碟形弹簧

特点与应用

- 刚度大，缓冲吸振能力强，能以小变形承受大载荷，适用于轴向空间较小的场合。
- 这种弹簧具有变刚度特性以及很广泛的非线性特性。
- 用同样的碟形弹簧采用不同的组合方式，能使弹簧特性在很大范围内变化。可采用对合、叠合的组合方式，也可采用复合不同厚度、不同片数等的组合方式。

Characteristics and Application

- Own high stiffness and great buffer and shock absorption capacity; be able to undertake huge loads by small deformation and is suitable for the occasions where the axial space is relatively small.
- This type of spring is featured by variable stiffness and broad non-linearity.
- Different combination methods of the same disc springs can lead to different spring characteristics. The combination methods combing the springs with different thicknesses and plate number can also be adopted.



碟形弹簧在机床上应用
Machine Tool



碟形弹簧在高压开关上应用
High-voltage Switch Gear



碟形弹簧在阀门上应用
Valves



碟形弹簧在液压锁紧装置上应用
Hydraulic Lock Device



碟形弹簧在风电上应用
Wind Power Industry



碟形弹簧在电机上应用
Motor



碟形弹簧在制动装置上应用
Brake Device



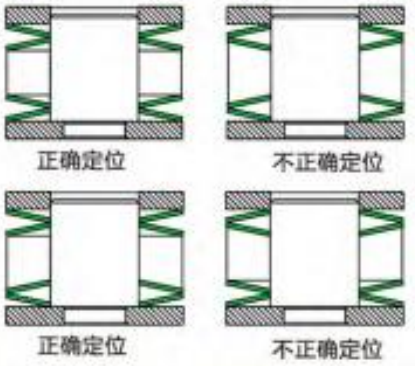
碟形弹簧在化工管道上应用
Petroleum and Chemical Industry



碟簧在汽车转向和车桥系统的应用
Auto Steering system and Axles system

碟形弹簧安装 Installation of Disc Spring

碟形弹簧的安装以它的底端朝向负荷力量来源为佳。
In view of the installation of disc spring, the source of its bottom-facing load force shall prevail.



碟簧的导向件采用导杆(内导向)或导套(外导向)，导向件与碟簧之间的间隙尺寸推荐表。
The guide bar (internally-guided) or guide bush (externally-guided) shall be adopted as the guiding part of disc spring. Here is the table of recommended size of gaps between guiding parts and disc spring.

内径d或外径D(mm)	建议间隙(mm)
~16	0.2
>16~20	0.3
>20~26	0.4
>26~31.5	0.5
>31.5~50	0.6
>50~80	0.8
>80~140	1.0
>140~250	1.6
>250~	2.0

碟形弹簧技术要求 technical specifications

■ 外径D，内径d公差表 Tolerance for outter and inner diameter

外径D/内径d Outer Dia D/Inner Dia.D(mm)	外径D（mm）				内径d(mm)			
	一级精密度 Level1Accuracy		二级精密度 Level 2 Accuracy		一级精密度 Level1Accuracy		二级精密度 Level 2 Accuracy	
8-10	+0	-0.15	+0	-0.22	+0.15	-0	+0.22	-0
>10~18	+0	-0.18	+0	-0.27	+0.18	-0	+0.27	-0
>18~30	+0	-0.21	+0	-0.33	+0.21	-0	+0.33	-0
>30~50	+0	-0.25	+0	-0.39	+0.25	-0	+0.39	-0
>50~80	+0	-0.30	+0	-0.46	+0.30	-0	+0.46	-0
>80~120	+0	-0.35	+0	-0.54	+0.35	-0	+0.54	-0
>120~180	+0	-0.40	+0	-0.63	+0.40	-0	+0.63	-0
>180~250	+0	-0.46	+0	-0.72	+0.46	-0	+0.72	-0
>250~315	+0	-0.52	+0	-0.81	+0.52	-0	+0.81	-0
>315~400	+0	-0.57	+0	-0.89	+0.57	-0	+0.89	-0
>400~500	+0	-0.63	+0	-0.97	+0.63	-0	+0.97	-0

■ 碟形弹簧，H_0，S=0.75h_0公差表 Tolerance for thickness and height (Ho，S=0.75ho)

材料厚度t(t') Material thickness(t') (mm)	材料厚度t公差 Allowable tolerance in Material thinkness t (mm)		自由高度Ho公差 Allowable tolerance in free height Ho (mm)		s=0.75ho时，F允许的波动范围(%) Allowable tolerance in spring force F at Ho-s During loading with s=0.75ho(%)				硬度 HRC
					一级精密度 Level1Accuracy		二级精密度 Level 2 Accuracy		
0.2~0.6	+0.02	-0.06	+0.10	-0.05	+25	-7.5	+30	-10	42-52
>0.6~1.25	+0.03	-0.09	+0.15	-0.08	+15	-7.5	+20	-10	
1.25									
>1.25~2									
>2~3	+0.04	-0.12	+0.20	-0.10					
>3~3.8			+0.30	-0.15	+10	-5	+15	-7.5	
>3.8~6	+0.05	-0.15							
>6~14	0.10		0.30		5		10		
>14~16	/				/		/		