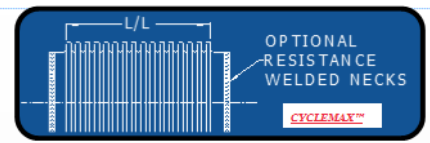


BELLOWS CAPSULE 6" L/L 2-PLY



T-321 S/S MULTI-PLY

**1200° MAX EXHAUST
TEMPERATURE AT 5 PSIG***

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	6.00"	1.25"	.625"	12-3060
3.50"	6.00"	1.50"	.625"	12-3560
4.00"	6.00"	1.75"	.625"	12-4060
4.50"	6.00"	1.75"	.625"	12-4560
5.00"	6.00"	2.00"	.625"	12-5060
5.56"	6.00"	2.00"	.625"	12-5560
6.00"	6.00"	2.00"	.625"	12-6060
6.625"	6.00"	2.00"	.625"	12-6560
8.00"	6.00"	2.00"	.500"	12-8060
8.625"	6.00"	2.00"	.500"	12-8560
10.00"	6.00"	2.00"	.500"	12-10060
10.75"	6.00"	2.00"	.430"	12-10560
12.00"	6.00"	2.00"	.430"	12-12060
12.75"	6.00"	2.00"	.375"	12-12560
14.00"	6.00"	2.00"	.375"	12-14060
16.00"	6.00"	2.00"	.250"	12-16060
18.00"	6.00"	2.00"	.250"	12-18060
20.00"	6.00"	2.00"	.250"	12-20060
22.00"	6.00"	2.00"	.188"	12-22060
24.00"	6.00"	2.00"	.188"	12-24060
26.00"	6.00"	2.00"	.188"	12-26060
28.00"	6.00"	2.00"	.188"	12-28060
30.00"	6.00"	2.00"	.125"	12-30060
32.00"	6.00"	2.00"	.125"	12-32060
34.00"	6.00"	2.00"	.063"	12-34060
36.00"	6.00"	2.00"	.063"	12-36060
38.00"	6.00"	2.00"	.063"	12-38060
40.00"	6.00"	2.00"	.063"	12-40060
42.00"	6.00"	2.00"	.063"	12-42060
44.00"	6.00"	2.00"	.063"	12-44060
46.00"	6.00"	2.00"	.063"	12-46060
48.00"	6.00"	2.00"	.063"	12-48060

HASTELLOY X MULTI-PLY

**1500° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	6.00"	1.25"	.625"	12-3060-X
3.50"	6.00"	1.25"	.625"	12-3560-X
4.00"	6.00"	1.25"	.625"	12-4060-X
4.50"	6.00"	1.75"	.625"	12-4560-X
5.00"	6.00"	2.00"	.625"	12-5060-X
5.56"	6.00"	2.00"	.625"	12-5560-X
6.00"	6.00"	2.00"	.625"	12-6060-X
6.625"	6.00"	2.00"	.625"	12-6560-X
8.00"	6.00"	2.00"	.500"	12-8060-X
8.625"	6.00"	2.00"	.500"	12-8560-X
10.00"	6.00"	2.00"	.500"	12-10060-X
10.75"	6.00"	2.00"	.430"	12-10560-X
12.00"	6.00"	2.00"	.430"	12-12060-X
12.75"	6.00"	2.00"	.375"	12-12560-X
14.00"	6.00"	2.00"	.375"	12-14060-X
16.00"	6.00"	2.00"	.250"	12-16060-X
18.00"	6.00"	2.00"	.250"	12-18060-X
20.00"	6.00"	2.00"	.250"	12-20060-X
22.00"	6.00"	2.00"	.188"	12-22060-X
24.00"	6.00"	2.00"	.188"	12-24060-X
26.00"	6.00"	2.00"	.188"	12-26060-X
28.00"	6.00"	2.00"	.188"	12-28060-X
30.00"	6.00"	2.00"	.125"	12-30060-X
32.00"	6.00"	2.00"	.125"	12-32060-X
34.00"	6.00"	2.00"	.063"	12-34060-X
36.00"	6.00"	2.00"	.063"	12-36060-X
38.00"	6.00"	2.00"	.063"	12-38060-X
40.00"	6.00"	2.00"	.063"	12-40060-X
42.00"	6.00"	2.00"	.063"	12-42060-X
44.00"	6.00"	2.00"	.063"	12-44060-X
46.00"	6.00"	2.00"	.063"	12-46060-X
48.00"	6.00"	2.00"	.063"	12-48060-X

INCONEL 625 MULTI-PLY

**1300° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	6.00"	1.25"	.625"	12-3060-625
3.50"	6.00"	1.25"	.625"	12-3560-625
4.00"	6.00"	1.75"	.625"	12-4060-625
4.50"	6.00"	1.75"	.625"	12-4560-625
5.00"	6.00"	2.00"	.625"	12-5060-625
5.56"	6.00"	2.00"	.625"	12-5560-625
6.00"	6.00"	2.00"	.625"	12-6060-625
6.625"	6.00"	2.00"	.625"	12-6560-625
8.00"	6.00"	2.00"	.500"	12-8060-625
8.625"	6.00"	2.00"	.500"	12-8560-625
10.00"	6.00"	2.00"	.500"	12-10060-625
10.75"	6.00"	2.00"	.430"	12-10560-625
12.00"	6.00"	2.00"	.375"	12-12060-625
12.75"	6.00"	2.00"	.375"	12-12560-625
14.00"	6.00"	2.00"	.375"	12-14060-625
16.00"	6.00"	2.00"	.250"	12-16060-625
18.00"	6.00"	2.00"	.250"	12-18060-625
20.00"	6.00"	2.00"	.250"	12-20060-625
22.00"	6.00"	2.00"	.188"	12-22060-625
24.00"	6.00"	2.00"	.188"	12-24060-625
26.00"	6.00"	2.00"	.188"	12-26060-625
28.00"	6.00"	2.00"	.188"	12-28060-625
30.00"	6.00"	2.00"	.125"	12-30060-625
32.00"	6.00"	2.00"	.125"	12-32060-625
34.00"	6.00"	2.00"	.125"	12-34060-625
36.00"	6.00"	2.00"	.063"	12-36060-625
38.00"	6.00"	2.00"	.063"	12-38060-625
40.00"	6.00"	2.00"	.063"	12-40060-625
42.00"	6.00"	2.00"	.063"	12-42060-625
44.00"	6.00"	2.00"	.063"	12-44060-625
46.00"	6.00"	2.00"	.063"	12-46060-625
48.00"	6.00"	2.00"	.063"	12-48060-625

*36" T321 AND UP RATED 2 PSIG @ 1200° F OR 5 PSIG @ 1000° F

AXIAL AND LATERAL MOVEMENTS ARE NON-CONCURRENT

NOTE: TEMPERATURE RATINGS ARE FOR THE BELLOWS ELEMENT ONLY AND CONSIDERATION MUST BE GIVEN TO THE FLANGE AND FITTING MATERIALS.



INDEX

6" L/L MULTI-PLY BELLOWS DATA

T-321 STAINLESS

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS / INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS / INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	6.00"	1.25"	107	100,000	.625"	53	100,000	5 PSIG	1200°F	12-3060
3" PIPE	3.50"	6.00"	1.50"	123	36,198	.625"	81	100,000	5 PSIG	1200°F	12-3560
4" TUBE	4.00"	6.00"	1.75"	107	44,325	.625"	94	100,000	5 PSIG	1200°F	12-4060
4" PIPE	4.50"	6.00"	1.75"	120	41,877	.625"	129	73,147	5 PSIG	1200°F	12-4560
5" TUBE	5.00"	6.00"	2.00"	104	42,157	.625"	138	87,331	5 PSIG	1200°F	12-5060
5" PIPE	5.56"	6.00"	2.00"	105	53,964	.625"	170	63,398	5 PSIG	1200°F	12-5560
6" TUBE	6.00"	6.00"	2.00"	119	44,316	.625"	220	35,817	5 PSIG	1200°F	12-6060
6" PIPE	6.63"	6.00"	2.00"	131	42,000	.625"	288	21,118	5 PSIG	1200°F	12-6560
8" TUBE	8.00"	6.00"	2.00"	153	36,235	.500"	476	23,821	5 PSIG	1200°F	12-8060
8" PIPE	8.63"	6.00"	2.00"	165	32,667	.500"	591	15,127	5 PSIG	1200°F	12-8560
10" TUBE	10.00"	6.00"	2.00"	145	70,635	.500"	691	14,581	5 PSIG	1200°F	12-10060
10" PIPE	10.75"	6.00"	2.00"	154	66,559	.430"	845	21,135	5 PSIG	1200°F	12-10560
12" TUBE	12.00"	6.00"	2.00"	171	61,644	.430"	1,151	11,763	5 PSIG	1200°F	12-12060
12" PIPE	12.75"	6.00"	2.00"	181	59,850	.375"	1,368	17,035	5 PSIG	1200°F	12-12560
14"	14.00"	6.00"	2.00"	198	57,316	.375"	1,788	10,577	5 PSIG	1200°F	12-14060
16"	16.00"	6.00"	2.00"	225	54,125	.250"	2,623	42,346	5 PSIG	1200°F	12-16060
18"	18.00"	6.00"	2.00"	253	51,665	.250"	3,684	22,077	5 PSIG	1200°F	12-18060
20"	20.00"	6.00"	2.00"	280	48,705	.250"	4,997	12,766	5 PSIG	1200°F	12-20060
22"	22.00"	6.00"	2.00"	307	48,101	.188"	6,587	33,522	5 PSIG	1200°F	12-22060
24"	24.00"	6.00"	2.00"	333	46,763	.188"	8,482	20,866	5 PSIG	1200°F	12-24060
26"	26.00"	6.00"	2.00"	460	60,697	.188"	13,908	16,929	5 PSIG	1200°F	12-26060
28"	28.00"	6.00"	2.00"	494	59,079	.188"	17,238	11,595	5 PSIG	1200°F	12-28060
30"	30.00"	6.00"	2.00"	528	57,677	.125"	21,059	70,098	5 PSIG	1200°F	12-30060
32"	32.00"	6.00"	2.00"	562	56,449	.125"	25,403	47,788	5 PSIG	1200°F	12-32060
34"	34.00"	6.00"	2.00"	596	55,363	.063"	30,304	100,000	5 PSIG	1200°F	12-34060
36"	36.00"	6.00"	2.00"	433	100,000	.063"	24,913	100,000	2 PSIG	1200°F	12-36060
38"	38.00"	6.00"	2.00"	457	100,000	.063"	29,152	100,000	2 PSIG	1200°F	12-38060
40"	40.00"	6.00"	2.00"	480	100,000	.063"	33,844	100,000	2 PSIG	1200°F	12-40060
42"	42.00"	6.00"	2.00"	503	100,000	.063"	39,013	100,000	2 PSIG	1200°F	12-42060
44"	44.00"	6.00"	2.00"	526	100,000	.063"	44,681	100,000	2 PSIG	1200°F	12-44060
46"	46.00"	6.00"	2.00"	549	100,000	.063"	50,863	100,000	2 PSIG	1200°F	12-46060
48"	48.00"	6.00"	2.00"	572	100,000	.063"	57,583	100,000	2 PSIG	1200°F	12-48060

Movements listed are non-concurrent.
 Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.

6" L/L MULTI-PLY BELLOWS DATA

INCONEL 625

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS / INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS / INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	6.00'	1.25"	120	92,340	.625"	58	100,000	5 PSIG	1300°F	12-3060-625
3" PIPE	3.50"	6.00"	1.25"	138	27,660	.625"	88	90,026	5 PSIG	1300°F	12-3560-625
4" TUBE	4.00"	6.00"	1.75"	120	32,010	.625"	106	100,000	5 PSIG	1300°F	12-4060-625
4" PIPE	4.50"	6.00"	1.75"	135	30,307	.625"	146	51,166	5 PSIG	1300°F	12-4560-625
5" TUBE	5.00"	6.00"	2.00"	117	30,598	.625"	155	61,602	5 PSIG	1300°F	12-5060-625
5" PIPE	5.56"	6.00"	2.00"	118	38,827	.625"	191	45,331	5 PSIG	1300°F	12-5560-625
6" TUBE	6.00"	6.00"	2.00"	134	32,111	.625"	247	26,146	5 PSIG	1300°F	12-6060-625
6" PIPE	6.63"	6.00"	2.00"	147	30,492	.625"	323	15,672	5 PSIG	1300°F	12-6560-625
8" TUBE	8.00"	6.00"	2.00"	162	34,862	.500"	505	22,957	5 PSIG	1300°F	12-8060-625
8" PIPE	8.63"	6.00"	2.00"	175	31,443	.500"	627	14,603	5 PSIG	1300°F	12-8560-625
10" TUBE	10.00"	6.00"	2.00"	162	50,346	.500"	776	10,941	5 PSIG	1300°F	12-10060-625
10" PIPE	10.75"	6.00"	2.00"	173	47,557	.430"	949	15,700	5 PSIG	1300°F	12-10560-625
12" TUBE	12.00"	6.00"	2.00"	192	44,179	.375"	1,292	17,390	5 PSIG	1300°F	12-12060-625
12" PIPE	12.75"	6.00"	2.00"	203	42,943	.375"	1,536	12,731	5 PSIG	1300°F	12-12560-625
14"	14.00"	6.00"	2.00"	223	41,193	.375"	2,007	8,000	5 PSIG	1300°F	12-14060-625
16"	16.00"	6.00"	2.00"	253	38,984	.250"	2,945	30,772	5 PSIG	1300°F	12-16060-625
18"	18.00"	6.00"	2.00"	284	37,277	.250"	4,136	16,380	5 PSIG	1300°F	12-18060-625
20"	20.00"	6.00"	2.00"	314	35,913	.250"	5,609	9,612	5 PSIG	1300°F	12-20060-625
22"	22.00'	6.00"	2.00"	344	34,797	.188"	7,395	24,553	5 PSIG	1300°F	12-22060-625
24"	24.00"	6.00"	2.00"	374	33,863	.188"	9,522	15,521	5 PSIG	1300°F	12-24060-625
26"	26.00"	6.00"	2.00"	515	43,996	.188"	15,461	13,058	5 PSIG	1300°F	12-26060-625
28"	28.00"	6.00"	2.00"	554	42,864	.188"	19,163	9,021	5 PSIG	1300°F	12-28060-625
30"	30.00"	6.00"	2.00"	592	41,883	.125"	23,409	51,835	5 PSIG	1300°F	12-30060-625
32"	32.00"	6.00"	2.00"	630	41,023	.125"	28,238	35,802	5 PSIG	1300°F	12-32060-625
34"	34.00"	6.00"	2.00"	668	40,261	.125"	33,686	25,633	5 PSIG	1300°F	12-34060-625
36"	36.00"	6.00"	2.00"	442	100,000	.063"	25,133	100,000	5 PSIG	1300°F	12-36060-625
38"	38.00"	6.00"	2.00"	513	100,000	.063"	32,727	100,000	5 PSIG	1300°F	12-38060-625
40"	40.00"	6.00"	2.00"	539	100,000	.063"	37,995	100,000	5 PSIG	1300°F	12-40060-625
42"	42.00"	6.00"	2.00"	565	100,000	.063"	43,798	100,000	5 PSIG	1300°F	12-42060-625
44"	44.00"	6.00"	2.00"	591	100,000	.063"	50,161	100,000	5 PSIG	1300°F	12-44060-625
46"	46.00"	6.00"	2.00"	617	100,000	.063"	57,101	100,000	5 PSIG	1300°F	12-46060-625
48"	48.00"	6.00"	2.00"	643	100,000	.063"	64,645	100,000	5 PSIG	1300°F	12-48060-625

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature

6" L/L MULTI-PLY BELLOWS DATA

HASTELLOY-X

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/inch)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/inch)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	6.00"	1.25"	107	100,000	.625"	52	100,000	5 PSIG	1500°F	12-3060-X
3" PIPE	3.50"	6.00"	1.25"	123	100,000	.625"	78	100,000	5 PSIG	1500°F	12-3560-X
4" TUBE	4.00"	6.00"	1.25"	107	100,000	.625"	94	100,000	5 PSIG	1500°F	12-4060-X
4" PIPE	4.50"	6.00"	1.75"	120	40,161	.625"	130	69,045	5 PSIG	1500°F	12-4560-X
5" TUBE	5.00"	6.00"	2.00"	104	40,532	.625"	138	83,685	5 PSIG	1500°F	12-5060-X
5" PIPE	5.56"	6.00"	2.00"	105	60,837	.625"	170	51,826	5 PSIG	1500°F	12-5560-X
6" TUBE	6.00"	6.00"	2.00"	119	42,599	.625"	220	34,462	5 PSIG	1500°F	12-6060-X
6" PIPE	6.63"	6.00"	2.00"	131	40,383	.625"	288	20,361	5 PSIG	1500°F	12-6560-X
8" TUBE	8.00"	6.00"	2.00"	165	31,443	.500"	476	22,957	5 PSIG	1500°F	12-8060-X
8" PIPE	8.63"	6.00"	2.00"	165	31,443	.500"	591	14,603	5 PSIG	1500°F	12-8560-X
10" TUBE	10.00"	6.00"	2.00"	145	67,755	.500"	691	14,079	5 PSIG	1500°F	12-10060-X
10" PIPE	10.75"	6.00"	2.00"	154	63,865	.430"	845	20,381	5 PSIG	1500°F	12-10560-X
12" TUBE	12.00"	6.00"	2.00"	171	59,172	.430"	1,151	11,365	5 PSIG	1500°F	12-12060-X
12" PIPE	12.75"	6.00"	2.00"	181	57,459	.375"	1,368	16,439	5 PSIG	1500°F	12-12560-X
14"	14.00"	6.00"	2.00"	198	55,037	.375"	1,788	10,223	5 PSIG	1500°F	12-14060-X
16"	16.00"	6.00"	2.00"	255	51,987	.250"	2,623	40,720	5 PSIG	1500°F	12-16060-X
18"	18.00"	6.00"	2.00"	253	46,636	.250"	3,684	21,286	5 PSIG	1500°F	12-18060-X
20"	20.00"	6.00"	2.00"	280	47,761	.250"	4,997	12,331	5 PSIG	1500°F	12-20060-X
22"	22.00"	6.00"	2.00"	307	46,228	.188"	6,587	32,268	5 PSIG	1500°F	12-22060-X
24"	24.00"	6.00"	2.00"	333	44,947	.188"	8,482	20,141	5 PSIG	1500°F	12-24060-X
26"	26.00"	6.00"	2.00"	459	58,903	.188"	13,772	16,870	5 PSIG	1500°F	12-26060-X
28"	28.00"	6.00"	2.00"	493	57,336	.188"	17,069	11,555	5 PSIG	1500°F	12-28060-X
30"	30.00"	6.00"	2.00"	527	55,978	.125"	20,852	69,809	5 PSIG	1500°F	12-30060-X
32"	32.00"	6.00"	2.00"	561	54,789	.125"	25,153	47,598	5 PSIG	1500°F	12-32060-X
34"	34.00"	6.00"	2.00"	598	53,737	.063"	30,006	100,000	5 PSIG	1500°F	12-34060-X
36"	36.00"	6.00"	2.00"	804	56,805	.063"	24,913	100,000	5 PSIG	1500°F	12-36060-X
38"	38.00"	6.00"	2.00"	900	45,590	.063"	57,448	100,000	5 PSIG	1500°F	12-38060-X
40"	40.00"	6.00"	2.00"	890	55,958	.063"	62,820	100,000	5 PSIG	1500°F	12-40060-X
42"	42.00"	6.00"	2.00"	933	55,593	.063"	72,410	100,000	5 PSIG	1500°F	12-42060-X
44"	44.00"	6.00"	2.00"	976	55,259	.063"	82,927	100,000	5 PSIG	1500°F	12-44060-X
46"	46.00"	6.00"	2.00"	1,019	54,953	.063"	94,411	100,000	5 PSIG	1500°F	12-46060-X
48"	48.00"	6.00"	2.00"	1,061	54,671	.063"	106,905	100,000	5 PSIG	1500°F	12-48060-X

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application.

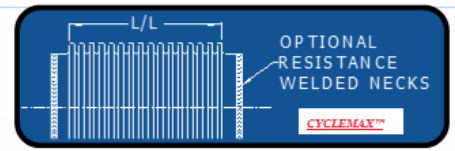
Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased.

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.

BELLOWS CAPSULE 9" L/L 2-PLY



T-321 S/S MULTI-PLY

**1200° MAX EXHAUST
TEMPERATURE AT 5 PSIG***

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	9.00"	1.63"	1.00"	12-3090
3.50"	9.00"	2.00"	1.00"	12-3590
4.00"	9.00"	2.75"	1.00"	12-4090
4.50"	9.00"	3.00"	1.00"	12-4590
5.00"	9.00"	3.00"	1.00"	12-5090
5.56"	9.00"	3.00"	1.00"	12-5590
6.00"	9.00"	3.00"	1.00"	12-6090
6.625"	9.00"	3.00"	1.00"	12-6590
8.00"	9.00"	3.00"	1.00"	12-8090
8.625"	9.00"	3.00"	1.00"	12-8590
10.00"	9.00"	3.00"	1.00"	12-10090
10.75"	9.00"	3.00"	1.00"	12-10590
12.00"	9.00"	3.00"	.875"	12-12090
12.75"	9.00"	3.00"	.875"	12-12590
14.00"	9.00"	3.00"	.750"	12-14090
16.00"	9.00"	3.00"	.625"	12-16090
18.00"	9.00"	3.00"	.500"	12-18090
20.00"	9.00"	3.00"	.500"	12-20090
22.00"	9.00"	3.00"	.500"	12-22090
24.00"	9.00"	3.00"	.500"	12-24090
26.00"	9.00"	3.00"	.438"	12-26090
28.00"	9.00"	3.00"	.375"	12-28090
30.00"	9.00"	3.00"	.375"	12-30090
32.00"	9.00"	3.00"	.313"	12-32090
34.00"	9.00"	3.00"	.313"	12-34090
36.00"	9.00"	3.00"	.250"	12-36090
38.00"	9.00"	3.00"	.250"	12-38090
40.00"	9.00"	3.00"	.250"	12-40090
42.00"	9.00"	3.00"	.250"	12-42090
44.00"	9.00"	3.00"	.250"	12-44090
46.00"	9.00"	3.00"	.250"	12-46090
48.00"	9.00"	3.00"	.250"	12-48090

HASTELLOY X MULTI-PLY

**1500° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	9.00"	1.63"	1.00"	12-3090-X
3.50"	9.00"	2.00"	1.00"	12-3590-X
4.00"	9.00"	2.75"	1.00"	12-4090-X
4.50"	9.00"	3.00"	1.00"	12-4590-X
5.00"	9.00"	3.00"	1.00"	12-5090-X
5.56"	9.00"	3.00"	1.00"	12-5590-X
6.00"	9.00"	3.00"	1.00"	12-6090-X
6.625"	9.00"	3.00"	1.00"	12-6590-X
8.00"	9.00"	3.00"	1.00"	12-8090-X
8.625"	9.00"	3.00"	1.00"	12-8590-X
10.00"	9.00"	3.00"	1.00"	12-10090-X
10.75"	9.00"	3.00"	1.00"	12-10590-X
12.00"	9.00"	3.00"	.750"	12-12090-X
12.75"	9.00"	3.00"	.750"	12-12590-X
14.00"	9.00"	3.00"	.750"	12-14090-X
16.00"	9.00"	3.00"	.625"	12-16090-X
18.00"	9.00"	3.00"	.625"	12-18090-X
20.00"	9.00"	3.00"	.500"	12-20090-X
22.00"	9.00"	3.00"	.500"	12-22090-X
24.00"	9.00"	3.00"	.438"	12-24090-X
26.00"	9.00"	3.00"	.438"	12-26090-X
28.00"	9.00"	3.00"	.375"	12-28090-X
30.00"	9.00"	3.00"	.375"	12-30090-X
32.00"	9.00"	3.00"	.313"	12-32090-X
34.00"	9.00"	3.00"	.313"	12-34090-X
36.00"	9.00"	3.00"	.313"	12-36090-X
38.00"	9.00"	3.00"	.250"	12-38090-X
40.00"	9.00"	3.00"	.250"	12-40090-X
42.00"	9.00"	3.00"	.250"	12-42090-X
44.00"	9.00"	3.00"	.250"	12-44090-X
46.00"	9.00"	3.00"	.250"	12-46090-X
48.00"	9.00"	3.00"	.188"	12-48090-X

INCONEL 625 MULTI-PLY

**1300° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
3.00"	9.00"	1.63"	1.00"	12-3090-625
3.50"	9.00"	2.00"	1.00"	12-3590-625
4.00"	9.00"	2.75"	1.00"	12-4090-625
4.50"	9.00"	3.00"	1.00"	12-4590-625
5.00"	9.00"	3.00"	1.00"	12-5090-625
5.56"	9.00"	3.00"	1.00"	12-5590-625
6.00"	9.00"	3.00"	1.00"	12-6090-625
6.625"	9.00"	3.00"	1.00"	12-6590-625
8.00"	9.00"	3.00"	1.00"	12-8090-625
8.625"	9.00"	3.00"	1.00"	12-8590-625
10.00"	9.00"	3.00"	1.00"	12-10090-625
10.75"	9.00"	3.00"	1.00"	12-10590-625
12.00"	9.00"	3.00"	.750"	12-12090-625
12.75"	9.00"	3.00"	.750"	12-12590-625
14.00"	9.00"	3.00"	.750"	12-14090-625
16.00"	9.00"	3.00"	.625"	12-16090-625
18.00"	9.00"	3.00"	.625"	12-18090-625
20.00"	9.00"	3.00"	.500"	12-20090-625
22.00"	9.00"	3.00"	.500"	12-22090-625
24.00"	9.00"	3.00"	.438"	12-24090-625
26.00"	9.00"	3.00"	.375"	12-26090-625
28.00"	9.00"	3.00"	.375"	12-28090-625
30.00"	9.00"	3.00"	.375"	12-30090-625
32.00"	9.00"	3.00"	.313"	12-32090-625
34.00"	9.00"	3.00"	.313"	12-34090-625
36.00"	9.00"	3.00"	.313"	12-36090-625
38.00"	9.00"	3.00"	.250"	12-38090-625
40.00"	9.00"	3.00"	.250"	12-40090-625
42.00"	9.00"	3.00"	.250"	12-42090-625
44.00"	9.00"	3.00"	.250"	12-44090-625
46.00"	9.00"	3.00"	.250"	12-46090-625
48.00"	9.00"	3.00"	.250"	12-48090-625

*36" T321 AND UP RATED 2 PSIG @ 1200° F OR 5 PSIG @ 1000° F

AXIAL AND LATERAL MOVEMENTS ARE NON-CONCURRENT

NOTE: TEMPERATURE RATINGS ARE FOR THE BELLOWS ELEMENT ONLY AND CONSIDERATION MUST BE GIVEN TO THE FLANGE AND FITTING MATERIALS.



INDEX

9" L/L MULTI-PLY BELLOWS DATA

T-321 STAINLESS

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	9.00"	1.63"	72	100,000	1.00"	16	100,000	5 PSIG	1200°F	12-3090
3" PIPE	3.50"	9.00"	2.00"	83	70,776	1.00"	24	100,000	5 PSIG	1200°F	12-3590
4" TUBE	4.00"	9.00"	2.75"	68	38,953	1.00"	27	100,000	5 PSIG	1200°F	12-4090
4" PIPE	4.50"	9.00"	3.00"	46	60,266	1.00"	22	100,000	5 PSIG	1200°F	12-4590
5" TUBE	5.00"	9.00"	3.00"	64	53,593	1.00"	39	100,000	5 PSIG	1200°F	12-5090
5" PIPE	5.56"	9.00"	3.00"	66	67,843	1.00"	47	100,000	5 PSIG	1200°F	12-5590
6" TUBE	6.00"	9.00"	3.00"	75	51,054	1.00"	62	100,000	5 PSIG	1200°F	12-6090
6" PIPE	6.63"	9.00"	3.00"	82	47,316	1.00"	80	100,000	5 PSIG	1200°F	12-6590
8" TUBE	8.00"	9.00"	3.00"	97	46,633	1.00"	136	38,994	5 PSIG	1200°F	12-8090
8" PIPE	8.63"	9.00"	3.00"	103	37,378	1.00"	165	31,484	5 PSIG	1200°F	12-8590
10" TUBE	10.00"	9.00"	3.00"	96	70,635	1.00"	205	26,704	5 PSIG	1200°F	12-10090
10" PIPE	10.75"	9.00"	3.00"	103	66,559	1.00"	248	18,277	5 PSIG	1200°F	12-10590
12" TUBE	12.00"	9.00"	3.00"	113	63,432	.875"	338	19,934	5 PSIG	1200°F	12-12090
12" PIPE	12.75"	9.00"	3.00"	121	59,850	.875"	405	14,193	5 PSIG	1200°F	12-12590
14"	14.00"	9.00"	3.00"	132	57,316	.750"	530	19,005	5 PSIG	1200°F	12-14090
16"	16.00"	9.00"	3.00"	150	54,125	.625"	777	23,976	5 PSIG	1200°F	12-16090
18"	18.00"	9.00"	3.00"	168	51,665	.500"	1,092	12,956	5 PSIG	1200°F	12-18090
20"	20.00"	9.00"	3.00"	186	49,705	.500"	1,480	23,188	5 PSIG	1200°F	12-20090
22"	22.00"	9.00"	3.00"	204	48,101	.500"	1,952	14,081	5 PSIG	1200°F	12-22090
24"	24.00"	9.00"	3.00"	222	46,763	.500"	2,513	9,107	5 PSIG	1200°F	12-24090
26"	26.00"	9.00"	3.00"	298	68,388	.438"	4,017	15,248	5 PSIG	1200°F	12-26090
28"	28.00"	9.00"	3.00"	320	66,559	.375"	4,980	23,384	5 PSIG	1200°F	12-28090
30"	30.00"	9.00"	3.00"	342	64,974	.375"	6,085	16,262	5 PSIG	1200°F	12-30090
32"	32.00"	9.00"	3.00"	364	63,587	.313"	7,342	29,688	5 PSIG	1200°F	12-32090
34"	34.00"	9.00"	3.00"	386	62,765	.313"	8,758	21,522	5 PSIG	1200°F	12-34090
36"	36.00"	9.00"	3.00"	289	100,000	.250"	7,382	100,000	2 PSIG	1200°F	12-36090
38"	38.00"	9.00"	3.00"	304	100,000	.250"	8,638	100,000	2 PSIG	1200°F	12-38090
40"	40.00"	9.00"	3.00"	320	100,000	.250"	10,028	92,996	2 PSIG	1200°F	12-40090
42"	42.00"	9.00"	3.00"	335	100,000	.250"	11,559	68,574	2 PSIG	1200°F	12-42090
44"	44.00"	9.00"	3.00"	351	100,000	.250"	13,239	51,835	2 PSIG	1200°F	12-44090
46"	46.00"	9.00"	3.00"	366	100,000	.250"	15,071	40,193	2 PSIG	1200°F	12-46090
48"	48.00"	9.00"	3.00"	382	100,000	.250"	17,062	31,814	2 PSIG	1200°F	12-48090

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.

9" L/L MULTI-PLY BELLOWS DATA

INCONEL 625

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	9.00"	1.63"	81	100,000	1.00"	18	100,000	5 PSIG	1300°F	12-3090-625
3" PIPE	3.50"	9.00"	2.00"	93	50,275	1.00"	27	100,000	5 PSIG	1300°F	12-3590-625
4" TUBE	4.00"	9.00"	2.75"	75	17,827	1.00"	28	100,000	5 PSIG	1300°F	12-4090-625
4" PIPE	4.50"	9.00"	3.00"	52	41,821	1.00"	25	100,000	5 PSIG	1300°F	12-4590-625
5" TUBE	5.00"	9.00"	3.00"	72	38,565	1.00"	43	100,000	5 PSIG	1300°F	12-5090-625
5" PIPE	5.56"	9.00"	3.00"	73	48,833	1.00"	53	100,000	5 PSIG	1300°F	12-5590-625
6" TUBE	6.00"	9.00"	3.00"	83	37,348	1.00"	69	100,000	5 PSIG	1300°F	12-6090-625
6" PIPE	6.63"	9.00"	3.00"	92	32,754	1.00"	92	100,000	5 PSIG	1300°F	12-6590-625
8" TUBE	8.00"	9.00"	3.00"	108	28,799	1.00"	152	34,211	5 PSIG	1300°F	12-8090-625
8" PIPE	8.63"	9.00"	3.00"	117	26,166	1.00"	189	21,477	5 PSIG	1300°F	12-8590-625
10" TUBE	10.00"	9.00"	3.00"	113	43,825	1.00"	239	17,450	5 PSIG	1300°F	12-10090-625
10" PIPE	10.75"	9.00"	3.00"	116	47,557	1.00"	281	13,316	5 PSIG	1300°F	12-10590-625
12" TUBE	12.00"	9.00"	3.00"	133	38,508	.750"	398	28,317	5 PSIG	1300°F	12-12090-625
12" PIPE	12.75"	9.00"	3.00"	136	42,943	.750"	455	23,121	5 PSIG	1300°F	12-12590-625
14"	14.00"	9.00"	3.00"	194	62,613	.750"	807	18,609	5 PSIG	1300°F	12-14090-625
16"	16.00"	9.00"	3.00"	218	55,604	.625"	1,167	22,481	5 PSIG	1300°F	12-16090-625
18"	18.00"	9.00"	3.00"	242	50,493	.625"	1,619	11,796	5 PSIG	1300°F	12-18090-625
20"	20.00"	9.00"	3.00"	266	46,814	.500"	2,176	20,444	5 PSIG	1300°F	12-20090-625
22"	22.00'	9.00"	3.00"	292	44,906	.500"	2,859	12,470	5 PSIG	1300°F	12-22090-625
24"	24.00"	9.00"	3.00"	317	43,327	.438"	3,671	15,492	5 PSIG	1300°F	12-24090-625
26"	26.00"	9.00"	3.00"	342	41,997	.375"	4,623	22,317	5 PSIG	1300°F	12-26090-625
28"	28.00"	9.00"	3.00"	368	40,859	.375"	5,725	15,123	5 PSIG	1300°F	12-28090-625
30"	30.00"	9.00"	3.00"	504	45,118	.375"	9,062	11,552	5 PSIG	1300°F	12-30090-625
32"	32.00"	9.00"	3.00"	536	44,106	.313"	10,926	20,679	5 PSIG	1300°F	12-32090-625
34"	34.00"	9.00"	3.00"	569	43,213	.313"	13,028	15,076	5 PSIG	1300°F	12-34090-625
36"	36.00"	9.00"	3.00"	601	42,472	.313"	15,383	11,299	5 PSIG	1300°F	12-36090-625
38"	38.00"	9.00"	3.00"	634	42,150	.250"	18,000	26,677	5 PSIG	1300°F	12-38090-625
40"	40.00"	9.00"	3.00"	667	41,859	.250"	20,896	20,433	5 PSIG	1300°F	12-40090-625
42"	42.00"	9.00"	3.00"	698	41,595	.250"	24,086	15,956	5 PSIG	1300°F	12-42090-625
44"	44.00"	9.00"	3.00"	730	41,353	.250"	27,584	12,670	5 PSIG	1300°F	12-44090-625
46"	46.00"	9.00"	3.00"	762	41,132	.250"	31,404	10,209	5 PSIG	1300°F	12-46090-625
48"	48.00"	9.00"	3.00"	794	40,928	.250"	35,560	35,863	5 PSIG	1300°F	12-48090-625

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature

9" L/L MULTI-PLY BELLOWS DATA

HASTELLOY-X

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
3" TUBE	3.00"	9.00"	1.63"	72	100,000	1.00"	16	100,000	5 PSIG	1500°F	12-3090-X
3" PIPE	3.50"	9.00"	2.00"	84	64,844	1.00"	24	100,000	5 PSIG	1500°F	12-3590-X
4" TUBE	4.00"	9.00"	2.75"	42	93,857	1.00"	16	100,000	5 PSIG	1500°F	12-4090-X
4" PIPE	4.50"	9.00"	3.00"	46	55,956	1.00"	22	100,000	5 PSIG	1500°F	12-4590-X
5" TUBE	5.00"	9.00"	3.00"	64	50,701	1.00"	39	100,000	5 PSIG	1500°F	12-5090-X
5" PIPE	5.56"	9.00"	3.00"	65	65,703	1.00"	48	100,000	5 PSIG	1500°F	12-5590-X
6" TUBE	6.00"	9.00"	3.00"	75	49,045	1.00"	62	100,000	5 PSIG	1500°F	12-6090-X
6" PIPE	6.63"	9.00"	3.00"	82	43,471	1.00"	82	100,000	5 PSIG	1500°F	12-6590-X
8" TUBE	8.00"	9.00"	3.00"	97	37,506	1.00"	136	44,817	5 PSIG	1500°F	12-8090-X
8" PIPE	8.63"	9.00"	3.00"	104	34,481	1.00"	168	28,138	5 PSIG	1500°F	12-8590-X
10" TUBE	10.00"	9.00"	3.00"	100	58,694	1.00"	213	22,719	5 PSIG	1500°F	12-10090-X
10" PIPE	10.75"	9.00"	3.00"	102	65,252	1.00"	249	17,528	5 PSIG	1500°F	12-10590-X
12" TUBE	12.00"	9.00"	3.00"	119	51,341	.750"	354	37,380	5 PSIG	1500°F	12-12090-X
12" PIPE	12.75"	9.00"	3.00"	121	57,459	.750"	405	30,332	5 PSIG	1500°F	12-12590-X
14"	14.00"	9.00"	3.00"	172	84,931	.750"	719	24,261	5 PSIG	1500°F	12-14090-X
16"	16.00"	9.00"	3.00"	194	75,074	.625"	1,039	29,460	5 PSIG	1500°F	12-16090-X
18"	18.00"	9.00"	3.00"	216	67,925	.625"	1,442	15,201	5 PSIG	1500°F	12-18090-X
20"	20.00"	9.00"	3.00"	237	62,801	.500"	1,938	26,717	5 PSIG	1500°F	12-20090-X
22"	22.00"	9.00"	3.00"	260	60,152	.500"	2,547	16,090	5 PSIG	1500°F	12-22090-X
24"	24.00"	9.00"	3.00"	283	57,964	.438"	3,270	20,096	5 PSIG	1500°F	12-24090-X
26"	26.00"	9.00"	3.00"	305	56,123	.438"	4,118	13,261	5 PSIG	1500°F	12-26090-X
28"	28.00"	9.00"	3.00"	327	54,550	.375"	5,100	19,605	5 PSIG	1500°F	12-28090-X
30"	30.00"	9.00"	3.00"	449	60,473	.375"	8,072	14,883	5 PSIG	1500°F	12-30090-X
32"	32.00"	9.00"	3.00"	478	59,069	.313"	9,732	27,042	5 PSIG	1500°F	12-32090-X
34"	34.00"	9.00"	3.00"	507	57,831	.313"	11,605	19,549	5 PSIG	1500°F	12-34090-X
36"	36.00"	9.00"	3.00"	536	56,805	.313"	13,703	14,549	5 PSIG	1500°F	12-36090-X
38"	38.00"	9.00"	3.00"	564	56,360	.250"	16,033	35,145	5 PSIG	1500°F	12-38090-X
40"	40.00"	9.00"	3.00"	593	55,958	.250"	18,613	26,712	5 PSIG	1500°F	12-40090-X
42"	42.00"	9.00"	3.00"	622	55,593	.250"	21,455	20,721	5 PSIG	1500°F	12-42090-X
44"	44.00"	9.00"	3.00"	650	55,259	.250"	24,571	16,359	5 PSIG	1500°F	12-44090-X
46"	46.00"	9.00"	3.00"	679	54,953	.250"	27,974	13,115	5 PSIG	1500°F	12-46090-X
48"	48.00"	9.00"	3.00"	708	54,671	.188"	31,675	47,692	5 PSIG	1500°F	12-48090-X

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

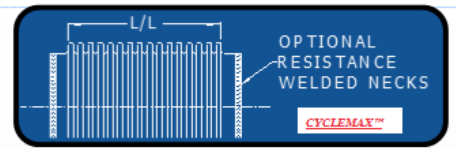
Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.

BELLOWS CAPSULE 12" L/L 2-PLY



T-321 S/S MULTI-PLY

**1200° MAX EXHAUST
TEMPERATURE AT 5 PSIG***

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
4.00"	12.00"	2.00"	1.50"	12-40120
4.50"	12.00"	2.50"	1.50"	12-45120
5.00"	12.00"	3.25"	1.50"	12-50120
5.56"	12.00"	4.00"	1.50"	12-55120
6.00"	12.00"	4.50"	1.50"	12-60120
6.625"	12.00"	5.00"	1.50"	12-65120
8.00"	12.00"	5.50"	1.50"	12-80120
8.625"	12.00"	5.50"	1.50"	12-85120
10.00"	12.00"	5.50"	1.50"	12-100120
10.75"	12.00"	5.50"	1.50"	12-105120
12.00"	12.00"	5.50"	1.50"	12-120120
12.75"	12.00"	5.50"	1.50"	12-125120
14.00"	12.00"	5.50"	1.50"	12-140120
16.00"	12.00"	5.50"	1.25"	12-160120
18.00"	12.00"	5.50"	1.13"	12-180120
20.00"	12.00"	5.25"	1.00"	12-200120
22.00"	12.00"	5.25"	.875"	12-220120
24.00"	12.00"	5.25"	.750"	12-240120
26.00"	12.00"	5.25"	.750"	12-260120
28.00"	12.00"	5.25"	.750"	12-280120
30.00"	12.00"	5.25"	.625"	12-300120
32.00"	12.00"	5.25"	.625"	12-320120
34.00"	12.00"	5.25"	.500"	12-340120
36.00"	12.00"	5.25"	.500"	12-360120
38.00"	12.00"	5.25"	.500"	12-380120
40.00"	12.00"	5.25"	.500"	12-400120
42.00"	12.00"	5.25"	.500"	12-420120
44.00"	12.00"	5.25"	.500"	12-440120
46.00"	12.00"	5.25"	.375"	12-460120
48.00"	12.00"	5.25"	.375"	12-480120

HASTELLOY X MULTI-PLY

**1500° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
4.00"	12.00"	2.00"	1.75"	12-40120-X
4.50"	12.00"	2.63"	1.75"	12-45120-X
5.00"	12.00"	3.25"	1.75"	12-50120-X
5.56"	12.00"	3.75"	1.75"	12-55120-X
6.00"	12.00"	4.50"	1.75"	12-60120-X
6.625"	12.00"	4.75"	1.75"	12-65120-X
8.00"	12.00"	5.50"	1.75"	12-80120-X
8.625"	12.00"	5.50"	1.75"	12-85120-X
10.00"	12.00"	5.50"	1.75"	12-100120-X
10.75"	12.00"	5.50"	1.75"	12-105120-X
12.00"	12.00"	5.50"	1.63"	12-120120-X
12.75"	12.00"	5.50"	1.63"	12-125120-X
14.00"	12.00"	5.50"	1.50"	12-140120-X
16.00"	12.00"	5.50"	1.25"	12-160120-X
18.00"	12.00"	5.50"	1.13"	12-180120-X
20.00"	12.00"	5.25"	1.00"	12-200120-X
22.00"	12.00"	5.25"	.875"	12-220120-X
24.00"	12.00"	5.25"	.750"	12-240120-X
26.00"	12.00"	5.25"	.750"	12-260120-X
28.00"	12.00"	5.25"	.625"	12-280120-X
30.00"	12.00"	5.25"	.625"	12-300120-X
32.00"	12.00"	5.25"	.625"	12-320120-X
34.00"	12.00"	5.25"	.500"	12-340120-X
36.00"	12.00"	5.25"	.500"	12-360120-X
38.00"	12.00"	5.25"	.500"	12-380120-X
40.00"	12.00"	5.25"	.500"	12-400120-X
42.00"	12.00"	5.25"	.500"	12-420120-X
44.00"	12.00"	5.25"	.375"	12-440120-X
46.00"	12.00"	5.25"	.375"	12-460120-X
48.00"	12.00"	5.25"	.375"	12-480120-X

INCONEL 625 MULTI-PLY

**1300° MAX EXHAUST
TEMPERATURE AT 5 PSIG**

BELLOWS I.D.	BELLOWS L/L	AXIAL COMP	LATERAL OFFSET	MP CAPSULE PART NUMBER
4.00"	12.00"	2.00"	1.75"	12-40120-625
4.50"	12.00"	2.63"	1.75"	12-45120-625
5.00"	12.00"	3.25"	1.75"	12-50120-625
5.56"	12.00"	3.75"	1.75"	12-55120-625
6.00"	12.00"	4.50"	1.75"	12-60120-625
6.625"	12.00"	4.50"	1.75"	12-65120-625
8.00"	12.00"	5.50"	1.75"	12-80120-625
8.625"	12.00"	5.50"	1.75"	12-85120-625
10.00"	12.00"	5.50"	1.75"	12-100120-625
10.75"	12.00"	5.50"	1.75"	12-105120-625
12.00"	12.00"	5.50"	1.50"	12-120120-625
12.75"	12.00"	5.50"	1.50"	12-125120-625
14.00"	12.00"	5.50"	1.38"	12-140120-625
16.00"	12.00"	5.50"	1.25"	12-160120-625
18.00"	12.00"	5.50"	1.13"	12-180120-625
20.00"	12.00"	5.25"	1.00"	12-200120-625
22.00"	12.00"	5.25"	.875"	12-220120-625
24.00"	12.00"	5.25"	.750"	12-240120-625
26.00"	12.00"	5.25"	.750"	12-260120-625
28.00"	12.00"	5.25"	.625"	12-280120-625
30.00"	12.00"	5.25"	.625"	12-300120-625
32.00"	12.00"	5.25"	.625"	12-320120-625
34.00"	12.00"	5.25"	.500"	12-340120-625
36.00"	12.00"	5.25"	.500"	12-360120-625
38.00"	12.00"	5.25"	.500"	12-380120-625
40.00"	12.00"	5.25"	.500"	12-400120-625
42.00"	12.00"	5.25"	.500"	12-420120-625
44.00"	12.00"	5.25"	.375"	12-440120-625
46.00"	12.00"	5.25"	.375"	12-460120-625
48.00"	12.00"	5.25"	.375"	12-480120-625

*36" T321 AND UP RATED 2 PSIG @ 1200° F OR 5 PSIG @ 1000° F

AXIAL AND LATERAL MOVEMENTS ARE NON-CONCURRENT

NOTE: TEMPERATURE RATINGS ARE FOR THE BELLOWS ELEMENT ONLY AND CONSIDERATION MUST BE GIVEN TO THE FLANGE AND FITTING MATERIALS.



INDEX

12" L/L MULTI-PLY BELLOWS DATA

T-321 STAINLESS

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
4" TUBE	4.00"	12.00"	2.00"	50	100,000	1.50"	11	100,000	5 PSIG	1200°F	12-40120
4" PIPE	4.50"	12.00"	2.50"	55	100,000	1.50"	15	100,000	5 PSIG	1200°F	12-45120
5" TUBE	5.00"	12.00"	3.25"	40	100,000	1.50"	13	100,000	5 PSIG	1200°F	12-50120
5" PIPE	5.56"	12.00"	4.00"	43	100,000	1.50"	18	100,000	5 PSIG	1200°F	12-55120
6" TUBE	6.00"	12.00"	4.50"	46	54,696	1.50"	21	100,000	5 PSIG	1200°F	12-60120
6" PIPE	6.63"	12.00"	5.00"	49	29,910	1.50"	28	100,000	5 PSIG	1200°F	12-65120
8" TUBE	8.00"	12.00"	5.50"	59	15,468	1.50"	46	100,000	5 PSIG	1200°F	12-80120
8" PIPE	8.63"	12.00"	5.50"	64	13,804	1.50"	58	100,000	5 PSIG	1200°F	12-85120
10" TUBE	10.00"	12.00"	5.50"	72	13,085	1.50"	86	70,900	5 PSIG	1200°F	12-100120
10" PIPE	10.75"	12.00"	5.50"	80	10,773	1.50"	110	38,641	5 PSIG	1200°F	12-105120
12" TUBE	12.00"	12.00"	5.50"	85	11,405	1.50"	144	23,482	5 PSIG	1200°F	12-120120
12" PIPE	12.75"	12.00"	5.50"	91	11,126	1.50"	171	17,035	5 PSIG	1200°F	12-125120
14"	14.00"	12.00"	5.50"	99	10,729	1.50"	223	10,577	5 PSIG	1200°F	12-140120
16"	16.00"	12.00"	5.50"	113	10,225	1.25"	328	13,175	5 PSIG	1200°F	12-160120
18"	18.00"	12.00"	5.50"	126	9,832	1.13"	461	12,187	5 PSIG	1200°F	12-180120
20"	20.00"	12.00"	5.25"	171	18,120	1.00"	783	18,190	5 PSIG	1200°F	12-200120
22"	22.00"	12.00"	5.25"	187	17,498	.875"	1,030	21,831	5 PSIG	1200°F	12-220120
24"	24.00"	12.00"	5.25"	204	16,980	.750"	1,324	30,712	5 PSIG	1200°F	12-240120
26"	26.00"	12.00"	5.25"	220	16,541	.750"	1,669	19,942	5 PSIG	1200°F	12-260120
28"	28.00"	12.00"	5.25"	236	16,163	.750"	2,070	13,586	5 PSIG	1200°F	12-280120
30"	30.00"	12.00"	5.25"	253	15,835	.625"	2,529	23,950	5 PSIG	1200°F	12-300120
32"	32.00"	12.00"	5.25"	269	15,572	.625"	3,051	17,063	5 PSIG	1200°F	12-320120
34"	34.00"	12.00"	5.25"	285	15,458	.500"	3,639	40,319	5 PSIG	1200°F	12-340120
36"	36.00"	12.00"	5.25"	217	42,715	.500"	3,114	87,857	2 PSIG	1200°F	12-360120
38"	38.00"	12.00"	5.25"	228	41,940	.500"	3,644	62,864	2 PSIG	1200°F	12-380120
40"	40.00"	12.00"	5.25"	240	41,240	.500"	4,231	46,336	2 PSIG	1200°F	12-400120
42"	42.00"	12.00"	5.25"	252	40,606	.500"	4,877	35,011	2 PSIG	1200°F	12-420120
44"	44.00"	12.00"	5.25"	263	40,029	.500"	5,585	27,019	2 PSIG	1200°F	12-440120
46"	46.00"	12.00"	5.25"	275	39,675	.375"	6,358	100,000	2 PSIG	1200°F	12-460120
48"	48.00"	12.00"	5.25"	286	39,469	.375"	7,198	84,460	2 PSIG	1200°F	12-480120

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.

12" L/L MULTI-PLY BELLOWS DATA

INCONEL 625

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
4" TUBE	4.00"	12.00"	2.00"	62	100,000	1.75"	13	100,000	5 PSIG	1300°F	12-40120-625
4" PIPE	4.50"	12.00"	2.63"	67	100,000	1.75"	18	100,000	5 PSIG	1300°F	12-45120-625
5" TUBE	5.00"	12.00"	3.25"	60	93,796	1.75"	20	100,000	5 PSIG	1300°F	12-50120-625
5" PIPE	5.56"	12.00"	3.75"	65	41,729	1.75"	26	100,000	5 PSIG	1300°F	12-55120-625
6" TUBE	6.00"	12.00"	4.50"	68	16,175	1.75"	30	100,000	5 PSIG	1300°F	12-60120-625
6" PIPE	6.63"	12.00"	4.50"	72	19,308	1.75"	42	100,000	5 PSIG	1300°F	12-65120-625
8" TUBE	8.00"	12.00"	5.50"	66	11,316	1.75"	52	81,506	5 PSIG	1300°F	12-80120-625
8" PIPE	8.63"	12.00"	5.50"	71	10,679	1.75"	65	50,480	5 PSIG	1300°F	12-85120-625
10" TUBE	10.00"	12.00"	5.50"	81	9,616	1.75"	97	21,366	5 PSIG	1300°F	12-100120-625
10" PIPE	10.75"	12.00"	5.50"	87	9,165	1.75"	119	14,399	5 PSIG	1300°F	12-105120-625
12" TUBE	12.00"	12.00"	5.50"	96	8,611	1.50"	161	17,390	5 PSIG	1300°F	12-120120-625
12" PIPE	12.75"	12.00"	5.50"	102	8,405	1.50"	192	12,731	5 PSIG	1300°F	12-125120-625
14"	14.00"	12.00"	5.50"	111	8,113	1.38"	251	11,949	5 PSIG	1300°F	12-140120-625
16"	16.00"	12.00"	5.50"	127	7,740	1.25"	368	9,912	5 PSIG	1300°F	12-160120-625
18"	18.00"	12.00"	5.50"	142	7,449	1.13"	517	9,187	5 PSIG	1300°F	12-180120-625
20"	20.00"	12.00"	5.25"	192	13,478	1.00"	882	13,423	5 PSIG	1300°F	12-200120-625
22"	22.00"	12.00"	5.25"	210	13,028	.875"	1,160	15,573	5 PSIG	1300°F	12-220120-625
24"	24.00"	12.00"	5.25"	229	12,653	.750"	1,492	22,304	5 PSIG	1300°F	12-240120-625
26"	26.00"	12.00"	5.25"	247	12,335	.750"	1,881	14,678	5 PSIG	1300°F	12-260120-625
28"	28.00"	12.00"	5.25"	265	12,061	.625"	2,331	24,241	5 PSIG	1300°F	12-280120-625
30"	30.00"	12.00"	5.25"	284	11,822	.625"	2,849	16,839	5 PSIG	1300°F	12-300120-625
32"	32.00"	12.00"	5.25"	302	11,637	.625"	3,437	12,137	5 PSIG	1300°F	12-320120-625
34"	34.00"	12.00"	5.25"	320	11,554	.500"	4,100	29,025	5 PSIG	1300°F	12-340120-625
36"	36.00"	12.00"	5.25"	339	11,480	.500"	4,843	21,519	5 PSIG	1300°F	12-360120-625
38"	38.00"	12.00"	5.25"	357	11,413	.500"	5,670	16,343	5 PSIG	1300°F	12-380120-625
40"	40.00"	12.00"	5.25"	375	11,352	.500"	6,585	12,670	5 PSIG	1300°F	12-400120-625
42"	42.00"	12.00"	5.25"	393	11,297	.500"	7,594	9,998	5 PSIG	1300°F	12-420120-625
44"	44.00"	12.00"	5.25"	411	11,246	.375"	8,701	31,859	5 PSIG	1300°F	12-440120-625
46"	46.00"	12.00"	5.25"	429	11,200	.375"	9,909	25,156	5 PSIG	1300°F	12-460120-625
48"	48.00"	12.00"	5.25"	447	11,157	.375"	11,225	20,169	5 PSIG	1300°F	12-480120-625

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature

12" L/L MULTI-PLY BELLOWS DATA

HASTELLOY-X

NOMINAL SIZE	BELLOWS I.D.	LIVE LENGTH	AXIAL COMP.	AXIAL SPRING RATE (LBS/INCH)	CYCLES	LATERAL OFFSET	LATERAL SPRING RATE (LBS/INCH)	CYCLES	MAX PRESSURE	MAX TEMP	PART NUMBER
4" TUBE	4.00"	12.00"	2.0"	55	100,000	1.75"	12	100,000	5 PSIG	1500°F	12-40120-X
4" PIPE	4.50"	12.00"	2.63"	60	100,000	1.75"	16	100,000	5 PSIG	1500°F	12-45120-X
5" TUBE	5.00"	12.00"	3.25"	53	100,000	1.75"	18	100,000	5 PSIG	1500°F	12-50120-X
5" PIPE	5.56"	12.00"	3.75"	60	47,914	1.75"	24	100,000	5 PSIG	1500°F	12-55120-X
6" TUBE	6.00"	12.00"	4.50"	61	21,033	1.75"	28	100,000	5 PSIG	1500°F	12-60120-X
6" PIPE	6.63"	12.00"	4.75"	68	14,675	1.75"	37	100,000	5 PSIG	1500°F	12-65120-X
8" TUBE	8.00"	12.00"	5.50"	59	14,573	1.75"	47	100,000	5 PSIG	1500°F	12-80120-X
8" PIPE	8.63"	12.00"	5.50"	63	13,735	1.75"	58	67,947	5 PSIG	1500°F	12-85120-X
10" TUBE	10.00"	12.00"	5.50"	72	12,337	1.75"	86	27,967	5 PSIG	1500°F	12-100120-X
10" PIPE	10.75"	12.00"	5.50"	77	11,745	1.75"	106	18,651	5 PSIG	1500°F	12-105120-X
12" TUBE	12.00"	12.00"	5.50"	85	11,020	1.63"	144	14,817	5 PSIG	1500°F	12-120120-X
12" PIPE	12.75"	12.00"	5.50"	91	10,752	1.63"	171	10,896	5 PSIG	1500°F	12-125120-X
14"	14.00"	12.00"	5.50"	99	10,370	1.50"	223	10,223	5 PSIG	1500°F	12-140120-X
16"	16.00"	12.00"	5.50"	113	9,883	1.25"	323	12,725	5 PSIG	1500°F	12-160120-X
18"	18.00"	12.00"	5.50"	126	9,505	1.13"	461	11,774	5 PSIG	1500°F	12-180120-X
20"	20.00"	12.00"	5.25"	171	17,425	1.00"	785	17,351	5 PSIG	1500°F	12-200120-X
22"	22.00"	12.00"	5.25"	187	16,829	.875"	1,033	20,206	5 PSIG	1500°F	12-220120-X
24"	24.00"	12.00"	5.25"	204	16,333	.750"	1,329	29,221	5 PSIG	1500°F	12-240120-X
26"	26.00"	12.00"	5.25"	220	15,912	.750"	1,675	19,015	5 PSIG	1500°F	12-260120-X
28"	28.00"	12.00"	5.25"	236	15,550	.625"	2,077	31,836	5 PSIG	1500°F	12-280120-X
30"	30.00"	12.00"	5.25"	253	15,235	.625"	2,538	21,892	5 PSIG	1500°F	12-300120-X
32"	32.00"	12.00"	5.25"	269	14,991	.625"	3,062	15,651	5 PSIG	1500°F	12-320120-X
34"	34.00"	12.00"	5.25"	285	14,882	.500"	3,652	38,326	5 PSIG	1500°F	12-340120-X
36"	36.00"	12.00"	5.25"	302	14,784	.500"	4,314	28,164	5 PSIG	1500°F	12-360120-X
38"	38.00"	12.00"	5.25"	318	14,695	.500"	5,050	21,232	5 PSIG	1500°F	12-380120-X
40"	40.00"	12.00"	5.25"	334	14,615	.500"	5,866	16,355	5 PSIG	1500°F	12-400120-X
42"	42.00"	12.00"	5.25"	350	14,543	.500"	6,764	12,835	5 PSIG	1500°F	12-420120-X
44"	44.00"	12.00"	5.25"	366	14,476	.375"	7,750	42,191	5 PSIG	1500°F	12-440120-X
46"	46.00"	12.00"	5.25"	382	14,415	.375"	8,827	33,073	5 PSIG	1500°F	12-460120-X
48"	48.00"	12.00"	5.25"	398	14,358	.375"	9,998	26,350	5 PSIG	1500°F	12-480120-X

Movements listed are non-concurrent.

Triad engineers will provide an EJMA 9th Edition data sheet with concurrent movements specific to your application

Cycle life data is theoretical based on EJMA 9th Edition formulas and is not guaranteed.

The cycle life will increase as the required movement is decreased

Axial and lateral spring rates are based on the maximum allowable temperature shown.

The pressure capability and spring rates increase as the temperature requirement is decreased.