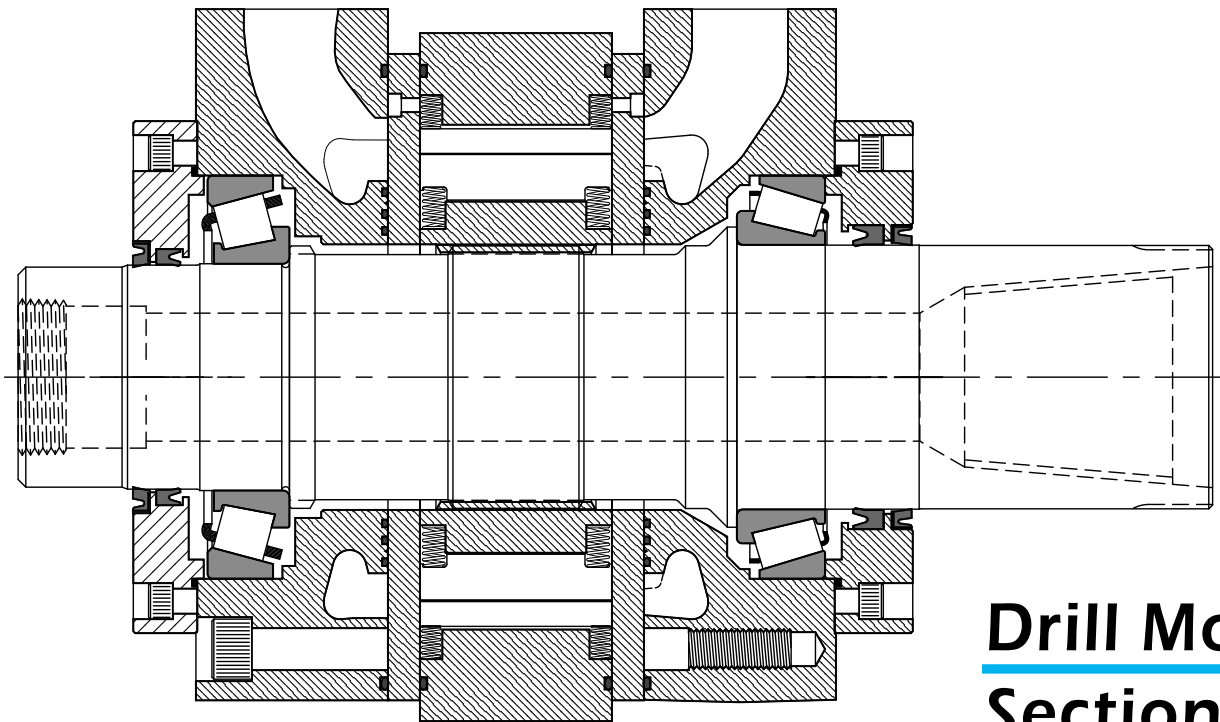




Repair Manual

125 Supplement

125 Series Thrust Style



Drill Motor Sectional

This manual is intended as supplemental material specific to the tapered roller bearing pre-load assembly procedures for the Rineer tapered roller bearing style motors. For procedures regarding basic motor disassembly, inspection, and reassembly, see 125 Repair Manual RM1255030.

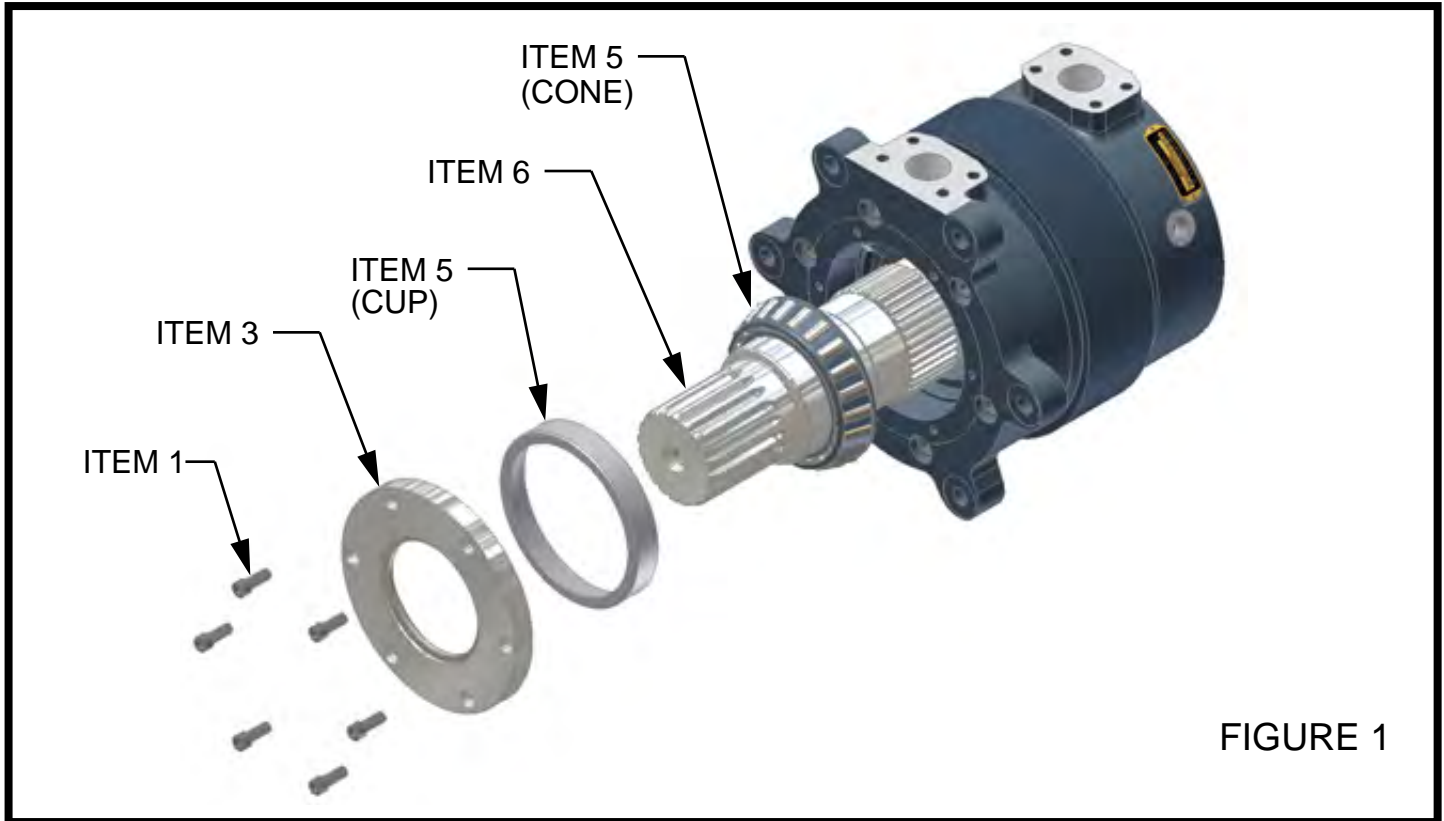


FIGURE 1

REMOVAL OF SEAL PLATES

1) **IMPORTANT!!** Before beginning the disassembly, mark all motor parts for proper reassembly and alignment.

Front

- 2) Remove six (sometimes 12) 3/8-16 bolts. (Item 1)
- 3) Remove seal plate from shaft. (Item 3)

Rear

- 4) Remove six 3/8-16 bolts. (Item 27)
- 5) Remove rear seal plate. (Item 26)

Note: On both front and rear seal plates, be careful not to damage the seals or if signs of wear/damage are present, replace seals. Locate and set aside all shims between the rear bearing and seal plate; if more than one motor is being repaired, be sure to keep the parts separate.

REMOVAL OF SHAFT

- 6) Remove shaft out of the motor from front side. (Item 6)
- 7) Inspect bearing cone/cup for wear/damage. (Item 5)
- 8) Inspect all seal contact areas for excessive wear.

(For disassembly of motor, cartridge and inspection of parts, see 125 standard repair manual RM1255030. This manual also covers assembly of basic motor and cartridge.)

ASSEMBLY

9) Press the front bearing cone (item 5) and install on front journal of shaft to fully seat against shaft shoulder. (See Figure 1)

10) Insert shaft, from the front housing, into motor, turning and guiding the spline teeth on the shaft through the rotor spline.

12) Install front bearing cup into front housing bore.

13) Install proper seals and o-rings in seal plate. Apply some type of moly enhanced grease, if available, to new seal lips.

14) Set the front seal plate (item 3) in place, taking care of the seals when installing over the shaft.

15) Bolt up front seal plate using bolts removed previously. (See Figure 1 above)

16) Press the rear bearing cone and install onto shaft journal, small end of taper to the outside of the motor, until fully seated against shaft shoulder.

17) Install rear bearing cup into rear housing bore to contact cone.

18) Replace proper shims removed at disassembly.

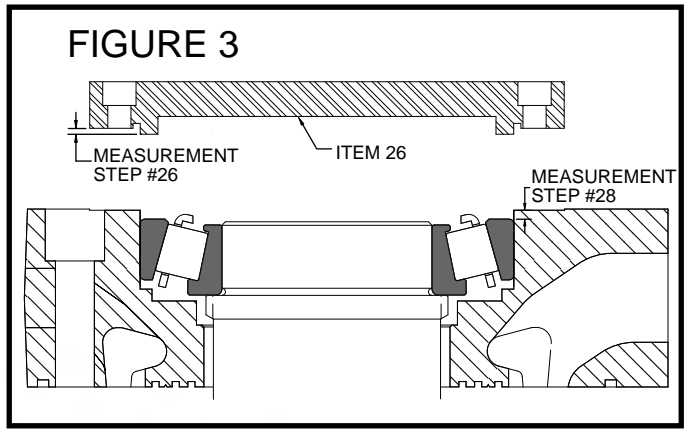
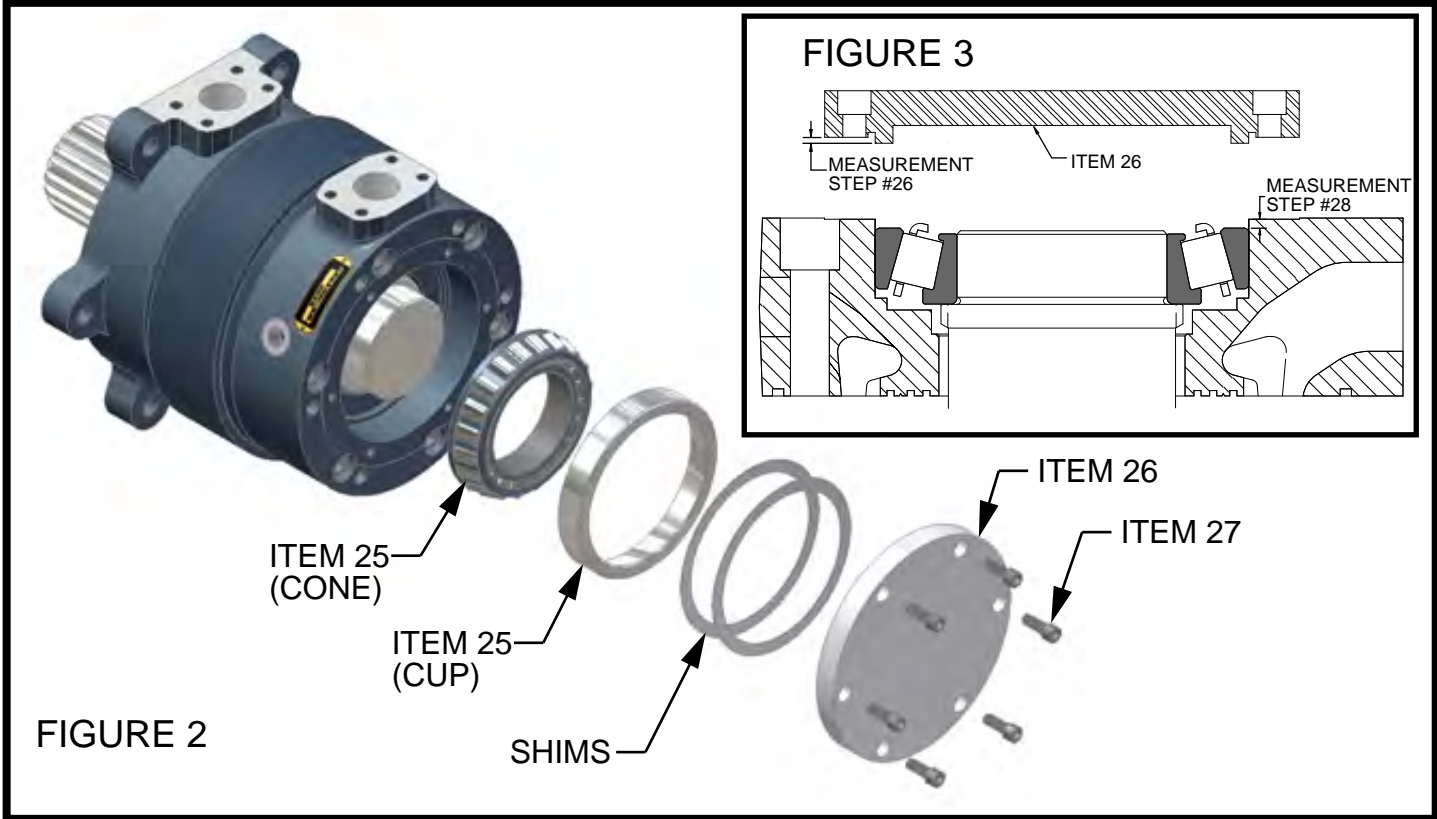
Note: *The original shims should be correct unless one or more of the major parts (seal plate, shaft, timing plates, or bearing) were replaced. To determine if existing shims are adequate, see Preload Procedure, next page.*

19) Install rear seal plate over the shaft (item 26)

Note: *Use grease on shaft to prevent shaft seal and shaft surface from being damaged. (Not applicable on blind seal plate.)*

20) Install six bolts (Item 27 - see Figure 2).

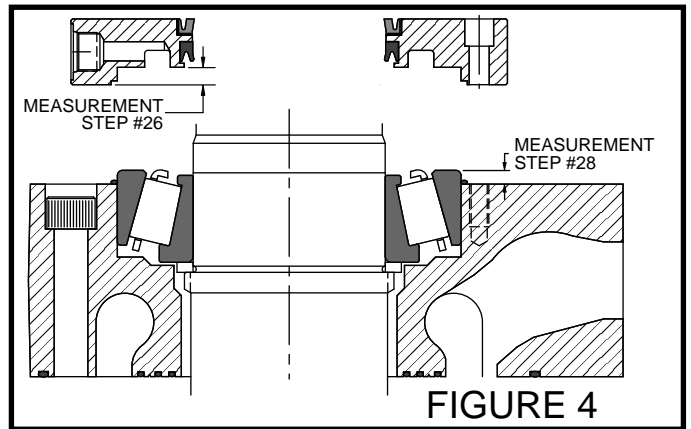
21) Torque bolts to 45 ft.-lbs.



PRELOAD PROCEDURE

- 22) Place motor, in a fixture, with shaft facing down. Make sure shaft is not in contact with anything.
- 23) Remove rear seal plate (item 26).
- 24) Press rear bearing cone (item 25) onto the shaft, small end of taper pointing up. (See Figure 3)
- 25) Set the bearing cup (item 25) in place.
- 26) With a depth gauge, measure the depth of the bearing race pilot to the face of the rear seal plate (to the 0.001 in.), at three locations and obtain the average. (See Figure 3, STEP #26)
- 27) With a thick ring gauge or a stack of shims equaling at least 0.100 inch placed on top of the cup, install the rear plate with 3 equally spaced bolts. Torque each bolt to 108 in-lbs., uniformly, fully seating the bearings for the next step. Remove seal plate and shims.
- 28) On the rear housing, with depth gauge, measure the depth of the back of the cup to the face of the housing immediately around it at three locations (to the 0.001 inch) then take the average. (See Figure 3, STEP #28)
- 29) Subtract the averaged values of MEASUREMENT STEP #26 from MEASUREMENT STEP #28 to determine shim stack required just to eliminate the clearance in the bearings.
- 30) Add between 0.002 to 0.004 inches to the value obtained in step 29. This will be the total shim stack required for the motor, including the preload.
- 31) Place shims into position on the back of the bearing cup, with grease to help hold it in position.

- 32) Install rear seal plate (item 26) with six bolts (item 27).
- 33) Torque bolts to 45 ft-lbs in cross hatch (star) pattern.



HD DRILL MOTOR PRE-LOAD

The HD drill motor rear bearing is positioned with the outer face extending out slightly from the rear housing face, and is 'captured' by the seal plate. Follow all steps 22-34 as outlined above, with the exception that in step #28, the bearing measurement is made to the housing face with the bearing OUTSIDE the housing. (See Figure 4) All the steps apply the same, and the 0.002 to 0.004 inch value for additional shim for pre-load is the same. As with the standard motor, care should be taken with the seals when installing the seal plate over the shaft.

Information:

Bolt Torque -

Main Bolts (5/8-11bolts or studs):

Code 61 Standard: 200 ft. lbs.

Code 61 Stacked: 220 ft. lbs.

Code 61 4-port: 200 ft. lbs.

Code 62 Standard: 220 ft. lbs.

Code 62 Stacked: 240 ft. lbs.

Code 62 4-port: 240 ft. lbs.

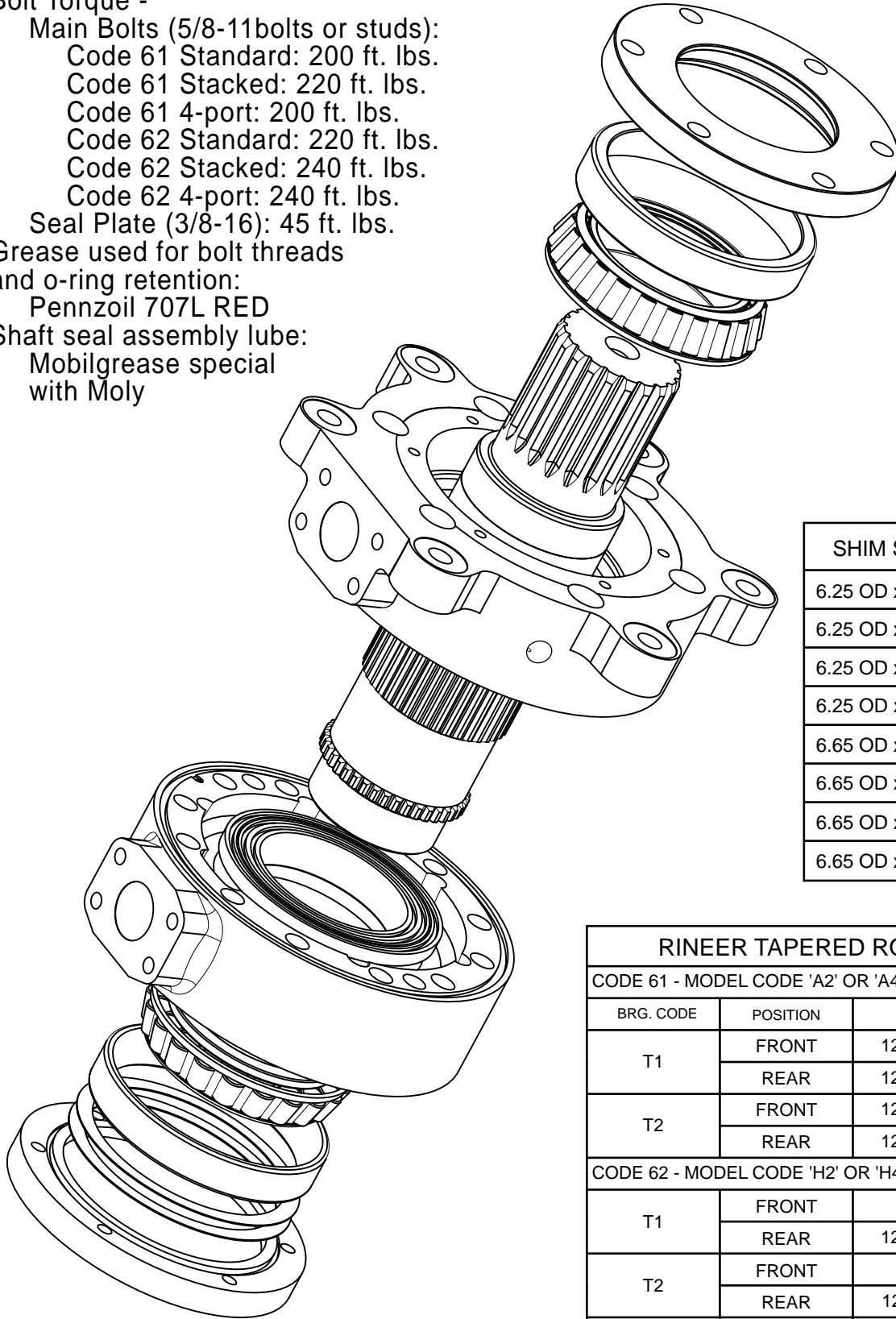
Seal Plate (3/8-16): 45 ft. lbs.

Grease used for bolt threads and o-ring retention:

Pennzoil 707L RED

Shaft seal assembly lube:

Mobilgrease special with Moly



| SHIM SIZE | PART NO. | BRG. CODE |
|----------------|----------|----------------|
| 6.25 OD x .010 | 1250964 | T1 T2 T4 |
| 6.25 OD x .012 | 1250966 | |
| 6.25 OD x .015 | 1250969 | |
| 6.25 OD x .020 | 1250970 | |
| 6.65 OD x .020 | 1250984 | T3 |
| 6.65 OD x .015 | 1250985 | |
| 6.65 OD x .012 | 1250986 | |
| 6.65 OD x .010 | 1250987 | |

| RINEER TAPERED ROLLER BEARINGS | | | |
|-----------------------------------|----------|---------------|---------|
| CODE 61 - MODEL CODE 'A2' OR 'A4' | | | |
| BRG. CODE | POSITION | CUP | CONE |
| T1 | FRONT | 1251794 (SET) | - |
| | REAR | 1251791 (SET) | - |
| T2 | FRONT | 1251791 (SET) | - |
| | REAR | 1251791 (SET) | - |
| CODE 62 - MODEL CODE 'H2' OR 'H4' | | | |
| T1 | FRONT | 1251797 | 1251798 |
| | REAR | 1251791 (SET) | - |
| T2 | FRONT | 1251797 | 1251798 |
| | REAR | 1252710 (SET) | - |
| T3 | FRONT | 1251797 | 1251798 |
| | REAR | 1252722 (SET) | - |
| T4 | FRONT | 1251790 (SET) | - |
| | REAR | 1251791 (SET) | - |



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