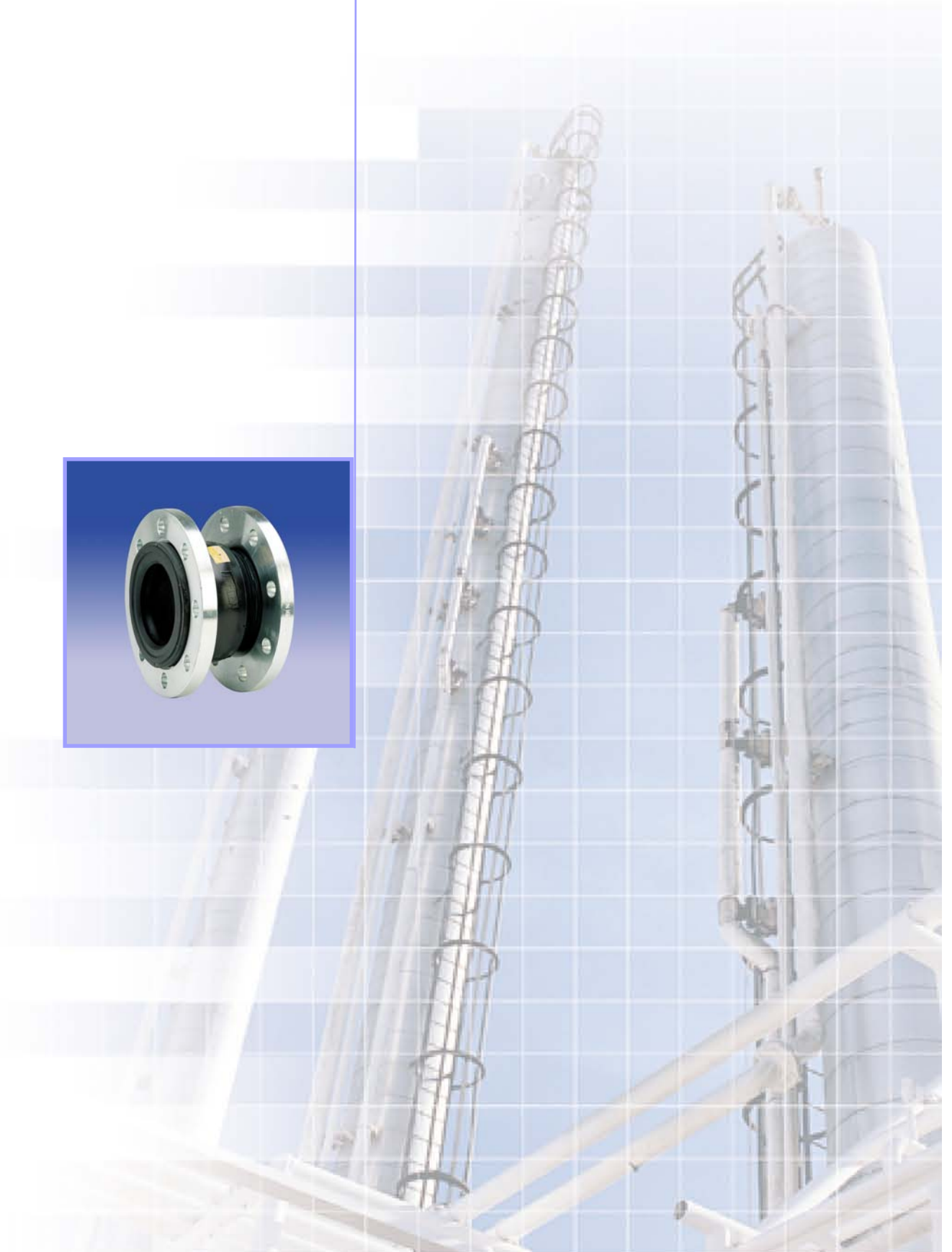




**Heap &
Partners Ltd**

Flexible Rubber & Stainless Steel Bellow Type Joints & Compensators





JMFlex Flanged Rubber Expansion Joints

Design

We offer two types of flanged joints. Type J2R-F single sphere joints and type J2R-F2 twin sphere joints, both of which are available with or without tie bars.

Movement

JMFlex rubber expansion joints are designed for axial or angular movement.

CE Marking

Heap & Partners range of rubber expansion joints are fully P.E.D. compliant and CE marked where appropriate.

Construction

Bellows are available in a variety of polymers as listed below

Colour Code	Inner Material	Outer Material	Min / Max Operating Temp. (°C)
Red	EPDM	EPDM	-10°C to 105 °C
Green	Hypalon	Neoprene	-10°C to 100 °C
Yellow	Nitrile	Neoprene	-10°C to 100 °C
Blue	Neoprene	Neoprene	-10°C to 105 °C
Black	Butyl	Butyl	-10°C to 105 °C

Maximum Working Pressure

The nominal maximum working pressure is 225psi at 80°C but the actual maximum working pressure depends on temperature of the fluid.

Press / Temp Correction Factor	Operating Temperatures					
	80°C	85°C	90°C	95°C	100°C	105°C
Maximum Working Pressure (x Factor)	x 1.0	x .92	x .83	x .75	x .67	x .60

Test Pressure

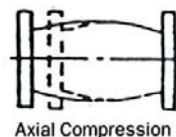
Normal test pressure is 1.5 times the working pressure.

Burst Pressure

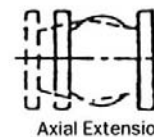
Size range: 1" to 12" bore - 850 psig.
14" to 30" bore - 340 psig.

Quality Assurance

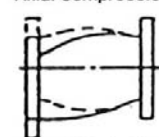
We are approved by LRQA to ISO9001:2000



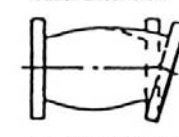
Axial Compression



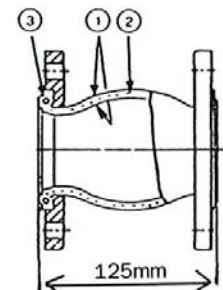
Axial Extension



Lateral Deflection



Angular Deflection





JMFlex Flanged Rubber Expansion Joints

Vacuum Duties

Standard rubber expansion joints are suitable for vacuums of 660mm HG. A higher vacuum joint with reinforced steel ring, suitable for 760mm HG, is also available.

Flanges

Zinc plated mild steel flanges can be supplied drilled ASA 125, BS4504 NP6, NP10, NP16 or BST Table D, E, F. Stainless steel grade 304 flanges are also available drilled ASA125 or BS4504 NP16.

JMFlex Flanged Single Sphere Joints

Nominal Diameter		Natural Installed Length	Allowable Movements from Natural Length				Pressures		Weight (Kg)	
inch	mm	mm	Axial Compression	Axial Extension	Lateral Deflection	Angular Deflection	Positive PSIG at 80°C	Vacuum mm	Tied	Untied
1¼"	32mm	125	13	9	13	15°	225	660	8	4
1½"	40mm	125	13	9	13	15°	225	660	8	4
2"	50mm	135	13	9	13	15°	225	660	9	5
2½"	65mm	135	13	9	13	15°	225	660	10	6
3"	80mm	130	13	9	13	15°	225	660	11	7
4"	100mm	135	13	9	13	15°	225	660	11	8
5"	125mm	135	13	9	13	15°	225	660	20	10
6"	150mm	135	13	9	13	15°	225	660	21	14
8"	200mm	135	13	9	13	15°	225	660	27	-
10"	250mm	140	13	9	13	15°	225	660	34	-
12"	300mm	130	13	9	13	15°	225	660	49	-

JMFlex Flanged Standard Duty Twin Sphere Joints

Nominal Diameter		Installed Length (mm)		Travel (mm)	Allowable Movements from Natural Length				Pressures		Weight (Kg)
inch	mm	Natural Length	Max / Min Installed	Total Compressed / Extended	Axial Compression	Axial Extension	±Lateral Deflection	±Angular Deflection	Positive PSIG at 80°C	Vacuum mm	Joint & Flanges
1"	25mm	254	216 - 269	204 - 284	50	30	45	40°	100	660	2.30
1¼"	32mm	254	216 - 269	204 - 284	50	30	45	40°	100	660	2.80
1½"	40mm	254	216 - 269	204 - 284	50	30	45	40°	100	660	3.50
2"	50mm	150	216 - 269	204 - 284	50	30	45	40°	100	660	4.60
2½"	65mm	150	216 - 269	204 - 284	50	30	45	40°	100	660	6.60
3"	80mm	254	216 - 269	204 - 284	50	30	45	40°	100	660	7.20
4"	100mm	254	216 - 271	204 - 289	50	35	40	35°	100	660	9.70
5"	125mm	235	216 - 271	204 - 289	50	35	40	35°	100	660	11.60
6"	150mm	230	216 - 271	204 - 289	50	35	40	35°	100	660	14.10
8"	200mm	230	216 - 271	204 - 289	50	35	40	30°	100	660	19.90



JMFlex Screwed Rubber Expansion Joints

Bellow Materials

Bellows are made from EPDM with multiple nylon and steel wire reinforcing.

Ends

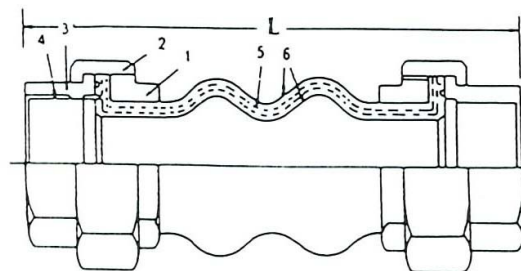
Zinc plated union ends screwed BSP.

Operating Conditions

Maximum working pressure at 80°C : 100psi
 Maximum test pressure at 80°C : 150psi
 Burst pressure : 700psi
 Temperature range : -10°C to 105°C

Nominal Diameter		Installed Length (mm)		Travel (mm)	Allowable Movements from Neutral				Pressures		Weight (Kg)
Inch	mm	Natural Length	Min / Max Installed	Total Compressed Extended	Axial Compression	Axial Extension	± Lateral Deflection	± Angular Deflection	Positive PSIG At 80°C	Vacuum mm	Joint & Flanges
¾"	20	200	186 - 206	181-209	22	6	22	32°	100	660	0.8
1"	25	200	186 - 206	181-209	22	6	22	25°	100	660	1.10
1¼"	32	200	186 - 206	181-209	22	6	22	25°	100	660	1.40
1½"	40	200	186 - 206	181-209	22	6	22	20°	100	660	1.70
2"	50	200	186 - 206	181-209	22	6	22	15°	100	660	2.40
2½"	65	224	186 - 206	181-209	22	6	22	12°	100	660	4.30
3"	80	224	186 - 206	181-209	22	6	22	10°	100	660	4.90

	Parts
1	Union Flange
2	Union Nut
3	Union Screw
4	Thread
5	Reinforcing Cloth
6	Facing and Inner Rubber





JMFlex Stainless Steel Expansion Joints

Design

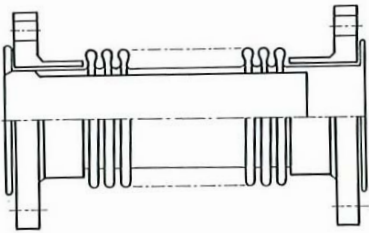
JMFlex type JS-F stainless steel expansion joints with convolutions are designed for low average stress giving long life service. They are fitted with an internal sleeve which reduces liquid friction and prevents bellows squirm and are available with or without tie rods.

Working Pressure

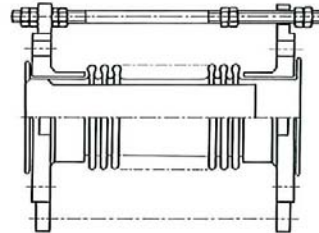
10 kg/cm² (150 psi)

Construction

Parts	Material	Option
Bellows	SUS304	SUS316/321
Flange	FCD-40	SUS304
Internal Sleeve	SUS304	SUS316
Tube End	FCD-40	SUS304
Tie Rods	S5C	-



Type JS-F



Type JS-F(T) With Tie Rods

Nominal Bore		Total Length	Bellows		Axial Movement	Force To Compress	Effective Area
mm	ins	mm	O.D.	Corrs No.	mm	kg	cm ²
40	1½	300	62	26	+10 - 30	150	22.2
50	2	300	78	24	+10 - 35	180	34.5
65	2½	300	95	20	+10 - 35	280	52.5
80	3	300	110	20	+10 - 40	260	71.2
100	4	300	134	16	+10 - 40	280	110.5
125	5	300	163	15	+10 - 40	400	168.7
150	6	300	190	14	+10 - 40	530	233.9
200	8	300	243	13	+10 - 40	650	389.1
250	10	300	295	12	+10 - 40	750	592.2
300	12	300	345	12	+10 - 40	850	829.7



JM Flex Stainless Steel Expansion Joints

Design

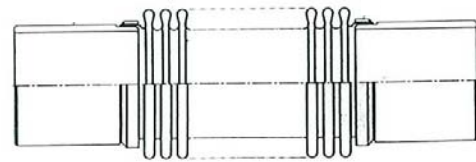
JM Flex type JS-S stainless steel expansion joints are available screwed either BSP or NPT male. We also offer type JS-W* with weld ends and can be supplied either with or without an internal sleeve.

Working Pressure

10 kg/cm² (150 psi)

Construction

Parts	Material	Option
Bellows	SUS304	SUS316/321
Tube End	SPG	SUS304
Internal Sleeve	SUS304	-
Seal Ring	SUS304	-



Nominal Bore		Total Length	Bellows		Axial Movement	Force To Compress	Effective Area
mm	ins		O.D.	Corrs No.			
15	½	250	31.1	22	+5 - 25	34	5.4
20	¾	250	31.1	22	+5 - 25	34	5.4
25	1	250	37.9	20	+5 - 25	31	8.2
32	1¼	350	56	28	+10 - 30	135	18.6
40	1½	350	62	26	+10 - 30	150	22.2
50	2	350	78	24	+10 - 35	180	34.5
65	2½	350	95	20	+10 - 35	280	52.5
80	3	350	110	20	+10 - 40	260	71.2
100	4	350	134	16	+10 - 40	280	110.5
125	5	350	163	15	+10 - 40	400	168.7
150	6	350	190	14	+10 - 40	530	233.9
200	8	350	252	13	+10 - 40	650	389.1
250	10	350	315	12	+10 - 40	750	592.2
300	12	350	366	12	+10 - 40	850	829.7

* Dimensions for weld end and all stainless steel expansion joints on request.



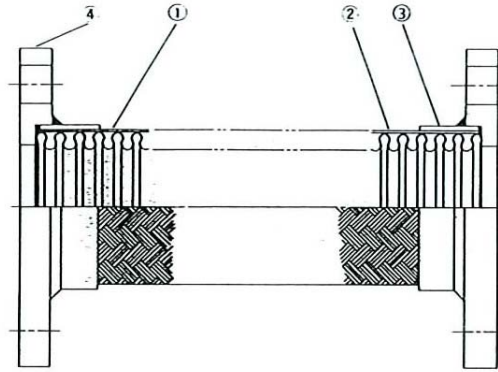
JM Flex Stainless Steel Expansion Joints

Design

Our Type JS-F (SBR) is a braided stainless steel expansion joint which is used in large offset.

Construction

Item	Parts	Material	Option
1	Bellows	SUS304	SUS316/321
2	Tube End	SPG	SUS304
3	Internal Sleeve	SUS304	-
4	Seal Ring	SUS304	-



Nominal Bore		Total Length	Bellows		mm		Working Pressure Kg/cm ²
mm	ins		O.D.	T			
15	1/2	200	30.5	0.3	40	26	20
20	3/4	200	30.5	0.3	40	26	20
25	1	200	38.0	0.3	38	24	20
32	1 1/4	200	46.0	0.3	36	21	20
40	1 1/2	200	56.0	0.4	33	16	20
50	2	230	73.6	0.4	28	15	20
65	2 1/2	230	88.0	0.4	24	13	16
80	3	230	102.0	0.4	20	11	16
100	4	230	128.0	0.4	18	9	13
125	5	280	155.0	0.5	23	14	10
150	6	280	185.0	0.5	20	12	10
200	8	300	235.0	0.6	20	8	10
250	10	330	286.0	0.6	17	8	10
300	12	330	340.0	0.7	15	7	10

Testing

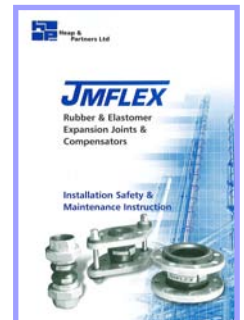
Our range of expansion joints have been stringently subjected to movement, pressure and temperature tests generally in accordance with in DIN4809 on our purpose built P.E.D. test rig.

All expansion joints held in stock are then hydraulically tested to 1.5 times the maximum working pressure prior to despatch.



Documentation Package

We supply a complete documentation package with all our expansion joints including test certificate, P.E.D. statement or declaration of conformity (as appropriate) and installation safety & maintenance instructions.



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