

## Welded Metal Bellows

### Material

#### ■ AM350

USA		Others	Japan
UNS	AMS		JIS
S35000	5548	AM350	SUS633

AM350 corresponds to JIS SUS633 and is chrome-nickel-molybdenum-stainless steel. Compared to other stainless steel, our product has superior welding, integrity and oxidation resistance.

#### ■ SUS316L

<0.03% C, 16-18.5% Cr, 10-14% Ni, 2-3% Mo, <2% Mn, <1% Si, <0.045% P, <0.03% S

SUS316L is the most basic material. Durable and corrosion-resistant, it is reasonably priced.

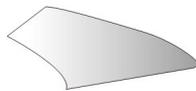
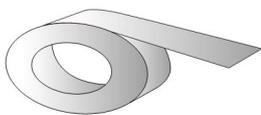
#### ■ Nickel-based Alloys(Hastelloy®, Inconel®, ETC)

Alloy type	UNS	Standard	Density g/cm <sup>3</sup>
INCONEL <sup>®</sup> 625	N06625	AMS-5599 AMS-5666	8.44

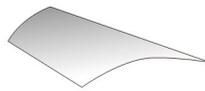
Our products offer excellent craftsmanship, superior strength, oxidation resistance and welding upon heat treatment.

 Sheet coil strips require careful treatment. Upon visual inspection, they are discarded or corrected to be used in manufacturing depending on the condition.

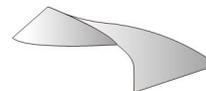
#### Narrow strip



coil set

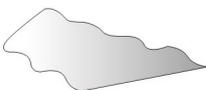
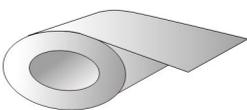


cross bow

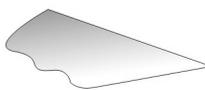


torsion

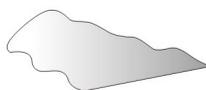
#### Broad strip



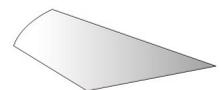
wavy edges



one-sided wavy edges



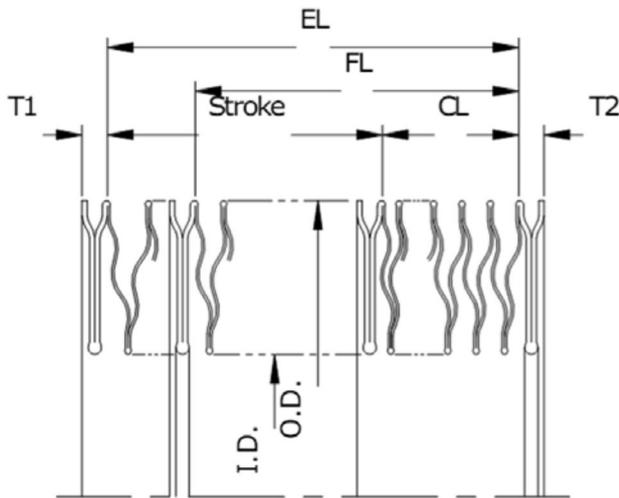
coilbreaks



central buckles

## Welded Metal Bellows Design

### ■ CAPSULE



### ■ DESIGN CONSIDERATIONS

1. OUTSIDE DIAMETER(O.D)
2. INSIDE DIAMETER(I.D)
3. COMPRESSED LENGTH(C.L)
4. EXTENDED LENGTH(E.L)
5. FREE LENGTH(F.L)

We are happy to manufacture even a single custom-ordered welded bellows

# There is no limit of stroke or length!

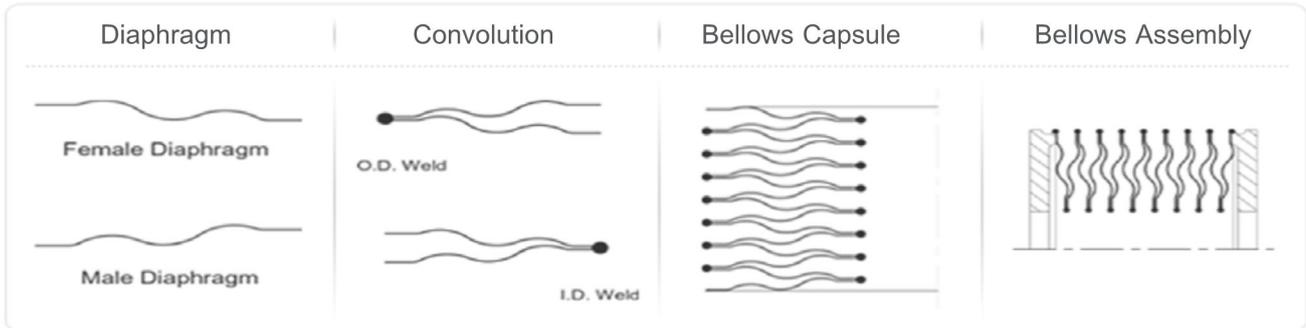
### ■ BELLOWS SPECIFICATION

O.D: 3.000"(76.200mm)  
 I.D: 2.000"(50.800mm)  
 Thickness: 0.004"(0.016mm)  
 Material of capsule:SUS316L  
 Qt'y of Conv: 1,840 Cv  
 Extension Length: 3,850.0mm  
 Compression Length : 850.0mm  
 Stroke: 3000.0mm  
 Shaft Dia: 40  
 Pressure: -Outside ATM -Inside Vacuum  
 Leak rate: Less than 1x10<sup>-8</sup> STD cc/sec He



## Welded Metal Bellows

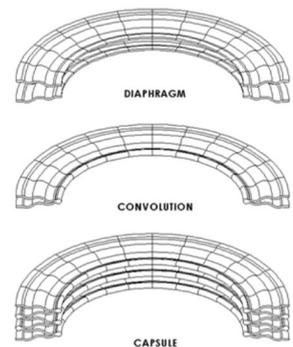
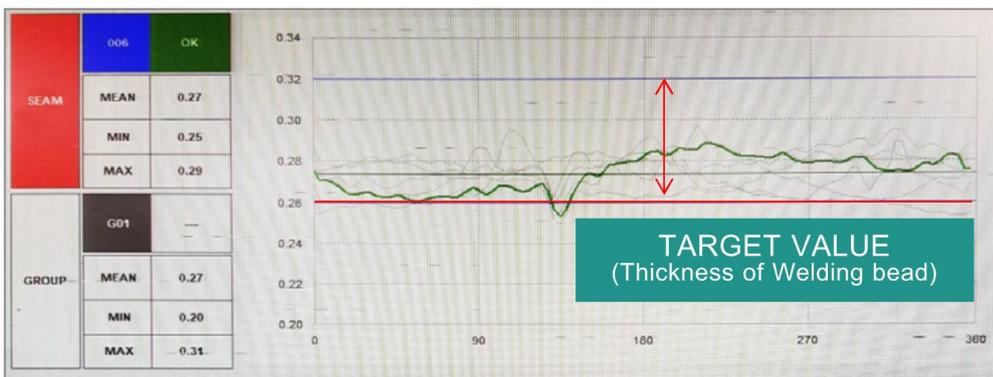
Manufacturing & Technology



Quality may decrease or defects may arise from human error in cases where micro-welding is done by hand.

Our selected method for manufacturing welded bellows both produces and 100% automatically inspects errors of approximately 1/100mm in perimeter of the welded bead.

This method makes possible the highest quality control. i-San, Inc.'s welded bellows guarantee the best quality, price and durability.

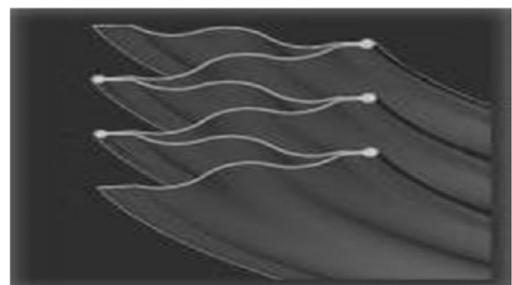


### Nested Ripple Flat I.D

Consisted of Nesting design male& female diaphragm

Extremely Normal shape of welded metal bellows

Maximum stroke in small space



## Welded Metal Bellows

### Form-Die List

NO	FORM DIE NUMBER	BELLOWS SIZE			
		INCH		METRIC	
		O.D.	I.D.	O.D.	I.D.
1	DV1201			12.60	5.00
2	DV1202	0.750	0.250	19.0500	6.3500
3	DV1101	0.750	0.312	19.0500	7.9248
4	DV1203			23.00	12.50
5	DV1204	0.937	0.402	23.7998	10.2108
6	DV1205			26.00	14.00
7	DV2101	1.025	0.482	26.0350	12.2428
8	DV2102	1.030	0.540	26.1620	13.7160
9	DV1206			26.50	17.50
10	DV2103	1.170	0.750	29.7180	19.0500
11	DV2104	1.250	0.625	31.7500	15.8750
12	DV2105	1.250	0.750	31.7500	19.0500
13	DX1220	1.312	0.812	33.3248	20.6248
14	DV4503			34.00	14.00
15	DV3101	1.355	0.540	34.4170	13.7160
16	DX1422	1.437	0.937	36.4998	23.7998
17	DV4504			37.00	19.00
18	DV2501	1.500	0.750	38.1000	19.0500
19	DV2106	1.500	1.000	38.1000	25.4000
20	DYM025	1.548	1.048	39.3192	26.6192
21	DV2107	1.560	0.960	39.6240	24.3840
22	DX1625	1.562	1.062	39.6748	26.9748
23	DV3102	1.625	0.750	41.2750	19.0500
24	DYM028	1.661	1.161	42.1894	29.4894
25	DX1828	1.687	1.187	42.8498	30.1498
26	DN2032	1.687	1.297	42.8498	32.9438
27	DV2108	1.740	1.220	44.1960	30.9880
28	DV4104	1.750	0.750	44.4500	19.0500
29	DV2502	1.750	1.000	44.4500	25.4000
30	DV4501			45.00	25.80
31	DV4502			46.00	26.00
32	DV2109	1.812	1.312	46.0248	33.3284
33	DX2032	1.812	1.312	46.0248	33.3284
34	DYM033	1.860	1.360	47.2440	34.5440
35	DV3103	1.875	0.975	47.6250	24.7650
36	DV2110	1.890	1.390	48.0060	35.3060
37	DV4505			49.00	21.00
38	DX2235	1.937	1.437	49.1998	36.4998
39	DN2438	1.937	1.547	49.1998	39.2938
40	DV3201	2.000	1.250	50.8000	31.7500
41	DX2438	2.062	1.562	52.3748	39.6748
42	DX2640	2.187	1.687	55.5498	42.8498
43	DV4201	2.200	1.040	55.8800	26.4160
44	DV3202	2.250	1.500	57.1500	38.1000
45	DV4506			58.00	42.00
46	DX2845	2.312	1.812	58.7248	46.0248
47	DV4507			60.00	40.00
48	DX3048	2.437	1.937	61.8998	49.1998
49	DV3203	2.500	1.750	63.5000	44.4500
50	DX3250	2.562	2.062	65.0748	52.3748

We accept custom orders for measurements/sizes not listed

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NO	FORM DIE NUMBER	BELLOWS SIZE			
		INCH		METRIC	
		O.D.	I.D.	O.D.	I.D.
51	DX3453	2.687	2.187	68.2498	55.5498
52	DV4508			70.00	50.00
53	DX3655	2.812	2.312	71.4248	58.7248
54	DX3860	2.937	2.437	74.5998	61.8998
55	DV4301	3.000	2.000	76.2000	50.8000
56	DX4063	3.187	2.562	80.9498	65.0748
57	DV4302	3.250	2.250	82.500	57.1500
58	DX4265	3.312	2.687	84.1248	68.2498
59	DV5101	3.312	2.812	84.1248	71.4248
60	DV4509			85.00	60.00
61	DX4470	3.437	2.812	87.2998	71.4248
62	DV5102	3.500	2.000	88.9000	50.8000
63	DV5103	3.500	2.500	88.9000	63.5000
64	DV4510			90.00	65.00
65	DV6101	3.625	3.000	92.0750	76.2000
66	DV6102	3.637	2.625	92.3798	66.6750
67	DX4875	3.750	3.125	95.2500	79.3750
68	DV3301	3.875	3.250	98.4250	82.5500
69	DX5000	3.875	3.250	98.4250	82.5500
70	DX5280	4.000	3.375	101.600	85.7250
71	DX5485	4.125	3.500	104.775	88.9000
72	DV4401	4.250	3.200	107.950	81.2800
73	DX5600	4.250	3.625	107.950	92.0750
74	DX5890	4.375	3.750	111.125	95.2500
75	DX6095	4.500	3.875	114.300	98.4250
76	DV6103	3.625	3.000	92.0750	76.2000
77	DX6200	4.625	4.000	117.475	101.600
78	DV4402	4.750	3.750	120.650	95.2500
79	DX6400	4.750	4.125	120.650	104.775
80	DX6605	4.875	4.250	123.825	107.950
81	DV3401	4.970	4.000	126.238	101.600
82	DX9035	5.250	4.500	133.350	114.300
83	DX9036	5.375	4.625	136.525	117.475
84	DX9038	5.625	4.875	142.875	123.825
85	DX9040	5.875	5.125	149.225	130.175
86	DX9041	6.000	5.250	152.400	133.350
87	DX9044	6.375	5.625	161.925	142.875
88	DX9048	6.875	6.125	174.625	155.575
89	DV7101	7.500	6.000	190.500	152.400
90	DX9054	7.625	6.875	193.675	174.625
91	DV4511			195.00	175.00
92	DV4512			200.00	167.00
93	DX9059	8.250	7.500	209.550	190.500
94	DV7102	8.625	7.125	219.075	180.975
95	DV7103	8.800	7.800	223.520	198.120
96	DX9066	9.125	8.375	231.775	212.725
97	DV7501			250.000	219.000
98	DV7502			270.0000	211.000
99					
100					

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