

JSC3, JSC4

Brake Cylinder

ø40, ø50, ø63, ø80, ø100
ø125, ø140, ø160, ø180

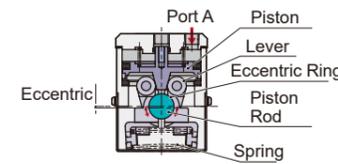
With Brake with Lock

Overview

This is a cylinder with brake, where a highly reliable brake is included with the medium bore (ø40 to ø100) series (SCA2) and large bore (ø125 to ø180) series (SCS2) among general type cylinders.

Operational Principle

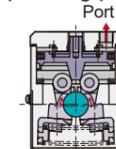
● Brake release operating principle



Ⓐ Brake Release Operating Principle

When air is supplied from port A, the lower piston is pushed, opening the lever, and the eccentric rings directly connected to the lever rotate in the direction of their respective arrows, freeing the Piston Rod.

● Brake operating principle



Ⓑ Brake Activation Operating Principle

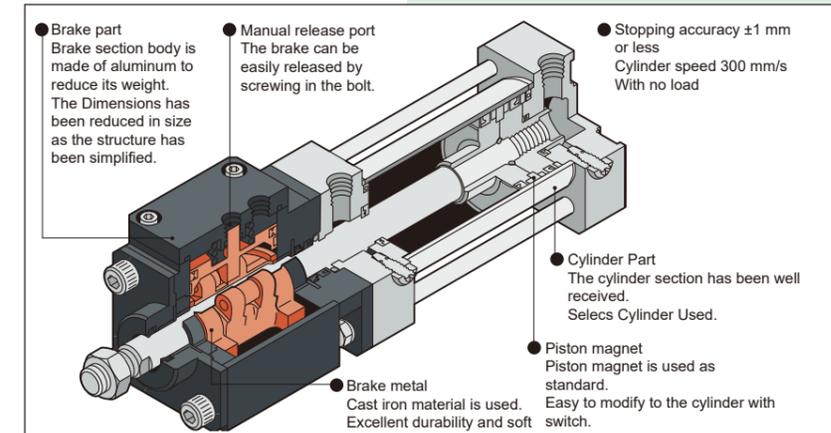
When air is exhausted from port A, the eccentric rings rotate in the direction of their respective arrows due to spring force, generating an eccentric load on the Piston Rod and braking the Piston Rod.



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Features



●: Standard, ◎: Option, ○: Custom Product, ■: Not available

Variation	Model Number Circuit Diagram Code	Bore Size (mm)	Standard Stroke (mm)											Min Stroke (mm)	Max Stroke (mm)	Intermediate Stroke (per mm)	Producible Stroke (mm)	Mounting Type										Option							Accessories					Switch	Page	
			50	75	100	150	200	250	300	350	400	450	500					Basic type	Axial Foot Type	Rod side Flange Type	Head side Flange Type	Head side special flange type	Single Clevis Type	Double clevis type	Intermediate Trunnion Square Type	Rod side trunnion type	Head side trunnion type	Bellows (100°C)	Bellows (250°C)	Piston Rod material change	Cushion needle position R	Cushion needle position S	Cushion needle position T	With Indicator	Single knuckle	Double Knuckle	Single Bracket	Double Yoke Bracket	Single bracket			Trunnion Type 2nd Bracket
			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)					00	LB	FA	FB	FC	CA	CB	TC	TA	TB	J	L	M	R	S	T	G	I	Y	B1	B2	B3			B4
Double Acting Type	JSC3	ø40											1	600		1600																										
		ø50	●	●	●	●	●	●	●	●	●	●	●	700	1	2000	●	●	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
		ø63												800		2500*1	●	●	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
	ø80	●	●	●	●	●	●	●	●	●	●	●	800	1		●	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
	ø100	●	●	●	●	●	●	●	●	●	●	●	900			●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
	JSC4-N JSC4-LN	ø125, ø140, ø160	●	●	●	●	●	●	●	●	●	●	800	1	2000	■	●	●	●	■	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
JSC4-LN	ø180	●	●	●	●	●	●	●	●	●	●	900			■	●	●	●	■	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
Double Acting Type with Brake Valve	JSC3-V	ø40											600		1000																											
		ø50	●	●	●	●	●	●	●	●	●	●	700	1	2000	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
		ø63											800		2500*1	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
		ø80	●	●	●	●	●	●	●	●	●	●	800	1		●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
		ø100	●	●	●	●	●	●	●	●	●	●	900			●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Double Acting, Low Hydraulic Pressure Type	JSC3-H	ø40											600		600																											
		ø50	●	●	●	●	●	●	●	●	●	●	700	1	700	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
		ø63											800		800	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
		ø80	●	●	●	●	●	●	●	●	●	●	800	1	800	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	JSC4-H JSC4-LH	ø125, ø140, ø160	○	○	○	○	○	○	○	○	○	○	800	1	800	■	○	○	○	■	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
JSC4-LH	ø180	○	○	○	○	○	○	○	○	○	○	900		900	■	○	○	○	■	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
Double Acting/Heat Resistant Type	JSC3-T	ø40											600		700																											
		ø50	●	●	●	●	●	●	●	●	●	●	700	1	700	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		
		ø63											800		800	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
		ø80	●	●	●	●	●	●	●	●	●	●	800	1	800	●	●	●	●	●	●	●	●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	JSC4-T	ø125, ø140, ø160	○	○	○	○	○	○	○	○	○	○	800	1	800	■	○	○	○	■	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
JSC4-T	ø180	○	○	○	○	○	○	○	○	○	○	900		900	■	○	○	○	■	○	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		

*1: For bellows-equipped models with tube inner diameters ø63 to ø100, the manufacturable stroke is up to 2000 mm.

Variation and Option Item Combination Availability Table

Variation / Option Combination Availability Table

JSC3 (ø40 to ø100)

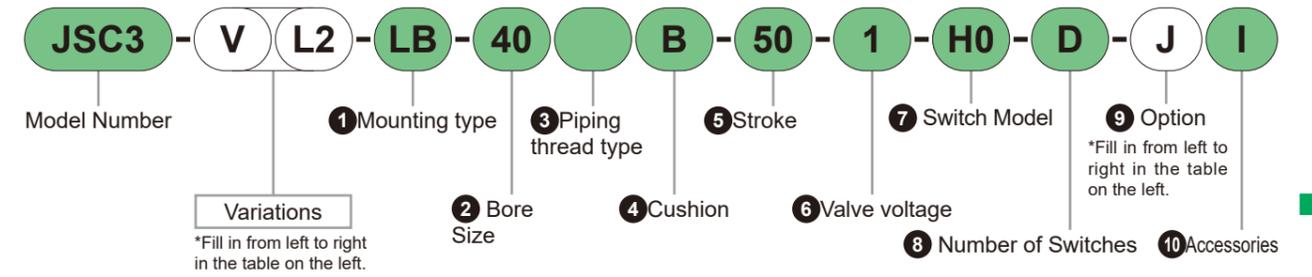
*For ø125 to ø180, please refer to P. 420.

- Mark: Standard
- Mark: Options
- Mark: Custom-made
- △ Mark: Manufacturable depending on conditions (please consult)
- × Mark: Not available

Category	Code	Variation						Piping thread		Option					
		Double Acting Basic Type	With Cushion	With Valve	Low Hydraulic Pressure	Heat Resistant (120°C)	With cylinder switch, for strong magnetic field	NPT	G	With bellows, Polyolefin	With Bellows, Silicone Rubber	Piston Rod material (Stainless Steel)	Cushion needle position specification	With Indicator	
Variations	Double Acting Basic Type	Blank	○	●	●	●	○	○	○	*1	*1	○	○	○	
	With Cushion	Blank		○	○	○	○	○	○	○	○	○	○	○	
	With Valve	V			△	x	○	○	○	○	○	○	○	○	
	Low Hydraulic Pressure	H				x	○	○	○	○	○	○	○	○	
	Heat Resistant (120°C)	T					x	○	○	x	○	○	○	○	
Piping thread	With cylinder switch, for strong magnetic field	L2					○	○	○	○	○	○	○	○	
	NPT	N						x	○	○	○	○	○	○	
Options	G	G							○	○	○	○	○	○	
	With bellows, Polyolefin	J								x	○	○	○	○	
	With Bellows, Silicone Rubber	L									○	○	○	○	
	Piston Rod material (Stainless Steel)	M									○	○	○	○	
	Cushion needle position specification	R.S.T										○	○	○	
	With Indicator	G											○	○	
Accessories	Cylinder Switch	Separately Shown	○	○	○	○	x	○			○	○	○	○	
	Single knuckle	I	○	○	○	○	○	○			○	○	○	○	
	Double knuckle	Y	○	○	○	○	○	○			○	○	○	○	
	Single bracket	B1	○	○	○	○	○	○			○	○	○	○	
	Double bracket	B2	○	○	○	○	○	○			○	○	○	○	
	Bracket for trunnion	B4	○	○	○	○	○	○			○	○	○	○	

*1: For bellows-equipped models with tube inner diameters ø63 to ø100, the manufacturable stroke is up to 2000 mm.

[Model No. Example]



Model No.: Brake Cylinder

- Variations: With valve and strong magnetic field proof switch
- ① mounting style: Axial Foot Type
- ② Bore Size: ø40 mm
- ③ Port thread: Rc Thread
- ④ Cushion: Both sides cushion
- ⑤ Stroke: 50 mm
- ⑥ valve voltage: 100 VAC
- ⑦ Switch model No.: Reed, switch for strong magnetic fields, lead wire 1 m
- ⑧ Switch quantity: With 2 pcs
- ⑨ Options: Bellows Max Ambient Temperature 100°C
- ⑩ Accessory: Single knuckle

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

Variation and Option Item Combination Availability Table

JSC4 (ø125 to ø180)

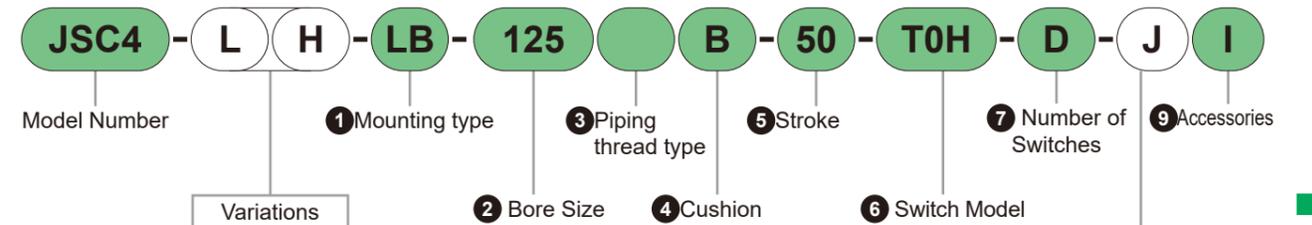
*For ø40 to ø100, please refer to P. 418.

- Mark: Standard
- Mark: Options
- Mark: Custom-made
- △ Mark: Manufacturable depending on conditions (please consult)
- × Mark: Not available

Category	Code	Variation				Piping thread		Option			
		Double Acting Basic Type	With Cushion	With Cylinder Switch	Low Hydraulic Pressure	Heat Resistant (120°C)	NPT	G	With bellows, Neoprene	With bellows, Silicone rubber	Piston Rod material (Stainless Steel)
ULK□	Double Acting basic type (Non-lubricated type)	N	○	○	△	○	○	○	○	○	○
	With Cushion		○	○	○	○	○	○	○	○	○
JSK2/ JSM2	With Cylinder Switch	L		○	×	○	○	○	○	○	○
	Low Hydraulic Pressure	H			×	○	○	○	○	○	○
JSG	Heat Resistant (120°C)	T				○	○	×	○	○	○
JSC3, JSC4	Piping thread	N					×	○	○	○	○
	G	G						○	○	○	○
USSD	Options	J							×	○	○
	With bellows, Neoprene	J							×	○	○
	With Bellows, Silicone Rubber	L								○	○
UFCD	Piston Rod material (Stainless Steel)	M									○
	Cylinder Switch	Separately Shown	○	○	○	×			○	○	○
USC	Accessories	I	○	○	○	○			○	○	○
	Single knuckle	I	○	○	○	○			○	○	○
	Double knuckle	Y	○	○	○	○			○	○	○
	Single bracket	B1	○	○	○	○			○	○	○
	Double bracket	B2	○	○	○	○			○	○	○

Variation / Option Combination Availability Table

[Model No. Example]



- *Fill in from left to right in the table on the left.
- Model Number
- Variation: Low hydraulic type with switch
 - ① Mounting style: Axial Foot Type
 - ② Bore Size: ø125 mm
 - ③ Port thread: Rc Thread
 - ④ Cushion: Both sides cushion
 - ⑤ Stroke: 50 mm
 - ⑥ Switch model No.: Solid State T0H Switch, Lead Wire 1 m
 - ⑦ Switch quantity: With 2 pcs
 - ⑧ Options: Bellows for Max Ambient Temperature 60°C
 - ⑨ Accessory: Single knuckle

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder Switch

Cylinder Switch

Ending

Ending



Brake Cylinder Double Acting, Single Rod Type / Double Acting, Non-lubricated Type

JSC3, JSC4-N Series

● Bore Size

JSC3: ø40, ø50, ø63, ø80, ø100, JSC4: ø125, ø140, ø160, ø180



JSC3 Series

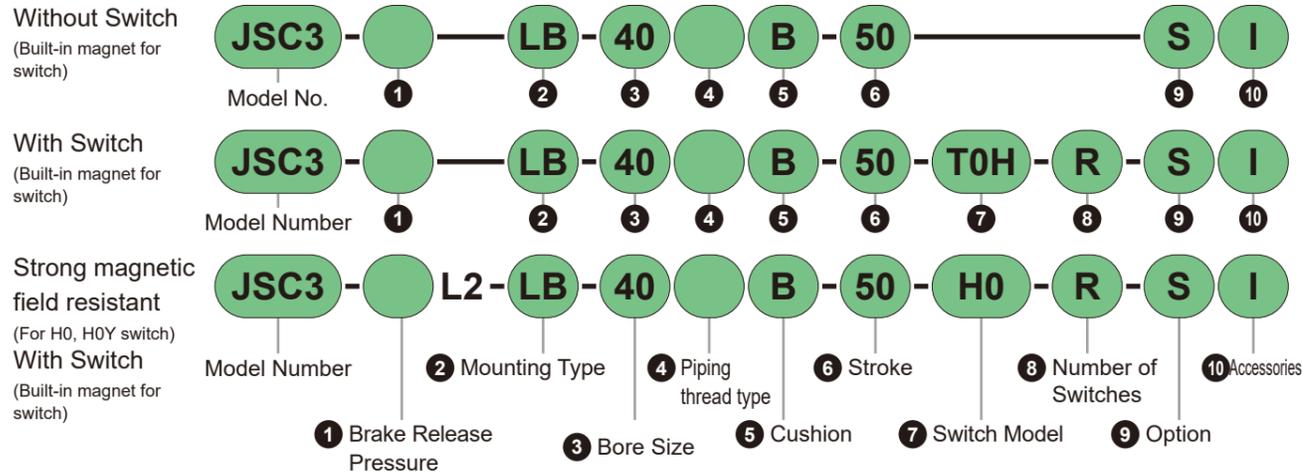
Model No. Notation

*Lead Wire Length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5m (Option)

Example) Lead wire length
1 m T0H
3 m T0H³
5 m T0H⁵

Model No. Notation (ø40 to ø100)



1 Brake Release Pressure

Code	Content
Blank	Standard Type (0.3 MPa)
S	Low Pressure Release Type (0.25 MPa)

2 Mounting Type

Mounting brackets are pre-assembled on the product for shipment. (However, head side special flange type is shipped included.)

Code	Content	Code	Content
00	Basic Type	CA	Single clevis type
LB	Axial Foot Type	CB	Double Clevis Type (Pin and Retaining Ring included)
FA	Rod Side Flange Type	TC	Intermediate Trunnion Type
FB	Head Side Flange Type	TA	Rod side trunnion type
FC	Head side special flange type	TB	Head side trunnion type

3 Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

4 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

5 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without Cushion

6 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40	1 to 600	Every 1 mm
ø50	1 to 600	
ø63	1 to 600	
ø80	1 to 700	
ø100	1 to 800	

Note: For minimum stroke with switch, please refer to P. 429, 430.

7 Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H□ T1V□	
		3-wire (NPN)	-	10 to 30	-	5 to 20 *2	T2H□ T2V□	
		3-wire (PNP)	-	30 or less	-	100 or less	T3H□ T3V□	
	2-color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□ T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□ T3WV□	
		For 2-color AC Magnetic Field	-	24 ± 10%	-	5 to 20	T2YD□ T2YDT□	
Contact	1-Color Off-Delay Type	2-wire	-	10 to 30	-	5 to 20 *2	T2JH□ T2JV□	
		1-Color Flexible Lead Wire Type	-	10 to 30	-	-	T2HR3 T2VR3	
	1-Color Without Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□ T0V□	
			110	5/12/24	20 or less	50 or less	T5H□ T5V□	
	1-Color For 1-color strong magnetic field	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□ T8V□	
			110	12/24	7 to 20	5 to 50	H0□ -	
1-Color For 2-color strong magnetic field	2-wire	-	24 ± 10%	-	5 to 20	H0Y□ -		
		-	24 ± 10%	-	5 to 20	-		

*1: Enter the code selected in the "Lead wire length" table into "□" of the Switch Model.

*2: The maximum load current of 20 mA mentioned above is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: Switches other than the above switch model numbers are also available. (Custom Product) For details, refer to P. 1457.

8 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Note: If 1 mounting type TA or TB is selected, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

9 Option

Code	Content		
	Max Ambient Temperature	Instantaneous Max Temperature	
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		

*1: Check the position indication of "S" and "T" in each dimensional drawing.

*2: If 1 mounting type "TA" or "TB" is selected, the cushion needle position cannot be changed. (If Blank, cushion needle position will be "S".)

* For combinations of variations and options, please refer to P. 418 to 421.

About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK□	Mounting Bracket Rotational Assembly
-XAQ□□	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending 11.

Model No. Ex.)

JSC3 - - XK□

Oil-free Compatible Specification

(Catalog No. RJ-001AA)

● Grease scatter prevention structure

JSC3 - - P12

10 Accessories

Code	Description
I	Single knuckle
Y	Double knuckle (Pin and Retaining Ring included)
B1	Single bracket
B2	Double bracket (Pin and Retaining Ring included)
B3	Single bracket
B4	Trunnion Type 2nd Bracket (Set of 2)

*1: "I" and "Y" cannot be selected simultaneously.

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/ JSM2

JSK2/ JSM2

JSG

JSG

JSC3, JSC4

JSC3, JSC4

USSD

USSD

UFCD

UFCD

USC

USC

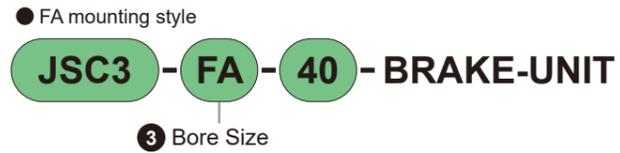
Cylinder Switch

Cylinder Switch

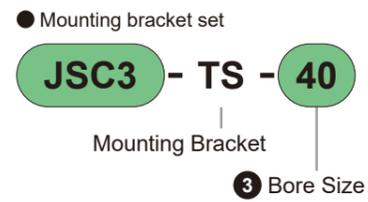
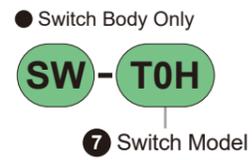
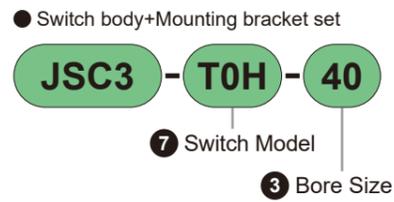
Ending

Ending

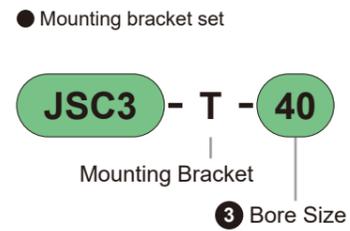
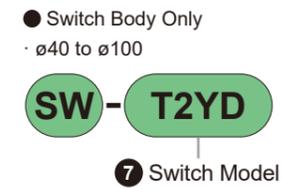
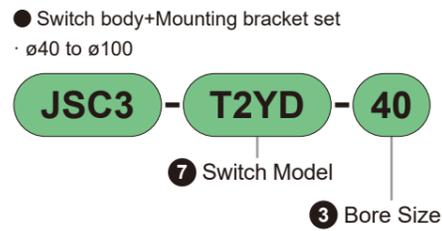
Brake Unit Model No. Notation



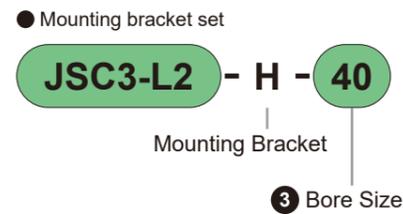
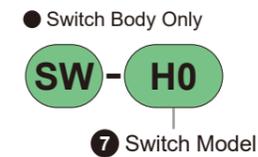
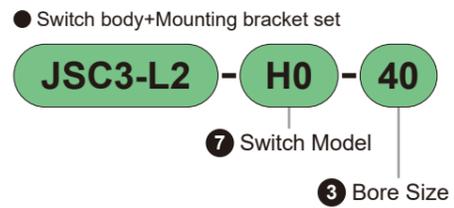
T-type Switch Individual Model No. Notation



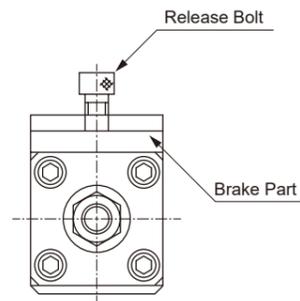
T2YD type switch single item model number notation method



H type switch single item model number notation method



Manual Brake Release Method



Note: Brake release method

- Screwing the release bolt (included with the product) 2 to 3 rotations into the female thread on the upper part of the brake unit (next to the brake release port) releases the brake. (Always remove the release bolt during normal use.)
- When manually releasing the brake, always use the release bolt included with the product. Using other bolts may cause the brake to fail.

MEMO

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

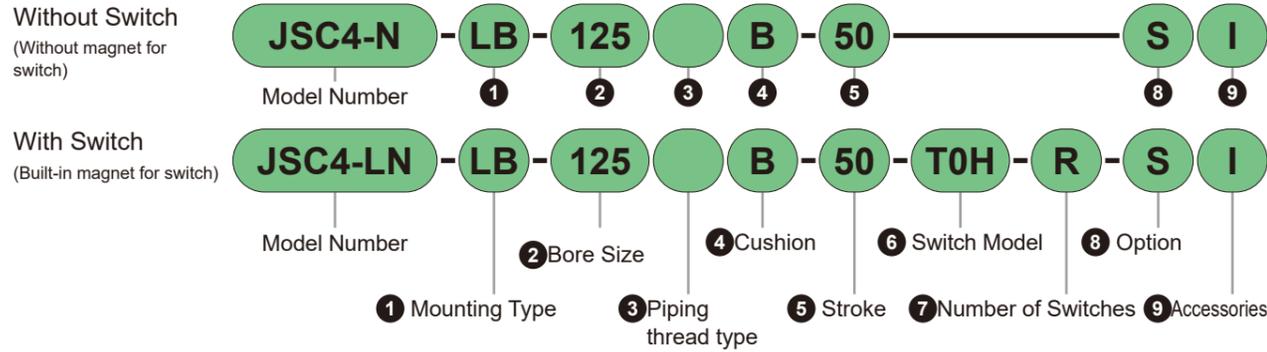
UFCD

USC

Cylinder
Switch

Ending

Model No. Notation (ø125 to ø180)



1 Mounting Type Mounting brackets are pre-assembled on the product for shipment.

Code	Content	Code	Content
LB	Axial Foot Type	CB	Double Clevis Type (Pin and Retaining Ring included)
FA	Rod Side Flange Type	TC	Intermediate Trunnion Type
FB	Head Side Flange Type	TA	Rod side trunnion type
CA	Single clevis type	TB	Head side trunnion type

2 Bore Size (mm)

Code	Content
125	ø125
140	ø140
160	ø160
180	ø180

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without Cushion

5 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø125	1 to 800	in 1 mm increments
ø140	1 to 800	
ø160	1 to 800	
ø180	1 to 900	

Note: Refer to P. 430 for the minimum stroke with switch.

6 Switch Model

For switch details, refer to P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	-	5 to 100	-	T1H	T1V	
			-	10 to 30	-	5 to 20 *2	T2H	T2V	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H	T3V	
	3-wire (PNP)	-	30 or less	-	50 or less	T3PH	T3PV		
	2-color	2-wire	-	24 ± 10%	-	5 to 20	T2WH	T2WV	
	Contact	1-Color Off-Delay Type	2-wire	-	24 ± 10%	-	5 to 20	T2YD	-
-				30 or less	-	50 or less	T3YD	-	
1-Color Flexible Lead Wire Type			2-wire	-	10 to 30	-	5 to 20 *2	T2JH	T2JV
1-Color		2-wire	110	12/24	7 to 20	5 to 50	T0H	T0V	
Without Indicator Lamp		2-wire	110	5/12/24	20 or less	50 or less	T5H	T5V	
1-Color		2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H	T8V	

***Lead Wire Length**

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
 1 m T0H
 3 m T0H^[3]
 5 m T0H^[5]

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Note: If mounting type TA or TB is selected, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

9 Accessories

Code	Description	
I	Single knuckle	
Y	Double Knuckle (pin and Retaining Ring included)	
B1	Single bracket	
B2	Double bracket	

*1: "I" and "Y" cannot be selected simultaneously.

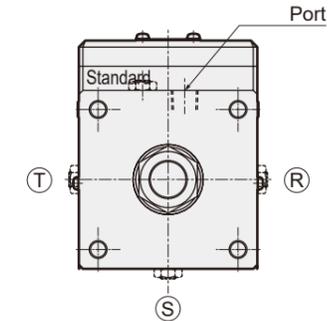
8 Option

Code	Content	Max Ambient Temperature		Image
		Instantaneous Max Temperature		
J	Bellows	100°C	200°C	
L	Bellows	250°C	400°C	
M	Piston Rod Material (Stainless Steel)			
Blank	Cushion needle position Standard			Standard
R	Cushion Needle Position R			
S	Cushion Needle Position S			
T	Cushion Needle Position T			
C2	With check valve in cushion part			

Note: For cushion needle position display, please check the figure below.

About Cushion Needle Position

(Needle position with port facing upward from rod direction)



Stroke subject to Type 2 pressure vessel inspection

Bore Size	Stroke
ø160	1948 or more
ø180	1526 or more

About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK	Mounting Bracket Rotational Assembly
-XAQ	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending P. 11.

Model No. Ex.)

JSC4 - ... - XK

*1: Enter the code selected in the "Lead wire length" table into "□" of the Switch Model.

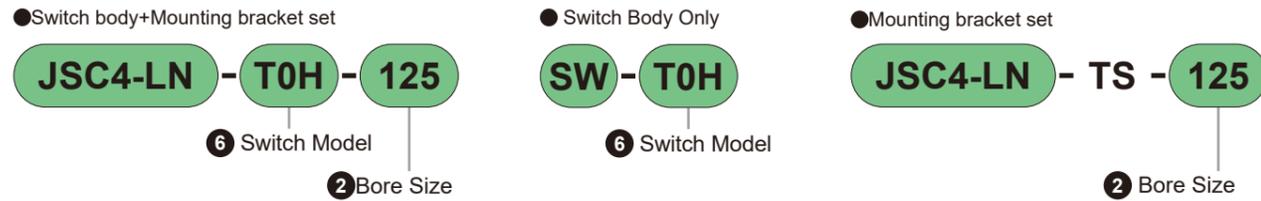
*2: The maximum load current of 20 mA mentioned above is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: Switches other than the above switch model numbers are also available. (Custom Product) For details, refer to P. 1457.

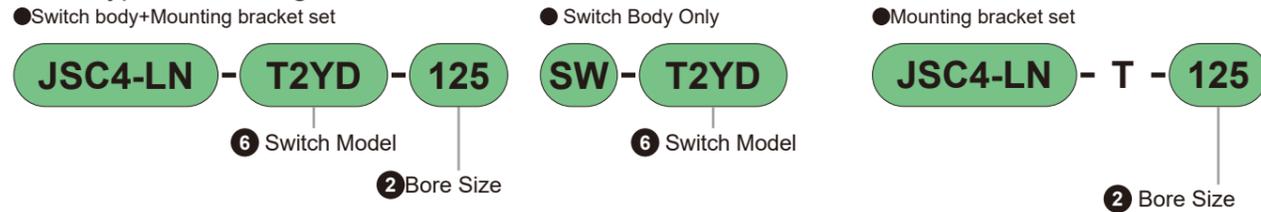
Brake Unit Model No. Notation



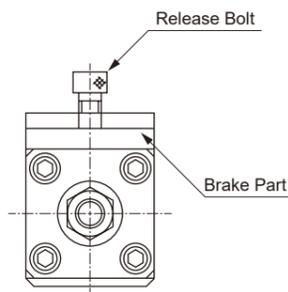
T-type Switch Individual Model No. Notation



T2YD type switch single item model number notation method



Manual Brake Release Method



Note: Brake release method

- Screwing the release bolt (included with the product) 2 to 3 rotations into the female thread on the upper part of the brake unit (next to the brake release port) releases the brake. (Always remove the release bolt during normal use.)
- When manually releasing the brake, always use the release bolt included with the product. Using other bolts may cause the brake to fail.

Specifications

Item	JSC3 (with Switch)					JSC3-S (with Switch)					JSC4-N				
	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	
Bore Size	mm														
Operating Method	Double Acting Type					Double Acting, low pressure release type					Double Acting Type				
Operating Fluid	Compressed Air														
Max Operating Pressure	MPa														
Min Operating Pressure	0.3					0.25					0.3				
Pressure	0.1					0.1					0.05				
Proof Pressure	MPa														
Ambient Temperature	-10 to 60 (however, no freezing)					-10 to 60 (however, no freezing)					-5 to 60 (However, no freezing)				
Port Size	Brake Part	Rc1/8		Rc1/4		Rc3/8		Rc1/8		Rc1/4		Rc3/8		Rc 1/2	
	Cylinder Part	Rc1/4		Rc3/8		Rc 1/2		Rc1/4		Rc3/8		Rc 1/2		Rc 3/4	
Stroke Tolerance	mm					^{+1.0} / ₀ (Up to 360), ^{+1.4} / ₀ (Up to 1000)					^{+1.0} / ₀ (Up to 300), ^{+1.4} / ₀ (Up to 1000), ^{+1.8} / ₀ (Up to 2000)				
Operating Piston Speed	mm/s														
Cushion	Air Cushion														
Effective air cushion length	14.6	16.6	20.6	23.6	14.6	16.6	20.6	23.6	21.6						
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)														
Holding Force	N														
Allowable Absorbed Energy	With Cushion	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 cushion, large energy generated by external load cannot be absorbed. It is recommended to use an external shock absorber together.															

Stroke

Bore Size (mm)	Standard Stroke (mm)	Max Stroke (mm)	Manufacturable Stroke (mm)	Min Stroke (mm)
ø40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1600	1
ø50			2,000	
ø63			2500	
ø80			*4	
ø100				
ø125	50, 75, 100, 150, 200, 250, 300	800	2000	
ø140				
ø180				900

*1: If the Max Stroke is exceeded, the product specifications may not be met depending on the conditions, so please consult us. Also, please refer to Intro 29.

*2: Intermediate strokes can be manufactured in 2 mm increments.

*3: Minimum stroke varies depending on the switch mounting method. Refer to the table below.

*4: For bellows-equipped models with tube inner diameters ø63 to ø100, the producible stroke is up to 2000 mm.

Minimum Stroke for JSC3 with Switch (T-type switch)

● Minimum stroke with T0/T5 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	20 (10)	60 (45)	110 (110)	110 (110)	50 (50)	50 (50)
ø50	20 (20)	15 (10)	20 (20)	135 (135)	135 (135)	60 (60)	60 (60)
ø63	20 (20)	15 (10)	20 (20)	110 (95)	110 (95)	50 (45)	50 (45)
ø80	25 (25)	15 (15)	25 (25)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	25 (25)	15 (15)	25 (25)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

Minimum Stroke for JSC3 with Switch (T-type switch)

● Minimum stroke with T8 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2	1	1
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	15 (10)	50 (35)	95 (85)	95 (85)	45 (40)	45 (40)
ø50	20 (20)	10 (10)	20 (20)	115 (115)	115 (115)	50 (50)	50 (50)
ø63	20 (20)	10 (10)	20 (20)	95 (75)	95 (75)	45 (35)	45 (35)
ø80	25 (25)	15 (15)	25 (25)	100 (70)	100 (70)	50 (35)	50 (35)
ø100	25 (25)	15 (15)	25 (25)	110 (80)	110 (80)	55 (40)	55 (40)

*1: () indicates T□V (L-shaped lead wire type).
*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T2/T3 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2	1	1
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).
*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T1/T2YD type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2	1	1
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	100 (70)	100 (70)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	120 (90)	120 (90)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type). However, T2YD does not have an L-shaped lead wire type (V).
*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Min Stroke with T2W/T3W switches

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2	1	1
Bore Size	2	1	2	1	2	1	1
ø40	20 (10)	20 (5)	65 (50)	110 (80)	110 (80)	50 (35)	50 (35)
ø50	20 (10)	20 (5)	20 (10)	110 (80)	110 (80)	50 (35)	50 (35)
ø63	20 (10)	20 (5)	20 (10)	115 (85)	115 (85)	55 (40)	55 (40)
ø80	15 (10)	15 (5)	15 (10)	120 (90)	120 (90)	55 (40)	55 (40)
ø100	10 (10)	10 (5)	10 (10)	130 (100)	130 (100)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).
*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

Minimum Stroke for JSC4 with Switch (T-type switch)

● ø125 to ø180

(Unit: mm)

Item	Stroke when mounted on the same surface	Intermediate trunnion mounting stroke	Rod side trunnion mounting stroke	Head side trunnion mounting stroke
Bore Size (mm)				
ø125	20 or more	120 or more	70 or more	
ø140		125 or more	75 or more	
ø160		130 or more	80 or more	
ø180		135 or more	85 or more	

Cylinder Weight

● JSC3 (ø40 to ø100)

[Unit: kg]

Item / Mounting Style	Product Weight when stroke (S) = 0 mm						Switch Weight	Mounting Bracket Weight		Added weight per S = 100 mm
	Bore Size (mm)	Basic Type (00)	Foot Type (LB)	Flange Type (FA, FB)	Single Clevis Type (CA)	Double Yoke Clevis Type (CB)		Trunnion Type (TC)	T Type	
ø40	2.48	2.66	2.91	2.83	2.83	2.86	Refer to the Weight listed in the Switch Specifications on P. 1457.	0.024	0.028	0.39
ø50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46
ø63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50
ø80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90
ø100	14.70	15.70	17.40	16.90	16.90	17.30		0.024	0.028	1.12

(Example) Product Weight of JSC3-LB-50B-200-T0H-D

Product weight for 0 mm stroke 3.67 kg
 Additional weight for 200 mm stroke ... $0.46 \times \frac{200}{100} = 0.92$ kg
 Weight of 2 T0H 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 (ø125 to ø180)

[Unit: kg]

Item / Mounting Style	Product Weight when stroke (S) = 0 mm					Switch Weight	Mounting bracket	Added weight per S = 100 mm
	Bore Size (mm)	Axial Foot Type (LB)	Flange Type (FA, FB)	Single Clevis Type (CA)	Double Clevis Type (CB)			
ø125	25.72	27.52	27.22	27.32	27.62	Refer to the Weight listed in the Switch Specifications on P. 1457.	0.028	1.54
ø140	32.95	36.35	34.75	34.95	34.15		0.030	1.78
ø160	42.85	46.65	44.75	45.05	46.15		0.034	2.22
ø180	61.55	69.05	64.45	64.95	65.15		0.038	2.96

(Example) Product Weight of JSC4-LN-LB-125B-300-T0H-D

Product Weight at S = 0 mm: 25.72 kg
 Additional weight when S = 300 mm $1.54 \times \frac{300}{100} = 4.62$ kg
 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	Operating 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	ø40	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
	ø50	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
	ø63	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
ø80	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	
ø100	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	ø125	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
	ø140	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
	ø160	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
ø180	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	

Mounting Bracket Model No. Notation

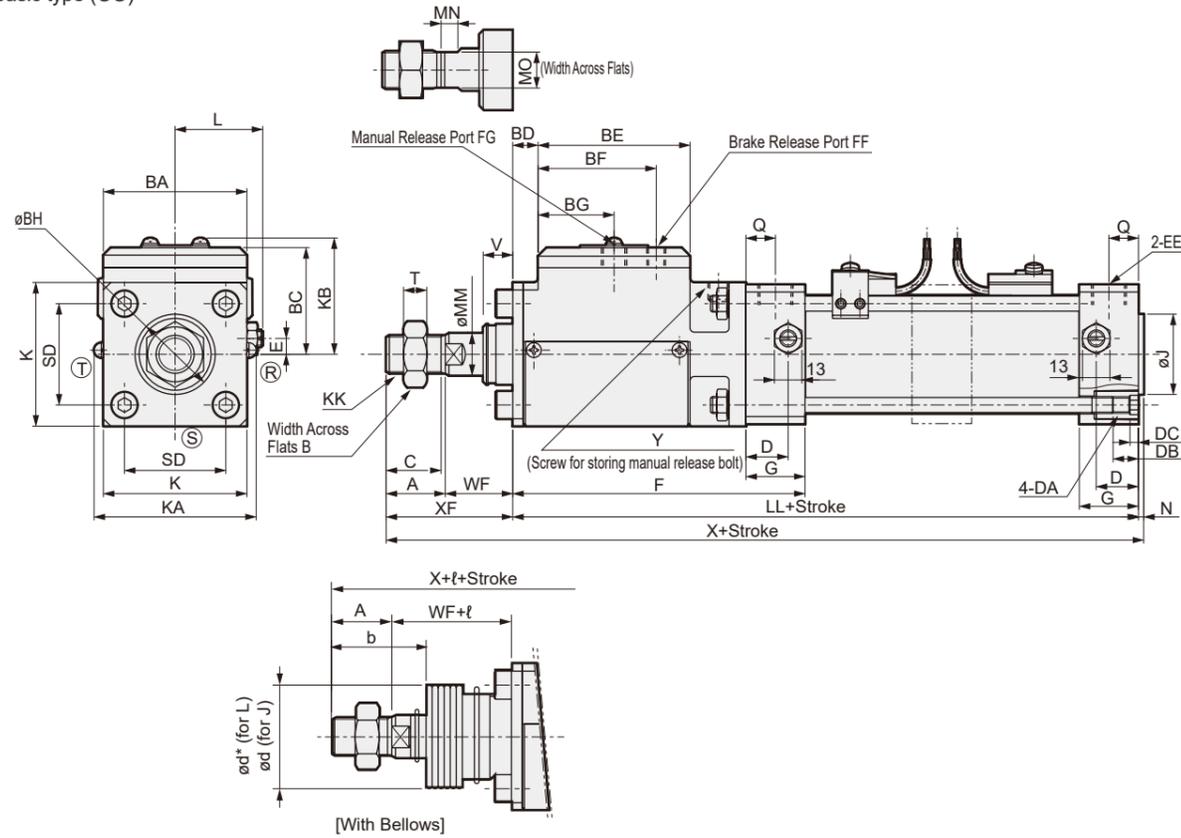
● ø40 to ø100

Bore Size (mm)	ø40	ø50	ø63	ø80	ø100
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
Single clevis (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Double Yoke Clevis (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: Foot type mounting brackets are 2 pcs/set.
*2: Pins and Retaining Rings are included.
*3: Mounting bolts are included with each mounting bracket.

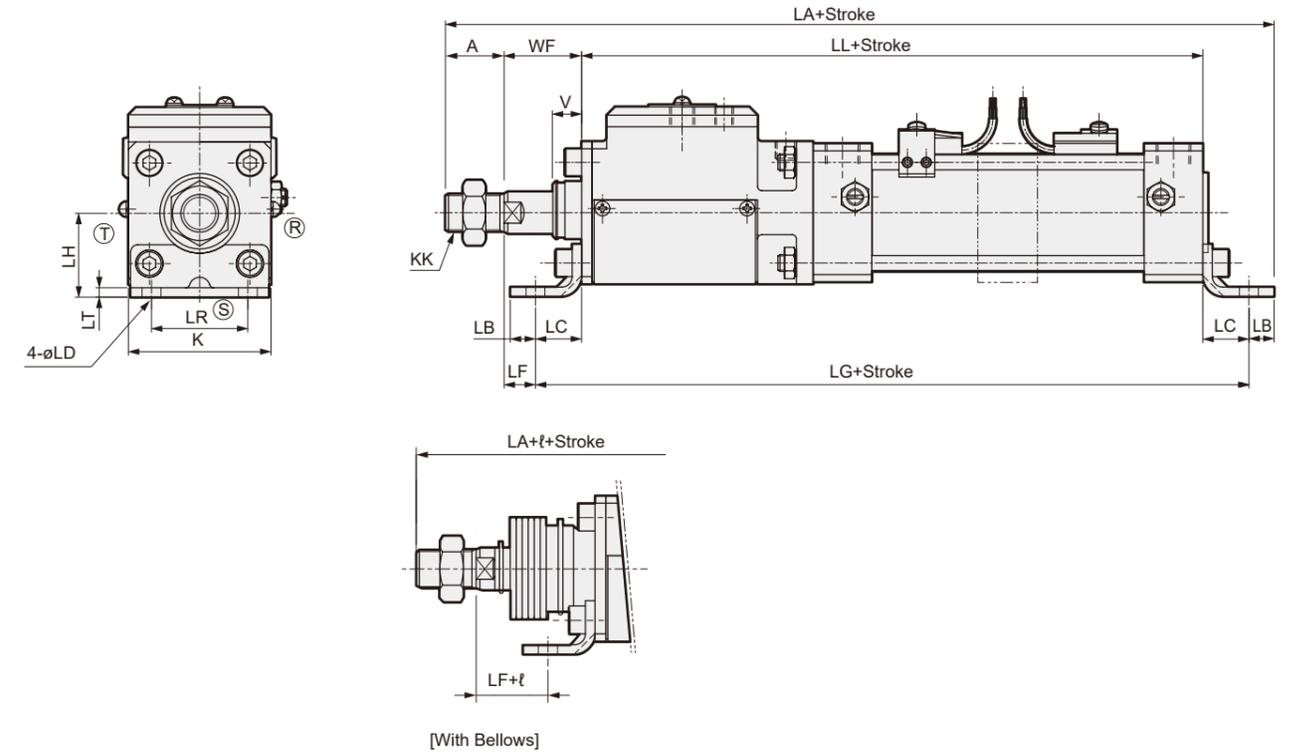
Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 100$)

● Basic type (OO)



Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 100$)

● Axial Foot Type (LB)



Code	Basic Type (OO) Basic Dimensions																					
Bore Size (mm)	A	B	BA	BC	BD	BE	BF	BG	BH	C	D	DA	DB	DC	E	EE	F	FF	FG	G	J	K
$\phi 40$	22	22	58	46	9	62	51	31	31	20	18	M8	12	4	7.5	Rc1/4	121	Rc1/8	M10	26	31	57
$\phi 50$	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
$\phi 63$	28	27	80	54	13	86	70	43	38	26	22	M8	12	4	0	Rc3/8	154	Rc1/4	M12	30	38	80
$\phi 80$	36	32	98	66	13	106	80	53	43	34	26	M12	16	5	0	Rc 1/2	179.5	Rc1/4	M14	34	43	98
$\phi 100$	45	41	118	74	17.5	132	101	66	51	43	28	M12	16	5	0	Rc 1/2	220.5	Rc3/8	M16	36	51	118

Code	With Bellows ℓ																
Bore Size (mm)	KA	KB	KK	L	LL	MM	MN	M0	N	Q	SD	T	V	WF	X	XF	Y
$\phi 40$	66	50.5	M14x1.5	38 to 39.5	188	16	8	14	2	13	40.5	8	15	30	242	52	M10 Depth 9
$\phi 50$	77	55	M18x1.5	41.0 to 43.5	211.5	20	8	17	2.5	14	48	11	16	34	276	62	M10 Depth 9
$\phi 63$	89	58.5	M18x1.5	47.5 to 50.0	229	20	8	17	3	15	59	11	16	30	290	58	M12 Depth 10
$\phi 80$	107	70.5	M22x1.5	56 to 59	261.5	25	11	22	3.5	17	74	13	17.5	43.5	344.5	79.5	M14 Depth 11
$\phi 100$	127	78.5	M26x1.5	66 to 69	312.5	30	13	27	4	18	90	16	26	48	409.5	93	M16 Depth 13

Code	With Bellows ℓ													
Bore Size (mm)	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
$\phi 40$	22	30	22	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
$\phi 50$	28	34	27	47	47	48	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
$\phi 63$	28	30	22	45	47	48	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
$\phi 80$	36	43.5	30.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
$\phi 100$	45	48	35.5	69.5	61	65	20	32	42	53	76	98	120	(Stroke/4.5)+9

Code	Axial Foot Type (LB) Mounting Dimensions															
Bore Size (mm)	A	K	KK	V	WF	LL	LA	LB	LC	LD	LF	LG	LH	LR	LT	
$\phi 40$	22	57	M14x1.5	15	30	188	269.5	10	19.5	9	10.5	227	40	40	3.2	
$\phi 50$	28	68	M18x1.5	16	34	211.5	307.5	12	22	9	12	255.5	40	46	4.5	
$\phi 63$	28	80	M18x1.5	16	30	229	329	12	30	11	0	289	50	60	4.5	
$\phi 80$	36	98	M22x1.5	17.5	43.5	261.5	392	14	37	14	6.5	335.5	60	74	6.0	
$\phi 100$	45	118	M26x1.5	26	48	312.5	457.5	21	31	14	17	374.5	67	80	6.0	

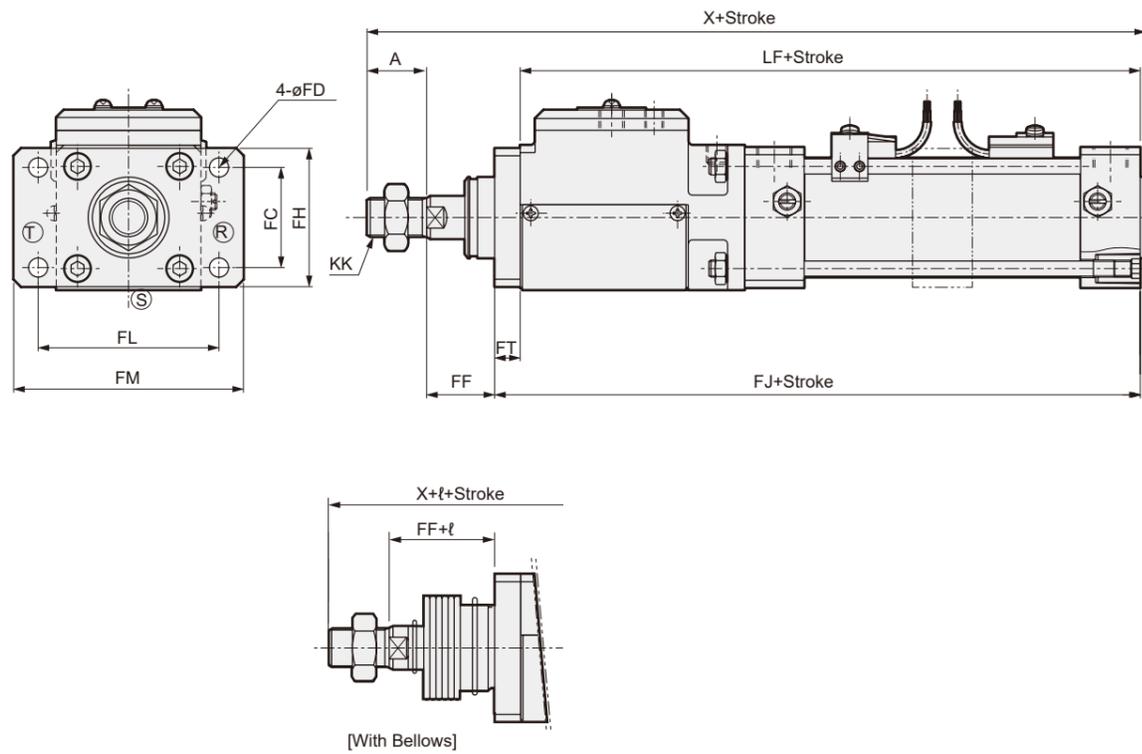
Code	With Bellows ℓ								
Bore Size (mm)	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more	
$\phi 40$	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8	
$\phi 50$	22	36	49	63	90	119	146	(Stroke/3.6)+7.5	
$\phi 63$	22	36	49	63	90	119	146	(Stroke/3.6)+7.5	
$\phi 80$	14	26	38	49	72	96	119	(Stroke/4.3)+2.5	
$\phi 100$	20	32	42	53	76	98	120	(Stroke/4.5)+9	

- *1: Round up the ℓ dimension to the nearest whole number.
- *2: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
- *3: Manual release bolt is included.
- *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
- *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
- *6: For dimensions with each switch, refer to P. 494.

- *1: Round up the ℓ dimension to the nearest whole number.
- *2: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
- *3: Manual release bolt is included.
- *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
- *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
- *6: For dimensions with each switch, refer to P. 494.

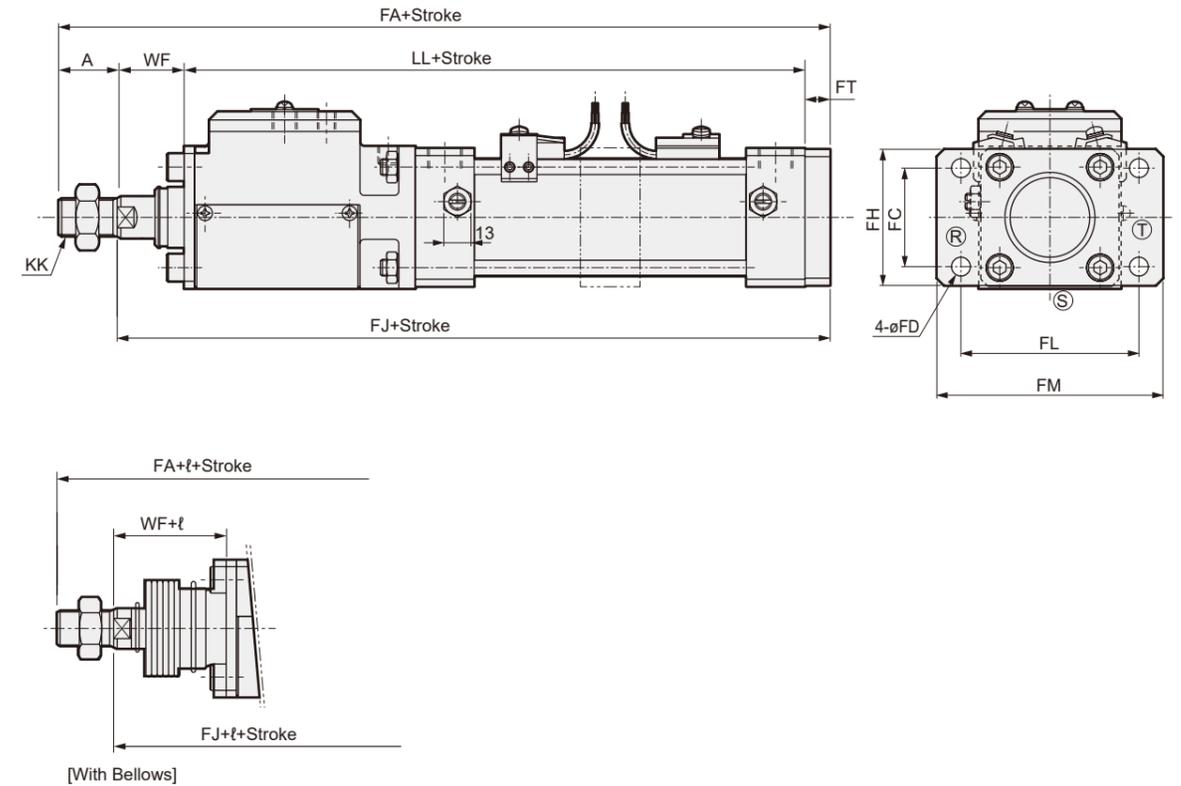
Outline Dimension Drawing (Bore Size: ø40 to ø100)

●Rod Side Flange Type (FA)



Outline Dimension Drawing (Bore Size: ø40 to ø100)

●Head Side Flange Type (FB)



With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Code	Rod Side Flange Type (FA) Mounting Dimensions											
Bore Size (mm)	A	K	LF	X	FC	FD	FF	FH	FJ	FL	FM	FT
ø40	22	57	184	242	40	9	22	57	196	80	100	12
ø50	28	68	206.5	276	47	9	27	65	218.5	85	108	12
ø63	28	80	221	290	60	11	22	80	237	106	130	16
ø80	36	98	255.5	344.5	74	14	30.5	98	274.5	125	153	19
ø100	45	118	306	409.5	88	14	35.5	118	325	144	180	19

Code	With Bellows ℓ							
Bore Size (mm)	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
ø40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
ø50	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø63	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø80	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
ø100	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: ® ® ® indicates the position of the cushion needle.
 *3: Since the rod metal is not fixed, it cannot be reassembled to the head side flange.
 *4: Manual release bolt is included.
 *5: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *6: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *7: For dimensions with each switch, refer to P. 494.

Code	Head Side Flange Type (FB) Mounting Dimensions											
Bore Size (mm)	A	KK	LL	WF	FA	FC	FD	FH	FJ	FL	FM	FT
ø40	22	M14x1.5	188	30	252	40	9	57	230	80	100	12
ø50	28	M18x1.5	211.5	34	285.5	47	9	65	257.5	85	108	12
ø63	28	M18x1.5	229	30	303	60	11	80	275	106	130	16
ø80	36	M22x1.5	261.5	43.5	360	74	14	98	324	125	153	19
ø100	45	M26x1.5	312.5	48	424.5	88	14	118	379.5	144	180	19

Code	With Bellows ℓ							
Bore Size (mm)	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
ø40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
ø50	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø63	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø80	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
ø100	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: ® ® ® indicates the position of the cushion needle.
 *3: Since the Piston Rod protrusion length (from flange end face), rod metal, and flange mounting bolts change, it cannot be reassembled to the rod side flange.
 *4: Manual release bolt is included.
 *5: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *6: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *7: For dimensions with each switch, refer to P. 494.

Cylinder
Switch

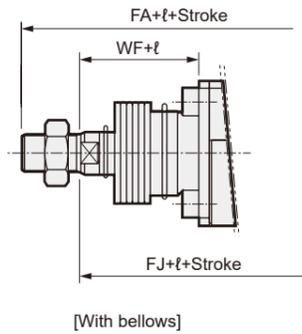
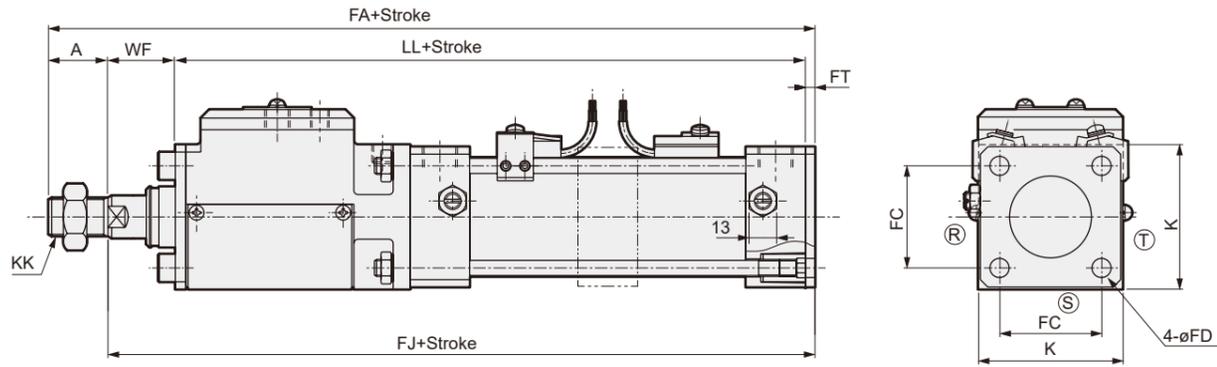
Cylinder
Switch

Ending

Ending

Outline Dimension Drawing (Bore Size: ø40 to ø100)

● Head side special flange type (FC)



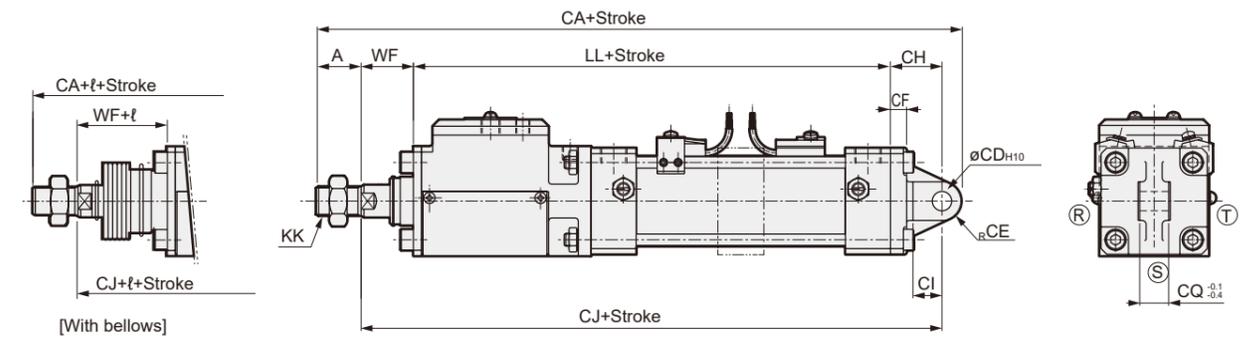
Code	Head Side Flange Type (FC) Mounting Dimensions									
Bore Size (mm)	A	K	KK	LL	WF	FA	FC	FD	FJ	FT
ø40	22	57	M14x1.5	188	30	244.5	40.5	9	222.5	4.5
ø50	28	68	M18x1.5	211.5	34	278	48	9	250	4.5
ø63	28	80	M18x1.5	229	30	291.5	59	9	263.5	4.5
ø80	36	98	M22x1.5	261.5	43.5	347	74	14	311	6
ø100	45	118	M26x1.5	312.5	48	411.5	90	14	366.5	6

Code	With Bellows ℓ							
Bore Size (mm)	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
ø40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
ø50	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø63	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø80	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
ø100	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: Ⓜ Ⓢ Ⓣ indicates the position of the cushion needle.
 *3: Manual release bolt is included.
 *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *6: For dimensions with each switch, refer to P. 494.

Outline Dimension Drawing (Bore Size: ø40 to ø100)

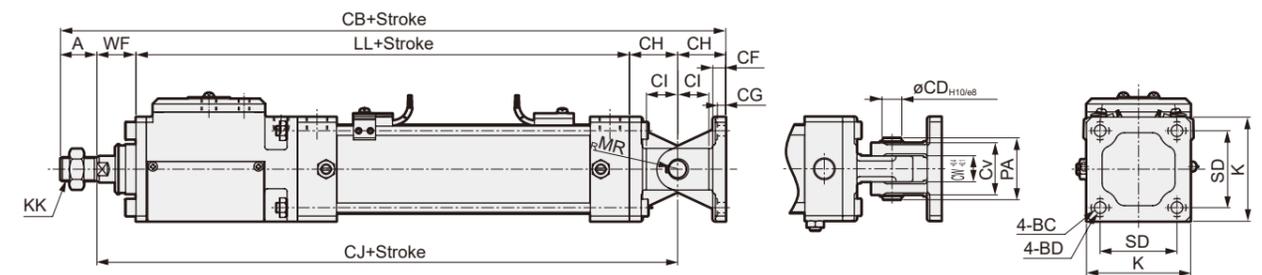
● Single Clevis Type (CA)



Code	Single Clevis Type (CA) Mounting Dimensions											With Bellows ℓ								
Bore Size (mm)	A	KK	LL	WF	CA	CD	CE	CF	CH	CI	CJ	CQ	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
ø40	22	M14x1.5	188	30	284	12	12	10	32	18	250	18	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
ø50	28	M18x1.5	211.5	34	317.5	12	12	10	32	18	277.5	18	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø63	28	M18x1.5	229	30	340	14	16	10	37	24	296	20	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
ø80	36	M22x1.5	261.5	43.5	413	20	20	14	52	30	357	28	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
ø100	45	M26x1.5	312.5	48	477.5	20	20	16	52	30	412.5	28	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: Ⓜ Ⓢ Ⓣ indicates the position of the cushion needle.
 *3: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *4: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *5: For dimensions with each switch, refer to P. 494.

● Eye bracket (CA) with clevis bracket (B2)



Code	Single Yoke Clevis Type (CA), with Double Yoke Bracket (B2) Mounting Dimensions																		
Bore Size (mm)	A	KK	LL	WF	CB	CD	CF	CG	CH	CI	CJ	Cv	CW	BC	BD	K	MR	PA	SD
ø40	22	M14x1.5	188	30	304	12	10	6.5	32	18	250	36	18	9	14	57	12	43.5	40.5
ø50	28	M18x1.5	211.5	34	337.5	12	10	6.5	32	18	277.5	36	18	9	14	66	12	43.5	48
ø63	28	M18x1.5	229	30	361	14	10	6.5	37	24	296	40	20	9	14	80	16	47.5	59
ø80	36	M22x1.5	261.5	43.5	445	20	14	10.5	52	30	357	56	28	14	20	98	20	64	74
ø100	45	M26x1.5	312.5	48	509.5	20	16	10.5	52	30	412.5	56	28	14	20	118	20	64	90

Cylinder Switch

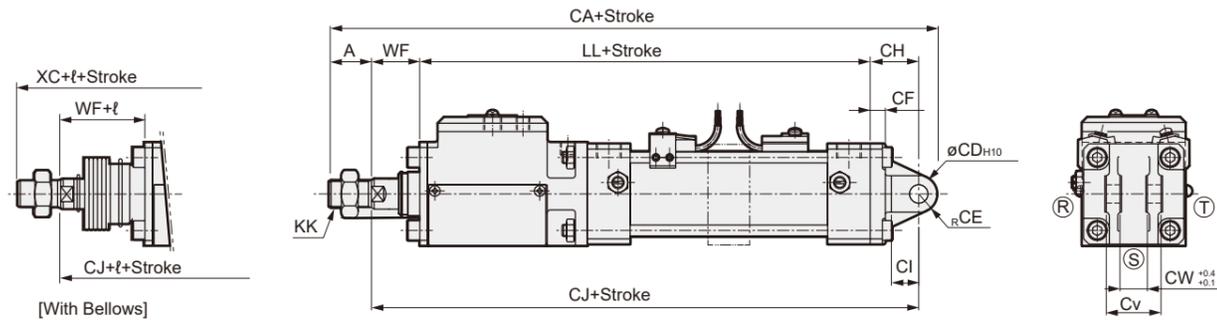
Ending

Cylinder Switch

Ending

Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 100$)

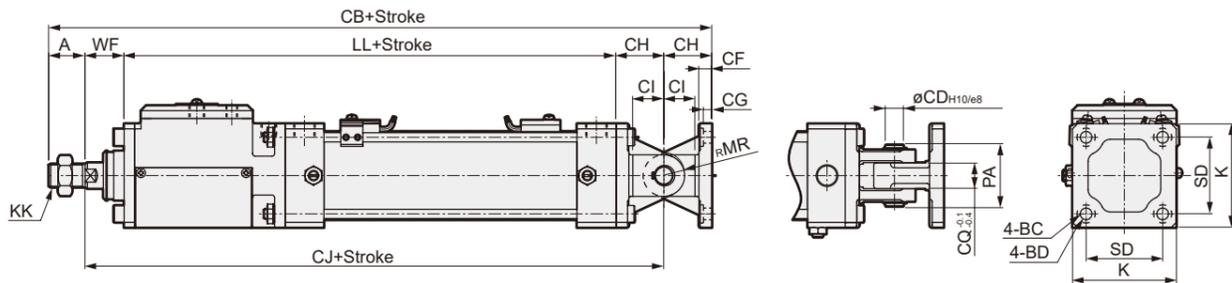
● Double clevis type (CB)



Code	Double Yoke Clevis Type (CA) Mounting Dimensions													With Bellows ℓ							
	Bore Size (mm)	A	KK	LL	WF	CA	CD	CE	CF	CH	CI	CJ	Cv	CW	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500
$\phi 40$	22	M14x1.5	188	30	284	12	12	10	32	18	250	36	18	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
$\phi 50$	28	M18x1.5	211.5	34	317.5	12	12	10	32	18	277.5	36	18	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
$\phi 63$	28	M18x1.5	229	30	340	14	16	10	37	24	296	40	20	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
$\phi 80$	36	M22x1.5	261.5	43.5	413	20	20	14	52	30	357	56	28	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
$\phi 100$	45	M26x1.5	312.5	48	477.5	20	20	16	52	30	412.5	56	28	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *3: Pin and Retaining Ring are included.
 *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *6: For dimensions with each switch, refer to P. 494.

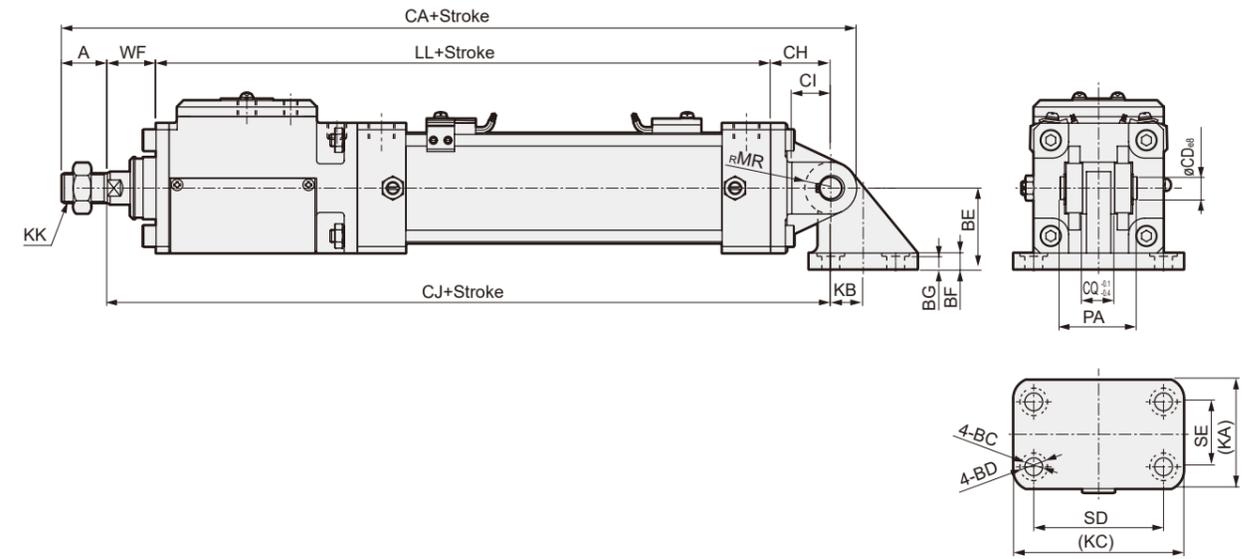
● Clevis bracket (CB) with eye bracket (B1)



Code	Double Yoke Clevis Type (CB), with Single Yoke Bracket (B1) Mounting Dimensions																	
	Bore Size (mm)	A	KK	LL	WF	CB	CD	CF	CG	CH	CI	CJ	CQ	BC	BD	K	MR	PA
$\phi 40$	22	M14x1.5	188	30	304	12	10	6.5	32	18	250	18	9	14	57	12	43.5	40.5
$\phi 50$	28	M18x1.5	211.5	34	337.5	12	10	6.5	32	18	277.5	18	9	14	66	12	43.5	48
$\phi 63$	28	M18x1.5	229	30	361	14	10	6.5	37	24	296	20	9	14	80	16	47.5	59
$\phi 80$	36	M22x1.5	261.5	43.5	445	20	14	10.5	52	30	357	28	14	20	98	20	64	74
$\phi 100$	45	M26x1.5	312.5	48	509.5	20	16	10.5	52	30	412.5	28	14	20	118	20	64	90

Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 100$)

● Clevis bracket (CB) with eye bracket (B3)



Code	Double Yoke Clevis Type (CB), with Single Yoke Bracket (B3) Mounting Dimensions																					
	Bore Size (mm)	A	KK	LL	WF	CA	CD	CH	CI	CJ	CQ	BC	BD	BE	BF	BG	KA	KB	KC	MR	PA	SD
$\phi 40$	22	M14x1.5	188	30	284	12	32	18	250	18	9	14	40	8	6.5	57	17.5	85	12	43.5	40.5	35
$\phi 50$	28	M18x1.5	211.5	34	317.5	12	32	18	277.5	18	9	14	40	8	6.5	57	17.5	85	12	43.5	48	35
$\phi 63$	28	M18x1.5	229	30	340	14	37	24	296	20	9	14	50	10	8	67	20	105	16	47.5	59	40
$\phi 80$	36	M22x1.5	261.5	43.5	413	20	52	30	357	28	14	20	65	12	10	93	30	130	20	64	74	60
$\phi 100$	45	M26x1.5	312.5	48	477.5	20	52	30	412.5	28	14	20	65	12	10	93	30	130	20	64	90	60

Cylinder Switch

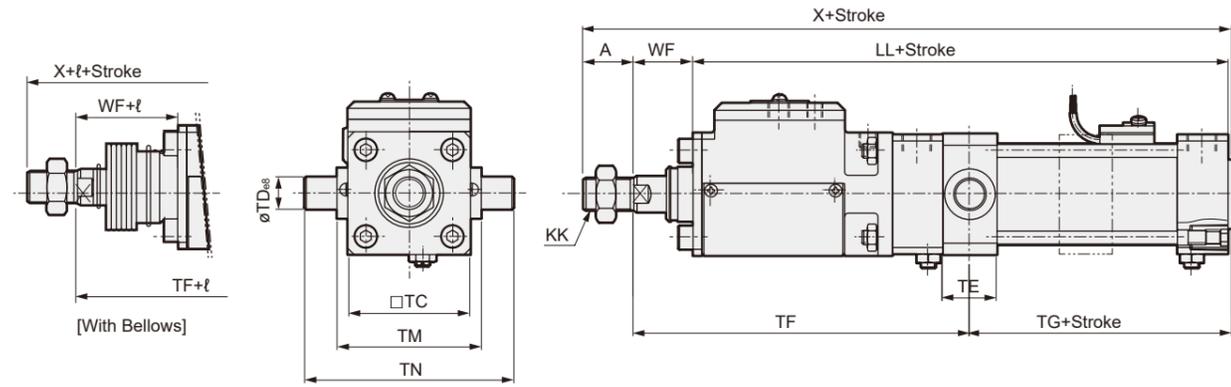
Ending

Cylinder Switch

Ending

Outline Dimension Drawing (Bore Size: ø40 to ø100)

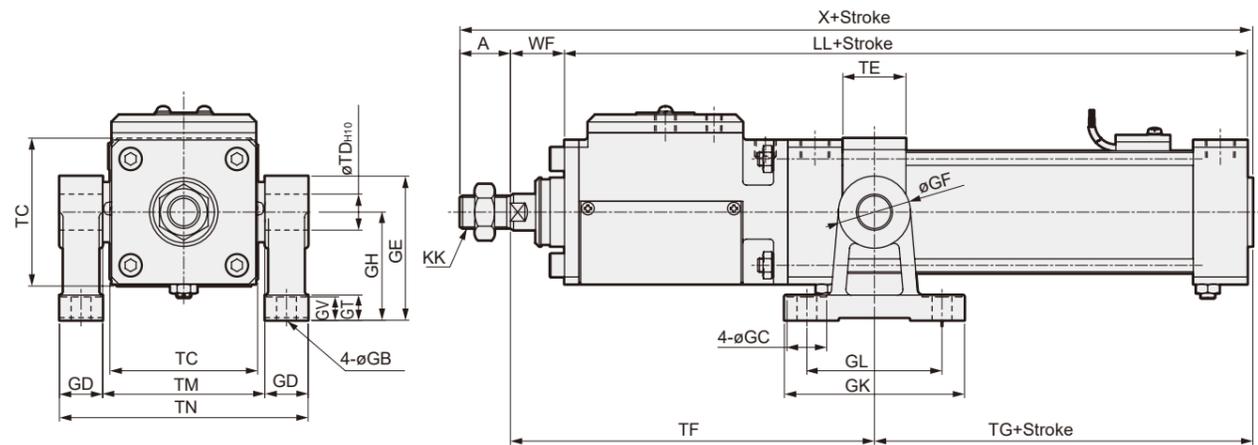
● Rod side trunnion type (TA)



Code	Rod Side Trunnion Type (TA) Mounting Dimensions											With Bellows ℓ								
	A	KK	LL	WF	TC	TD	TE	TF	TG	TM	TN	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more	
ULK□	ø40	22	M14x1.5	188	30	57	16	30	166.5	53.5	63	95	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
	ø50	28	M18x1.5	211.5	34	67	18	30	188	60	80	116	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
	ø63	28	M18x1.5	229	30	82	20	35	202	60	90	130	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
JSK2/ JSM2	ø80	36	M22x1.5	261.5	43.5	100	25	40	243.5	65	115	165	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
	ø100	45	M26x1.5	312.5	48	121	35	50	294	70.5	135	205	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: Position detection at the rod side stroke end is not possible.
 *3: Cushion needle position cannot be changed.
 *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *6: For dimensions with each switch, refer to P. 494.

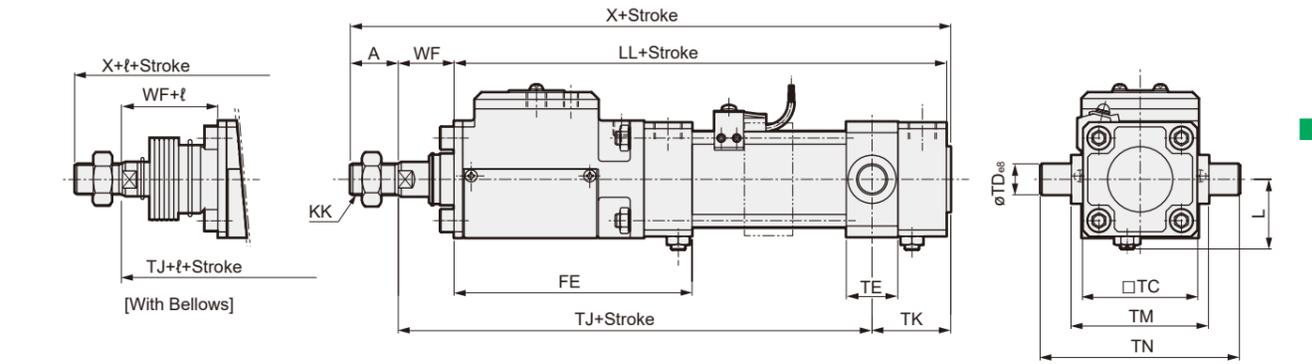
● Rod side trunnion (TA), trunnion with second bracket (B4)



Code	Rod Side Trunnion Type (TA), with Trunnion Type 2nd Bracket (B4) Mounting Dimensions																						
	A	KK	LL	WF	X	TC	TD	TE	TF	TG	TM	TN	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	
Cylinder Switch	ø40	22	M14x1.5	188	30	242	57	16	30	166.5	53.5	63	95	9	17	19	61	32	45	80	60	12	11
	ø50	28	M18x1.5	211.5	34	276	67	18	30	188	60	80	116	9	17	19	63	36	45	85	65	12	11
	ø63	28	M18x1.5	229	30	290	82	20	35	202	60	90	130	11	22	24	80	40	60	100	75	14	13
Ending	ø80	36	M22x1.5	261.5	43.5	344.5	100	25	40	243.5	65	115	165	14	24	26	85	50	60	115	85	14	13
	ø100	45	M26x1.5	312.5	48	409.5	121	35	50	294	70.5	135	205	14	24	35	107	64	75	130	100	17	16

Outline Dimension Drawing (Bore Size: ø40 to ø100)

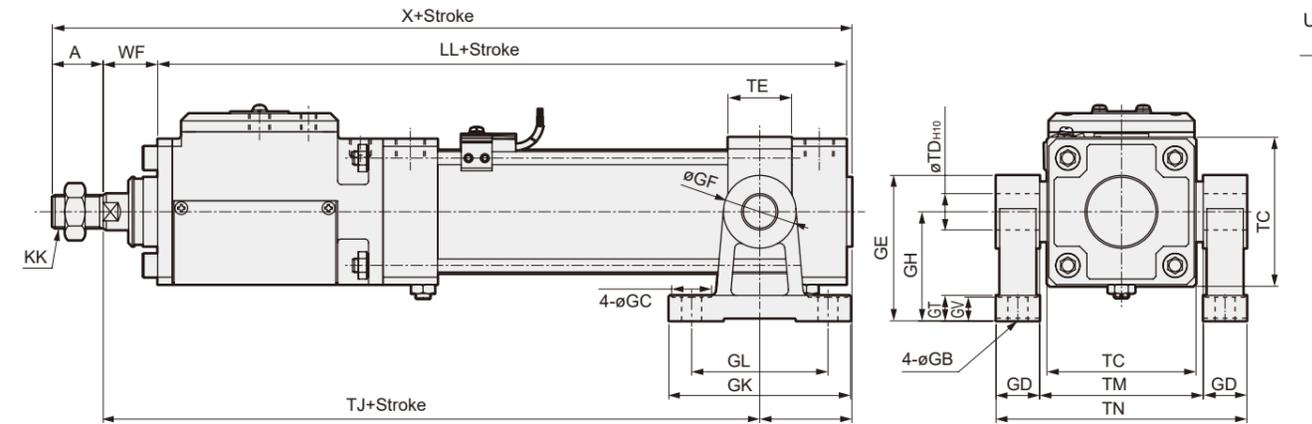
● Head Side Trunnion Type (TB)



Code	Head Side Trunnion Type (TB) Mounting Dimensions														With Bellows ℓ								
	A	KK	LL	WF	FE	L	X	TC	TD	TE	TJ	TK	TM	TN	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more	
ULK□	ø40	22	M14x1.5	188	30	121	38 to 39.5	242	57	16	30	176.5	43.5	63	95	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke/3.0)+8
	ø50	28	M18x1.5	211.5	34	138.5	41.0 to 43.5	276	67	18	30	202	46	80	116	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
	ø63	28	M18x1.5	229	30	154	47.5 to 50.0	290	82	20	35	211	51	90	130	22	36	49	63	90	119	146	(Stroke/3.6)+7.5
JSK2/ JSM2	ø80	36	M22x1.5	261.5	43.5	179.5	56 to 59	344.5	100	25	40	250.5	58	115	165	14	26	38	49	72	96	119	(Stroke/4.3)+2.5
	ø100	45	M26x1.5	312.5	48	220.5	66 to 69	409.5	121	35	50	299	65.5	135	205	20	32	42	53	76	98	120	(Stroke/4.5)+9

*1: Round up the ℓ dimension to the nearest whole number.
 *2: Position detection at the head side stroke end is not possible.
 *3: Cushion needle position cannot be changed.
 *4: For outline dimension drawings of accessories, please refer to P. 453 to 455.
 *5: An intermediate support head (two-dot chain line) is added depending on the stroke. For details on dimensions, please refer to P. 443.
 *6: For dimensions with each switch, refer to P. 494.

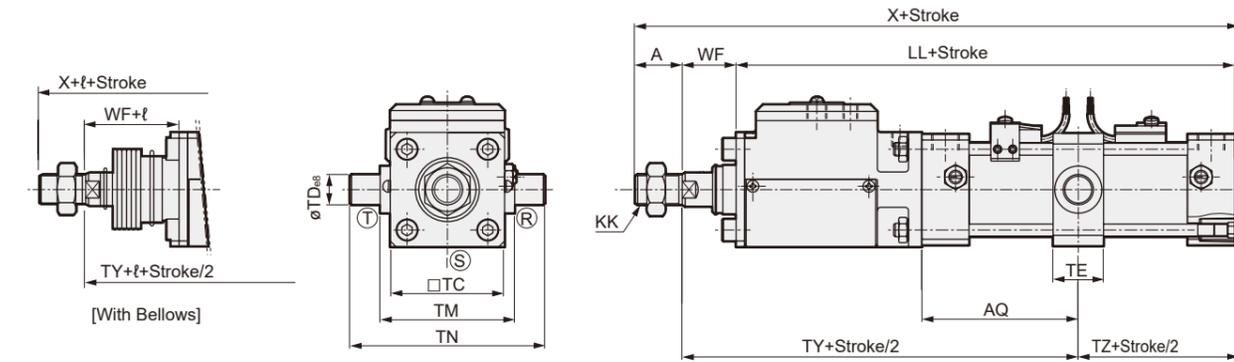
● Head side trunnion (TB), trunnion with No. 2 bracket (B4)



Code	Head Side Trunnion Type (TB), with Trunnion Type 2nd Bracket (B4) Mounting Dimensions																						
	A	KK	LL	WF	X	TC	TD	TE	TJ	TK	TM	TN	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	
Cylinder Switch	ø40	22	M14x1.5	188	30	242	57	16	30	176.5	43.5	63	95	9	17	19	61	32	45	80	60	12	11
	ø50	28	M18x1.5	211.5	34	276	67	18	30	202	46	80	116	9	17	19	63	36	45	85	65	12	11
	ø63	28	M18x1.5	229	30	290	82	20	35	211	51	90	130	11	22	24	80	40	60	100	75	14	13
Ending	ø80	36	M22x1.5	261.5	43.5	344.5	100	25	40	250.5	58	115	165	14	24	26	85	50	60	115	85	14	13
	ø100	45	M26x1.5	312.5	48	409.5	121	35	50	299	65.5	135	205	14	24	35	107	64	75	130	100	17	16

Outline Dimension Drawing (Bore Size: ø40 to ø100)

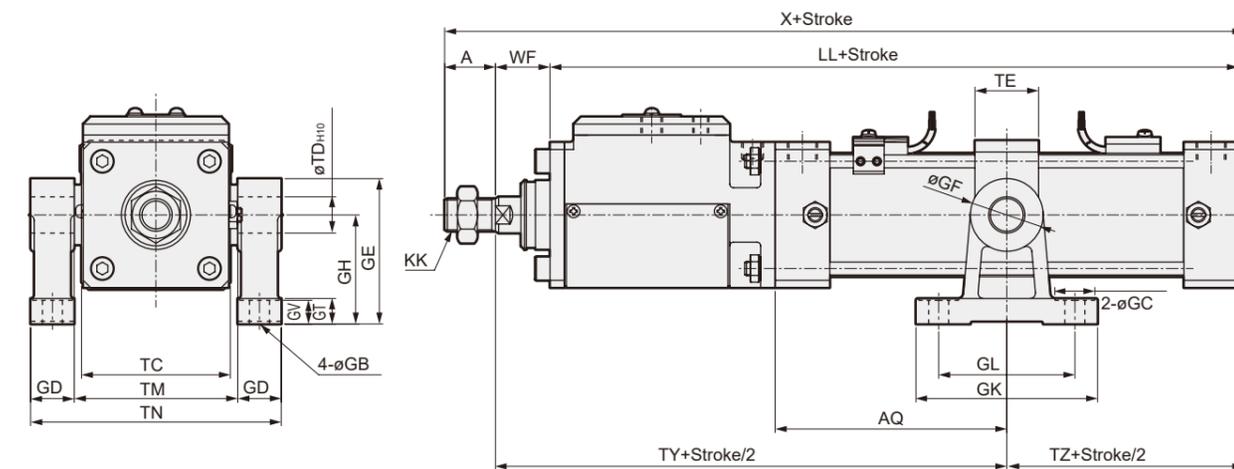
● Intermediate trunnion type (TC)



Code	Intermediate Trunnion Type (TC) Mounting Dimensions													With Bellows ℓ								
	Bore Size (mm)	A	KK	LL	WF	X	AQ	TC	TD	TE	TM	TN	TY	TZ	50 or less	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 or more
ø40	22	M14x1.5	188	30	242	$46.5 + \frac{\text{Stroke}}{2}$	57	16	30	63	95	171.5	48.5	25.5	41.5	58.5	75.5	108.5	141.5	174.5	$(\text{Stroke}/3.0)+8$	
ø50	28	M18x1.5	211.5	34	276	$50.5 + \frac{\text{Stroke}}{2}$	67	18	30	80	116	195	53	22	36	49	63	90	119	146	$(\text{Stroke}/3.6)+7.5$	
ø63	28	M18x1.5	229	30	290	$52.5 + \frac{\text{Stroke}}{2}$	82	20	35	90	130	206.5	55.5	22	36	49	63	90	119	146	$(\text{Stroke}/3.6)+7.5$	
ø80	36	M22x1.5	261.5	43.5	344.5	$58 + \frac{\text{Stroke}}{2}$	100	25	40	115	165	247	61.5	14	26	38	49	72	96	119	$(\text{Stroke}/4.3)+2.5$	
ø100	45	M26x1.5	312.5	48	409.5	$64 + \frac{\text{Stroke}}{2}$	121	35	50	135	205	296.5	68	20	32	42	53	76	98	120	$(\text{Stroke}/4.5)+9$	

- *1: Round up the ℓ dimension to the nearest whole number.
- *2: R S T indicates the position of the cushion needle.
- *3: For outline dimension drawings of accessories, please refer to P. 453 to 455.
- *4: For dimensions with each switch, refer to P. 494.

● Intermediate trunnion (TC), trunnion with second bracket (B4)

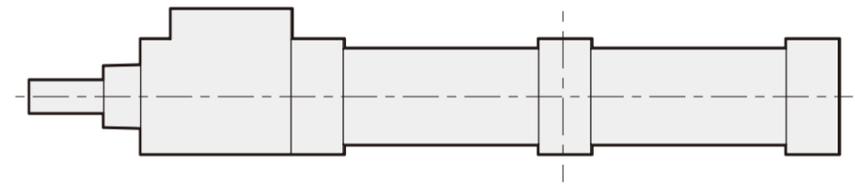


Code	Intermediate Trunnion Type (TC), with Trunnion Type 2nd Bracket (B4) Mounting Dimensions																								
	Bore Size (mm)	A	KK	LL	WF	X	AQ	TC	TD	TE	TY	TZ	TM	TN	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	
ø40	22	M14x1.5	188	30	242	$46.5 + \frac{\text{Stroke}}{2}$	57	16	30	171.5	48.5	63	95	9	17	19	61	32	45	80	60	12	11		
ø50	28	M18x1.5	211.5	34	276	$50.5 + \frac{\text{Stroke}}{2}$	67	18	30	195	53	80	116	9	17	19	63	36	45	85	65	12	11		
ø63	28	M18x1.5	229	30	290	$52.5 + \frac{\text{Stroke}}{2}$	82	20	35	206.5	55.5	90	130	11	22	24	80	40	60	100	75	14	13		
ø80	36	M22x1.5	261.5	43.5	344.5	$58 + \frac{\text{Stroke}}{2}$	100	25	40	247	61.5	115	165	14	24	26	85	50	60	115	85	14	13		
ø100	45	M26x1.5	312.5	48	409.5	$64 + \frac{\text{Stroke}}{2}$	121	35	50	296.5	68	135	205	14	24	35	107	64	75	130	100	17	16		

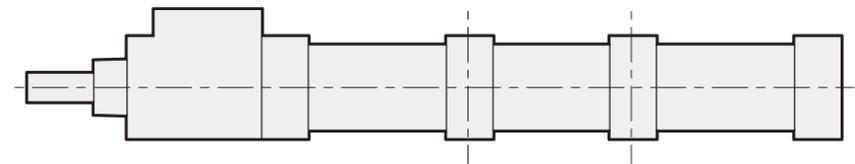
● Non-sag block (Bore Size: ø40 to ø100)

An intermediate support head is added to the center of the cylinder depending on the stroke. The quantity of intermediate support heads varies depending on the tube diameter and stroke as shown in the table below.

Quantity of intermediate support heads by stroke		
Tube Diameter (mm)	Stroke mm	Intermediate support head quantity
ø40	1200 to 1600	1
	1801 to 2000	2
ø50	1200 to 1800	1
	1801 to 2000	2
ø63	1200 to 1800	1
	1801 to 2500	2
ø80	1500 to 2000	1
	2001 to 2500	2
ø100	1500 to 2000	1
	2001 to 2500	2

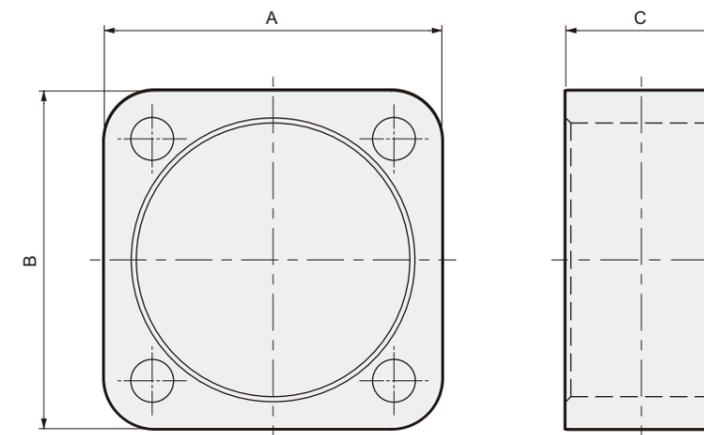


One non-sag block: Assembled in the center between the covers



Two non-sag blocks: Assembled to divide the space between covers into three equal parts

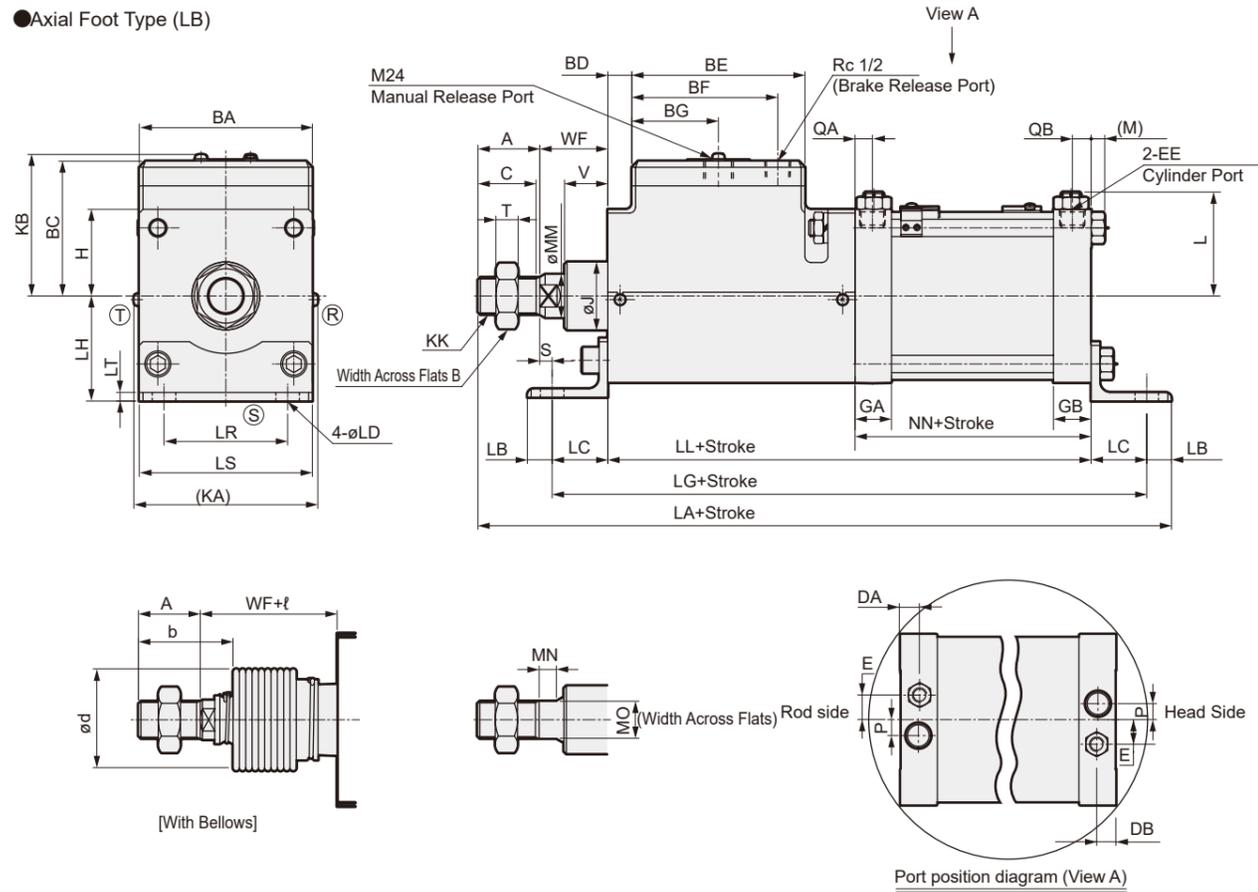
Also, the dimensions of the intermediate support head are as shown in the figure below, so please consider the dimensions of the intermediate support head when installing the cylinder.



Tube Diameter (mm)	Intermediate support head dimensions		
	A	B	C
ø40	56	57	30
ø50	66	67	30
ø63	81	82	35
ø80	99	100	40
ø100	120	121	50

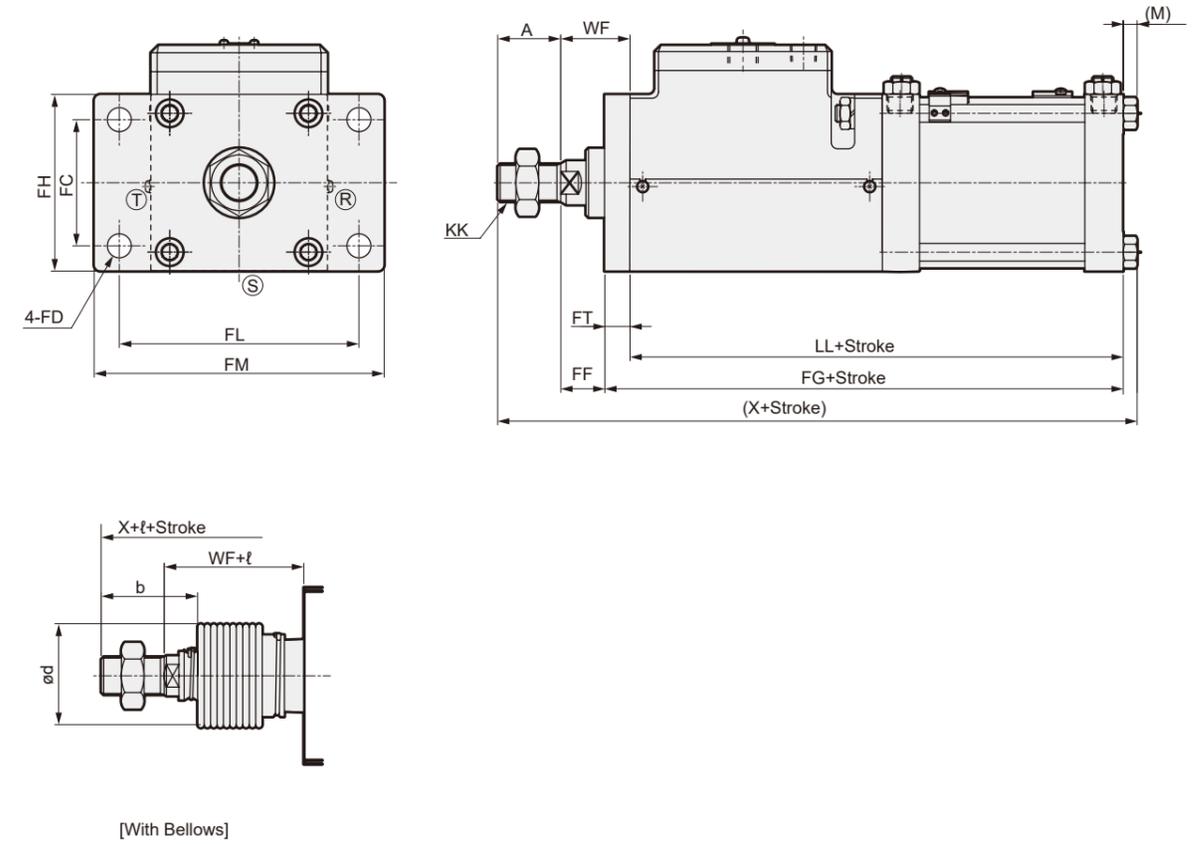
Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Axial Foot Type (LB)



Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Rod Side Flange Type (FA)



Code	Axial Foot (LB) Mounting Dimensions															
Bore Size (mm)	A	B	BA	BC	BD	BE	BF	BG	C	DA	DB	E	EE	F	GA	GB
$\phi 125$	50	46	140	109	19.5	140	118	70	47	15	16	20	Rc 1/2	200	29.5	30.5
$\phi 140$	50	46	157	116.5	18.5	157	128.5	78.5	47	19	20	20	Rc 3/4	216	33.5	34.5
$\phi 160$	56	55	177	128	23	177	146.5	88.5	53	19	20	24	Rc 3/4	245	33.5	34.5
$\phi 180$	63	60	200	146	14	200	170	100	60	19	20	24	Rc 3/4	264	33.5	34.5

Code	Axial Foot (LB) Mounting Dimensions																		
Bore Size (mm)	H	J	L	KA	KB	KK	LL	M	MM	MN	MO	NN	P	QA	QB	S	T	V	WF
$\phi 125$	70	55	78 to 82	150	115	M30 \times 1.5	291	11	35	14	30	91	13	14	15	10	18	35	55
$\phi 140$	78.5	55	86.5 to 91	167	122.5	M30 \times 1.5	318	11	35	14	30	102	15	16	17	7	18	35	57
$\phi 160$	88.5	62.5	96.5 to 101	189	134	M36 \times 1.5	350	13	40	16	36	105	15	16	17	18.5	21	48	71.5
$\phi 180$	100	68.5	108 to 112	213	152	M40 \times 1.5	373	15	45	18	41	109	15	16	17	18.5	24	53	78.5

Code	Axial Foot (LB) Mounting Dimensions															
Bore Size (mm)	With Bellows										With Bellows					
Bore Size (mm)	LA	LB	LC	LD	LG	LH	LR	LS	LT	b	d	ℓ				
$\phi 125$	460	19	45	19	381	85	100	140	7	74	75	(Stroke/4.55)+11				
$\phi 140$	495	20	50	19	418	100	112	157	8	74	75	(Stroke/4.55)+9				
$\phi 160$	550.5	20	53	19	456	106	118	177	10	81	80	(Stroke/5.15)+9				
$\phi 180$	601.5	27	60	24	493	125	132	200	10	90	90	(Stroke/5.15)+9				

*1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

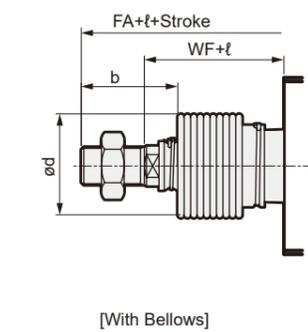
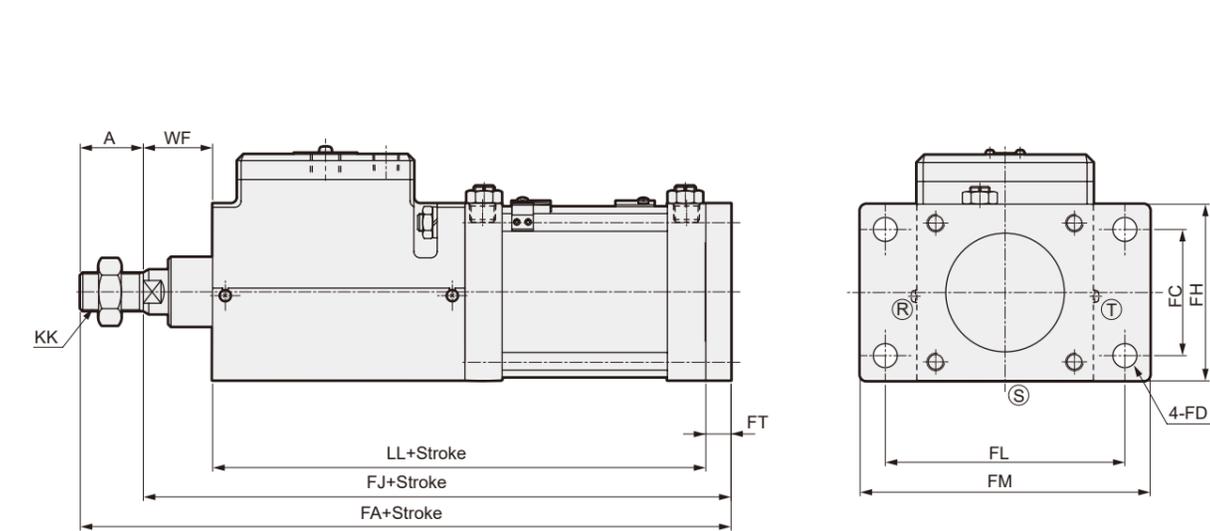
Code	Rod Side Flange Type (FA) Mounting Dimensions													
Bore Size (mm)	A	KK	LL	M	WF	X	FC	FD	FF	FG	FH	FL	FM	FT
$\phi 125$	50	M30 \times 1.5	291	11	55	407	100	19	35	311	140	190	230	20
$\phi 140$	50	M30 \times 1.5	318	11	57	436	112	19	37	338	157	212	250	20
$\phi 160$	56	M36 \times 1.5	350	13	71.5	490.5	118	19	49.5	372	177	236	280	22
$\phi 180$	63	M40 \times 1.5	373	15	78.5	529.5	132	24	53.5	398	200	265	310	25

Code	With Bellows		
Bore Size (mm)	b	d	ℓ
$\phi 125$	74	75	(Stroke/4.55)+11
$\phi 140$	74	75	(Stroke/4.55)+9
$\phi 160$	81	80	(Stroke/5.15)+9
$\phi 180$	90	90	(Stroke/5.15)+9

*1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Head Side Flange Type (FB)



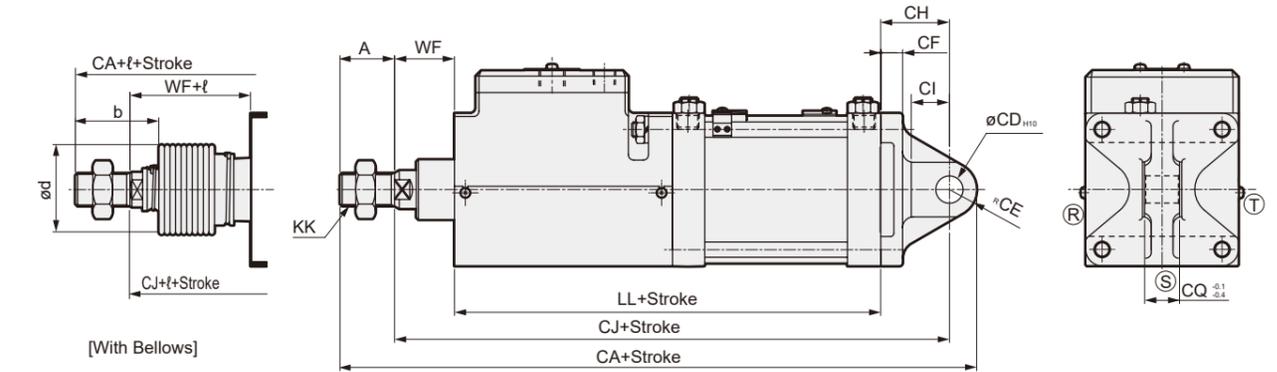
Code	Head Side Flange Type (FB) Mounting Dimensions											
Bore Size (mm)	A	KK	LL	WF	FA	FC	FD	FH	FJ	FL	FM	FT
$\phi 125$	50	M30 \times 1.5	291	55	410	100	19	140	360	190	230	14
$\phi 140$	50	M30 \times 1.5	318	57	444	112	19	157	394	212	250	19
$\phi 160$	56	M36 \times 1.5	350	71.5	496.5	118	19	177	440.5	236	280	19
$\phi 180$	63	M40 \times 1.5	373	78.5	539.5	132	24	200	476.5	265	310	25

Code	With Bellows		
Bore Size (mm)	b	d	ℓ
$\phi 125$	74	75	(Stroke/4.55)+11
$\phi 140$	74	75	(Stroke/4.55)+9
$\phi 160$	81	80	(Stroke/5.15)+9
$\phi 180$	90	90	(Stroke/5.15)+9

*1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

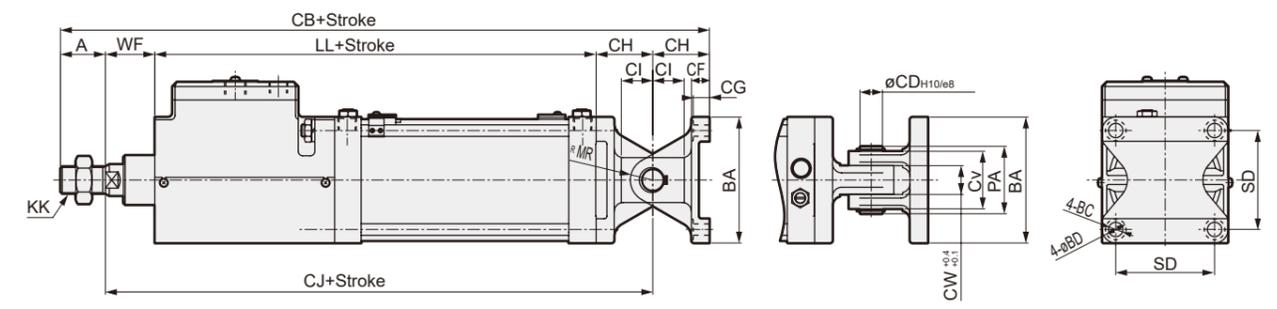
● Single Clevis Type (CA)



Code	Single Clevis Type (CA) Mounting Dimensions												With Bellows		
Bore Size (mm)	A	KK	LL	WF	CA	CD	CE	CF	CH	CI	CJ	CQ	b	d	ℓ
$\phi 125$	50	M30 \times 1.5	291	55	484	25	25	20	63	35	409	32	74	75	(Stroke/4.55)+11
$\phi 140$	50	M30 \times 1.5	318	57	528	28	28	22	75	40	450	36	74	75	(Stroke/4.55)+9
$\phi 160$	56	M36 \times 1.5	350	71.5	584.5	32	32	24	75	40	496.5	40	81	80	(Stroke/5.15)+9
$\phi 180$	63	M40 \times 1.5	373	78.5	644.5	40	40	25	90	55	541.5	50	90	90	(Stroke/5.15)+9

*1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

● Eye bracket (CA) with clevis bracket (B2)



Code	Single Yoke Clevis Type (CA), with Double Yoke Bracket (B2) Mounting Dimensions																		
Bore Size (mm)	A	KK	LL	WF	CB	CD	CF	CG	CH	CI	CJ	Cv	CW	BA	BC	BD	MR	PA	SD
$\phi 125$	50	M30 \times 1.5	291	55	522	25	20	18	63	35	409	64	32	140	16	23	25	75	110
$\phi 140$	50	M30 \times 1.5	318	57	575	28	22	20	75	40	450	72	36	154	16	23	28	84	124
$\phi 160$	56	M36 \times 1.5	350	71.5	627.5	32	24	22	75	40	496.5	80	40	174	18	26	32	92	142
$\phi 180$	63	M40 \times 1.5	373	78.5	694.5	40	25	23	90	55	541.5	100	50	196	20	29	40	115	160

*1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

Cylinder Switch

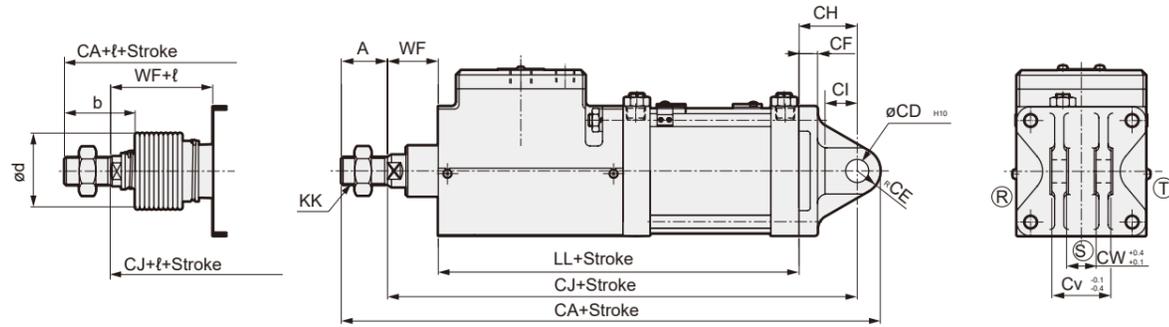
Ending

Cylinder Switch

Ending

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

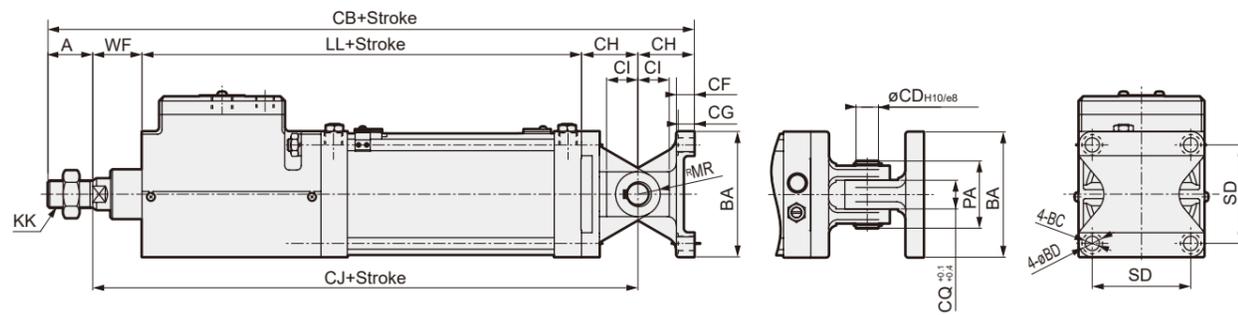
● Double clevis type (CB)



Code	Double Clevis Type (CB) Mounting Dimensions													With Bellows			
	Bore Size (mm)	A	KK	LL	WF	CA	CD	CE	CF	CH	CI	CJ	Cv	CW	b	d	ℓ
ULK□	$\phi 125$	50	M30×1.5	291	55	484	25	25	20	63	35	409	64	32	74	75	(Stroke/4.55)+11
	$\phi 140$	50	M30×1.5	318	57	528	28	28	22	75	40	450	72	36	74	75	(Stroke/4.55)+9
JSK2/ JSM2	$\phi 160$	56	M36×1.5	350	71.5	584.5	32	32	24	75	40	496.5	80	40	81	80	(Stroke/5.15)+9
	$\phi 180$	63	M40×1.5	373	78.5	644.5	40	40	25	90	55	541.5	100	50	90	90	(Stroke/5.15)+9

*1: R S T indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

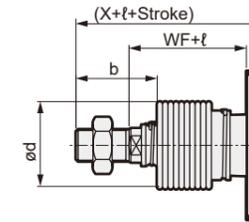
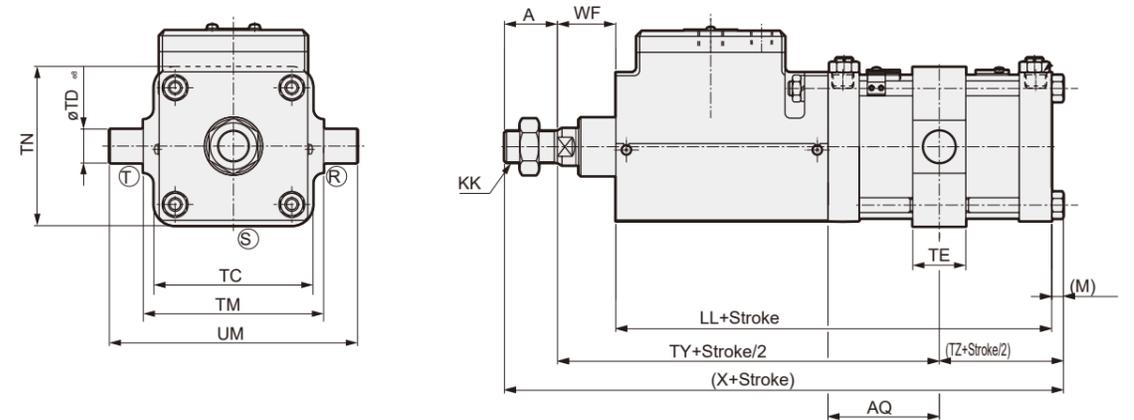
● Clevis bracket (CB) with eye bracket (B1)



Code	Double Yoke Clevis Type (CB), with Single Yoke Bracket (B1) Mounting Dimensions																		
	Bore Size (mm)	A	KK	LL	WF	CB	CD	CF	CG	CH	CI	CJ	CQ	BA	BC	BD	MR	PA	SD
	$\phi 125$	50	M30×1.5	291	55	522	25	20	18	63	35	409	32	140	16	23	25	75	110
	$\phi 140$	50	M30×1.5	318	57	575	28	22	20	75	40	450	36	154	16	23	28	84	124
	$\phi 160$	56	M36×1.5	350	71.5	627.5	32	24	22	75	40	496.5	40	174	18	26	32	92	142
	$\phi 180$	63	M40×1.5	373	78.5	694.5	40	25	23	90	55	541.5	50	196	20	29	40	115	160

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Intermediate trunnion type (TC)



[With Bellows]

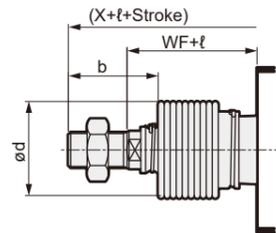
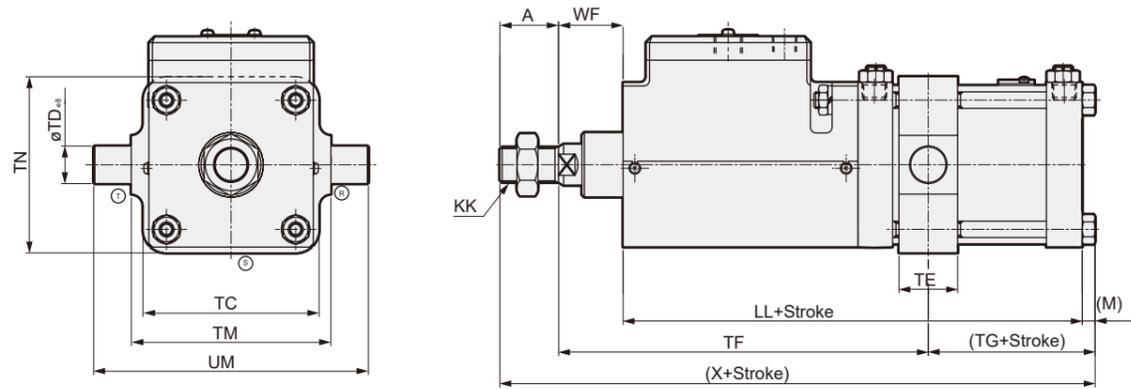
Code	Intermediate Trunnion Type (TC) Mounting Dimensions															
	Bore Size (mm)	A	KK	LL	M	WF	X	AQ	TC	TN	TD	TE	TM	UM	TY	TZ
	$\phi 125$	50	M30×1.5	291	11	55	407	45+Stroke/2	150	150	32	50	170	234	300	57
	$\phi 140$	50	M30×1.5	318	11	57	436	50.5+Stroke/2	154	170	36	55	190	262	323.5	62.5
	$\phi 160$	56	M36×1.5	350	13	71.5	490.5	52+Stroke/2	190	190	40	60	212	292	368.5	66
	$\phi 180$	63	M40×1.5	373	15	78.5	529.5	54+Stroke/2	210	210	45	65	236	326	396.5	70

Code	With Bellows			
	Bore Size (mm)	b	d	ℓ
	$\phi 125$	74	75	(Stroke/4.55)+11
	$\phi 140$	74	75	(Stroke/4.55)+9
	$\phi 160$	81	80	(Stroke/5.15)+9
	$\phi 180$	90	90	(Stroke/5.15)+9

*1: R S T indicates the position of the cushion needle.
 *2: The ℓ dimension is rounded up to the nearest whole number.
 *3: For outer dimensions diagram of accessories, refer to P. 456.
 *4: For dimensions with each switch, refer to P. 495.

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Rod side trunnion type (TA)



[With Bellows]

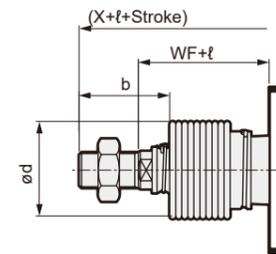
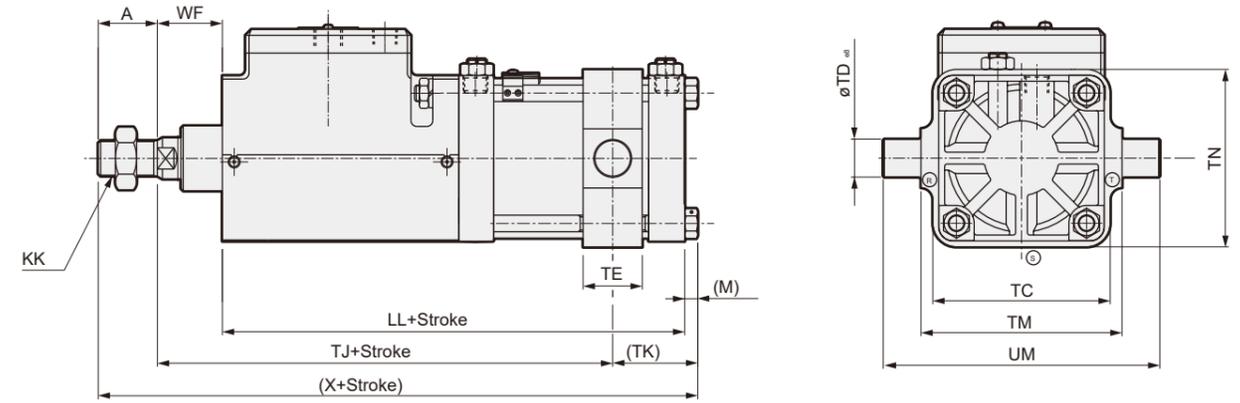
Code	Rod Side Trunnion Type (TA) Mounting Dimensions													
Bore Size (mm)	A	KK	LL	M	WF	X	TC	TD	TE	TF	TG	TM	TN	UM
$\phi 125$	50	M30 \times 1.5	291	11	55	407	150	32	50	315	42	170	150	234
$\phi 140$	50	M30 \times 1.5	318	11	57	436	154	36	55	339.5	46.5	190	170	262
$\phi 160$	56	M36 \times 1.5	350	13	71.5	490.5	190	40	60	385.5	49	212	190	292
$\phi 180$	63	M40 \times 1.5	373	15	78.5	529.5	210	45	65	414	52.5	236	210	326

Code	With Bellows		
Bore Size (mm)	b	d	ℓ
$\phi 125$	74	75	(Stroke/4.55)+11
$\phi 140$	74	75	(Stroke/4.55)+9
$\phi 160$	81	80	(Stroke/5.15)+9
$\phi 180$	90	90	(Stroke/5.15)+9

- *1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
- *2: The ℓ dimension is rounded up to the nearest whole number.
- *3: For outer dimensions diagram of accessories, refer to P. 456.
- *4: For dimensions with each switch, refer to P. 495.

Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Head Side Trunnion Type (TB)



[With Bellows]

Code	Head Side Trunnion Type (TB) Mounting Dimensions													
Bore Size (mm)	A	KK	LL	M	WF	X	TC	TD	TE	TJ	TK	TM	TN	UM
$\phi 125$	50	M30 \times 1.5	291	11	55	407	150	32	50	285	72	170	150	234
$\phi 140$	50	M30 \times 1.5	318	11	57	436	154	36	55	307.5	78.5	190	170	262
$\phi 160$	56	M36 \times 1.5	350	13	71.5	490.5	190	40	60	351.5	83	212	190	292
$\phi 180$	63	M40 \times 1.5	373	15	78.5	529.5	210	45	65	379	87.5	236	210	326

Code	With Bellows		
Bore Size (mm)	b	d	ℓ
$\phi 125$	74	75	(Stroke/4.55)+11
$\phi 140$	74	75	(Stroke/4.55)+9
$\phi 160$	81	80	(Stroke/5.15)+9
$\phi 180$	90	90	(Stroke/5.15)+9

- *1: $\text{\textcircled{R}}$ $\text{\textcircled{S}}$ $\text{\textcircled{T}}$ indicates the position of the cushion needle.
- *2: The ℓ dimension is rounded up to the nearest whole number.
- *3: For outer dimensions diagram of accessories, refer to P. 456.
- *4: For dimensions with each switch, refer to P. 495.

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

Cylinder
Switch

Ending

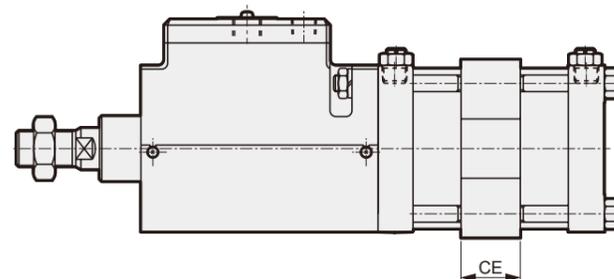
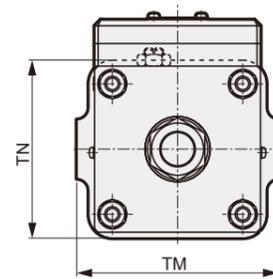
● Non-sag block (Bore Size: $\phi 125$, $\phi 140$)

In the case of the strokes in the table below, an intermediate support head is added to the center of the cylinder.

Intermediate support head additional stroke

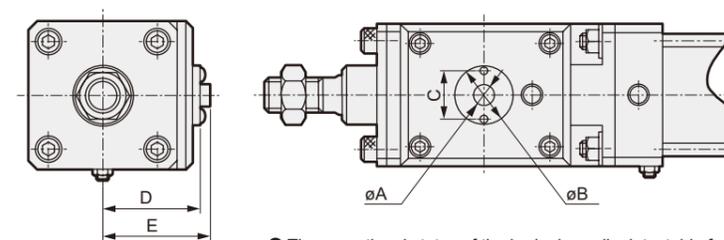
Bore Size (mm)	Stroke (mm)
$\phi 125$	1801 to 2000
$\phi 140$	

Code	TM	TN	CE
$\phi 125$	150	150	50
$\phi 140$	190	170	55



Accessories Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 100$)

● Indicator



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

Code	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

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

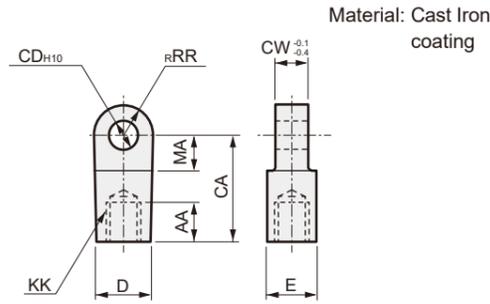
Cylinder
Switch

Ending

Accessories Outline Dimension Drawing (Bore Size: ø40 to ø100)

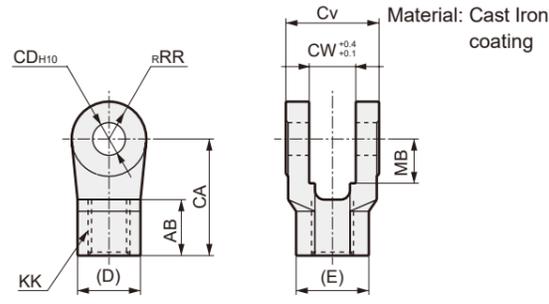
, The mounting dimensions (øCD, CW, CQ) of the clevis type, knuckle, and 2nd bracket are the same, and all combinations are possible.

● Rod eye for JSC3 (I)



Model No.	Applicable 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

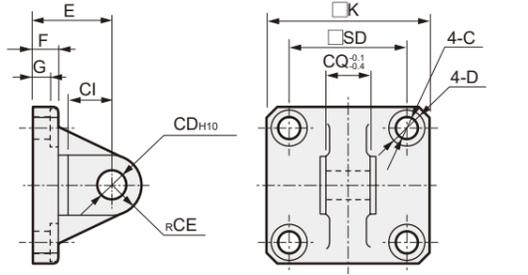
● For JSC3Double Knuckle (Y)



Model No.	Applicable Bore Size (mm)	AB	CA	CD	Cv	CW	D	E	KK	MB	RR	Weight (kg)
S1-Y-40	40	24	50	12	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

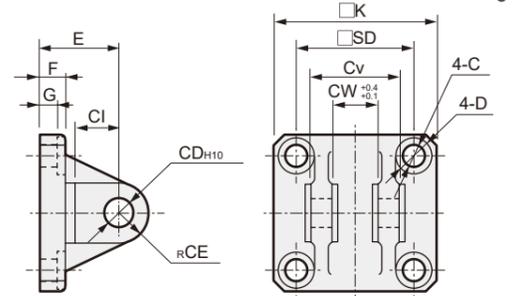
*1: MB dimension represents the CW dimension effective length.
*2: Pins and Retaining Rings are included.

● For JSC3Single Bracket (B1)



Model No.	Applicable Bore Size (mm)	C	CD	CE	CI	CQ	D	E	F	G	K	SD	Weight (kg)
S1-B1-40	40	9	12	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

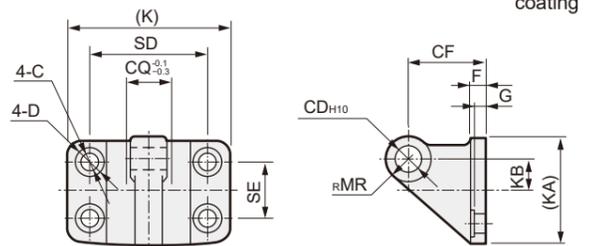
● For JSC3Clevis bracket (B2)



Model No.	Applicable Bore Size (mm)	C	CD	CE	CI	Cv	CW	D	E	F	G	K	SD	Weight (kg)
S1-B2-40	40	9	12	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: Pin and Retaining Ring are included.

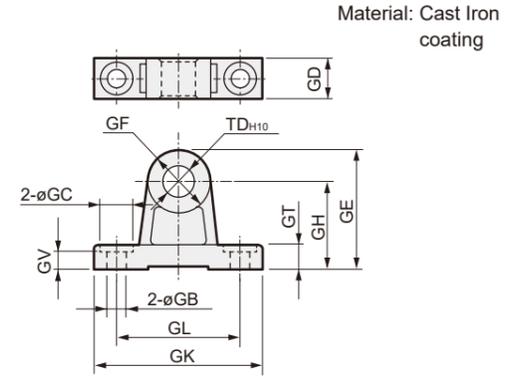
● For JSC3Single Bracket (B3)



Model No.	Applicable Bore Size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Weight (kg)
S1-B3-40	ø40, ø50	9	12	40	18	14	8	6.5	85	57	17.5	12	65	35	0.44
S1-B3-63	ø63	11	14	50	20	17	10	8	105	67	20	16	80	40	0.77
S1-B3-80	ø80, ø100	14	20	65	28	20	12	10	130	93	30	20	100	60	1.64

Accessories Outline Dimension Drawing (Bore Size: ø40 to ø100)

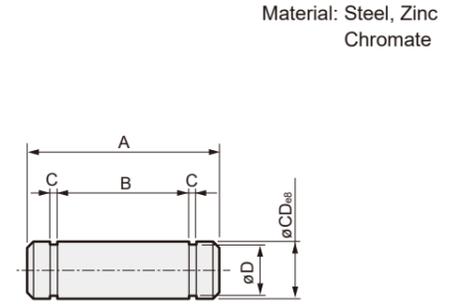
● Trunnion type 2nd bracket (B4)



Code	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: Brackets are 2 pcs/set.

● Pin (P)



Model No.	Applicable Bore Size (mm)	A	B	C	D	CD	Retaining Ring to Use	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 14 for Shaft	0.06
S1-P-80	80, 100	64	56.2	1.35	19	20	C-type for shaft 20	0.16

● Release bolt size (Hexagon Socket Head Cap Screw)

Bore Size	Size	
	JSC3	JSC3-V
ø40, ø50	M10×8	M10×29
ø63	M12×9	M12×30
ø80	M14×10	M14×31
ø100	M16×12	M16×40

With Brake / With Lock

ULK□

JSK2/ JSM2

JSG

JSC3, JSC4

USSD

UFCD

USC

With Brake / With Lock

ULK□

JSK2/ JSM2

JSG

JSC3, JSC4

USSD

UFCD

USC

Cylinder Switch

Ending

Cylinder Switch

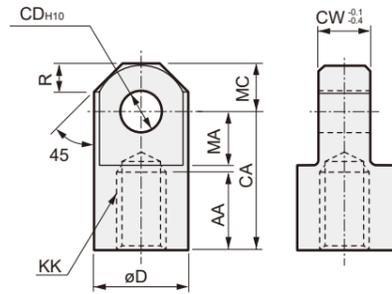
Ending

JSC4 Common Series

Accessories Outline Dimension Drawing (Bore Size: $\phi 125$ to $\phi 180$)

● Rod eye for JSC4 (I)

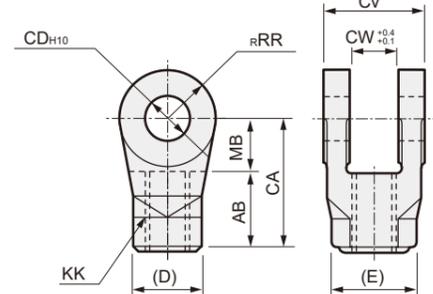
Material: Cast Iron coating



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)

Material: Cast Iron coating

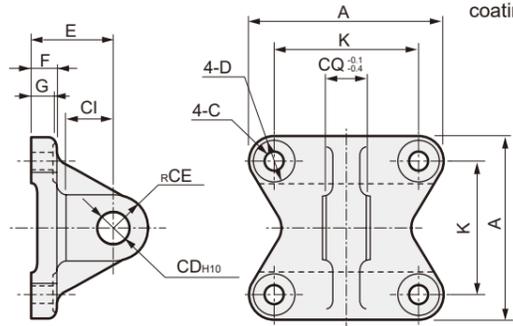


Code	AB	CA	CD	Cv	CW	D	E	KK	MB	RR	Weight (kg)
SCS2-125-Y	50	85	25	64	32	46	53.1	M30×1.5	35	27.5	1.30
SCS2-140-Y	50	90	28	72	36	46	53.1	M30×1.5	40	30	1.65
SCS2-160-Y	60	105	32	80	40	55	63.5	M36×1.5	45	35	2.55
SCS2-180-Y	65	115	40	100	50	60	69.3	M40×1.5	50	42.5	4.40

Note: Pin and Retaining Ring are included.

● Eye bracket for JSC4 (B1)

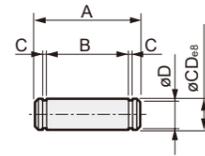
Material: Cast Iron coating



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

● JSC4 pin (P)

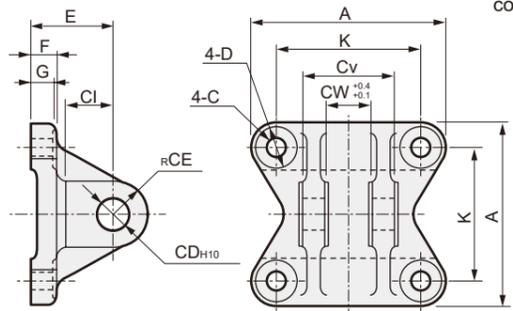
Material: Carbon steel, Zinc Chromate



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

● Clevis bracket for JSC4 (B2)

Material: Cast Iron coating



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

● Release bolt size (Hexagon Socket Head Cap Screw)

Bore Size	Size	
	JSC3	JSC3-V
$\phi 40, \phi 50$	M10×8	M10×29
$\phi 63$	M12×9	M12×30
$\phi 80$	M14×10	M14×31
$\phi 100$	M16×12	M16×40

Note: Pin and Retaining Ring are included.

MEMO

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

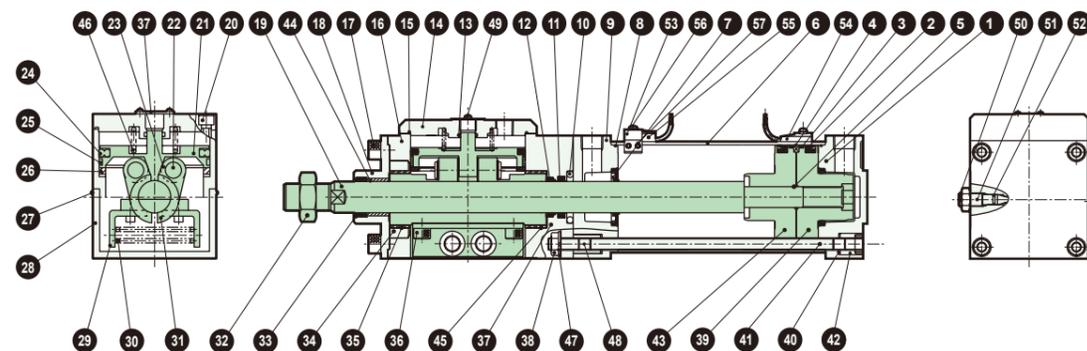
UFCD

USC

Cylinder
Switch

Ending

Internal Structure / Materials (Bore Size: $\phi 40$ to $\phi 100$)



Do Not Disassemble

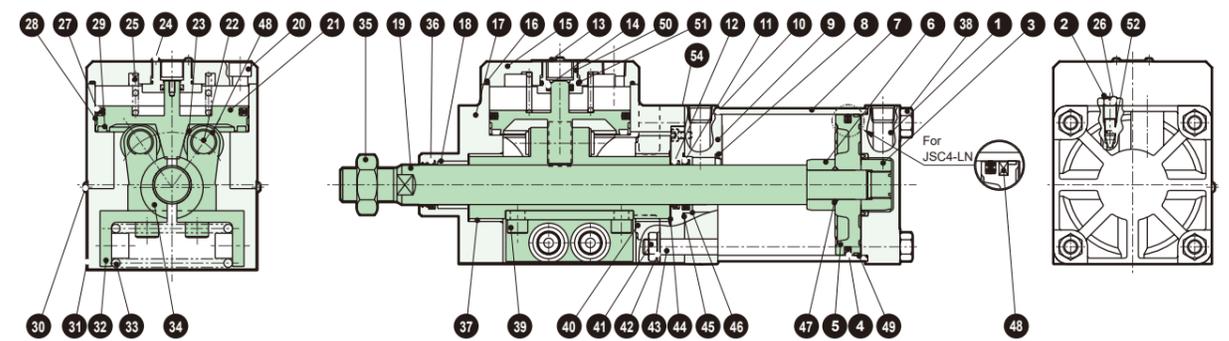
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Painted	30	Spring	Piano Wire	
2	Piston Packing	Nitrile Rubber		31	Brake metal	Cast Iron	Nickel Plating
3	Wear ring	Polyacetal		32	Rod nut	Steel	Zinc Chromate
4	Magnet	Plastic		33	Scraper	Nitrile Rubber	
5	Piston gasket	Nitrile Rubber		34	DU ring	Steel	Black Oxide
6	Cylinder Tube	Aluminum Alloy	Hard Alumite	35	Bush	Oil-impregnated Bearing Alloy	
7	Cushion Packing	Nitrile Rubber, Steel		36	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
8	Cylinder gasket	Nitrile Rubber		37	Dust cover	Aluminum Alloy	Alumite
9	Rod Cover	Aluminum Alloy	Painted	38	Hexagon Nut	Steel	Black Oxide
10	Metal seal	Nitrile Rubber		39	Piston H	Aluminum Alloy	
11	Rod Packing	Nitrile Rubber		40	Tie rod	Steel	Zinc Chromate
12	Scraper	Nitrile Rubber		41	Belleville washer	Steel	Black Oxide
13	Cap gasket A	Nitrile Rubber		42	Round nut	Steel	Zinc Chromate
14	Body cap	Cast Iron	Manganese Phosphate treatment	43	Piston R	Aluminum Alloy	
15	Cap gasket B	Nitrile Rubber		44	Bush B	Oil impregnated Bearing Alloy	
16	Brake body	Aluminum Alloy	Alumite	45	Thrust washer		
17	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	46	Spring	Piano Wire	Painted
18	Rod metal	Steel	Manganese Phosphate	47	Toothed washer	Steel	Black Oxide
19	Piston Rod	Steel	Industrial Chrome Plating	48	Hexagon Socket Set Screw	Alloy Steel	Black Oxide
20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	49	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate
21	Brake piston	Cast Iron	Manganese Phosphate	50	Cushion needle	Copper Alloy	Nickel Plating
22	Parallel pin	Steel		51	Needle nut	Copper Alloy	Nickel Plating
23	Bearing			52	Needle gasket	Nitrile Rubber	
24	Piston Packing B	Nitrile Rubber		With switch			
25	Wear ring	Polyacetal		53	Switch mounting base	Aluminum Alloy	
26	Cushion rubber	Urethane Rubber		54	Switch holder	Aluminum Alloy	
27	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate	55	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
28	Cover	Steel	Painted	56	Hexagon Socket Set Screw	Alloy Steel	Black Oxide
29	Spring seat	Steel	Zinc Chromate	57	Switch		

Note: Never disassemble the brake as it contains a strong spring and is dangerous.

●Material of mounting bracket ($\phi 40$ to $\phi 100$)

Mounting Style	Material	Remarks
Foot (LB)	Steel	Painted
Flange (FA, FB)	Steel	Painted
Clevis (CA/CB)	Cast Iron	Painted
Trunnion (TC)	Cast Iron	Painted

Internal Structure / Materials (Bore Size: $\phi 125$ to $\phi 180$)



Do Not Disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Chromate	28	Wear ring	Polyacetal	
2	Cushion needle	Copper Alloy		29	Cushion Rubber	Urethane Rubber	
3	Cushion ring A	Steel	Zinc Chromate	30	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
4	Piston Packing	Nitrile Rubber		31	Cover	Steel	Painted
5	Piston	Aluminum Alloy		32	Spring seat	Steel	Manganese Phosphate
6	Cushion ring B	Steel	Zinc Chromate	33	Spring	Piano Wire	Black Oxide
7	Cylinder Tube	Aluminum Alloy	Hard Alumite	34	Brake metal	Cast Iron	Nickel Plating
8	Cushion Packing	Nitrile Rubber, Steel		35	Rod nut	Steel	Zinc Chromate
9	Rod Cover	Aluminum Alloy	Chromate	36	Scraper	Nitrile Rubber	
10	Cylinder gasket	Nitrile Rubber		37	Bush A	Bearing Alloy	
11	Rod Packing	Nitrile Rubber		38	Hexagon Nut	Steel	Zinc Chromate
12	Scraper	Nitrile Rubber		39	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
13	Dust cover	Aluminum Alloy	Alumite	40	Ring	Steel	Black Oxide
14	Rod Packing	Nitrile Rubber		41	Hexagon Nut	Steel	Zinc Chromate
15	Body cap	Aluminum Alloy	Black alumite	42	Toothed washer	Steel	Zinc Chromate
16	Cap gasket	Nitrile Rubber		43	Tie rod	Steel	Zinc Chromate
17	Brake body	Aluminum Alloy	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 Oxide	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	
23	Bearing			50	Body cap	Cast Iron	Manganese Phosphate
24	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate	51	O-ring	Nitrile Rubber	
25	Spring	Piano Wire	Painted	52	Needle gasket	Nitrile Rubber	
26	Needle nut	Steel	Zinc Chromate	53	E-type Retaining Ring	Steel	Zinc Chromate
27	Piston Packing B	Nitrile Rubber		54	Hexagon Socket Head Cap Screw	Steel	Black Oxide

●Mounting Bracket Material ($\phi 125$ to $\phi 180$)

Mounting Style	Material	Remarks
Foot (LB)	Steel	Painted
Rod Side Flange (FA)	Carbon steel	Parkerizing
Single clevis (CA)	Cast Iron	Painted
Double Yoke Clevis (CB)	Cast Iron	Painted
Trunnion (TC/TA/TB)	Cast Iron	Painted
Head Side Flange (FB)	Carbon steel	Painted

●Release bolt size (Hexagon Socket Head Cap Screw)

Bore Size	Size
$\phi 125$	M24x16 or more
$\phi 140$	M24x20 or more
$\phi 160$	M24x20 or more
$\phi 180$	M24x24 or more

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

Cylinder
Switch

Ending

Ending



Cell Top Cylinder Double Acting with Brake Valve

JSC3-V Series

● Bore Size: $\phi 40, \phi 50, \phi 63, \phi 80, \phi 100$

Circuit Diagram Code



JSC3-V Series

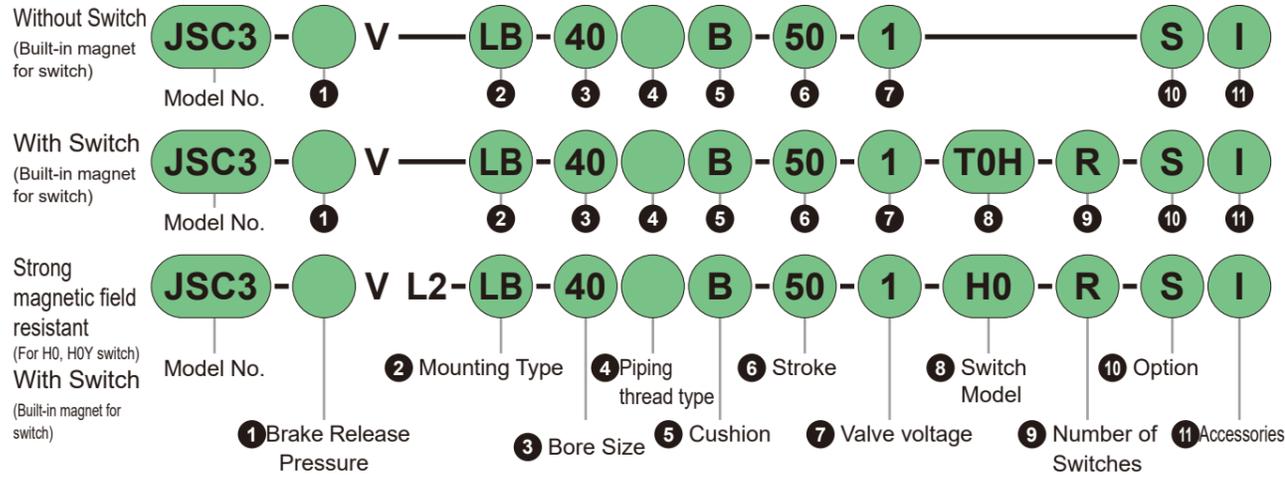
Model No. Notation

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T0H
3 m T0H³
5 m T0H⁵

Model No. Notation



1 Brake Release Pressure

Code	Content
Blank	Standard Type (0.3 MPa)
S	Low pressure release type (0.25 MPa)

2 Mounting Type

Mounting brackets are pre-assembled on the product for shipment. (However, head side special flange type is attached for shipment.)

Code	Content	Code	Content
00	Basic type	CA	Single Clevis Type
LB	Axial Foot Type	CB	Double Clevis Type (Pin and Retaining Ring attached)
FA	Rod Side Flange Type	TC	Center trunnion type
FB	Head Side Flange Type	TA	Rod Side Trunnion Type
FC	Head side special flange type	TB	Head Side Trunnion Type

3 Bore Size (mm)

Code	Contents
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$
80	$\phi 80$
100	$\phi 100$

4 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G thread (Custom product)

5 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without cushion

6 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
$\phi 40$	1 to 600	Every 1 mm
$\phi 50$	1 to 600	
$\phi 63$	1 to 600	
$\phi 80$	1 to 700	
$\phi 100$	1 to 800	

Note: For minimum stroke with switch, please refer to P. 464.

7 Valve voltage

Code	Content
1	100 VAC
2	200 VAC
3	24 VDC
4	12 VDC

8 Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□
		3-wire (NPN)	—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (PNP)	—	30 or less	—	100 or less	T3H□	T3V□
	2-color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□
		For 2-color AC Magnetic Field	—	24 ± 10%	—	5 to 20	T2YD□	—
Reed	1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□
		1-Color Flexible Lead Wire Type	—	10 to 30	—	—	T2HR3	T2VR3
	1-Color No Indicator LED	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
		2-wire	110	5/12/24	20 or less	50 or less	T5H□	T5V□
	1-color For Strong Magnetic Fields	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□
		2-wire	110	12/24	7 to 20	5 to 50	H0□	—
2-color For strong magnetic field	2-wire	—	24 ± 10%	—	5 to 20	H0Y□	—	

*1: Insert the code selected in the "Lead wire length" table into "□" of the switch Model No.

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: Switches other than the above models are also available. (Custom Product) For details, refer to P. 1457.

9 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Note: If mounting type TA or TB is selected, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

11 Accessories

Code	Content
I	Single knuckle
Y	Double yoke knuckle (pin and Retaining Ring included)
B1	Single bracket
B2	Double yoke bracket (pin and Retaining Ring included)
B3	Single bracket
B4	Trunnion Type 2nd Bracket (Set of 2)

*1: "I" and "Y" cannot be selected simultaneously.

10 Option

Code	Content	Max Ambient Temperature		Instantaneous Max Temperature	
		Max Ambient Temperature	Instantaneous Max Temperature	Max Ambient Temperature	Instantaneous Max Temperature
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				

Note: For "S" and "T" position display, please check the respective outline dimension drawings.

About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK◇	Mounting Bracket Rotational Assembly
-XAQ◇◇	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

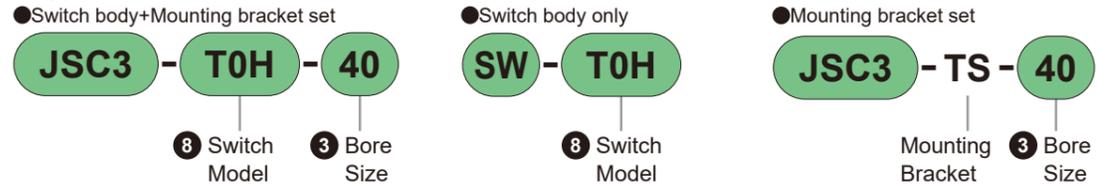
Model No. Ex.)

JSC3-V-..... -XK□

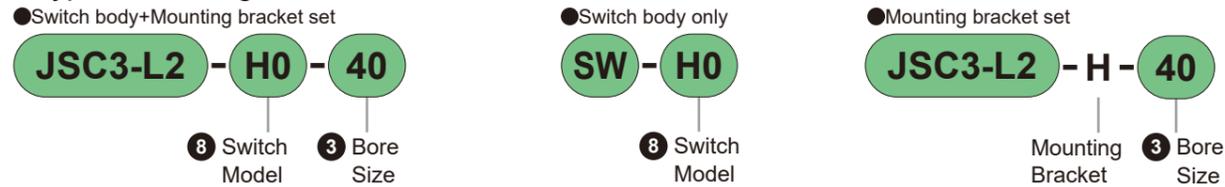
Brake Unit (Without Solenoid Valve / Sub-plate) Model No. Notation



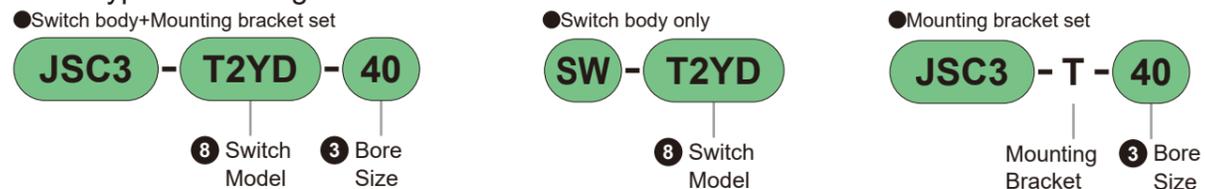
T-type Switch Individual Model No. Notation



H type switch single item Model No. Notation



T2YD type switch single item Model No. Notation



Specifications

Item	JSC3-V (With Switch)					JSC3-SV (With Switch)						
	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100		
Bore Size	mm											
Operation type	Double Acting with brake valve					Double Acting, low pressure release type, with brake valve						
Operating Fluid	Compressed Air											
Max Operating Pressure	MPa					0.7						
Min Operating Pressure	MPa					0.3						
Pressure	MPa					0.1						
Proof Pressure	MPa					1.05						
Ambient Temperature	°C											
	-5 to 50 (However, no freezing)											
Port Size	Brake Part		Rc1/4		Rc1/4		Rc3/8		Rc1/4		Rc3/8	
	Cylinder Part		Rc1/4		Rc3/8		Rc 1/2		Rc1/4		Rc3/8	
Stroke Tolerance	mm											
	-0.9 ₀ (to 360), +1.4 ₀ (to 1000)											
Operating Piston Speed	mm/s											
	50 to 1000 (Use within allowable absorbed energy)											
Cushion	Air Cushion											
Effective air cushion length	mm											
	14.6	16.6	16.6	20.6	23.6	14.6	16.6	16.6	20.6	23.6		
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)											
Holding Force	N											
	980	1569	2451	3922	6178	784	1255	1961	3138	4941		
Allowable absorption energy	With Cushion		4.29	8.37	15.8	27.9	49.8	4.29	8.37	15.8	27.9	
	Without cushion		0.067	0.079	0.079	0.201	0.301	0.067	0.079	0.079	0.201	
Note: Without cushion, large energy generated by external load cannot be absorbed. It is recommended to use an external shock absorbing device in conjunction.												

Brake Valve Electrical Specifications

Item	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
Heat Resistance Class	Class B (Molded Coil)		

*1: 100 / 200 VAC coils can be used at 110 / 220 VAC (60 Hz).

*2: Main specifications of the valve are the same as standard product 4KB2. For details, please refer to "Directional Control Valve" No. RJ-012AA.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Max Stroke (mm)	Manufacturable Stroke (mm)	Min Stroke (mm)
ø40	50, 75, 100, 150, 200, 250 300, 350, 400, 450, 500	600	1000	1
ø50			2,000	
ø63		700	2500	
ø80				
ø100				

*1: If the Max Stroke is exceeded, the product specifications may not be met depending on the conditions, so please consult us. Also, please refer to Intro 29.

*2: Intermediate strokes can be manufactured in 2 mm increments.

*3: The minimum stroke varies depending on how the switch is mounted. Please refer to P. 464.

*4: For Bore Size ø63 to ø100 with bellows, the manufacturable stroke is up to 2000 mm.

Min Stroke with Switch (T-type Switch)

● Minimum stroke with T0/T5 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Position detection at the rod side stroke end with rod side trunnion mounting is not possible.	Position detection at the head side stroke end with head side trunnion mounting is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	20 (10)	60 (45)	110 (110)	110 (110)	50 (50)	50 (50)
ø50	20 (20)	15 (10)	20 (20)	135 (135)	135 (135)	60 (60)	60 (60)
ø63	20 (20)	15 (10)	20 (20)	110 (95)	110 (95)	50 (45)	50 (45)
ø80	25 (25)	15 (15)	25 (25)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	25 (25)	15 (15)	25 (25)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).
 *2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T8 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Position detection at the rod side stroke end with rod side trunnion mounting is not possible.	Position detection at the head side stroke end with head side trunnion mounting is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	15 (10)	50 (35)	95 (85)	95 (85)	45 (40)	45 (40)
ø50	20 (20)	10 (10)	20 (20)	115 (115)	115 (115)	50 (50)	50 (50)
ø63	20 (20)	10 (10)	20 (20)	95 (75)	95 (75)	45 (35)	45 (35)
ø80	25 (25)	15 (15)	25 (25)	100 (70)	100 (70)	50 (35)	50 (35)
ø100	25 (25)	15 (15)	25 (25)	110 (80)	110 (80)	55 (40)	55 (40)

*1: () indicates T□V (L-shaped lead wire type).
 *2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T2/T3 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Position detection at the rod side stroke end with rod side trunnion mounting is not possible.	Position detection at the head side stroke end with head side trunnion mounting is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).
 *2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T1/T2YD type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Position detection at the rod side stroke end with rod side trunnion mounting is not possible.	Position detection at the head side stroke end with head side trunnion mounting is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	100 (70)	100 (70)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	120 (90)	120 (90)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type). However, T2YD does not have an L-shaped lead wire type (V).
 *2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Min Stroke with T2W/T3W switches

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Position detection at the rod side stroke end with rod side trunnion mounting is not possible.	Position detection at the head side stroke end with head side trunnion mounting is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (10)	20 (5)	65 (50)	110 (80)	110 (80)	50 (35)	50 (35)
ø50	20 (10)	20 (5)	20 (10)	110 (80)	110 (80)	50 (35)	50 (35)
ø63	20 (10)	20 (5)	20 (10)	115 (85)	115 (85)	55 (40)	55 (40)
ø80	15 (10)	15 (5)	15 (10)	120 (90)	120 (90)	55 (40)	55 (40)
ø100	10 (10)	10 (5)	10 (10)	130 (100)	130 (100)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).
 *2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

Cylinder Weight

[Unit: kg]

Item / Mounting Style	Product Weight when stroke (S) = 0 mm						Switch Weight	Mounting Bracket Weight		Added weight per S = 100 mm	Valve Weight
	Basic Type (00)	Foot Type (LB)	Flange type (FA, FB)	Single Clevis Type (CA)	Double Yoke Clevis Type (CB)	Trunnion Type (TC)		T Type	H type		
ø40	2.48	2.66	2.91	2.83	2.83	2.86	Refer to the Weight listed in the Switch Specifications on P. 1457.	0.024	0.028	0.39	0.32
ø50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46	
ø63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50	0.35
ø80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90	
ø100	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-TOH-D

Product weight for 0 mm stroke 3.67 kg
 Additional weight for 200 mm stroke $0.46 \times \frac{200}{100} = 0.92$ 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	Operating Pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø40	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
	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
ø50	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
	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
ø63	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
	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
ø80	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
	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
ø100	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
	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

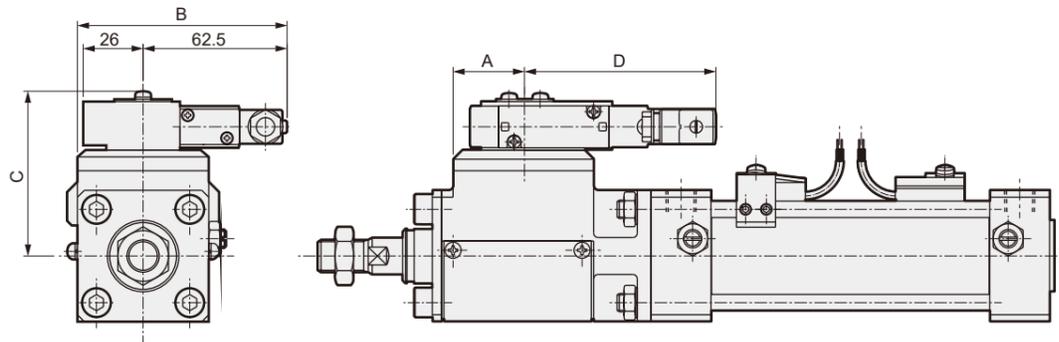
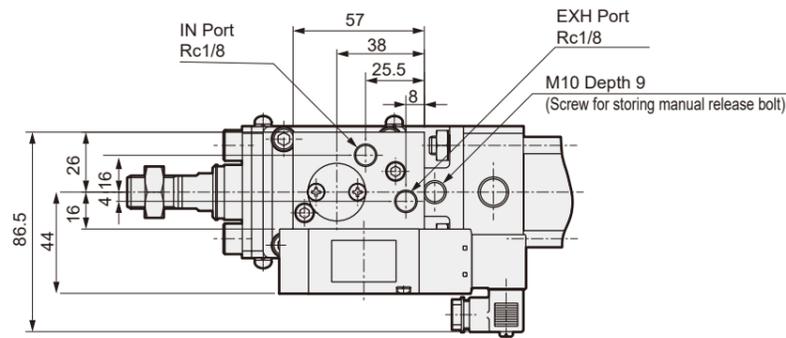
Mounting Bracket Model No. Notation

Bore Size (mm)	ø40	ø50	ø63	ø80	ø100
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
Single clevis (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Double Yoke Clevis (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: Foot type mounting brackets are 2 pcs/set.
 *2: Pins and Retaining Rings are included.
 *3: Mounting bolts are included with each mounting bracket.

Outline Dimension Drawing (Bore Size: $\phi 40$ to $\phi 63$)

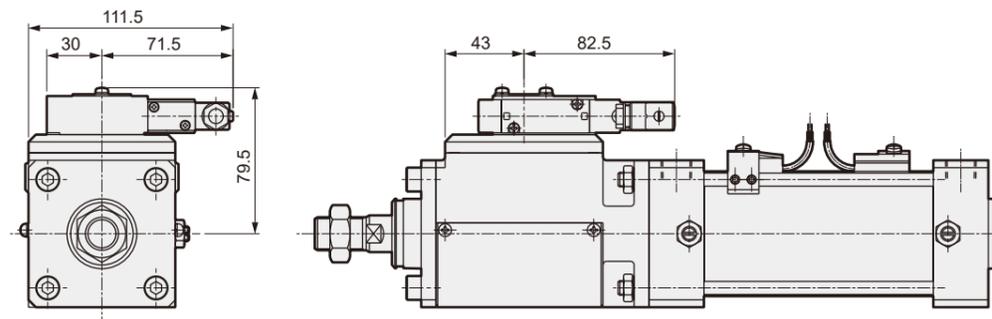
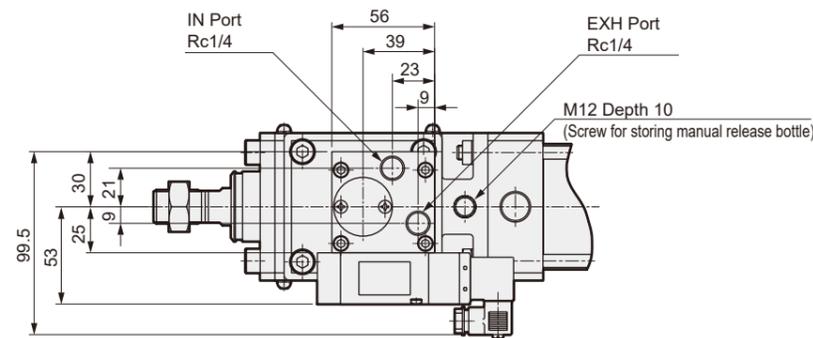
With Valve for Brake
● JSC3-V-40
-50



Code	A	B	C	D
JSC3, JSC4 Bore Size (mm)				
$\phi 40$	31	91	71.5	83.5
$\phi 50$	36	96.5	76	86.5

*1: Same as standard type except for the above dimensions. Please refer to P. 432.
*2: For dimensions with each switch, please refer to P. 494.

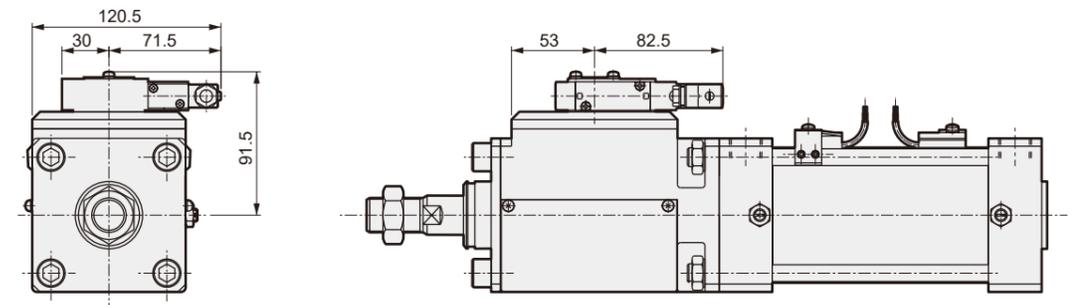
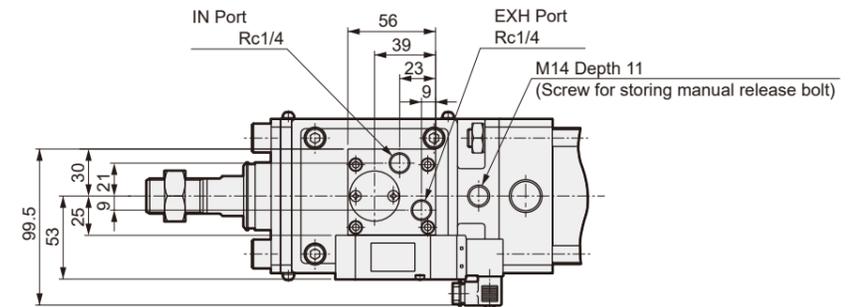
With Valve for Brake
● JSC3-V-63



*1: Same as standard type except for the above dimensions. Please refer to P. 432.
*2: For dimensions with each switch, please refer to P. 494.

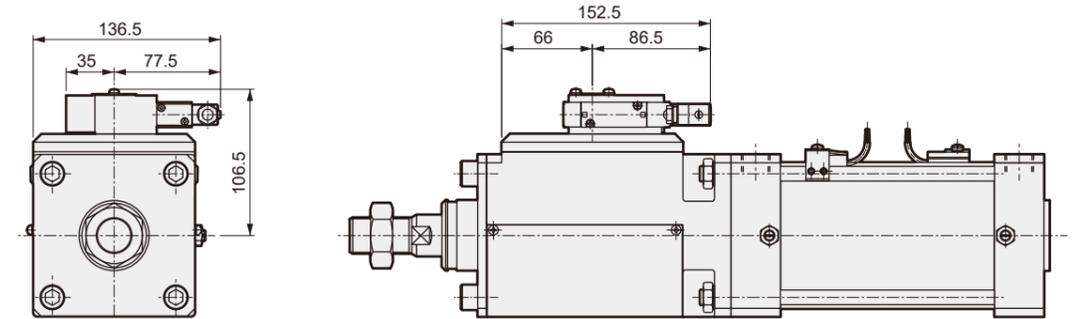
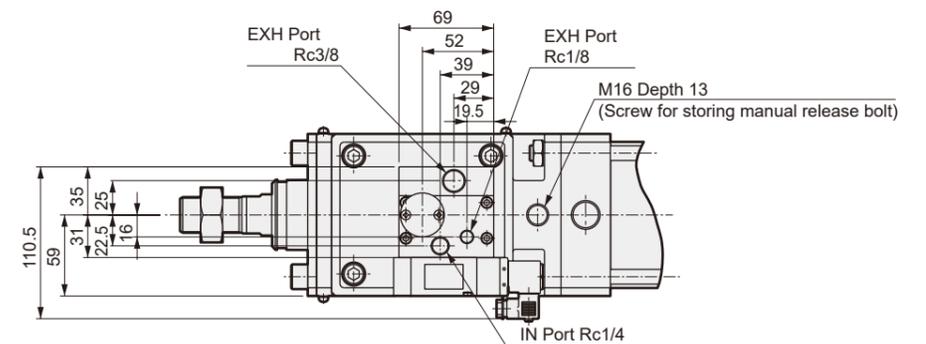
Outline Dimension Drawing (Bore Size: $\phi 80$, $\phi 100$)

With Valve for Brake
● JSC3-V-80



*1: Same as standard type except for the above dimensions. Please refer to P. 432.
*2: For dimensions with each switch, please refer to P. 494.

● JSC3-V-100



*1: Same as standard type except for the above dimensions. Please refer to P. 432.
*2: For dimensions with each switch, please refer to P. 494.

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

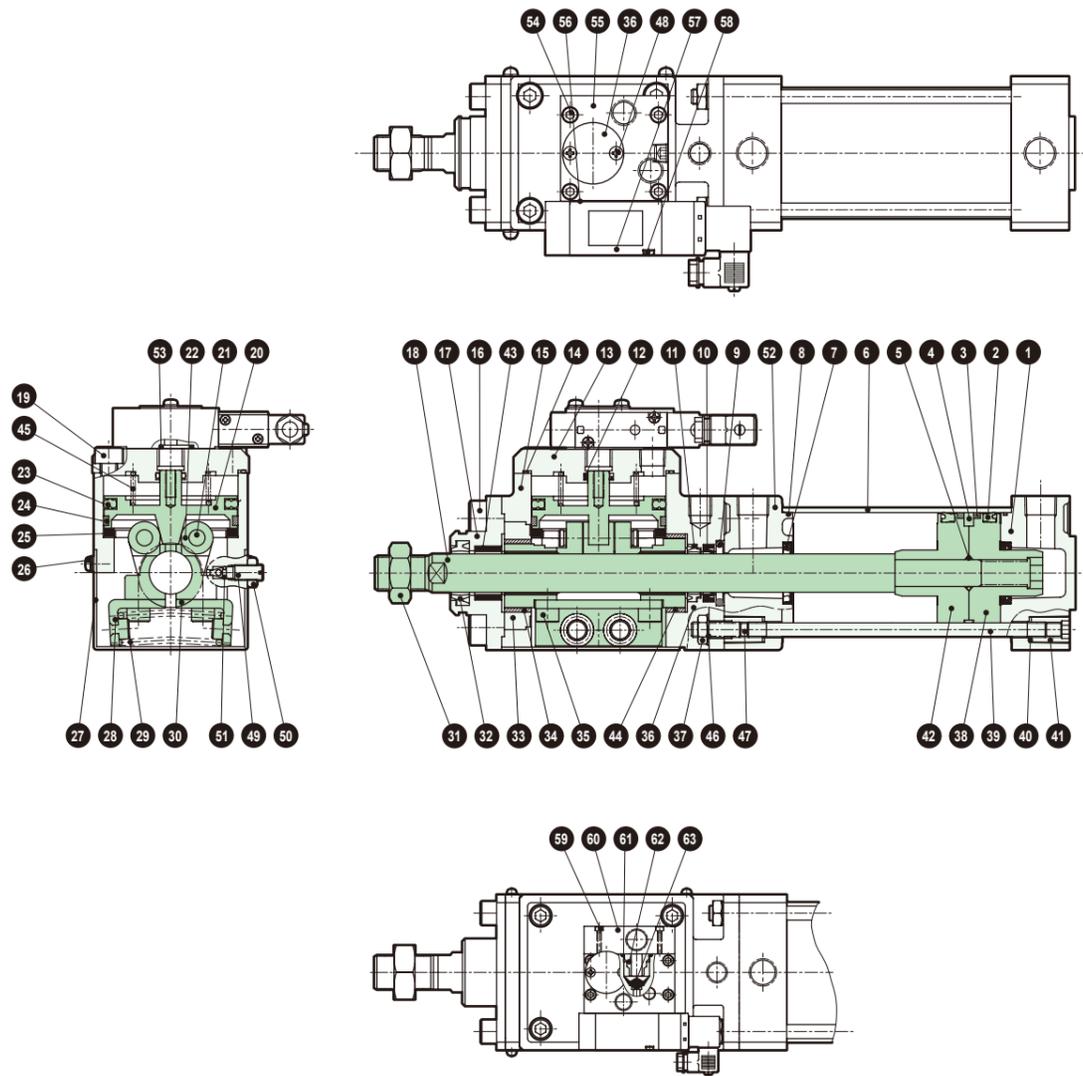
Ending

Internal Structure Diagram/Material (Bore Size: $\phi 40$ to $\phi 100$)

Material

With Brake / With Lock

With Brake / With Lock



For $\phi 63$

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Painted	33	DU ring	Steel	Black Oxide
2	Piston Packing	Nitrile Rubber		34	Bush	Oil-Impregnated Bearing Alloy	
3	Wear ring	Polyacetal		35	Hexagon Socket Head Cap Screw	Steel	Black Oxide
4	Magnet	Plastic		36	Dust cover	Aluminum Alloy	Painting
5	Piston gasket	Nitrile Rubber		37	Hexagon Nut	Steel	Black Oxide
6	Cylinder Tube	Aluminum Alloy	Hard Anodized	38	Piston H	Aluminum Alloy	
7	Cushion Packing	Nitrile Rubber, Steel		39	Tie rod	Steel	Zinc Chromate
8	Cylinder gasket	Nitrile Rubber		40	Belleville washer	Steel	Black Oxide
9	Metal seal	Nitrile Rubber		41	Round nut	Steel	Zinc Chromate
10	Rod Packing	Nitrile Rubber		42	Piston R	Aluminum Alloy	
11	Dust Wiper	Nitrile Rubber		43	Bush B	Oil impregnated Bearing Alloy	
12	Cap gasket A	Nitrile Rubber		44	Thrust washer	Stainless Steel	
13	Body cap	Cast Iron	Nitriding Treatment	45	Piston Spring	Steel	Painted
14	Cap gasket B	Nitrile Rubber		46	Toothed washer	Steel	Black Oxide
15	Brake body	Aluminum Alloy	Alumite	47	Hexagon Socket Set Screw	Steel	Black Oxide
16	Hexagon Socket Head Cap Screw	Steel	Black Oxide	48	Pan Head Screw	Steel	Zinc Chromate
17	Rod metal	Steel	Manganese Phosphate	49	Cushion needle	Copper Alloy	Nickel Plating
18	Piston Rod	Steel	Industrial Chrome Plating	50	Needle nut	Copper Alloy	Nickel Plating
19	Hexagon Socket Head Cap Screw	Steel	Black Oxide	51	Needle gasket	Nitrile Rubber	
20	Brake piston	Cast Iron	Manganese Phosphate	52	Rod Cover	Aluminum Alloy Die Cast	Painted
21	Parallel pin	Steel		53	O-Ring	Nitrile Rubber	
22	Bearing			54	Hexagon Socket Head Cap Screw	Steel	Black Oxide
23	Piston Packing B	Nitrile Rubber		55	Sub plate	Aluminum Alloy	
24	Wear ring	Polyacetal		56	Gasket	Nitrile Rubber	
25	Cushion Rubber	Urethane Rubber	With switch only	57	Selex Valve		4KB (Custom item) (CKD)
26	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate	58	Pan Head Screw	Steel	Zinc Chromate
27	Cover	Steel	Painted	59	Hexagon Socket Head Cap Screw	Steel	Black Oxide
28	Spring seat	Steel	Zinc Chromate	60	Sub-plate 2	Aluminum Alloy	
29	Brake Spring	Steel		61	O-Ring	Nitrile Rubber	
30	Brake metal	Cast Iron	Nickel Plating	62	Sub-plate Valve Seat	Aluminum Alloy	
31	Rod nut	Steel	Zinc Chromate	63	Quick Packing	Urethane Rubber	
32	Dust Wiper	Nitrile Rubber					

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

Cylinder
Switch

Ending

Ending

For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.



Celtop Cylinder Double Acting / Low Hydraulic Pressure Type

JSC3-H, JSC4-H Series

● Bore Size
 JSC3: ø40, ø50, ø63, ø80, ø100
 JSC4: ø125, ø140, ø160, ø180



JSC3-H Series

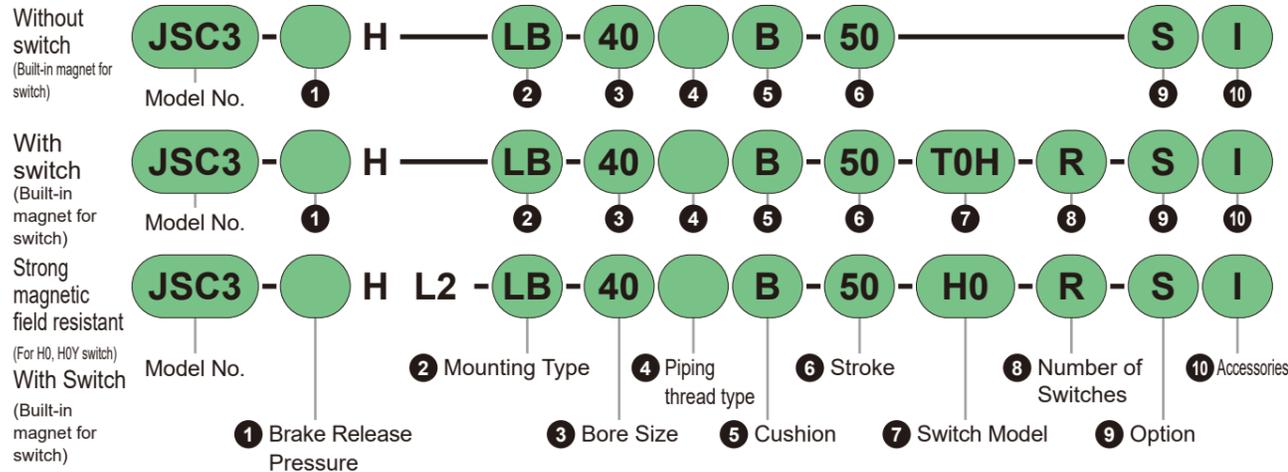
Model No. Notation

*Lead Wire Length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5m (Option)

Example) Lead wire length
 1 m T0H
 3 m T0H³
 5 m T0H⁵

Model No. Notation (ø40 to ø100)



1 Brake Release Pressure

Code	Content
Blank	Standard Type (0.3 MPa)
S	Low pressure release type (0.25 MPa)

2 Mounting Type

Mounting brackets are pre-assembled on the product for shipment. (However, head side special flange type is attached for shipment.)

Code	Content	Code	Content
00	Basic type	CA	Single Clevis Type
LB	Axial Foot Type	CB	Double Clevis Type (Pin and Retaining Ring attached)
FA	Rod Side Flange Type	TC	Intermediate Trunnion Type
FB	Head Side Flange Type	TA	Rod Side Trunnion Type
FC	Head side special flange type	TB	Head Side Trunnion Type

3 Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

4 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G thread (Custom product)

5 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without cushion

6 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40	1 to 600	Every 1 mm
ø50	1 to 600	
ø63	1 to 600	
ø80	1 to 700	
ø100	1 to 800	

Note: For minimum stroke with switch, please refer to P. 478, 479.

7 Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□
		3-wire (NPN)	—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (PNP)	—	30 or less	—	100 or less	T3H□	T3V□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□
		3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□
		For 2-color AC Magnetic Field	—	24 ± 10%	—	5 to 20	T2YD□	—
Reed	1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□
		1-color Flexible Lead Wire Type	—	10 to 30	—	—	T2HR3	T2VR3
	1-Color No Indicator LED	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
		—	110	5/12/24	20 or less	50 or less	T5H□	T5V□
	1-Color For Strong Magnetic Fields	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□
		2-color For strong magnetic field	—	24 ± 10%	—	5 to 20	H0Y□	—

*1: Insert the code selected in the "Lead wire length" table into "□" of the switch Model No.

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: Switches other than the above models are also available. (Custom Product) For details, refer to P. 1457.

8 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Note: 1 If mounting type TA or TB is selected, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

10 Accessories

Code	Content
I	Single knuckle
Y	Double knuckle (Pin and Retaining Ring included)
B1	Single bracket
B2	Double yoke bracket (pin and Retaining Ring included)
B3	Single bracket
B4	Trunnion Type 2nd Bracket (Set of 2)

*1: "I" and "Y" cannot be selected simultaneously.

9 Option

Code	Content	Max Ambient Temperature		Instantaneous Max Temperature
		Max Ambient Temperature	Instantaneous Max Temperature	
J	Bellows	100°C	200°C	
L	Bellows	250°C	400°C	
M	Piston Rod material (Stainless Steel)			
Blank	Cushion needle position R (Standard)			T R (Standard)
S	Cushion needle position S			S
T	Cushion needle position T			
G	With Indicator			

Note: For "S" and "T" position display, please check the respective outline dimension drawings.

About specifications of custom products

For details, please refer to P. 498 to 503.

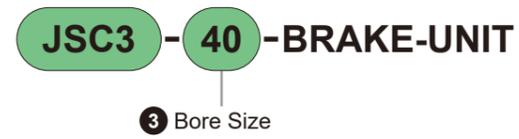
Code	Content
-XK◇	Mounting Bracket Rotational Assembly
-XAQ◇	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending P. 11.

Model No. Ex.)

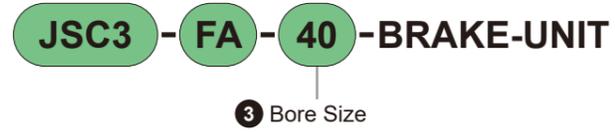
JSC3-H-..... - XK□

JSC3-H Series

Brake Unit Model No. Notation

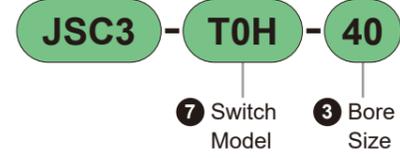


● FA mounting style

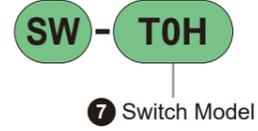


T-type Switch Individual Model No. Notation

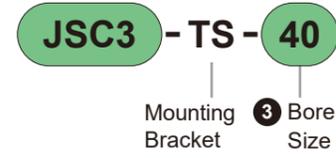
● Switch body+Mounting bracket set



● Switch Body Only

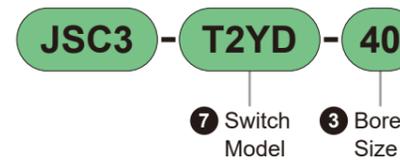


● Mounting bracket set

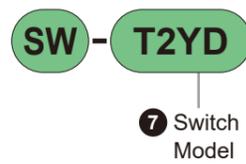


T2YD type switch single item Model No. Notation

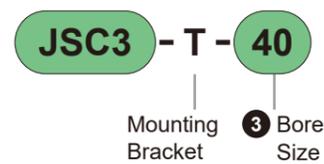
● Switch body+Mounting bracket set
· ø40 to ø100



● Switch Body Only
· ø40 to ø100

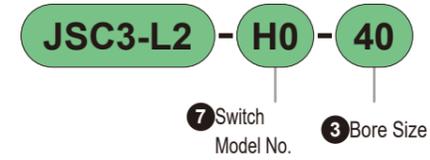


● Mounting bracket set

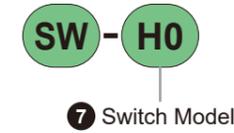


H type switch single item Model No. Notation

● Switch body+Mounting bracket set



● Switch Body Only



● Mounting bracket set



MEMO

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

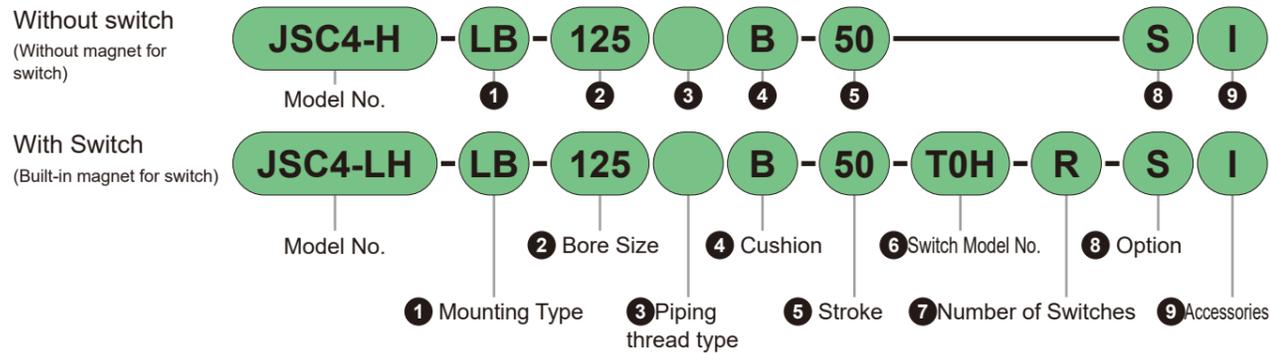
UFCD

USC

Cylinder
Switch

Ending

Model No. Notation



① Mounting type

Mounting bracket is pre-assembled on the product for shipment.

Code	Content	Code	Content
LB	Axial foot type	CB	Double Clevis Type (Pin and Retaining Ring attached)
FA	Rod side flange type	TC	Center trunnion type
FB	Head Side Flange Type	TA	Rod side trunnion type
CA	Single clevis type	TB	Head side trunnion type

② Bore Size (mm)

Code	Content
125	ø125
140	ø140
160	ø160
180	ø180

③ Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G thread (Custom product)

④ Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without cushion

⑤ Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø125	1 to 800	in 1 mm increments
ø140	1 to 800	
ø160	1 to 800	
ø180	1 to 900	

Note: Refer to P. 479 for the Min Stroke with switch.

⑥ Switch Model No.

For switch details, refer to P. 1457. Switches are shipped with the product.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead wire *1		Image
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	Image
			-	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	—	100 or less	—	T3H□	T3V□	Image
	3-wire (PNP)	—	30 or less	—	—	T3PH□	T3PV□		
	2-wire	—	24 ± 10%	—	5 to 20	—	T2WH□	T2WV□	
	Contact	2-Color AC For Magnetic Field	3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□
-				24 ± 10%	-	5 to 20	T2YD□	-	
1-Color Off-Delay Type		2-wire	—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□	Image
			—	10 to 30	—	—	T2HR3	T2VR3	
1-Color Without Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	Image	
		110	5/12/24	20 or less	50 or less	T5H□	T5V□		
		110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□		

*1: Insert the code selected in the "Lead wire length" table into "□" of the switch Model No..

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating Ambient Temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: Switches other than the above models are also available. (Custom Product) For details, refer to P. 1457.

⑦ Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

Note: If ① mounting type TA or TB is selected, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

⑨ Accessories

Code	Content	Image
I	Single knuckle	Image
Y	Double Knuckle (Pin and Retaining Ring attached)	Image
B1	Single bracket	Image
B2	Double bracket	Image

*1: "I" and "Y" cannot be selected simultaneously.

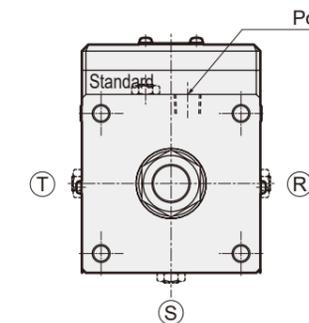
⑧ Option

Code	Content	Max Ambient Temperature		Image
		Instantaneous Max Temperature		
J	Bellows	100°C	200°C	Image
L	Bellows	250°C	400°C	Image
M	Piston Rod Material (Stainless Steel)	-		
Blank	Cushion needle position Standard	Standard		
R	Cushion Needle Position R	Image		
S	Cushion Needle Position S	Image		
T	Cushion Needle Position T	Image		
C2	With check valve in cushion part	Image		

Note: For cushion needle position display, please check the figure below.

About Cushion Needle Position

(Needle position with port facing upward from rod direction)



About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK□	Mounting Bracket Rotational Assembly
-XAQ□□	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending P. 11.

Model No. Ex.)

JSC4-H-..... - XK□

Note: Refer to P. 484 for compatible dimensions of JSC3-LH.

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

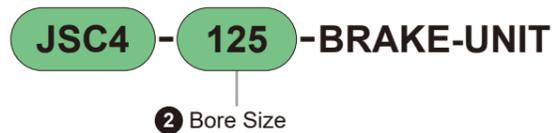
USC

Cylinder
Switch

Ending

JSC4-H Series

Brake Unit Model No. Notation

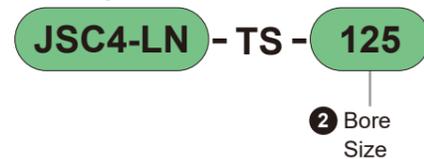
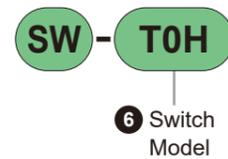
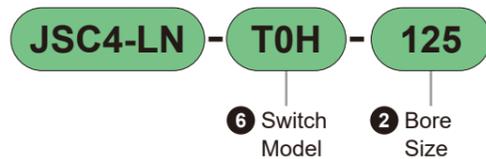


T-type Switch Individual Model No. Notation

● Switch body+Mounting bracket set

● Switch Body Only

● Mounting bracket set

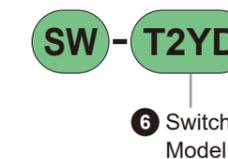
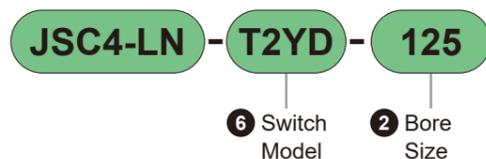


T2YD type switch single item Model No. Notation

● Switch body+Mounting bracket set

● Switch Body Only

● Mounting bracket set



MEMO

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

Cylinder
Switch

Ending

Ending

Specifications

Item	JSC3-H (With Switch)					JSC3-SH (With Switch)					JSC4-H						
	mm	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180		
Bore Size	mm	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180		
Operation type		Double Acting, Low Hydraulic Pressure Type					Double Acting, low pressure release, low hydraulic pressure type					Double Acting / Low Hydraulic Type					
Operating Fluid		Hydraulic operating fluid (Brake unit uses compressed air)															
Max Operating Pressure	MPa	1.0															
Min Operating Pressure	MPa	0.3					0.25 (36 psi)					0.3					
Pressure	MPa	0.2 (29 psi)					0.2 (29 psi)					0.1					
Proof Pressure	MPa	1.6															
Ambient Temperature	°C	5 to 50															
Port Size	Brake Part	Rc1/8		Rc1/4		Rc3/8		Rc1/8		Rc1/4		Rc3/8		Rc 1/2			
	Cylinder Part	Rc1/4		Rc3/8		Rc 1/2		Rc1/4		Rc3/8		Rc 1/2		Rc 3/4			
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										With cushion					
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	With Cushion	Note: The cushioning capacity of low hydraulic pressure cylinders cannot absorb large energy. It is recommended to use an external shock absorber together.															
	Without cushion	Note: Without cushion, large energy generated by external load cannot be absorbed. It is recommended to use an external shock absorber together.															

Note: Brake section is air operated.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Max Stroke (mm)	Min Stroke (mm)
JSC3	ø40	50, 75, 100, 150, 200, 300, 350, 400, 450, 500	1
	ø50		
	ø63		
	ø80		
	ø100		
JSC4	ø125	50, 75, 100, 150, 200, 250, 300	1
	ø140		
	ø160		
	ø180		
	ø180		

*1: If the Max Stroke is exceeded, the product specifications may not be met depending on the conditions, so please consult us. Also, please refer to Intro 29.

*2: Intermediate strokes can be manufactured in 2 mm increments.

*3: Minimum stroke varies depending on the switch mounting method. Refer to the table below.

Minimum Stroke for JSC3 with Switch (T-type switch)

● Minimum stroke with T0/T5 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	20 (10)	60 (45)	110 (110)	110 (110)	50 (50)	50 (50)
ø50	20 (20)	15 (10)	20 (20)	135 (135)	135 (135)	60 (60)	60 (60)
ø63	20 (20)	15 (10)	20 (20)	110 (95)	110 (95)	50 (45)	50 (45)
ø80	25 (25)	15 (15)	25 (25)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	25 (25)	15 (15)	25 (25)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

Minimum Stroke for JSC3 with Switch (T-type switch)

● Minimum stroke with T8 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (20)	15 (10)	50 (35)	95 (85)	95 (85)	45 (40)	45 (40)
ø50	20 (20)	10 (10)	20 (20)	115 (115)	115 (115)	50 (50)	50 (50)
ø63	20 (20)	10 (10)	20 (20)	95 (75)	95 (75)	45 (35)	45 (35)
ø80	25 (25)	15 (15)	25 (25)	100 (70)	100 (70)	50 (35)	50 (35)
ø100	25 (25)	15 (15)	25 (25)	110 (80)	110 (80)	55 (40)	55 (40)

*1: () indicates T□V (L-shaped lead wire type).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Minimum stroke with T2/T3 type switch

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	115 (85)	115 (85)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	125 (95)	125 (95)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Min Stroke with T1/T2W/T3W/T2YD switches

Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (15)	20 (10)	60 (45)	105 (75)	105 (75)	50 (35)	50 (35)
ø50	15 (15)	15 (10)	15 (15)	100 (70)	100 (70)	45 (30)	45 (30)
ø63	15 (15)	15 (10)	15 (15)	105 (75)	105 (75)	50 (35)	50 (35)
ø80	15 (15)	15 (10)	15 (15)	110 (80)	110 (80)	55 (40)	55 (40)
ø100	15 (15)	10 (10)	15 (15)	120 (90)	120 (90)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type). However, T2YD does not have an L-shaped lead wire type (V).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

● Min Stroke with T2W/T3W switches

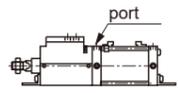
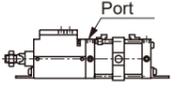
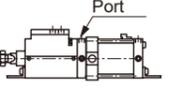
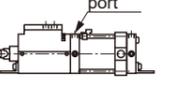
Number of Switches	Different Surface Mounting	Same Surface Mounting		Intermediate Trunnion Mounting		Rod Side Trunnion Mounting Position detection at the rod side stroke end is not possible.	Head Side Trunnion Mounting Position detection at the head side stroke end is not possible.
		1	2	1	2		
Bore Size	2	1	2	1	2	1	1
ø40	20 (10)	20 (5)	65 (50)	110 (80)	110 (80)	50 (35)	50 (35)
ø50	20 (10)	20 (5)	20 (10)	110 (80)	110 (80)	50 (35)	50 (35)
ø63	20 (10)	20 (5)	20 (10)	115 (85)	115 (85)	55 (40)	55 (40)
ø80	15 (10)	15 (5)	15 (10)	120 (90)	120 (90)	55 (40)	55 (40)
ø100	10 (10)	10 (5)	10 (10)	130 (100)	130 (100)	60 (45)	60 (45)

*1: () indicates T□V (L-shaped lead wire type).

*2: If the stroke is 15 mm or less, two switches may turn ON simultaneously. In this case, adjust the switch mounting positions so that they are further apart from each other.

Minimum Stroke with JSC4 Switch (T-type Switch)

● ø125 to ø180

Item	Stroke when mounted on the same surface	Intermediate trunnion mounting stroke	Rod side trunnion mounting stroke	Head side trunnion mounting stroke
Bore Size (mm)				
ø125	 20 or more	 120 or more	 70 or more	 70 or more
ø140		125 or more	75 or more	
ø160		130 or more	80 or more	
ø180		135 or more	85 or more	

Cylinder Weight

● JSC3 (ø40 to ø100) [Unit: kg]

Item / Mounting Style	Product Weight when stroke (S) = 0 mm						Switch Weight	Of mounting bracket Weight		Per S = 100 mm Added Weight
	Bore Size (mm)	Basic Type (00)	Foot Type (LB)	Flange type (FA, FB)	Single Clevis Type (CA)	Double Yoke Clevis Type (CB)		Trunnion Type (TC)	T Type	
ø40	2.48	2.66	2.91	2.83	2.83	2.86	Please refer to the Weight described in the switch specifications on P. 1457.	0.024	0.028	0.39
ø50	3.47	3.67	3.97	3.87	3.87	3.97		0.022	0.026	0.46
ø63	5.09	5.49	6.19	5.79	5.79	5.89		0.020	0.024	0.50
ø80	8.15	8.85	9.95	9.65	9.65	9.45		0.026	0.029	0.90
ø100	14.70	15.70	17.40	16.90	16.90	17.30		0.024	0.028	1.12

(Example) Product Weight of JSC3-H-LB-50B-200-T0H-D

Product weight for 0 mm stroke 3.67 kg
 Added Weight at 200 mm stroke $0.46 \times \frac{200}{100} = 0.92$ kg
 Weight of 2 T0H 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 (ø125 to ø180) (Unit: kg)

Item / Mounting Style	Product Weight when stroke (S) = 0 mm					Switch Weight		S = 100 mm Per Added Weight
	Bore Size (mm)	Axial foot type (LB)	Flange Type (FA, FB)	Single Clevis Type (CA)	Double Clevis Type (CB)	Trunnion Type (TA, TB, TC)	Switch	
ø125	25.72	27.52	27.22	27.32	27.62	Please refer to the Weight described in the switch specifications on P. 1457.	0.028	1.54
ø140	32.95	36.35	34.75	34.95	34.15		0.030	1.78
ø160	42.85	46.65	44.75	45.05	46.15		0.034	2.22
ø180	61.55	69.05	64.45	64.95	65.15		0.038	2.96

(Example) Product Weight of JSC4-H-LB-125B-300-T0H-D

Product Weight at S = 0 mm: 25.72 kg
 Additional weight when S=300 mm $1.54 \times \frac{300}{100} = 4.62$ kg
 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	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0 (145 psi)
ø40	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
	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
ø50	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
	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
ø63	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
	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
ø80	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
	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
ø100	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	1.27×10 ⁴	1.53×10 ⁴	1.78×10 ⁴	2.04×10 ⁴	2.29×10 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

Mounting Bracket Model No. Notation (ø40 to ø100)

Bore Size (mm)	Mounting Bracket	ø40	ø50	ø63	ø80	ø100
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
Single clevis (CA)		S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Double Yoke Clevis (CB) *2		S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: Foot type mounting brackets are 2 pcs/set. *2: Pins and Retaining Rings are included. *3: Mounting bolts are included with each mounting bracket.

Dimensional Drawings

● ø40 to ø100

Same as JSC3 (Double Acting, single rod type). Please refer to P. 432 to 442.

● ø125 to ø180

Same as JSC4-N (Double Acting, non-lubricated type). Please refer to P. 444 to 451.

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

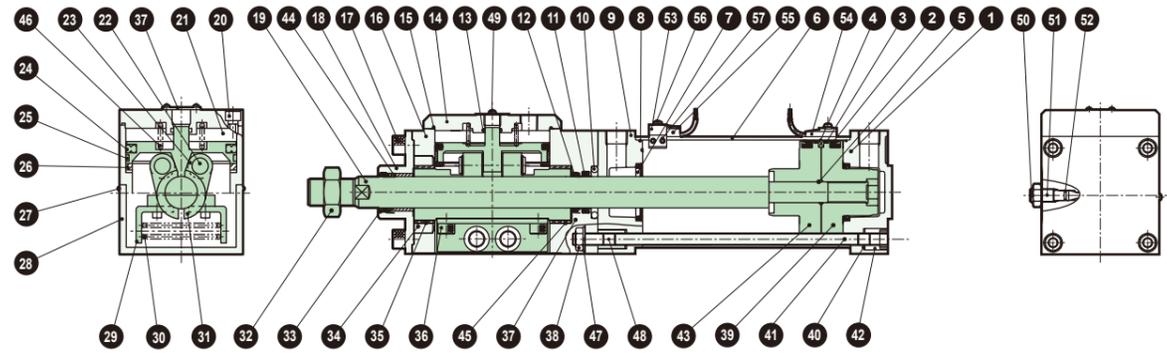
USC

Cylinder
Switch

Cylinder
Switch

Ending

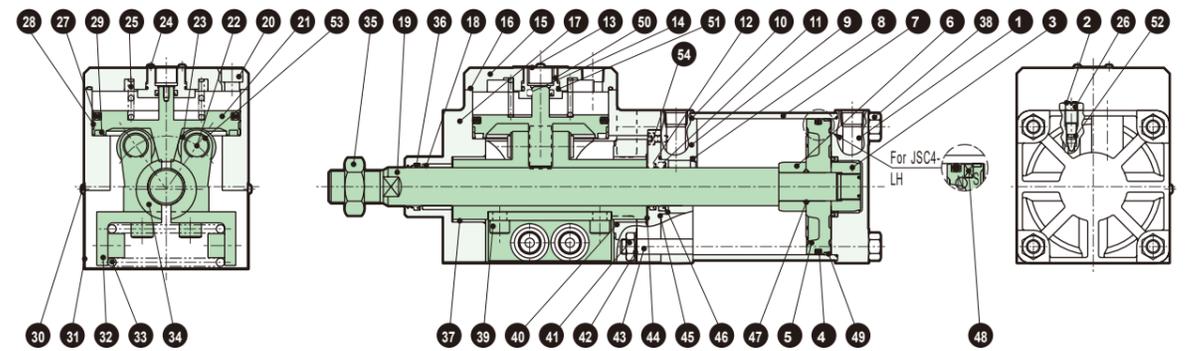
Ending



Do Not Disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Painted	30	Spring	Piano Wire	
2	Piston Packing	Nitrile Rubber		31	Brake metal	Cast Iron	Nickel Plating
3	Wear ring	Polyacetal		32	Rod nut	Steel	Zinc Chromate
4	Magnet	Plastic		33	Scraper	Nitrile Rubber	
5	Piston gasket	Nitrile Rubber		34	DU ring	Steel	Black Oxide
6	Cylinder Tube	Aluminum Alloy	Hard Alumite	35	Bush	Oil-Impregnated Bearing Alloy	
7	Cushion packing	Nitrile Rubber, Steel		36	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
8	Cylinder gasket	Nitrile Rubber		37	Dust cover	Aluminum Alloy	Painting
9	Rod Cover	Aluminum Alloy	Painted	38	Hexagon Nut	Steel	Black Oxide
10	Metal seal	Nitrile Rubber		39	Piston H	Aluminum Alloy	
11	Rod Packing	Nitrile Rubber		40	Tie rod	Steel	Zinc Chromate
12	Scraper	Nitrile Rubber		41	Belleville washer	Steel	Black Oxide
13	Cap gasket A	Nitrile Rubber		42	Round nut	Steel	Zinc Chromate
14	Body cap	Cast Iron	Nitriding Treatment	43	Piston R	Aluminum Alloy	
15	Cap gasket B	Nitrile Rubber		44	Bush B	Oil impregnated Bearing Alloy	
16	Brake body	Aluminum Alloy	Alumite	45	Thrust washer		
17	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	46	Spring	Piano Wire	Painted
18	Rod metal	Steel	Manganese Phosphate	47	Toothed washer	Steel	Black Oxide
19	Piston Rod	Steel	Industrial Chrome Plating	48	Hexagon Socket Set Screw	Steel	Black Oxide
20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	49	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate
21	Brake piston	Cast Iron	Manganese Phosphate	50	Cushion needle	Copper Alloy	Nickel Plating
22	Parallel pin	Steel		51	Needle nut	Copper Alloy	Nickel Plating
23	Bearing			52	Needle gasket	Nitrile Rubber	
24	Piston Packing B	Nitrile Rubber		With switch			
25	Wear ring	Polyacetal		53	Switch mounting base	Aluminum Alloy	
26	Cushion rubber	Urethane Rubber		54	Switch holder	Aluminum Alloy	
27	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate	55	Cylinder Switch		
28	Cover	Steel	Painted	56	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
29	Spring seat	Steel	Zinc Chromate	57	Hexagon Socket Set Screw	Alloy Steel	Black Oxide

Note: Contains a strong spring and Never disassemble the brake.



Do Not Disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Chromate	28	Wear ring	Polyacetal	
2	Cushion needle	Copper Alloy		29	Cushion Rubber	Urethane Rubber	
3	Cushion ring A	Steel	Zinc Chromate	30	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
4	Piston Packing	Nitrile Rubber		31	Cover	Steel	Painted
5	Piston	Aluminum Alloy		32	Spring seat	Steel	Manganese Phosphate
6	Cushion ring B	Steel	Zinc Chromate	33	Spring	Piano Wire	Black Oxide
7	Cylinder Tube	Aluminum Alloy	Hard Alumite	34	Brake metal	Cast Iron	Nickel Plating
8	Cushion Packing	Nitrile Rubber, Steel		35	Rod nut	Steel	Zinc Chromate
9	Rod Cover	Aluminum Alloy	Chromate	36	Scraper	Nitrile Rubber	
10	Cylinder gasket	Nitrile Rubber		37	Bush A	Bearing Alloy	
11	Rod Packing	Nitrile Rubber		38	Hexagon Nut	Steel	Zinc Chromate
12	Scraper	Nitrile Rubber		39	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
13	Dust cover	Aluminum Alloy	Alumite	40	Ring	Steel	Black Oxide
14	Rod Packing	Nitrile Rubber		41	Hexagon Nut	Steel	Zinc Chromate
15	Body cap	Aluminum Alloy	Black alumite	42	Toothed washer	Steel	Zinc Chromate
16	Cap gasket	Nitrile Rubber		43	Tie rod	Steel	Zinc Chromate
17	Brake body	Aluminum Alloy	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 Oxide	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	
23	Bearing	-		50	Body cap	Cast Iron	Manganese Phosphate
24	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate	51	O-ring	Nitrile Rubber	
25	Spring	Piano Wire	Painted	52	Needle gasket	Nitrile Rubber	
26	Needle nut	Steel	Zinc Chromate	53	Ring type Retaining	Steel	Zinc Chromate
27	Piston Packing B	Nitrile Rubber		54	Hexagon Socket Head Cap Screw	Steel	Black Oxide

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

Cylinder
Switch

Ending

Ending

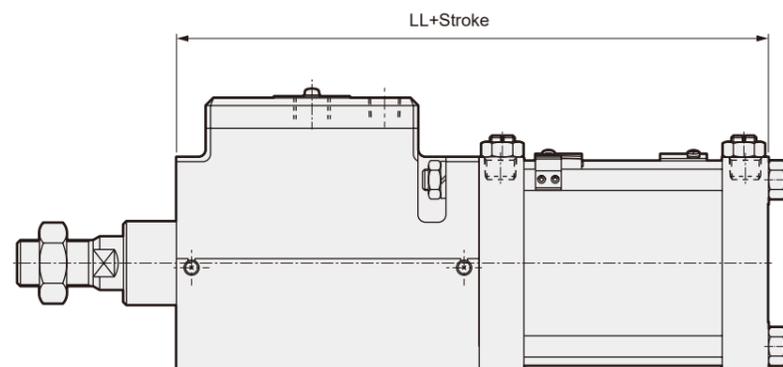
For maintenance parts, refer to the CKD component product site (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> See "Maintenance Parts".

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

Brake Cylinder JSC3-LH

As of March 2015, the JSC3-LH series has been model changed to the JSC4-LH Series. JSC3-LH has different overall length dimensions from JSC4-LH. Compatible machines corresponding to these have been prepared. (Custom order) Currently, if you are using JSC3-LH and require a dimensionally compatible machine, please order by adding "-S092" to the end of the Model No..

Dimensional Drawings



Note: LL dimensions on P. 444 to 451 are as follows.

Code	Dimension table	
Bore Size (mm)	LL	
ø125	311	
ø140	338	
ø160	367	
ø180	388	

*Please check with us for details.

MEMO

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

485

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

484



Brake Cylinder Double Acting / Heat Resistant Type

JSC3-T, JSC4-T Series

● Bore Size

JSC3: ø40, ø50, ø63, ø80, ø100, ø125

JSC4: ø140, ø160, ø180

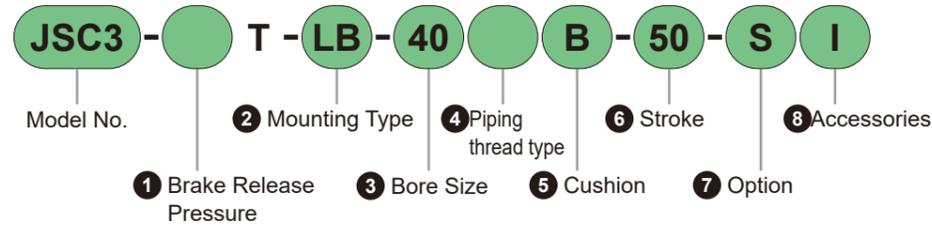


JSC3-T Series

Model No. Notation

Model No. Notation (ø40 to ø100)

Without switch



1 Brake Release Pressure

Code	Content
Blank	Standard Type (0.3 MPa)
S	Low pressure release type (0.25 MPa)

2 Mounting Type

Mounting bracket is pre-assembled on the product for shipment. (However, head side special flange type is attached for shipment.)

Code	Content	Code	Content
00	Basic Type	CA	Single clevis type
LB	Axial foot type	CB	Double Clevis Type (Pin and Retaining Ring attached)
FA	Rod side flange type	TC	Center trunnion type
FB	Head Side Flange Type	TA	Rod side trunnion type
FC	Head side special flange type	TB	Head side trunnion type

3 Bore Size (mm)

Code	Contents
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

4 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G thread (Custom product)

5 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without cushion

6 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø40	1 to 600	Every 1 mm
ø50	1 to 600	
ø63	1 to 600	
ø80	1 to 700	
ø100	1 to 800	

7 Option

Code	Content		
		Max Ambient Temperature	Instantaneous Max Temperature
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		

Note: For "S" and "T" position display, please check the respective outline dimension drawings.

8 Accessories

Code	Content	
I	Single knuckle	
Y	Double yoke knuckle (pin and Retaining Ring included)	
B1	Single bracket	
B2	Double yoke bracket (pin and Retaining Ring included)	
B3	Single bracket	
B4	Trunnion Type 2nd Bracket (Set of 2)	

*1: "I" and "Y" cannot be selected simultaneously.

About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK◇	Mounting Bracket Rotational Assembly
-XAQ◇◇	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending P. 11.

Model No. Ex.)

JSC3-T-.....-XK□

With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

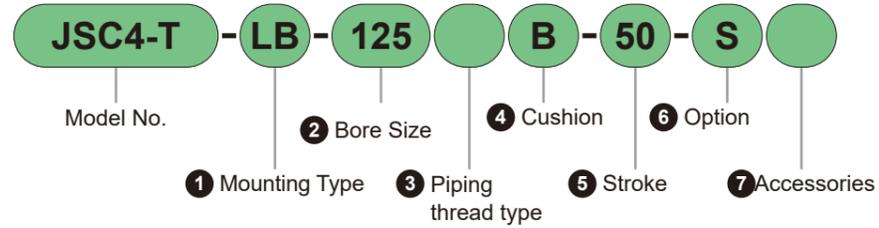
Cylinder
Switch

Ending

Ending

Model No. Notation (ø125 to ø180)

Without switch



1 Mounting Type

Mounting bracket is pre-assembled on the product for shipment.

Code	Content	Code	Content
LB	Axial foot type	CB	Double Clevis Type (Pin and Retaining Ring attached)
FA	Rod side flange type	TC	Center trunnion type
FB	Head Side Flange Type	TA	Rod side trunnion type
CA	Single clevis type	TB	Head side trunnion type

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G thread (Custom product)

4 Cushion

Code	Content
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Without cushion

2 Bore Size (mm)

Code	Content
125	ø125
140	ø140
160	ø160
180	ø180

5 Stroke (mm)

Bore Size	Stroke	Intermediate Stroke
ø125	1 to 800	in 1 mm increments
ø140	1 to 800	
ø160	1 to 800	
ø180	1 to 900	

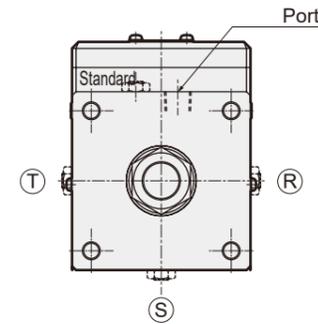
6 Option

Code	Content		
		Max Ambient Temperature	Instantaneous Max Temperature
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 check valve in cushion part		

Note: For cushion needle position display, please check the figure below.

About Cushion Needle Position

(Needle position with port facing upward from rod direction)



About specifications of custom products

For details, please refer to P. 498 to 503.

Code	Content
-XK	Mounting Bracket Rotational Assembly
-XAQ	Trunnion Position Specification
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape change	Refer to Ending P. 11.

Model No. Ex.)

JSC4-T-..... - **XK**

7 Accessories

Code	Content
I	Single knuckle
Y	Double Knuckle (pin and Retaining Ring included)
B1	Single bracket
B2	Double bracket

*1: "I" and "Y" cannot be selected simultaneously.

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

Specifications

Item	JSC3-T					JSC3-ST					JSC4-T				
	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	
Bore Size mm															
Operation type	Double Acting/Heat Resistant Type					Double Acting, low pressure release, heat resistant type					Double Acting/Heat Resistant Type				
Operating Fluid	Compressed Air														
Max Operating Pressure MPa	1.0 (145 psi)														
Min Operating Pressure MPa	0.3					0.25 (36 psi)					0.3				
Pressure MPa	0.1					0.1					0.05				
Proof Pressure MPa	1.6														
Ambient Temperature °C	5 to 120														
Port Size	Brake Part	Rc1/8		Rc1/4		Rc3/8		Rc1/8		Rc1/4		Rc3/8		Rc 1/2	
	Cylinder Part	Rc1/4	Rc3/8		Rc 1/2		Rc1/4	Rc3/8		Rc 1/2		Rc 1/2	Rc 3/4		
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)
Operating Piston Speed mm/s	50 to 1000 (Use within 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 allowed														
Holding Force N	980	1569	2451	3922	6178	784	1255	1961	3138	4941	9600	12000	15800	20000	
Allowable Absorbed Energy	With Cushion	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 cushion, large energy generated by external load cannot be absorbed. It is recommended to use an external shock absorber together.															

*1: Grease up regularly with heat-resistant grease.

Stroke

Bore Size (mm)	Standard Stroke (mm)	Max Stroke (mm)	Min Stroke (mm)
ø40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1
ø50			
ø63			
ø80			
ø100	700		
ø125			
ø140	50, 75, 100, 150, 200, 250, 300	800	
ø160			
ø180		900	

*1: If the Max Stroke is exceeded, the product specifications may not be met depending on the conditions, so please consult us. Also, please refer to Intro 29.

*2: Intermediate strokes can be manufactured in 2 mm increments.

*3: Minimum stroke varies depending on the switch mounting method. Refer to the table below.

Cylinder Weight

● JSC3 (ø40 to ø100)

[Unit: kg]

Item / Mounting Style	Product Weight when stroke (S) = 0 mm						Added weight per S = 100 mm
	Basic Type (00)	Foot Type (LB)	Flange Type (FA, FB)	Single Yoke Clevis Type (CA)	Double Yoke Clevis Type (CB)	Trunnion Type (TC)	
ø40	2.48	2.66	2.91	2.83	2.83	2.86	0.39
ø50	3.47	3.67	3.97	3.87	3.87	3.97	0.46
ø63	5.09	5.49	6.19	5.79	5.79	5.89	0.50
ø80	8.15	8.85	9.95	9.65	9.65	9.45	0.90
ø100	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 0 mm stroke 3.67 kg
 Additional weight for 200 mm stroke ... $0.46 \times \frac{200}{100} = 0.92$ kg
 Product weight 3.67 kg + 0.92 kg = 4.59 kg

● JSC4 (ø125 to ø180)

(Unit: kg)

Item / Mounting Style	Product Weight at stroke (S) = 0 mm					Added Weight per S=100 mm
	Axial foot type (LB)	Flange Type (FA/FB)	Single clevis type (CA)	Double Clevis Type (CB)	Trunnion Type (TA, TB, TC)	
ø125	25.72	27.52	27.22	27.32	27.62	1.54
ø140	32.95	36.35	34.75	34.95	34.15	1.78
ø160	42.85	46.65	44.75	45.05	46.15	2.22
ø180	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 = 300 mm $1.54 \times \frac{300}{100} = 4.62$ kg
 ● Product weight 25.72 + 4.62 = 30.34 kg

Theoretical Thrust Table

(Unit: N)

Bore Size (mm)	Operating Direction	Operating Pressure MPa											
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0 (145 psi)	
JSC3	ø40	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
	ø50	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
	ø63	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
ø80	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	
ø100	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	ø125	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
	ø140	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
	ø160	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
	ø180	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	1.30×10 ⁴	1.50×10 ⁴	1.70×10 ⁴	1.90×10 ⁴	2.10×10 ⁴
		Pull	2.39×10 ³	3.58×10 ³	4.77×10 ³	6.71×10 ³	8.84×10 ³	1.09×10 ⁴	1.29×10 ⁴	1.49×10 ⁴	1.69×10 ⁴	1.89×10 ⁴	2.09×10 ⁴

Mounting Bracket Model No. Notation (ø40 to ø100)

Bore Size (mm)	ø40	ø50	ø63	ø80	ø100
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
Single clevis (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Double Yoke Clevis (CB) *2	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

*1: Foot type mounting brackets are 2 pcs/set.

*2: Pins and Retaining Rings are included.

*3: Mounting bolts are included with each mounting bracket.

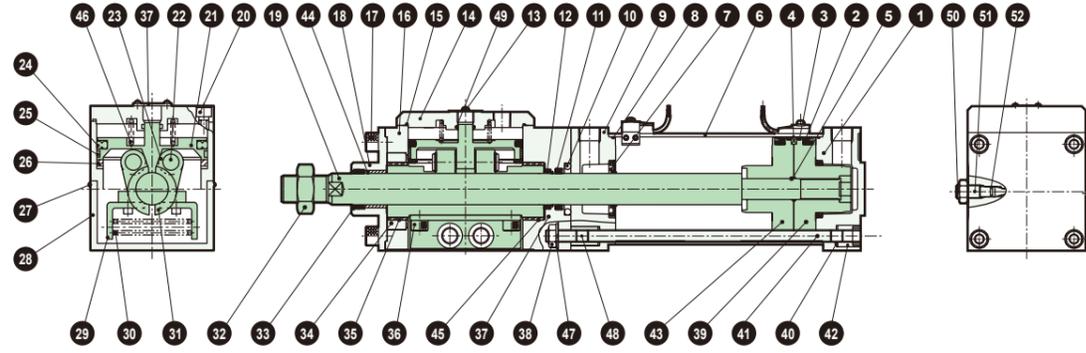
Dimensional Drawings

- The dimensions of $\phi 40$ to $\phi 100$ is the same as that of JSC3 (Double Acting/single). Refer to P. 432 to 442.
- Dimensions of $\phi 125$ to $\phi 180$ is the same as that of JSC4-N (Double Acting/no-lubrication). Refer to P. 444 to 451. However, switches are not included.

Internal Structure / Materials (Bore Size: $\phi 40$ to $\phi 100$)

Internal Structure / Materials (Bore Size: $\phi 125$ to $\phi 180$)

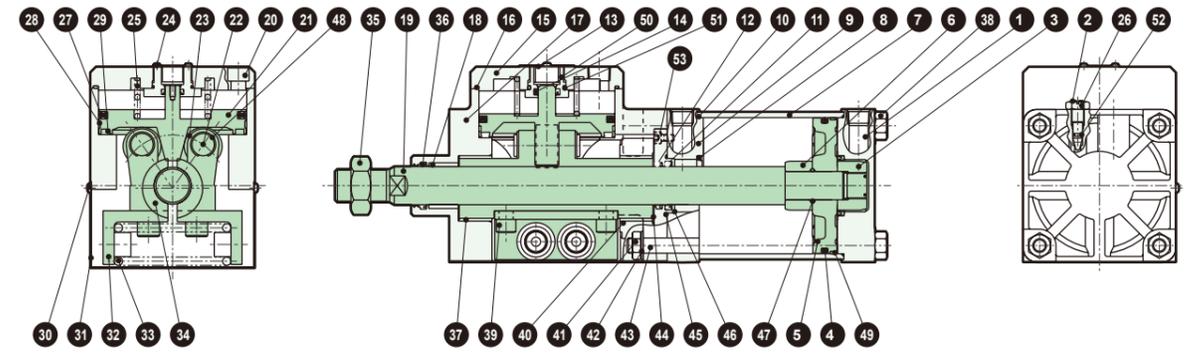
With Brake / With Lock



Do Not Disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Painted	27	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
2	Piston Packing	Fluoro Rubber		28	Cover	Steel	Painted
3	Wear ring	Polytetrafluoroethylene resin		29	Spring seat	Steel	Zinc Chromate
4	Piston Ring	Steel		30	Spring	Piano Wire	
5	Piston gasket	Fluoro Rubber		31	Brake metal	Cast Iron	Nickel Plating
6	Cylinder Tube	Aluminum Alloy	Hard Anodized	32	Rod nut	Steel	Zinc Chromate
7	Cushion packing	Fluororubber, Steel		33	Scraper	Fluoro Rubber	
8	Cylinder gasket	Fluoro Rubber		34	DU ring	Steel	Black Oxide
9	Rod Cover	Aluminum Alloy	Painted	35	Bush	Oil-impregnated Bearing Alloy	
10	Metal seal	Fluoro Rubber		36	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
11	Rod Packing	Fluoro Rubber		37	Dust cover	Aluminum Alloy	Painted
12	Scraper	Fluoro Rubber		38	Hexagon Nut	Steel	Black Oxide
13	Cap gasket A	Fluoro Rubber		39	Piston H	Aluminum Alloy	
14	Body cap	Cast Iron	Nitriding Treatment	40	Tie rod	Steel	Zinc Chromate
15	Cap gasket B	Fluoro Rubber		41	Belleville washer	Steel	Black Oxide
16	Brake body	Aluminum Alloy	Alumite	42	Round nut	Steel	Zinc Chromate
17	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	43	Piston R	Aluminum Alloy	
18	Rod metal	Steel	Manganese Phosphate	44	Bush B	Oil impregnated Bearing Alloy	
19	Piston Rod	Steel	Industrial Chrome Plating	45	Thrust washer		
20	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide	46	Spring	Piano Wire	Painted
21	Brake piston	Cast Iron	Manganese Phosphate	47	Toothed washer	Steel	Black Oxide
22	Parallel pin	Steel		48	Hexagon Socket Set Screw	Steel	Black Oxide
23	Bearing			49	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate
24	Piston Packing B	Fluoro Rubber		50	Cushion needle	Copper Alloy	Nickel Plating
25	Wear ring	Special resin		51	Needle nut	Copper Alloy	Nickel Plating
26	Cushion rubber	Fluorosilicone rubber		52	Needle gasket	Fluoro Rubber	

Note: Contains a strong spring and Never disassemble the brake.



Do Not Disassemble

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Head cover	Aluminum Alloy	Chromate	27	Piston Packing B	Fluoro Rubber	
2	Cushion needle	Copper Alloy		28	Wear ring	Polyacetal	
3	Cushion ring A	Steel	Zinc Chromate	29	Cushion rubber	Silicone Rubber	
4	Piston Packing	Fluoro Rubber		30	Cross-Recessed Pan Head Screw	Steel	Zinc Chromate
5	Piston	Aluminum Alloy		31	Cover	Steel	Painted
6	Cushion ring B	Steel	Zinc Chromate	32	Spring seat	Steel	Manganese Phosphate
7	Cylinder Tube	Aluminum Alloy	Hard Alumite	33	Spring	Piano Wire	Black Oxide
8	Cushion Packing	Fluororubber, Steel		34	Brake metal	Cast Iron	Nickel Plating
9	Rod Cover	Aluminum Alloy	Chromate	35	Rod nut	Steel	Zinc Chromate
10	Cylinder gasket	Fluoro Rubber		36	Scraper	Fluoro Rubber	
11	Rod Packing	Fluoro Rubber		37	Bush A	Bearing Alloy	
12	Scraper	Fluoro Rubber		38	Hexagon Nut	Steel	Zinc Chromate
13	Dust cover	Aluminum Alloy	Alumite	39	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
14	Rod Packing	Fluoro Rubber		40	Ring	Steel	Black Oxide
15	Body cap	Aluminum Alloy	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 Oxide	46	Rod metal	Cast Iron	Zinc Chromate
21	Brake piston	Cast Iron	Manganese Phosphate	47	Piston gasket	Fluoro Rubber	
22	Bearing pin	Steel		48	Ring Type Retaining Ring	Steel	Zinc Chromate
23	Bearing	-		49	Wear ring	Fabric-Reinforced Phenolic Resin	
24	Cross-Recessed pan head machine screw with washer	Steel	Zinc Chromate	50	Body cap	Cast Iron	Manganese Phosphate
25	Spring	Piano Wire	Painted	51	O-ring	Fluoro Rubber	
26	Needle nut	Steel	Zinc Chromate	52	Needle gasket	Fluoro Rubber	
				53	Hexagon Socket Head Cap Screw	Steel	Black Oxide

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

Cylinder Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

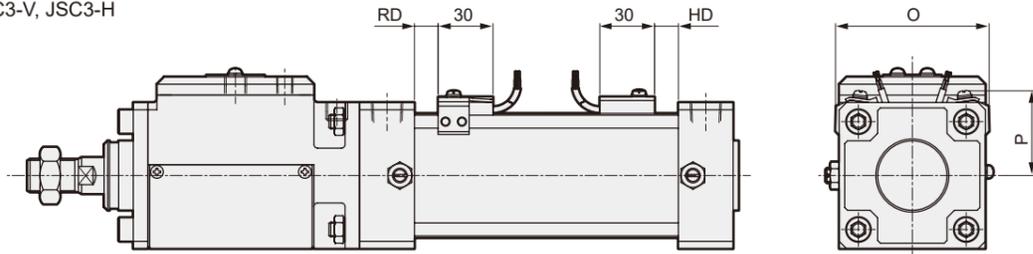
USC

Cylinder Switch

Ending

JSC3 Series Switch Equipped Outline Dimension Drawing

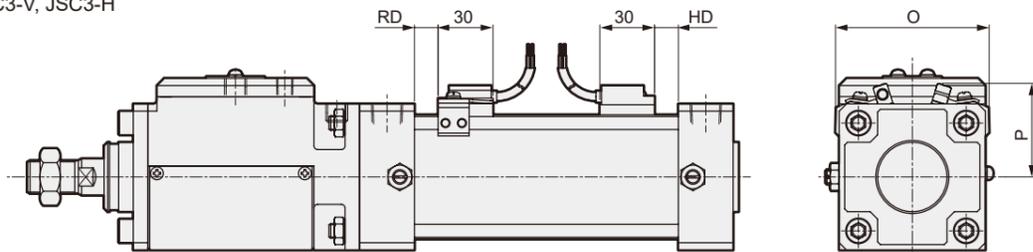
- T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2 [H/V] R3, T2WH/V, T3WH/V, T8H/V, T2JH/V
- JSC3, JSC3-V, JSC3-H



Code Bore Size (mm)	JSC3, JSC3-V, JSC3-H									
	O	P	T0, T5, T2, T3, T3P, T2□R3		T2W, T3W		T8		T2J	
			RD	HD	RD	HD	RD	HD	RD	HD
ø40	66	41.5	11	11	13	13	5	5	10	10
ø50	73	43	13	13	15	15	7	7	12	12
ø63	85	47	13	13	15	15	7	7	12	12
ø80	105	57	14.5	14.5	16.5	16.5	8.5	8.5	13.5	13.5
ø100	121	63	18.5	18.5	20.5	20.5	12.5	12.5	17.5	17.5

Note: For switch mountability, refer to the Model No. display method for each variation.

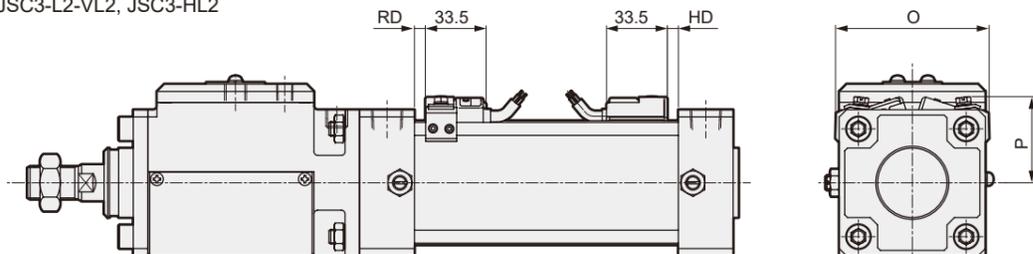
- T1H/V, T2YD, T2YDT
- JSC3, JSC3-V, JSC3-H



Code Bore Size (mm)	JSC3, JSC3-V, JSC3-H			
	O	P	T1, T2YD, T2YDT	
			RD	HD
ø40	66	40	10	10
ø50	73	44.5	12	12
ø63	85	50	12	12
ø80	105	60	13.5	13.5
ø100	121	68	17.5	17.5

Note: For switch mountability, refer to the Model No. display method for each variation.

- H0, H0Y
- JSC3-L2, JSC3-L2-VL2, JSC3-HL2



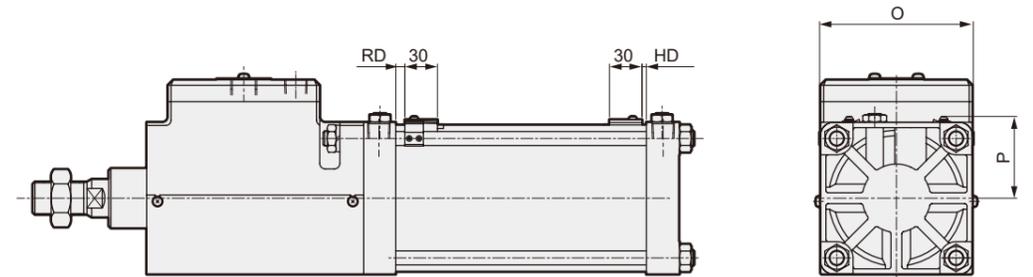
Code Bore Size (mm)	JSC3-L2, JSC3-L2-VL2, JSC3-HL2			
	O	P	H0, H0Y	
			RD	HD
ø40	66	42	4	4
ø50	73	44	6	6
ø63	84	47	6	6
ø80	104	58	7.5	7.5
ø100	120	64	11.5	11.5

Note: For switch mountability, refer to the Model No. display method for each variation.

External Dimensions Diagram with Switch

JSC4 Series Switch Equipped Outline Dimension Drawing

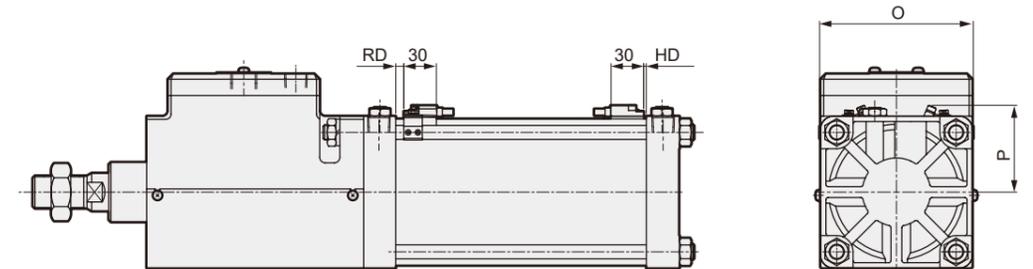
- T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2 [H/V] R3, T2WH/V, T3WH/V, T8H/V, T2JH/V
- JSC4-LN, JSC4-LH



Code Bore Size (mm)	JSC4-LN, JSC4-LH									
	O	P	T0, T5, T2, T3, T3P		T2W, T3W		T2J		T8	
			RD	HD	RD	HD	RD	HD	RD	HD
ø125	142	76	8.5	4	10.5	5.5	7.5	2.5	2.5	0
ø140	156	82	8.5	7	10.5	8.5	7.5	5.5	2.5	0.5
ø160	175	90	10.5	8	12.5	10	9.5	7	4.5	1.5
ø180	196	98	13	9.5	14.5	11.5	11.5	8.5	6.5	3.5

Note: For switch mountability, refer to the Model No. display method for each variation.

- T1, T2YD, T2YDT
- JSC4-LN, JSC4-LH



Code Bore Size (mm)	JSC4-LN, JSC4-LH			
	O	P	T2YD, T2YDT, T1	
			RD	HD
ø125	142	80	7.5	2.5
ø140	156	86	7.5	5.5
ø160	175	95	9.5	7
ø180	196	103	11.5	8.5

Note: For switch mountability, refer to the Model No. display method for each variation.

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

*Related Equipment Selection Guide

Overrun amount and stopping accuracy vary depending on the valve used. Please use the related equipment below.

Model Name	Related Equipment Name Bore Size (mm)	SOL-1	SOL-2	Reverse Regulator	Speed Controller	Silencer	Piping
JSC3	ø40	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	ø8 × ø5.7 Nylon Tubing
	ø50	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	ø10 × ø7.2 Nylon Tubing
	ø63	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	ø10 × ø7.2 Nylon Tubing
	ø80	4GB450-15 PV5G-8-FIG-D-1-A04	4GA210R-06 4GB210R-08	R4100-15-W	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	ø12 × ø8.9 Nylon Tubing
	ø100	4GB450-15 PV5G-8-FIG-D-1-A04	4GB310R-10	R4100-15-W	SC3W-15-12 SC3R-15 SC1-15	SLW-15A	ø12 × ø8.9 Nylon Tubing
JSC4	ø125	4GB450-15 PV5G-8-FIG-D-1-A04	4GB310R-10 4F310R-10	R4100-15-W	SC3R-15 SC1-15	SLW-15A	ø12 Rubber Hose SGP3/8B SGP1/2B
	ø140	4F650-20	4GB310R-10 4F310R-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	ø19 Rubber Hose SGP1/2B SGP3/4B
	ø160	4F650-20 4F750-20	4GB310R-10 4F310R-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	ø19 Rubber Hose SGP1/2B SGP3/4B
	ø180	4F750-20	4GA410-10 4GB410-10 4F310-10	R4100-15-W-A20W R6100-20-W	SC-20A	SL-20A	ø19 Rubber Hose SGP1/2B SGP3/4B

Note: JSC3-V is assembled with a brake release valve (SOL2).

Applications

It can be used for devices and equipment requiring the following functions.

1 When multipoint positioning is required (Transfer/Positioning)

It can stop accurately at multiple target positions.

2 When fall prevention is required

When the air pressure source and power supply are turned OFF (during power outage or accident), the brake is applied instantly and can be held, preventing equipment damage and ensuring safety.

3 When emergency stop is required

If a worker, etc., enters a hazardous area, the cylinder stops instantaneously due to an electrical signal.

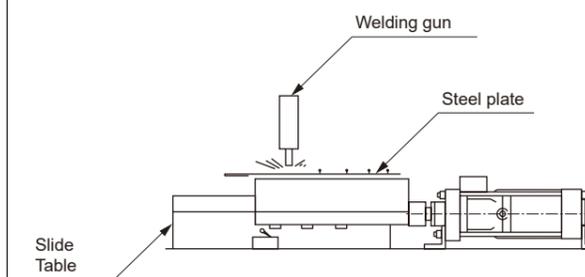
4 Work lock

When locking a workpiece to a jig, mounting base, etc., it can be locked even without a pneumatic source or power supply. Conveyance is possible while locked to the jig.

Usage Example

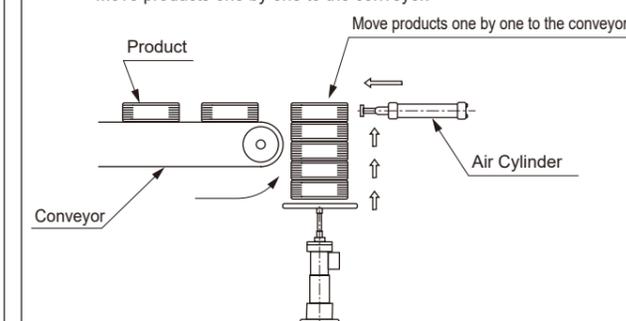
1 Linear multipoint welding

Movement and positioning of a slide table or welding gun when welding many steel plates, etc., in a straight line.



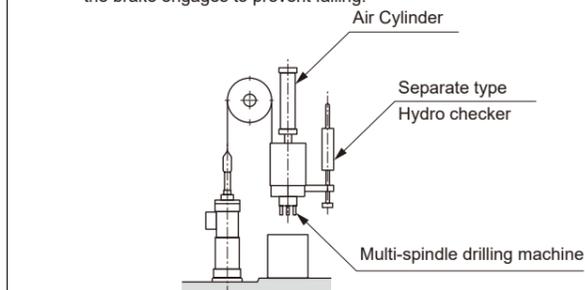
4 Move to conveyor

Move products one by one to the conveyor.



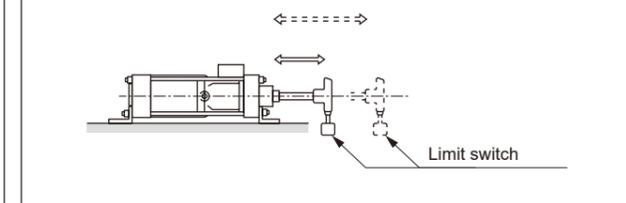
2 Fall prevention

If there is a load in the vertical direction and it is problematic for the load to fall under its own weight when the pressure source stops, the brake engages to prevent falling.



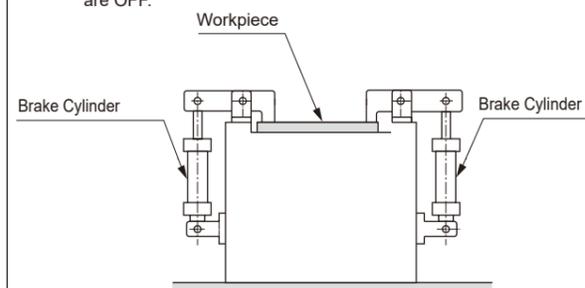
5 Cylinders with different strokes
When it is necessary to have many

When items of different sizes flow on a conveyor etc., the cylinders set there often need to change their strokes. In that case, by using a Brake Cylinder, cylinders with various strokes can be made electrically.



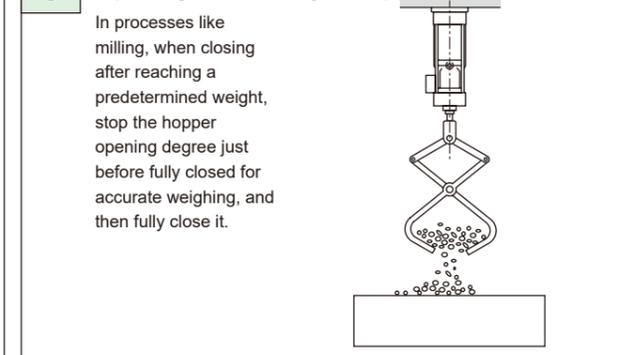
3 Work lock

When locking a workpiece to a jig, etc., if a Brake Cylinder is used, it remains locked even if the pneumatic source and power supply are OFF.



6 Opening and closing of hopper

In processes like milling, when closing after reaching a predetermined weight, stop the hopper opening degree just before fully closed for accurate weighing, and then fully close it.



With Brake / With Lock

With Brake / With Lock

ULK□

ULK□

JSK2/
JSM2

JSK2/
JSM2

JSG

JSG

JSC3,
JSC4

JSC3,
JSC4

USSD

USSD

UFCD

UFCD

USC

USC

Cylinder
Switch

Cylinder
Switch

Ending

Ending

■ Mounting bracket rotation assembly (-XK□)

Content: Specifies the mounting position of the mounting bracket.

Model No. Notation



Model No.

Please refer to the JSC3/JSC4 Model No. display method.

① Mounting bracket mounting position

① Mounting bracket mounting position

Code	Content
XK1	Rotate mounting bracket 90° clockwise
XK2	Rotate mounting bracket 180° clockwise
XK3	Rotate mounting bracket 270° clockwise

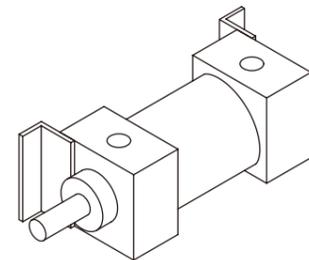
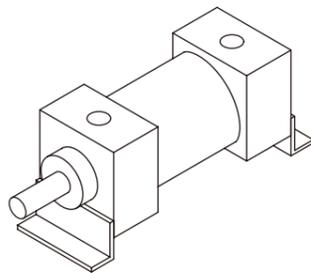
*1

*1: For flanges and trunnions, only XK1 (90° rotation) is applicable.

Dimensional Drawings

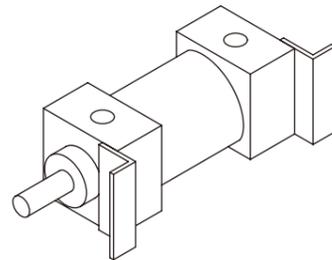
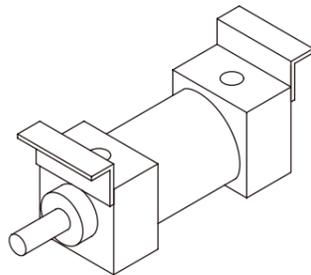
● Basic

● K1



● K2

● K3



*Port and cushion needle positions do not change. Please be careful with piping routing and cushion needle usability. If piping/cushion needle and mounting surface are the same, relief for piping/cushion needle is required on the mounting surface. In the case of K2, relief for the brake unit (including piping) is required on the mounting surface.

■ Trunnion position specification (-XAQ□□)

Content: Specify the dimension from the rod cover end face to the center of the trunnion axis.

Model No. Notation



Model No.

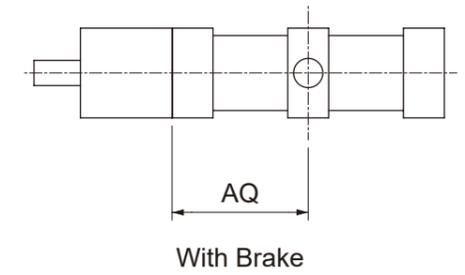
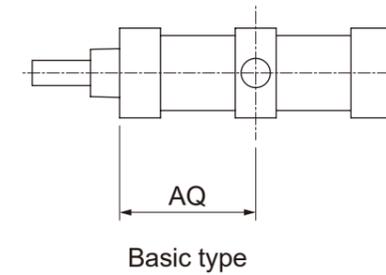
Please refer to the JSC3/JSC4 Model No. display method.

Custom-made dimension

Refer to the external dimensions list.

*1: For two-stage type and back-to-back type, please consult us separately.

Dimensional Drawings



Knuckle Pin/Clevis Pin Split Pin (-XP5)

Content: Change the snap ring of rod eye pin and clevis pin to the split pin.

Model No. Notation

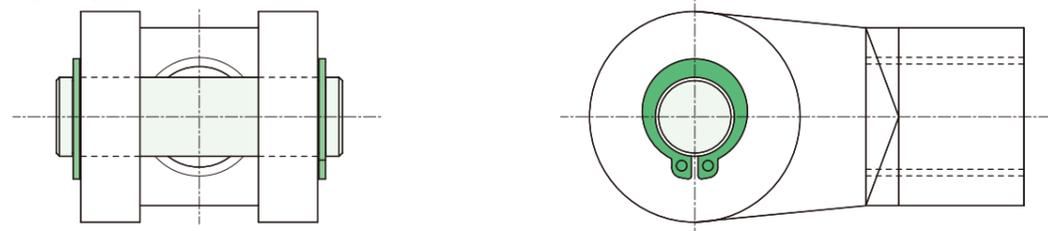
JSC3, JSC4 - **00** - **40** **B** - **100** - Y - XP5

Model No.

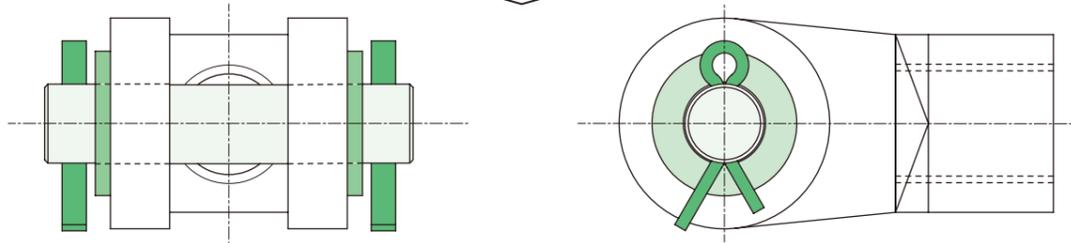
Please refer to the JSC3/JSC4 Model No. display method.

Dimensional Drawings

Retaining Ring



Split pin



Pin Diameter	Split Pin Size
12	ø4×20
14	ø4×20
20	ø4×25
25	ø4×30
28	ø5×35
32	ø5×40
40	ø5×50
50	ø5×60

Knuckle Fixed by Pinning (-XP7)

Content: Also, drive a spring pin into the knuckle to prevent loosening.

Model No. Notation

JSC3, JSC4 - TC - **40** **B** - **100** - Y - XP7

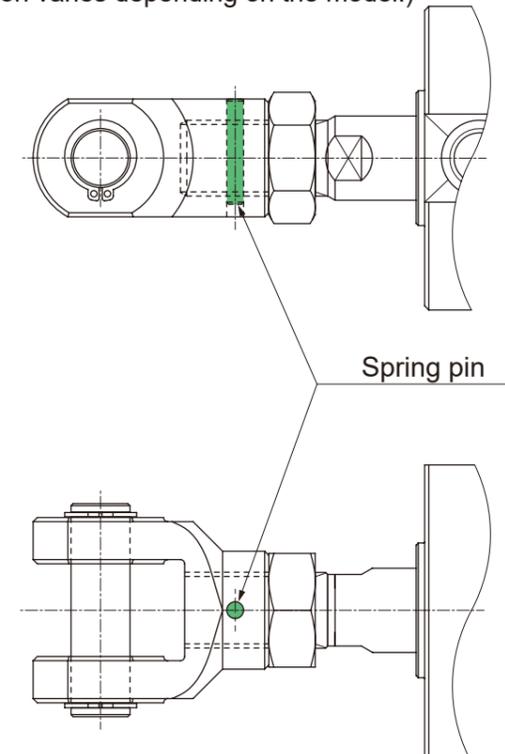
Model No.

Please refer to the JSC3/JSC4 Model No. display method.

Dimensional Drawings

Same as with Knuckle specification.

(Spring pin driving direction varies depending on the model.)



With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

With Brake / With Lock

ULK□

JSK2/
JSM2

JSG

JSC3,
JSC4

USSD

UFCD

USC

Cylinder
Switch

Ending

Knuckle Pin/Clevis Pin Split Pin Specification, Knuckle Fixed by Pinning (-XP8)

Content: Change the snap ring of rod eye pin and clevis pin to the split pin. Also, a spring pin on the knuckle Prevents loosening by hammering. (XP5+XP7)

Model No. Notation

JSC3, JSC4 - 00 - 40 B - 100 - Y - XP8

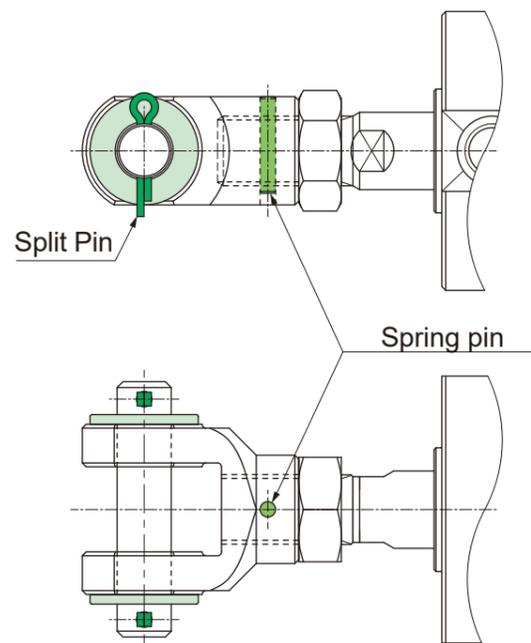
Model No.

Please refer to the JSC3/JSC4 Model No. display method.

Dimensional Drawings

Mounting dimensions are the same as with Knuckle specification.

A combination of XP5(P. 500) and XP7 (P. 501).



Without Bellows (-XJ9)

Content: Piston Rod with dimensions for bellows, but bellows not assembled

Model No. Notation

JSC3, JSC4 - 00 - 40 B - 100 - XJ9

Model No.

Please refer to the JSC3/JSC4 Model No. display method.

Dimensional Drawings

It has the same dimensions as with bellows, but without bellows attached.

With 2 Rod Nuts (-A2)

Content: Shipped with 2 rod nuts, same as standard.

Model No. Notation

JSC3, JSC4 - 00 - 40 B - 100 - A2

JSC3, JSC4 - 50 - 50 - NA2

Model No.

Please refer to the JSC3/JSC4 Model No. display method.

Dimensional Drawings

Same as standard type except that 2 rod nuts are included.



To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

Individual Precautions: Brake cylinder JSK2, JSM2 Series

Design / Selection

1. Common

WARNING

Structure so that the human body does not directly touch the driven object and the moving parts of the cylinder with brake.

Install a protective cover so that the human body cannot touch it directly. Or, if there is a risk of touching, provide a sensor etc. to make a safe structure such as emergency stop before touching or sounding a warning sound to notify danger.

Use a balanced circuit that accommodates the protrusion of the Piston Rod.

If the brake is operated at any position during the stroke such as intermediate stop, and air pressure is applied to only one side of the cylinder, the Piston Rod will pop out at high speed when the brake is released. In such cases, there is a risk of personal injury, such as getting hands or feet caught, and damage to machinery. Therefore, use a balance circuit like the basic circuit to prevent projection.

When using a low hydraulic pressure type Brake Cylinder, always operate the brake unit by pneumatic 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.

Therefore, please be careful when using near the upper limit of the holding force at all times.

Do not apply impact load, strong vibration, or rotational force when the brake is operating.

If impact load, strong vibration, or rotational force is applied from the outside, the holding force will decrease and it is dangerous, so please be careful.

When performing intermediate stop, consider the stopping accuracy and overrun amount.

Because it is a mechanical lock, it does not stop instantly in response to the stop signal, but stops with a time delay. The stroke sliding due to this delay is the overrun amount. And the range between the maximum and minimum overrun amount is the stopping accuracy.

Place the limit switch in front of the desired stop position by the overrun amount.

The limit switch requires a detection length (dog length) of the overrun amount + α .

The operating range of CKD cylinder switches is 7 to 16 mm, depending on the switch model. If the overrun amount exceeds this, perform self-holding of the contact on the switch load side.

In order to improve stopping accuracy, ensure that the brake stops the cylinder as soon as possible after receiving the stop signal.

To do so, use a DC type control electric circuit and valve with good response, and place the valve and cylinder as close as possible.

Please note that stopping accuracy is affected by changes in piston speed.

If the piston speed changes due to load fluctuations or disturbances during cylinder operation, the variation in the stop position will increase. Therefore, ensure that the piston speed is constant just before the stop position. Also, during operation in the cushion region and while in the acceleration zone from the start of operation, the speed change is large, so the variation in the stop position will be large.

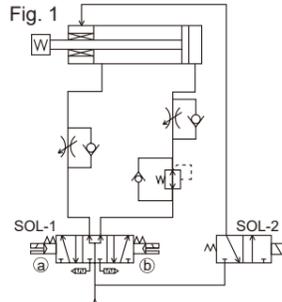
The stopping accuracy at a piston speed of 300 mm/s under no load is ± 1.0 mm (reference value). It varies depending on the equipment used. For details, refer to the page on stopping accuracy and overrun.

Basic circuit

Even when used for fall prevention or emergency stop, be sure to use the following circuit. 2-position valves cannot be used because the cylinder's own thrust acts on the brake part even when stopped. Balance the thrust and load with the following circuit. The brake may not release if a load is applied to the brake.

For Horizontal Load

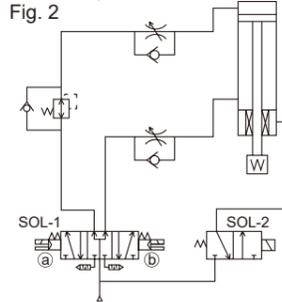
Piping as shown in Fig. 1 applies equal pressure to both sides of the piston when stopped, preventing rod projection when the brake is released. Also, install a pressure reducing valve with a check valve on the head side to balance the thrust.



a SOL-1	b SOL-2	Operating State
OFF	OFF	Stop
ON	OFF	Retract
OFF	ON	Advance

For downward vertical load

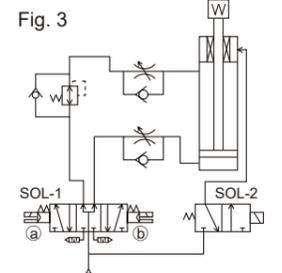
As shown in Fig. 2, if the load is downward, the rod will malfunction in the Load Direction when the brake is released. Therefore, install a pressure reducing valve with a check valve on the head side, reduce the thrust in the Load Direction, and balance the load.



a SOL-1	b SOL-2	Operating State
OFF	OFF	Stop
ON	OFF	Descend
OFF	ON	Ascend

For upward vertical load

If the load is upward as shown in Fig. 3, the rod will malfunction in the Load Direction when the brake is released, so install a pressure reducing valve with check valve on the rod side to reduce the thrust in the Load Direction and balance the load.



a SOL-1	b SOL-2	Operating State
OFF	OFF	Stop
ON	OFF	Descend
OFF	ON	Ascend

Do not use multiple cylinders with brakes in synchronization. If a synchronization error occurs, load may concentrate on the cylinder where the brake engaged first, potentially causing reduced lifespan or damage.

Do not apply torque to the rod when braking, as the holding force will decrease, creating hazardous conditions. Also, use with a mechanism that prevents rod rotation.

Do not apply force exceeding the brake holding force listed in the catalog to the cylinder.

If the piston speed is fast, the detection dog must be long enough to match relay response time. Please note that if the dog length is short, a stop signal will not be output, and it will not stop.

CAUTION

Stopping accuracy

Stop Pitch and Load Factor

Stopping accuracy varies depending on stop pitch and load factor. To obtain stopping accuracy, the load factors in the table below are recommended.

*Stop position reference value: ± 1.0 (300 mm/s at no load)

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 Brake Valve

Stopping accuracy and overrun amount vary depending on the response of the brake valve. Select from our company's Selex Valve 4GB2 Series by referring to the JSC3-V brake valve electrical specifications. Also, connect the valve directly to the brake port to improve stopping accuracy.

When using a PLC (programmable controller)

If a PLC (Programmable Logic Controller) is used for the electrical control device of the brake valve, the stopping accuracy will deteriorate due to the scan time (calculation processing time). When using a PLC, do not incorporate only the brake valve into the PLC circuit.

Do not change the load weight significantly when the brake is stopped. The stop position may change.

During the cushion stroke and while in the acceleration range from the start of operation, the speed change is large, so the dispersion of the stop position becomes large. For this reason, when performing step operation with a short stroke from the start of operation to the next position, the stop position will be large, so please be careful.

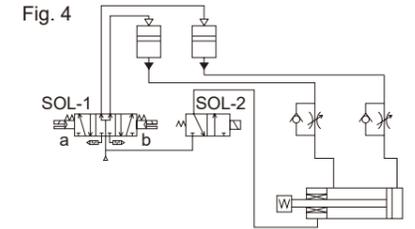
Load to Piston Rod

More strictly than in the case of general pneumatic cylinders, use with the load on the Piston Rod always applied axially. Furthermore, when moving the load, regulate it sufficiently with a guide so that there is no backlash or twisting.

2. Low hydraulic JSC3-H, JSC4-H

WARNING

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



When releasing the brake, make sure to release the brake earlier than the cylinder operation. If the cylinder operation is faster, the brake may not release.

If back pressure is applied during locking, the lock may be released, so use a single valve or an individual exhaust type manifold for the brake release valve.

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 Regulators with a check valve.

CAUTION

This product is a pneumatic cylinder that can use hydraulic operating fluid as the operating fluid. Does not comply with JIS standards for hydraulic cylinders regarding operation and leakage inspection.

3. Low pressure release JSC3-S

CAUTION

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

With Brake / With Lock

ULK□

JSK2/ JSM2

JSG

JSC3, JSC4

USSD

UFCD

USC

Cylinder Switch

Ending

With Brake / With Lock

ULK□

JSK2/ JSM2

JSG

JSC3, JSC4

USSD

UFCD

USC

Cylinder Switch

Ending

During Use

1. Common

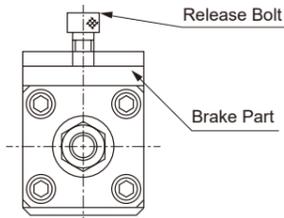
Warning

Release brakes before coupling the load to the end of the rod. If done with the brake activated, rotational force or load exceeding the holding force will act on the Piston Rod, causing damage to 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 work, etc., 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:
 - Placing the load at the lower end
 - Pressurizing both sides
 - Placing a support
- etc.
- Confirm that air is not pressurized on only one side of the cylinder when releasing brakes.

How to manually release the brake



Note: Brake release method

- 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 ø125 or more, screwing it in 2 to 3 rotations releases the brake.) (Always remove the release bolt during normal use.)
- When releasing the brake manually, be sure to use the release bolt attached to the product. Using other bolts may cause brake damage due to overtightening, so when using general bolts, follow the appropriate tightening amount in the table below.

Bore Size	Size		Appropriate Tightening Amount
	JSC3	JSC3-V	
ø40 / ø50	M10x8	M10x29	4 rotations or less
ø63	M12x9	M12x30	
ø80	M14x10	M14x31	
ø100	M16x12	M16x40	
ø125	M24x16 or more		2 to 3 rotations
ø140	M24x20 or more		
ø160	M24x20 or more		
ø180	M24x24 or more		

Brakes are released manually or by pressurizing the brake release port. During load installation, if the brake is left released by this operation, the load may fall. Therefore, always return the manual release operation to its initial state, or confirm that the brake is effective with no air in the brake release port before installation.

Do not apply torque to the rod when braking, as the holding force will decrease, creating hazardous conditions. Also, use with a mechanism that prevents rod rotation.

Do not apply force exceeding the brake holding force listed in the catalog to the cylinder.

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

CAUTION

Adjust the air balance in the cylinder. With the brake released, attach the load to the cylinder and balance the load by adjusting the air pressure on the rod side and head side of the cylinder. By ensuring this load balance, problems such as the Piston Rod popping out when the brake is released or the brake not releasing normally can be prevented.

Adjust the mounting position of the detection part such as the cylinder switch. When performing intermediate stop, adjust the mounting position of the detection part such as the cylinder switch considering the overrun amount with respect to the desired stop position.

Load fluctuation during the reciprocating stroke of the cylinder causes changes in piston speed, and changes in piston speed increase the dispersion of the stop position. Adjust the mounting so that there is no load fluctuation during the cylinder reciprocating stroke, especially immediately before stopping.

Maintaining the rod sliding parts. Be careful not to scratch or dent the Piston Rod sliding part. It causes damage to packings, leading to leakage or brake failure.

1. Common

Warning

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

The required amount of grease is applied to the brake part, so avoid applying more grease and do not wipe off the grease.

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

Please always use with the dust cover attached except during manual release, as it may cause a malfunction.

CAUTION

Air supply pipes that are too narrow or too long can reduce stopping accuracy.

If the cylinder has been stopped for a long time, such as first thing in the morning or afternoon, the frictional resistance increases and the piston speed changes, so the stopping accuracy may deteriorate. Perform a break-in operation to obtain stable stopping accuracy.

If the manual release bolt is removed while the Piston Rod is pulled out, the bolt cannot be screwed in. If removed, supply air from the brake release port and screw in the manual release bolt.

Inspection of Type 2 pressure vessels

Based on the Ordinance of the Ministry of Health, Labour and Welfare, cylinders falling under the following categories must undergo inspection by the Japan Boiler 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, an inner diameter of the cylinder tube of 200 mm or more, and a body length (cylinder tube length) of 1000 mm or more

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

V: Cylinder capacity (m³)
D: Bore Size (mm)
S: Body length (cylinder tube length) (mm)

Stroke subject to Type 2 pressure vessel inspection

Bore Size	Stroke
ø160	1948 or more
ø180	1526 or more

With cushion section check valve (C2)

If the load is large, the delay in cylinder starting time will increase. If you want to reduce the starting time, please use the model with a check valve in the cushion part (C2).

For precautions during mounting, installation, adjustment, use, and maintenance, refer to "During Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> [Instruction Manual](#).

With Brake / With Lock

ULK□

JSK2/ JSM2

JSG

JSC3, JSC4

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UFCD

USC

Cylinder Switch

Ending

With Brake / With Lock

ULK□

JSK2/ JSM2

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