

Replacing Splined Inserts

The following procedure can be used to replace the insert on a splined crankshaft.



WARNING: Accidental Starts!

Disabling engine. Accidental starting can cause severe injury or death. Before working on the engine or equipment, disable the engine as follows: 1) Disconnect the spark plug lead(s). 2) Disconnect negative (-) battery cable from battery.

1. Obtain a 7/16-20 nut and a 7/16-20 x 4-1/2 hex. capscrew. The capscrew must have about 3" of thread length. See Figure 1.

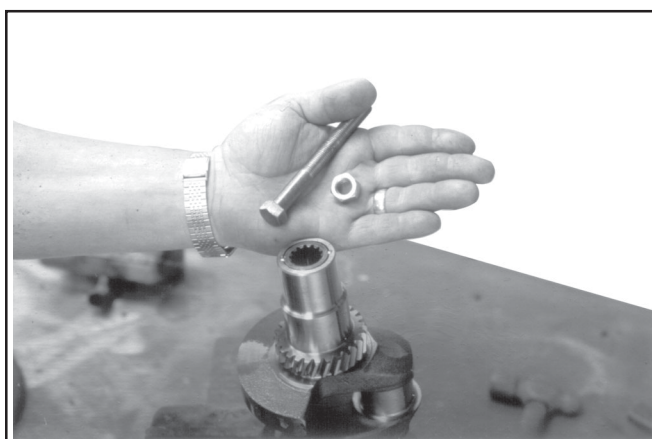


Figure 1.

2. Remove the crankshaft from the engine and clamp it firmly in a large vise, but be careful not to damage any of the machined surfaces. See Figure 2.

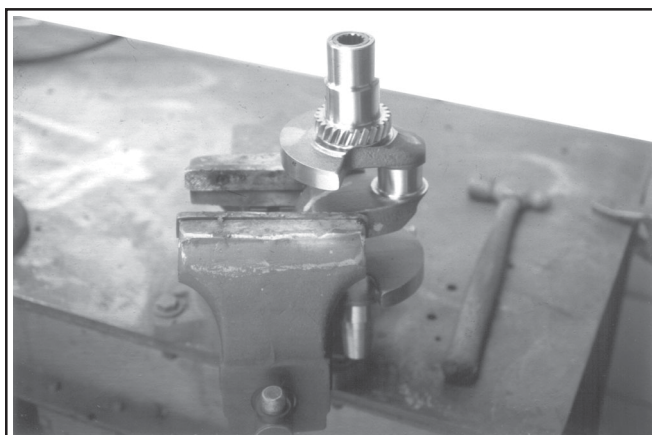


Figure 2.

3. On K582 crankshafts, remove the snap ring in the end of the insert counterbore. Measure the depth dimension from the end of the crankshaft to the face of the insert. It will be either 3/16" or 7/16".

4. Thread the capscrew about 1" through the nut. Using the capscrew as a handle, tack weld the 7/16-20 nut to the old insert. See Figure 3.

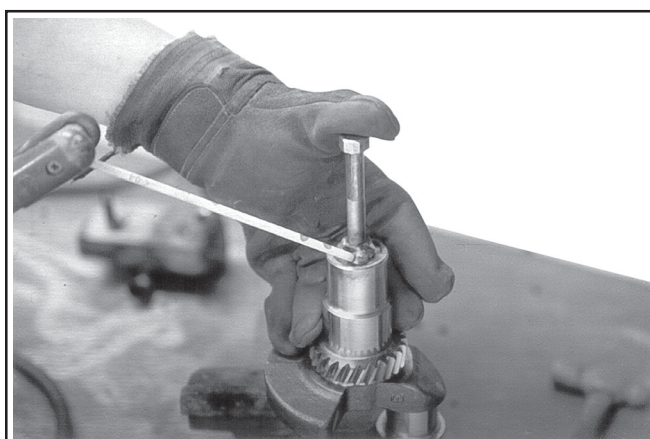


Figure 3.

- a. For a 9 or 11 tooth spline, center the nut on the face of the insert.
- b. For a 13 tooth spline, the nut will fit inside the spline, but it will be close enough to the walls for tacking. See Figure 4.

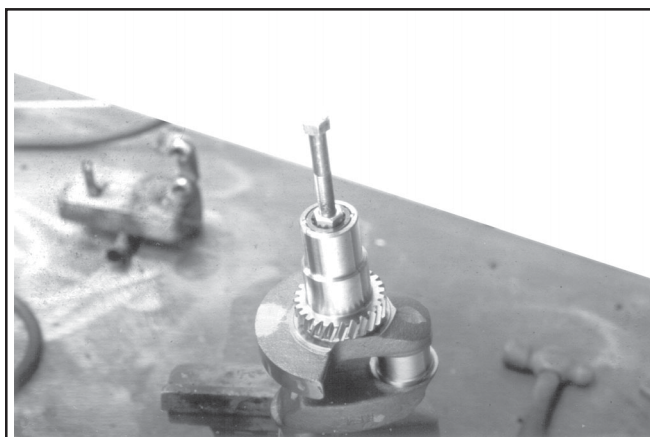


Figure 4.

- Thread the capscrew through the nut. It should turn easily until it bottoms in the crankshaft counterbore, then get more difficult as it begins to pull out the insert. Continue turning until the insert pulls free of the crankshaft. See Figure 5.

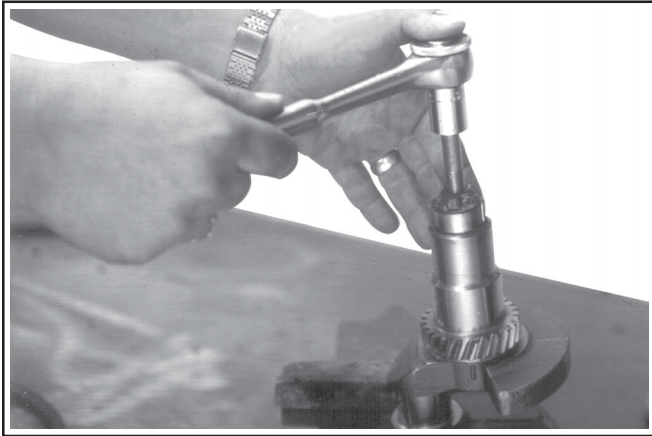


Figure 5.

- Check both ends of the replacement insert for a stamping mark. If it is marked, that end must be **out** when the insert is installed. Apply a small amount of Loctite® RC/680, or equivalent, to the outside diameter of the replacement insert. Press the insert into the crankshaft until it is flush with the end.
- Drill new holes for the retaining pins. The insert is considerably harder than the crankshaft. It is very difficult, if not impossible, to drill the holes with a hand drill as the bit will tend to veer into the softer material. It must be done on a drill press or similar machine where the crankshaft can be securely mounted and the drilling kept straight. A drilling aid like the factory uses is advisable. See Figure 6. You might want to contact a machine shop for this operation if you have any doubts about your own equipment and/or capabilities.

Drill 2 holes 90° away (perpendicular) from the original holes using a #30 (.128) carbide drill bit. In a crankshaft from an aluminum twin drill to depth of 9/16". In a 582 crankshaft drill to a depth of 9/16", plus the depth measurement from step 3. Ream the holes to .136/.137. See Figure 7.

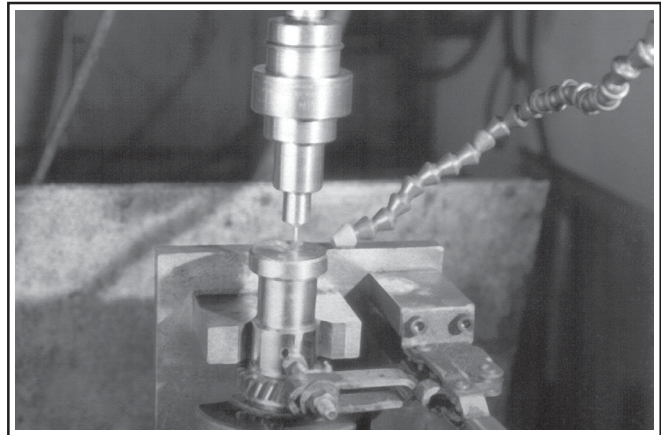


Figure 7.

- Apply a small amount of Loctite® RC/680 to the tip of each retaining pin and tap them into the drilled holes until they are flush. On a K582 crankshaft, press the insert the rest of the way in to the original depth (step 3), and use a small punch to tap the pins in until flush with the face of the insert. Reinstall the snap ring.
- Lubricate the splines very liberally with Dow Corning G-N Metal Assembly Paste (Kohler Part No. 25 357 12-S), or equivalent, prior to reassembling the hydraulic pump to the engine.

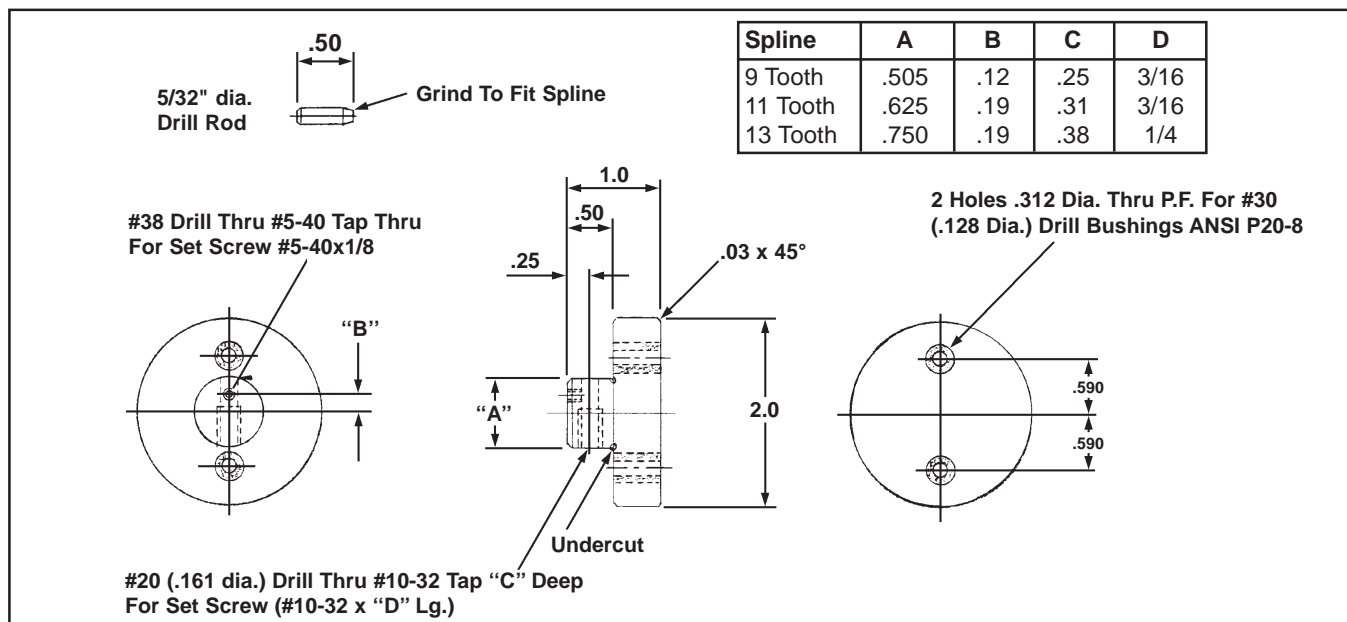


Figure 6.