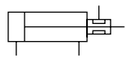
●: Standard, ◎: Option, : Not available

Variation	Model no. / JIS symbol	Bore size (mm)	Standard stroke length (mm) 50	75	100	150	200	250	300	350	400	450	500	Min. stroke length (mm)	Available stroke length (mm)	Custom stroke length (per mm)	Max. stroke length (mm)	Mounting style: Basic type 00	Axial foot type LB	Rod end flange type FA	Head end flange type FB	Special head end flange type FC	Eye bracket type CA	Clevis bracket type CB	Center trunnion way type TC	Rod end trunnion type TA	Head end trunnion type TB	Option: Bellows (60˚C) J	Bellows (100˚C) J	Bellows (100˚C) K	Bellows (250˚C) L	Piston rod material change M	Cushion needle position S	Cushion needle position T	With indicator G	Accessory: Rod eye I	Rod clevis Y	Eye bracket B1	Clevis bracket B2	Eye bracket B3	Trunnion type No. 2 bracket B4	Switch	Page
Double acting	JSC3 	ϕ40												1	1600	1	600	●	●	●	●	●	●	●	●	●	●				◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	1298
		ϕ50	●	●	●	●	●	●	●	●	●	●	●		2000																											
		ϕ63													2500																											
		ϕ80	●	●	●	●	●	●	●	●	●	●	●		2500		700																									
		ϕ100	●	●	●	●	●	●	●	●	●	●	●		2500		800																									
	JSC3-N JSC3-LN	ϕ125, ϕ140 ϕ160	●	●	●	●	●	●	●					1	2000		800																									
		ϕ180	●	●	●	●	●	●	●								900																									
Double acting with valve for brake	JSC3-V 	ϕ40												1	1000	1	600	●	●	●	●	●	●	●	●	●	●				◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	1326
		ϕ50	●	●	●	●	●	●	●	●	●	●	●		2000																											
		ϕ63													2500																											
		ϕ80	●	●	●	●	●	●	●	●	●	●	●		2500		700																									
		ϕ100	●	●	●	●	●	●	●	●	●	●	●	1	2500		800																									
Double acting low hydraulic type	JSC3-H	ϕ40												1	1600	1	600	●	●	●	●	●	●	●	●	●	●				◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	1334
		ϕ50	●	●	●	●	●	●	●	●	●	●	●		2000																											
		ϕ63													2500																											
		ϕ80	●	●	●	●	●	●	●	●	●	●	●		2500		700																									
		ϕ100	●	●	●	●	●	●	●	●	●	●	●		2500		800																									
	JSC3-H JSC3-LH	ϕ125, ϕ140 ϕ160	●	●	●	●	●	●	●	●	●	●	●	1	2000		800																									
		ϕ180	●	●	●	●	●	●	●	●	●	●	●				900																									
Double acting heat resistance type	JSC3-T	ϕ40												1	1600	1	600	●	●	●	●	●	●	●	●	●	●						◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		1346
		ϕ50	●	●	●	●	●	●	●	●	●	●	●		2000																											
		ϕ63													2500																											
		ϕ80	●	●	●	●	●	●	●	●	●	●	●		2500		700																									
		ϕ100	●	●	●	●	●	●	●	●	●	●	●		2500		800																									
		ϕ125, ϕ140 ϕ160	●	●	●	●	●	●	●	●	●	●	●	1	2000		800																									
		ϕ180	●	●	●	●	●	●	●	●	●	●	●				900																									

Brake cylinder (medium and large bore size)
With brake

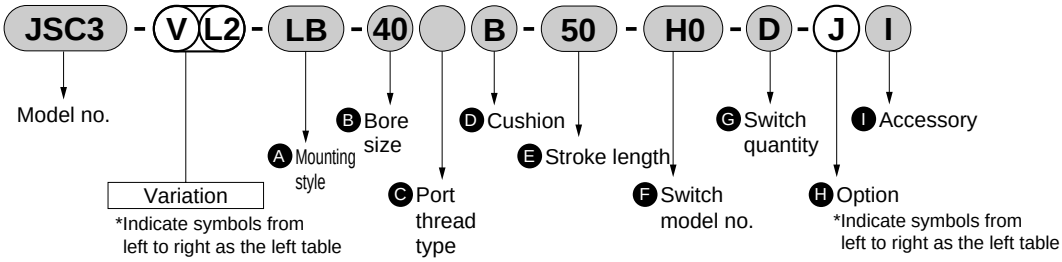
Variation and option selection table

JSC3(ϕ40 to ϕ100) * Refer to page 1292 for ϕ125 to ϕ180.

● : Standard
◎ : Option
○ : Available (custom order)
△ : Available depending on conditions (consult with CKD)
X : Not available

		Code	Variation							Port thread			Option					
			Double acting basic type	Cushioned	With valve	Low hydraulic	Heat resistance (120℃)	Strong magnetic field proof with cylinder switch		NPT	G		Polyolefin with bellows	Silicone rubber with bellows	Piston rod material stainless steel	Customized piston rod end form	Cushion needle relocation	With indicator
		Symbol	No	No	V	H	T	L2		N	G		J	L	M	N	R.S.T	G
Variation	Double acting basic type	Blank		◎	●	●	●	◎		○	○		◎	◎	◎	○	◎	◎
	Cushioned	Blank			◎	◎	◎	◎		○	○		◎	◎	◎	○	◎	◎
	With valve	V				△	△	◎		○	○		◎	◎	◎	○	◎	◎
	Low hydraulic	H					○	X		○	○		◎	◎	◎	○	◎	◎
	Heat resistance (120℃)	T						X		○	○		X	◎	◎	○	◎	◎
	Strong magnetic field proof with cylinder switch	L2								○	○		◎	◎	◎	○	◎	◎
Port thread	NPT	N									X		○	○	○	○	○	○
	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															○	○
	Cushion needle relocation	R.S.T																○
	With indicator	G																
Accessory	Cylinder switch	Listed on Ending	◎	◎	◎	◎	X	◎					◎	◎	◎	○	◎	◎
	Rod eye	I	◎	◎	◎	◎	◎	◎					◎	◎	◎	○	◎	◎
	Rod clevis	Y	◎	◎	◎	◎	◎	◎					◎	◎	◎	○	◎	◎
	Eye bracket	B1	◎	◎	◎	◎	◎	◎					◎	◎	◎	○	◎	◎
	Clevis bracket	B2	◎	◎	◎	◎	◎	◎					◎	◎	◎	○	◎	◎
	Bracket for trunnion	B4	◎	◎	◎	◎	◎	◎					◎	◎	◎	○	◎	◎

<Example of model number>



Model no.: Brake cylinder

● Variation: With valve, strong magnetic field proof switch

Ⓐ Mounting style : Axial foot type
Ⓑ Bore size : ϕ 40mm
Ⓒ Port thread type : Rc thread
Ⓓ Cushion : Both sides cushioned
Ⓔ Stroke length : 50mm
Ⓕ Switch model no. : Reed, strong magnetic field proof switch, lead wire 1m
Ⓖ Switch quantity : Two
Ⓗ Option : Bellows, max. ambient temperature 100℃
Ⓘ Accessory : Rod eye

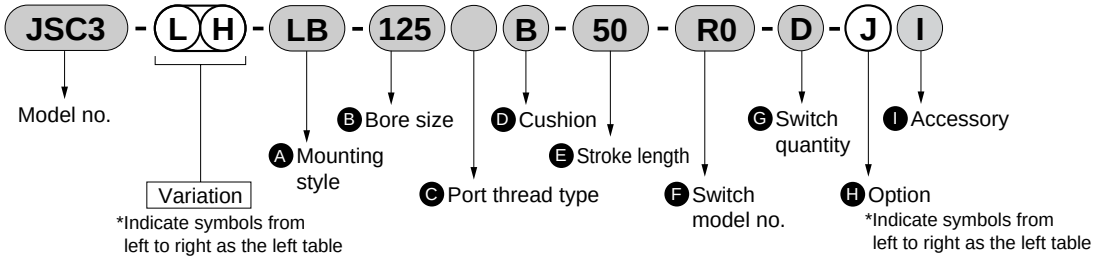
Variation and option selection table

JSC3(ϕ125 to ϕ180) * Refer to page 1290 for ϕ140 to ϕ100.

● : Standard
◎ : Option
○ : Available (custom order)
△ : Available depending on conditions (consult with CKD)
X : Not available

Code		Code	Variation						Port thread			Option					
			Double acting basic type	Cushioned	With cylinder switch	Low hydraulic	Heat resistance (120℃)		NPT	G		Nylon tarpaulin with bellows	Neoprene with bellows	Silicone rubber with bellows	Piston rod material stainless steel		
		Symbol	No		L	H	T		N	G		J	K	L	M		
Variation	Double acting basic type	Blank	＼	◎	◎	＼	＼		○	○		◎	◎	◎	◎		
	Cushioned			＼	◎	◎	◎		○	○		◎	◎	◎	◎		
	With cylinder switch	L			＼	◎	X		○	○		◎	◎	◎	◎		
	Low hydraulic	H				＼	X		○	○		◎	◎	◎	◎		
	Heat resistance (120℃)	T					＼		○	○		X	X	◎	◎		
								＼									
Port thread	NPT	N							＼	X		○	○	○	○		
	G	G								＼		○	○	○	○		
											＼						
Option	Nylon tarpaulin with bellows	J										＼	X	X	○		
	Neoprene with bellows	K											＼	X	○		
	Silicone rubber with bellows	L												＼	○		
	Piston rod material stainless steel	M													＼		
Accessory	Cylinder switch	Listed on Ending	◎	◎	◎	◎	X					◎	◎	◎	◎		
	Rod eye	I	◎	◎	◎	◎	◎					◎	◎	◎	◎		
	Rod clevis	Y	◎	◎	◎	◎	◎					◎	◎	◎	◎		
	Eye bracket	B1	◎	◎	◎	◎	◎					◎	◎	◎	◎		
	Clevis bracket	B2	◎	◎	◎	◎	◎					◎	◎	◎	◎		

<Example of model number>



Model no.

● Variation: With switch, low hydraulic type

Ⓐ Mounting style : Axial foot type
Ⓑ Bore size : ϕ125mm
Ⓒ Port thread type : Rc thread
Ⓓ Cushion : Both sides cushioned
Ⓔ Stroke length : 50mm
Ⓕ Switch model no. : Reed RO switch, lead wire 1m
Ⓖ Switch quantity : Two
Ⓗ Option : Bellows and max. ambient temperature 60℃
Ⓘ Accessory : Rod eye

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 JSC3 Series

Design & Selection

1. Common

⚠ 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 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 the stoppage accuracy and the overrun distance 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 + 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.

⚠ WARNING

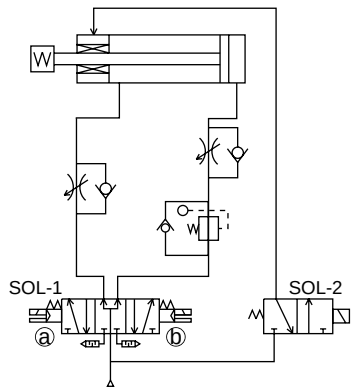
■ Basic circuit

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

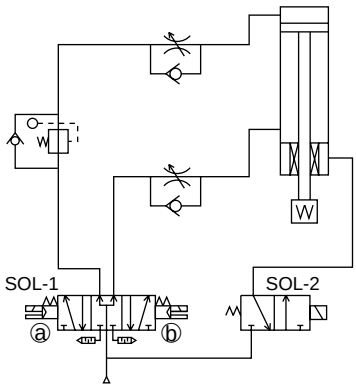


ⓐ SOL-1 ⓑ		SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Return
OFF	ON	ON	Advance

● 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

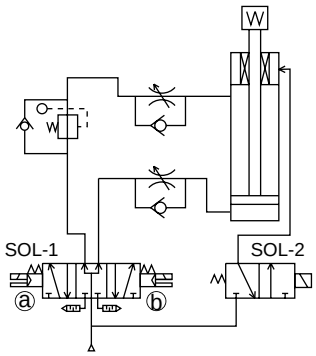


ⓐ SOL-1 ⓑ		SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Down
OFF	ON	ON	Up

● 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

■ 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	
	JSC3-*	JSC3-S*
50mm or less	20% of thrust	15% of thrust
50mm to 100mm	40% of thrust	30% of thrust
100mm and over	60% of thrust	45% 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 JSC3-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.

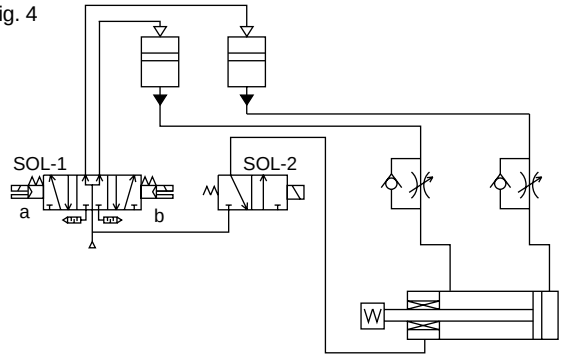
■ Do not apply the large load when brake stopping. Stopping position may change.

2. Low hydraulic type JSC3-H

⚠ WARNING

■ Use the JSC3-H and converter when a stopping accuracy within ± 0.2mm is required, when the stopping pitch is 25mm or less, or when an offset load could occur in the middle of the stroke.

Fig. 4



■ Always release the brakes before the cylinder operates. If the cylinder operates fast, the brakes might not release.

■ 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.

3. Low pressure release type JSC3-S

⚠ CAUTION

■ Due to release pressure reduction, care must be taken because brake holding force is also reduced.

Installation & Adjustment

1. Common

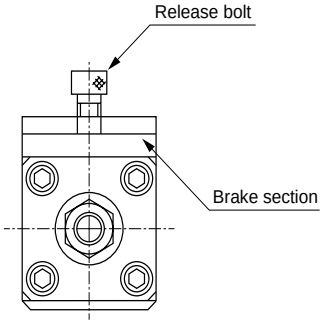
⚠ WARNING

■ 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.
  Do the position locking such as.
- 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 are released by completing screwing the release bolt (enclosed with product) into the female threads (brake release port) on the top of the brakes. (With the ϕ 125 or larger sizes, the brakes are released when the screw is turned in two to three rotations.)
  Remove the release bolt during normal use.
- Use the release bolt enclosed with the product when manually releasing the brakes. The brakes could be damaged when other bolts are used. Follow the optimum screw-in volume shown below when using a regular bolt.

Bore size	Size		Adequate screw-in volume
	JSC3	JSC3-V	
ϕ40, ϕ50	M10 x 8	M10 x 29	4 rotation or less
ϕ63	M12 x 9	M12 x 30	
ϕ80	M14 x 10	M14 x 31	
ϕ100	M16 x 12	M16 x 40	
ϕ125	M24 x 16 and over		2 to 3 rotation
ϕ140	M24 x 20 and over		
ϕ160	M24 x 20 and over		
ϕ180	M24 x 24 and over		

■ 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.

■ 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.

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.

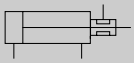
■ Frictional resistance increases and causes the piston speed to change when the cylinder has been stopped for a long time, such as when using first thing in the morning or afternoon. This may impair stoppage accuracy. Conduct break-in operation to obtain stable stoppage accuracy.

Brake cylinder Double acting single rod type/double acting oil-free type

JSC3/JSC3-N Series

● Bore size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100
ϕ125, ϕ140, ϕ160, ϕ180

JIS symbol



RoHS CAD

Specifications

Descriptions		JSC3 (with switch)					JSC3-N/JSC3-LN				JSC3-S (with switch)				
Bore size mm		ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	ϕ125	ϕ140	ϕ160	ϕ180	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation		Double acting									Double acting low pressure release type				
Working fluid		Compressed air													
Max. working pressure MPa		1.0													
Min. working pressure MPa	Brake section	0.3									0.25				
	Cylinder section	0.1					0.05				0.1				
Withstanding pressure MPa		1.6													
Ambient temperature ℃		-10 to 60 (no freezing)					-5 to 60 (no freezing)				-10 to 60 (no freezing)				
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/2				Rc1/8		Rc1/4		Rc3/8
	Cylinder section	Rc1/4	Rc3/8		Rc1/2		Rc1/2	Rc3/4			Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance mm		$^{+0.9}_{0}$ (to 360) $^{+1.4}_{0}$ (to 1000)					$^{+1.0}_{0}$ (to 300), $^{+1.4}_{0}$ (to 1000), $^{+1.8}_{0}$ (to 2000)				$^{+0.9}_{0}$ (to 360) $^{+1.4}_{0}$ (to 1000)				
Working piston speed mm/s		50 to 1000 (used within allowable energy absorption)													
Cushion		Air cushion													
Effective cushion length mm		14.6	16.6		20.6	23.6	21.6				14.6	16.6		20.6	23.6
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISOVG32)													
Stoppage accuracy mm		±1.0 (300mm/s loadless)													
Holding force N		980	1569	2451	3922	6178	9600	12000	15800	20000	784	1255	1961	3138	4941
Allowable energy absorption J	Cushioned	4.29	8.37	15.8	27.9	49.8	63.6	91.5	116	152	4.29	8.37	15.8	27.9	49.8
	No cushion	0.067	0.079	0.079	0.201	0.301	0.371	0.386	0.386	0.958	0.067	0.079	0.079	0.201	0.301
		Note: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. We recommend to use an external shock absorber together.													

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ 40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1600	1
ϕ 50			2000	
ϕ 63			2500	
ϕ 80		700		
ϕ100		800		
ϕ125	50, 75,100,150, 200, 250, 300	800	2000	
ϕ140				
ϕ160				
ϕ180		900		

Note: If the max. stroke is exceeded, product specifications may not be met, depending on operating conditions. Refer to Ending 74 for details.
Custom stroke length is available per 1mm increment.

Min. stroke length of type with switch (T type switch)

● T0/T5 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (20)	40 (40)	60 (60)	20 (10)	60 (45)	105 (75)	150 (105)	110 (110)	110 (110)	175 (145)	175 (145)	50 (50)	50 (50)
ϕ50	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	65 (50)	65 (60)	135 (135)	135 (135)	135 (135)	135 (135)	60 (60)	60 (60)
ϕ63	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	70 (55)	70 (60)	110 (95)	110 (95)	110 (100)	110 (100)	50 (45)	50 (45)
ϕ80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	115 (85)	115 (85)	115 (105)	115 (105)	55 (40)	55 (40)
ϕ100	15 (15)	25 (25)	45 (45)	70 (70)	15 (15)	25 (25)	70 (55)	70 (70)	125 (95)	125 (95)	125 (115)	125 (115)	60 (45)	60 (45)

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.

Min. stroke length of type with switch (T type switch)

● T8 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	50 (35)	95 (65)	140 (95)	95 (85)	95 (85)	155 (125)	155 (125)	45 (40)	45 (40)
ϕ50	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	115 (115)	115 (115)	135 (135)	135 (135)	50 (50)	50 (50)
ϕ63	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	95 (75)	95 (75)	110 (110)	110 (110)	45 (35)	45 (35)
ϕ80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	100 (70)	100 (70)	115 (115)	115 (115)	50 (35)	50 (35)
ϕ100	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	110 (80)	110 (80)	125 (125)	125 (125)	55 (40)	55 (40)

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 min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (75)	105 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (85)	110 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	115 (85)	115 (85)	115 (90)	115 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	125 (95)	125 (95)	125 (100)	125 (100)	60 (45)	60 (45)

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 min. stroke length with switch

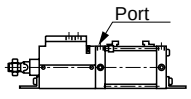
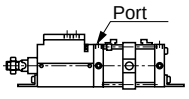
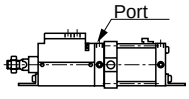
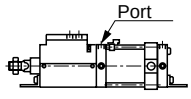
	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at rod side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	100 (70)	100 (70)	100 (75)	100 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (85)	105 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (90)	110 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	120 (90)	120 (90)	120 (100)	120 (100)	60 (45)	60 (45)

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.

Min. stroke length of type with switch (R type switch)

● ϕ125 to ϕ180

(Unit: mm)

Descriptions / Bore size (mm)	Stroke length when same surface installation	Stroke length when center trunnion installation	Stroke length when rod end trunnion installation	Stroke length when head end trunnion installation
				
ϕ125	20 and over * (25 and over)	120 and over	70 and over	
ϕ140		125 and over	75 and over	
ϕ160		130 and over	80 and over	
ϕ180		135 and over	85 and over	

*The minimum stroke length for R2YK and R3YK.

Switch specifications (T type switch)

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

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

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	T0H/T0V		T5H/T5V		T8H/T8V			T2YD*/T2YDPT*
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 switches.
Note 2: Max. load current above: 20mA at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25 ℃. (5 to 10mA at 60℃)

Switch specifications (R type switch/H type switch)

● Proximity switch

Descriptions	Proximity 2 wire			Proximity 3 wire	
	R1/R1K	R2/R2K	R2Y/R2YK (2 color indicator type)	R3/R3K	R3Y/R3YK (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 and 5 to 100mA	10 to 30 VDC and 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	

● Reed switch

Descriptions	Reed 2 wire					
	R0	R4	R5	R6	H0	H0Y (2 color indicator type)
Applications	Relay, programmable controller	High capacity relay, solenoid valve	Programmable controller, relay, IC circuit (w/o indicator light), serial connection	Programmable controller (with DC self hold)	Relay, programmable controller	Programmable controller
Load voltage / current	12/24 VDC, 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	12/24 VDC 5 to 50mA / 110 VAC 7 to 20mA	24 VDC, 5 to 20mA (Note 2)
Light	LED ON lighting	Neon light OFF lighting	None	LED ON lighting	Green LED ON lighting	Red/green LED ON lighting
Leakage current	0mA	1mA or less	0mA	0.1mA or less	10 μA or less	

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: The maximum load current is applied at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25 ℃. (5 to 10mA when 60 ℃)

Cylinder weight

● φ40 to φ100

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm						Weight per switch (including mounting bracket)					Additional weight per S = 100mm
							T type	H type		T2YD type		
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	D mountain clevis type (CB)	Trunnion type (TC)		1m	3m	1m	3m	
φ40	2.48	2.66	2.91	2.83	2.83	2.86	0.018	0.10	0.20	0.08	0.17	0.39
φ50	3.47	3.67	3.97	3.87	3.87	3.97						0.46
φ63	5.09	5.49	6.19	5.79	5.79	5.89						0.50
φ80	8.15	8.85	9.95	9.65	9.65	9.45						0.90
φ100	14.70	15.70	17.40	16.90	16.90	17.30						1.12

(E.g.) Product weight of JSC3-LB-50B-200-T0H-D

Product weight when S = 0mm ····· 3.67kg
Additional weight when S = 200mm ····· 0.46 X $\frac{200}{100}$ = 0.92 (kg)
Weight of two switches ····· 0.018kg X 2 = 0.036kg
Product weight ····· 3.67kg + 0.92kg + 0.036kg = 4.626kg

● φ125 to φ180

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm					Additional weight per S = 100mm	R type		H type		T2YD type	
	Axial foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	D mountain clevis type (CB)	Trunnion type (TC, TA, TB)		Grommet	Terminal box	1m	3m	1m	3m
φ125	33.3	35.1	34.8	34.9	35.2	2.60	0.10	0.09	0.10	0.20	0.08	0.17
φ140	43.8	47.2	45.6	45.8	45.0	2.96						
φ160	56.8	60.6	58.7	59.0	60.1	3.57						
φ180	79.6	87.1	82.5	83.0	83.2	4.94						

(E.g.) JSC3-N-LB-125B-300

Product weight when S = 0mm ····· 33.3kg
Additional weight when S = 300mm ····· 2.60 X $\frac{300}{100}$ = 7.8kg
Product weight when S = 300mm ····· 33.3 + 7.8 = 41.1kg

Oil-prohibited specifications

(Ending 126)

JSC3 - ····· - P12

How to order (ϕ 40 to ϕ 100)

Without switch

JSC3 - ○ — LB - 40 ○ B - 50 — S I

With switch

JSC3 - ○ — LB - 40 ○ B - 50 - T0H - R - S I

Strong magnetic field proof (H0, H0Y switch) with switch

JSC3 - ○ L2 - LB - 40 ○ B - 50 - H0 - R - S I

Model no.

Ⓐ Brake release pressure

Ⓑ Mounting style Note 1

Ⓒ Bore size

Ⓓ Port thread type

Ⓔ Cushion

Ⓕ Stroke length Note 2

Ⓖ Switch model no. *indicates lead wire length.

Ⓗ Switch quantity Note 4

Ⓘ Option Note 5

Ⓙ Accessory Note 6

Symbol	Descriptions
Ⓐ Brake release pressure	
Blank	Standard type 0.3MPa
S	Low pressure release type 0.25MPa
Ⓑ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
FC	Special head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end 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 cushioned
R	Rod end cushion
H	Head end cushion
N	No cushion

Ⓕ Stroke length (mm)

Bore size	Stroke length Note 3	Available stroke length	Custom stroke length
ϕ40	**1 to 600**	**1600**	**1 mm increment**
ϕ50	**1 to 600**	**2000**	
ϕ63	**1 to 600**	**2500**	
ϕ80	**1 to 700**	**2500**	
ϕ100	**1 to 800**	**2500**	

Ⓖ Switch model no.

Refer to the following page for switch model no.

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

Ⓗ Switch quantity	
R	One on rod end
H	One on rod head
D	Two
T	Three
4	Four (if more than four switches, indicate switch quantity.)

Ⓘ Option

		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	100℃	200℃
L	Bellows	250℃	400℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
G	With indicator		

Ⓙ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring 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. (Special head end flange type is attached when shipped.)

Note 2: Refer to Ending 74 if max. stroke length is exceeded.

Note 3: Refer to page 1299 for min. stroke length with switch.

Note 4: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.

Note 5: Refer to each dimensions to confirm indication of "S", "T", and "G" positions.

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

Note 7: Refer to Ending 89 for custom specifications of rod end form.

<Example of model number>

JSC3-LB-40B-50-T0H-R-SI

Model: Brake cylinder double acting

Ⓐ Brake release pressure : Standard type 0.3MPa
Ⓑ Mounting style : Axial foot type
Ⓒ Bore size : ϕ40mm
Ⓓ Port thread type : Rc thread
Ⓔ Cushion : Both sides cushioned
Ⓕ Stroke length : 50mm
Ⓖ Switch model no. : Reed switch T0H, lead wire 1m
Ⓗ Switch quantity : One on rod end
Ⓘ Option : Cushion needle position S
Ⓙ Accessory : Rod eye

How to order mounting bracket

● ϕ40 to ϕ100

Bore size (mm) / Mounting bracket	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Foot (LB)	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FB)	JSC3-40-FB	JSC3-50-FB	JSC3-63-FB	JSC3-80-FB	JSC3-100-FB
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

Note 1: The foot type mounting bracket is supplied as a two-piece set.

[G] Switch model no.

T type switch

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	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			3-wire
T3H*	**T3V***		2 color indicator type	2-wire
T2YH*	**T2YV***			3-wire
T3YH*	**T3YV***		1 color indicator type (custom order)	3-wire
T3PH*	**T3PV***		2 color indicator type (w/o indicator light for preventive maintenance output)	3-wire
T2YFH*	**T2YFV***			4-wire
T3YFH*	**T3YFV***		2 color indicator type (with indicator light for preventive maintenance output (1 color))	3-wire
T2YMH*	**T2YMV***			4-wire
T3YMH*	**T3YMV***		Strong magnetic field proof switch	2-wire
T2YD*	**-**			
T2YDT*	**-**		Off-delay type	2-wire
T2JH*	**T2JV***			

R switch/H types switch

Grommet type	Terminal box type		Contact	Indicator	Lead wire
	Standard type	Water tight type			
R1*	**R1B**	**R1A**			
					wire
R					
					wire
R					
R6	**R6B**	**R6A**		1 color indicator type	wire
H0*	**-**	**-**		Strong magnetic field proof 1 color indicator type	
H0Y*	**-**	**-**		Strong magnetic field proof 2 color indicator type	

The switch has been changed to T type switch since October first, 2007.

How to order brake unit

JSC3 - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

● For mounting bracket FA

JSC3 - FA - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

How to order T type switch

● Switch body + mounting bracket

JSC3 - T0H - 40

Switch model no. (Item Ⓖ) | Bore size (Item Ⓒ previous page)

● Only switch body

SW - T0H

Switch model no. (Item Ⓖ)

● Mounting bracket

JSC3 - TS - 40

Bracket | Bore size (Item Ⓒ previous page)

How to order T2YD type switch.

● Switch body + mounting bracket
· ϕ 40 to ϕ100

JSC3 - T2YD - 40

Switch model no. (Item Ⓖ) | Bore size (Item Ⓒ previous page)

● Only switch body
· ϕ 40 to ϕ100

SW - T2YD

Switch model no. (Item Ⓖ)

● Mounting bracket

JSC3 - T - 40

Bore size (Item Ⓒ previous page)

How to order H type switch

● Switch body + mounting bracket

JSC3-L2 - H0 - 40

Switch model no. (Item Ⓖ) | Bore size (Item Ⓒ previous page)

● Only switch body

SW - H0

Switch model no. (item Ⓖ)

● Mounting bracket

JSC3-L2 - H - 40

Bore size (Item Ⓒ previous page)

How to order (ϕ125 to ϕ180)

Without switch

JSC3-N - LB - 125 ( ) B - 50 ——— S I

With switch

JSC3-LN - LB - 125 ( ) B - 50 - R0 - R - S I

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length Note 2

Ⓕ Switch model no.
* indicates lead wire length

Ⓖ Switch quantity Note 4

Ⓗ Option Note 5

Ⓘ Accessory Note 6

Symbol	Descriptions
Ⓐ Mounting style	
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end trunnion type
Ⓑ Bore size (mm)	
125	ϕ125
140	ϕ140
160	ϕ160
180	ϕ180
Ⓒ Port thread type	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)
Ⓓ Cushion	
B	Both sides cushioned
R	Rod end cushion
H	Head end cushion
N	No cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 3	Available stroke length	Custom stroke length
ϕ125	**1 to 800**	**2000**	**1 mm increment**
ϕ140	**1 to 800**	**2000**	
ϕ160	**1 to 800**	**2000**	
ϕ180	**1 to 900**	**2000**	

Ⓕ Switch model no.

Grommet Type	Terminal box type: Standard type	Terminal box type: Splash-proof	Contact	Indicator	Lead wire
R1K*	**R1KB**	**R1KA**	Proximity	1 color indicator type	2-wire
R2K*	**R2KB**	**R2KA**			
R2YK*	**R2YKB**	**R2YKA**		2 color indicator type	
T2YDP*	--	--		Strong magnetic field proof switch	
T2YDPT*	--	--			
R3K*	**R3KB**	**R3KA**		1 color indicator type	3-wire
R3YK*	**R3YKB**	**R3YKA**		2 color indicator type	
R0*	**R0B**	**R0A**	Reed	1 color indicator type	2-wire
R4*	**R4B**	**R4A**		W/o indicator light	
R5*	**R5B**	**R5A**			
R6*	**R6B**	**R6A**		1 color indicator type	

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

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

Ⓗ Option

		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	60℃	100℃
K	Bellows	100℃	200℃
L	Bellows	250℃	400℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
C2	Cushion mechanism with check valve		

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring attached)

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.
Note 2: Refer to Ending 74 if max. stroke length is exceeded.
Note 3: Refer to page 1299 for min. stroke length with switch.
Note 4: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.
Note 5: Refer to the dimentions for position indication of cushion needle.
Note 6: "I and "Y" can not be selected at the same time.
Note 7: Refer to Ending 89 for custom specifications of rod end form.

<Example of model number>

JSC3-LN-LB-125B-50-R0-R-SI

Model: Brake cylinder double acting oil-free type
Ⓐ Mounting style : Axial foot type
Ⓑ Bore size : ϕ125mm
Ⓒ Port thread type : Rc thread
Ⓓ Cushion : Both sides cushioned
Ⓔ Stroke length : 50mm
Ⓕ Switch model no. : Reed switch R0
Ⓖ Switch quantity : One on rod end
Ⓗ Option : Cushion needle position S
Ⓘ Accessory : Rod eye

How to order brake unit

JSC3 - (125) - **BRAKE-UNIT**

Bore size (Item (B) previous page)

How to order R type switch

● Switch body + mounting bracket

JSC3-LN - **R0** - **125**

Switch model no. (Item (F) previous page)
Bore size (Item (B) previous page)

● Only switch body

SW - **R0**

Switch model no. (item (F) previous page) *
* For swarf countermeasures, R2YK*, R3YK* are provided. (Measures against swarf must also be provided for the mounting bracket)

● Mounting bracket

JSC3-LN - **R** - **125**

Bracket	
*R	R type switch

Bore size (Item (B) previous page)
*For swarf countermeasures, RF is provided. (For R2YK and R3YK switch only)

● Only terminal box

·R * B: **SW** - **RB**

·R * A: **SW** - **RA**

How to order T2YD type switch.

● Switch body + mounting bracket
· ϕ 125 to ϕ180

JSC3-LN - **T2YDP*** - **140**

Switch model no. (Item (F) previous page)
Bore size (Item (B) previous page)

● Only switch body
· ϕ 125 to ϕ 180

SW - **T2YDP***

Switch model no. (Item (F) previous page)

● Mounting bracket

JSC3-LN - **T** - **140**

Bore size (Item (B) previous page)

● ϕ40 to ϕ100

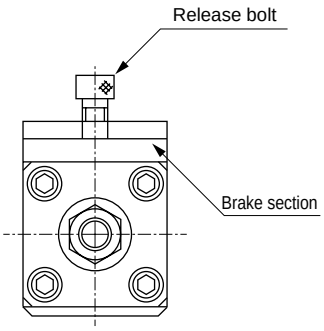
Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Paint
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TC	Cast iron	Paint

Release bolt size (hexagon socket head cap bolt)

Bore size	Size	
	JSC3	JSC3-V
ϕ 40, ϕ50	M10 x 8	M10 x 29
ϕ 63	M12 x 9	M12 x 30
ϕ 80	M14 x 10	M14 x 31
ϕ 100	M16 x 12	M16 x 40

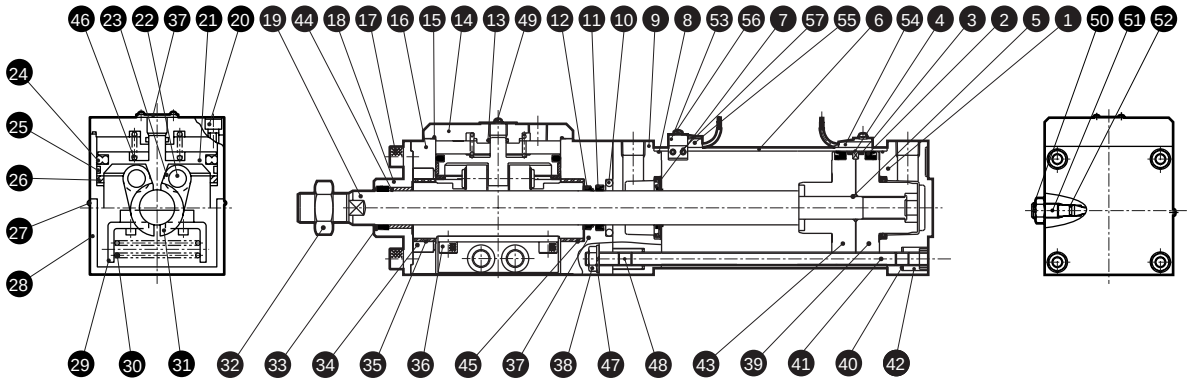
Manual brake release method



Note: Method of brake release

- The brakes are released by screwing the release bolt (enclosed with product) into the female threads (side of brake release port) on the top of the brakes in two to three rotations.
  (Remove the release bolt during normal use.)
- Use the release bolt enclosed with the product when manually releasing the brakes. The brakes could be damaged when other bolts are used.

Internal structure and parts list



Products No.	Parts name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint
2	Piston packing seal	Nitrile rubber	
3	Wear ring	Polyacetal resin	
4	Magnet	Plastic	
5	Piston gasket	Nitrile rubber	
6	Cylinder tube	Aluminum alloy	Hard alumite
7	Cushion packing seal	Nitrile rubber	
8	Cylinder gasket	Nitrile rubber	
9	Rod cover	Aluminum alloy die-casting	Paint
10	Metal seal	Nitrile rubber	
11	Rod packing seal	Nitrile rubber	
12	Dust wiper	Nitrile rubber	
13	Cap gasket A	Nitrile rubber	
14	Main body cap	Cast iron	Nitriding
15	Cap gasket B	Nitrile rubber	
16	Brake	Aluminum alloy casting	Alumite
17	Hexagon socket head cap bolt	Alloy steel	Blackening
18	Rod bushing	Steel	Phosphoric acid mangan
19	Piston rod	Steel	Industrial chrome plating
20	Hexagon socket head cap bolt	Alloy steel	Blackening
21	Piston for brake	Cast iron	Phosphoric acid mangan
22	Parallel pin	Steel	
23	Bearing		
24	Piston packing seal B	Nitrile rubber	
25	Wear ring	Polyacetal resin	
26	Cushion rubber	Urethane rubber	
27	Cross headed pan	Steel	Zinc chromate

Products No.	Parts name	Material	Remarks
28	Cover	Steel	Paint
29	Spring holder	Steel	Zinc chromate
30	Spring	Steel	
31	Brake shoe metal	Cast iron	Nickeling
32	Rod nut	Steel	Zinc chromate
33	Dust wiper	Nitrile rubber	
34	DU ring	Steel	Blackening
35	Bush	Oil impregnated bearing alloy	
36	Hexagon socket head cap bolt	Alloy steel	Blackening
37	Dust cover	Aluminum alloy	Paint
38	Hexagon nut	Steel	Blackening
39	Piston H	Aluminum alloy die-casting	
40	Tie rod	Steel	Zinc chromate
41	Conical spring washer	Steel	Blackening
42	Round nut	Steel	Zinc chromate
43	Piston R	Aluminum alloy die-casting	
44	Bush B	Oil impregnated bearing alloy	
45	Thrust washer		
46	Spring	Steel	Paint
47	Toothed washer	Steel	Blackening
48	Hexagon socket head set screw	Alloy steel	Blackening
49	Washer assembly cross headed pan	Steel	Zinc chromate
50	Cushion needle	Copper alloy	
51	Needle nut	Copper alloy	
52	Needle gasket	Nitrile rubber	
With switch			
53	Switch installation unit	Aluminum alloy	
54	Switch holder	Aluminum alloy	
55	Cross headed pan	Steel	Zinc chromate
56	Hexagon socket head set screw	Alloy steel	Blackening
57	Cylinder switch		

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
ϕ 40	JSC3- 40K	❷ ❸ ❼ ❽ ❿ ⓫ ⓬ ㉝ ㊺
ϕ 50	JSC3- 50K	
ϕ 63	JSC3- 63K	
ϕ 80	JSC3- 80K	
ϕ 100	JSC3-100K	

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

● ϕ125 to ϕ180

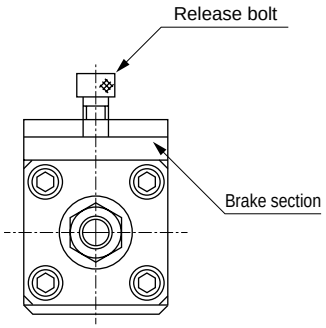
Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Paint
FA	Carbon steel	Phosphate coating
CA	Cast iron	Paint
CB	Cast iron	Paint
TC/TA/TB	Cast iron	Paint
FB	Carbon steel	Paint

Release bolt size (hexagon socket head cap bolt)

Bore size	Size
ϕ125	M24 x 16 and over
ϕ140	M24 x 20 and over
ϕ160	M24 x 20 and over
ϕ180	M24 x 24 and over

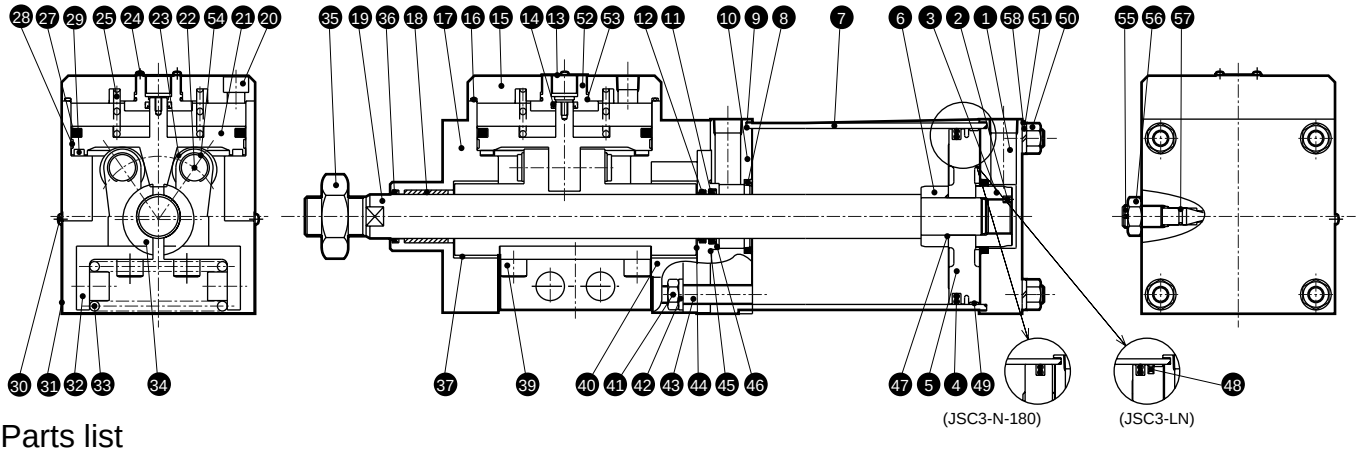
Manual brake release method



Note: Method of brake release

- The brakes are released by screwing the release bolt (enclosed with product) into the female threads (side of brake release port) on the top of the brakes in two to three rotations.
  (Remove the release bolt during normal use.)
- Use the release bolt enclosed with the product when manually releasing the brakes. The brakes could be damaged when other bolts are used.

Internal structure and parts list



Parts list

No.	Parts name	Material	Remarks
1	Head cover	Steel	Zinc chromate
2	Hexagon socket head set screw	Alloy steel	Blackening
3	Cushion ring (A)	Steel	Zinc chromate
4	Piston packing seal	Nitrile rubber	
5	Piston	ϕ125 to ϕ160 Aluminum alloy, ϕ180 Cast iron	
6	Cushion ring (B)	Steel	Zinc chromate
7	Cylinder tube	Steel	Paint, industrial chrome plating
8	Cushion packing seal	Nitrile rubber, steel	
9	Cylinder gasket	Nitrile rubber	
10	Rod cover	Steel	Zinc chromate
11	Rod packing seal	Nitrile rubber	
12	Dust wiper	Nitrile rubber	
13	Dust cover	Aluminum alloy	Alumite
14	Rod packing seal	Nitrile rubber	
15	Main body cap	Cast iron	Alumite
16	Cap gasket	Nitrile rubber	
17	Brake	Aluminum casting	Alumite
18	Bush B	Oil impregnated bearing alloy	
19	Piston rod	Steel	Industrial chrome plating
20	Hexagon socket head cap bolt	Alloy steel	Blackening
21	Piston for brake	Cast iron	Phosphoric acid mangan
22	Bearing pin	Steel	
23	Bearing	-	
24	Washer assembly cross headed pan	Steel	Zinc chromate
25	Spring	Steel	Paint
27	Piston packing seal B	Nitrile rubber	
28	Wear ring	Polyacetal resin	
29	Cushion rubber	Urethane rubber	
30	Cross headed pan	Steel	Zinc chromate
31	Cover	Steel	Paint
32	Spring holder	Steel	Phosphoric acid mangan
33	Spring	Steel	Blackening
34	Brake shoe metal	Cast iron	Nickeling
35	Rod nut	Steel	Zinc chromate
36	Dust wiper	Nitrile rubber	
37	Bush A	DU dry bearing	
39	Hexagon socket head cap bolt	Alloy steel	Blackening
40	Ring	Steel	Blackening
41	Hexagon nut	Steel	Zinc chromate
42	Toothed washer	Steel	Zinc chromate
43	Tie rod	Steel	Zinc chromate
44	Thrust washer	Steel	
45	Metal gasket	Nitrile rubber	
46	Rod bushing	Cast iron	Zinc chromate
47	Piston gasket	Nitrile rubber	
48	Magnet	Rubber	Only JSC3-LN
49	Wear ring	Polyacetal resin	
50	Hexagon nut	Steel	Zinc chromate
51	Spring washer	Steel	Zinc chromate
52	Main body cap	Cast iron	Phosphoric acid mangan
53	O ring	Nitrile rubber	
54	E type snap ring	Steel	Zinc chromate
55	Cushion needle	Steel	Zinc chromate
56	Needle nut	Steel	Zinc chromate
57	Needle gasket	Nitrile rubber	
58	Plain washer	Steel	Zinc chromate

Note 1: With JSC3-LN-125 to 160, the (7) cylinder tube is made of aluminum alloy, and the (48) magnet is built in.
Note 2: With JSC3-LN-180, the (5) piston and (7) cylinder tube are made of aluminum alloy, and the (48) magnet and (49) wear ring are built in.

Repair parts list

● JSC3-LN/JSC3-N (excluding ϕ180)

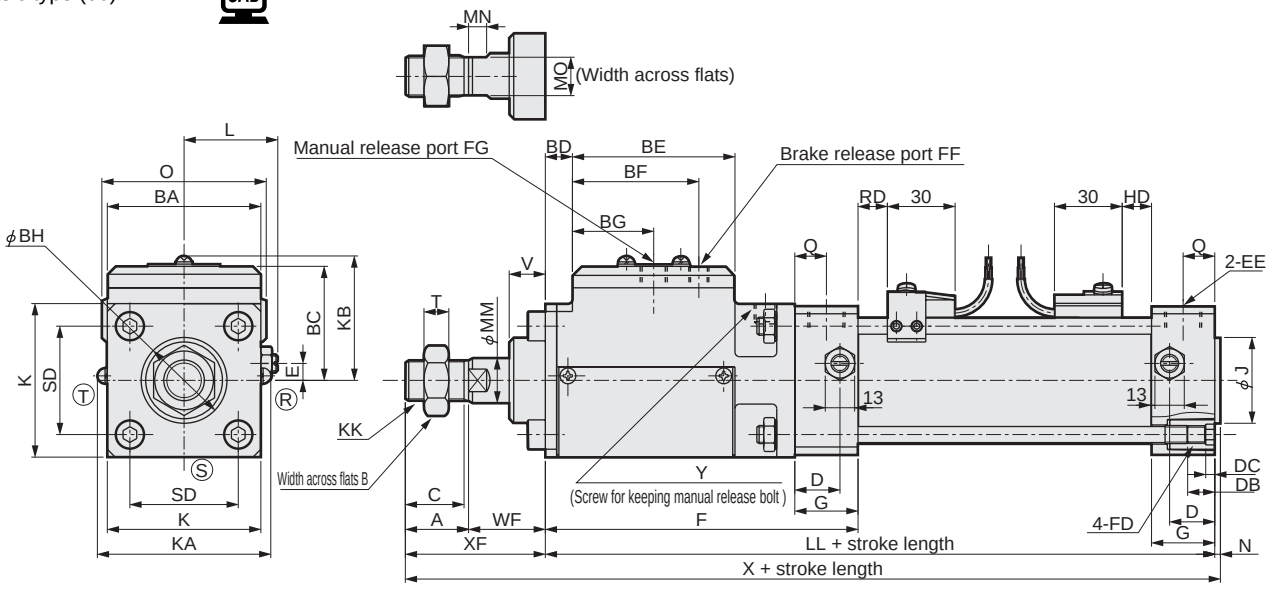
Bore size (mm)	Kit No.	Repair parts number
ϕ125	JSC3-N-125K	❹ ❽ ❾ ⓫ ⓬ ㊱ ㊺ ㊾ ㊼
ϕ140	JSC3-N-140K	
ϕ160	JSC3-N-160K	
ϕ180	JSC3-LN-180K	

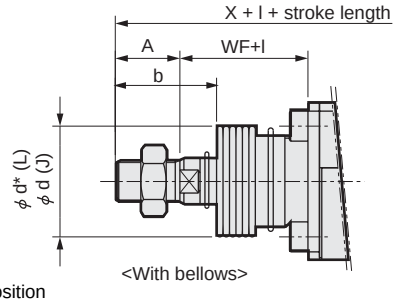
● JSC3-N

Bore size (mm)	Kit No.	Repair parts number
ϕ180	JSC3-N-180K	❹ ❽ ❾ ⓫ ⓬ ㊱ ㊺ ㊼

Dimensions (ϕ40 to ϕ100)

Basic type (00)





<With bellows>

RD: Rod end max. sensitive position
HD: Head end max. sensitive position Note: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.

Note 1: Manual release bolt is attached.
Note 2: Refer to pages 1351, 1352 for the accessory dimensions.

Symbol / Bore size (mm)	Basic type (00) basic dimensions																						
	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DB	DC	E	EE	F	FF	FG	G	J	K
φ40	22	22	57	46	9	61	51	31	31	20	18	M8	12	4	7.5	Rc1/4	121	Rc1/8	M10	26	31	57
φ50	28	27	68	50.5	12	72	56	36	38	26	20	M8	12	4	0	Rc3/8	138.5	Rc1/8	M10	28	38	68
φ63	28	27	80	54	13	86	70	43	38	26	22	M8	12	4	0	Rc3/8	154	Rc1/4	M12	30	38	80
φ80	36	32	98	66	13	106	80	53	43	34	26	M12	16	5	0	Rc1/2	179.5	Rc1/4	M14	34	43	98
φ100	45	41	118	74	17.5	132	101	66	51	43	28	M12	16	5	0	Rc1/2	220.5	Rc3/8	M16	36	51	118

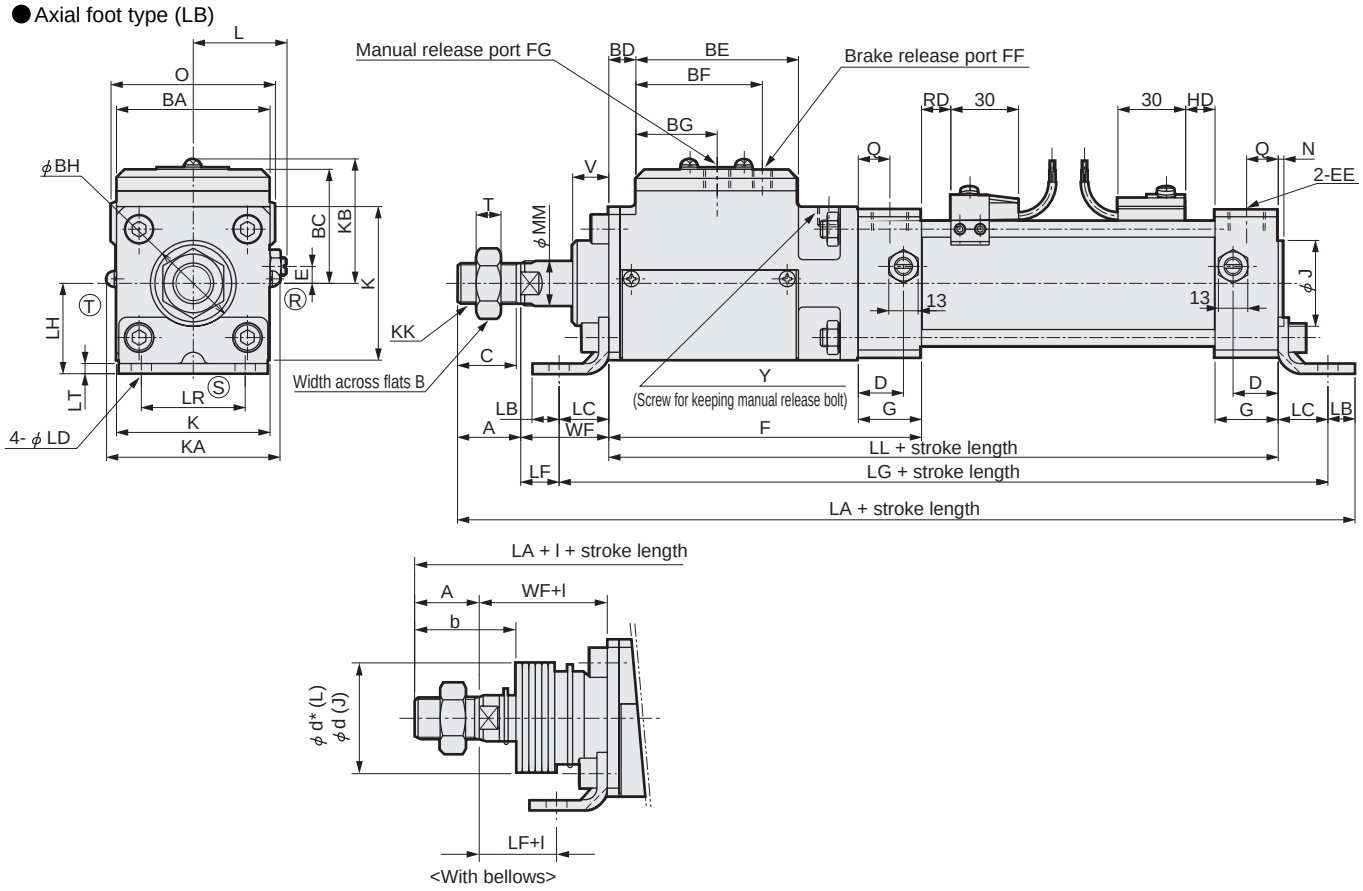
Symbol / Bore size (mm)																		With switch					
	KA	KB	KK	L	LL	MM	MN	M0	N	Q	SD	T	V	WF	X	XF	Y	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M		
																		O	RD	HD	O	RD	HD
φ40	66	50.5	M14 x 1.5	38 to 39.5	188	16	8	14	2	13	40.5	8	15	30	242	52	M10 depth 9	66	11	11	66	10	10
φ50	77	55	M18 x 1.5	41.0 to 43.5	211.5	20	8	17	2.5	14	48	11	16	34	276	62	M10 depth 9	73	13	13	73	12	12
φ63	89	58.5	M18 x 1.5	47.5 to 50.0	229	20	8	17	3	15	59	11	16	30	290	58	M12 depth 10	85	13	13	85	12	12
φ80	107	70.5	M22 x 1.5	56 to 59	261.5	25	11	22	3.5	17	74	13	17.5	43.5	344.5	79.5	M14 depth 11	105	14.5	14.5	105	13.5	13.5
φ100	127	78.5	M26 x 1.5	66 to 69	312.5	30	13	27	4	18	90	16	26	48	409.5	93	M16 depth 13	121	18.5	18.5	121	17.5	17.5

Symbol / Bore size (mm)	With bellows										ℓ								
	T8			T2YD			H0*			A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	HD	O	RD	HD	O	RD	HD														
φ40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
φ50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
φ100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Axial foot type (LB)



Note 1: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.
Note 2: Manual release bolt is attached.
Note 3: Refer to page 1351, 1352 for accessory dimensions.

Symbol / Bore size (mm)	Axial foot type (LB) basic dimensions																				
	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	E	EE	F	FG	FF	G	J	K	KA	KB
φ40	22	22	57	46	9	61	51	31	31	20	18	7.5	Rc1/4	121	M10	Rc1/8	26	31	57	66	50.5
φ50	28	27	68	50.5	12	72	56	36	38	26	20	0	Rc3/8	138.5	M10	Rc1/8	28	38	68	77	55
φ63	28	27	80	54	13	86	70	43	38	26	22	0	Rc3/8	154	M12	Rc1/4	30	38	80	89	58.5
φ80	36	32	98	66	13	106	80	53	43	34	26	0	Rc1/2	179.5	M14	Rc1/4	34	43	98	107	70.5
φ100	45	41	118	74	17.5	132	101	66	51	43	28	0	Rc1/2	220.5	M16	Rc3/8	36	51	118	127	78.5

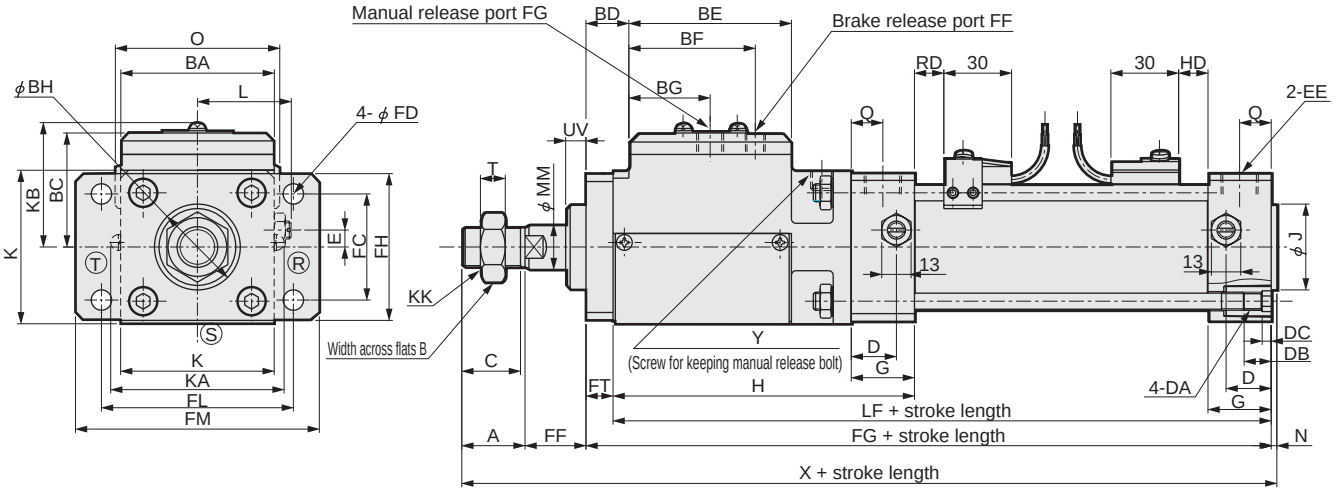
Symbol / Bore size (mm)											Installation dimensions								With switch					
	KK	L	LL	MM	N	Q	T	V	WF	Y	LA	LB	LC	LD	LG	LH	LR	LT	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M		
																			O	RD	HD	O	RD	HD
φ40	M14 x 1.5	38 to 39.5	188	16	2	13	8	15	30	M10 depth 9	269.5	10	19.5	9	227	40	40	3.2	66	11	11	66	10	10
φ50	M18 x 1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	M10 depth 9	307.5	12	22	9	255.5	40	46	4.5	73	13	13	73	12	12
φ63	M18 x 1.5	47.5 to 50.0	229	20	3	15	11	16	30	M12 depth 10	329	12	30	11	289	50	60	4.5	85	13	13	85	12	12
φ80	M22 x 1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	M14 depth 11	392	14	37	14	335.5	60	74	6.0	105	14.5	14.5	105	13.5	13.5
φ100	M26 x 1.5	66 to 69	312.5	30	4	18	16	26	48	M16 depth 13	457.5	21	31	14	374.5	67	80	6.0	121	18.5	18.5	121	17.5	17.5

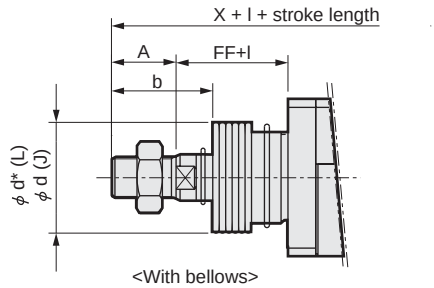
Symbol / Bore size (mm)	T8			T2YD			H0*			With bellows						ℓ							
	O	RD	HD	O	RD	HD	O	RD	HD	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
φ40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
φ50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
φ100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Rod end flange type (FA)





<With bellows>

Note 1: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.
Note 2: The rod metal is not fixed, so conversion to the head side flange is not possible.
Note 3: Manual release bolt is attached.
Note 4: Refer to page 1351, 1352 for accessory dimensions.

Symbol / Bore size (mm)	Rod end flange type (FA) basic dimensions																						
	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DC	DB	E	EE	FF*	FG	G	H	J	K	KA
φ 40	22	22	57	46	17	61	51	31	31	20	18	M8	4	12	7.5	Rc1/4	Rc1/8	M10	26	117	31	57	66
φ 50	28	27	68	50.5	19.5	72	56	36	38	26	20	M8	4	12	0	Rc3/8	Rc1/8	M10	28	134	38	68	77
φ 63	28	27	80	54	21	86	70	43	38	26	22	M8	4	12	0	Rc3/8	Rc1/4	M12	30	146	38	80	89
φ 80	36	32	98	66	27	106	80	53	43	34	26	M12	5	16	0	Rc1/2	Rc1/4	M14	34	173.5	43	98	107
φ 100	45	41	118	74	30	132	101	66	51	43	28	M12	5	16	0	Rc1/2	Rc3/8	M16	36	214.5	51	118	127

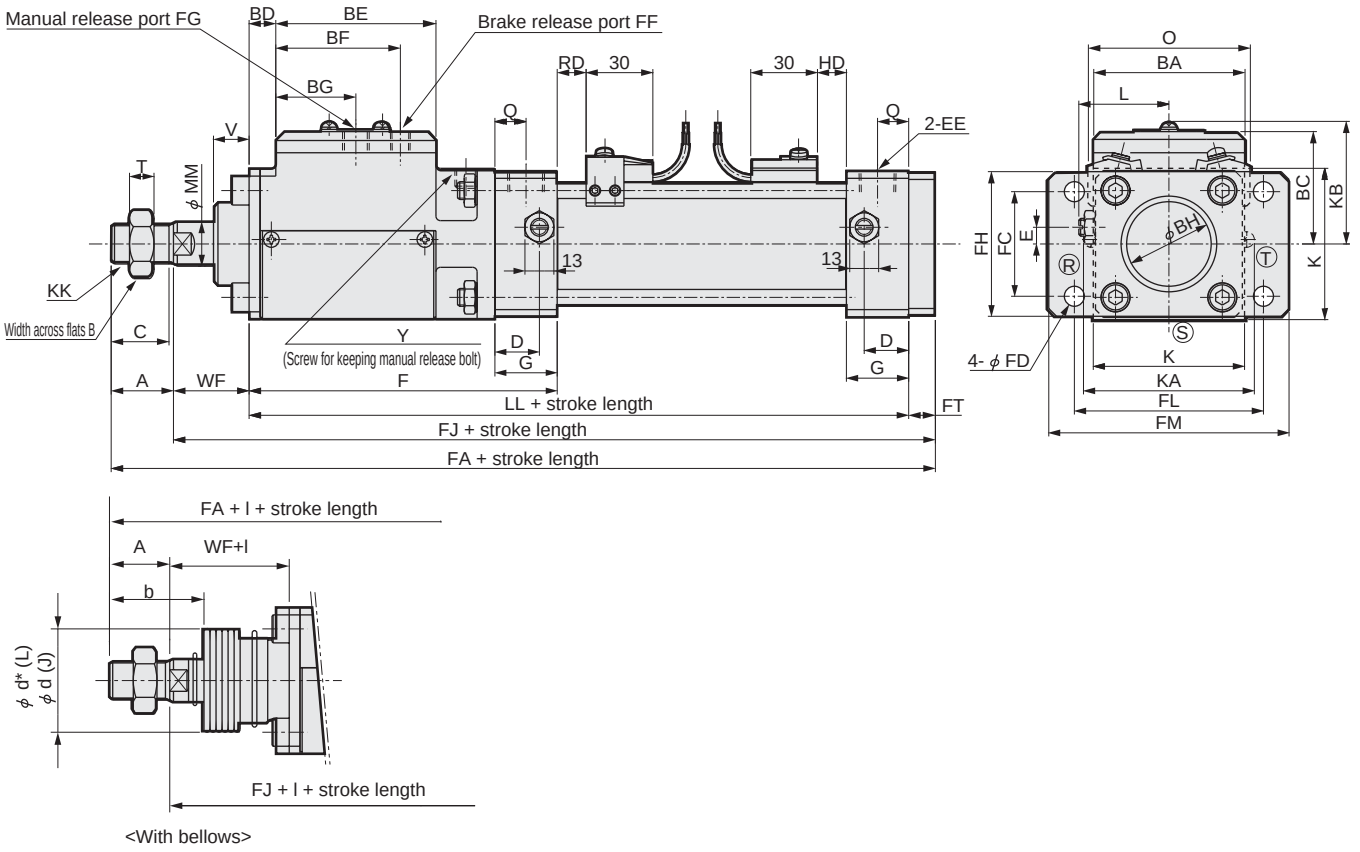
Symbol / Bore size (mm)												Installation dimensions								With switch					
	KB	KK	L	LF	MM	N	Q	T	UV	X	Y	FC	FD	FF	FH	FJ	FL	FM	FT	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M		
																				O	RD	HD	O	RD	HD
φ 40	50.5	M14 x 1.5	38 to 39.5	184	16	2	13	8	7	242	M10 depth 9	40	9	22	57	196	80	100	12	66	11	11	66	10	10
φ 50	55	M18 x 1.5	41.0 to 43.5	207	20	2.5	14	11	8.5	276	M10 depth 9	47	9	26.5	65	219	85	108	12	73	13	13	73	12	12
φ 63	58.5	M18 x 1.5	47.5 to 50.0	221	20	3	15	11	8	290	M12 depth 10	60	11	22	80	237	106	130	16	85	13	13	85	12	12
φ 80	70.5	M22 x 1.5	56 to 59	255.5	25	3.5	17	13	4.5	344.5	M14 depth 11	74	14	30.5	98	274.5	125	153	19	105	14.5	14.5	105	13.5	13.5
φ 100	78.5	M26 x 1.5	66 to 69	306.5	30	4	18	16	13	409.5	M16 depth 13	88	14	35	118	325.5	144	180	19	121	18.5	18.5	121	17.5	17.5

Symbol / Bore size (mm)	T8			T2YD			H0*			With bellows						ℓ							
	O	RD	HD	O	RD	HD	O	RD	HD	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
φ 40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
φ 50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ 63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ 80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
φ 100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Head end flange type (FB)



<With bellows>

Note 1: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.
Note 2: The piston rod protrusion length (from flange end), rod metal and flange mounting bolt will change, so conversion to the rod side flange is not possible.
Note 3: Manual release bolt is attached.
Note 4: Refer to page 1351, 1352 for accessory dimensions.

Symbol / Bore size (mm)	Head end flange type (FB) basic dimensions																		
	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	E	EE	F	FG	FF	G	K	KA	KB
ϕ 40	22	22	57	46	9	61	51	31	31	20	18	7.5	Rc1/4	121	M10	Rc1/8	26	57	66	50.5
ϕ 50	28	27	68	50.5	12	72	56	36	38	26	20	0	Rc3/8	138.5	M10	Rc1/8	28	68	77	55
ϕ 63	28	27	80	54	13	86	70	43	38	26	22	0	Rc3/8	154	M12	Rc1/4	30	80	89	58.5
ϕ 80	36	32	98	66	13	106	80	53	43	34	26	0	Rc1/2	179.5	M14	Rc1/4	34	98	107	70.5
ϕ 100	45	41	118	74	17.5	132	101	66	51	43	28	0	Rc1/2	220.5	M16	Rc3/8	36	118	127	78.5

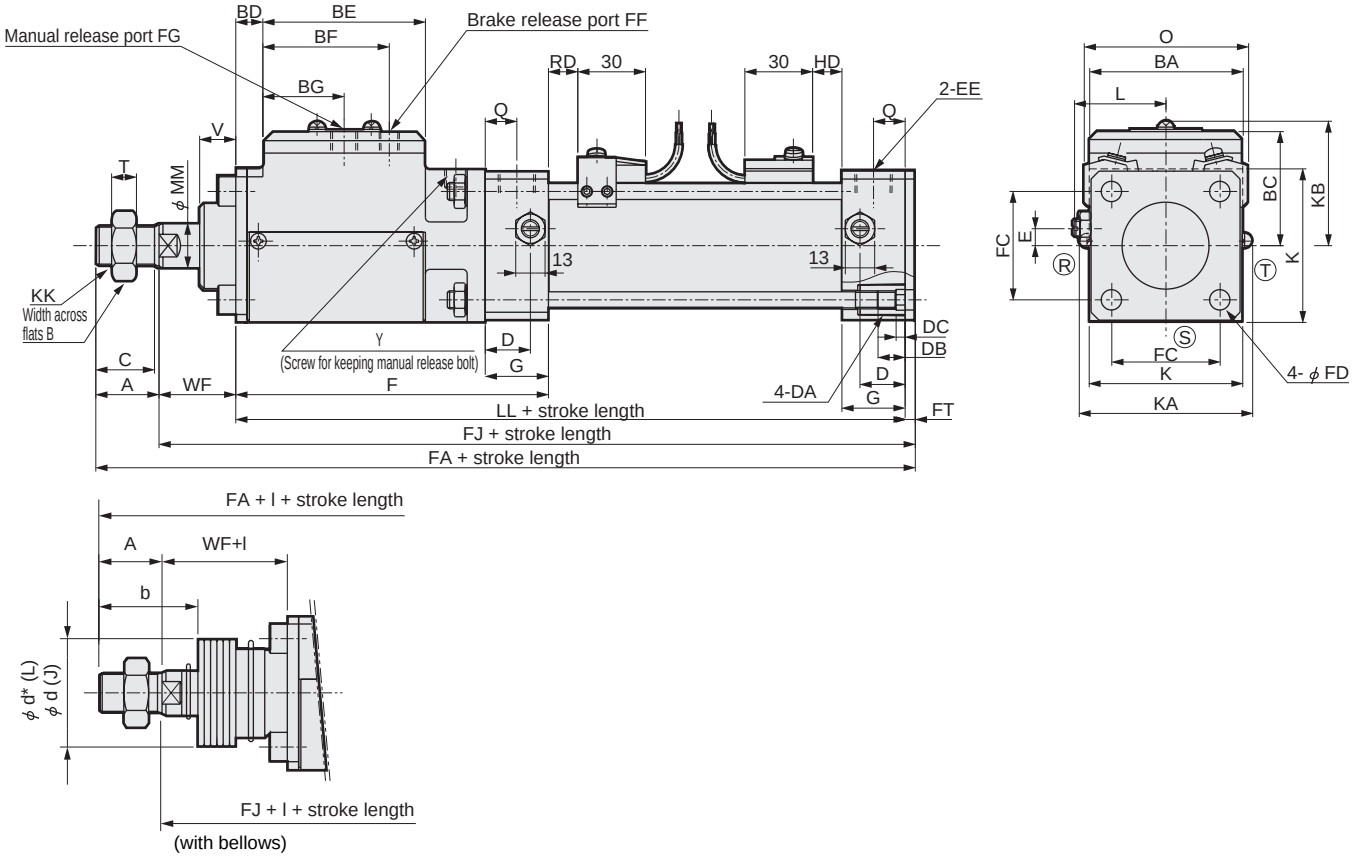
Symbol / Bore size (mm)										Installation dimensions								With switch						
	KK	L	LL	MM	Q	T	V	WF	Y	FA	FC	FD	FH	FJ	FL	FM	FT	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M			
																		O	RD	HD	O	RD	HD
ϕ 40	M14 x 1.5	38 to 39.5	188	16	13	8	15	30	M10 depth 9	252	40	9	57	230	80	100	12	66	11	11	66	10	10
ϕ 50	M18 x 1.5	41.0 to 43.5	211.5	20	14	11	16	34	M10 depth 9	285.5	47	9	65	257.5	85	108	12	73	13	13	73	12	12
ϕ 63	M18 x 1.5	47.5 to 50.0	229	20	15	11	16	30	M12 depth 10	303	60	11	80	275	106	130	16	85	13	13	85	12	12
ϕ 80	M22 x 1.5	56 to 59	261.5	25	17	13	17.5	43.5	M14 depth 11	360	74	14	98	324	125	153	19	105	14.5	14.5	105	13.5	13.5
ϕ 100	M26 x 1.5	66 to 69	312.5	30	18	16	26	48	M16 depth 13	424.5	88	14	118	379.5	144	180	19	121	18.5	18.5	121	17.5	17.5

Symbol / Bore size (mm)	With bellows														ℓ							
	T8			T2YD			H0*			A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	HD	O	RD	HD	O	RD	HD														
ϕ 40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ 50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ 100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Special head end flange type (FC)



Note 1: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.
Note 2: Manual release bolt is attached.
Note 3: Refer to page 1351, 1352 for accessory dimensions.

Symbol	Head end flange type (FC) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	D	DA	DB	DC	EE	F	FG	FF	G	K	KK	KA
ϕ 40	22	22	57	46	9	61	51	31	20	18	M8	12	4	Rc1/4	121	M10	Rc1/8	26	57	M14 x 1.5	66
ϕ 50	28	27	68	50.5	12	72	56	36	26	20	M8	12	4	Rc3/8	138.5	M10	Rc1/8	28	68	M18 x 1.5	77
ϕ 63	28	27	80	54	13	86	70	43	26	22	M8	12	4	Rc3/8	154	M12	Rc1/4	30	80	M18 x 1.5	89
ϕ 80	36	32	98	66	13	106	80	53	34	26	M12	16	5	Rc1/2	179.5	M14	Rc1/4	34	98	M22 x 1.5	107
ϕ 100	45	41	118	74	17.5	132	101	66	43	28	M12	16	5	Rc1/2	220.5	M16	Rc3/8	36	118	M26 x 1.5	127

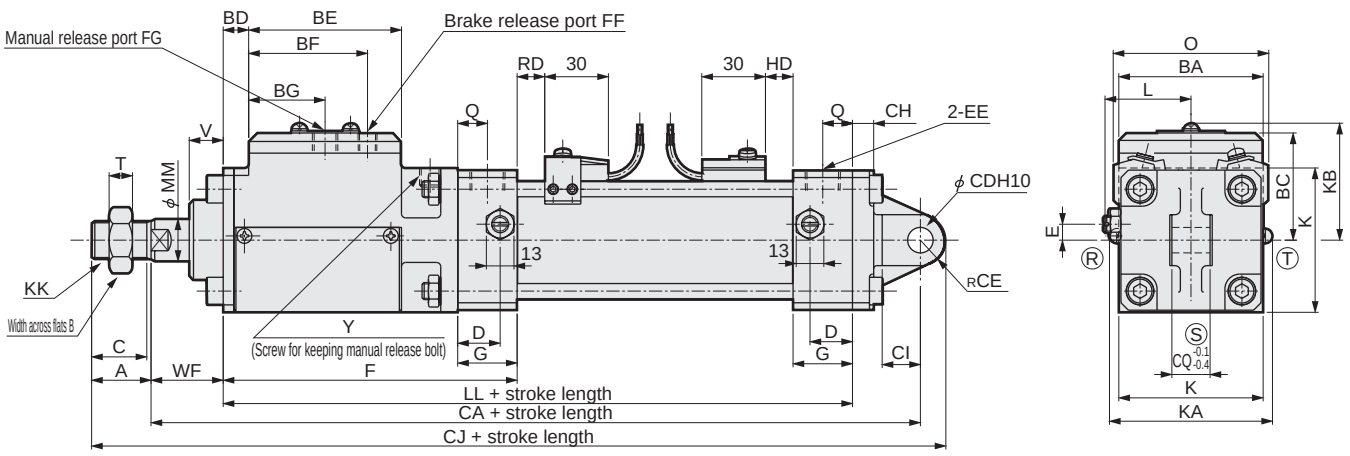
Symbol									Installation dimensions					With switch					
														T0, T5, T2, T3			T1,T2Y,T3Y,T2VF/M,T3YF/M		
Bore size (mm)	KB	L	LL	MM	Q	T	V	WF	Y	FA	FC	FD	FJ	FT	O	RD	HD	O	RD	HD
ϕ 40	50.5	38 to 39.5	188	16	13	8	15	30	M10 depth 9	244.5	40.5	9	222.5	4.5	66	11	11	66	10	10
ϕ 50	55	41.0 to 43.5	211.5	20	14	11	16	34	M10 depth 9	278	48	9	250	4.5	73	13	13	73	12	12
ϕ 63	58.5	47.5 to 50.0	229	20	15	11	16	30	M12 depth 10	291.5	59	9	263.5	4.5	85	13	13	85	12	12
ϕ 80	70.5	56 to 59	261.5	25	17	13	17.5	43.5	M14 depth 11	347	74	14	311	6	105	14.5	14.5	105	13.5	13.5
ϕ 100	78.5	66 to 69	312.5	30	18	16	26	48	M16 depth 13	411.5	90	14	366.5	6	121	18.5	18.5	121	17.5	17.5

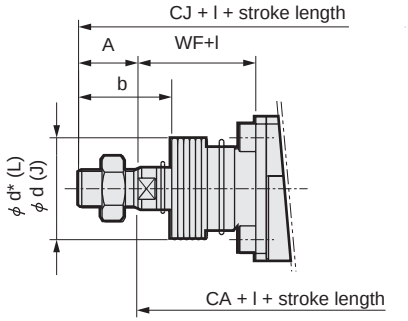
Symbol										With bellows						ℓ							
	T8			T2YD			H0*																
Bore size (mm)	O	RD	HD	O	RD	HD	O	RD	HD	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
ϕ 40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ 50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ 100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Eye bracket type (CA)





(with bellows)

Note 1: Ⓡ Ⓢ Ⓣ indicates a cushion needle position.
Note 2: Refer to page 1351, 1352 for accessory dimensions.

Symbol	Eye bracket type (CA) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	D	E	EE	F	FF	FG	G	K	KK	KA
ϕ 40	22	22	57	46	9	61	51	31	20	18	7.5	Rc1/4	121	Rc1/8	M10	26	57	M14 x 1.5	66
ϕ 50	28	27	68	50.5	12	72	56	36	26	20	0	Rc3/8	138.5	Rc1/8	M10	28	68	M18 x 1.5	77
ϕ 63	28	27	80	54	13	86	70	43	26	22	0	Rc3/8	154	Rc1/4	M12	30	80	M18 x 1.5	89
ϕ 80	36	32	98	66	13	106	80	53	34	26	0	Rc1/2	179.5	Rc1/4	M14	34	98	M22 x 1.5	107
ϕ 100	45	41	118	74	17.5	132	101	66	43	28	0	Rc1/2	220.5	Rc3/8	M16	36	118	M26 x 1.5	127

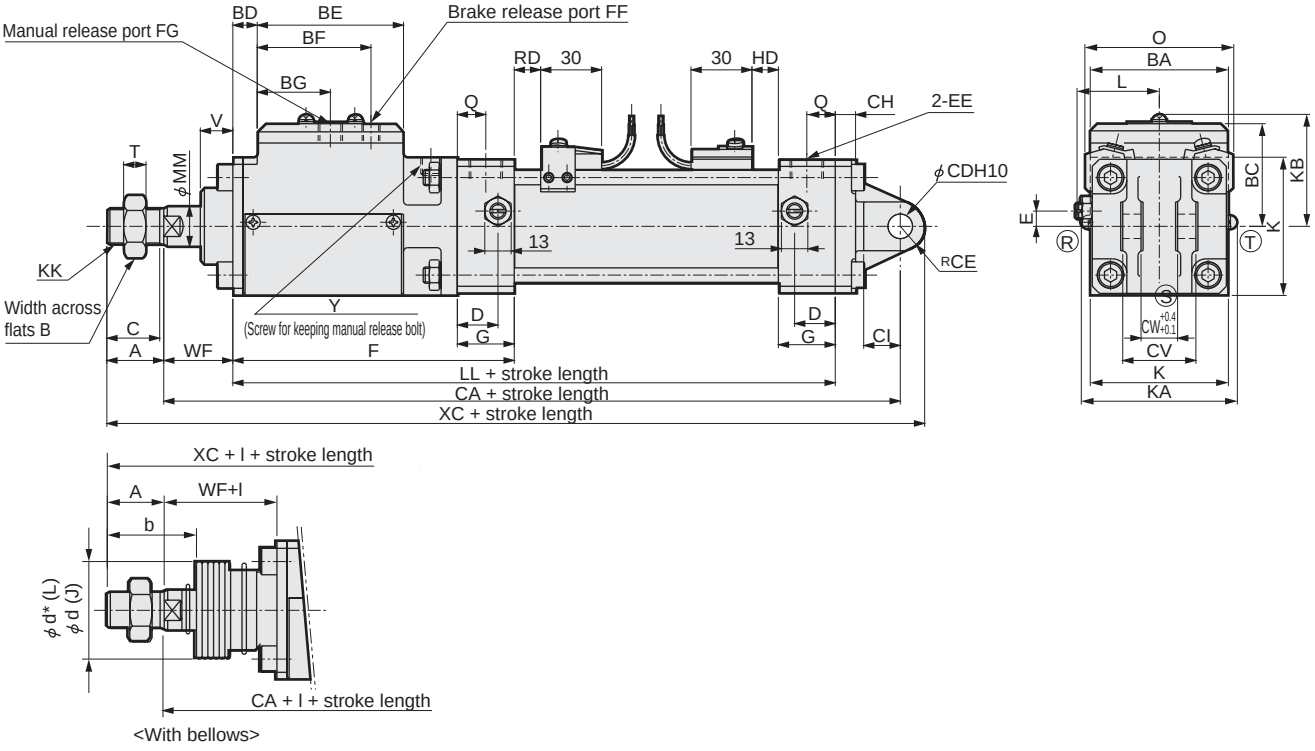
Symbol										Installation dimensions							With switch					
Bore size (mm)	KB	L	LL	MM	Q	T	V	WF	Y	CA	CD	CE	CH	CI	CJ	CQ	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M		
																	O	RD	HD	O	RD	HD
ϕ 40	50.5	38 to 39.5	188	16	13	8	15	30	M10 depth 9	250	12	12	10	18	284	18	66	11	11	66	10	10
ϕ 50	55	41.0 to 43.5	211.5	20	14	11	16	34	M10 depth 9	277.5	12	12	10	18	317.5	18	73	13	13	73	12	12
ϕ 63	58.5	47.5 to 50.0	229	20	15	11	16	30	M12 depth 10	296	14	16	10	24	340	20	85	13	13	85	12	12
ϕ 80	70.5	56 to 59	261.5	25	17	13	17.5	43.5	M14 depth 11	357	20	20	14	30	413	28	105	14.5	14.5	105	13.5	13.5
ϕ 100	78.5	66 to 69	312.5	30	18	16	26	48	M16 depth 13	412.5	20	20	16	30	477.5	28	121	18.5	18.5	121	17.5	17.5

Symbol										With bellows						ℓ								
Bore size (mm)	T8			T2YD			H0*			A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	HD	O	RD	HD	O	RD	HD														
ϕ 40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ 50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ 100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Clevis bracket type (CB)



<With bellows>

Note 1: ⓇⓈⓉ indicates a cushion needle position. ・A pin is attached.
Note 2: Refer to page 1351, 1352 for accessory dimensions.

Symbol / Bore size (mm)	Clevis bracket type (CB) basic dimensions																	
	A	B	BA	BC	BD	BE	BF	BG	C	D	EE	F	FF	FG	G	K	KK	KA
φ40	22	22	57	46	9	61	51	31	20	18	Rc1/4	121	Rc1/8	M10	26	57	M14 x 1.5	66
φ50	28	27	68	50.5	12	72	56	36	26	20	Rc3/8	138.5	Rc1/8	M10	28	68	M18 x 1.5	77
φ63	28	27	80	54	13	86	70	43	26	22	Rc3/8	154	Rc1/4	M12	30	80	M18 x 1.5	89
φ80	36	32	98	66	13	106	80	53	34	26	Rc1/2	179.5	Rc1/4	M14	34	98	M22 x 1.5	107
φ100	45	41	118	74	17.5	132	101	66	43	28	Rc1/2	220.5	Rc3/8	M16	36	118	M26 x 1.5	127

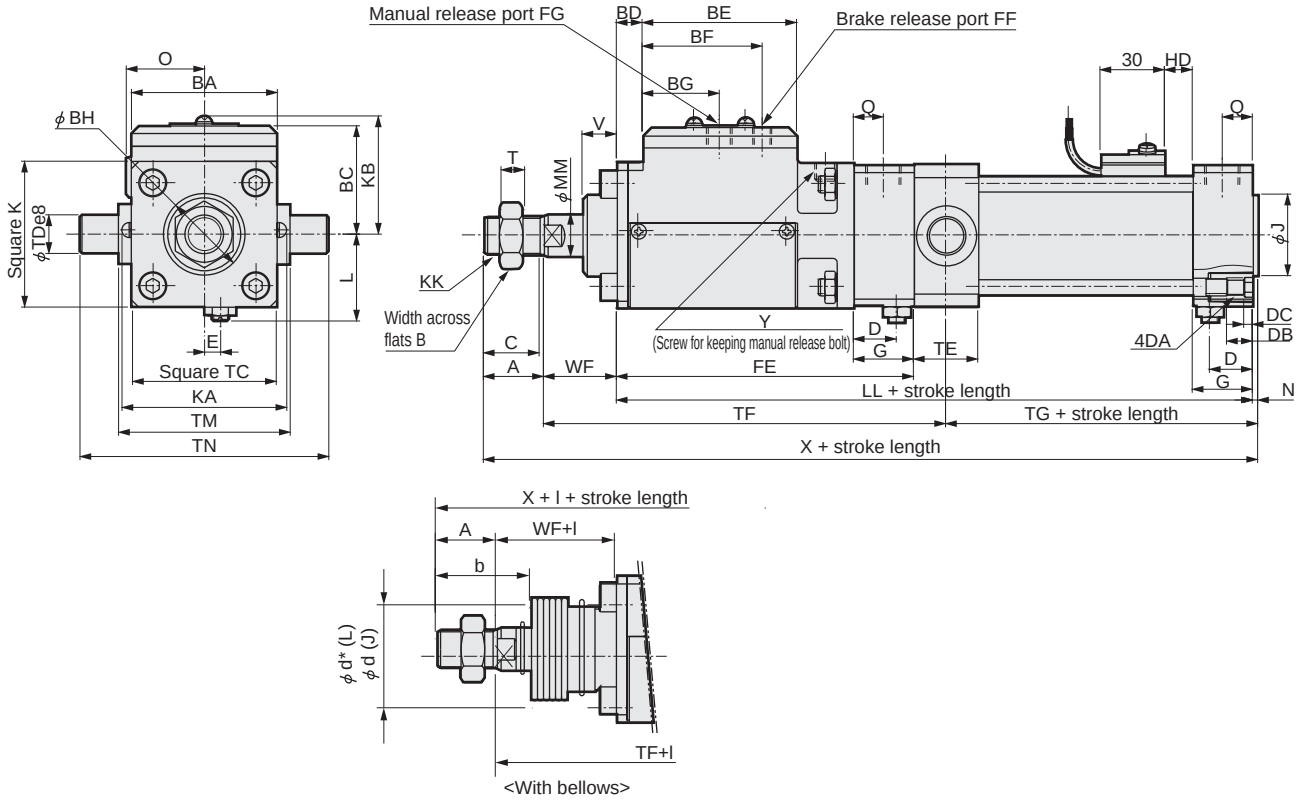
Symbol / Bore size (mm)											Installation dimensions							With switch						
	KB	L	LL	MM	Q	T	V	WF	XC	Y	CA	CD	CE	CH	CI	CV	CW	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M			
																		O	RD	HD	O	RD	HD
φ40	50.5	38 to 39.5	188	16	13	8	15	30	284	M10 depth 9	250	12	12	10	18	36	18	66	11	11	66	10	10
φ50	55	41.0 to 43.5	211.5	20	14	11	16	34	317.5	M10 depth 9	277.5	12	12	10	18	36	18	73	13	13	73	12	12
φ63	58.5	47.5 to 50.0	229	20	15	11	16	30	340	M12 depth 10	296	14	16	10	24	40	20	85	13	13	85	12	12
φ80	70.5	56 to 59	261.5	25	17	13	17.5	43.5	413	M14 depth 11	357	20	20	14	30	56	28	105	14.5	14.5	105	13.5	13.5
φ100	78.5	66 to 69	312.5	30	18	16	26	48	477.5	M16 depth 13	412.5	20	20	16	30	56	28	121	18.5	18.5	121	17.5	17.5

Symbol / Bore size (mm)										With bellows						ℓ								
	T8			T2YD			H0*			A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	HD	O	RD	HD	O	RD	HD															
φ40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
φ50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
φ100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Rod end trunnion type (TA)



Note 1: A position can not be detected at rod side stroke end.
Note 2: A cushion needle position can not be detected.
Note 3: Refer to page 1351, 1352 for accessory dimensions.

Symbol / Bore size (mm)	Rod end trunnion type (TA) basic dimensions																					
	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DB	DC	E	EE	FE	FF	FG	G	J	K
ϕ40	22	22	57	46	9	61	51	31	31	20	18	M8	12	4	7.5	Rc1/4	121	Rc1/8	M10	26	31	57
ϕ50	28	27	68	50.5	12	72	56	36	38	26	20	M8	12	4	0	Rc3/8	138.5	Rc1/8	M10	28	38	68
ϕ63	28	27	80	54	13	86	70	43	38	26	22	M8	12	4	0	Rc3/8	154	Rc1/4	M12	30	38	80
ϕ80	36	32	98	66	13	106	80	53	43	34	26	M12	16	5	0	Rc1/2	179.5	Rc1/4	M14	34	43	98
ϕ100	45	41	118	74	17.5	132	101	66	51	43	28	M12	16	5	0	Rc1/2	220.5	Rc3/8	M16	36	51	118

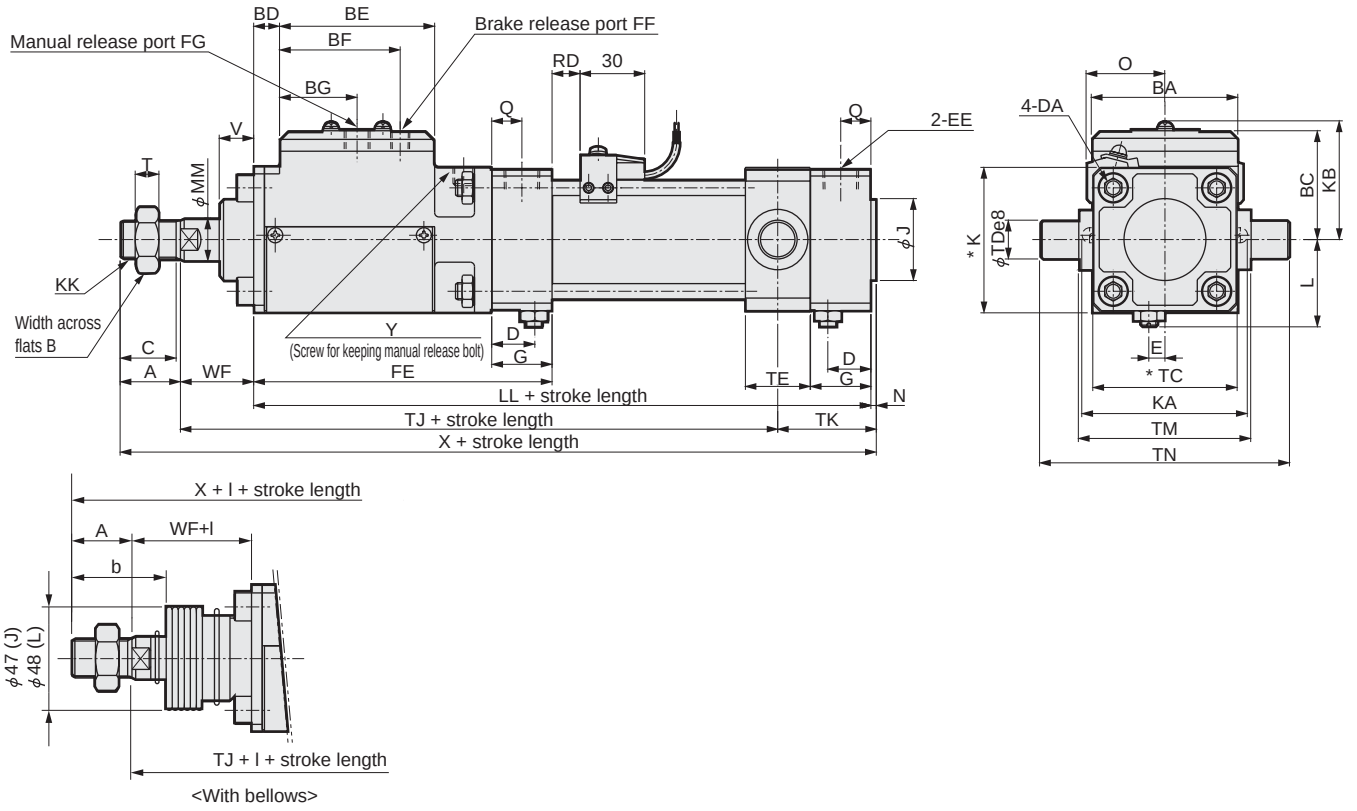
Symbol / Bore size (mm)														Installation dimensions							With switch	
	KA	KB	KK	L	LL	MM	N	Q	T	V	WF	X	Y	TC	TD	TE	TF	TG	TM	TN	T0, T5, T2, T3 O	T0, T5, T2, T3 HD
ϕ40	66	50.5	M14 x 1.5	38 to 39.5	188	16	2	13	8	15	30	242	M10 depth 9	57	16	30	166.5	53.5	63	95	33	11
ϕ50	77	55	M18 x 1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	276	M10 depth 9	67	18	30	188	60	80	116	36.5	13
ϕ63	89	58.5	M18 x 1.5	47.5 to 50.0	229	20	3	15	11	16	30	290	M12 depth 10	82	20	35	202	60	90	130	42.5	13
ϕ80	107	70.5	M22 x 1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	344.5	M14 depth 11	100	25	40	243.5	65	115	165	52.5	14.5
ϕ100	127	78.5	M26 x 1.5	66 to 69	312.5	30	4	18	16	26	48	409.5	M16 depth 13	121	35	50	294	70.5	135	205	60.5	18.5

Symbol / Bore size (mm)	T1,T2Y,T3Y T2YF/M,T3YF/M		T8		T2YD		H0*		With bellows						ℓ							
	O	HD	O	HD	O	HD	O	HD	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
ϕ40	33	10	33	5	33	10	33	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ50	36.5	12	36.5	7	36.5	12	36.5	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ63	42.5	12	42.5	7	42	12	42	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ80	52.5	13.5	52.5	8.5	52	13.5	52	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ100	60.5	17.5	60.5	12.5	60	17.5	60	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Head end trunnion type (TB)



Note 1: A position can not be detected at head side stroke end.
Note 2: A cushion needle position can not be changed.
Note 3: Refer to page 1351, 1352 for accessory dimensions.

Symbol	Head end trunnion type (TB) basic dimensions																			
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	EE	FE	FF	FG	G	J	K	KA
ϕ40	22	22	57	46	9	61	51	31	31	20	18	M8	Rc1/4	121	Rc1/8	M10	26	31	57	66
ϕ50	28	27	68	50.5	12	72	56	36	38	26	20	M8	Rc3/8	138.5	Rc1/8	M10	28	38	68	77
ϕ63	28	27	80	54	13	86	70	43	38	26	22	M8	Rc3/8	154	Rc1/4	M12	30	38	80	89
ϕ80	36	32	98	66	13	106	80	53	43	34	26	M12	Rc1/2	179.5	Rc1/4	M14	34	43	98	107
ϕ100	45	41	118	74	17.5	132	101	66	51	43	28	M12	Rc1/2	220.5	Rc3/8	M16	36	51	118	127

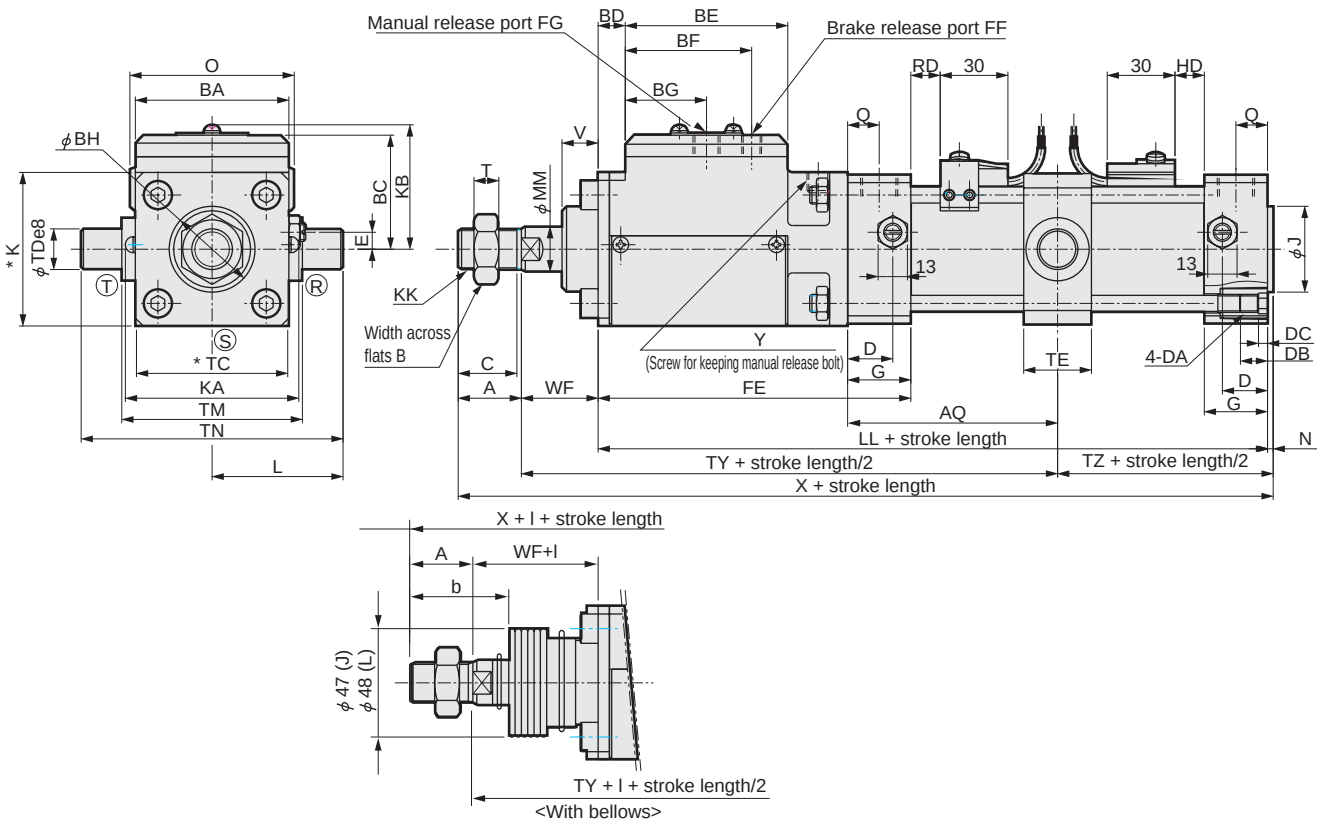
Symbol													Installation dimensions							With switch	
Bore size (mm)	KB	KK	L	LL	MM	N	Q	T	V	WF	X	Y	TC	TD	TE	TJ	TK	TM	TN	T0, T5, T2, T3 O	T0, T5, T2, T3 RD
ϕ40	50.5	M14 x 1.5	38 to 39.5	188	16	2	13	8	15	30	242	M10 depth 9	57	16	30	176.5	43.5	63	95	33	11
ϕ50	55	M18 x 1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	276	M10 depth 9	67	18	30	202	46	80	116	36.5	13
ϕ63	58.5	M18 x 1.5	47.5 to 50.0	229	20	3	15	11	16	30	290	M12 depth 10	82	20	35	211	51	90	130	42.5	13
ϕ80	70.5	M22 x 1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	344.5	M14 depth 11	100	25	40	250.5	58	115	165	52.5	14.5
ϕ100	78.5	M26 x 1.5	66 to 69	312.5	30	4	18	16	26	48	409.5	M16 depth 13	121	35	50	299	65.5	135	205	60.5	18.5

Symbol									With bellows						ℓ							
Bore size (mm)	T1,T2Y,T3Y T2YF/M,T3YF/M		T8		T2YD		H0*		A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	O	RD	O	RD	O	RD														
ϕ40	33	10	33	5	33	10	33	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ50	36.5	12	36.5	7	36.5	12	36.5	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ63	42.5	12	42.5	7	42	12	42	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ80	52.5	13.5	52.5	8.5	52	13.5	52	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ100	60.5	17.5	60.5	12.5	60	17.5	60	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ40 to ϕ100)

● Center trunnion type (TC)



Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1351, 1352 for accessory dimensions.

Symbol	Center trunnion type (TC) basic dimensions																						
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DB	DC	E	EE	FE	FF	FG	G	J	K	KA	KB
ϕ40	22	22	57	46	9	61	51	31	31	20	18	M8	12	4	7.5	Rc1/4	121	Rc1/8	M10	26	31	57	66	50.5
ϕ50	28	27	68	50.5	12	72	56	36	38	26	20	M8	12	4	0	Rc3/8	138.5	Rc1/8	M10	28	38	68	77	55
ϕ63	28	27	80	54	13	86	70	43	38	26	22	M8	12	4	0	Rc3/8	154	Rc1/4	M12	30	38	80	89	58.5
ϕ80	36	32	98	66	13	106	80	53	43	34	26	M12	16	5	0	Rc1/2	179.5	Rc1/4	M14	34	43	98	107	70.5
ϕ100	45	41	118	74	17.5	132	101	66	51	43	28	M12	16	5	0	Rc1/2	220.5	Rc3/8	M16	36	51	118	127	78.5

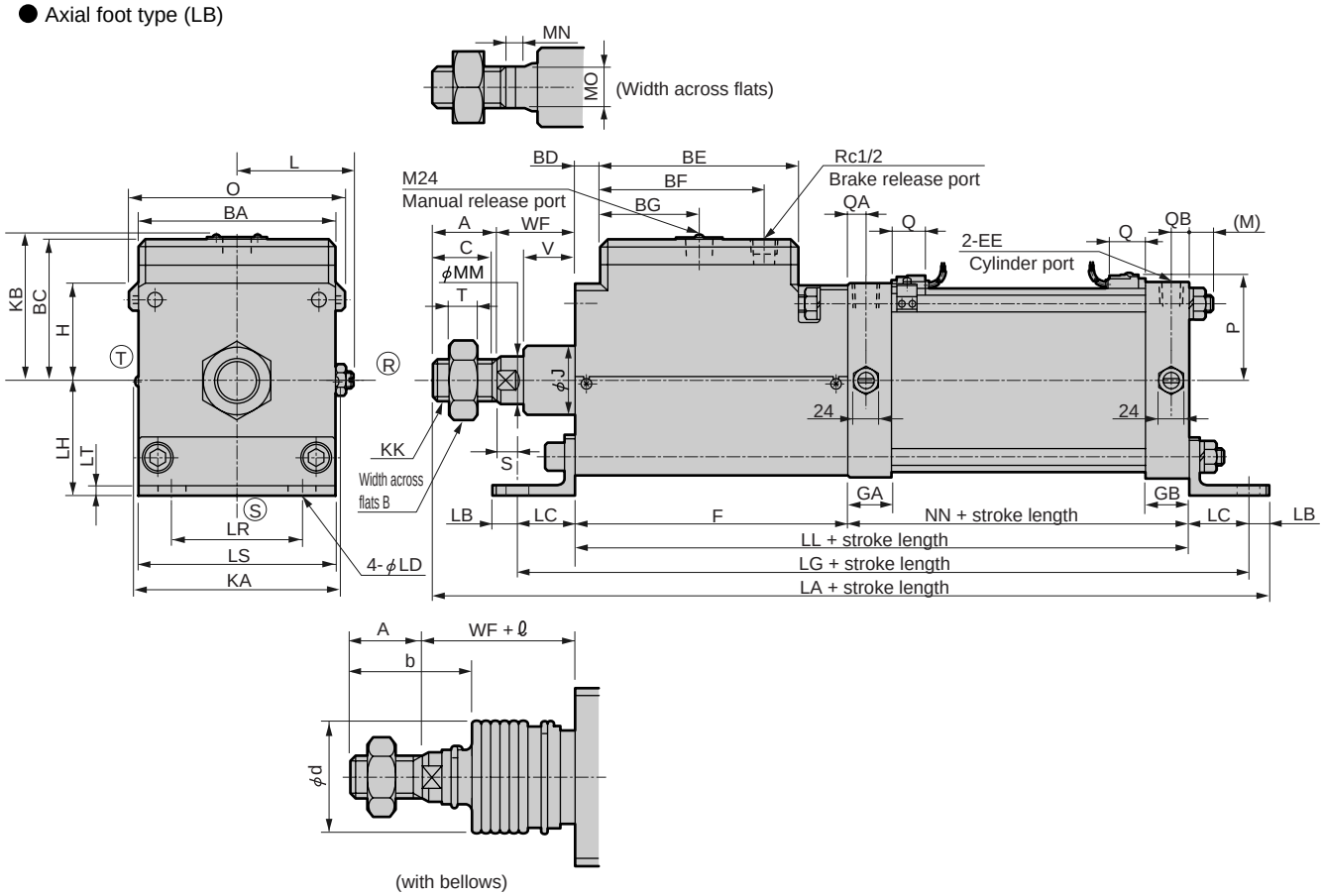
Symbol												Installation dimensions								With switch						
Bore size (mm)	KK	L	LL	MM	N	Q	T	V	WF	X	Y	AQ	TC	TD	TE	TM	TN	TY	TZ	T0, T5, T2, T3			T1,T2Y,T3Y,T2YF/M,T3YF/M		
																				O	RD	HD	O	RD	HD
ϕ40	M14 x 1.5	38 to 39.5	188	16	2	13	8	15	30	242	M10 depth 9	46.5+$\frac{\text{Stroke length}}{2}$	57	16	30	63	95	171.5	48.5	66	11	11	66	10	10
ϕ50	M18 x 1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	276	M10 depth 9	50.5+$\frac{\text{Stroke length}}{2}$	67	18	30	80	116	195	53	73	13	13	73	12	12
ϕ63	M18 x 1.5	47.5 to 50.0	229	20	3	15	11	16	30	290	M12 depth 10	52.5+$\frac{\text{Stroke length}}{2}$	82	20	35	90	130	206.5	55.5	85	13	13	85	12	12
ϕ80	M22 x 1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	344.5	M14 depth 11	58+$\frac{\text{Stroke length}}{2}$	100	25	40	115	165	247	61.5	105	14.5	14.5	105	13.5	13.5
ϕ100	M26 x 1.5	66 to 69	312.5	30	4	18	16	26	48	409.5	M16 depth 13	64+$\frac{\text{Stroke length}}{2}$	121	35	50	135	205	296.5	68	121	18.5	18.5	121	17.5	17.5

Symbol										With bellows						ℓ								
Bore size (mm)	T8			T2YD			H0*			A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 and over
	O	RD	HD	O	RD	HD	O	RD	HD														
ϕ40	66	5	5	66	10	10	66	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ50	73	7	7	73	12	12	73	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ63	85	7	7	84	12	12	84	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ80	105	8.5	8.5	104	13.5	13.5	104	7.5	7.5	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ100	121	12.5	12.5	120	17.5	17.5	120	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Note: ℓ dimensions below decimal point are rounded up.

Dimensions (ϕ 125 to ϕ 180)

● Axial foot type (LB)



Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1353 for accessory dimensions.

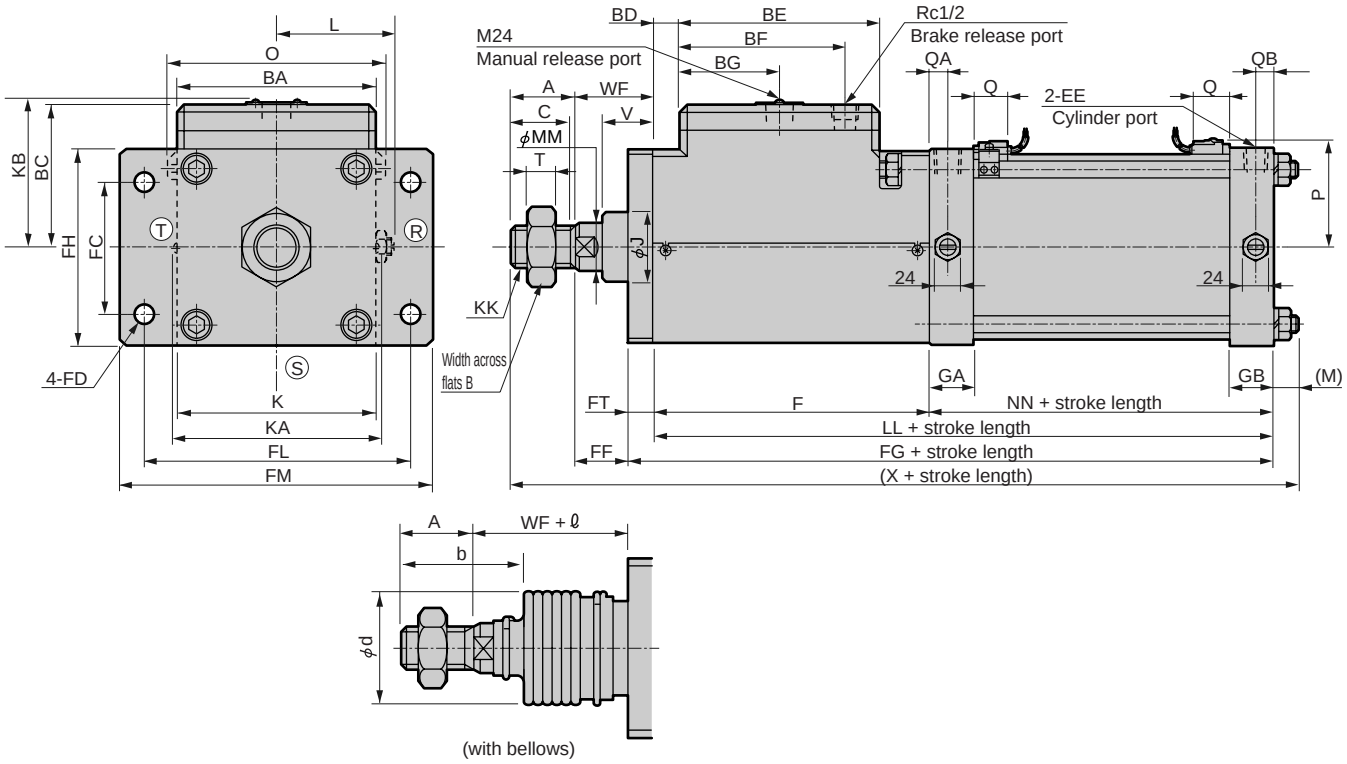
Symbol / Bore size (mm)	Axial foot type (LB) basic dimensions																				
	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	H	J	KA	KB	KK	L	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	70	55	150	115	M30 x 1.5	83 to 91	291	20
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	78.5	55	167	122.5	M30 x 1.5	91.5 to 99.5	318	20
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	88.5	62.5	190	134	M36 x 1.5	101.5 to 109.5	350	23
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	100	68.5	213	152	M40 x 1.5	113 to 121	373	26

Symbol / Bore size (mm)											Installation dimensions								
	MM	MN	MO	NN	QA	QB	S	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT
φ125	35	14	30	91	14	15	10	18	35	55	461	20	45	19	381	85	100	140	7
φ140	35	14	30	102	16	17	7	18	35	57	495	20	50	19	418	100	112	157	8
φ160	40	16	36	105	16	17	18.5	21	48	71.5	550.5	20	53	19	456	106	118	177	10
φ180	45	18	41	109	16	17	18.5	24	53	78.5	601.5	27	60	24	493	125	132	200	10

Symbol / Bore size (mm)	With switch								With bellows				
	O	P				Q							
		Grommet	Terminal box R*B	Terminal box R*A	T2YDP*	Grommet	Terminal box	T2YDP*	A	WF	b	d	ℓ
φ125	142	78.5	107.5	103	80	32	44.5	30	50	55	74	75	(Stroke length/4.55) + 11
φ140	156	85	114	109.5	86.5	32	44.5	30	50	57	74	75	(Stroke length/4.55) + 9
φ160	176	93.5	122	117.5	95	32	44.5	30	56	71.5	82	80	(Stroke length/5.15) + 9
φ180	196	109.5	130	125.5	103	32	44.5	30	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Rod end flange type (FA)



Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1353 for accessory dimensions.

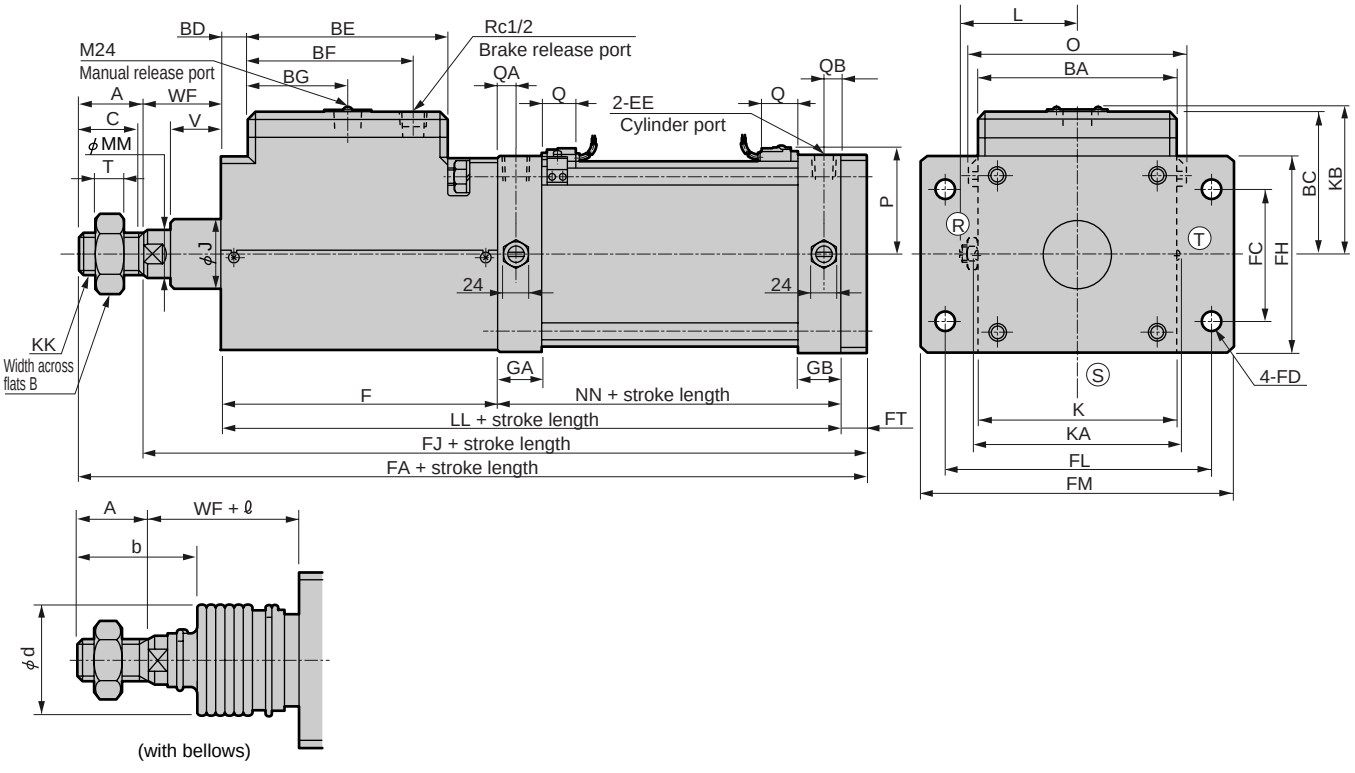
Symbol	Rod end flange type (FA) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	M
ϕ 125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	20
ϕ 140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	20
ϕ 160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	23
ϕ 180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	26

Symbol									Installation dimensions								With switch								
																	O	P				Q			
																		Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
Bore size (mm)	MM	NN	QA	QB	T	V	WF	X	FC	FD	FF	FG	FH	FL	FM	FT			R*B	R*A				
ϕ 125	35	91	14	15	18	35	55	416	100	19	35	311	140	190	230	20	142	78.5	107.5	103	80	32	44.5	30
ϕ 140	35	102	16	17	18	35	57	445	112	19	37	338	157	212	250	20	156	85	114	109.5	86.5	32	44.5	30
ϕ 160	40	105	16	17	21	48	71.5	500.5	118	19	49.5	372	177	236	280	22	176	93.5	122	117.5	95	32	44.5	30
ϕ 180	45	109	16	17	24	53	78.5	540.5	132	24	53.5	398	200	265	310	25	196	109.5	130	125.5	103	32	44.5	30

Symbol	With bellows				
Bore size (mm)	A	WF	b	d	ℓ
ϕ 125	50	55	74	75	(Stroke length/4.55) + 11
ϕ 140	50	57	74	75	(Stroke length/4.55) + 9
ϕ 160	56	71.5	82	80	(Stroke length/5.15) + 9
ϕ 180	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Head end flange type (FB)



(with bellows)

Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1353 for accessory dimensions.

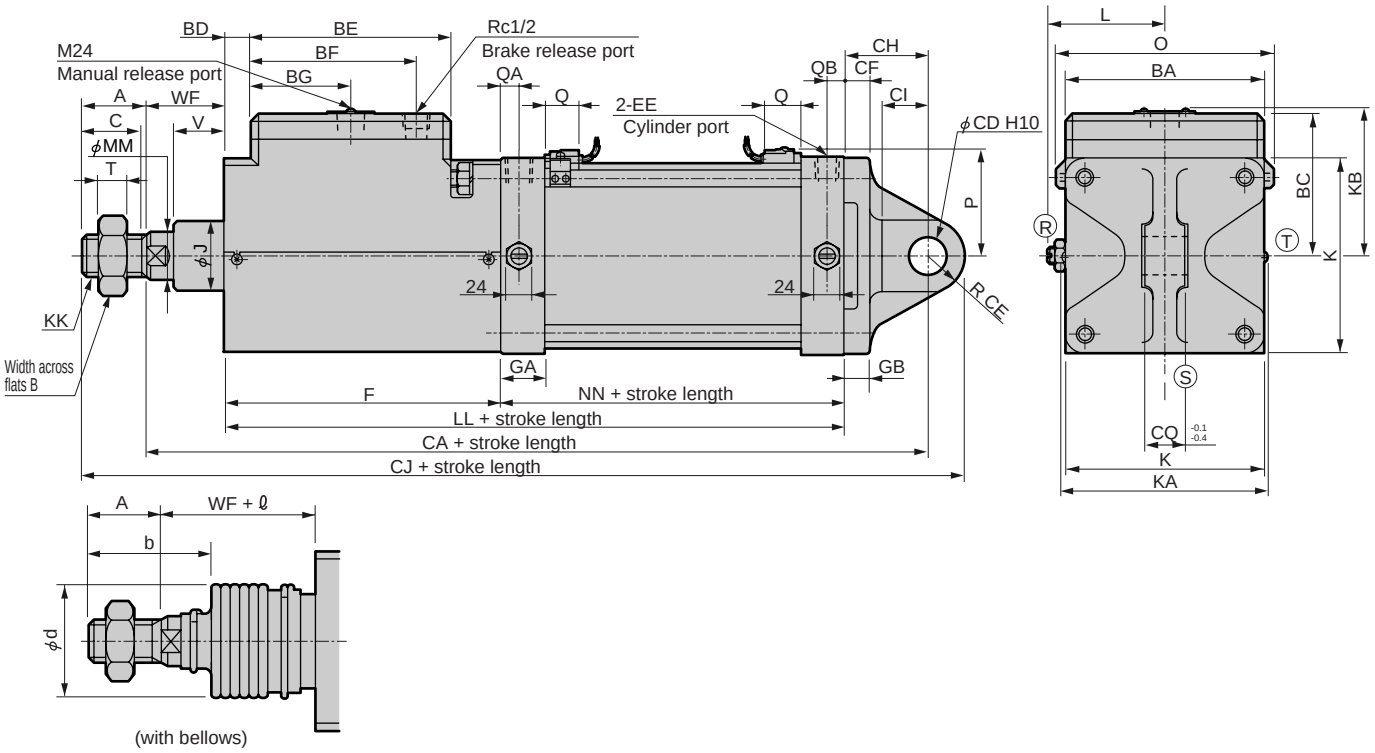
Symbol	Head end flange type (FB) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	MM
ϕ 125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	35
ϕ 140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	35
ϕ 160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	40
ϕ 180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	45

Symbol							Installation dimensions								With switch								
															O	P				Q			
																Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
Bore size (mm)	NN	QA	QB	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT			R*B	R*A				
ϕ 125	91	14	15	18	35	55	410	100	19	140	360	190	230	14	142	78.5	107.5	103	80	32	44.5	30
ϕ 140	102	16	17	18	35	57	444	112	19	157	394	212	250	19	156	85	114	109.5	86.5	32	44.5	30
ϕ 160	105	16	17	21	48	71.5	496.5	118	19	177	440.5	236	280	19	176	93.5	122	117.5	95	32	44.5	30
ϕ 180	109	16	17	24	53	78.5	539.5	132	24	200	476.5	265	310	25	196	109.5	130	125.5	103	32	44.5	30

Symbol	With bellows				
Bore size (mm)	A	WF	b	d	ℓ
ϕ 125	50	55	74	75	(Stroke length/4.55) + 11
ϕ 140	50	57	74	75	(Stroke length/4.55) + 9
ϕ 160	56	71.5	82	80	(Stroke length/5.15) + 9
ϕ 180	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Eye bracket type (CA)



(with bellows)

Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1353 for accessory dimensions.

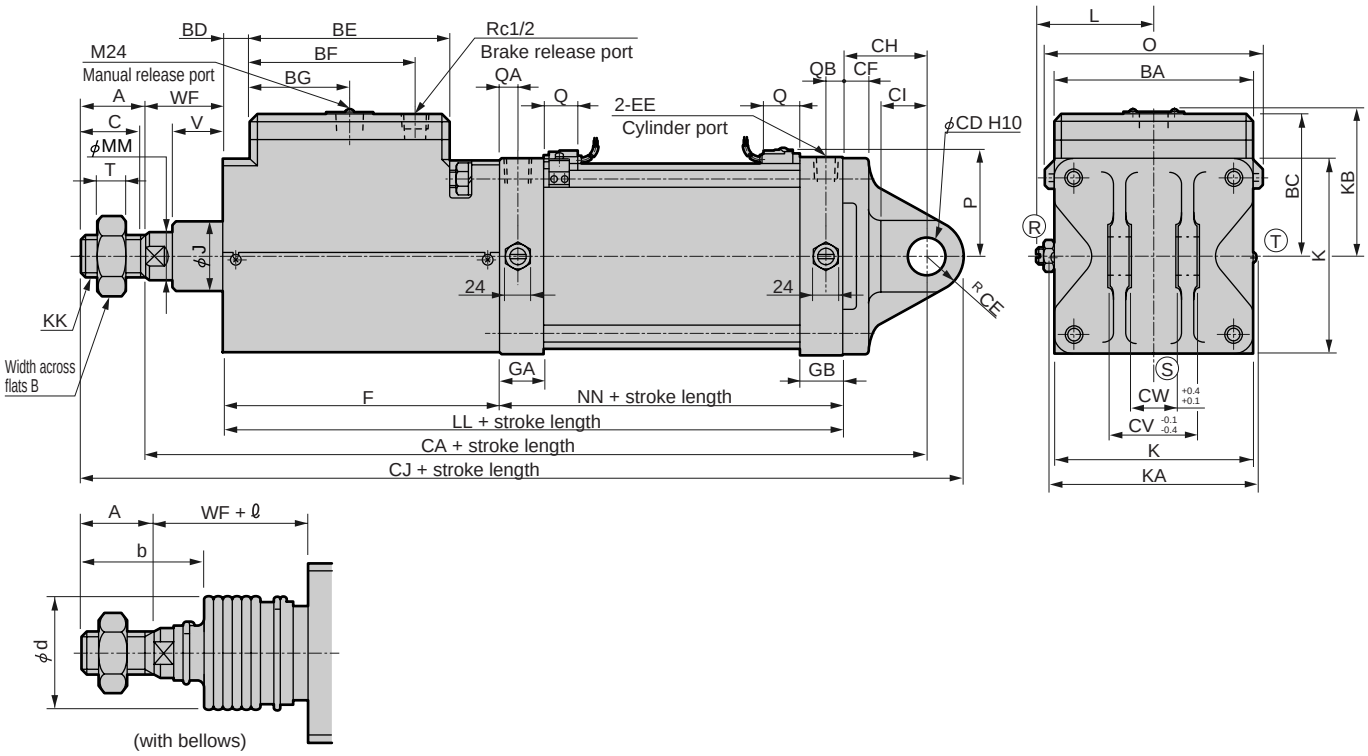
Symbol	Eye bracket type (CA) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	MM
ϕ 125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	35
ϕ 140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	35
ϕ 160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	40
ϕ 180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	45

Symbol							Installation dimensions								With switch								
															O	P				Q			
																Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
Bore size (mm)	NN	QA	QB	T	V	WF	CA	CD	CE	CF	CH	CI	CJ	CQ			R*B	R*A				
ϕ 125	91	14	15	18	35	55	409	25	25	20	63	35	483.5	32	142	78.5	107.5	103	80	32	44.5	30
ϕ 140	102	16	17	18	35	57	450	28	28	22	75	40	527.5	36	156	85	114	109.5	86.5	32	44.5	30
ϕ 160	105	16	17	21	48	71.5	496.5	32	32	24	75	40	584	40	176	93.5	122	117.5	95	32	44.5	30
ϕ 180	109	16	17	24	53	78.5	541.5	40	40	25	90	55	644	50	196	109.5	130	125.5	103	32	44.5	30

Symbol	With bellows				
Bore size (mm)	A	WF	b	d	ℓ
ϕ 125	50	55	74	75	(Stroke length/4.55) + 11
ϕ 140	50	57	74	75	(Stroke length/4.55) + 9
ϕ 160	56	71.5	82	80	(Stroke length/5.15) + 9
ϕ 180	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Clevis bracket type (CB)



Note 1: ⓇⓈⓉ indicates a cushion needle position. ・A pin is attached.
Note 2: Refer to page 1353 for dimensions with bellows.
Note 3: Refer to page 1353 for the dimensions of the accessory.

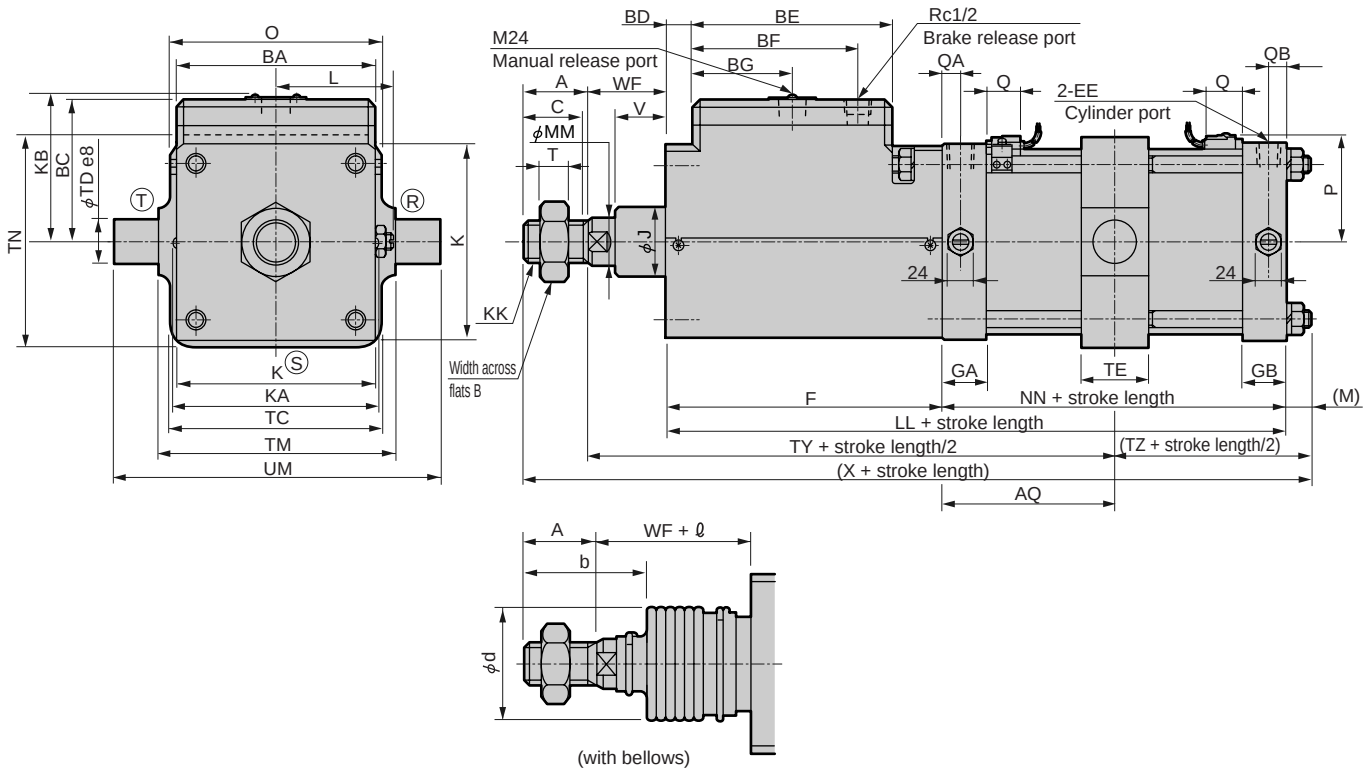
Symbol	Clevis bracket type (CB) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	45

Symbol	Installation dimensions														With switch							
															O	P				Q		
																Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
Bore size (mm)	NN	QA	QB	T	V	WF	CA	CD	CE	CF	CH	CI	CJ	CV	CW			R*B	R*A			
φ125	91	14	15	18	35	55	409	25	25	20	63	35	484	64	32	142	78.5	107.5	103	80	32	44.5	30
φ140	102	16	17	18	35	57	450	28	28	22	75	40	528	72	36	156	85	114	109.5	86.5	32	44.5	30
φ160	105	16	17	21	48	71.5	496.5	32	32	24	75	40	584.5	80	40	176	93.5	122	117.5	95	32	44.5	30
φ180	109	16	17	24	53	78.5	541.5	40	40	25	90	55	644.5	100	50	196	109.5	130	125.5	103	32	44.5	30

Symbol	With bellows				
Bore size (mm)	A	WF	b	d	ℓ
φ125	50	55	74	75	(Stroke length/4.55) + 11
φ140	50	57	74	75	(Stroke length/4.55) + 9
φ160	56	71.5	82	80	(Stroke length/5.15) + 9
φ180	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Center trunnion type (TC)



Note 1: ⓇⓈⓉ indicates a cushion needle position.
Note 2: Refer to page 1353 for accessory dimensions.

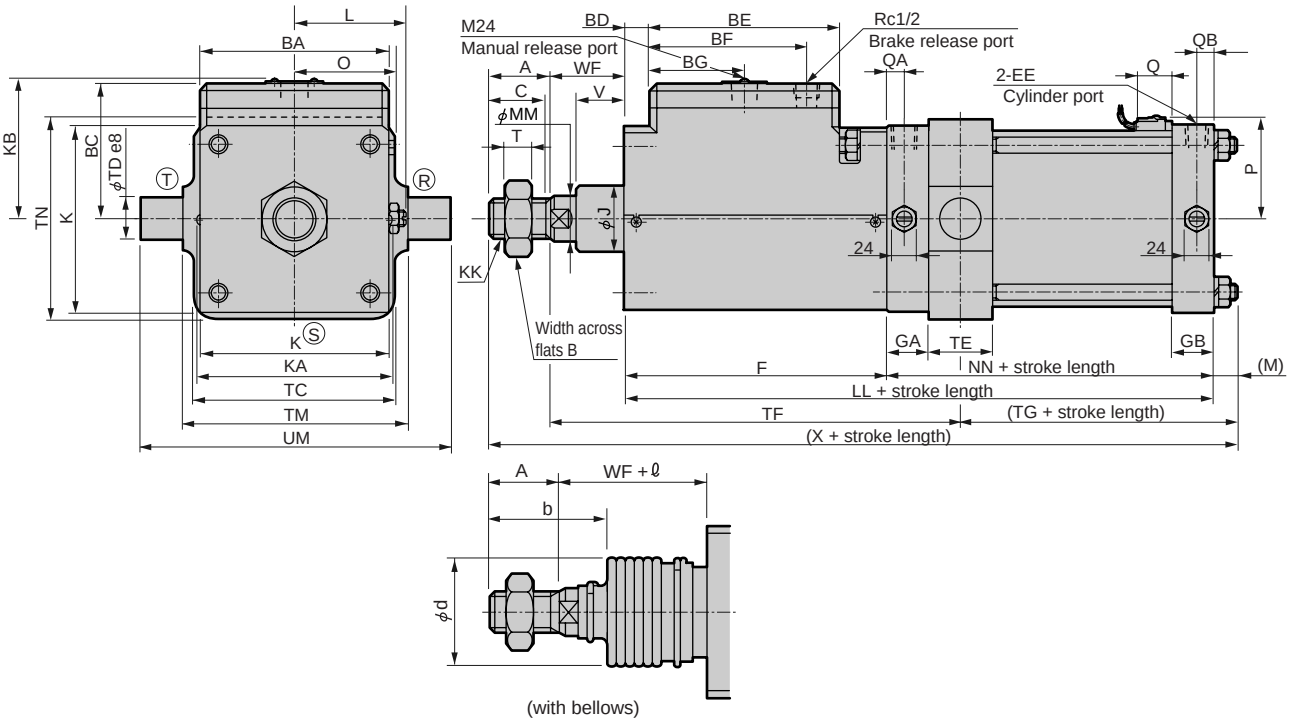
Symbol	Center trunnion type (TC) basic dimensions																				
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	20
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	20
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	23
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	26

Symbol									Installation dimensions								
Bore size (mm)	MM	NN	QA	QB	T	V	WF	X	AQ	TC	TN	TD	TE	TM	UM	TY	TZ
φ125	35	91	14	15	18	35	55	416	$45.5+\frac{\text{Stroke length}}{2}$	150	150	32	50	170	234	300	66
φ140	35	102	16	17	18	35	57	445	$51+\frac{\text{Stroke length}}{2}$	154	170	36	55	190	262	323.5	71.5
φ160	40	105	16	17	21	48	71.5	500.5	$52.5+\frac{\text{Stroke length}}{2}$	190	190	40	60	212	292	368.5	76
φ180	45	109	16	17	24	53	78.5	540.5	$54.5+\frac{\text{Stroke length}}{2}$	210	210	45	65	236	326	396.5	81

Symbol	With switch								With bellows				
	O	P				Q							
		Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*					
Bore size (mm)			R*B	R*A					A	WF	b	d	ℓ
φ125	142	78.5	107.5	103	80	32	44.5	30	50	55	74	75	(Stroke length/4.55) + 11
φ140	156	85	114	109.5	86.5	32	44.5	30	50	57	74	75	(Stroke length/4.55) + 9
φ160	176	93.5	122	117.5	95	32	44.5	30	56	71.5	82	80	(Stroke length/5.15) + 9
φ180	196	109.5	130	125.5	103	32	44.5	30	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Rod end trunnion type (TA)



Note 1: A position can not be detected at rod side stroke end.
Note 2: ⓇⓈⓉ indicates a cushion needle position.
Note 3: Refer to page 1353 for the dimensions of the accessory.

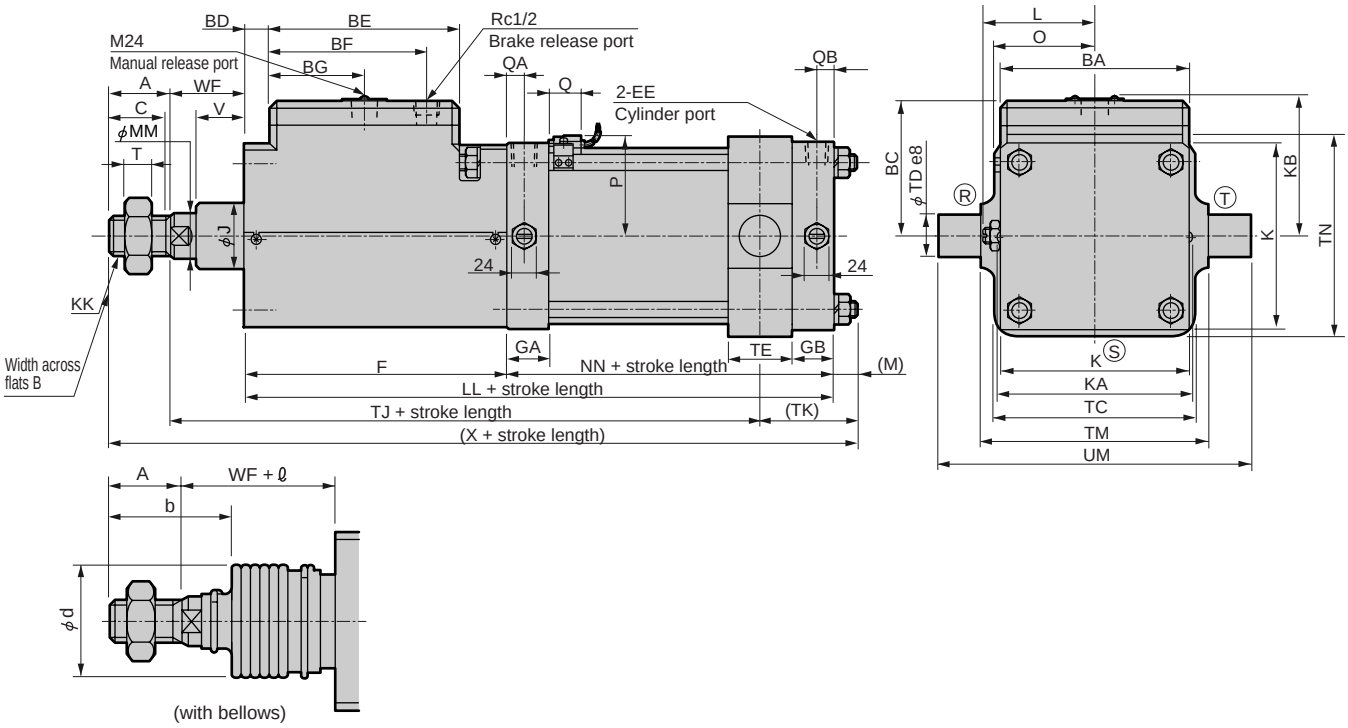
Symbol / Bore size (mm)	Rod end trunnion type (TA) basic dimensions																					
	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	M	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	20	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	20	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	23	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	26	45

Symbol / Bore size (mm)									Installation dimensions								With switch						
																	P				Q		
																	Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
	NN	O	QA	QB	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	UM		R*B	R*A				
φ125	91	71	14	15	18	35	55	416	150	32	50	315	51	170	150	234	78.5	107.5	103	80	32	44.5	30
φ140	102	78	16	17	18	35	57	445	154	36	55	339.5	55.5	190	170	262	85	114	109.5	86.5	32	44.5	30
φ160	105	88	16	17	21	48	71.5	500.5	190	40	60	385.5	59	212	190	292	93.5	122	117.5	95	32	44.5	30
φ180	109	98	16	17	24	53	78.5	540.5	210	45	65	414	63.5	236	210	326	109.5	130	125.5	103	32	44.5	30

Symbol / Bore size (mm)	With bellows				
	A	WF	b	d	ℓ
φ125	50	55	74	75	(Stroke length/4.55) + 11
φ140	50	57	74	75	(Stroke length/4.55) + 9
φ160	56	71.5	82	80	(Stroke length/5.15) + 9
φ180	63	78.5	91	90	(Stroke length/5.15) + 9

Dimensions (ϕ 125 to ϕ 180)

● Head end trunnion type (TB)

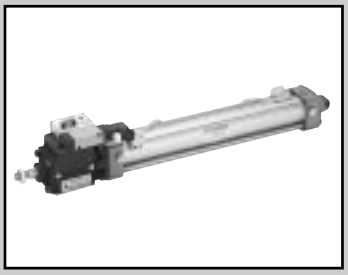


Note 1: A position can not be detected at head side stroke end.
Note 2: ⓇⓈⓉ indicates a cushion needle position.
Note 3: Refer to page 1353 for the dimensions of the accessory.

Symbol	Head end trunnion type (TB) basic dimensions																					
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	K	KA	KB	KK	L	LL	M	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	31.5	29	55	140	150	115	M30 x 1.5	83 to 91	291	20	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	35.5	36	55	157	167	122.5	M30 x 1.5	91.5 to 99.5	318	20	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	38	36	62.5	177	190	134	M36 x 1.5	101.5 to 109.5	350	23	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	39	38.5	68.5	200	213	152	M40 x 1.5	113 to 121	373	26	45

Symbol									Installation dimensions								With switch						
																	P			Q			
																	Grommet	Terminal box		T2YDP*	Grommet	Terminal box	T2YDP*
Bore size (mm)	NN	O	QA	QB	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	UM		R*B	R*A				
φ125	91	71	14	15	18	35	55	416	150	32	50	285	81	170	150	234	78.5	107.5	103	80	32	44.5	30
φ140	102	78	16	17	18	35	57	445	154	36	55	307.5	87.5	190	170	262	85	114	109.5	86.5	32	44.5	30
φ160	105	88	16	17	21	48	71.5	500.5	190	40	60	351.5	93	212	190	292	93.5	122	117.5	95	32	44.5	30
φ180	109	98	16	17	24	53	78.5	540.5	210	45	65	379	98.5	236	210	326	109.5	130	125.5	103	32	44.5	30

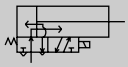
Symbol	With bellows				
Bore size (mm)	A	WF	b	d	ℓ
φ125	50	55	74	75	(Stroke length/4.55) + 11
φ140	50	57	74	75	(Stroke length/4.55) + 9
φ160	56	71.5	82	80	(Stroke length/5.15) + 9
φ180	63	78.5	91	90	(Stroke length/5.15) + 9



Brake cylinder Double acting with valve for brake

JSC3-V Series

● Bore size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100

JIS symbol 

RoHS

Specifications

Descriptions			JSC3-V (with switch)					JSC3-SV (with switch)				
Bore size		mm	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation			Double acting with valve for brake					Double acting low pressure release type with valve for brake				
Working fluid			Compressed air									
Max. working pressure		MPa	0.7									
Min. working pressure	MPa	Brake section	0.3					0.25				
		Cylinder section	0.1									
Withstanding pressure		MPa	1.6									
Ambient temperature		℃	-5 to 50 (no freezing)									
Port size		Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/8		Rc1/4		Rc3/8
		Cylinder section	Rc1/4	Rc3/8		Rc1/2		Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance		mm	+0.9 0 (to 360), +1.4 0 (to 1000)									
Working piston speed		mm/s	50 to 1000 (used within allowable energy absorption)									
Cushion			Air cushion									
Effective cushion length		mm	14.6	16.6	16.6	20.6	23.6	14.6	16.6	16.6	20.6	23.6
Lubrication			Not required					Not required (when lubricating, use turbine oil Class 1 ISOVG32)				
Stoppage accuracy		mm	±1.0 (300mm/s loadless)									
Holding force		N	980	1569	2451	3922	6178	784	1255	1961	3138	4941
Allowable energy absorption	Cushioned	J	4.29	8.37	15.8	27.9	49.8	4.29	8.37	15.8	27.9	49.8
	No cushion	J	0.067	0.079	0.079	0.201	0.301	0.067	0.079	0.079	0.201	0.301
			Note: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. We recommend to use an external shock absorber together.									

Note: Specifications of valves are the same as the standard products " 4KB2 ". Refer to " Pneumatic Valves (CB-23SA)" for details.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1000	1
ϕ50			2000	
ϕ63			2500	
ϕ80		700		
ϕ100		800		

* Min. stroke length will differ 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 (T type switch)

●T0/T5 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (20)	40 (40)	60 (60)	20 (10)	60 (45)	105 (75)	150 (105)	110 (110)	110 (110)	175 (145)	175 (145)	50 (50)	50 (50)
ϕ50	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	65 (50)	65 (60)	135 (135)	135 (135)	135 (135)	135 (135)	60 (60)	60 (60)
ϕ63	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	70 (55)	70 (60)	110 (95)	110 (95)	110 (100)	110 (100)	50 (45)	50 (45)
ϕ80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	115 (85)	115 (85)	115 (105)	115 (105)	55 (40)	55 (40)
ϕ100	15 (15)	25 (25)	45 (45)	70 (70)	15 (15)	25 (25)	70 (55)	70 (70)	125 (95)	125 (95)	125 (115)	125 (115)	60 (45)	60 (45)

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.

Min. stroke length of type with switch (T type switch)

●T8 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	50 (35)	95 (65)	140 (95)	95 (85)	95 (85)	155 (125)	155 (125)	45 (40)	45 (40)
ϕ50	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	115 (115)	115 (115)	135 (135)	135 (135)	50 (50)	50 (50)
ϕ63	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	95 (75)	95 (75)	110 (110)	110 (110)	45 (35)	45 (35)
ϕ80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	100 (70)	100 (70)	115 (115)	115 (115)	50 (35)	50 (35)
ϕ100	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	110 (80)	110 (80)	125 (125)	125 (125)	55 (40)	55 (40)

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 min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (75)	105 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (85)	110 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	115 (85)	115 (85)	115 (90)	115 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	125 (95)	125 (95)	125 (100)	125 (100)	60 (45)	60 (45)

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 min. stroke length with 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
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	100 (70)	100 (70)	100 (75)	100 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (85)	105 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (90)	110 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	120 (90)	120 (90)	120 (100)	120 (100)	60 (45)	60 (45)

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 (T type switch)

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

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

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*/T2YDP*
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 switches.
Note 2: Max. load current above: 20mA at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25℃.
(5 to 10mA when 60℃)

Switch specifications (H type switch)

●Reed switch

Descriptions	Reed 2 wire		
	H0		H0Y (2 color indicator type)
Applications	Relay, programmable controller		Programmable controller dedicated
Load voltage / current	12/24 VDC 5 to 50mA	110 VAC 7 to 20mA	24 VDC, 5 to 20mA (Note 2)
Light	Green LED ON lighting		Red/green LED ON lighting
Leakage current	10 μA or less		

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: The maximum load current is applied at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25℃.
(5 to 10mA when 60℃)

Valve electric specifications for brake

Descriptions	4KB2		
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 (No. CB-23SA)" for details.

Cylinder weight

(Unit: kg)

Descriptions, mounting style	Product weight when stroke length (S) = 0mm						Weight per switch (including mounting bracket)						
							T type	H type		T2YD type		Additional weight per S = 100mm	Valve weight
Bore size (mm)	Basic type (00)	Foot type (LB)	Flange type (FA and FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)		1m	3m	1m	3m		
ϕ40	2.48	2.66	2.91	2.83	2.83	2.86	0.018	0.10	0.20	0.08	0.17	0.39	0.32
ϕ50	3.47	3.67	3.97	3.87	3.87	3.97						0.46	
ϕ63	5.09	5.49	6.19	5.79	5.79	5.89						0.50	0.35
ϕ80	8.15	8.85	9.95	9.65	9.65	9.45						0.90	
ϕ100	14.70	15.70	17.40	16.90	16.90	17.30						1.12	0.49

(E.g.) Product weight of JSC3-V-LB-50B-200-T0H-D

Product weight when S = 0mm ····· 3.67kg
Additional weight when S = 200mm····· 0.46 X $\frac{200}{100}$ = 0.92 (kg)
Weight of two switches ····· 0.018kg X 2 = 0.036kg
Weight of valve ····· 0.32kg
Product weight ····· 3.67kg + 0.92kg + 0.036kg + 0.32kg = 4.946kg

How to order

Without switch

JSC3 - ○ V — LB - 40 ○ B - 50 - 1 ——— S I

With switch

JSC3 - ○ V — LB - 40 ○ B - 50 - 1 - T0H - R - S I

Strong magnetic field proof (H0, H0Y switch) with switch

JSC3 - ○ V L2 - LB - 40 ○ B - 50 - 1 - H0 - R - S I

- Model no.
- A Brake release pressure
- B Mounting style Note 1
- C Bore size
- D Port thread type
- E Cushion
- F Stroke length Note 2
- G Valve voltage
- H Switch model no. Note 4 (* indicates lead wire lengt.)
- I Switch quantity Note 5
- J Option Note 6
- K Accessory Note 7

Symbol	Descriptions
A Brake release pressure	
Blank	Standard type 0.3MPa
S	Low pressure release type 0.25MPa
B Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
FC	Special head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end trunnion type
C Bore size (mm)	
40	ϕ40
50	ϕ50
63	ϕ63
80	ϕ80
100	ϕ100
D Port thread type	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)
E Cushion	
B	Both sides cushioned
R	Rod end cushion
H	Head end cushion
N	No cushion

F Stroke length (mm)

Bore size	Stroke length Note 3	Available stroke length	Custom stroke length
ϕ40	**1 to 600**	**1000**	**1 mm increment**
ϕ50	**1 to 600**	**2000**	
ϕ63	**1 to 600**	**2500**	
ϕ80	**1 to 700**	**2500**	
ϕ100	**1 to 800**	**2500**	

Symbol	Descriptions
G Valve voltage	
1	100 VAC
2	200 VAC
3	24 VDC
4	12 VDC
H Switch model no.	
Refer to the following page for switch model no.	
***Lead wire length**	
Blank	1m (standard)
3	3m (option)
5	5m (option)
I Switch quantity	
R	One on rod end
H	One on rod head
D	Two
T	Three
4	Four (if more than four switches, indicate switch quantity.)

J Option

		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	100 ℃	200 ℃
L	Bellows	250 ℃	400 ℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
G	With indicator		

Symbol	Descriptions
K Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring 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. (Special head end flange type is attached when shipped.)
Note 2: Refer to Ending 74 if max. stroke length is exceeding.
Note 3: Refer to page 1326 for min. stroke length with switch,
Note 4: T2YD, T2YDT, H0 and H0Y is strong magnetic field proof switch.
Note 5: 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 6: Refer to each dimensions to confirm indication of "S" ,"T", and "G" positions.
Note 7: "I" and "Y" can not be selected at the same time.
Note 8: Refer to Ending 89 for custom specifications of rod end form.

<Example of model number>

JSC3-V-LB-40B-50-1-T0H-R-SI

Model: Brake cylinder double acting with valve for brake
- A Brake release pressure : Standard type 0.3MPa
- B Mounting style : Axial foot type
- C Bore size : ϕ40mm
- D Port thread type : Rc thread
- E Cushion : Both sides cushioned
- F Stroke length : 50mm
- G Valve voltage : 100 VAC
- H Switch model no. : Proximity switch T0H, lead wire 1m
- I Switch quantity : One on rod end
- J Option : Cushion needle position S
- K Accessory : Rod eye

How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Foot (LB)	JSC3-40-LB	JSC3-50-LB	JSC3-63-LB	JSC3-80-LB	JSC3-100-LB
Flange (FB)	JSC3-40-FB	JSC3-50-FB	JSC3-63-FB	JSC3-80-FB	JSC3-100-FB
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

Note 1: The foot type bracket is a two-piece set.

[H] Switch model no.

T type switch

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	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			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 (w/o 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

R switch/H type switch

Grommet type	Terminal box type: Standard type	Terminal box type: Water tight type	Contact	Indicator	Lead wire
R1*	**R1B**	**R1A**		1 color indicator type	
R					vire
R					vire
R					vire
R0	**R0B**	**R0A**	Reed	1 color indicator type	
H0*	-	-		Strong magnetic field proof 1 color indicator type	
H0Y*	-	-		Strong magnetic field proof 2 color indicator type	

The switch has been changed to T type switch since October first, 2007.

How to order brake unit

JSC3 - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

● For mounting bracket FA

JSC3 - FA - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

How to order T type switch

● Switch body + mounting bracket

JSC3 - T0H - 40

Switch model no. (Item Ⓗ)
Bore size (Item Ⓒ previous page)

● Only switch body

SW - T0H

Switch model no. (Item Ⓗ)

● Mounting bracket

JSC3 - TS - 40

Bracket
Bore size (Item Ⓒ previous page)

How to order H type switch

● Switch body + mounting bracket

JSC3-L2 - H0* - 40

Switch model no. (Item Ⓗ)
Bore size (Item Ⓒ previous page)

● Only switch body

SW - H0*

Switch model no. (item Ⓗ)

● Mounting bracket

JSC3-L2 - H - 40

Bore size (Item Ⓒ previous page)

How to order Y2YD type switch.

● Switch body + mounting bracket

JSC3 - T2YD* - 40

Switch model no. (Item Ⓗ)
Bore size (Item Ⓒ previous page)

● Only switch body

SW - T2YD*

Switch model no. (Item Ⓗ)

● Mounting bracket

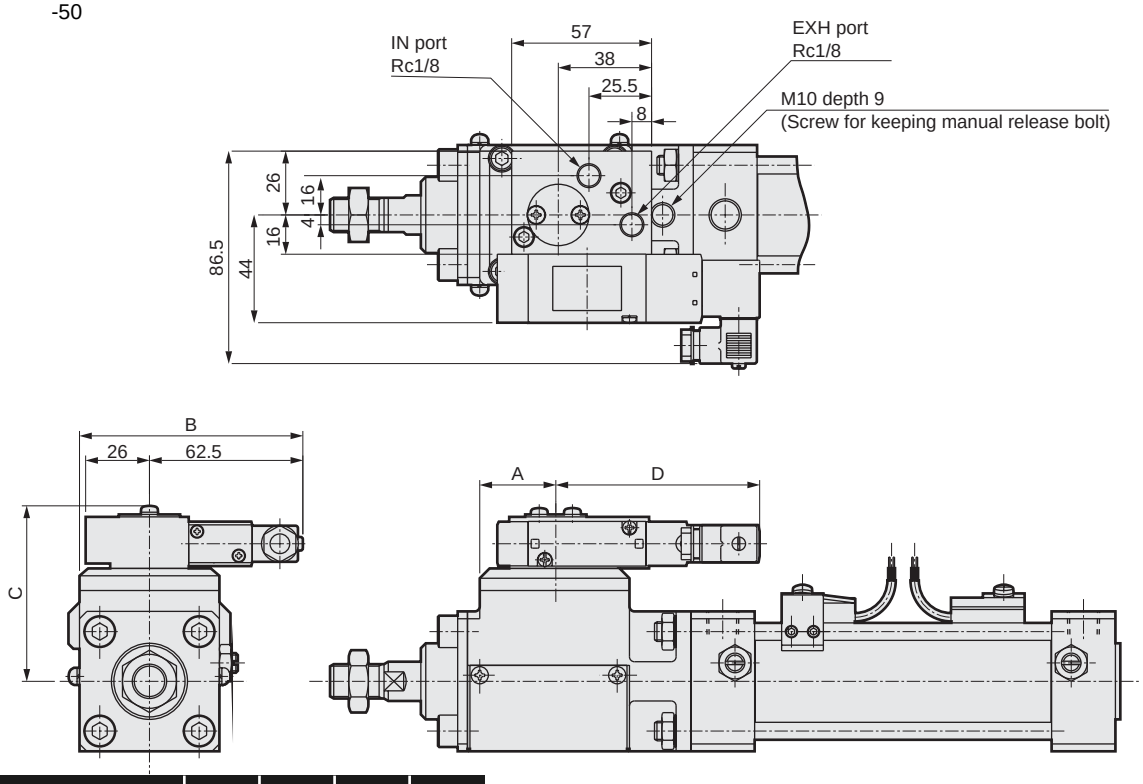
JSC3 - T - 40

Bore size (Item Ⓒ previous page)

Dimensions

With valve for brake

● JSC3-V-40 ϕ40, ϕ50
-50

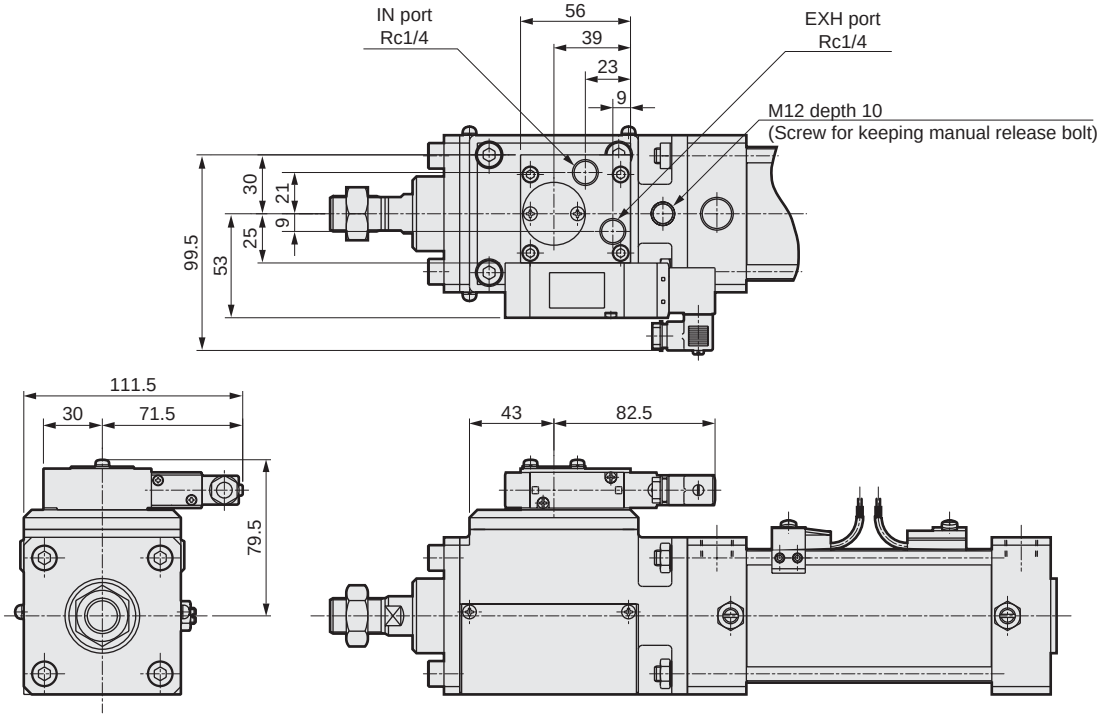


Symbol / Bore size (mm)	A	B	C	D
ϕ40	31	91	71.5	83.5
ϕ50	36	96.5	76	86.5

● Note: Dimensions are same as standard except the above dimensions.
Refer to page 1308.

With valve for brake

● JSC3-V-63 ϕ63

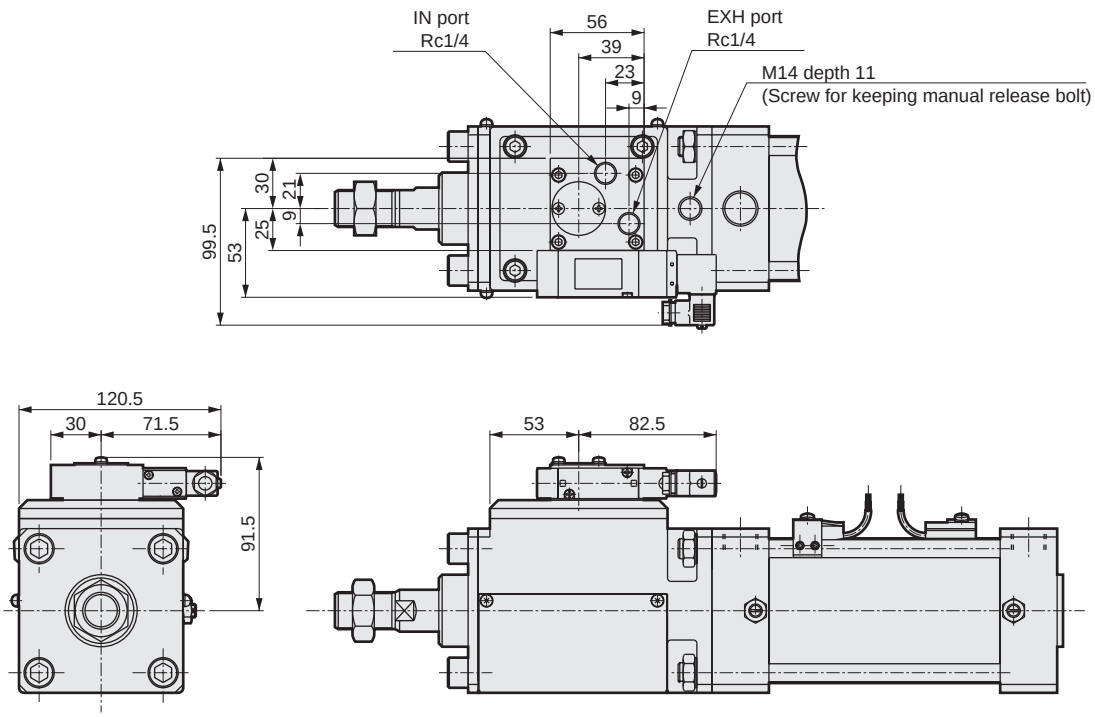


● Note: Dimensions are same as standard except the above dimensions. Refer to page 1308.

Dimensions

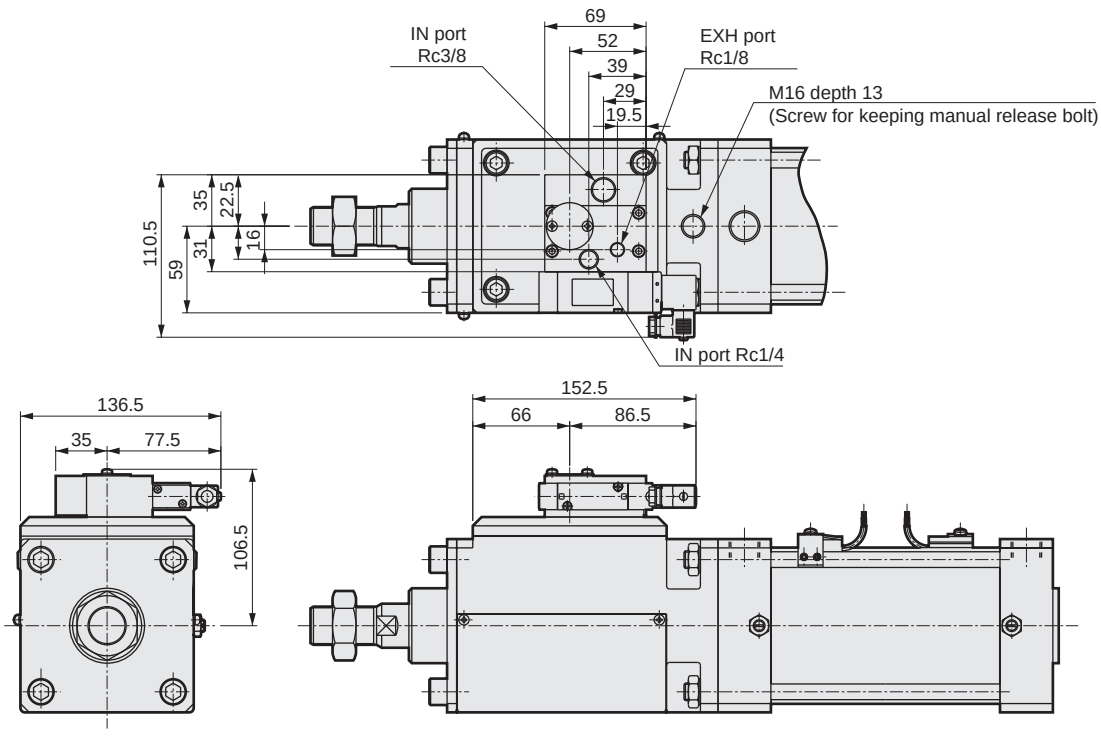
With valve for brake

● JSC3-V-80 ϕ80



● Note: Dimensions are same as standard except the above dimensions. Refer to page 1308.

● JSC3-V-100 ϕ100

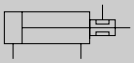


● Note: Dimensions are same as standard except the above dimensions. Refer to page 1308.

Brake cylinder Double acting low hydraulic type

JSC3-H Series

● Bore size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100
ϕ125, ϕ140, ϕ160, ϕ180

JIS symbol 

RoHS CAD

Specifications

Descriptions		JSC3-H (with switch)					JSC3-H/JSC3-LH				JSC3-SH (with switch)				
Bore size mm		ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	ϕ125	ϕ140	ϕ160	ϕ180	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation		Double acting low hydraulic type									Double acting low pressure release, low hydraulic type				
Working fluid		Hydraulic fluid (compressed air for brake section)													
Max. working pressure MPa		1.0													
Min. working pressure MPa	Brake section	0.3									0.25				
	Cylinder section	0.2					0.1				0.2				
Withstanding pressure MPa		1.6													
Ambient temperature ℃		5 to 50													
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/2				Rc1/8		Rc1/4		Rc3/8
	Cylinder section	Rc1/4	Rc3/8		Rc1/2		Rc1/2	Rc3/4			Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance mm		+0.9 0 (to 360), +1.4 0 (to 1000)					+1.0 0 (to 300), +1.4 0 (to 1000), +1.8 0 (to 2000)				+0.9 0 (to 360), +1.4 0 (to 1000)				
Cushion		Air cushion													
Effective cushion length mm		14.6	16.6		20.6	23.6	21.6				14.6	16.6		20.6	23.6
Stoppage accuracy mm		±0.2 (50mm/s loadless)													
Holding force N		980	1569	2451	3922	6178	9600	12000	15800	20000	784	1255	1961	3138	4941
Allowable energy absorption J	Cushioned	Note: The low hydraulic cylinder's cushion performance cannot absorb large energies. We recommend to use an external shock absorber together.													
	No cushion	Note: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. We recommend to use an external shock absorber together.													

Note: The brakes are air-operated.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ 40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1600	1
ϕ 50			2000	
ϕ 63			2500	
ϕ 80		700		
ϕ100		800		
ϕ125			2000	
ϕ140				
ϕ160				
ϕ180		900		

Note 1: If the max. stroke is exceeded, product specifications may not be met, depending on operating conditions. Refer to Ending 74.
Note 2: Custom stroke length is available per 1mm increment.

Min. stroke length of type with switch (T type switch)

● T0/T5 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 40	20 (10)	20 (20)	40 (40)	60 (60)	20 (10)	60 (45)	105 (75)	150 (105)	110 (110)	110 (110)	175 (145)	175 (145)	50 (50)	50 (50)
ϕ 50	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	65 (50)	65 (60)	135 (135)	135 (135)	135 (135)	135 (135)	60 (60)	60 (60)
ϕ 63	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	70 (55)	70 (60)	110 (95)	110 (95)	110 (100)	110 (100)	50 (45)	50 (45)
ϕ 80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	115 (85)	115 (85)	115 (105)	115 (105)	55 (40)	55 (40)
ϕ 100	15 (15)	25 (25)	45 (45)	70 (70)	15 (15)	25 (25)	70 (55)	70 (70)	125 (95)	125 (95)	125 (115)	125 (115)	60 (45)	60 (45)

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.

Min. stroke length of type with switch (T type switch)

● T8 type min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	50 (35)	95 (65)	140 (95)	95 (85)	95 (85)	155 (125)	155 (125)	45 (40)	45 (40)
ϕ50	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	115 (115)	115 (115)	135 (135)	135 (135)	50 (50)	50 (50)
ϕ63	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	95 (75)	95 (75)	110 (110)	110 (110)	45 (35)	45 (35)
ϕ80	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	100 (70)	100 (70)	115 (115)	115 (115)	50 (35)	50 (35)
ϕ100	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	110 (80)	110 (80)	125 (125)	125 (125)	55 (40)	55 (40)

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 min. stroke length with switch

Switch quantity	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.
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (75)	105 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (85)	110 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	115 (85)	115 (85)	115 (90)	115 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	125 (95)	125 (95)	125 (100)	125 (100)	60 (45)	60 (45)

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 min. stroke length with switch

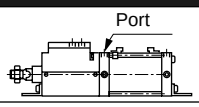
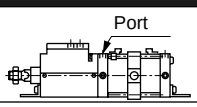
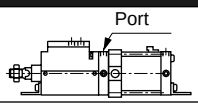
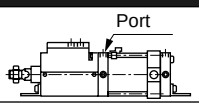
	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at rod side stroke end.
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
ϕ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	100 (70)	100 (70)	100 (75)	100 (75)	45 (30)	45 (30)
ϕ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (85)	105 (85)	50 (35)	50 (35)
ϕ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (90)	110 (90)	55 (40)	55 (40)
ϕ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	120 (90)	120 (90)	120 (100)	120 (100)	60 (45)	60 (45)

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.

Min. stroke length of type with switch (R type switch)

● ϕ125 to ϕ180

(Unit: mm)

Descriptions / Bore size (mm)	Stroke length when same surface installation	Stroke length when center trunnion installation	Stroke length when rod end trunnion installation	Stroke length when head end trunnion installation
				
ϕ125	20 and over * (25 and over)	120 and over	70 and over	
ϕ140		125 and over	75 and over	
ϕ160		130 and over	80 and over	
ϕ180		135 and over	85 and over	

*The minimum stroke length for R2YK and R3YK.

Switch specifications (T type switch)

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

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

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	T0H/T0V	T5H/T5V		T8H/T8V				T2YD*/T2YDPT*
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 10)		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 switches.
Note 2: Max. load current above: 20mA at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25℃. (5 to 10mA at 60℃)

Switch specifications (R type switch/H type switch)

● Proximity switch

Descriptions	Proximity 2 wire			Proximity 3 wire	
	R1/R1K	R2/R2K	R2Y/R2YK (2 color indicator type)	R3/R3K	R3Y/R3YK (2 color indicator type)
Applications	Programmable controller, relay, small solenoid valve	Programmable controller		Programmable controller, relay, IC circuit or solenoid valve	
Output method	———			NPN output	
Power voltage	———	———		4.5 to 28 VDC	
Load voltage and 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	

● Reed switch

Descriptions	Reed 2 wire					
	R0	R4	R5	R6	H0	H0Y (2 color indicator type)
Applications	Relay, programmable controller	High capacity relay, solenoid valve	Programmable controller, relay, IC circuit (w/o indicator light), serial connection	Programmable controller dedicated (with DC self hold)	Relay, programmable controller	Programmable controller dedicated
Load voltage and current	12/24 VDC, 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	12/24 VDC 5 to 50mA / 110 VAC 7 to 20mA	24 VDC, 5 to 20mA (Note 2)
Light	LED ON lighting	Neon light OFF lighting	None	LED ON lighting	Green LED ON lighting	Red/green LED ON lighting
Leakage current	0mA	1mA or less	0mA	0.1mA or less	10 μA or less	

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: The maximum load current is applied at 25℃. The current will be lower than 20mA if ambient temperature around switch is higher than 25 ℃. (5 to 10mA when 60℃)

Cylinder weight

● ϕ40 to ϕ100

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm						Weight per switch (including mounting bracket)					Additional weight per S = 100mm
							T type	H type		T2YD type		
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)		1m	3m	1m	3m	
ϕ40	2.48	2.66	2.91	2.83	2.83	2.86	0.018	0.10	0.20	0.08	0.17	0.39
ϕ50	3.47	3.67	3.97	3.87	3.87	3.97						0.46
ϕ63	5.09	5.49	6.19	5.79	5.79	5.89						0.50
ϕ80	8.15	8.85	9.95	9.65	9.65	9.45						0.90
ϕ100	14.70	15.70	17.40	16.90	16.90	17.30						1.12

(E.g.) Product weight of JSC3-H-LB-50B-200-R0-D

Product weight when S = 0mm ·····3.67kg
Additional weight when S = 200mm ·····0.46 X $\frac{200}{100}$ = 0.92 (kg)
Weight of two switches ·····0.018kg X 2 = 0.036kg
Product weight ·····3.67kg + 0.92kg + 0.036kg = 4.626kg

● ϕ125 to ϕ180

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm					Additional weight per S = 100mm	R type		H type		T2YD type	
	Axial foot type (LB)	Flange type (FA and FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC, TA, TB)		Grommet	Terminal box	1m	3m	1m	3m
ϕ125	33.3	35.1	34.8	34.9	35.2	2.60	0.10	0.09	0.10	0.20	0.08	0.17
ϕ140	43.8	47.2	45.6	45.8	45.0	2.96						
ϕ160	56.8	60.6	58.7	59.0	60.1	3.57						
ϕ180	79.6	87.1	82.5	83.0	83.2	4.94						

(E.g.) JSC3-H-LB-125B-300

Product weight when S = 0mm·····33.3kg
Additional weight when S=300mm·····2.60 X $\frac{300}{100}$ = 7.8kg
Product weight when S=300mm ·····33.3 + 7.8 = 41.1kg

How to order (ϕ 40 to ϕ 100)

Without switch

JSC3 - ○ H — LB - 40 ○ B - 50 ——— S I

With switch

JSC3 - ○ H — LB - 40 ○ B - 50 - T0H - R - S I

Strong magnetic field proof (H0, H0Y switch) with switch

JSC3 - ○ HL2 - LB - 40 ○ B - 50 - H0 - R - S I

Model no.

Ⓐ Brake release pressure

Ⓑ Mounting style Note 1

Ⓒ Bore size

Ⓓ Port thread type

Ⓔ Cushion

Ⓕ Stroke length Note 2

Ⓖ Switch model no. Note 4
* indicates lead wire length.

Ⓗ Switch quantity Note 5

Ⓘ Option Note 6

Ⓙ Accessory Note 7

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product. (Special head end flange type is attached when shipped.)
Note 2: Refer to Ending 74 if max. stroke length is exceeded.
Note 3: Refer to page 1334 for min. stroke length with switch.
Note 4: T2YD, T2YDT, H0 and H0Y is strong magnetic field proof switch.
Note 5: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.
Note 6: Refer to each dimensions to confirm indication of "S" ,"T", and "G" positions.
Note 7: "I" and "Y" can not be selected at the same time.
Note 8: Refer to Ending 89 for custom specifications of rod end form.

<Example of model number>

JSC3-H-LB-40B-50-T0H-R-SI

Model: Brake cylinder double acting low hydraulic type
Ⓐ Brake release pressure : Standard type 0.3MPa
Ⓑ Mounting style : Axial foot type
Ⓒ Bore size : ϕ 40mm
Ⓓ Port thread type : Rc thread
Ⓔ Cushion : Both sides cushioned
Ⓕ Stroke length : 50mm
Ⓖ Switch model no. : Reed switch TOH, lead wire 1m
Ⓗ Switch quantity : One on rod end
Ⓘ Option : Cushion needle position S
Ⓙ Accessory : Rod eye

Symbol	Descriptions
Ⓐ Brake release pressure	
Blank	Standard type 0.3MPa
S	Low pressure release type 0.25MPa
Ⓑ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
FC	Special head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end 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 cushion
R	Rod end cushion
H	Head end cushion
N	No cushion

Ⓕ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ40	**1 to 600**	**1600**	**1 mm increment**
ϕ50	**1 to 600**	**2000**	
ϕ63	**1 to 600**	**2500**	
ϕ80	**1 to 700**	**2500**	
ϕ100	**1 to 800**	**2500**	

Ⓖ Switch model no.
Refer to the following page for switch model no.

***Lead wire length**	
Blank	1m (standard)
3	3m (option)
5	5m (option)
Ⓗ Switch quantity	
R	One on rod end
H	One on rod head
D	Two
T	Three
4	Four (If more than 4 switches, indicate switch quantity)

Ⓘ Option

		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	100 ℃	200 ℃
L	Bellows	250 ℃	400 ℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
G	With indicator		

Ⓙ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring attached)
B3	Eye bracket
B4	Trunnion type No. 2 bracket

How to order mounting bracket

● ϕ40 to ϕ100

Bore size (mm) / Mounting bracket	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Foot (LB)	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FB)	JSC3-40-FB	JSC3-50-FB	JSC3-63-FB	JSC3-80-FB	JSC3-100-FB
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

[G] Switch model no.

T type switch

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	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			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 (w/o 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

R switch/H type switch

Grommet type	Terminal box type: Standard type	Terminal box type: Water tight type	Contact	Indicator	Lead wire
R1*	**R1B**	**R1A**			wire
R					wire
					wire
R					wire
					wire
					wire
					wire
R0	**R0B**	**R0A**	Reed	1 color indicator type	wire
H0*	**-**	**-**		Strong magnetic field proof 1 color indicator type	4-wire
H0Y*	**-**	**-**		Strong magnetic field proof 2 color indicator type	2-wire

The switch has been changed to T type switch since October first, 2007.

How to order brake unit

JSC3 - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

● For mounting bracket FA

JSC3 - FA - 40 - BRAKE-UNIT

Bore size (Item Ⓒ previous page)

How to order T type switch

● Switch body + mounting bracket

JSC3 - T0H - 40

Switch model no. (Item Ⓖ)
Bore size (Item Ⓒ previous page)

● Only switch body

SW - T0H

Switch model no. (Item Ⓖ)

● Mounting bracket

JSC3 - TS - 40

Bracket
Bore size (Item Ⓒ previous page)

How to order T2YD type switch.

● Switch body + mounting bracket
・ ϕ40 to ϕ100

JSC3 - T2YD - 40

Switch model no. (Item Ⓖ)
Bore size (Item Ⓒ previous page)

● Only switch body
・ ϕ40 to ϕ100

SW - T2YD

Switch model no. (Item Ⓖ)

● Mounting bracket

JSC3 - T - 40

Bore size (Item Ⓒ previous page)

How to order H type switch

● Switch body + mounting bracket

JSC3-L2 - H0 - 40

Switch model no. (Item Ⓖ)
Bore size (Item Ⓒ previous page)

● Only switch body

SW - H0

Switch model no. (item Ⓖ)

● Mounting bracket

JSC3-L2 - H - 40

Bore size (Item Ⓒ previous page)

How to order (ϕ125 to ϕ180)

Without switch

JSC3-H - LB - 125 ( ) B - 50 ——— S I

With switch

JSC3-LH - LB - 125 ( ) B - 50 - R0 - R - S I

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length Note 2

Ⓕ Switch model no. Note 4

Ⓖ Switch quantity Note 5

Ⓗ Option Note 6

Ⓘ Accessory Note 7

Symbol	Descriptions
Ⓐ Mounting style	
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end trunnion type
Ⓑ Bore size (mm)	
125	ϕ125
140	ϕ140
160	ϕ160
180	ϕ180
Ⓒ Port thread type	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)
Ⓓ Cushion	
B	Both sides cushion
R	Rod end cushion
H	Head end cushion
N	No cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 3	Available stroke length	Custom stroke length
ϕ125	**1 to 800**	**2000**	**By 1 mm increment**
ϕ140	**1 to 800**	**2000**	
ϕ160	**1 to 800**	**2000**	
ϕ180	**1 to 900**	**2000**	

Ⓕ Switch model no.

Grommet type	Terminal box type: Standard type	Terminal box type: Splash-proof	Contact	Indicator	Lead wire
R1K*	**R1KB**	**R1KA**	Proximity	1 color indicator type	2-wire
R2K*	**R2KB**	**R2KA**			
R2YK*	**R2YKB**	**R2YKA**		2 color indicator type	
T2YDP*	**-**	**-**		Strong magnetic field proof switch	
T2YDPT*	**-**	**-**			
R3K*	**R3KB**	**R3KA**		1 color indicator type	3-wire
R3YK*	**R3YKB**	**R3YKA**		2 color indicator type	
R0*	**ROB**	**R0A**	Reed	1 color indicator type	2-wire
R4*	**R4B**	**R4A**			
R5*	**R5B**	**R5A**		Without indicator light	
R6*	**R6B**	**R6A**		1 color indicator type	

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

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

Ⓗ Option

		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	60℃	100℃
K	Bellows	100℃	200℃
L	Bellows	250℃	400℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
C2	Cushion mechanism with check valve		

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring attached)

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.
Note 2: If the max. stroke length is exceeded, refer to Ending 74.
Note 3: Refer to page 1334 for min. stroke length with switch.
Note 4: The type with switch is the custom order. Note that dimensions will change.
Note 5: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.
Note 6: Refer to each dimensions to confirm indication of cushion needle position.
Note 7: "I""Y" can not be selected at the same time.
Note 8: Refer to Ending 89 for custom specifications of rod end form.

<Example of model number>

JSC3-LH-LB-125B-50-R0-R-SI

Model: Brake cylinder low hydraulic type
Ⓐ Mounting style : Axial foot type
Ⓑ Bore size : ϕ125mm
Ⓒ Port thread type : Rc thread
Ⓓ Cushion : Both sides cushioned
Ⓔ Stroke length : 50mm
Ⓕ Switch model no. : Reed switch R0
Ⓖ Switch quantity : One on rod end
Ⓗ Option : Cushion needle position S
Ⓘ Accessory : Rod eye

How to order brake unit

JSC3 - 125 - BRAKE-UNIT

Bore size (Item Ⓑ previous page)

How to order R type switch

● Switch body + mounting bracket

JSC3 - RO - 125

Switch model no. (Item Ⓕ previous page)
Bore size (Item Ⓑ previous page)

● Only switch body

SW - RO

Switch model no. (item Ⓕ previous page) *
* For swarf countermeasures, R2YK*, R3YK* are provided.
(Measures against swarf must also be provided for the mounting bracket)

● Mounting bracket

JSC3 - R - 125

Bracket
*R | R type switch
Bore size (Item Ⓑ previous page)
*For swarf countermeasures, RF is provided. (For R2YK and R3YK switch only.)

● Only terminal box

· R * B

SW - RB

· R * A

SW - RA

How to order T2YD type switch.

● Switch body + mounting bracket

· ϕ125 to ϕ180

JSC3-LN - T2YDP* - 140

Switch model no. (Item Ⓕ previous page)
Bore size (Item Ⓑ previous page)

● Only switch body

· ϕ125 to ϕ180

SW - T2YDP*

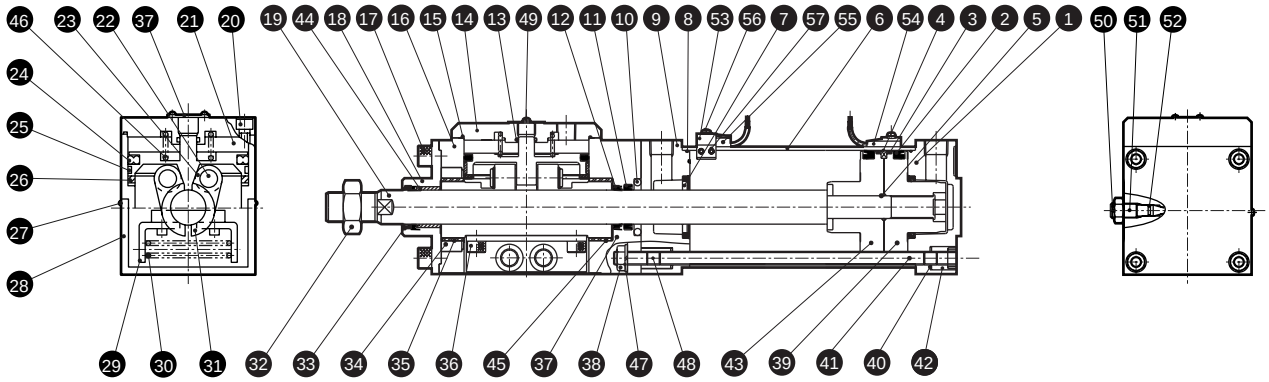
Switch model no. (Item Ⓕ previous page)

● Mounting bracket

JSC3-LN - T - 140

Bore size (Item Ⓑ previous page)

Internal structure and parts list (ϕ40 to ϕ100)



Products No.	Parts name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint
2	Piston packing seal	Nitrile rubber	
3	Wear ring	Polyacetal resin	
4	Magnet	Plastic	
5	Piston gasket	Nitrile rubber	
6	Cylinder tube	Aluminum alloy	Hard alumite
7	Cushion packing seal	Urethane rubber	
8	Cylinder gasket	Nitrile rubber	
9	Rod cover	Aluminum alloy die-casting	Paint
10	Metal seal	Nitrile rubber	
11	Rod packing seal	Nitrile rubber	
12	Dust wiper	Nitrile rubber	
13	Cap gasket A	Nitrile rubber	
14	Main body cap	Cast iron	Nitriding
15	Cap gasket B	Nitrile rubber	
16	Brake	Aluminum alloy casting	Alumite
17	Hexagon socket head cap bolt	Alloy steel	Blackening
18	Rod bushing	Steel	Phosphoric acid mangan
19	Piston rod	Steel	Industrial chrome plating
20	Hexagon socket head cap bolt	Alloy steel	Blackening
21	Piston for brake	Cast iron	Phosphoric acid mangan
22	Parallel pin	Steel	
23	Bearing		
24	Piston packing seal B	Nitrile rubber	
25	Wear ring	Polyacetal resin	
26	Cushion rubber	Urethane rubber	
27	Cross headed pan	Steel	Zinc chromate

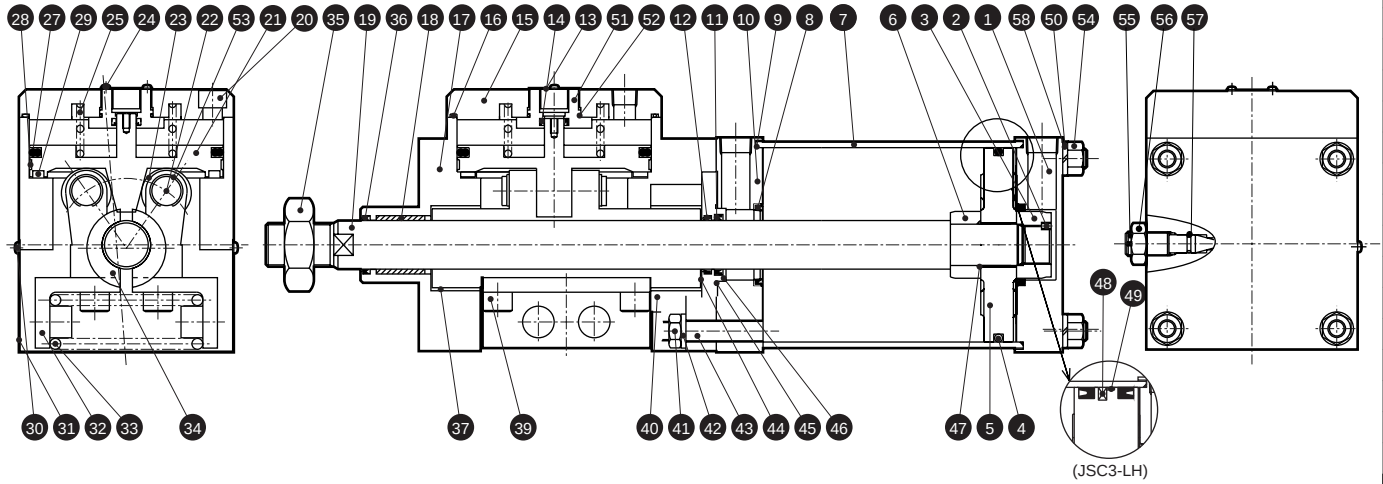
Products No.	Parts name	Material	Remarks
28	Cover	Steel	Paint
29	Spring holder	Steel	Zinc chromate
30	Spring	Steel	
31	Brake shoe metal	Cast iron	Nickeling
32	Rod nut	Steel	Zinc chromate
33	Dust wiper	Nitrile rubber	
34	DU ring	Steel	Blackening
35	Bush	Oil impregnated bearing alloy	
36	Hexagon socket head cap bolt	Alloy steel	Blackening
37	Dust cover	Aluminum alloy	Paint
38	Hexagon nut	Steel	Blackening
39	Piston H	Aluminum alloy die-casting	
40	Tie rod	Steel	Zinc chromate
41	Conical spring washer	Steel	Blackening
42	Round nut	Steel	Zinc chromate
43	Piston R	Aluminum alloy die-casting	
44	Bush B	Oil impregnated bearing alloy	
45	Thrust washer		
46	Spring	Steel	Paint
47	Toothed washer	Steel	Blackening
48	Hexagon socket head set screw	Steel	Blackening
49	Washer assembly cross headed pan	Steel	Zinc chromate
50	Cushion needle	Copper alloy	
51	Needle nut	Copper alloy	
52	Needle gasket	Nitrile rubber	
With switch			
53	Switch installation unit	Aluminum alloy	
54	Switch holder	Aluminum alloy	
55	Cylinder switch		
56	Cross headed pan	Steel	Zinc chromate
57	Hexagon socket head set screw	Alloy steel	Blackening

Repair parts list

Bore size	Kit No.	Repair parts number
ϕ40	JSC3-H- 40K	2 3 7 8 10 11 12 33 55
ϕ50	JSC3-H- 50K	
ϕ63	JSC3-H- 63K	
ϕ80	JSC3-H- 80K	
ϕ100	JSC3-H-100K	

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

Internal structure and parts list (ϕ125 to ϕ180)



Parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Head cover	Steel	Zinc chromate	29	Cushion rubber	Urethane rubber	
2	Hexagon socket head set screw	Alloy steel	Blackening	30	Cross headed pan	Steel	
3	Cushion ring (A)	Steel	Zinc chromate	31	Cover	Steel	
4	Piston packing seal	Nitrile rubber		32	Spring holder	Steel	Zinc chromate
5	Piston	ϕ125 to ϕ160 aluminum Alloy, ϕ180 cast iron		33	Spring	Piano wire	Blackening
				34	Brake shoe metal	Cast iron	
6	Cushion ring (B)	Steel	Zinc chromate	35	Rod nut	Steel	
7	Cylinder tube	Steel	Paint and industrial chrome plating	36	Dust wiper	Nitrile rubber	
8	Cushion packing seal	Nitrile rubber and steel		37	Bush A	DU dry bearing	
9	Cylinder gasket	Nitrile rubber		39	Hexagon socket head cap bolt	Alloy steel	Blackening
10	Rod cover	Steel	Zinc chromate	40	Ring	Steel	Blackening
11	Rod packing seal	Nitrile rubber		41	Hexagon nut	Steel	Zinc chromate
12	Dust wiper	Nitrile rubber		42	Toothed washer	Steel	Zinc chromate
13	Dust cover	Aluminum alloy		43	Tie rod	Steel	Zinc chromate
14	Rod packing seal	Nitrile rubber		44	Thrust washer	Steel	
15	Main body cap	Cast iron		45	Metal gasket	Nitrile rubber	
16	Cap gasket	Nitrile rubber		46	Rod bushing	Steel	
17	Brake	Aluminum casting		47	Piston gasket	Nitrile rubber	
18	Bush B	Oil impregnated bearing alloy		48	Magnet	Rubber	Only JSC3-LH
19	Piston rod	Steel	Industrial chrome plating	49	Wear ring	Acetar resin	
20	Hexagon socket head cap bolt	Alloy steel	Blackening	50	Spring washer	Steel	
21	Piston for brake	Cast iron		51	Main body cap	Cast iron	
22	Bearing pin	Steel		52	O ring	Nitrile rubber	
23	Bearing	-		53	E type snap ring	Steel	
24	Washer assembly cross headed pan	Steel		54	Hexagon nut	Steel	Zinc chromate
25	Spring	Piano wire	Blackening	55	Cushion needle	Steel	Zinc chromate
27	Piston packing seal B	Nitrile rubber		56	Needle nut	Steel	Zinc chromate
28	Wear ring	Acetar resin		57	Needle gasket	Nitrile rubber	
				58	Plain washer	Steel	Zinc chromate

Note 1: With JSC3-LH-125 to 160, the (7) cylinder tube is made of aluminum alloy, and the (48) magnet is built in.
Note 2: With JSC3-LH-180, the (5) piston and (7) cylinder tube are made of aluminum alloy, and the (48) magnet and (49) wear ring are built in.

Repair parts list

● JSC3-H

Bore size (mm)	Kit No.	Repair parts number
ϕ125	JSC3-H-125K	❹ ❽ ❾ ⓫ ⓬ ㊱ ㊺ ㊼
ϕ140	JSC3-H-140K	
ϕ160	JSC3-H-160K	
ϕ180	JSC3-H-180K	

● JSC3-LH (with switch)

Bore size (mm)	Kit No.	Repair parts number
ϕ125	JSC3-LH-125K	❹ ㊾
ϕ140	JSC3-LH-140K	
ϕ160	JSC3-LH-160K	
ϕ180	JSC3-LH-180K	

Note: The JSC3-LH (with switch) consumable part is the JSC3-H consumable part with different piston packing and additional wear ring.

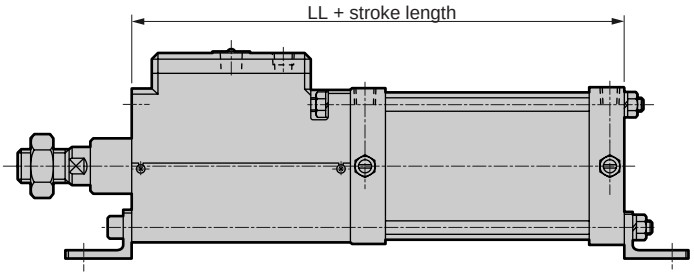
Dimensions

● ϕ40 to ϕ100

It is the same as the JSC3 (double acting single rod type). Refer to pages 1308 to 1317.

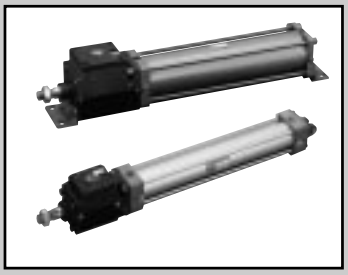
● ϕ125 to ϕ180

It is the same as the JSC3-N (double acting oil-free type). Refer to pages 1318 to 1325.



Note: LL dimensions of JSC3-H without switch differs from the dimensions of JSC3-LH with switch.

	ϕ125	ϕ140	ϕ160	ϕ180
JSC3-H	291	318	350	373
JSC3-LH	311	338	367	388

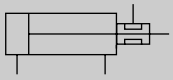


Brake cylinder Double acting heat resistance type

JSC3-T Series

● Bore size: ϕ40, ϕ50, ϕ63, ϕ80, ϕ100, ϕ125, ϕ140, ϕ160, ϕ180

JIS symbol



RoHS CAD

Specifications

Descriptions			JSC3-T									JSC3-ST				
Bore size		mm	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	ϕ125	ϕ140	ϕ160	ϕ180	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation			Double acting heat resistance type									Double acting low pressure release, heat resistance type				
Working fluid			Compressed air													
Max. working pressure		MPa	1.0													
Min. working pressure	Brake section	MPa	0.3									0.25				
	Cylinder section		0.1					0.05				0.1				
Withstanding pressure		MPa	1.6													
Ambient temperature		℃	5 to 120													
Port size	Brake section		Rc1/8		Rc1/4		Rc3/8	Rc1/2				Rc1/8		Rc1/4		Rc3/8
	Cylinder section		Rc1/4	Rc3/8		Rc1/2			Rc3/4			Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance		mm	+0.9 0 (to 360), +1.4 0 (to 1000)					+1.0 0 (to 300), +1.4 0 (to 1000), +1.8 0 (to 2000)				+0.9 0 (to 360), +1.4 0 (to 1000)				
Working piston speed		mm/s	50 to 1000 (used within allowable energy absorption)													
Cushion			Air cushion													
Effective cushion length		mm	14.6	16.6		20.6	23.6	21.6				14.6	16.6		20.6	23.6
Lubrication (note)			Not available													
Stoppage accuracy		mm	±1.0 (300mm/s loadless)													
Holding force		N	980	1569	2451	3922	6178	9600	12000	15800	20000	784	1255	1961	3138	4941
Allowable energy absorption J	Cushioned		4.29	8.37	15.8	27.9	49.8	63.6	91.5	116	152	4.29	8.37	15.8	27.9	49.8
	No cushion		0.067	0.079	0.079	0.201	0.301	0.371	0.386	0.386	0.958	0.067	0.079	0.079	0.201	0.301
			Note: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. We recommend to use an external shock absorber together.													

Note: Apply heat resistance grease periodically.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ140	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1600	1
ϕ150			2000	
ϕ163			2500	
ϕ180		700		
ϕ100		800		
ϕ125			2000	
ϕ140				
ϕ160				
ϕ180		900		

Note: If the max. stroke is exceeded, product specifications may not be met, depending on operating conditions. Refer to Ending 74.
Custom stroke length is available per 1mm increment.

Cylinder weight

● ϕ40 to ϕ100

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm						Additional weight per S = 100mm
	Basic type (00)	Foot type (LB)	Flange type (FA and FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)	
ϕ40	2.48	2.66	2.91	2.83	2.83	2.86	0.39
ϕ50	3.47	3.67	3.97	3.87	3.87	3.97	0.46
ϕ63	5.09	5.49	6.19	5.79	5.79	5.89	0.50
ϕ80	8.15	8.85	9.95	9.65	9.65	9.45	0.90
ϕ100	14.70	15.70	17.40	16.90	16.90	17.30	1.12

(E.g.) Product weight of JSC3-T-LB-50B-200

Product weight when S = 0mm ····· 3.67kg
Additional weight when S = 200mm ····· 0.46 X $\frac{200}{100}$ = 0.92 (kg)
Product weight ····· 3.67kg + 0.92kg = 4.59kg

● ϕ125 to ϕ180

(Unit: kg)

Descriptions, mounting style / Bore size (mm)	Product weight when stroke length (S) = 0mm					Additional weight per S = 100mm
	Axial foot type (LB)	Flange type (FA and FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC, TA or TB)	
ϕ125	33.3	35.1	34.8	34.9	35.2	2.60
ϕ140	43.8	47.2	45.6	45.8	45.0	2.96
ϕ160	56.8	60.6	58.7	59.0	60.1	3.57
ϕ180	79.6	87.1	82.5	83.0	83.2	4.94

(E.g.) LB-125B-300

Product weight when S = 0mm ····· 33.3kg
Additional weight when S=300mm ····· 2.60 X $\frac{300}{100}$ = 7.8kg
Product weight when S=300mm ····· 33.3 + 7.8 = 41.1kg

How to order

Without switch

JSC3 - ○ T - LB - 40 ○ B - 50 - S I

Model no.

Ⓐ Brake release pressure

Ⓑ Mounting style Note 1

Ⓒ Bore size

Ⓓ Port thread type

Ⓔ Cushion

Ⓕ Stroke length Note 2

Ⓖ Option Note 3

Ⓗ Accessory Note 5

Symbol	Descriptions
Ⓐ Brake release pressure	
Blank	Standard type 0.3MPa
S	Low pressure release type 0.25MPa
Ⓑ Mounting style	
00	Basic type (ϕ125 to ϕ180 can not be selected.)
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
FC	Special head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and snap ring attached)
TC	Center trunnion type
TA	Rod end trunnion type
TB	Head end trunnion type
Ⓒ Bore size (mm)	
40	ϕ40
50	ϕ50
63	ϕ63
80	ϕ80
100	ϕ100
125	ϕ125
140	ϕ140
160	ϕ160
180	ϕ180
Ⓓ Port thread type	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)
Ⓔ Cushion	
B	Both sides cushioned
R	Rod end cushion
H	Head end cushion
N	No cushion

Ⓕ Stroke length (mm)

Bore size	Stroke length	Available stroke length	Custom stroke length
ϕ40	**1 to 600**	**1600**	**1 mm increment**
ϕ50	**1 to 600**	**2000**	
ϕ63	**1 to 600**	**2500**	
ϕ80	**1 to 700**	**2500**	
ϕ100	**1 to 800**	**2500**	
ϕ125	**1 to 800**	**2000**	
ϕ140	**1 to 800**	**2000**	
ϕ160	**1 to 800**	**2000**	
ϕ180	**1 to 900**	**2000**	

Ⓖ Option

		Max. ambient temperature	Instantaneous max. temperature
L	Bellows	250℃	400℃
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
G	With indicator (for ϕ 40 to ϕ100)		
C2	Cushion mechanism with check valve (for ϕ125 to ϕ180)		

Symbol	Descriptions
Ⓗ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B1	Eye bracket
B2	Clevis bracket (pin and snap ring attached)
B3	Eye bracket (for ϕ 40 to ϕ100)
B4	Trunnion type No. 2 bracket (for ϕ40 to ϕ100)

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.
(Special head end flange type is attached when shipped.)

Note 2: Refer to Ending 74 if max. stroke length is exceeded.

Note 3: Refer to each dimensions to confirm indication of "S", "T", and "G" positions.

Note 4: Refer to Ending 89 for custom specifications of rod end form.

Note 5: "I" and "Y" can not be selected at the same time.

<Example of model number>

JSC3-T-LB-40B-50-SI

Model: Brake cylinder double acting heat resistance type
Ⓐ Brake release pressure: Standard type 0.3MPa
Ⓑ Mounting style : Axial foot type
Ⓒ Bore size : ϕ40mm
Ⓓ Port thread type : Rc thread
Ⓔ Cushion : Both sides cushioned
Ⓕ Stroke length : 50mm
Ⓖ Option : Cushion needle position S
Ⓗ Accessory : Rod eye

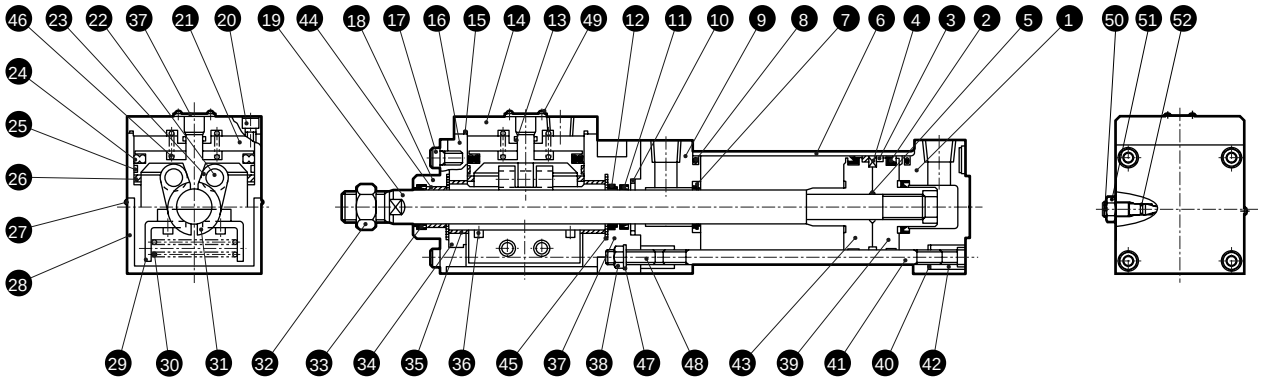
How to order mounting bracket

● ϕ40 to ϕ100

Bore size (mm) / Mounting bracket	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Foot (LB)	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FB)	JSC3-40-FB	JSC3-50-FB	JSC3-63-FB	JSC3-80-FB	JSC3-100-FB
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

Note 1: The foot type mounting bracket is supplied as a two-piece set.

Internal structure and parts list (ϕ40 to ϕ100)



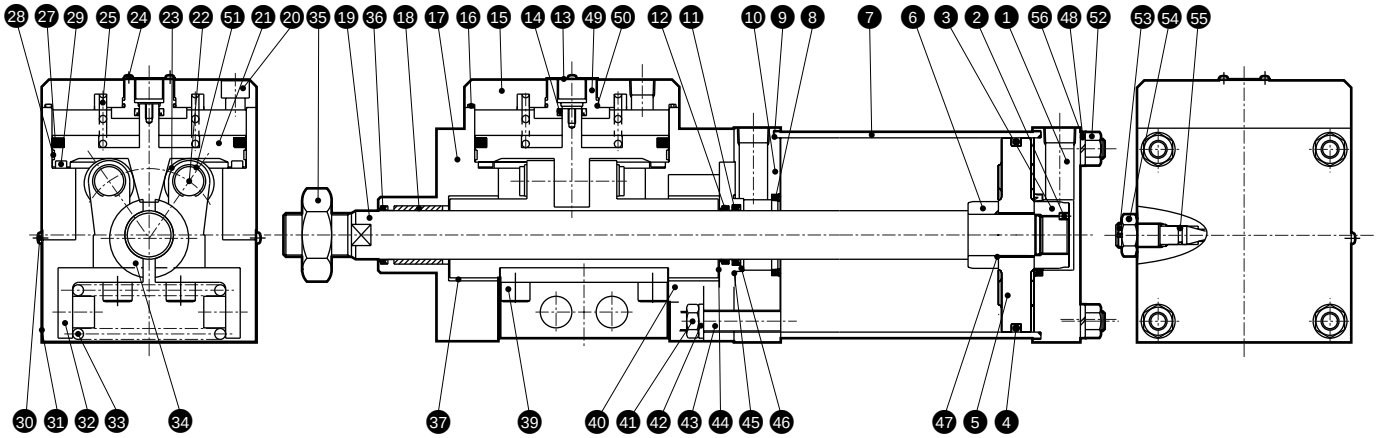
Products No.	Parts name	Material	Remarks	Products No.	Parts name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint	28	Cover	Steel	Paint
2	Piston packing seal	Fluoro rubber		29	Spring holder	Steel	Zinc chromate
3	Wear ring	Tetrafluoroethylene resin		30	Spring	Steel	
4	Piston ring	Steel		31	Brake shoe metal	Cast iron	Nickeling
5	Piston gasket	Fluoro rubber		32	Rod nut	Steel	Zinc chromate
6	Cylinder tube	Aluminum alloy	Hard alumite	33	Dust wiper	Fluoro rubber	
7	Cushion packing seal	Fluoro rubber		34	DU ring	Steel	Blackening
8	Cylinder gasket	Fluoro rubber		35	Bush	Oil impregnated bearing alloy	
9	Rod cover	Aluminum alloy die-casting	Paint	36	Hexagon socket head cap bolt	Alloy steel	Blackening
10	Metal seal	Fluoro rubber		37	Dust cover	Aluminum alloy	Paint
11	Rod packing seal	Fluoro rubber		38	Hexagon nut	Steel	Blackening
12	Dust wiper	Fluoro rubber		39	Piston H	Aluminum alloy die-casting	
13	Cap gasket A	Fluoro rubber		40	Tie rod	Steel	Zinc chromate
14	Main body cap	Cast iron	Nitriding	41	Conical spring washer	Steel	Blackening
15	Cap gasket B	Fluoro rubber		42	Round nut	Steel	Zinc chromate
16	Brake	Aluminum alloy casting	Alumite	43	Piston R	Aluminum alloy die-casting	
17	Hexagon socket head cap bolt	Alloy steel	Blackening	44	Bush B	Oil impregnated bearing alloy	
18	Rod bushing	Steel	Phosphoric acid mangan	45	Thrust washer		
19	Piston rod	Steel	Industrial chrome plating	46	Spring	Steel	Paint
20	Hexagon socket head cap bolt	Alloy steel	Blackening	47	Toothed washer	Steel	Blackening
21	Piston for brake	Cast iron	Phosphoric acid mangan	48	Hexagon socket head set screw	Steel	Blackening
22	Parallel pin	Steel		49	Washer assembly cross headed pan	Steel	Zinc chromate
23	Bearing			50	Cushion needle	Copper alloy	
24	Piston packing seal B	Fluoro rubber		51	Needle nut	Copper alloy	
25	Wear ring	Special plastic		52	Needle gasket	Fluoro rubber	
26	Cushion rubber	Flouro silicon rubber					
27	Cross headed pan	Steel	Zinc chromate				

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
ϕ40	JSC3-T- 40K	❷ ❸ ❼ ❽ ❿ ⓫ ⓬ ㉝ ㊷
ϕ50	JSC3-T- 50K	
ϕ63	JSC3-T- 63K	
ϕ80	JSC3-T- 80K	
ϕ100	JSC3-T-100K	

Note: Specify the kit No. when placing an order

Internal structure and parts list (ϕ125 to ϕ180)



Parts list

No.	Parts name	Material	Remarks
1	Head cover	Steel	Zinc chromate
2	Hexagon socket head set screw	Alloy steel	Blackening
3	Cushion ring (A)	Steel	Zinc chromate
4	Piston packing seal	Fluoro rubber	
5	Piston	ϕ125 to ϕ160 Aluminum alloy, ϕ180 Cast iron	
6	Cushion ring (B)	Steel	Zinc chromate
7	Cylinder tube	Steel	Paint and industrial chrome plating
8	Cushion packing seal	Fluoro rubber and steel	
9	Cylinder gasket	Fluoro rubber	
10	Rod cover	Steel	Zinc chromate
11	Rod packing seal	Fluoro rubber	
12	Dust wiper	Fluoro rubber	
13	Dust cover	Aluminum alloy	
14	Rod packing seal	Fluoro rubber	
15	Main body cap	Cast iron	
16	Cap gasket	Fluoro rubber	
17	Brake	Aluminum casting	
18	Bush B	Oil impregnated bearing alloy	
19	Piston rod	Steel	Industrial chrome plating
20	Hexagon socket head cap bolt	Alloy steel	Blackening
21	Piston for brake	Cast iron	
22	Bearing pin	Steel	
23	Bearing	-	
24	Washer assembly cross headed pan	Steel	
25	Spring	Piano wire	Blackening

No.	Parts name	Material	Remarks
27	Piston packing seal B	Fluoro rubber	
28	Wear ring	Acetar resin	
29	Cushion rubber	Silicon rubber	
30	Cross headed pan	Steel	
31	Cover	Steel	
32	Spring holder	Steel	Zinc chromate
33	Spring	Piano wire	Blackening
34	Brake shoe metal	Cast iron	
35	Rod nut	Steel	
36	Dust wiper	Fluoro rubber	
37	Bush A	DU dry bearing	
39	Hexagon socket head cap bolt	Alloy steel	Blackening
40	Ring	Steel	Blackening
41	Hexagon nut	Steel	Zinc chromate
42	The toothed washer	Steel	Zinc chromate
43	Tie rod	Steel	Zinc chromate
44	Thrust washer	Steel	
45	Metal gasket	Fluoro rubber	
46	Rod bushing	Steel	
47	Piston gasket	Fluoro rubber	
48	Spring washer	Steel	
49	Main body cap	Cast iron	
50	O ring	Fluoro rubber	
51	E type snap ring	Steel	
52	Hexagon nut	Steel	Zinc chromate
53	Cushion needle	Steel	Zinc chromate
54	Needle nut	Steel	Zinc chromate
55	Needle gasket	Fluoro rubber	
56	Plain washer	Steel	Zinc chromate

Repair parts list

● JSC3-T

Bore size (mm)	Kit No.	Repair parts number
ϕ125	JSC3-T-125K	4 8 9 11 12 36 45 55
ϕ140	JSC3-T-140K	
ϕ160	JSC3-T-160K	
ϕ180	JSC3-T-180K	

Dimensions

· Dimensions of ϕ40 to ϕ100 cylinder are the same as JSC3 (double acting single rod). Refer to pages 1308 to 1317.
· Dimensions of ϕ125 to ϕ180 cylinder are the same as JSC3-N (double acting oil-less type). Refer to pages 1318 to 1325.

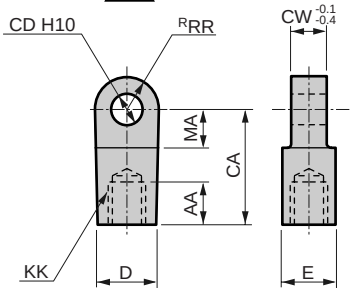
MEMO

JSC3 Series common accessory dimensions (rod eye, clevis, No. 2 bracket) ϕ 40 to ϕ 100

· Installation dimensions of clevis type, knuckle, and No.2 bracket (CD, CW, CQ) are same. All combinations are possible.
· Specify the model no. when placing an order.

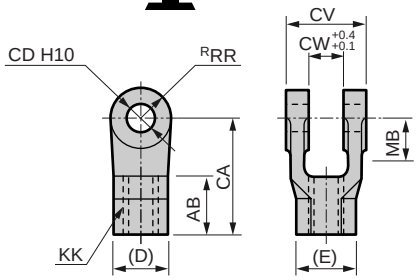
● Rod eye/clevis dimensions

Rod eye (I) CAD Material: Cast iron



Model no.	Applicable bore size (mm)	AA	CA	CD	CW	D	E	KK	MA	RR	Weight (kg)
S1-I-40	40	20	50	$12^{+0.070}_{0}$	18	27	27	M14 x 1.5	21	16	0.26
S1-I-50	50	21	50	$12^{+0.070}_{0}$	18	27	27	M18 x 1.5	21	16	0.24
S1-I-63	63	21	50	$14^{+0.070}_{0}$	20	27	27	M18 x 1.5	21	16	0.25
S1-I-80	80	30	70	$20^{+0.084}_{0}$	28	46	41	M22 x 1.5	30	25	0.80
S1-I-100	100	30	70	$20^{+0.084}_{0}$	28	46	41	M26 x 1.5	30	25	0.84

Rod clevis (Y) CAD Material: Cast iron



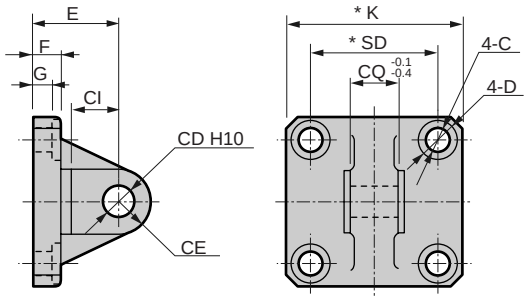
● Note: A pin and a snap ring are attached.

Model no.	Applicable bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	MB	RR	Weight (kg)
S1-Y-40	40	24	50	$12^{+0.070}_{0}$	36	18	27	31.2	M14 x 1.5	19	16	0.25
S1-Y-50	50	24	50	$12^{+0.070}_{0}$	36	18	27	31.2	M18 x 1.5	19	16	0.24
S1-Y-63	63	24	50	$14^{+0.070}_{0}$	40	20	27	31.2	M18 x 1.5	19	16	0.26
S1-Y-80	80	35	70	$20^{+0.084}_{0}$	56	28	41	47.3	M22 x 1.5	30	25	0.90
S1-Y-100	100	35	70	$20^{+0.084}_{0}$	56	28	41	47.3	M26 x 1.5	30	25	0.85

Note: The MB dimensions indicate the effective length of the CW dimensions.

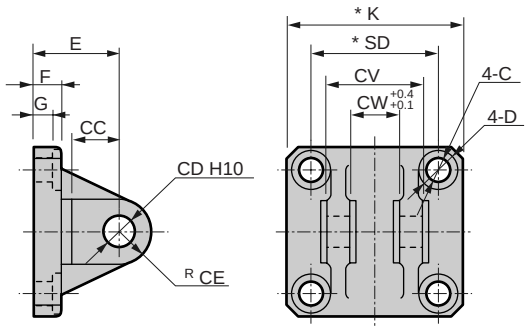
● No. 2 bracket dimensions

Eye bracket (B1) CAD Material: Cast iron



Model no.	Applicable bore size (mm)	C	CD	CE	CI	CQ	D	E	F	G	K	SD	Weight (kg)
S1-B1-40	40	9	$12^{+0.070}_{0}$	12	18	18	14	32	10	6.5	57	40.5	0.32
S1-B1-50	50	9	$12^{+0.070}_{0}$	12	18	18	14	32	10	6.5	66	48	0.38
S1-B1-63	63	9	$14^{+0.070}_{0}$	16	24	20	14	37	10	7.5	80	59	0.57
S1-B1-80	80	14	$20^{+0.084}_{0}$	20	30	28	20	52	14	10.5	98	74	1.27
S1-B1-100	100	14	$20^{+0.084}_{0}$	20	30	28	20	52	16	10.5	118	90	1.64

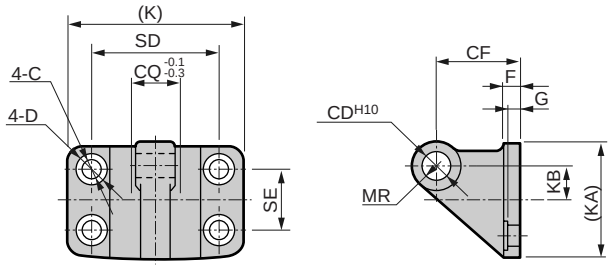
Clevis bracket (B2) CAD Material: Cast iron



● Note: A pin and a snap ring are attached.

Model no.	Applicable bore size (mm)	C	CD	CE	CI	CV	CW	D	E	F	G	K	SD	Weight (kg)
S1-B2-40	40	9	$12^{+0.070}_{0}$	12	18	36	18	14	32	10	6.5	57	40.5	0.36
S1-B2-50	50	9	$12^{+0.070}_{0}$	12	18	36	18	14	32	10	6.5	66	48	0.41
S1-B2-63	63	9	$14^{+0.070}_{0}$	16	24	40	20	14	37	10	7.5	80	59	0.62
S1-B2-80	80	14	$20^{+0.084}_{0}$	20	30	56	28	20	52	14	10.5	98	74	1.48
S1-B2-100	100	14	$20^{+0.084}_{0}$	20	30	56	28	20	52	16	10.5	118	90	1.82

Eye bracket (B3) Material: Cast iron

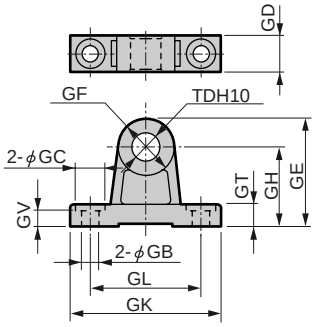


Model no.	Applicable bore size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Weight (kg)
S1-B3-40	ϕ40, ϕ50	9	12	40	18	14	8	6.5	85	57	17.5	12	65	35	0.44
S1-B3-63	ϕ63	11	14	50	20	17	10	8	105	67	20	16	80	40	0.77
S1-B3-80	ϕ80, ϕ100	14	20	65	28	20	12	10	130	93	30	20	100	60	1.64

JSC3 Series common accessory dimensions (No. 2 bracket, pin, bellows, indicator) ϕ 40 to ϕ 100

● Trunnion type No. 2 bracket dimensions

Material: Cast iron

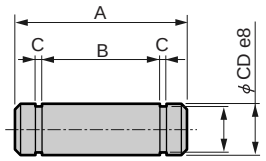


Model no. \ Symbol	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD	Weight (kg)
S1-B4-40	9	17	19	61	32	45	80	60	12	11	$16^{+0.070}_{0}$	0.25
S1-B4-50	9	17	19	63	36	45	85	65	12	11	$18^{+0.070}_{0}$	0.28
S1-B4-63	11	22	24	80	40	60	100	75	14	13	$20^{+0.084}_{0}$	0.52
S1-B4-80	14	24	26	85	50	60	115	85	14	13	$25^{+0.084}_{0}$	0.70
S1-B4-100	14	24	35	107	64	75	130	100	17	16	$35^{+0.100}_{0}$	1.48

● Pin dimensions

Pin (P) CAD

Material: Carbon steel

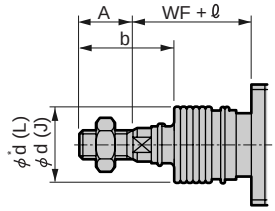


Model no.	Applicable bore size (mm)	A	B	C	D	CD	Snap ring	Weight (kg)
S1-P-40	40,50	43.5	36.2	1.15	11.5	$12^{-0.032}_{-0.059}$	Axis C type 12	0.04
S1-P-63	63	47.5	40.2	1.15	13.4	$14^{-0.032}_{-0.059}$	Axis C type 14	0.06
S1-P-80	80,100	64	56.2	1.35	19	$20^{-0.040}_{-0.073}$	Axis C type 20	0.16

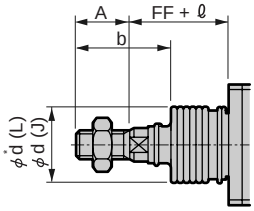
Note: A pin and a snap ring for clevis bracket, rod clevis, clevis bracket types are attached.

● Bellows CAD

ϕ 40 to ϕ 100



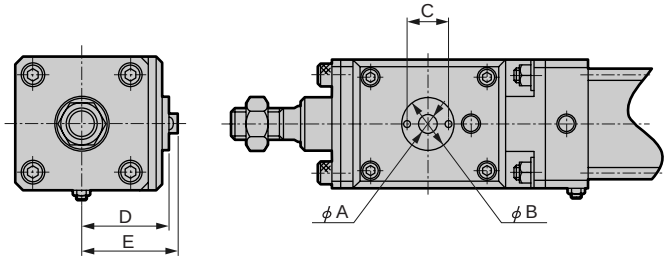
Rod end flange (FA)



Note: ℓ dimensions below decimal point are rounded up.

Symbol / Bore size (mm)	A	WF	FF	b	d	d*	ℓ 50 or less	ℓ 51 to 100	ℓ 101 to 150	ℓ 151 to 200	ℓ 201 to 300	ℓ 301 to 400	ℓ 401 to 500	ℓ 501 and over
ϕ 40	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
ϕ 50	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 63	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
ϕ 80	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5
ϕ 100	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

● Indicator



Symbol / Bore size (mm)	A	B	C	D	E
ϕ 40	8	25	18	51	51 to 59
ϕ 50	8	25	18	55.5	55.5 to 63.5
ϕ 63	10	32	24	59	59 to 68
ϕ 80	12	32	24	69	69 to 80
ϕ 100	14	32	24	78	78 to 90

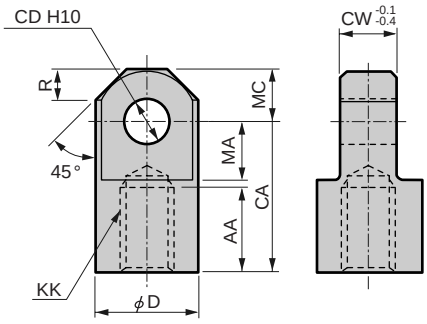
● The brake operation status can be visually judged from outside.

JSC3 Series common accessory dimensions (rod eye, clevis, bracket, pin) ϕ125 to ϕ180

CAD

● Rod eye for JSC3 (I)

Material: Steel

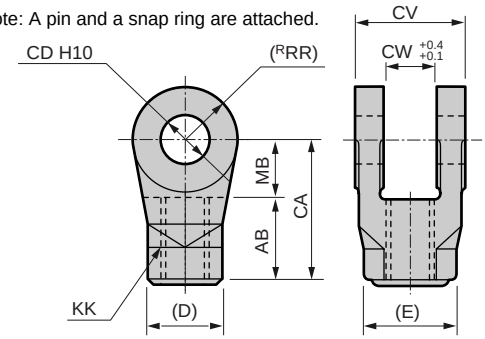


Model no.	Applicable bore size (mm)	AA	CA	CD	CW	D	KK	MA	MC	R	Weight (kg)
SCS-125-I	ϕ125	50	85	25	32	55	M30 X 1.5	32	27.5	15.5	1.25
SCS-140-I	ϕ140	50	90	28	36	60	M30 X 1.5	35	30	18	1.65
SCS-160-I	ϕ160	60	105	32	40	70	M36 X 1.5	40	35	21	2.55
SCS-180-I	ϕ180	65	115	40	50	85	M40 X 1.5	47.5	42.5	29	4.20

● Rod clevis for JSC3 (Y)

Material: Cast iron

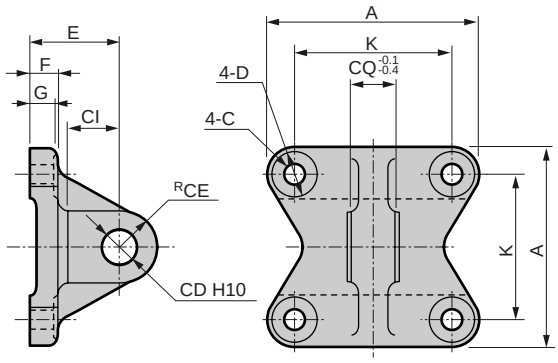
● Note: A pin and a snap ring are attached.



Model no.	Applicable bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	MB	RR	Weight (kg)
SCS-125-Y	ϕ125	50	85	25	64	32	46	53.1	M30 X 1.5	35	27.5	1.30
SCS-140-Y	ϕ140	50	90	28	72	36	46	53.1	M30 X 1.5	40	30	1.65
SCS-160-Y	ϕ160	60	105	32	80	40	55	63.5	M36 X 1.5	45	35	2.55
SCS-180-Y	ϕ180	65	115	40	100	50	60	69.3	M40 X 1.5	50	42.5	4.40

● Eye bracket for JSC3 (B1)

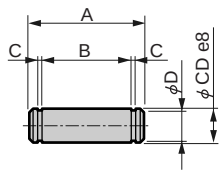
Material: Cast iron



Model no. \ Symbol	A	C	CD	CE	CI	CQ	D	E	F	G	K	Weight (kg)
SCS-125-B1	140	16	25	25	35	32	23	63	20	18	110	2.35
SCS-140-B1	154	16	28	28	40	36	23	75	22	20	124	3.30
SCS-160-B1	174	18	32	32	40	40	26	75	24	22	142	4.65
SCS-180-B1	196	20	40	40	55	50	29	90	25	23	160	6.75

● Pin (P)

Material: Carbon steel



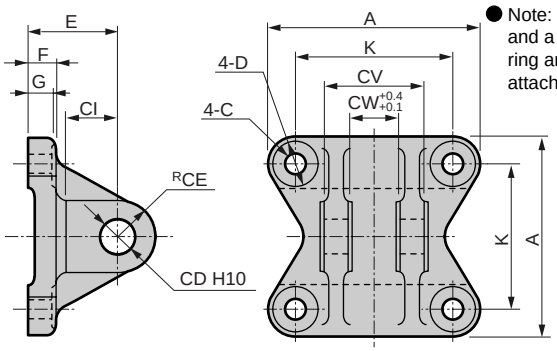
Model no. \ Symbol	A	B	C	CD	D	Applicable snap ring	Weight (kg)	Applicable model
SCS-125-P	75	66.3	1.35	25	23.9	Axis C type 25	0.25	JSC-125
SCS-140-P	84	74.7	1.65	28	26.6	Axis C type 28	0.40	JSC-140
SCS-160-P	92	82.7	1.65	32	30.3	Axis C type 32	0.50	JSC-160
SCS-180-P	115	103.2	1.9	40	38	Axis C type 40	1.15	JSC-180

Note: A pin and a snap ring are attached for clevis, clevis bracket and rod clevis.

● Clevis bracket for JSC3 (B2)

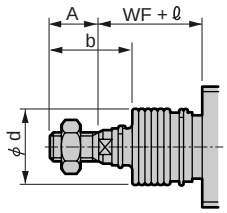
Material: Cast iron

● Note: A pin and a snap ring are attached.



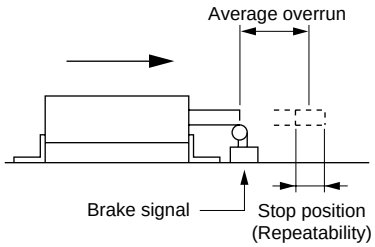
Model no. \ Symbol	A	C	CD	CE	CI	CV	CW	D	E	F	G	K	Weight (kg)
SCS-125-B2	140	16	25	25	35	64	32	23	63	20	18	110	2.65
SCS-140-B2	154	16	28	28	40	72	36	23	75	22	20	124	3.85
SCS-160-B2	174	18	32	32	40	80	40	26	75	24	22	142	5.45
SCS-180-B2	196	20	40	40	55	100	50	29	90	25	23	160	8.70

● Bellows dimension

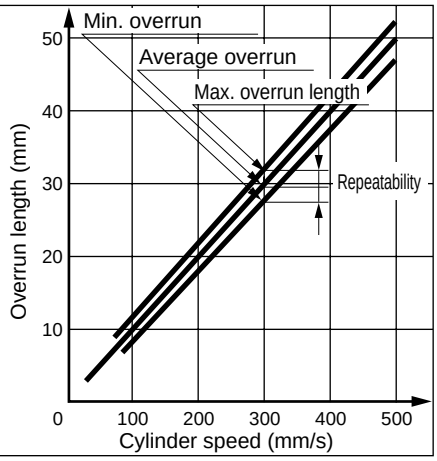


Symbol / Bore size (mm)	A	WF	b	d	ℓ
ϕ125	50	55	74	75	(Stroke length/4.55) + 11
ϕ140	50	57	74	75	(Stroke length/4.55) + 9
ϕ160	56	71.5	82	80	(Stroke length/5.15) + 9
ϕ180	63	78.5	91	90	(Stroke length/5.15) + 9

Stoppage accuracy and overrun



Right characteristic chart shows the value when 1m pipe length between brake release port and valve at no load.



*Related products selection guide

Overrun length and stoppage accuracy differ depending on the used valve. Use the following related products.

Model	Related components / Bore size (mm)	SOL-1	SOL-2	Reverse regulator	Speed control valve	Silencer	Piping
JSM2 JSK2	ϕ 20	4KB150-06	B5136	R1100-6 2419-1C	SC3W-6-6 SC3R-6 SC1-6	SLW-6A	ϕ 6 x ϕ 4 Nylon tube
JSK2	ϕ 25	4KB150-06	B5136	R1100-6 2419-1C	SC3W-6-6 SC3R-6 SC1-6	SLW-6A	ϕ 6 x ϕ 4 Nylon tube
JSM2	ϕ 30	4KB150-06 4KA250-06 4KB250-06	B5136	R1100-6 2419-1C	SC3W-6-6 SC3R-3-6 SC1-6	SLW-6A	ϕ 6 x ϕ 4 Nylon tube
JSK2	ϕ 32	4KB150-06 4KA250-06 4KB250-06	B5136	R1100-6 2419-1C	SC3W-6-6 SC3R-3-6 SC1-6	SLW-6A	ϕ 6 x ϕ 4 Nylon tube
JSM2 JSK2	ϕ 40	4KA250-06 4KB250-06	4KA110-06 4KB110-06	R1100-6 2419-1C	SC3W-6-8 SC3R-6 SC1-6	SLW-6A	ϕ 8 x ϕ 5.7 Nylon tube
JSC3	ϕ 40	4KB250-08 4KB350-08 PV5-6-FIG-K-A02	4KA210-06 4KB210-06	R3100-8 2400-2C	SC3W-8-8 SC3R-8 SC1-8	SLW-8A	ϕ 8 x ϕ 5.7 Nylon tube
	ϕ 50	4KB350-08 4F350-10 4F450-10 PV5-6-FIG-D-A03	4KA210-06 4KB210-08	R3100-10 2400-3C	SC3W-10-10 SC3R-10 SC1-10	SLW-10A	ϕ 10 x ϕ 7.2 Nylon tube
	ϕ 63	4KB350-08 4F350-10 4F3450-10 PV5-6-FIG-D-A03	4KA210-06 4KB210-08	R4100-10 2401-3C	SC3W-10 SC3R-10 SC1-10	SLW-10A	ϕ 10 x ϕ 7.2 Nylon tube
	ϕ 80	4KB450-15 4F550-15 PV5-8-FIG-D-A04	4KA210-06 4KB210-08	R4100-15 2401-4C	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	ϕ 12 x ϕ 8.9 Nylon tube
	ϕ 100	4KB450-15 4F550-15 PV5-8-FIG-K-A04	4KB310-10	R4100-15 2401-4C	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	ϕ 12 x ϕ 8.9 Nylon tube
	ϕ 125	4KB450-15 4F550-15 4F650-15 PV5-8-FIG-K-A04	4KB310-10 4F310-10	R4100-15 2401-4C	SC3R-15 SC1-15	SLW-15A	ϕ12 Rubber hose SGP3/8B SGP1/2B
	ϕ 140	4F650-20	4KB310-10 4F310-10	2401-6C	SC-20A	SL-20A	ϕ19 Rubber hose SGP1/2B SGP3/4B
	ϕ 160	4F650-20 4F750-20	4KB310-10 4F310-10	2401-6C	SC-20A	SL-20A	ϕ19 Rubber hose SGP1/2B SGP3/4B
	ϕ 180	4F750-20	4KA410-10 4KB410-15 4F310-10	2401-6C	SC-20A	SL-20A	ϕ19 Rubber hose SGP1/2B SGP3/4B

● Note 1: For JSC3-V, the solenoid valve for brake release (SOL2) is integrated.

Applications

This product can be used with devices and equipment requiring the following functions:

1 When multipoint positioning is required (transfer/positioning)

Equipment can be accurately stopped at several positions.

2 When position locking is required

Brakes can be applied and held instantly when the air pressure source or power is turned OFF during power failure or accident, preventing damage to equipment and ensuring safety.

3 When emergency stop is required

The cylinder can be stopped with electric signals, etc., when personnel, etc., enter hazardous areas.

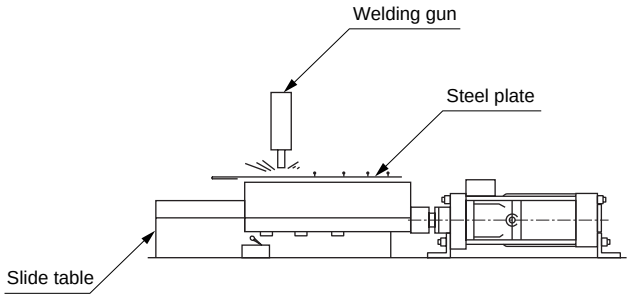
4 Workpiece lock

When the workpiece is locked to the jig or mounting bracket, etc., it can be locked even without air pressure source or power. The workpiece can be transferred while locked to the jig.

Applications

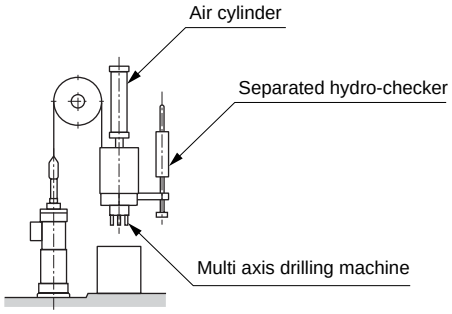
1 Linear multipoint welding

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



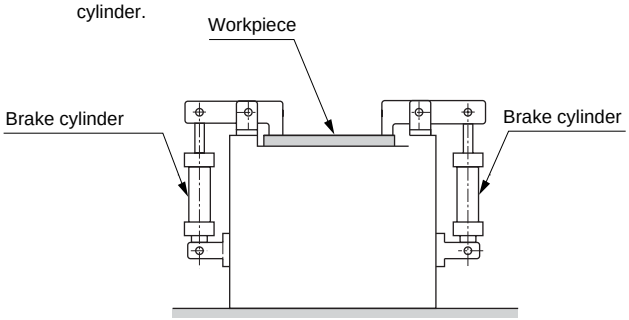
2 Position locking

If there is a vertical load that could drop of its own weight when the pressure source is turned off, brakes are applied to the lock position.



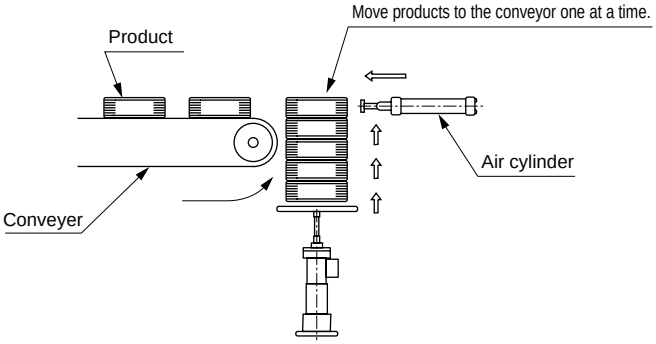
3 Workpiece lock

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



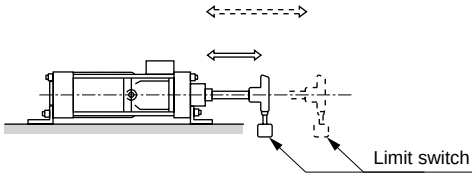
4 Moving to conveyer

Move products to the conveyor one at a time.



5 When several cylinders with different strokes are required

When different-sized products flow to the conveyor, etc., and many cylinders are set, the stroke must be changed. Using the middle bore size brake cylinder, a cylinder compatible with different strokes is created electrically.



6 Opening and closing of hopper

When a hopper must be closed at a specific weight, such as when manufacturing powder, the hopper is not completely closed to accurately measure powder, then it is fully closed.