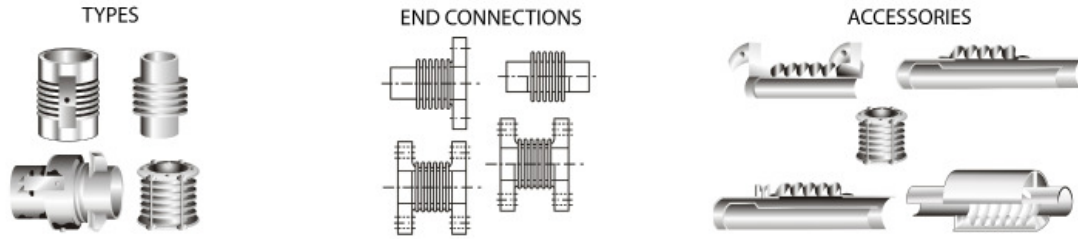


## SINGLE EXPANSION JOINTS

**U.S. Bellows, Inc.**

Effective (Thrust) Area: 357.87 in<sup>2</sup> (2308.26 cm<sup>2</sup>)

**20-INCH NOMINAL DIAMETER**



D I A M E T E R	P R E S S U R E	O V E R A L L L E N G T H A N D W E I G H T						N O N - C O N C U R R E N T M O V E M E N T S			S P R I N G R A T E S			
		F L A N G E D E N D S		W E L D E N D S		C O M B I N A T I O N E N D S		A X I A L C O M P	L A T E R A L	A N G U L A R	A X I A L	L A T E R A L	A N G U L A R	T O R S I O N A L
		O.A.L.	WT.	O.A.L.	WT.	O.A.L.	WT.							
		PSIG	IN	LB	IN	LB	IN	LB	IN	IN	DEG	LB/IN	LB/IN	IN-LB/DEG
KG/CM <sup>2</sup>	MM	KG	MM	KG	MM	KG	MM	MM	GRAD	KG/MM	KG/MM	N-M/GRAD	N-M/GRAD x 10 <sup>5</sup>	
20	70	12	156	18	75	15	116	3.5	0.52	10	530	3989	524	1.0323
	4.9	305	70.9	457	34.1	381	52.7	88.9	13.2	11	9	71	53.3	1.0499
	70	18	166	24	85	21	126	5.6	1.36	10	331	937	327	0.6424
	4.9	457	75.5	610	38.6	533	57.3	142	34.5	11	6	17	33.3	0.6534
	35	24	177	30	96	27	136	8.53	2.87	10	241	354	238	0.4663
	2.5	610	80.5	762	43.6	686	61.8	217	72.9	11	4	6	24.2	0.4743
20	200	12	350	14	77	13	214	1.39	0.14	8	3106	54098	3074	2.4362
	14.1	305	159	356	35	330	97.3	35.3	3.56	9	56	968	312.6	2.4776
	200	18	367	20	94	19	230	2.64	0.51	10	1672	7583	1655	1.2968
	14.1	457	167	508	42.7	483	105	67.1	13	11	30	136	1683	1.3188
	200	24	383	26	110	25	246	3.86	1.1	10	1144	2338	1132	0.8835
	14.1	610	174	660	50	635	112	98	27.9	11	20	42	115.1	0.8985
20	400	12	659	13	105	13	382	0.94	0.07	5	8729	294625	8677	3.5831
	28.1	305	300	330	47.7	330	174	23.9	1.78	6	156	5272	882.5	3.6441
	400	18	691	19	136	19	413	2.13	0.35	10	3968	24597	3944	1.6074
	28.1	457	314	483	61.8	483	188	54.1	8.89	11	71	440	401.1	1.6348
	400	24	722	25	168	25	445	3.37	0.87	10	2567	6445	2552	1.0361
	28.1	610	328	635	76.4	635	202	85.6	22.1	11	46	115	259.5	1.0537

**GENERAL NOTES**

1. Rated life cycle at 650°F is 3000 cycles for any one tabulated movement.
2. To combine axial, lateral and angular movements, please refer to page 43.
3. To increase cycle life or movements, please refer to graph on page 42.
4. Rated bellows extension is equal to rated axial movement. Provided bellows is precompressed the amount of design extension. Installed O.A.L. will decrease by the amount of precompression.
5. Maximum test pressure: 1.5 X rated working pressure.
6. Bellows rated for 650°F: See page 31 for appropriate flange temperature/pressure ratings.
7. Torsional spring rate data provided only for modeling expansion joints on computer stress programs. Please consult factory for allowable torsional loadings.
8. Overall lengths and weights for unrestrained expansion joints only. Consult factory for information regarding tied, hinged, or gimbal expansion joints.
9. Pressure thrust load applied to adjacent pipe anchors/equipment when unrestrained expansion joints are used.

**MATERIALS**

**BELLOWS:** A240-T304. Alternate materials available upon request. Refer to page 33.  
**FLANGES:** ASTM A105.  
 35-70 psig Series: 125 lb ANSI B16.5 RF50.  
 200 psig Series: 150 lb ANSI B16.5 RF50.  
 400 psig Series: 300 lb ANSI B16.5 RF50.  
 Plate flanges and angle flanges available for low pressure systems. Please refer to page 32.  
**PIPE:** ASTM A53/A106.  
 35-70 psig Series: Std. Wt. Pipe.  
 200 psig Series: Std. Wt. Pipe.  
 400 psig Series: Std. Wt. Pipe.  
**LINERS:** A240-T304.  
**COVERS:** Carbon steel.  
**TIE RODS, HINGES, GIMBALS:** Carbon steel