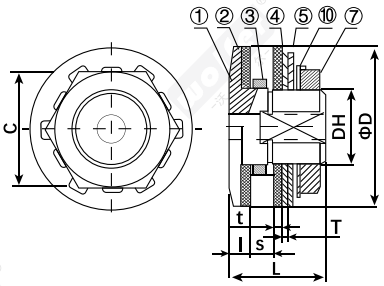
扭力限制器
Torque Limiter

RTL摩擦片式扭矩限制器 RTL Torque Limiter

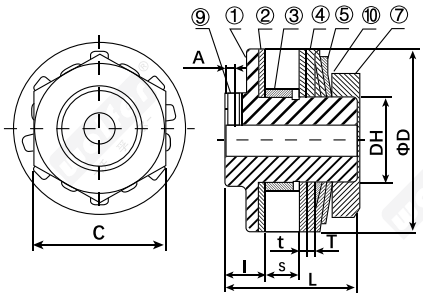
RTL50-1 RTL50-2
◎ 单螺母调节
◎ 止退垫片,防止螺母松动
◎ Single Nut Adjustment
◎ Lock Washer to prevent the nut from

RTL65-1 RTL65-2
RTL89-1 RTL89-2
◎ 单螺母调节
◎ 止退垫片,防止螺母松动
◎ Single Nut Adjustment
◎ Lock Washer to prevent the nut from loosening

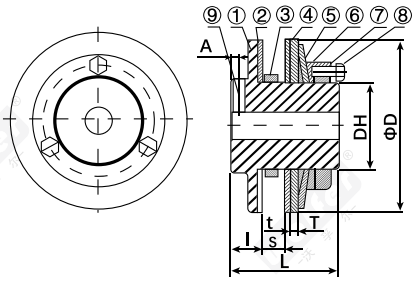
RTL127-1 RTL127-2
RTL178-1 RTL178-2
◎ 3个螺栓调节
◎ 3个螺栓设定扭矩,调节螺母固定导向压板
◎ Three Bolts Adjustment
◎ Torque preset by the three bolts (an adjustment nut to fix a pilot plate in place)



RTL50



RTL65 RTL89



RTL127 RTL178

零件名称：

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

Name of parts:

①Hub
②Friction Facing
③Bushing
④Pressure Plate
⑤Disc Spring
⑥Pilot Plate
⑦Adjustment Nut
⑧Adjustment Bolt
⑨Set Screw
⑩Lock Washer

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RTL50至RTL178的尺寸表 Dimensions and Capacity for RTL50 to RTL178

规格	扭矩范围 (N·m)	内孔	最大孔径	衬环长度	衬环外径		中心元件配合孔径		D	DH	L	l	T	t	S (Max)	A	c	调节螺母	调节螺栓	锁紧螺钉	重量 (Kg)
Size	Torque Range	plain Bore	Max. Bore	Bush Length	OD.of Bush		Bore for Center Member		D	DH	L	l	T	t	s	A	c	Adjust Nut	Adjust Bolt	Set Screw	weight
RTL50-1	2.94~9.80	8	15	3.8 4.5 6.0	30	-0.020 -0.041	30	+0.033 0	50	M24	29	6.5	1.6	2.5	7	-	36	M24 P1.0	-	-	0.248
RTL50-2	6.86~19.60																				0.256
RTL65-1	6.86~27.44	10	22	4.5 6.0 8.0	41	-0.025 -0.050	41	+0.039 0	65	M35	48	16.0	4.0	3.2	9	4.0	50	M35 P1.5	-	M5	0.721
RTL65-2	13.72~53.90																				0.739
RTL89-1	19.60~74.48	17	28	6.0 8.0 9.5 14.5	49	-0.025 -0.050	49	+0.039 0	89	M42	62	19.0	4.0	3.2	16	5.0	65	M42 P1.5	-	M6	2.417
RTL89-2	34.30~148.96																				2.477
RTL127-1	46.08~209.72	20	45	6.0 8.0 8.5 9.5 14.5	74	-0.030 -0.060	74	+0.046 0	127	M65	76	22.0	6.0	3.2	16	6.0	-	M65 P1.5	M8 P1.0 3PCS	M8	3.692
RTL127-2	88.20~420.42																				3.858
RTL178-1	115.64~569.38	30	65	8.0 9.5 12.0 14.5 17.0 22.0	105	-0.036 -0.071	105	+0.054 0	178	M95	98	24.0	7.0	3.2	29	6.5	-	M95 P1.5	M10 P1.0 3PCS	M10	9.033
RTL178-2	223.44~1087.80																				9.436

选型 Selection

◎ 依据负载条件或设备本身的力的大小来决定所需打滑扭矩。如果设备负载条件不清楚,请将打滑扭矩设为马达产生在承载限扭装置的轴上扭矩的1.5~2倍。
◎ 选用限扭装置时,应选择有足够大的扭矩范围和孔径范围。
◎ 根据两个摩擦片中间夹的中心元件的厚度来决定选择最合适的衬环宽度。
◎ 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 1.5~2 times the torque that the motor produces on the shaft where the torque limiter is mounted.
◎ Select a torque limiter that has enough torque range and bore range.
◎ 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 is shown as "S max."in the dimension table.

中心元件 Center Member

◎ 中心元件的摩擦表面应加工,以保证额定转矩,以及平面度、平行度、与孔一致和防锈、防油污。推荐表面粗糙度为Ra1.6。如果中心元件不能满足以上技术要求,打滑扭矩将不稳定。
◎ 请按下表来加工中心元件的孔,和选择最小链轮齿数和衬环宽度。
◎ The center member should be machined on its rubbing surface to obtain the rated torque and be flat, parallel, square with bore, and free from rust, scale, and oil. Surface finish recommended is Ra1.6. If the center member is not in accordance with these specifications, the slip torque will be erratic.
◎ Bore of the center member to be machined is shown in the table below. Also, min. numbers of sprockets teeth to be used and bushing length to be chosen are listed

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最小链轮齿数和衬环宽度 Minimum Sprocket Teeth and Bushing Length

链轮节距和齿数 Sprocket Pitch and Number of Teeth															
中心元件		9.525-06B		12.7-08B		15.875-10B		19.05-12B		25.4-16B		31.75-20B		38.1-24B	
规格	孔径 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)	链轮最小齿数	衬环宽度 (mm)
Size	Bore of Center Member (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)	Sprocket MinTeeth	Bush Length (mm)
RTL50	30	20	3.8	16	6	-	-	-	-	-	-	-	-	-	-
RTL65	41	-	-	20	6	17	8	-	-	-	-	-	-	-	-
RTL89	49	-	-	26	6	21	8	18	9.5	15	14.5	-	-	-	-
RTL127	74	-	-	35	6	29	8	25	9.5	19	14.5	-	-	-	-
RTL178	105	-	-	-	-	39	8	33	9.5	26	14.5	21	17	18	22

扭矩的设定 Torque Setting

◎ 限扭装置扭矩的设定是依靠上紧和松开调节螺栓和/或调节螺母来实现的。针对RTL50到RTL89,依靠调节螺母;针对RTL127和RTL178, 依靠调节螺栓。

◎ 扭矩的设定可以在将限扭装置安装在轴上后进行,过程是:

◎ RTL50到RTL89的规格,
首先,用手旋转上紧调节螺母,以至固定碟型弹簧和压板; 然后,试着用扳手将螺母上紧,约60度。

◎ RTL127到RTL178的规格
首先,旋转螺母,固定碟型弹簧和压板,再上紧每一个调节螺栓,约60度。
然后,如果限扭装置在正常负载条件下能够打滑,请逐渐上紧螺母(RTL50到RTL89)或螺栓(RTL127到RTL178),直到限扭装置停止打滑。请务必保证均匀上紧(或松开)每个螺栓。
通过这样的几次测试,来找到适合设备的扭矩设定。下表显示有效旋转角度和扭矩设定的关系,供参考。

为了精确扭矩设定,推荐试运行一次限扭装置,比如,在当转速50~60rpm, 500转时,旋转调节螺母或螺栓45度。

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RTL (Torque Limiter)

◎Torque setting of th torque limiter is achieved by tightening or loosening the adjustment bolts and/or the adjustment nut. For torque adjustment of RTL50 through RTL89, an adjustment nut is provided, and for RTL127 through RTL178,adjustment bolts are provided. The torque setting can be made after mounting the torque limiter on the shaft. The process is:

◎ For RTL50 through RTL89,
First, rotate the adjustment nut tightly by hand so that the disk spring fits the plate.Then tentatively tighten the nut by about 60 degrees with a wrench.

◎ For RTL127 through RTL178,
First, rotate the nut for fixing the disk 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 RTL50~RTL89) or the bolts (for RTL127~RTL178) 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, thebelow chart shows the relation between the effective rotated angle and preset torque.For precise torque setting, run-in of the torque limiter is recommended, for example, 500 revolution at 50~ 60 rpm with a rotated angle of 45 degrees of the adjustment nut or the bolts.

旋转角度和扭矩设定
Rotated Angle and Setting Torque