



## **OIL PUMP AND PICKUP INSTALLATION INSTRUCTIONS**

### **CLEANLINESS**

Be sure to thoroughly clean oil pump inside and out to eliminate any dust or dirt that might be present. Submerge the pump in clean oil and rotate the gears by hand before installing the pump.

### **Bolting to Main Cap or Block Flange**

Check the machined surface of oil pump and main cap/block flange for flatness and cleanliness. It's important that these surfaces are prepared to mechanically seal the two components together. **Any issues with this contact area will result in oil leakage and a lack of pressure**

If dowel pins are used for pump alignment they must be in good condition to prevent misalignment and burrs, Replace any damaged dowel pins.

When installing the oil pump it is important to use the correct fasteners and torque values for your engine.

### **CHECKING ENDPLAY**

After the pump is installed on the engine, install the distributor and check endplay of the oil pump drive shaft. Between .020" to .125" is acceptable. If no endplay is present, corrective measures must be taken or the pump drive gear will score the pump cover causing premature pump failure and possible bearing problems.

Once the endplay is correct, check for drive shaft clearance with the main cap access hole and any passage through the block for interference.

**NOTE:** On standard & high volume pumps, a new intermediate shaft with a pinned steel sleeve must be used.

Moroso and other manufacturers offer drive shafts with steel sleeves. If the steel sleeve is not used, the oil pump can be damaged, resulting in failure of the pump and a loss of oil pressure. Failure to follow this warning voids any warranty of this product.

### **OIL PAN TO PICKUP CLEARANCE**

Before the final installation of the oil pan, check the clearance between the pump pickup screen and the pan bottom as follows:

-Bolt the pump to the engine. Place a straight edge on pickup and measure the distance from the blocks pan rail to the straight edge.

For Technical Assistance, call Moroso's Tech Line

(203)-458-0542, 8:30am-5:00pm Eastern Time

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Some pick-ups will have a slight angle, so there could be two different heights. Take the average of the two, and record this measurement as pickup height.

-Then measure the distance from the oil pan bottom to the pan rail. Record this measurement as pan depth.

-Subtracting the pickup height from the pan depth gives you the oil pan-to-pickup clearance (not including gasket thickness). Measure your gasket and add this to the clearance.

-Ideal clearance is .250" to .500" to ensure adequate oil supply.

### **Oil Pressure**

**Oil Pressure readings maybe lower than expected due to anti-cavitations modifications at lower rpm. The maximum oil pressure created by the oil pump will be dependant on the relief spring installed.** At what RPM the bypass opens is dependant on the over all machined clearance of the engines internal parts. The following list is based on the current spring color and pump style. The opening pressure is known as long as enough oil volume is present to create the advertised pressure:

#### Small Block Chevy Oil Pumps (Cast & Billet):

**Heavy pressure spring – Purple Color – 60 to 70 p.s.i. (At operating temperatures)**

Light pressure spring – Brown Color – 50 to 60 p.s.i. (At operating temperatures)

#### Big Block Chevy Oil Pumps (Cast & Billet):

Heavy pressure spring – Brown Color – 70 to 80 p.s.i. (At operating temperatures)

Medium pressure spring – Purple Color – 60 to 70 p.s.i. (At operating temperatures)

Light pressure spring – Blue Color – 50 to 60 p.s.i. (At operating temperatures)

### **Changing Pressure Relief Springs**

**Remove the backing pin or cap plug to remove the spring from the bypass hole.**

**Remove the bypass piston with a magnet and check for surface wear.** The spring will have a wider coiled end that will sit against the pin or cap plug. This is by design.

When reinstalling put the bypass piston in first, with the long pointed end entering the hole first. The spring will locate into the opening in the bypass piston. Make sure the wide coiled end is closest to pin or cap plug when reinstalling.

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