

# Floating Joint: Standard Type

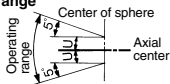
# JA Series

RoHS

## Specifications

<b>Operating pressure</b>	Pneumatic cylinder: 1 MPa or less
	Hydraulic cylinder: 3.5 MPa or less
<b>Mounting</b>	Basic type, Flange type, Foot type

### Operating range



JA series

## ⚠ Precautions

Be sure to read this before handling the products. Refer to page 20 for safety instructions.

### Mounting

## ⚠ Warning

- To screw the male threads of the rod into the female threads of the socket or the case, make sure that it does not bottom out. If the floating joint is used with its rod bottom out, the stud will not be able to float, causing damage. For the screw-in depth of the female threads, refer to the dimensions (page 1236). As a rule, after the rod bottoms out, back off 1 to 2 turns.
- The dust cover may adhere to the stud. In this case, move the dust cover at the neck of the stud by the finger or twist the stud slightly left or right to break in the dust cover before use. Additionally, when screwing the stud and socket or the case into a driven body, screw in such parts with the dust cover removed. When screwing in such parts without removing the dust cover, this may cause damage to the dust cover.
- To use a floating joint to connect the cylinder rod to a driven body, secure it in place by applying a torque that is appropriate for the thread size. Also, if there is a risk of loosening during operation, take measures to prevent loosening, such as using a locking pin or thread adhesive. In the event that the connected portion becomes loose, the driven body might lose control or fall off, leading to equipment damage or injury to personnel.
- This product is not a rotary joint. So, the product cannot be used for rotational or rotation acting applications.
- Be sure to use the cushion mechanism of the cylinder or the buffer mechanism, such as the shock absorber so that any impact force is not applied to the floating joint when stopping a driven body. If there is no buffer mechanism, an excessive impact force is generated. As a result, the tensile compression force of the floating joint may exceed its maximum level.

### Maintenance

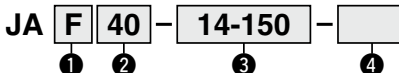
## ⚠ Warning

- Do not reuse if disassembled. The threaded part cannot be removed from the rest of the joint as they are either welded together or held together using high-strength adhesive. Attempting to forcefully disassemble the joint may result in damage.

## Model/Specifications

Model	Applicable bore size (mm)	Applicable cylinder nominal thread size	Maximum operating tension and compression force (N)			Allowable eccentricity U (mm)	Rotating angle	Ambient temperature
			Basic type	Flange type	Foot type			
<b>Standard/Thread nominal size</b>								
JA6-3-050	6	M3 x 0.5	19	—	—	0.5	±5°	-5 to 60°C
JA10-4-070	10	M4 x 0.7	54	—	—	0.5		
JA15-5-080	10, 15	M5 x 0.8	123	—	—	0.5		
JA15-6-100	15	M6 x 1	123	—	—	0.5		
JA□20-8-125	20	M8 x 1.25	1100	1100	1000	0.5		
JA□30-10-125	25, 32	M10 x 1.25	2500	2500	2000	0.5		
JA□40-14-150	40	M14 x 1.5	4400	4400	4400	0.75		
JA□63-18-150	50, 63	M18 x 1.5	11000	11000	9000	1		
JA□80-22-150	80	M22 x 1.5	18000	18000	14000	1.25		
JA□100-26-150	100	M26 x 1.5	28000	28000	22000	2		
JA□140-30-150	125, 140	M30 x 1.5	54000	36000	36000	2.5		
JA□160-36-150	160	M36 x 1.5	71000	55000	55000	3		
<b>Semi-standard/Thread nominal size</b>								
JA□20-8-100	20	M8 x 1	1100	1100	1000	0.5	±5°	-5 to 60°C
JA□25-10-150	25	M10 x 1.5	2500	2500	2000	0.5		
JA□32-10-100	32	M10 x 1	2500	2500	2000	0.5		
JA□40-12-125	32, 40	M12 x 1.25	4400	4400	4400	0.75		
JA□40-12-150	40	M12 x 1.5	4400	4400	4400	0.75		
JA□40-12-175	32, 40	M12 x 1.75	4400	4400	4400	0.75		
JA□50-16-150	50	M16 x 1.5	11000	11000	9000	1		
JA□63-16-200	50, 63	M16 x 2	11000	11000	9000	1		
JA□80-20-250	80	M20 x 2.5	18000	18000	14000	1.25		
JA□100-24-300	100	M24 x 3	28000	28000	22000	2		
JA□100-27-150	100	M27 x 1.5	28000	28000	22000	2		
JA□125-27-200	125	M27 x 2	28000	28000	28000	2		
JA□160-33-200	160	M33 x 2	71000	55000	55000	3		

## How to Order



### ① Mounting type

Nil	Basic type
F	Flange type
L	Foot type

### ④ Option

Nil	None
X11	High temperature specifications -5 to 100°C

### ② Applicable bore size (mm)

Model	Symbol	Applicable bore size (mm)
Standard	6	6
	10	10
	15	10, 15
	20	20
	30	25, 32
	40	40
	63	50, 63
	80	80
	100	100
	140	125, 140
160	160	
180	180	
200	200	

### ③ Thread nominal size (Standard)

Nominal thread size	Applicable cylinder nominal thread size
3-050	M3 x 0.5
4-070	M4 x 0.7
5-080	M5 x 0.8
6-100	M6 x 1
8-125	M8 x 1.25
10-125	M10 x 1.25
14-150	M14 x 1.5
18-150	M18 x 1.5
22-150	M22 x 1.5
26-150	M26 x 1.5
30-150	M30 x 1.5
36-150	M36 x 1.5

Made to Order: Individual Specifications -X530

Note) For details, refer to page 1239. For pneumatic cylinders

## ⚠ Caution

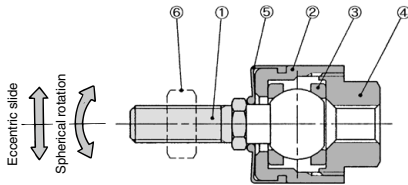
- The black zinc chromate treatment is applied to the material surfaces of the case, flange and foot. However, the white deposit may rarely occur on the surface. This white deposit should not affect the product functions. However, if the white deposit becomes a problem from a viewpoint of appearance, special products with the surface treatment changed to the electrodeless nickel plating are also available. For details, please contact SMC.

## ⚠ Warning

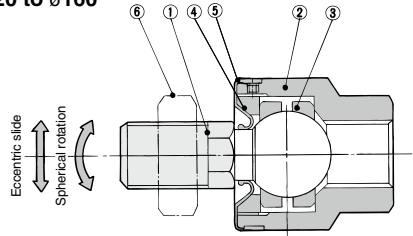
- JA series has play in the axial direction. (Default: 0.06 mm or less) When positioning the driven object, avoid the influence of play using a knock pin or external stopper.

## Construction

ø6 to ø15



ø20 to ø160



### Component Parts

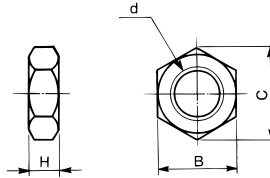
No.	Description	Material	Note
1	Stud	Free-cutting steel	Electroless nickel plated
2	Case	Brass	Electroless nickel plated
3	Ring	Stainless steel	
4	Socket	Brass	Electroless nickel plated
5	Dust cover	Synthetic rubber	
6	Rod end nut	Low carbon steel wire rod	Zinc chromated

No.	Description	Material	Note
1	Stud	Chromium molybdenum steel	Dyed black
2	Case	Carbon steel	Black zinc chromated
3	Ring	Chromium molybdenum steel	
4	Cap	Carbon steel	Black zinc chromated
5	Dust cover	Synthetic rubber	
6	Rod end nut	Carbon steel	Zinc chromated
7	Flange	Rolled steel	Black zinc chromated
8	Foot	Rolled steel	Black zinc chromated

## Accessory Dimensions

### Rod end nut

One rod end nut is supplied with the JA series or JAH basic type. If additional nuts are needed, please order them using the part no. shown below.



Model	Order no.	d: Thread nominal size	H	B	C
JA6-3-050	DA00201	M3x0.5	2.4	5.5	6.4
JA10-4-070	DA00117	M4x0.7	3.2	7	8.1
JA15-5-080	DA00118	M5x0.8	4	8	9.2
JA15-6-100	DA00119	M6x1	5	10	11.5
JA20-8-100	DA00207	M8x1	5	13	15
JA20-8-125	DA00169	M8x1.25	5	13	15
JA32-10-100	DA00141	M10x1	6	17	19.6
JA30-10-125	DA00142	M10x1.25	6	17	19.6
JA25-10-150	DA00140	M10x1.5	6	17	19.6
JA40-12-125	DA00145	M12x1.25	7	19	21.9
JA40-12-150	DA00146	M12x1.5	7	19	21.9
JA40-12-175	DA00143	M12x1.75	7	19	21.9
JA40-14-150	DA00148	M14x1.5	8	22	25.4
JA50-16-150	DA00151	M16x1.5	10	24	27.7
JAH40-16-150					
JA63-16-200	DA00150	M16x2	10	24	27.7
JA63-18-150	DA00153	M18x1.5	11	27	31.2

Model	Order no.	d: Thread nominal size	H	B	C
JAH50-20-150	DA00155	M20x1.5	12	30	34.6
JA80-20-250	DA00154	M20x2.5	12	30	34.6
JA80-22-150	DA00156	M22x1.5	13	32	37
JAH63-24-150	DA00158	M24x1.5	14	36	41.6
JAH63-24-200	DA00159	M24x2	14	36	41.6
JA100-24-300	DA00157	M24x3	14	36	41.6
JA100-26-150	DA00160	M26x1.5	16	41	47.3
JA100-27-150	DA00161	M27x1.5	16	41	47.3
JA125-27-200	DA00162	M27x2	16	41	47.3
JA140-30-150	DA00224	M30x1.5	18	46	53.1
JAH80-30-150					
JAH80-30-200	DA00163	M30x2	18	46	53.1
JA160-33-200	DA00225	M33x2	20	50	57.7
JA160-36-150	DA00164	M36x1.5	21	55	63.5
JAH100-39-150	DA00204	M39x1.5	23	60	69.3
JAH100-42-300	DA00165	M42x3	25	65	75
JAH100-48-150	DA00205	M48x1.5	29	75	86.5

## Floating Joint Replacement Parts

### Dust cover

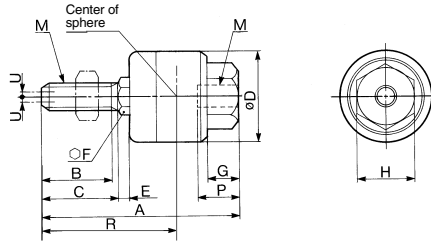
Order with the following part no. if dust cover is damaged. Replaceable dust cover is only for the basic type. Flange type and foot type cannot be replaced.

Part no. for dust cover	Applicable model
P2152051	JA6, JA10
P2152052	JA15, JB12, JB16
P215215	JA20, JB20
P215225	JA30, JB30
P215235	JA40, JB40
P215245	JA63, JA50, JB63

Part no. for dust cover	Applicable model
P215255	JA80, JAH40, JB80
P215265	JA100, JAH50, JB100
P215275	JA125, JAH63
P215285	JA140, JAH80, JB140
P215295	JA160, JAH100, JB160

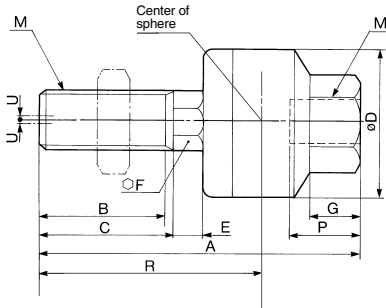
## Basic Type: JA6 to JA160

### JA6 to 15

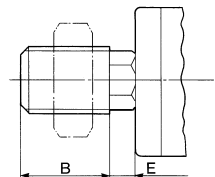
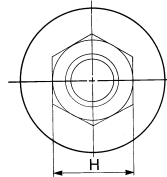


Use the precision spanner for clock 4 mm in the case of mounting male thread of JA6 and JA10.

### JA20 to 160



### Without C-dimension



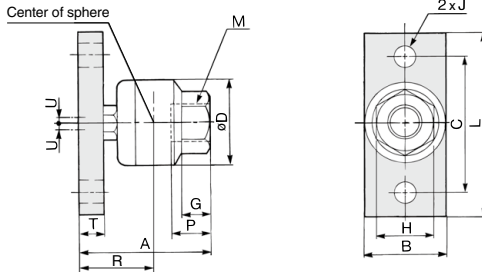
Applicable bore size (mm)	Model	M		A	B	C	D	E	F	G	H	Center of sphere R	Maximum thread depth P	Allowable eccentricity U	Maximum operating tension and compression force (N)	Weight (kg)
		Nominal size	Pitch													
<b>Standard</b> Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa																
6	JA6-3-050	3	0.5	23.2	7	8	12	1.5	4	3.2	5.5	15	5	0.5	19	0.01
10 (CJ1)	JA10-4-070	4	0.7	26	9	10	12	1.5	4	4	7	17	5.5	0.5	54	0.01
10 (CZ1), 15 (CJ1)	JA15-5-080	5	0.8	34.5	12.5	14	16	2	6	5	10	23	7	0.5	123	0.02
15 (CZ1)	JA15-6-100	6	1	34.5	12.5	14	16	2	6	5	10	23	7	0.5	123	0.02
20	JA20-8-125	8	1.25	44	17.5	-	21	4.5	7	7	13	30.5	8	0.5	1100	0.05
25, 32	JA30-10-125	10	1.25	49.5	19.5	-	24	5	8	8	17	34	9	0.5	2500	0.07
40	JA40-14-150	14	1.5	60	20	-	31	6	11	11	22	38	13	0.75	4400	0.16
50, 63	JA63-18-150	18	1.5	74.5	25	-	41	7.5	14	13.5	27	47.5	15	1	11000	0.31
80	JA80-22-150	22	1.5	89.5	29	-	50	9.5	19	16	32	56.5	18	1.25	18000	0.58
100	JA100-26-150	26	1.5	110	35	-	59.5	11.5	24	20	41	68	24	2	28000	1.08
125, 140	JA140-30-150	30	1.5	152	42	45	79	14	30	22	46	94.5	38	2.5	54000	2.7
160	JA160-36-150	36	1.5	178	52	55	96	16	36	24	55	112	42	3	71000	4.7

### Semi-standard Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa

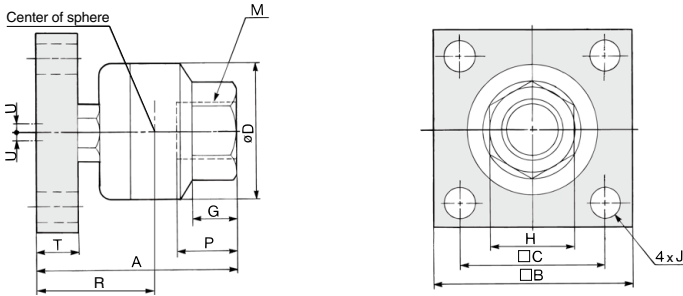
20	JA20-8-100	8	1	44	17.5	-	21	4.5	7	7	13	30.5	8	0.5	1100	0.05
25	JA25-10-150	10	1.5	49.5	19.5	-	24	5	8	8	17	34	9	0.5	2500	0.07
32	JA32-10-100	10	1	49.5	19.5	-	24	5	8	8	17	34	9	0.5	2500	0.07
32, 40	JA40-12-125	12	1.25	60	20	-	31	6	11	11	22	38	13	0.75	4400	0.16
40	JA40-12-150	12	1.5	60	20	-	31	6	11	11	22	38	13	0.75	4400	0.16
32, 40	JA40-12-175	12	1.75	60	20	-	31	6	11	11	22	38	13	0.75	4400	0.16
50	JA50-16-150	16	1.5	71.5	22	-	41	7.5	14	13.5	27	44.5	15	1	11000	0.3
50, 63	JA63-16-200	16	2	71.5	22	-	41	7.5	14	13.5	27	44.5	15	1	11000	0.3
80	JA80-20-250	20	2.5	90.5	27	30	50	9.5	19	16	32	57.5	18	1.25	18000	0.6
100	JA100-24-300	24	3	110	32	35	59.5	11.5	24	20	41	68	24	2	28000	1.05
100	JA100-27-150	27	1.5	110	35	-	59.5	11.5	24	20	41	68	24	2	28000	1.08
125	JA125-27-200	27	2	123	34	38	66	13	24	20	41	77	24	2	28000	1.5
160	JA160-33-200	33	2	165	38	42	96	16	36	24	55	99	42	3	71000	4.5

**Flange Type: JAF20 to JAF160**

**JAF20 to ø40**



**øJAF50 to ø160**



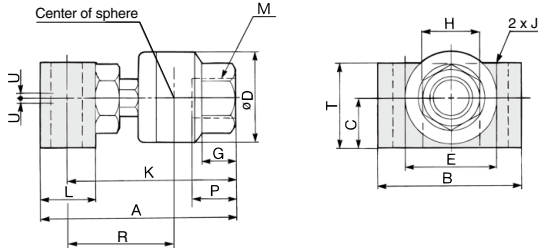
Applicable bore size (mm)	Model	M		A	B	L	C	D	T	J	G	H	Center of sphere R	Maximum thread depth P	Allowable eccentricity U	Maximum operating tension and compression force (N)	Weight (kg)
		Nominal size	Pitch														
<b>Standard</b> Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa																	
20	JAF20-8-125	8	1.25	32.5	19	48	36	21	6	6.6	7	13	19	8	0.5	1100	0.08
25, 32	JAF30-10-125	10	1.25	36	25	52	40	24	6	6.6	8	17	20.5	9	0.5	2500	0.12
40	JAF40-14-150	14	1.5	49	32	70	52	31	9	9	11	22	27	13	0.75	4400	0.28
50, 63	JAF63-18-150	18	1.5	61.5	65	—	45	41	12	9	13.5	27	34.5	15	1	11000	0.63
80	JAF80-22-150	22	1.5	76.5	75	—	55	50	16	11	16	32	43.5	18	1.25	18000	1.15
100	JAF100-26-150	26	1.5	94	90	—	65	59.5	19	11	20	41	52	24	2	28000	2.07
125, 140	JAF140-30-150	30	1.5	131	125	—	82	79	24	18	22	46	73.5	38	2.5	36000	5.2
160	JAF160-36-150	36	1.5	152	150	—	100	96	29	22	24	55	86	42	3	55000	9

**Semi-standard** Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa

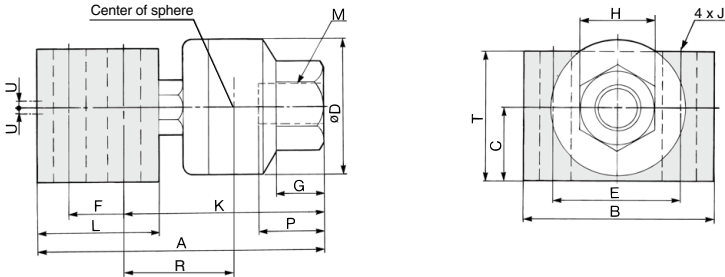
20	JAF20-8-100	8	1	32.5	19	48	36	21	6	6.6	7	13	19	8	0.5	1100	0.08
25	JAF25-10-150	10	1.5	36	25	52	40	24	6	6.6	8	17	20.5	9	0.5	2500	0.12
32	JAF32-10-100	10	1	36	25	52	40	24	6	6.6	8	17	20.5	9	0.5	2500	0.12
32, 40	JAF40-12-125	12	1.25	49	32	70	52	31	9	9	11	22	27	13	0.75	4400	0.28
40	JAF40-12-150	12	1.5	49	32	70	52	31	9	9	11	22	27	13	0.75	4400	0.28
32, 40	JAF40-12-175	12	1.75	49	32	70	52	31	9	9	11	22	27	13	0.75	4400	0.28
50	JAF50-16-150	16	1.5	61.5	65	—	45	41	12	9	13.5	27	34.5	15	1	11000	0.63
50, 63	JAF63-16-200	16	2	61.5	65	—	45	41	12	9	13.5	27	34.5	15	1	11000	0.63
80	JAF80-20-250	20	2.5	76.5	75	—	55	50	16	11	16	32	43.5	18	1.25	18000	1.15
100	JAF100-24-300	24	3	94	90	—	65	59.5	19	11	20	41	52	24	2	28000	2.07
100	JAF100-27-150	27	1.5	94	90	—	65	59.5	19	11	20	41	52	24	2	28000	2.07
125	JAF125-27-200	27	2	106	100	—	72	66	21	18	20	41	60	24	2	28000	2.8
160	JAF160-33-200	33	2	152	150	—	100	96	29	22	24	55	86	42	3	55000	9

## Foot Type: JAL20 to JAF160

### JAL20 to 100



### JAL125 to 160



Applicable bore size (mm)	Model	M		A	B	C	D	E	F	K	L	T	J	G	H	Center of sphere R	Maximum thread depth P	Allowable eccentricity U	Maximum operating tension and compression force (N)	Weight (kg)
		Nominal size	Pitch																	
<b>Standard</b> Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa																				
20	JAL20-8-125	8	1.25	44	30	11.5	21	18	-	38	12	19	6.6	7	13	24.5	8	0.5	1000	0.09
25, 32	JAL30-10-125	10	1.25	52	42	14	24	24	-	44	16	25	9	8	17	28.5	9	0.5	2000	0.18
40	JAL40-14-150	14	1.5	67	52	17.5	31	30	-	57.5	19	30	11	11	22	35.5	13	0.75	4400	0.36
50, 63	JAL63-18-150	18	1.5	82.5	56	23	41	34	-	71.5	22	38	11	13.5	27	44.5	15	1	9000	0.61
80	JAL80-22-150	22	1.5	98.5	70	28	50	42	-	86	25	47	14	16	32	53	18	1.25	14000	1.09
100	JAL100-26-150	26	1.5	123	80	35	59.5	48	-	107	32	58	16	20	41	65	24	2	22000	2.03
125, 140	JAL140-30-150	30	1.5	187	96	45	79	60	44	125	80	79	18	22	46	67.5	38	2.5	36000	6.4
160	JAL160-36-150	36	1.5	213	116	55	96	74	48	144	90	89	22	24	55	78	42	3	55000	10
<b>Semi-standard</b> Pneumatic: Up to 1 MPa Hydraulic: Up to 3.5 MPa																				
20	JAL20-8-100	8	1	44	30	11.5	21	18	-	38	12	19	6.6	7	13	24.5	8	0.5	1000	0.09
25	JAL25-10-150	10	1.5	52	42	14	24	24	-	44	16	25	9	8	17	28.5	9	0.5	2000	0.18
32	JAL32-10-100	10	1	52	42	14	24	24	-	44	16	25	9	8	17	28.5	9	0.5	2000	0.18
32, 40	JAL40-12-125	12	1.25	67	52	17.5	31	30	-	57.5	19	30	11	11	22	35.5	13	0.75	4400	0.36
40	JAL40-12-150	12	1.5	67	52	17.5	31	30	-	57.5	19	30	11	11	22	35.5	13	0.75	4400	0.36
32, 40	JAL40-12-175	12	1.75	67	52	17.5	31	30	-	57.5	19	30	11	11	22	35.5	13	0.75	4400	0.36
50	JAL50-16-150	16	1.5	82.5	56	23	41	34	-	71.5	22	38	11	13.5	27	44.5	15	1	9000	0.61
50, 63	JAL63-16-200	16	2	82.5	56	23	41	34	-	71.5	22	38	11	13.5	27	44.5	15	1	9000	0.61
80	JAL80-20-250	20	2.5	98.5	70	28	50	42	-	86	25	47	14	16	32	53	18	1.25	14000	1.09
100	JAL100-24-300	24	3	123	80	35	59.5	48	-	107	32	58	16	20	41	65	24	2	22000	2.03
100	JAL100-27-150	27	1.5	123	80	35	59.5	48	-	107	32	58	16	20	41	65	24	2	22000	2.03
125	JAL125-27-200	27	2	155	88	38	66	54	36	102	70	69	14	20	41	56	24	2	28000	4.1
160	JAL160-33-200	33	2	213	116	55	96	74	48	144	90	89	22	24	55	78	42	3	55000	10