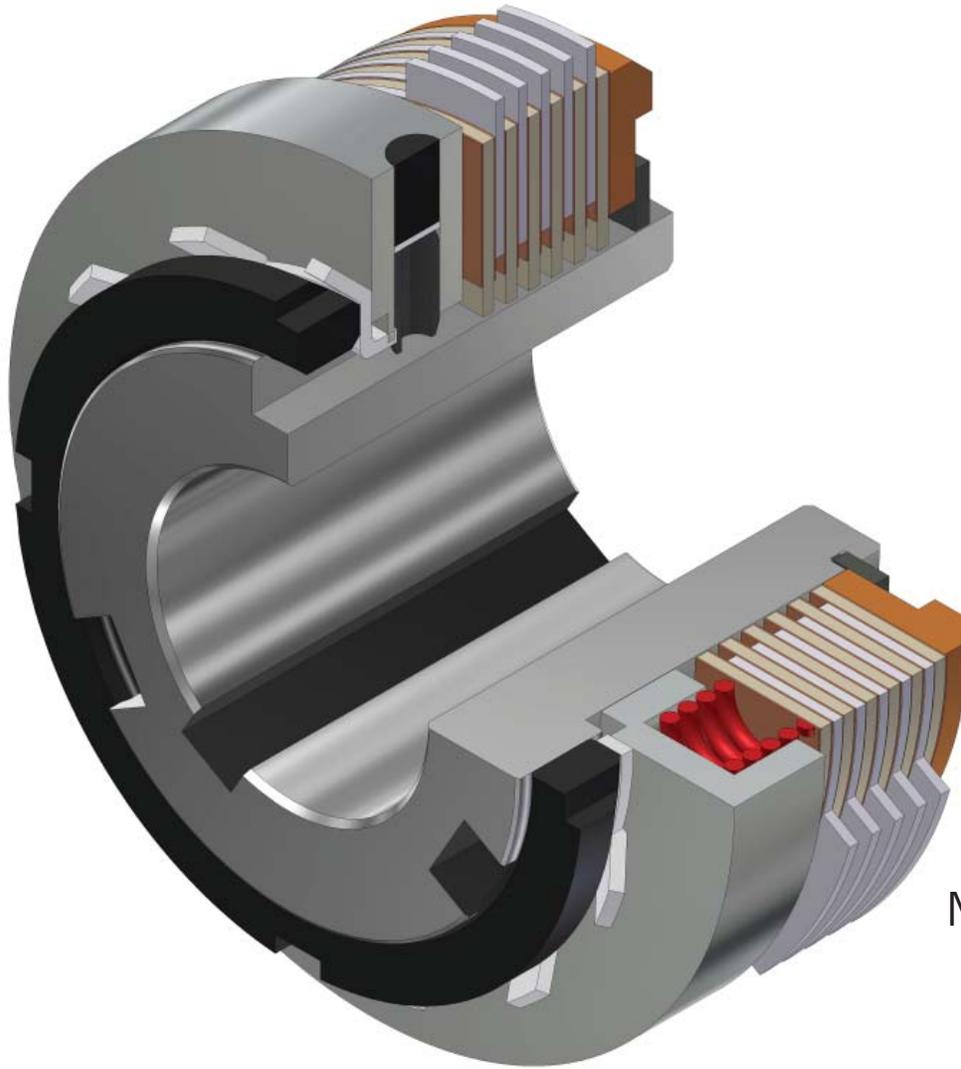


# Multiple Disc Torque Limiters

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Models TL1  
TL2 & TL3

## THE MAXITORQ® ADVANTAGE

- High torque in smallest space
- Sustains torque level
- Durable
- Predictable dynamic and static torque
- Easily adjustable over a wide range
- Superior adjustment retention



**Type 1:** Highly versatile torque limiting device compatible with our standard internal flange type driving cup.  
\*Drive cup is sold separately.



**Type 2:** Cut-off coupling designed to join two shafts. Transmits torque from one shaft to the other.



**Type 3:** Sprocket drive typically mounts on motor shaft as an integral part of the drive mechanism.

## Maxitorq® Multiple Disc Torque Limiters

The Carlyle Johnson Torque Limiter provides protection against overloads while sustaining torque so that machine cut-off and restart is not required. Unlike our overload release clutch which automatically cuts the torque from full to zero, the Torque Limiter acts as a torsion shock absorber to permit “slip” if torque exceeds an adjustable pre-set level.

Depending on unit size, the Limiters are adjustable over a wide torque range from 1 - 1500 lb. ft. Small sizes (from 2-3/16” to 8 -5/8” O.D.), and high torque potential make them the best possible choice for machine tools, conveyor systems, off-highway mobile equipment or any application where obstructions can cause overloads or where production is sensitive to overtensioning – as in textile or paper mills.

## Easily Pre-adjusted to meet Critical Torque Limits

Carlyle Johnson Torque Limiters can be pre-set to transmit torque constantly regardless of the speed of the drive mechanism. An adjusting nut on the end of the hub regulates spring pressure against a multiple steel on bronze friction disc assembly. When overtensioning or a jam-up occurs, the clutch will slip but the torque level is relatively sustained. The Torque Limiter continues to drive the machine at the pre-set torque level. As a result, no time is lost in replacing a broken gear box, a twisted shaft or other machine components.

Adjustment is easy and fast. Begin with a light setting and gradually tighten the adjusting nut with a spanner wrench until the increased spring pressure drives the clutch without slipping. The torque transmitted by the clutch at the desired setting will remain essentially constant, regardless of the rotating speed. The spacing or “gap” (see diagram on page 3) between the pressure ring and the facing bronze disc is a measure of the torque. Note relationship of the gap to torque expressed in the slope intercept equation for each Torque Limiter.

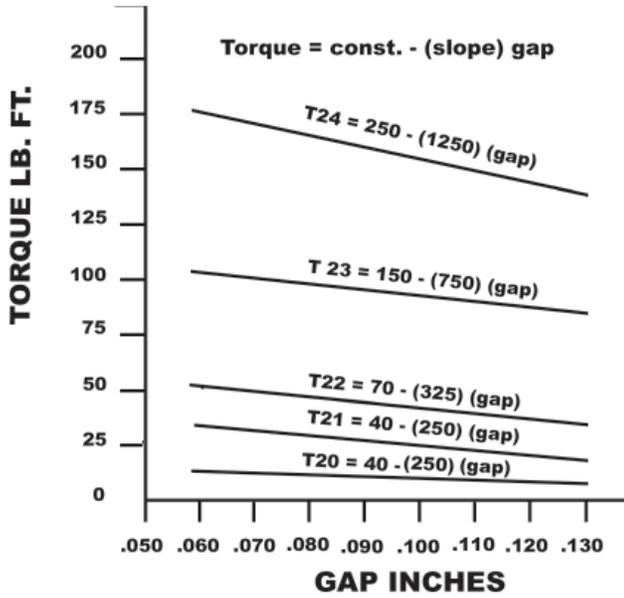
**An adjusting nut on the end of the hub regulates spring pressure against a multiple steel-on-bronze friction disc assembly.**



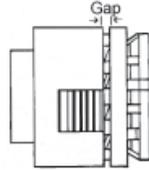
Carlyle Johnson Maxitorq® steel on bronze friction discs are considerably more predictable in dynamic and static torque properties than more commonly used fiber discs. They also last longer. Carlyle Johnson Maxitorq® coil springs maintain torque levels longer than Belleville type springs and eliminate frequent torque adjustment.

Grease seal protection is provided in Carlyle Johnson Type 3 Torque Limiters. It can also be supplied for Type 1. The Torque Limiter is solidly packed with grease and totally enclosed and sealed. A wide variety of greases are available to provide the desired torque characteristics. The grease pack provides a closer variation between breakaway torque and sustained torque, and contributes to smooth, trouble-free operation and long life.

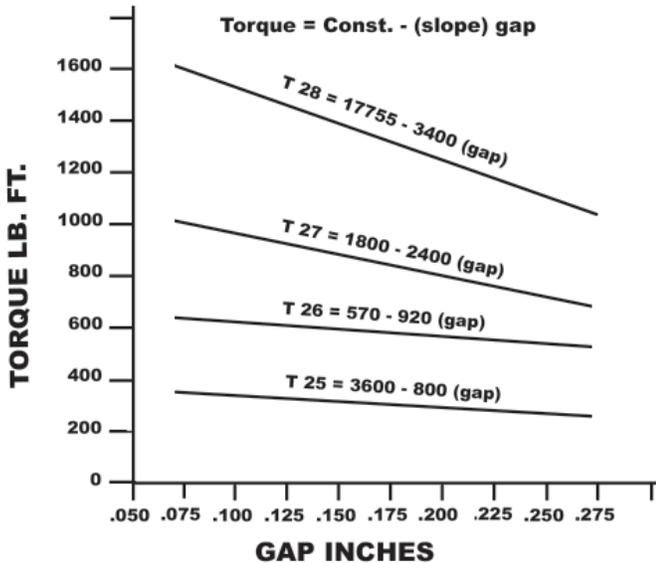
## Torque = Const.-(Slope) Gap



Spacing or "gap" between pressure ring and facing bronze disc is a measure of torque.



## Torque = Const.-(Slope) Gap

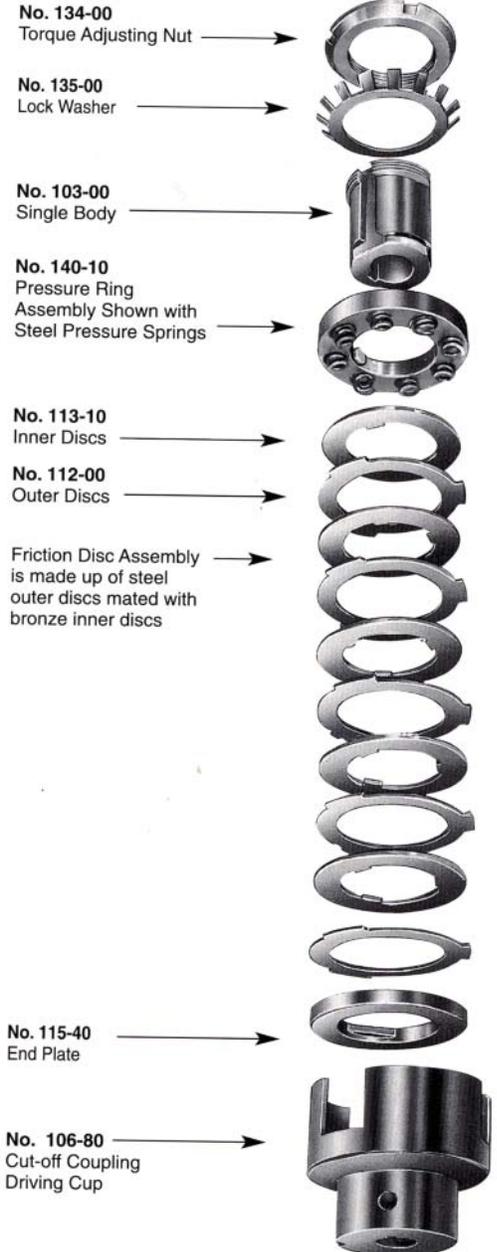


Multiple coil springs maintain constant pressure and require very infrequent adjustment. They also provide long service life.

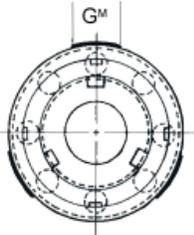
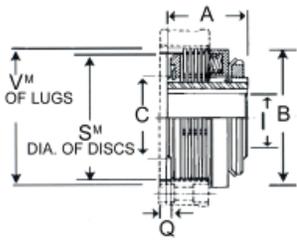


## Replacement Parts

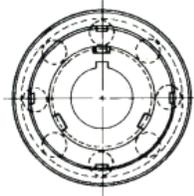
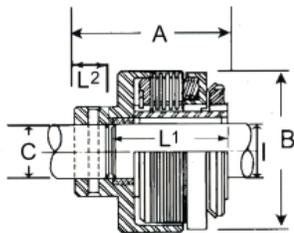
Every Maxitorq® clutch, brake, or torque limiter is designed to permit rapid, easy replacement of normal wear parts, without the use of special tools. Parts may be obtained for any Maxitorq® product by specifying the part number, clutch size, and serial number.



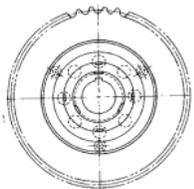
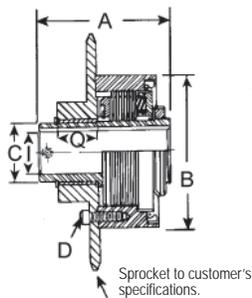
**NOTE:** Maxitorq® Torque Limiters as furnished can run dry or in oil. We specifically recommend Series A oils. If high gear loading or worm and wheels are adjacent to the clutch and indicate extreme pressure additives that would reduce clutch torque, please contact the factory for recommendations.



Model	Torque Adjustment Range lb. ft.	I STD Bores		Keyway	A	B	C	Q	G <sup>m</sup> Driving Lugs		S <sup>m</sup>	V <sup>m</sup>
		+001	-000						No.	Width		
TL10020	0-10	1/2	5/8	1/8 x 1/16	1.250	2.188	1.500	0.188	3	.615	1.984	2.188
TL10021	10-25	3/4	7/8	3/16 x 3/32	1.625	2.188	1.250	0.125	3	.615	1.984	2.188
TL10022	25-50	1	1 1/8	3/16 x 3/32	2.125	2.625	1.594	0.125	3	.740	2.478	2.750
TL10023	50-100	1 1/4	1 3/8	1/4 x 1/8	2.125	3.500	2.063	0.188	3	.990	3.234	3.563
TL10024	100-175	1 1/2	1 5/8	5/16 x 5/32	2.125	4.000	2.344	0.188	3	.990	3.734	4.063
TL10025	175-300	1 3/4	1 7/8	3/8 x 3/16	2.750	4.500	2.688	0.188	8	.740	4.484	4.875
TL10026	300-500	2	2 1/4	7/16 x 7/32	3.250	5.500	3.250	0.188	12	.615	5.484	5.875
TL10027	500-1000	2 1/2	2 3/4	9/16 x 9/32	4.000	7.000	5.125	0.063	12	.740	6.984	7.500
TL10028	1000-1500	2 3/4	3	9/16 x 9/32	4.625	8.000	6.500	0.190	12	.740	7.984	8.500



Model	Torque Adjustment Range lb. ft.	I STD Bores		Keyway	A	B	C Hub Bores		L1	L2
		+001	-000				No.	Max		
TL20020	0-10	1/2	5/8	1/8 x 1/16	2.125	2.192	.375	.750	1.625	.438
TL20021	10-25	3/4	7/8	3/16 x 3/32	2.625	2.192	.500	1.000	2.000	.563
TL20022	25-50	1	1 1/8	3/16 x 1/16	3.375	2.757	.625	1.250	2.688	.563
TL20023	50-100	1 1/4	1 3/8	1/4 x 1/8	3.500	3.569	.875	1.500	2.668	.688
TL20024	100-175	1 1/2	1 5/8	5/16 x 5/32	3.750	3.767	1.000	1.750	2.813	.813
TL20025	175-300	1 3/4	1 7/8	3/8 x 3/16	4.625	4.882	1.250	2.000	3.563	.938
TL20026	300-500	2	2 1/4	7/16 x 7/32	5.625	5.882	1.750	2.500	4.188	1.375
TL20027	500-1000	2 1/2	2 3/4	9/16 x 9/32	7.500	7.507	2.000	3.250	5.375	2.000
TL20028	1000-1500	2 3/4	3	9/16 x 9/32	8.500	8.507	2.000	3.500	6.125	2.250



Model	Torque Adjustment Range lb. ft.	I STD Bores		Keyway Bores	A	B	C	NO./Screw Size	B.C. D	Q Max	Sprocket Min. Pitch Dia.
		+001	-000								
TL30020	0-10	1/2	5/8	1/8 x 1/2	2.442	3.125	1.000	3-1/4	2 9/16	.750	4.000
TL30021	10-25	3/4	7/8	3/16 x 3/32	3.000	3.125	1.250	3-1/4	2 9/16	1.000	4.250
TL30022	25-50	1	1 1/8	3/16 x 3/32	4.000	3.625	1.625	3-1/4	3 1/16	1.250	4.750
TL30023	50-100	1 1/4	1 3/8	1/4 x 1/8	4.000	4.625	1.750	3-15/16	3 5/16	1.250	5.625
TL30024	100-175	1 1/2	1 5/8	5/16 x 5/32	4.125	5.250	2.000	3-15/16	4 7/16	1.250	6.250
TL30025	175-300	1 3/4	1 7/8	3/8 x 3/16	4.625	6.125	2.313	4-3/8	5 5/16	1.250	7.500
TL30026	300-500	2	2 1/4	7/16 x 7/32	5.750	7.125	2.813	6-3/8	6 1/4	1.750	8.500
TL30027	500-1000	2 1/2	2 3/4	9/16 x 9/32	7.125	9.125	4.000	6-1/2	8 1/16	2.000	10.000
TL30028	1000-1500	2 3/4	3	9/16 x 9/32	7.500	10.125	4.500	6-1/2	9 1/16	2.000	11.250