

TECHNICAL BULLETIN

TB NO. 1049

Rev. 0

Subject: Instructions For Replacing Lip Seals With Oil Slingers For Ajax
DPC- 800 Integral Compressors

Purpose: The oil seal on Ajax units prevents oil from migrating along the crankshaft to the exterior of the crankcase at both the flywheel and sheave ends of the crankshaft. This bulletin is provided to aid in field installation of the slinger style replacement seals.

CAUTION: *Before beginning this repair, ensure manual fuel valve is closed and the spark plug wires are removed from all power cylinders. Ensure suction and discharge block valves are closed and all pressure has been vented from the process gas system.*

Flywheel End

The flywheel is secured to the crankshaft with a ringfeder locking device and must be removed as follows:

1. Secure the flywheel with proper lifting equipment (nylon straps). Using a 14mm hex wrench gradually loosen the ringfeder socket screws in several stages, following the tightening sequence (see figure 1) until all screws are loose (do not completely remove the screws).

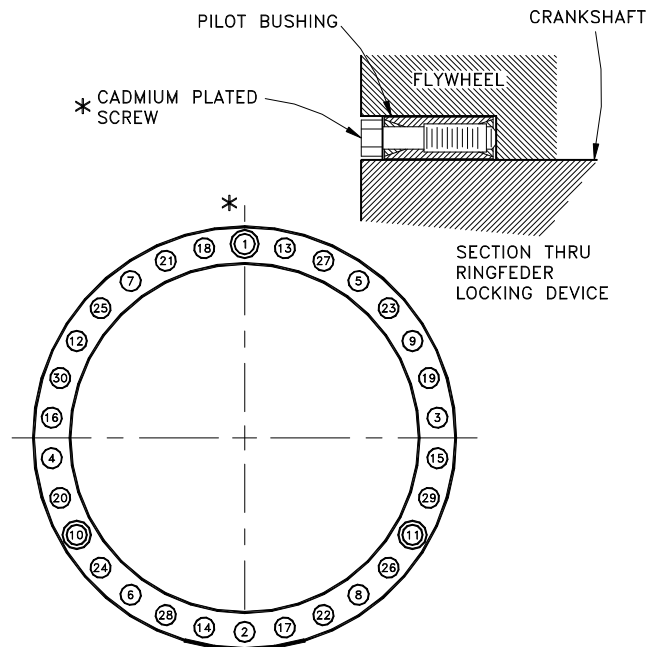


FIGURE 1
FLYWHEEL RINGFEDER TIGHTENING SEQUENCE
Note: Pilot bushings to be equally spaced on cadmium plated screws (*)

Remove the three cadmium plated screws from the outer taper ring, exposing the 20mm threads. Screw the bolt (20mm threads) of a slide hammer into the bolt hole and bump to loosen the outer ring. Repeat this in all three 20mm holes alternately until the outer ring is loose.

The inner taper ring can be loosened by tapping on the remaining socket screws (loosened previously) using a soft hammer. Tap lightly and evenly around the ringfeder bolt circle.

Once the inner rings are loose, remove them and slide the flywheel over the end of the crankshaft.

2. Remove the end cover from the frame. Be careful not to damage the gaskets or the gasket surfaces of the frame and end cover.
3. Remove the wear plate (P-K-8061) from the end cover.
4. Heat the new slinger (P-K-8001) to 350 deg.F and install it onto the crankshaft, with the groove facing out (toward the flywheel end of the crankshaft). Ensure the slinger makes solid contact with the timing gear, and allow it to cool before continuing.

5. Once the slinger has cooled to room temperature, lay a firm straight edge across the end of the frame (with gasket in place) and measure the distance from the inside edge of the straight edge to the bottom of the recessed cut in the slinger face. Record this value.
6. Install the deflector (P-K-8009-1) and the gasket (P-K-7223-D) on the end cover. Measure from the edge of the deflector to the end cover gasket surface (no gasket). Record this value.
7. Subtract the value recorded in Step 6, from the value recorded in Step 5. Then subtract another .050" from this total for clearance. The resulting number is the amount of (P-K-8051-B) shims that must be installed between the deflector and the end cover.
8. Remove the deflector from the end cover and reinstall it with the appropriate amount of (P-K-8051-B) shims. If required use longer cap screws (P-BM-11900-C-0420-14).

CAUTION: *Depending on the amount of shims required, altering the final length of the (P-BM-11900-C-0420-14) cap screws may be required. Shorten the cap screws until 2 threads or less are protruding after they are tightened to the proper torque.*

CAUTION: *Verify the oil drain holes, in the deflector, are at the bottom during final assembly.*

9. To verify the amount of shims is correct, place wax or **SOFT** solder in the recess (groove) in the face of the slinger, and install the end cover and deflector assembly to the frame. Then remove the assembly and recover the wax or solder.
10. Measure the thickness of the wax or solder. The proper clearance is .040" to .060". If incorrect, adjust the shim pack and re-check until this clearance range is achieved.
11. Verify that a new (P-K-7230) end plate gasket is in place
12. Position the end cover so the top edge is flush with the top cover and install the end cover assembly.
13. Loosen the deflector bolts and position the deflector so that it is centered on the crankshaft, assuring that it does not contact the crankshaft.
14. Tighten the deflector bolts.

15. Clean the flywheel bores and mating diameters on the crankshaft. Surfaces must be dry and free of any burrs, rust, and/or lubricants.
16. Position the crankshaft so that the #1 power piston is at top dead center. Using nylon straps lift the flywheel into position. The scribed timing lines on the face of the flywheel must be horizontal with the line on the rim in the 9 o'clock position (see figure 2). Slide the flywheel onto the crankshaft until the face of the flywheel hub is flush with the end of the crankshaft.

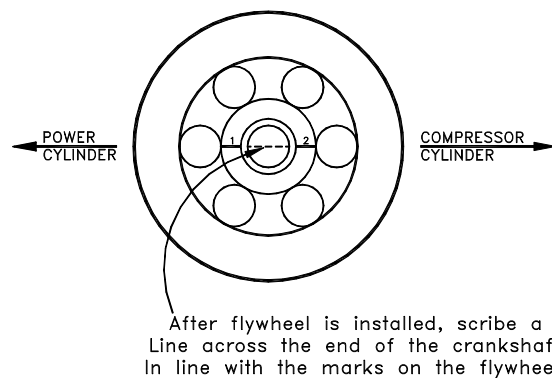


FIGURE 2

CAUTION: The clearance between the ring gear and the end of the starter pinion should be 1/16" minimum to 3/16" maximum (see figure 3).

ALL PIPING MUST BE SUPPORTED IN NEUTRAL POSITION SO IT DOES NOT IMPOSE STRAIN ON STARTER CONNECTIONS. SHIM PIPING SUPPORTS IF NECESSARY.

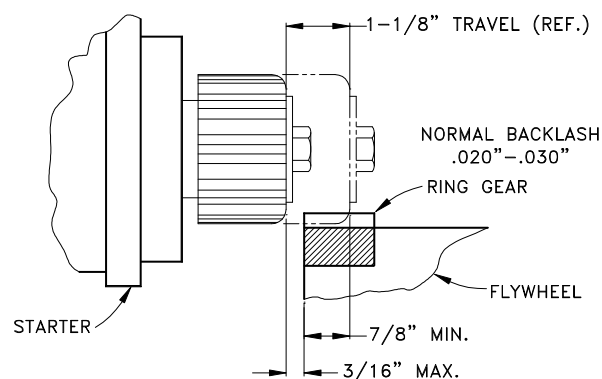


FIGURE 3
STARTER PINION LOCATION

NOTE: If necessary, adjust starter bracket to obtain dimensions shown.

Check that the ringfeder is clean and dry on the inner and outer surfaces, and that the pilot bushings are in place under the three cadmium plated screws. No oil or any dry lubricant is to be used on the locking surfaces. Lightly oil the threads and under the heads of the socket head screws.

Install the ringfeder making sure it is fully seated and square in the bore. The three pilot bushings are to be equally spaced. Tighten all the socket head screws in three successive stages (70 ft. lbs., 140 ft. lbs., and 215 ft. lbs. of torque).

The tightening sequence (see figure 1) must be followed for all three stages.

This sequence also applies to the three cadmium plated screws.

Allow assembly to set for 30 minutes, then re-check all screws at 215 ft. lbs. torque, following the tightening sequence.

After final tightening of the screws, check the flywheel run-out of the rim and O.D. (see figure 4).

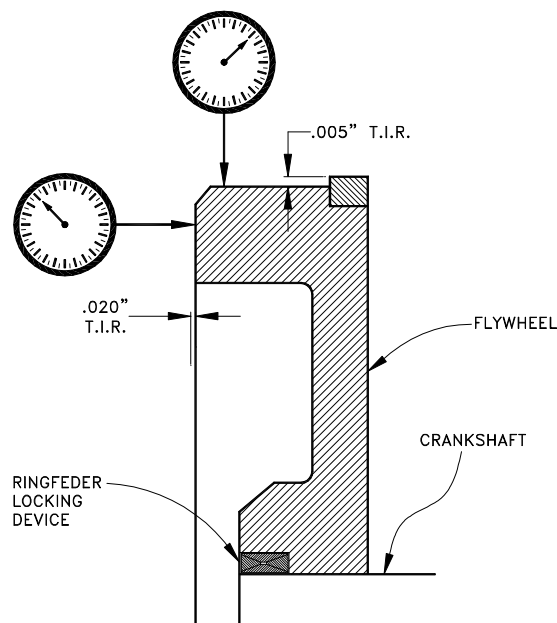


FIGURE 4

If run-out exceeds the maximum allowed, loosen all socket head screws and tap flywheel into position using a soft hammer and a block of wood. Retighten the screws, following the same torque procedure as described above, and check that the run-out is within tolerance.

Sheave End

The sheave is secured to the crankshaft with a ringfeder locking device exactly like the system that secures the flywheel to the crankshaft, with slight differences as noted below:

1. Install a ½"-13 N.C. eyebolt into the sheave and ensure a proper lifting device is attached to the sheave. Follow the same procedure as in "1" above under flywheel removal, using a 10mm hex wrench to loosen the ringfeder bolts. Follow the torque sequence for the sheave bolts (see figure 5).

Remove the three cadmium plated screws to expose the 16mm threads, and using the slide hammer and 16mm puller screws to bump the outer ring unit loose. Then follow the balance of the instructions in the flywheel section above.

2. Remove the (P-K-8062) wear plate in the same manner as the (P-K-8061 wear plate listed in the flywheel section.
3. Install the new (P-K-8002) slinger, (P-K-7224-A-1) deflector and (P-K-7223-C) gasket in the same manor as the (P-K-8001) deflector and (P-K-7223-D) gasket listed in the flywheel section.

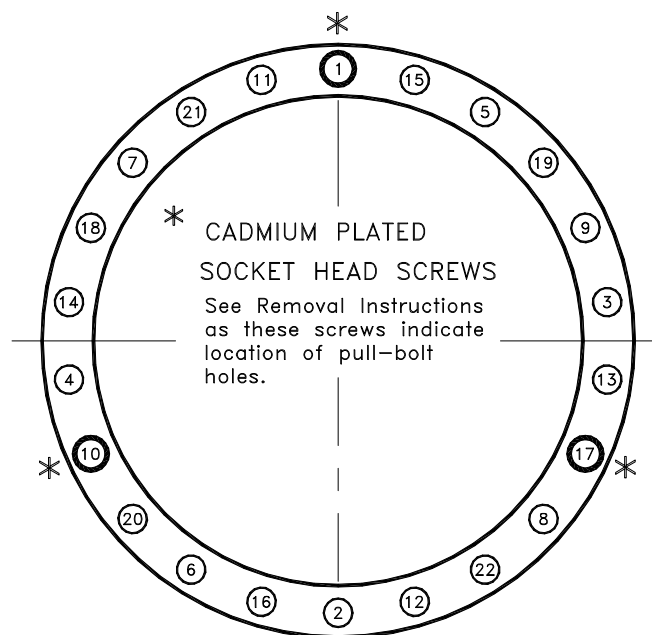


FIGURE 5

SHEAVE RINGFEDER TIGHTENING SEQUENCE

Note: Pilot bushings to be equally spaced on cadmium plated screws (*)

4. Measure the clearance between the slinger and deflector, and shim to the correct initial location with the (P-K-8051-A) shim pack (as instructed in the flywheel section above).
5. Clean the sheave bores and mating diameters on the crankshaft, as instructed in the flywheel section above.

Using the ½"-13 N.C. eyebolt, lift the sheave back into place on the crankshaft. Slide the sheave on until it is against the shoulder of the crankshaft.

Reinstall the ringfeder components as instructed in the flywheel section above.

Tighten all the socket head screws in three successive stages (30 ft. lbs., 60 ft. lbs., and 90 ft. lbs. of torque).

The tightening sequence (see figure 5) must be followed for all three stages.

This sequence also applies to the cadmium plated screws.

Allow assembly to set for 30 minutes, then recheck all screws at 90 ft. lbs. torque, following the tightening sequence in figure 5.

After final tightening of screws, check sheave run-out at the rim and O.D. (see figure 6).

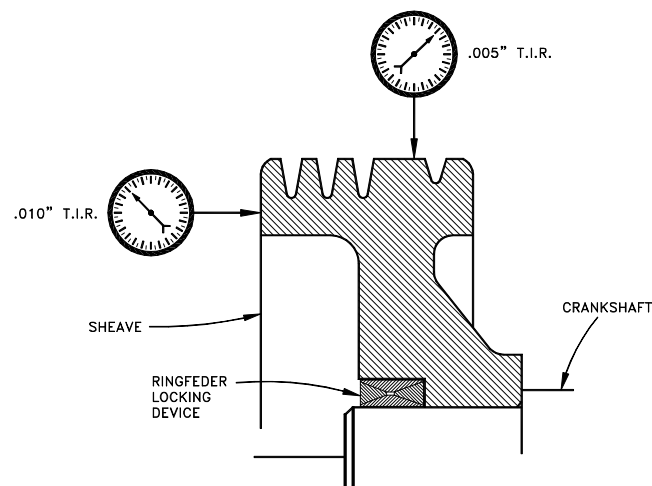


FIGURE 6

If run-out exceeds the maximum allowed, loosen all socket head screws and tap flywheel into position using a soft hammer and a block of wood. Retighten the screws, following the same torque procedure as described above, and check that the run-out is within tolerance.

6. Reconnect the spark plug wires, and prepare the unit for re-start.

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