

Universal Expansion Joints

3"

Nominal Diameter

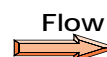
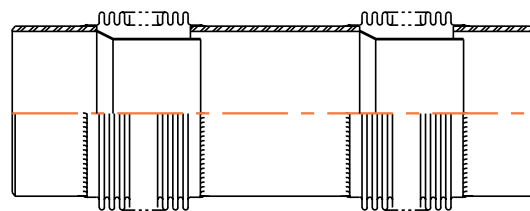


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
3	U	O	300	4.02	WS	WS	L		32"	B2	E2	

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 11.70	3.51	10	1.66	180	12.00	1.1875	0.625	4.00	4.50
	6.00	10	1.66	180	18.00	1.1875	0.625	4.00	4.50
	8.57	<10	1.66	180	24.00	1.1875	0.625	4.00	4.50
	13.70	<10	1.66	180	36.00	1.1875	0.625	4.00	4.50
50 psig 11.87	2.42	20	1.09	250	12.00	1.1875	0.625	4.00	4.50
	4.06	10	1.09	250	18.00	1.1875	0.625	4.00	4.50
	5.72	<10	1.09	250	24.00	1.1875	0.625	4.00	4.50
	9.06	<10	1.09	250	36.00	1.1875	0.625	4.00	4.50
150 psig 11.94	2.46	40	1.17	470	12.00	1.1875	0.625	4.00	4.50
	4.21	10	1.17	470	18.00	1.1875	0.625	4.00	4.50
	5.99	10	1.17	470	24.00	1.1875	0.625	4.00	4.50
	9.58	<10	1.17	470	36.00	1.1875	0.625	4.00	4.50
300 psig 11.99	1.68	90	0.78	1160	12.00	1.6875		4.00	4.50
	2.84	30	0.78	1160	18.00	1.6875		4.00	4.50
	4.02	20	0.78	1160	24.00	1.6875		4.00	4.50
	6.39	10	0.78	1160	36.00	1.6875		4.00	4.50

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

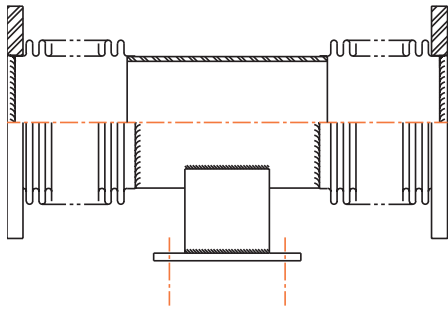
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension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



Universal Expansion Joints



4" Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	TOTAL AXIAL COMPRESSION	END FITTINGS		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
					(See Page 38)					BELLOWS	END
										MAT'L	MAT'L
4	D	O	050	1.52	FP	FP			19 1/4"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.				
	(inches)	(lbs/in)	(inches)	(lbs/in)		(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE						
25 psig 19.52	2.72	20	1.66	150	12.00	1.3125	0.625	4.00	6.00	
	4.66	10	1.66	150	18.00	1.3125	0.625	4.00	6.00	
	6.63	<10	1.66	150	24.00	1.3125	0.625	4.00	6.00	
	10.61	<10	1.66	150	36.00	1.3125	0.625	4.00	6.00	
50 psig 20.26	2.00	40	1.52	280	12.00	1.3125	0.625	4.00	6.00	
	4.00	10	1.52	280	18.00	1.3125	0.625	4.00	6.00	
	5.94	10	1.52	280	24.00	1.3125	0.625	4.00	6.00	
	9.50	<10	1.52	280	36.00	1.3125	0.625	4.00	6.00	
150 psig 20.29	1.91	60	1.29	450	12.00	1.3125	0.625	4.00	6.00	
	3.38	20	1.29	450	18.00	1.3125	0.625	4.00	6.00	
	4.87	10	1.29	450	24.00	1.3125	0.625	4.00	6.00	
	7.90	10	1.29	450	36.00	1.3125	0.625	4.00	6.00	
300 psig 20.51	1.50	250	1.02	1730	12.00	1.875		4.00	6.00	
	2.65	90	1.02	1730	18.00	1.875		4.00	6.00	
	3.83	50	1.02	1730	24.00	1.875		4.00	6.00	
	6.21	20	1.02	1730	36.00	1.875		4.00	6.00	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

5"

Nominal Diameter

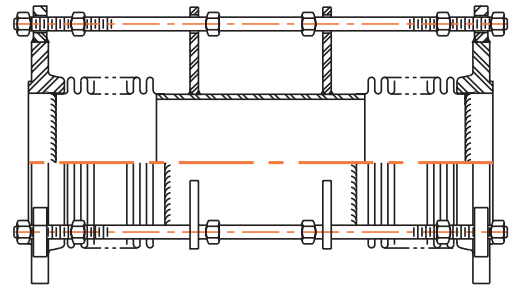


UNIT TYPE

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D = DUAL

UNIT STYLE

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T = TIE RODS/LIMIT RODS/
CONTROL RODS
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G = GIMBAL



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
5	U	T	150	7.41	FR	FR			38 ⁷ / ₈ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 29.66	2.60	40	2.28	160	12.00	1.4375	0.75	4.00	7.50
	4.70	10	2.28	160	18.00	1.4375	0.75	4.00	7.50
	6.86	10	2.28	160	24.00	1.4375	0.75	4.00	7.50
	11.25	<10	2.28	160	36.00	1.4375	0.75	4.00	7.50
50 psig 30.26	2.00	90	1.78	400	12.00	1.4375	0.75	4.00	7.50
	3.63	30	1.78	400	18.00	1.4375	0.75	4.00	7.50
	5.31	20	1.78	400	24.00	1.4375	0.75	4.00	7.50
	8.70	10	1.78	400	36.00	1.4375	0.75	4.00	7.50
150 psig 30.30	1.60	150	1.56	590	12.00	1.4375	0.75	4.00	7.50
	2.99	50	1.56	590	18.00	1.4375	0.75	4.00	7.50
	4.45	30	1.56	590	24.00	1.4375	0.75	4.00	7.50
	7.41	10	1.56	590	36.00	1.4375	0.75	4.00	7.50
300 psig 30.54	1.42	350	1.27	1530	12.00	2.00		4.00	7.50
	2.57	130	1.27	1530	18.00	2.00		4.00	7.50
	3.76	70	1.27	1530	24.00	2.00		4.00	7.50
	6.16	30	1.27	1530	36.00	2.00		4.00	7.50

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

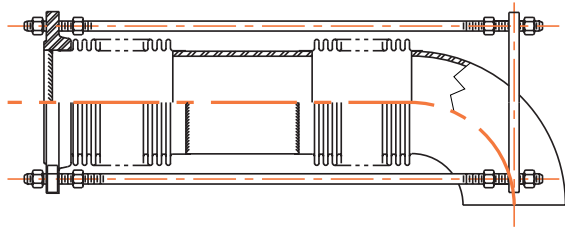
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension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



Universal Expansion Joints



6" Nominal Diameter



UNIT TYPE
 U = UNIVERSAL
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UNIT STYLE
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 T = TIE RODS/LIMIT RODS/
 CONTROL RODS
 H = HINGE
 G = GIMBAL

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS						
										BELLOWS MAT'L	END MAT'L					
										6	-	U	T	-	300	-

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END
25 psig 40.80	2.21	60	2.28	180	12.00	1.5625	0.75	5.00	9.00
	4.01	20	2.28	180	18.00	1.5625	0.75	5.00	9.00
	5.85	10	2.28	180	24.00	1.5625	0.75	5.00	9.00
	9.60	<10	2.28	180	36.00	1.5625	0.75	5.00	9.00
50 psig 41.51	1.66	150	1.73	470	12.00	1.5625	0.75	5.00	9.00
	3.00	50	1.73	470	18.00	1.5625	0.75	5.00	9.00
	4.40	30	1.73	470	24.00	1.5625	0.75	5.00	9.00
	7.21	10	1.73	470	36.00	1.5625	0.75	5.00	9.00
150 psig 41.56	1.34	240	1.53	700	12.00	1.5625	0.75	5.00	9.00
	2.51	90	1.53	700	18.00	1.5625	0.75	5.00	9.00
	3.73	40	1.53	700	24.00	1.5625	0.75	5.00	9.00
	6.22	20	1.53	700	36.00	1.5625	0.75	5.00	9.00
300 psig 41.65	0.99	560	1.24	1470	12.00	2.0625		5.00	9.00
	1.91	190	1.24	1470	18.00	2.0625		5.00	9.00
	2.89	100	1.24	1470	24.00	2.0625		5.00	9.00
	4.88	40	1.24	1470	36.00	2.0625		5.00	9.00

Standard materials of construction

Bellows: A240 T321.
 Liners: A240 T304 (when liner is requested).
 Covers: Carbon Steel (when cover is requested).
 Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
 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).
 Elbow: Standard Wt. 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

8"

Nominal Diameter

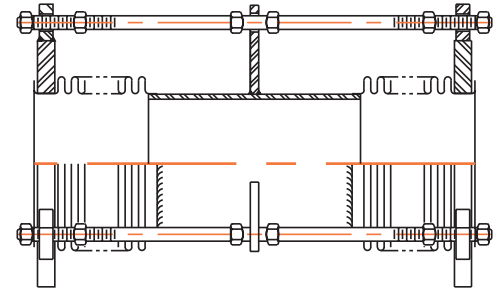


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
8	U	T	150	2.16	VP	VP			20"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 68.85	1.56	90	1.90	180	12.00	1.75	1.00	6.00	12.00
	2.73	30	1.90	180	18.00	1.75	1.00	6.00	12.00
	3.93	20	1.90	180	24.00	1.75	1.00	6.00	12.00
	6.34	10	1.90	180	36.00	1.75	1.00	6.00	12.00
50 psig 70.25	1.83	170	2.85	280	12.00	1.75	1.00	6.00	12.00
	3.00	60	2.85	280	18.00	1.75	1.00	6.00	12.00
	5.00	30	2.85	280	24.00	1.75	1.00	6.00	12.00
	8.75	10	2.85	280	36.00	1.75	1.00	6.00	12.00
150 psig 70.43	1.00	690	1.92	990	12.00	1.75	1.00	6.00	12.00
	2.16	230	1.92	990	18.00	1.75	1.00	6.00	12.00
	3.30	110	1.92	990	24.00	1.75	1.00	6.00	12.00
	5.65	40	1.92	990	36.00	1.75	1.00	6.00	12.00
300 psig 70.90	1.00	1520	2.07	1930	12.00	2.4375		6.00	12.00
	2.14	490	2.07	1930	18.00	2.4375		6.00	12.00
	3.35	240	2.07	1930	24.00	2.4375		6.00	12.00
	5.85	90	2.07	1930	36.00	2.4375		6.00	12.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

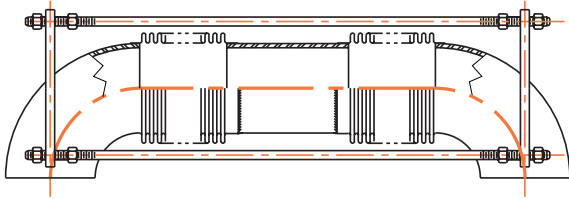
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500 F.
- Consult factory for temperature rating of plate flanges..
- Maximum Axial Extension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



Universal Expansion Joints



10"
Nominal Diameter



UNIT TYPE

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PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
10	U	T	150	1.73	EL	EL			48"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 103.67	1.41	130	2.37	170	12.00	1.9375	1.00	6.00	15.00
	2.58	50	2.37	170	18.00	1.9375	1.00	6.00	15.00
	3.78	30	2.37	170	24.00	1.9375	1.00	6.00	15.00
	6.22	10	2.37	170	36.00	1.9375	1.00	6.00	15.00
50 psig 105.44	1.00	530	2.73	510	12.00	1.9375	1.00	6.00	15.00
	2.51	180	2.73	510	18.00	1.9375	1.00	6.00	15.00
	3.84	90	2.73	510	24.00	1.9375	1.00	6.00	15.00
	6.58	30	2.73	510	36.00	1.9375	1.00	6.00	15.00
150 psig 105.58	0.87	1280	1.88	1230	12.00	1.9375	1.00	6.00	15.00
	1.73	430	1.88	1230	18.00	1.9375	1.00	6.00	15.00
	2.65	210	1.88	1230	24.00	1.9375	1.00	6.00	15.00
	4.54	80	1.88	1230	36.00	1.9375	1.00	6.00	15.00
300 psig 107.31	0.92	2330	1.99	2200	12.00	2.625		6.00	15.00
	1.82	780	1.99	2200	18.00	2.625		6.00	15.00
	2.78	380	1.99	2200	24.00	2.625		6.00	15.00
	4.76	150	1.99	2200	36.00	2.625		6.00	15.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

12"
Nominal Diameter

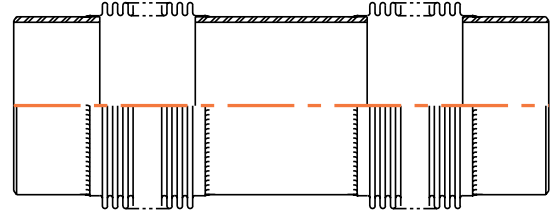


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UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
12	U	O	300	1.93	WS	WS			40"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 145.65	1.27	270	2.85	210	12.00	2.1875	1.00	8.00	18.00
	2.42	90	2.85	210	18.00	2.1875	1.00	8.00	18.00
	3.62	50	2.85	210	24.00	2.1875	1.00	8.00	18.00
	6.07	20	2.85	210	36.00	2.1875	1.00	8.00	18.00
50 psig 147.66	1.00	680	3.14	460	12.00	2.1875	1.00	8.00	18.00
	2.00	230	3.14	460	18.00	2.1875	1.00	8.00	18.00
	3.69	110	3.14	460	24.00	2.1875	1.00	8.00	18.00
	6.36	40	3.14	460	36.00	2.1875	1.00	8.00	18.00
150 psig 148.00	0.67	3200	1.76	2140	12.00	2.1875	1.00	8.00	18.00
	1.35	1070	1.76	2140	18.00	2.1875	1.00	8.00	18.00
	2.07	520	1.76	2140	24.00	2.1875	1.00	8.00	18.00
	3.56	200	1.76	2140	36.00	2.1875	1.00	8.00	18.00
300 psig 148.87	0.63	7240	1.65	4810	12.00	2.875		8.00	18.00
	1.26	2410	1.65	4810	18.00	2.875		8.00	18.00
	1.93	1180	1.65	4810	24.00	2.875		8.00	18.00
	3.32	460	1.65	4810	36.00	2.875		8.00	18.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

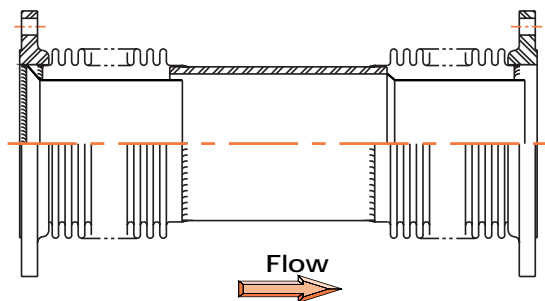
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500 F.
- Consult factory for temperature rating of plate flanges..
- Maximum Axial Extension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



Universal Expansion Joints



14"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
14	U	O	150	2.16	FR	FR	L		28 ¹ / ₂ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 174.53	2.55	220	3.99	330	18.00	2.25	1.00	8.00	21.00
	4.02	100	3.99	330	24.00	2.25	1.00	8.00	21.00
	7.10	40	3.99	330	36.00	2.25	1.00	8.00	21.00
	10.24	20	3.99	330	48.00	2.25	1.00	8.00	21.00
50 psig 175.81	2.00	280	3.63	430	18.00	2.25	1.00	8.00	21.00
	3.65	130	3.63	430	24.00	2.25	1.00	8.00	21.00
	6.44	50	3.63	430	36.00	2.25	1.00	8.00	21.00
	9.29	30	3.63	430	48.00	2.25	1.00	8.00	21.00
150 psig 176.19	1.31	1320	2.42	1720	18.00	2.25	1.00	8.00	21.00
	2.16	600	2.42	1720	24.00	2.25	1.00	8.00	21.00
	3.97	220	2.42	1720	36.00	2.25	1.00	8.00	21.00
	5.85	110	2.42	1720	48.00	2.25	1.00	8.00	21.00
300 psig 177.13	1.29	2800	2.46	3520	18.00	3.00		8.00	21.00
	2.13	1270	2.46	3520	24.00	3.00		8.00	21.00
	3.96	460	2.46	3520	36.00	3.00		8.00	21.00
	5.85	230	2.46	3520	48.00	3.00		8.00	21.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

16"
Nominal Diameter

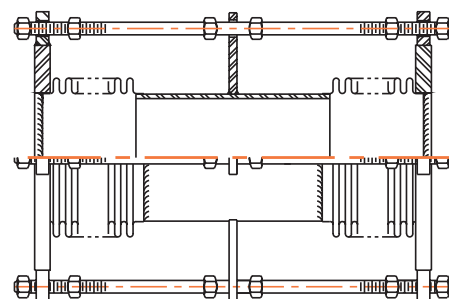


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
16	U	T	050	3.00	FP	FP			26"			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 227.84	2.24	260	3.99	300	18.00	2.50	1.00	8.00	24.00
	3.52	120	3.99	300	24.00	2.50	1.00	8.00	24.00
	6.21	50	3.99	300	36.00	2.50	1.00	8.00	24.00
	8.96	20	3.99	300	48.00	2.50	1.00	8.00	24.00
50 psig 231.19	1.94	650	3.91	680	18.00	2.50	1.00	8.00	24.00
	3.00	300	3.91	680	24.00	2.50	1.00	8.00	24.00
	5.73	110	3.91	680	36.00	2.50	1.00	8.00	24.00
	8.39	60	3.91	680	48.00	2.50	1.00	8.00	24.00
150 psig 232.06	1.79	1410	3.61	1470	18.00	2.50	1.00	8.00	24.00
	2.91	650	3.61	1470	24.00	2.50	1.00	8.00	24.00
	5.28	240	3.61	1470	36.00	2.50	1.00	8.00	24.00
	7.73	120	3.61	1470	48.00	2.50	1.00	8.00	24.00
300 psig 232.49	1.34	2830	2.70	2930	18.00	3.25		8.00	24.00
	2.17	1310	2.70	2930	24.00	3.25		8.00	24.00
	3.95	480	2.70	2930	36.00	3.25		8.00	24.00
	5.78	250	2.70	2930	48.00	3.25		8.00	24.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

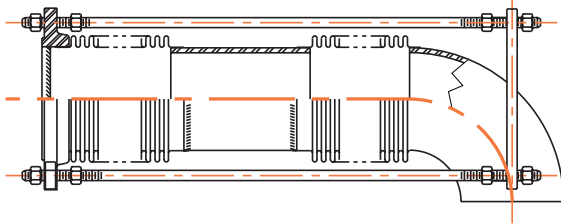
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500 F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension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



Universal Expansion Joints



18"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
18	U	T	050	2.80	FR	EL			53 ¹¹ / ₁₆ "		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.				
	(inches)	(lbs/in)	(inches)	(lbs/in)		(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE						
25 psig 284.49	2.00	350	3.99	330	18.00	2.6875	1.0625	8.00	27.00	
	3.15	170	3.99	330	24.00	2.6875	1.0625	8.00	27.00	
	5.56	60	3.99	330	36.00	2.6875	1.0625	8.00	27.00	
	8.02	30	3.99	330	48.00	2.6875	1.0625	8.00	27.00	
50 psig 288.23	1.73	910	3.87	760	18.00	2.6875	1.0625	8.00	27.00	
	2.80	420	3.87	760	24.00	2.6875	1.0625	8.00	27.00	
	5.09	150	3.87	760	36.00	2.6875	1.0625	8.00	27.00	
	7.44	80	3.87	760	48.00	2.6875	1.0625	8.00	27.00	
150 psig 288.26	1.53	2120	3.43	1780	18.00	2.6875	1.0625	8.00	27.00	
	2.47	980	3.43	1780	24.00	2.6875	1.0625	8.00	27.00	
	4.50	360	3.43	1780	36.00	2.6875	1.0625	8.00	27.00	
	6.58	180	3.43	1780	48.00	2.6875	1.0625	8.00	27.00	
300 psig 289.68	1.19	3950	2.68	3290	18.00	3.50		8.00	27.00	
	1.93	1830	2.68	3290	24.00	3.50		8.00	27.00	
	3.51	670	2.68	3290	36.00	3.50		8.00	27.00	
	5.13	340	2.68	3290	48.00	3.50		8.00	27.00	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 to 150 psig: 150# ANSI B16.5 RFSO (A105)
300 psig: 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1¹/₁₆" thick; 150# ANSI B16.5 drilling (A-36).
Pipe: Standard Wt. (A53-B/A106-B).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

20"
Nominal Diameter

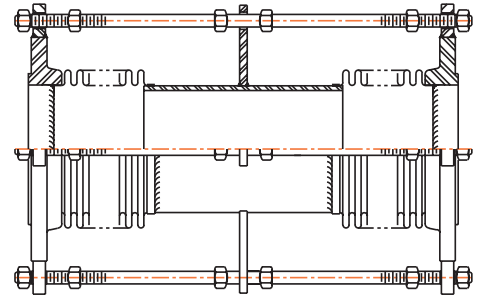


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
20	U	T	150	2.65	FR	FR			29 ³ / ₄ "			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 347.68	1.93	970	5.32	600	18.00	2.875	1.125	8.00	30.00
	3.00	440	5.32	600	24.00	2.875	1.125	8.00	30.00
	6.02	160	5.32	600	36.00	2.875	1.125	8.00	30.00
	8.94	80	5.32	600	48.00	2.875	1.125	8.00	30.00
50 psig 355.73	1.00	1010	4.82	610	18.00	2.875	1.125	8.00	30.00
	2.88	450	4.82	610	24.00	2.875	1.125	8.00	30.00
	5.00	160	4.82	610	36.00	2.875	1.125	8.00	30.00
	8.00	80	4.82	610	48.00	2.875	1.125	8.00	30.00
150 psig 356.80	1.00	2170	4.43	1310	18.00	2.875	1.125	8.00	30.00
	2.65	980	4.43	1310	24.00	2.875	1.125	8.00	30.00
	4.95	350	4.43	1310	36.00	2.875	1.125	8.00	30.00
	7.35	180	4.43	1310	48.00	2.875	1.125	8.00	30.00
300 psig 358.00	0.97	8720	2.70	5250	18.00	3.75		10.00	30.00
	1.61	3920	2.70	5250	24.00	3.75		10.00	30.00
	3.02	1400	2.70	5250	36.00	3.75		10.00	30.00
	4.48	710	2.70	5250	48.00	3.75		10.00	30.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
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).

Standard materials (Cont.)

Pipe: Standard Wt. (A53-B/A106-B).
Elbow: Standard Wt. 90° L.R. (A234 WPB).

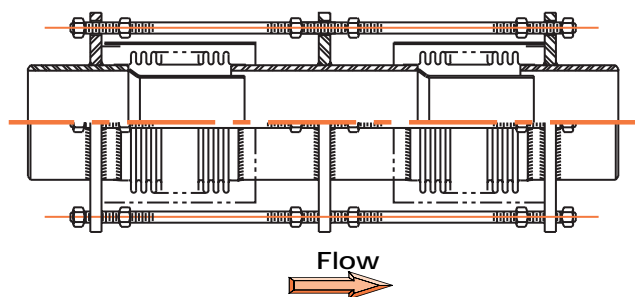
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F.
If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension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



Universal Expansion Joints



22"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
22	U	T	150	2.00	WS	WS	L	C	40"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 421.46	1.75	920	5.32	470	18.00	3.125	1.1875	8.00	33.00
	2.92	410	5.32	470	24.00	3.125	1.1875	8.00	33.00
	5.47	150	5.32	470	36.00	3.125	1.1875	8.00	33.00
	8.12	70	5.32	470	48.00	3.125	1.1875	8.00	33.00
50 psig 425.73	1.00	1320	4.78	670	18.00	3.125	1.1875	8.00	33.00
	2.00	600	4.78	670	24.00	3.125	1.1875	8.00	33.00
	4.89	210	4.78	670	36.00	3.125	1.1875	8.00	33.00
	7.26	110	4.78	670	48.00	3.125	1.1875	8.00	33.00
150 psig 426.90	1.00	2840	4.40	1440	18.00	3.125	1.1875	8.00	33.00
	2.00	1280	4.40	1440	24.00	3.125	1.1875	8.00	33.00
	4.49	460	4.40	1440	36.00	3.125	1.1875	8.00	33.00
	6.67	230	4.40	1440	48.00	3.125	1.1875	8.00	33.00
300 psig 428.22	0.88	11440	2.69	5760	18.00	4.00		10.00	33.00
	1.46	5150	2.69	5760	24.00	4.00		10.00	33.00
	2.74	1830	2.69	5760	36.00	4.00		10.00	33.00
	4.07	930	2.69	5760	48.00	4.00		10.00	33.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 to 150 psig; 150# ANSI B16.5 RFSO (A105)
300 psig; 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1 3/8" thick; 150# ANSI B16.5 drilling (A-36).

Standard materials (Cont.)

Pipe: 25 to 150 psig; Standard Wt. (A53-B/A106-B)
300 psig; SCH. 80s (0.5" Wall) (A106-B/A516-70).
Elbow: 25 to 150 psig; Standard Wt. 90° L.R. (A234 WPB)
300 psig; SCH. 80s (0.5" Wall) 90° L.R. (A234 WPB).

- 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.



Universal Expansion Joints

24"

Nominal Diameter

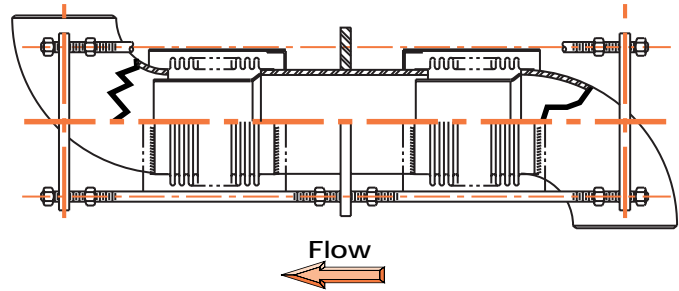


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
24	U	T	150	2.00	EL	EL	L2	C2	96"	B2	E2

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
25 psig 502.33	1.56	910	4.56	440	18.00	3.25	1.25	10.00	36.00
	2.52	420	4.56	440	24.00	3.25	1.25	10.00	36.00
	4.57	150	4.56	440	36.00	3.25	1.25	10.00	36.00
	6.67	80	4.56	440	48.00	3.25	1.25	10.00	36.00
50 psig 502.01	1.00	1740	4.07	850	18.00	3.25	1.25	10.00	36.00
	2.00	810	4.07	850	24.00	3.25	1.25	10.00	36.00
	4.00	300	4.07	850	36.00	3.25	1.25	10.00	36.00
	5.96	150	4.07	850	48.00	3.25	1.25	10.00	36.00
150 psig 503.28	1.00	3740	3.75	1820	18.00	3.25	1.25	10.00	36.00
	2.00	1740	3.75	1820	24.00	3.25	1.25	10.00	36.00
	3.75	640	3.75	1820	36.00	3.25	1.25	10.00	36.00
	5.48	330	3.75	1820	48.00	3.25	1.25	10.00	36.00
300 psig 504.72	0.78	15070	2.29	7320	18.00	4.1875		10.00	36.00
	1.26	7000	2.29	7320	24.00	4.1875		10.00	36.00
	2.29	2580	2.29	7320	36.00	4.1875		10.00	36.00
	3.34	1320	2.29	7320	48.00	4.1875		10.00	36.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 to 150 psig: 150# ANSI B16.5 RFSO (A105)
300 psig: 300# ANSI B16.5 RFSO (A105).
Plate Flanges: 1/4" thick; 150# ANSI B16.5 drilling (A-36).

Standard materials (Cont.)

Pipe: 25 to 150 psig: Standard Wt. (A53-B/A106-B)
300 psig: SCH.80s (0.5" Wall) (A106-B/A516-70).
Elbow: 25 to 150 psig: Standard Wt. 90° L.R. (A234 WPB)
300 psig: SCH. 80s (0.5" Wall) 90° L.R. (A234 WPB).

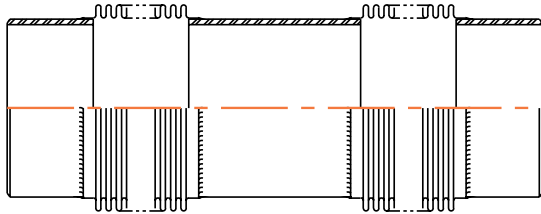
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F.
- If forged flanged ends are specified, the maximum temperature rating for 150 psig design is 500° F.
- Consult factory for temperature rating of plate flanges.
- Maximum Axial Extension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



Universal Expansion Joints



26"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
26	U	O	150	3.46	WS	WS			56"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
25 psig 585.27	1.00	1950	4.56	820	18.00	1.75	Customer to specify	10.00	39.00
	2.34	910	4.56	820	24.00	1.75		10.00	39.00
	4.23	330	4.56	820	36.00	1.75	Plate Flange Dimensions	10.00	39.00
	6.18	170	4.56	820	48.00	1.75		10.00	39.00

50 psig 584.58	1.00	2190	4.05	920	18.00	1.75	Customer to specify	10.00	39.00
	2.00	1020	4.05	920	24.00	1.75		10.00	39.00
	3.76	370	4.05	920	36.00	1.75	Plate Flange Dimensions	10.00	39.00
	5.49	190	4.05	920	48.00	1.75		10.00	39.00

150 psig 585.95	1.00	4700	3.73	1970	18.00	Customer to advise Flange Specification.	Customer to specify Plate Flange Dimensions	10.00	39.00
	1.91	2180	3.73	1970	24.00			10.00	39.00
	3.46	800	3.73	1970	36.00			10.00	39.00
	5.05	410	3.73	1970	48.00			10.00	39.00

Standard materials of construction

BelloWS: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 & 50 psig designs; 125# LW F.F.S.O. (A105).
Customer to advise flange specification for 150 psig design.
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 25 to 150 psig; Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (A234 WPB/A-36/A516-70/A53-B/A106-B).

- 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.



Universal Expansion Joints

28"
Nominal Diameter

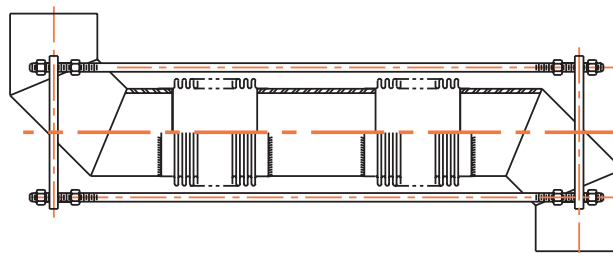


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
28	U	T	025	3.94	EL	EL			120"			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH (inches)	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (inches) ±1/8"; ±1/4" ABOVE 3 FT.			
	(inches) LATERAL MOVEMENT	(lbs/in) LATERAL SPRING RATE	(inches) AXIAL COMP.	(lbs/in) AXIAL SPRING RATE		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
25 psig 674.17	1.00	2420	4.56	880	18.00	1.75	Customer to specify Plate Flange Dimensions	10.00	42.00
	2.00	1120	4.56	880	24.00	1.75		10.00	42.00
	3.94	410	4.56	880	36.00	1.75		10.00	42.00
	5.76	210	4.56	880	48.00	1.75		10.00	42.00

50 psig 673.43	1.00	2710	4.03	990	18.00	1.75	Customer to specify Plate Flange Dimensions	10.00	42.00
	1.93	1260	4.03	990	24.00	1.75		10.00	42.00
	3.00	460	4.03	990	36.00	1.75		10.00	42.00
	5.00	240	4.03	990	48.00	1.75		10.00	42.00

150 psig 674.90	1.00	7090	3.69	2260	18.00	Customer to advise Flange Specification.	Customer to specify Plate Flange Dimensions	10.00	42.00
	1.65	3290	3.69	2260	24.00			10.00	42.00
	2.99	1210	3.69	2260	36.00			10.00	42.00
	4.36	620	3.69	2260	48.00			10.00	42.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 & 50 psig designs; 125# LW F.F.S.O. (A105).
Customer to advise flange specification for 150 psig design.
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 25 to 150 psig; Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (A234 WPB/A-36/A516-70/A53-B/A106-B).

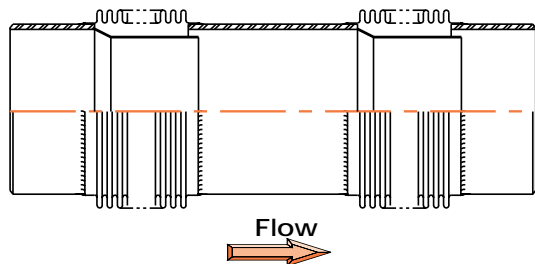
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum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



Universal Expansion Joints



30"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
30	U	O	050	3.00	WS	WS	L		56"	B4	E4

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END
25 psig 769.35	1.00	2940	4.56	940	18.00	1.75	Customer to specify	10.00	45.00
	2.00	1370	4.56	940	24.00	1.75		10.00	45.00
	3.69	500	4.56	940	36.00	1.75	Plate Flange Dimensions	10.00	45.00
	5.39	260	4.56	940	48.00	1.75		10.00	45.00

50 psig 768.56	1.00	3300	4.01	1050	18.00	1.75	Customer to specify	10.00	45.00
	1.80	1530	4.01	1050	24.00	1.75		10.00	45.00
	3.00	560	4.01	1050	36.00	1.75	Plate Flange Dimensions	10.00	45.00
	4.74	290	4.01	1050	48.00	1.75		10.00	45.00

150 psig 770.14	1.00	7090	3.69	2260	18.00	Customer to advise Flange Specification.	Customer to specify Plate Flange Dimensions	10.00	45.00
	1.65	3290	3.69	2260	24.00			10.00	45.00
	2.99	1210	3.69	2260	36.00			10.00	45.00
	4.36	620	3.69	2260	48.00			10.00	45.00

Standard materials of construction

Bellows: A240 T321.

Liners: A240 T304 (when liner is requested).

Covers: Carbon Steel (when cover is requested).

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

Flanges: 25 & 50 psig designs; 125# LW F.F.S.O. (A105).

Customer to advise flange specification for 150 psig design.

Plate Flanges: Available upon request and with dimensional information provided by customer.

Pipe: 25 to 150 psig; Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).

Elbow: Standard Wt. (3/8" wall) 90° L.R.

(A234 WPB/A-36/A516-70/A53-B/A106-B).

• 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.



Universal Expansion Joints

32" and 34" Nominal Diameter

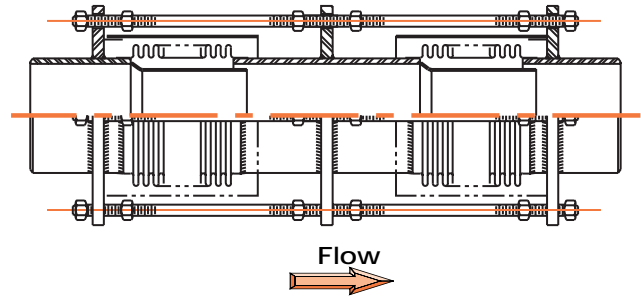


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)				LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
												BELLOWS	END
												MAT'L	MAT'L
34	U	T	050	2.86	WS	WS	L	C	56"				

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.				
	(inches)	(lbs/in)	(inches)	(lbs/in)		(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE						
25 psig 870.82	1.00	3540	4.56	1000	18.00	1.75	Customer to specify	10.00	48.00	
	1.92	1640	4.56	1000	24.00	1.75		10.00	48.00	
	3.47	610	4.56	1000	36.00	1.75	Plate Flange	10.00	48.00	
	5.07	310	4.56	1000	48.00	1.75	Dimensions	10.00	48.00	

50 psig 869.96	1.00	3980	4.00	1120	18.00	1.75	Customer to specify	10.00	48.00
	1.00	1850	4.00	1120	24.00	1.75		10.00	48.00
	3.00	680	4.00	1120	36.00	1.75	Plate Flange	10.00	48.00
	4.44	350	4.00	1120	48.00	1.75	Dimensions	10.00	48.00

34"										
25 psig 978.57	1.00	4220	4.56	1060	18.00	1.75	Customer to specify	10.00	51.00	
	1.81	1960	4.56	1060	24.00	1.75		10.00	51.00	
	3.27	720	4.56	1060	36.00	1.75	Plate Flange	10.00	51.00	
	4.78	370	4.56	1060	48.00	1.75	Dimensions	10.00	51.00	

50 psig 977.68	0.98	4740	3.98	1190	18.00	1.75	Customer to specify	10.00	51.00
	1.00	2200	3.98	1190	24.00	1.75		10.00	51.00
	2.86	810	3.98	1190	36.00	1.75	Plate Flange	10.00	51.00
	4.00	420	3.98	1190	48.00	1.75	Dimensions	10.00	51.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 & 50 psig designs: 125# LW F.F.S.O. (A105).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig: Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (A234 WPB/A-36/A516-70/A53-B/A106-B).

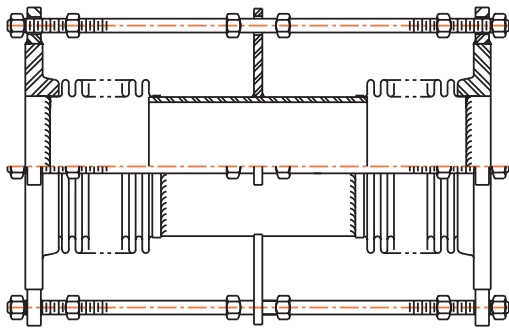
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum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



Universal Expansion Joints



36" and 38" Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
36	U	T	050	2.77	FR	FR			39 1/2"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN			
	(inches)	(lbs/in)	(inches)	(lbs/in)		OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
25 psig 1099.94	1.86	1770	5.89	720	24.00	1.75	Customer to specify	10.00	54.00
	3.58	610	5.89	720	36.00	1.75		10.00	54.00
	5.38	310	5.89	720	48.00	1.75	Plate Flange	10.00	54.00
	7.21	180	5.89	720	60.00	1.75	Dimensions	10.00	54.00

50 psig 1099.47	1.00	3900	4.56	1580	24.00	1.75	Customer to specify	10.00	54.00
	2.77	1360	4.56	1580	36.00	1.75		10.00	54.00
	4.16	680	4.56	1580	48.00	1.75	Plate Flange	10.00	54.00
	5.58	400	4.56	1580	60.00	1.75	Dimensions	10.00	54.00

38"										
25 psig 1220.65	1.77	2070	5.89	760	24.00	1.75	Customer to specify	10.00	57.00	
	3.40	720	5.89	760	36.00	1.75		10.00	57.00	
	5.10	360	5.89	760	48.00	1.75	Plate Flange	10.00	57.00	
	6.85	210	5.89	760	60.00	1.75	Dimensions	10.00	57.00	

50 psig 1220.15	1.00	4560	4.54	1670	24.00	1.75	Customer to specify	10.00	57.00
	2.62	1580	4.54	1670	36.00	1.75		10.00	57.00
	3.94	790	4.54	1670	48.00	1.75	Plate Flange	10.00	57.00
	5.28	470	4.54	1670	60.00	1.75	Dimensions	10.00	57.00

Standard materials of construction

Bellows: A240 T321.

Liners: A240 T304 (when liner is requested).

Covers: Carbon Steel (when cover is requested).

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

Flanges: 25 & 50 psig designs; 125# LW F.F.S.O. (A105).

Plate Flanges: Available upon request and with dimensional information provided by customer.

Pipe: 25 & 50 psig; Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).

Elbow: Standard Wt. (3/8" wall) 90° L.R. (A234 WPB/A-36/A516-70/A53-B/A106-B).

• 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 & 300 psig designs can be provided upon request.



Universal Expansion Joints

40" and 42"
Nominal Diameter

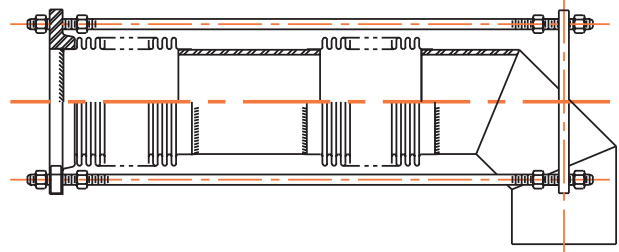


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
40	U	T	050	2.49	FR	EL			97 ³ / ₄ "			

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE					
25 psig 1347.64	1.68	2400	5.89	790	24.00	1.75	Customer	10.00	60.00
	3.23	830	5.89	790	36.00	1.75	to specify	10.00	60.00
	4.86	420	5.89	790	48.00	1.75	Plate Flange	10.00	60.00
	6.52	250	5.89	790	60.00	1.75	Dimensions	10.00	60.00

50 psig 1347.12	1.00	5290	4.53	1750	24.00	1.75	Customer	10.00	60.00
	2.49	1840	4.53	1750	36.00	1.75	to specify	10.00	60.00
	3.74	920	4.53	1750	48.00	1.75	Plate Flange	10.00	60.00
	5.02	550	4.53	1750	60.00	1.75	Dimensions	10.00	60.00

42"										
25 psig 1480.92	1.61	2760	5.89	830	24.00	1.75	Customer	10.00	63.00	
	3.08	960	5.89	830	36.00	1.75	to specify	10.00	63.00	
	4.63	480	5.89	830	48.00	1.75	Plate Flange	10.00	63.00	
	6.22	280	5.89	830	60.00	1.75	Dimensions	10.00	63.00	

50 psig 1480.37	1.00	6080	4.53	1830	24.00	1.75	Customer	10.00	63.00
	2.37	2110	4.53	1830	36.00	1.75	to specify	10.00	63.00
	3.57	1050	4.53	1830	48.00	1.75	Plate Flange	10.00	63.00
	4.78	630	4.53	1830	60.00	1.75	Dimensions	10.00	63.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 & 50 psig designs: 125# LW F.F.S.O. (A105).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig: Standard Wt. (3/8" Wall)(A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (A234 WPB/A-36/A516-70/A53-B/A106-B).

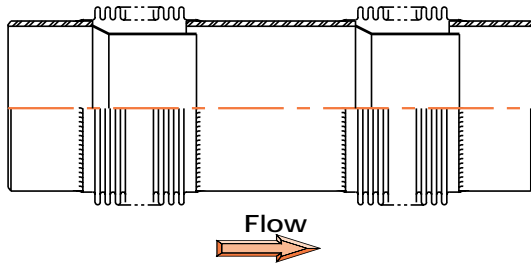
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum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



Universal Expansion Joints



44" and 46" Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
46	U	O	050	2.00	WS	WS	L		56"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN			
	(inches)	(lbs/in)	(inches)	(lbs/in)		OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
25 psig 1620.48	1.53	3160	5.89	870	24.00	2.25	Customer	10.00	66.00
	2.95	1100	5.89	870	36.00	2.25	to specify	10.00	66.00
	4.43	550	5.89	870	48.00	2.25	Plate Flange	10.00	66.00
	5.94	330	5.89	870	60.00	2.25	Dimensions	10.00	66.00

50 psig 1619.90	1.00	6950	4.53	1920	24.00	2.25	Customer	10.00	66.00
	2.00	2410	4.53	1920	36.00	2.25	to specify	10.00	66.00
	3.41	1200	4.53	1920	48.00	2.25	Plate Flange	10.00	66.00
	4.57	720	4.53	1920	60.00	2.25	Dimensions	10.00	66.00

46"										
25 psig 1766.32	1.47	3590	5.89	910	24.00	2.25	Customer	10.00	69.00	
	2.82	1250	5.89	910	36.00	2.25	to specify	10.00	69.00	
	4.24	620	5.89	910	48.00	2.25	Plate Flange	10.00	69.00	
	5.69	370	5.89	910	60.00	2.25	Dimensions	10.00	69.00	

50 psig 1765.72	1.00	7900	4.52	2000	24.00	2.25	Customer	10.00	69.00
	2.00	2740	4.52	2000	36.00	2.25	to specify	10.00	69.00
	3.26	1370	4.52	2000	48.00	2.25	Plate Flange	10.00	69.00
	4.37	820	4.52	2000	60.00	2.25	Dimensions	10.00	69.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 25 & 50 psig designs; 125# LW F.F.S.O. (A105).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 25 & 50 psig; Standard Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (Fabricated with pipe & mitered).

- 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 & 300 psig designs can be provided upon request.



Universal Expansion Joints

48" , 50" & 52" Nominal Diameter

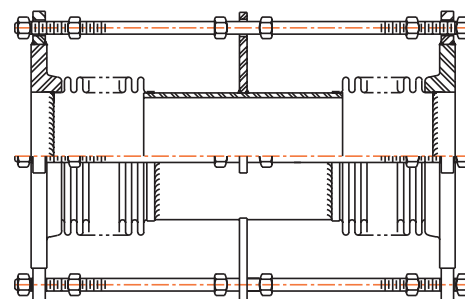


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
52	U	T	025	2.44	FR	FR			41"			

This part number describes the unit pictured above.

48"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(lbs/in)	(inches)	(lbs/in)						
25 psig 1919.69	1.00	9770	5.74	2270	24.00	2.50	Customer to specify	8.00	72.00	
	2.00	3390	5.74	2270	36.00	2.50		8.00	72.00	
	3.97	1690	5.74	2270	48.00	2.50	Plate Flange	8.00	72.00	
	5.00	1010	5.74	2270	60.00	2.50	Dimensions	8.00	72.00	

50"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(lbs/in)	(inches)	(lbs/in)						
25 psig 2078.15	1.00	10990	5.74	2360	24.00	2.50	Customer to specify	8.00	75.00	
	2.00	3820	5.74	2360	36.00	2.50		8.00	75.00	
	3.81	1900	5.74	2360	48.00	2.50	Plate Flange	8.00	75.00	
	5.00	1140	5.74	2360	60.00	2.50	Dimensions	8.00	75.00	

52"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(lbs/in)	(inches)	(lbs/in)						
25 psig 2285.05	1.00	6770	5.70	1350	24.00	2.50	Customer to specify	8.00	78.00	
	2.44	2370	5.70	1350	36.00	2.50		8.00	78.00	
	3.65	1190	5.70	1350	48.00	2.50	Plate Flange	8.00	78.00	
	4.89	710	5.70	1350	60.00	2.50	Dimensions	8.00	78.00	

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 125# LW F.F.S.O. (A105).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: Standard Wt. (3/8" wall) (A53-B/A106-B/A-36/A516-70).
Elbow: Standard Wt. (3/8" wall) 90° L.R. (Fabricated with pipe & mitered).

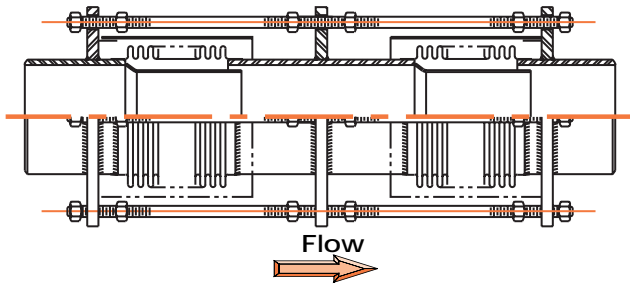
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum (EJMA).
- Movements are non-concurrent.
- 50, 150 & 300 psig designs can be provided for 48" Dia. upon request.
- 50 & 150 psig designs can be provided for 50" & 52" Dia. upon request.



Universal Expansion Joints



54", 56" & 58"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS MAT'L	END MAT'L
56	U	T	025	2.27	WS	WS	L	C	56"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)				
25 psig 2457.65	1.00	7550	5.70	1400	24.00	2.50	Customer to specify	10.00	81.00
	2.35	2640	5.70	1400	36.00	2.50		10.00	81.00
	3.52	1320	5.70	1400	48.00	2.50	Plate Flange	10.00	81.00
	4.71	790	5.70	1400	60.00	2.50	Dimensions	10.00	81.00

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)				
25 psig 2636.53	1.00	8380	5.70	1450	24.00	125# LW Flanges are not available in this size.	Customer to specify Plate Flange Dimensions	10.00	84.00
	2.27	2940	5.70	1450	36.00			10.00	84.00
	3.40	1470	5.70	1450	48.00			10.00	84.00
	4.55	880	5.70	1450	60.00			10.00	84.00

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)				
25 psig 2821.69	1.00	9280	5.70	1500	24.00	125# LW Flanges are not available in this size.	Customer to specify Plate Flange Dimensions	10.00	87.00
	2.20	3250	5.70	1500	36.00			10.00	87.00
	3.29	1630	5.70	1500	48.00			10.00	87.00
	4.40	970	5.70	1500	60.00			10.00	87.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 125# LW F.F.S.O. (A105); (54" Dia. only).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 3/8" wall (A-36/A516-70)
Elbow: 3/8" wall; 90° L.R. (Fabricated with pipe & mitered).

- 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.



Universal Expansion Joints

60", 66" & 72"
Nominal Diameter

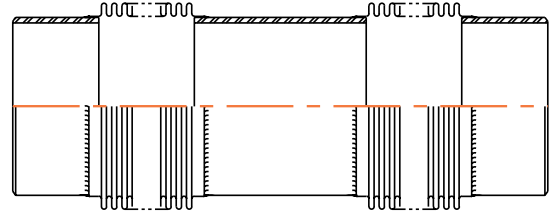


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
66	U	O	025	1.00	WS	WS			44"		

This part number describes the unit pictured above.

60"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(inches)	(lbs/in)	(inches)						(lbs/in)
25 psig 3013.14	1.00	10230	5.70	1550	24.00	2.75	Customer to specify	10.00	90.00	
	2.12	3580	5.70	1550	36.00	2.75		10.00	90.00	
	3.18	1790	5.70	1550	48.00	2.75	Plate Flange	10.00	90.00	
	4.26	1070	5.70	1550	60.00	2.75	Dimensions	10.00	90.00	

66"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(inches)	(lbs/in)	(inches)						(lbs/in)
25 psig 3625.18	1.00	13480	5.70	1700	24.00	2.75	Customer to specify	10.00	99.00	
	1.94	4720	5.70	1700	36.00	2.75		10.00	99.00	
	2.90	2360	5.70	1700	48.00	2.75	Plate Flange	10.00	99.00	
	3.88	1410	5.70	1700	60.00	2.75	Dimensions	10.00	99.00	

72"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		(inches)	(lbs/in)	(inches)						(lbs/in)
25 psig 4293.76	0.93	17350	5.70	1850	24.00	2.75	Customer to specify	10.00	108.00	
	1.78	6070	5.70	1850	36.00	2.75		10.00	108.00	
	2.66	3040	5.70	1850	48.00	2.75	Plate Flange	10.00	108.00	
	3.57	1820	5.70	1850	60.00	2.75	Dimensions	10.00	108.00	

Standard materials of construction

BelloWS: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 125# LW F.F.S.O. (A105).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 3/8" wall (A-36/A516-70).
Elbow: 3/8" wall; 90° L.R. (Fabricated with pipe & mitered).

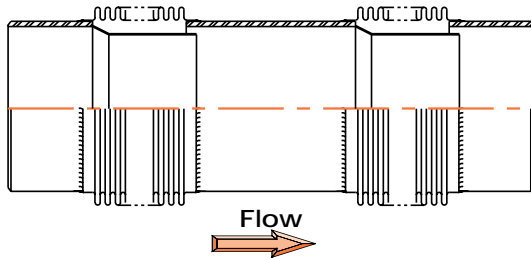
- Maximum Test Pressure is 1.5 X Rated Pressure.
- Pressure Rating is based on a design temperature of -20° F to 600° F. If flanged ends are required, please consult factory for maximum temperature rating.
- Maximum Axial Extension is 15% of Axial Compression Value shown above.
- Cycle Life = 3,000 minimum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



Universal Expansion Joints



78", 84" & 90"
Nominal Diameter



UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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

PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)		LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
										BELLOWS	END
										MAT'L	MAT'L
78	U	O	025	2.46	WS	WS	L		72"		

This part number describes the unit pictured above.

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE		(inches)			
25 psig 5018.90	0.86	21890	5.70	1990	24.00	125# LW	Customer to specify Plate Flange Dimensions	12.00	117.00
	1.65	7660	5.70	1990	36.00	Flanges are not available in this size.		12.00	117.00
	2.46	3840	5.70	1990	48.00			12.00	117.00
	3.30	2300	5.70	1990	60.00			12.00	117.00

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE		(inches)			
25 psig 5800.58	0.80	27150	5.70	2140	24.00	3.00	Customer to specify Plate Flange Dimensions	12.00	126.00
	1.53	9510	5.70	2140	36.00	3.00		12.00	126.00
	2.29	4760	5.70	2140	48.00	3.00		12.00	126.00
	3.07	2850	5.70	2140	60.00	3.00		12.00	126.00

PRESS/ EFF. AREA (in ²)	MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ± 3/8" ABOVE 12 FT.			
	(inches)	(lbs/in)	(inches)	(lbs/in)		(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW
	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE		(inches)			
25 psig 6638.81	0.75	33200	5.70	2290	24.00	125# LW	Customer to specify Plate Flange Dimensions	12.00	135.00
	1.43	11620	5.70	2290	36.00	Flanges are not available in this size.		12.00	135.00
	2.14	5820	5.70	2290	48.00			12.00	135.00
	2.87	3480	5.70	2290	60.00			12.00	135.00

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 125# LW F.F.S.O. (A105); (84" Dia. Only).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 3/8" wall (A-36/A516-70).
Elbow: 3/8" wall; 90° L.R. (Fabricated with pipe & mitered).

- 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.



Universal Expansion Joints

96" , 102" & 120"
Nominal Diameter

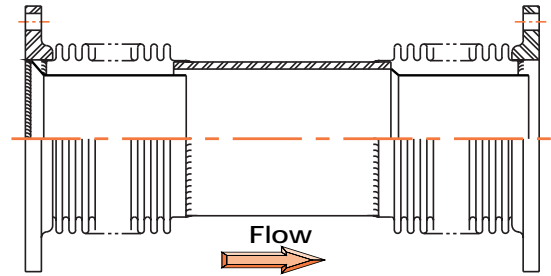


UNIT TYPE

U = UNIVERSAL
D = DUAL

UNIT STYLE

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



PART NUMBER EXAMPLE:

NOM SIZE	UNIT TYPE	UNIT STYLE	DESIGN PRESS.	LATERAL MOVEMENT	END FITTINGS (See Page 38)			LINER W/ MAT'L	COVER W/ MAT'L	OVERALL LENGTH	SPECIAL MATERIALS	
											BELLOWS	END
											MAT'L	MAT'L
96	U	O	025	2.00	FR	FR	L			54 1/2"		

This part number describes the unit pictured above.

96"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		25 psig 7533.59	0.71	39990		5.70	2430	24.00	3.25	Customer to specify
1.00	14000		5.70	2430	36.00	3.25	Plate Flange	12.00	144.00	
2.00	7010		5.70	2430	48.00	3.25	Dimensions	12.00	144.00	
2.69	4190		5.70	2430	60.00	3.25		12.00	144.00	

102"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		25 psig 8484.92	0.66	47650		5.70	2570	24.00	125# LW Flanges are not available in this size.	Customer to specify
1.27	16690		5.70	2570	36.00	Plate Flange	12.00	153.00		
1.90	8360		5.70	2570	48.00	Dimensions	12.00	153.00		
2.54	5000		5.70	2570	60.00		12.00	153.00		

120"		MOVEMENTS & SPRING RATES				UNIVERSAL LENGTH	ADD TO UNIVERSAL LENGTH TO OBTAIN OVERALL LENGTH (in.) ±1/8"; ±1/4" ABOVE 3 FT.; ±3/8" ABOVE 12 FT.			
PRESS/ EFF. AREA (in ²)	LATERAL MOVEMENT	LATERAL SPRING RATE	AXIAL COMP.	AXIAL SPRING RATE	(inches)	(FR & VR) FORGED FLANGE	(FP & VP) PLATE FLANGE	(WS) WELD END	(EL) ELBOW	
		25 psig 11774.17	0.56	40300		5.70	1560	24.00	125# LW Flanges are not available in this size.	Customer to specify
1.07	14110		5.70	1560	36.00	Plate Flange	12.00	180.00		
1.61	7070		5.70	1560	48.00	Dimensions	12.00	180.00		
2.15	4230		5.70	1560	60.00		12.00	180.00		

Standard materials of construction

Bellows: A240 T321.
Liners: A240 T304 (when liner is requested).
Covers: Carbon Steel (when cover is requested).
Hardware: Carbon Steel (Tie Rods, Hinges, Gimbals).
Flanges: 125# LW F.F.S.O. (A105); (96" Dia. Only).
Plate Flanges: Available upon request and with dimensional information provided by customer.
Pipe: 3/8" wall (A-36/A516-70).
Elbow: 3/8" wall; 90° L.R. (Fabricated with pipe & mitered).

- Maximum Test Pressure is 1.5 X Rated Pressure.
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