



# Torque Limiter Installation & Maintenance Instructions For 250A Thru 700A

## Power Transmission Solutions

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## FORM

PN 602216, PS-740-0001

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### ⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

### ⚠ CAUTION

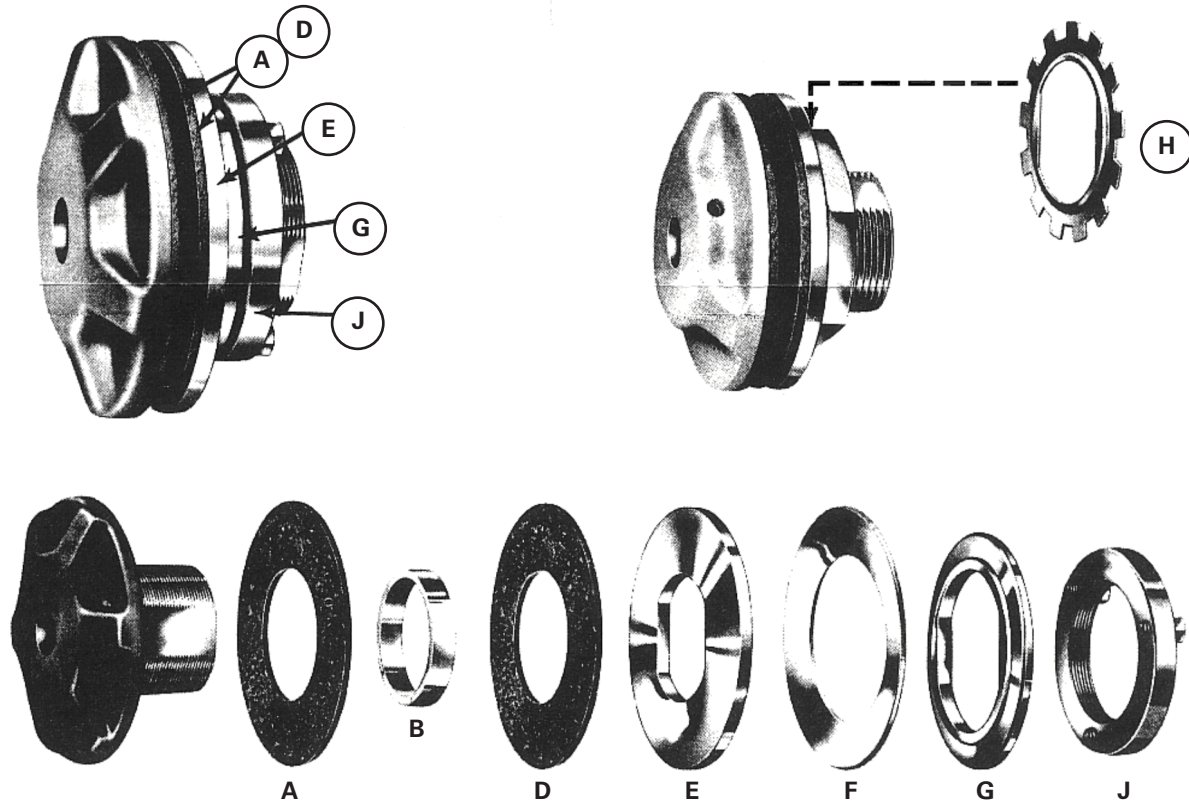
- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.
- All electrical work should be performed by qualified personnel and compliant with local and national electrical codes.

## 1. GENERAL

Before assembly, the pressure plates, facings and center member (sprocket, sheave, plate, etc.) should be free of oil, grease, dirt and rust. The center member should have a 125 micro-inch finish in the bore and a 63 micro-inch finish on the area where the friction facings rub in order to obtain maximum rated capacity and optimum life from the Torque Limiter.

## 2. ASSEMBLY

Refer to the appropriate sketch (see below) and assemble on the torque limiter hub the following: (A) Friction facing (B) Bushing (C) Center member (not shown) (D) Friction facing (E) Pressure plate (F) Spring(s) (G) Pilot plate (500A and 700A models only) (H) Lockwasher (250A and 350A models only) (J) Adjusting nut.



## 3. RUNNING-IN

Torque Limiters should be run-in for the most consistent results. To run-in, adjust the Torque Limiter to 70-80% of the maximum single spring capacity and slip the center member approximately 60 RPM for approximately 4 minutes. (See steps 4 and 5 for setting and checking instructions.)

## 4. TORQUE SETTING

- (A) For the 250A and 350A models: To adjust the Torque Limiter to carry the required torque, tighten the adjusting nut an appropriate amount. *Do not* completely flatten the disk spring. Check setting per step 5.

Torque Limiter Size	250A	350A	500A	700A
Run-In Torque-Lb. Ft.	14-16	38-44	108-125	290-330

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(B) For the 500A and 700A models:

### Maximum Rated Torque

With the 3 cap screws backed out until the points are below the surface of the nut, run the nut up finger tight or slightly less than finger tight, and alternately tighten the cap screws no more than  $\frac{1}{2}$  turn at a time until their heads bottom. Do not overtighten the cap screws nor completely flatten the disk spring. This should give the maximum rated torque, but since there are several variables that affect the setting, it should be checked per step 5 and readjusted if necessary.

### Less Than Maximum Rated Torque

With the 3 cap screws backed out until the points are below the surface of the nut, run the nut up finger tight; then back off an appropriate amount. Alternately tighten the cap screws no more than  $\frac{1}{2}$  turn at a time until their heads bottom. Check setting per Item 5. Do not overtighten the cap screws nor completely flatten the disk spring.

## 5. Torque Checking

To check the Torque Limiter for the required slip torque, mount the Torque Limiter on a stub shaft and fasten in a bench vise. Wrap the center member (if a sprocket) with a chain and load the chain with weights until the center member rotates. If the center member is a plate, attach a chain or cable to the center member. The breakaway torque will be equal to the radius of the center member in feet times the weight in lbs. on the chain. The breakaway torque should be slightly higher (5% to 10%) than the required slip torque.

If the slip torque is too high or too low, readjust torque limiter as in step 4-tightening or loosening the adjusting nut as required. On the 500A and 700A sizes, back off the cap screws until the spring force is relieved before tightening or loosening adjusting nut. After readjustment, check the breakaway torque in the manner outlined above.

After final adjustment, lock the adjusting nut by bending lock-washer tab over nut (models 250A and 350A). On models 500A and 700A, the 3 cap screws have cup ends which lock into the pilot plate.

## 6. THIS ADDITIONAL STEP IS APPLICABLE TO THE TORQUE LIMITER COUPLING ONLY:

- (a) **Never use a torque limiter alone as a coupling.**  
When shaft coupling is required in conjunction with slip protection, use a torque limiter coupling.
- (b) After setting torque limiter per steps 4 and 5 above (with flat sprocket installed as the center member in torque limiter), mount it on the shaft. Then mount the coupling half (the sprocket with the hub) onto the shaft to be coupled, leaving a gap between adjacent sprocket faces.

Torque Limiter Size	250A	350A	500A	700A
Gap Width-Inches	5/16	13/32	15/32	5/8

- (c) Align the shafts as accurately as possible to obtain the maximum service life from the coupling.

Maximum Angular Misalignment  $-\frac{1}{2}^{\circ}$

Torque Limiter Size	250A	350A	500A	700A
Maximum Parallel Misalignment-Inches	.010	.012	.015	.020

- (d) When the shafts are properly aligned, wrap the coupling chain around the sprocket teeth and connect the chain ends by inserting the pin which is furnished loose with the coupling. The chain will wrap and connect easily on properly aligned sprockets.

## 7. Caution

The operating characteristics and capacity of Torque Limiters are affected by atmospheric conditions, moisture, lubricants, and surface corrosion. To illustrate, the life of the friction facings may be greatly reduced by rust on the center plate. The Torque Limiter ratings are based on average conditions. For best results, the Torque Limiter should be adjusted under conditions similar to those in which it will be used.

## 8. Maintenance

At periodic intervals, or if proper torque is not being maintained, inspect Torque Limiter for presence of oil, grease, moisture, or corrosion on the driving surfaces and for proper setting of spring load. Clean and adjust as required. Friction facings and bushings are the only parts that should normally require replacement.

**For Technical Support Call 1-800-626-2093.**