}$ (to 1500)				
Working piston speed		mm/s	50 to 1000 (Use within the allowable energy absorption.)					50 to 1000 (Use within the allowable energy absorption.)				
Cushion			Selection of air cushion and rubber cushion possible					Selection of air cushion and rubber cushion possible				
Effective air cushion length		mm	8.6	13.4	13.4	15.4	15.4	8.6	13.4	13.4	15.4	15.4
Lubrication			Not required (when lubricating, use turbine oil Class 1 ISO VG32)					Not required (when lubricating, use turbine oil Class 1 ISO VG32)				
Stoppage accuracy		mm	±1 (300mm/s loadless)					±1 (300mm/s loadless)				
Holding force		N	980	1569	2451	3922	6178	980	1569	2451	3922	6178
Allowable energy	Rubber cushioned		0.9	1.6	1.6	3.3	5.8	0.9	1.6	1.6	3.3	5.8
absorption J	Air cushioned		3.7	8.0	14.4	25.4	45.6	3.7	8.0	14.4	25.4	45.6

Valve electric specifications for brake

Descriptions	Specifications		
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	0.075
Power consumption (W)	1.8/1.4		1.8
Insulation class	Class B (molded coil)		

Note 1: 100/200 VAC coil is available for 110/220 VAC (60Hz).
Note 2: Specifications of valves are the same as the standard products 4KB2. Refer to "Pneumatic Valves (CB-23SA)" for details.
The order model will differ, so contact CKD for more information.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ40	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	800	1
ϕ50			1200	
ϕ63				
ϕ80		700	1400	
ϕ100		800	1500	

Note 1: Custom stroke length is available per 1mm increment.
Note 2: If the maximum stroke is exceeded, product specifications may not be met, depending on operating conditions. Consult with CKD in this case.

Min. stroke length with switch

● T0/T5 type switch

	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

Note 1: Value in ( ) for T*V (Radial lead wire).
Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● T8 type switch

	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ 50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ 63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ 80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ 100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

Note 1: Value in ( ) for T*V (Radial lead wire).
Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● T2/T3 type switch

	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at rod side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ 50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ 63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ 80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ 100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

Note 1: Value in ( ) for T*V (Radial lead wire).
Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● T1/T2Y/T3Y/T2YD type switch

	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ 50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ 63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ 80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ 100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

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

● 1 color/2 color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire			Proximity 3 wire			Reed 2 wire							Proximity 2 wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	TOH/TOV	T5H/T5V		T8H/T8V				T2YD
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				Programmable controller
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	24 VDC ±10%
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	5 to 20mA
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)				Red/green 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							1mA or less

● 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	Installation position adjustment section	Red/green LED (ON lighting)			
	Preventive maintenance output	-		Yellow LED (ON lighting)	
Regular 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
	Leakage current	1mA or less	10 μA or less	1.2mA or less	10 μA or less
Preventive maintenance Output	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℃. The current will be lower than 20mA if ambient temperature around switch is higher than 20mA. (5 to 10mA when 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0mm						Stroke length: Additional weight per 50mm	Switch weight	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)		Grommet	I	Y
ϕ 40	1.75	1.89	2.16	1.94	1.94	2.09	0.17	0.018	0.09	0.14
ϕ 50	2.91	3.07	3.54	3.32	3.32	3.40	0.23	0.018	0.20	0.33
ϕ 63	3.94	4.28	4.96	4.49	4.51	4.82	0.25	0.018	0.20	0.33
ϕ 80	7.81	8.24	9.38	9.08	9.09	9.30	0.40	0.018	0.52	0.96
ϕ 100	12.08	12.94	14.40	13.80	13.83	14.65	0.51	0.018	0.48	0.92

How to order

Without switch

JSG - LB - 40 ( ) B - 100 - ( ) —— J - I

With switch

JSG - LB - 40 ( ) B - 100 - ( ) - T2H - R - J - I

Ⓐ Model no.

Ⓑ Mounting style Note 1

Ⓒ Bore size

Ⓓ Port thread type

Ⓔ Cushion

Ⓕ Stroke length

Ⓖ Solenoid valve voltage

Ⓗ Switch model no.

Ⓘ Switch quantity Note 3

Ⓙ Option

Ⓚ Accessory Note 4

Symbol	Descriptions	Ⓐ Model no. Double acting	Ⓐ Model no. Double acting, with valve for brake release
Ⓑ Mounting style			
00	Basic type	●	●
LB	Axial foot type	●	●
FA	Rod end flange type	●	●
FB	Head end flange type	●	●
CA	Eye bracket type	●	●
CB	Clevis bracket type (pin and split pin attached)	●	●
TA	Rod end trunnion type	●	●
TB	Head end trunnion type	●	●
TC	Center trunnion type	●	●
Ⓒ Bore size (mm)			
40	ϕ40	●	●
50	ϕ50	●	●
63	ϕ63	●	●
80	ϕ80	●	●
100	ϕ100	●	●
Ⓓ Port thread type			
Blank	Rc thread	●	●
N	NPT thread (custom order)	●	●
G	G thread (custom order)	●	●
Ⓔ Cushion			
B	Both sides air cushioned (basic type)	●	●
D	Both sides rubber cushioned	●	●
Note: The rubber cushion type is longer than the air cushion.			

Ⓕ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ40	1 to 600	800	1 mm increment
ϕ50		1200	
ϕ63			
ϕ80	1 to 700	1400	
ϕ100	1 to 800	1500	

Ⓖ Solenoid valve voltage			
1	100 VAC		●
2	200 VAC		●
3	24 VDC		●
4	12 VDC		●

Ⓗ 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 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***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YFH*	**T2YFV***		2 color indicator type (without indicator light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with indicator light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	**T2JV***		Off-delay type	2-wire

*** Lead wire length**			
Blank	1m (standard)	●	●
3	3m (option)	●	●
5	5m (option)	●	●
Ⓘ Switch quantity			
R	One on rod end	●	●
H	One on head end	●	●
D	Two	●	●
T	Three	●	●

Ⓙ Option

		Max. ambient temperature	Instantaneous ambient temperature		
J	Bellows	60℃	100℃	●	●
M	Piston rod material stainless steel			●	●

Ⓚ Accessory			
I	Rod eye	●	●
Y	Rod clevis (pin and split pin attached)	●	●
B1	Eye bracket	●	●
B2	Clevis bracket (pin and split pin attached)	●	●
B3	Eye bracket	●	●
B4	Trunnion type No. 2 bracket	●	●

Note on model no. selection

Note 1: The mounting bracket is shipped with the product. (Trunnion type is installed on the product at shipment.)
Note 2: Custom stroke length is available per 1mm increment.
Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod side) for TB.
Note 4: "I" and "Y" can not be selected at the same time.

<Example of model number>

JSG-V-LB-40B-100-1-T2H-D-JI

Model: Tie rod cylinder with brake

- Ⓐ Model no. : Double acting, with valve for brake release
- Ⓑ Mounting style : Axial foot type
- Ⓒ Bore size : ϕ40mm
- Ⓓ Port thread type : Rc thread
- Ⓔ Cushion : Both sides air cushioned
- Ⓕ Stroke length : 100mm
- Ⓖ Solenoid valve voltage : 100 VAC
- Ⓗ Switch model no. : Proximity T2H switch, lead wire 1m
- Ⓘ Switch quantity : Two
- Ⓙ Option : With bellows
- Ⓚ Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

- T0H: Switch model no. (Previous Ⓗ page)
- 40: Bore size (Previous Ⓒ page)

● Only switch body

SW - T0H

- T0H: Switch model no. (Previous Ⓗ page)

Note: To use an ecological T type switch, consult with CKD.

● Switch bracket set

SCG - T - 40

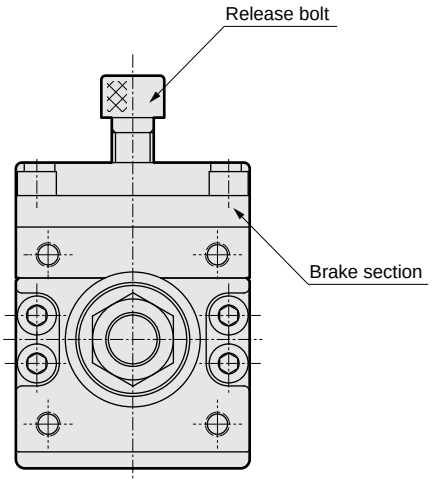
- T: Bracket
- 40: Bore size (Previous Ⓒ page)

How to order mounting bracket

Bore size (mm) / Mounting bracket		ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 100
Foot (lB)	Note 2	JSG-LB-40	JSG-LB-50	JSG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	Note 1	JSG-FA-40	JSG-FA-50	JSG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)		SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	Note 3	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: The foot type bracket is a two-piece set.
Note 2: Designate "JSG-FA-(bore size)-J" for the flange with bellows (FA).
Note 3: A pin, a split pin and a plain washer are contained.

How to unlock brake section manually



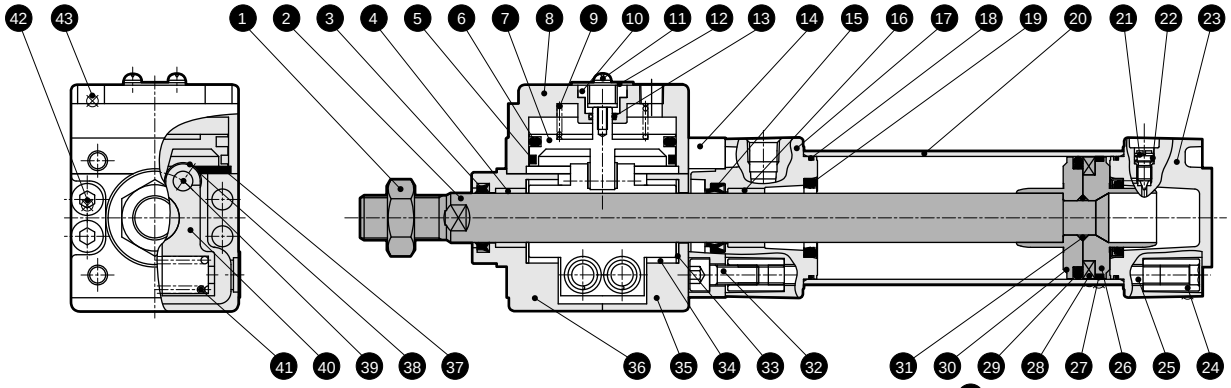
The brakes are released by screwing a bolt into the manual release port (female threads on top of brakes).
(If the bolt is screwed in too far, the brakes may not be applied. Refer to the screw-in volume showed in the separate table.)
Always remove the bolt during normal use.

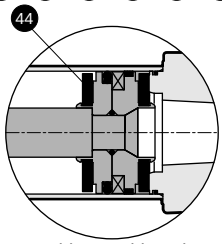
Release bolt size

Bore size	Bolt screw diameter	Bolt length		Adequate screw-in volume
		JSG	JSG-V	
ϕ 40	M12 x 1.75	16 and over	40 and over	3 rotations or less
ϕ 50	M12 x 1.75	16 and over	40 and over	4 rotations or less
ϕ 63	M14 x 2	16 and over	40 and over	4 rotations or less
ϕ 80	M16 x 2	20 and over	40 and over	4.5 rotations or less
ϕ 100	M18 x 2.5	20 and over	50 and over	5 rotations or less

Internal structure and parts list

● JSG





Rubber cushioned

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickel plating	24	Round nut	Steel	Zinc chromate
2	Piston rod	Steel	Industrial chrome plating	25	Tie rod	Steel	Zinc chromate
3	Dust wiper	Nitrile rubber		26	Piston H	ϕ 40: Aluminum alloy ϕ 50 to 100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy					
5	Wear ring	Acetar resin		27	Wear ring	Polyacetal resin	
6	Piston packing seal B	Nitrile rubber		28	Magnet	Resin	
7	Piston for brake	Cast iron	Phosphate coating	29	Piston packing seal	Nitrile rubber	
8	Body H	Aluminum casting	Chromate	30	Piston R	ϕ40: Aluminum alloy ϕ 50 to 100: Aluminum alloy die-casting	
9	Spring	Piano wire					
10	Piston guide	Cast iron	Phosphate coating	31	Piston gasket	Nitrile rubber	
11	Washer assembly cross headed pan	Steel	Zinc chromate	32	Hexagon socket head cap bolt	Alloy steel	Blackening
12	Dust cover	Aluminum alloy	Alumite	33	Thrust washer		
13	Gasket	Nitrile rubber		34	Bush	Dry bearing	
14	Joint plate	Aluminum alloy	Alumite	35	Body R	Aluminum casting	Chromate
15	Rod packing seal	Nitrile rubber		36	Body F	Aluminum casting	Chromate
16	Bush	Oil impregnated bearing alloy		37	Cushion rubber	Urethane rubber	
17	Rod cover	Aluminum alloy die-casting	Paint	38	Bearing		
18	Cylinder gasket	Nitrile rubber		39	Pin	Alloy steel	
19	Cushion packing seal	Nitrile rubber, steel	Zinc chromate	40	Brake shoe metal	Cast iron	Nickel plating
20	Cylinder tube	Aluminum alloy	Hard alumite	41	Spring	Piano wire	
21	Cushion needle	Copper alloy		42	Hexagon socket head cap bolt	Alloy steel	Blackening
22	Needle gasket	Nitrile rubber		43	Hexagon socket head cap bolt	Alloy steel	Blackening
23	Head cover	Aluminum alloy die-casting	Paint	44	Cushion rubber	Urethane rubber	

Repair parts list

● Air cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 40	JSG-40BK	3 15 18 19 21 27 29
ϕ 50	JSG-50BK	
ϕ 63	JSG-63BK	
ϕ 80	JSG-80BK	
ϕ 100	JSG-100BK	

Note: Specify the kit No. when placing an order.

● Rubber cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 40	JSG-40DK	3 15 18 21 27 29 44
ϕ 50	JSG-50DK	
ϕ 63	JSG-63DK	
ϕ 80	JSG-80DK	
ϕ 100	JSG-100DK	

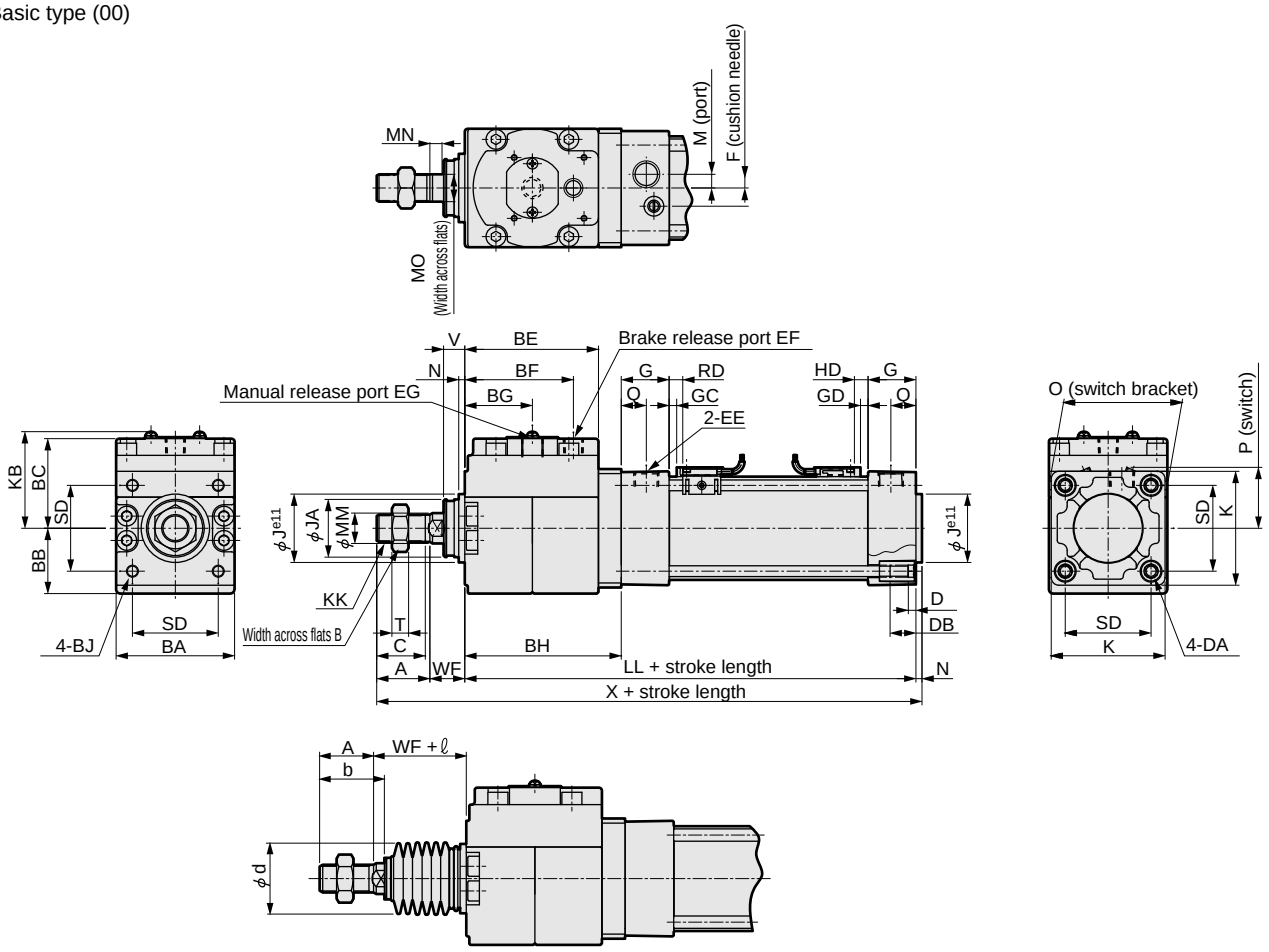
Note: Specify the kit No. when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ40; +6mm, φ50/φ63; +8mm, φ80/φ100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for the dimensions of the type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

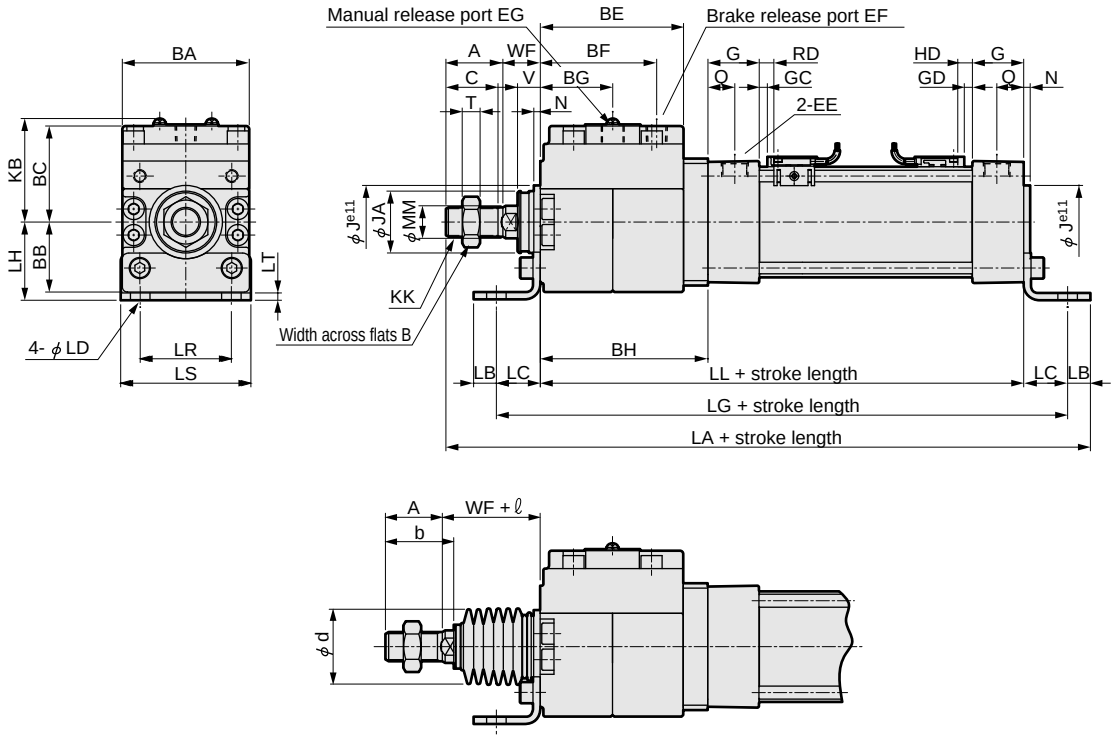
Symbol / Bore size (mm)	Basic type (00) basic dimensions																			
	A	B	BA	BB	BC	BE	BF	BG	BH	BJ	C	DA	DB	DC	EE	EF	EG	F	G	J
φ40	30	22	57	31.5	46.5	63	52.5	32.5	77	M6 depth 12	27	M6	16	5	Rc1/4	Rc1/8	M12	9	27	35
φ50	35	27	68	38	54	74	59	39	89	M8 depth 12	32	M8	16	5	Rc1/4	Rc1/8	M12	10.5	31.5	40
φ63	35	27	78	43	59	88	71.5	44.5	103	M8 depth 14	32	M8	16	5	Rc3/8	Rc1/4	M14	12	31.5	45
φ80	40	32	98	53	72.5	108	81.5	54.5	131	M10 depth 16	37	M10	16	5	Rc3/8	Rc1/4	M16	14	38	45
φ100	40	41	118	63	80.5	129	101	65.5	151	M10 depth 18	37	M10	16	5	Rc1/2	Rc3/8	M18	15	38	55

Symbol / Bore size (mm)																
	JA	K	KB	KK	Note 1 LL	M	MM	MN	MO	N	O	Q	SD	T	V	WF	Note 1 X
φ40	31	52	51.1	M14 x 1.5	161 (167)	4	16	6	14	4	57	14	38	8	13	21	216 (222)
φ50	38	65	58.6	M18 x 1.5	183 (191)	5	20	7	17	4	68	15.5	46.5	11	14	23	245 (253)
φ63	38	75	63.6	M18 x 1.5	197 (205)	9	20	7	17	4	78	16.5	56.5	11	14	23	259 (267)
φ80	43	95	77.1	M22 x 1.5	245 (255)	11.5	25	10	22	4	95	19	72	13	20	32	321 (331)
φ100	51	114	85.1	M26 x 1.5	265 (275)	17	30	10	27	4	114	19	89	16	20	32	341 (351)

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
φ40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
φ50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Axial foot type (LB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ 40; +6mm, φ 50/φ 63; +8mm, φ 80/φ 100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

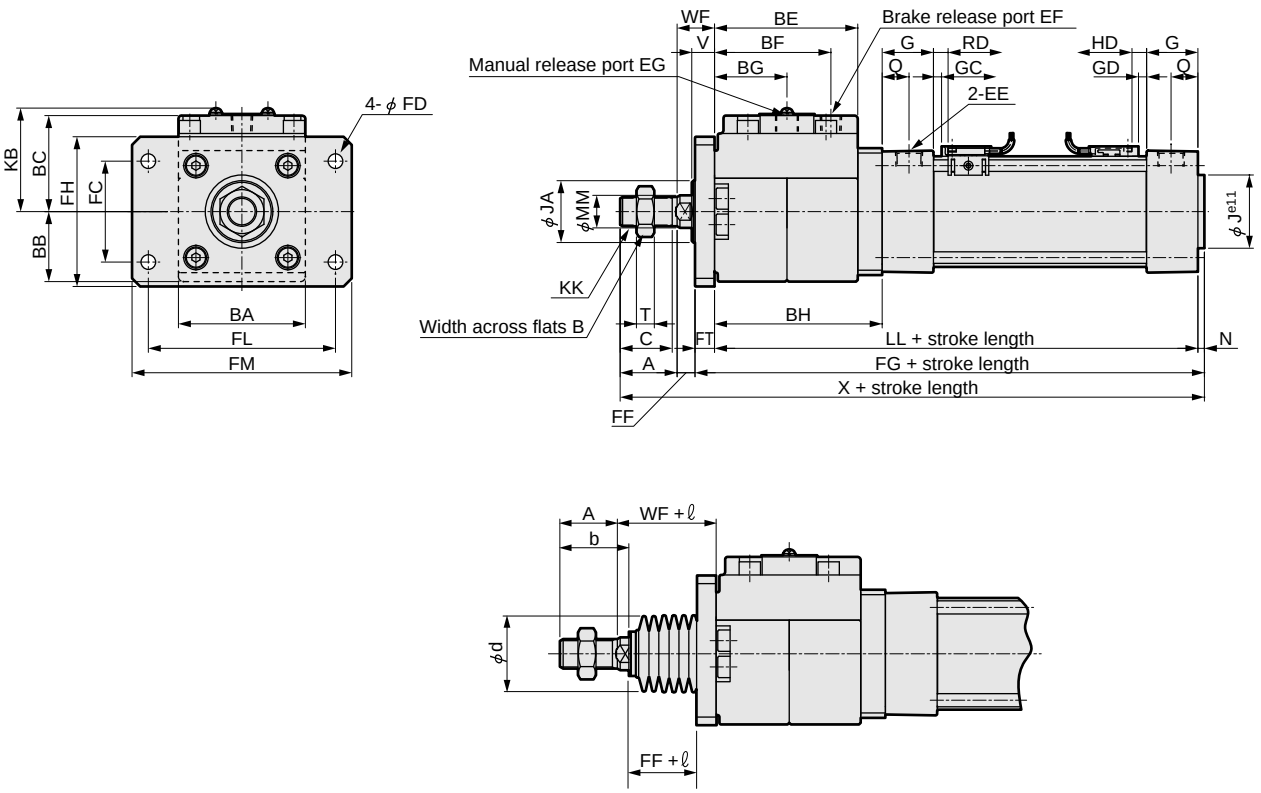
Symbol / Bore size (mm)	Axial foot type (LB) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
φ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
φ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
φ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
φ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
φ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)							Installation dimensions								
	MM	N	Q	T	V	WF	Note 1 LA	LB	LC	LD	Note 1 LG	LH	LR	LS	LT
φ 40	16	4	14	8	13	21	247 (253)	11	24	9	209 (215)	33	38	55	3.2
φ 50	20	4	15.5	11	14	23	279 (287)	11	27	9	237 (245)	40	46	70	3.2
φ 63	20	4	16.5	11	14	23	296 (304)	14	27	12	251 (259)	48	56	80	4.5
φ 80	25	4	19	13	20	32	361 (371)	14	30	12	305 (315)	55	72	95	4.5
φ 100	30	4	19	16	20	32	385 (395)	16	32	14	329 (339)	65	89	114	6

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
φ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
φ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Rod end flange type (FA)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ 40; +6mm, ϕ 50/ϕ 63; +8mm, ϕ 80/ϕ 100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

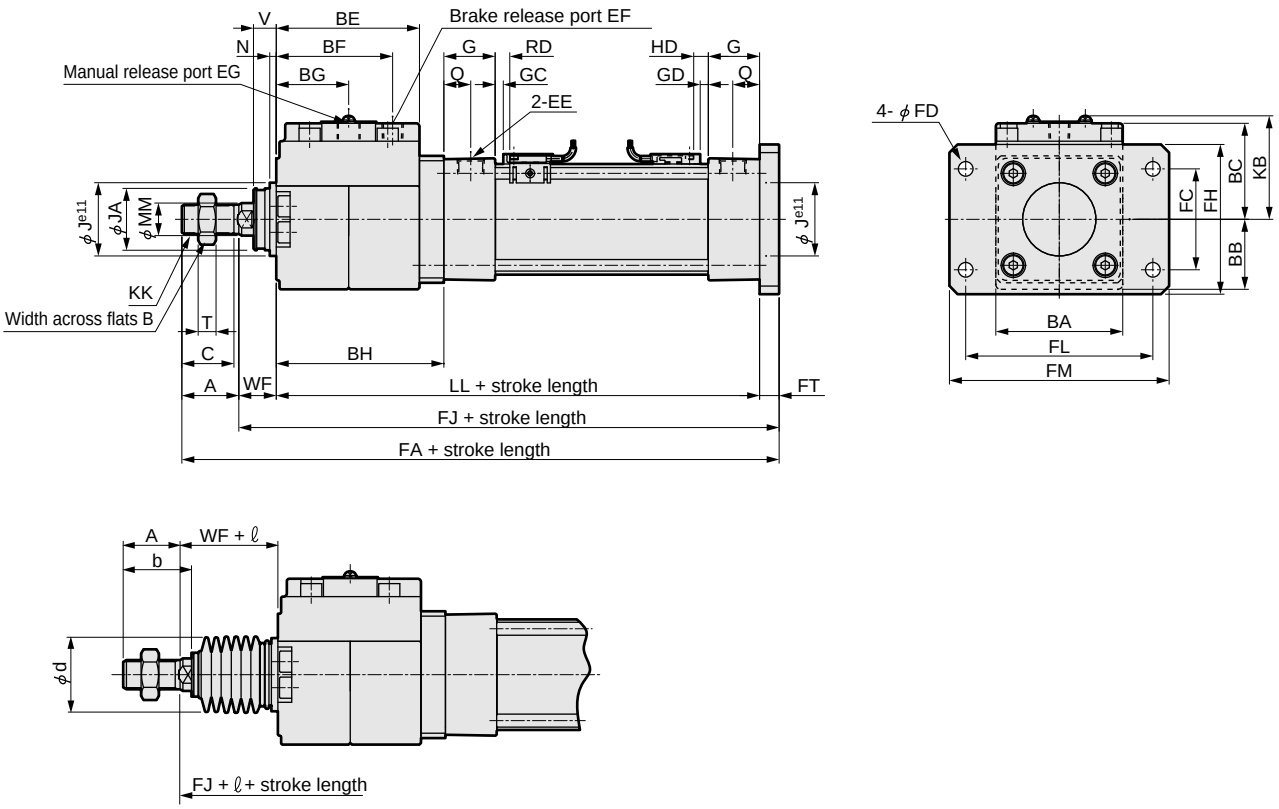
Symbol / Bore size (mm)	Rod end flange type (FA) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ϕ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
ϕ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
ϕ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
ϕ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
ϕ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)								Installation dimensions							
	MM	N	Q	T	V	WF	Note 1 X	FC	FD	FF	Note 1 FG	FH	FL	FM	FT
ϕ 40	16	4	14	8	13	21	216 (222)	46	9	11	175 (181)	65	83	101	10
ϕ 50	20	4	15.5	11	14	23	245 (253)	52	9	11	199 (207)	77	100	120	12
ϕ 63	20	4	16.5	11	14	23	259 (267)	62	9	11	213 (221)	92	115	135	12
ϕ 80	25	4	19	13	20	32	321 (331)	63	12	16	265 (275)	100	126	153	16
ϕ 100	30	4	19	16	20	32	341 (351)	75	14	16	285 (295)	120	150	178	16

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
ϕ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
ϕ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ϕ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ϕ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
ϕ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Head end flange type (FB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ 40; +6mm, ϕ 50/ϕ 63; +8mm, ϕ 80/ ϕ 100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

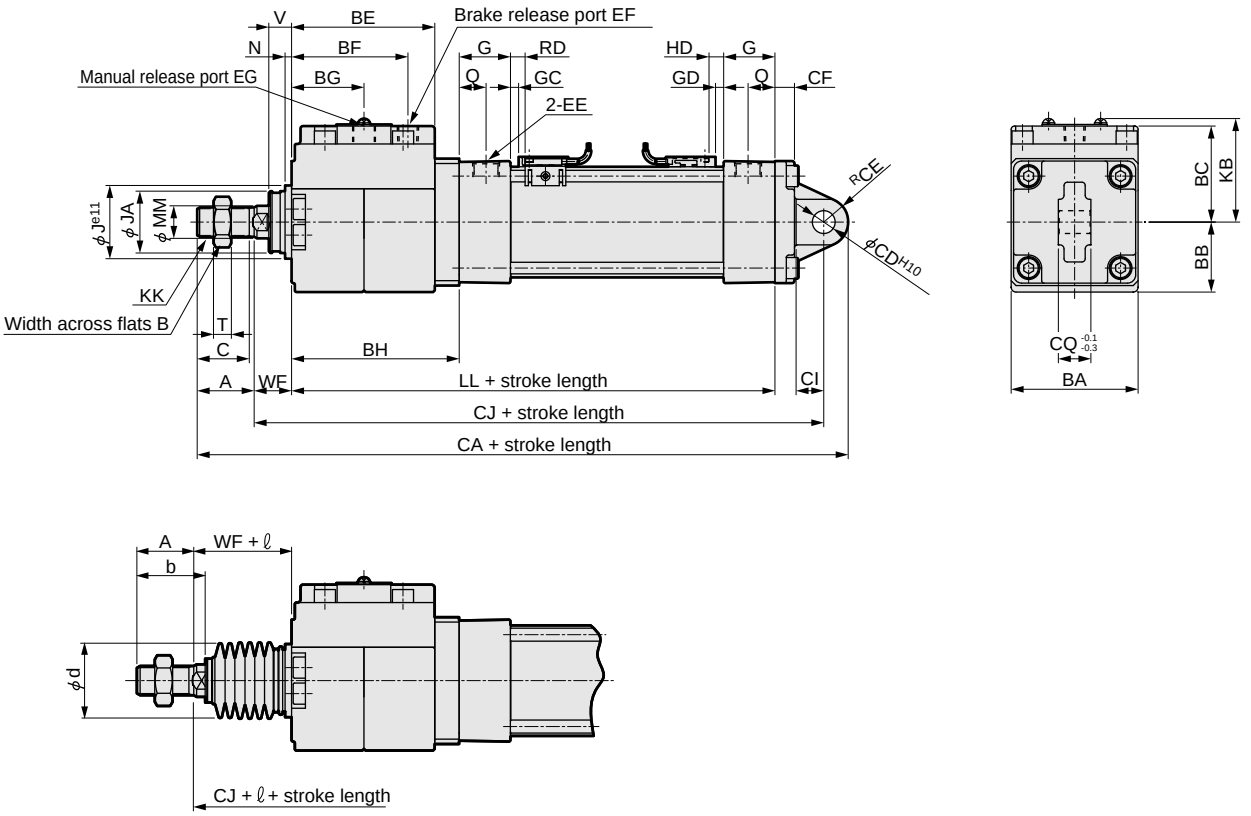
Symbol / Bore size (mm)	Head end flange type (FB) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ϕ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
ϕ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
ϕ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
ϕ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
ϕ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)	Installation dimensions													
	MM	N	Q	T	V	WF	Note 1 FA	FC	FD	FH	Note 1 FJ	FL	FM	FT
ϕ 40	16	4	14	8	13	21	222 (228)	46	9	65	192 (198)	83	101	10
ϕ 50	20	4	15.5	11	14	23	253 (261)	52	9	77	218 (226)	100	120	12
ϕ 63	20	4	16.5	11	14	23	267 (275)	62	9	92	232 (240)	115	135	12
ϕ 80	25	4	19	13	20	32	333 (343)	63	12	100	293 (303)	126	153	16
ϕ 100	30	4	19	16	20	32	353 (363)	75	14	120	313 (323)	150	178	16

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
ϕ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
ϕ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ϕ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ϕ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
ϕ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Eye bracket type (CA)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ 40; +6mm, φ 50/φ 63; +8mm, φ 80/ φ 100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

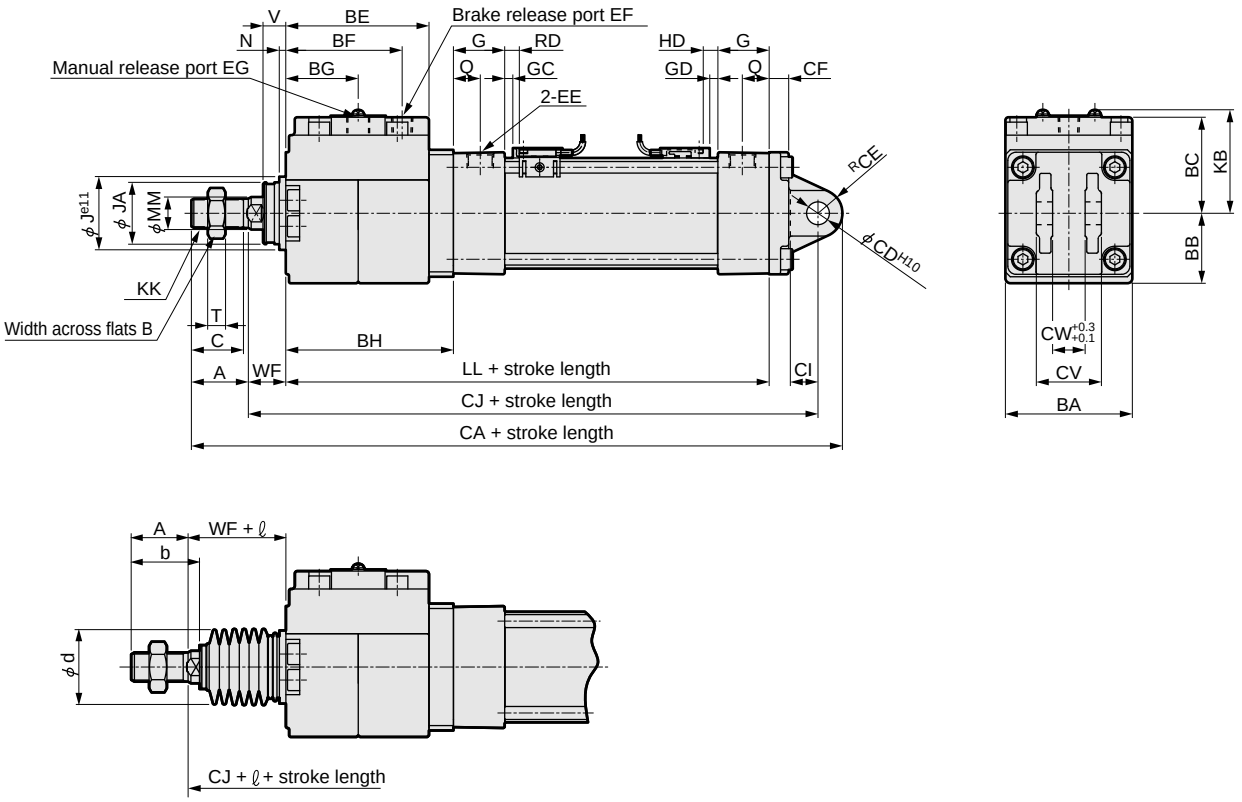
Symbol / Bore size (mm)	Eye bracket type (CA) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
φ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
φ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
φ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
φ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
φ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)	Installation dimensions											
	MM	N	Q	T	V	WF	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CQ
φ 40	16	4	14	8	13	21	246 (252)	10	11	9	13	205 (211)	14
φ 50	20	4	15.5	11	14	23	286 (294)	14	15	12	17	236 (244)	20
φ 63	20	4	16.5	11	14	23	300 (308)	14	15	12	17	250 (258)	20
φ 80	25	4	19	13	20	32	382 (392)	22	23	15	26	319 (329)	30
φ 100	30	4	19	16	20	32	402 (412)	22	23	15	26	339 (349)	30

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
φ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
φ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Clevis bracket (CB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ 40; +6mm, ϕ 50/ ϕ 63; +8mm, ϕ 80/ ϕ 100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.
Note 5: A pin, a split pin and a plain washer are included.

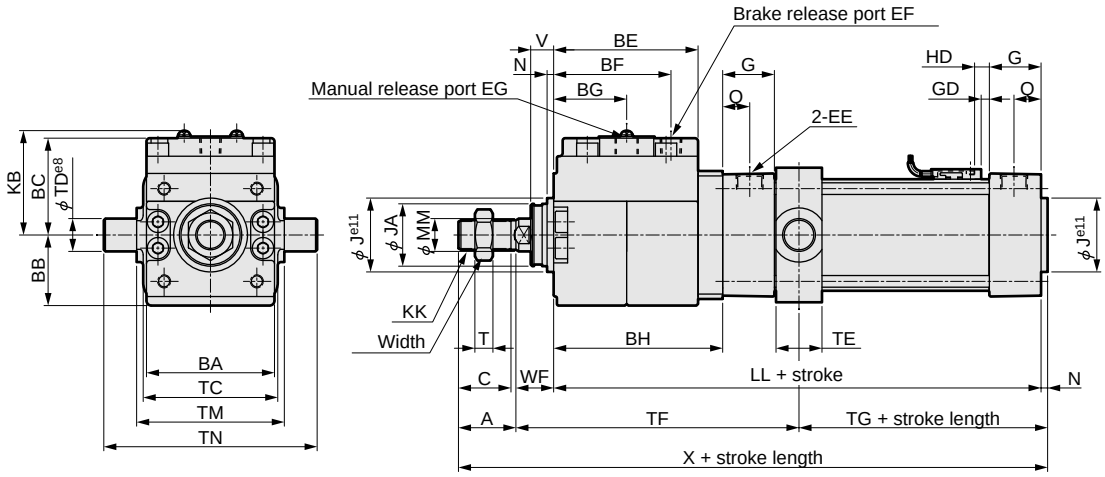
Symbol / Bore size (mm)	Clevis bracket type (CB) basic dimensions.																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ϕ40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
ϕ50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
ϕ63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
ϕ80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
ϕ100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

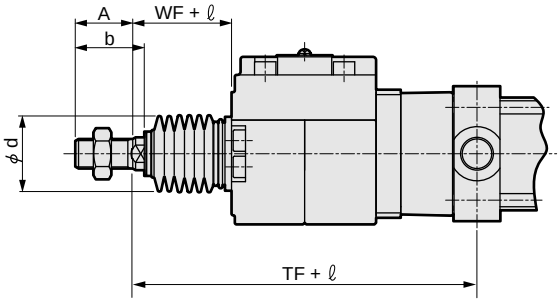
Symbol / Bore size (mm)							Installation dimensions							
	MM	N	Q	T	V	WF	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CV	CW
ϕ40	16	4	14	8	13	21	246 (252)	10	11	9	13	205 (211)	28	14
ϕ50	20	4	15.5	11	14	23	286 (294)	14	15	12	17	236 (244)	40	20
ϕ63	20	4	16.5	11	14	23	300 (308)	14	15	12	17	250 (258)	40	20
ϕ80	25	4	19	13	20	32	382 (392)	22	23	15	26	319 (329)	60	30
ϕ100	30	4	19	16	20	32	402 (412)	22	23	15	26	339 (349)	60	30

Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
ϕ40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
ϕ50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ϕ63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ϕ80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
ϕ100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Dimensions

● Rod end trunnion type (TA)





Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ40; +6mm, ϕ50/ϕ63; +8mm, ϕ80/ϕ100; +10mm)
Note 2: Switches can not be installed on the rod end.
Note 3: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 4: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 5: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

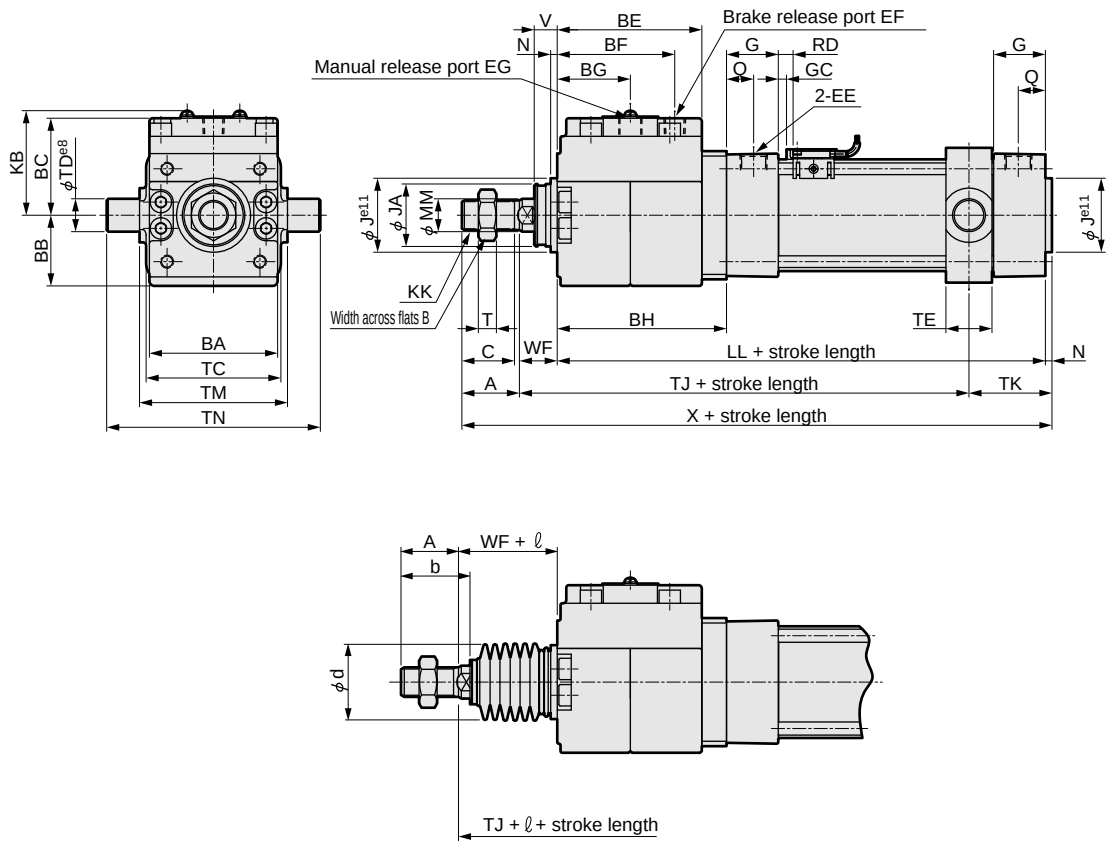
Symbol / Bore size (mm)	Rod end trunnion type (TA) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
ϕ40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
ϕ50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
ϕ63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
ϕ80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
ϕ100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)								Installation dimensions						
	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	TF	Note 1 TG	TM	TN
ϕ40	16	4	14	8	13	21	216 (222)	57	16	22	137	49 (55)	63	95
ϕ50	20	4	15.5	11	14	23	245 (253)	67	16	22	155.5	54.5 (62.5)	75	107
ϕ63	20	4	16.5	11	14	23	259 (267)	82	20	28	172.5	51.5 (59.5)	90	130
ϕ80	25	4	19	13	20	32	321 (331)	100	20	34	219	62 (72)	110	150
ϕ100	30	4	19	16	20	32	341 (351)	121	25	40	242	59 (69)	132	182

Symbol / Bore size (mm)	With bellows														With switch	
	A	b	d	WF	ℓ										Note 1 GD	Note 1 HD
					50 or less	50 to 100	100 to 150	200 to 300	300 to 400	300 to 350	400 to 500	500 to 600	600 to 700	700 to 750		
ϕ40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	5 (8)
ϕ50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	1 (5)	5 (9)
ϕ63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	1 (5)	5 (9)
ϕ80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	2 (7)	6 (11)
ϕ100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	2.5 (7.5)	6.5 (11.5)

Dimensions

● Head end trunnion (TB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ40; +6mm, φ 50/φ 63;+8mm, φ 80/ φ100; +10mm)
Note 2: Switches can not be installed on the head end.
Note 3: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 4: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 5: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

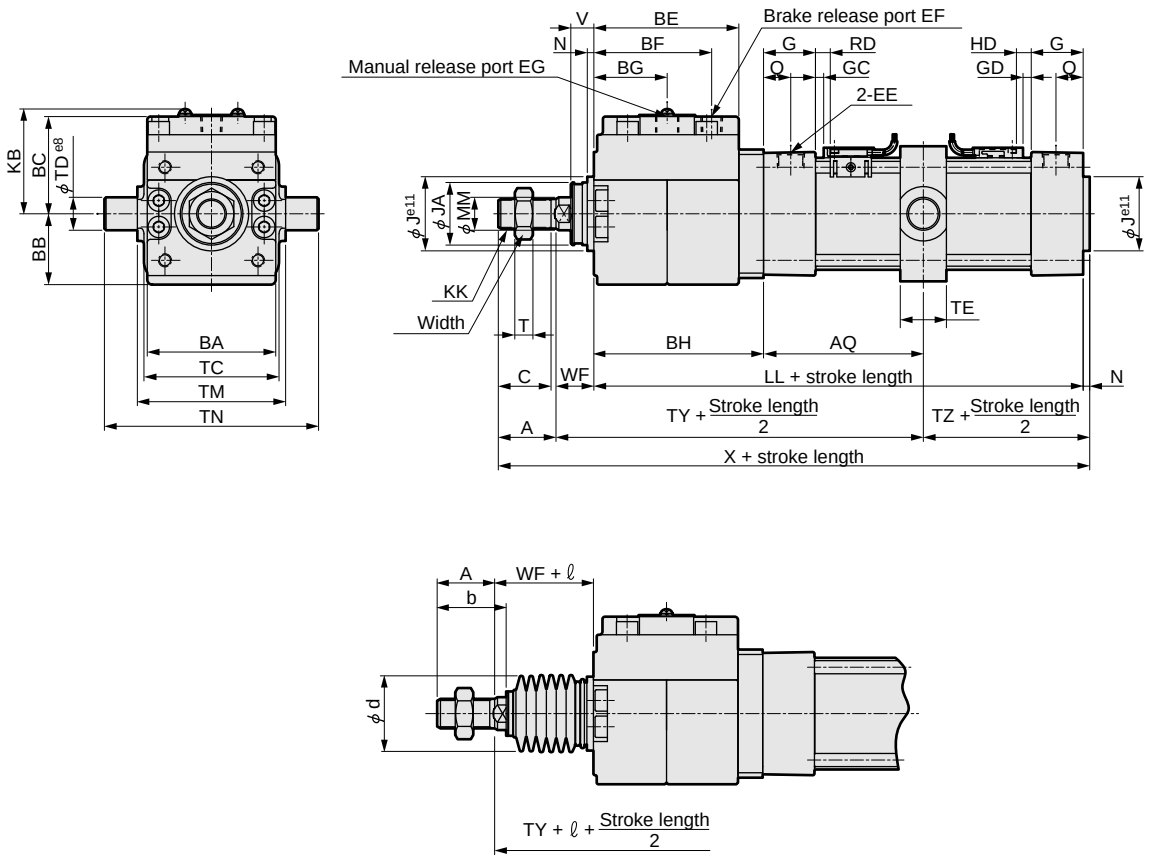
Symbol / Bore size (mm)	Head end trunnion (TB) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
φ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
φ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
φ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
φ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
φ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

Symbol / Bore size (mm)								Installation dimensions						
	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	Note 1 TJ	TK	TM	TN
φ 40	16	4	14	8	13	21	216 (222)	57	16	22	143 (149)	43	63	95
φ 50	20	4	15.5	11	14	23	245 (253)	67	16	22	162.5 (170.5)	47.5	75	107
φ 63	20	4	16.5	11	14	23	259 (267)	82	20	28	173.5 (181.5)	50.5	90	130
φ 80	25	4	19	13	20	32	321 (331)	100	20	34	221 (231)	60	110	150
φ 100	30	4	19	16	20	32	341 (351)	121	25	40	238 (248)	63	132	182

Symbol / Bore size (mm)	With bellows														With switch	
	A	b	d	WF	ℓ										Note 1 GC	Note 1 RD
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750		
φ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	5 (8)
φ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	6.5 (10.5)
φ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	6.5 (10.5)
φ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	12.5 (17.5)
φ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	12 (17)

Dimensions

● Center trunnion type (TC)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ40; +6mm, φ50/φ63; +8mm, φ80/φ100; +10mm)
Note 2: RD and HD dimensions in the dimension drawings indicate the position of switch end, and GC and GD indicate the position of switch rail end.
Note 3: Refer to page 1281 for dimensions of type with valves (JSG-V).
Note 4: Refer to page 1282 for 2 color indicator type, HD, RD dimensions and projection dimensions of preventive maintenance output switch.

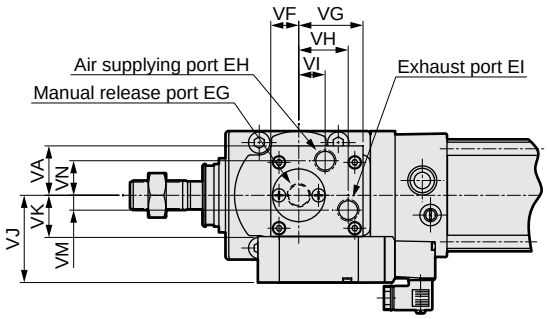
Symbol / Bore size (mm)	Center trunnion type (TC) basic dimensions																		
	A	B	BA	BB	BC	BE	BF	BG	BH	C	EE	EF	EG	G	J	JA	KB	KK	Note 1 LL
φ 40	30	22	57	31.5	46.5	63	52.5	32.5	77	27	Rc1/4	Rc1/8	M12	27	35	31	51.1	M14 x 1.5	161 (167)
φ 50	35	27	68	38	54	74	59	39	89	32	Rc1/4	Rc1/8	M12	31.5	40	38	58.6	M18 x 1.5	183 (191)
φ 63	35	27	78	43	59	88	71.5	44.5	103	32	Rc3/8	Rc1/4	M14	31.5	45	38	63.6	M18 x 1.5	197 (205)
φ 80	40	32	98	53	72.5	108	81.5	54.5	131	37	Rc3/8	Rc1/4	M16	38	45	43	77.1	M22 x 1.5	245 (255)
φ 100	40	41	118	63	80.5	129	101	65.5	151	37	Rc1/2	Rc3/8	M18	38	55	51	85.1	M26 x 1.5	265 (275)

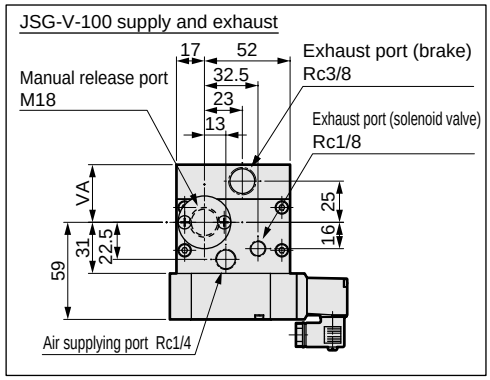
Symbol / Bore size (mm)	Installation dimensions													
	MM	N	Q	T	V	WF	Note 1 X	TC	TD	TE	TM	TN	Note 1 TY	Note 1 TZ	Note 1 AQ
φ 40	16	4	14	8	13	21	216 (222)	57	16	22	63	95	140 (143)	46 (49)	42 (45)+ Stroke length / 2
φ 50	20	4	15.5	11	14	23	245 (253)	67	16	22	75	107	159 (163)	51 (55)	47 (51)+ Stroke length / 2
φ 63	20	4	16.5	11	14	23	259 (267)	82	20	28	90	130	173 (177)	51 (55)	47 (51)+ Stroke length / 2
φ 80	25	4	19	13	20	32	321 (331)	100	20	34	110	150	220 (225)	61 (66)	57 (62)+ Stroke length / 2
φ 100	30	4	19	16	20	32	341 (351)	121	25	40	132	182	240 (245)	61 (66)	57 (62)+ Stroke length / 2

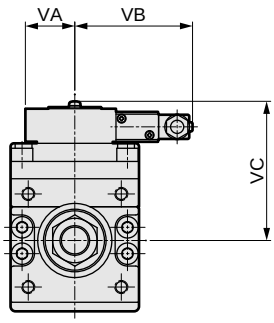
Symbol / Bore size (mm)	With bellows														With switch				
	A	b	d	WF	ℓ										Note 1 GC	Note 1 GD	Note 1 RD	Note 1 HD	P
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750					
φ 40	30	35	40	21	30	43	55	68	93	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
φ 50	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ 63	35	42	47	23	31	44	56	69	94	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ 80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ 100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

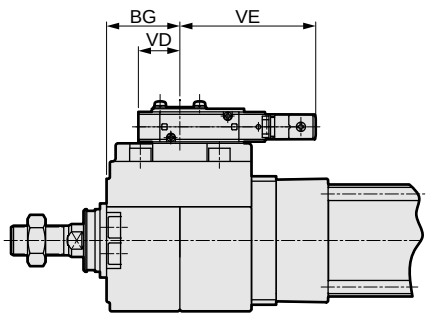
Dimensions

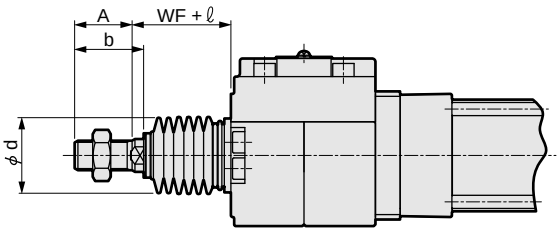
● JSG-V (with valve for brake release)











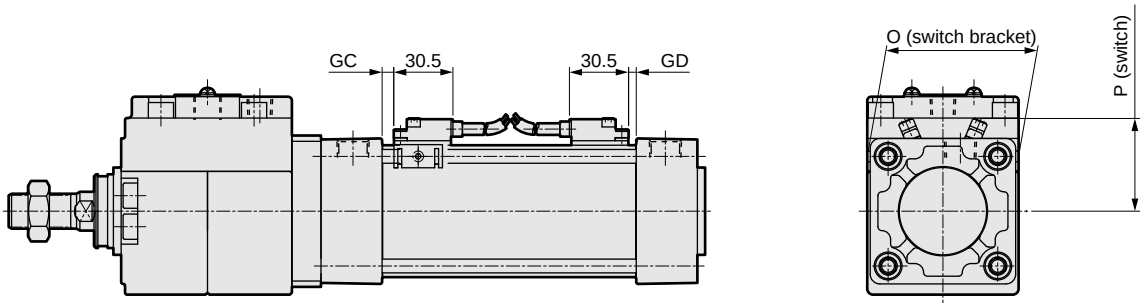
Note 1: The shape of the JSG-V-100 supply and exhaust port differs from other sizes.
Refer to dimension drawing of the JSG-V-100 supply and exhaust port at the upper right.

Symbol / Bore size (mm)	With valve for brake release (JSG-V) basic dimensions																
	BG	EG	EH	EI	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VM	VN
ϕ40	32.5	M12	Rc1/8	Rc1/8	26	62.5	72	24	83.5	19	38	30	12.5	44	16	4	16
ϕ50	39	M12	Rc1/8	Rc1/8	26	62.5	79.5	24	83.5	19	38	30	12.5	44	16	4	16
ϕ63	44.5	M14	Rc1/4	Rc1/4	30	71.5	84.5	25	82.5	17	39	30	16	53	25	9	21
ϕ80	54.5	M16	Rc1/4	Rc1/4	30	71.5	98	25	82.5	17	39	30	16	53	25	9	21
ϕ100	65.5	M18	Note 1		35	77.5	113	21	86.5	Note 1							

Symbol / Bore size (mm)	With bellows													
	A	b	d	WF	ℓ									
					50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 750
ϕ40	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ϕ50	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ63	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ80	40	50	53	32	29	42	54	67	92	117	142	167	192	204
ϕ100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204

* Dimensions other than those above are the same as the double-acting and single-rod type. Refer to pages 1272 to 1280.

JSG Series common (2 color indicator type, with preventive maintenance output with switch) dimensions



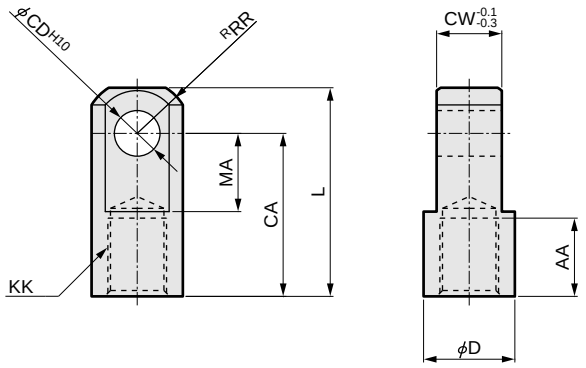
2 color indicator type, preventive maintenance output switch installation dimensions

Symbol / Bore size (mm)	P				Other than T8*		T8*		O
	2 color indicator type		Preventive maintenance output type		Note 1 GC	Note 1 GD	GC	GD	
	T*YH	T*YV	T*Y*H	T*Y*V					
ϕ40	35	38	40	43	4 (7)	4 (7)	0 (2)	0 (2)	58
ϕ50	39	42	44	47	5.5 (9.5)	4 (8)	0.5 (4.5)	0 (3)	68
ϕ63	45	48	50	53	5.5 (9.5)	4 (8)	0.5 (4.5)	0 (3)	78
ϕ80	52	55	57	60	11.5 (16.5)	5 (10)	6.5 (11.5)	0 (5)	95
ϕ100	60	63	64	67	11 (16)	5.5 (10.5)	6 (11)	0.5 (5.5)	114

Note 1: Dimensions shown in parentheses are for rubber cushion type.

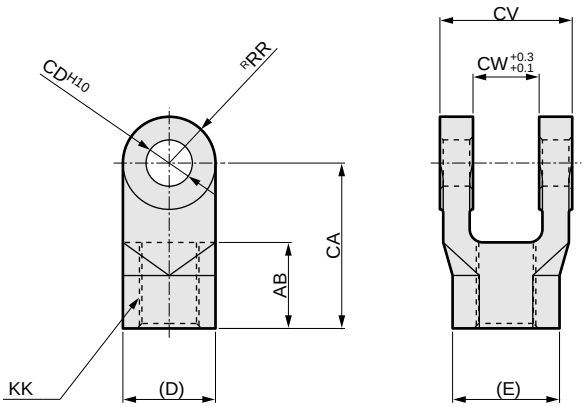
SCG Series common accessory (rod eye/clevis/bracket) dimensions

● Rod eye (I) Material: Steel



Model no.	Applicable bore size (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Weight (kg)
SCG-I-40	40	19	40	10	14	22	M14 x 1.5	50	19	12.5	0.07
SCG-I-50	50,63	24	50	14	20	28	M18 x 1.5	64	24	16.5	0.20
SCG-I-80	80	26	60	22	30	40	M22 x 1.5	80	34	23.5	0.52
SCG-I-100	100	26	60	22	30	40	M26 x 1.5	80	34	23.5	0.48

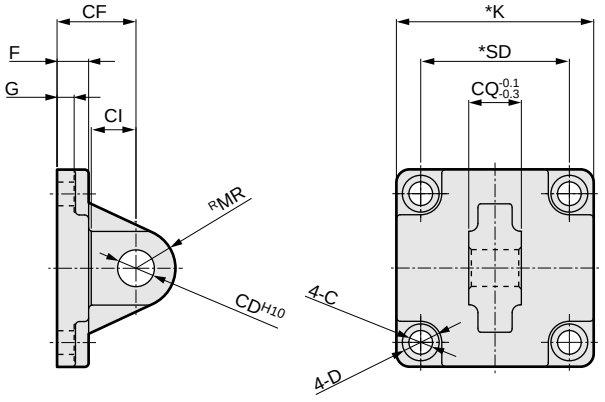
● Rod clevis (Y) Material: Cast iron



Model no.	Applicable bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Weight (kg)
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14 x 1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	32.3	M18 x 1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	46.2	M22 x 1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	46.2	M26 x 1.5	20	0.92

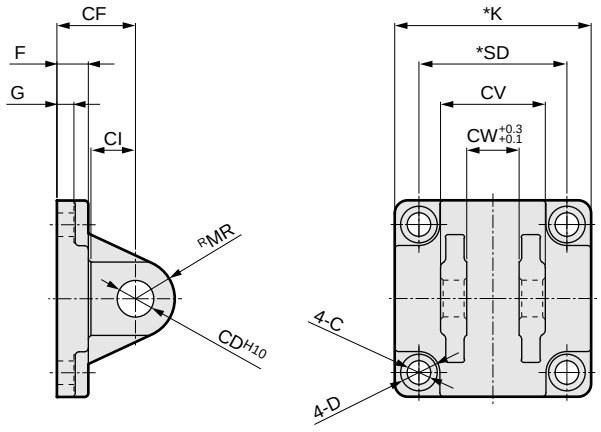
Note: Pin, split pin and plain washer are included.

● Eye bracket (B1) Material: Cast iron



Model no.	Applicable bore size (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Weight (kg)
SCG-B1-40	40	6.6	10	23	13	14	11	9	4.5	52	11	38	0.16
SCG-B1-50	50	9	14	30	17	20	14	12	6.5	65	15	46.5	0.38
SCG-B1-63	63	9	14	30	17	20	14	12	6.5	75	15	56.5	0.48
SCG-B1-80	80	11	22	42	26	30	17	15	8.5	95	23	72	1.19
SCG-B1-100	100	11	22	42	26	30	17	15	8.5	114	23	89	1.56

● A clevis bracket type (B2) Material: Cast iron

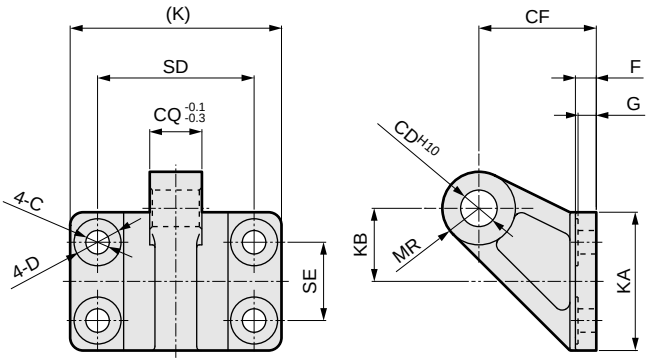


Model no.	Applicable bore size (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Weight (kg)
SCG-B2-40	40	6.6	10	23	13	28	14	11	9	4.5	52	11	38	0.20
SCG-B2-50	50	9	14	30	17	40	20	14	12	6.5	65	15	46.5	0.46
SCG-B2-63	63	9	14	30	17	40	20	14	12	6.5	75	15	56.5	0.58
SCG-B2-80	80	11	22	42	26	60	30	17	15	8.5	95	23	72	1.52
SCG-B2-100	100	11	22	42	26	60	30	17	15	8.5	114	23	89	1.91

Note: Pin, split pin and plain washer are included.

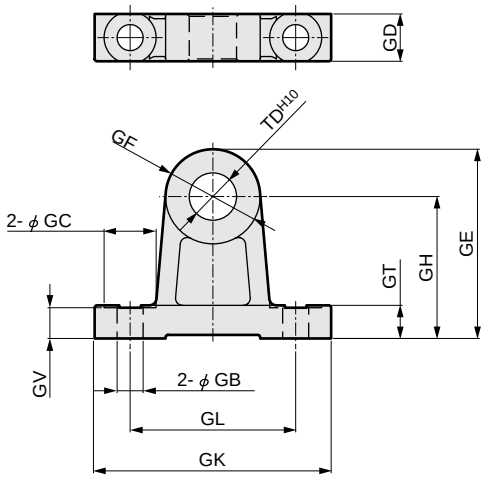
Accessory dimensions CAD

● Eye bracket (B3) Material: Cast iron



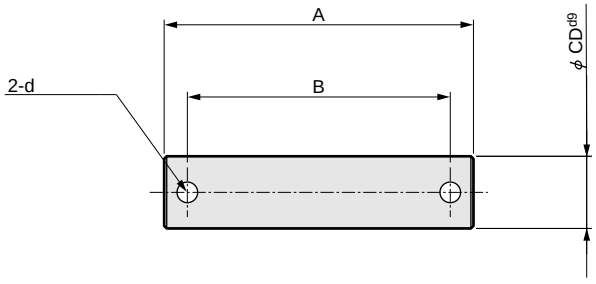
Model no.	Applicable bore size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Weight (kg)
SCG-B3-32	40	6.6	10	33	14	15	7	6	62	42	21	10	44	22	0.21
SCG-B3-50	50,63	9	14	45	20	18	8	7	81	53	28	14	60	30	0.45
SCG-B3-80	80,100	11	22	65	30	22	10	9	111	73	41.5	22	86	45	1.23

● Trunnion type No. 2 bracket (B4) Material: Cast iron



Model no.	Applicable bore size (mm)	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD	Weight (kg)
SCG-B4-40	40,50	9	18	17	60	30	45	80	60	12	11	16	0.43
SCG-B4-63	63,80	11	22	20	80	40	60	100	70	14	13	20	0.87
SCG-B4-100	100	13.5	24	26	100	50	75	120	90	17	16	25	1.75

● Pin (P) Material: Steel



Model no.	Applicable bore size (mm)	A	B	CD	d	Weight (kg)
SCG-P-32	40	44	36	10	3	0.04
SCG-P-50	50, 63	60	51	14	4	0.10
SCG-P-80	80, 100	82	72	22	4	0.34

Note: Split pin and plain washer for clevis, rod clevis, clevis bracket types are attached.

Applications

This product can be used with devices and equipment requiring the following types of functions.

1 Requiring multi point positioning (transfer and positioning)

The equipment can be accurately stopped at the several required positions.

2 Requiring position locking

As the brakes can be applied and held instantly when the air source or power is turned OFF (during power failure or accident), damage to the equipment can be prevented and safety can be secured.

3 Requiring emergency stop

The cylinder can be stopped with electric signals, etc., when the worker, etc., is entering hazardous areas, etc.

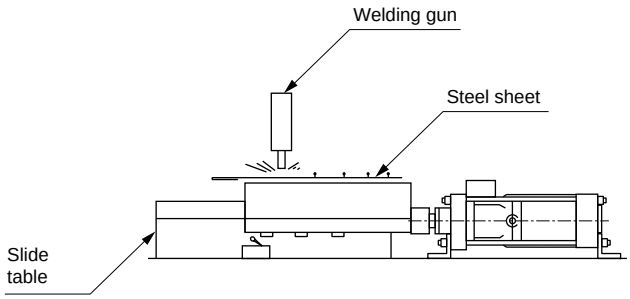
4 Work lock

When the workpiece is locked to the jig or mounting frame, etc., it can be locked even if there is no air pressure source or power. The workpiece can be transferred while locked to the jig.

Applications

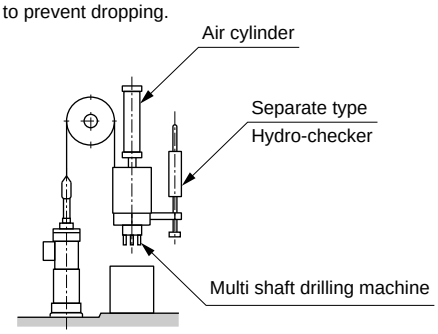
1 Linear multipoint welding

When welding steel plates, etc., linearly at several points, this cylinder can be used to move and position the slide table or welding gun.



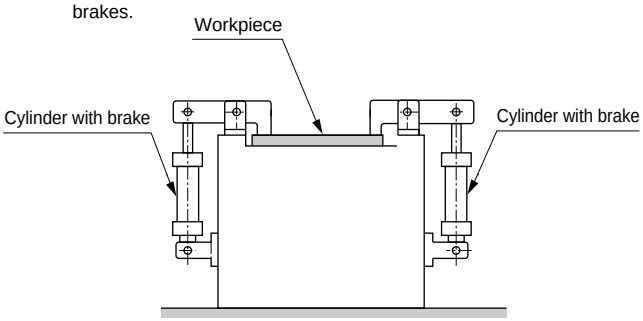
2 Position locking

If there is a load in the vertical direction and the load could drop with its own weight when the pressure source is cut off, the brakes will be applied to prevent dropping.



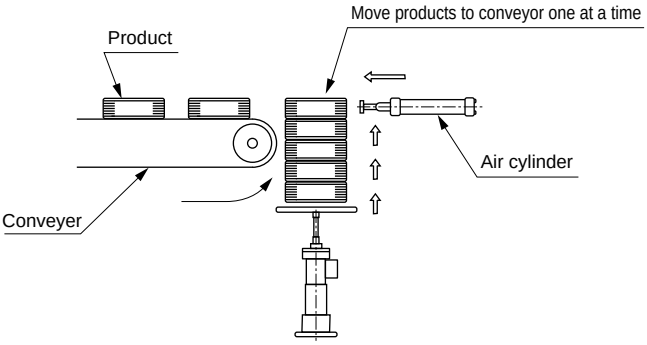
3 Work lock

When the workpiece is locked to a jig, etc., it can be locked even when the air pressure source or power by using the cylinder with brakes.



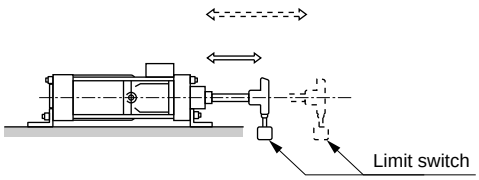
4 Movement to conveyer

The products can be moved to the conveyor one at a time.



5 When several cylinders with different strokes are required

When different sized products pass to the conveyor, etc., and there are many cylinders set, the stroke must be changed. By using the cylinder, a cylinder compatible with various strokes can be created electrically.



6 Open and close of hopper

When a hopper has to be closed at a specific weight, such as when dispensing powders, the hopper is closed just before it is fully closed to accurately measure the powder, and then it is fully closed.