JSG Tie rod cylinder with brake

With brake/position locking

ø40/ø50/ø63/ø80/ø100



CONTENTSProduct introduction738Series variation740Double acting/single rod (JSG)742Double acting/with valve for brake release (JSG-V)742JSG Series common dimensions758Applications761Safety precautions762

The cylinder switches T2YH, T2YV, T3YH, and T3YV are scheduled for end of production at the end of December 2023.

LCM	
ICP	
LUG	
LCX	
STM	
STG	
STR2	
UCA2	
1111/*	
JSK/M2 JSG JSC3/JSC4	
JSG	
JSC3/JSC4	
USSD	
UFCD	
UFCD USC	
UB	
JSB3	
LMB	
LML	
НСМ	Ī
HCM HCA	
LBC	
LBC CAC4	
CAC-N	
CAC-N UCAC-N RCS2 RCC2 PCC	
RCS2	
RCC2	
PCC	
SHC	
MCP	
SHC MCP GLC MFC BBS	
MFC	
BBS	
RRC	
GRC	
RV3*	
NHS	
HRL	
LN	
Hand	
Chuk	
MecHnd/Chuk	
ShkAbs	
FJ	
FK	
SpdContr	
Ending	

Succeeding the outstanding traits of the JSC3.

The JSC3 Series brake mechanism, well known for its high stopping accuracy, strong holding force, and superb reliability, has been mounted as is on the new general cylinder SCG Series. For the new era: Tie rod cylinder with brake JSG Series. (ø40 to ø100)

Reliable and accomplished brake mechanism

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

Powerful rod holding force

Our original lock mechanism has a rod holding force approximately double the thrust (at working pressure 0.4MPa).

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



738

I CE LCG LCV I CX STM

STR2

UCA2 ULK*

JSK/M2 JSG

JSC3/JSC4 USSD

UFCD USC UB

JSB3 LMB I MI HCM

НСА LBC CAC4 JCAC2 UCAC-N RCS2

RCC2 PCC

SHC MCF

GLC MEC BBS RRC GRC RV3 NHS HRL LN Hand Chuk ShkAbs FJ FK SpdContr Ending

СКО

Compact and reliable brake section



Light weight

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

Built-in compact switch

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



Magnet provided as standard

Switches can be additionally mounted on all products.

Space saving

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

Unification in white

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

ø40 ø50 ø63 ø80 ø100 25~500 **JSG** Standard With valve for **JSG-V** brake release

JSG Series products

LCM LCR LCG

Series variation

Tie rod cylinder with brake JSG Series

STL 22 42 52 M2 50 50 50 50 50 50 50 50 50 50	Variation	Model No. JIS symbol	Bore size (mm)				S	Stand	ard s	troke	e (mn	1)				Min. stroke	
\ ;				25	50	75	100	150	200	250	300	350	400	450	500		
C2 C2 C2 C2 C2 C2 C2 C2 C2 C2 C2 C2 C2 C	Double acting/ single rod	JSG	ø40 ø50/ø63 ø80 ø100		•			•	•		•	•	•	•	•	1	
2 ; ; ; ;	Double acting/ with valve for brake release	JSG-V	ø40 ø50/ø63 ø80 ø100	•	•	•	•	•	•	•	•	•	•	•	•	1	

LCM

Series variation

LCM LCR LCG

BBS RRC GRC RV3* NHS HRL LN Hand Chuk Medhd/Chuk ShkAbs FJ FK SpdContr Ending

	TG
	TS/STL TR2
Max. stroke Available stroke Available stroke Custom stroke Basic Basic Axial foot Basic Axial foot Basic Axial foot Rod side flange Head side flange Eye bracket Clevis bracket Proo-sided air cushion Intermediate trunnion Intermediate trunnion Proo-sided air cushion Proo-sided rubber cushion Proo-sided air cushion Proo-sided rubber cushion Proo-sided rubber cushion Proo-sided rubber cushio Proo-sid	CA2 LK* SK/M2 SG C3/JSC4 SSD FCD SC B SB3 MB ML CM
	CA BC
$\begin{bmatrix} 600 & \hline 1200 \\ \hline 1200 & \hline 1400 \\ \hline 800 & 1500 \end{bmatrix} 1 \\ \hline \Theta $	AC4 CAC2 AC-N CAC-N CAC-N
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ICC2 CC HC ICP ICC ICC IFC



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



Bore size: ø40/ø50/ø63/ø80/ø100

```
    Double acting
    JIS symbol
```

● Double acting, with valve for brake release

白



Specifications

2	ltem				JSG					JSG-V				
24	Bore size	mm	ø40	ø50	ø63	ø80	ø100	ø40	ø50	ø63	ø80	ø100		
)4)	Actuation			D	ouble actin	g			Double	e acting/with	h valve			
)	Working fluid			Co	ompressed	air			Co	ompressed	air			
	Max. working pr	essure MPa		1.0 (*	≈150 psi, 10) bar)			0.7 (≈100 psi, 7	bar)			
_	Min. working pre	essure MPa		0.3	(≈44 psi, 3	bar)			0.3	(≈44 psi, 3	bar)			
	Proof pressure	MPa		1.6 (*	≈230 psi, 16	3 bar)			1.6 (≈	≈230 psi, 16	3 bar)			
	Ambient temper	ature °C	-1	0 (14°F) to	60 (140°F)	(no freezin	g)	-10 (14°F) to 60 (140°F) (no freezing)						
_	Port size	Brake section	Rc	1/8	Rc	1/4	Rc3/8	Rc	1/8		Rc1/4			
	PUIT SIZE	Cylinder	Rc1/4 Rc3/8 Rc1/2						Rc1/4 Rc3/8 Rc1/2					
1	Stroke	With rubber cushion		^{+1.4} (to 1	000), +1.8 (1	to 1500)			^{+1.4} (to 1	1000), +1.8 (1	to 1500)			
N	tolerance mm	With air cushion	+1.0 0	(to 360), ⁺¹ ₀	⁴ (to 1000)), ^{+1.8} (to 15	00)	^{+1.0} / ₀ (to 360), ^{+1.4} / ₀ (to 1000), ^{+1.8} / ₀ (to 1500)						
N	Working piston a	speed mm/s	50 to 1000	(Operate wit	hin the allow	able absorb	ed energy.)	50 to 1000	(Operate wit	hin the allow	vable absorb	ed energy.)		
2	Cushion		Either air	cushion or	rubber cus	hion can be	e selected	Either air	cushion or	rubber cus	hion can be	selected		
_	Effective air cushi	on length mm	8.6	13.4	13.4	15.4	15.4	8.6	13.4	13.4	15.4	15.4		
_	Lubrication	for lubrication)	Not required (use turbine oil c	lass 1 ISO VG	32 if necessary	for lubrication)							
_	Holding force	N	980	1569	2451	3922	6178	980	1569	2451	3922	6178		
	Allowable	With rubber cushion	0.9	0.9 1.6 1.6 3.3 5.					1.6	1.6	3.3	5.8		
_	absorbed energy J	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
ık	Holding current (A)	0.028/0.022	0.014/0.011	0.075
S	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				
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
ø40	25/50/75/100		800	
ø50	150/200/250	600	1200	
ø63	300/350/400		1200	1
ø80	450/500	700	1400	
ø100	450/500	800	1500	

*1 : The custom stroke 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 strokes for models with bellows are as shown below.

ø40: 500 mm

ø50, ø63: 600 mm

ø80, ø100: 750 mm

SpdContr

Ending

JSG/JSG-V Series Specifications

Min. stroke with switch T0/T5 type switch

	Switch													
	D	ifferent mou	t surfac nting	e	Same	e surfa	ce mou	inting	Cente	r trunn	ion mo		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.
Switch quantity			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 (L-shaped lead wire).

*2: When the stroke 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

	D		t surfac nting	e	Same	e surfa	ce mou	inting	Cente	r trunn	ion mo		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.
Switch quantity			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	4 9 18 36 5		54	116(116) 116(116) 121(121) 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 (L-shaped lead wire).

*2: When the stroke 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

	D	ifferen mou	t surfac nting	ce	Same	e surfa	ce moı	inting	Cente	r trunn	ion mo		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.	RV3* NHS HRL LN
Switch quantity	1	2	3	4	1	2	3	4	1	2	3	4	1	1	Hand
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32	Chuk MecHnd/Chu
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32	ShkAb
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38	FJ FK
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43	SpdCont
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49	Ending

*1: The values in () are of T*V (L-shaped lead wire).

*2: When the stroke 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/T3	3Y/T2W/	T3W/T2	YD swit	ches										
	D	ifferen mou	t surfac nting	ce	Same	e surfa	ce mou	inting	Cente	r trunn	ion mo		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.
Switch quantity	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

owitol

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

*2: When the stroke 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.

Switch specifications

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

• • • • • • • • •		2//0///	magne		p. 00.											
	Proximity 2-wire	Prox	imity 2	-wire	Р	roximi	ty 3-wi	re			Ree	d 2-wir	e (*4)			Proximity 2-wire
Item	T1H/ T1V			T2WH/ T2WV	T3H/ T3V			T3WH/ T3WV	і тон/	ΤΟν	T5⊦	I/T5V	Т	8H/T8\	J	T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve		edicated			or progr controll			For progra		relay, it circ	mable controller, uit (no indicator ial connection		rogramn troller, re		For programmable controller
Output method		-				PNP output	NPN output	NPN output					-			
Pwr. supp. V.		-			10 to 28 VDC								-			
Load voltage	85 to 265 VAC	10 to 3	0 VDC	24 VDC ±10%		30 VDC	or less		12/24 VDC	110 VAC	5/12/24 VD0	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 m/	A ≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
	LED	LED (Lit	Red/green	Red/green	LED (Lit	Yellow	Red/green	Red/green	LE	D	No in	dicator				Red/green
Indicator	(Lit when	when	LED (Lit	LED (Lit	when	LED (Lit	LED (Lit	LED (Lit	Lit whe		-	mp	LED (Lit wher	n ON)	LED
	ON)	ON)	when ON)	when ON)	ON)	when ON)	when ON)	when ON)				ΠP				(Lit when ON)
Leakage	\leq 1 mA at 100 VAC,	1	mA or le	22		10 µA	or less					0 mA				1 mA or
current	≤ 2 mA at 200 VAC					10 μ/ (1				0 110 1				less
-	1 m:33	1 m:18	1 m:33	1 m:18	1 m	n:18	1 m:33	1 m:18					1	m:33		1 m:61
Weight g	3 m:87	3 m:49	3 m:87	3 m:49	3 m	n:49	3 m:87	3 m:49	1 m:	18 3 m	n:49 5	m:80	3	m:87		3 m:166
,	5 m:142	5 m:80	5 m:142	5 m:80	5 m	n:80	5 m:142	5 m:80					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

_	Weight table										I	Jnit: kg
	Bore size		W	eight for () mm strol	(e		Added weight	Switch	Mounting	Accesso	ry weight
	(mm)	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA,TB,TC)	/50 mm stroke	weight	bracket weight	I	Y
	ø40	1.75	1.89	2.16	1.94	1.94	2.09	0.17	Refer to the	0.024	0.09	0.14
_	ø50	2.91	3.07	3.54	3.32	3.32	3.40	0.23	weight in the	0.022	0.20	0.33
uk	ø63	3.94	4.28	4.96	4.49	4.51	4.82	0.25	switch	0.022	0.20	0.33
S	ø80	7.81	8.24	9.38	9.08	9.09	9.30	0.40	specifications.	0.026	0.52	0.96
_	ø100	12.08	12.94	14.40	13.80	13.83	14.65	0.51	specifications.	0.024	0.48	0.92
g I	(Example) Product	weight of JS	G-LB-50B-20	00-T0H-D-Y	Additional v Weight of 2 Weight of 2 Weight of r	eight for strok veight for strok 2 TOH switch 2 mounting b od clevis	ke 200 mm les rackets		23×200/50= 018×2=0.03 022×2=0.04 33 kg	6 kg	33=4.4	kg

Theoretical thrust table

CKD

Theoretica	l thrust t	able							(Unit: N)
Bore size	Operating				Working pro	essure MPa			
(mm)	direction	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	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
Ø40	Pull	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	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
050	Pull	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	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
003	Pull	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
~ 80	Push	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
ø80	Pull	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	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
0100	Pull	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

LCM

LCR

LCG LCW



CKD

745

How to order switch





Switch model No. Bore size (Item ® on page (Item © on page 745) 745) • Switch body only SW - TOH

Switch model No. (Item I on page 745) Note: Contact CKD when using an environmen

using an environmentfriendly T-switch. Switch mounting bracket set



Mounting Bore size bracket (Item © on page 745)

How to order mounting bracket

		•				
Bore size (mm)		~10	~50	~62	~90	ø100
Mounting bracket	$ \$	Ø40	Ø50	003	000	Ø100
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
	Mounting bracket Foot (LB) Flange (FA) (FB) Eye bracket (CA)	Mounting bracketFoot (LB)*1Flange (FA) (FB)*2Eye bracket (CA)	Mounting bracketØ40Foot (LB)*1JSG-LB-40Flange (FA) (FB)*2JSG-FA-40Eye bracket (CA)SCG-CA-40	Mounting bracketØ40Ø50Foot (LB)*1JSG-LB-40JSG-LB-50Flange (FA) (FB)*2JSG-FA-40JSG-FA-50Eye bracket (CA)SCG-CA-40SCG-CA-50	Mounting bracketØ40Ø50Ø63Foot (LB)*1JSG-LB-40JSG-LB-50JSG-LB-63Flange (FA) (FB)*2JSG-FA-40JSG-FA-50JSG-FA-63Eye bracket (CA)SCG-CA-40SCG-CA-50SCG-CA-63	Mounting bracket Ø40 Ø50 Ø63 Ø80 Foot (LB) *1 JSG-LB-40 JSG-LB-50 JSG-LB-63 SCG-LB-80 Flange (FA) (FB) *2 JSG-FA-40 JSG-FA-50 JSG-FA-63 SCG-FA-80 Eye bracket (CA) SCG-CA-40 SCG-CA-50 SCG-CA-63 SCG-CA-80

*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



LCM

LCR LCG

LCW

LCX STM STG

STR2



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	Bolt I	ength	Appropriate
Bore Size	diameter	JSG	JSG-V	screw-in volume
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

Double acting/single rod

Internal structure and parts list



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		00	Distan II	ø40: Aluminum alloy	
4	Bush	Oil impregnated bearing alloy		26	Piston H	ø50 to ø100: Aluminum alloy die-casting	
5	Wear ring	Acetal resin		27	Wear ring	Polyacetal resin	
6	Piston packing B	Nitrile rubber		28	Magnet	Resin	
7	Brake piston	Cast iron	Phosphate coating	29	Piston packing	Nitrile rubber	
8	Body H	Aluminum casting	Chromate		Distan D	ø40: Aluminum alloy	
9	Spring	Piano wire		30	Piston R	ø50 to ø100: Aluminum alloy die-casting	
10	Piston guide	Cast iron	Phosphate coating	31	Piston gasket	Nitrile rubber	
11	Phillips pan head machine screw/captive washer	Steel	Zinc chromate	32	Hexagon socket head cap screw	Alloy steel	Black finish
12	Dust cover	Aluminum alloy	Alumite	33	Thrust washer		
13	Gasket	Nitrile rubber		34	Bush	Dry bearing	
14	Joint plate	Aluminum alloy	Alumite	35	Body R	Aluminum casting	Chromate
15	Rod packing	Nitrile rubber		36	Body F	Aluminum casting	Chromate
16	Bush	Oil impregnated bearing alloy		37	Cushion rubber	Urethane rubber	
17	Rod cover	Aluminum alloy die-casting	Paint	38	Bearing		
18	Cylinder gasket	Nitrile rubber		39	Pin	Alloy steel	
19	Cushion packing	Nitrile rubber, steel	Zinc chromate	40	Brake shoe metal	Cast iron	Nickel plating
20	Cylinder tube	Aluminum alloy	Hard alumite	41	Spring	Piano wire	
21	Cushion needle	Copper alloy	Nickel plating	42	Hexagon socket head cap screw	Alloy steel	Black finish
22	Needle gasket	Nitrile rubber		43	Hexagon socket head cap screw	Alloy steel	Black finish
23	Head cover	Aluminum alloy die-casting	Paint	44	Cushion rubber	Urethane rubber	

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	
ø50	JSG-50BK	3 15 18
ø63	JSG-63BK	19 22 27
ø80	JSG-80BK	29
ø100	JSG-100BK	

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

• With rubber cushion

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

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

LCM

CAD

Dimensions



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



øJe11

DC DB

4-DA

 \mathbf{x} SD

SD





*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).

ø MM ø MM

<u>/ĸĸ</u>

SD

3: Refer to pag	e /5/	for aim	iensic	ons of	type v	vith va	aives	(JSG-	V).																		
Code	Bas	ic (00) ba	sic di	men	sion	s																				
Bore size (mm)	A	в	ВА	вв	вс	BD	BE	BF	BG	BJ	J	вк	с	DA	DB	DC	EE	E	F	EG	F	G	J	JA	к		
ø40	30	22	57	31.5	46.5	14	63	32.5	20	M6 Dep	th 12	4.6	27	M6	16	5	Rc1/4	Rc	:1/8	M12	9	27	31	52			
ø50	35	27	68	38	54	15	74	39	20	M8 Dep	th 12	4.6	32	M8	16	5	Rc1/4	Rc	:1/8	M12	10.5	31.5	40	38	65		
ø63	35	27	78	43	59	15	15 88 44.5 27 N 23 108 54.5 27 N				th 14	4.6	32	M8	16	5	Rc3/8	Rc	1/4	M14	12	31.5	45	38	75		
ø80	40	32	98	53	72.5	23	108	54.5	27	M10 Dep	oth 16	4.6	37	M10	16	5	Rc3/8	Rc	1/4	M16	14	38	43	95			
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	M10 Dep	oth 18	4.6	37	M10	16	5	Rc1/2	Rc	3/8	M18	15	38	55	51	114		
Code																		With	ı swi	tch							
Bore size (mm)		ĸĸ		*1 LL	N	і м	мм	и м	0 1	v Q	R	SD	т	v	WF	-	*1 X	о	Р	T0, T5 RC	<u> </u>			<u> </u>	3W HD		
ø40	M1	4×1.5	8	4(90)	4	1	6 6	3 1	4 4	4 14	19	38	8	13	3 21	2	16(222)	66	41	5(8					5(10.5)		
		8×1.5	-	4(102)						_	-		-	-	_	_	45(253)	72	43	6.5(10	·	()		-	(11)		
		8×1.5	-	4(102)	_	_	-			_	21.5	-					59(267)	83	48	6.5(10	,	()	``	,	(11)		
ø80		2×1.5	-	4(124		_				4 19	28	72	13				21(331)	104	57	12.5(1)		. ,	<u> </u>	(13)			
ø100	M2	6×1.5	-	4(124	<u> </u>	7 3	0 1	3 2	7 4	4 19	28	-	16	20) 32	-	41(351)	121	63	12(1	14 38 45 43 15 38 55 51 5, T2, T3, T3P $T2W$, T 0 HD RD 0 5(8) 7.5(10.5) 7. 0.5) 5(9) 9(13) 10 0.5) 5(9) 9(13) 10 7.5) 6(11) 15(20) 8 7.10 6.5(11.5) 14.5(19.5) 8.				. ,		
Code	With	ı bell	ows	-																	· .			· .			
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Bore size (mm)		b	d	WF	50 c les:		Over 5 to 100		er 100 150	Over 15 to 200	-	er 200 9 300	Over to 4		Over 40 to 500			ver 60 to 700		er 700 750			Ov	er 80(D		
ø40	30	35	40	21	30		43		55	68		93	11	18	143				0.3	35 x s	troke	-32					
ø50	35	42	47	23	31		44		56	69		94	11	19	144		169			0.3	5 x st	roke-4	1				
ø63	35	42	47	23	31		44		56	69		94	11	19	144		169			0.3	5 x st	roke-4	1				
ø80	40	50	53	32	29		42		54	67		92	11	17	142		167	192	2	04	21	9 27 35 31 0.5 31.5 40 38 12 31.5 45 38 14 38 45 43 15 38 55 51 HD RD 17 5(8) 7.5(10.5) 7.5 5(9) 9(13) 7 6(11) 15(20) 8 6.5(11.5) 14.5(19.5) 8.5					
ø100	40	52.5	61	32	29		42		54	67		92	11	17	142		167	192	2	04	21	7 ().35 x	40 38 45 38 45 43 55 51 T2W, T3 RD 1 7.5(10.5) 7.5 9(13) 7 9(13) 7 9(13) 7 15(20) 8 14.5(19.5) 8.5 Over 80 1 1.35 x stroket			

MecHnd/Chuk ShkAbs FJ FK SpdContr

Ending

CKD

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ø40	30		57 3	31.5	_		63 3	2.5	20 4	1.6	_						35	31		M14×1.5	84(9	0)		16	_
ø50										-	_			-											_
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ø100											_					+ +									
Code								_	_							1						/			
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Ø80 Ø100 Code Bore size (mm) Ø40 Ø50	4 With A 30 35	19 bell b 35 42	ows d 40 47	WF 21 23	50 le 3) or ss 30	Over to 10 43 44	50 0	to 150 55 56		to 200 68 69) to	300 93 94	to 400 118 119	to	ver 400 o 500 143 144	to (5 00 59		00 to 7	750 to 5 x strol 0.35 x	o 800 ke-32 strok	2 (e-41		800
Ø80 Ø100 Code Bore size (mm) Ø40 Ø50 Ø63	4 With A 30 35 35	19 bell b 35 42 42	ows d 40 47 47	WF 21 23 23	50 le 33 33) or Iss 30 31	Over to 10 43 44 44	50 0	to 150 55 56 56		to 200 68 69 69) to 	300 93 94 94	to 400 118 119 119		ver 400 o 500 143 144 144	to (16 16	5 00 59 59	to 7	00 to 7	750 to 5 x strol 0.35 x 0.35 x	o 800 ke-32 strok	e-41		
Ø80 Ø100 Code Bore size (mm) Ø40 Ø50	4 With A 30 35 35	19 bell b 35 42 42	ows d 40 47 47	WF 21 23 23	50 le 33 33 32) or Iss 30 31	Over to 10 43 44 44	50 0	to 150 55 56 56		to 200 68 69 69) to () () () () () () () () () () () () ()	300 93 94 94	to 400 118 119 119		ver 400 o 500 143 144 144	to (16 16	5 00 59 59	to 7	00 to 7 0.35 2 20	750 to 5 x strol 0.35 x 0.35 x 0.35 x	o 800 ke-32 strok	2 (e-41 (e-41 0.	35 x st	

Dimensions

CAD

Axial foot (LB)



Double acting/single rod

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

CAD

Dimensions

LCM

LCR LCG

LCW LCX

STM STG

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 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).

*3: Refer to page	2 /5/	tor all	mens	ions (or typ	e witr	i vaiv	es (J	SG-V).																
Code	Rod	l sid	e fla	nge	(FA)	basi	c dir	nens	sions	5																
Bore size (mm)	A	в	ВΑ	вв	вс	BD	BE	BF	BG	вк	с	EE	EF	EC	G F	=	G	J	JA	к	кк	*1 LL	м	мм	MN	мо
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1/4	Rc1/	3 M1	2	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/	3 M1	2 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	8 Rc1/4	4 M1	4 1	2 3	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	8 Rc1/4	4 M1	6 1	4	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	2 Rc3/	3 M1	8 1	5	38	55	51	114	M26×1.5	114(124)	17	30	13	27
Code									Mc	ount	ing d	limen	sions					۱	Nith	swit	ch					
Bore size (mm)	N	Q	R	т	v	WF		* 1 X 216(222) 245(253)		FC	FF		'1 'G	FH	FL	FI	м F	т	0	P 1	10, T5, T2 RD	2, T3, T3P HD	T RI	î	T3W H	
(11111) ø40	4	14	19	8	13	21			46	9	11		(181)	65	83	10		0	66 4	11			7.5(1		7.5(1	
ø40 ø50	4		23.5	-	13	21		. ,	52		-	-	· /	77	o3 100	-		_			5(8)	5(8)	(- /	· ·	
								. ,	_	-	11	-	(207)			-	-				6.5(10.5)	5(9)	9(1	,	7(1	,
ø63	4		21.5		14	23		(267)	62		11		(221)	92	115		-			_	6.5(10.5)	5(9)	9(1	<i>,</i>	7(1	
ø80	4	19	28	13	20	32		(331)	63	-		-	(275)	100	126	-	-	-			2.5(17.5)	6(11)	15(2	,	8(1	,
ø100	4	19	28	16	20	32	341	(351)	75	14	16	285	(295)	120	150	17	8 1	6 1	21 6	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(1	3.5)
Code	Wit	h bel	lows	\$ 														-								
Bore size	_									i			Ĺ				ł	-		_						
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ø40	30	35	40	21		30	4	3	55	5	68	Í	93	118	8	14	43				0.3	5 x stroke-3	32			
ø50	35	42	47	23	;	31	4	4	56	3	69		94	119	9	14	44	1	69			0.35 x stro	oke-41			
ø63	35	42	47	23	;	31	4	4	56	3	69		94	119	9	1	44	1	69			0.35 x stro	oke-41			
ø80	40	50	53	32	2	29	4	2	54	1	67		92	11	7	1	42	1	67	19	92 20)4 217	0.	35 x	stroke	e-63
ø100	40	52.5	5 61	32	2	29	4	2	54	1	67		92	11	7	1	42	1	67	19	92 20)4 217	0.	35 x	stroke	e-63

MecHnd/Chuk ShkAbs FJ FK SpdContr

Ending

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Image: Control of the rubber cushion. FA +t+ Stroke FFL FM FFL FM FRC: 252 FCC: 354 FRC: 352 FRC: 352 <td>¥</td> <td></td> <td>D</td> <td></td> <td>ا ا</td> <td>ALS</td> <td></td> <td></td> <td></td> <td></td> <td><u> </u>'</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+</td> <td></td> <td>표요</td> <td>Ī -</td> <td></td> <td>)-{</td> <td></td> <td>×</td> <td>¥</td> <td></td>	¥		D		ا ا	ALS					<u> </u> '						+		표요	Ī -)-{		×	¥		
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Import of the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Dimensions in () are for the rubber cushion. **: Code Vert defer to page 786 for RD. HD and protruding dimensions of other switches. *: Stafer to page 786 for dimensions of type switches. *: To dimensions of type switches. *: To dimensions of type switches. Stafe to page 786 for dimensions of the switches. *: To dimensions o									4 +{+	Strol	ke															SHC	
Imported in the problem of the problem						-		VVI ±1		Ten 1																	
Rr C Rr C Rr C (With bellows) F + + + Stroke **: Dimensions in () are for the rubber cushin: *: Dimensions in () are for the rubber cushin: : Refer to page 758 for RD, HD and profruing dimensions of other switches. : Strafter to page 757 for dimensions of type with valves (USG-V). For size (mm) A B B A BB BC BD B C BK C E E F F G F G J J A K K K LL M MM MM MO G B 4 4 5 7 4 4 5 9 2 4 6 3 2 5 2 0 4 6 2 7 Rc1/4 Rc1/8 M12 10 5 31.5 4 0 38 6 5 M18*1.5 94(102 5 2 0 8 17 F K). Bore size (mm) N B B B B B B B C B K C R A 7 Rc3/8 Rc1/4 M14 12 13 5 34 5 4 38 6 5 M18*1.5 94(102 5 2 0 8 17 F K). Bore size (mm) N B A B B Z B 2 2 10 8 34 5 7 Rc1/4 Rc1/8 M12 10 5 31.5 4 0 38 6 5 M18*1.5 94(102 5 2 0 8 17 F K). Strafter b page 757 M A 5 B 1 15 88 44.5 2 7 4.6 3 2 Rc3/8 Rc1/4 M14 12 13 5 45 3 3 5 M18*1.5 94(102 5 2 0 8 17 F K). Other to mouthing dimensions With solution dimens										1	-i-"															MFC	
				Ţ	gÎ.		Ħ			ļ			\square														
Image: With bellows FJ + f+ Stroke Image: Stroke of the rubber cushion. Image: Stroke of the rubbe				,	<u> </u>	Ч				¥																	
With bellows FJ +4* Stroke HRL *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 (JSC-V). Head Chuk Hand *3: Refer to page 757 for dimensions of type with valves (JSC-V). Max K K K *1 M									Ľ																		
N Q R T V BF BS BK C EE F C G J JA K KK LL M			[With	bello	ows]	-		FJ +	-ł+ St	roke																
1: Dimensions in () are for the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 756 or far. Jung of the rubber cushion. Chuk Mage 757 for dimensions of the rubber cushion. Solution of the rubber cushion. Code Total solution of the rubber cushion. F Solution of the rubber cushion. F F F F F F F F F F F F <th colspan<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>LN</td></th>	<td></td> <td>LN</td>																										LN
12: Sefer to page 758 for RD, HC and protunding dimensions of other switches. 3: Sefer to page 758 for RD, HC and protunding dimensions of other switches. 3: Sefer to page 758 for RD, HC and protunding dimensions of other switches. 3: Sefer to page 758 for RD, HC and protunding dimensions of other switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of other switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sefer to page 758 for RD, HC and protunding dimensions of the switches. Since 10: Sef	*1: Dimensions ir	ו() a	re for	the ru	bber	cushi	on.																				
Code (mm) Head side (FB) basic dimensions FJ	*2: Refer to page	7581	for RE), HD	and p	protru	ding d				r swit	ches														MecHnd/Chuk	
Bore size (mm) A B BA BB BC BS BF BG BK C EE FK C FK G J JA K KK LL M MM MN MO FK e40 30 22 57 315 46.5 14 63 32.5 20 4.6 27 Rc1/4 Rc1/8 M12 9 27 35 31 52 M14x1.5 84(90) 4 16 6 14 e50 35 27 78 43 59 15 74 39 20 4.6 32 Rc1/4 Rc1/4 M14 12 1.5 43 65 M18x1.5 94(102) 9 20 8 17 e63 35 27 78 84.5 27 4.6 32 Rc3/8 Rc1/4 M14 14 38 45 38 75 M18x1.5 94(102) 9 28 14 14 14 14 14 14 34 95 14 <td></td>																											
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	· · · · · · · · · · · · · · · · · · ·			T		Ì	Ì						Ì								*1					FK	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	N N	A	В	BA	BB	BC	BD	BEBF	BC	G B	(C	E	E EF	EG	F	G	J	JA	к к	K		M	ММ	MN	мо		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	ø40	30	22	57 3	31.5	46.5	14	63 32.5	5 20) 4.6	6 27	Rc	1/4 Rc1/	/8 M12	9	27	35	31 5	2 M14	×1.5	84(90)	4	16	6	14	Ending	
ø80 40 32 98 53 72.5 23 108 54.9 77 4.6 37 Rc3/8 Rc1/4 M16 14 38 45 43 95 M22×1.5 114(124) 11.5 25 11 22 11 22 0100 40 41 118 63 0.5 2.5 125 15.5 3 4.6 37 Rc1/2 Rc3/8 Rc1/4 M16 15 38 55 51 114 M26×1.5 114(124) 11.5 25 11 22 11 22 11 22 11 22 11 22 11 22 11 23 11 11 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 114 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5 11.5	ø50	35	27	68	38	54	15	74 39	20) 4.6	32	Rc	1/4 Rc1/	/8 M12 1	0.5 3	1.5	40	38 6	5 M18	×1.5	94(102)	5	20	8	17		
\$\$\overline{100}\$ \$\$\overline{40}\$ \$\$\overline{100}\$ \$\$\$\overline{100}\$ \$					_		_	_	_	_	-	_							_		. ,						
Code Mounting dimensions With switch Bore size (mm) N Q R T V WF $\frac{*4}{FA}$ FC FD FH $\frac{*4}{FJ}$ FL FM FT O P $\frac{70,75,72,73,73P}{RD}$ T2W,T3W $@40$ 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) $g50$ 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) $@63$ 4 19 28 16 20 32 333(343) 63 12 100 293(303) 126 153 16 104 57 12.5(17.5) 6(11) 15(20) 8(13) 040 W 50												_				-			_			-					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		40	41	118	63	80.5	22.5						1/2 RC3/	8 1118	15	38				×1.5	114(124)	17	30	13	27		
(mm) N Q R I V WF FA FC FD FL FL <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>*1</td> <td>ĭ</td> <td></td> <td></td> <td></td> <td>*1</td> <td></td> <td></td> <td>ľ</td> <td>╢──</td> <td></td> <td>1</td> <td>5 T2 '</td> <td>T3 T3P</td> <td></td> <td>Г2W⁻</td> <td>T3W</td> <td></td> <td></td>			1					*1	ĭ				*1			ľ	╢──		1	5 T2 '	T3 T3P		Г2W ⁻	T3W			
φ40 4 14 19 8 13 21 222(228) 46 9 65 192(198) 83 101 10 66 41 5(8) 7.5(10.5) 7.5(10.5) 7.5(10.5) φ50 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) φ63 4 16.5 21.5 11 14 23 267(275) 62 9 92 232(240) 15 15 15 15 15 15 16 104 57 12.5(17.5) 6(11) 15(20) 8(13) φ80 4 19 28 16 20 32 333(343) 63 12 100 293(303) 150 178 16 121 63 12(17) 6.5(11.5) 14.5(19.5) 8.5(13.5) Code With bell W M M 150 0 0 0 0 0 0	· · · ·	N	Q	R	Т	V	WF			FC	FD	FH		FL	FM	F	ГО	P		i i							
Ø63 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) Ø80 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) Ø100 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 1 100 0ver 100 0ver 150 0ver 100 0ver 100 0ver 300 0ver 400 0ver 500 0ver 750 0ver 750 0ver 800 Ø40 30 35 40 21 30 43		4	14	19	8	13	21			46	9	65		8) 83	101	10	66	41	1								
Ø80 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) Ø100 4 19 28 16 20 32 333(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 Image: State (mm) M	ø50	4	15.5	23.5	11	14	23	253(2	61)	52	9	77	218(22	26) 100	120	12	72	43	6.5(10).5)	5(9)	9(1	3)	7(1	1)		
Ø100 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 (mm) With bellows V Image: Comparison of the stress of	ø63	4	16.5	21.5	11	14	23	267(2	75)	62	9	92	232(24	0) 115	135	12	83	48	6.5(10).5)	5(9)	9(1	3)	7(1	1)		
Code (mm) With bellows A b d Vertsing (mm) Solution (mm) Solutici (mm) Solutici (mm) <th< td=""><td></td><td colspan="2"><complex-block></complex-block></td><td></td></th<>		<complex-block></complex-block>																									
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		<complex-block></complex-block>																									
Bore size (mm) A b d WF 50 or less Over 50 to 100 Over 100 to 150 Over 150 to 200 Over 300 to 300 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	Code	With	n bel	lows	1	1																					
(mm) is <			h	d	WE	-	<u></u>	0./an Ef		400	0	150	0.000 200	0.000 200	1		0	5000		0.00	0010						
Ø40 30 35 40 21 30 43 55 68 93 118 143 Image: Close of the state o	(mm)			–																			Ονε	er 800			
ø50 35 42 47 23 31 44 56 69 94 119 144 169 ••••••••••••••••••••••••••••••••••••	ø40	30	35	40	21		ļ																				
Ø80 40 50 53 32 29 42 54 67 92 117 142 167 192 204 217 0.35 x stroke-63	ø50	35	42	47	23	3	1	44		56	69	9	94	119	14	4	16	9					1				
	ø63	35	42	47	23	3	1	44		56	69	9	94	119	14	4	16	9		(0.35 x stro	oke-41	1				
ø100 40 52.5 61 32 29 42 54 67 92 117 142 167 192 204 217 0.35 x stroke-63						-			-			-									_						
	ø100	40	52.5	61	32	2	9	42	;	54	6	7	92	117	14	2	16	7	192	204				stroke	e-63		

CKD

JSG/JSG-V Series

Double acting/single rod

CAD

Dimensions

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

• Eye bracket (CA)

BK

ВС

BB





*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					21			`).																
Code	Eye	brac	кет	(CA)	bas		men	sion	IS	i —	Ì	i	-1-		<u> </u>					i —	i	+4		Ì	ì	
Bore size (mm)	A	в	BA	BB	вс	BD	BE	BF	BG	вк	C	E	E	EF	EG	F	G	J	JA	к	КК	*1 LL	М	мм	MN	M
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc1	1/4 Ro	c1/8	M12	9	27	35	31	52	M14×1.5	84(90)	4	16	6	1
ø50	35	27	68	38	54	15	74	39	20	4.6	32	Rc1	1/4 Ro	c1/8	M12	10.5	31.5	40	38	65	M18×1.5	94(102)	5	20	8	1
ø63	35	27	78	43	59	15	88	44.5	27	4.6	32	Rc3	3/8 Ro	c1/4	M14	12	31.5	45	38	75	M18×1.5	94(102)	9	20	8	1
ø80	40	32	98	53	72.5	23	108	54.5	27	4.6	37	Rca	3/8 Ro	c1/4	M16	14	38	45	43	95	M22×1.5	114(124)	11.5	25	11	2
ø100	40	41	118	63	80.5	22.5	128.5	65.5	35	4.6	37	Rc1	1/2 Ro	:3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	2
Code	Î						Mc	ount	ing o	dim	ensi	ons						N N	ith s	swite	ch					
Bore size (mm)	N	Q	R	т	v	w	=	*1 FA	(CD	CE	CF	СІ		์1 วิ.	c	ג E	6)	P 1	10, T5, T RD	2, T3, T3P HD	1 R		Т3М	V ID
ø40	4	14	19	8	13	21		6(25)	2)	10	11	9	13	_	(211)	14	1 23	3 6	6 4	1	5(8)	5(8)	7.5(1		7.5(*	
ø50	4		23.5		14	_	_	6(29	<i>'</i>	14	15	12	17	_	(244)	20	_			_	6.5(10.5)	5(9)	9(1		7.0(
	4	-	21.5	-	14			0(30)	-	14	15	12	17		(258)	20					6.5(10.5)	5(9)	9(1	,	7(*	,
ø80	4	19	28	13	20		_	2(39)		22	23	15	26		(329)	30					2.5(17.5)	6(11)	15(2	,	8(1	
ø100	4	19	28	16	20	-		2(41)	/	22	23	15	26		(349)	30			_	33 ·	12(17)	6.5(11.5)		,	8.5(
Code	Wit	h bel		-				_(_/ _						(***)						()		1	, ,		
					Т												ł									-
Bore size (mm)	A	b	d	WF		0 or ess	Ove to 1		Over to 1		Over to 2		Over 20 to 300		ver 300 o 400				r 500 600	Over to 7		r 700 Over 1 750 to 80		Ove	er 80(0
ø40	30	35	40	21		30	4		55		68		93		118		143		000	10 1		5 x stroke-				
ø40 ø50	35	42	40	23	-	31	4	-	56		69		93		119		143	1	69		0.0	0.35 x str		1		_
ø63	35	42	47	23	-	31	4		56	-	69		94	_	119	-	144		59 69			0.35 x str				
	40	50	53	32	-	29	4		54		67		94		117	-	142		59 67	19	2 2	0.33 × 30			stroke	e-F
ø80	40							-	0-		01		52							1 10		21			011010	~ ~

RV3* NHS HRL LN Hand Chuk MecHnd/Chuk ShkAbs FJ FK

> SpdContr Ending

							WO (M					CA 1 Ctr	aka												UFCD
		BA					-	WF	1	3E	BD	CA + Str	оке LL +	Stro	ke			E			0				UB
	-	DA	•				C C	↓ V	· ·			G		0110			GC				К				JSB3 LMB
Ж							T	N	-		Q	2-E	E				Q		OF	8/	PA	_			LML
4	T		right i						ी लग			◩▰				. -			6CD+10r						HCM
BC	•		>								I		<u> </u>				цц.	N			Dh 17	O	1		HCA LBC
· · ·	Ø		O	øJett	ALS	₹			Ð								`	18	Ύ.				×		CAC4
B B		Y	0	ø		<u></u>	$-\frac{1}{2}$		₽	-	·+·-						1	Y	Ĉn						UCAC2
_ <u>+</u>	Ľ							I	<u>ل</u>		┢╧┷] ,	┛╽	14.	le l		P			CAC-N
												<u> </u>	troko							$CW_{+0.1}^{+0.3}$					UCAC-N RCS2
						<u>/ ł</u>	<u>K</u>	•				CJ + S	lioke					•			CV	•			RCC2
								C	A +{+	Stroke															PCC
						7	WF +			ouono															SHC MCP
					-	b		•																	GLC
								_	 	┖╎┛															MFC
RV3*																									
NHS																									
LN Hand																									
*1: Dimensions in () are for the rubber cushion.																									
	*1: Dimensions in () are for the rubber cushion. *2: Refer to page 758 for RD, HD and protruding dimensions of other switches.															MecHnd/Chuk									
									,																ShkAbs FJ
Code	Cle		rack	et ((3B) 1	basic	dimer		ons I	1	1	Ì	1	1	İ	Í	1	1		* 4	1	1	i		FK
Bore size (mm)	A	в	ΒA	ΒВ	вс	BD	BE B	F	BGE	вк с	; EE	E EF	EG	F	G	J	JA	ĸ	кк	*1 LL	м	мм	MN	мо	SpdContr
	30	22	57	31.5	46.5	5 14	63 32	5	20 4	.6 2	7 Rc1	/4 Rc1/8	3 M12	9	27	35	31	52	M14×1.5		4	16	6	14	Ending
ø50	35	27	68	38	54		74 3			.6 3	_	_	3 M12			_	-	65	M18×1.5		5	20	8	17	
ø63	35	27	78	43	59	-		_		.6 3	-	_	4 M14	-	_	-	-	75		. ,	9	20	8	17	
ø80	40	32	98	53	72.5	-	108 54	_		.6 3	_	/8 Rc1/4	-	-	-	_	-	95	M22×1.5	. ,	_		11	22	
ø100	40	41	118	63	80.5	5 22.5	128.5 65	5.5	35 4	.6 3	7 Rc1	/2 Rc3/8	3 M18	15	38	-	-	114	M26×1.5	. ,		30	13	27	
Code							Mounti										With			, , ,	_				
Bore size			_	_ [*1	Ť				*1						11		2, T3, T3P	l 1	Γ2W,	T3W	1	
(mm)	Ν	Q	R	Т	V	WF	СА	C	DCI	ECF	CI	CJ	cv	cw	E	PA	0	P	RD	HD	R	D	H	D	
ø40	4	14	19	8	13	21	246(252) 1	0 11	9	13 2	205(211)	28	14	23	44	66	41	5(8)	5(8)	7.5(1	0.5)	7.5(1	0.5)	
ø50	4	15.5	23.5	11	14	23 2	286(294) 1	4 15	5 12	17 2	236(244)	40	20	30	60	72	43 6	6.5(10.5)	5(9)	9(1		7(1		
ø63	4	16.5	21.5	11	14	23 3	300(308)) 1	4 15	5 12	17 2	250(258)	40	20	30	60	83		6.5(10.5)	5(9)	9(1	3)	7(1		
ø80	4			13	20		382(392)		22 23			319(329)		30	42	82			2.5(17.5)	6(11)	15(2		8(1		
ø100	4		_	-	20	32 4	402(412) 2	22 23	_		339(349)		30	42	82			12(17)	6.5(11.5)		,		,	
Code	Wit	h bel	lows	5		!		<u> </u>				. ,				<u>. </u>						,		ý	
/			1	Î											ł										
Bore size	Α	b	d	w	F	50 or	Over t	50 C	Over 10	0 Ove	r 150 Q	ver 200	Over 3	000	ver 40	00 Ov	er <u>500</u>	Over	600 Over	r 700 Over :	750				
(mm)						less	to 10		to 150			to 300	to 400		to 500		o 600	to 7				Ove	er 800)	
ø40	30	35	40	2	1	30	43		55	6	8	93	118		143				0.3	5 x stroke-	32				
ø50	35	42	47	23	3	31	44		56	6	69	94	119		144		169			0.35 x str	oke-41	1			
ø63	35	42	47	2:	3	31	44		56	6	69	94	119		144		169			0.35 x str	oke-41	1			
ø80	40	50	53	32	2	29	42		54	6	67	92	117		142		167	19	92 20	04 217	7 0	.35 x	stroke	e-63	
ø100	40	52.5	61	32	2	29	42		54	6	67	92	117	T	142		167	19	92 20	04 217	7 0	.35 x	stroke	e-63	
												· ·				,				(CK	D)	7	753

Clevis bracket (CB)

CAD Dimensions

Manual release port EG

۵

ш

MN

(Width across flats)

BF BG

Brake release port EF

30

HD

0

R

Ð

CI

щ

30

RD

O,

R

0

JSG/JSG-V Series

Double acting/single rod

LCM LCR

LCG

LCW LCX

STM STG

STS/STL STR2

UCA2 ULK*

JSK/M2

JSG

JSC3/JSC4 USSD UFCD

CAD

Dimensions

LCM

LCR LCG

LCW

LCX

STM STG STS/STL

STR2

UCA2

ULK*

JSK/M2 JSG

USSD

UFCD USC

JSB3

LMB

LML

HCM

HCA

LBC

CAC4

UB





*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).

5. Relei to paye	e 131		nens		n type		vaive	55 (30	5G-v).																					
Code	Roc	l side	e tru	nnio	n (T/	A) ba	isic d	lime	ensio	ons																					
Bore size (mm)	^	в	ВΑ	вв	вс	BD	BE	BF	BG	вк	с	E	E	EF	EG	F	G	J	JA	к	кк	*1 LL	м	мм	MN	мс					
ø40	30	22	57	31.5	46.5	14	63	32.5	20	4.6	27	Rc	1/4 R	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	Rc	1/4 R	c1/8	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 4	44.5	27	4.6	32	Rc	3/8 R	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	Rc	3/8 R	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	Rc	1/2 R	Rc3/8	M18	15	38	55	51	114	M26×1.5	114(124)	17	30	13	27					
Code										Mou	ntin	g diı	nens	sions	5			V	/ith s	swite	ch 🛛										
Bore size (mm)	N	Q	R	Т	v	WF	=	*1 X	-	тс	TD	ΤЕ	TF		*1 ГG	Т	и т	ı :	3	P T	0, T5, T2 H	, T3, T3P	T	2W, H		/					
ø40	4	14	19	8	13	21	216	^ 6(22)	2)	57	16	22	137		(55)	63	3 95	1	3 4	1	5(7.5(1							
ø 1 0	4		23.5		14	23	-	5(25)	<u> </u>	67	16	22			62.5				-	3	5(,		7.3(1	,						
ø63	4		21.5		14	-	_	9(26)	-	82	20	28			6(59.5		-		-	18	5(,		7(1	,	_					
ø80	4	10.0	28	13	20	32	_	1(33	-	100	20	34	219		2(72)	110			-	57	6(1	,		8(1	,						
ø100	4	19	28	16	20	-		1(35	-	121	25	40	242		(69)	13		2 60	_	33	6.5(1	,		8.5(1	,						
Code	Wit	h bel						.(]					(00)																
																	ł														
Bore size (mm)		b	d	w) or ess	Over to 1		Over to 1		Over to 2		Over 2 to 30		ver 30 to 400				r 500 600	Over to 7		700 Over 7		Ove	er 80(0					
ø40	30	35	40	21		30	43	3	5	5	68	3	93		118		143				0.3	5 x stroke-3	32								
ø50	35	42	47		_	31	44	-	5	-	69	-	94		119	-	144	1	69			0.35 x str									
ø63	35	42	47	23		31	44	4	5	6	69	9	94		119		144	1	69			0.35 x str	oke-4								
ø80	40	50	53	32		29	42	2	54	4	67	7	92		117		142	1	67	19	2 20	4 217	′ 0	35 x	stroke	e-63					
ø100	40	52.5	61	32		29	42	_	54	4	67	-	92		117		142	1 .	67	19	0	204 217 0.35									

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

-		- (Man	ual re	elease	e port	EG	BF	BG	/	Bral	ke release	e port El	=	÷										LCW LCX STM STG
				F B	E •						R		+				Σ	S							STG STS/STL STR2 UCA2 ULK* JSK/M2 JSG JSC3/JSC4 USSD
BB BC BK			<u>-</u>		MMg -			-				2-EE	L + Stro	oke		G Q TK							øTDe6	TC	UFCD USC UB JSB3 LMB LML HCM HCA LBC CAC4 UCAC2 CAC-N UCAC-N UCAC-N RCS2 RCC2
	[W	/ith be	ellows			WF -		+{+ St																	PCC SHC MCP GLC MFC BBS RRC GRC RV3* NHS HRL LN
*1: Dimensions ir *2: Refer to page *3: Refer to page	758 f	for RD), HD ;	and p	orotru	ding d				swite	ches.														Hand Chuk MecHnd/Chuk ShkAbs
Code Bore size	Hea	d sid	le tru	nnio I	on (Ti	B) ba	sic dir	nens I	ions		1	- i		ĺ						*1	1	1			FJ FK
(mm) \	Α		BA				BE BF				E				G		AK			LL		ММ			SpdContr Ending
ø40 ø50	30 35	22 27		-			53 32.5 74 39	5 20 20	4.6	27 32		1/4 Rc1/8		9 2 0.5 3			31 52 38 65	2 M14×1 5 M18×1		84(90) 94(102)	4	16 20	6 8	14 17	 I
	35	27					4 05 38 44.5	-	4.6	32	1		+ +			_	8 7			94(102)	9	20	8	17	1
ø80	40	32					08 54.5		4.6	37	-	3/8 Rc1/4					3 9	_		14(124)	11.5		11	22	1
ø100	40	41	118	63 8	80.5 2	22.5 12	28.5 65.5	5 35	4.6	37	Rc1	1/2 Rc3/8	3 M18	15 3	38	55 5	51 11	4 M26×	1.5 1	14(124)	17	30	13	27	1
Code								<u> </u>	Moui	nting	g dir	nension	IS			Wit	h swi	tch							1
Bore size (mm)	N	Q	R	т		WF	*1 X		тс		ТΕ	*1 TJ		тм			Р	T0, T5,	RD	3, T3P	1	2W, RI	D	1	
ø40	4	14	19	8	13	21	216(22			16	22	143(149		63	95		41	-	5(8)	- \		7.5(1			
ø50	4		23.5	11	14	23	245(25		_	16	22	162.5(170. 173.5(181.			107	7 36 0 41.5	43		5(10.5			9(1			1
ø63 ø80	4	16.5 19	21.5	11 13	14 20	23 32	259(26 321(33			20 20	28 34	221(231	- <u>-</u>	90 110	130	_	48 57		5(10.5 .5(17.			9(1 15(2			
ø80 ø100	4	19	28	16	20	32	341(3		_	20 25	40	238(248		132		2 60.5			2(17)	-		14.5(1
Code		n bell						/	·	-			<u> </u>						(···)				/		1
Bore size (mm)	A	b	d	WF	50	or	Over 50	Over	100	Over	150 0	Over 200	Over 300	} Over	- 1	Over 5	600 Ov				50	0.46	er 80()	ĺ
					le	ss	to 100	to 1	50	to 2	00	to 300	to 400	to 5	600	to 60	0 to	700 1	o 750	to 800)		-000		1
ø40	30	35	40	21		30	43	5		68	_	93	118	14			1	C		stroke-3					
ø50	35	42	47	23	-	31	44	5		69	_	94	119	14	-	169	_			35 x stro					1
ø63	35	42	47	23	-	31	44	5	_	69		94	119	14	_	169		102		35 x stro			otral		
ø80 ø100	40 40	50 52.5	53 61	32 32	-	29 29	42 42	5	-	67 67		92 92	117 117	14 14		167 167	_	192 192	204 204	217		.35 x : .35 x :			1
		102.0				~	12	1 0	<u>· </u>	51		~-		1 1-1	-	.07			T						- 755

CAD

Dimensions

• Head side trunnion (TB)

JSG/JSG-V Series

Double acting/single rod

CAD Dimensions

LCM

LCR LCG

LCW

I CX

STM STG

STR2

UCA2

ULK*

JSG

USC

JSB3

LMB

LML

HCM

HCA LBC

RCS2

RCC2 PCC

SHC

MCP

GLC MFC

BBS

RRC GRC RV3 NHS

HRL LN

Ending

UB

Intermediate trunnion (TC)













*1

LL

84(90)

94(102)

94(102)

114(124)

114(124)

HD

5(8)

5(9)

T0,T5,T2,T3,T3P

Μ ΜМ MN MO

4 16 6 14

5 20 8 17

9

11.5 25 11 22

17 30 13 27

RD

9(13)

20

8

T2W,T3W

7.5(10.5) 7.5(10.5)

HD

7(11)

17

KK

M14×15

M18×1.5

M18×1.5

M22×1.5

RD

5(8)

43 6.5(10.5)

114 M26×1.5

With switch

0 Ρ

72

66 41

Hand Chuk MecHnd/Chuk ShkAbs FJ Code FK Bore size SpdContr

(mm)

ø40

ø50

ø63

ø80

ø100

Bore size

(mm)

ø40

ø50

Code

С

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

315 465

63 80.5

14 23 14 63 32 5 20 46 27 Rc1/4

22.5 128.5

*1

X

216(222)

245(253)

65 5 35 4.6 37

тс TD

57

67 16 22 75

Mounting dimensions

TE

16 22

ТΜ

63 95

TN

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

*1: Dimensions in () are for the rubber cushion. ntermediate trunnion (TC) basic dimensions

> Α В BA BB BC BD ΒE BF BG ΒK С

30 22 57

35 27 68 38 54 15 74 39 20 4.6 32 Rc1/4

35 27 78 43 59 15 88 44.5 27 4.6 32 Rc3/8

40 32 98 53 72.5 23 108 54.5 27 4.6 37 Rc3/8

40

Ν Q R Т v WF

4 14 19 8 13 21

4

41 118

15.5 23.5 11



CKD

ø63	4	16.5	21.5	11	14	23	259(267)	82	20	28	90 13	0 173(177) 51(55)	47(51)+ -	2	83	48 6	5.5(10.5)	5(9)	9(13)	7(11)						
ø80	4	19	28	13	20	32	321(331)	100	20	34	110 15	0 220(225) 61(66)	51(62)+-	Stroke 2	104	57 1	2.5(17.5)	6(11)	15(20)	8(13)						
ø100	4	19	28	16	20	32	341(351)	121	25	40	132 18	2 240(245) 61(66)	51(62)+ -	Stroke 2	121	63	12(17)	6.5(11.5)	14.5(19.5)	8.5(13.5)						
Code	Wi	th b	ello	ws																							
D														ł													
Bore size (mm)	A	•	5	d	WF	50 les			Over ' to 1		Over 15 to 200	0 Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 5 to 60		ver 60 to 700			i Ove	er 800						
ø40	30	3	5	40	21	30	0 43		55		68	93	118	143				0.35 x	stroke-32	2							
ø50	35	4	2	47	23	3′	1 44		56		69	94	119	144	169			0	.35 x strol	ke-41							
ø63	35	4	2	47	23	3′	1 44		56		69	94	119	144	169		0.35 x stroke-41										
ø80	40	5	0	53	32	29	9 42		54		67	92	117	142	167		192	204	217	0.35 x	stroke-63						
ø100	40	52	2.5	61	32	29	9 42	:	54		67	92	117	142	167		192	204	217	0.35 x	stroke-63						

EE

EF EG F G J JA Κ

Rc1/8 M12 10.5 31.5 40 38 65

Rc1/4 M14 12 31.5 45 38 75

Rc1/4 M16 14 38 45 43 95

Rc1/2 Rc3/8 M18

*1

TY

Rc1/8 M12

9 27 35 31 52

15 38 55 51

*1

AQ

*1

ΤZ

107 159(163) 51(55) 47(51)+ <u>Stroke</u>

140(143) 46(49) 42(45)+ Stroke

Double acting/single rod

Dimensions

● JSG-V (with valve for brake release)

CAD









*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.

	With valve for brake release (JSG-V) basic dimensions																		
Code	With	valve	e for l	orake	relea	ase (J	SG-V) basi	ic din	nensi	ons								
Bore size	ВG	EG	F	н	F	EI	VA	νв	vc	VD	VE	VF	VG	νн	VI	VJ	vк	νм	VN
(mm) \				••			•		••			•		•••		••			
ø40	32.5	M12	Rc	1/8	Rc	:1/8	26	62.5	72	24	83.5	19	38	30	12.5	44	16	4	16
ø50	39	M12	Rc	1/8	Rc	:1/8	26	62.5	79.5	24	83.5	19	38	30	12.5	44	16	4	16
ø63	44.5	M14	Rc	1/4	Rc	Rc1/4 30 Rc1/4 30		71.5	84.5	25	82.5	17	39	30	16	53	25	9	21
ø80	54.5	M16	Rc	1/4	Rc	:1/4	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	14/346					35 77.5 113 21 86.5													
Coue	vviun	bello	ws																
Bore size			-							l									
	A	bello	d d	WF	50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 750					
Bore size			-	WF					Over 200	Over 300									
Bore size (mm)	Α	b	d		less	to 100	to 150	to 200	Over 200 to 300	- Over 300 to 400	to 500		to 700	to 750					
Bore size (mm) ø40	A 30	b 35	d 40	21	less 30	to 100 43	to 150 55	to 200 68	Over 200 to 300 93	Over 300 to 400 118	to 500 143	to 600 -	to 700 -	to 750 –					
Bore size (mm) ø40 ø50	A 30 35	b 35 42	d 40 47	21 23	less 30 31	to 100 43 44	to 150 55 56	to 200 68 69	Over 200 to 300 93 94	Over 300 to 400 118 119	to 500 143 144	to 600 - 169	to 700 _ _	to 750 - -					

* 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

CKD





CAD



Code	With T2Y, T	3Y, T2J, T8 s	witches			
Bore size	•	D	T2Y, T3	3Y, T2J	Т	8
(mm) \	0	Р	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)

 $^{\ast}\mbox{1:}$ Dimensions in () are for the rubber cushion.

• With T1, T2YD, T2YDT-switches





Code	With T1, T2	YD, T2YDT	-switches	
Bore size (mm)	о	Р	RD	HD
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.

Accessory dimensions

LCM LCR

LCG

LCW

LCX STM STG STS/STI

STR2

UCA2

ULK* JSK/M2 JSG JSC3/JSC4 USSD UFCD

USC

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

UB JSB3



Material: Steel

Painting

Rod eye (I)

KK KK





Rod clevis (Y)



Material: Cast iron

Painting

Model No.	Bore size (mm)	АВ	СА	CD	cv	cw	D	E	кк	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.

Clevis bracket (B2)

Material: Cast iron Painting

MecHnd/Chuk ShkAbs FJ FK SpdContr Ending





Model No.	Bore size (mm)	с	CD	CF	CI	cv	cw	D	F	G	к	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 a	and a	a plai	n wa	sher	are	atta	ched					

Eye bracket (B1)

Model No.

SCG-I-40

SCG-I-50

SCG-I-80

SCG-I-100

Bore size

(mm)

40

50,63

80

100

aa|ca|cd|cw| d

19 40 10 14 22

24 50 14 20 28

26 60 22 30 40

26 60 22 30 40

Material: Cast iron Painting

□K

Wt

0.20

23.5 0.52

34 23.5 0.48



	□SD	
	CQ -0.1	
4-C	זיייייייייייייייייייייייייייייייייי	
		\bigcirc
4-D		

KK

M14×1.5

M18×1.5

M22×1.5

M26×1.5

50 19 12.5 0.07

64 24 16.5

80 34

80

Model No.	Bore size (mm)	с	CD	CF	СІ	cQ	D	F	G	к	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

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



Accessory dimensions • Eye bracket (B3)

LCM

LCR LCG

LCW

LCX STM STG

UCAC2

CAC-N UCAC-N RCS2 RCC2 PCC SHC MCP GLC MFC BBS RRC GRC

RV3 NHS HRL LN

MecHnd/Chuk ShkAbs FJ FK SpdContr Ending

CAD

Material: Cast iron Painting

Trunnion No. 2 bracket (B4)

Material: Cast iron Painting







Model No.	Bore size (mm)	с	CD	CF	cq	D	F	G	к	KA	КВ	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

Model No.	Bore size (mm)	GВ	GC	GD	GE	GR	GH	GK	GL	GТ	GV	тD	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.

Pin (P) Hand Chuk

Material: Steel Zinc chromate treatment



Model No.	Applicable bore size (mm)	A	в	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.

Technical data



СКД



Pneumatic components

Safety Precautions

Be sure to read this section before use.

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

Product-specific cautions: Tie rod with brake JSG Series

Design/selection

A WARNING

- Design a structure that prevents person(s) from coming into contact with the driven workpiece as well as the moving parts of the cylinder with brakes.
 Provide a protective cover so that no one can directly touch the unit. In case of possible contact, provide safety measures such as a sensor for emergency stop before making contact and a buzzer to warn of danger.
- Use a balanced circuit that accommodates the protrusion of the piston rod.

If the cylinder is stopped part-way in the stroke with the brake, etc., and air pressure is applied to one side of the cylinder, the piston rod will pop out at high speeds when the brake is released. This could cause physical harm, such as pinched hands or feet, or mechanical damage. Use a balance circuit, such as the basic circuit, to prevent popping out.

- The holding force is the ability to hold static load that is not accompanied by vibration or shock, in a state where the brake is operating under no load. Take care when constantly using near the upper limit of the holding force.
- Do not apply loads with impact, strong vibration, or torque while brakes are activated.

If load is externally applied with impact, or if strong vibration or rotational force is externally applied, the holding force can be reduced, creating a dangerous situation.

Consider the stopping accuracy and overrun distance during braking.

Because a mechanical lock is applied, the cylinder does not stop instantly when the stop signal is issued, but stops with a time-wise delay. The stroke at which the cylinder slides due to this delay is the overrun distance. The max. and min. width of the overrun distance is the stopping accuracy.

- To achieve the required stop position, move the limit switch forward by the overrun distance.
- The limit switch must have a detection length (dog length) of the overrun distance + α.
- The operating range of CKD cylinder switches is 7 to 16mm (differs depending on the switch model). If overrun distance exceeds this, provide self-holding of the contact at the switch load.
- Do not use multiple synchronized cylinders with brakes. If the synchronization deviates, load is concentrated on the cylinder where the brake was applied first, risking shortened service life or damage.

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

Use a high response DC control electricity circuit or valve, and set the valve as close to the cylinder as possible.

The stopping accuracy is susceptible to fluctuations in piston speed. If the piston speed changes due to load fluctuations or by some disturbance while the cylinder is moving, the stopping position may vary sharply. Make sure that the piston speed stays the same up to just before the stop position. Since the speed changes significantly in the cushioned range and in the acceleration range after starting operation, the variability of the stopping position will increase. The stopping accuracy with a piston speed of 300mm/s with no load is ±1.0mm (reference value). This value differs based on the device used. For more information, refer to the page on stopping accuracy and overrun.

WARNING

Basic circuit

Always adopt the following circuit even for position locking and emergency stop applications. A 2-position valve cannot be used because it affects the brake section even when the cylinder thrust is stopped. Maintain thrust and load balance with the following circuit. Brakes may not be released when load is applied to brakes. Horizontal load

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





a so	L-1 (b)	SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Reverse
OFF	ON	ON	Forward

LCR LCG LCW I CX STM STG STR2 UCA2 ULK* JSK/M2 JSG JSC3/JSC4 USSD UFCD USC UB JSB3 LMB I MI 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

LCM

Product-specific cautions

Design/selection

For downward vertical load

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

Fig. 2



a so	L-1(b)	SOL-2	Operational status
OFF	OFF	OFF	Stop
ON	OFF	ON	Drop
OFF	ON	ON	Rise

For upward vertical load

Fig. 3

If load faces upward as shown in Fig. 3, the rod malfunctions in the load direction when brakes are released. Place a regulator with a check valve on the rod side to reduce thrust in the load direction and balance the load.



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

Mount a speed controller on the cylinder. Mount the speed controller on the cylinder. Use within the working piston speed range of each series.

Stopping accuracy

Stopping pitch and load factor

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

*Stopping accuracy reference value: ± 1.0 (300 mm/s, no load)

Stop pitch	Load factor
Stop pitch	JSG
50 mm or less	20% of thrust
50 mm to 100 mm	40% of thrust
100 mm or more	60% of thrust

Selection of valve for brake

The stopping accuracy and overrun distance will change according to the responsiveness of the brake valve. Refer to the JSG-V electrical specification for brake valve and select from the CKD pneumatic valve 4KB2 Series. Connect the valve directly to the brake port to improve stopping accuracy.

When using a PLC (programmable controller) If a PLC (programmable controller) is used as the electrical control unit for the valve for brake, stopping accuracy drops due to scan time (computing time). When using a PLC, do not assemble the valve for brake into the PLC circuit.

Do not make major changes in applied load when stopped with brakes, or the stopping position may change.

CAUTION

LCM

LCR

LCG LCW

I CX

STM

STG

STR2

UCA2

ULK*

JSK/M2

JSG

JSC3/JSC4

USSD

UFCD

USC

JSB3

LMB

I MI

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

UB

As a cushion mechanism integrated in the cylinder, the rubber cushion and the air cushion are available. The purpose of the air cushion is to absorb the piston's kinetic energy by using air compressibility, avoiding collisions of piston and cover at the stroke end. Thus, the cushion is not used to decelerate the piston speed (deceleration action) near the stroke end. The following table shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds these values, or if bouncing caused by the air compressibility is to be avoided, consider using another shock absorber.

Doro oizo	Rubber cushion	Air cushion			
Bore size	Allowable	Effective air cushion	Allowable		
(mm)	absorbed energy J	length (mm)	absorbed energy J		
ø40	0.9	8.6	3.7		
ø50	1.6	13.4	8.0		
ø63	1.6	13.4	14.4		
ø80	3.3	15.4	25.4		
ø100	5.8	15.4	45.6		

Kinetic energy (J) =

 $\frac{1}{2}$ × Weight (kg) × {Speed (m/s)}²

(Note) Calculating kinetic energy

Average cylinder speed is obtained with Va = $\frac{L}{T}$.

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

With respect to this, the cylinder speed just before rushing into the cushion can be obtained with the following simple formula.

$$Vm = \frac{1}{T} \times (1+1.5 \times \frac{1}{100})$$

Vm: Speed just before rush-into the cushion (m/s)

 ω : Cylinder load factor (%)

Use this Vm value as speed to calculate kinetic energy.

Mounting, installation and adjustment

WARNING

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

How to manually release the brake



Note: How to release the brake

 The brakes are released by screwing the release bolt into the female threads (brake release port) on the top of the brakes. (Always remove the release bolt during normal use.)

Release bolt size

Bore size	Bolt screw	Bolt I	ength	Appropriate
Dore Size	diameter	JSG	JSG-V	screw-in volume
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

- Brakes are released manually or by pressurizing the brake release port. When mounting the load, the brake release operation may cause the load to fall; make sure to check that the brake is operational when the manual release operation is set to default or when there is no air in the brake release port.
- Do not apply torque to the rod when braking, as the holding force will decrease, creating hazardous conditions. Also, use this product in mechanisms in which the rod does not rotate.
- Do not apply to the cylinder any force that exceeds the brake holding force listed in the catalog.

Product-specific cautions

Mounting, installation and adjustment

WARNING

With the JSG Series, the brakes can be manually released by screwing a hexagon socket head cap bolt into the brake release female thread on the top of the brakes. However, the brakes may be damaged if the bolt is screwed in too far; use the appropriate screw insertion depth for the release bolt shown in the table below.

Bore size	Suitable screw-in volume
ø40	3 rotations or less
ø50	4 rotations or less
ø63	4 rotations or less
ø80	4.5 rotations or less
ø100	5 rotations or less

- If there is any play, such as looseness, in the brake signal dog, stopping accuracy is affected. Securely fix to eliminate play, etc.
- If the piston speed is fast, the detection dog must be long enough to match relay response time. If the dog is short, the stop signal is not output and operation does not stop.

- Adjust the air balance in the cylinder. With brakes released, place a load on the cylinder and balance the load by adjusting pneumatic pressure applied to the cylinder rod side and head side. Malfunctions such as piston popping out during brake release or abnormal brake release can be prevented by accurately balancing the load.
- Adjust the installation position of the detector parts, including the cylinder switch.
 When braking, consider the overrun distance vis-a-vis the desired stop position and adjust the installation positions for detector parts, including the cylinder switch.

- Load fluctuations during the reciprocating stroke of the cylinder can cause inconsistent piston speed, leading to greater variation in the stop position. Adjust the mounting of the load so as to prevent any load fluctuations during the reciprocating stroke of the cylinder, especially before the stop position.
- Since the speed changes significantly in the cushioned range and in the acceleration range after starting operation, the variability of the stopping position will increase. For this reason, the accuracy described in the specifications may not be obtained when a step just after start of the operation has a short stroke to the next point.
- Load to piston rod Limit load movement using guides so play and torsion do not occur.
- Maintaining the rod sliding parts Protect the piston rod sliding surface from scratches and dents. Such scratches and dents can cause damage to packings, resulting in leakage and/or brake failure.
- Fixing the switch

For screw fixing when using T2, T3, T0, or T5, use a flathead screwdriver (clockwork screwdriver, precision screwdriver, etc.) with a grip diameter of 5 to 6 mm, a 2.4 mm or smaller tip, and a thickness of 0.3 mm or less to tighten the screws with a tightening torque of 0.1 to 0.2 N·m. When using T2J, T2Y, or T3Y, tighten the screw with a tightening torque of 0.5 to 0.7 N·m.

Use/maintenance

WARNING

- The brake section can be removed from the cylinder body. Do not disassemble or inspect brakes, or a hazardous situation may occur when brakes are used again.
- The required grease is applied to brakes. Avoid applying extra grease and do not wipe grease off.
- The required grease is applied when brakes are replaced, so there is no need to apply grease to rods.
- Always use the product with the dust cover on, except for when performing manual release, in order to prevent failure or malfunction.

CAUTION

- Air supply pipes that are too narrow or too long can reduce stopping accuracy.
- Frictional resistance increases and causes the piston speed to change when the cylinder has been stopped for a long time, such as when using first thing in the morning or afternoon. This may impair stopping accuracy. Conduct conditioning operations to obtain a stable stopping accuracy.