

◇ 防止机械损坏，避免停机损失

Prevent machine Damage and Eliminate costly Downtime



◆ WAKA 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。WAKA 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。

Waka torque limiters is a protective device that limits the torque transmitted in a drive system by slipping when the torque demand exceeds a preset value as a result of shock loads , overloads ,or machine jams. It automatically reengages when the overload is removed . No resetting is required.

◆ WAKA 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，预设其滑动扭力。

Waka torque limiter utilize spring- loaded friction surfaces for their operation,and slip torque is preset by adjusting of the spring force using the adjustment nut bolts.

◆ WAKA 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。WAKA 扭力限制器性能可靠，与最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。

Waka torque limiter can be used with a sprocket, gear, sheave, or flange plate as the center member clamped between two friction facings.Waka torque limiter ratings are realistic and consistent with optimum spring loads and face pressures that permit longer slip time, maintain reengagement at preset torque and provide long lasting protection. This is an important advantage over the shear-pin mechanism which serves only as a 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 from the loading conditions or from the design strength of the machine. If the loading conditions of the machine are unknown, set the required slip torque of the Torque limiter to 1.5 to 2 times the torque that the motor produces on the shaft where the Torque limiter 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宽度，中心构件的最大宽度见表中S〈最大〉栏。

Determine the proper bushing length from the thickness of the center member to be inserted between the friction facings. Always choose the largest bushing which does not exceed the width of the center member. Maximum thickness of the center member is shown as'S max , 'in the dimension table.

◇ 中心构件 center Member

◆ 中心构件之摩擦面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 center member should be machined on its rubbing surface to obtain the rated torque and be fiat and parallel, and free from rust, scale and oil. Surface finish recommended is 3S to 6S(63micro-inches finish). If the center member is not in accordance with these specifications, the slip torque will be erratic.

摩擦式扭力限制器 Friction-Type Torque Limiter

◇ 扭力设定 Setting Torque

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，TL200至TL350型各具一调整螺帽，TL500至TL700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 torque adjustment of TL200 to TL350, an adjustment nut is provided, and for TL500 to TL700 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.

TL200至350型 For TL200 to TL350:

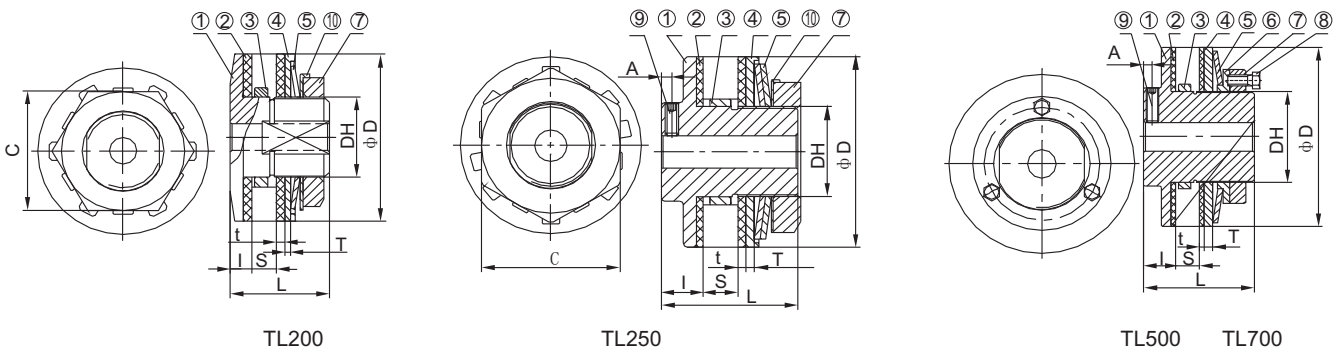
首先，用手以全力转动调整螺帽使碟形弹簧固定至一压板。然后，暂时以一扳钳把螺帽拧紧至60度。

First, rotate the adjustment nut tightly by hand so that the disc spring fits the plate. Then tentatively tighten the nut by about 60 degrees with a wrench.

TL500至TL10、14、20型 From TL500 to TL10、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（TL200-TL350型）或螺栓（TL500-TL20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下试运转500回转。

First, rotate the nut for fixing the disc spring to the plate, and then tighten each adjustment bolt by about 60 degrees. Then, if the Torque Limiter slips under normal loading conditions, tighten the nut (for TL200 to TL350) or the bolts (for TL500 to TL20) gradually 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 at 50 to 60r/min with a rotated angle of 45 degrees of adjustment nuts or the bolts.



◇ 零件名称:

Name of parts:

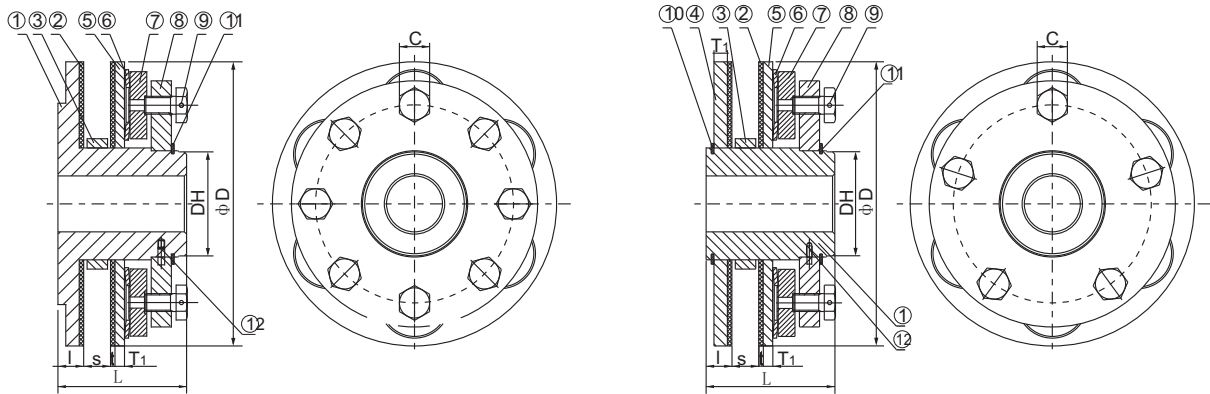
- ① 主体 Hub
- ② 摩擦片 Friction facing
- ③ 衬环 Bushing
- ④ 压板 Pressure Plate
- ⑤ 碟型弹簧 Disc Spring
- ⑥ 导向压板 Pilot Plate

- ⑦ 调节螺母 Adjustment Nut
- ⑧ 调节螺栓 Adjustment Bolt
- ⑨ 锁紧螺钉 Set Screw
- ⑩ 止退垫片 Lock Washer

◇ TL200~TL700的尺寸表 Dimensions and Capacity for -TL200~TL700

尺寸: (mm)
Dimensions in mm

型号 Model	扭矩范围 Torque Range (Nm)	最高转速 Max. speed unbalanced rpm	成品内孔 Pilot Bore	最大孔径 Max. Bore	衬环长度 Bushing Length	衬环外径 O.D. of Bushing	中心元件配合孔径 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	30	-0.020	30	+0.033	50	M24	29	6.5	1.6	2.5	7	-	36	0.26	-
TL200-2	6.9~20																			
TL250-1	6.9~27	6600	10	22	4.5	41	-0.025	41	+0.039	65	M35	48	16	4.0	3.2	9	4	50	0.74	-
TL250-2	14~54																			
TL350-1	20~74	5600	17	25	6.0	49	-0.025	49	+0.039	89	M42	62	19	4.0	3.2	16	5	65	2.48	-
TL350-2	34~149																			
TL500-1	47~210	2700	20	42	6.0	74	-0.030	74	+0.046	127	M65	76	22	6.0	3.2	16	6	-	3.85	M8xP1.0 3pcs
TL500-2	88~420																			
TL700-1	116~569	2100	30	64	8.0	105	-0.036	105	+0.054	178	M95	98	24	7.0	3.2	29	6.5	-	9.44	M10xP1.0 3pcs
TL700-2	223~1080																			



零件名称:

TL10

TL14 - TL20

Name of parts:

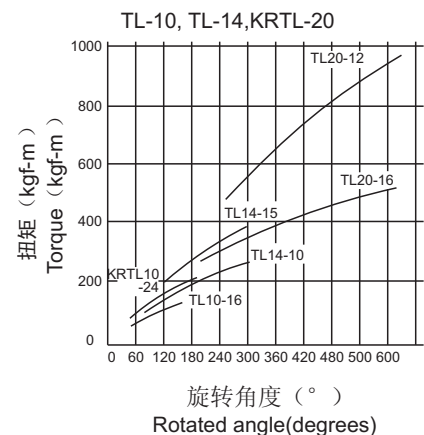
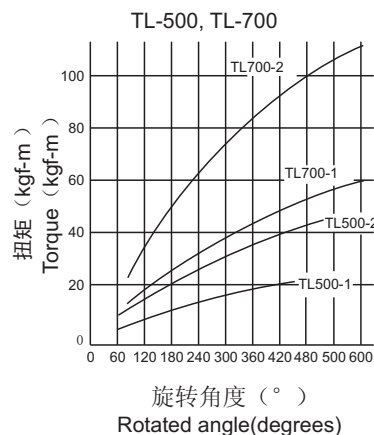
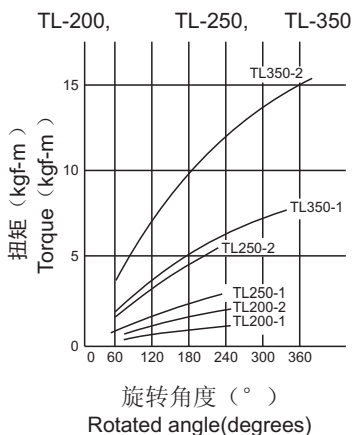
- | | | | | | |
|------|------------------|-------|-------------------|-------|-----------------|
| ①主体 | Hub | ⑤压板B | pressure Plate B | ⑨调节螺栓 | Adjustment Bolt |
| ②摩擦片 | Friction facing | ⑥碟型弹簧 | Disc Spring | ⑩轴用挡圈 | Snap Ring |
| ③衬环 | Bushing | ⑦碟簧压板 | Disc Spring Plate | ⑪外接圈 | Spirolox |
| ④压板A | Pressure Plate A | ⑧导向压板 | Pilot Plate | ⑫弹簧栓 | Spring Pin |

TL10~TL20的尺寸表 Dimensions and Capacity for TL10~TL20

尺寸: (mm)
Dimensions in mm

型号 Model	扭矩范围 Torque Range (Nm)	最高转速 Max.speed unbalanced rpm	成品内孔 Finish Bore	最大孔径 Max. Bore	衬环长度 Bushing Length	衬环外径 O.D.of Bushing	中心元件配合孔径 Bore for center Member	D	D _H	L	I	T ₁	T ₂	t	S (max.)	C	质量 Mass (kg)	调节螺栓 Adjust.Bolt
TL10-16	400~1240	1400	30	72	12.5	135 ^{-0.085}	135 ^{+0.07} ₀	254	100	115	23	8.5	-	4.0	24	19	21	M18x1.5
TL10-24	590~1860					135 ^{-0.125}	135 ^{+0.07} ₀											
TL14-10	890~2660	1200	40	100	19.5	185 ^{-0.07}	185 ^{+0.07} ₀	356	145	150	31	13	13	4.0	29	27	52	M26x1.5
TL14-15	1960~3920					185 ^{-0.12}	185 ^{+0.07} ₀											
TL20-16	2450~4900	800	50	135	15.5	226 ^{-0.07}	226 ^{+0.07} ₀	508	185	175	36	15	18	4.0	31	36	117	M32x1.5
TL20-12	4610~9310					226 ^{-0.12}	226 ^{+0.07} ₀											

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



订货描述示例:

Order form:

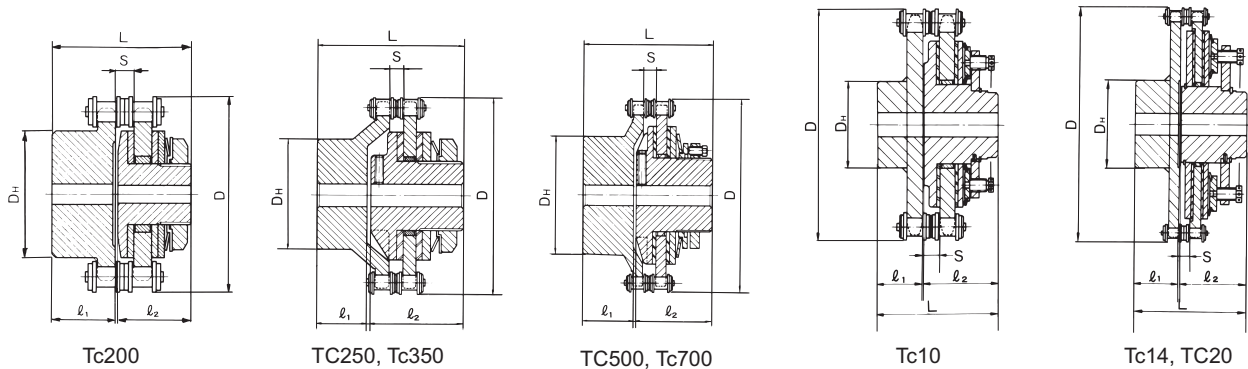
TL14-10	φ40	φ40键槽 φ40keyway
规格与型号 Size/type of joint	成品孔径 Finish bore (H7)	成品孔径(H7) 键槽按GB/T3852-1997 (JS9) 标准 Finish bore (H7) to GB/T3852-1997(JS9)

扭力限制型联轴器 Friction Type Torque Limiter Coupling



扭力限制型联轴器，具超载后打滑之保护作用，同时也实现了轴—轴传动的可能，WAKA 扭力限制器型联轴器是滚子链联轴器与摩擦型扭力限制器的一种完美结合。the torque limiter coupling combines overload slip protection with the ability to couple driving and driven shafts. It is an assembly consisting of a WA torque limiter and rollerchain coupling.

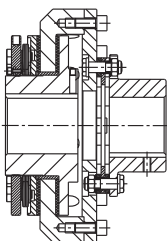
This construction provides a dependable character and easy-to-assemble flexible coupling.



◇ 扭力限制型联轴器的尺寸 Capacity and Dimension of Torque Limiter Coupling

尺寸:(mm)
Dimensions in mm

型号 Model	扭矩范围 Torque Range (Nm)	最高转速 Max. Running Speed (r/min)	成型孔径 Finish Bore		最大孔径 Max. Bore		链轮 Sprocket	D	D _H	L	l ₁	l ₂	S	重量 Weight (kg)
			链轮 Sprocket	TC	链轮 Sprocket	TC								
TC200-1	2.9~9.8	1200	8	7	31	14	RS 40-16T	76	50	55	24	29	7.5	1.0
TC200-2	6.9~20													
TC250-1	6.9~27	1000	13	10	38	22	RS 40-22T	102	56	76	25	48	7.4	1.9
TC250-2	14~54													
TC350-1	20~74	800	13	17	45	25	RS 50-24T	137	72	103	37	62	9.7	4.2
TC350-2	34~149													
TC500-1	47~210	500	18	20	65	42	RS 60-28T	188	105	120	40	76	11.6	10.0
TC500-2	88~420													
TC700-1	116~569	400	23	30	90	64	RS80-28T	251	150	168	66	98	15.3	26.0
TC700-2	223~1080													
TC10-16	400~1240	300	33	30	95	72	RS140-22T	355	137	189	71	115	26.2	66.0
TC10-24	590~1860													
TC14-10	890~2660	200	28	40	118	100	RS160-26T	470	167	235	80	150	30.1	140.0
TC14-15	1960~3920													
TC20-16	2450~4900	140	43	50	150	135	RS160-36T	631	237	300	120	175	30.1	285.0
TC20-12	4610~9310													

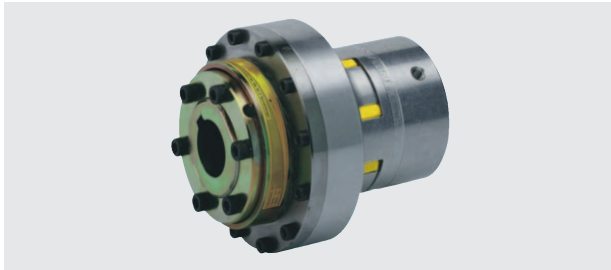


- 可和刚性无齿隙钢膜片联轴器组装
With torsionally rigid, backlash-free steel lamina coupling
- 可适应较高的工作温度 (可达280 ° C)
suitable for high operating temperatures (up to280 ° C)
- 有不同长度的中间体适用不同的轴间距
with variable spacers for different shaft distance dimensions

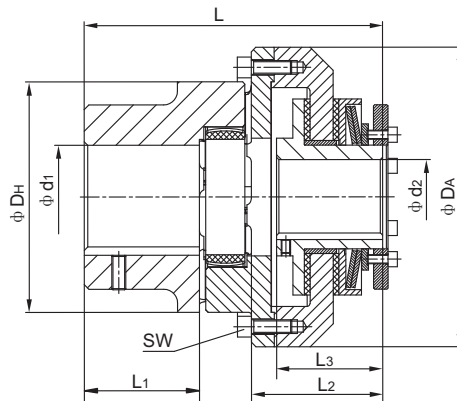
◇ 订货描述示例:

Order form:

TC14-10	φ 28/ φ 40	φ 28/ φ 40键槽按 φ 28/ φ 40keyway
规格与型号 Size/type of joint	链轮孔径/扭力限制器孔径 Sprocket H7/TL H7	成品孔径(H7)键槽按GB/T3852-1997(JS9)标准 Finish bore (H7) Keyway toGB/T3852 sheet 1997(JS9)



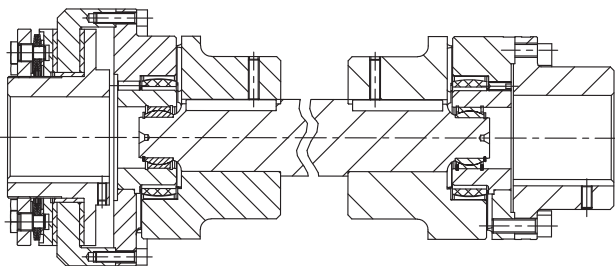
- 轴与轴连接 Shaft-to-shaft-connection
- 扭向弹性力矩限制器 Torsionally flexible safety clutch
- 轴向插入，安装方便 Axial plug-in
- 能补偿安装偏差 Able to compensate for misalignment
- 可装在设备上调节打滑力矩 Torque can be set while in place
- 成品孔径公差按照ISO标准为H7，键槽宽公差按照标准为JS9
Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - Js9



◇ 扭力限制型联轴器的尺寸 Capacity and Dimension of Torque Limiter Coupling

尺寸:(mm)
Dimensions in mm

型号 Model	扭矩范围 Torque Range (Nm)	最高转速 Max.speed Unbalanced rpm	d ₁	d ₂	DA	DH	L	L ₁	L ₂	L ₃	SW
TLC200-1	2.9~9.8	1800	6-19	8-14	70	40	77	25	36	29	6-M4
TLC200-2	6.9~20										
TLC250-1	6.9~27	1800	8-24	10-22	87	55	106	30	58	48	6-M5
TLC250-2	14~54										
TLC350-1	20~74	1800	10-28	17-25	118	65	129	35	74	62	6-M6
TLC350-2	34~149										
TLC500-1	47~210	1800	14-42	20-42	158	95	166	50	90	76	8-M8
TLC500-2	88~420										
TLC700-1	116~569	1400	22-65	30-64	216	135	225	75	115	98	8-M10
TLC700-2	223~1080										
TLC1016-1	400~1240	1400	40-90	30-72	300	200	284	100	139	115	8-M12
TLC1024-2	590~1860										



- 带中间轴联轴器
as intermediate shaft coupling
- 适合较大的轴间距离
for large shaft distance dimensions
- 可和钢膜片联轴器组装
available in combination with or steel lamina couplings

◇ 订货描述示例:

Order form:

TLC350-2	φ20/φ24	φ20/φ24键槽 φ28/φ40keyway
规格与型号 Size/type of joint	联轴器孔径/扭力限制器孔径 Coupling H7/KRTL H7	成品孔径(H7)键槽按GB/T3852-1997(JS9)标准 Finish bore (H7) Keyway toGB/T3852 sheet 1997(JS9)