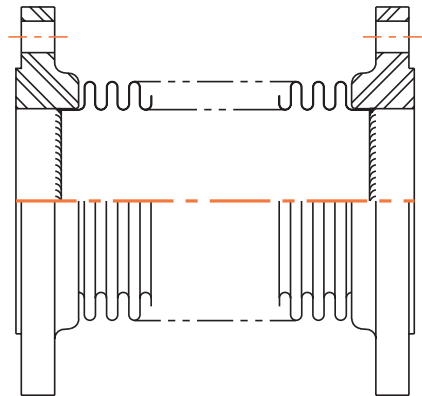




3"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
3	S	O	150	0.79	FR	FR			6 1/2"	B8	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 11.70	0.48	0.05	14.10	640	9180	20	3.75	2.50	7.25	5.50	5.00
	0.95	0.21	15.00	320	1150	10	5.00	3.75	8.50	6.75	6.25
	1.43	0.46	15.00	210	340	10	6.25	5.00	9.75	8.00	7.50
	2.02	0.93	15.00	150	120	>10	7.75	6.75	11.50	9.50	9.00
50 psig 11.87	0.36	0.04	10.68	750	10900	30	3.75	2.50	7.25	5.50	5.00
	0.63	0.12	15.00	430	2030	10	4.75	3.50	8.25	6.50	6.00
	0.91	0.24	15.00	300	700	10	5.50	4.50	9.25	7.50	6.75
	1.18	0.41	15.00	230	320	10	6.50	5.50	10.25	8.25	7.75
150 psig 11.99	0.34	0.04	9.86	1640	23960	50	3.75	2.50	7.25	5.50	5.00
	0.75	0.18	15.00	730	2100	20	5.25	4.25	9.00	7.00	6.50
	0.79	0.27	15.00	1220	1690	40	6.50	5.50	10.25	8.25	7.75
	1.03	0.47	15.00	930	760	30	7.75	6.75	11.50	9.50	9.00
300 psig 11.99	0.28	0.04	8.31	3200	32580	110	5.00		7.50	6.25	
	0.45	0.09	13.24	2010	8140	70	5.75		8.50	7.25	
	0.62	0.17	15.00	1460	3170	50	6.75		9.25	8.00	
	0.78	0.26	15.00	1150	1650	40	7.50		10.00	8.75	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 5/8" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

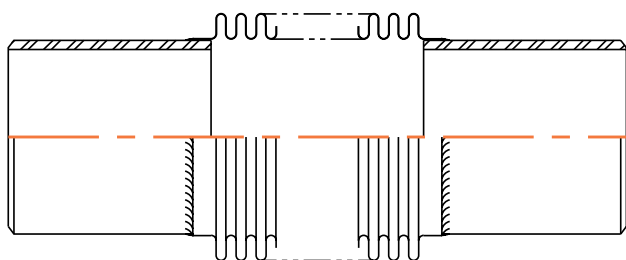
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 6" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 3/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



Single Expansion Joints

4"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
4	S	O	150	1.10	WS		WS				10 ¹ / ₂ "	B1	E1

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 19.52	0.67	0.08	15.00	370	4490	20	4.50	3.00	7.75	6.25	5.50
	1.00	0.18	15.00	250	1330	10	5.25	4.00	8.75	7.00	6.25
	1.50	0.39	15.00	160	390	10	6.75	5.25	10.00	8.25	7.75
	1.83	0.59	15.00	130	220	10	7.50	6.25	11.00	9.25	8.50

50 psig 20.38	0.61	0.07	13.69	700	8770	40	4.50	3.00	7.75	6.25	5.50
	1.21	0.28	15.00	350	1100	20	6.25	4.75	9.50	8.00	7.25
	1.80	0.62	15.00	500	710	30	8.00	6.50	11.25	9.75	9.00
	2.25	0.97	15.00	400	360	20	9.25	8.00	12.75	11.00	10.25

150 psig 20.45	0.43	0.05	9.72	1340	16940	80	4.50	3.00	7.75	6.25	5.50
	0.75	0.15	15.00	770	3160	40	5.75	4.50	9.25	7.50	6.75
	1.10	0.31	15.00	1180	2410	70	7.00	5.75	10.50	8.75	8.00
	1.32	0.45	15.00	980	1400	60	8.00	6.50	11.25	9.75	9.00

300 psig 20.51	0.43	0.06	9.69	4130	31980	240	6.00		8.25	7.25	
	0.60	0.12	13.51	2960	11860	170	7.00		9.25	8.00	
	0.77	0.20	15.00	2300	5630	130	7.75		10.00	9.00	
	1.04	0.37	15.00	1720	2280	100	9.25		11.50	10.50	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 5/8" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

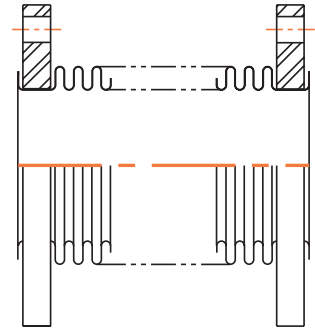
* To obtain Bellows Only Overall Length, subtract 6" from WS - WS length and add neck lengths.

* To obtain Banded Bellows Overall Length, subtract 3 1/2" from WS - WS length.

* Additional length is required for units with hardware attached to weld ends (please consult factory).



5"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
5	S	O	050	1.04	VP	VP			5"	B4	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 29.66	0.76	0.08	14.18	490	6870	40	5.00	3.50	8.00	6.50	5.75
	1.33	0.25	15.00	280	1280	20	6.50	5.00	9.50	8.00	7.25
	1.90	0.52	15.00	190	440	20	8.00	6.50	11.00	9.50	8.75
	2.28	0.74	15.00	160	250	10	9.00	7.50	12.00	10.50	9.75
50 psig 30.27	0.59	0.06	10.96	1200	17340	101	5.00	3.50	8.00	6.50	5.75
	1.04	0.20	15.00	686	3235	58	6.50	5.00	9.50	8.00	7.25
	1.48	0.40	15.00	480	1110	40	8.00	6.50	11.00	9.50	8.75
	1.93	0.67	15.00	369	505	31	9.50	8.00	12.50	11.00	10.25
150 psig 30.54	0.45	0.05	8.24	2057	29769	173	5.00	3.50	8.00	6.50	5.75
	0.89	0.19	15.00	1029	3721	87	7.00	5.50	10.00	8.50	7.75
	1.34	0.43	15.00	1524	2469	129	9.00	7.50	12.00	10.50	9.75
	1.68	0.67	15.00	1219	1264	103	10.50	9.00	13.50	12.00	11.25
300 psig 30.54	0.53	0.07	9.70	3657	34126	310	6.50		8.50	7.50	
	0.74	0.14	13.58	2612	12436	222	7.50		9.50	8.50	
	0.95	0.23	15.00	2032	5851	172	8.50		10.50	9.50	
	1.16	0.34	15.00	1662	3205	141	9.50		11.50	10.50	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 3/4" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

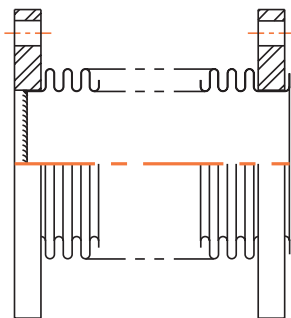
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500°F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 6" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 3 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



Single Expansion Joints

6"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
6	S	O	050	1.58	FP	VP				7"			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 40.80	0.76	0.07	12.09	550	10660	60	5.25	3.50	9.00	7.25	6.25
	1.33	0.22	15.00	310	1990	40	6.75	5.00	10.50	8.75	7.75
	1.90	0.44	15.00	220	680	20	8.25	6.50	12.00	10.25	9.25
	2.28	0.63	15.00	180	390	20	9.25	7.50	13.00	11.25	10.25

50 psig 41.51	0.58	0.05	9.08	1410	27950	160	5.25	3.50	9.00	7.25	6.25
	1.01	0.16	15.00	810	5220	90	6.75	5.00	10.50	8.75	7.75
	1.58	0.40	15.00	510	1340	60	8.75	7.00	12.50	10.75	9.75
	2.02	0.65	15.00	400	650	50	10.25	8.50	14.00	12.25	11.25

150 psig 41.83	0.44	0.04	6.91	2410	48390	280	5.25	3.50	9.00	7.25	6.25
	0.88	0.16	13.82	1220	6050	140	7.25	5.50	11.00	9.25	8.25
	1.32	0.36	15.00	810	1790	90	9.25	7.50	13.00	11.25	10.25
	1.76	0.64	15.00	1360	1690	160	11.25	9.50	15.00	13.25	12.25

300 psig 41.65	0.47	0.06	7.34	3910	34550	450	7.25		10.00	8.75	
	0.70	0.14	11.00	2610	10240	300	8.75		11.50	10.25	
	0.93	0.26	14.67	1960	4320	230	10.25		13.00	11.75	
	1.09	0.35	15.00	1680	2720	190	11.25		14.00	12.75	

Standard materials of construction

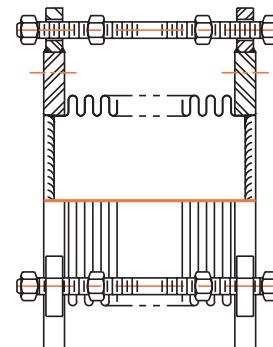
Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
 300 psig; 300# ANSI B16.5 RFSO (A105).
 Plate Flanges: 3/4" thick; 150# ANSI B16.5 drilling (A-36).
 Pipe: Standard Wt. (A53-B/A106-B).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 7" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 4 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



8"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
8	S	T	050	1.44	FP	FP			5 ³ / ₄ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 68.85	0.96	0.09	11.75	360	7600	70	6.00	4.50	9.50	7.75	7.00
	1.43	0.19	15.00	240	2250	50	7.25	5.75	10.75	9.00	8.25
	2.15	0.43	15.00	160	670	30	9.25	7.75	12.75	11.00	10.25
	2.62	0.64	15.00	130	370	30	10.50	9.00	14.00	12.25	11.50
50 psig 70.25	0.96	0.08	11.62	850	18250	170	6.00	4.50	9.50	7.75	7.00
	1.44	0.19	15.00	570	5410	110	7.25	5.75	10.75	9.00	8.25
	1.92	0.34	15.00	430	2280	80	8.50	7.00	12.00	10.25	9.50
	2.40	0.53	15.00	340	1170	70	9.75	8.25	13.25	11.50	10.75
150 psig 70.43	0.55	0.05	6.62	3460	74430	680	6.00	4.50	9.50	7.75	7.00
	0.96	0.15	11.59	1980	13890	390	8.00	6.50	11.50	9.75	9.00
	1.37	0.30	15.00	1380	4760	270	9.75	8.25	13.25	11.50	10.75
	1.78	0.51	15.00	1060	2170	210	11.75	10.25	15.25	13.50	12.75
300 psig 70.90	0.65	0.07	7.79	6170	85500	1210	8.00		10.25	9.25	
	1.03	0.18	12.46	3850	20870	760	10.00		12.00	11.00	
	1.42	0.34	15.00	2800	8030	550	11.75		14.00	13.00	
	1.81	0.55	15.00	2200	3900	430	13.75		15.75	14.75	

Standard materials of construction

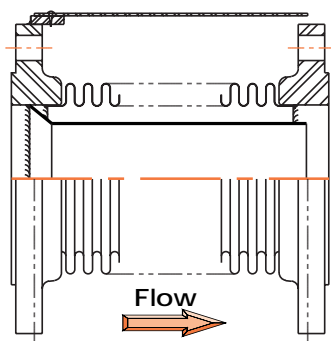
Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500°F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 7" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 4 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



10"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
10	S	O	150	1.48	FR	FR	L	C	10 ³ / ₄ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 103.67	0.96	0.07	9.57	420	13240	120	6.50	4.50	9.50	8.00	7.00
	1.43	0.16	14.30	280	3920	80	7.75	5.75	10.75	9.25	8.25
	1.91	0.28	15.00	210	1650	60	9.00	7.00	12.00	10.50	9.50
	2.38	0.43	15.00	170	850	50	10.25	8.25	13.25	11.75	10.75

50 psig 105.44	0.78	0.06	7.70	1800	57850	530	6.50	4.50	9.50	8.00	7.00
	1.36	0.17	13.48	1030	10790	300	8.25	6.50	11.50	10.00	9.00
	1.95	0.35	15.00	720	3700	210	10.25	8.25	13.25	11.75	10.75
	2.73	0.69	15.00	510	1350	150	12.75	10.75	15.75	14.25	13.25

150 psig 105.58	0.54	0.04	5.31	4290	138360	1260	6.50	4.50	9.50	8.00	7.00
	0.94	0.12	9.29	2450	25820	720	8.25	6.50	11.50	10.00	9.00
	1.48	0.29	14.60	1560	6650	460	10.75	9.00	14.00	12.50	11.50
	2.01	0.54	15.00	1140	2620	340	13.25	11.50	16.50	15.00	14.00

300 psig 107.31	0.71	0.06	6.97	6160	129380	1840	8.50		10.25	9.50	
	0.99	0.12	9.75	4400	47150	1310	9.75		11.50	10.75	
	1.42	0.25	13.93	3080	16170	920	11.50		13.25	12.50	
	1.85	0.43	15.00	2370	7360	710	13.50		15.25	14.50	

Standard materials of construction

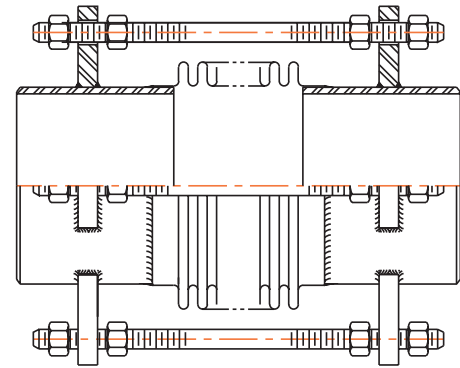
Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 7" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 4 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



12"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS MAT'L	END MAT'L
12	S	T	150	1.75	WS	WS			22"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 145.65	1.14	0.08	9.63	530	16380	210	7.50	5.00	11.00	9.25	8.00
	1.72	0.19	14.44	350	4850	140	9.00	6.50	12.50	10.75	9.50
	2.29	0.34	15.00	260	2050	110	10.50	8.00	14.00	12.25	11.00
	2.86	0.52	15.00	210	1050	90	12.00	9.50	15.50	13.75	12.50
50 psig 147.66	1.04	0.08	8.72	1380	43130	560	7.50	5.00	11.00	9.25	8.00
	1.83	0.23	15.00	790	8050	320	9.75	7.25	13.25	11.50	10.25
	2.61	0.48	15.00	550	2760	230	12.00	9.50	15.50	13.75	12.50
	3.13	0.68	15.00	460	1600	190	13.50	11.00	17.00	15.25	14.00
150 psig 148.00	0.58	0.04	4.88	6420	201710	2640	7.50	5.00	11.00	9.25	8.00
	1.17	0.17	9.75	3210	25210	1320	10.50	8.00	14.00	12.25	11.00
	1.75	0.38	14.63	2140	7470	880	13.50	11.00	17.00	15.25	14.00
	2.34	0.68	15.00	1610	3150	660	16.50	14.00	20.00	18.25	17.00
300 psig 148.87	0.68	0.06	5.70	11560	233620	4780	9.50		11.75	10.75	
	1.23	0.20	10.25	6420	40060	2650	12.50		14.75	13.75	
	1.78	0.42	14.81	4440	13290	1840	15.50		17.75	16.75	
	2.19	0.64	15.00	3610	7130	1490	17.75		20.00	19.00	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

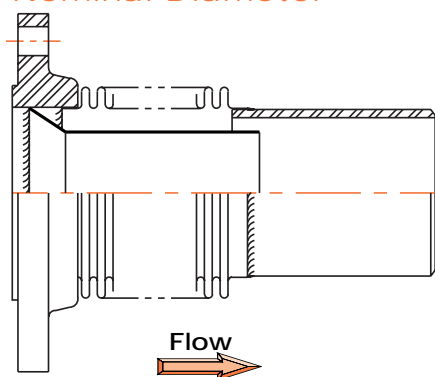
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 8" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 5 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



Single Expansion Joints

14"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
14	S	O	300	1.22	FR	WS	L2			13 ³ / ₄ "	B2	E2	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	(inches)				
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 174.53	1.14	0.08	8.76	1170	43290	570	7.50	5.00	11.00	9.25	8.00
	2.28	0.31	15.00	580	5410	280	10.50	8.00	14.00	12.25	11.00
	3.42	0.69	15.00	390	1600	190	13.50	11.00	17.00	15.25	14.00
	4.28	1.08	15.00	310	820	150	15.75	13.25	19.25	17.50	16.25

50 psig 175.81	1.03	0.07	7.92	1500	56110	730	7.50	5.00	11.00	9.25	8.00
	1.81	0.21	13.85	860	10470	420	9.75	7.25	13.25	11.50	10.25
	2.58	0.43	15.00	600	3590	290	12.00	9.50	15.50	13.75	12.50
	3.10	0.62	15.00	500	2080	240	13.50	11.00	17.00	15.25	14.00

150 psig 176.19	0.60	0.04	4.61	6890	219370	3370	7.75	5.25	11.25	9.50	8.25
	1.21	0.17	9.22	3440	27420	1690	11.00	8.50	14.50	12.75	11.50
	1.81	0.39	13.83	2300	8120	1120	14.25	11.75	17.75	16.00	14.75
	2.41	0.70	15.00	1720	3430	840	17.50	15.00	21.00	19.25	18.00

300 psig 177.13	0.68	0.06	5.19	12660	304490	6230	9.75		11.75	10.75	
	1.22	0.18	9.34	7030	52210	3460	12.75		14.75	13.75	
	1.63	0.33	12.45	5270	22030	2590	15.00		17.00	16.00	
	2.17	0.58	15.00	3960	9290	1950	18.00		20.00	19.00	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

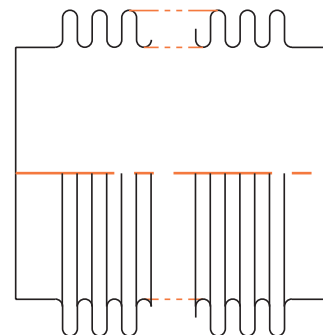
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 8" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 5 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).



16"

Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)			LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
16	S	B	025	2.33						7 ⁵ / ₈ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 227.84	1.33	0.09	8.95	910	32230	570	8.50	5.50	11.50	10.00	8.50
	2.33	0.28	15.00	520	6010	330	11.25	8.25	14.25	12.75	11.25
	3.33	0.57	15.00	360	2060	230	13.75	10.75	16.75	15.25	13.75
	3.99	0.82	15.00	300	1190	190	15.50	12.50	18.50	17.00	15.50

50 psig 231.19	1.11	0.08	7.43	2380	85620	1530	8.50	5.50	11.50	10.00	8.50
	1.95	0.23	13.01	1360	15980	870	11.25	8.25	14.25	12.75	11.25
	2.78	0.47	15.00	950	5480	610	13.75	10.75	16.75	15.25	13.75
	3.62	0.80	15.00	730	2490	470	16.50	13.50	19.50	18.00	16.50

150 psig 232.06	1.03	0.07	6.85	5130	185690	3310	8.50	5.50	11.50	10.00	8.50
	1.80	0.21	11.99	2930	34650	1890	11.25	8.25	14.25	12.75	11.25
	2.57	0.44	15.00	2050	11880	1320	13.75	10.75	16.75	15.25	13.75
	3.34	0.74	15.00	1580	5410	1020	16.50	13.50	19.50	18.00	16.50

300 psig 232.49	0.96	0.08	6.42	8210	190480	5300	11.00		12.50	11.75	
	1.35	0.16	8.98	5870	69420	3790	12.75		14.25	13.50	
	1.93	0.33	12.83	4110	23810	2650	15.25		16.75	16.00	
	2.50	0.55	15.00	3160	10840	2040	18.00		19.50	18.75	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105).
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

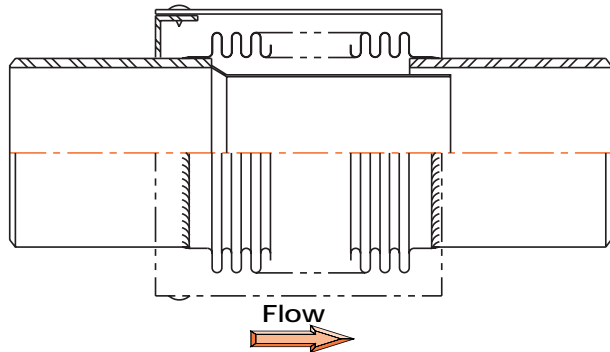
- * To obtain Bellows Only Overall Length, subtract 8" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 5 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

18" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
18	S	O	150	1.79	WS	WS	L4	C	16 1/4"	B4	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 284.49	1.33	0.08	8.01	1000	44440	790	9.00	5.75	13.50	11.25	9.50
	2.33	0.25	14.02	570	8290	450	11.50	8.50	16.25	14.00	12.25
	3.33	0.51	15.00	400	2840	320	14.25	11.00	18.75	16.50	14.75
	4.32	0.86	15.00	310	1290	240	16.75	13.75	21.50	19.25	17.50

50 psig 288.23	1.10	0.07	6.60	2660	119570	2130	9.00	5.75	13.50	11.25	9.50
	1.93	0.21	11.54	1520	22310	1220	11.50	8.50	16.25	14.00	12.25
	2.76	0.42	15.00	1060	7650	850	14.25	11.00	18.75	16.50	14.25
	3.58	0.71	15.00	820	3480	660	16.75	13.75	21.50	19.25	17.50

150 psig 289.20	1.02	0.06	6.09	5750	259200	4620	9.00	6.00	13.50	11.25	9.50
	1.79	0.19	10.67	3290	48360	2640	11.50	8.75	16.25	14.00	12.25
	2.55	0.39	15.00	2300	16590	1850	14.25	11.25	18.75	16.50	14.75
	3.06	0.56	15.00	1920	9600	1540	16.00	13.00	20.50	18.25	16.50

300 psig 289.68	0.96	0.07	5.70	9210	266100	7410	11.50		14.50	13.00	
	1.34	0.14	7.98	6580	96980	5290	13.25		16.25	14.75	
	1.91	0.29	11.40	4600	33260	3700	15.75		18.75	17.25	
	2.48	0.49	14.82	3540	15140	2850	18.50		21.50	20.00	

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 to 150 psig: 150# ANSI B16.5 RF50 (A105).
 300 psig: 300# ANSI B16.5 RF50 (A105).
 Plate Flanges: 1 1/16" thick; 150# ANSI B16.5 drilling (A-36).
 Pipe: Standard Wt. (A53-B/A106-B).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

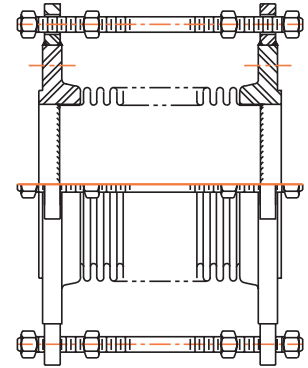
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

- * To obtain Bellows Only Overall Length, subtract 10" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 7 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





20"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS				
					FR	FR	FR	FR				BELLOWS	END			
												MAT'L	MAT'L			
➤ 20	-	S	T	-	150	-	2.21	-	FR	-	FR	-	12 ³ / ₄ "	-		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 347.68	1.52	0.10	8.28	2110	87690	2040	9.75	6.25	14.00	12.00	10.25
	2.66	0.30	14.49	1210	16360	1170	12.75	9.25	17.00	15.00	13.25
	3.80	0.60	15.00	850	5610	820	15.75	12.25	20.00	18.00	16.25
	4.94	1.02	15.00	650	2550	630	18.75	15.25	23.00	21.00	19.25
50 psig 355.73	1.37	0.09	7.40	2140	90950	2120	9.75	6.25	14.00	12.00	10.25
	2.40	0.26	12.94	1220	16970	1210	12.75	9.25	17.00	15.00	13.25
	3.43	0.54	15.00	860	5820	850	15.75	12.25	20.00	18.00	16.25
	4.12	0.77	15.00	710	3370	710	17.75	14.25	22.00	20.00	18.25
➤ 150 psig 356.80	1.26	0.08	6.80	4590	195520	4550	9.75	6.25	14.00	12.00	10.25
	2.21	0.24	11.90	2620	36480	2600	12.75	9.25	17.00	15.00	13.25
	3.16	0.49	15.00	1840	12510	1820	15.75	12.25	20.00	18.00	16.25
	3.79	0.71	15.00	1530	7240	1520	17.75	14.25	22.00	20.00	18.25
300 psig 358.00	0.96	0.08	5.17	14710	402300	14630	12.50		15.00	13.75	
	1.35	0.15	7.24	10510	146610	10450	14.50		17.00	15.75	
	1.93	0.30	10.35	7350	50290	7310	17.50		20.00	18.75	
	2.31	0.43	12.42	6130	29100	6090	19.50		22.00	20.75	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 to 150 psig: 150# ANSI B16.5 RFSO (A105).
300 psig: 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1 1/8" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

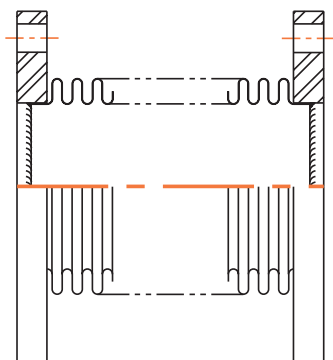
- * To obtain Bellows Only Overall Length, subtract 10" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 7 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

22" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
22	S	O	150	2.20	FP	FP			9 1/2"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 421.46	1.52	0.09	7.52	1650	82790	1930	10.25	6.50	14.00	12.25	10.25
	2.66	0.27	13.16	940	15450	1100	13.25	9.50	17.00	15.25	13.25
	3.80	0.55	15.00	1060	8560	1240	16.25	12.50	20.00	18.25	16.25
	4.94	0.92	15.00	510	2410	590	19.25	15.50	23.00	21.25	19.25

50 psig 425.73	1.36	0.08	6.71	2350	119230	2770	10.25	6.50	14.00	12.25	10.25
	2.39	0.24	11.75	1340	22250	1590	13.25	9.50	17.00	15.25	13.25
	3.41	0.49	15.00	940	7630	1110	16.25	12.50	20.00	18.25	16.25
	4.09	0.70	15.00	780	4420	920	18.25	14.50	22.00	20.25	18.25

150 psig 426.90	1.26	0.07	6.17	5030	256250	5960	10.25	6.50	14.00	12.25	10.25
	2.20	0.22	10.80	2870	47810	3410	13.25	9.50	17.00	15.25	13.25
	3.14	0.45	15.00	2010	16400	2390	16.25	12.50	20.00	18.25	16.25
	3.77	0.65	15.00	1680	9490	1990	18.25	14.50	22.00	20.25	18.25

300 psig 428.22	0.96	0.07	4.70	16140	527910	19200	13.00		15.00	14.00	
	1.34	0.13	6.58	11530	192390	13710	15.00		17.00	16.00	
	1.92	0.27	9.40	8070	65990	9600	18.00		20.00	19.00	
	2.30	0.39	11.28	6720	38190	8000	20.00		22.00	21.00	

Standard materials of construction

Bellows: A240 T321.

Liners: A240 T304 (when liner is requested).

Covers: Carbon Steel (when cover is requested).

Flanges: 25 to 150 psig: 150# ANSI B16.5 RFSO (A105).
300 psig: 300# ANSI B16.5 RFSO (A105).

Plate Flanges: 1 3/16" thick. 150# ANSI B16.5 drilling (A-36).

Pipe: 25 to 150 psig: Std. Wt. pipe (A53-B/A106-B).
300 psig: 0.5" wall (A106-B/A516-70).

Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

• Maximum Test Pressure is 1.5 X Rated Pressure.

• Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.

• Consult factory for temperature rating of plate flanges.

• Maximum Axial Extension is 15% of Axial Compression Value shown above.

• Cycle Life = 3,000 minimum (EJMA).

• Movements are non-concurrent.

* To obtain Bellows Only Overall Length, subtract 10" from WS - WS length and add neck lengths.

* To obtain Banded Bellows Overall Length, subtract 7 1/2" from WS - WS length.

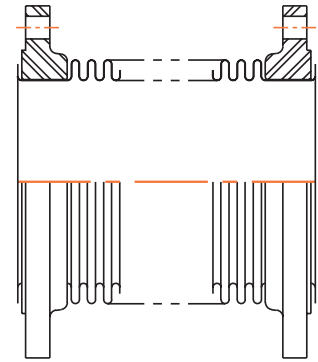
* Additional length is required for units with hardware attached to weld ends (please consult factory).





24"

Nominal Diameter



UNIT TYPE

S = SINGLE

UNIT STYLE

B = BELLOWS ONLY
 O = UNRESTRAINED
 T = TIE RODS/LIMIT RODS/
 CONTROL RODS
 H = HINGE
 G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)			LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
➤ 24	- S	O	- 150	- 2.18	- VR	- VR	-	-	-	13 1/2"	-	-

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 502.33	1.52	0.08	6.89	1320	79420	1850	10.50	6.50	14.00	12.25	10.25
	2.66	0.25	12.05	760	14820	1060	13.50	9.50	17.00	15.25	13.25
	3.80	0.50	15.00	530	5080	740	16.50	12.50	20.00	18.25	16.25
	4.94	0.85	15.00	550	3110	760	19.50	15.50	23.00	21.25	19.25
50 psig 502.01	1.36	0.07	6.14	2550	152810	3560	10.50	6.50	14.00	12.25	10.25
	2.37	0.22	10.75	1460	28510	2030	13.50	9.50	17.00	15.25	13.25
	3.39	0.45	15.00	1020	9780	1420	16.50	12.50	20.00	18.25	16.25
	4.07	0.64	15.00	850	5660	1190	18.50	14.50	22.00	20.25	18.25
150 psig 503.28	1.25	0.07	5.65	5470	328330	7640	10.50	6.50	14.00	12.25	10.25
	2.18	0.20	9.88	3120	61260	4370	13.50	9.50	17.00	15.25	13.25
	3.12	0.41	14.11	2190	21010	3060	16.50	12.50	20.00	18.25	16.25
	3.74	0.59	15.00	1820	12160	2550	18.50	14.50	22.00	20.25	18.25
300 psig 504.72	0.95	0.06	4.31	17560	677160	24620	13.50		15.00	14.25	
	1.33	0.12	6.03	12540	246780	17590	15.50		17.00	16.25	
	1.91	0.25	8.61	8780	84640	12310	18.50		20.00	19.25	
	2.29	0.36	10.33	7320	48980	10260	20.50		22.00	21.25	

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 to 150 psig: 150# ANSI B16.5 RFSO (A105).
 300 psig: 300# ANSI B16.5 RFSO (A105).
 Plate Flanges: 1 1/4" thick. 150# ANSI B16.5 drilling (A-36).
 Pipe: 25 to 150 psig: Std. Wt. pipe (A53-B/A106-B).
 300 psig: 0.5" wall (A106-B/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.

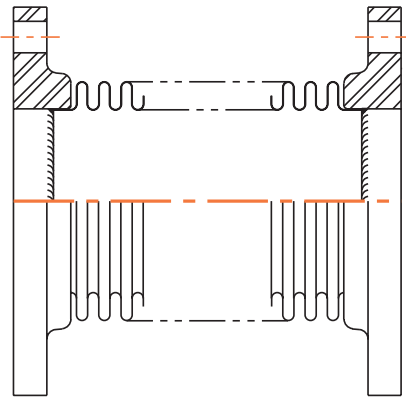
- * To obtain Bellows Only Overall Length, subtract 10" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 7 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

26"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
26	S	O	050	2.36	FR	FR				10 1/2"			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 585.27	1.52	0.07	6.38	2460	171510	3990	7.50	Customer	16.00	11.75	Customer
	2.66	0.23	11.17	1400	32000	2280	10.50	to specify	19.00	14.75	to specify
	3.80	0.46	15.00	980	10980	1600	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.94	0.78	15.00	760	5000	1230	16.50	Dimensions	25.00	20.75	Dimensions

50 psig 584.58	1.35	0.07	5.66	2750	192130	4470	7.50	Customer	16.00	11.75	Customer
	2.36	0.20	9.90	1570	35850	2550	10.50	to specify	19.00	14.75	to specify
	3.37	0.41	14.15	1100	12300	1790	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.04	0.59	15.00	920	7120	1490	15.50	Dimensions	24.00	19.75	Dimensions

150 psig 585.95	1.24	0.06	5.20	5900	412720	9600	Customer	Customer	16.00	Customer	Customer
	2.17	0.19	9.11	3370	77010	5490	to advise	to specify	19.00	to advise	to specify
	3.10	0.38	13.01	2360	26410	3840	Flange	Plate Flange	22.00	Flange	Plate Flange
	3.72	0.54	15.00	1970	15290	3200	Specification	Dimensions	24.00	Specification	Dimensions

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 & 50 psig: 125# LW F.F.S.O. (A105).
 Customer to advise flange specification for 150 psig design.
 Plate Flanges: Are available upon request and with dimensional information provided by customer.
 Pipe: 25 to 150 psig: Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 300 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).

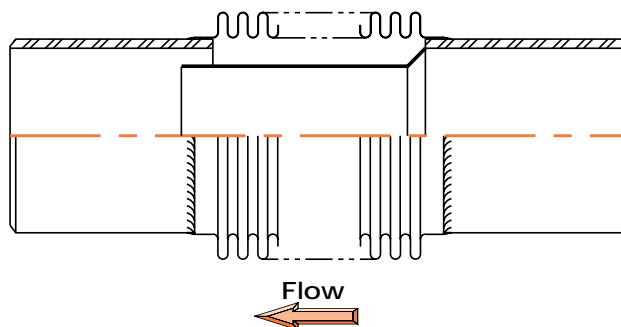




28"
Nominal Diameter

UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
28	S	O	050	2.35	WS	WS	L		19"	B3	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 674.17	1.52	0.07	5.95	2630	211940	4930	7.50	Customer	16.00	11.75	Customer
	2.66	0.21	10.40	1500	39550	2820	10.50	to specify	19.00	14.75	to specify
	3.80	0.43	14.86	1050	13560	1970	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.94	0.73	15.00	810	6170	1520	16.50	Dimensions	25.00	20.75	Dimensions

50 psig 673.43	1.34	0.06	5.25	2960	237640	5530	7.50	Customer	16.00	11.75	Customer
	2.35	0.19	9.18	1690	44340	3160	10.50	to specify	19.00	14.75	to specify
	3.35	0.38	13.12	1180	15210	2210	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.02	0.55	15.00	990	8800	1840	15.50	Dimensions	24.00	19.75	Dimensions

150 psig 674.90	1.23	0.06	4.82	6340	510390	11880	Customer	Customer	17.75	Customer	Customer
	2.16	0.17	8.44	3620	95230	6790	to advise	to specify	20.75	to advise	to specify
	3.09	0.35	12.06	2530	32660	4750	Flange	Plate Flange	23.75	Flange	Plate Flange
	3.70	0.51	14.47	2110	18900	3960	Specification	Dimensions	25.75	Specification	Dimensions

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 & 50 psig: 125# LW F.F.S.O. (A105).
 Customer to advise flange specification for 150 psig design.
 Plate Flanges: Are available upon request and with dimensional information provided by customer.
 Pipe: 25 to 150 psig: Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 300 psig designs can be provided upon request.

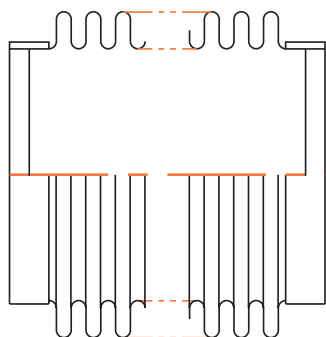
- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

30" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
30	S	O	025	2.66	BB	BB				9 1/2"			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches) AXIAL COMP.	(inches) LATERAL	(degrees) ANGULAR	(lbs/in) AXIAL	(lbs/in) LATERAL	(in. lb/deg) ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 585.27	1.52	0.06	5.57	2810	258230	6010	7.50	Customer	16.00	11.75	Customer
	2.66	0.20	9.74	1610	48180	3430	10.50	to specify	19.00	14.75	to specify
	3.80	0.40	13.91	1120	16530	2400	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.94	0.68	15.00	870	7520	1850	16.50	Dimensions	25.00	20.75	Dimensions

50 psig 584.58	1.33	0.06	4.89	3160	289790	6740	7.50	Customer	16.00	11.75	Customer
	2.34	0.17	8.56	1810	54070	3850	10.50	to specify	19.00	14.75	to specify
	3.34	0.36	12.23	1260	18550	2700	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.00	0.51	14.67	1050	10730	2250	15.50	Dimensions	24.00	19.75	Dimensions

150 psig 585.95	1.23	0.05	4.50	6770	622280	14480	Customer	Customer	16.00	Customer	Customer
	2.15	0.16	7.87	3870	116110	8270	to advise	to specify	19.00	to advise	to specify
	3.07	0.33	11.24	2710	39830	5790	Flange	Plate Flange	22.00	Flange	Plate Flange
	3.69	0.47	13.49	2260	23050	4830	Specification	Dimensions	24.00	Specification	Dimensions

Standard materials of construction

BelloWS: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 25 & 50 psig: 125# LW F.F.S.O. (A105).
 Customer to advise flange specification for 150 psig design.
 Plate Flanges: Are available upon request and with dimensional information provided by customer.
 Pipe: 25 to 150 psig; Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

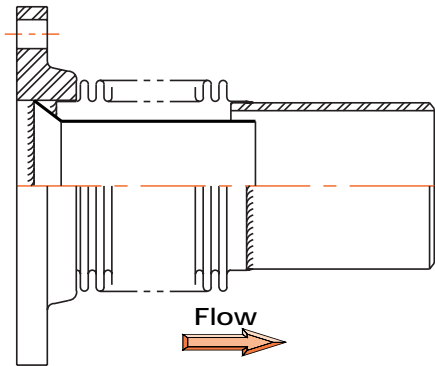
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 300 psig designs can be provided upon request.

- * To obtain BelloWS Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded BelloWS Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





32" and 34" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS								
										BELLOWS	END							
										MAT'L	MAT'L							
➤ 34	-	S	O	-	025	-	2.66	-	FR	-	WS	-	L4	-	14 ^{3/4} "	-		

This part number describes the unit pictured above.

32"		MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
PRESS/ EFF. AREA (in ²)	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
	25 psig 870.82	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	7.50	Customer to specify	16.00	11.75	Customer to specify
1.52		0.06	5.23	2990	310770	7230	10.50	19.00		14.75		
2.66		0.19	9.15	1710	57990	4130	13.50	Plate Flange	22.00	17.75	Plate Flange	
3.80		0.38	13.08	1200	19890	2890	16.50	Dimensions	25.00	20.75	Dimensions	

50 psig 869.98	1.33	0.05	4.58	3360	349020	8120	7.50	Customer to specify	16.00	11.75	Customer to specify
	2.33	0.16	8.01	1920	65120	4640	10.50		19.00	14.75	
	3.32	0.33	11.45	1340	22340	3250	13.50	Plate Flange	22.00	17.75	Plate Flange
	3.99	0.48	13.73	1120	12930	2710	15.50	Dimensions	24.00	19.75	Dimensions

34"		MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
PRESS/ EFF. AREA (in ²)	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
	➤ 25 psig 978.57	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	7.50	Customer to specify	16.00	11.75	Customer to specify
1.52		0.06	4.93	3170	369960	8610	10.50	19.00		14.75		
2.66		0.18	8.64	1810	69030	4920	13.50	Plate Flange	22.00	17.75	Plate Flange	
3.80		0.36	12.34	1270	23680	3440	16.50	Dimensions	25.00	20.75	Dimensions	

50 psig 977.68	1.32	0.05	4.30	3560	415780	9680	7.50	Customer to specify	16.00	11.75	Customer to specify
	2.32	0.15	7.53	2040	77580	5530	10.50		19.00	14.75	
	3.31	0.31	10.76	1430	26610	3870	13.50	Plate Flange	22.00	17.75	Plate Flange
	4.31	0.53	13.99	1100	12110	2980	16.50	Dimensions	25.00	20.75	Dimensions

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 & 50 psig; 125# LW F.F.S.O. (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig; Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 150 and 300 psig designs can be provided upon request

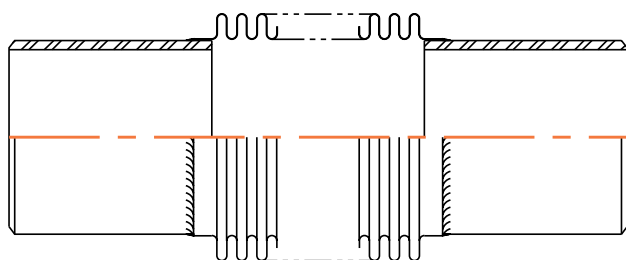
- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

36" and 38" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
38	S	O	050	2.27	WS	WS			19 ³ / ₄ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR					
25 psig 1099.94	1.66	0.06	5.09	2520	276660	7700	8.00	Customer	16.50	12.25	Customer
	2.95	0.20	9.02	1440	50240	4390	11.25	to specify	19.75	15.50	to specify
	4.18	0.41	12.80	1010	17480	3080	14.50	Plate Flange	23.00	18.75	Plate Flange
	5.04	0.59	15.00	840	10030	2560	16.75	Dimensions	25.25	21.00	Dimensions

50 psig 1099.47	1.28	0.05	3.91	5610	651820	17120	7.75	Customer	16.25	12.00	Customer
	2.28	0.16	6.97	3170	110780	9680	11.25	to specify	19.75	15.50	to specify
	3.24	0.32	9.93	2220	38560	6790	14.50	Plate Flange	23.00	18.75	Plate Flange
	3.90	0.46	11.93	1850	22120	5650	16.75	Dimensions	25.25	21.00	Dimensions

25 psig 1220.65	1.62	0.06	4.69	2670	344830	9060	7.75	Customer	16.25	12.00	Customer
	2.95	0.19	8.56	1510	58680	5130	11.25	to specify	19.75	15.50	to specify
	4.18	0.39	12.15	1060	20420	3590	14.50	Plate Flange	23.00	18.75	Plate Flange
	5.04	0.56	14.64	880	11720	2990	16.75	Dimensions	25.25	21.00	Dimensions

50 psig 1220.15	1.28	0.05	3.71	5890	760520	19980	7.75	Customer	16.25	12.00	Customer
	2.27	0.15	6.60	3340	129520	11310	11.25	to specify	19.75	15.50	to specify
	3.23	0.30	9.39	2340	45090	7940	14.50	Plate Flange	23.00	18.75	Plate Flange
	3.88	0.44	11.29	1950	25870	6610	16.75	Dimensions	25.25	21.00	Dimensions

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 & 50 psig; 125# LW F.F.S.O. (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig; Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

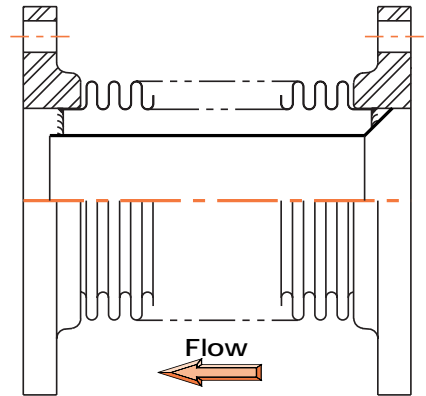
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 150 and 300 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





40" and 42" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
					BELLOWS MAT'L	END MAT'L					
➤ 42	- S	O	- 025	- 1.62	- FR	- FR	- L	-	7 ³ / ₄ "	-	-

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	(inches)				
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 1347.64	1.62	0.06	4.47	2810	399780	10500	7.75	Customer to specify	16.25	12.00	Customer to specify
	2.95	0.18	8.15	1590	68020	5940	11.25		19.75	15.50	
	4.18	0.37	11.56	1110	23670	4170	14.50	Plate Flange	23.00	18.75	Plate Flange
	5.04	0.54	13.93	930	13580	3470	16.75	Dimensions	25.25	21.00	Dimensions

50 psig 1347.12	1.27	0.04	3.53	6180	880600	23130	7.75	Customer to specify	16.25	12.00	Customer to specify
	2.26	0.14	6.26	3500	150120	13110	11.25		19.75	15.50	
	3.12	0.25	8.62	2500	64390	9360	13.50	Plate Flange	22.00	17.75	Plate Flange
	3.88	0.41	10.73	2050	29980	7650	16.75	Dimensions	25.25	21.00	Dimensions

42"											
➤ 25 psig 1480.92	1.62	0.05	4.26	2940	460260	12090	7.75	Customer to specify	16.25	12.00	Customer to specify
	2.95	0.18	7.77	1660	78290	6840	11.25		19.75	15.50	
	4.18	0.35	11.03	1170	27250	4800	14.50	Plate Flange	23.00	18.75	Plate Flange
	5.04	0.51	13.29	970	15630	3990	16.75	Dimensions	25.25	21.00	Dimensions

50 psig 1480.37	1.27	0.04	3.36	6470	1012610	26600	7.75	Customer to specify	16.25	12.00	Customer to specify
	2.26	0.13	5.97	3670	172670	15080	11.25		19.75	15.50	
	3.22	0.27	8.51	2570	60080	10570	14.50	Plate Flange	23.00	18.75	Plate Flange
	3.87	0.39	10.22	2140	34480	8800	16.75	Dimensions	25.25	21.00	Dimensions

Standard materials of construction

BelloWS: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 & 50 psig; 125# LW F.F.S.O. (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig; Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 150 and 300 psig designs can be provided upon request.

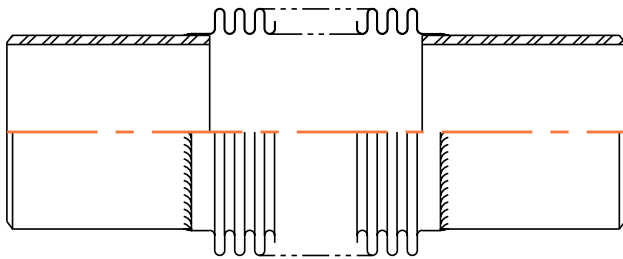
- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

44" and 46" Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
					-	-	-	-				BELLOWS	END
												MAT'L	MAT'L
44	S	O	050	2.26	WS	-	WS	-	-	19 ³ / ₄ "	-		

This part number describes the unit pictured above.

44"	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	(inches)				
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 1620.48	1.62	0.05	4.07	3070	526510	13830	8.75	Customer	16.25	12.50	Customer
	2.95	0.17	7.43	1740	89540	7820	12.25	to specify	19.75	16.00	to specify
	4.18	0.34	10.55	1220	31160	5480	15.50	Plate Flange	23.00	19.25	Plate Flange
	5.04	0.49	12.70	1010	17880	4570	17.75	Dimensions	25.25	21.50	Dimensions

50 psig 1619.90	1.27	0.04	3.21	6760	1157120	30400	8.75	Customer	16.25	12.50	Customer
	2.26	0.13	5.70	3830	197350	17240	12.25	to specify	19.75	16.00	to specify
	3.22	0.26	8.13	2690	68660	12080	15.50	Plate Flange	23.00	19.25	Plate Flange
	3.87	0.38	9.77	2240	39410	10060	17.75	Dimensions	25.25	21.50	Dimensions

46"	25 psig 1766.32	1.62	0.05	3.90	3210	598800	15730	8.75	Customer	16.25	12.50	Customer
		2.95	0.16	7.12	1810	101820	8890	12.25	to specify	19.75	16.00	to specify
		4.18	0.32	10.10	1270	35440	6240	15.50	Plate Flange	23.00	19.25	Plate Flange
		5.04	0.47	12.17	1060	20330	5190	17.75	Dimensions	25.25	21.50	Dimensions

50 psig 1765.72	1.27	0.04	3.07	7040	1314670	34540	8.75	Customer	16.25	12.50	Customer
	2.26	0.12	5.46	3990	224270	19590	12.25	to specify	19.75	16.00	to specify
	3.22	0.25	7.78	2800	78020	13730	15.50	Plate Flange	23.00	19.25	Plate Flange
	3.87	0.36	9.35	2330	44780	11430	17.75	Dimensions	25.25	21.50	Dimensions

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 25 & 50 psig; 125# LW F.F.S.O. (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig; Std. Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 150 and 300 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).

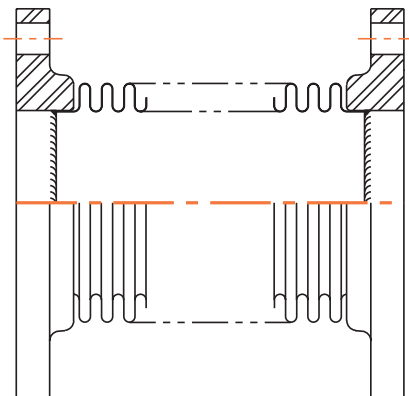




48" , 50" & 52" Nominal Diameter

UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
50	S	O	025	2.86	FR	FR			12 ³ / ₄ "		

This part number describes the unit pictured above.

48"		MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
PRESS/ EFF. AREA (in ²)	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
	25 psig 1919.69	1.61	0.05	3.74	8020	1628190	42770	9.25	Customer	16.25	12.75	Customer
2.87		0.15	6.65	4540	277200	24220	12.75	to specify	19.75	16.25	to specify	
4.09		0.30	9.47	3180	96500	16980	16.00	Plate Flange	23.00	19.50	Plate Flange	
4.91		0.44	11.38	2650	55360	14140	18.25	Dimensions	25.25	21.75	Dimensions	

50"		MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
PRESS/ EFF. AREA (in ²)	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
	25 psig 2078.15	1.61	0.04	3.59	8330	1830580	48090	9.25	Customer	16.25	12.75	Customer
2.86		0.14	6.38	4720	311880	27250	12.75	to specify	19.75	16.25	to specify	
4.08		0.29	9.09	3310	108530	19100	16.00	Plate Flange	23.00	19.50	Plate Flange	
4.90		0.42	10.93	2750	62280	15900	18.25	Dimensions	25.25	21.75	Dimensions	

52"		MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
PRESS/ EFF. AREA (in ²)	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
	25 psig 2285.05	1.71	0.05	3.63	4520	973390	28670	9.50	Customer	16.50	13.00	Customer
2.85		0.13	6.05	2710	210250	17200	12.50	to specify	19.50	16.00	to specify	
3.99		0.26	8.48	1940	76620	12290	15.50	Plate Flange	22.50	19.00	Plate Flange	
5.13		0.43	10.90	1510	36050	9560	18.50	Dimensions	25.50	22.00	Dimensions	

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 125# LW F.F.S.O. (A105).
 Plate Flanges: Are available upon request and with dimensional information provided by customer.
 Pipe: Std. Wt. (3/8" Wall) (A53-B/A106-B/A-36/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50 psig designs can be provided upon request.

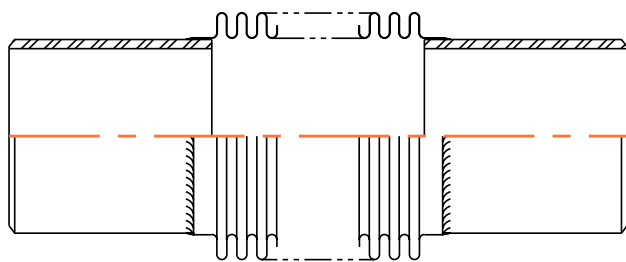
- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

54", 56" & 58"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
58	S	O	025	1.71	WS	WS			16 1/2"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR					
25 psig 2457.65	1.71	0.05	3.50	4680	1085060	31960	9.50	Customer	16.50	13.00	Customer
	2.85	0.13	5.84	2810	234370	19170	12.50	to specify	19.50	16.00	to specify
	3.99	0.25	8.17	2010	85410	13700	15.50	Plate Flange	22.50	19.00	Plate Flange
	5.13	0.41	10.51	1560	40190	10650	18.50	Dimensions	25.50	22.00	Dimensions

PRESS/ EFF. AREA (in ²)	MOVEMENTS	SPRING RATES	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS						
								(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)
								AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR
25 psig 2636.53	1.71	0.04	3.38	4850	1204910	35490	125# LW	Customer	16.50	125# LW	Customer		
	2.85	0.12	5.64	2910	260260	21290	Flanges are	to specify	19.50	Flanges are	to specify		
	3.99	0.24	7.89	2080	94850	15210	not available	Plate Flange	22.50	not available	Plate Flange		
	5.13	0.40	10.15	1620	44630	11830	in this size	Dimensions	25.50	in this size	Dimensions		

PRESS/ EFF. AREA (in ²)	MOVEMENTS	SPRING RATES	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS						
								(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)
								AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR
25 psig 2821.69	1.71	0.04	3.27	5010	1333230	39270	125# LW	Customer	16.50	125# LW	Customer		
	2.85	0.12	5.45	3010	287980	23560	Flanges are	to specify	19.50	Flanges are	to specify		
	3.99	0.23	7.63	2150	104950	16830	not available	Plate Flange	22.50	not available	Plate Flange		
	5.13	0.39	9.81	1670	49380	13090	in this size	Dimensions	25.50	in this size	Dimensions		

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 125# LW F.F.S.O. (54" Nom. Dia. Only) (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 3/8" Wall (A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).

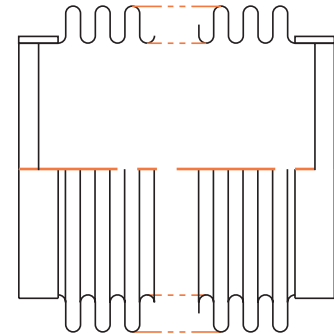




60", 66" & 72"
Nominal Diameter

UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
60	S	O	025	1.71	BB	BB			7"		

This part number describes the unit pictured above.

60"												
PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)					
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
25 psig 3013.14	1.71	0.04	3.16	5170	1470310	43300	10.00	Customer	16.50	13.25	Customer	
	2.85	0.12	5.27	3100	317590	25980	13.00	to specify	19.50	16.25	to specify	
	3.99	0.23	7.38	2220	115740	18560	16.00	Plate Flange	22.50	19.25	Plate Flange	
	5.13	0.37	9.49	1720	54460	14430	19.00	Dimensions	25.50	22.25	Dimensions	

66"												
PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)					
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
25 psig 3625.18	1.71	0.04	2.88	5670	1936940	57050	10.00	Customer	16.50	13.25	Customer	
	2.85	0.10	4.81	3400	418380	34230	13.00	to specify	19.50	16.25	to specify	
	3.99	0.21	6.73	2430	152470	24450	16.00	Plate Flange	22.50	19.25	Plate Flange	
	5.13	0.34	8.65	1890	71740	19020	19.00	Dimensions	25.50	22.25	Dimensions	

72"												
PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)					
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS	
25 psig 4293.76	1.71	0.03	2.65	6160	2492620	73410	10.00	Customer	16.50	13.25	Customer	
	2.85	0.10	4.42	3690	538410	44050	13.00	to specify	19.50	16.25	to specify	
	3.99	0.19	6.18	2640	196210	31460	16.00	Plate Flange	22.50	19.25	Plate Flange	
	5.13	0.31	7.95	2050	92320	24470	19.00	Dimensions	25.50	22.25	Dimensions	

Standard materials of construction

BelloWS: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 125# LW F.F.S.O. (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 3/8" Wall (A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50 psig designs can be provided upon request.

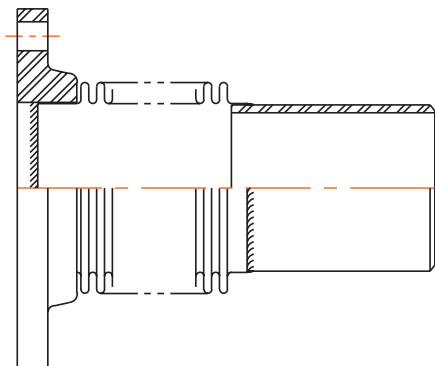
- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





Single Expansion Joints

78", 84" & 90"
Nominal Diameter



UNIT TYPE
S = SINGLE

UNIT STYLE
B = BELLOWS ONLY
O = UNRESTRAINED
T = TIE RODS/LIMIT RODS/
CONTROL RODS
H = HINGE
G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)				LINER W/ MAT'L	COVER W/ MAT'L	*OVERALL LENGTH	SPECIAL MATERIALS	
					FR	VR	FP	WS				BELLOWS	END
												MAT'L	MAT'L
84	S	O	025	2.85	FR	VR	FP	WS			16 1/2"	B9	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR					
25 psig 5018.90	1.71	0.03	2.45	6640	3145060	92630	125# LW Flanges are not available in this size	Customer to specify Plate Flange Dimensions	16.50	125# LW Flanges are not available in this size	Customer to specify Plate Flange Dimensions
	2.85	0.09	4.09	3990	679330	55580			19.50		
	3.99	0.17	5.72	2850	247570	39700			22.50		
	5.13	0.29	7.35	2210	116480	30880			25.50		

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR					
25 psig 5800.58	1.71	0.03	2.28	7130	3901910	114920	10.50 13.50 16.50 19.50	Customer to specify Plate Flange Dimensions	16.50	13.50 16.50 19.50 22.50	Customer to specify Plate Flange Dimensions
	2.85	0.08	3.80	4280	842810	68950			19.50		
	3.99	0.16	5.32	3060	307150	49250			22.50		
	5.13	0.27	6.84	2380	144520	38310			25.50		

PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8" (inches)				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR					
25 psig 6638.81	1.71	0.03	2.13	7620	4770560	140500	125# LW Flanges are not available in this size	Customer to specify Plate Flange Dimensions	16.50	125# LW Flanges are not available in this size	Customer to specify Plate Flange Dimensions
	2.85	0.08	3.55	4570	1030440	84300			19.50		
	3.99	0.15	4.97	3270	375520	60220			22.50		
	5.13	0.25	6.39	2540	176690	46830			25.50		

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Flanges: 125# LW F.F.S.O. (84" Nom. Dia. Only) (A105).
Plate Flanges: Are available upon request and with dimensional information provided by customer.
Pipe: 3/8" Wall (A-36/A516-70).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).





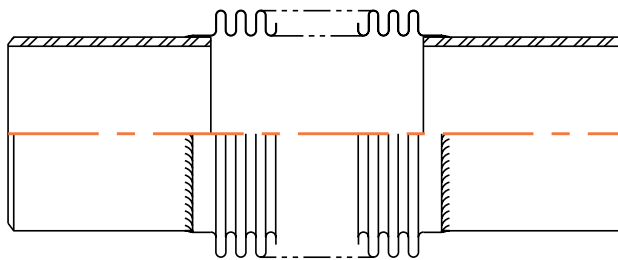
96" , 102" & 120" Nominal Diameter

UNIT TYPE

S = SINGLE

UNIT STYLE

B = BELLOWS ONLY
 O = UNRESTRAINED
 T = TIE RODS/LIMIT RODS/
 CONTROL RODS
 H = HINGE
 G = GIMBAL



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	AXIAL COMP.	END FITTINGS (See Page 10)		LINER W/ MAT'L	COVER W/ MAT'L	* OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
➤ 102	- S	O	- 025	- 3.99	- WS	- WS	-	-	- 22 1/2"	-	

This part number describes the unit pictured above.

96"											
PRESS/ EFF. AREA (in ²)	MOVEMENTS			SPRING RATES			*OVERALL LENGTHS ± 1/8"				
	(inches)	(inches)	(degrees)	(lbs/in)	(lbs/in)	(in. lb/deg)	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 7533.59	1.71	0.03	2.00	8090	5747030	169260	11.00	Customer	16.50	13.75	Customer
	2.85	0.07	3.33	4850	1241360	101560	14.00	to specify	19.50	16.75	to specify
	3.99	0.14	4.67	3470	452390	72540	17.00	Plate Flange	22.50	19.75	Plate Flange
	5.13	0.24	6.00	2700	212850	56420	20.00	Dimensions	25.50	22.75	Dimensions

102"											
PRESS/ EFF. AREA (in ²)	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
➤ 25 psig 8484.92	1.71	0.02	1.89	8560	6847610	201680	125# LW	Customer	16.50	125# LW	Customer
	2.85	0.07	3.14	5130	1479080	121010	Flanges are	to specify	19.50	Flanges are	to specify
	3.99	0.13	4.40	3670	539030	86430	not available	Plate Flange	22.50	not available	Plate Flange
	5.13	0.22	5.66	2850	253620	67230	in this size	Dimensions	25.50	in this size	Dimensions

120"											
PRESS/ EFF. AREA (in ²)	AXIAL COMP.	LATERAL	ANGULAR	AXIAL	LATERAL	ANGULAR	FR-FR VR-VR	FP-FP VP-VP	WS-WS	FR-WS VR-WS	FP-WS VP-WS
25 psig 11774.17	1.71	0.02	1.60	5220	5791270	170570	125# LW	Customer	16.50	125# LW	Customer
	2.85	0.06	2.67	3130	1250910	102340	Flanges are	to specify	19.50	Flanges are	to specify
	4.00	0.11	3.74	2240	455870	73100	not available	Plate Flange	22.50	not available	Plate Flange
	5.14	0.19	4.81	1740	214490	56860	in this size	Dimensions	25.50	in this size	Dimensions

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Flanges: 125# LW F.F.S.O. (96" Nom. Dia. Only) (A105).
 Plate Flanges: Are available upon request and with dimensional information provided by customer.
 Pipe: 3/8" Wall (A-36/A516-70).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).

- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50 psig designs can be provided upon request.

- * To obtain Bellows Only Overall Length, subtract 12" from WS - WS length and add neck lengths.
- * To obtain Banded Bellows Overall Length, subtract 9 1/2" from WS - WS length.
- * Additional length is required for units with hardware attached to weld ends (please consult factory).

