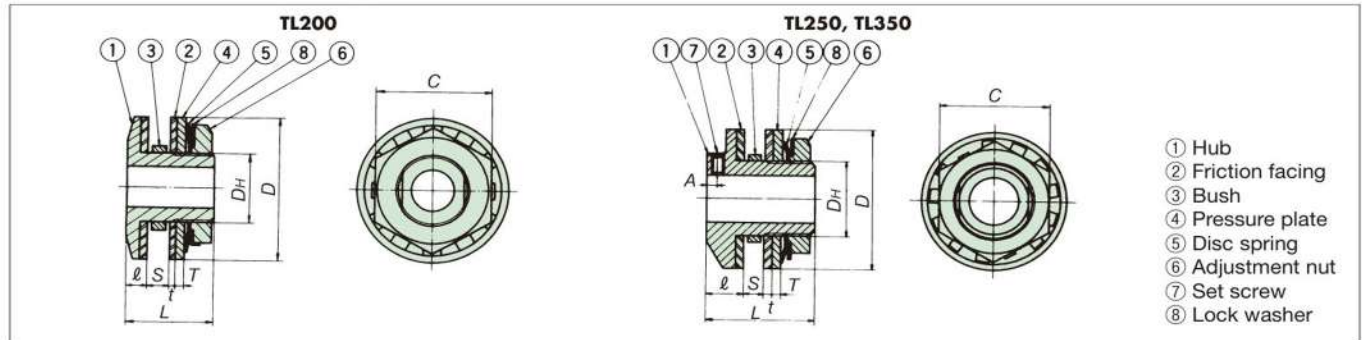


Torque limiters

Transmission Capacity and Dimensions



• TL200 does not have a tapped hole for the set screw.

Unit: mm

Model no.	Torque range N·m	Max. rpm	Pilot bore dia.	Min. bore dia.	Max. bore dia.	Bush length	Bush outer dia.	Center member bore dia.	Dimensions											Mass kg
									D	D _H	L	ℓ	T	t	S max.	A	C	Adjustment nut dia. x pitch	Set screw dia.	
TL200-1	2.9 to 9.8	1800	7	9	14	3.8 6.0	30	30 ^{+0.03 0}	50	24	29	6.5	2.6	2.5	7	—	38	M24×1.0	—	0.3
TL200-2	6.9 to 20																			
TL250-1	6.9 to 27		10	12	22	4.5 6.5	41	41 ^{+0.05 0}	65	35	48	16	4.5	3.2	9	4	50	M35×1.5	M5	0.5
TL250-2	14 to 54																			
TL350-1	20 to 74		17	18	25	4.5 6.5 9.5	49	49 ^{+0.05 0}	89	42	62	19	4.5	3.2	16	6	63	M42×1.5	M6	1.2
TL350-2	34 to 149																			

Note: 1. Pilot bore stock models are shown in bold, and non-bold models are made to order.

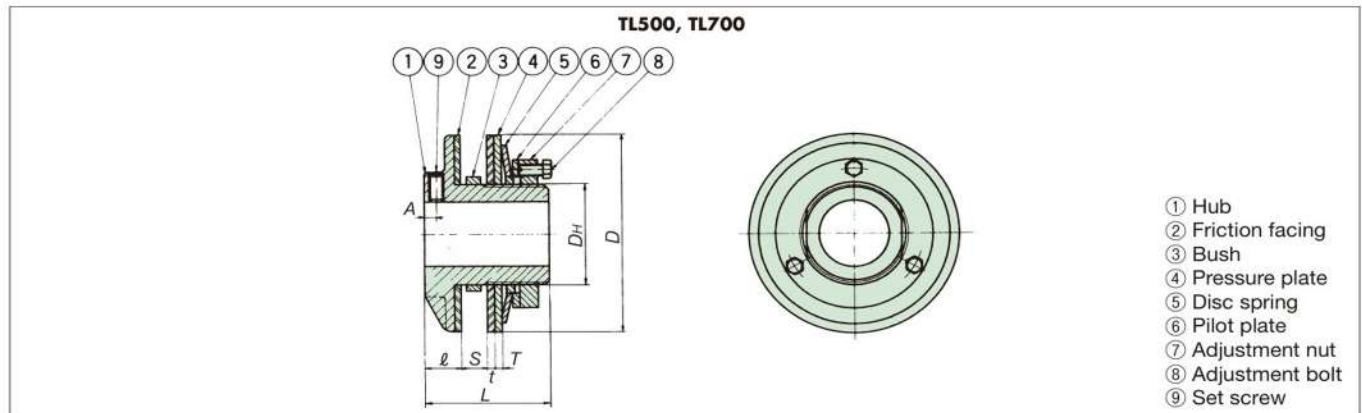
2. The set screw is included in the shipment.

3. The TL200 cannot be mounted to the shaft using a hexagon socket head set screw. Use a retaining ring or end plate.

4. The torque values above are values for continuous slipping torque, intended for protecting the equipment from overload.

5. Mass is based on the maximum bore diameter.

6. The slipping torque may decrease when the Torque Limiter is used at low speeds of 5 r/min or less. Contact representative for extremely low-speed applications.



Unit: mm

Model no.	Torque range N·m	Max. rpm	Pilot bore dia.	Min. bore dia.	Max. bore dia.	Bush length	Bush outer dia.	Center member bore dia.	Dimensions											Mass kg
									D	D _H	L	ℓ	T	t	S max.	A	Adjustment nut dia. x pitch	Adjustment bolt dia. x pitch	Set screw dia.	
TL500-1	47 to 210	1800	20	22	42	6.5 9.5	74	74 ^{+0.05 0}	127	65	76	22	6	3.2	16	7	M65×1.5	M8×1	M 8	3.1
TL500-2	88 to 420																			
TL700-1	116 to 569		30	32	64	9.5 12.5	105	105 ^{+0.05 0}	178	95	98	24	8	3.2	29	8	M95×1.5	M10×1.25	M10	7.0
TL700-2	223 to 1080																			

Note: 1. Pilot bore stock models are shown in bold, and non-bold models are made to order.

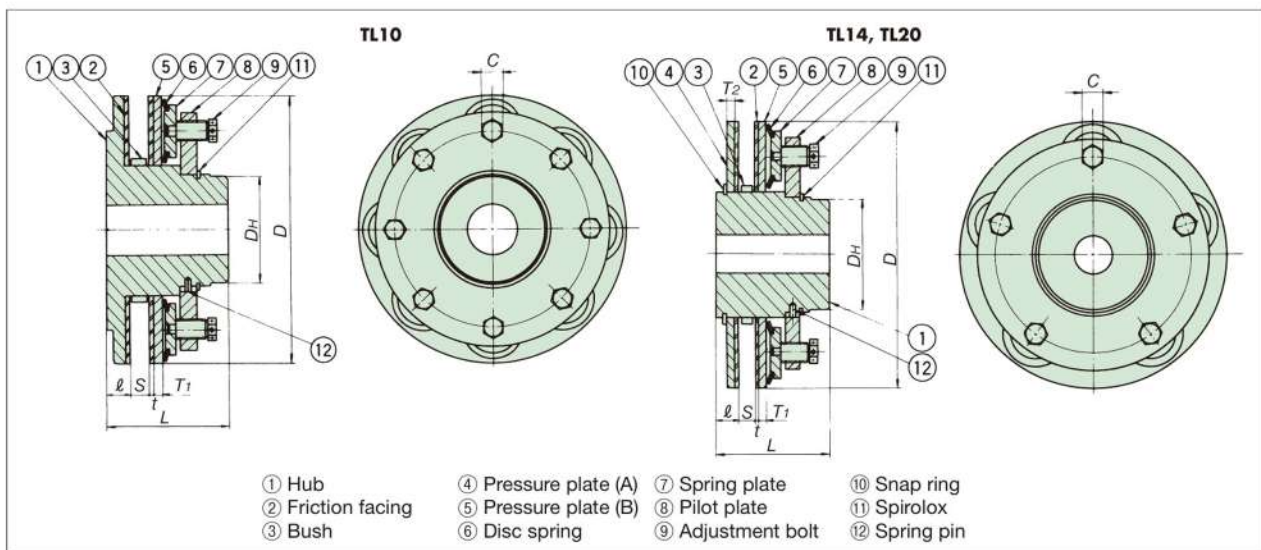
2. The set screw is included in the shipment.

3. The torque values above are values for continuous slipping torque, intended for protecting the equipment from overload.

4. Mass is based on the maximum bore diameter.

5. The slipping torque may decrease when the Torque Limiter is used at low speeds of 5 r/min or less. Contact representative for extremely low-speed applications.

Torque limiters



Note: The TL20 has six adjustment bolts. Refer to the standard drawing.

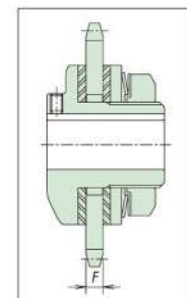
Unit: mm

Model no.	Torque range N·m	Max. rpm	Pilot bore dia.	Min. bore dia.	Max. bore dia.	Bush length	Bush outer dia.	Center member bore dia.	Dimensions										Mass kg
									D	D ⁺	L	ℓ	T ₁	T ₂	t	S max.	C	Adjustment bolt dia. x pitch	
TL10-16	392 to 1270	1000	30	32	72	12.5	135	135 ^{+0.07} ₀	254	100	115	23	8.5	—	4.0	24	19	M18x1.5	19
TL10-24	588 to 1860					15.5													
TL14-10	882 to 2660		40	42	100	15.5	183	183 ^{+0.07} ₀	356	145	150	31	13	13	4.0	29	27	M26x1.5	44
TL14-15	1960 to 3920					19.5													
TL20-6	2450 to 4900		50	52	130	23.5	226	226 ^{+0.07} ₀	508	185	175	36	15	18	4.0	31	36	M32x1.5	99
TL20-12	4610 to 9310					19.5													

Torque Limiter with Sprocket

■ Assembled with sprockets

Standardized with sprockets for sizes TL200 to TL700.

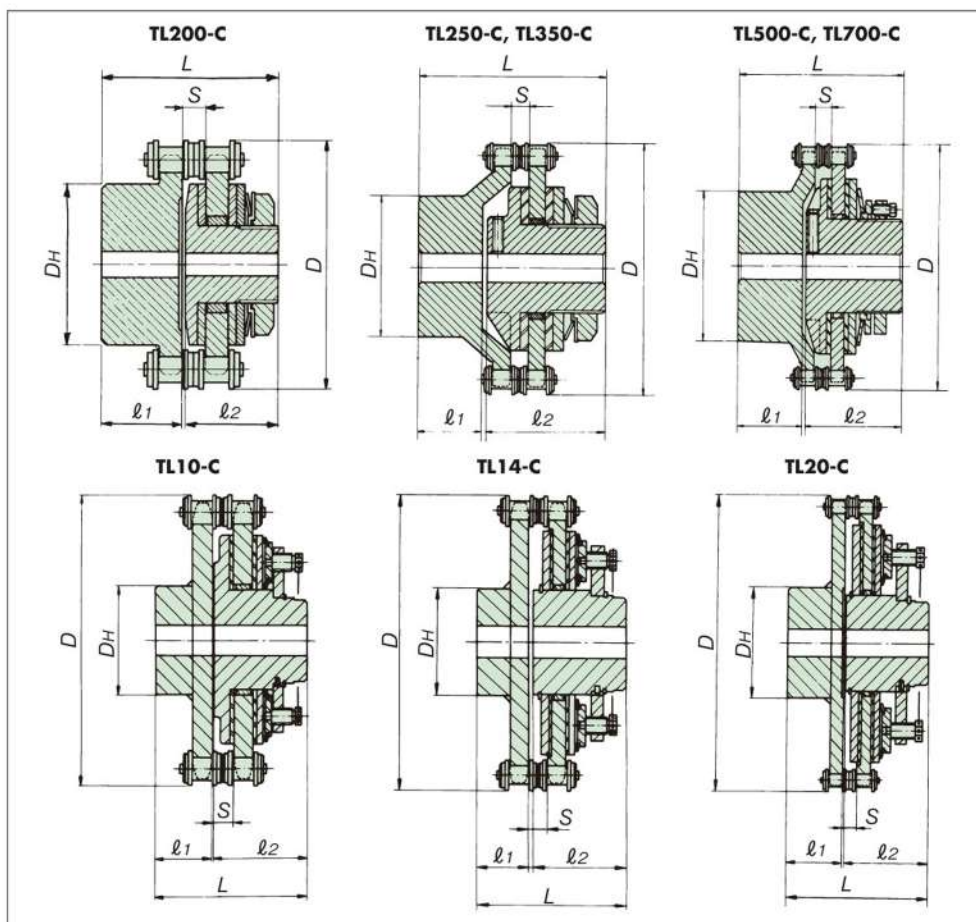


Sprocket and Bore Finishing Dimensions

Torque Limiter size	Finished bore dia. (mm) TL200 TH□□JD0 TL250 to 700 TH□□JD1	Sprocket					Mass (kg)
		Type	F (mm)	Bush len. (mm)	Number of teeth (stock models)	Number of teeth (MTO models)	
TL200	9,10,12,14	RS35	4.3 ⁰ _{-0.25}	3.8	20,21,22,23,24,25,26,28,30	—	0.4
		RS40	7 ⁰ _{-0.35}	6.0	16,17,18,19,20,21,22,24,25,26	—	0.5
TL250	12,14,15,16,17, 18,19,20,22	RS40	7 ⁰ _{-0.35}	6.5	22,23,24,25,26,27,28,30	21,32	0.9
		RS50	7 ⁰ _{-0.25}	6.5	18,19,20,21,22,23,24,25,26,27,28	17	1.0
TL350	18,19,20,22,24,25	RS40	7 ⁰ _{-0.35}	6.5	26,27,28,30,32,34,35,36,38	40,42,45	1.8
		RS50	7 ⁰ _{-0.25}	6.5	22,23,24,25,26,27,28,30,32	21,34,35,36	1.9
		RS60	10 ⁰ _{-0.30}	9.5	—	18,19,20,21,22,23,24,25,26,27,28,30	2.1
TL500	22,24,25,28,30,32, 34,35,36,38,40,42	RS50	7 ⁰ _{-0.25}	6.5	30,32,34,35,36,38,40,42,45	48,50	4.6
		RS60	10 ⁰ _{-0.30}	9.5	25,26,27,28,30,32,34,35,36,38	40	5.0
		RS80	13 ⁰ _{-0.30}	9.5	—	19,20,21,22,23,24,25,26,27,28,30	5.5
TL700	32,34,35,36,38,40, 42,45,46,48,50,55, 60	RS60	10 ⁰ _{-0.30}	9.5	35,36,38,40,42,45,48,50,54	—	12
		RS80	13 ⁰ _{-0.30}	12.5	26,27,28,30,32,34,35,36,38	—	12
		RS100	16.5 ⁰ _{-0.30}	12.5	—	21,22,23,24,25,26,27,28,30	14

Torque Limiter Coupling

Torque Limiter coupling is a flexible coupling that uses a Torque Limiter and special sprockets connected by two rows of RS roller chains. The coupling is easy to center and simple to operate. In addition, the Torque Limiter acts as an automatic safety device to protect the machine in the event of overload.



Unit: mm

Model no.	Torque range N·m	Max. rpm*	Pilot bore dia.		Min. bore dia.		Max. bore dia.		Sprocket	Dimensions						Mass kg
			Coupling side	Torque Limiter side	Coupling side	Torque Limiter side	Coupling side	Torque Limiter side		D	D _H	L	l ₁	l ₂	S	
TL200-1C	2.9 to 9.8	1200	8	7	10	9	31	14	RS 40-16T	76	50	55	24	29	7.5	1.0
TL200-2C	6.9 to 20															
TL250-1C	6.9 to 27	1000	13	10	15	12	38	22	RS 40-22T	102	56	76	25	48	7.4	2.0
TL250-2C	14 to 54															
TL350-1C	20 to 74	800	13	17	15	18	45	25	RS 50-24T	137	72	103	37	62	9.7	5.0
TL350-2C	34 to 149															
TL500-1C	47 to 210	500	18	20	20	22	65	42	RS 60-28T	188	105	120	40	76	11.6	12
TL500-2C	88 to 420															
TL700-1C	116 to 569	400	23	30	25	32	90	64	RS 80-28T	251	150	168	66	98	15.3	28
TL700-2C	223 to 1080															
TL10-16C	392 to 1270	300	33	30	35	32	95	72	RS140-22T	355	137	189	71	115	26.2	60
TL10-24C	588 to 1860															
TL14-10C	882 to 2660	200	38	40	40	42	118	100	RS160-26T	470	167	235	80	150	30.1	125
TL14-15C	1960 to 3920															
TL20-6C	2450 to 4900	140	43	50	45	52	150	130	RS160-36T	631	237	300	120	175	30.1	251
TL20-12C	4610 to 9310															

Note: 1. Pilot bore stock models are shown in bold, and non-bold models are made to order.

2. TL200 to TL700 sizes with hardened teeth sprockets can be used up to 1800 r/min. TL10 to TL20 sizes can be used up to 800 r/min.

3. Contact representative for sizes above TL20-12C.

4. Mass is based on the maximum bore diameter.

Torque limiters

Torque Limiter model no.	Sprocket bore dia. (center member bore dia.)	Min. number of sprocket teeth																	
		RS35		RS40		RS50		RS60		RS80		RS100		RS120		RS140		RS160	
		Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length	Min. number of teeth	Bush length
TL200	30 $^{+0.03}_0$	△ 20	3.8	16	6														
TL250	41 $^{+0.05}_0$			20	6.5	17	6.5												
TL350	49 $^{+0.05}_0$			26	6.5	21	6.5	18	9.5	15	9.5								
TL500	74 $^{+0.05}_0$					△ 29 (30)	6.5	25	9.5	19	9.5								
TL700	105 $^{+0.05}_0$							△ 33 (35)	9.5	26	12.5	21	12.5	18	12.5				
TL10	135 $^{+0.07}_0$											△ 29 (30)	12.5	24	15.5	△ 22	19.5		
TL14	183 $^{+0.07}_0$											△ 39 (40)	15.5	△ 33 (35)	15.5	△ 29	19.5	△ 26	23.5
TL20	226 $^{+0.07}_0$											△ 54	15.5	△ 46 (60)	15.5	△ 40	19.5	△ 35	23.5

Note: 1. Those marked with "△" are not standard type A sprockets. When using a standard stock sprocket, use the number of teeth in parenthesis ().
2. Bush length is for reference.

Selection

When using the Torque Limiter with human transportation or lifting devices, take the necessary precautions with equipment to avoid serious injury or death from falling objects.

- To set the Torque Limiter slipping torque, consider the strength and load of the machine, as well as other relevant information. The Torque Limiter should be set at the point where it should not go any higher. If the limit value is not clear, calculate the torque based on the rated output power of the motor and the rpm where the torque limiter is installed, and then multiply the result by 1.5 to 2.0 times. This is the Torque Limiter slipping torque.
- When selecting a Torque Limiter, make sure that the slipping torque falls within its rated torque range.
- Check the dimensions table to make sure that the Torque Limiter maximum bore is greater than the mounting shaft bore. In cases where the mounting shaft bore exceeds the limit, it is recommended to use a Torque Limiter one size larger.
- Determine the appropriate bushing length based on the thickness of the center member in the Torque Limiter. Refer to the dimensions tables for the specified bushing length. Select one or a combination of bushings from the table, making sure the total length does not exceed the thickness of the center member. Select the longest combination within that thickness limit.

Torque Setting

Set the Torque Limiter slipping torque by tightening the adjustment nuts or bolts.

- After mounting the Torque Limiter onto the equipment, perform several test runs to find the optimal position by gradually tightening the adjustment nuts/bolts.
To determine the slipping torque for a given tightening amount of the adjustment nut/bolt, use the Tightening Amount–Torque Correlation Charts below. However, the torque may vary depending on the condition of the friction surfaces and other factors. The chart is a guide only, and the best way to find the correct tightening amount for your machine is to perform a test run with the adjustment nut/bolt slightly loose and then gradually tighten it to find the optimal position.
If a stable torque is required, tighten the adjustment nut/bolt by hand until it is fully seated, then tighten an additional 60 degrees with a wrench. Then allow the nut/bolt to slip approximately 500 turns. If the speed is high, divide the 500 turns into several intervals.
- Torque Limiters can be supplied with a center member and pre-set torque, but the shaft bore must be finished.

Tightening Amount–Torque Correlation Charts

Zero point (0) is the state where the adjusting nut or bolts are hand-tightened and the disc springs are fixed.

