

Torque Limiter

Maintenance and Adjustment



TORQUE LIMITERS TL2 SERIES MAINTENANCE REPAIR MANUAL

Maxitorq® Torque Limiters

Maxitorq® Torque Limiters come in three types:

Type 1: Highly versatile two-element torque limiting device consisting of torque limiter and ring driving cup.

Type 2: Cut-off Coupling designed to join two shafts, transmits torque from one shaft to another.

Type 3; Sprocket Drive which typically mounts on the motor shaft as an integral part of the drive mechanism.

Depending on the unit size, Torque Limiters are adjustable over a wide torque range from 1 ft. lb to 1500 ft. lb. They 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. Adjustment is easy and fast. The following directions will walk you through adjusting your Torque Limiter.

If replacement parts are needed or if you require more assistance, please call us at 806-643-1530

Preventive Maintenance

MAXITORQ® TORQUE LIMITERS need periodic adjustment to maintain torque settings. After extended or severe use, there may be an accumulation of worn material which could compromise transmission of torque. Discs may be washed in a solvent to remove residual material and restore clutch performance. Disc replacement is not necessary until abrasive coating is worn completely off one or more discs.

Replacement of Discs & Springs

We recommend always replacing the discs as a set. We recommend purchasing a complete disc and spring set to restore your torque limiter to like-new performance.

Tools Required

- 1 Spanner wrench *Figure #1*
- 2 Arbor with key *Figure #1*
- 3 Clamping device or chuck
- 4 Vernier Caliper or feeler gage
- 5 Ring Cup bar fixture *Figure #2*
- 6 Torque measuring device (optional)

Figure #1



Figure #2



Disassembly of the Torque Limiter

- 1 Remove the Torque Limiter from the machine.
- 2 Remove the cup from the Torque Limiter. See figure #3
- 3 Place the keyed shaft Arbor in a chuck and secure it.
- 4 Slide the Torque Limiter over the keyed shaft with the torque adjusting nut facing out.
- 5 Using a hammer and punch, straighten out the lock washer ears NO. 135-00 to allow the torque adjusting nut No. 134-00 to be loosened.
- 6 Loosen the torque adjusting locking nut No. 134-00 with the spanner wrench until it is finger tight.
- 7 Remove the torque limiter from the Arbor and place it on the work bench.
- 8 Remove the torque adjusting nut No. 134-00 and lock washer No. 134-00.
- 9 The assembly can now be disassembled. Pressure ring assembly NO 140-10, inner and outer disc (No.113-00 & 112-00), end plate No 115-40, and retaining ring No. 130 000, and end plate.

Figure #5

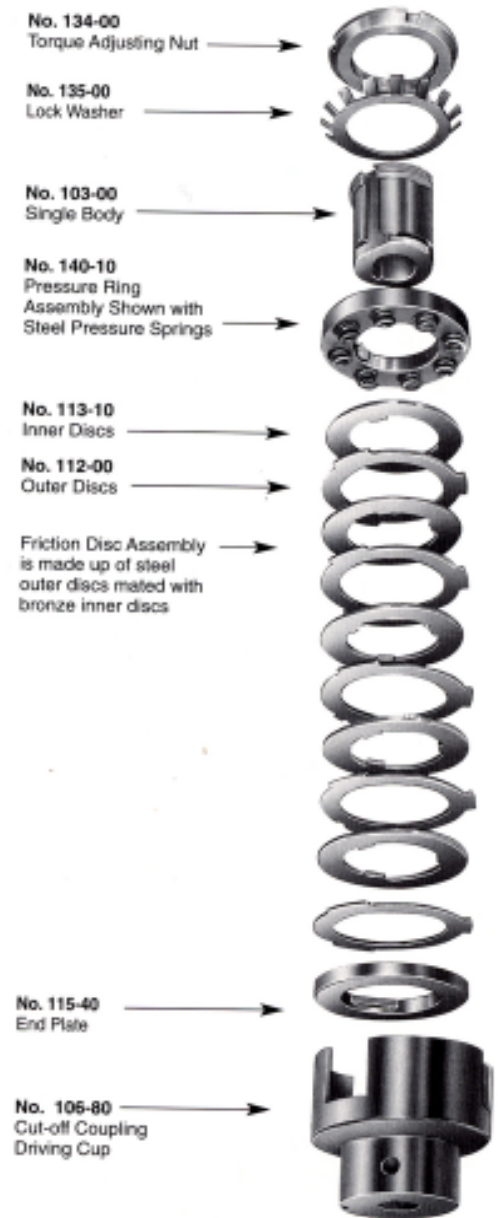
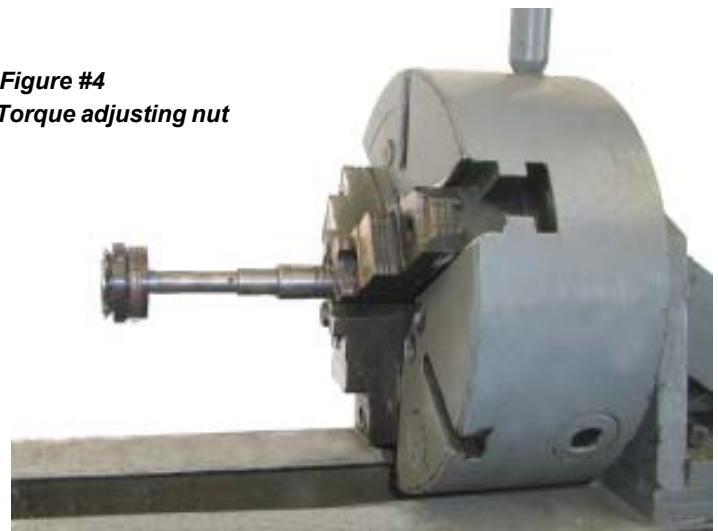


Figure #3



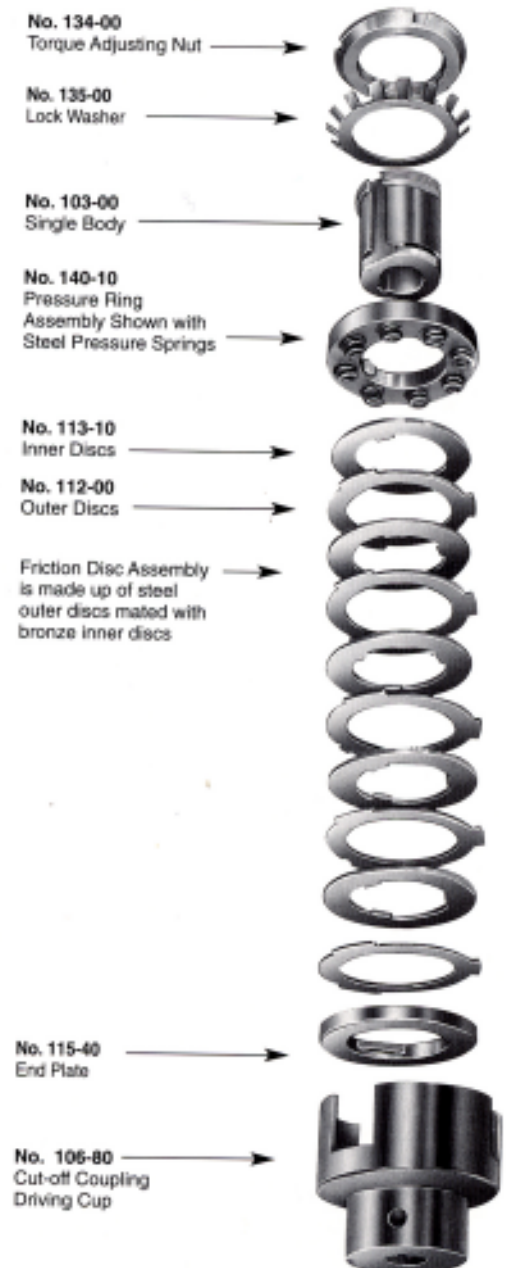
Figure #4
Torque adjusting nut



Re-assembly of the Torque Limiter

- 1 Ensure everything is clean and dry prior to re-assembling.
- 2 Place the body TL10022-103-150 on a flat surface with thread side down.
- 3 Slide the pressure ring assembly TL10022-140-999 onto the body with spring side cavities up.
- 4 Place the springs FEA0625-478-000 into the pressure ring cavities TL10022-104-999.
- 5 Slide the inner disc MMS0022-113-100 next over the body, The first inner disc will rest on the springs protruding from the pressure plate.
- 6 Slide the outer disc MMS0022-112-000 next over the body.
- 7 Repeat steps 5-6 until the last disc is placed.
- 8 Place the end plate TL10022-115-000 so that the counter bore side faces up, then slide it on the body.
- 9 Place the retaining ring TL10022-130-000 onto the body.
- 10 Turn the assembly over and place it on a flat service, thread side up.
- 11 Slide the bearing lock washer TL10022-135-000 over the body, fingers pointing up.
- 12 Screw on the bearing lock nut TL 100-135-000 over the body, until it is hand tight.
- 13 See drawing c3400 for more detail of the assembly.

Figure #5



Setting the torque Procedure

1. Place the arbor (1) in the clamping device (2) and restrain it from rotating.
2. Slide the ring cup bar fixture (3) over the shaft, fingers facing out.
3. Slide the torque limiter (4) over the arbor with the adjusting nut facing out.
See Figure #6
4. Make sure all the outer discs tabs are aligned and slide the Ring cup bar fixture over the discs.
5. Tighten the adjusting nut with the spanner wrench, turn the wrench in a clockwise motion.
6. Measure the gap between the pressure ring and the facing bronze disc using either a feeler gauge or a vernier caliper.
7. Go to Figure #7 and calculate the torque (Example: $T_{22} = 70 - 335 \times \text{gap}$ (actual measurement)).
8. Repeat steps 5-7 until the desired torque requirement is reached.
9. Once the desired torque is reached, use a hammer and a punch, bend over one of the lock washer ears See Figure #8
10. The Torque Limiter is now ready to be installed for your operation.

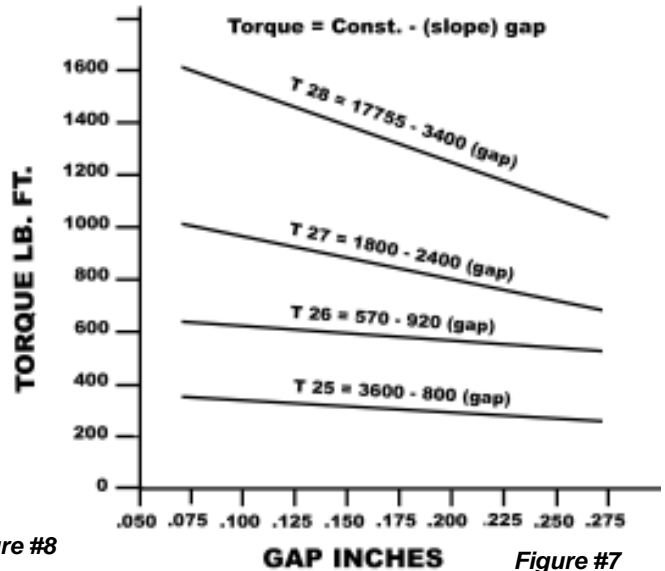
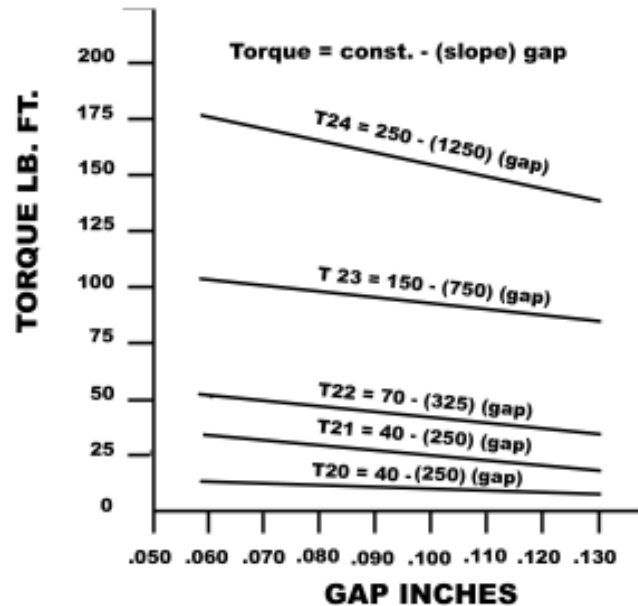
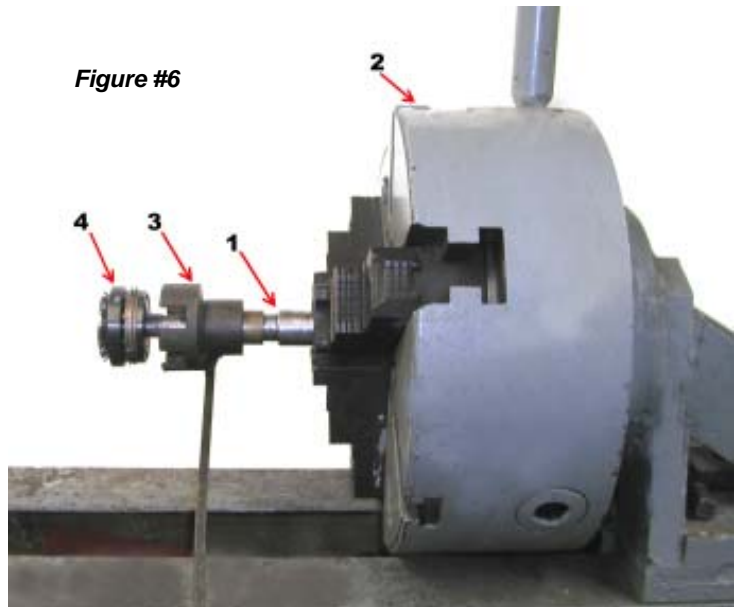


Figure #8

Figure #7

Torque Verification Procedure

- 1 Make sure all the outer discs tabs are aligned and slide the Ring cup bar fixture over the discs.
- 2 Hook up the scale to the torque limiter fixture arm the 1 ft. mark.
- 3 Pull the handle in a clockwise motion until the scale reads the desired pounds. See Figure #9
- 4 Adjust tighten the torque adjusting nut with a spanner wrench to achieve the required torque.
- 5 Using a hammer and a punch, bend over one of the lock washer ears. See Figure #8 previous page.
- 6 The torque limiter is now ready to be installed for your operation.

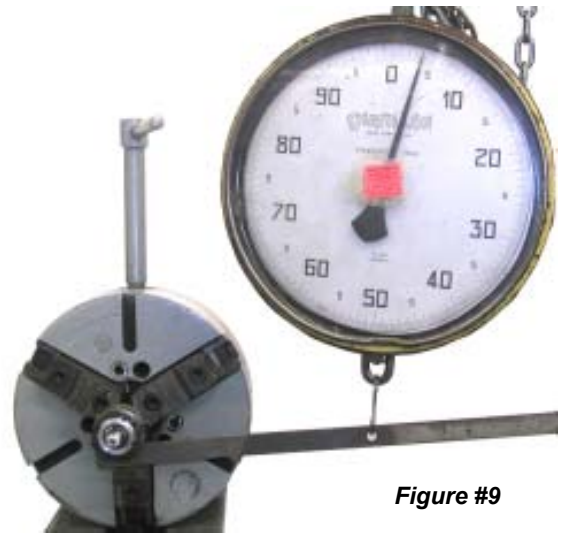


Figure #9



If you have any problems or questions please call one of our sales staff for assistance.



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