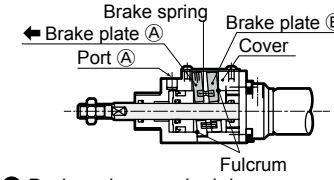
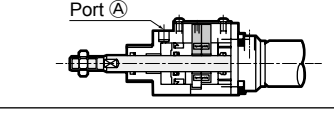
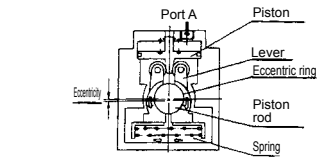
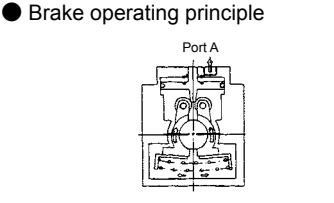
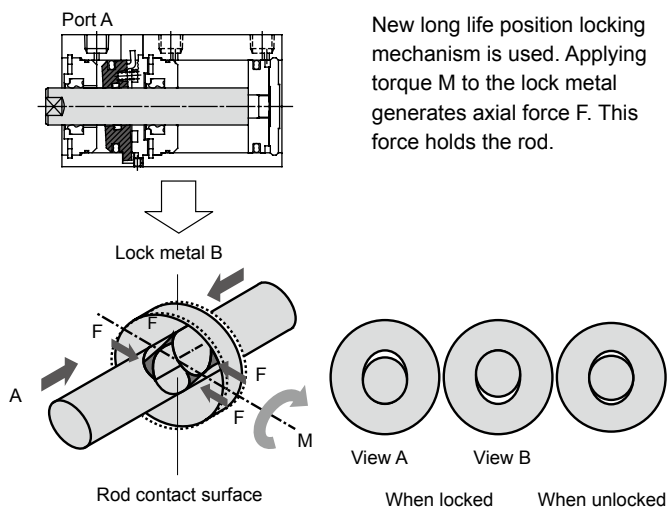
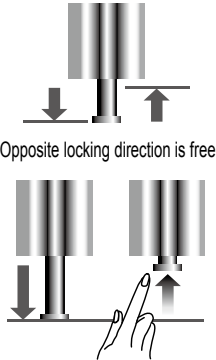


Product MAP with brake function

1) Cylinder with position locking and brake

Model	Function	Structure/Operational principle	Driving cylinder	Features
ULK* JSK/M2 JSG JSC3/JSC4 USSD UFCD USC JSB3 LMB LML	With brake (Stop when operating)	Swash plate ● Brake operating principle  <p>When air is discharged from port A, the brake plates A and B tilt to the arrow direction from the fulcrum. This boosts the brake force by generating cylinder thrust, enabling retention of the piston rod.</p>	SCP*2 φ16	Cylinder with brake. It can be stopped or held stationary during operation. JSG saves more space in the brake area when compared to the conventional JSC3 Series. The ULK also saves more space by reducing the brake height compared to the conventional JSK2 Series.
		● Brake release principle  <p>When air is supplied from port A, the brake plates A and B are pushed by the release piston. The brake plates A and B become perpendicular to the piston rod, and the piston rod becomes free to move.</p>	CMK2 φ20 to φ40	
JSK2	With brake (Stop when operating)	Rod clamping ● Brake release principle  <p>Air supplied from port A pushes the piston under it and opens the lever. The eccentric rings directly connected to the lever rotate and release the piston rod.</p>	CMK2 φ20 to φ40	[Applications] (1) When multipoint positioning is required (2) When position locking is required (3) When emergency stop is required (4) When locking a workpiece
JSM2		● Brake operating principle  <p>If air is discharged from port A, the eccentric rings rotate with the spring force, generating an eccentric load to brake the piston rod.</p>	CMA2 φ20 to φ40	
JSG		SCG φ40 to φ100		
JSC3		SCA2 φ40 to φ100		
JSC4		SCS2 φ125 to φ180		
USSD	Free position locking (Retain stationary state)	Round slit method  <p>New long life position locking mechanism is used. Applying torque M to the lock metal generates axial force F. This force holds the rod.</p>	SSD φ25 to φ100	Cylinder with position locking mechanism (for holding cylinder stationary). 2 lock direction  Opposite locking direction is free [Application] When position locking is required
UFCD		FCD φ25 to φ63		
USC		SCA2 φ40 to φ100		

2) Braking unit

Model	Function	Size	Features
JSB3	Brake (Stop when operating)	Rod size φ16 to φ45	A module of the brake mechanism of JSC3 Series. Able to stop the movable rod immediately and lock it firmly, it can be used in safety mechanisms and clamping mechanisms of many kinds of devices.
LMB	Stationary state locked	THK Rail width: 15/20/25	A lock unit installed in a linear guide. When used with a system incorporating a linear guide, this lock unit can be used to lock a workpiece after moving it to a specified position, or to enable emergency stop for safety, etc. LMB is narrower than LML, and LML is lower-profile than LMB.
LML		THK, IKO Rail width: 15/20/25/30/35	

JSC3/JSC4

Brake cylinder

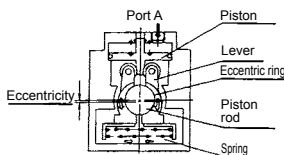
With brake/position locking

Overview

A reliable brake is integrated to the medium bore size ($\phi 40$ to $\phi 100$ mm) series (SCA2) and large bore size ($\phi 125$ to $\phi 180$ mm) series (SCS2) among the standard cylinder lineup.

Operational principle

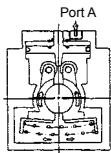
● Brake release operating principle



Ⓐ Brake release operating principle

Air supplied from port A pushes the piston under it and opens the lever. The eccentric rings directly connected to the lever rotate in the arrow direction and release the piston rod.

● Brake operating principle



Ⓑ Brake operating principle

If air is discharged from port A, the eccentric rings rotate in the arrow direction with the spring force, generating an eccentric load on the piston rod to apply a braking force.

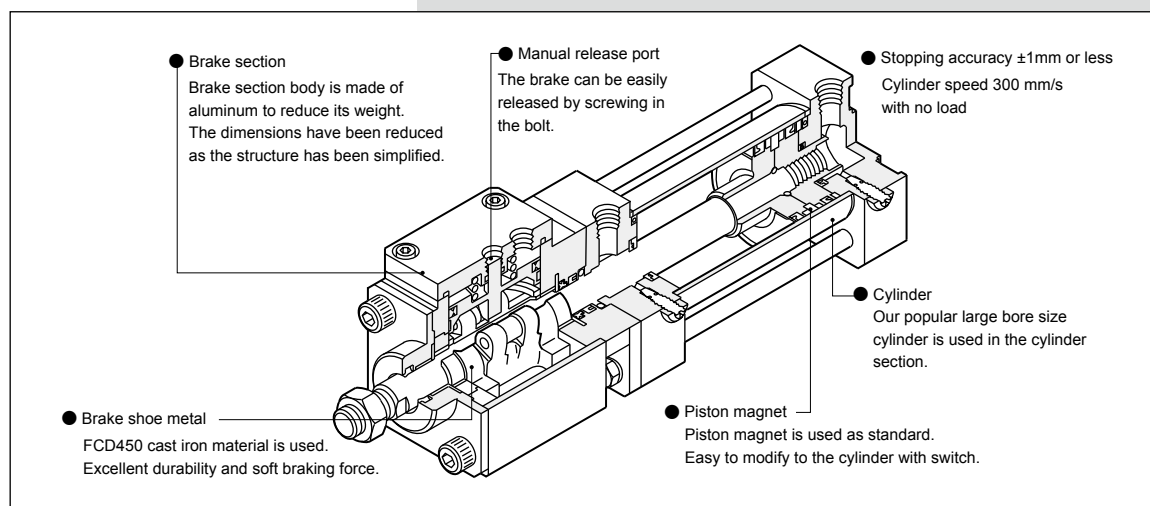
$\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$
 $\phi 125/\phi 140/\phi 160/\phi 180$



CONTENTS

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Option/variation combination selection table	760
● Double acting/single rod (JSC3)/no-lubrication (JSC3-N/JSC4-N)	764
● Double acting/with valve for brake (JSC3-V)	800
● Double acting/low hydraulic (JSC3-H/JSC4-H)	808
● Double acting/heat resistant (JSC3-T/JSC4-T)	820
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Features

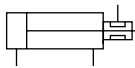
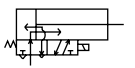

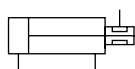
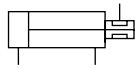


LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Series variation

Brake cylinder JSC3/JSC4 Series

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Variation	Model No. JIS symbol	Bore size (mm)	Standard stroke length (mm)												Min. stroke length (mm)	Max. stroke length (mm)	Custom stroke length (mm)	Available stroke length (mm)
			50	75	100	150	200	250	300	350	400	450	500					
Double acting	JSC3 	φ40												1	600		1600	
		φ50	●	●	●	●	●	●	●	●	●	●	●				2000	
		φ63															2500	
		φ80	●	●	●	●	●	●	●	●	●	●	●	1	700	1	2500	
		φ100	●	●	●	●	●	●	●	●	●	●	●		800		2500	
	JSC4-N JSC4-LN	φ125/φ140/ φ160	●	●	●	●	●	●						1	800			
		φ180	●	●	●	●	●	●							900		2000	
Double acting, with valve for brake	JSC3-V 	φ40												1	600		1000	
		φ50	●	●	●	●	●	●	●	●	●	●			1	2000		
		φ63															2500	
		φ80	●	●	●	●	●	●	●	●	●	●	●	1	700		2500	
		φ100	●	●	●	●	●	●	●	●	●	●	●		800		2500	
Double acting/low hydraulic	JSC3-H 	φ40												1	600		1600	
		φ50	●	●	●	●	●	●	●	●	●	●				2000		
		φ63															2500	
		φ80	●	●	●	●	●	●	●	●	●	●	●	1	700	1	2500	
		φ100	●	●	●	●	●	●	●	●	●	●	●		800		2500	
	JSC4-H JSC4-LH	φ125/φ140/ φ160	○	○	○	○	○	○	○	○	○	○	○	1	800			
φ180		○	○	○	○	○	○	○	○	○	○	○		900		2000		
Double acting/ heat resistant	JSC3-T 	φ40												1	600		1600	
		φ50	●	●	●	●	●	●	●	●	●	●				2000		
		φ63															2500	
		φ80	●	●	●	●	●	●	●	●	●	●	●	1	700	1	2500	
		φ100	●	●	●	●	●	●	●	●	●	●	●		800		2500	
	JSC4-T 	φ125/φ140/ φ160	○	○	○	○	○	○	○	○	○	○	○	1	800			
	φ180	○	○	○	○	○	○	○	○	○	○	○		900		2000		

●: Standard, ◎: Option, ○: Available (custom order product), ■: Not available

Mounting											Option								Accessory						Switch	Page			
Basic	Axial foot	Rod side flangeype	Head side flange	Head side special flange	Eye bracket	Clevis bracket	Intermediate trunnion	Rod side trunnion	Head side trunnion		Bellows (60°C)	Bellows (100°C)	Bellows (100°C)	Bellows (250°C)	Piston rod material change	Cushion needle position R	Cushion needle position S	Cushion needle position T	With indicator	Rod eye	Rod clevis	Eye bracket	Clevis bracket	Eye bracket			Trunnion No. 2 bracket		
00	LB	FA	FB	FC	CA	CB	TC	TA	TB		J	K	L	M	R	S	T	G	I	Y	B1	B2	B3	B4					
●	●	●	●	●	●	●	●	●	●			◎		◎	◎	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
●	●	●	●	●	●	●	●	●	●			◎		◎	◎	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		764
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●	●	●	●	●	●	●	●	●	●			◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Variation and option combination selection table

JSC3(φ40 to φ100)

* Refer to page 762 for information on cylinders with bore sizes φ125 to φ180.

●: Standard

○: Option

○: Available (custom order product)

△: Available depending on conditions (Contact CKD.)

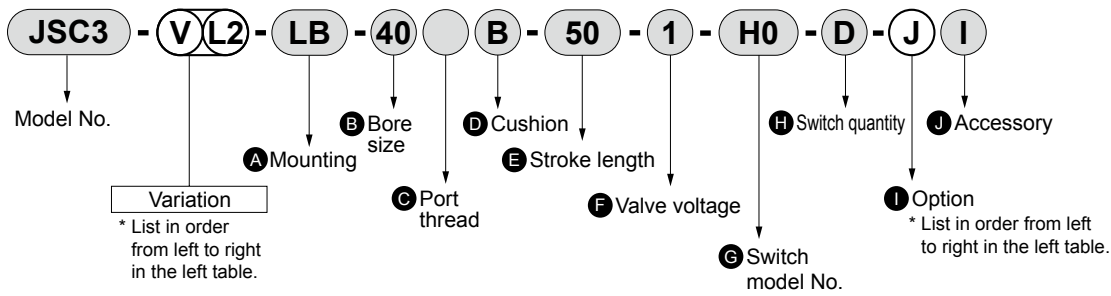
X: Not available

Category	Code	Variation						Port thread		Option					
		Double acting basic	Cushioned	With valve	Low hydraulic	Heat resistance (120°C)	Strong magnetic field proof with cylinder switch	NPT	G	Polyolefin with bellows	Silicone rubber with bellows	Piston rod material stainless steel	Specify piston rod end form	Cushion needle position specification	With indicator
		None	None	V	H	T	L2	N	G	J	L	M	N**	R.S.T	G
Double acting basic	Blank	○	●	●	●	○		○	○	*1	*1	○	○	○	○
Cushioned	Blank		○	○	○	○		○	○	○	○	○	○	○	○
With valve	V				△	X	○	○	○	○	○	○	○	○	○
Low hydraulic	H					X	○	○	○	○	○	○	○	○	○
Heat resistance (120°C)	T					X	○	○	X	○	○	○	○	○	○
Strong magnetic field proof with cylinder switch	L2						○	○	○	○	○	○	○	○	○
NPT	N							X		○	○	○	○	○	○
G	G									○	○	○	○	○	○
Polyolefin with bellows	J									X	○	○	○	○	○
Silicone rubber with bellows	L										○	○	○	○	○
Piston rod material stainless steel	M											○	○	○	○
Specify piston rod end form	N**												○	○	○
Cushion needle position specification	R.S.T													○	○
With indicator	G														○
Cylinder switch	Listed separately	○	○	○	○	X	○			○	○	○	○	○	○
Rod eye	I	○	○	○	○	○	○			○	○	○	○	○	○
Rod clevis	Y	○	○	○	○	○	○			○	○	○	○	○	○
Eye bracket	B1	○	○	○	○	○	○			○	○	○	○	○	○
Clevis bracket	B2	○	○	○	○	○	○			○	○	○	○	○	○
Trunnion bracket	B4	○	○	○	○	○	○			○	○	○	○	○	○

Caution

*1: The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.

[Example of model No.]



Model No.: Brake cylinder

● Variations: With valve and strong magnetic field proof switch

- A** Mounting : Axial foot
- B** Bore size : $\phi 40$ mm
- C** Port thread : Rc thread
- D** Cushion : Both sides cushioned
- E** Stroke length : 50mm
- F** Valve voltage : 100 VAC
- G** Switch model No. : Reed, strong magnetic field proof switch, lead wire 1 m
- H** Switch Quantity : 2
- I** Option : Bellows, max. ambient temperature 100°C
- J** Accessory : Rod eye

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Variation and option combination selection table

JSC4(φ125 to φ180)

* Refer to page 760 for information on cylinders with bore sizes φ40 to φ100.

●: Standard

◎: Option

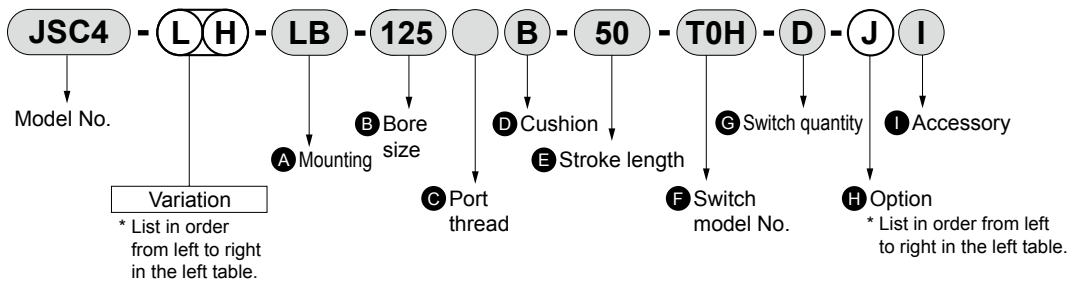
○: Available (custom order product)

△: Available depending on conditions (Contact CKD.)

×: Not available

Category	Code	Variation					Port thread		Option			
		Double acting basic	Cushioned	With cylinder switch	Low hydraulic	Heat resistance (120°C)	NPT	G	Nylon tarpaulin with bellows	Neoprene with bellows	Silicone rubber with bellows	Piston rod material stainless steel
		N		L	H	T	N	G	J	K	L	M
Double acting basic (no-lubrication)	N	◎	◎			○	○	◎	◎	◎	◎	
Cushioned			◎	○	○	○	○	◎	◎	◎	◎	
With cylinder switch	L			○	×	○	○	◎	◎	◎	◎	
Low hydraulic	H				×	○	○	◎	◎	◎	◎	
Heat resistance (120°C)	T					○	○	×	×	◎	◎	
NPT	N						×	○	○	○	○	
G	G							○	○	○	○	
Nylon tarpaulin with bellows	J								×	×	○	
Neoprene with bellows	K									×	○	
Silicone rubber with bellows	L										○	
Piston rod material stainless steel	M										○	
Cylinder switch	Listed separately	◎	◎	◎	◎	×			◎	◎	◎	
Rod eye	I	◎	◎	◎	◎	◎			◎	◎	◎	
Rod clevis	Y	◎	◎	◎	◎	◎			◎	◎	◎	
Eye bracket	B1	◎	◎	◎	◎	◎			◎	◎	◎	
Clevis bracket	B2	◎	◎	◎	◎	◎			◎	◎	◎	

[Example of model No.]



Model No.

- Variation: Low hydraulic with switch
- **A** Mounting : Axial foot
- **B** Bore size : $\phi 125$ mm
- **C** Port thread : Rc thread
- **D** Cushion : Both sides cushioned
- **E** Stroke length : 50mm
- **F** Switch model No. : Reed T0H switch, lead wire 1m
- **G** Switch Quantity : 2
- **H** Option : Bellows for max. ambient temperature 60°C
- **I** Accessory : Rod eye

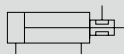
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Brake cylinder: Double acting, single rod/double acting, no-lubrication

JSC3/JSC4-N Series

- Bore size:
JSC3: $\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$
JSC4: $\phi 125/\phi 140/\phi 160/\phi 180$

JIS symbol



Specifications

Descriptions		JSC3 (with switch)					JSC3-S (with switch)					JSC4-N			
Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$	$\phi 140$	$\phi 160$	$\phi 180$
Actuation		Double acting					Double acting/low pressure release					Double acting			
Working fluid		Compressed air													
Max. working pressure	MPa	1.0 (≈ 150 psi, 10 bar)													
Min. working pressure	Brake section	0.3 (≈ 44 psi, 3 bar)					0.25 (≈ 36 psi, 2.5 bar)					0.3 (≈ 44 psi, 3 bar)			
	Cylinder	0.1 (≈ 15 psi, 1 bar)					0.1 (≈ 15 psi, 1 bar)					0.05 (≈ 7.3 psi, 0.5 bar)			
Proof pressure	MPa	1.6 (≈ 230 psi, 16 bar)													
Ambient temperature	$^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)					-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)					-5 (23 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)			
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/8		Rc1/4		Rc3/8	Rc1/2			
	Cylinder	Rc1/4		Rc3/8		Rc1/2	Rc1/4		Rc3/8		Rc1/2	Rc1/2		Rc3/4	
Stroke tolerance	mm	$^{+0.9}_0$ (to 360) $^{+1.4}_0$ (to 1000)					$^{+1.0}_0$ (to 360) $^{+1.4}_0$ (to 1000)					$^{+1.0}_0$ (to 300), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 2000)			
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)													
Cushion		Air cushion													
Effective air cushion length	mm	14.6	16.6	20.6	23.6	14.6	16.6	20.6	23.6	21.6					
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)													
Holding force	N	980	1569	2451	3922	6178	784	1255	1961	3138	4941	9600	12000	15800	20000
Allowable absorbed energy	Cushioned	4.29	8.37	15.8	27.9	49.8	4.29	8.37	15.8	27.9	49.8	63.6	91.5	116	152
	Without cushion	0.067	0.079	0.079	0.201	0.301	0.067	0.079	0.079	0.201	0.301	0.371	0.386	0.386	0.958
		Note: Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.													

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
JSC3	$\phi 40$	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	1600	1
	$\phi 50$		2000	
	$\phi 63$		2500	
	$\phi 80$			
	$\phi 100$			
JSC4	$\phi 125$	50, 75, 100, 150, 200, 250, 300	2000	
	$\phi 140$			
	$\phi 160$			
	$\phi 180$			900

*1 : If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Refer to Ending Page 69 for details.
The custom stroke length is available in 1 mm increments.

*2 : The max. stroke length available for $\phi 63$ to $\phi 100$ bore size models with bellows is 2000 mm.

Min. stroke length with switch (T switch)

- Min. stroke length with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
Bore size														
$\phi 40$	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)
$\phi 50$	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)
$\phi 63$	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)
$\phi 80$	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)
$\phi 100$	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)

*1 : The values in () are of T*V (radial lead wire).

*2 : When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke length with JSC3 switch (T switch)

● T8 min. stroke with switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T1/T2Y/T3Y/T2YD switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
φ40	20(5)	20(10)	20(15)	25(25)	20(5)	65(50)	110(80)	155(110)	110(80)	110(80)	170(140)	170(140)	50(35)	50(35)
φ50	20(5)	20(10)	20(15)	20(20)	20(5)	20(10)	65(40)	65(40)	110(80)	110(80)	110(60)	110(60)	50(35)	50(35)
φ63	20(5)	20(10)	20(15)	25(25)	20(5)	20(10)	65(40)	65(40)	115(85)	115(85)	115(65)	115(65)	55(40)	55(40)
φ80	15(5)	15(10)	15(15)	25(25)	15(5)	15(10)	60(40)	60(40)	120(90)	120(90)	120(70)	120(70)	55(40)	55(40)
φ100	10(5)	10(10)	20(20)	25(25)	10(5)	10(10)	60(40)	60(40)	130(100)	130(100)	130(85)	130(85)	60(45)	60(45)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke length with JSC4 switch (T switch)

● φ125 to φ180

(Unit: mm)

Descriptions	Stroke length when mounted on the same surface	Center trunnion mounting stroke	Rod side trunnion mounting stroke	Head side trunnion mounting stroke
Bore size (mm)				
φ125	20 or more	120 or more	70 or more	
φ140		125 or more	75 or more	
φ160		130 or more	80 or more	
φ180		135 or more	85 or more	

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC3/JSC4 Series

Switch specifications (T type switch)

- 1-color/2-color display/for AC magnetic field proof

Descriptions	Proximity 2-wire		Proximity 2-wire				Proximity 3-wire				Reed 2-wire (*4)						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V		T2YD T2YDPT				
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller				For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		For programmable controller			
Output method	-				NPN output	PNP output	NPN output	NPN output	-									
Pwr. supp. V.	-				10 to 28 VDC				-									
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	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 100 mA	5 to 20 mA (*2)				100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	≤50 mA	≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA	
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	LED (Lit when ON)	LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	LED (Lit when ON)	LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		LED (Lit when ON)			
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less				10 μA or less				0 mA						1 mA or less		
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272						

*1 : Refer to Ending Page 1 for other switch specifications.

*2 : The above max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*3 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.

*4 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

● JSC3(φ40 to φ100)

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm						Switch weight	Mounting bracket weight		Additional weight per S = 100 mm
	Bore size (mm)	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)		Trunnion (TC)	T type	
φ40	2.48	2.66	2.91	2.83	2.83	2.86	Refer to the weight in the switch specifications.	0.024	0.028	0.39
φ50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46
φ63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50
φ80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90
φ100	14.70	15.70	17.40	16.90	16.90	17.30		0.024	0.028	1.12

Product weight for stroke length 0 mm 3.67 kg
 Additional weight for stroke length 200 mm... $0.46 \times \frac{200}{100} = 0.92$ kg
 (Example) Product weight of JSC3-LB-50B-200-T0H-D Weight of 2 TOH switches $0.018 \times 2 = 0.036$ kg
 Weight of 2 mounting brackets $0.022 \times 2 = 0.044$ kg
 Product weight $3.67 + 0.92 + 0.036 + 0.044 = 4.670$ kg

● JSC4(φ125 to φ180)

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight		Additional weight per S = 100 mm
	Bore size (mm)	Axial foot (LB)	Flange (FA/FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA/TB/TC)	Switch	
φ125	25.72	27.52	27.22	27.32	27.62	Refer to the weight in the switch specifications.	0.028	1.54
φ140	32.95	36.35	34.75	34.95	34.15		0.030	1.78
φ160	42.85	46.65	44.75	45.05	46.15		0.034	2.22
φ180	61.55	69.05	64.45	64.95	65.15		0.038	2.96

Product weight when S = 0 mm 25.72 kg
 Additional weight when S = 300mm $1.54 \times \frac{300}{100} = 4.62$ kg
 (Example) Product weight of JSC4-LN-LB-125B-300-T0H-D Weight of 2 switches (T0H-D) $0.018 \times 2 = 0.036$ kg
 Weight of 2 switch brackets $0.028 \times 2 = 0.056$ kg
 Product weight $25.72 + 4.62 + 0.036 + 0.056 = 30.432$ kg

Theoretical thrust table

[Unit: N]

Bore size (mm)	Operating direction	Working pressure MPa											
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
JSC3	φ40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
		Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
	φ50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
		Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
	φ63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
		Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
	φ80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
		Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
	φ100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
		Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3
JSC4	φ125	Push	1.23×10^3	1.84×10^3	2.45×10^3	3.68×10^3	4.91×10^3	6.14×10^3	7.36×10^3	8.59×10^3	9.82×10^3	1.10×10^4	1.23×10^4
		Pull	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
	φ140	Push	1.54×10^3	2.31×10^3	3.08×10^3	4.62×10^3	6.16×10^3	7.70×10^3	9.24×10^3	1.08×10^4	1.23×10^4	1.39×10^4	1.54×10^4
		Pull	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4
	φ160	Push	2.01×10^3	3.02×10^3	4.02×10^3	6.03×10^3	8.04×10^3	1.01×10^4	1.21×10^4	1.41×10^4	1.61×10^4	1.81×10^4	2.01×10^4
		Pull	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4
	φ180	Push	2.54×10^3	3.82×10^3	5.09×10^3	7.63×10^3	1.02×10^4	1.27×10^4	1.53×10^4	1.78×10^4	2.04×10^4	2.29×10^4	2.54×10^4
		Pull	2.39×10^3	3.58×10^3	4.77×10^3	7.16×10^3	9.54×10^3	1.19×10^4	1.43×10^4	1.67×10^4	1.91×10^4	2.15×10^4	2.39×10^4

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

How to order (φ40 to φ100)

Without switch (built-in magnet for switch)

JSC3 - **LB** - **40** **B** - **50** **S** **I**

With switch (built-in magnet for switch)

JSC3 - **LB** - **40** **B** - **50** - **T0H** - **R** - **S** **I**

With strong magnetic field proof (for H0, H0Y switches) switch (built-in magnet for switch)

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

Model No.

A Brake release pressure

B Mounting
*1

C Bore size

D Port thread

E Cushion

F Stroke length
*2
*3
*4

G Switch model No.
* indicates the lead wire length.

H Switch quantity
*5

I Option
*6

J Accessory
*7

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped assembled with the product.
(Head side special flange is attached separately)

*2 : If the stroke exceeds the max. stroke length, refer to Ending Page 69.

*3 : The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.

*4 : Refer to page 764 for the min. stroke length with switch.

*5 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

*6 : For S, T, and G position indications, check the respective dimensions.

*7 : "I" and "Y" cannot be selected together.

*8 : Refer to Ending Page 85 for custom specifications of rod end form.

[Example of model No.]

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

Model: Brake cylinder double acting

A Brake release pressure : Standard 0.3 MPa

B Mounting : Axial foot

C Bore size : φ40 mm

D Port thread : Rc thread

E Cushion : Both sides cushioned

F Stroke length : 50mm

G Switch model No. : Reed switch T0H, lead wire 1 m

H Switch quantity : 1 on rod side

I Option : Cushion needle position S

J Accessory : Rod eye

Code	Content		
A Brake release pressure			
Blank	Standard (0.3 MPa)		
S	Low pressure release (0.25 MPa)		
B Mounting			
00	Basic		
LB	Axial foot		
FA	Rod side flange		
FB	Head side flange		
FC	Head side special flange		
CA	Eye bracket		
CB	Clevis bracket (pin and snap ring attached)		
TC	Intermediate trunnion		
TA	Rod side trunnion		
TB	Head side trunnion		
C Bore size (mm)			
40	φ40		
50	φ50		
63	φ63		
80	φ80		
100	φ100		
D Port thread			
Blank	Rc thread		
N	NPT thread (custom order product)		
G	G thread (custom order product)		
E Cushion			
B	Both sides cushioned		
R	Rod side cushioned		
H	Head side cushioned		
N	Without cushion		
F Stroke length (mm)			
Bore size	Stroke length *4	Available stroke length	Custom stroke length
φ40	1 to 600	1600	In 1 mm increments
φ50	1 to 600	2000	
φ63	1 to 600	2500	
φ80	1 to 700	2500	
φ100	1 to 800	2500	
G Switch model No.			
Refer to the switch model numbers on the following page.			
* Lead wire length			
Blank	1 m (standard)		
3	3 m (option)		
5	5 m (option)		
H Switch quantity			
R	1 on rod side		
H	1 on head side		
D	2		
T	3		
4	4 (when there are more than 4 switches, indicate switch quantity.)		
I Option			
		Max. ambient temperature	instantaneous max. temp
J	Bellows	100°C	200°C
L	Bellows	250°C	400°C
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		
J 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 No. 2 bracket (2 pcs./set)		

[G] Switch model No.

T type switch						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●		
T2WH*	T2WV*			●	2-color display	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		
T3YH*	T3YV*		●	1-color display (custom order)	3-wire	
T3PH*	T3PV*		●			
T2YD*	-	Reed		●	2-color display	2-wire
T2YDT*	-			●	AC magnetic field	
T2JH*	T2JV*			●	1-color display off-delay	2-wire
				●		

H type switch						
HO*	-	Reed	●	●	Strong magnetic field proof	2-wire
HOY*	-			●	Strong magnetic field 2-color display	

How to order brake unit

JSC3 - 40 - BRAKE-UNIT

Bore size (Item © on the previous page)

● Mounting FA

JSC3 - FA - 40 - BRAKE-UNIT

Bore size (Item © on the previous page)

How to order T type switch

● Switch body + mounting bracket set

JSC3 - T0H - 40

Switch model No. (Item ©) Bore size (Item © on the previous page)

● Switch body only

SW - T0H

Switch model No. (Item ©)

● Mounting bracket set

JSC3 - TS - 40

Mounting bracket Bore size (Item © on the previous page)

How to order T2YD type switch

● Switch body + mounting bracket set
·φ40 to φ100

JSC3 - T2YD - 40

Switch model No. (Item ©) Bore size (Item © on the previous page)

● Switch body only
·φ40 to φ100

SW - T2YD

Switch model No. (Item ©)

● Mounting bracket set

JSC3 - T - 40

Mounting bracket Bore size (Item © on the previous page)

How to order H type switch

● Switch body + mounting bracket set

JSC3-L2 - H0 - 40

Switch model No. (Item ©) Bore size (Item © on the previous page)

● Switch body only

SW - H0

Switch model No. (Item ©)

● Mounting bracket set

JSC3-L2 - H - 40

Mounting bracket Bore size (Item © on the previous page)

How to order mounting bracket

● φ40 to φ100

Bore size (mm)	φ40	φ50	φ63	φ80	φ100
Mounting bracket					
Foot (LB) *1	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 bracket (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis bracket (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

*2: A pin and a snap ring are attached.

*3: All mounting brackets have mounting bolts attached.

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC4-N Series

How to order (φ125 to 180)

Without switch (without magnet for switch)

JSC4-N - **LB** - **125** - **B** - **50** - **S** **I**

With switch (built-in magnet for switch)

JSC4-LN - **LB** - **125** - **B** - **50** - **T0H** - **R** - **S** **I**

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
* indicates the lead wire length.

G Switch quantity
*3

H Option

I Accessory
*5

Code	Content
A Mounting	
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and snap ring attached)
TC	Intermediate trunnion
TA	Rod side trunnion
TB	Head side trunnion

B Bore size (mm)	
125	φ125
140	φ140
160	φ160
180	φ180

C Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

D Cushion	
B	Both sides cushioned
R	Rod side cushioned
H	Head side cushioned
N	Without cushion

E Stroke length (mm)			
Bore size	Stroke length	Available stroke	Custom stroke length
φ125	1 to 800	2000	In 1 mm increments
φ140	1 to 800	2000	
φ160	1 to 800	2000	
φ180	1 to 900	2000	

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage AC DC	Indicator	Lead wire	
T0H*	T0V*	Reed	● ●	1-color display	2-wire	
T5H*	T5V*		● ●	Without indicator lamp		
T8H*	T8V*		● ●	1-color display		
T1H*	T1V*	Proximity	● ●	1-color display	2-wire	
T2H*	T2V*		● ●			
T3H*	T3V*		● ●	display	3-wire	
T3PH*	T3PV*		● ●	1-color display (PNP output) (custom)	3-wire	
T2WH*	T2WV*		● ●	2-color display	2-wire	
T2YH*	T2YV*		● ●			
T3WH*	T3WV*	● ●	display			3-wire
T3YH*	T3YV*	● ●	display	3-wire		
T2JH*	T2JV*	● ●	● ●	1-color display Off-delay	2-wire	
T2YD*	-	● ●	● ●	2-color display for AC magnetic field	2-wire	
T2YDT*	-	● ●	● ●	AC magnetic field	2-wire	

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3
4	4

H Option	
	Max. ambient temp. : instantaneous max. temp.
J	Bellows : 60°C : 100°C
K	Bellows : 100°C : 200°C
L	Bellows : 250°C : 400°C
M	Piston rod material (stainless steel)
Blank	Cushion needle position (standard)
R	Cushion needle position R
S	Cushion needle position S
T	Cushion needle position T
C2	With cushion section check valve

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

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped assembled with the product.
- *2 : Refer to page 765 for the min. stroke length with switch.
- *3 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and R (1 on rod side) for TB.
- *4 : Refer to page 771 for the cushion needle position indication.
- *5 : "I" and "Y" cannot be selected together.


[Example of model No.]

JSC4-LN-LB-125B-50-T0H-R-SI

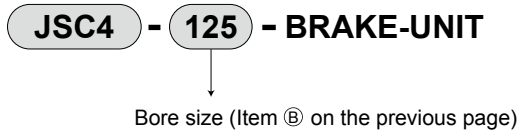
Model: Brake cylinder double acting/no-lubrication

- A** Mounting : Axial foot
- B** Bore size : φ125 mm
- C** Port thread : Rc thread
- D** Cushion : Both sides cushioned
- E** Stroke length : 50mm
- F** Switch model No. : Reed switch T0H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Option : Cushion needle position S
- I** Accessory : Rod eye

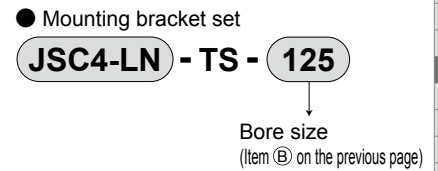
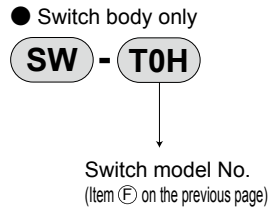
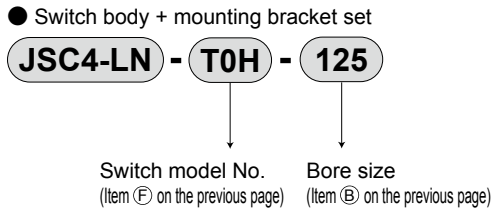
*4

Blank	Cushion needle position (standard)	Standard
R	Cushion needle position R	
S	Cushion needle position S	
T	Cushion needle position T	

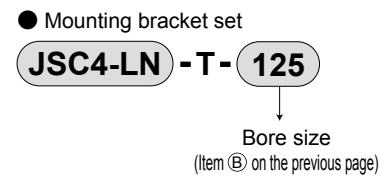
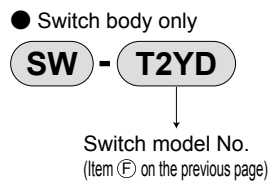
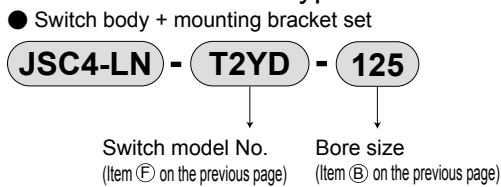
How to order brake unit



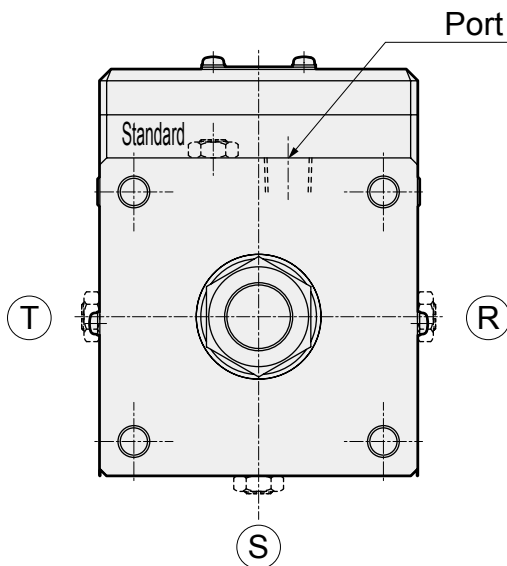
How to order T type switch



How to order T2YD type switch



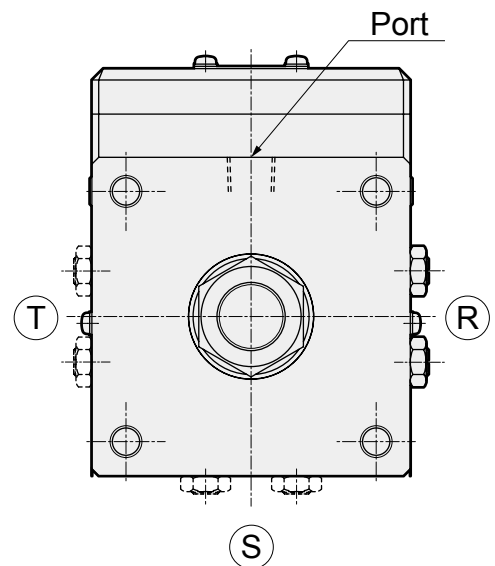
Cushion needle position (needle position from rod direction with the port on the top side)



When selecting option R, S, or T for a certified class 2 pressure vessel, the port position should be in the center as shown in the figure to the right, and the needle position should be in the offset position.

Certified class 2 pressure vessel stroke length

Bore size	Stroke length
φ160	1948 or more
φ180	1526 or more



Class 2 pressure vessel certification
Option R, S, or T

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

● φ40 to φ100

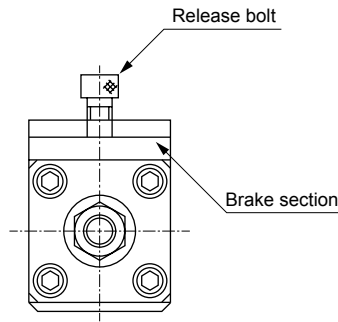
Material of mounting bracket

Mounting	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 screw)

Bore size	Size	
	JSC3	JSC3-V
φ40/φ50	M10×8	M10×29
φ63	M12×9	M12×30
φ80	M14×10	M14×31
φ100	M16×12	M16×40

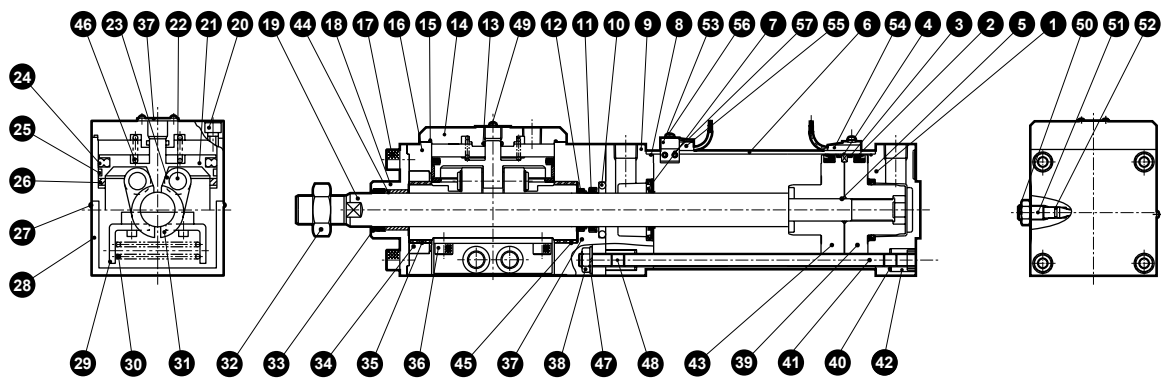
How to release the brake manually



Note: How to release the brake

- The brakes are released by turning the release bolt (attached with product) two or three times to screw it into the female thread (next to brake release port) on top of the brake. (Always remove the release bolt during normal use.)
- To manually release the brake, always use the release bolt attached with the product. Using any other bolt may prevent the brake from functioning properly.

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint	28	Cover	Steel	Paint
2	Piston packing	Nitrile rubber		29	Spring holder	Steel	Zinc chromate
3	Wear ring	Polyacetal resin		30	Spring	Steel	
4	Magnet	Plastic		31	Brake shoe metal	Cast iron	Nickeling
5	Piston gasket	Nitrile rubber		32	Rod nut	Steel	Zinc chromate
6	Cylinder tube	Aluminum alloy	Hard alumite	33	Dust wiper	Nitrile rubber	
7	Cushion packing	Nitrile rubber, steel		34	DU ring	Steel	Black finish
8	Cylinder gasket	Nitrile rubber		35	Bush	Oil impregnated bearing alloy	
9	Rod cover	Aluminum alloy die-casting	Paint	36	Hexagon socket head cap screw	Alloy steel	Black finish
10	Metal seal	Nitrile rubber		37	Dust cover	Aluminum alloy	Paint
11	Rod packing	Nitrile rubber		38	Hexagon nut	Steel	Black finish
12	Dust wiper	Nitrile rubber		39	Piston H	Aluminum alloy die-casting	
13	Cap gasket A	Nitrile rubber		40	Tie rod	Steel	Zinc chromate
14	Body cap	Cast iron	Nitriding	41	Conical spring washer	Steel	Black finish
15	Cap gasket B	Nitrile rubber		42	Round nut	Steel	Zinc chromate
16	Brake body	Aluminum alloy casting	Alumite	43	Piston R	Aluminum alloy die-casting	
17	Hexagon socket head cap screw	Alloy steel	Black finish	44	Bush B	Oil impregnated bearing alloy	
18	Rod metal	Steel	Manganese phosphate	45	Thrust washer		
19	Piston rod	Steel	Industrial chrome plating	46	Spring	Steel	Paint
20	Hexagon socket head cap screw	Alloy steel	Black finish	47	Toothed washer	Steel	Black finish
21	Brake piston	Cast iron	Manganese phosphate	48	Hexagon socket set screw	Alloy steel	Black finish
22	Parallel pin	Steel		49	Phillips pan head machine screw/captive washer	Steel	Zinc chromate
23	Bearing			50	Cushion needle	Copper alloy	Nickeling
24	Piston packing B	Nitrile rubber		51	Needle nut	Copper alloy	Nickeling
25	Wear ring	Polyacetal resin		52	Needle gasket	Nitrile rubber	
26	Cushion rubber	Urethane rubber		With switch			
27	Phillips pan head machine screw	Steel	Zinc chromate	53	Switch mounting base	Aluminum alloy	
				54	Switch holder	Aluminum alloy	
				55	Phillips pan head machine screw	Steel	Zinc chromate
				56	Hexagon socket set screw	Alloy steel	Black finish
				57	Cylinder switch		

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ40	JSC3-40K	
φ50	JSC3-50K	
φ63	JSC3-63K	
φ80	JSC3-80K	
φ100	JSC3-100K	

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

Note: Never disassemble the brake section, as the powerful spring installed can be dangerous.

● φ125 to φ180

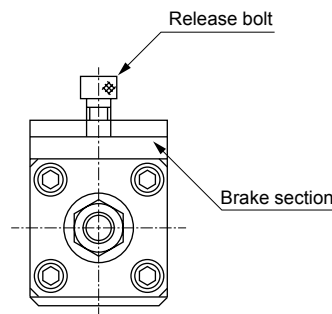
Material of mounting bracket

Mounting	Material	Remarks
LB	Steel	Paint
FA	Carbon steel	Parkerizing
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 screw)

Bore size	Size
φ125	M24 x 16 or higher
φ140	M24 x 20 or higher
φ160	M24 x 20 or higher
φ180	M24 x 24 or higher

How to release the brake manually



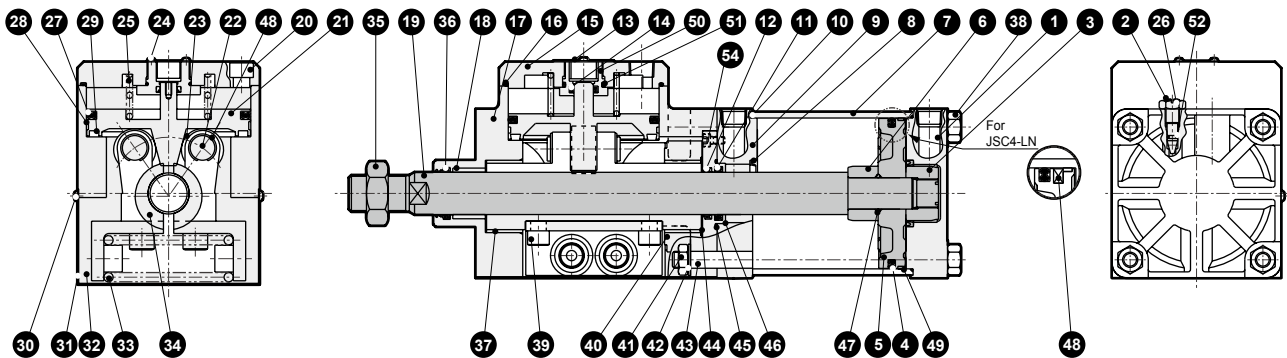
Note: How to release the brake

· The brakes are released by turning the release bolt (attached with product) two or three times to screw it into the female thread (next to brake release port) on top of the brake.

(Always remove the release bolt during normal use.)

· To manually release the brake, always use the release bolt attached with the product. Using any other bolt may prevent the brake from functioning properly.

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy casting	Chromate	28	Wear ring	Polyacetal resin	
2	Cushion needle	Copper alloy		29	Cushion rubber	Urethane rubber	
3	Cushion ring A	Steel	Zinc chromate	30	Phillips pan head machine screw	Steel	Zinc chromate
4	Piston packing	Nitrile rubber		31	Cover	Steel	Paint
5	Piston	Aluminum alloy casting		32	Spring holder	Steel	Manganese phosphate
6	Cushion ring B	Steel	Zinc chromate	33	Spring	Steel	Black finish
7	Cylinder tube	Aluminum alloy	Hard alumite	34	Brake shoe metal	Cast iron	Nickeling
8	Cushion packing	Nitrile rubber/steel		35	Rod nut	Steel	Zinc chromate
9	Rod cover	Aluminum alloy casting	Chromate	36	Dust wiper	Nitrile rubber	
10	Cylinder gasket	Nitrile rubber		37	Bush A	Oiles drymet	
11	Rod packing	Nitrile rubber		38	Hexagon nut	Steel	Zinc chromate
12	Dust wiper	Nitrile rubber		39	Hexagon socket head cap screw	Alloy steel	Black finish
13	Dust cover	Aluminum alloy	Alumite	40	Ring	Steel	Black finish
14	Rod packing	Nitrile rubber		41	Hexagon nut	Steel	Zinc chromate
15	Body cap	Aluminum alloy casting	Black alumite	42	Toothed washer	Steel	Zinc chromate
16	Cap gasket	Nitrile rubber		43	Tie rod	Steel	Zinc chromate
17	Brake body	Aluminum cast iron	Alumite	44	Thrust washer	Steel	
18	Bush B	Oil impregnated bearing alloy		45	Metal gasket	Nitrile rubber	
19	Piston rod	Steel	Industrial chrome plating	46	Rod metal	Cast iron	Zinc chromate
20	Hexagon socket head cap screw	Alloy steel	Black finish	47	Piston gasket	Nitrile rubber	
21	Brake piston	Cast iron	Manganese phosphate	48	Magnet	Rubber	JSC4-LN only
22	Bearing pin	Steel		49	Wear ring	Polyacetal resin	
23	Bearing	-		50	Body cap	Cast iron	Manganese phosphate
24	Phillips pan head machine screw/captive washer	Steel	Zinc chromate	51	O-ring	Nitrile rubber	
25	Spring	Steel	Paint	52	Needle gasket	Nitrile rubber	
26	Needle nut	Steel	Zinc chromate	53	E type snap ring	Steel	Zinc chromate
27	Piston packing B	Nitrile rubber		54	Hexagon socket head cap screw	Steel	Black finish

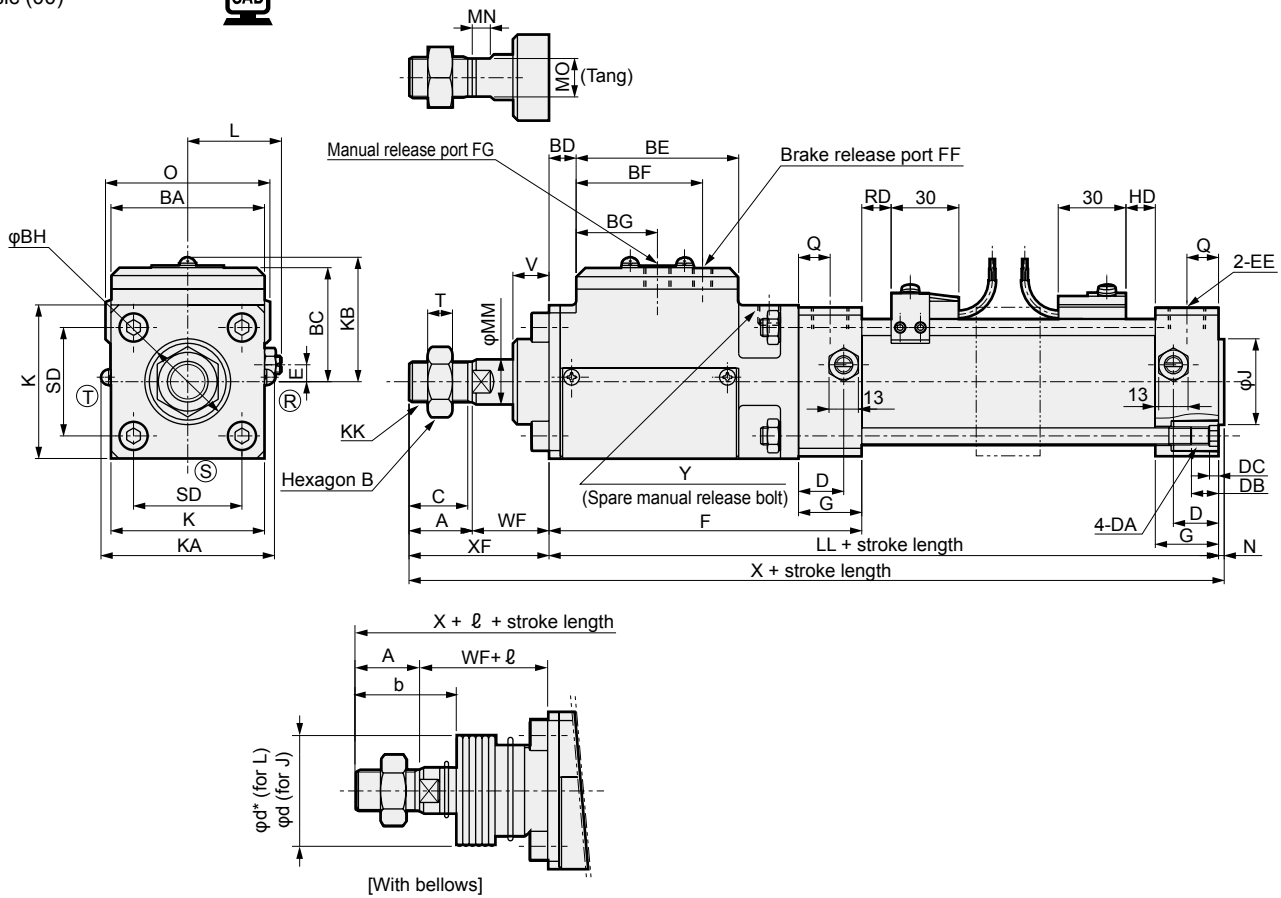
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ125	JSC4-N-125K	
φ140	JSC4-N-140K	
φ160	JSC4-N-160K	
φ180	JSC4-N-180K	

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions (φ40 to φ100)

Basic (00)



- *1 : For the \varnothing dimension, round up below the decimal point.
- *2 : $\text{\textcircled{R}}$, $\text{\textcircled{S}}$ and $\text{\textcircled{T}}$ indicate the cushion needle position.
- *3 : Manual release bolt is attached.
- *4 : For the dimensions of the accessories, refer to pages 796 and 797.
- *5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Basic (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	62	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

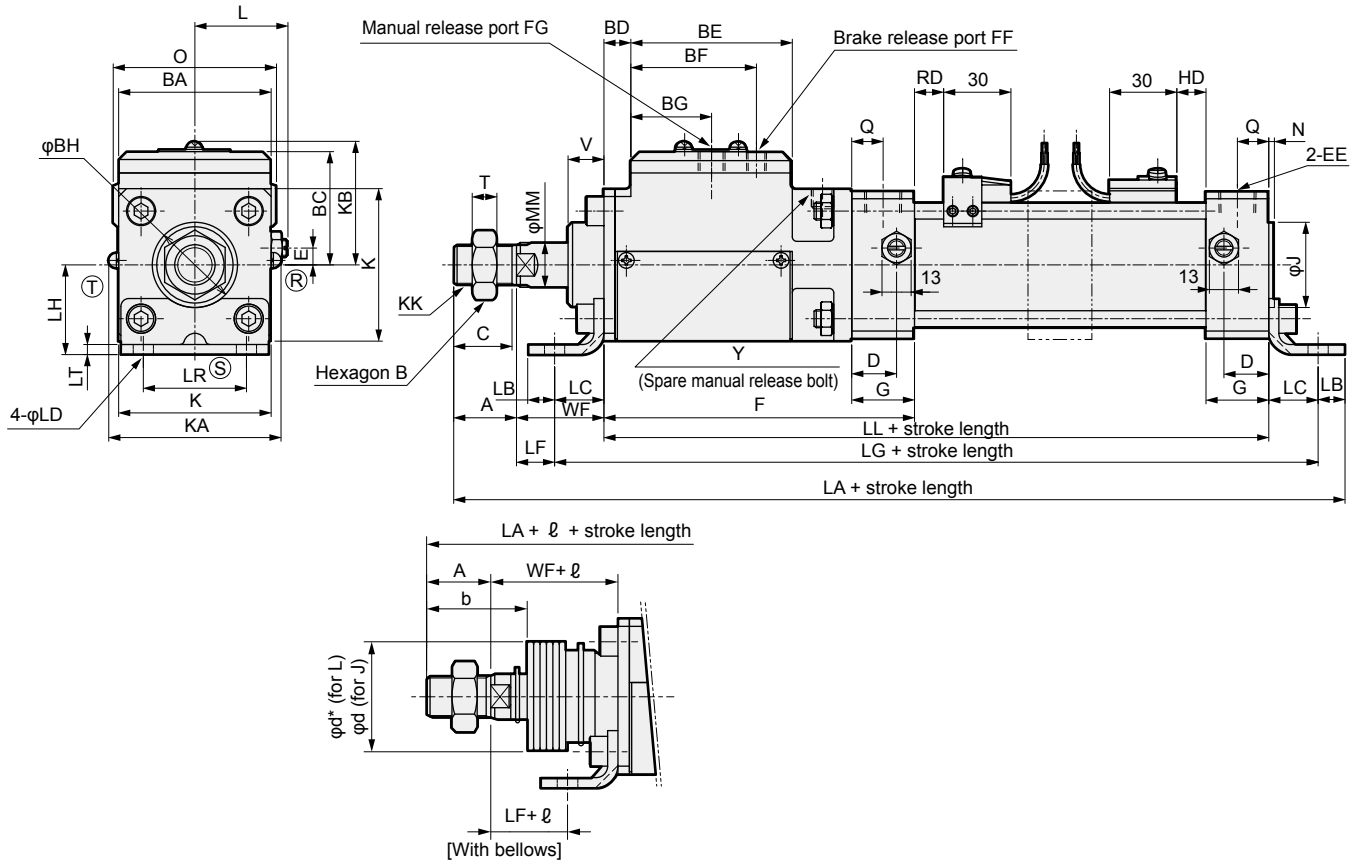
Code	Basic (00) basic dimensions																	With switch				
	KA	KB	KK	L	LL	MM	MN	M0	N	Q	SD	T	V	WF	X	XF	Y	O	T0, T5, T2, T3		T1, T2Y, T3Y, T2Y, T2YD/T	
																			RD	HD	RD	HD
φ40	66	50.5	M14×1.5	38 to 39.5	188	16	8	14	2	13	40.5	8	15	30	242	52	M10 depth 9	66	11	11	10	10
φ50	77	55	M18×1.5	41.0 to 43.5	211.5	20	8	17	2.5	14	48	11	16	34	276	62	M10 depth 9	73	13	13	12	12
φ63	89	58.5	M18×1.5	47.5 to 50.0	229	20	8	17	3	15	59	11	16	30	290	58	M12 depth 10	85	13	13	12	12
φ80	107	70.5	M22×1.5	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	13.5	13.5
φ100	127	78.5	M26×1.5	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	17.5	17.5

Code	With bellows						\varnothing														
	T8		T2W, T3W		HO, HOY		A	WF	FF	b	d	d*	50 or less					501 or more			
	RD	HD	RD	HD	RD	HD							less	100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	Stroke length	
φ40	5	5	13	13	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	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	

Dimensions (φ40 to φ100)



● Axial foot (LB)



- *1 : For the \varnothing dimension, round up below the decimal point.
- *2 : ®, © and ① indicate the cushion needle position.
- *3 : Manual release bolt is attached.
- *4 : For the dimensions of the accessories, refer to pages 796 and 797.
- *5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Axial foot (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	62	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

Code	Bore size (mm)	Mounting dimensions										With switch												
		KK	L	LL	MM	N	Q	T	V	WF	Y	LA	LB	LC	LD	LF	LG	LH	LR	LT	O	T0, T5, T2, T3	T1, T2Y, T3Y, T2J, T2YD/T	
		RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD									
φ40	M14×1.5	38 to 39.5	188	16	2	13	8	15	30	M10 depth 9	269.5	10	19.5	9	10.5	227	40	40	3.2	66	11	11	10	10
φ50	M18×1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	M10 depth 9	307.5	12	22	9	12	255.5	40	46	4.5	73	13	13	12	12
φ63	M18×1.5	47.5 to 50.0	229	20	3	15	11	16	30	M12 depth 10	329	12	30	11	0	289	50	60	4.5	85	13	13	12	12
φ80	M22×1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	M14 depth 11	392	14	37	14	6.5	335.5	60	74	6.0	105	14.5	14.5	13.5	13.5
φ100	M26×1.5	66 to 69	312.5	30	4	18	16	26	48	M16 depth 13	457.5	21	31	14	17	374.5	67	80	6.0	121	18.5	18.5	17.5	17.5

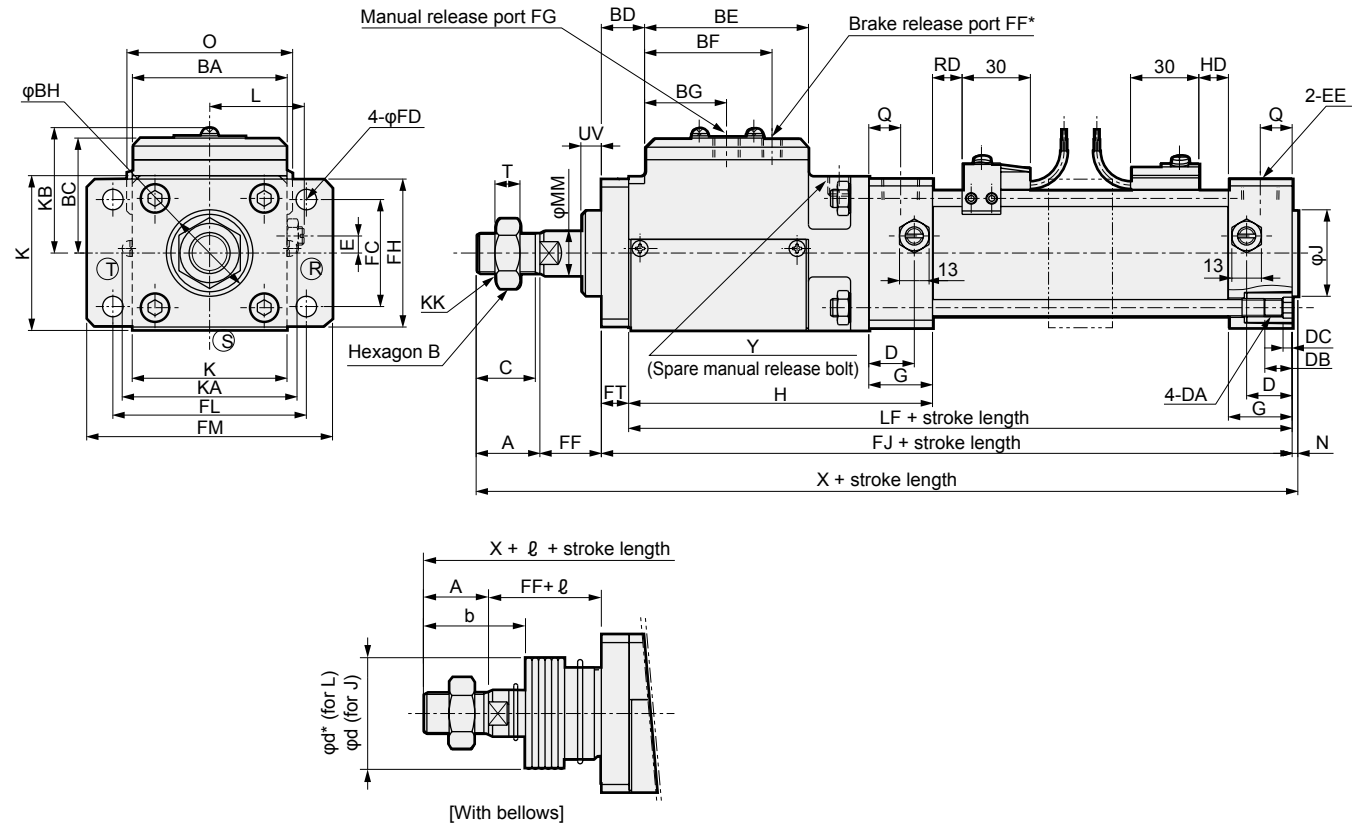
Code	Bore size (mm)	With bellows										\varnothing											
		T8		T2W, T3W		HO, HOY		A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more		
		RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD		
φ40	5	5	13	13	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8			
φ50	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5			
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5			
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9			

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Dimensions (φ40 to φ100)



● Rod side flange (FA)



*1 : For the ℓ dimension, round up below the decimal point.

*2 : Ⓡ, Ⓢ and Ⓣ indicate the cushion needle position.

*3 : Reassembly to the head side flange is not possible because the rod metal is not fixed.

*4 : Manual release bolt is attached.

*5 : For the dimensions of the accessories, refer to pages 796 and 797.

*6 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Rod side flange (FA) basic dimensions																						
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DC	DB	E	EE	FF*	FG	G	H	J	K	KA
φ40	22	22	57	46	17	62	51	31	31	20	18	M8	4	12	7.5	Rc1/4	Rc1/8	M10	26	117	31	57	66
φ50	28	27	68	50.5	19	72	56	36	38	26	20	M8	4	12	0	Rc3/8	Rc1/8	M10	28	134	38	68	77
φ63	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
φ80	36	32	98	66	26	106	80	53	43	34	26	M12	5	16	0	Rc1/2	Rc1/4	M14	34	173.5	43	98	107
φ100	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

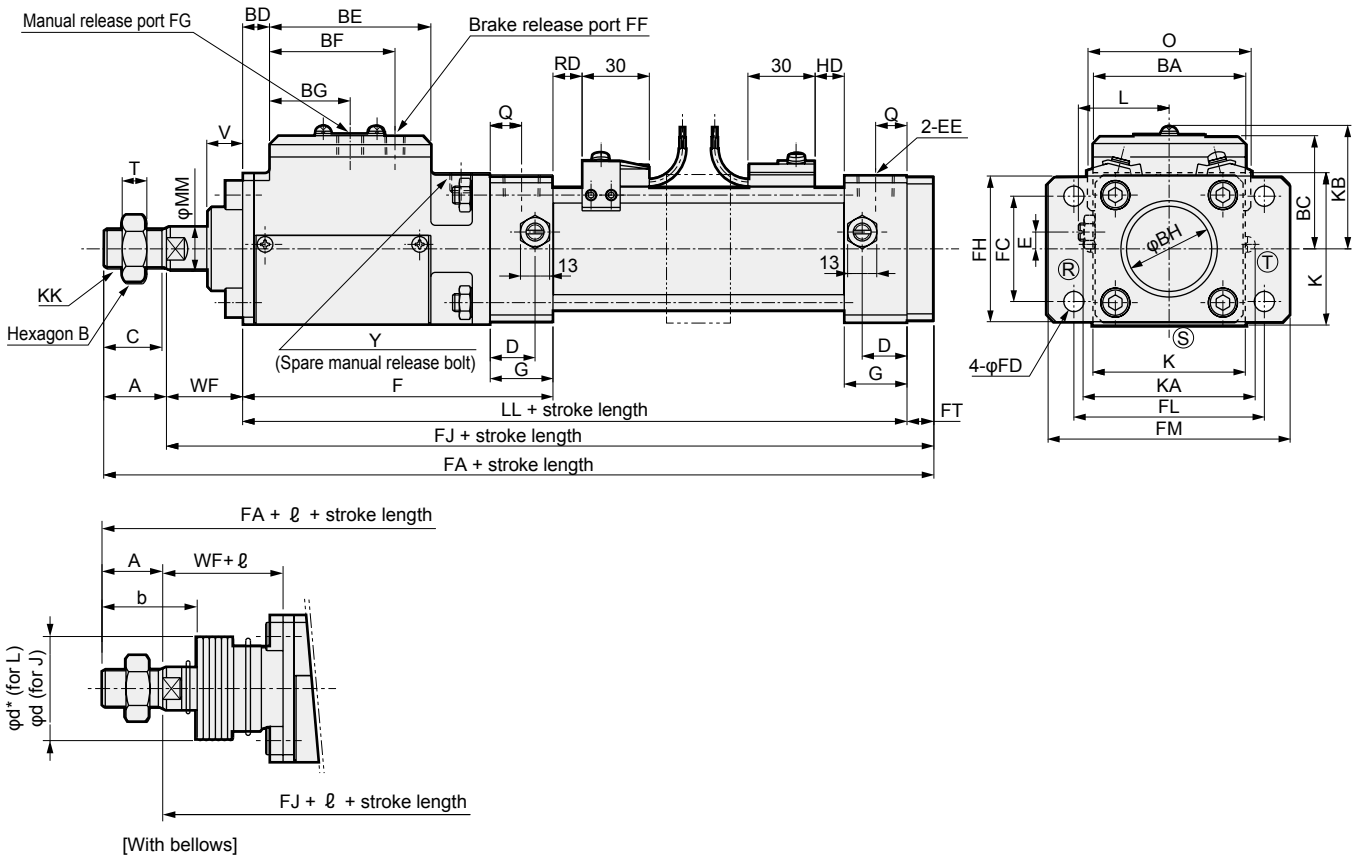
Code	Mounting dimensions												With switch											
Bore size (mm)	KB	KK	L	LF	MM	N	Q	T	UV	X	Y	FC	FD	FF	FH	FJ	FL	FM	FT	O	T0, T5, T2, T3	T1, T2Y, T3Y, T2J, T2YD/T		
	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD		
φ40	50.5	M14 × 1.5	38 to 39.5	184	16	2	13	8	7	242	M10 depth 9	40	9	22	57	196	80	100	12	66	11	11	10	10
φ50	55	M18 × 1.5	41.0 to 43.5	207	20	2.5	14	11	8.5	276	M10 depth 9	47	9	27	65	219	85	108	12	73	13	13	12	12
φ63	58.5	M18 × 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	12	12
φ80	70.5	M22 × 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	13.5	13.5
φ100	78.5	M26 × 1.5	66 to 69	306	30	4	18	16	13	409.5	M16 depth 13	88	14	35	118	325	144	180	19	121	18.5	18.5	17.5	17.5

Code	With bellows												ℓ							
Bore size (mm)	T8		T2W, T3W		HO, HOY		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 or more
	RD	HD	RD	HD	RD	HD	A	WF	FF	b	d	d*	RD	HD	RD	HD	RD	HD	RD	HD
φ40	5	5	13	13	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	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length(3.6) + 7.5
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length(3.6) + 7.5
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35	69.5	61	65	20	32	42	53	76	98	120	(Stroke length(4.5) + 9

Dimensions (φ40 to φ100)



● Head side flange (FB)



- *1 : For the l dimension, round up below the decimal point.
- *2 : (R), (S) and (T) indicate the cushion needle position.
- *3 : Reassembly to the rod side flange is not possible because the piston rod protruding length (from the flange end), rod metal and flange mounting bolt are different.
- *4 : Manual release bolt is attached.
- *5 : For the dimensions of the accessories, refer to pages 796 and 797.
- *6 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code		Head side flange (FB) basic dimensions																			
Bore size (mm)		A	B	BA	BC	BD	BE	BF	BG	BH	C	D	E	EE	F	FG	FF	G	K	KA	KB
φ40		22	22	57	46	9	62	51	31	31	20	18	7.5	Rc1/4	121	M10	Rc1/8	26	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	68	77	55
φ63		28	27	80	54	13	86	70	43	38	26	22	0	Rc3/8	154	M12	Rc1/4	30	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	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	118	127	78.5

Code		Mounting dimensions									With switch														
Bore size (mm)		KK	L	LL	MM	Q	T	V	WF	Y	FA	FC	FD	FH	FJ	FL	FM	FT	O	T0, T5, T2, T3	T1, T2Y, T3Y, T2J, T2YD/T	RD	HD	RD	HD
φ40		M14×1.5	38 to 39.5	188	16	13	8	15	30	M10 depth 9	252	40	9	57	230	80	100	12	66	11	11	10	10		
φ50		M18×1.5	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	12	12		
φ63		M18×1.5	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	12	12		
φ80		M22×1.5	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	13.5	13.5		
φ100		M26×1.5	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	17.5	17.5		

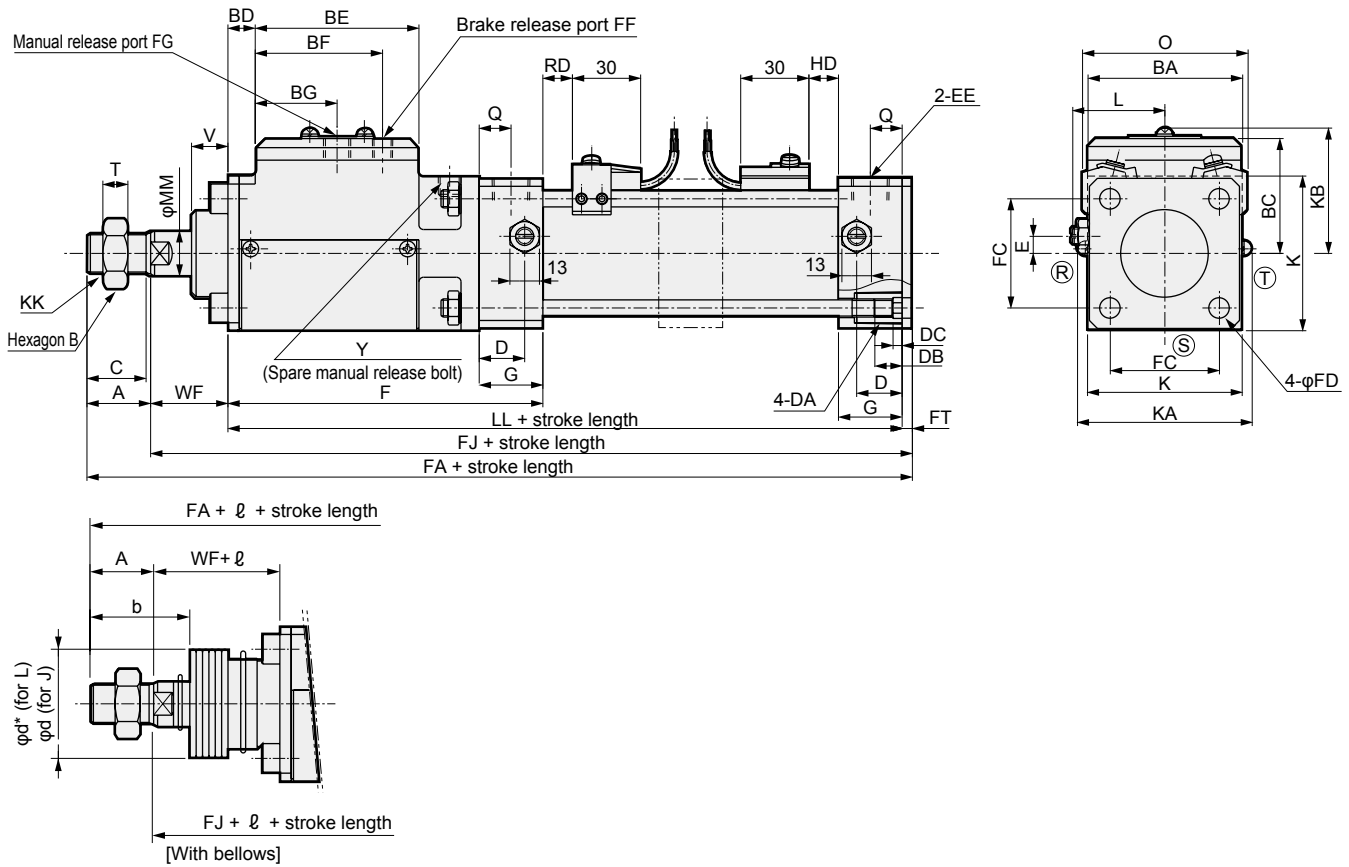
Code		With bellows										l									
Bore size (mm)		T8		T2W, T3W		HO, HOY		A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
		RD	HD	RD	HD	RD	HD														
φ40		5	5	13	13	4	4	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8
φ50		7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ63		7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ80		8.5	8.5	16.5	16.5	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		12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Dimensions (φ40 to φ100)



● Head side special flange (FC)



*1 : For the ℓ dimension, round up below the decimal point.

*2 : ®, © and ① indicate the cushion needle position.

*3 : Manual release bolt is attached.

*4 : For the dimensions of the accessories, refer to pages 796 and 797.

*5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Head side flange (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
φ40	22	22	57	46	9	62	51	31	20	18	M8	12	4	Rc1/4	121	M10	Rc1/8	26	57	M14×1.5	66
φ50	28	27	68	50.5	12	72	56	36	26	20	M8	12	4	Rc3/8	138.5	M10	Rc1/8	28	68	M18×1.5	77
φ63	28	27	80	54	13	86	70	43	26	22	M8	12	4	Rc3/8	154	M12	Rc1/4	30	80	M18×1.5	89
φ80	36	32	98	66	13	106	80	53	34	26	M12	16	5	Rc1/2	179.5	M14	Rc1/4	34	98	M22×1.5	107
φ100	45	41	118	74	17.5	132	101	66	43	28	M12	16	5	Rc1/2	220.5	M16	Rc3/8	36	118	M26×1.5	127

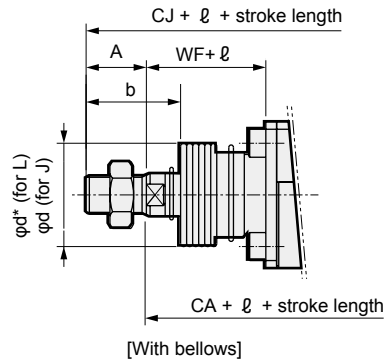
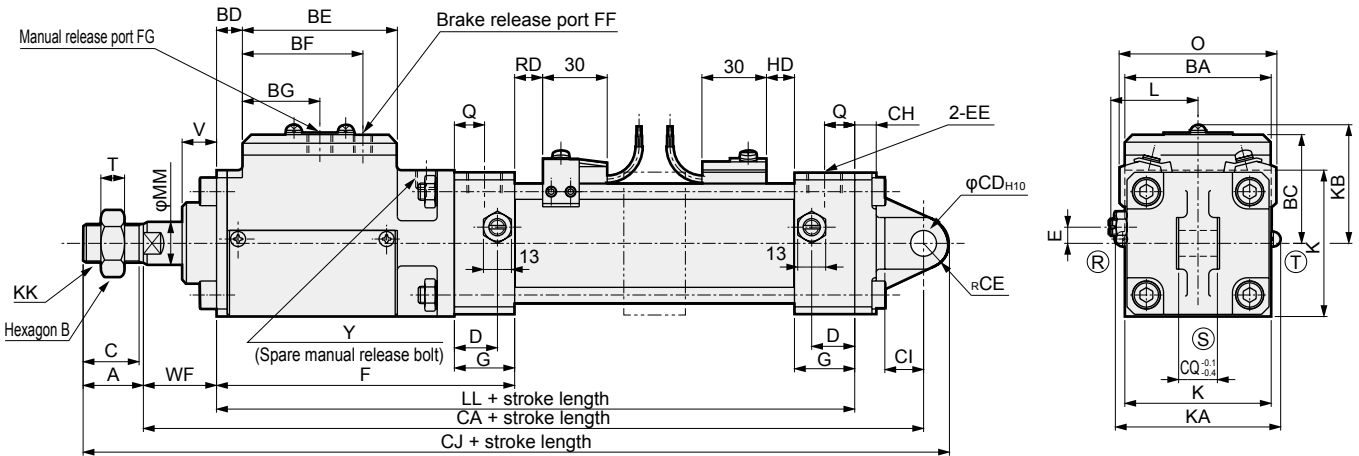
Code	Mounting dimensions										With switch								
Bore size (mm)	KB	L	LL	MM	Q	T	V	WF	Y	FA	FC	FD	FJ	FT	O	T0, T5, T2, T3		T1, T2Y, T3Y, T2J, T2YD/T	
																RD	HD	RD	HD
φ40	50.5	38 to 39.5	188	16	13	8	15	30	M10 depth 9	244.5	40.5	9	222.5	4.5	66	11	11	10	10
φ50	55	41.0 to 43.5	211.5	20	14	11	16	34	M10 depth 9	278	48	9	250	4.5	73	13	13	12	12
φ63	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	12	12
φ80	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	13.5	13.5
φ100	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	17.5	17.5

Code	With bellows											ℓ								
Bore size (mm)	T8		T2W, T3W		HO, HOY		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 or more
	RD	HD	RD	HD	RD	HD														
φ40	5	5	13	13	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	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9

Dimensions (φ40 to φ100)



● Eye bracket (CA)



*1 : For the l dimension, round up below the decimal point.

*2 : (R), (S) and (T) indicate the cushion needle position.

*3 : For the dimensions of the accessories, refer to pages 796 and 797.

*4 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code Bore size (mm)	Eye bracket (CA) basic dimensions																		
	A	B	BA	BC	BD	BE	BF	BG	C	D	E	EE	F	FF	FG	G	K	KK	KA
φ40	22	22	57	46	9	62	51	31	20	18	7.5	Rc1/4	121	Rc1/8	M10	26	57	M14×1.5	66
φ50	28	27	68	50.5	12	72	56	36	26	20	0	Rc3/8	138.5	Rc1/8	M10	28	68	M18×1.5	77
φ63	28	27	80	54	13	86	70	43	26	22	0	Rc3/8	154	Rc1/4	M12	30	80	M18×1.5	89
φ80	36	32	98	66	13	106	80	53	34	26	0	Rc1/2	179.5	Rc1/4	M14	34	98	M22×1.5	107
φ100	45	41	118	74	17.5	132	101	66	43	28	0	Rc1/2	220.5	Rc3/8	M16	36	118	M26×1.5	127

Code Bore size (mm)	Mounting dimensions										With switch												
	KB	L	LL	MM	Q	T	V	WF	Y	CA	CD	CE	CH	CI	CJ	CQ	O	T0, T5, T2, T3		T1, T2Y, T3Y, T2J, T2YD/T			
	RD	HD	RD	HD	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 or more	RD	HD	RD
φ40	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	10	10	
φ50	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	12	12	
φ63	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	12	12	
φ80	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	13.5	13.5	
φ100	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	17.5	17.5	

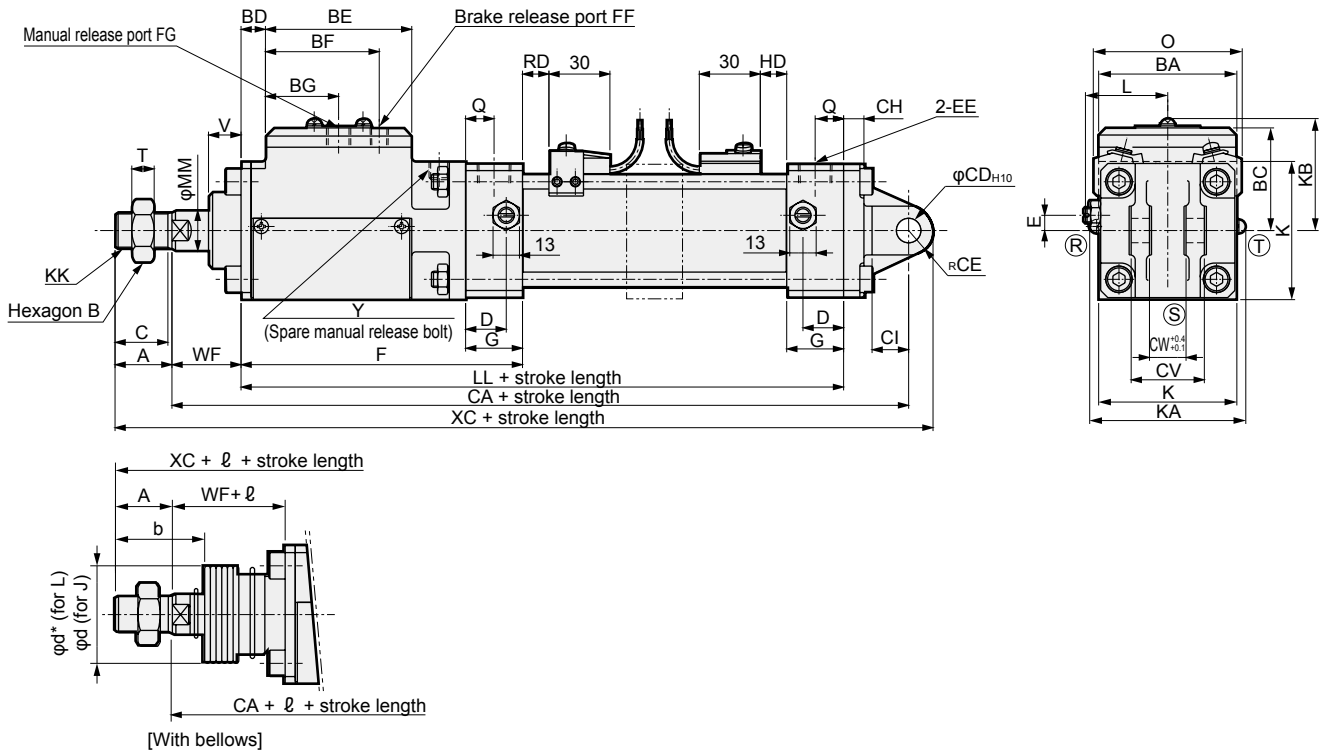
Code Bore size (mm)	With bellows										l													
	T8		T2W, T3W		HO, HOY		A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more				
	RD	HD	RD	HD	RD	HD	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more				
φ40	5	5	13	13	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	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5				
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5				
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9				

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Dimensions (φ40 to φ100)



● Clevis bracket (CB)



- *1 : For the ℓ dimension, round up below the decimal point.
- *2 : (R), (S) and (T) indicate the cushion needle position.
- *3 : A pin and a snap ring are attached.
- *4 : For the dimensions of the accessories, refer to pages 796 and 797.
- *5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Clevis bracket (CB) basic dimensions																	
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	D	EE	F	FF	FG	G	K	KK	KA
φ40	22	22	57	46	9	62	51	31	20	18	Rc1/4	121	Rc1/8	M10	26	57	M14 × 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 × 1.5	77
φ63	28	27	80	54	13	86	70	43	26	22	Rc3/8	154	Rc1/4	M12	30	80	M18 × 1.5	89
φ80	36	32	98	66	13	106	80	53	34	26	Rc1/2	179.5	Rc1/4	M14	34	98	M22 × 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 × 1.5	127

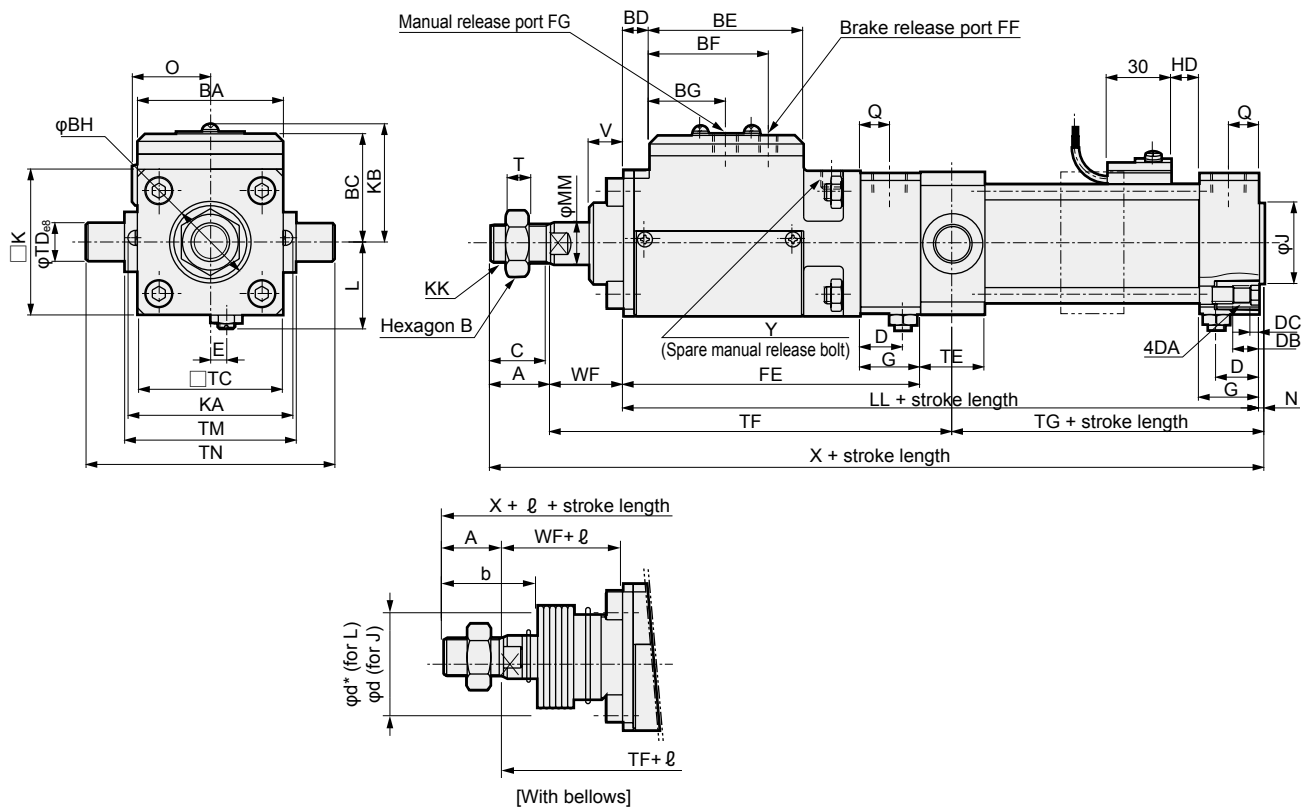
Code	Mounting dimensions										With switch											
Bore size (mm)	KB	L	LL	MM	Q	T	V	WF	XC	Y	CA	CD	CE	CH	CI	CV	CW	O	T0, T5, T2, T3	T1, T2Y, T3Y, T2J, T2YD/T		
φ40	50.5	38 to 39.5	188	16	13	8	15	30	284	M10 depth 9	250	12	12	10	18	36	18	66	11	11	10	10
φ50	55	41.0 to 43.5	211.5	20	14	11	16	34	317.5	M10 depth 9	277.5	12	12	10	18	36	18	73	13	13	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	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	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	17.5	17.5

Code	With bellows						ℓ														
Bore size (mm)	T8		T2W, T3W		HO, HOY		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 or more	
	RD	HD	RD	HD	RD	HD															
φ40	5	5	13	13	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	7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ63	7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ80	8.5	8.5	16.5	16.5	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	12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	

Dimensions (φ40 to φ100)



● Rod side trunnion (TA)



- *1 : For the ℓ dimension, round up below the decimal point.
- *2 : Position cannot be detected at rod side stroke end.
- *3 : The position of the cushion needle cannot be detected.
- *4 : For the dimensions of the accessories, refer to pages 796 and 797.
- *5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Rod side trunnion (TA) 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
φ40	22	22	57	46	9	62	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

Code	Mounting dimensions															With switch					
Bore size (mm)	KA	KB	KK	L	LL	MM	N	Q	T	V	WF	X	Y	TC	TD	TE	TF	TG	TM	TN	O
φ40	66	50.5	M14×1.5	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
φ50	77	55	M18×1.5	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
φ63	89	58.5	M18×1.5	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
φ80	107	70.5	M22×1.5	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
φ100	127	78.5	M26×1.5	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

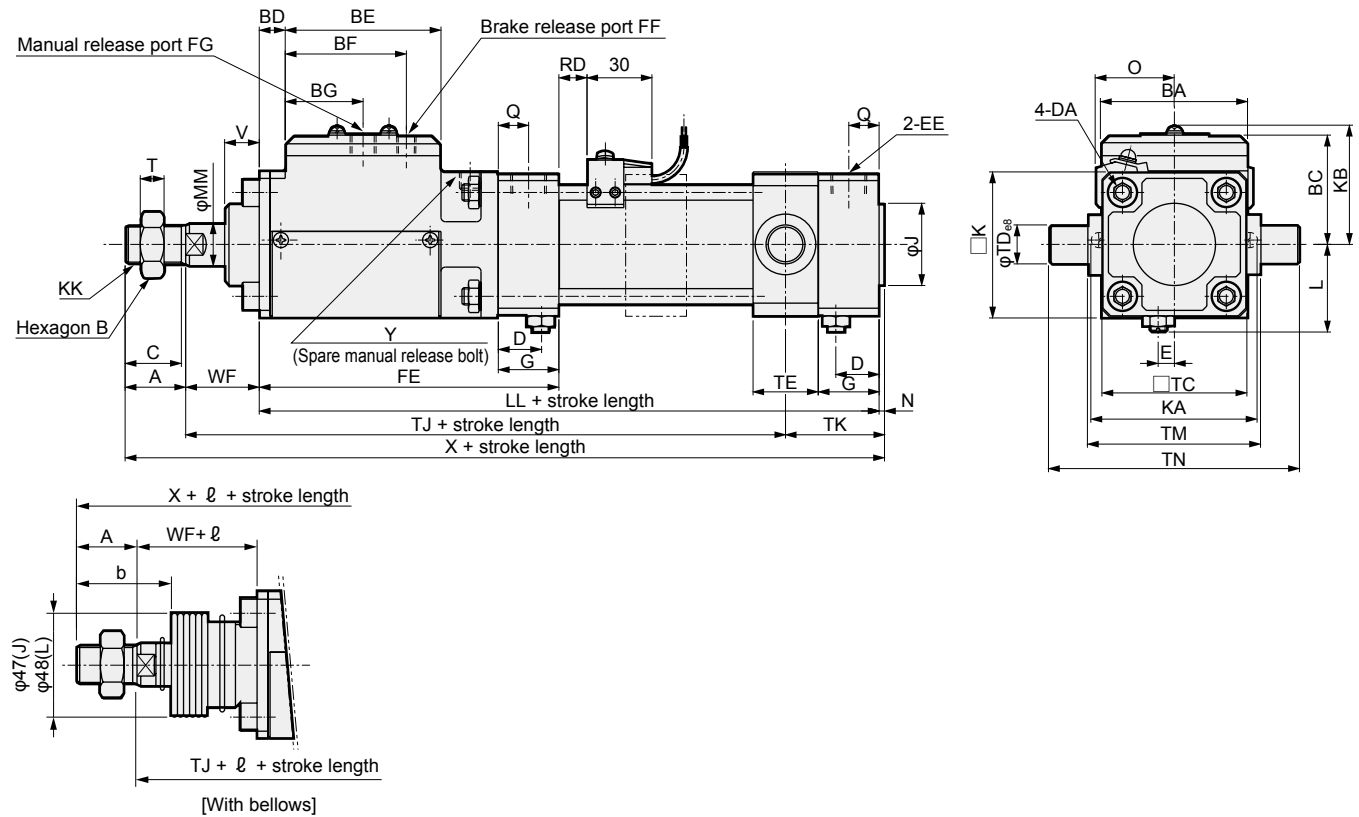
Code	With bellows						ℓ														
Bore size (mm)	T0, T5, T2, T3		T1, T2Y, T3Y, T2J, T2YD/T		T8	T2W, T3W	HO, HOY	A	WF	FF	b	d	d*	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD	HD
φ40	11	10	5	13	4	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	13	12	7	15	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5		
φ63	13	12	7	15	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5		
φ80	14.5	13.5	8.5	16.5	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	18.5	17.5	12.5	20.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9		

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions (φ40 to φ100)



● Head side trunnion (TB)



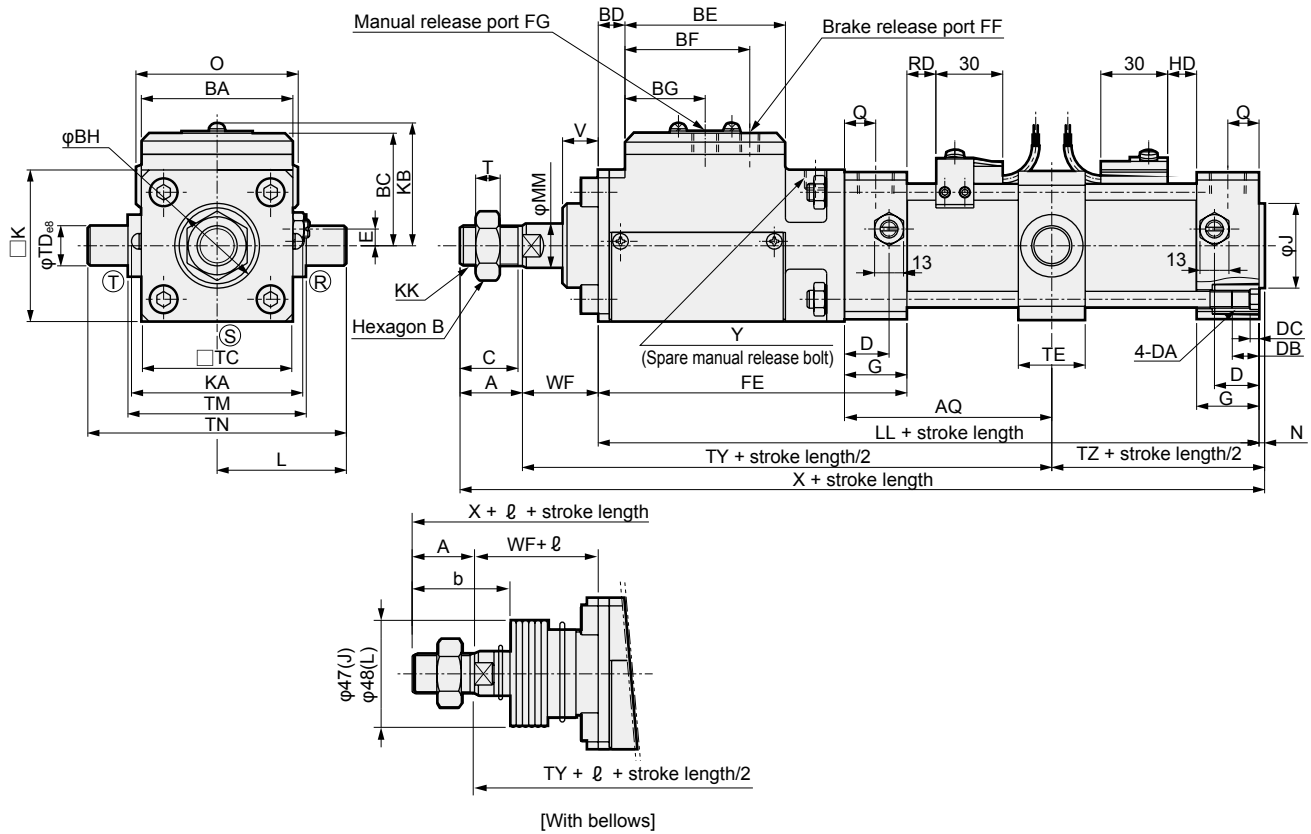
- *1 : For the l dimension, round up below the decimal point.
- *2 : Position cannot be detected at head side stroke end.
- *3 : The position of the cushion needle cannot be changed.
- *4 : For the dimensions of the accessories, refer to pages 796 and 797.
- *5 : Non-sag block (2-dashed line) will be added depending on the stroke length. Refer to page 784 for details on dimensions.

Code	Head side trunnion (TB) basic dimensions																	Mounting dimensions					With switch																	
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	EE	FE	FF	FG	G	J	K	KA	KB	KK	L	LL	MM	N	Q	T	V	WF	X	Y	TC	TD	TE	TJ	TK	TM	TN	O
φ40	22	22	57	46	9	62	51	31	31	20	18	M8	Rc1/4	121	Rc1/8	M10	26	31	57	66	50.5	M14 × 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
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	55	M18 × 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
φ63	28	27	80	54	13	86	70	43	38	26	22	M8	Rc3/8	154	Rc1/4	M12	30	38	80	89	58.5	M18 × 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
φ80	36	32	98	66	13	106	80	53	43	34	26	M12	Rc1/2	179.5	Rc1/4	M14	34	43	98	107	70.5	M22 × 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
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	78.5	M26 × 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

Code	With bellows																	l						
Bore size (mm)	T0, T5, T2, T3	T1, T2Y, T3Y, T2J, T2YD/T	T8	T2W, T3W	HO, HOY	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 or more					
φ40	11	10	5	13	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	13	12	7	15	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length(3.6) + 7.5)					
φ63	13	12	7	15	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length(3.6) + 7.5)					
φ80	14.5	13.5	8.5	16.5	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	18.5	17.5	12.5	20.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length(4.5) + 9)					

Dimensions (φ40 to φ100)

● Intermediate trunnion (TC)



- *1 : For the l dimension, round up below the decimal point.
- *2 : $\text{\textcircled{R}}$, $\text{\textcircled{S}}$ and $\text{\textcircled{T}}$ indicate the cushion needle position.
- *3 : For the dimensions of the accessories, refer to pages 796 and 797.

Code		Intermediate trunnion (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	62	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

Code		Mounting 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	O	T0, T5, T2, T3		T1, T2Y, T3Y, T2J, T2YD/T		
		RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD
φ40		M14×1.5	38 to 39.5	188	16	2	13	8	15	30	242	M10 depth 9	46.5+ Stroke length 2	57	16	30	63	95	171.5	48.5	66	11	11	10	10	
φ50		M18×1.5	41.0 to 43.5	211.5	20	2.5	14	11	16	34	276	M10 depth 9	50.5+ Stroke length 2	67	18	30	80	116	195	53	73	13	13	12	12	
φ63		M18×1.5	47.5 to 50.0	229	20	3	15	11	16	30	290	M12 depth 10	52.5+ Stroke length 2	82	20	35	90	130	206.5	55.5	85	13	13	12	12	
φ80		M22×1.5	56 to 59	261.5	25	3.5	17	13	17.5	43.5	344.5	M14 depth 11	58+ Stroke length 2	100	25	40	115	165	247	61.5	105	14.5	14.5	13.5	13.5	
φ100		M26×1.5	66 to 69	312.5	30	4	18	16	26	48	409.5	M16 depth 13	64+ Stroke length 2	121	35	50	135	205	296.5	68	121	18.5	18.5	17.5	17.5	

Code		With bellows						l														
Bore size (mm)		T8		T2W, T3W		HO, HOY		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 or more	
		RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD
φ40		5	5	13	13	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		7	7	15	15	6	6	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ63		7	7	15	15	6	6	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	
φ80		8.5	8.5	16.5	16.5	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		12.5	12.5	20.5	20.5	11.5	11.5	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	

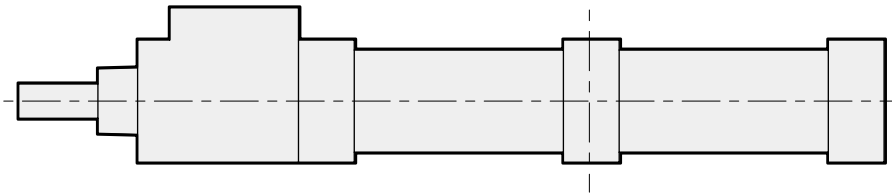
- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

● About the non-sag block (φ40 to φ100)

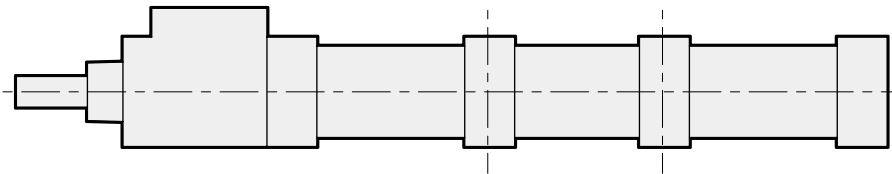
Depending on its stroke length, a non-sag block will be added to the middle part of the cylinder.

The number of non-sag blocks to be added differs depending on the bore size and the stroke length as shown in the table below.

Number of non-sag blocks depending on stroke length		
Tube size (mm)	Stroke length (mm)	Number of non-sag blocks
φ40	1200 to 1600	1
φ50	1200 to 1800	1
	1801 to 2000	2
φ63	1200 to 1800	1
	1801 to 2500	2
φ80	1500 to 2000	1
	2001 to 2500	2
φ100	1500 to 2000	1
	2001 to 2500	2

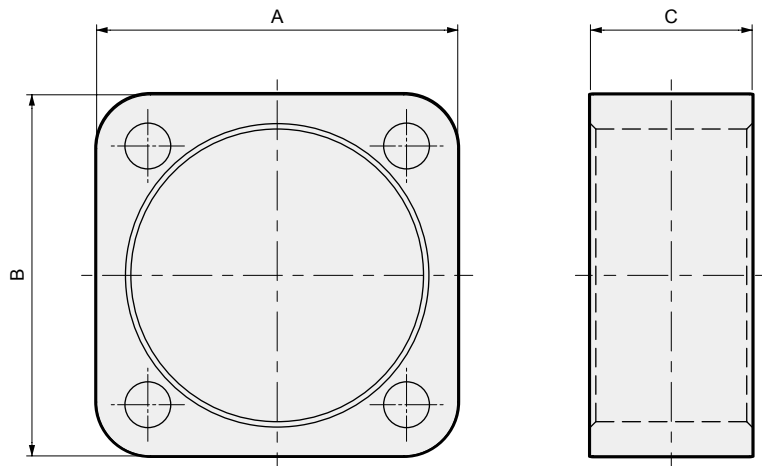


One non-sag block: To be added to the middle point between the covers.



Two non-sag blocks: mount the 2 blocks so that the length of the 2 covers will be divided into 3 equal parts.

The dimensions of non-sag blocks are as shown in the figure below. When attaching the cylinder, take into account the dimensions of the non-sag blocks.



Non-sag block dimensions table			
Tube size (mm)	Non-sag block dimensions		
	A	B	C
φ40	56	57	30
φ50	66	67	30
φ63	81	82	35
φ80	99	100	40
φ100	120	121	50

MEMO

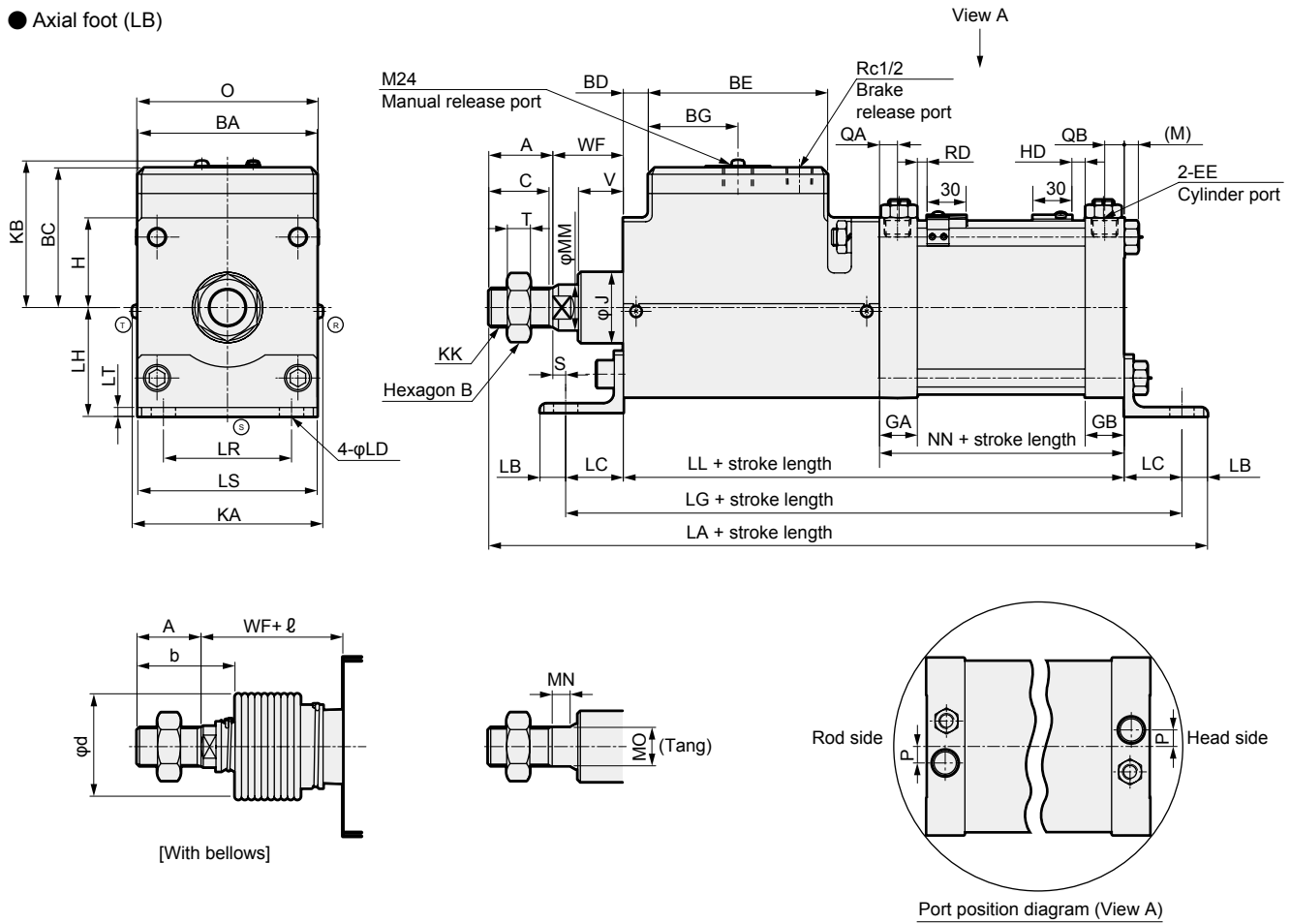
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC4-N Series

Dimensions (φ125 to φ180)



● Axial foot (LB)



- *1 : Ⓜ, Ⓢ and Ⓣ indicate the cushion needle position.
- *2 : ℓ dimensions below decimal point are rounded up.
- *3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position
 HD: Head side max. sensitivity position

Code	Axial foot (LB) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	11
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	11
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	13
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	15

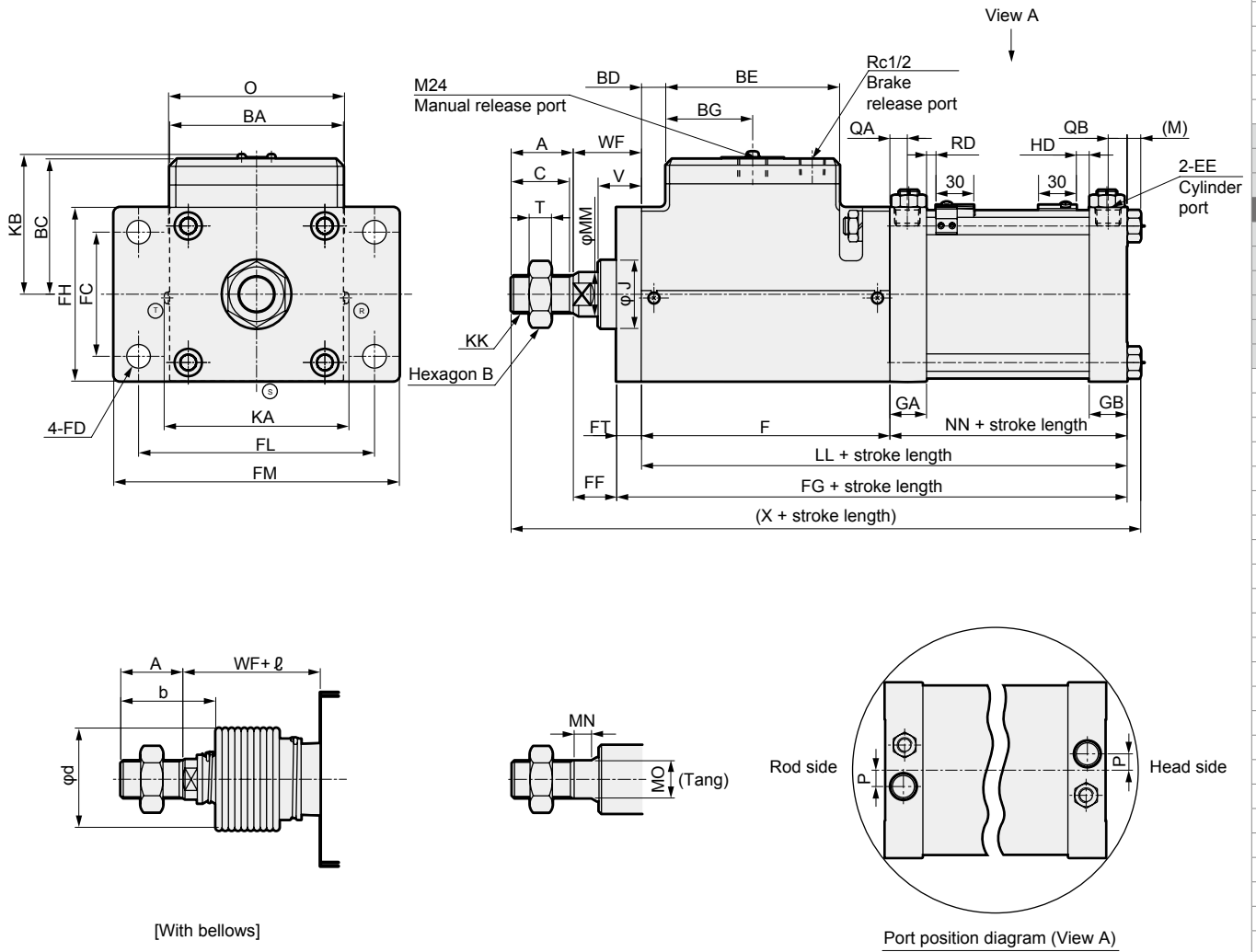
Code	Mounting dimensions																			
Bore size (mm)	MM	MN	MO	NN	P	QA	QB	S	T	V	WF	LA	LB	LC	LD	JG	LH	LR	LS	LT
φ125	35	14	30	91	13	14	15	10	18	35	55	460	19	45	19	381	85	100	140	7
φ140	35	14	30	102	15	16	17	7	18	35	57	495	20	50	19	418	100	112	157	8
φ160	40	16	36	105	15	16	17	18.5	21	48	71.5	550.5	20	53	19	456	106	118	177	10
φ180	45	18	41	109	15	16	17	18.5	24	53	78.5	601.5	27	60	24	493	125	132	200	10

Code	With bellows				With switch							
Bore size (mm)	b	d	ℓ	T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8		
				RD	HD	RD	HD	RD	HD	RD	HD	
φ125	74	75	(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0	
φ140	74	75	(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5	
φ160	81	80	(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5	
φ180	90	90	(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5	

Dimensions (φ125 to φ180)



● Rod side flange (FA)



[With bellows]

Port position diagram (View A)

*1 : Ⓜ, Ⓢ and Ⓣ indicate the cushion needle position.

*2 : l dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

Code	Rod side flange (FA) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	11
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	11
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	13
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	15

Code	Mounting dimensions																		
Bore size (mm)	MM	MN	MO	NN	P	QA	QB	T	V	WF	X	FC	FD	FF	FG	FH	FL	FM	FT
φ125	35	14	30	91	13	14	15	18	35	55	407	100	19	35	311	140	190	230	20
φ140	35	14	30	102	15	16	17	18	35	57	436	112	19	37	338	157	212	250	20
φ160	40	16	36	105	15	16	17	21	48	71.5	490.5	118	19	49.5	372	177	236	280	22
φ180	45	18	41	109	15	16	17	24	53	78.5	529.5	132	24	53.5	398	200	265	310	25

Code	With bellows			With switch							
				T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8	
	b	d	l	RD	HD	RD	HD	RD	HD	RD	HD
φ125	74	75	(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0
φ140	74	75	(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5
φ160	81	80	(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5
φ180	90	90	(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5

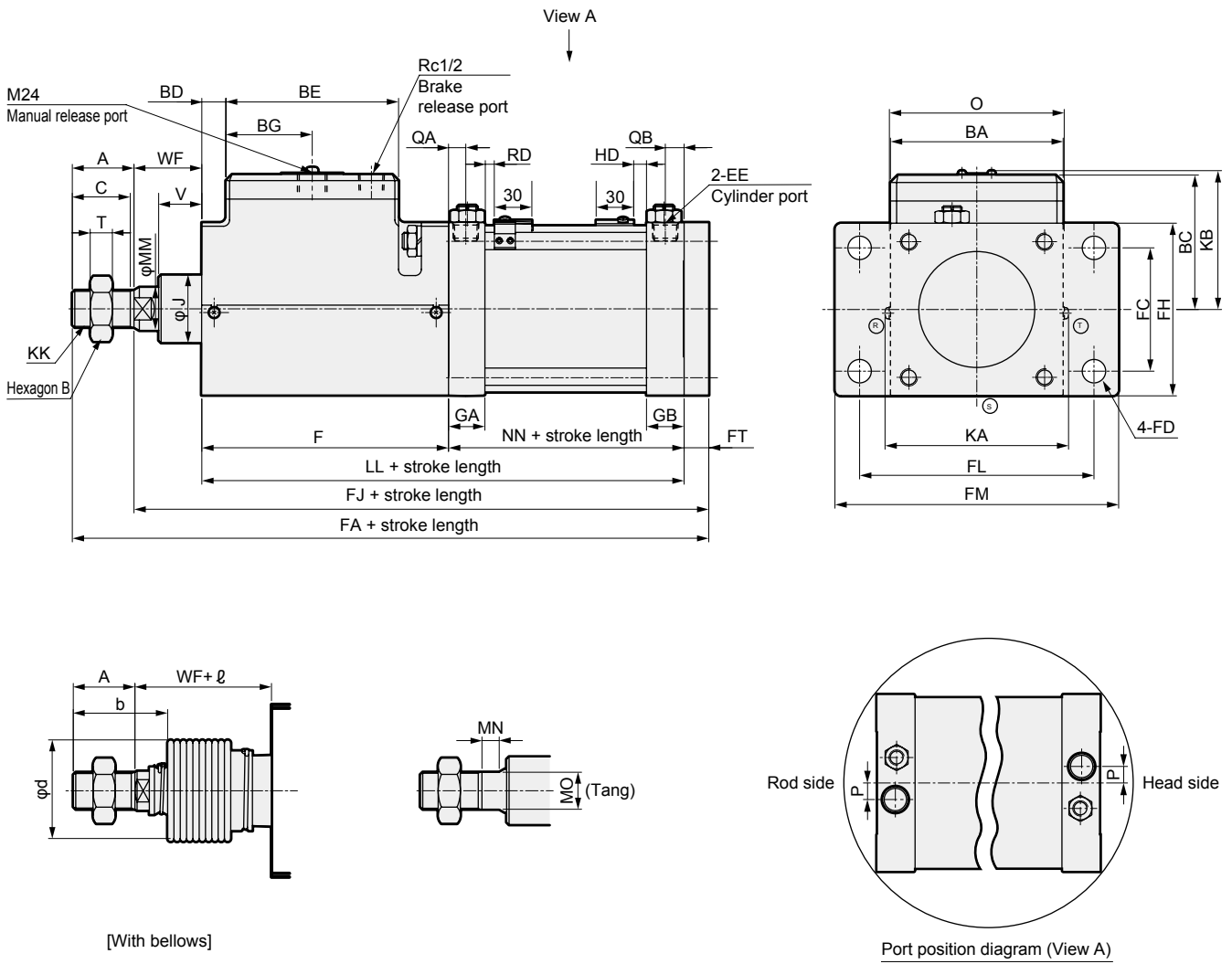
- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC4-N Series

Dimensions (φ125 to φ180)



● Head side flange (FB)



*1 : Ⓡ, Ⓢ and ⊕ indicate the cushion needle position.

*2 : φ dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

Code	Head side flange (FB) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	45

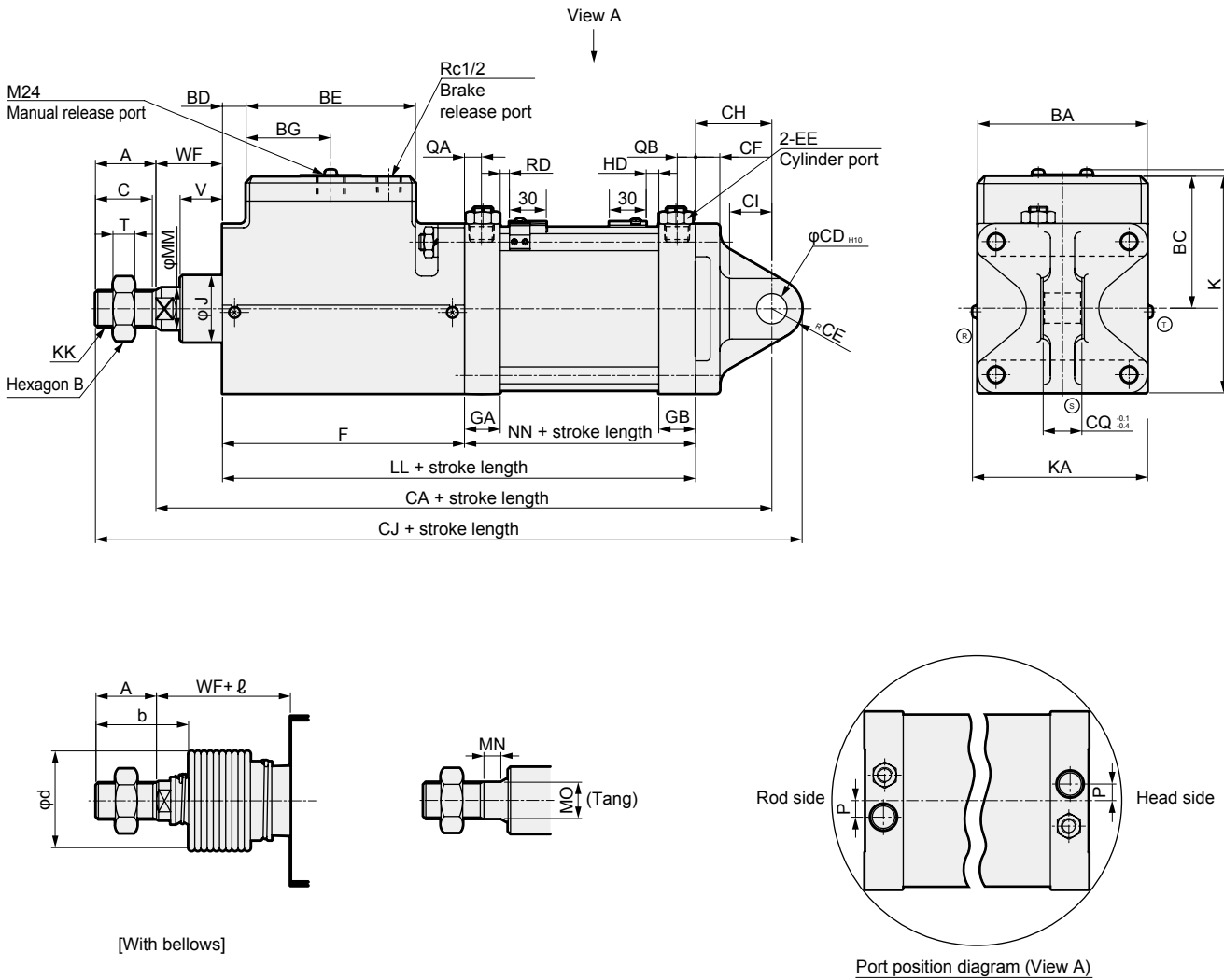
Code	Mounting dimensions																
Bore size (mm)	MN	MO	NN	P	QA	QB	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT
φ125	14	30	91	13	14	15	18	35	55	410	100	19	140	360	190	230	14
φ140	14	30	102	15	16	17	18	35	57	444	112	19	157	394	212	112	19
φ160	16	36	105	15	16	17	21	48	71.5	496.5	118	19	177	440.5	236	118	19
φ180	18	41	109	15	16	17	24	53	78.5	539.5	132	24	200	476.5	265	132	25

Code	With bellows			With switch								
	Bore size (mm)	b	d	φ	T0,T5,T2,T3		T2W,T3W		T2Y,T3Y,T2YD,T1,T2J		T8	
					RD	HD	RD	HD	RD	HD	RD	HD
φ125	74	75		(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0
φ140	74	75		(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5
φ160	81	80		(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5
φ180	90	90		(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5

Dimensions (φ125 to φ180)



● Eye bracket (CA)



*1 : Ⓜ, Ⓢ and Ⓣ indicate the cushion needle position.

*2 : ℓ dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

Code	Eye bracket (CA) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	45

Code	Mounting dimensions																
Bore size (mm)	MN	MO	NN	P	QA	QB	T	V	WF	CA	CD	CE	CF	CH	CI	CJ	CQ
φ125	14	30	91	13	14	15	18	35	55	409	25	25	20	63	35	484	32
φ140	14	30	102	15	16	17	18	35	57	450	28	28	22	75	40	528	36
φ160	16	36	105	15	16	17	21	48	71.5	496.5	32	32	24	75	40	584.5	40
φ180	18	41	109	15	16	17	24	53	78.5	541.5	40	40	25	90	55	644.5	50

Code	With bellows			With switch							
				T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8	
	b	d	ℓ	RD	HD	RD	HD	RD	HD	RD	HD
φ125	74	75	(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0
φ140	74	75	(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5
φ160	81	80	(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5
φ180	90	90	(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5

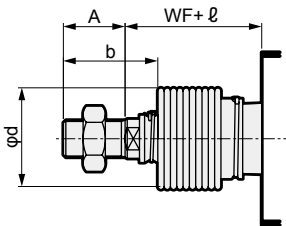
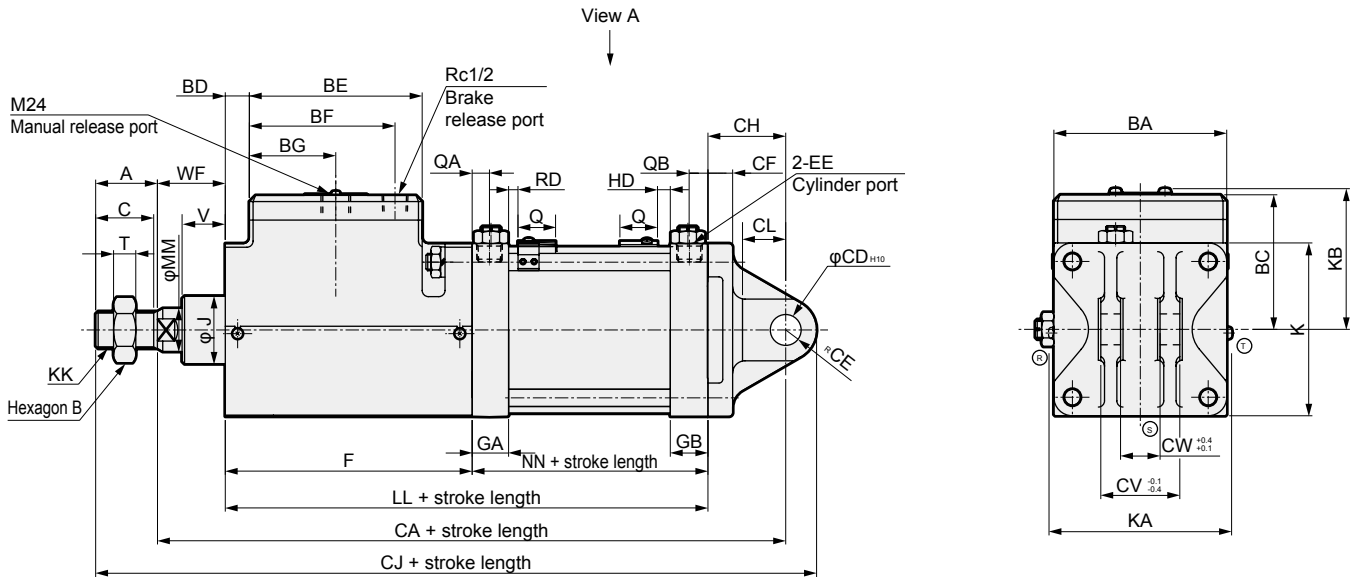
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC4-N Series

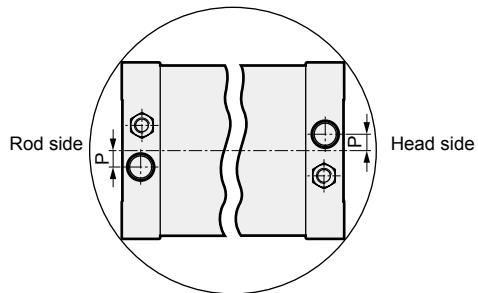
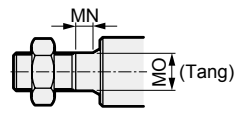
Dimensions (φ125 to φ180)



● Clevis bracket (CB)



[With bellows]



Port position diagram (View A)

*1 : Ⓡ, Ⓢ and Ⓣ indicate the cushion needle position.
 *2 : φ dimensions below decimal point are rounded up.
 *3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position
 HD: Head side max. sensitivity position

Code	Clevis bracket (CB) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	MM
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	35
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	35
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	40
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	45

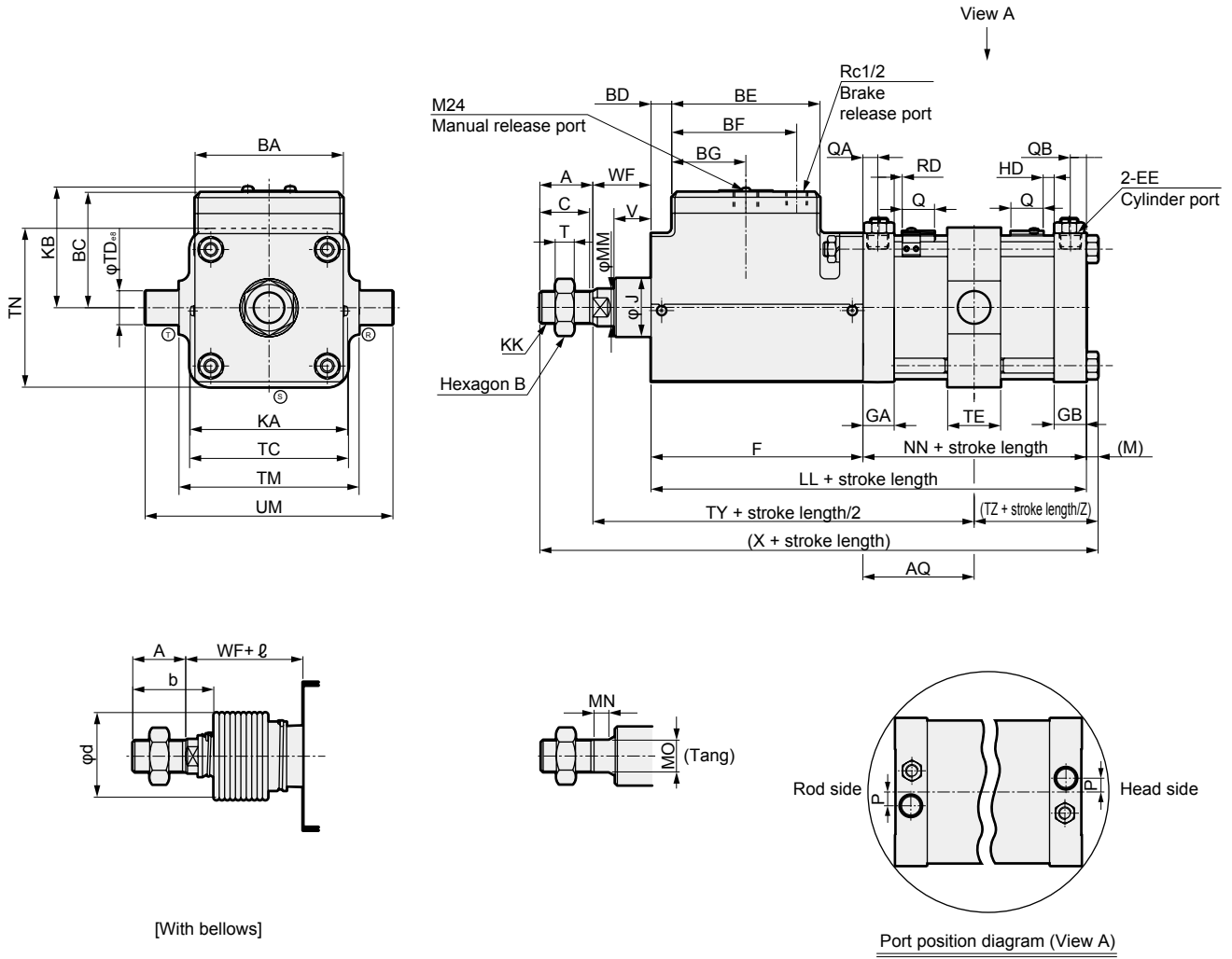
Code	Mounting dimensions																		
Bore size (mm)	MN	MO	NN	P	QA	QB	T	V	WF	CA	CD	CE	CF	CH	CI	CJ	CV	CW	
φ125	14	30	91	13	14	15	18	35	55	409	25	25	20	63	35	484	64	32	
φ140	14	30	102	15	16	17	18	35	57	450	28	28	22	75	40	528	72	36	
φ160	16	36	105	15	16	17	21	48	71.5	496.5	32	32	24	75	40	584.5	80	40	
φ180	18	41	109	15	16	17	24	53	78.5	541.5	40	40	25	90	55	644.5	100	50	

Code	With bellows						With switch							
				T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8				
	b	d	φ	RD	HD	RD	HD	RD	HD	RD	HD			
φ125	74	75	(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0			
φ140	74	75	(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5			
φ160	81	80	(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5			
φ180	90	90	(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5			

Dimensions (φ125 to φ180)



● Intermediate trunnion (TC)



[With bellows]

Port position diagram (View A)

*1 : ®, ® and ① indicate the cushion needle position.

*2 : ℓ dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

Code	Intermediate trunnion (TC) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	11
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	11
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	13
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	15
Code	Mounting dimensions																		
Bore size (mm)	MM	MN	MO	NN	P	QA	QB	T	V	WF	X	AQ		TC	TN	TD	TE	TM	UM
φ125	35	14	30	91	13	14	15	18	35	55	407	45.5 + stroke length/2		150	150	32	50	170	234
φ140	35	14	30	102	15	16	17	18	35	57	436	51 + stroke length/2		154	170	36	55	190	262
φ160	40	16	36	105	15	16	17	21	48	71.5	490.5	52.5 + stroke length/2		190	190	40	60	212	292
φ180	45	18	41	109	15	16	17	24	53	78.5	529.5	54.5 + stroke length/2		210	210	45	65	236	326
Code	Mounting dimensions				With bellows				With switch										
Bore size (mm)	TY		TZ		b		d		ℓ		T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8		
	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD	HD			
φ125	300	57	74	75	(Stroke length/4.55) + 11		8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0					
φ140	323.5	62.5	74	75	(Stroke length/4.55) + 9		8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5					
φ160	368.5	66	81	80	(Stroke length/5.15) + 9		10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5					
φ180	396.5	70	90	90	(Stroke length/5.15) + 9		13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5					

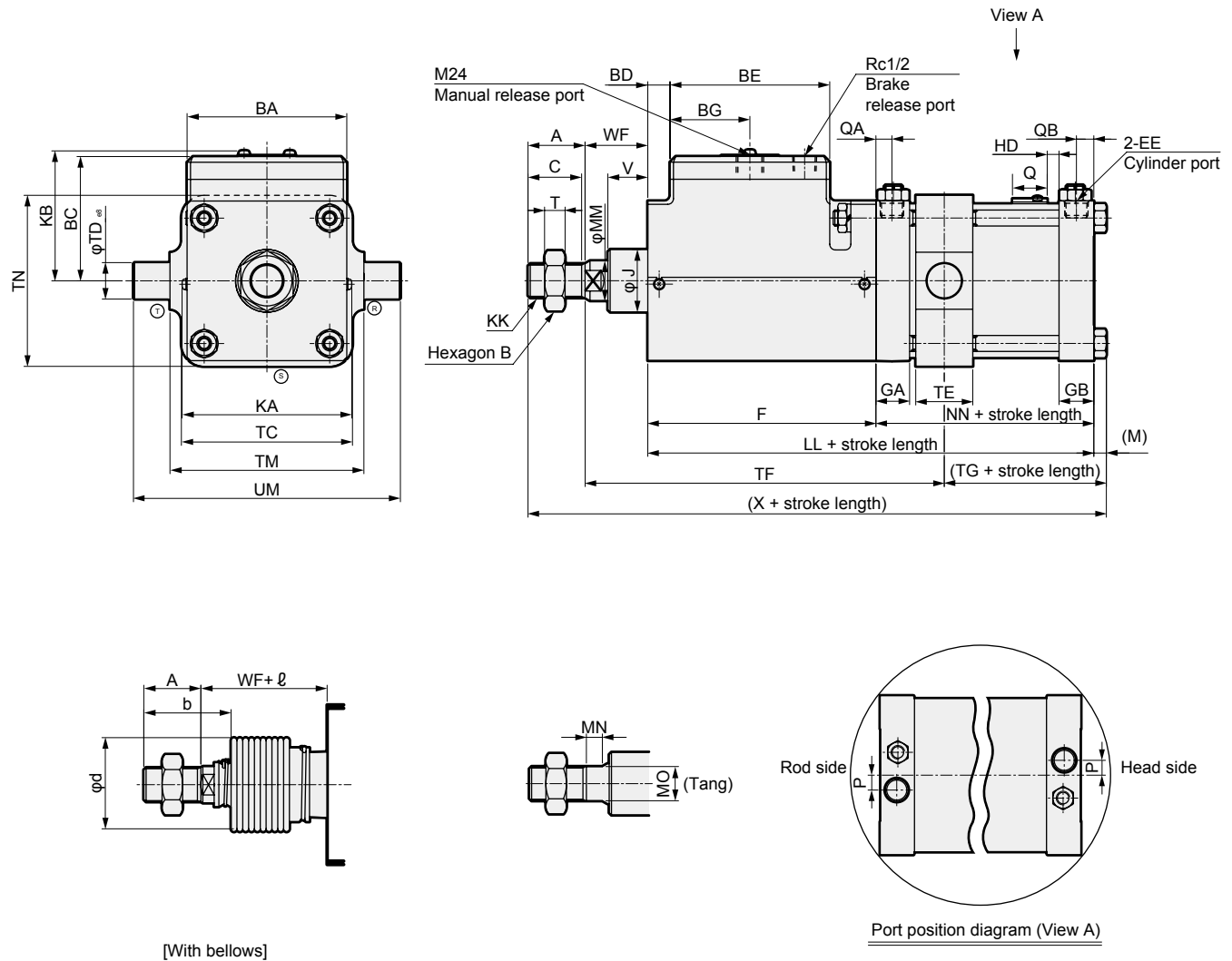
- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC4-N Series

Dimensions (φ125 to φ180)



● Rod side trunnion (TA)



[With bellows]

Port position diagram (View A)

*1 : Ⓟ, Ⓢ and Ⓣ indicate the cushion needle position.

*2 : \varnothing dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

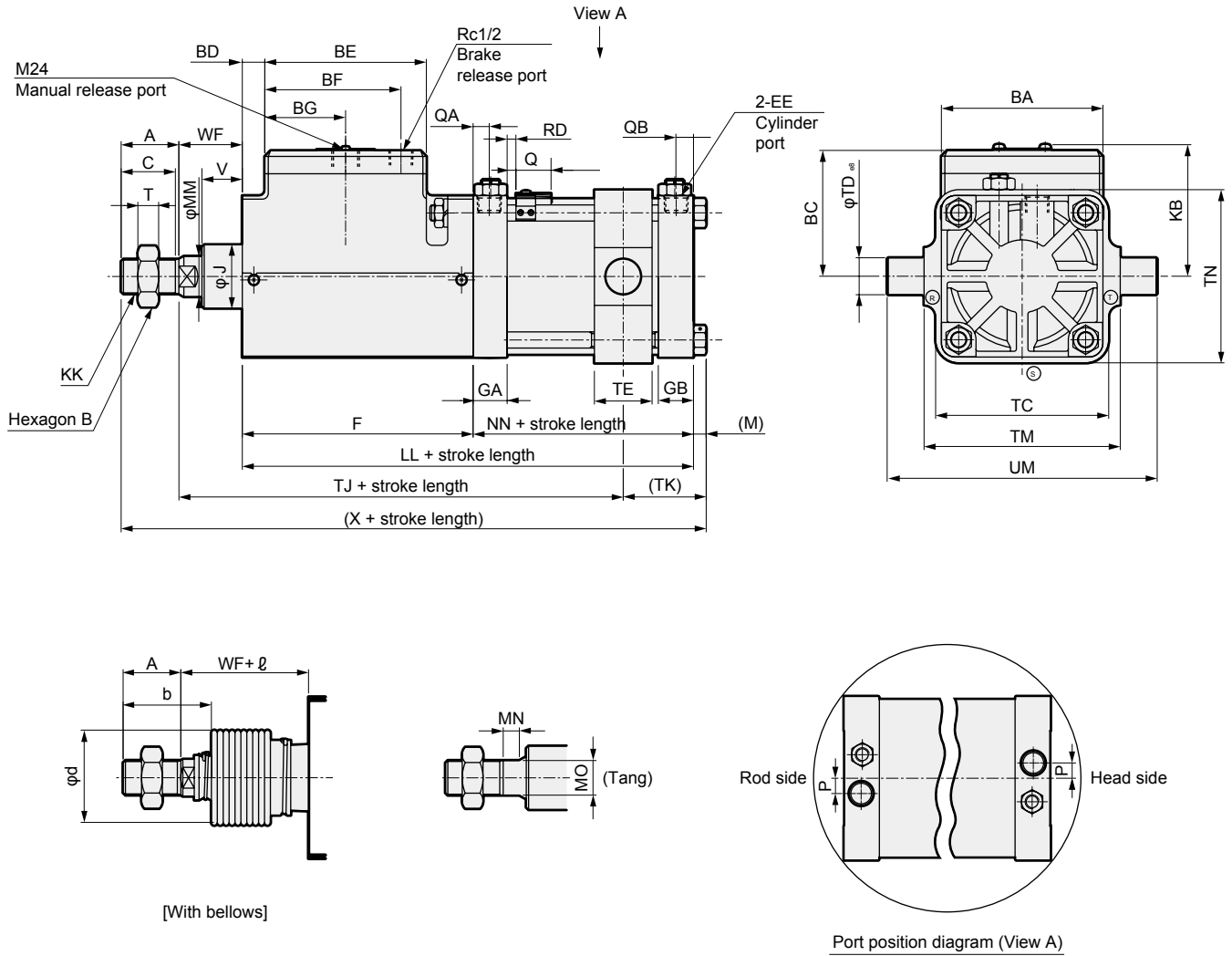
HD: Head side max. sensitivity position

Code		Rod side trunnion (TA) basic dimensions																		
Bore size (mm)		A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	M
φ125		50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	11
φ140		50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	11
φ160		56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	13
φ180		63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	15
Code		Mounting dimensions																		
Bore size (mm)		MM	MN	MO	NN	P	QA	QB	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	UM
φ125		35	14	30	91	13	14	15	18	35	55	407	150	32	50	315	42	170	150	234
φ140		35	14	30	102	15	16	17	18	35	57	436	154	36	55	339.5	46.5	190	170	262
φ160		40	16	36	105	15	16	17	21	48	71.5	490.5	190	40	60	385.5	49	212	190	292
φ180		45	18	41	109	15	16	17	24	53	78.5	529.5	210	45	65	414	52.5	236	210	326
Code		With bellows			With switch															
Bore size (mm)		b	d	ℓ	T0,T5,T2,T3		T2W,T3W		T2Y,T3Y,T2YD,T1,T2J		T8									
					RD	HD	RD	HD	RD	HD	RD	HD								
φ125		74	75	(Stroke length/4.55) + 11	8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0								
φ140		74	75	(Stroke length/4.55) + 9	8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5								
φ160		81	80	(Stroke length/5.15) + 9	10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5								
φ180		90	90	(Stroke length/5.15) + 9	13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5								

Dimensions (φ125 to φ180)



● Head side trunnion (TB)



*1 : ®, ® and ⊕ indicate the cushion needle position.

*2 : ℓ dimensions below decimal point are rounded up.

*3 : For the dimensions of the accessories, refer to page 798.

RD: Rod side max. sensitivity position

HD: Head side max. sensitivity position

Code	Head side trunnion (TB) basic dimensions																		
Bore size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	EE	F	GA	GB	J	KA	KB	KK	LL	M
φ125	50	46	140	109	19.5	140	118	70	47	Rc1/2	200	29.5	30.5	55	150	115	M30×1.5	291	11
φ140	50	46	157	116.5	18.5	157	128.5	78.5	47	Rc3/4	216	33.5	34.5	55	167	122.5	M30×1.5	318	11
φ160	56	55	177	128	23	177	146.5	88.5	53	Rc3/4	245	33.5	34.5	62.5	190	134	M36×1.5	350	13
φ180	63	60	200	146	14	200	170	100	60	Rc3/4	264	33.5	34.5	68.5	213	152	M40×1.5	373	15
Code	Mounting dimensions																		
Bore size (mm)	MM	MN	MO	NN	P	QA	QB	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	UM
φ125	35	14	30	91	13	14	15	18	35	55	407	150	32	50	285	72	170	150	234
φ140	35	14	30	102	15	16	17	18	35	57	436	154	36	55	307.5	78.5	190	170	262
φ160	40	16	36	105	15	16	17	21	48	71.5	490.5	190	40	60	351.5	83	212	190	292
φ180	45	18	41	109	15	16	17	24	53	78.5	529.5	210	45	65	379	87.5	236	210	326
Code	With bellows				With switch														
Bore size (mm)	b		d		ℓ		T0, T5, T2, T3		T2W, T3W		T2Y, T3Y, T2YD, T1, T2J		T8						
	b	d	ℓ		RD	HD	RD	HD	RD	HD	RD	HD	RD	HD					
φ125	74	75	(Stroke length/4.55) + 11		8.5	4.0	10.5	5.5	7.5	2.5	2.5	0.0							
φ140	74	75	(Stroke length/4.55) + 9		8.5	7.0	10.5	8.5	7.5	5.5	2.5	0.5							
φ160	81	80	(Stroke length/5.15) + 9		10.5	8.0	12.5	10.0	9.5	7.0	4.5	1.5							
φ180	90	90	(Stroke length/5.15) + 9		13.0	9.5	14.5	11.5	11.5	8.5	6.5	3.5							

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC4-N Series

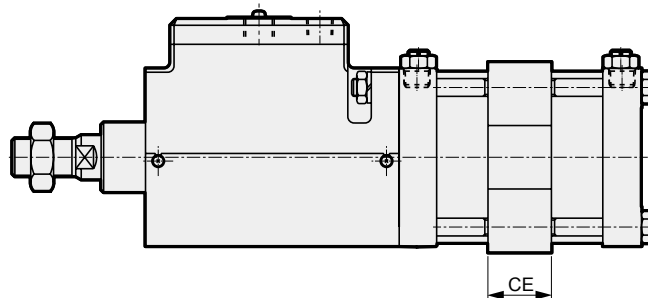
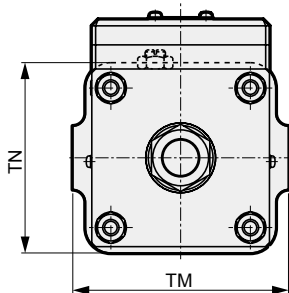
● About the non-sag block (φ125, φ140)

A non-sag block will be added to the middle part of the cylinder if the stroke length is in the range given in the table below.

Additional stroke length to the non-sag block

Bore size (mm)	Stroke length (mm)
φ125	1801 to 2000
φ140	

Code	TM	TN	CE
Bore size (mm)			
φ125	150	150	50
φ140	190	170	55



- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

MEMO

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

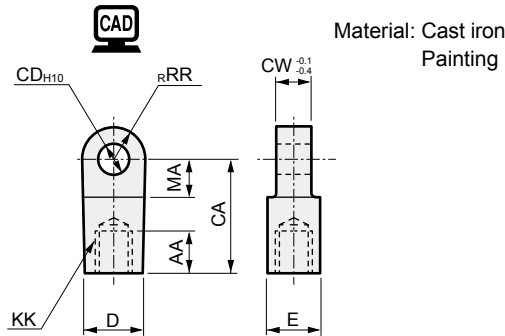
JSC3 common Series

JSC3 Series common accessory dimensions (rod eye/No. 2 bracket) $\phi 40$ to $\phi 100$

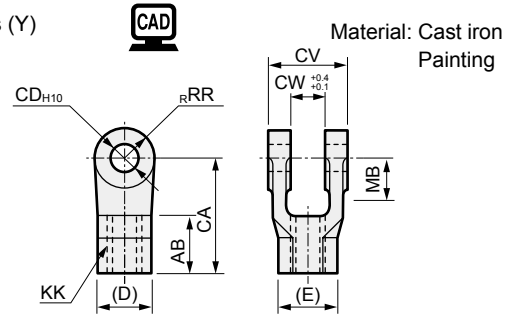
The installation dimensions for the clevis, rod eye, and No. 2 bracket (ϕCD , CW , CQ) are all the same, and any combination is possible.
Specify the model No. when placing an order.

● Rod eye/clevis dimensions

Rod eye (I)



Rod clevis (Y)



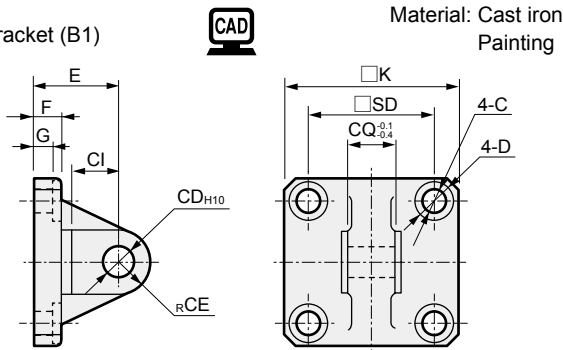
Model No.	Bore size (mm)	AA	CA	CD	CW	D	E	KK	MA	RR	Weight (kg)
S1-I-40	40	20	50	12	18	27	27	M14×1.5	21	16	0.26
S1-I-50	50	21	50	12	18	27	27	M18×1.5	21	16	0.24
S1-I-63	63	21	50	14	20	27	27	M18×1.5	21	16	0.25
S1-I-80	80	30	70	20	28	46	41	M22×1.5	30	25	0.80
S1-I-100	100	30	70	20	28	46	41	M26×1.5	30	25	0.84

Model No.	Bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	MB	RR	Weight (kg)
S1-Y-40	40	24	50	12	36	18	27	31.2	M14×1.5	19	16	0.25
S1-Y-50	50	24	50	12	36	18	27	31.2	M18×1.5	19	16	0.24
S1-Y-63	63	24	50	14	40	20	27	31.2	M18×1.5	19	16	0.26
S1-Y-80	80	35	70	20	56	28	41	47.3	M22×1.5	30	25	0.90
S1-Y-100	100	35	70	20	56	28	41	47.3	M26×1.5	30	25	0.85

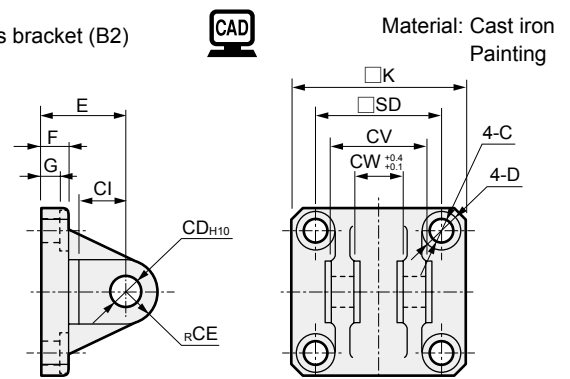
*1: The MB dimension is the effective length of the CW dimension.
*2: A pin and a snap ring are attached.

● No. 2 bracket dimensions

Eye bracket (B1)



Clevis bracket (B2)

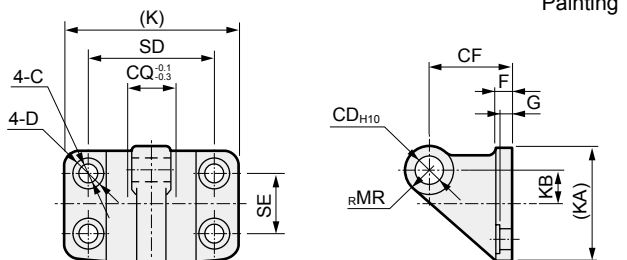


Model No.	Bore size (mm)	C	CD	CE	CI	CQ	D	E	F	G	K	SD	Weight (kg)
S1-B1-40	40	9	12	12	18	18	14	32	10	6.5	57	40.5	0.32
S1-B1-50	50	9	12	12	18	18	14	32	10	6.5	66	48	0.38
S1-B1-63	63	9	14	16	24	20	14	37	10	6.5	80	59	0.57
S1-B1-80	80	14	20	20	30	28	20	52	14	10.5	98	74	1.27
S1-B1-100	100	14	20	20	30	28	20	52	16	10.5	118	90	1.64

Model No.	Bore size (mm)	C	CD	CE	CI	CV	CW	D	E	F	G	K	SD	Wt (kg)
S1-B2-40	40	9	12	12	18	36	18	14	32	10	6.5	57	40.5	0.36
S1-B2-50	50	9	12	12	18	36	18	14	32	10	6.5	66	48	0.41
S1-B2-63	63	9	14	16	24	40	20	14	37	10	6.5	80	59	0.62
S1-B2-80	80	14	20	20	30	56	28	20	52	14	10.5	98	74	1.48
S1-B2-100	100	14	20	20	30	56	28	20	52	16	10.5	118	90	1.82

Note: A pin and a snap ring are attached.

Eye bracket (B3)

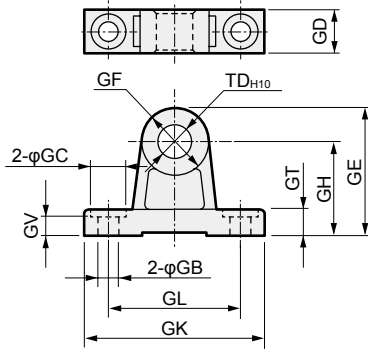


Model No.	Applicable bore size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Weight (kg)
S1-B3-40	$\phi 40/\phi 50$	9	12	40	18	14	8	6.5	85	57	17.5	12	65	35	0.44
S1-B3-63	$\phi 63$	11	14	50	20	17	10	8	105	67	20	16	80	40	0.77
S1-B3-80	$\phi 80/\phi 100$	14	20	65	28	20	12	10	130	93	30	20	100	60	1.64

JSC3 Series common accessory dimensions (No. 2 bracket/pin/bellows/indicator) $\phi 40$ to $\phi 100$

● Trunnion No. 2 bracket dimensions

Material: Cast iron
Painting



Code Model No.	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	0.25
S1-B4-50	9	17	19	63	36	45	85	65	12	11	18	0.28
S1-B4-63	11	22	24	80	40	60	100	75	14	13	20	0.52
S1-B4-80	14	24	26	85	50	60	115	85	14	13	25	0.70
S1-B4-100	14	24	35	107	64	75	130	100	17	16	35	1.48

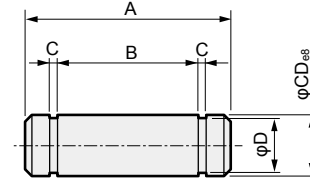
Note: The bracket is provided as 2 pcs./set.

● Pin dimensions

Pin (P)

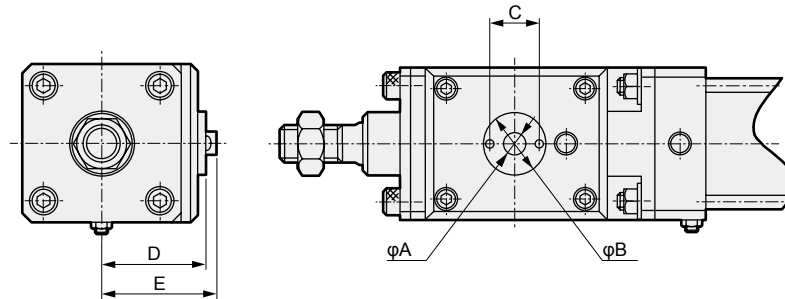


Material: Carbon steel
Zinc chromate treatment



Model No.	Applicable bore size (mm)	A	B	C	D	CD	Applicable snap ring	Weight (kg)
S1-P-40	40, 50	43.5	36.2	1.15	11.5	12	C type for shaft 12	0.04
S1-P-63	63	47.5	40.2	1.15	13.4	14	C type for shaft 14	0.06
S1-P-80	80, 100	64	56.2	1.35	19	20	C type for shaft 20	0.16

● Indicator



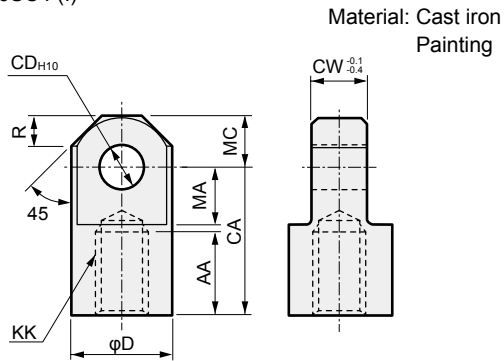
Code Bore size (mm)	A	B	C	D	E
$\phi 40$	8	25	18	51	51 to 59
$\phi 50$	8	25	18	55.5	55.5 to 63.5
$\phi 63$	10	32	24	59	59 to 68
$\phi 80$	12	32	24	69	69 to 80
$\phi 100$	14	32	24	78	78 to 90

● The operational status of the brake is easily detectable from outside.

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

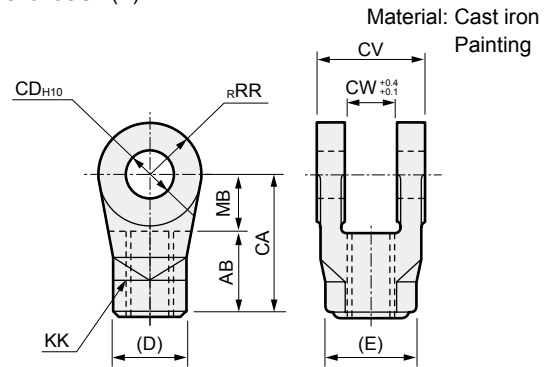
JSC4 Series common accessory dimensions (rod eye, bracket, pin) φ125 to φ180

● Rod eye for JSC4 (I)



Code	AA	CA	CD	CW	D	KK	MA	MC	R	Weight (kg)
SCS2-125-I	50	85	25	32	55	M30×1.5	32	27.5	15.5	1.25
SCS2-140-I	50	90	28	36	60	M30×1.5	35	30	18	1.65
SCS2-160-I	60	105	32	40	70	M36×1.5	40	35	21	2.55
SCS2-180-I	65	115	40	50	85	M40×1.5	47.5	42.5	29	4.20

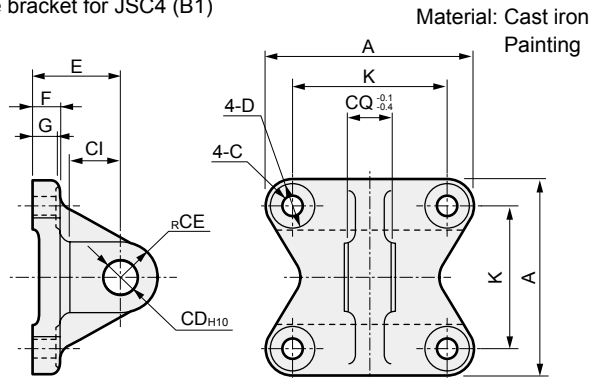
● Rod clevis for JSC4 (Y)



Code	AB	CA	CD	CV	CW	D	E	KK	MB	RR	Weight (kg)
SCS2-125-Y	50	85	25	64	32	46	53.1	M30×1.5	35	27.5	1.30
SCS2-140-Y	50	90	28	72	36	46	53.1	M30×1.5	40	30	1.65
SCS2-160-Y	60	105	32	80	40	55	63.5	M36×1.5	45	35	2.55
SCS2-180-Y	65	115	40	100	50	60	69.3	M40×1.5	50	42.5	4.40

Note: A pin and a snap ring are attached.

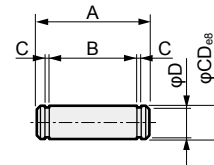
● Eye bracket for JSC4 (B1)



Code	A	C	CD	CE	CI	CQ	D	E	F	G	K	Weight (kg)
SCS2-125-B1	140	16	25	25	35	32	23	63	20	18	110	2.35
SCS2-140-B1	154	16	28	28	40	36	23	75	22	20	124	3.30
SCS2-160-B1	174	18	32	32	40	40	26	75	24	22	142	4.65
SCS2-180-B1	196	20	40	40	55	50	29	90	25	23	160	6.75

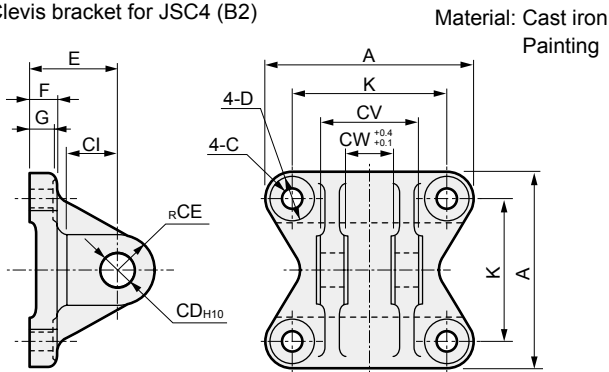
● Pin (P)

Material: Carbon steel
Zinc chromate treatment



Code	A	B	C	CD	D	Applicable snap ring	Weight (kg)	Compatibility
SCS2-125-P	75	66.3	1.35	25	23.9	C for shaft 25	0.25	JSC3-125
SCS2-140-P	84	74.7	1.65	28	26.6	C for shaft 28	0.40	JSC3-140
SCS2-160-P	92	82.7	1.65	32	30.3	C for shaft 32	0.50	JSC3-160
SCS2-180-P	115	103.2	1.9	40	38	C for shaft 40	1.15	JSC3-180

● Clevis bracket for JSC4 (B2)



Code	A	C	CD	CE	CI	CV	CW	D	E	F	G	K	Weight (kg)
SCS2-125-B2	140	16	25	25	35	64	32	23	63	20	18	110	2.65
SCS2-140-B2	154	16	28	28	40	72	36	23	75	22	20	124	3.85
SCS2-160-B2	174	18	32	32	40	80	40	26	75	24	22	142	5.45
SCS2-180-B2	196	20	40	40	55	100	50	29	90	25	23	160	8.70

Note: A pin and a snap ring are attached.

MEMO

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

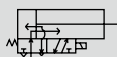


Brake cylinder Double acting/with valve for brake

JSC3-V Series

● Bore size: $\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$

JIS symbol



Specifications

Descriptions		JSC3-V (with switch)					JSC3-SV (with switch)				
Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting/with valve for brake					Double acting/low pressure release/with valve for brake				
Working fluid		Compressed air									
Max. working pressure		0.7 (≈ 100 psi, 7 bar)									
Min. working pressure	Brake section	0.3 (≈ 44 psi, 3 bar)					0.25 (≈ 36 psi, 2.5 bar)				
	Cylinder	0.1 (≈ 15 psi, 1 bar)									
Proof pressure		1.6 (≈ 230 psi, 16 bar)									
Ambient temperature		-5 (23°F) to 50 (122°F) (no freezing)									
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/8		Rc1/4	Rc3/8	
	Cylinder	Rc1/4	Rc3/8		Rc1/2		Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance		$+0.9$ (to 360), $+1.4$ (to 1000) 0 0									
Working piston speed		50 to 1000 (Operate within the allowable absorbed energy.)									
Cushion		Air cushion									
Effective air cushion length		14.6	16.6	16.6	20.6	23.6	14.6	16.6	16.6	20.6	23.6
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)									
Holding force		980	1569	2451	3922	6178	784	1255	1961	3138	4941
Allowable absorbed energy	Cushioned	4.29	8.37	15.8	27.9	49.8	4.29	8.37	15.8	27.9	49.8
	Without cushion	0.067	0.079	0.079	0.201	0.301	0.067	0.079	0.079	0.201	0.301
		Note: Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.									

Note: The valve specifications are the same as those of the standard model "4KB2". For details, refer to "Pneumatic Valves (CB-23SA)".

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 40$	50, 75, 100, 150, 200, 250 300, 350, 400, 450, 500	600	1000	1
$\phi 50$			2000	
$\phi 63$		700	2500	
$\phi 80$				
$\phi 100$				

*1 : The min. stroke length varies depending on switch mounting method. Refer to the following table.

The custom stroke length is available in 1 mm increments.

*2 : The max. stroke length available for $\phi 63$ to $\phi 100$ bore size models with bellows is 2000 mm.

Min. stroke length with switch (T switch)

● Min. stroke length with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 40$	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)
$\phi 50$	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)
$\phi 63$	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)
$\phi 80$	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)
$\phi 100$	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)

*1 : The values in () are of T*V (radial lead wire).

*2 : When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke length with switch (T switch)

● Min. stroke length with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T1/T2Y/T3Y/T2YD switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	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)

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

● Min. stroke length with T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
φ40	20(5)	20(10)	20(15)	25(25)	20(5)	65(50)	110(80)	155(110)	110(80)	110(80)	170(140)	170(140)	50(35)	50(35)
φ50	20(5)	20(10)	20(15)	20(20)	20(5)	20(10)	65(40)	65(40)	110(80)	110(80)	110(60)	110(60)	50(35)	50(35)
φ63	20(5)	20(10)	20(15)	25(25)	20(5)	20(10)	65(40)	65(40)	115(85)	115(85)	115(65)	115(65)	55(40)	55(40)
φ80	15(5)	15(10)	15(15)	25(25)	15(5)	15(10)	60(40)	60(40)	120(90)	120(90)	120(70)	120(70)	55(40)	55(40)
φ100	10(5)	10(10)	20(20)	25(25)	10(5)	10(10)	60(40)	60(40)	130(100)	130(100)	130(85)	130(85)	60(45)	60(45)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Switch specifications (T type switch)

● 1-color/2-color display/for AC magnetic field proof

Descriptions	Proximity 2-wire		Proximity 2-wire				Proximity 3-wire				Reed 2-wire (*4)				Proximity 2-wire		
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V		T2YD T2YDPT			
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller				For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		For programmable controller		
Output method	-				NPN output	PNP output	NPN output	NPN output	-								
Pwr. supp. V.	-				10 to 28 VDC				-								
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	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 100 mA	5 to 20 mA (*2)				100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	≤50 mA	≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)		
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less				10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272			

*1 : Refer to Ending Page 1 for other switch specifications.

*2 : The above max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*3 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.

*4 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Switch specifications (H type switch)

● Reed switch

Descriptions	Reed 2-wire		
	H0		H0Y (2-color display)
Applications	For relay, programmable controller		Dedicated for programmable controller
Load voltage/ current	12/24 VDC	110 VAC	24 VDC, 5 to 20 mA (*2)
Indicator lamp	Green LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	10 µA or less		
Weight g	1 m:76	3 m:181	5 m:289

*1 : Refer to Ending Page 1 for other switch specifications.

*2 : Max. load current is applied at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

Electrical specification for brake valve

Descriptions	4KB2		
Rated voltage (V)	100 AC(50/60 Hz)	200 AC(50/60 Hz)	24 DC
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
Thermal class	Class B (molded coil)		

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

*2 : The valve specifications are the same as those of the standard model 4KB2. For details, refer to "Pneumatic Valves (CB-23SA)".

Cylinder weight

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm						Switch weight	Mounting bracket weight		Additional weight per S = 100 mm	Valve weight
	Bore size (mm)	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)		Trunnion (TC)	T type		
φ40	2.48	2.66	2.91	2.83	2.83	2.86	Refer to the weight in the switch specifications.	0.024	0.028	0.39	0.32
φ50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46	
φ63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50	0.35
φ80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90	
φ100	14.70	15.70	17.40	16.90	16.90	17.30		0.024	0.028	1.12	0.49

(Example) Product weight of JSC3-V-LB-50B-200-T0H-D	Product weight for stroke length 0 mm ...	3.67 kg
	Additional weight for stroke length 200 mm ...	$0.46 \times \frac{200}{100} = 0.92$ kg
	Weight of 2 TOH switches	$0.018 \times 2 = 0.036$ kg
	Weight of 2 mounting brackets	$0.022 \times 2 = 0.044$ kg
	Valve weight	0.32 kg
	Product weight	$3.67 + 0.92 + 0.036 + 0.044 + 0.32 = 4.990$ kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
φ50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
φ63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
φ80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
φ100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC3-V Series

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

With strong magnetic field proof (for H0, HOY switches) switch (built-in magnet for switch)

JSC3-VL2-LB-40-B-50-1-H0-R-S-I

A Brake release pressure
B Mounting *1
C Bore size
D Port thread
E Cushion
F Stroke length *2 *3 *4
G Valve voltage
H Switch model No. *5
I Switch quantity *6
J Option *7
K Accessory *8

⚠ Precautions for model selection

- *1 : Mounting bracket will be shipped assembled with the product.
(Head side special flange is attached separately)
- *2 : If the stroke exceeds the max. stroke length, refer to Ending Page 69.
- *3 : The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.
- *4 : Refer to pages 800 to 801 for the min. stroke length with switch.
- *5 : T2YD, T2YDT, H0, and HOY are strong magnetic field proof switches.
- *6 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.
- *7 : For S, T, and G position indications, check the respective dimensions.
- *8 : "I" and "Y" cannot be selected together.
- *9 : Refer to Ending Page 85 for custom specifications of rod end form.

[Example of model No.]

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

Model: Brake cylinder Double acting/with valve for brake

- A** Brake release pressure: Standard 0.3 MPa
- B** Mounting : Axial foot
- C** Bore size : φ40 mm
- D** Port thread : Rc thread
- E** Cushion : Both sides cushioned
- F** Stroke length : 50 mm
- G** Valve voltage : 100 VAC
- H** Switch model No. : Proximity switch T0H, lead wire 1 m
- I** Switch quantity : 1 on rod side
- J** Option : Cushion needle position S
- K** Accessory : Rod eye

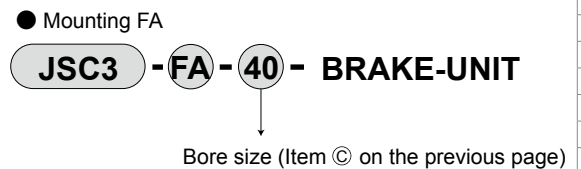
Code	Content		
A Brake release pressure			
Blank	Standard (0.3 MPa)		
S	Low pressure release (0.25 MPa)		
B Mounting			
00	Basic		
LB	Axial foot		
FA	Rod side flange		
FB	Head side flange		
FC	Head side special flange		
CA	Eye bracket		
CB	Clevis bracket (pin and snap ring attached)		
TC	Intermediate trunnion		
TA	Rod side trunnion		
TB	Head side trunnion		
C Bore size (mm)			
40	φ40		
50	φ50		
63	φ63		
80	φ80		
100	φ100		
D Port thread			
Blank	Rc thread		
N	NPT thread (custom order product)		
G	G thread (custom order product)		
E Cushion			
B	Both sides cushioned		
R	Rod side cushioned		
H	Head side cushioned		
N	Without cushion		
F Stroke length (mm)			
Bore size	Stroke length *4	Available stroke length	Custom stroke length
φ40	1 to 600	1000	In 1 mm increments
φ50	1 to 600	2000	
φ63	1 to 600	2500	
φ80	1 to 700	2500	
φ100	1 to 800	2500	
G Valve voltage			
1	100 VAC		
2	200 VAC		
3	24 VDC		
4	12 VDC		
H Switch model No.			
Refer to the switch model numbers on the following page.			
* Lead wire length			
Blank	1 m (standard)		
3	3 m (option)		
5	5 m (option)		
I Switch quantity			
R	1 on rod side		
H	1 on head side		
D	2		
T	3		
4	4 (when there are more than 4 switches, indicate switch quantity.)		
J Option			
		Max. ambient temperature	instantaneous max. temp
J	Bellows	100°C	200°C
L	Bellows	250°C	400°C
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		
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 No. 2 bracket (2 pcs./set)		

[H] Switch model No.

T type switch						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
TOH*	TOV*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●		3-wire
T2WH*	T2WV*			●	2-color display	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		3-wire
T3YH*	T3YV*		●	1-color display (custom order)	3-wire	
T3PH*	T3PV*		●			
T2YD*	-		●			2-color display
T2YDT*	-		●	AC magnetic field	2-wire	
T2JH*	T2JV*		●	1-color display off-delay	2-wire	

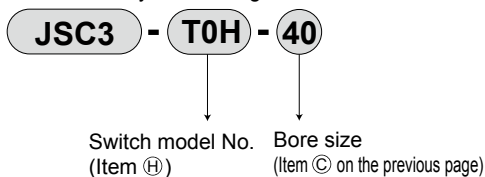
H type switch						
HO*	-	Reed	●	●	Strong magnetic field proof	2-wire
HOY*	-		●	●	Strong magnetic field 2-color display	

How to order brake unit

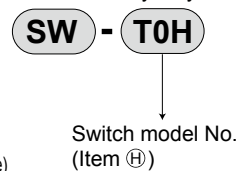


How to order T type switch

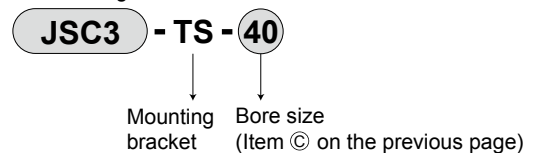
- Switch body + mounting bracket set



- Switch body only

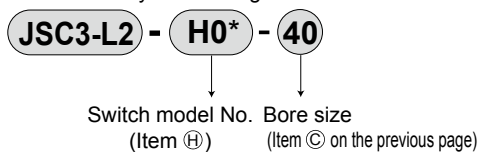


- Mounting bracket set

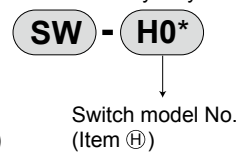


How to order H type switch

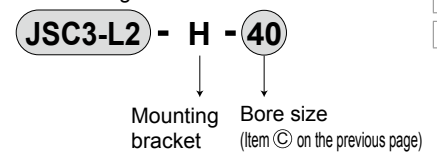
- Switch body + mounting bracket set



- Switch body only

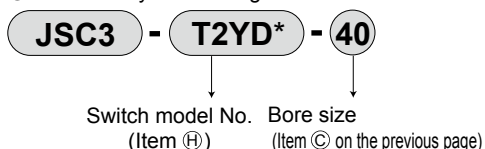


- Mounting bracket set

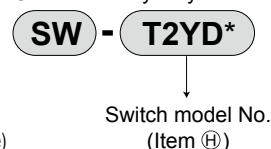


How to order T2YD type switch

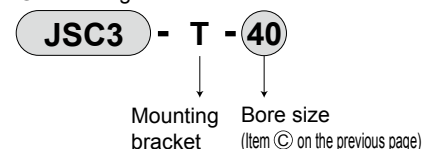
- Switch body + mounting bracket set



- Switch body only



- Mounting bracket set



How to order mounting bracket

Bore size (mm)	φ40	φ50	φ63	φ80	φ100
Mounting bracket					
Foot (LB) *1	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 bracket (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis bracket (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

*2: A pin and a snap ring are attached.

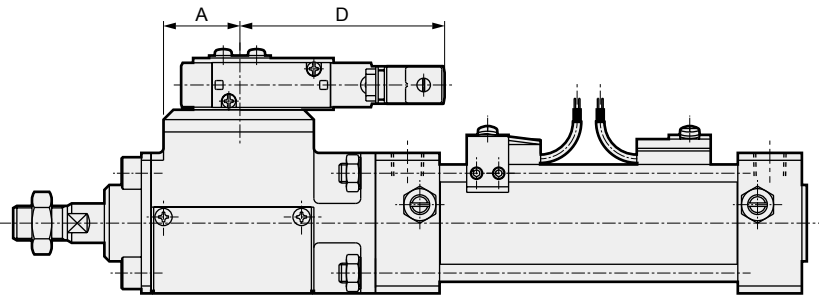
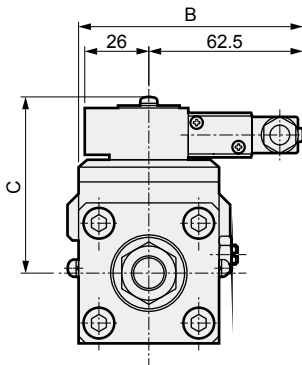
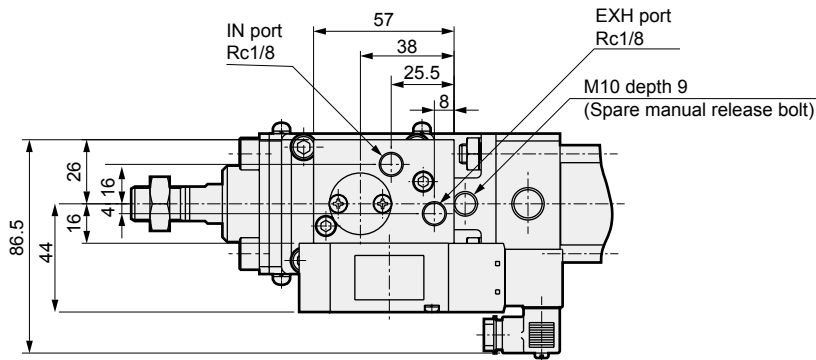
*3: All mounting brackets have mounting bolts attached.

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC3-V Series

Dimensions (φ40 to φ63)

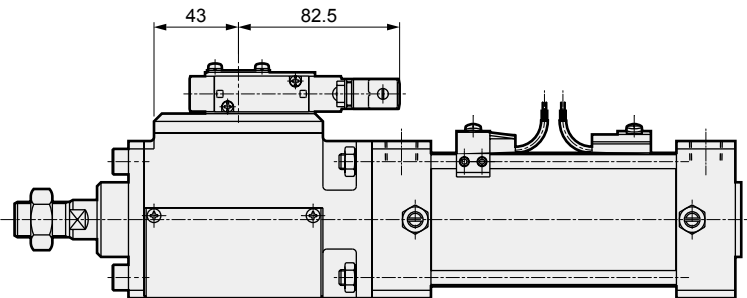
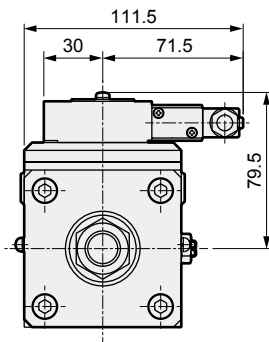
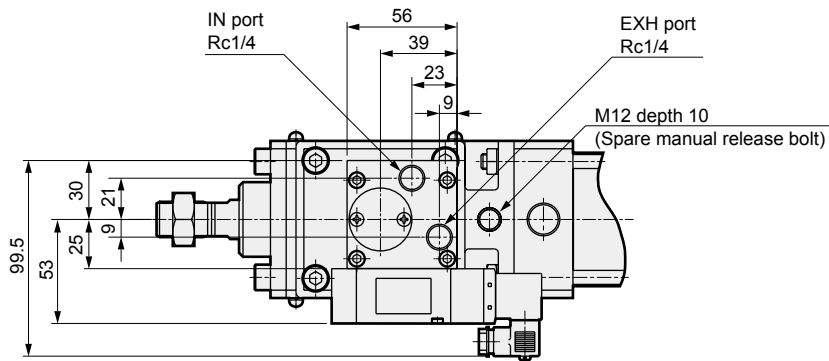
With valve for brake
 ● JSC3-V-40
 -50



Code	A	B	C	D
Bores size (mm)				
φ40	31	91	71.5	83.5
φ50	36	96.5	76	86.5

● Note: This model is the same as the standard, except for the dimensions above. Refer to page 774.

With valve for brake
 ● JSC3-V-63



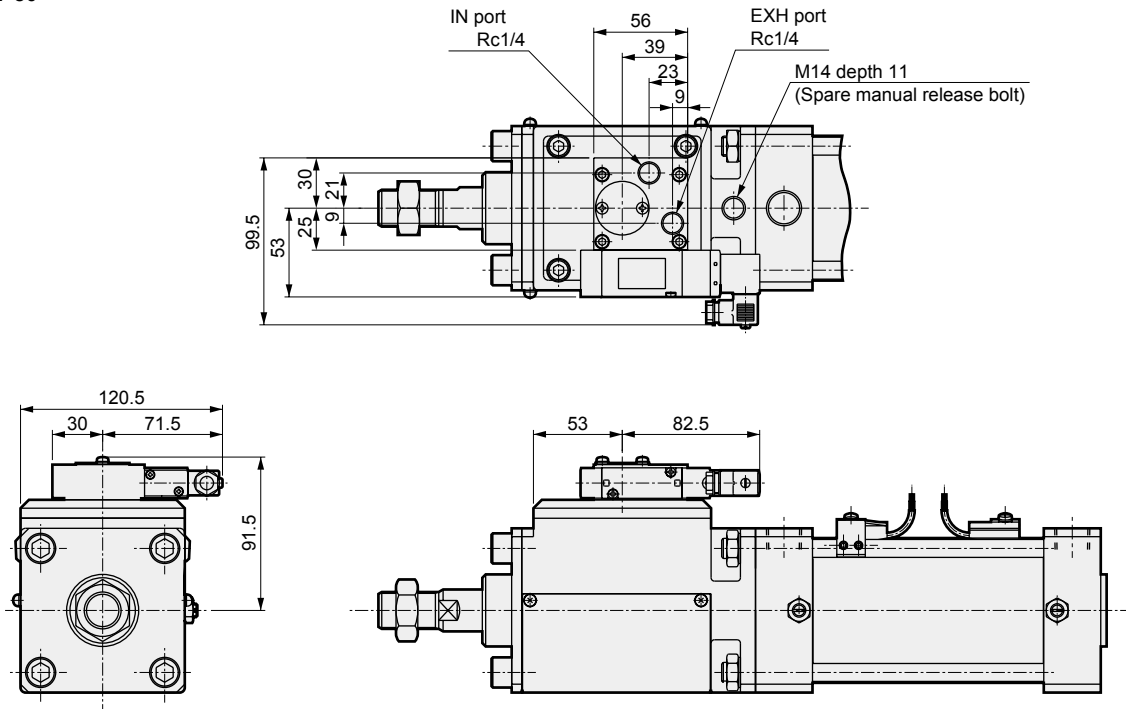
● Note: This model is the same as the standard, except for the dimensions above. Refer to page 774.

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

Dimensions (φ80, φ100)

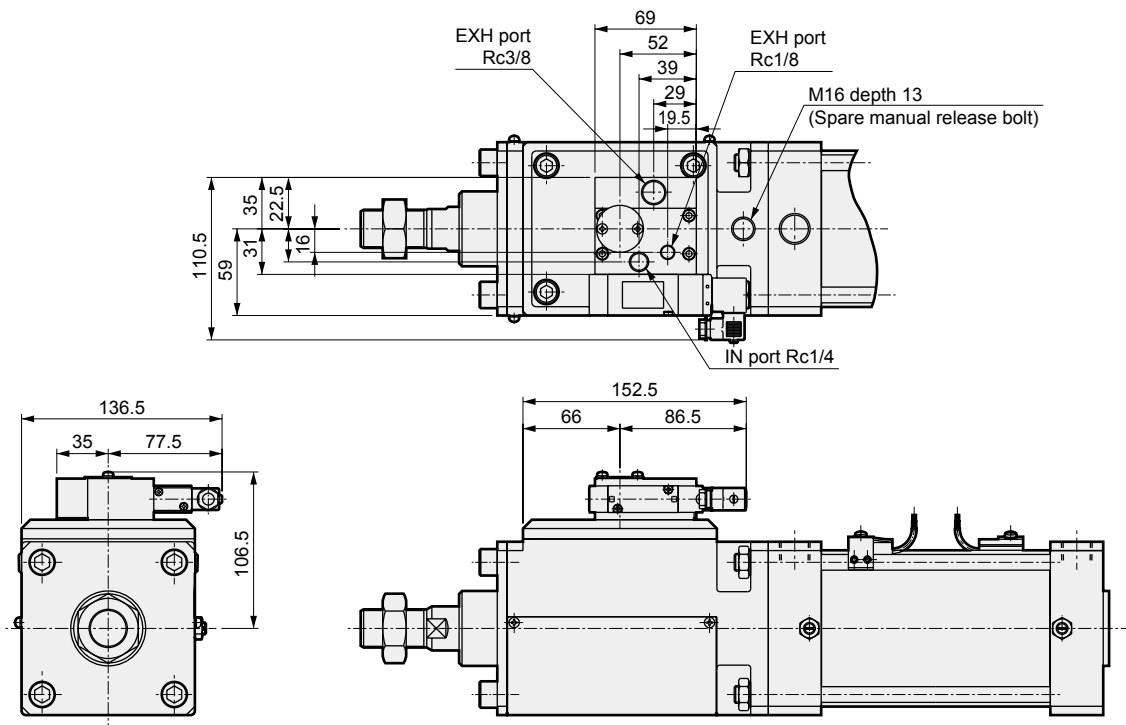
With valve for brake

● JSC3-V-80



● Note: This model is the same as the standard, except for the dimensions above. Refer to page 774.

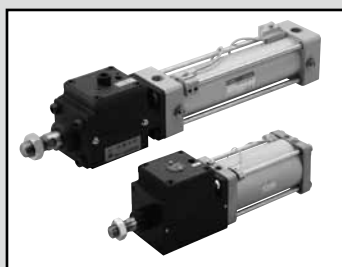
● JSC3-V-100



● Note: This model is the same as the standard, except for the dimensions above. Refer to page 774.

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

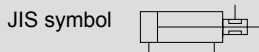
LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Brake cylinder Double acting/low hydraulic

JSC3-H/JSC4-H Series

- Bore size:
JSC3: $\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$
JSC4: $\phi 125/\phi 140/\phi 160/\phi 180$



Specifications

Descriptions		JSC3-H (with switch)					JSC3-SH (with switch)					JSC4-H			
Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$	$\phi 140$	$\phi 160$	$\phi 180$
Actuation		Double acting/low hydraulic					Double acting/low pressure release/low hydraulic					Double acting/low hydraulic			
Working fluid		Hydraulic fluid (compressed air for brake section)													
Max. working pressure	MPa	1.0 (≈ 150 psi, 10 bar)													
Min. working pressure	Brake section	0.3 (≈ 44 psi, 3 bar)					0.25 (≈ 36 psi, 2.5 bar)					0.3 (≈ 44 psi, 3 bar)			
	Cylinder	0.2 (≈ 29 psi, 2 bar)					0.2 (≈ 29 psi, 2 bar)					0.1 (≈ 15 psi, 1 bar)			
Proof pressure	MPa	1.6 (≈ 230 psi, 16 bar)													
Ambient temperature	$^{\circ}\text{C}$	5 (41°F) to 50 (122°F)													
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8	Rc1/8		Rc1/4		Rc3/8	Rc1/2			
	Cylinder	Rc1/4	Rc3/8		Rc1/2		Rc1/4	Rc3/8		Rc1/2		Rc1/2	Rc3/4		
Stroke tolerance	mm	$+0.9_0$ (to 360), $+1.4_0$ (to 1000)					$+0.9_0$ (to 360), $+1.4_0$ (to 1000)					$+1.0_0$ (to 300), $+1.4_0$ (to 1000), $+1.8_0$ (to 2000)			
Cushion		Air cushion										Cushioned			
Effective air cushion length	mm	14.6	16.6		20.6	23.6	14.6	16.6		20.6	23.6	21.6			
Holding force	N	980	1569	2451	3922	6178	784	1255	1961	3138	4941	9600	12000	15800	20000
Allowable absorbed energy	Cushioned	Note: The cushioning of the low hydraulic cylinder cannot absorb large energy. We recommend using an external shock absorber.													
	Without cushion	Note: Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.													

Note: Brake section is air operated.

Stroke length

Bore size (mm)		Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
JSC3	$\phi 40$	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1600	1
	$\phi 50$			2000	
	$\phi 63$			2500	
	$\phi 80$				
	$\phi 100$				
JSC4	$\phi 125$	50, 75, 100, 150, 200, 250, 300	800	2000	1
	$\phi 140$				
	$\phi 160$				
	$\phi 180$				

*1 : If max. stroke length is exceeded, product specifications may not be met, depending on conditions. Refer to Ending Page 69.

*2 : The custom stroke length is available in 1 mm increments.

*3 : The max. stroke length available for $\phi 63$ to $\phi 100$ bore size models with bellows is 2000 mm.

Min. stroke length with JSC3 switch (T switch)

- Min. stroke length with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
Bore size														
$\phi 40$	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)
$\phi 50$	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)
$\phi 63$	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)
$\phi 80$	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)
$\phi 100$	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)

*1 : The values in () are of T*V (radial lead wire).

*2 : When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

JSC3-H/JSC4-H Series

Specifications

Min. stroke length with JSC3 switch (T switch)

- Min. stroke length with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting	Head side trunnion mounting
	No position detection at rod side stroke end.				No position detection at head 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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

- Min. stroke length with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting	Head side trunnion mounting
	No position detection at rod side stroke end.				No position detection at head 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)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

- Min. stroke length with T1/T2Y/T3Y/T2W/T3W/T2YD switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting	Head side trunnion mounting
	No position detection at rod side stroke end.				No position detection at head 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)	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)

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

- Min. stroke length with T2W/T3W switches

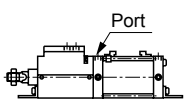
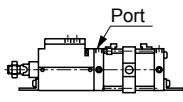
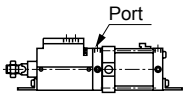
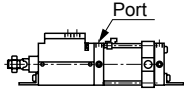
Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting	Head side trunnion mounting
	No position detection at rod side stroke end.				No position detection at head side stroke end.									
Bore size	1	2	3	4	1	2	3	4	1	2	3	4	1	1
φ40	20(5)	20(10)	20(15)	25(25)	20(5)	65(50)	110(80)	155(110)	110(80)	110(80)	170(140)	170(140)	50(35)	50(35)
φ50	20(5)	20(10)	20(15)	20(20)	20(5)	20(10)	65(40)	65(40)	110(80)	110(80)	110(60)	110(60)	50(35)	50(35)
φ63	20(5)	20(10)	20(15)	25(25)	20(5)	20(10)	65(40)	65(40)	115(85)	115(85)	115(65)	115(65)	55(40)	55(40)
φ80	15(5)	15(10)	15(15)	25(25)	15(5)	15(10)	60(40)	60(40)	120(90)	120(90)	120(70)	120(70)	55(40)	55(40)
φ100	10(5)	10(10)	20(20)	25(25)	10(5)	10(10)	60(40)	60(40)	130(100)	130(100)	130(85)	130(85)	60(45)	60(45)

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke length with JSC4 switch (T switch)

- φ125 to 180

Descriptions	Stroke length when mounted on the same surface	Center trunnion mounting stroke	Rod side trunnion mounting stroke	Head side trunnion mounting stroke
Bore size (mm)				
φ125 φ140 φ160 φ180	 20 or more	 120 or more	 70 or more	 75 or more
		125 or more	80 or more	80 or more
		130 or more	85 or more	85 or more
		135 or more		

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC3-H/JSC4-H Series

Switch specifications (T type switch)

● 1-color/2-color display/for AC magnetic field proof

Descriptions	Proximity 2-wire		Proximity 2-wire				Proximity 3-wire				Reed 2-wire (*4)						Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V		T2YD T2YDPT			
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller				For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		For programmable controller		
Output method	-				NPN output	PNP output	NPN output	NPN output	-								
Pwr. supp. V.	-				10 to 28 VDC				-								
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	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 100 mA	5 to 20 mA (*2)				100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	≤50 mA	≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green (Lit when ON)	Red/green (Lit when ON)	LED (Lit when ON)	Yellow (Lit when ON)	Red/green (Lit when ON)	Red/green (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)		
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less				10 μA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272				

*1 : Refer to Ending Page 1 for other switch specifications.

*2 : The above max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*3 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.

*4 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

*5 : Dimensions depend on switch model No. Refer to Ending Page 18.

Cylinder weight

● JSC3(φ40 to φ100)

[Unit: kg]

Item/ mounting	Product weight when stroke length (S) = 0 mm						Switch weight	Mounting bracket weight		Additional weight per S = 100 mm
	Bore size (mm)	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)		Trunnion (TC)	T type	
φ40	2.48	2.66	2.91	2.83	2.83	2.86	Refer to the weight in the switch specifications.	0.024	0.028	0.39
φ50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46
φ63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50
φ80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90
φ100	14.70	15.70	17.40	16.90	16.90	17.30		0.024	0.028	1.12

Product weight for stroke length 0 mm ... 3.67 kg
 Additional weight for stroke length 200mm ... $0.46 \times \frac{200}{100} = 0.92$ kg
 (Example) Product weight of JSC3-H-LB-50B-200-T0H-D Weight of 2 TOH switches $0.018 \times 2 = 0.036$ kg
 Weight of 2 mounting brackets $0.022 \times 2 = 0.044$ kg
 Product weight $3.67 + 0.92 + 0.036 + 0.044 = 4.670$ kg

● JSC4(φ125 to φ180)

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight		Additional weight per S = 100 mm
	Bore size (mm)	Axial foot (LB)	Flange (FA/FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA/TB/TC)	Switch	
φ125	25.72	27.52	27.22	27.32	27.62	Refer to the weight in the switch specifications.	0.028	1.54
φ140	32.95	36.35	34.75	34.95	34.15		0.030	1.78
φ160	42.85	46.65	44.75	45.05	46.15		0.034	2.22
φ180	61.55	69.05	64.45	64.95	65.15		0.038	2.96

Product weight when S = 0 mm 25.72 kg
 Additional weight when S = 300 mm $1.54 \times \frac{300}{100} = 4.62$ kg
 (Example) Product weight of JSC4-H-LB-125B-300-T0H-D Weight of 2 switches (T0H-D) $0.018 \times 2 = 0.036$ kg
 Weight of 2 switch brackets $0.028 \times 2 = 0.056$ kg
 Product weight $25.72 + 4.62 + 0.036 + 0.056 = 30.432$ kg

Theoretical thrust table

[Unit: N]

Bore size (mm)	Operating direction	Working pressure MPa												
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
JSC3	φ40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3	
		Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3	
	φ50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3	
		Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3	
	φ63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3	
		Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3	
	φ80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3	
		Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3	
	φ100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3	
		Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3	
	JSC4	φ125	Push	1.23×10^3	1.84×10^3	2.45×10^3	3.68×10^3	4.91×10^3	6.14×10^3	7.36×10^3	8.59×10^3	9.82×10^3	1.10×10^4	1.23×10^4
			Pull	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
φ140		Push	1.54×10^3	2.31×10^3	3.08×10^3	4.62×10^3	6.16×10^3	7.70×10^3	9.24×10^3	1.08×10^4	1.23×10^4	1.39×10^4	1.54×10^4	
		Pull	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4	
φ160		Push	2.01×10^3	3.02×10^3	4.02×10^3	6.03×10^3	8.04×10^3	1.01×10^4	1.21×10^4	1.41×10^4	1.61×10^4	1.81×10^4	2.01×10^4	
		Pull	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4	
φ180		Push	2.54×10^3	3.82×10^3	5.09×10^3	7.03×10^3	9.02×10^3	1.10×10^4	1.29×10^4	1.48×10^4	1.67×10^4	1.86×10^4	2.05×10^4	
		Pull	2.39×10^3	3.58×10^3	4.77×10^3	6.71×10^3	8.74×10^3	1.07×10^4	1.27×10^4	1.46×10^4	1.65×10^4	1.84×10^4	2.03×10^4	

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC3-H Series

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

How to order (φ40 to φ100)

Without switch (built-in magnet for switch)

JSC3 - **H** - **LB** - **40** - **B** - **50** - **S** - **I**

With switch (built-in magnet for switch)

JSC3 - **H** - **LB** - **40** - **B** - **50** - **TOH** - **R** - **S** - **I**

With strong magnetic field proof (for H0, HOY switches) switch (built-in magnet for switch)

JSC3 - **H** - **L2** - **LB** - **40** - **B** - **50** - **H0** - **R** - **S** - **I**

Model No.

A Brake release pressure

B Mounting *1

C Bore size

D Port thread

E Cushion

F Stroke length *2 *3

G Switch model No. *5
* indicates the lead wire length.

H Switch quantity *6

I Option *7

J Accessory *8

⚠ Precautions for model selection

- *1 : Mounting bracket will be shipped assembled with the product.
(Head side special flange is attached separately)
- *2 : If the stroke exceeds the max. stroke length, refer to Ending Page 69.
- *3 : The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.
- *4 : Refer to pages 808 to 809 for the min. stroke length with switch.
- *5 : T2YD, T2YDT, H0, and HOY are strong magnetic field proof switches.
- *6 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.
- *7 : For S, T, and G position indications, check the respective dimensions.
- *8 : "I" and "Y" cannot be selected together.
- *9 : Refer to Ending Page 85 for custom specifications of rod end form.

[Example of model No.]

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

Model: Brake cylinder Double acting/low hydraulic

- A** Brake release pressure: Standard 0.3 MPa
- B** Mounting : Axial foot
- C** Bore size : φ40 mm
- D** Port thread : Rc thread
- E** Cushion : Both sides cushioned
- F** Stroke length : 50 mm
- G** Switch model No. : Reed switch TOH, lead wire 1 m
- H** Switch quantity : 1 on rod side
- I** Option : Cushion needle position S
- J** Accessory : Rod eye

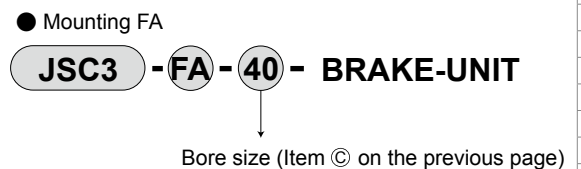
Code	Content		
A Brake release pressure			
Blank	Standard (0.3 MPa)		
S	Low pressure release (0.25 MPa)		
B Mounting			
00	Basic		
LB	Axial foot		
FA	Rod side flange		
FB	Head side flange		
FC	Head side special flange		
CA	Eye bracket		
CB	Clevis bracket (pin and snap ring attached)		
TC	Intermediate trunnion		
TA	Rod side trunnion		
TB	Head side trunnion		
C Bore size (mm)			
40	φ40		
50	φ50		
63	φ63		
80	φ80		
100	φ100		
D Port thread			
Blank	Rc thread		
N	NPT thread (custom order product)		
G	G thread (custom order product)		
E Cushion			
B	Both sides cushioned		
R	Rod side cushioned		
H	Head side cushioned		
N	Without cushion		
F Stroke length (mm)			
Bore size	Stroke length *4	Available stroke length	Custom stroke length
φ40	1 to 600	1600	In 1 mm increments
φ50	1 to 600	2000	
φ63	1 to 600	2500	
φ80	1 to 700	2500	
φ100	1 to 800	2500	
G Switch model No.			
Refer to the switch model numbers on the next page.			
* Lead wire length			
Blank	1 m (standard)		
3	3 m (option)		
5	5 m (option)		
H Switch quantity			
R	1 on rod side		
H	1 on head side		
D	2		
T	3		
4	4 (when there are more than 4 switches, indicate switch quantity.)		
I Option			
		Max. ambient temperature	instantaneous max. temp
J	Bellows	100°C	200°C
L	Bellows	250°C	400°C
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		
J 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 No. 2 bracket (2 pcs./set)		

[G] Switch model No.

T type switch						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
TOH*	TOV*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●	3-wire	
T2WH*	T2WV*			●		
T2YH*	T2YV*			●	2-color display	2-wire
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	3-wire	
T3PH*	T3PV*			●		1-color display (custom order)
T2YD*	-			●	2-color display	2-wire
T2YDT*	-			●	for AC magnetic field	
T2JH*	T2JV*		●	1-color display off-delay	2-wire	

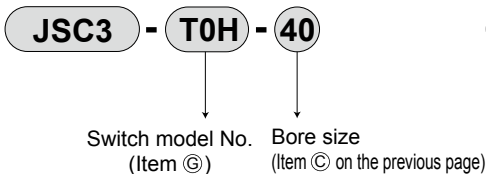
H type switch						
HO*	-	Reed	●	●	Strong magnetic field proof	2-wire
HOY*	-			●	Strong magnetic field 2-color display	

How to order brake unit

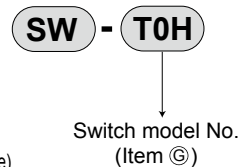


How to order T type switch

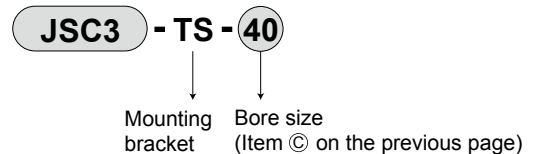
● Switch body + mounting bracket set



● Switch body only

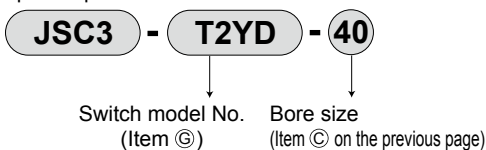


● Mounting bracket set

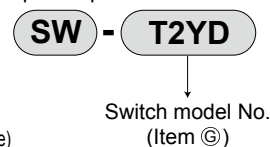


How to order T2YD type switch

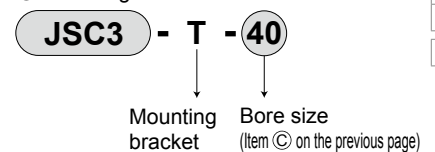
● Switch body + mounting bracket set
φ40 to φ100



● Switch body only
φ40 to φ100

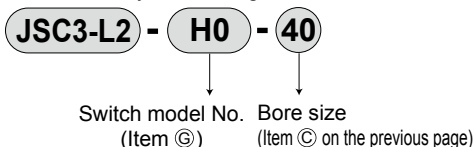


● Mounting bracket set

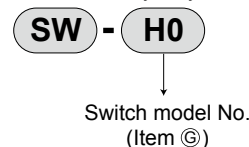


How to order H type switch

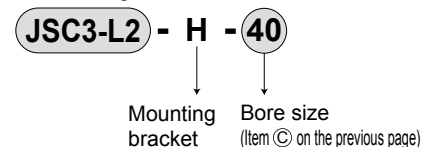
● Switch body + mounting bracket set



● Switch body only



● Mounting bracket set



How to order mounting bracket

● φ40 to φ100

Bore size (mm)	φ40	φ50	φ63	φ80	φ100
Mounting bracket					
Foot (LB) *1	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 bracket (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis bracket (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

*2: A pin and a snap ring are attached.

*3: All mounting brackets have mounting bolts attached.

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC4-H Series

How to order (φ125 to 180)

Without switch (without magnet for switch)

JSC4-H - **LB** - **125** - **B** - **50** - **S** **I**

With switch (built-in magnet for switch)

JSC4-LH - **LB** - **125** - **B** - **50** - **T0H** - **R** - **S** **I**

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length
*2

F Switch model No.
* indicates the lead wire length.

G Switch quantity
*3

H Option

I Accessory
*5

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped assembled with the product.
- *2 : Refer to page 809 for the min. stroke length with switch.
- *3 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and R (1 on rod side) for TB.
- *4 : Refer to page 815 for the cushion needle position indication.
- *5 : "I" and "Y" cannot be selected together.
- *6 : Refer to page 819 for details.

[Example of model No.]

JSC4-LH-LB-125B-50-T0H-R-SI

Model: Brake cylinder Double acting/low hydraulic

- A** Mounting : Axial foot
- B** Bore size : φ125 mm
- C** Port thread : Rc thread
- D** Cushion : Both sides cushioned
- E** Stroke length : 50mm
- F** Switch model No. : Reed switch T0H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Option : Cushion needle position S
- I** Accessory : Rod eye

Code	Content
A Mounting	
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and snap ring attached)
TC	Intermediate trunnion
TA	Rod side trunnion
TB	Head side trunnion

B Bore size (mm)	
125	φ125
140	φ140
160	φ160
180	φ180

C Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

D Cushion	
B	Both sides cushioned
R	Rod side cushioned
H	Head side cushioned
N	Without cushion

E Stroke length (mm)			
Bore size	Stroke length	Available stroke	Custom stroke length
φ125	1 to 800	2000	In 1 mm increments
φ140	1 to 800	2000	
φ160	1 to 800	2000	
φ180	1 to 900	2000	

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●	●	1-color display	2-wire
T2H*	T2V*		●	●		
T3H*	T3V*		●	●	1-color display (PNP output) (custom)	3-wire
T3PH*	T3PV*		●	●		
T2WH*	T2WV*		●	●	2-color display	2-wire
T2YH*	T2YV*		●	●		
T3WH*	T3WV*	●	●	display	3-wire	
T3YH*	T3YV*	●	●			
T2JH*	T2JV*	●	●	1-color display off-delay	2-wire	
T2YD*	-	●	●	2-color display	2-wire	
T2YDT*	-	●	●	for AC magnetic field		

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3
4	4

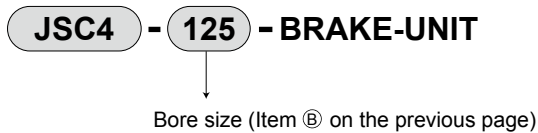
H Option			
		Max. ambient temp.	instantaneous max. temp.
J	Bellows	60°C	100°C
K	Bellows	100°C	200°C
L	Bellows	250°C	400°C
M	Piston rod material (stainless steel)		

*4	
Blank	Cushion needle position (standard)
R	Cushion needle position R
S	Cushion needle position S
T	Cushion needle position T
C2	With cushion section check valve

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

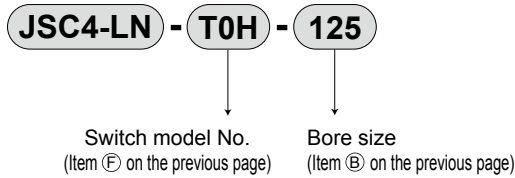
Custom order product code	
-S092	JSC3-LH Compatible mounting dimensions

How to order brake unit

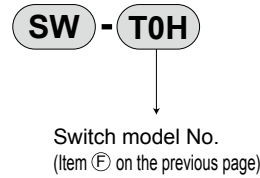


How to order T type switch

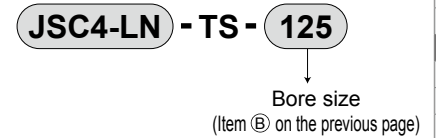
- Switch body + mounting bracket set



- Switch body only

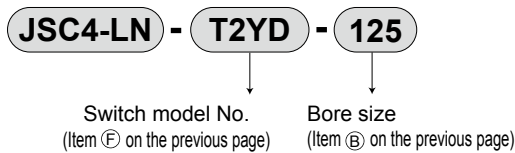


- Mounting bracket set

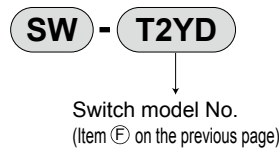


How to order T2YD type switch

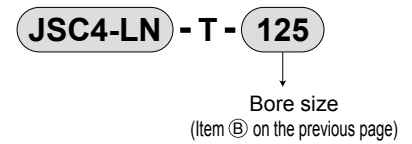
- Switch body + mounting bracket set



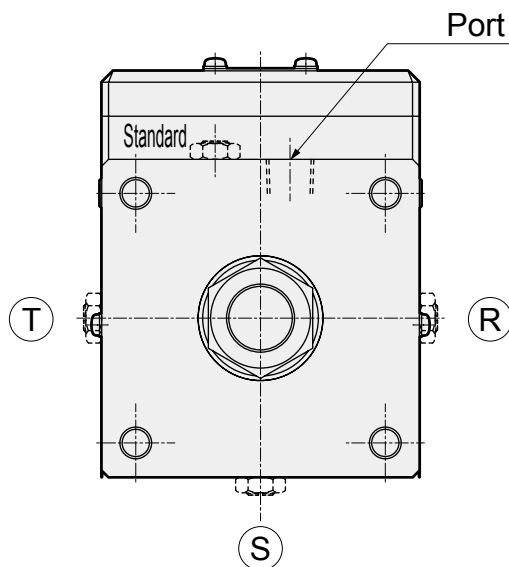
- Switch body only



- Mounting bracket set



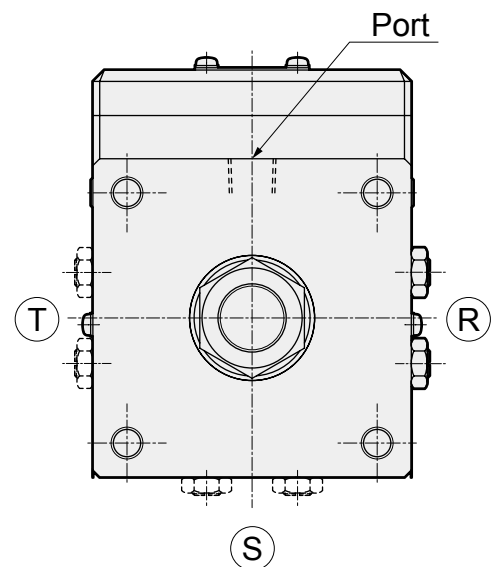
Cushion needle position (needle position from rod direction with the port on the top side)



When selecting option R, S, or T for a certified class 2 pressure vessel, the port position should be in the center as shown in the figure to the right, and the needle position should be in the offset position.

Certified class 2 pressure vessel stroke length

Bore size	Stroke length
φ160	1948 or more
φ180	1526 or more

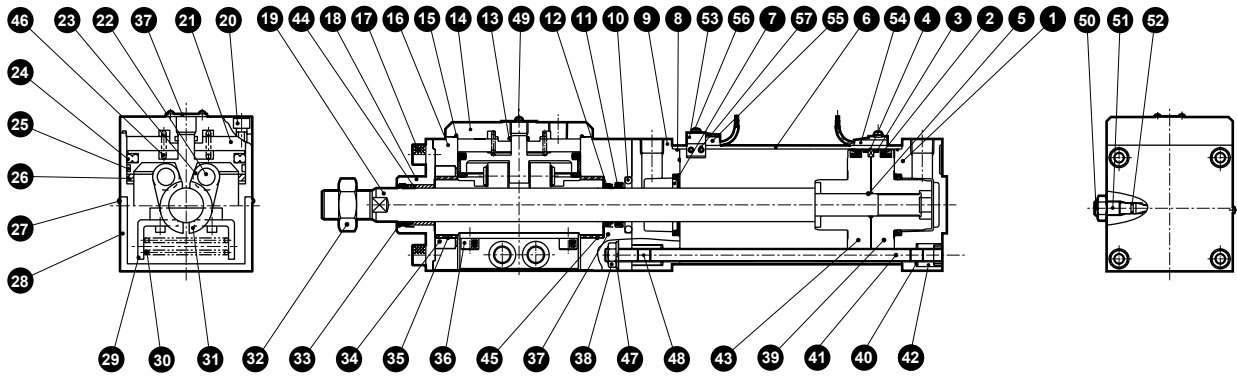


Class 2 pressure vessel certification
Option R, S, or T

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC3-H Series

Internal structure and parts list (φ40 to φ100)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint	28	Cover	Steel	Paint
2	Piston packing	Nitrile rubber		29	Spring holder	Steel	Zinc chromate
3	Wear ring	Polyacetal resin		30	Spring	Steel	
4	Magnet	Plastic		31	Brake shoe metal	Cast iron	Nickeling
5	Piston gasket	Nitrile rubber		32	Rod nut	Steel	Zinc chromate
6	Cylinder tube	Aluminum alloy	Hard alumite	33	Dust wiper	Nitrile rubber	
7	Cushion packing	Nitrile rubber, steel		34	DU ring	Steel	Black finish
8	Cylinder gasket	Nitrile rubber		35	Bush	Oil impregnated bearing alloy	
9	Rod cover	Aluminum alloy die-casting	Paint	36	Hexagon socket head cap screw	Alloy steel	Black finish
10	Metal seal	Nitrile rubber		37	Dust cover	Aluminum alloy	Paint
11	Rod packing	Nitrile rubber		38	Hexagon nut	Steel	Black finish
12	Dust wiper	Nitrile rubber		39	Piston H	Aluminum alloy die-casting	
13	Cap gasket A	Nitrile rubber		40	Tie rod	Steel	Zinc chromate
14	Body cap	Cast iron	Nitriding	41	Conical spring washer	Steel	Black finish
15	Cap gasket B	Nitrile rubber		42	Round nut	Steel	Zinc chromate
16	Brake body	Aluminum alloy casting	Alumite	43	Piston R	Aluminum alloy die-casting	
17	Hexagon socket head cap screw	Alloy steel	Black finish	44	Bush B	Oil impregnated bearing alloy	
18	Rod metal	Steel	Manganese phosphite	45	Thrust washer		
19	Piston rod	Steel	Industrial chrome plating	46	Spring	Steel	Paint
20	Hexagon socket head cap screw	Alloy steel	Black finish	47	Toothed washer	Steel	Black finish
21	Brake piston	Cast iron	Manganese phosphite	48	Hexagon socket set screw	Steel	Black finish
22	Parallel pin	Steel		49	Phillips pan head machine screw/captive washer	Steel	Zinc chromate
23	Bearing			50	Cushion needle	Copper alloy	Nickeling
24	Piston packing B	Nitrile rubber		51	Needle nut	Copper alloy	Nickeling
25	Wear ring	Polyacetal resin		52	Needle gasket	Nitrile rubber	
26	Cushion rubber	Urethane rubber		With switch			
27	Phillips pan head machine screw	Steel	Zinc chromate	53	Switch mounting base	Aluminum alloy	
				54	Switch holder	Aluminum alloy	
				55	Cylinder switch		
				56	Phillips pan head machine screw	Steel	Zinc chromate
				57	Hexagon socket set screw	Alloy steel	Black finish

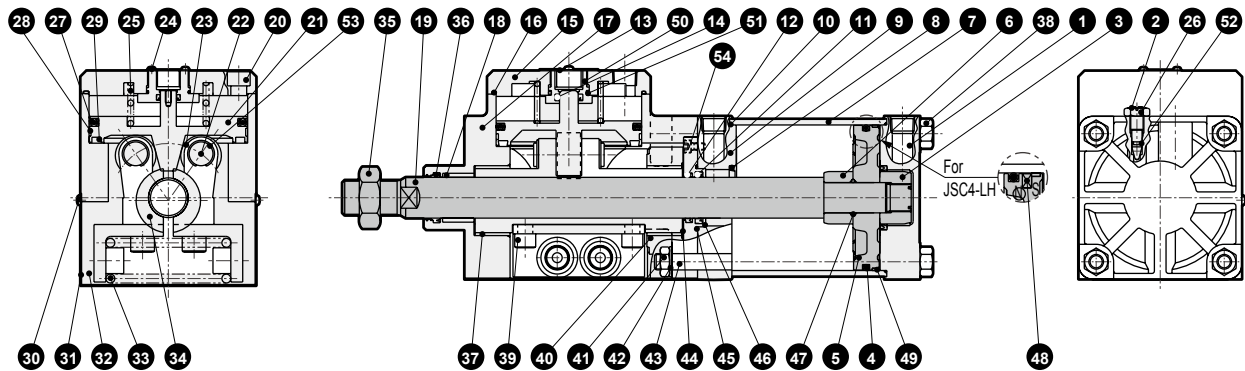
Note: Never disassemble the brake section, as the powerful spring installed can be dangerous.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ40	JSC3-H- 40K	
φ50	JSC3-H- 50K	2 3 7 8
φ63	JSC3-H- 63K	10 11 12 33 52
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)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy casting	Chromate	28	Wear ring	Polyacetal resin	
2	Cushion needle	Copper alloy		29	Cushion rubber	Urethane rubber	
3	Cushion ring A	Steel	Zinc chromate	30	Cross-recessed pan head machine screw	Steel	Zinc chromate
4	Piston packing	Nitrile rubber		31	Cover	Steel	Paint
5	Piston	Aluminum alloy casting		32	Spring holder	Steel	Manganese phosphate
6	Cushion ring B	Steel	Zinc chromate	33	Spring	Steel	Black finish
7	Cylinder tube	Aluminum alloy	Hard alumite	34	Brake shoe metal	Cast iron	Nickeling
8	Cushion packing	Nitrile rubber/steel		35	Rod nut	Steel	Zinc chromate
9	Rod cover	Aluminum alloy casting	Chromate	36	Dust wiper	Nitrile rubber	
10	Cylinder gasket	Nitrile rubber		37	Bush A	Oiles drymet	
11	Rod packing	Nitrile rubber		38	Hexagon nut	Steel	Zinc chromate
12	Dust wiper	Nitrile rubber		39	Hexagon socket head cap screw	Alloy steel	Black finish
13	Dust cover	Aluminum alloy	Alumite	40	Ring	Steel	Black finish
14	Rod packing	Nitrile rubber		41	Hexagon nut	Steel	Zinc chromate
15	Body cap	Aluminum alloy casting	Black alumite	42	Toothed washer	Steel	Zinc chromate
16	Cap gasket	Nitrile rubber		43	Tie rod	Steel	Zinc chromate
17	Brake body	Aluminum cast iron	Alumite	44	Thrust washer	Steel	
18	Bush B	Oil impregnated bearing alloy		45	Metal gasket	Nitrile rubber	
19	Piston rod	Steel	Industrial chrome plating	46	Rod metal	Cast iron	Zinc chromate
20	Hexagon socket head cap screw	Alloy steel	Black finish	47	Piston gasket	Nitrile rubber	
21	Brake piston	Cast iron	Manganese phosphate	48	Magnet	Rubber	JSC4-LN only
22	Bearing pin	Steel		49	Wear ring	Polyacetal resin	
23	Bearing	-		50	Body cap	Cast iron	Manganese phosphate
24	Phillips pan head machine screw/captive washer	Steel	Zinc chromate	51	O-ring	Nitrile rubber	
25	Spring	Steel	Paint	52	Needle gasket	Nitrile rubber	
26	Needle nut	Steel	Zinc chromate	53	E type snap ring	Steel	Zinc chromate
27	Piston packing B	Nitrile rubber		54	Hexagon socket head cap screw	Steel	Black finish

Repair parts list

Bore size	Kit No.	Repair parts No.
φ125	JSC4-H-125K	
φ140	JSC4-H-140K	4 8 10 11 12
φ160	JSC4-H-160K	36 45 49 52
φ180	JSC4-H-180K	

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC3-H/JSC4-H Series

Dimensions

- $\phi 40$ to $\phi 100$
Same as JSC3 (double acting/single rod). Refer to pages 774 to 783.
- $\phi 125$ to $\phi 180$
Same as JSC4-N (double acting/no-lubrication). Refer to pages 786 to 793.

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

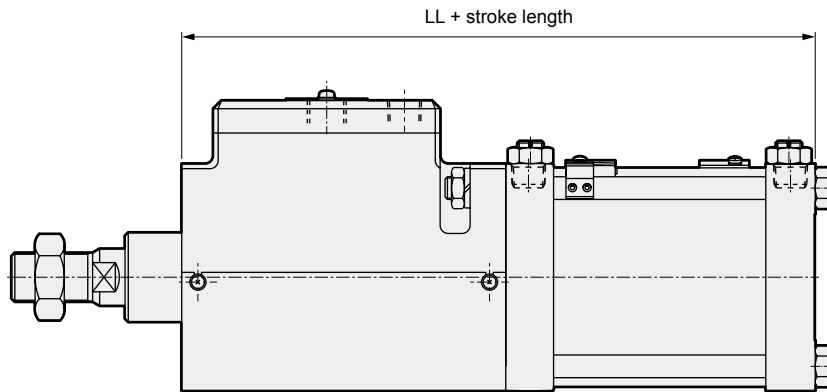
Introduction of custom order products

JSC3-LH compatible mounting dimensions

How to order

When making an order, add "-S092" at the end of the model No.

Dimensions

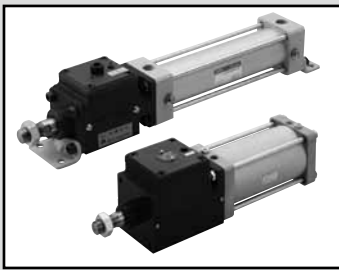


Note: LL dimensions on pages 786 to 793 are as follows.

Code	Dimensions table
Bore size (mm)	LL
φ125	311
φ140	338
φ160	367
φ180	388

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Brake cylinder Double acting/heat resistance

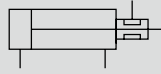
JSC3-T/JSC4-T Series

● Bore size:

JSC3: φ40/φ50/φ63/φ80/φ100/φ125

JSC4: φ140/φ160/φ180

JIS symbol



Specifications

Descriptions		JSC3-T					JSC3-ST					JSC4-T					
Bore size	mm	φ40	φ50	φ63	φ80	φ100	φ40	φ50	φ63	φ80	φ100	φ125	φ140	φ160	φ180		
Actuation		Double acting/heat resistant					Double acting/low pressure release/heat resistance					Double acting/heat resistant					
Working fluid		Compressed air															
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)															
Min. working pressure	Brake section	0.3 (≈44 psi, 3 bar)					0.25 (≈36 psi, 2.5 bar)					0.3 (≈44 psi, 3 bar)					
	Cylinder	0.1 (≈15 psi, 1 bar)					0.1 (≈15 psi, 1 bar)					0.05 (≈7.3 psi, 0.5 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)															
Ambient temperature	°C	5 (41°F) to 120 (248°F) (*2)															
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8		Rc1/8		Rc1/4		Rc3/8		Rc1/2			
	Cylinder	Rc1/4		Rc3/8		Rc1/2		Rc1/4		Rc3/8		Rc1/2		Rc1/2		Rc3/4	
Stroke tolerance	mm	+0.9 0 (to 360), +1.4 0 (to 1000)					+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)					
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)															
Cushion		Air cushion															
Effective air cushion length	mm	14.6	16.6	20.6	23.6	14.6	16.6	20.6	23.6	21.6							
Lubrication (*1)		Not available															
Holding force	N	980	1569	2451	3922	6178	784	1255	1961	3138	4941	9600	12000	15800	20000		
Allowable absorbed energy	Cushioned	4.29	8.37	15.8	27.9	49.8	4.29	8.37	15.8	27.9	49.8	63.6	91.5	116	152		
	Without cushion	0.067	0.079	0.079	0.201	0.301	0.067	0.079	0.079	0.201	0.301	0.371	0.386	0.386	0.958		
	J cushion	Note: Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.															

*1 : Periodically apply additional heat-resistant grease.

*2 : The ambient temperature for the following products is 5 to 100°C.

Bore size	Stroke length
φ160	1948 or more
φ180	1526 or more

Custom order of the above is available when using in applications with a temperature range of 5 to 120°C. Contact CKD.

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		700	2500	
φ 80				
φ100				
φ125	50, 75, 100, 150, 200, 250, 300	800	2000	
φ140				
φ160		900	2000	
φ180				

*1 : If max. stroke length is exceeded, product specifications may not be met, depending on the conditions. Refer to Ending Page 69.

The custom stroke length is available in 1 mm increments.

*2 : The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.

JSC3-T/JSC4-T Series

Specifications

Cylinder weight

● JSC3(φ40 to φ100)

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm						Additional weight per S = 100 mm	
	Bore size (mm)	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)		Trunnion (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

(Example) Product weight of JSC3-T-LB-50B-200

Product weight for stroke length 0 mm 3.67 kg

Additional weight for stroke length 200 mm $0.46 \times \frac{200}{100} = 0.92$ kg

Product weight 3.67 kg + 0.92 kg = 4.59 kg

● JSC4(φ125 to φ180)

[Unit: kg]

Item/mounting	Product weight when stroke length (S) = 0 mm					Additional weight per S = 100 mm	
	Bore size (mm)	Axial foot (LB)	Flange (FA/FB)	Eye bracket (CA)	Clevis bracket (CB)		Trunnion (TA/TB/TC)
φ125		25.72	27.52	27.22	27.32	27.62	1.54
φ140		32.95	36.35	34.75	34.95	34.15	1.78
φ160		42.85	46.65	44.75	45.05	46.15	2.22
φ180		61.55	69.05	64.45	64.95	65.15	2.96

(Example) Product weight of JSC4-T-LB-125B-300

● Product weight when S = 0 mm 25.72 kg

● Additional weight when S = 300mm ... $1.54 \times \frac{300}{100} = 4.62$ kg

● Product weight 25.72 + 4.62 = 30.34 kg

Theoretical thrust table

[Unit: N]

Bore size (mm)	Operating direction	Working pressure MPa												
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
JSC3	φ40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3	
		Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3	
	φ50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3	
		Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3	
	φ63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3	
		Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3	
	φ80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3	
		Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3	
	φ100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3	
		Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3	
	JSC4	φ125	Push	1.23×10^3	1.84×10^3	2.45×10^3	3.68×10^3	4.91×10^3	6.14×10^3	7.36×10^3	8.59×10^3	9.82×10^3	1.10×10^4	1.23×10^4
			Pull	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
φ140		Push	1.54×10^3	2.31×10^3	3.08×10^3	4.62×10^3	6.16×10^3	7.70×10^3	9.24×10^3	1.08×10^4	1.23×10^4	1.39×10^4	1.54×10^4	
		Pull	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4	
φ160		Push	2.01×10^3	3.02×10^3	4.02×10^3	6.03×10^3	8.04×10^3	1.01×10^4	1.21×10^4	1.41×10^4	1.61×10^4	1.81×10^4	2.01×10^4	
		Pull	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4	
φ180		Push	2.54×10^3	3.82×10^3	5.09×10^3	7.03×10^3	1.02×10^4	1.27×10^4	1.53×10^4	1.78×10^4	2.04×10^4	2.29×10^4	2.54×10^4	
		Pull	2.39×10^3	3.58×10^3	4.77×10^3	7.16×10^3	9.54×10^3	1.19×10^4	1.43×10^4	1.67×10^4	1.91×10^4	2.15×10^4	2.39×10^4	

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

JSC3-T Series

- LCW
- LCR
- LCC
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

How to order (φ40 to φ100)

Without switch

JSC3 - **T** - **LB** - **40** - **B** - **50** - **S** **I**

Model No.

B Mounting
*1

A Brake release pressure

C Bore size

D Port thread

E Cushion

F Stroke length
*2
*3

G Option
*4

H Accessory
*6

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped assembled with the product. (Head side special flange is attached separately)
- *2 : If the stroke exceeds the max. stroke length, refer to Ending Page 69.
- *3 : The max. stroke length available for φ63 to φ100 bore size models with bellows is 2000 mm.
- *4 : For S, T, and G position indications, check the respective dimensions.
- *5 : Refer to Ending Page 85 for custom specifications of rod end form.
- *6 : "I" and "Y" cannot be selected together.

[Example of model No.]

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

Model: Brake cylinder double acting/heat resistance

- A** Brake release pressure : Standard 0.3 MPa
- B** Mounting : Axial foot
- C** Bore size : φ40 mm
- D** Port thread : Rc thread
- E** Cushion : Both sides cushioned
- F** Stroke length : 50mm
- G** Option : Cushion needle position S
- H** Accessory : Rod eye

Code	Content
A Brake release pressure	
Blank	Standard (0.3 MPa)
S	Low pressure release (0.25 MPa)

B Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
FC	Head side special flange
CA	Eye bracket
CB	Clevis bracket (pin and snap ring attached)
TC	Intermediate trunnion
TA	Rod side trunnion
TB	Head side trunnion

C Bore size (mm)	
40	φ40
50	φ50
63	φ63
80	φ80
100	φ100

D Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

E Cushion	
B	Both sides cushioned
R	Rod side cushioned
H	Head side cushioned
N	Without cushion

F Stroke length (mm)			
Bore size	Stroke length	Available stroke length	Custom stroke length
φ40	1 to 600	1600	In 1 mm increments
φ50	1 to 600	2000	
φ63	1 to 600	2500	
φ80	1 to 700	2500	
φ100	1 to 800	2500	

G Option		Max. ambient temperature	instantaneous max. temp
L	Bellows	250°C	400°C
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		

H 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 No. 2 bracket (2 pcs./set)

How to order mounting bracket (φ40 to φ100)

Bore size (mm)	φ40	φ50	φ63	φ80	φ100
Mounting bracket					
Foot (LB) *1	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 bracket (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis bracket (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

*2: A pin and a snap ring are attached.

*3: All mounting brackets have mounting bolts attached.

How to order (φ125 to φ180)

JSC4-T - LB - 125 - B - 50 - S

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Option

G Accessory
*4

Code	Content		
A Mounting			
LB	Axial foot		
FA	Rod side flange		
FB	Head side flange		
CA	Eye bracket		
CB	Clevis bracket (pin and snap ring attached)		
TC	Intermediate trunnion		
TA	Rod side trunnion		
TB	Head side trunnion		
B Bore size (mm)			
125	φ125		
140	φ140		
160	φ160		
180	φ180		
C Port thread			
Blank	Rc thread		
N	NPT thread (custom order product)		
G	G thread (custom order product)		
D Cushion			
B	Both sides cushioned		
R	Rod side cushioned		
H	Head side cushioned		
N	Without cushion		
E Stroke length (mm)			
Bore size	Stroke length	Available stroke	Custom stroke
φ125	1 to 800	2000	In 1 mm increments
φ140	1 to 800	2000	
φ160	1 to 800	2000	
φ180	1 to 900	2000	
F Option			
		Max. ambient temp.	instantaneous max. temp.
L	Bellows	250°C	400°C
M	Piston rod material (stainless steel)		
C2		With cushion section check valve	
G Accessory			
I	Rod eye		
Y	Rod clevis (pin and snap ring attached)		
B1	Eye bracket		
B2	Clevis bracket		

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped assembled with the product.
- *2 : When selecting TA or TB as mounting, the switch quantity is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.
- *3 : Check the figures below for the cushion needle position indication.
- *4 : "I" and "Y" cannot be selected together.

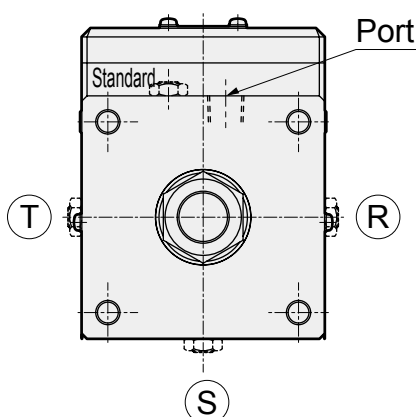
[Example of model No.]

JSC4-T-LB-125B-50-SI

Model: Brake cylinder double acting/heat resistance

- A** Mounting : Axial foot
- B** Bore size : φ125 mm
- C** Port thread : Rc thread
- D** Cushion : Both sides cushioned
- E** Stroke length : 50mm
- F** Option : Cushion needle position S
- G** Accessory : Rod eye

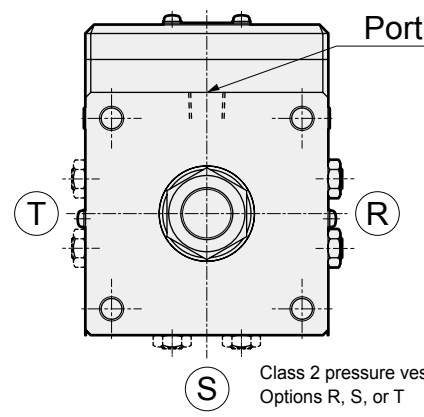
Cushion needle position (needle position from rod direction with the port on the top side)



When selecting option R, S, or T for a certified class 2 pressure vessel, the port position should be in the center as shown in the figure to the right, and the needle position should be in the offset position.

Certified class 2 pressure vessel stroke length

Bore size	Stroke length
φ160	1948 or more
φ180	1526 or more

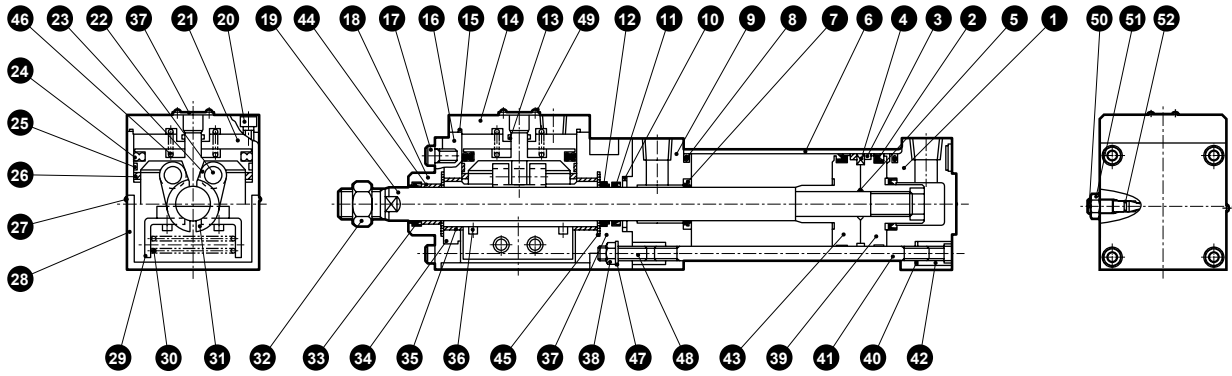


Class 2 pressure vessel certification
Options R, S, or T

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSC3-T Series

Internal structure and parts list (φ40 to φ100)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy die-casting	Paint	28	Cover	Steel	Paint
2	Piston packing	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	Fluoro rubber, steel		34	DU ring	Steel	Black finish
8	Cylinder gasket	Fluoro rubber		35	Bush	Oil impregnated bearing alloy	
9	Rod cover	Aluminum alloy die-casting	Paint	36	Hexagon socket head cap screw	Alloy steel	Black finish
10	Metal seal	Fluoro rubber		37	Dust cover	Aluminum alloy	Paint
11	Rod packing	Fluoro rubber		38	Hexagon nut	Steel	Black finish
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	Body cap	Cast iron	Nitriding	41	Conical spring washer	Steel	Black finish
15	Cap gasket B	Fluoro rubber		42	Round nut	Steel	Zinc chromate
16	Brake body	Aluminum alloy casting	Alumite	43	Piston R	Aluminum alloy die-casting	
17	Hexagon socket head cap screw	Alloy steel	Black finish	44	Bush B	Oil impregnated bearing alloy	
18	Rod metal	Steel	Manganese phosphite	45	Thrust washer		
19	Piston rod	Steel	Industrial chrome plating	46	Spring	Steel	Paint
20	Hexagon socket head cap screw	Alloy steel	Black finish	47	Toothed washer	Steel	Black finish
21	Brake piston	Cast iron	Manganese phosphite	48	Hexagon socket set screw	Steel	Black finish
22	Parallel pin	Steel		49	Phillips pan head machine screw/captive washer	Steel	Zinc chromate
23	Bearing			50	Cushion needle	Copper alloy	Nickeling
24	Piston packing B	Fluoro rubber		51	Needle nut	Copper alloy	Nickeling
25	Wear ring	Special resin		52	Needle gasket	Fluoro rubber	
26	Cushion rubber	Fluorosilicone rubber					
27	Phillips pan head machine screw	Steel	Zinc chromate				

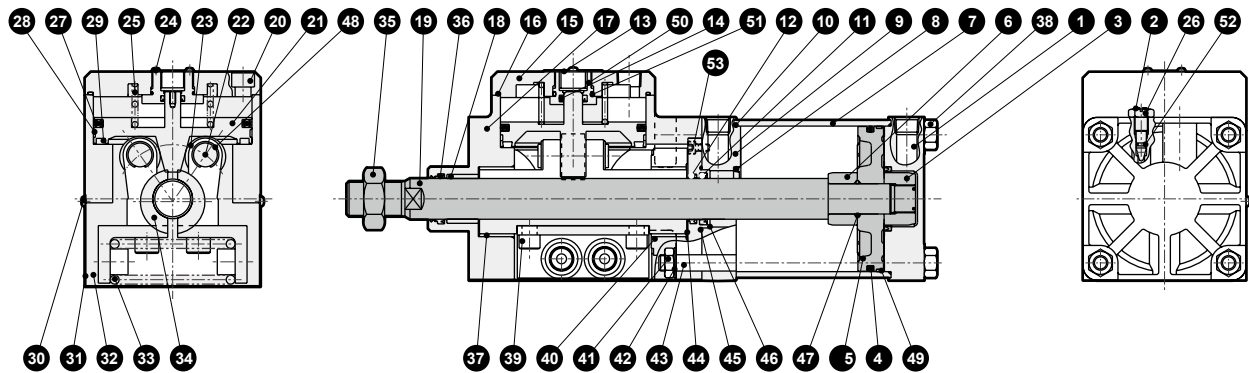
Note: Never disassemble the brake section, as the powerful spring installed can be dangerous.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ40	JSC3-T-40K	
φ50	JSC3-T-50K	
φ63	JSC3-T-63K	2 3 7 8
φ80	JSC3-T-80K	10 11 12 33 52
φ100	JSC3-T-100K	

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

Internal structure and parts list (φ125 to φ180)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy casting	Chromate	27	Piston packing B	Fluoro rubber	
2	Cushion needle	Copper alloy		28	Wear ring	Acetal resin	
3	Cushion ring A	Steel	Zinc chromate	29	Cushion rubber	Silicone rubber	
4	Piston packing	Fluoro rubber		30	Cross-recessed pan head machine screw	Steel	Zinc chromate
5	Piston	Aluminum alloy casting		31	Cover	Steel	Paint
6	Cushion ring B	Steel	Zinc chromate	32	Spring holder	Steel	Manganese phosphate
7	Cylinder tube	Aluminum alloy	Hard alumite	33	Spring	Steel	Black finish
8	Cushion packing	Fluoro rubber/steel		34	Brake shoe metal	Cast iron	Nickeling
9	Rod cover	Aluminum alloy casting	Chromate	35	Rod nut	Steel	Zinc chromate
10	Cylinder gasket	Fluoro rubber		36	Dust wiper	Fluoro rubber	
11	Rod packing	Fluoro rubber		37	Bush A	Oiles drymet	
12	Dust wiper	Fluoro rubber		38	Hexagon nut	Steel	Zinc chromate
13	Dust cover	Aluminum alloy	Alumite	39	Hexagon socket head cap screw	Alloy steel	Black finish
14	Rod packing	Fluoro rubber		40	Ring	Steel	Black finish
15	Body cap	Aluminum alloy casting	Black alumite	41	Hexagon nut	Steel	Zinc chromate
16	Cap gasket	Fluoro rubber		42	Toothed washer	Steel	Zinc chromate
17	Brake body	Aluminum cast iron	Alumite	43	Tie rod	Steel	Zinc chromate
18	Bush B	Oil impregnated bearing alloy		44	Thrust washer	Steel	
19	Piston rod	Steel	Industrial chrome plating	45	Metal gasket	Fluoro rubber	
20	Hexagon socket head cap screw	Alloy steel	Black finish	46	Rod metal	Cast iron	Zinc chromate
21	Brake piston	Cast iron	Manganese phosphate	47	Piston gasket	Fluoro rubber	
22	Bearing pin	Steel		48	E type snap ring	Steel	Zinc chromate
23	Bearing	-		49	Wear ring	Fiber-reinforced phenolic resin	
24	Phillips pan head machine screw/captive washer	Steel	Zinc chromate	50	Body cap	Cast iron	Manganese phosphate
25	Spring	Steel	Paint	51	O-ring	Fluoro rubber	
26	Needle nut	Steel	Zinc chromate	52	Needle gasket	Fluoro rubber	
				53	Hexagon socket head cap screw	Steel	Black finish

Repair parts list

Bore size	Kit No.	Repair parts No.
φ125	JSC4-T-125K	
φ140	JSC4-T-140K	4 8 10 11 12
φ160	JSC4-T-160K	36 45 49 52
φ180	JSC4-T-180K	

Dimensions

- Dimensions of bore sizes φ40 to φ100 are the same as those of JSC3 (double acting/single rod). Refer to pages 774 to 783.
- Dimensions of bore sizes φ125 to φ180 are the same as those of JSC4-N (double acting/no-lubrication). Refer to pages 786 to 793.

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

JSM2/JSK2/JSC3/JSC4 Series

* Related product selection guide

Overrun distance and stopping accuracy differ depending on the used valve. Use the following related products.

Model	Related products Bore size (mm)	SOL-1	SOL-2	Reverse regulator	Speed controller	Silencer	Piping
JSM2 JSK2	φ20	4GB150R-06	3GA110R	R1100-6-W 2419-1C	SC3W-6-6 SC3R-6 SC1-6	SLW-6A	φ6×φ4 Nylon tube
JSK2	φ25	4GB150R-06	3GA110R	R1100-6-W 2419-1C	SC3W-6-6 SC3R-6 SC1-6	SLW-6A	φ6×φ4 Nylon tube
JSM2	φ30	4GB150R-06 4GA210R-06 4GB250R-06	3GA110R	R1100-6-W 2419-1C	SC3W-6-6 SC3R-3-6 SC1-6	SLW-6A	φ6×φ4 Nylon tube
JSK2	φ32	4GB150R-06 4GA250R-06 4GB250R-06	B5136	R1100-6-W 2419-1C	SC3W-6-6 SC3R-3-6 SC1-6	SLW-6A	φ6×φ4 Nylon tube
JSM2 JSK2	φ40	4GA250R-06 4GB250R-06	4GA110R-06 4GB110R-06	R1100-6-W 2419-1C	SC3W-6-8 SC3R-6 SC1-6	SLW-6A	φ8×φ5.7 Nylon tube
JSC3	φ40	4GB250R-08 4GB350R-08 PV5G-6-FIG-D-1-A02	4GA210R-06 4GB210R-06	R3100-8-W R2100-8-W	SC3W-8-8 SC3R-8 SC1-8	SLW-8A	φ8×φ5.7 Nylon tube
	φ50	4GA350R-08 4GB350R-10 PV5G-6-FIG-D-1-A03	4GA210R-06 4GB210R-08	R3100-10-W R2100-10-W	SC3W-10-10 SC3R-10 SC1-10	SLW-10A	φ10×φ7.2 Nylon tube
	φ63	4GB350R-08 4GB350R-10 PV5G-6-FIG-D-1-A03	4GA210R-06 4GB210R-08	R4100-10-W	SC3W-10 SC3R-10 SC1-10	SLW-10A	φ10×φ7.2 Nylon tube
	φ80	4GB450-15 PV5G-8-FIG-D-1-A04	4GA210R-06 4GB210R-08	R4100-15-W	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	φ12×φ8.9 Nylon tube
	φ100	4GB450-15 PV5G-8-FIG-D-1-A04	4GB310R-10	R4100-15-W	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	φ12×φ8.9 Nylon tube
JSC4	φ125	4GB450-15 PV5G-8-FIG-D-1-A04	4GB310R-10 4F310R-10	R4100-15-W	SC3R-15 SC1-15	SLW-15A	φ12 rubber hose SGP3/8B SGP1/2B
	φ140	4F650-20	4GB310R-10 4F310R-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	φ19 rubber hose SGP1/2B SGP3/4B
	φ160	4F650-20 4F750-20	4GB310R-10 4F310R-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	φ19 rubber hose SGP1/2B SGP3/4B
	φ180	4F750-20	4GA410-10 4GB410-10 4F310-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	φ19 rubber hose SGP1/2B SGP3/4B

● *1: JSC3-V is assembled with a brake release valve (SOL2).

Applications

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

1 When multipoint positioning is required (transfer/positioning)

The equipment can be accurately stopped at several required positions.

2 When position locking is required

The brakes can be applied and held instantly when the air source or power is turned OFF (during power failure or accident), preventing equipment damage and securing safety.

3 When emergency stop is required

The cylinder can be immediately stopped with electric signals, etc., when a worker enters a hazardous area.

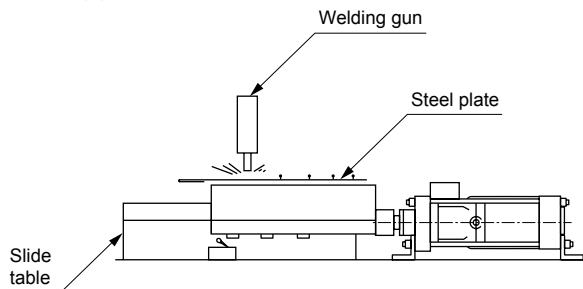
4 Workpiece lock

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

Applications

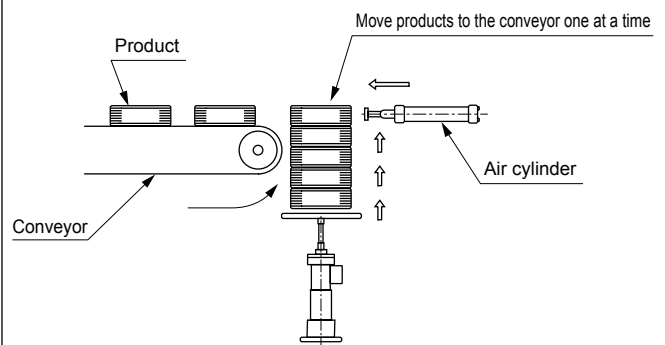
1 Linear multipoint welding

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



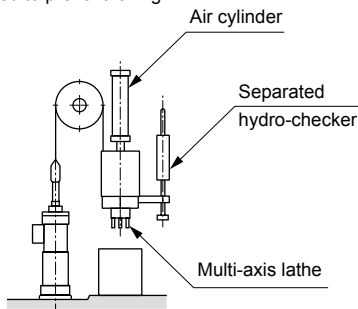
4 Movement to conveyor

Move products to the conveyor one at a time.



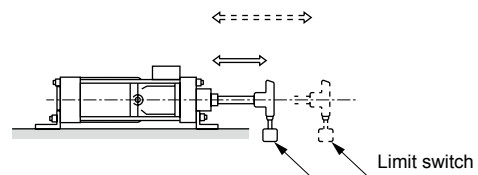
2 Position locking

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



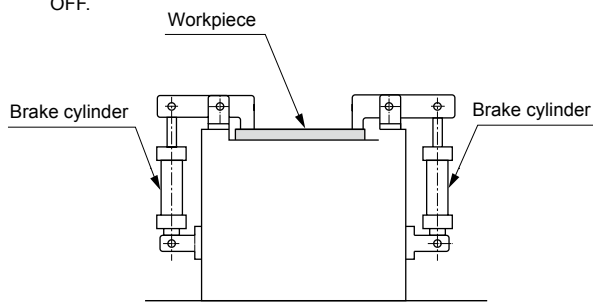
5 When several cylinders with different strokes are required

When different-sized products are in motion on a conveyor, etc., in many cases the stroke length for the cylinders set there must also be changed. Using the brake cylinder, a cylinder compatible with different strokes is created electrically.



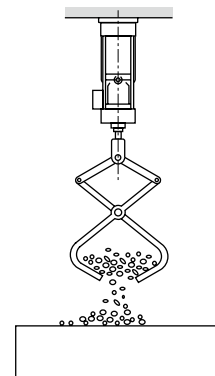
3 Workpiece lock

When locking the workpiece to the jig, etc., if the brake cylinder is used, it will be locked even when the pneumatic source or power is OFF.



6 Hopper open/close

In the case where a hopper must be closed at a specific weight in powder manufacturing, accurate measurement is obtained by stopping the hopper, measuring it accurately and then completely closing it.



LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Brake cylinder JSC3/JSC4 Series

Design/selection

1. Common

⚠ WARNING

- Design a structure that prevents person(s) from coming into contact with the driven workpiece as well as the moving parts of the cylinder with brakes. Provide a protective cover so that no human body directly touches the unit. In case of possible contact, provide safety measures such as a sensor for emergency stop before making contact and a buzzer to warn of danger.
- Use a balanced circuit that accommodates the protrusion of the piston rod. If the cylinder is stopped part-way in the stroke with the brake, etc., and air pressure is applied to one side of the cylinder, the piston rod will pop out at high speeds when the brake is released. This could cause physical harm, such as pinched hands or feet, or mechanical damage. Use a balance circuit, such as the basic circuit, to prevent popping out. When using a low hydraulic brake cylinder, the brake section should always be operated by air pressure.
- The holding force (max. static load) is the ability to hold static load that is not accompanied by vibration or shock, in a state where the brake is operating under no load. Take care when constantly using near the upper limit of the holding force.
- Do not apply loads with impact, strong vibration, or torque while brakes are activated. If load is externally applied with impact, or if strong vibration or rotational force is externally applied, the holding force can be reduced, creating a dangerous situation.
- Consider the stopping accuracy and overrun distance during the braking. Because a mechanical lock is applied, the cylinder does not stop instantly when the stop signal is issued, but stops with a time-wise delay. The stroke at which the cylinder slides due to this delay is the overrun distance. The max. and min. width of the overrun distance is the stopping accuracy.
 - To achieve the required stop position, move the limit switch forward by the overrun distance.
 - The limit switch must have a detection length (dog length) of the overrun distance + α .
 - The operating range of CKD cylinder switches is 7 to 16 mm, depending on the switch model. If overrun distance exceeds this, provide self-holding of the contact at the switch load.
- In order to improve stopping accuracy, ensure that the brake stops the cylinder as soon as possible after receiving the stop signal. Use a high response DC control electricity circuit or valve, and set the valve as close to the cylinder as possible.
- The stopping accuracy is susceptible to fluctuations in piston speed. If the piston speed changes due to load fluctuations or by some disturbance while the cylinder is moving, the stopping position may vary sharply. Make sure that the piston speed stays the same up to just before the stop position. Since the speed changes significantly in the cushioned range and in the acceleration range after starting operation, the variability of the stopping position will increase. The stopping accuracy with a piston speed of 300 mm/s with no load is ± 1.0 mm (reference value). This value differs based on the device used. For more information, refer to the page on stopping accuracy and overrun.

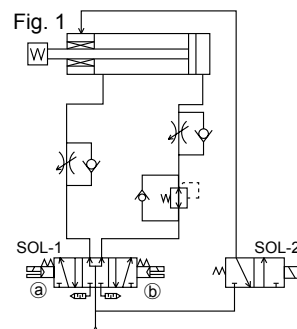
■ Basic circuit

Always adopt the following circuit even for position locking and emergency stop applications. A 2-position valve cannot be used because it affects the brake section even when the cylinder thrust is stopped.

Maintain thrust and load balance with the following circuit. Brakes may not be released when load is applied to brakes.

● Horizontal load

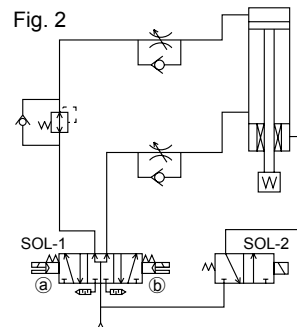
When piping is as shown in Fig. 1, equal pressure is applied to both ends of the piston when stopped to prevent the rod from popping out when the brakes are released. Install a regulator with check valve on the head side to maintain thrust balance.



a SOL-1	b SOL-1	SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Reverse
OFF	ON	ON	Forward

● For downward vertical load

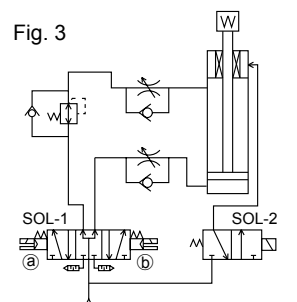
If load faces downward as shown in Fig. 2, the rod malfunctions in the load direction when brakes are released. Place a regulator with a check valve on the head side to reduce thrust in the load direction and balance the load.



a SOL-1	b SOL-1	SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Drop
OFF	ON	ON	Rise

● For upward vertical load

If 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 side to reduce thrust in the load direction and balance the load.



a SOL-1	b SOL-1	SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Drop
OFF	ON	ON	Rise

- Do not apply torque to the rod when braking, as the holding force will decrease, creating hazardous conditions. Also, use this product in mechanisms in which the rod does not rotate.
- Do not apply to the cylinder any force that exceeds the brake holding force listed in the catalog.

CAUTION

- Stopping accuracy**
 - Stopping pitch and load factor

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

Stop pitch	Load factor	
	JSC3-*	JSC3-S*
50 mm or less	20% of thrust	15% of thrust
50 mm to 100 mm	40% of thrust	30% of thrust
100 mm or more	60% of thrust	45% of thrust

- Selection of valve for brake

The stopping accuracy and overrun distance will change according to the responsiveness of the brake valve. Refer to the JSC3-V electric specification for brake valve and select from the CKD pneumatic valve 4GB2 Series. Connect the valve directly to the brake port to improve stopping accuracy.
- When using a PLC (programmable controller)

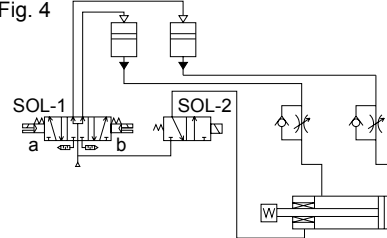
If a PLC (programmable controller) is used as the electrical control unit for the valve for brake, stopping accuracy drops due to scan time (computing time). When using a PLC, do not assemble the valve for brake into the PLC circuit.
- Do not make major changes in applied load when stopped with brakes, or the stopping position may change.

2. Low hydraulic JSC3-H/JSC4-H

WARNING

- If the load fluctuates during the stroke, use the JSC3-H and a converter.

Fig. 4



- Release brakes before cylinder operation. The brake may not be released when the cylinder is operating at high speed.
- 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 popping out when starting.
- To maintain balance of the thrust, including the load, the side with the larger thrust should have a regulator with a check valve.

3. Low pressure release JSC3-S

CAUTION

- Note that brake holding force is also reduced due to release pressure reduction.

Mounting, installation and adjustment

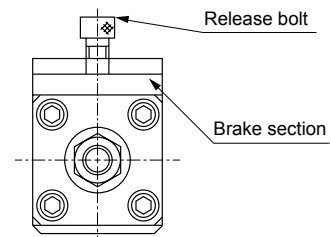
1. Common

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 the brake is released while air is applied to only one side of the cylinder, the piston rod can pop out at high speed, creating a dangerous situation. When releasing the brake during adjustment or other maintenance, always observe the following:
 - Check that no one is in the movable range of the load and that no problems will arise if the load moves when brakes are released.
 - When releasing the brake, perform position locking or take other measures:
 - Place the load to the bottom end
 - Pressurize both sides
 - Place a strut to prevent the load from falling.
 - Confirm that air is not pressured on only one side of the cylinder when releasing brakes.

- How to manually release the brake



Note: How to release the brake

- The brakes are released by completely screwing the release bolt (attached with product) into the female threads (brake release port) on the top of the brakes. (For cylinders with a bore size of $\phi 125$ and over, the brake can be released by turning the release bolt 2 to 3 times.) (Always remove the release bolt during normal use.)
- To manually release the brake, always use the release bolt attached with the product. 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		Appropriate screw-in volume
	JSC3	JSC3-V	
$\phi 40/\phi 50$	M10 \times 8	M10 \times 29	4 rotations or less
$\phi 63$	M12 \times 9	M12 \times 30	
$\phi 80$	M14 \times 10	M14 \times 31	
$\phi 100$	M16 \times 12	M16 \times 40	
$\phi 125$	M24 \times 16 or higher		2 to 3 rotations
$\phi 140$	M24 \times 20 or higher		
$\phi 160$	M24 \times 20 or higher		
$\phi 180$	M24 \times 24 or higher		

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

LCW
LCR
LCG
LCX
LCM
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

- Brakes are released manually or by pressurizing the brake release port. When mounting the load, the brake release operation may cause the load to fall; make sure to check that the brake is operational when the manual release operation is set to default or when there is no air in the brake release port.
- Do not apply torque to the rod when braking, as the holding force will decrease, creating hazardous conditions. Also, use this product in mechanisms in which the rod does not rotate.
- Do not apply to the cylinder any force that exceeds the brake holding force listed 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 the piston 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 air balance in the cylinder.
With brakes released, place a load on the cylinder and balance the load by adjusting pneumatic pressure applied to the cylinder rod side and head side. Malfunctions such as piston popping out during brake release or abnormal brake release can be prevented by accurately balancing the load.

- Adjust the installation position of the detector parts, including the cylinder switch.
When braking, consider the overrun distance vis-a-vis the desired stop position and adjust the installation positions for detector parts, including the cylinder switch.
- Load fluctuations during the reciprocating stroke of the cylinder can cause inconsistent piston speed, leading to greater variation in the stop position. Adjust the mounting of the load so as to prevent any load fluctuations during the reciprocating stroke of the cylinder, especially before the stop position.
- Since the speed changes significantly in the cushioned range and in the acceleration range after starting operation, the variability of the stopping position will increase. For this reason, the distance of the stop position increases when performing step operations with short stroke length, from the start point of the operation to the next position.
- Load to piston rod
Operate the cylinder so that load applied to the piston rod is always applied in the axial direction more strictly than with a general-purpose air cylinder. Limit load movement using guides so play and torsion do not occur.
- Maintaining the rod sliding parts
Protect the piston rod sliding surface from scratches and dents. Such scratches and dents can cause damage to packings, resulting in leakage and/or brake failure.

Use/maintenance

1. Common

⚠ WARNING

- The brake section can be removed from the cylinder body. Do not disassemble or inspect brakes, or a hazardous situation may occur 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.
- Always use the product with the dust cover on, except for when performing manual release, in order to prevent failure or malfunction.

⚠ CAUTION

- Air supply pipes that are too narrow or too long can reduce stopping accuracy.
- 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 stopping accuracy. Conduct conditioning operations to obtain a stable stopping accuracy.

- If the manual release bolt is removed while the piston rod is pulled out, the bolt cannot be screwed in. When the manual release bolt has been removed, supply air from the brake release port and screw in the bolt.
- Certification of class 2 pressure vessel
According to regulations of the Ministry of Health, Labour and Welfare, the following cylinders should be certified by the Japan Boilers Association.
 - (1) Cylinders with a rated pressure exceeding 0.2 MPa and cylinder capacity exceeding 0.04 m³.
 - (2) Cylinders with a rated pressure exceeding 0.2 MPa, tube bore size exceeding 200 mm and length exceeding 1000 mm.

$$V = \frac{D^2 \times S \times 3.14}{4 \times 10^9}$$

V: Cylinder capacity (m³)

D: Bore size (mm)

S: Body length (cylinder tube length) (mm)

- With cushion section check valve (C2)
The larger the load, the greater the delay in the starting time of the cylinder will be. To shorten the starting time, use the cushion section check valve (C2).