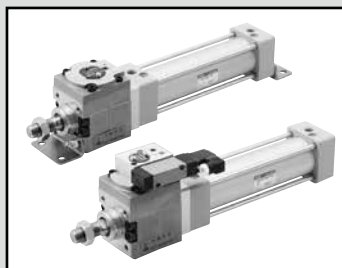


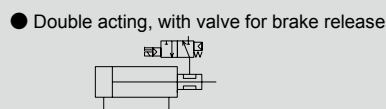
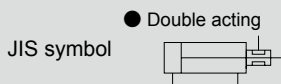
LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MecHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending



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

# JSG/JSG-V Series

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



## Specifications

Item	JSG					JSG-V					
	Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$
Actuation	Double acting					Double acting/with valve					
Working fluid	Compressed air					Compressed air					
Max. working pressure	MPa	1.0 ( $\approx 150$ psi, 10 bar)					0.7 ( $\approx 100$ psi, 7 bar)				
Min. working pressure	MPa	0.3 ( $\approx 44$ psi, 3 bar)					0.3 ( $\approx 44$ psi, 3 bar)				
Proof pressure	MPa	1.6 ( $\approx 230$ psi, 16 bar)					1.6 ( $\approx 230$ psi, 16 bar)				
Ambient temperature	$^{\circ}\text{C}$	-10 ( $14^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)					-10 ( $14^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)				
Port size	Brake section	Rc1/8		Rc1/4		Rc3/8		Rc1/8		Rc1/4	
	Cylinder	Rc1/4		Rc3/8		Rc1/2		Rc1/4		Rc3/8	
Stroke tolerance	mm	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 1500)					$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 1500)				
	With air cushion	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 1500)					$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 1500)				
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)					50 to 1000 (Operate within the allowable absorbed energy.)				
Cushion		Either air cushion or rubber cushion can be selected					Either air cushion or rubber cushion can be selected				
Effective air cushion length	mm	8.6	13.4	13.4	15.4	15.4	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)				
Holding force	N	980	1569	2451	3922	6178	980	1569	2451	3922	6178
	Allowable	With rubber cushion					With rubber cushion				
absorbed energy	J	0.9	1.6	1.6	3.3	5.8	0.9	1.6	1.6	3.3	5.8
	With air cushion	3.7	8.0	14.4	25.4	45.6	3.7	8.0	14.4	25.4	45.6

## Electrical specification for brake valve

Item	Specifications		
Rated voltage (V)	100 AC(50/60 Hz)	200 AC(50/60 Hz)	24 DC
Starting current (A)	0.056/0.044	0.028/0.022	0.075
Holding current (A)	0.028/0.022	0.014/0.011	0.075
Power consumption (W)	1.8/1.4		1.8
Thermal class	Class B (molded coil)		

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

\*2 : The valve specifications are the same as those of the standard model 4KB2. For details, refer to "Pneumatic Valves (CB-023SA)".

Contact CKD when placing an order, as model numbers differ.

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 40$	25/50/75/100	600	800	1
$\phi 50$	150/200/250		1200	
$\phi 63$	300/350/400	700	1400	
$\phi 80$	450/500		1500	
$\phi 100$		800		

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

\*2 : If the maximum stroke is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

\*3 : The available stroke lengths for models with bellows are as shown below.

$\phi 40$ : 500 mm  
 $\phi 50, \phi 63$ : 600 mm  
 $\phi 80, \phi 100$ : 750 mm

### Min. stroke length with switch

● T0/T5 type switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø40	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
ø50	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
ø63	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
ø80	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
ø100	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

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

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

● T8 type switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø40	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
ø50	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
ø63	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
ø80	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
ø100	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

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

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

● T2/T3 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

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

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

● T1/T2Y/T3Y/T2W/T3W/T2YD switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting Position cannot be detected at the rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

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

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

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

# JSG/JSG-V Series

## Switch specifications

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

Item	Proximity 2-wire		Proximity 2-wire				Proximity 3-wire				Reed 2-wire (*4)				Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD(*4) T2YDT			
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller				For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection	For programmable controller, relay		For programmable controller		
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC	24 VDC ±10%		30 VDC or less				12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	≤50 mA	≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 μA or less			0 mA						1 mA or less		
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80			1 m:33		1 m:61		
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49	3 m:87 5 m:80			3 m:87		3 m:166		
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80	5 m:142			5 m:142		5 m:272		

\*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

\*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

\*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

\*4 : AC magnetic field proof switch (T2YD/T2YDT) cannot be used in DC magnetic fields.

## Weight table

Unit: kg

Bore size (mm)	Weight for 0 mm stroke length						Added weight /50 mm stroke	Switch weight	Mounting bracket weight	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA, TB, TC)				I	Y
ø40	1.75	1.89	2.16	1.94	1.94	2.09	0.17	Refer to the weight in the switch specifications.	0.024	0.09	0.14
ø50	2.91	3.07	3.54	3.32	3.32	3.40	0.23		0.022	0.20	0.33
ø63	3.94	4.28	4.96	4.49	4.51	4.82	0.25		0.022	0.20	0.33
ø80	7.81	8.24	9.38	9.08	9.09	9.30	0.40		0.026	0.52	0.96
ø100	12.08	12.94	14.40	13.80	13.83	14.65	0.51		0.024	0.48	0.92

(Example) Product weight of JSG-LB-50B-200-T0H-D-Y

Product weight for stroke length 0 mm .....3.07 kg  
 Additional weight for stroke length 200 mm .....0.23 × 200/50=0.92 kg  
 Weight of 2 TOH switches .....0.018 × 2=0.036 kg  
 Weight of 2 mounting brackets .....0.022 × 2=0.044 kg  
 Weight of rod clevis .....0.33 kg  
 Product weight .....3.07+0.92+0.036+0.044+0.33=4.4 kg

## Theoretical thrust table

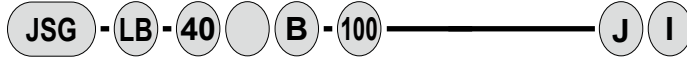
(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa							
		0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	3.77 × 10 <sup>2</sup>	5.03 × 10 <sup>2</sup>	6.28 × 10 <sup>2</sup>	7.54 × 10 <sup>2</sup>	8.80 × 10 <sup>2</sup>	1.01 × 10 <sup>3</sup>	1.13 × 10 <sup>3</sup>	1.26 × 10 <sup>3</sup>
	Pull	3.17 × 10 <sup>2</sup>	4.22 × 10 <sup>2</sup>	5.28 × 10 <sup>2</sup>	6.33 × 10 <sup>2</sup>	7.39 × 10 <sup>2</sup>	8.44 × 10 <sup>2</sup>	9.50 × 10 <sup>2</sup>	1.06 × 10 <sup>3</sup>
ø50	Push	5.89 × 10 <sup>2</sup>	7.85 × 10 <sup>2</sup>	9.82 × 10 <sup>2</sup>	1.18 × 10 <sup>3</sup>	1.37 × 10 <sup>3</sup>	1.57 × 10 <sup>3</sup>	1.77 × 10 <sup>3</sup>	1.96 × 10 <sup>3</sup>
	Pull	4.95 × 10 <sup>2</sup>	6.60 × 10 <sup>2</sup>	8.25 × 10 <sup>2</sup>	9.90 × 10 <sup>2</sup>	1.15 × 10 <sup>3</sup>	1.32 × 10 <sup>3</sup>	1.48 × 10 <sup>3</sup>	1.65 × 10 <sup>3</sup>
ø63	Push	9.35 × 10 <sup>2</sup>	1.25 × 10 <sup>3</sup>	1.56 × 10 <sup>3</sup>	1.87 × 10 <sup>3</sup>	2.18 × 10 <sup>3</sup>	2.49 × 10 <sup>3</sup>	2.81 × 10 <sup>3</sup>	3.12 × 10 <sup>3</sup>
	Pull	8.41 × 10 <sup>2</sup>	1.12 × 10 <sup>3</sup>	1.40 × 10 <sup>3</sup>	1.68 × 10 <sup>3</sup>	1.96 × 10 <sup>3</sup>	2.24 × 10 <sup>3</sup>	2.52 × 10 <sup>3</sup>	2.80 × 10 <sup>3</sup>
ø80	Push	1.51 × 10 <sup>3</sup>	2.01 × 10 <sup>3</sup>	2.51 × 10 <sup>3</sup>	3.02 × 10 <sup>3</sup>	3.52 × 10 <sup>3</sup>	4.02 × 10 <sup>3</sup>	4.52 × 10 <sup>3</sup>	5.03 × 10 <sup>3</sup>
	Pull	1.36 × 10 <sup>3</sup>	1.81 × 10 <sup>3</sup>	2.27 × 10 <sup>3</sup>	2.72 × 10 <sup>3</sup>	3.17 × 10 <sup>3</sup>	3.63 × 10 <sup>3</sup>	4.08 × 10 <sup>3</sup>	4.54 × 10 <sup>3</sup>
ø100	Push	2.36 × 10 <sup>3</sup>	3.14 × 10 <sup>3</sup>	3.93 × 10 <sup>3</sup>	4.71 × 10 <sup>3</sup>	5.50 × 10 <sup>3</sup>	6.28 × 10 <sup>3</sup>	7.07 × 10 <sup>3</sup>	7.85 × 10 <sup>3</sup>
	Pull	2.14 × 10 <sup>3</sup>	2.86 × 10 <sup>3</sup>	3.57 × 10 <sup>3</sup>	4.29 × 10 <sup>3</sup>	5.00 × 10 <sup>3</sup>	5.72 × 10 <sup>3</sup>	6.43 × 10 <sup>3</sup>	7.15 × 10 <sup>3</sup>

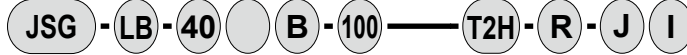
### How to order

#### ● Without valve

Without switch (built-in magnet for switch)

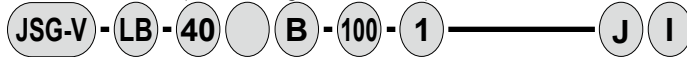


With switch (built-in magnet for switch)

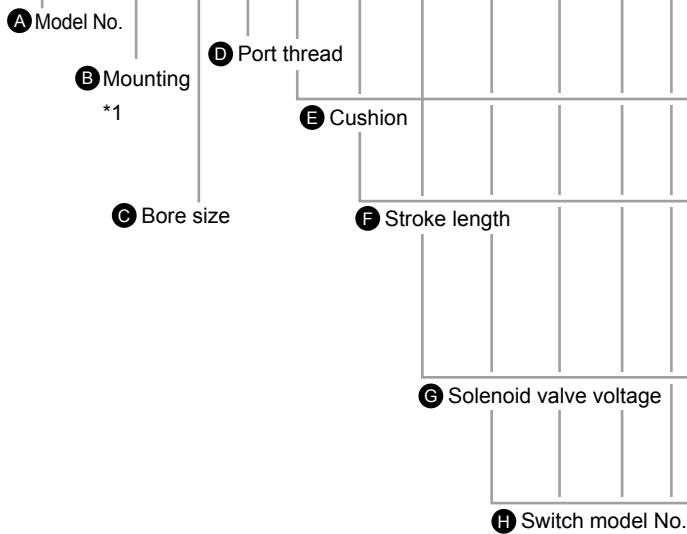
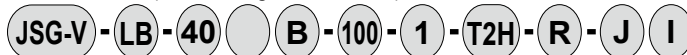


#### ● With valve for brake release

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



#### ⚠ Precautions for model No. selection

- \*1 : Mounting bracket will be shipped with the product. (Trunnion is assembled at shipment.)
- \*2 : The custom stroke length is available in 1 mm increments.
- \*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.
- \*4 : "I" and "Y" cannot be selected together.

#### [Example of model No.]

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

Model: Tie rod cylinder with brake

- A** Model No. : Double acting, with valve for brake release
- B** Mounting : Axial foot
- C** Bore size :  $\phi 40$  mm
- D** Port thread : Rc thread
- E** Cushion : With two-sided air cushion
- F** Stroke length : 100 mm
- G** Solenoid valve voltage : 100 VAC
- H** Switch model No. : Proximity T2H switch, lead wire 1 m
- I** Switch quantity : 2
- J** Option : With bellows
- K** Accessory : Rod eye (included)

**I** Switch quantity  
\*3

**J** Option

**K** Accessory  
\*4

Code		Description	A Model No.		
			Double acting	Double acting, brake release valve - V	
<b>B Mounting</b>					
00		Basic	●	●	
LB		Axial foot	●	●	
FA		Rod side flange	●	●	
FB		Head side flange	●	●	
CA		Eye bracket	●	●	
CB		Clevis bracket (pin and split pin attached)	●	●	
TA		Rod side trunnion	●	●	
TB		Head side trunnion	●	●	
TC		Intermediate trunnion	●	●	
<b>C Bore size (mm)</b>					
40	$\phi 40$		●	●	
50	$\phi 50$		●	●	
63	$\phi 63$		●	●	
80	$\phi 80$		●	●	
100	$\phi 100$		●	●	
<b>D Port thread</b>					
Blank		Rc thread	●	●	
N		NPT thread (made-to-order product)	●	●	
G		G thread (made-to-order product)	●	●	
<b>E Cushion</b>					
B		Two-sided air cushion (basic)	●	●	
D		Two-sided rubber cushion	●	●	
Note: The rubber cushion has a longer total length than the air cushion.					
<b>F Stroke length (mm)</b>					
Bore size	Stroke length *2	Available stroke length	Custom stroke length		
$\phi 40$	1 to 600	800	In 1 mm increments		
$\phi 50$		1200			
$\phi 63$		1400			
$\phi 80$	1 to 700	1500			
$\phi 100$	1 to 800				
<b>G Solenoid valve voltage</b>					
1		100 VAC		●	
2		200 VAC		●	
3		24 VDC		●	
4		12 VDC		●	
<b>H Switch model No.</b>					
Axial lead wire	Radial lead wire	Contact	Voltage AC DC	Display	Lead wire
T0H*	T0V*	Reed	● ●	1-color display	2-wire
T5H*	T5V*		● ●	Without indicator lamp	
T8H*	T8V*		● ●	1-color display	2-wire
T1H*	T1V*		● ●	1-color display	2-wire
T2H*	T2V*	Proximity	● ●	1-color display	2-wire
T3H*	T3V*		● ●	1-color display	3-wire
T3PH*	T3PV*		● ●	1-color display	3-wire
T2WH*	T2WV*		● ●	2-color display	2-wire
T2YH*	T2YV*		● ●		
T3WH*	T3WV*		● ●	2-color display	3-wire
T3YH*	T3YV*		● ●		
T2YD*	-		● ●	2-color display	2-wire
T2YDT*	-		● ●	AC magnetic field	2-wire
T2JH*	T2JV*		● ●	1-color display off-delay	2-wire
<b>* Lead wire length</b>					
Blank		1 m (standard)	●	●	
3		3 m (option)	●	●	
5		5 m (option)	●	●	
<b>I Switch quantity</b>					
R		1 on rod side	●	●	
H		1 on head side	●	●	
D		2	●	●	
T		3	●	●	
<b>J Option</b>					
		Max. ambient temperature	Instantaneous ambient temperature		
J	Bellows	100°C	200°C	● ●	
M	Piston rod material stainless steel			● ●	
<b>K Accessory</b>					
I		Rod eye	●	●	
Y		Rod clevis (pin and split pin attached)	●	●	
B1		Eye bracket	●	●	
B2		Clevis bracket (pin and split pin attached)	●	●	
B3		Eye bracket	●	●	
B4		Trunnion No. 2 bracket (2 pcs./set)	●	●	

LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MechHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

## How to order switch

### ● Switch body + mounting bracket set

**SCG - T0H - 40**

Switch model No. (Item ④ on page 745)      Bore size (Item ③ on page 745)

### ● Switch body only

**SW - T0H**

Switch model No. (Item ④ on page 745)

Note: Contact CKD when using an environment-friendly T type switch.

### ● Switch mounting bracket set

**SCG - T - 40**

Mounting bracket      Bore size (Item ③ on page 745)

## How to order mounting bracket

Bore size (mm)		ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	*1	JSG-LB-40	JSG-LB-50	JSG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	*2	JSG-FA-40	JSG-FA-50	JSG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)		SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	*3	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

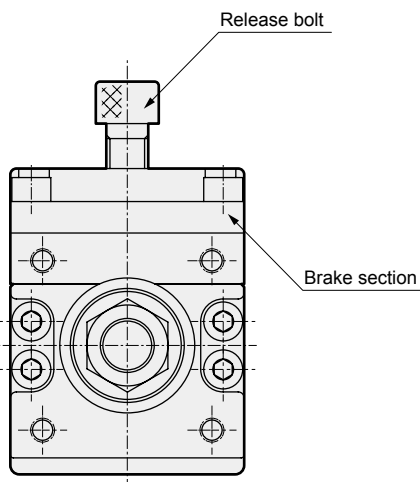
\*1: The foot (LB) mounting bracket is provided as 2 pcs./set.

\*2: Specify the flange (FA) with bellows as "JSG-FA-(bore size)-J".

\*3: Pin, split pin and plain washer are attached.

\*4: All mounting brackets have mounting bolts attached.

## How to release the brake section manually



The brakes are released by screwing a bolt into the manual release port (female threads on top of brakes).

(The brake may go out if the bolt is screwed in too far.)

Refer to the appropriate screw-in volume in the table below.)

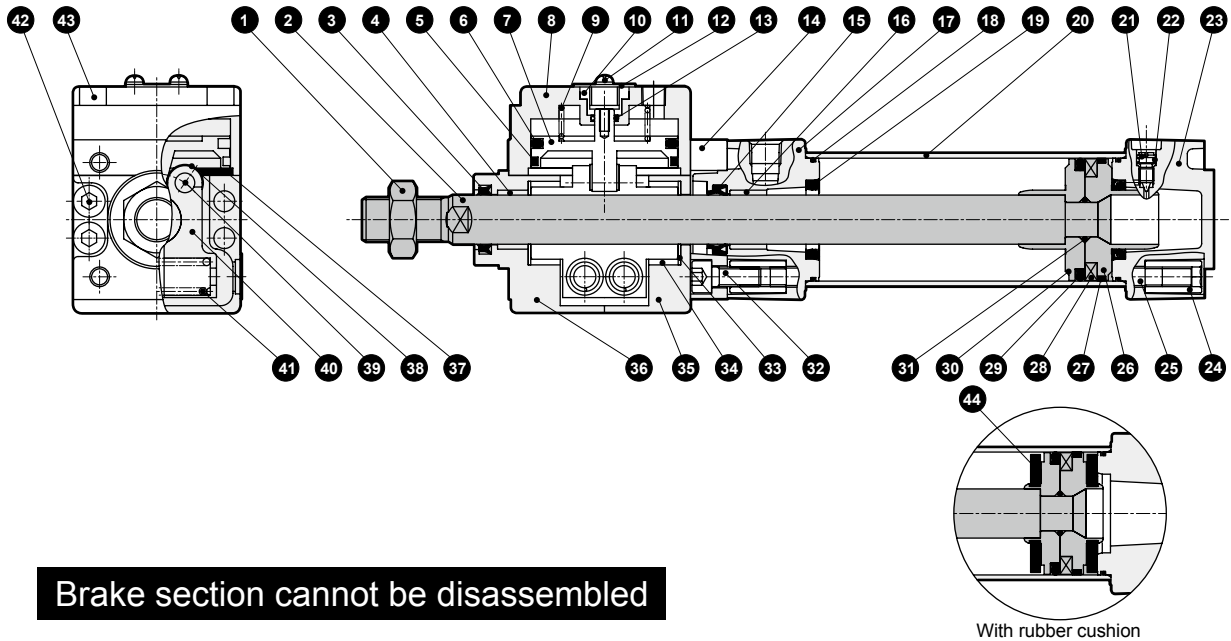
Always remove the bolt during normal use.

### Release bolt size

Bore size	Bolt screw diameter	Bolt length		Appropriate screw-in volume
		JSG	JSG-V	
ø40	M12×1.75	16 or more	40 or more	3 rotations or less
ø50	M12×1.75	16 or more	40 or more	4 rotations or less
ø63	M14×2	16 or more	40 or more	4 rotations or less
ø80	M16×2	20 or more	40 or more	4.5 rotations or less
ø100	M18×2.5	20 or more	50 or more	5 rotations or less

## Internal structure and parts list

● JSG



**Brake section cannot be disassembled**

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	24	Round nut	Steel	Zinc chromate
2	Piston rod	Steel	Industrial chrome plating	25	Tie rod	Steel	Zinc chromate
3	Dust wiper	Nitrile rubber		26	Piston H	ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy		27	Wear ring	Polyacetal resin	
5	Wear ring	Acetal resin		28	Magnet	Resin	
6	Piston packing B	Nitrile rubber		29	Piston packing	Nitrile rubber	
7	Brake piston	Cast iron	Phosphate coating	30	Piston R	ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
8	Body H	Aluminum casting	Chromate	31	Piston gasket	Nitrile rubber	
9	Spring	Piano wire		32	Hexagon socket head cap screw	Alloy steel	Black finish
10	Piston guide	Cast iron	Phosphate coating	33	Thrust washer		
11	Phillips pan head machine screw/captive washer	Steel	Zinc chromate	34	Bush	Dry bearing	
12	Dust cover	Aluminum alloy	Alumite	35	Body R	Aluminum casting	Chromate
13	Gasket	Nitrile rubber		36	Body F	Aluminum casting	Chromate
14	Joint plate	Aluminum alloy	Alumite	37	Cushion rubber	Urethane rubber	
15	Rod packing	Nitrile rubber		38	Bearing		
16	Bush	Oil impregnated bearing alloy		39	Pin	Alloy steel	
17	Rod cover	Aluminum alloy die-casting	Paint	40	Brake shoe metal	Cast iron	Nickel plating
18	Cylinder gasket	Nitrile rubber		41	Spring	Piano wire	
19	Cushion packing	Nitrile rubber, steel	Zinc chromate	42	Hexagon socket head cap screw	Alloy steel	Black finish
20	Cylinder tube	Aluminum alloy	Hard alumite	43	Hexagon socket head cap screw	Alloy steel	Black finish
21	Cushion needle	Copper alloy	Nickel plating	44	Cushion rubber	Urethane rubber	
22	Needle gasket	Nitrile rubber					
23	Head cover	Aluminum alloy die-casting	Paint				

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

## Repair parts list

● With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø40	JSG-40BK	3 15 18
ø50	JSG-50BK	19 22 27
ø63	JSG-63BK	29
ø80	JSG-80BK	
ø100	JSG-100BK	

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

● With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø40	JSG-40DK	3 15 18
ø50	JSG-50DK	22 27 29
ø63	JSG-63DK	44
ø80	JSG-80DK	
ø100	JSG-100DK	

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

## Material of mounting bracket

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

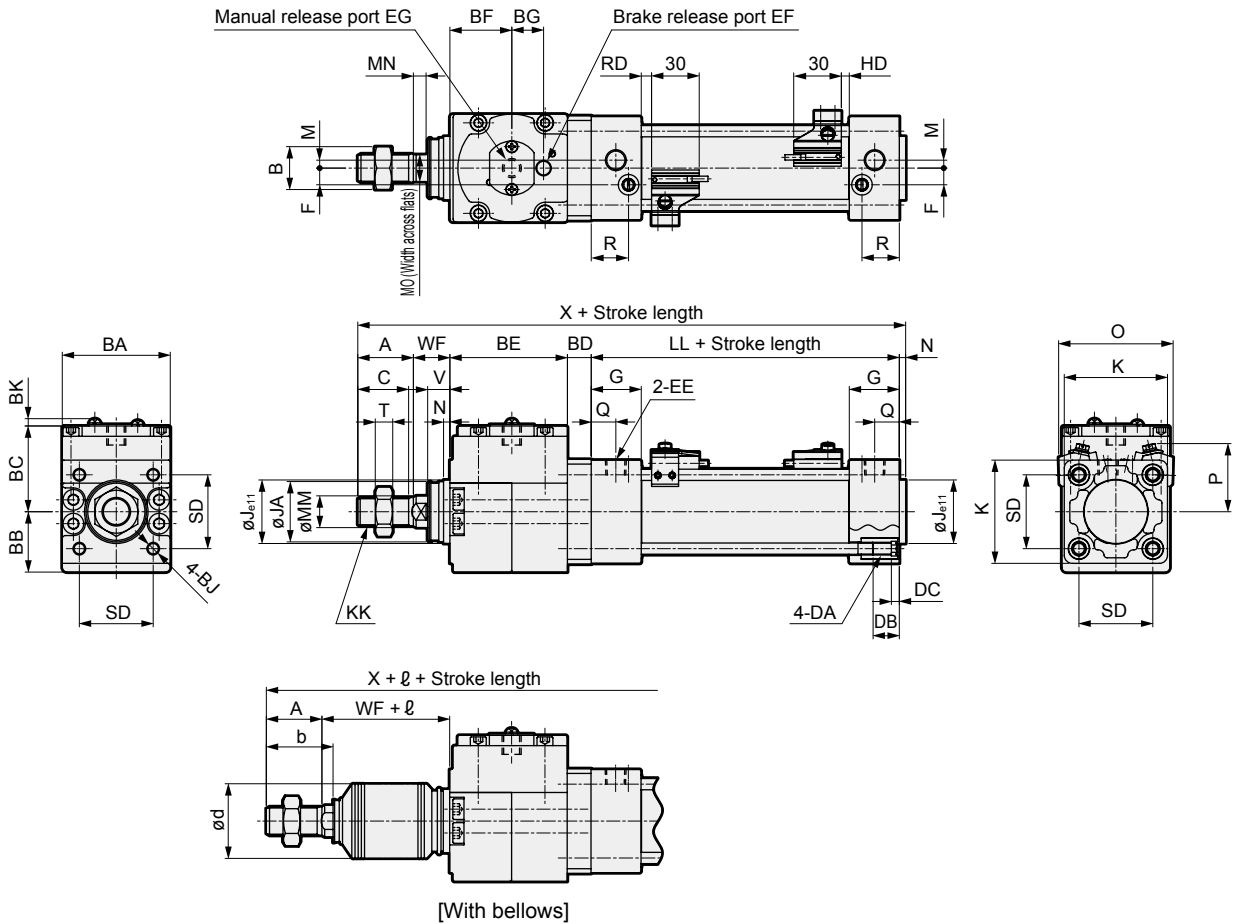
- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

# JSG/JSG-V Series

## Dimensions



### ● Basic (00)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code		Basic (00) basic dimensions																					
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BJ	BK	C	DA	DB	DC	EE	EF	EG	F	G	J	JA	K
ø50	35	27	68	38	54	15	74	39	20	M8 Depth 12	4.6	32	M8	16	5	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65
ø63	35	27	78	43	59	15	88	44.5	27	M8 Depth 14	4.6	32	M8	16	5	Rc3/8	Rc1/4	M14	12	31.5	45	38	75
ø80	40	32	98	53	72.5	23	108	54.5	27	M10 Depth 16	4.6	37	M10	16	5	Rc3/8	Rc1/4	M16	14	38	45	43	95
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	M10 Depth 18	4.6	37	M10	16	5	Rc1/2	Rc3/8	M18	15	38	55	51	114

Code		With switch																		
Bore size (mm)	KK	*1 LL	M	MM	MN	MO	N	Q	R	SD	T	V	WF	*1 X	O	P	T0, T5, T2, T3, T3P		T2W, T3W	
																	RD	HD	RD	HD
ø40	M14×1.5	84(90)	4	16	6	14	4	14	19	38	8	13	21	216(222)	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
ø50	M18×1.5	94(102)	5	20	8	17	4	15.5	23.5	46.5	11	14	23	245(253)	72	43	6.5(10.5)	5(9)	9(13)	7(11)
ø63	M18×1.5	94(102)	9	20	8	17	4	16.5	21.5	56.5	11	14	23	259(267)	83	48	6.5(10.5)	5(9)	9(13)	7(11)
ø80	M22×1.5	114(124)	11.5	25	11	22	4	19	28	72	13	20	32	321(331)	104	57	12.5(17.5)	6(11)	15(20)	8(13)
ø100	M26×1.5	114(124)	17	30	13	27	4	19	28	89	16	20	32	341(351)	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

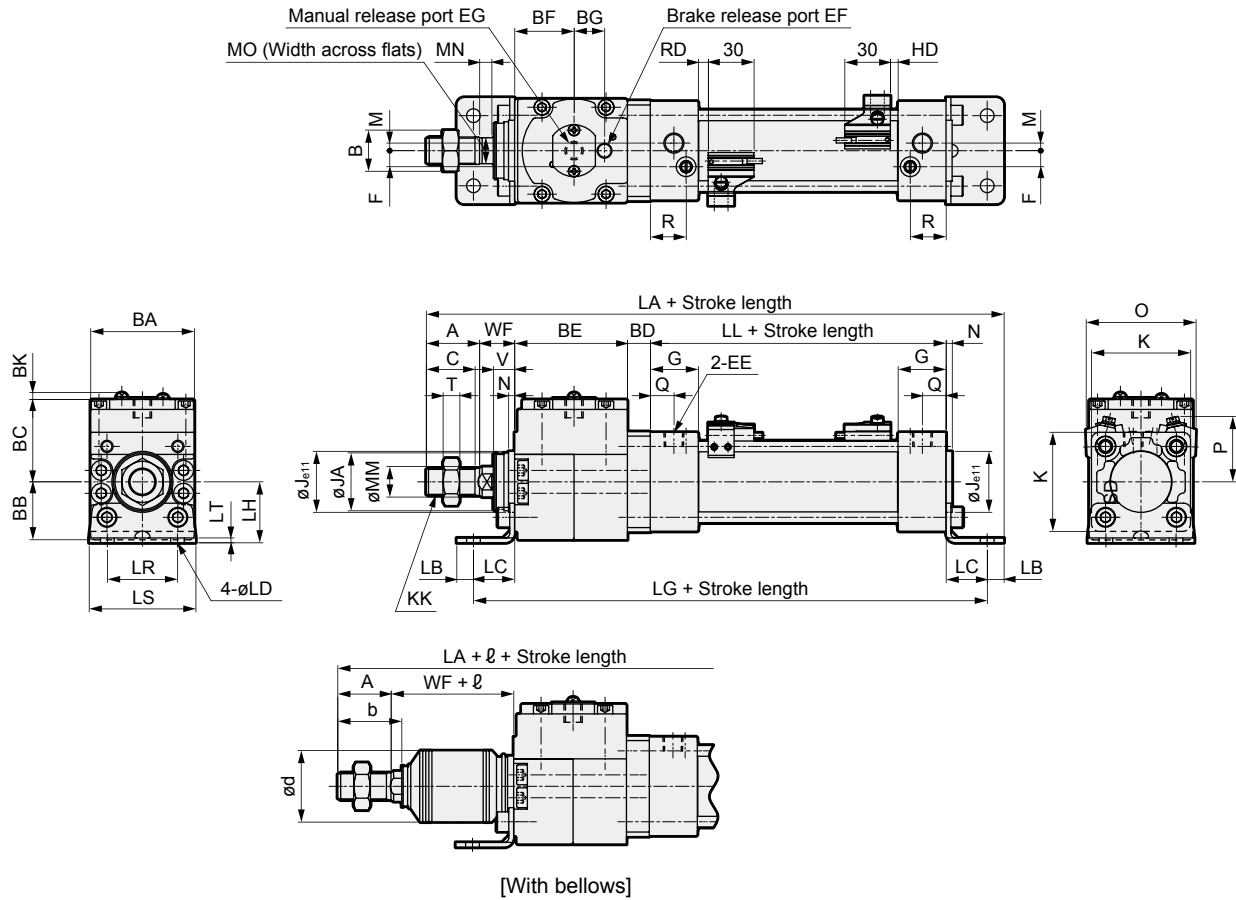
  

Code		With bellows															
Bore size (mm)	A	b	d	WF	ℓ												
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800	
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32					
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	

## Dimensions



### ● Axial foot (LB)



\*1: Dimensions in ( ) are for the rubber cushion.  
 \*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.  
 \*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Axial foot (LB) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

Code	Mounting dimensions												With switch								
Bore size (mm)	N	Q	R	T	V	WF	*1 LA	LB	LC	LD	*1 LG	LH	LR	LS	LT	O	P	T0, T5, T2, T3, T3P	T2W, T3W		
																		RD	HD	RD	HD
ø40	4	14	19	8	13	21	247(253)	11	24	9	209(215)	33	38	55	3.2	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
ø50	4	15.5	23.5	11	14	23	279(287)	11	27	9	237(245)	40	46	70	3.2	72	43	6.5(10.5)	5(9)	9(13)	7(11)
ø63	4	16.5	21.5	11	14	23	296(304)	14	27	12	251(259)	48	56	80	4.5	83	48	6.5(10.5)	5(9)	9(13)	7(11)
ø80	4	19	28	13	20	32	361(371)	14	30	12	305(315)	55	72	95	4.5	104	57	12.5(17.5)	6(11)	15(20)	8(13)
ø100	4	19	28	16	20	32	385(395)	16	32	14	329(339)	65	89	114	6	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

Code	With bellows																			
Bore size (mm)	A	b	d	WF	l															
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800					
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32								
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41							
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41							
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63				
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63				

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

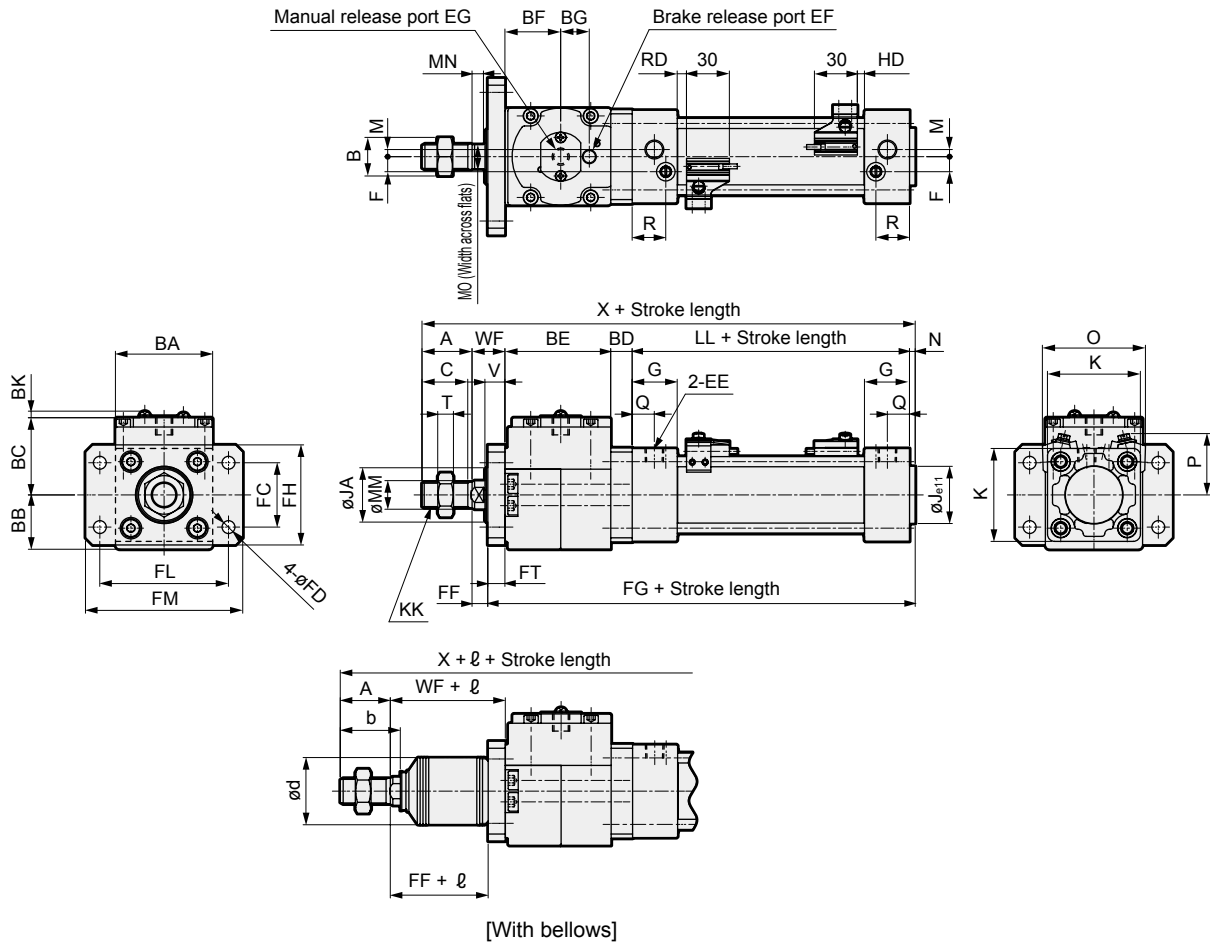


# JSG/JSG-V Series

## Dimensions



### ● Rod side flange (FA)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Rod side flange (FA) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
	∅40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6
∅50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
∅63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
∅80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
∅100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

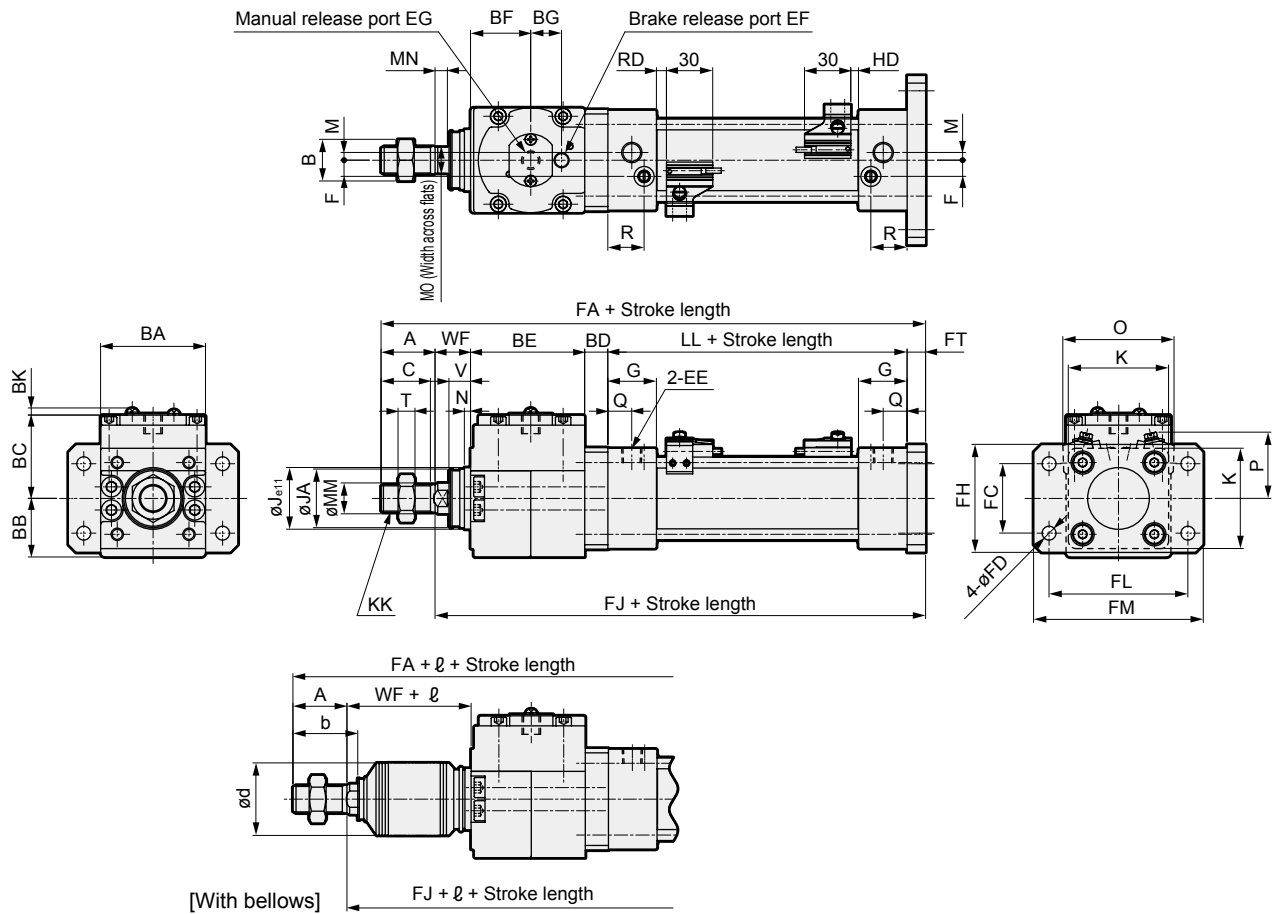
Code	Mounting dimensions										With switch										
Bore size (mm)	N	Q	R	T	V	WF	*1 X	FC	FD	FF	*1 FG	FH	FL	FM	FT	O	P	T0, T5, T2, T3, T3P		T2W, T3W	
																			RD	HD	RD
∅40	4	14	19	8	13	21	216(222)	46	9	11	175(181)	65	83	101	10	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
∅50	4	15.5	23.5	11	14	23	245(253)	52	9	11	199(207)	77	100	120	12	72	43	6.5(10.5)	5(9)	9(13)	7(11)
∅63	4	16.5	21.5	11	14	23	259(267)	62	9	11	213(221)	92	115	135	12	83	48	6.5(10.5)	5(9)	9(13)	7(11)
∅80	4	19	28	13	20	32	321(331)	63	12	16	265(275)	100	126	153	16	104	57	12.5(17.5)	6(11)	15(20)	8(13)
∅100	4	19	28	16	20	32	341(351)	75	14	16	285(295)	120	150	178	16	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

Code	With bellows																								
Bore size (mm)	A	b	d	WF	ℓ																				
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800									
∅40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32													
∅50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41												
∅63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41												
∅80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63									
∅100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63									

## Dimensions

### ● Head side flange (FB)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Head side flange (FB) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
∅40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
∅50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
∅63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
∅80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
∅100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

Code	Mounting dimensions													With switch						
Bore size (mm)	N	Q	R	T	V	WF	*1 FA	FC	FD	FH	*1 FJ	FL	FM	FT	O	P	T0, T5, T2, T3, T3P		T2W, T3W	
																	RD	HD	RD	HD
∅40	4	14	19	8	13	21	222(228)	46	9	65	192(198)	83	101	10	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
∅50	4	15.5	23.5	11	14	23	253(261)	52	9	77	218(226)	100	120	12	72	43	6.5(10.5)	5(9)	9(13)	7(11)
∅63	4	16.5	21.5	11	14	23	267(275)	62	9	92	232(240)	115	135	12	83	48	6.5(10.5)	5(9)	9(13)	7(11)
∅80	4	19	28	13	20	32	333(343)	63	12	100	293(303)	126	153	16	104	57	12.5(17.5)	6(11)	15(20)	8(13)
∅100	4	19	28	16	20	32	353(363)	75	14	120	313(323)	150	178	16	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

Code	With bellows																				
Bore size (mm)	A	b	d	WF	ℓ																
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800						
∅40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32									
∅50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41								
∅63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41								
∅80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63					
∅100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63					

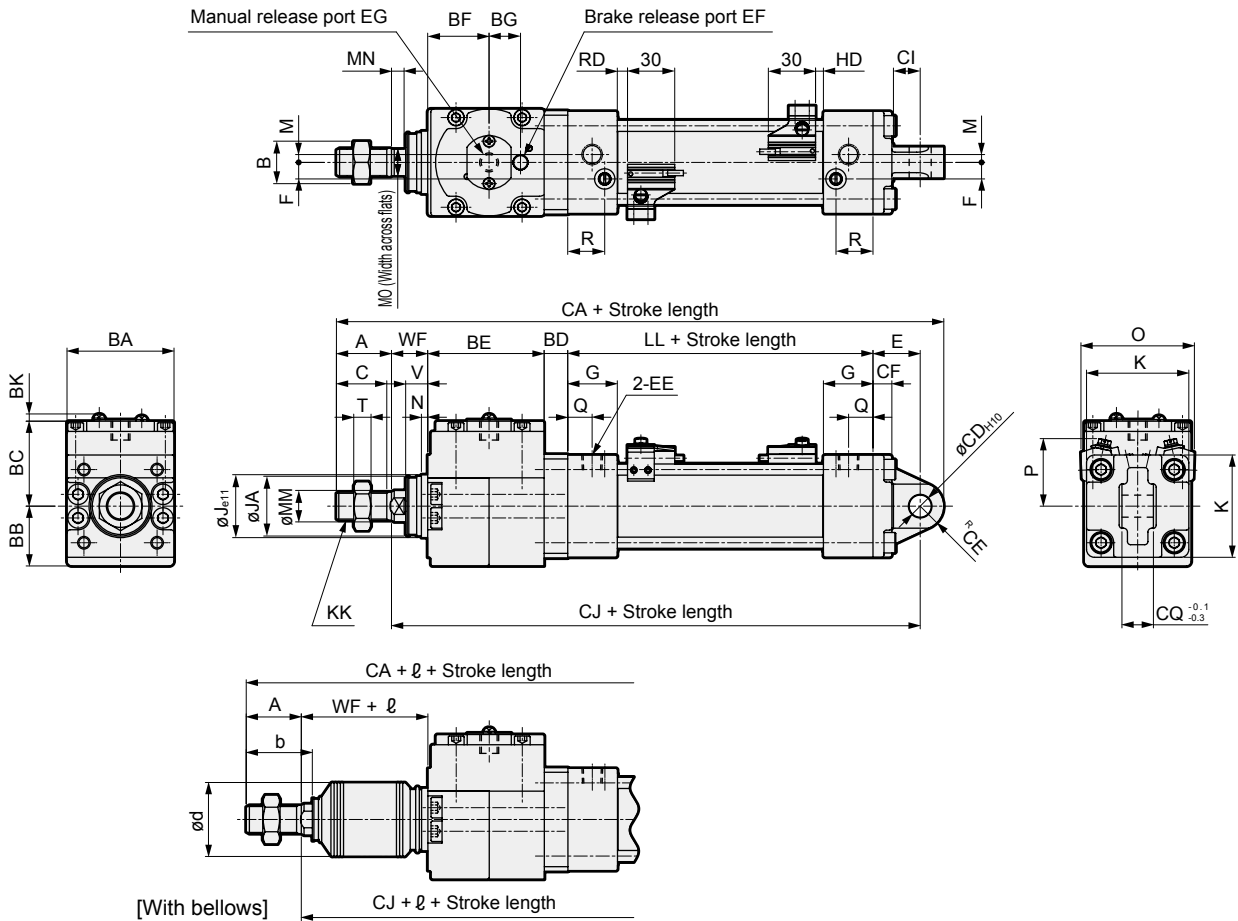
- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

# JSG/JSG-V Series

## Dimensions



### ● Eye bracket (CA)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Eye bracket (CA) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

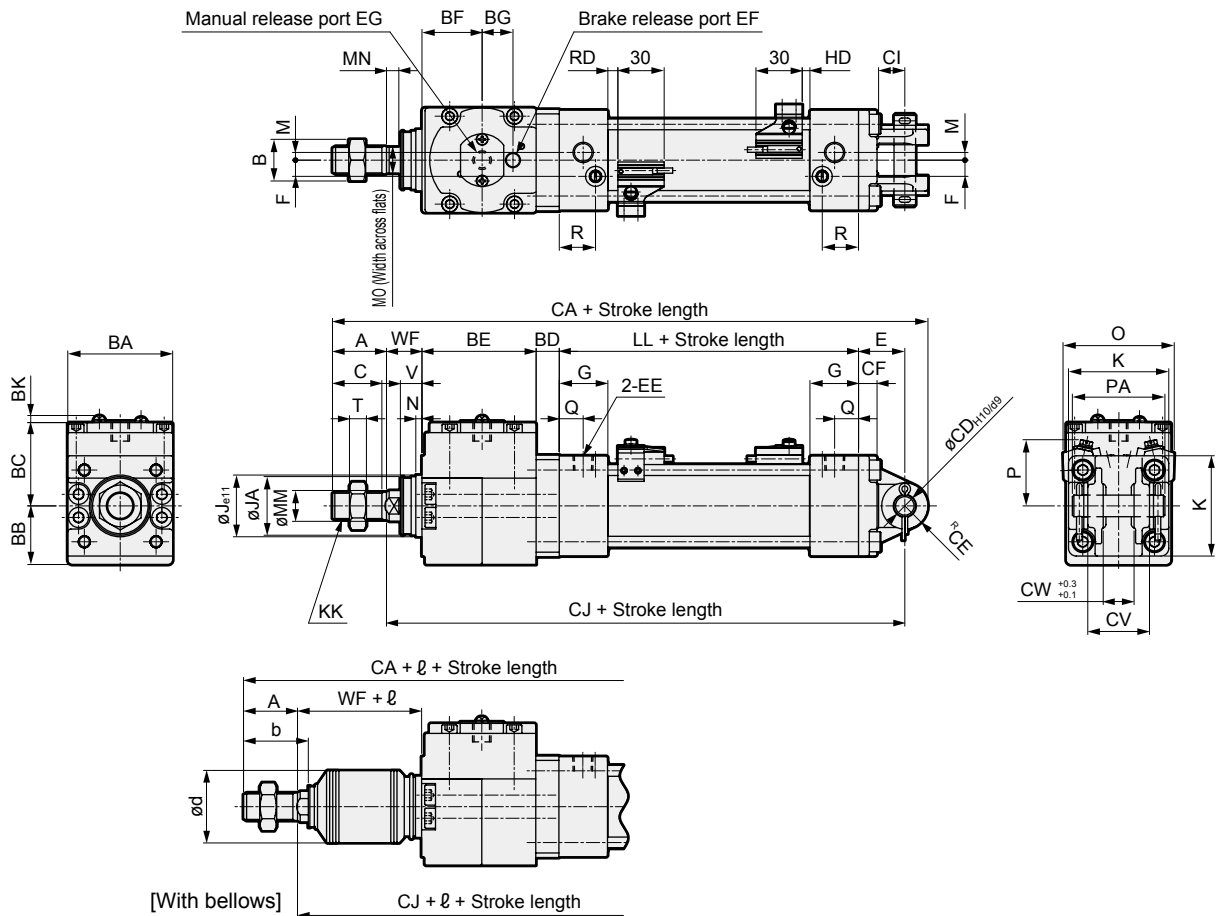
Code	Mounting dimensions											With switch								
Bore size (mm)	N	Q	R	T	V	WF	*1 FA	CD	CE	CF	CI	*1 CJ	CQ	E	O	P	T0, T5, T2, T3, T3P		T2W, T3W	
																	RD	HD	RD	HD
ø40	4	14	19	8	13	21	246(252)	10	11	9	13	205(211)	14	23	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
ø50	4	15.5	23.5	11	14	23	286(294)	14	15	12	17	236(244)	20	30	72	43	6.5(10.5)	5(9)	9(13)	7(11)
ø63	4	16.5	21.5	11	14	23	300(308)	14	15	12	17	250(258)	20	30	83	48	6.5(10.5)	5(9)	9(13)	7(11)
ø80	4	19	28	13	20	32	382(392)	22	23	15	26	319(329)	30	42	104	57	12.5(17.5)	6(11)	15(20)	8(13)
ø100	4	19	28	16	20	32	402(412)	22	23	15	26	339(349)	30	42	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

Code	With bellows				$\varnothing$											
Bore size (mm)	A	b	d	WF	50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32				
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41			
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41			
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63

## Dimensions

● Clevis bracket (CB)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Clevis bracket (CB) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

Code	Mounting dimensions												With switch									
Bore size (mm)	N	Q	R	T	V	WF	*1 CA	CD	CE	CF	CI	*1 CJ	CV	CW	E	PA	O	P	T0, T5, T2, T3, T3P		T2W, T3W	
																			RD	HD	RD	HD
ø40	4	14	19	8	13	21	246(252)	10	11	9	13	205(211)	28	14	23	44	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
ø50	4	15.5	23.5	11	14	23	286(294)	14	15	12	17	236(244)	40	20	30	60	72	43	6.5(10.5)	5(9)	9(13)	7(11)
ø63	4	16.5	21.5	11	14	23	300(308)	14	15	12	17	250(258)	40	20	30	60	83	48	6.5(10.5)	5(9)	9(13)	7(11)
ø80	4	19	28	13	20	32	382(392)	22	23	15	26	319(329)	60	30	42	82	104	57	12.5(17.5)	6(11)	15(20)	8(13)
ø100	4	19	28	16	20	32	402(412)	22	23	15	26	339(349)	60	30	42	82	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

Code	With bellows				l												
Bore size (mm)	A	b	d	WF	50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800	
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32					
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	

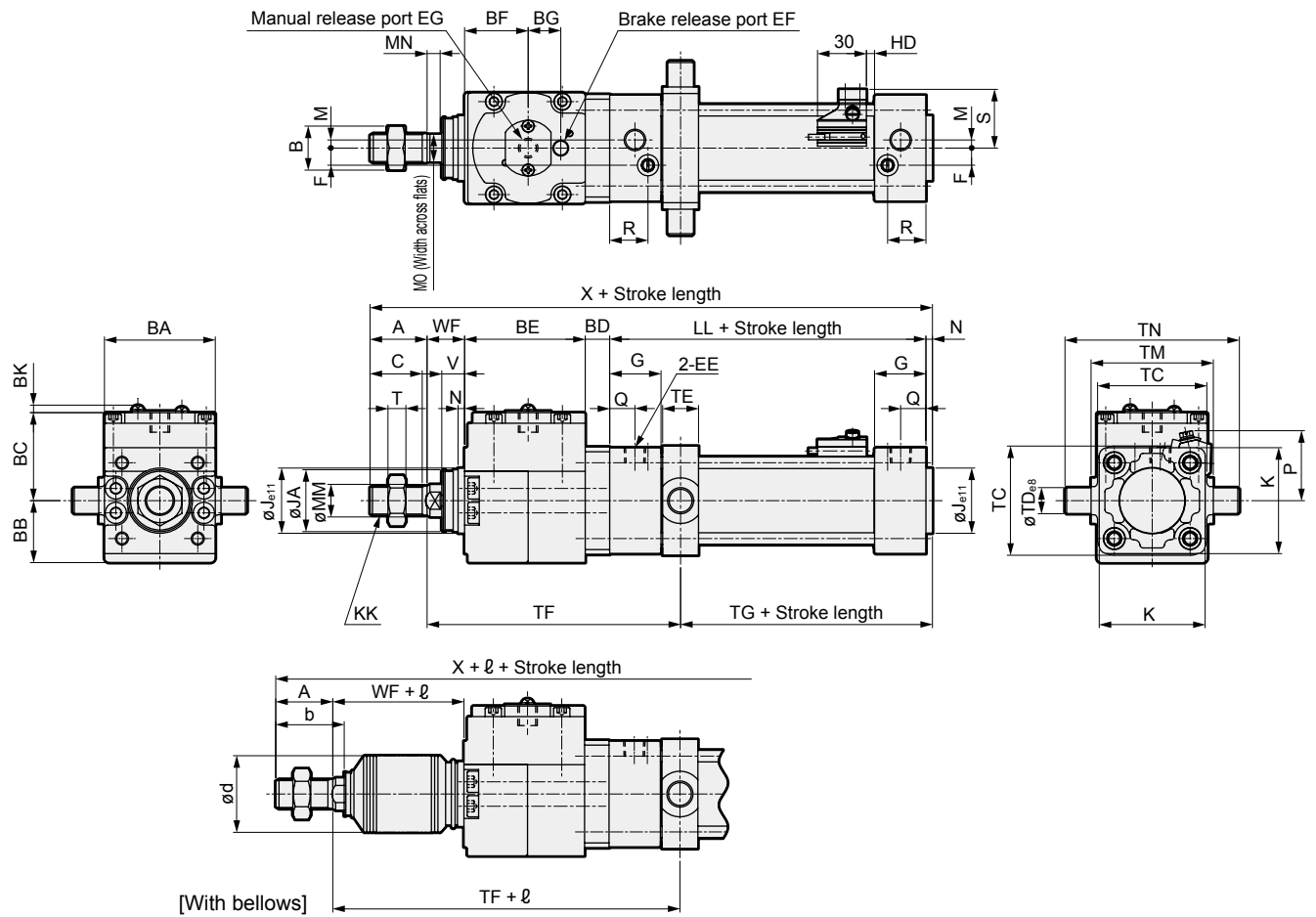
- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML**
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

# JSG/JSG-V Series

## Dimensions



### ● Rod side trunnion (TA)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code		Rod side trunnion (TA) basic dimensions																								
Bore size (mm)		A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
		ø40		30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16
ø50		35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63		35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80		40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100		40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

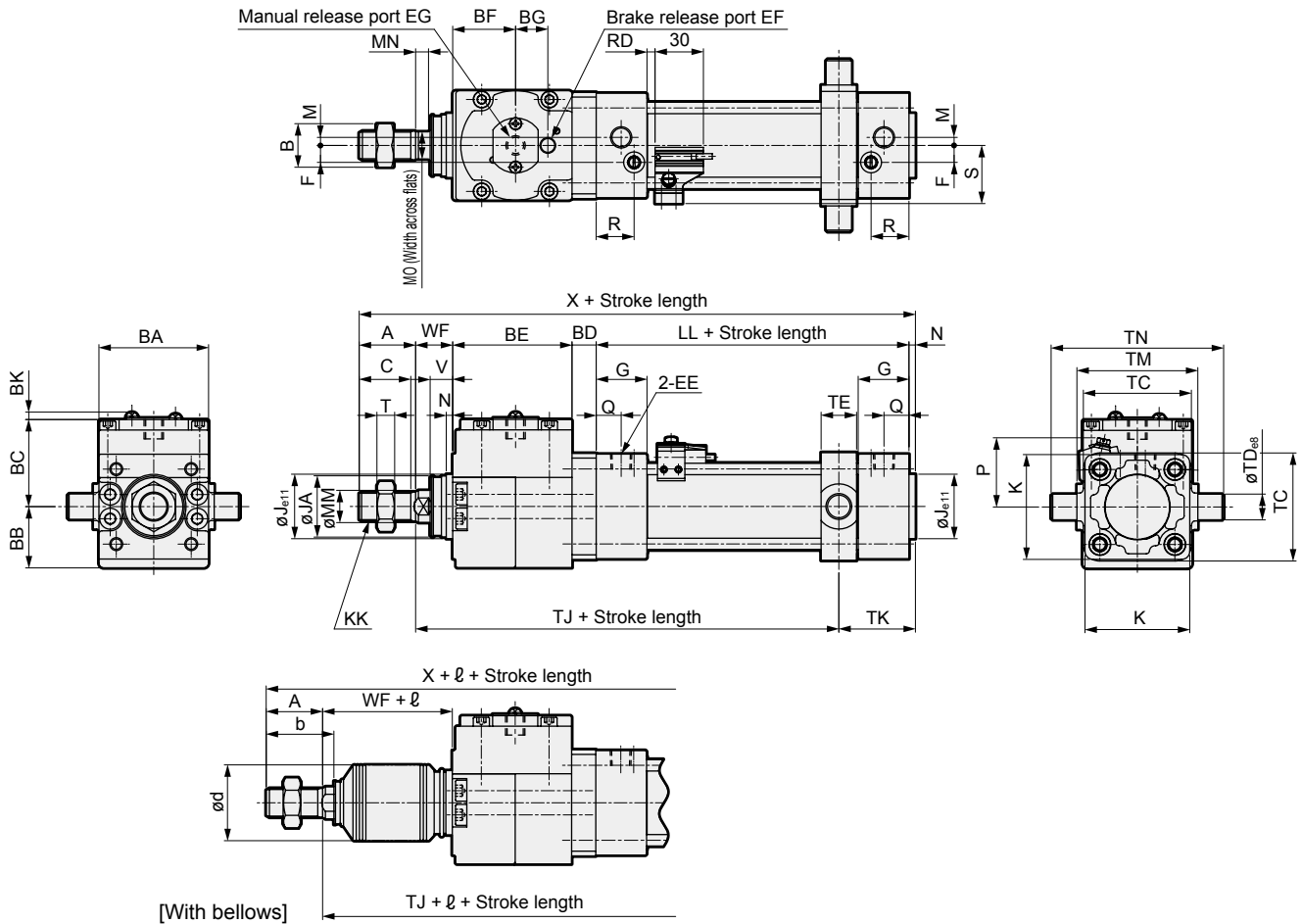
Code		Mounting dimensions										With switch							
Bore size (mm)		N	Q	R	T	V	WF	*1 X	TC	TD	TE	TF	*1 TG	TM	TN	S	P	T0, T5, T2, T3, T3P	T2W, T3W
		HD		HD		HD		HD											
ø40		4	14	19	8	13	21	216(222)	57	16	22	137	49(55)	63	95	33	41	5(8)	7.5(10.5)
ø50		4	15.5	23.5	11	14	23	245(253)	67	16	22	155.5	54.5(62.5)	75	107	36	43	5(9)	7(11)
ø63		4	16.5	21.5	11	14	23	259(267)	82	20	28	172.5	51.5(59.5)	90	130	41.5	48	5(9)	7(11)
ø80		4	19	28	13	20	32	321(331)	100	20	34	219	62(72)	110	150	52	57	6(11)	8(13)
ø100		4	19	28	16	20	32	341(351)	121	25	40	242	59(69)	132	182	60.5	63	6.5(11.5)	8.5(13.5)

Code		With bellows																
Bore size (mm)		A	b	d	WF	ℓ												
		50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800					
ø40		30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32					
ø50		35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø63		35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø80		40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	
ø100		40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	

## Dimensions

### ● Head side trunnion (TB)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code	Head side trunnion (TB) basic dimensions																								
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1 LL	M	MM	MN	MO
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

Code	Mounting dimensions													With switch				
Bore size (mm)	N	Q	R	T	V	WF	*1 X	TC	TD	TE	*1 TJ	TK	TM	TN	S	P	T0, T5, T2, T3, T3P	T2W, T3W
	RD																	RD
ø40	4	14	19	8	13	21	216(222)	57	16	22	143(149)	43	63	95	33	41	5(8)	7.5(10.5)
ø50	4	15.5	23.5	11	14	23	245(253)	67	16	22	162.5(170.5)	47.5	75	107	36	43	6.5(10.5)	9(13)
ø63	4	16.5	21.5	11	14	23	259(267)	82	20	28	173.5(181.5)	50.5	90	130	41.5	48	6.5(10.5)	9(13)
ø80	4	19	28	13	20	32	321(331)	100	20	34	221(231)	60	110	150	52	57	12.5(17.5)	15(20)
ø100	4	19	28	16	20	32	341(351)	121	25	40	238(248)	63	132	182	60.5	63	12(17)	14.5(19.5)

Code	With bellows																	
Bore size (mm)	A	b	d	WF	ℓ												Over 800	
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800				
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32						
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41					
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41					
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63		
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63		

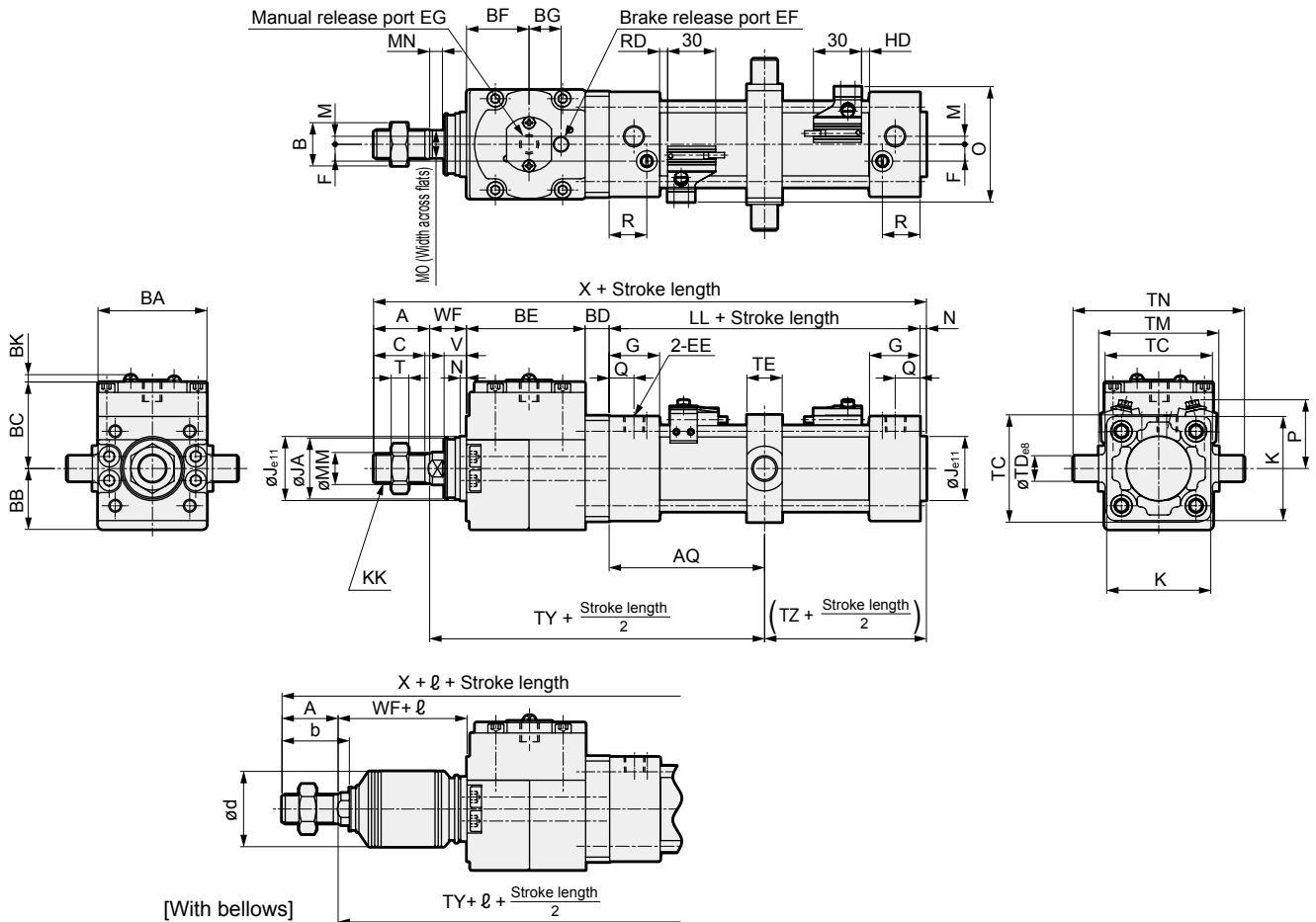
- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

# JSG/JSG-V Series

## Dimensions



### ● Intermediate trunnion (TC)



\*1: Dimensions in ( ) are for the rubber cushion.

\*2: Refer to page 758 for RD, HD and protruding dimensions of other switches.

\*3: Refer to page 757 for dimensions of type with valves (JSG-V).

Code		Intermediate trunnion (TC) basic dimensions																							
Bore size (mm)	A	B	BA	BB	BC	BD	BE	BF	BG	BK	C	EE	EF	EG	F	G	J	JA	K	KK	*1	M	MM	MN	MO
																					LL				
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	14
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1/4	Rc1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	17
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3/8	Rc1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	17
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rc3/8	Rc1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	22
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1/2	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27

Code		Mounting dimensions												With switch							
Bore size (mm)	N	Q	R	T	V	WF	*1	TC	TD	TE	TM	TN	*1	*1	*1	O	P	T0,T5,T2,T3,T3P		T2W,T3W	
							X						TY	TZ	AQ			RD	HD	RD	HD
ø40	4	14	19	8	13	21	216(222)	57	16	22	63	95	140(143)	46(49)	42(45)+ Stroke length 2	66	41	5(8)	5(8)	7.5(10.5)	7.5(10.5)
ø50	4	15.5	23.5	11	14	23	245(253)	67	16	22	75	107	159(163)	51(55)	47(51)+ Stroke length 2	72	43	6.5(10.5)	5(9)	9(13)	7(11)
ø63	4	16.5	21.5	11	14	23	259(267)	82	20	28	90	130	173(177)	51(55)	47(51)+ Stroke length 2	83	48	6.5(10.5)	5(9)	9(13)	7(11)
ø80	4	19	28	13	20	32	321(331)	100	20	34	110	150	220(225)	61(66)	51(62)+ Stroke length 2	104	57	12.5(17.5)	6(11)	15(20)	8(13)
ø100	4	19	28	16	20	32	341(351)	121	25	40	132	182	240(245)	61(66)	51(62)+ Stroke length 2	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)

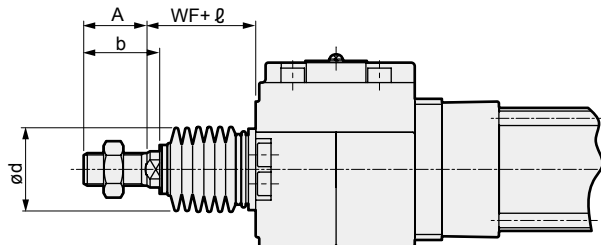
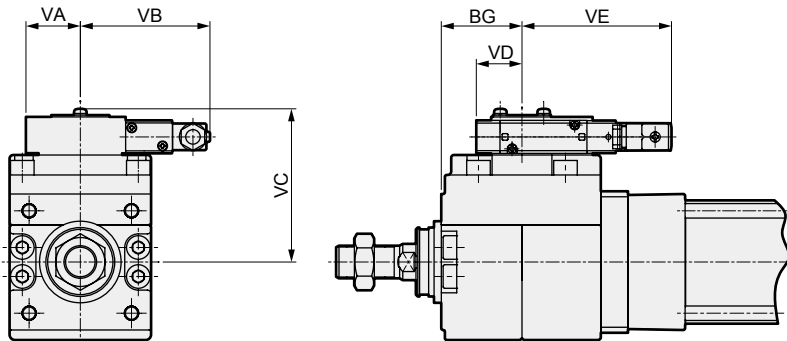
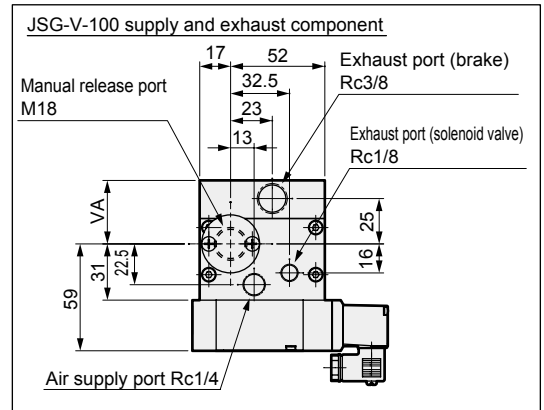
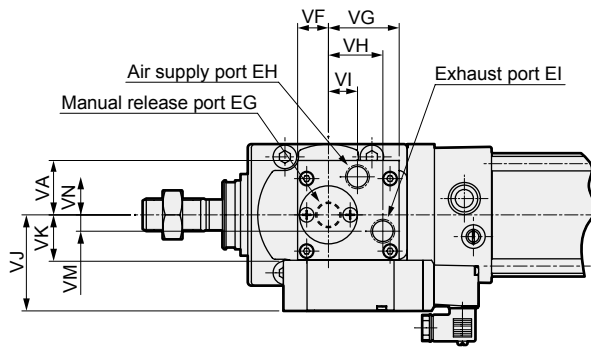
  

Code		With bellows				ℓ											
Bore size (mm)	A	b	d	WF	50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750	Over 750 to 800	Over 800	
					ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 x stroke-32
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 x stroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204	217	0.35 x stroke-63	

## Dimensions



- JSG-V (with valve for brake release)



\*1: The shape of the JSG-V-100 supply and exhaust port differs from that of other sizes. Refer to the dimensions of JSG-V-100 supply and exhaust components in the upper right figure.

Code	With valve for brake release (JSG-V) basic dimensions																
Bore size (mm)	BG	EG	EH	EI	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VM	VN
ø40	32.5	M12	Rc1/8	Rc1/8	26	62.5	72	24	83.5	19	38	30	12.5	44	16	4	16
ø50	39	M12	Rc1/8	Rc1/8	26	62.5	79.5	24	83.5	19	38	30	12.5	44	16	4	16
ø63	44.5	M14	Rc1/4	Rc1/4	30	71.5	84.5	25	82.5	17	39	30	16	53	25	9	21
ø80	54.5	M16	Rc1/4	Rc1/4	30	71.5	98	25	82.5	17	39	30	16	53	25	9	21
ø100	65.5	M18	*1		35	77.5	113	21	86.5	*1							

Code	With bellows													
Bore size (mm)	A	b	d	WF	ℓ									
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750
ø40	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ø50	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ø63	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	204
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	204

\* Dimensions other than those listed above are the same as those of double acting/single rod. Refer to pages 748 to 756.

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

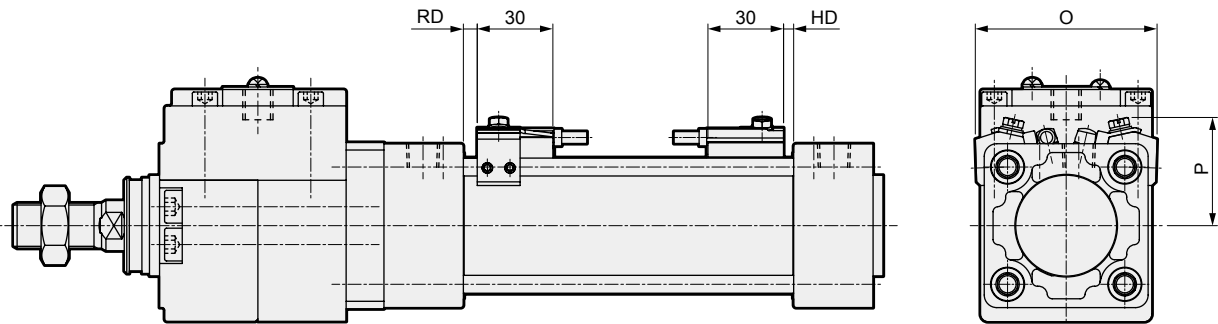


# JSG/JSG-V Series

## JSG Series common Dimensions with switch



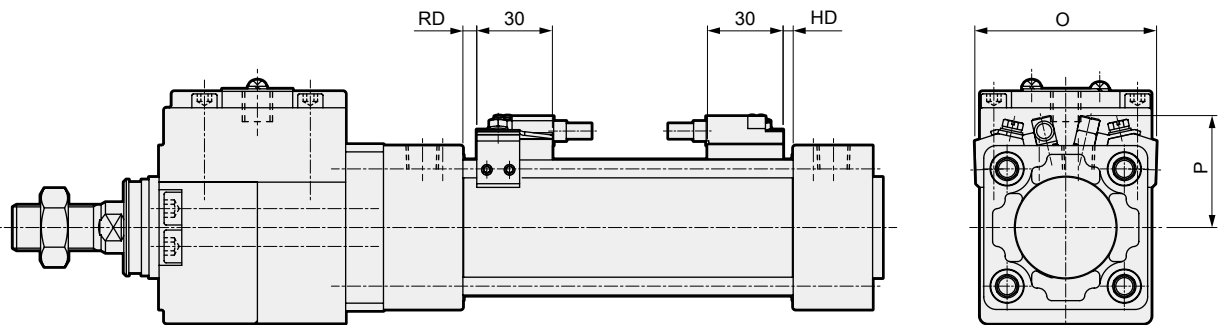
● With T2Y, T3Y, T2J, T8 switches



Code	With T2Y, T3Y, T2J, T8 switches						
	Bore size (mm)	O	P	T2Y, T3Y, T2J		T8	
				RD	HD	RD	HD
ø40	66	41	4(7)	4(7)	0(2)	0(2)	
ø50	72	43	5.5(9.5)	4(8)	0.5(4.5)	0(3)	
ø63	83	48	5.5(9.5)	4(8)	0.5(4.5)	0(3)	
ø80	104	57	11.5(16.5)	5(10)	6.5(11.5)	0(5)	
ø100	121	63	11(16)	5.5(10.5)	6(11)	0.5(5.5)	

\*1: Dimensions in ( ) are for the rubber cushion.

● With T1, T2YD, T2YDT switches



Code	With T1, T2YD, T2YDT switches			
	Bore size (mm)	O	P	RD
ø40	66	41	4(7)	4(7)
ø50	72	44	5.5(9.5)	4(8)
ø63	83	50	5.5(9.5)	4(8)
ø80	104	57	11.5(16.5)	5(10)
ø100	121	64	11(16)	5.5(10.5)

\*1: Dimensions in ( ) are for the rubber cushion.

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG**
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

### JSG Series common accessory dimensions (rod eye, clevis, bracket)

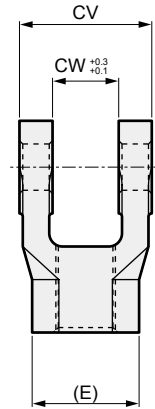
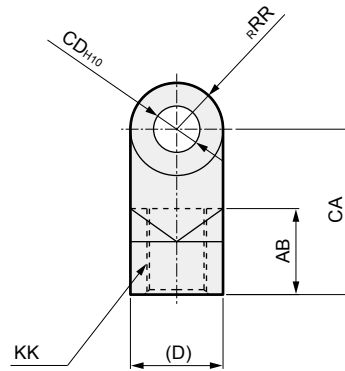
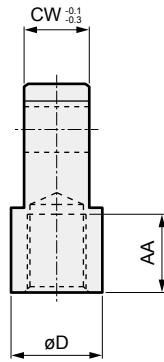
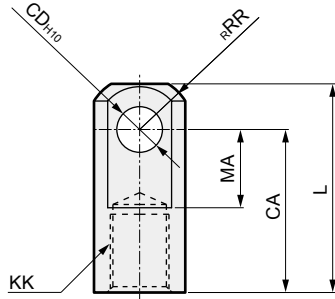


#### ● Rod eye (I)

Material: Steel  
Painting

#### ● Rod clevis (Y)

Material: Cast iron  
Painting



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

Model No.	Bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Wt (kg)
SCG-Y-40	40	21	40	10	28	14	22	22.4	M14×1.5	11	0.13
SCG-Y-50	50,63	26	50	14	40	20	28	29.3	M18×1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	43.2	M22×1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	43.2	M26×1.5	20	0.92

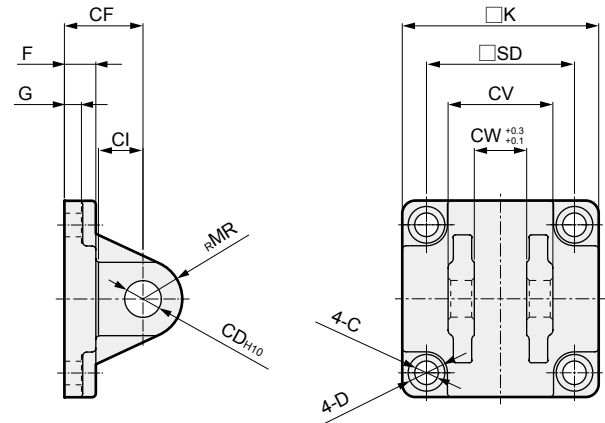
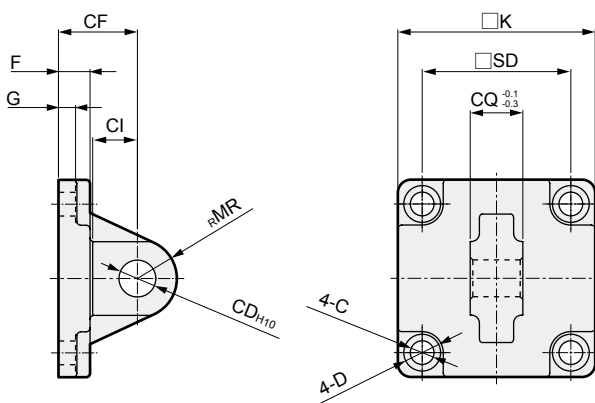
Note: A pin, a split pin and a plain washer are attached.

#### ● Eye bracket (B1)

Material: Cast iron  
Painting

#### ● Clevis bracket (B2)

Material: Cast iron  
Painting



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

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

Note: A pin, a split pin and a plain washer are attached.

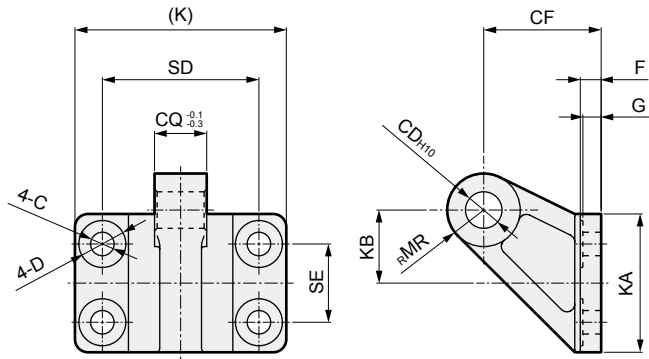
L
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
<b>JSG</b>
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

## Accessory dimensions



### ● Eye bracket (B3)

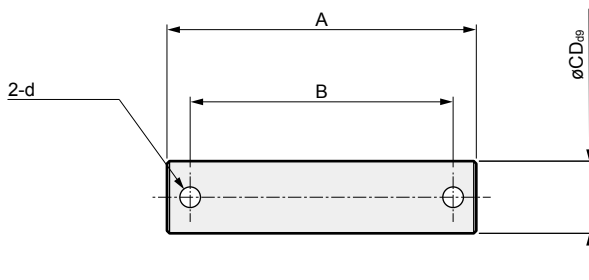
Material: Cast iron  
Painting



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

### ● Pin (P)

Material: Steel  
Zinc chromate treatment

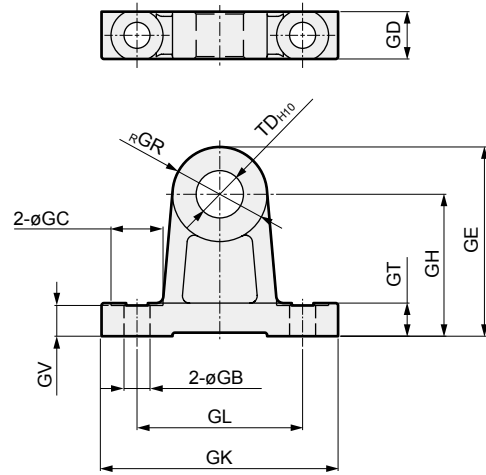


Model No.	Applicable bore size (mm)	A	B	CD	d	Weight (kg)
SCG-P-32	40	44	36	10	3	0.04
SCG-P-50	50,63	60	51	14	4	0.10
SCG-P-80	80,100	82	72	22	4	0.34

Note: Split pin and plain washer are attached.

### ● Trunnion No. 2 bracket (B4)

Material: Cast iron  
Painting



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

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