

扭矩限制器

TLA 摩擦式扭矩限制器

防止机械损坏，避免停机损失

Prevent machine damage and eliminate downtime cost



◆ 奔万扭力限制器是一种扭矩过载保护装置。在机器负载震动，超载或机械故障而致所需之扭力超过设定值时，它以滑动方式限制传动系统所传动之扭力，而于超载情形消失后自动啮合，不必再行设定。奔万扭力限制器能有效的防止机械损坏，避免了昂贵的停机损失。

Benwan torque limiter is a protective device which limits the torque transmitted in a drive system by slipping when the demanded torque exceeds a preset value as a result of shock loads, overloads or machine jams. It will automatically reengage when the overload is removed. No resetting is required.

◆ 奔万扭力限制器采用弹簧负荷式摩擦表面，以螺帽或螺栓调整弹簧力，预设其滑动力

Benwan torque limiter utilizes spring-loaded friction surfaces for its operation, and slip torque is preset by adjusting the spring force with nuts and bolts.

◆ 奔万扭力限制器可以用链轮、齿轮、槽轮或法兰板作为中心构件，夹在其摩擦面中间。奔万扭力限制器性能可靠，与适合的弹簧负荷和表面压力相一致结合，保证了较长的打滑时间，提供永久性的保护，本扭力限制器不似剪销式机械一次使用就须作废，而是可以重复使用。

Benwan torque limiter can be used with a sprockets, gear, sheave or flange plate as the central member clamped between two friction facings. Benwan torque limiter ratings are realistic and consistent with optimum spring loads and face pressures that ensure longer slip time. maintain reengagement at preset provide long protection. This is an important advantage over the shearpin mechanism which serves only as one-shot remedy.

选择方法 selection

◆ 从负荷条件或机器设计强度，决定所需滑动扭力。如机器负荷条件不详，则将扭力限制器滑动扭力设定为其安装相关马达所产生之扭力 1.5 - 2 倍。

Determine the required slip torque according to the load conditions or the designed strength of the machine. If the loading conditions of the machine are not clear, then set the required slip torque of the limiter to be 1.5 to 2 times of the torque when related motor is mounted.

◆ 请选择扭力范围和内径范围足够的扭力限制器。

Select a torque limiter which has enough torque range and bore range.

◆ 衬环的长度由摩擦片间中心构件的厚度决定。构件的选择不可大于中心构件的厚度，中心构件的最大宽度见表中 S (最大) 栏。 Determine the proper bushing length according to the thickness of the central constitutes clamped between the friction faces. Always choose the bushing which does not exceed the width of the central constitutes. MAXimum width of the central constitutes is shown as column S (max) in the table.

中心构件 center member

◆ 中心构件之摩擦必须研磨加工以保证额定之扭力，以及平面度、平行度与内径相垂直，不含任何灰尘，铁皮和油污，表面研磨度以 3S-6S 为宜。

The central constitutes should be grinded on its friction faces to ensure the rated torque and free of rust, scale and oil, and to make sure that flatness, parallel and internal diameter are vertical. The surface finish is recommended as 3S to 6S (63 microinches finish). If the central constitutes are not in accordance with these specifications, the slip torque will be erratic.

TLA 摩擦式扭矩限制器

◆扭力设定 Torque setting

扭力限制器的设定只需扭紧或放松调整螺栓/或调整螺帽便可，TLA200 至 TLA350 型各具一调整螺帽，TLA500 至 TLA700 型则各具调整螺栓供扭力调整用。

Torque setting of the Torque Limiter is achieved by tightening or loosening the adjustment bolts and / or the adjustment nuts. For KRTL200 to TLA350, an adjustment nut is provided, and for TLA500 to TLA700, adjustment bolts are provided.

扭力限制器在安装至轴上后，即可进行扭力调整，其步骤如下：

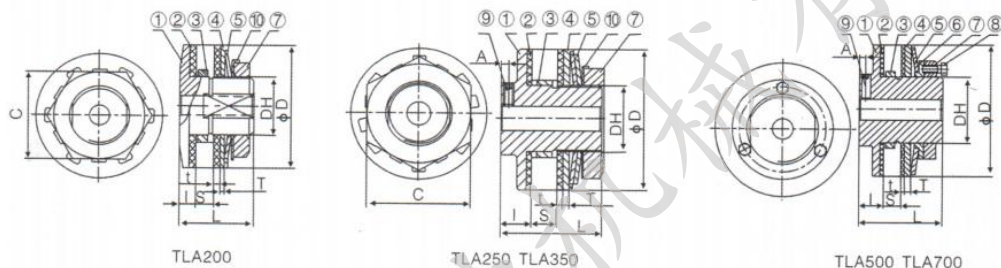
The torque setting can be made after mounting the Torque Limiter on the shaft. The steps are as below: For TLA200 to TLA350: 首先，用手以全力转动调整螺帽使碟形弹簧固定至一压板。然后，暂时以一扳钳把螺帽拧紧到 60 度。

Firstly, rotate the adjustment nut tightly by hand to fix the disc spring in the plate. Then tentatively tighten the nut by about 60 degrees with a wrench.

For TLA500 to TLA700, 14, 20:

首先，转动一螺帽，把碟形弹簧固定至一压板，再将每一调整螺栓拧紧 60 度。其次，如于正常情况下扭力限制器仍然滑动，则逐渐拧紧螺帽（TLA200-TLA350 型）或螺栓（TLA500-TLA700 型），一直到扭力限制器不再滑动。注意，各螺栓之松紧度必须均匀，先试行调整数次以求得相关机器之正确扭力设定，下一页为有效旋转角度和预设扭力关系图可参考。为求精密扭力之调整，宜将本扭力限制器在扭矩调整后把螺帽或螺栓旋转 45 度，于 50-60RMP 下度运转 500 回转。

Firstly, rotate the nut to fixing the disc spring in the plate, and then tighten each adjustment bolt by about 60 degrees. Then, if the Torque Limiter slips under normal loading conditions, gradually tighten the nut (for TLA200 to TLA350) or the bolts (for TLA 500 to TLA700) until the torque limiter stops slipping. Always tighten (or loosen) the bolts equally, try this adjustment several times to find the proper torque setting for the machine. For your guidance, the chart on the next page shows the relation between the effective rotated angle and preset torque. For precise torque setting, run-in of torque limiter is recommended. For example, 500 revolutions is tried at 50 to 60 r/min with a rotated angle of 45 degrees of adjustment nuts or the bolts.



零件名称：

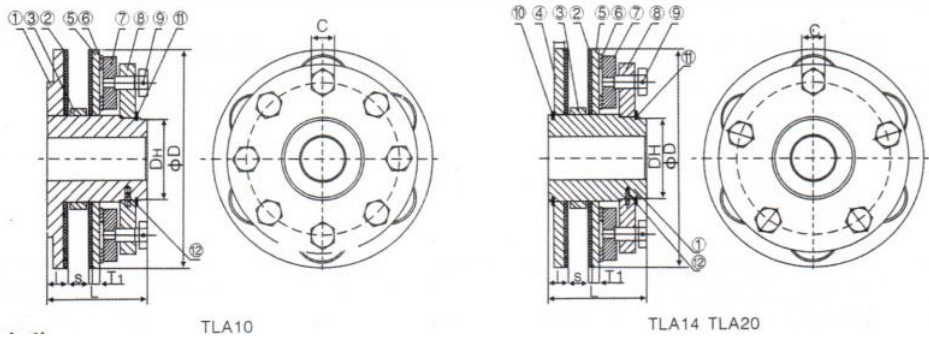
Name of parts:

- | | | |
|-----------------------|------------------------|--------------------|
| ① 主体 Hub | ⑤ 碟形弹簧 Disc Spring | ⑨ 锁紧螺钉 Set Screw |
| ② 摩擦片 Friction facing | ⑥ 导向压板 Pilot Plate | ⑩ 止退垫片 Lock Washer |
| ③ 衬环 Bushing | ⑦ 调节螺母 Adjustment Nut | |
| ④ 压板 Pressure Plate | ⑧ 调节螺栓 Adjustment Bolt | |

BWTLA200~BWTLA700 的尺寸表 Dimensions and Capacity for -BWTLA200-BWTLA700

型号 Model	扭矩范围 Torque Range (Nm)	最高转速 MAX speed (rpm)	成品 内孔 Finish Bore	最大 孔径 MAX. Bore	衬环长度 O. D. of Bushing	衬环外径 O. D. of Bushing	跳动 Bore for center Member	D	Dh	L	I	T	t	S (max.)	A	C	质量 Mass (Kg)	调节 螺栓 Adjust. Bolt
TL200-1	2.9~9.8	6600	8	14	3.8	φ0.020	+0.033	50	M24	29	6.5	1.6	2.5	7		36	0.26	
TL200-2	6.9~20				6.0	φ0.041	30.0											
TL250-1	6.9~27				4.5	-0.025	+0.039	65	M35	48	16	4.0	3.2	9	4	50	0.74	
TL250-2	14~54	6600	10	22	8.0	-0.050	U 0											
TL350-1	20~74		17	25	6.0	-0.025	+0.039	89	M42	62	19	4.0	3.2	16	5	65	2.48	
TL350-2	34~149				14.5	±0.050	49 出 0											
TL500-1	47~210	2700	20	42	6.0	-0.030	+0.046	127	M65	76	22	6.0	3.2	16	6		3.85	M8×P
TL500-2	88~420				14.5	從 0.060	74.0											1.03pcs
TL700-1	116~569	2100	30	64	8.0	-0.036	+0.054	178	M95	98	24	7.0	3.2	29	6.5		9.44	M10×P
TL700-2	223~1080				22.0	10~0.071	105 q											1.03pcs

TLA 摩擦式扭矩限制器



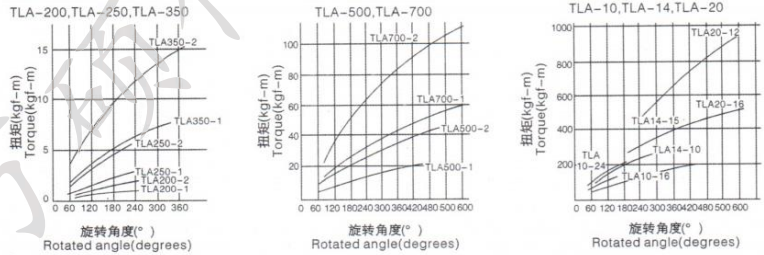
零件名称: Name of parts:

- ①主体 Hub②摩擦片 Friction③衬环 Bushing④压板 A Pressure Plate A⑤压板 B Pressure Plate B
⑥碟型弹簧 Disc Spring⑦碟型压板 Disc Spring Plate⑧导向压板 Pilot Plate⑨调节螺栓 Adjustment Bolt
⑩轴用挡圈 Snap Ring⑪外接圈 Spirolox⑫弹簧栓 Spring Pin

TLA10-TLA20 的尺寸表 Dimensions and Capacity for TLA10-TLA-20

型号 Model	扭矩范围 Torque Range(Nm)	最高转速 MAXspeed inbaianced rpm	成品 内孔 Finish Bore	最大孔径 MAX. Bore	衬环长 度 Bushinc Length	衬环外径 O. D. of Bushing	中心原 件配合 孔径 Bore for center Member	D	Dh	L	I	Ti	T2	t	S (max.)	C	质量 Mass (Kg)	调节螺栓 Adjust. Bolt
TLA10-16	400-1240	1400	30	72	12.5	35 0 086		254	100	115	23	8.5	-	4.0	24	19	21	M18×1.5
TLA10-24	590-1860				19.5	-0.125												
TLA14-10	890-2660	1200	40	100	19.5	185-° ° :		356	145	150	31	13	13	4.0	29	27	52	M26×1.5
TLM4-15.	1960-3920				23.5	-0.12	y											
TLA20-16	2450-4900	800	50	135	15.5	22 节		508	185	175	36	15	18	4.0	31	36	117	M32×1.5
TLA20-12	4610-9310				23.5	-0.12 ° ° 7 0												

◇旋转角度与预设扭力 rotated angle and setting torque



◇订货描述示例:

Order form:

TLA14-10	Φ40	Φ40 键槽Φ40keyway
规格与型号 Size/type of joint	成品孔径 Finish bore (H7)	成品孔径 (H7) 键槽按 G B/T3852 - 1997 (JS9) 标准 Finish bore (H7) to GB/T3852-1997 (JS9)