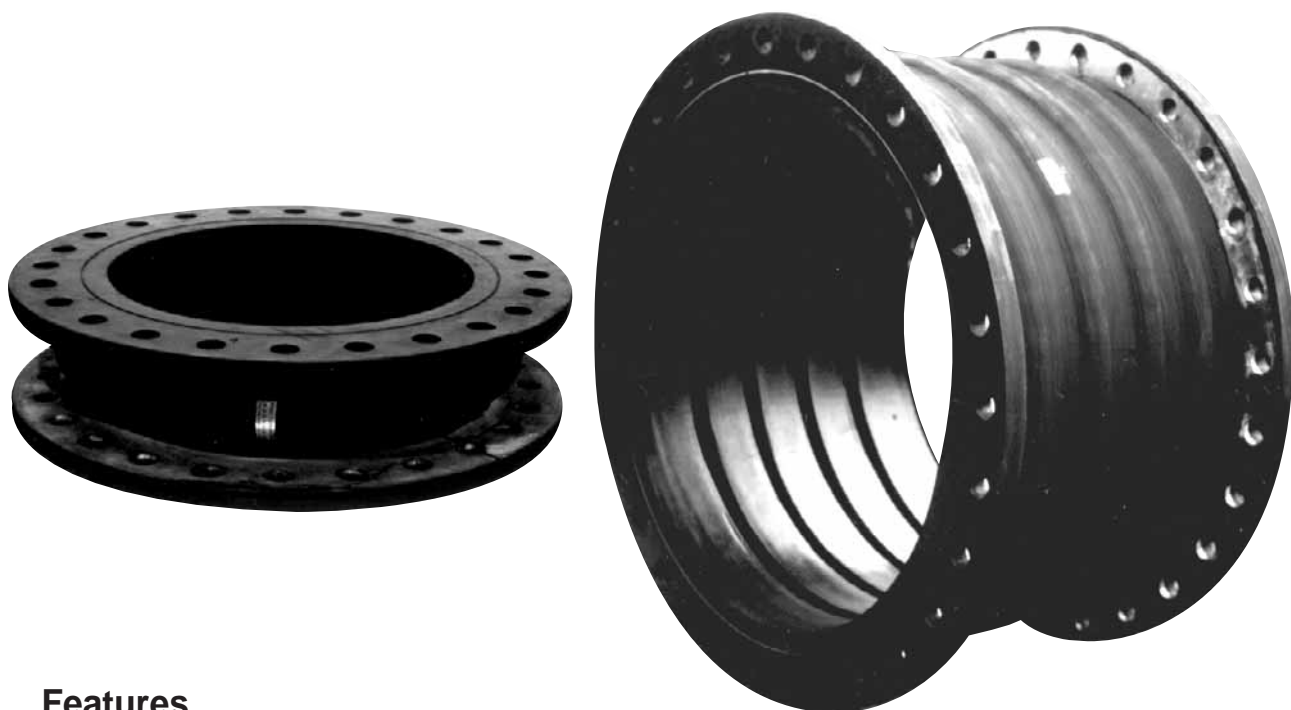


# ***megaflexon*** with Confidence

## SPOOL TYPE

### RUBBER EXPANSION JOINTS

HAND BUILT



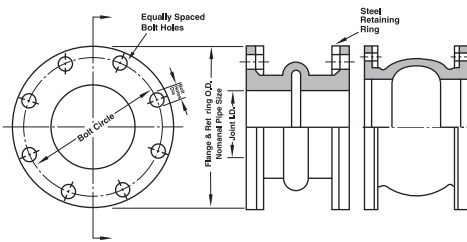
### Features

- Single to multi as required
- Retaining split rings material / Galvanized  
Carbon steel or stainless steel ANSI, DIN, PN and BS available.
- ANSI 150 lb drilling is standard.
- Other flange code drilling as required.
- Reinforcement / Spiral steel wire or steel bar.
- Pipe diameter size 2inch to 144inch.
- Internal liner cover use special materials for resistance to acid.
- High temperature resistant fabric for up to 400° F
- Minimum pressure safety factor : 4 to 1
- Pressures, vacuum ratings and temperature tolerance as detailed inside.

**BASIC SPOOL TYPE EXPANSION JOINTS**

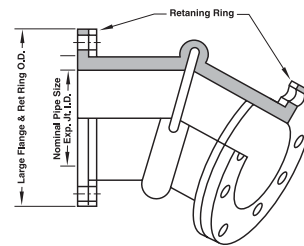
**Single Arch Type**

- Fabric and rubber construction.
- Reinforced with metal/wire rings.
- Full face flanges integral with joint body.
- Flanges drilled to companion bolt pattern.
- Gaskets not required.



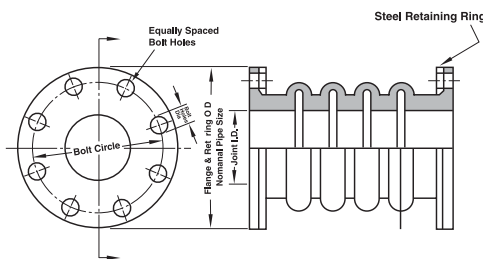
**Offset type**

- Custom built to specifications.
- Will compensate for initial misalignment and non-parallelism of piping axis.
- Complete drawings and specifications recommended with inquiries/orders.



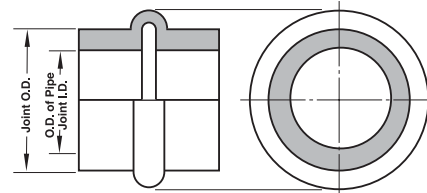
**Multiple Arch Type**

- Accommodates greater movement than single arch joint.
- Minimum joint length is dependent on the number of arches.
- Maximum of four(4) arches recommended to maintain lateral stability.



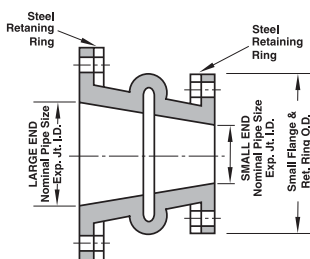
**Sleeve Type**

- Same design as single arch type except that the sleeve ends have an I.D. equal to the pipe O.D.
- Will slip over straight ends of open pipe.
- Ends secured by suitable clamps.
- Recommended for low pressure service only.

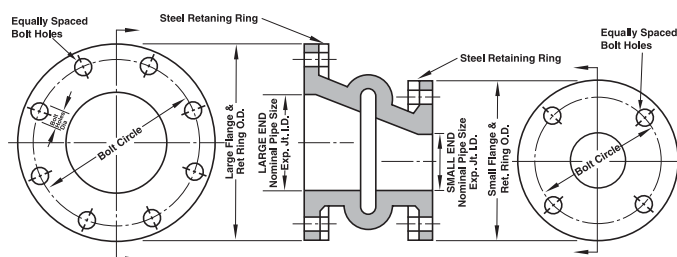


**Taper & Reducer Type**

- Will connect piping of different diameters.
- May be manufactured as concentric tapered joints: with the axis of each end concentric with the other,
- May also be manufactured eccentric: each axis offset from the other end.
- Tapers of 15 or less are recommended.
- Pressure ratings are based on larger I.D.
- Available with/without arches.



Concentric Reducer Type Expansion Joint

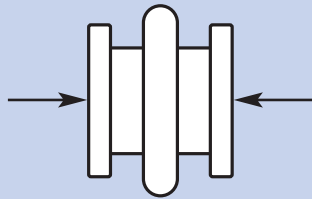


Eccentric Reducer Type Expansion Joint

### MOVEMENTS IN INDUSTRIAL PIPING

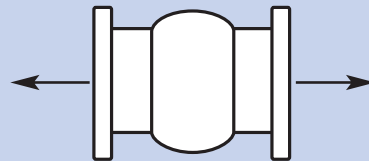
#### Axial Compression

- Longitudinal movement shortens face-to-face dimension along axis of expansion joint/flexible coupling.
- Pipe flanges remain perpendicular to axis.



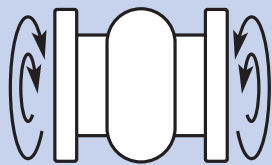
#### Axial Extension

- Longitudinal movement lengthens face-to-face dimension along axis of expansion joint/flexible coupling.
- Pipe flanges remain perpendicular to axis.



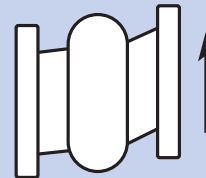
#### Torsional Movement

- Rotation of one flange with stationary counterpart.
- Simultaneous rotation of both flanges in opposing motion.



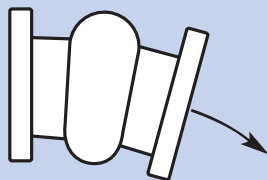
#### Lateral/Transverse Movement

- Offset movement of one/both pipe flanges.
- Both flanges remain parallel to each other while forming angle to axis of joint.



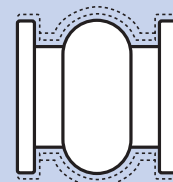
#### Angular Movement

- Deflection/rotation of one or both flanges.
- Angle with axis of expansion joint/flexible coupling is formed.



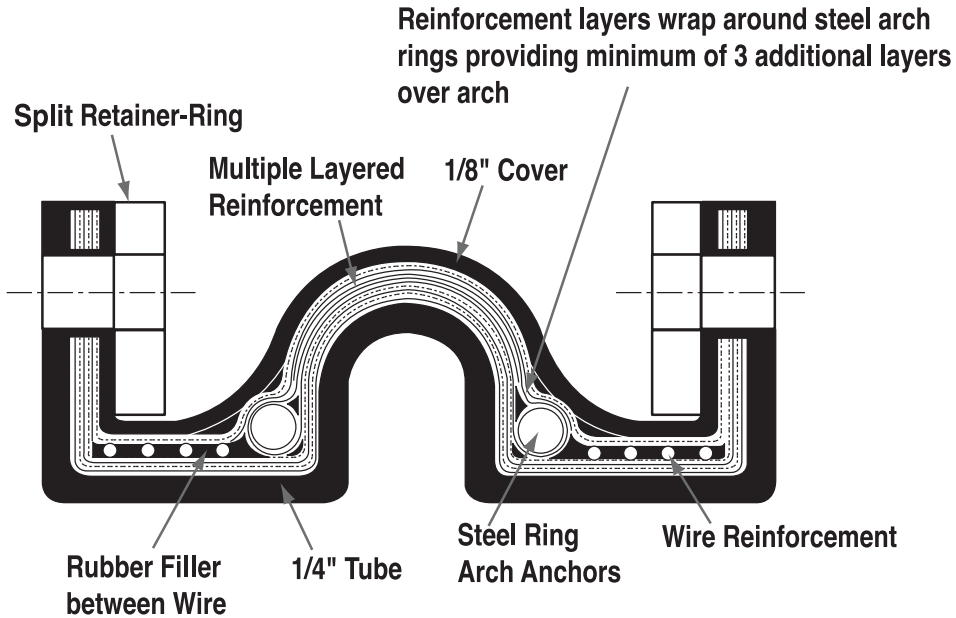
#### Vibration

- By definition oscillating movement around axis of expansion joint/flexible coupling
- Pipe flanges remain parallel with each other.
- Flanges remain perpendicular to axis.
- Mechanical vibration in steel piping system reduced with installation of pipe connectors/expansion joints.



Exp. Joint Size -inches	2to6			8			10			12			14			16			18			20			22to24			26to40			42to96					
	□	1	1□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	1	2	3	1□	2□	3□			
To Handle inches-Axial Compression	□	1	1□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	□	1□	2□	1	2	3	1□	2□	3□			
To Handle inches-Axial Extension	□	□	□	□	1□	□	□	1□	□	□	1□	□	□	1□	□	□	1□	□	□	1□	□	□	1□	□	□	1□	□	□	1	□	□	1□	□			
To Handle in-Lateral Deflection	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□	□	1	1□			
Use Face-to-Face -inches	6	10	12	6	10	14	8	12	14	8	12	14	8	12	14	8	12	16	8	12	16	8	12	16	8	12	16	10	14	18	10	14	18			
Use Number Arches	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3

**CONSTRUCTION**



\*OPTIONAL / FILLED ARCH AVAILABLE

**OPERATING TEMPERATURES**

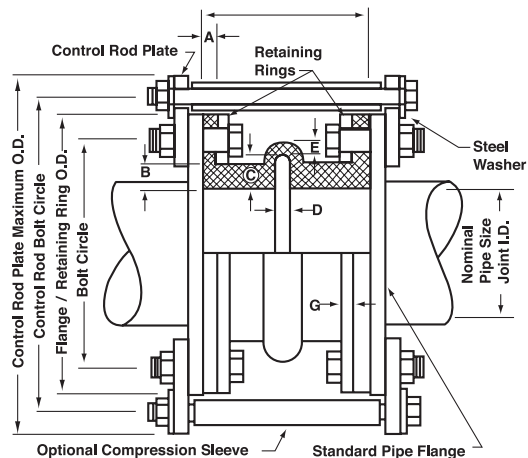
STANDARD MATERIALS (RUBBER)		OPERATING TEMPERATURES (MAX)	
INTERNAL TUBE	EXTERNAL COVER		
Butyl	Butyl	B	250° F
EPDM	EPDM	E	350° F
Hypalon	Hypalon	H	225° F
Hypalon	Neoprene	HN	225° F
Nitrile	Neoprene	NiN	210° F
Neoprene	Natural	NR	180° F
Viton	Viton	VV	400° F

**INSTALLATION INSTRUCTIONS OF CONTROL UNIT COMPONENTS**

Control units may be required to limit both extension and compression movements.

**Extension.** Control units must be used when it is not feasible in a given structure to provide adequate anchors in the proper location. In such cases, the static pressure thrust of the system will cause the expansion joint to extend to the limit set by the control rods which will then preclude the possibility of further motion that would over-elongate the joint. Despite the limiting action that control rods have on the joint, they must be used when proper anchoring cannot be provided. It cannot be emphasized too strongly that rubber expansion joints, by virtue of their function, are not designed to take end thrusts and, in all cases where such are likely to occur, proper anchoring is essential. If this fact is ignored, premature failure of the expansion joint is a foregone conclusion.

**Compression.** Pipe sleeves can be installed over the control rods. The purpose of the sleeve is to prevent excessive compression in the expansion joint. The length of this pipe sleeve should be such that the expansion joint cannot be compressed beyond the maximum allowable compression figure stated by the manufacturer.

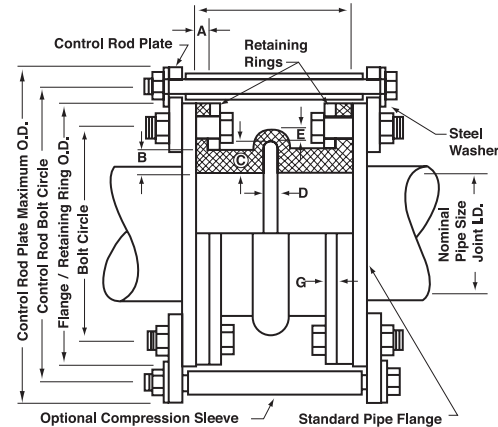


## Expansion Joint

### SSE SERIES

**SPOOL TYPE**

**SINGLE OPEN ARCH EXPANSION JOINTS**



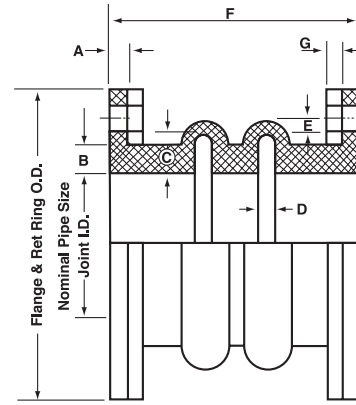
Pipe Size (in)	Flange OD (in)	Face to Face (in)	Overall Flange Thickness (in)		Dia Bolt Circle (in)	No. of Bolts	Dia of Bolts (in)	Axial Compression (in)	Axial Extension (in)	Lateral Deflection (in)	Angular (degrees)	Torsional (degrees)	Rated Working Pressure (psi)	Minimum Burst Pressure (psi)	Vacuum (inHg)
			Steel	Ductile											
2	6	6	7/8	1	4 3/4	4	5/8	3/4	1/2	1/2	14.5	3	165	660	30
2 1/2	7	6	7/8	1	5 1/2	4	5/8	3/4	1/2	1/2	11.5	3	165	660	30
3	7 1/2	6	7/8	1	6	4	5/8	3/4	1/2	1/2	10.0	3	165	660	30
4	9	6	7/8	1	7 1/2	8	5/8	3/4	1/2	1/2	7.5	3	165	660	30
5	10	6	7/8	1	8 1/2	8	3/4	3/4	1/2	1/2	6.0	3	140	560	30
6	11	6	7/8	1	9 1/2	8	3/4	3/4	1/2	1/2	5.5	3	140	560	30
8	13 1/2	6	7/8	1	11 3/4	8	3/4	3/4	1/2	1/2	5.0	3	140	560	30
10	16	8	7/8	1	14 1/4	12	7/8	1	5/8	5/8	4.5	3	140	560	30
12	19	8	7/8	1	17	12	7/8	1	5/8	5/8	3.8	3	140	560	30
14	21	8	1	1 1/8	18 3/4	12	1	1	5/8	5/8	3.3	2	90	360	30
16	23 1/2	8	1	1 1/8	21 1/4	16	1	1	5/8	5/8	2.8	2	70	280	30
18	25	8	1	1 1/8	22 3/4	16	1 1/8	1	5/8	5/8	2.5	1	70	280	30
20	27 1/2	8	1	1 1/8	25	20	1 1/8	1	5/8	5/8	2.5	1	70	280	30
22	29 1/2	10	1	1 1/8	27 1/4	20	1 1/4	1 1/4	3/4	5/8	2.3	1	70	280	30
24	32	10	1	1 1/8	29 1/2	20	1 1/4	1 1/4	3/4	5/8	2.0	1	70	280	30
26	34 1/4	10	1	1 1/8	31 3/4	24	1 1/4	1 1/4	3/4	5/8	2.0	1	70	280	30
28	36 1/2	10	1	1 1/8	34	28	1 1/4	1 1/4	3/4	5/8	2.0	1	60	240	30
30	38 3/4	10	1	1 1/8	36	28	1 1/4	1 1/4	3/4	5/8	2.0	1	60	240	30
34	43 3/4	10	1	1 1/8	40 1/2	32	1 1/2	1 1/4	3/4	5/8	1.8	1	60	240	30
36	46	10	1/8	1 1/4	42 3/4	32	1 1/2	1 1/4	3/4	5/8	1.5	1	60	240	30
40	50 3/4	10	1 1/8	1 1/4	47 1/4	36	1 1/2	1 1/2	3/4	5/8	1.5	1	60	240	30
42	53	12	1 1/8	1 1/4	49 1/2	36	1 1/2	1 1/2	7/8	3/4	1.5	1	60	240	30
44	55 1/4	12	1 1/8	1 1/4	51 3/4	40	1 1/2	1 1/2	7/8	3/4	1.5	1	60	240	30
48	59 1/2	12	1 1/8	1 1/4	56	44	1 1/2	1 1/2	7/8	3/4	1.5	1	60	240	30
50	61 3/4	12	1 1/8	1 1/4	58 1/4	44	1 3/4	1 1/2	7/8	3/4	1.3	1	60	240	30
54	66 1/4	12	1 1/8	1 1/4	62 3/4	44	1 3/4	1 1/2	7/8	3/4	1.3	1	60	240	30
56	68 3/4	12	1 1/8	1 1/4	65	48	1 3/4	1 1/2	7/8	3/4	1.3	1	60	240	30
60	73	12	1 1/8	1 1/4	69 1/4	52	1 3/4	1 1/2	7/8	3/4	1.0	1	60	240	30
62	75 3/4	12	1 1/8	1 1/4	71 3/4	52	1 3/4	1 1/2	7/8	3/4	1.0	1	50	200	30
66	80	12	1 1/8	1 1/4	76	52	1 3/4	1 1/2	7/8	3/4	1.0	1	50	200	30
72	86 1/2	12	1 1/8	1 1/4	82 1/2	60	1 3/4	1 1/2	7/8	3/4	0.9	1	50	200	30
78	93	12	1 1/8	1 1/4	89 3/4	64	2	1 1/2	7/8	3/4	0.9	1	50	200	30
84	99 3/4	12	1 1/8	1 1/4	95 1/2	64	2	1 1/2	7/8	3/4	0.8	1	50	200	30
90	106 1/2	12	1 1/8	1 1/4	102 1/4	68	2	1 1/2	7/8	3/4	0.8	1	50	200	30
96	113 1/4	12	1 1/8	1 1/4	108 1/2	68	2 1/4	1 1/2	7/8	3/4	0.4	1	50	200	30
98	115 1/2	12	1 1/4	1 3/8	110 3/4	68	2 1/4	2 1/4	1	1 1/8	0.6	1	30	120	30
100	117 3/4	12	1 1/4	1 3/8	113	68	2 1/4	2 1/4	1	1 1/8	0.6	1	30	120	30
102	120	12	1 1/4	1 3/8	114 1/2	72	2 1/4	2 1/4	1	1 1/8	0.6	1	30	120	30
108	126 3/4	12	1 1/4	1 3/8	120 3/4	72	2 1/4	2 1/4	1	1 1/8	0.4	1	25	100	30
120	140 1/4	12	1 1/4	1 3/8	132 3/4	76	2 1/4	2 1/4	1	1 1/8	0.4	1	25	100	30
132	153 3/4	12	1 1/4	1 3/8	145 3/4	80	2 1/4	2 1/4	1	1 1/8	0.3	1	25	100	30
144	167 1/4	12	1 1/4	1 3/8	158 1/4	84	2 1/4	2 1/4	1	1 1/8	0.1	1	25	100	30

Expansion Joint

**SDE** SERIES

SPOOL TYPE

**DOUBLE OPEN ARCH EXPANSION JOINTS**



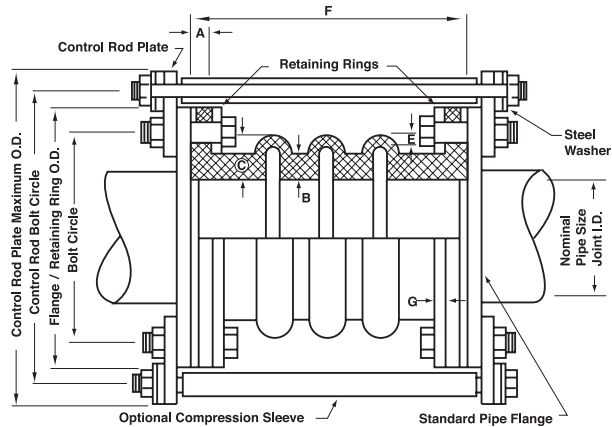
Pipe Size (in)	Flange OD (in)	Face to Face (in)	Overall Flange Thickness (in)		Dia Bolt Circle (in)	No. of Bolts	Dia of Bolts (in)	Axial Compression (in)	Axial Extension (in)	Lateral Deflection (in)	Angular (degrees)	Torsional (degrees)	Rated Working Pressure (psi)	Minimum Burst Pressure (psi)	Vacuum (inHg)
			Steel	Ductile											
2	6	10	7/8	1	4 3/4	4	5/8	1 1/2	1	1	19.5	5	165	660	30
2 1/2	7	10	7/8	1	5 1/2	4	5/8	1 1/2	1	1	16.5	5	165	660	30
3	7 1/2	10	7/8	1	6	4	5/8	1 1/2	1	1	15.5	5	165	660	30
4	9	10	7/8	1	7 1/2	8	5/8	1 1/2	1	1	12.5	5	165	660	30
5	10	10	7/8	1	8 1/2	8	3/4	1 1/2	1	1	11.0	5	140	560	30
6	11	10	7/8	1	9 1/2	8	3/4	1 1/2	1	1	10.5	5	140	560	30
8	13 1/2	10	7/8	1	11 3/4	8	3/4	1 1/2	1	1	10.0	5	140	560	30
10	16	12	7/8	1	14 1/4	12	7/8	2	1 1/4	1 1/4	9.5	5	140	560	30
12	19	12	7/8	1	17	12	7/8	2	1 1/4	1 1/4	8.8	5	140	560	30
14	21	12	1	1 1/8	18 3/4	12	1	2	1 1/4	1 1/4	8.3	4	90	360	30
16	23 1/2	12	1	1 1/8	21 1/4	16	1	2	1 1/4	1 1/4	7.8	4	70	280	30
18	25	12	1	1 1/8	22 3/4	16	1 1/8	2	1 1/4	1 1/4	7.5	3	70	280	30
20	27 1/2	12	1	1 1/8	25	20	1 1/8	2	1 1/4	1 1/4	7.5	3	70	280	30
22	29 1/2	14	1	1 1/8	27 1/4	20	1 1/4	2 1/2	1 1/2	1 1/4	7.3	3	70	280	30
24	32	14	1	1 1/8	29 1/2	20	1 1/4	2 1/2	1 1/2	1 1/4	7.0	3	70	280	30
26	34 1/4	14	1	1 1/8	31 3/4	24	1 1/4	2 1/2	1 1/2	1 1/4	7.0	3	70	280	30
28	36 1/2	14	1	1 1/8	34	28	1 1/4	2 1/2	1 1/2	1 1/4	7.0	3	60	240	20
30	38 3/4	14	1	1 1/8	36	28	1 1/4	2 1/2	1 1/2	1 1/4	7.0	3	60	240	20
34	43 3/4	14	1	1 1/8	40 1/2	32	1 1/2	2 1/2	1 1/2	1 1/4	6.8	3	60	240	20
36	46	14	1/8	1 1/4	42 3/4	32	1 1/2	2 1/2	1 1/2	1 1/4	6.5	3	60	240	20
40	50 3/4	14	1 1/8	1 1/4	47 1/4	36	1 1/2	2 1/2	1 1/2	1 1/4	6.5	3	60	240	20
42	53	16	1 1/8	1 1/4	49 1/2	36	1 1/2	3	1 3/4	1 1/2	6.5	2	60	240	15
44	55 1/4	16	1 1/8	1 1/4	51 3/4	40	1 1/2	3	1 3/4	1 1/2	6.5	2	60	240	15
48	59 1/2	16	1 1/8	1 1/4	56	44	1 1/2	3	1 3/4	1 1/2	6.5	2	60	240	15
50	61 3/4	16	1 1/8	1 1/4	58 1/4	44	1 3/4	3	1 3/4	1 1/2	6.3	2	60	240	15
54	66 1/4	16	1 1/8	1 1/4	62 3/4	44	1 3/4	3	1 3/4	1 1/2	6.3	2	60	240	15
56	68 3/4	16	1 1/8	1 1/4	65	48	1 3/4	3	1 3/4	1 1/2	6.3	2	60	240	15
60	73	16	1 1/8	1 1/4	69 1/4	52	1 3/4	3	1 3/4	1 1/2	6.0	2	60	240	15
62	75 3/4	16	1 1/8	1 1/4	71 3/4	52	1 3/4	3	1 3/4	1 1/2	6.0	2	50	200	15
66	80	16	1 1/8	1 1/4	76	52	1 3/4	3	1 3/4	1 1/2	6.0	2	50	200	15
72	86 1/2	16	1 1/8	1 1/4	82 1/2	60	1 3/4	3	1 3/4	1 1/2	5.9	2	50	200	15
78	93	16	1 1/8	1 1/4	89 3/4	64	2	3	1 3/4	1 1/2	5.9	2	50	200	15
84	99 3/4	16	1 1/8	1 1/4	95 1/2	64	2	3	1 3/4	1 1/2	5.8	2	50	200	15
90	106 1/2	16	1 1/8	1 1/4	102 1/4	68	2	3	1 3/4	1 1/2	5.8	2	50	200	15
96	113 1/4	16	1 1/8	1 1/4	108 1/2	68	2 1/4	3	1 3/4	1 1/2	5.7	2	50	200	15
98	115 1/2	16	1 1/4	1 3/8	110 3/4	68	2 1/4	4 1/2	2	2 1/4	5.6	2	30	120	15
100	117 3/4	16	1 1/4	1 3/8	113	68	2 1/4	4 1/2	2	2 1/4	5.6	2	30	120	15
102	120	16	1 1/4	1 3/8	114 1/2	72	2 1/4	4 1/2	2	2 1/4	5.6	2	30	120	15
108	126 3/4	16	1 1/4	1 3/8	120 3/4	72	2 1/4	4 1/2	2	2 1/4	5.4	2	25	100	15
120	140 1/4	16	1 1/4	1 3/8	132 3/4	76	2 1/4	4 1/2	2	2 1/4	5.4	2	25	100	15
132	153 3/4	16	1 1/4	1 3/8	145 3/4	80	2 1/4	4 1/2	2	2 1/4	5.3	2	25	100	15
144	167 1/4	16	1 1/4	1 3/8	158 1/4	84	2 1/4	4 1/2	2	2 1/4	5.1	2	25	100	10

## Expansion Joint

# STE SERIES

**SPOOL TYPE**

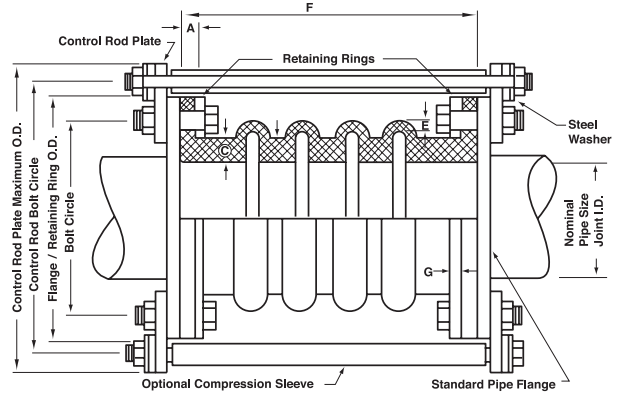
**TRIPLE OPEN ARCH EXPANSION JOINTS**



Pipe Size (in)	Flange OD (in)	Face to Face (in)	Overall Flange Thickness (in)		Dia Bolt Circle (in)	No. of Bolts	Dia of Bolts (in)	Axial Compression (in)	Axial Extension (in)	Lateral Deflection (in)	Angular (degrees)	Torsional (degrees)	Rated Working Pressure (psi)	Minimum Burst Pressure (psi)	Vacuum (inHg)
			Steel	Ductil											
2	6	14	7/8	1	4 3/4	4	5/8	2 1/4	1 1/2	1 1/2	24.5	7	165	660	15
2 1/2	7	14	7/8	1	5 1/2	4	5/8	2 1/4	1 1/2	1 1/2	21.5	7	165	660	15
3	7 1/2	14	7/8	1	6	4	5/8	2 1/4	1 1/2	1 1/2	19.5	7	165	660	15
4	9	14	7/8	1	7 1/2	8	5/8	2 1/4	1 1/2	1 1/2	17.5	7	165	660	15
5	10	14	7/8	1	8 1/2	8	3/4	2 1/4	1 1/2	1 1/2	16.0	7	140	560	15
6	11	14	7/8	1	9 1/2	8	3/4	2 1/4	1 1/2	1 1/2	15.5	7	140	560	15
8	13 1/2	14	7/8	1	11 3/4	8	3/4	2 1/4	1 1/2	1 1/2	15.0	7	140	560	15
10	16	16	7/8	1	14 1/4	12	7/8	3	1 7/8	1 7/8	14.9	7	140	560	15
12	19	16	7/8	1	17	12	7/8	3	1 7/8	1 7/8	12.8	7	140	560	15
14	21	16	1	1	18 3/4	12	1	3	1 7/8	1 7/8	12.8	6	90	360	15
16	23 1/2	16	1	1 1/8	21 1/4	16	1	3	1 7/8	1 7/8	12.8	6	70	280	15
18	25	16	1	1 1/8	22 3/4	16	11/8	3	1 7/8	1 7/8	12.5	5	70	280	15
20	27 1/2	16	1	1 1/8	25	20	11/8	3	1 7/8	1 7/8	12.5	5	70	280	15
22	29 1/2	18	1	1 1/8	27 1/4	20	11/4	3 3/4	1 7/8	1 7/8	12.3	5	70	280	15
24	32	18	1	1 1/8	29 1/2	20	11/4	3 3/4	2 1/4	1 7/8	12.0	5	70	280	15
26	34 1/4	18	1	1 1/8	31 3/4	24	11/4	3 3/4	2 1/4	1 7/8	12.0	5	70	280	15
28	36 1/2	18	1	1 1/8	34	28	11/4	3 3/4	2 1/4	1 7/8	12.0	5	60	240	10
30	38 3/4	18	1	1 1/8	36	28	11/4	3 3/4	2 1/4	1 7/8	12.0	5	60	240	10
34	43 3/4	18	1	1 1/8	40 1/2	32	11/2	3 3/4	2 1/4	1 7/8	11.8	5	60	240	10
36	46	18	1 1/8	1 1/8	42 3/4	32	11/2	3 3/4	2 1/4	1 7/8	11.5	5	60	240	10
40	50 3/4	18	1 1/8	1 1/4	47 1/4	36	11/2	3 3/4	2 1/4	1 7/8	11.5	5	60	240	10
42	53	20	1 1/8	1 1/4	49 1/2	36	11/2	4 1/2	2 5/8	2 1/4	11.5	4	60	240	10
44	55 1/4	20	1 1/8	1 1/4	51 3/4	40	11/2	4 1/2	2 5/8	2 1/4	11.5	4	60	240	10
48	59 1/2	20	1 1/8	1 1/4	56	44	11/2	4 1/2	2 5/8	2 1/4	11.5	4	60	240	10
50	61 3/4	20	1 1/8	1 1/4	58 1/4	44	13/4	4 1/2	2 5/8	2 1/4	11.3	4	60	240	10
54	66 1/4	20	1 1/8	1 1/4	62 3/4	44	13/4	4 1/2	2 5/8	2 1/4	11.3	4	60	240	10
56	68 3/4	20	1 1/8	1 1/4	65	48	13/4	4 1/2	2 5/8	2 1/4	11.3	4	60	240	10
60	73	20	1 1/8	1 1/4	69 1/4	52	13/4	4 1/2	2 5/8	2 1/4	11.0	4	60	240	10
62	75 3/4	20	1 1/8	1 1/4	71 3/4	52	13/4	4 1/2	2 5/8	2 1/4	11.0	4	50	200	10
66	80	20	1 1/8	1 1/4	76	52	13/4	4 1/2	2 5/8	2 1/4	11.0	4	50	200	10
72	86 1/2	20	1 1/8	1 1/4	82 1/2	60	13/4	4 1/2	2 5/8	2 1/4	10.9	4	50	200	10
78	93	20	1 1/8	1 1/4	89 3/4	64	2	4 1/2	2 5/8	2 1/4	10.9	4	50	200	10
84	99 3/4	20	1 1/8	1 1/4	95 1/2	64	2	4 1/2	2 5/8	2 1/4	10.8	4	50	200	10
90	106 1/2	20	1 1/8	1 1/4	102 1/4	68	2	4 1/2	2 5/8	2 1/4	10.8	4	50	200	10
96	113 1/4	20	1 1/8	1 1/4	108 1/2	68	21/4	4 1/2	2 5/8	2 1/4	10.7	4	50	200	10
98	115 1/2	20	1 1/4	1 1/4	110 3/4	68	21/4	6 3/4	3	3 3/8	10.6	3	30	120	10
100	117 3/4	20	1 1/4	1 3/8	113	68	21/4	6 3/4	3	3 3/8	10.6	3	30	120	10
102	120	20	1 1/4	1 3/8	114 1/2	72	21/4	6 3/4	3	3 3/8	10.6	3	30	120	10
108	126 3/4	20	1 1/4	1 3/8	120 3/4	72	2 1/4	6 3/4	3	3 3/8	10.4	3	25	100	10
120	140 1/4	20	1 1/4	1 3/8	132 3/4	76	21/4	6 3/4	3	3 3/8	10.4	3	25	100	10
132	153 3/4	20	1 1/4	1 3/8	145 3/4	80	21/4	6 3/4	3	3 3/8	10.3	3	25	100	10
144	167 3/4	20	1 1/4	1 3/8	158 1/4	84	21/4	6 3/4	3	3 3/8	10.1	3	25	100	8

**SPOOL TYPE**

**MULTIPLE ARCH TYPE EXPANSION JOINTS**



Pipe Size (in)	Flange OD (in)	Face to Face (in)	Overall Flange Thickness (in)		Dia Bolt Circle (in)	No. of Bolts	Dia of Bolts (in)	Axial Compression (in)	Axial Extension (in)	Lateral Deflection (in)	Angular (degrees)	Torsional (degrees)	Rated Working Pressure (psi)	Minimum Burst Pressure (psi)	Vacuum (inHg)
			Steel	Ductile											
2	6	18	7/8	1	4 3/4	4	5/8	3	2	2	29.5	8	165	660	15
2 1/2	7	18	7/8	1	5 1/2	4	5/8	3	2	2	26.5	8	165	660	15
3	7 1/2	18	7/8	1	6	4	5/8	3	2	2	24.5	8	165	660	15
4	9	18	7/8	1	7 1/2	8	5/8	3	2	2	22.5	8	165	660	15
5	10	18	7/8	1	8 1/2	8	3/4	3	2	2	21.0	8	140	560	15
6	11	18	7/8	1	9 1/2	8	3/4	3	2	2	20.5	8	140	560	15
8	13 1/2	18	7/8	1	11 3/4	8	3/4	3	2	2	20.0	8	140	560	15
10	16	20	7/8	1	14 1/4	12	7/8	4	2 1/2	2 1/2	19.9	8	140	560	15
12	19	20	7/8	1	17	12	7/8	4	2 1/2	2 1/2	17.8	8	140	560	15
14	21	20	1	1 1/8	18 3/4	12	1	4	3	2 1/2	17.8	7	90	360	15
16	23 1/2	20	1	1 1/8	21 1/4	16	1	4	3	2 1/2	17.8	7	70	280	15
18	25	20	1	1 1/8	22 3/4	16	1 1/8	4	3	2 1/2	17.5	6	70	280	15
20	27 1/2	20	1	1 1/8	25	20	1 1/8	4	3	2 1/2	17.5	6	70	280	15
22	29 1/2	22	1	1 1/8	27 1/4	20	1 1/4	5	3	2 1/2	17.3	6	70	280	15
24	32	22	1	1 1/8	29 1/2	20	1 1/4	5	3	2 1/2	17.0	6	70	280	15
26	34 1/4	22	1	1 1/8	31 3/4	24	1 1/4	5	3	2 1/2	17.0	6	70	280	15
28	36 1/2	22	1	1 1/8	34	28	1 1/4	5	3	2 1/2	17.0	6	60	240	10
30	38 3/4	22	1	1 1/8	36	28	1 1/4	5	3 1/2	3	17.0	6	60	240	10
34	43 3/4	22	1	1 1/8	40 1/2	32	1 1/2	5	3 1/2	3	16.8	6	60	240	10
36	46	22	1/8	1 1/4	42 3/4	32	1 1/2	5	3 1/2	3	16.5	6	60	240	10
40	50 3/4	22	1 1/8	1 1/4	47 1/4	36	1 1/2	5	3 1/2	3	16.5	6	60	240	10
42	53	24	1 1/8	1 1/4	49 1/2	36	1 1/2	6	3 1/2	3	16.5	5	60	240	10
44	55 1/4	24	1 1/8	1 1/4	51 3/4	40	1 1/2	6	3 1/2	3	16.5	5	60	240	10
48	59 1/2	24	1 1/8	1 1/4	56	44	1 1/2	6	3 1/2	3	16.5	5	60	240	10
50	61 3/4	24	1 1/8	1 1/4	58 1/4	44	1 3/4	6	3 1/2	3	16.3	5	60	240	10
54	66 1/4	24	1 1/8	1 1/4	62 3/4	44	1 3/4	6	3 1/2	3	16.3	5	60	240	10
56	68 3/4	24	1 1/8	1 1/4	65	48	1 3/4	6	3 1/2	3	16.3	5	60	240	10
60	73	24	1 1/8	1 1/4	69 1/4	52	1 3/4	6	3 1/2	3	16.0	5	60	240	10
62	75 3/4	24	1 1/8	1 1/4	71 3/4	52	1 3/4	6	3 1/2	3	16.0	5	50	200	10
66	80	24	1 1/8	1 1/4	76	52	1 3/4	6	3 1/2	3	16.0	5	50	200	10
72	86 1/2	24	1 1/8	1 1/4	82 1/2	60	1 3/4	6	3 1/2	3	15.9	5	50	200	10
78	93	24	1 1/8	1 1/4	89 3/4	64	2	6	3 1/2	3	15.9	5	50	200	10
84	99 3/4	24	1 1/8	1 1/4	95 1/2	64	2	6	3 1/2	3	15.8	5	50	200	10
90	106 1/2	24	1 1/8	1 1/4	102 1/4	68	2	6	3 1/2	3	15.8	5	50	200	10
96	113 1/4	24	1 1/8	1 1/4	108 1/2	68	2 1/4	6	3 1/2	3	15.7	5	50	200	10
98	115 1/2	24	1 1/4	1 3/8	110 3/4	68	2 1/4	9	4	4 1/2	15.6	4	30	120	10
100	117 3/4	24	1 1/4	1 3/8	113	68	2 1/4	9	4	4 1/2	15.6	4	30	120	10
102	120	24	1 1/4	1 3/8	114 1/2	72	2 1/4	9	4	4 1/2	15.6	4	30	120	10
108	126 3/4	24	1 1/4	1 3/8	120 3/4	72	2 1/4	9	4	4 1/2	15.4	4	25	100	10
120	140 1/4	24	1 1/4	1 3/8	132 3/4	76	2 1/4	9	4	4 1/2	15.4	4	25	100	10
132	153 3/4	24	1 1/4	1 3/8	145 3/4	80	2 1/4	9	4	4 1/2	15.3	4	25	100	10
144	167 1/4	24	1 1/4	1 3/8	158 1/4	84	2 1/4	9	4	4 1/2	15.1	4	25	100	8



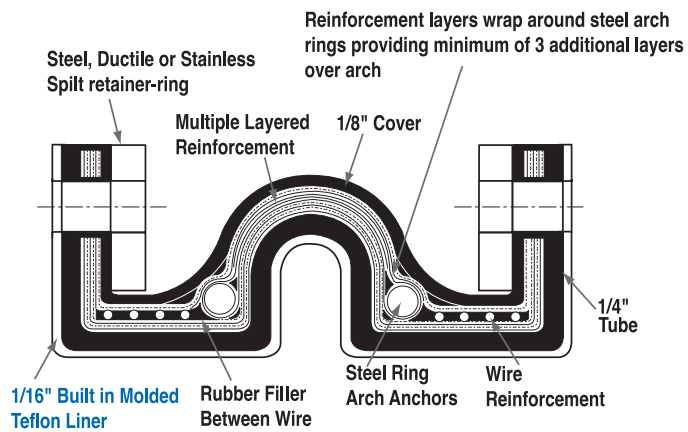
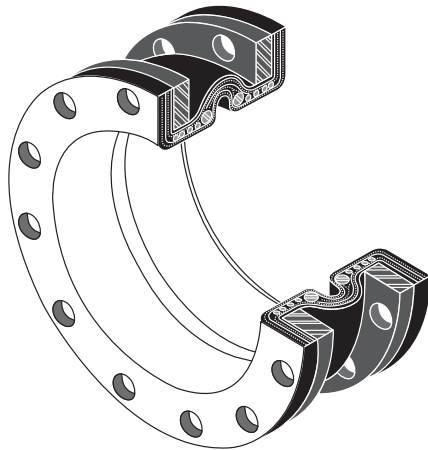
## Expansion Joint

# STF

SERIES

**SPOOL TYPE**

**TEFLON LINED EXPANSION JOINTS <SINGLE ARCH>**



Pipe Size (in)	Flange OD (in)	Face to Face (in)	Overall Flange Thickness (in)		Dia Bolt Circle (in)	No. of Bolts	Dia of Bolts (in)	Axial Compression (in)	Axial Extension (in)	Lateral Deflection (in)	Angular (degrees)	Torsional (degrees)	Rated Working Pressure (psi)	Minimum Burst Pressure (psi)	Vacuum (inHg)
			Steel	Ductile											
2 1/2	7	6	7/8	1	5 1/2	4	5/8	1 1/16	3/8	1/2	11.5	3	165	660	30
3	7 1/2	6	7/8	1	6	4	5/8	1 1/16	3/8	1/2	10.0	3	165	660	30
4	9	6	7/8	1	7 1/2	8	5/8	1 1/16	3/8	1/2	7.5	3	165	660	30
5	10	6	7/8	1	8 1/2	8	3/4	1 1/16	3/8	1/2	6.0	3	150	600	30
6	11	6	7/8	1	9 1/2	8	3/4	1 1/16	3/8	1/2	5.5	3	150	600	30
8	13 1/2	6	7/8	1	11 3/4	8	3/4	1 1/16	3/8	1/2	5.0	3	150	600	30
10	16	8	7/8	1	14 1/4	12	7/8	1 1/16	3/8	1/2	4.5	3	150	600	30
12	19	8	7/8	1	17	12	7/8	1 1/16	3/8	1/2	3.8	3	150	600	30
14	21	8	1	1 1/8	18 3/4	12	1	1 1/16	3/8	1/2	3.3	3	90	360	30
16	23 1/2	8	1	1 1/8	21 1/4	16	1	1 1/16	3/8	1/2	2.8	3	70	280	30
18	25	8	1	1 1/8	22 3/4	16	1 1/8	1 3/16	7/16	1/2	2.5	2	70	280	30
20	27 1/2	8	1	1 1/8	25	20	1 1/8	1 3/16	7/16	1/2	2.5	2	70	280	30
22	29 1/2	10	1	1 1/8	27 1/4	20	1 1/4	1 5/16	1/2	1/2	2.3	1	70	280	30
24	32	10	1	1 1/8	29 1/2	20	1 1/4	1 5/16	1/2	1/2	2.0	1	70	280	30
26	34 1/4	10	1	1 1/8	31 3/4	24	1 1/4	1 5/16	1/2	1/2	2.0	1	60	240	30
28	36 1/2	10	1	1 1/8	34	28	1 1/4	1 5/16	1/2	1/2	2.0	1	60	240	30
30	38 3/4	10	1	1 1/8	36	28	1 1/4	1 5/16	1/2	1/2	2.0	1	60	240	30
34	43 3/4	10	1	1 1/8	40 1/2	32	1 1/2	1 5/16	1/2	1/2	1.8	1	60	240	30
36	46	10	1 1/8	1 1/4	42 3/4	32	1 1/2	1 5/16	1/2	1/2	1.5	1	60	240	30
40	50 3/4	10	1 1/8	1 1/4	47 1/4	36	1 1/2	1 5/16	1/2	1/2	1.5	1	60	240	30
42	53	12	1 1/8	1 1/4	49 1/2	36	1 1/2	1 1/16	9/16	1/2	1.5	1	60	240	30
44	55 1/4	12	1 1/8	1 1/4	51 3/4	40	1 1/2	1 1/16	9/16	1/2	1.5	1	60	240	30
48	59 1/2	12	1 1/8	1 1/4	56	44	1 1/2	1 1/16	9/16	1/2	1.3	1	60	240	30
50	61 3/4	12	1 1/8	1 1/4	58 1/4	44	1 3/4	1 1/16	9/16	1/2	1.5	1	60	240	30
54	66 1/4	12	1 1/8	1 1/4	62 3/4	44	1 3/4	1 1/16	9/16	1/2	1.3	1	60	240	30
56	68 3/4	12	1 1/8	1 1/4	65	48	1 3/4	1 1/16	9/16	1/2	1.3	1	60	240	30
60	73	12	1 1/8	1 1/4	69 1/4	52	1 3/4	1 1/16	9/16	1/2	1.0	1	60	240	30
66	80	12	1 1/8	1 1/4	76	52	1 3/4	1 1/16	9/16	1/2	1.0	1	60	240	30
72	86 1/2	12	1 1/8	1 1/4	82 1/2	60	1 3/4	1 1/16	9/16	1/2	0.9	1	50	200	30
78	93	12	1 1/8	1 1/4	89 3/4	64	2	1 1/16	9/16	1/2	0.9	1	50	200	30
84	99 3/4	12	1 1/8	1 1/4	95 1/2	64	2	1 1/16	9/16	1/2	0.8	1	50	200	30
90	106 1/2	12	1 1/8	1 1/4	102 1/4	68	2	1 1/16	9/16	1/2	0.8	1	50	200	30
96	113 1/4	12	1 1/8	1 1/4	108 1/2	68	2 1/4	1 1/16	9/16	1/2	0.7	1	50	200	30

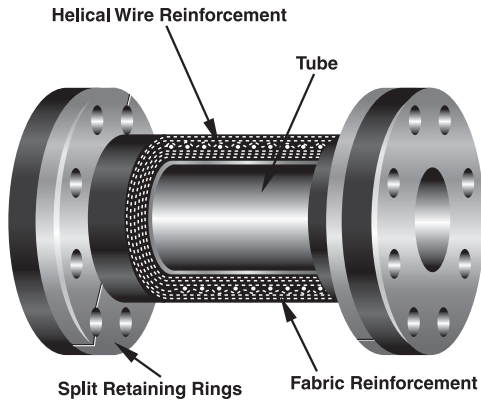
## Expansion Joint

# SVD

SERIES

**SPOOL TYPE**

**VIBRATION DAMPENERS**



▲ Cross Sectional View of Flanged Type Flexible Rubber Pipe

Rubber vibration dampeners is possible to manufacture no-arch type expansion joints. It is more common however, to specify flanges pipe connectors having a substantially longer length than an expansion joint of the same pipe size, and this chapter will consider the construction, usage and dimensions of these pipe connectors.

The most common type of rubber pipe incorporates a full face flange integral with the body of the pipe. The flange is drilled to conform to the bolt pattern of the companion metal flanges of the pipeline.

The type of a rubber faced flange, backed with a retaining ring, is of sufficient thickness to form a tight seal against the companion flange without the use of a gasket.

**MAXIMUM PERMISSABLE MOVEMENT**

Pipe Size	Face to Face	Compression	Extension	Lateral	Pipe Size	Face to Face	Compression	Extension	Lateral 3/8
2" & 2 1/2"	18"	1/4	3/8	3/8	5" & 6"	24"	5/8	1/2	3/8
3"	18"	3/8	3/8	3/8	8" & 10"	24"	3/4	1/2	1/2
4"	24"	1/2	1/2	1/2	12"	24"	3/4	5/8	

**LENGTHS · DIMENSIONS**

L - TYPE (150 PSIG)						H - TYPE (300 PSIG)				
NOMINAL PIPE SIZE I.D. OF DAMPENER	F/F	FLANGE O.D.	BOLT CIRCLE	NO. OF HOLES	SIZE OF HOLES	FLANGE O.D.	FLANGE THICKNESS	BOLT CIRCLE	NO. OF HOLES	SIZE OF HOLES
1-1/2	12"	5"	3-7/8	4	5/8	6-1/8"	5/8"	4-1/2	4	7/8
2	12"	6"	4-3/4	4	3/4	6-1/2"	5/8"	5	8	3/4
3	12"	7- 1/2 "	6	4	3/4	8-1/4"	5/8"	6-5/8	8	7/8
4	12"	9"	7-1/2	8	3/4	10"	5/8"	7-7/8	8	7/8
5	12"	10"	8-1/2	8	7/8	11"	5/8"	9-1/4	8	7/8
6	18"	11"	9-1/2	8	7/8	12-1/2"	3/4"	10-5/8	12	7/8
8	24"	13-1/2 "	11-3/4	8	7/8	15"	7/8"	13	12	1
10	24"	16"	14-1/4	12	1	17-1/2"	7/8"	15-1/4	16	1-1/8
12	24"	19"	17	12	1	20-1/2"	7/8"	17-3/4	16	1-1/4

**PERCENTAGE OF REDUCTION OF VIBRATION INPUT WITH FREQUENCY AND PRESSURE AS COMPARED TO STEEL PIPE**

Center Freq.	8" I.D. x 6" F-F Expansion Joint			8" I.D. x 24" F-F Vibration Joint		
	10psig	50psig	80psig	10psig	50psig	80psig
40	37%	55%	72%	87%	91%	93%
68	60%	68%	78%	95%	96%	99%
125	44%	50%	60%	98%	99%	99%
250	44%	50%	50%	96%	97%	99%
500	65%	89%	90%	91%	93%	94%
1000	90%	96%	98%	82%	91%	96%
2000	94%	95%	96%	99%	99%	99%
4000	90%	93%	97%	99%	99%	99%
8000	89%	89%	94%	97%	97%	98%

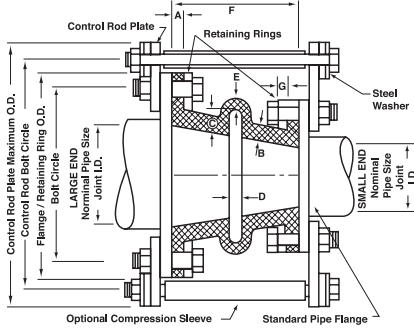
**EXAMPLE** - If a steel piping system had a major vibration frequency of 1000 Hz at 50 PSIG and an 8" rubber expansion joint was installed in the pipeline, the percentage of reduction of vibration would be 96%.

SPOOL TYPE

REDUCER EXPANSION JOINTS

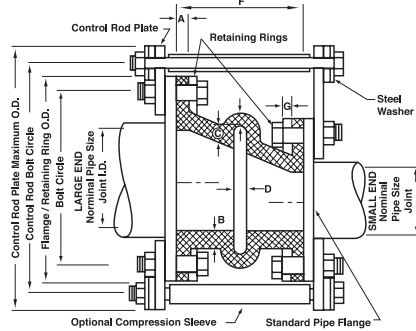
CONCENTRIC REDUCERS

To Connect Pipe of Unequal Diameters



ECCENTRIC REDUCERS

For Equipment With Different Size Flanges



Reducer Joint Size : I.D. x I.D. x Length	Open Arch Movement Capability : From Neutral Position								Filled Arch Movement Capability : From Neutral Position								Weights/Pounds			Pressure	
	Maximum Total Travel When Installed	In. Of Axial Compression	In. Of Axial Extension	±In. Of Lateral Deflection	±Angular Deflection	Degrees of Torsional	Thrust Factor	Maximum Total Travel When Installed	In. Of Axial Compression	In. Of Axial Extension	±In. Of Lateral Deflection	±Angular Deflection	Degrees of Torsional	Thrust Factor	Open Arch Joint/Rings	Filled Arch Joint/Rings	Control Rod Assembly	Positive P.S.I.G.	Negative In. Of In-Hg		
																				Compressed-Extended	Compressed-Extended
2x1x6	5.5-6.25	.5	.25	.5	18.4°	3°	12.69	5.75-6.125	.25	.125	.3	9.5°	1.8°	3.14	5.1	5.6	6.0	200	26		
2x1.5x6	5.5-6.25	.5	.25	.5	15.9°	3°	14.32	5.75-6.125	.25	.125	.3	8.1°	1.8°	3.14	5.5	6.0	6.3	200	26		
2.5x1.5x6	5.5-6.25	.5	.25	.5	14.1°	3°	16.04	5.75-6.125	.25	.125	.3	7.2°	1.8°	4.97	7.1	7.6	7.1	200	26		
2.5x2x6	5.5-6.25	.5	.25	.5	12.5°	3°	17.87	5.75-6.125	.25	.125	.3	6.4°	1.8°	4.97	8.1	8.7	7.4	200	26		
3x1.5x6*	5.5-6.25	.5	.25	.5	12.5°	3°	17.87	5.75-6.125	.25	.125	.3	6.4°	1.8°	7.06	8.2	8.8	7.1	200	26		
3x2x6*	5.5-6.25	.5	.25	.5	11.3°	3°	19.79	5.75-6.125	.25	.125	.3	5.7°	1.8°	7.06	8.3	8.9	7.0	200	26		
3x2.5x6*	5.5-6.25	.5	.25	.5	10.3°	3°	21.60	5.75-6.125	.25	.125	.3	5.2°	1.8°	7.06	9.5	10.1	7.1	200	26		
4x2x6	5.5-6.25	.5	.25	.5	9.5°	3°	23.92	5.75-6.125	.25	.125	.3	4.8°	1.8°	12.57	10.8	11.4	7.1	200	26		
4x2x7*	6.5-7.25	.5	.25	.5	9.5°	3°	23.92	6.75-7.125	.25	.125	.3	4.8°	1.8°	12.57	10.9	11.5	7.1	200	26		
4x2.5x6	5.5-6.25	.5	.25	.5	8.8°	3°	26.15	5.75-6.125	.25	.125	.3	4.4°	1.8°	12.57	10.9	11.6	7.6	200	26		
4x2.5x7*	6.5-7.25	.5	.25	.5	8.8°	3°	26.15	6.75-7.125	.25	.125	.3	4.4°	1.8°	12.57	11.8	12.4	7.6	200	26		
4x3x6	5.5-6.25	.5	.25	.5	8.2°	3°	28.46	5.75-6.125	.25	.125	.3	4.1°	1.8°	12.57	12.0	12.8	7.5	200	26		
4x3x7*	6.5-7.25	.5	.25	.5	8.2°	3°	28.46	6.75-7.125	.25	.125	.3	4.1°	1.8°	12.57	12.9	13.7	7.5	200	26		
5x3x6	5.5-6.25	.5	.25	.5	7.1°	3°	33.38	5.75-6.125	.25	.125	.3	3.6°	1.8°	19.63	13.4	14.2	11.5	190	26		
5x4x6	5.5-6.25	.5	.25	.5	6.4°	3°	38.70	5.75-6.125	.25	.125	.3	3.2°	1.8°	19.63	14.4	15.2	10.1	190	26		
5x4x8*	7.5-8.25	.5	.25	.5	6.4°	3°	38.70	7.75-8.125	.25	.125	.3	3.2°	1.8°	19.63	16.9	17.8	10.1	190	26		
6x2x8	7.5-8.25	.5	.25	.5	7.1°	3°	33.38	7.75-8.125	.25	.125	.3	3.6°	1.8°	28.27	13.6	14.4	11.6	190	26		
6x2.5x6	5.5-6.25	.5	.25	.5	6.7°	3°	35.99	5.75-6.125	.25	.125	.3	3.4°	1.8°	28.27	13.8	14.6	11.9	190	26		
6x3x6	5.5-6.25	.5	.25	.5	6.4°	3°	38.70	5.75-6.125	.25	.125	.3	3.2°	1.8°	28.27	15.6	16.0	12.3	190	26		
6x3x9*	8.5-9.25	.5	.25	.5	6.4°	3°	38.70	8.75-9.125	.25	.125	.3	3.2°	1.8°	28.27	16.6	17.4	12.5	190	26		
6x4x6	5.5-6.25	.5	.25	.5	5.7°	3°	44.41	5.75-6.125	.25	.125	.3	2.9°	1.8°	28.27	15.9	16.4	10.6	190	26		
6x4x8	7.5-8.25	.5	.25	.5	5.7°	3°	44.41	7.75-8.125	.25	.125	.3	2.9°	1.8°	28.27	17.8	18.6	11.0	190	26		
6x4x9*	8.5-9.25	.5	.25	.5	5.7°	3°	44.41	8.75-9.125	.25	.125	.3	2.9°	1.8°	28.27	19.3	20.1	11.0	190	26		
6x5x6	5.5-6.25	.5	.25	.5	5.2°	3°	50.51	5.75-6.125	.25	.125	.3	2.6°	1.8°	28.27	17.1	18.6	10.5	190	26		
6x5x9*	8.5-9.25	.5	.25	.5	5.2°	3°	50.51	8.75-9.125	.25	.125	.3	2.6°	1.8°	28.27	18.6	19.4	11.9	190	26		
8x3x6	5.25-6.375	.75	.375	.5	7.8°	3°	56.64	5.625-6.188	.375	.188	.3	3.9°	1.8°	50.27	20.5	21.3	20.4	190	26		
8x4x6	5.25-6.375	.75	.375	.5	7.1°	3°	63.49	5.625-6.188	.375	.188	.3	3.6°	1.8°	50.27	22.9	23.7	18.6	190	26		
8x4x8	7.25-8.375	.75	.375	.5	7.1°	3°	63.49	7.625-8.188	.375	.188	.3	3.6°	1.8°	50.27	23.2	24.0	19.5	190	26		
8x4x11*	10.25-11.375	.75	.375	.5	7.1°	3°	63.49	10.625-11.188	.375	.188	.3	3.6°	1.8°	50.27	23.8	24.6	21.0	190	26		
8x5x6	5.25-6.375	.75	.375	.5	6.6°	3°	70.76	5.625-6.188	.375	.188	.3	3.3°	1.8°	50.27	21.4	22.2	18.4	190	26		
8x5x11*	10.25-11.375	.75	.375	.5	6.6°	3°	70.76	10.625-11.188	.375	.188	.3	3.3°	1.8°	50.27	26.1	26.9	20.6	190	26		
8x6x6	5.25-6.375	.75	.375	.5	6.1°	3°	78.42	5.625-6.188	.375	.188	.3	3.1°	1.8°	50.27	23.0	23.8	17.5	190	26		
8x6x8	7.25-8.375	.75	.375	.5	6.1°	3°	78.42	7.625-8.188	.375	.188	.3	3.1°	1.8°	50.27	25.6	26.6	18.1	190	26		
8x6x11*	10.25-11.375	.75	.375	.5	6.1°	3°	78.42	10.625-11.188	.375	.188	.3	3.1°	1.8°	50.27	28.1	28.9	19.6	190	26		
10x5x8	7.25-8.375	.75	.375	.5	5.7°	3°	86.46	7.625-8.188	.375	.188	.3	2.9°	1.8°	78.54	29.4	30.2	27.0	190	26		
10x6x8	7.25-8.375	.75	.375	.5	5.3°	3°	94.90	7.625-8.188	.375	.188	.3	2.8°	1.8°	78.54	29.0	29.8	26.0	190	26		
10x6x12*	11.25-12.375	.75	.375	.5	5.3°	3°	94.90	11.625-12.188	.375	.188	.3	2.8°	1.8°	78.54	33.4	34.2	27.5	190	26		
10x8x6	5.25-6.375	.75	.375	.5	4.8°	3°	112.95	5.625-6.188	.375	.188	.3	2.4°	1.8°	78.54	29.9	30.7	24.5	190	26		
10x8x8	7.25-8.375	.75	.375	.5	4.8°	3°	112.95	7.625-8.188	.375	.188	.3	2.4°	1.8°	78.54	34.6	35.8	25.3	190	26		
10x8x12*	11.25-12.375	.75	.375	.5	4.8°	3°	112.95	11.625-12.188	.375	.188	.3	2.4°	1.8°	78.54	40.1	40.9	27.8	190	26		
12x6x8	7.25-8.375	.75	.375	.5	4.8°	3°	113.10	7.625-8.188	.375	.188	.3	2.4°	1.8°	113.10	38.8	39.7	29.0	190	26		
12x6x14*	13.25-14.375	.75	.375	.5	4.8°	3°	113.10	13.625-14.188	.375	.188	.3	2.4°	1.8°	113.10	45.0	46.0	30.5	190	26		
12x8x6	5.25-6.375	.75	.375	.5	4.3°	3°	132.57	5.625-6.188	.375	.188	.3	2.2°	1.8°	113.10	37.6	38.6	28.0	190	26		
12x8x8	7.25-8.375	.75	.375	.5	4.3°	3°	132.57	7.625-8.188	.375	.188	.3	2.2°	1.8°	113.10	42.0	44.5	28.8	190	26		
12x8x14*	13.25-14.375	.75	.375	.5	4.3°	3°	132.57	13.625-14.188	.375	.188	.3	2.2°	1.8°	113.10	48.6	49.6	30.1	190	26		
12x10x8	7.25-8.375	.75	.375	.5	3.9°	3°	153.76	7.625-8.188	.375	.188	.3	1.9°	1.8°	113.10	47.8	48.0	24.3	190	26		
12x10x14*	13.25-14.375	.75	.375	.5	3.9°	3°	153.76	13.625-14.188	.375	.188	.3	1.9°	1.8°	113.10	60.0	61.0	26.1	190	26		
14x8x8	7.25-8.375	.75	.375	.5	3.9°	2°	177.09	7.625-8.188	.375	.188	.3	1.9°	1.2°	153.94	45.8	46.8	29.0	190	26		
14x10x8	7.25-8.375	.75	.375	.5	3.6°	2°	201.46	7.625-8.188	.375	.188	.3	1.8°	1.2°	153.94	53.5	54.6	29.4	130	26		
14x12x8	7.25-8.375	.75	.375	.5	3.3°	2°	277.40	7.625-8.188	.375	.188	.3	1.7°	1.2°	153.94	63.6	64.6	26.6	130	26		
16x10x8	7.25-8.375	.75	.375	.5	3.3°	2°	227.40	7.625-8.188	.375	.188	.3	1.7°	1.2°	201.06	55.8	56.8	35.8	110	26		
16x12x8	7.25-8.375	.75	.375	.5	3.1°	2°	254.91	7.625-8.188	.375	.188	.3	1.5°	1.2°	201.06	61.8	62.8	36.0	110	26		
16x14x8	7.25-8.375	.75	.375	.5	2.9°	2°	283.99	7.625-8.188	.375	.188	.3	1.4°	1.2°	201.06	69.6	70.6	36.5	110	26		
18x12x8	7.25-8.375	.75	.375	.5	2.9°	1°	283.99	7.625-8.188	.375	.188	.3	1.4°	.6°	254.47	65.5	66.5	37.0	110	26		
18x14x8	7.25-8.375	.75	.375	.5	2.7°	1°	314.65	7.625-8.188	.375	.188	.3	1.3°	.6°	254.47	67.4	68.4	37.0	110	26		
18x16x8	7.25-8.375	.75	.375	.5	2.6°	1°	346.88	7.625-8.188	.375	.188	.3	1.2°	.6°	254.47	78.7	79.7	33.8	110	26		

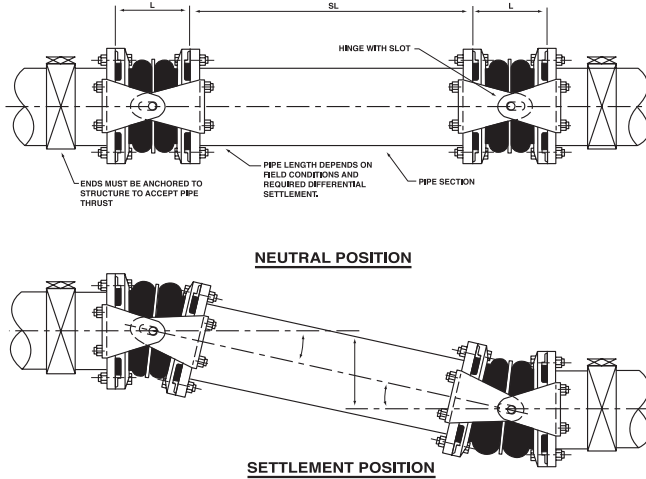
## Expansion Joint

**SPOOL TYPE**

### HINGED EXPANSION JOINTS

# SHE

SERIES



Pipe Size(in)	Allowable Angular Displacement	Tan $\theta$	Length(L) (inch)
1-1/2	30°	.58	7
2	30°	.58	7
2-1/2	30°	.58	7
3	30°	.58	7
4	29°	.55	7
5	24°	.45	7
6	20°	.36	7
8	15°	.27	8
10	13°	.23	8
12	11°	.19	8
14	10°	.18	10

**SPOOL TYPE**

### BURIED TYPE EXPANSION JOINTS

# SBE

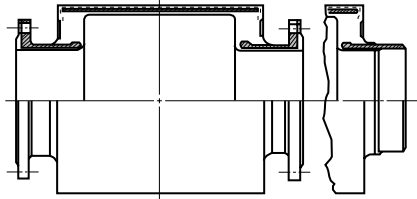
SERIES



(MAX. BORE SIZE : ID 3400mm)

**DESIGN CONDITIONS**

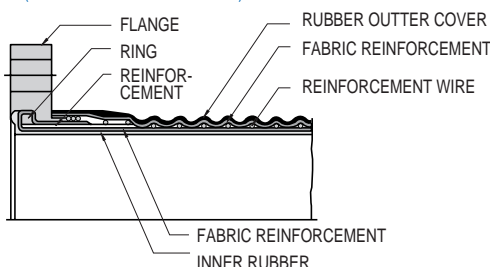
- Working Pressure : High : 10kgf/cm<sup>2</sup>  
Medium : 5kgf/cm<sup>2</sup>  
Low : 3kgf/cm<sup>2</sup>
- Buried Method : 3 M. Depth underground
- Temperature : Ambient Temperature
- Fluid : Fresh water, Waste water



(MAX. BORE SIZE : ID 2500mm)

**DESIGN CONDITIONS**

- Working Pressure : 5kgf/cm<sup>2</sup>
- Working Temperature : Ambient
- Fluid : Fresh water, Waste water



**Allowable Movement (mm)**

SIZE	Length(mm)	Extension Compression(X±)	Lateral(Y)	Angular(DEG)
100	1,000	±60	±120	25
150	1,000			
200	1,000			
250	1,000			
300	1,100			22
350	1,100			
400	1,100			
450	1,100			
500	1,200			20
600	1,200			
700	1,200	18		
800	1,200			
900	1,200			
1,000	1,200			
1,100	1,200		16	
1,200	1,200	14		
1,350	1,200			
1,500	1,400			

- \* Ends / Pipe weld end Type
- \* Flange / KS 5kgf/cm<sup>2</sup>, 10kgf/cm<sup>2</sup>, 20kgf/cm<sup>2</sup>, ANSI150. 300, DIN
- \* Rubber Material / Neoprene, EPDM, Butyl, Hypalon
- \* Manufact-D According to KS D 3565

**(Allowable Movement)**

Extension(X+) (mm)	Compression(X-) (mm)	Lateral (mm)
40	30	100

- \* Flange / KS 5kgf/cm<sup>2</sup>, 10kgf/cm<sup>2</sup>, 20kgf/cm<sup>2</sup>, ANSI150. 300, DIN
- \* Rubber Material / Neoprene, EPDM, Butyl, Hypalone
- \* Manufact-D According to KS D 3565