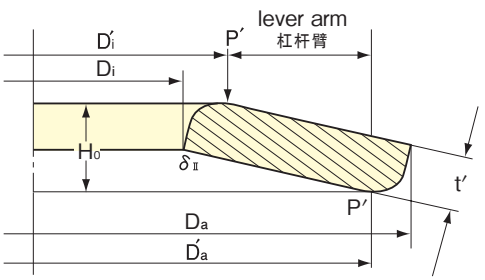
Cautions concerning use of the products 使用时的注意事项

As shown in the graph (Figure 5), the contact surfaces of BELLEVILLE SPRINGS are beveled and for thicknesses of less than 4mm, thickness (t′) is a given. Therefore, when using stacked discs in parallel, the entire length/height (including the thickness of the plate) is calculated using the following formula:
Where n = Number of discs stacked
Total length (L_o) : $L_o = H_o + (n - 1)\,t'$
The value, L_o (Total length) when used in the case of dynamic loads, requires that the first-stage deflection should be set at f = 0.15h ~ 0.2h and, for the total deflection, it is desirable for that it be in the range of f = 0.75h > .

如附图 5 所示，板厚大于 4mm 的蝶簧，内外接触面处有倒角，板厚用 t′ 表示。为此并联重叠使用时，包括板厚在内的全长 L。可按以下公式计算，n 为重叠片数。
全长 $L_o = H_o + (n - 1)\,t'$
在动负荷条件下使用时，预压缩量至少要 0.15h ~ 0.20h。并建议在 0.75h 以内的范围使用。



Appendix : Table 5 附表 5

Light load type : "L" 轻负荷用 L																	
Outside diameter 外径 Da	Inside diameter 内径 Di	Thickness 板厚 t	Thickness 板厚 t'	Deflection 压缩量 h	Total length 总高度 H_o	f = 0.25h			f = 0.5h			f = 0.75h			f = h		
						P	f	δ Ⅱ	P	f	δ Ⅱ	P	f	δ Ⅱ	P	f	δ Ⅱ
8	4.2	0.3		0.25	0.55	5.3	0.063	17.9	9.1	0.125	45.4	12	0.188	82.6	14.5	0.25	129
10	5.2	0.4		0.3	0.7	9	0.075	22.2	15.9	0.15	53.4	21.4	0.225	93.6	26.2	0.3	143
12.5	6.2	0.5		0.35	0.85	12.3	0.088	22.5	22	0.175	52.6	30	0.263	90.2	37.1	0.35	136
14	7.2	0.5		0.4	0.9	12.3	0.1	17	21.4	0.2	42	28.5	0.3	75	34.5	0.4	116
16	8.2	0.6		0.45	1.05	17.6	0.113	19.6	31.1	0.225	47	41.9	0.338	82.3	51.3	0.45	125
18	9.2	0.7		0.5	1.2	23.8	0.125	21.9	42.5	0.25	51.7	57.8	0.375	89.3	71.4	0.5	135
20	10.2	0.8		0.55	1.35	31.1	0.138	23.1	55.8	0.275	53.9	76.4	0.413	92.3	94.9	0.55	138
22.5	11.2	0.8		0.65	1.45	31.3	0.163	17.3	54.5	0.325	42.9	72.2	0.488	76.9	87.3	0.65	119
25	12.2	0.9		0.7	1.6	37.4	0.175	18.1	65.8	0.35	43.8	88	0.525	77.3	107	0.7	119
28	14.2	1		0.8	1.8	48.7	0.2	17.2	85	0.4	42.4	113	0.6	75.7	137	0.8	117
31.5	16.3	1.25		0.9	2.15	80.7	0.225	22.6	144	0.45	53.5	195	0.675	92.7	241	0.9	140
35.5	18.3	1.25		1	2.25	74.7	0.25	16.9	130	0.5	41.7	174	0.75	74.6	210	1	116
40	20.4	1.6		1.15	2.75	133	0.288	22.9	237	0.575	54.1	322	0.863	93.7	397	1.15	142
45	22.4	1.75		1.3	3.05	156	0.325	21.1	276	0.65	50.4	372	0.975	87.8	457	1.3	133
50	25.4	2		1.4	3.4	199	0.35	23.1	357	0.7	54.1	487	1.05	92.9	603	1.4	140
56	28.5	2		1.6	3.6	195	0.4	17.2	341	0.8	42.4	453	1.2	75.6	549	1.6	117
63	31	2.5		1.75	4.25	300	0.438	22.8	537	0.875	53.3	732	1.313	91.4	907	1.75	137
71	36	2.5		2	4.5	296	0.5	17.2	516	1	42.4	687	1.5	75.7	833	2	117
80	41	3		2.3	5.3	454	0.575	19.4	800	1.15	47	1074	1.725	82.8	1311	2.3	127
90	46	3.5		2.5	6	596	0.625	21.9	1064	1.25	51.7	1446	1.875	89.3	1786	2.5	135
100	51	3.5		2.8	6.3	574	0.7	16.2	1003	1.4	39.9	1335	2.1	71.3	1618	2.8	110
112	57	4	3.75	3.2	7.2	836	0.8	10.6	1414	1.6	29	1812	2.4	59.4	2200	3.2	98.7
125	64	5	4.7	3.5	8.5	1330	0.875	16.1	2315	1.75	40.9	3055	2.625	74.5	3784	3.5	119
140	72	5	4.7	4	9	1309	1	10.8	2217	2	30.6	2845	3	59.4	3453	4	98.2
160	82	6	5.6	4.5	10.5	1880	1.125	12.1	3230	2.25	33	4186	3.375	62.6	5131	4.5	103
180	92	6	5.6	5.1	11.1	1825	1.275	7.7	3040	2.55	24.5	3829	3.825	50.4	4588	5.1	86.6
200	102	8	7.5	5.6	13.6	3404	1.4	16	5911	2.8	40.7	7791	4.2	74.3	9659	5.6	119
225	112	8	7.5	6.5	14.5	3363	1.625	9.9	5669	3.25	28.8	7237	4.875	56.5	8731	6.5	94.2
250	127	10	9.4	7	17	5303	1.75	16.2	9219	3.5	41.1	12168	5.25	74.8	15071	7	119

⚠ Do not use deflection rates that exceed f = 0.75h 动负荷条件下，不可在超过 f = 0.75h 的压缩量下使用