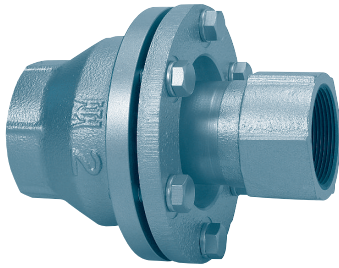
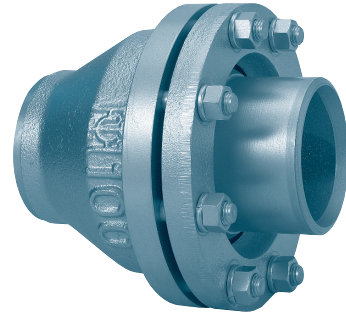


Ball type

Type J102 Ball Joint

Complies with SHASE-S 007


Size 20-50



Size 65-300

Features

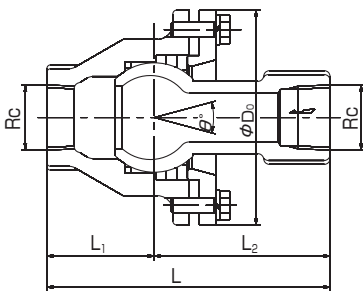
- Complies with SHASE-S007 standard.
- Absorbs large movement without requiring large space.
- Special packing allows long term use.
- Chromium plating on the ball prevents rust which could damage packing.
- Simple construction results in an airtight feature.

Remark SHASE : The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan.

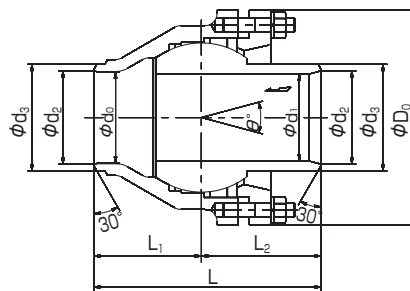
Specifications

Size	20-300
Max. allowable pressure	2.0MPa
Hydrostatic pressure	4.0MPa
Max. allowable temperature	220°C
Fluid	Steam, water, air and oil
Connection	Size 20-50 : screwed, size 65-300 : welded

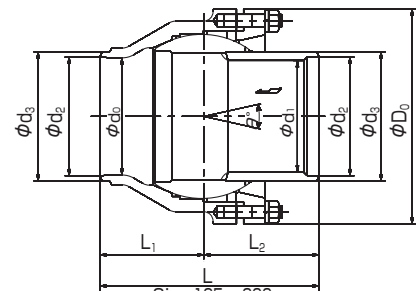
Construction



Size 20-50



Size 65-100



Size 125-300

Part name	Material	Part name	Material
Body	20- 50 : Spheroidal graphite cast iron	Packing D	Fushilock
	65-300 : Cast steel	Cover	Spheroidal graphite cast iron
Ball	20- 50 : Spheroidal graphite cast iron (chromium plated)	Bolt	Stainless steel
	65-300 : Carbon steel tube (chromium plated)	Stud bolt	Stainless steel
Packing A	Fushilock	Nut	Carbon steel
Packing B	Fushilock	Pipe	Carbon steel
Packing C	Fushilock		

 Remarks 1. Stainless steel for fluid contact is available on request.
 2. Flanged connection is available on request.

Type J102 Ball Joint

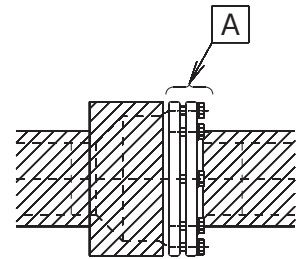
Dimensions and weights

(mm, kg)

Part	Size	20	25	32	40	50	65	80	100	125	150	200	250	300
Setting length	L	145	145	155	170	190	170	190	230	260	280	300	340	390
	L ₁	55	55	55	65	70	80	90	110	120	130	140	160	190
	L ₂	90	90	100	105	120	90	100	120	140	150	160	180	200
	D ₀	110	110	120	135	155	165	180	225	260	275	340	420	475
Screwed	JIs Rc	¾	1	1¼	1½	2	—	—	—	—	—	—	—	—
Weld ends	d ₀	—	—	—	—	—	65	77	101.5	125	150	200	250	297
	d ₁	—	—	—	—	—	58.3	73	95	120.8	143.2	190.9	237.2	283.7
	d ₂	—	—	—	—	—	65.9	78.1	102.3	126.6	151.7	200	250	297.9
	d ₃	—	—	—	—	—	76.3	89.1	114.3	139.8	165.2	216.3	267.4	318.5
Max. inclination	θ°	30	30	30	30	30	25	25	25	25	25	20	16	16
Weight		2.7	2.7	3.2	5.0	7.0	9.1	13	23	31	37	52	96	135

Notice

- In the event of some leakage, retighten the bolts or nuts from 1/6 to 1 turn more.
Part A shall not be insulated from above point of view.
- Expansion joint should be used in extent of allowable inclination.
In case it exceeds allowable inclination, please check and modify guide and anchor.



7

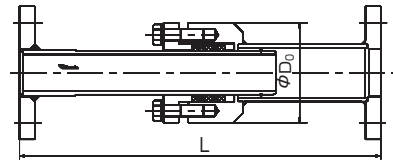
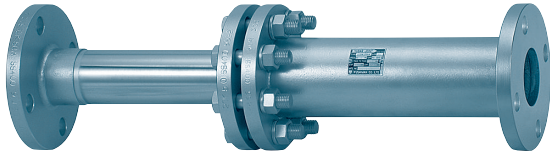
Ball Joint

Sleeve
type

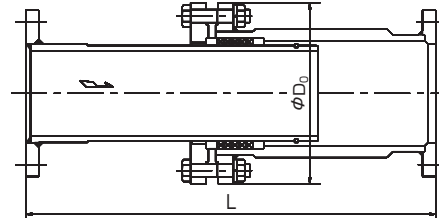
Yubar Joint (Type J104-2 Sleeve Expansion Joint)

Complies with SHASE-S 003

Construction



Size 25-40



Size 50-300

Features

- Complies with SHASE-S003 standard.
- Absorbs large movement.
- Special packing allows long term use.

Remark SHASE : The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan.

Specifications

Size	25-300
Max. allowable pressure	1.0MPa, 2.0MPa (3.0MPa is available)
Hydrostatic pressure	2.0MPa, 4.0MPa
Max. allowable temperature	300°C
Max. displacement	200mm
Fluid	Steam, water, oil and non-corrosive gas
Connection	Flanged JIS10K, 20K

Part name	Material	Part name	Material
Stopper	SWRH or STKM Carbon steel	Bolt	SWCH Fushilock
Packing	Fushilock	Sleeve	STPG370 Carbon steel chromium plated
Body	SS400+STPG or STKM Carbon steel	Guide	SS400 or STKM Carbon steel
Cover	SS400 Carbon steel		

Note : Stainless steel for fluid contact is available on request.

Dimensions and weights

(mm, kg)

Part	Size	25	32	40	50	65	80	100	125	150	200	250	300
Setting length	L	560				600		640		690		740	
Max. allowable length	L ₁	600				640		680		730		780	
Min. allowable length	L ₂	400				440		480		530		580	
Max. displacement	δ	expansion (δe) : 40						contraction (δc) : 160					
D ₀		85	100	105	155	175	200	225	270	305	350	430	480
Weight		6	8	11	16	22	29	39	55	72	105	140	177

Remark : Setting length L is the value to subtract expansion δe from max. allowable length L₁.
Expansion joint will be supplied with this length L unless otherwise specified.

Notice

Expansion joint should be used in extent of allowable length.

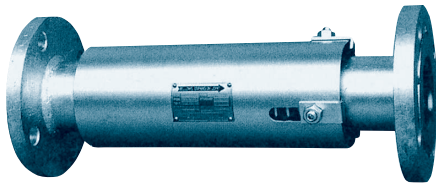
In case it exceeds allowable inclination, please check and modify guide and anchor.

Bellows type

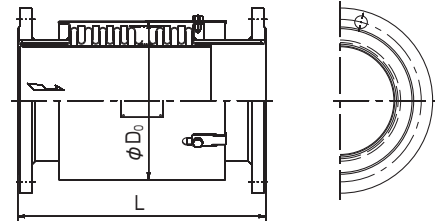
Type JOB40, JOB41 Bellows Expansion Joints

Construction

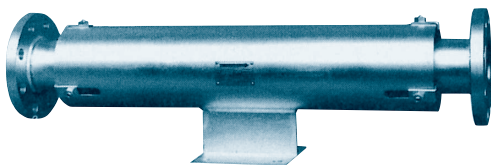
Single type (JOB40)



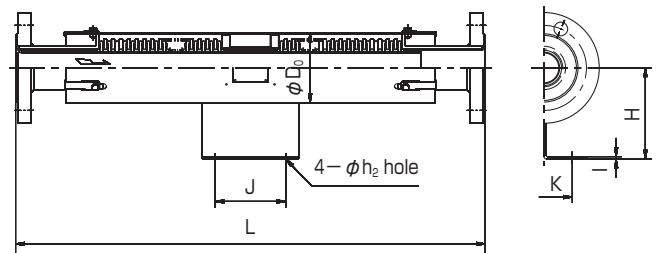
Single type (JOB40)



Double type (JOB41)



Double type (JOB41)



Features

- Bellows made of anti corrosive material SUS316L (low carbon stainless steel)
- Parts for fluid contact made of stainless steel
- No leakage because packing is not used.

Specifications

Size	20—300A
Max. allowable pressure	2.0MPa
Hydrostatic pressure	3.0MPa
Max. allowable temperature	220°C
Fluid	Steam, water, oil and non-corrosive gas
Connection	Flanged JIS20K

Part name	Material	Part name	Material
Flange lagging	SUS316L Stainless steel	Tie bolt	SS400 Carbon steel
Flange	SS400 Carbon steel	Tie plate (20—300A)	SPHC or S400 Carbon steel
External cover	SPHC or SS400 Carbon steel	Ring	SS400 Carbon steel
Bellows	SUS316L Stainless steel	Anchor base	SS400 Carbon steel
Internal sleeve	SUS316L Stainless steel		

Dimensions and weights

(mm, kg)

Type		Single type : JOB40												Double type : JOB41																															
Part	Size	20	25	32	40	50	65	80	100	125	150	200	250	300	20	25	32	40	50	65	80	100	125	150	200	250	300																		
Setting length	L	365				415				440				465				565				680				780				880				930				980				1130			
Max. allowable length	L ₁	375				425				450				475				575				700				800				900				950				1000				1150			
Min. allowable length	L ₂	340				390				415				440				540				630				730				830				880				930				1080			
Max. displacement	δ	expansion (δe) : 10 contraction (δc) : 25												expansion (δe) : 20 (one side : 10) contraction (δc) : 50 (one side : 25)																															
Anchor base	K	—												60 70 80 100 110 130 150 180 220 280 300																															
	J	—												100 120 160 180 200																															
	H	—												100 120 130 140 150 170 200 220 250 300 350																															
	I	—												3.2 4.0 4.5 25																															
	Bolt hole dia	h ₂	—												12 15 19 23 25 27																														
	Bolt		—												M10 M12 M16 M20 M22 M24																														
D ₀		58	73	98	110	136	162	212	235	292	333	387	61	76	102	140	165	216	236	236	293	334	387																						
Weight		3.5	4.5	5.6	6.0	8.9	12	17	22	35	46	60	90	139	6	8	10	11	15	22	30	40	65	80	105	150	250																		

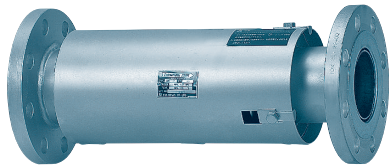
Notice

Expansion joint should be used in extent of allowable length.
In case it exceeds allowable length, please check and modify guide and anchor.

Bellows type

Type JOB30T, JOB31T Bellows Expansion Joints

Single type (JOB30T)



Double type (JOB31T)



Features

- Complies with JIS B 2352 standard.
- Bellows made of anti-corrosive material SUS316L (low carbon stainless steel).
- Fluid contact made of stainless steel.
- No leakage because packing is not used.
- Internal casing made of anti-corrosive material SUS316L (low carbon stainless steel).

Specifications

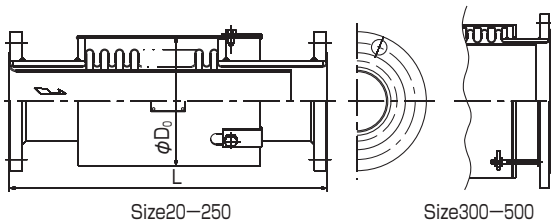
Size	20–500
Max. allowable pressure	1.0MPa
Hydrostatic pressure	1.5MPa
Max. allowable temperature	220°C
Fluid	Steam, water, oil and non-corrosive gas
Connection	Flanged JIS10K

Notice

Expansion joint should be used in extent of allowable length.
In case it exceeds allowable length, please check and modify guide and anchor.

Construction

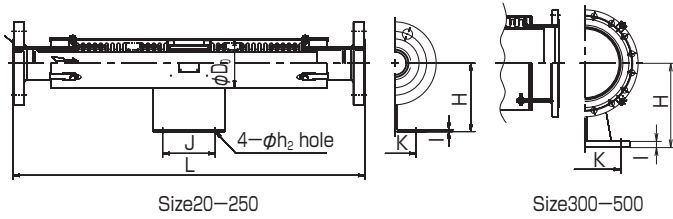
Single type (JOB30T)



Part name	Material	Part name	Material
Flange lagging	SUS316L Stainless steel	Internal casing	SUS316L Stainless steel
Flange	SS400 Carbon steel	Tie bolt	SS400 Carbon steel
External cover	SPHC or SS400 Carbon steel	Tie plate (20–250A)	SPHC or SS400 Carbon steel
Bellows	SUS316L Stainless steel	Ring (300–500A)	SS400 Carbon steel

Type JOB30T, JOB31T Bellows Expansion Joints

Double type (JOB31T)



Part name	Material	Part name	Material
Flange lagging	SUS316L Stainless steel	Tie bolt	SS400 Carbon steel
Flange	SS400 Carbon steel	Tie plate (20-250A)	SPHC or SS400 Carbon steel
External cover	SPHC or SS400 Carbon steel	Ring (300-500A)	SS400 Carbon steel
Bellows	SUS316L Stainless steel	Anchor base	SS400 Carbon steel
Internal sleeve	SUS316L Stainless steel		

Dimensions and weights

Single type : JOB30T

(mm, kg)

Part	Size	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500
Setting length	L	365			415			440			465			490				
Max. allowable length	L ₁	375			425			450			475			500				
Min. allowable length	L ₂	340			390			415			440			465				
Max. displacement	δ	expansion (δe) : 10 contraction (δc) : 25																
D ₀		58	73	98	110	136	162	212	235	292	333	387	422	470	517	567		
Weight		3.5	4.5	5.5	6	7.5	11	12	16	21	27	36	52	111	130	160	186	208

- Remarks 1. Setting length L is the value to subtract expansion δe from max. allowable length L₁.
Expansion joint will be supplied with this length L unless otherwise specified.
2. Please take off the tie bolt and tie plate after hydraulic test.

Double type : JOB31T

(mm, kg)

Part	Size	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500								
Setting length	L	680			780			880			930			980			1030			1080						
Max. allowable length	L ₁	700			800			900			950			1000			1050			1100						
Min. allowable length	L ₂	630			730			830			880			930			980			1030						
Max. displacement	δ	expansion (δe) : 20 (one side : 10) contraction (δc) : 50 (one side : 25)																								
Anchor base	K	60	70	80	100	110	130	150	180	220	280	300	350	400	450	500										
	J	100			120			160			180			200			250			300						
	H	100	120	130	140	150	170	200	220	250	300	350	450	500	550	600										
	I	3.2			4.0			4.5			25															
	Bolt hole dia	h ₂	12			15			19			23			25			27			33			39		
	Bolt		M10			M12			M16			M20			M22			M24			M30			M36		
D ₀		58	73	98	110	136	162	212	235	292	333	387	422	470	517	567										
Weight		5	6	8	8.5	11	14	17	22	35	46	66	96	225	271	325	390	442								

- Remarks 1. Setting length L is the value to subtract expansion δe from max. allowable length L₁.
Expansion joint will be supplied with this length L unless otherwise specified.
2. Please take off the tie bolt and tie plate after hydraulic test.