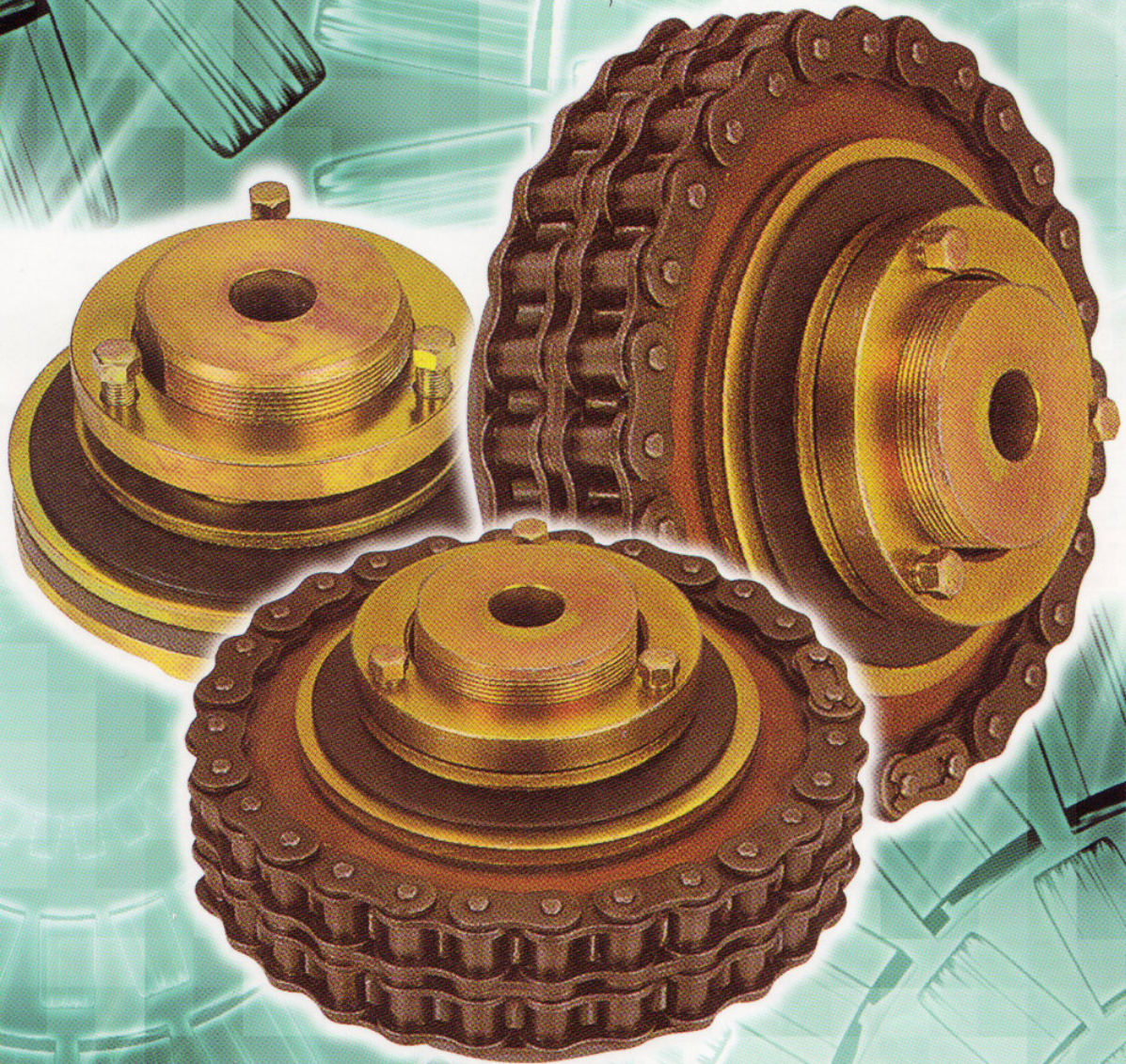


TORQUE LIMITER



TUNG SHIN TORQUE LIMITER

Prevent Machine Damage and Eliminate Costly Downtime

The TUNG SHIN Torque Limiter 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.

TUNG SHIN Torque Limiters prevent machine damage and eliminate costly downtime. TUNG SHIN Torque Limiters utilize spring-loaded friction surfaces for their operation, and slip torque is preset by adjusting of the spring force using the adjustment nut bolts.

TUNG SHIN Torque Limiters can be used with a sprocket, gear, sheave, or flange plate as the center member clamped between two friction facings.

The TUNG SHIN Torque Limiter ratings are realistic and consisten with optimum spring loads and face pressures that permit longer slip time, maintain reengagement. This is an important advantage over the shear-pin mechanism which serves only as a one-shot remedy.



TL200⁻¹/₋₂ TL250⁻¹/₋₂

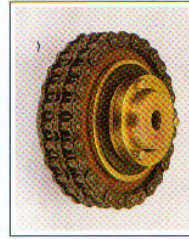
TL350⁻¹/₋₂

- Single nut adjustment
- lock washer to prevent the nut from loosening



TL500⁻¹/₋₂ TL700⁻¹/₋₂

- Three bolt adjustment
- Torque preset by three bolts (an adjustment nut to fix a pilot plate in place)



TL200^{-1C}/_{-2C} TO TL100^{-16C}/_{-24C}

The Torque Limiter Coupling combines overload slip protection with the ability to couple driving and driven shafts. It is an assembly consisting of a TUNG SHIN Torque Limiter and Roller Chain Coupling. This construction provides a dependable and easy-to-assemble flexible coupling.

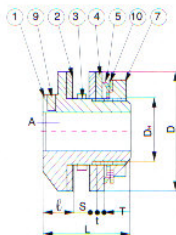
TL250-1C



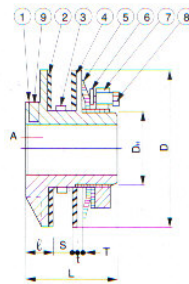
DIMENSIONS AND CAPACITY FOR TL200⁻¹/₋₂ TO TL100⁻¹⁶/₋₂₄

Dimensions in mm

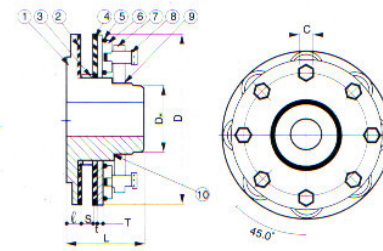
Model	Torque Range (kgf-m)	Plain Bore	Max. Bore	Bush. Length	O.D of Bush.	Bore for Center Member	D	DH	L	ℓ	T	t	S (max.)	A	C	Adjust. Nut	Adjust. Bolt	Set Screw	Weight (kg)
TL200-1	0.3-1	7	14	3.8	30 ^{-0.024}	30 ^{+0.03} ₀	50	24	29	6.5	2.6	2.5	7	-	38	M24 P1.0	-	-	0.2
TL200-2	0.7-2				30 ^{-0.049}														
TL250-1	0.7-2.8	10	22	4.5	41 ^{-0.010}	41 ^{+0.05} ₀	65	35	48	16	4.5	3.2	9	4	50	M35 P1.5	-	M5	0.5
TL250-2	1.4-5.5				41 ^{-0.045}														
TL350-1	2.0-7.6	17	25	6.5	49 ^{-0.025}	49 ^{+0.05} ₀	89	42	62	19	4.5	3.2	16	6	63	M42 P1.5	-	M6	1.2
TL350-2	3.5-15.2				49 ^{-0.065}														
TL500-1	4.8-21.4	20	42	6.5	74 ^{-0.05}	74 ^{+0.05} ₀	127	65	76	22	5.7	3.2	16	7	-	M65 P1.5	M8 P1.0 3pcs	M8	3
TL500-2	9-42.9				74 ^{-0.10}														
TL700-1	11.8-58.1	30	64	9.5	105 ^{-0.075}	105 ^{+0.05} ₀	178	95	98	24	7.7	3.2	29	8	-	M95 P1.5	M10 P1.25 3pcs	M10	6.7
TL700-2	22.8-110.6				105 ^{-0.125}														
TL100-16	40-130	30	72	12.5	135 ^{-0.085}	135 ^{+0.07} ₀	254	100	115	23	15	4.0	24	-	-	-	M18 P1.5 8pcs	-	21
TL100-24	60-190				135 ^{-0.125}														



TL-200, TL-250, TL-350



TL-500, TL-700



TL-100

Name of Parts

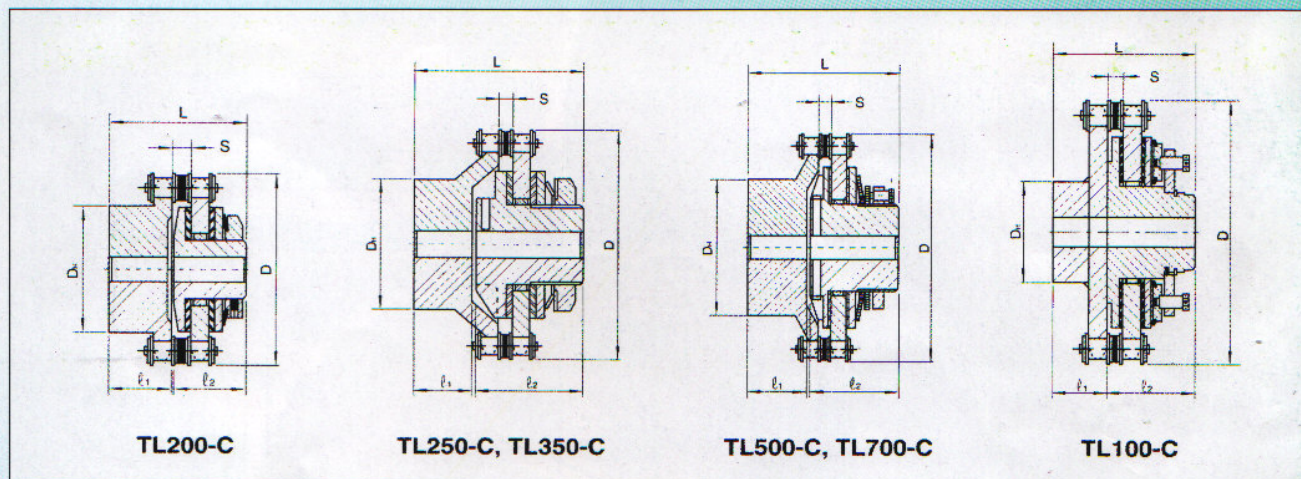
- | | | |
|-------------|-----------|-----------------|
| 1. Hub | 4. Plate | 7. Nut |
| 2. Friction | 5. Spring | 8. Bolt |
| 3. Bush | 6. Washer | 9. Set Screw |
| | | 10. Lock Washer |

TORQUE LIMITER COUPLING

DIMENSIONS AND CAPACITY FOR TL200^{-1C}/_{-2C} TO TL100^{-16C}/_{-24C}

Dimensions in mm

Model	Torque Range (kgf-m)	Max. Running Speed (r/min)	Plain Bore		Max. Bore		Sprocket	D	DH	L	ℓ ₁	ℓ ₂	S	Weight (kg)
			Coupling Half	TL Half	Coupling Half	TL Half								
TL200-1C	0.3~1	1200	8	7	31	14	RS 40-16T	76	50	55	24	29	7.5	1.0
TL200-2C	0.7~2.0													
TL250-1C	0.7~2.8	1000	13	10	38	22	RS 40-22T	102	56	76	25	48	7.4	2.0
TL250-2C	1.4~5.5													
TL350-1C	2.0~7.6	800	13	17	45	25	RS 50-24T	137	72	103	37	62	9.7	5.2
TL350-2C	3.5~15.2													
TL500-1C	4.8~21.4	500	18	20	65	42	RS 60-28T	188	105	120	40	76	11.6	12.3
TL500-2C	9.0~42.9													
TL700-1C	11.8~58.1	400	23	30	90	64	RS 80-28T	251	150	168	66	98	15.3	31.0
TL700-2C	22.8~110.6													
TL100-16C	40~130	300	33	30	95	72	RS 140-22T	355	137	189	71	115	26.2	66
TL100-24C	60~190													



TL200-C

TL250-C, TL350-C

TL500-C, TL700-C

TL100-C

Minimum Sprocket Teeth and Bushing Length

Size	Bore of Center Member (mm)	Sprocket Pitch and Number of Teeth																	
		3/8" -#35		1/2" -#40		5/8" -#50		3/4" -#60		1" -#80		1 1/4" -#100		1 1/2" -#120		1 3/4" -#140		2" -#160	
		Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)	Sprocket Min. Teeth	Bushing Length (mm)		
TL200	30	20	3.8	16	6														
TL250	41			20	4.5	17	6.5												
TL350	49			26	4.5	21	6.5	18	9.5	15	9.5								
TL500	74			35	4.5	29	6.5	25	9.5	19	9.5								
TL700	105			48	4.5	39	6.5	33	9.5	26	9.5	21	12.5	18	12.5				
TL100	135											29	12.5	24	15.5	22	19.5		

TORQUE SETTING

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 TL100 adjustment bolts are provided. The torque setting can be made after mounting the Torque Limiter on the shaft. The procedure is:

For TL200 to TL350

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 TL500 to TL100

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 TL100) 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 the 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.

SELECTION

1. 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.

2. Select a Torque Limiter which has enough torque range and bore range.

3. 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.

CENTER MEMBER

1. The center member should be machined on its rubbing surface to obtain the rated torque and be flat and parallel, and free from rust, scale and oil. Surface finish recommended is 3S to 6S (63 micro-inches finish).

If the center member is not in accordance with these specifications, the slip torque will be erratic.

2. Bore of the center member to be machined is shown in the table below. Also, minimum number of sprocket teeth to be used and bushing length to be chosen are listed in the table below.

ROTATED ANGLE AND SETTING TORQUE

