

FJ

Free Joint

Related Equipment



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Related Equipment

SKL

NCK

SCK

FCK

FJ

FK

Cylinder Switch

Ending

Related Equipment

SKL

NCK

SCK

FCK

FJ

FK

Cylinder Switch

Ending

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

Variation	Model No.	Thread size								Thread size										Page	
		M3×0.5	M4×0.7	M5×0.8	M6×1.0	M8×1.0	M8×1.25	M10×1.25		M12×1.25	M12×1.5	M14×1.5	M16×1.5	M18×1.5	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M40×1.5		M45×1.5
Basic type	FJ-0	●	●	●	●	●	●	●		◎	●	●	●	●	●	●	●	○	○	○	1442
Foot type	FJ-L	■	■	■	■	●	●	●		◎	●	●	●	●	●	●	●	○	○	○	1442
Flange Type	FJ-F	■	■	■	■	●	●	●		◎	●	●	●	●	●	●	●	○	○	○	1442

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Free Joint FJ Series

● Compatible cylinder diameter: $\phi 20$ to $\phi 200$



Model Number Notation



Model No. ① Mounting ② Nominal Thread Diameter×Pitch

① Mounting

Code	Content
0	Basic type
L	Foot type
F	Flange Type

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

FJ- - P4*

* Please contact us for details.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

FJ- - FP1

② Nominal Thread Diameter×Pitch

Code	Content	Mounting		
		O	L	F
3	M3×0.5	●		
4	M4×0.7	●		
5	M5×0.8	●		
6	M6×1.0	●		
8	M8×1.0	●	●	●
8-1.25	M8×1.25	●	●	●
10	M10×1.25	●	●	●
12-1.25	M12×1.25	●	●	●
12	M12×1.5	●	●	●
14	M14×1.5	●	●	●
16	M16×1.5	●	●	●
18	M18×1.5	●	●	●
22	M22×1.5	●	●	●
26	M26×1.5	●	●	●
30	M30×1.5	●	●	●
36	M36×1.5	●	●	●
40	M40×1.5	●	●	●
45	M45×1.5	●	●	●

Specifications

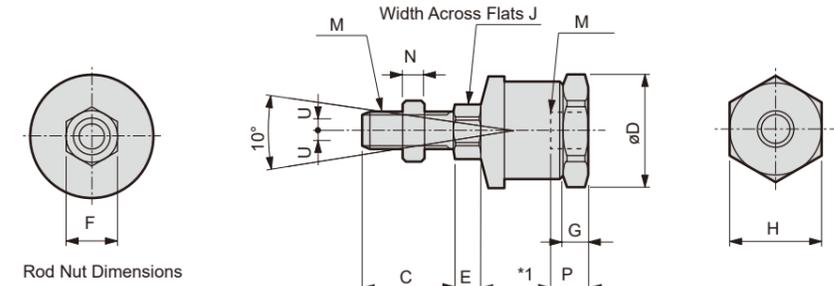
Item Model No.	Nominal Thread Diameter×Pitch	Max Operating Tensile/Compressive Force (kN) *1			Allowable Misalignment (mm)	Oscillation Angle	Ambient Temperature
		Basic type	Flange Type	Foot type			
FJ-□- 3	M3×0.5	0.019	—	—	0.5	±5°	-10 to 60°C (provided there is no freezing)
4	M4×0.7	0.053	—	—	0.5		
5	M5×0.8	0.121	—	—	0.5		
6	M6×1.0	1.08	—	—	0.75		
8	M8×1.0	1.08	1.08	1.08	0.75		
8-1.25	M8×1.25	1.08	1.08	1.08	0.75		
10	M10×1.25	2.45	2.45	2.45	0.75		
12-1.25	M12×1.25	2.45	2.45	2.45	0.75		
12	M12×1.5	2.45	2.45	2.45	0.75		
14	M14×1.5	5.88	5.88	5.88	1.0		
16	M16×1.5	10.8	10.8	10.8	1.5		
18	M18×1.5	10.8	10.8	10.8	1.5		
22	M22×1.5	17.6	17.6	17.6	2.0		
26	M26×1.5	27.5	27.5	27.5	3.0		
30	M30×1.5	60.8	60.8	60.8	3.0		
36	M36×1.5	87.3	87.3	87.3	4.0		
40	M40×1.5	87.3	87.3	87.3	4.0		
45	M45×1.5	108	108	108	4.0		

*1: Max operating tensile/compressive force indicates static load.

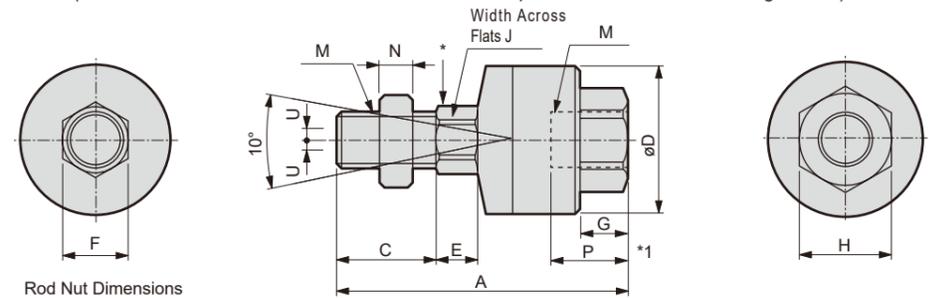
*2: FJ-8-1.25 and FJ-12-1.25 are optional items. FJ-36, 40, 45 are custom products.

External Dimensions: Basic type

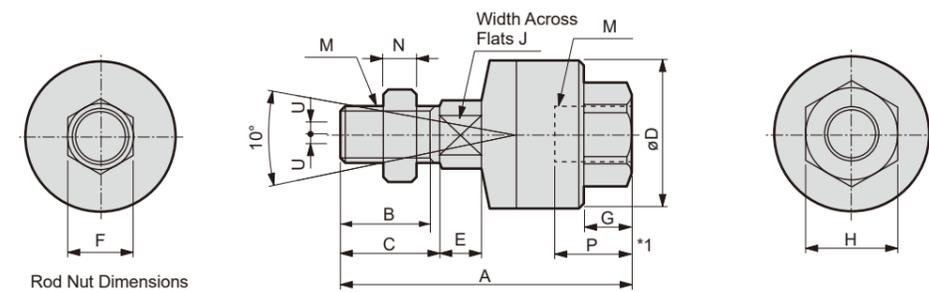
● FJ-0-3 to 5



● FJ-0-6, 8, 10, 36 to 45 (Dust cover is not included with FJ-36 to 45. The * part of FJ36 to 45 is a Hexagon Nut.)



● FJ-0-12 to 30 (Dust cover is not included with FJ-30)

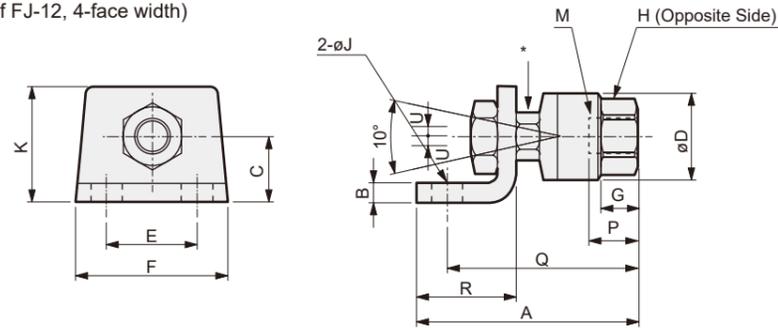


*1: For FJ-□-3 to 5, strictly observe the screw-in dimension (P).

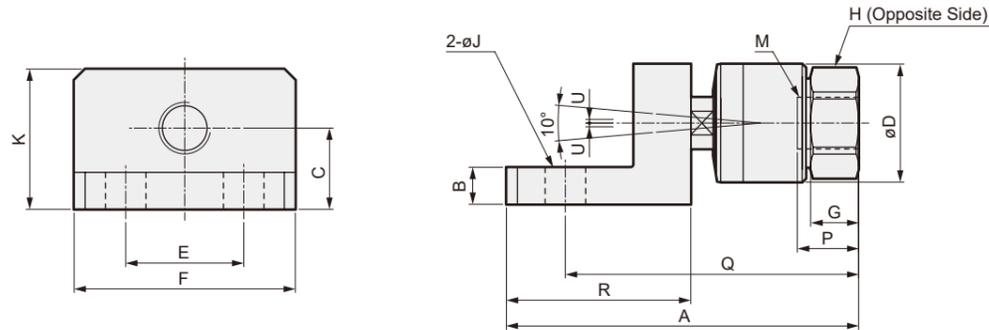
Model No.	Main Applicable Cylinders	M		A	B	C	D	E	F	G	H	J	N	P *1	Allowable Misalignment U	Max Operating Tensile Compressive Force kN	Weight (kg)
		Nominal Diameter	Pitch														
FJ-O- 3	SCPD3-6 / SMG-6	3	0.5	23	—	8.3	12	2.5	5.5	2.5	11	5.5	1.8	4	0.5	0.019	0.012
4	SCPD3-10 / SMG-10	4	0.7	26	—	10	12	3.5	7	2.5	11	5.5	2.4	3.7	0.5	0.053	0.012
5	SCPD3-16 / SSD / SSD2-12-N / SMG-16	5	0.8	31.6	—	12	15.5	4	8	3.5	14	7	3.2	5.2	0.5	0.121	0.022
6	SSD / SSD2-16-N / SMG-20	6	1.0	45.4	—	15.8	21	4	10	9	17	10	3.6	12	0.75	1.08	0.057
8	CMA2 / CMK2 / CKV2-20 / JSK2 / JSM2-20	8	1.0	48.4	—	18.8	21	4	13	9	17	10	5	12	0.75	1.08	0.061
8-1.25	SMG-25 / SSD / SSD2-20-N / SCM-20	8	1.25	48.4	—	18.8	21	4	13	9	17	10	5	12	0.75	1.08	0.061
10	CMA2-30 / SMG-32 / CMK2 / SCG / CKV2-25, 32 / FCD-25-N / SSD / SSD2-25-N / SCM-25, 32 / JSK2-25, 32 / JSM2-30	10	1.25	56.2	—	22	24	7	17	10	19	12	6	12	0.75	2.45	0.092
12	CMA2 / CMK2 / CKV2-40 / JSK2 / JSM2-40	12	1.5	58	20.5	23	27	6	19	10	21	12	7	11.8	0.75	2.45	0.12
12-1.25	—	12	1.25	58	20.5	23	27	6	19	10	21	12	7	11.8	0.75	2.45	0.12
14	SCG-40 / SCA2-40 / FCD-32, 40-N / SSD / SSD2-32, 40-N / SCM-40 / JSC3-40	14	1.5	68.5	20	22	32	7	22	13	27	14	8	16.5	1.0	5.88	0.22
16	CAV2-50 / COV2-50	16	1.5	84.2	26	29	43	11	24	14	27	16	10	16.9	1.5	10.8	0.4
18	SCG-50, 63 / SCA2-50, 63 / FCD-50, 63-N / SSD / SSD2-50, 63-N / SCM-50, 63 / JSC3-50, 63	18	1.5	84.2	26	29	43	11	27	14	27	18	11	16.9	1.5	10.8	0.41
22	SCG-80 / SCA2-80 / SSD / SSD2-80-N / SCM-80 / JSC3-80	22	1.5	102.5	31	34	53	14	32	17	32	22	13	17.2	2.0	17.6	0.75
26	SCG-100 / SCA2-100 / SSD / SSD2-100-N / SCM-100 / JSC3-100	26	1.5	121.6	39	42	69	15	41	20	41	26	16	20.8	3.0	27.5	1.5
30	SCS2-125, 140 / JSC4-125, 140	30	1.5	145.2	47	50	90	16	46	21	46	30	18	26	3.0	60.8	3.1
36	SCS2-160 / JSC4-160	36	1.5	163.5	—	57	108	16	55	22	55	36	21	25	4.0	87.3	4.6
40	SCS2-180 / JSC4-180	40	1.5	170.5	—	64	108	16	60	22	55	40	24	25	4.0	87.3	4.7
45	SCS2-200	45	1.5	199.5	—	72	118	18	70	24	60	45	27	35	4.0	108	7.0

External Dimensions: Foot type

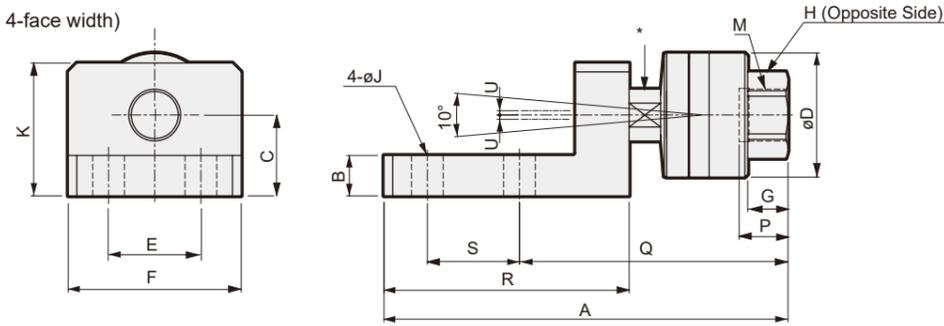
●FJ-L-8 to 12 (* part of FJ-12, 4-face width)



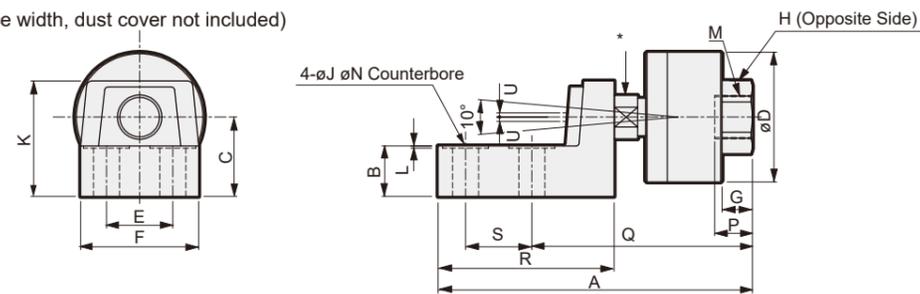
●FJ-L-14



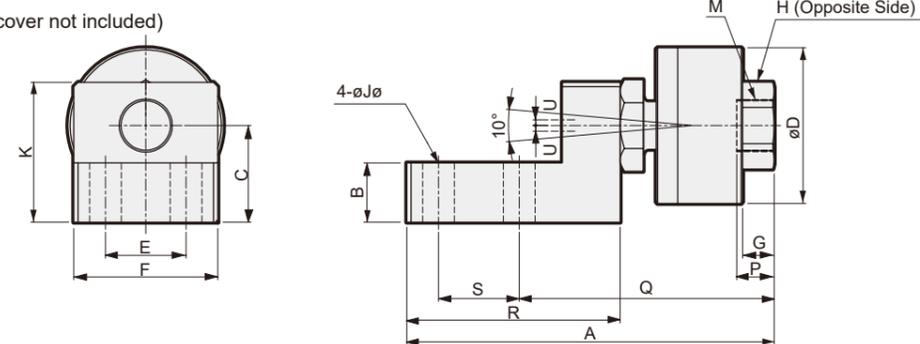
●FJ-L-16 to 26 (* part, 4-face width)



●FJ-L-30 (* part, 4-face width, dust cover not included)



●FJ-L-36 to 45 (Dust cover not included)



External Dimensions: Foot type

Model No.	Main Applicable Cylinders	M		A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R	S	U	Max. Operating Tensile Compressive Force (N)	Weight (kg)
		Nominal Diameter	Pitch																			
FJ-L-8	CMA2 / CMK2 / CKV-20 / JSK2 / JSM2-20	8	1.0	54.6	3.2	15	21	26	44	9	17	9	25	-	-	12	45.6	25	-	0.75	1.08	0.1
8-1.25	SMG-25 / SSD / SSD2-20-N / SCM-20	8	1.25	54.6	3.2	15	21	26	44	9	17	9	25	-	-	12	45.6	25	-	0.75	1.08	0.1
10	CMA2-30 / SMG-32 / CMK2 / SCG / CKV2-25, 32 / FCD-25-N / SSD / SSD2-25-N / SCM-25, 32 / JSK2-25, 32 / JSM2-30	10	1.25	64.5	5	19	24	26	44	10	19	9	32	-	-	12	54.5	30	-	0.75	2.45	0.18
12	CMA2 / CMK2 / CKV2-40 / JSK2 / JSM2-40	12	1.5	64.6	5	19	27	26	44	10	21	9	32	-	-	11.8	54.6	30	-	0.75	2.45	0.19
12-1.25	-	12	1.25	64.6	5	19	27	26	44	10	21	9	32	-	-	11.8	54.6	30	-	0.75	2.45	0.19
14	SCG-40 / SCA2-40 / FCD-32, 40-N / SSD / SSD2-32, 40-N / SCM-40 / JSC3-40	14	1.5	95.5	10	22	32	32	60	13	27	11	38	-	-	16.6	79.5	50	-	1.0	5.88	0.43
16	CAV2-50 COV2-50	16	1.5	140.1	14	28	43	32	60	14	27	11	46	-	-	16.9	93.1	85	32	1.5	10.8	0.4
18	SCG-50, 63 / SCA2-50, 63 / FCD-50, 63-N / SSD / SSD2-50, 63-N / SCM-50, 63 / JSC3-50, 63	18	1.5	140.1	14	28	43	32	60	14	27	11	46	-	-	16.9	93.1	85	32	1.5	10.8	1.1
22	SCG-80 / SSD / SSD2-80-N / SCA2-80 / SCM-80 / JSC3-80	22	1.5	163.5	19	35	53	36	68	17	32	14	55	-	-	17.2	110.5	95	36	2.0	17.6	2.1
26	SCG-100 / SCA2-100 / SSD / SSD2-100-N / SCM-100 / JSC3-100	26	1.5	179.6	24	42	69	36	68	20	41	14	64	-	-	20.8	126.6	100	36	3.0	27.5	2.9
30	SCS2-125, 140 / JSC4-125, 140	30	1.5	217.2	35	55	90	46	82	21	46	18	80	1.5	32	26	152.2	122	46	3.0	60.8	5.6
36	SCS2-160 / JSC4-160	36	1.5	254.5	41	67	108	56	100	22	55	22	97	-	-	25	177	148	56	4.0	87.3	8.9
40	SCS2-180 / JSC4-180	40	1.5	254.5	41	67	108	56	100	22	55	22	97	-	-	25	177	148	56	4.0	87.3	8.8
45	SCS2-200	45	1.5	294	41	70	118	66	125	24	60	26	103	-	-	35	203	166	66	4.0	108	13.2

Related Equipment
SKL
NCK
SCK
FCK
FJ
FK

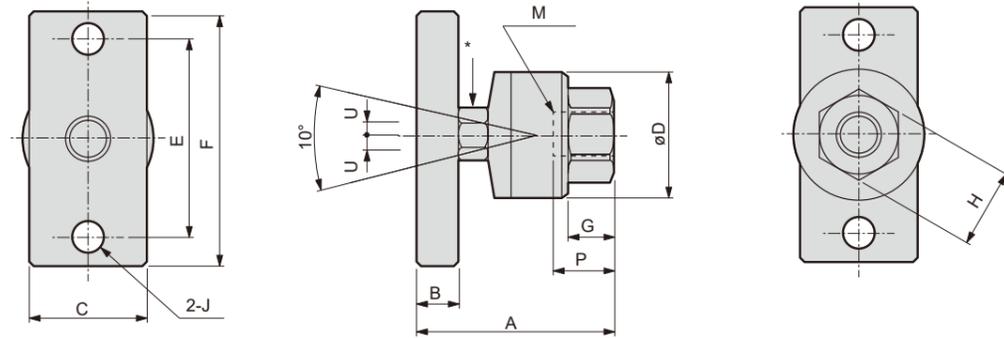
Related Equipment
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Cylinder Switch
Ending

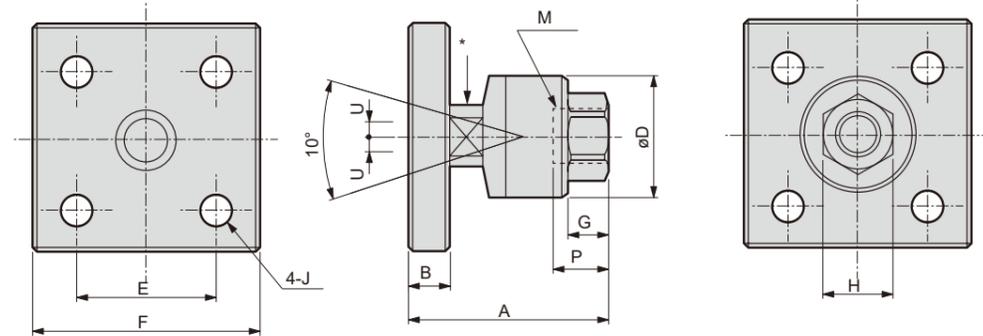
Cylinder Switch
Ending

External Dimensions: Flange Type

● FJ-F-8 to 14 (Width across flats for * parts of FJ-12 and 14)



● FJ-F-16 to 45 (Hex nut for * parts of FJ-36, 40, 45)

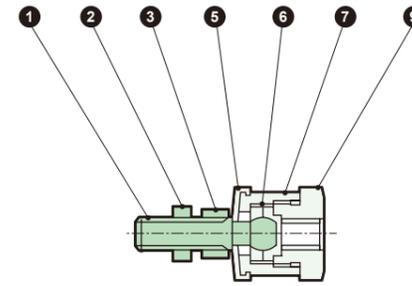


Model No.	Main Applicable Cylinders	M		A	B	C	D	E	F	G	H	J	P	Allowable Misalignment U	Max Operating Tensile/Compressive Force KN	Weight (kg)
		Nominal Diameter	Pitch													
FJ-F- 8	CMA2 / CMK2 / CKV2-20 / JSK2 / JSM2-20	8	1.0	35.6	6	19	21	40	52	9	17	6.6	12	0.75	1.08	0.11
8-1.25	SMG-25 / SSD / SSD2-20-N / SCM-20	8	1.25	35.6	6	19	21	40	52	9	17	6.6	12	0.75	1.08	0.11
10	CMA2-30 / SMG-32 / CMK2 / SCG / CKV2-25, 32 / FCD-25-N / SSD / SSD2-25-N / SCM-25, 32 / JSK2-25, 32 / JSM2-30	10	1.25	43.2	9	25	24	44	56	10	19	6.6	12	0.75	2.45	0.18
12	CMA2 / CMK2 / CKV2-40 / JSK2 / JSM2-40	12	1.5	43.6	9	25	27	44	56	10	21	6.6	11.8	0.75	2.45	0.19
12-1.25	-	12	1.25	43.6	9	25	27	44	56	10	21	6.6	11.8	0.75	2.45	0.19
14	SCG-40 / SCA2-40 / FCD-32, 40-N / SSD / SSD2-32, 40-N / SCM-40 / JSC3-40	14	1.5	57.5	12	32	32	60	80	13	27	11	16.5	1.0	5.88	0.56
16	CAV2-50 / COV2-50	16	1.5	71.2	16	—	43	50	75	14	27	11	16.9	1.5	10.8	1.1
18	SCG-50, 63 / SCA2-50, 63 / FCD-50, 63-N / SSD / SSD2-50, 63-N / SCM-50, 63 / JSC3-50, 63	18	1.5	71.2	16	—	43	50	75	14	27	11	16.9	1.5	10.8	1.1
22	SCG-80 / SCA2-80 / SSD / SSD2-80-N / SCM-80 / JSC3-80	22	1.5	87.5	19	—	53	62	100	17	32	14	17.2	2.0	17.6	1.9
26	SCG-100 / SCA2-100 / SSD / SSD2-100-N / SCM-100 / JSC3-100	26	1.5	101.6	22	—	69	70	100	20	41	14	20.8	3.0	27.5	2.8
30	SCS2-125, 140 / JSC4-125, 140	30	1.5	120.2	25	—	90	90	125	21	46	18	26	3.0	60.8	5.6
36	SCS2-160 / JSC4-160	36	1.5	135	29	—	108	114	150	22	55	22	25	4.0	87.3	9.4
40	SCS2-180 / JSC4-180	40	1.5	135	29	—	108	114	150	22	55	22	25	4.0	87.3	9.3
45	SCS2-200	45	1.5	159	32	—	118	132	175	24	60	26	35	4.0	108	13.4

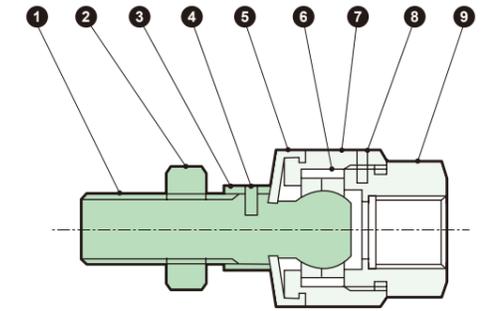
Internal Structure Diagram/Material

Internal Structure Diagram/Material

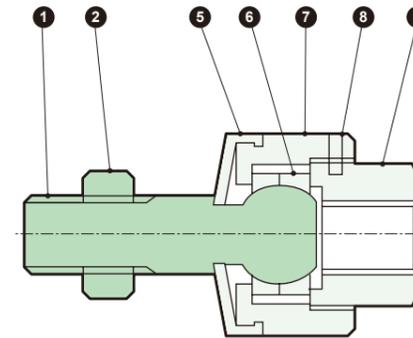
● FJ-O-3 to 5



● FJ-O-6, 8, 10
FJ-O-36 to 45



● FJ-12 to 30



Do not disassemble

No.	Part Name	Material	Treatment	No.	Part Name	Material	Treatment
1	Ball Stud	Alloy Steel	Trivalent chromate	8	Spring pin	Steel	Black Oxide
2	Rod Nut	Steel	Trivalent chromate	9	Socket	Brass (FJ-3 to 5)	Electroless Nickel Plating
3	Stud Nut	Steel	Trivalent chromate			Steel (FJ-6 to 45)	Trivalent chromate
4	Spring pin	Steel	Black Oxide	-	Foot	Steel (FJ-8, 10, 12)	Trivalent chromate
5	Dust Cover	Nitrile Rubber	—			Cast Iron (FJ-14 to 30)	Trivalent chromate
6	Ball Holder	Steel (FJ-3 to 5)	Electroless Nickel Plating	-	Flange	Steel (FJ-36 to 45)	Trivalent chromate
		Alloy Steel (FJ-6 to 45)	Trivalent chromate			Steel	Trivalent chromate
7	Case	Copper Alloy (FJ-3 to 5)	Electroless Nickel Plating				
		Steel (FJ-6 to 45)	Trivalent chromate				

*1: Spring pin of 4 is not included with FJ-6, 8, 10.

*2: Dust cover of 5 is not included with FJ-30 or more.

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Cylinder Switch

Ending

Cylinder Switch

Ending



To Use This Product Safely

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

Individual Precautions: Free Joint FJ Series

During Use

Warning

- When screwing the male thread of a rod onto the female thread of a socket or case, check that it does not hit the bottom.

If used with the rod bottomed out, the ball stud will not float and will not operate normally. As a guideline, the appropriate screw-in Depth into the female thread is 1 to 2 turns back from the bottomed-out position. For FJ-3 to 5, strictly observe the screw-in dimension (P).

- Do not apply excessive torque such as tightening torque to the stud nut. When assembling the ball stud to the equipment, apply tightening torque only to the rod nut. Also, when removing the ball stud from the equipment, loosen the rod nut to remove.

- When connecting the object being driven and the cylinder rod with a Floating Fittings, securely fix the components by fastening the screws with a tightening torque that is appropriate for the thread size. Furthermore, if loosening is a concern during use, take measures to prevent loosening such as pinning or applying adhesive.

In the unlikely event that the connection part loosens and detaches, it may cause runaway or falling of the driven body, leading to equipment damage or injury.

- The thread part (ball stud) can be turned but is not a rotary fitting. Do not use this for rotary purposes.

MEMO

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Cylinder Switch

Ending

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

Cylinder Switch

Ending