

Studebaker

PASSENGER CAR SERVICE LETTER



NUMBER 936

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SUBJECT ENGINE OIL PUMP RELIEF VALVE
TUBE KIT FOR CORRECTION OF
HYDRAULIC VALVE TAPPET
LETDOWN - 56J GOLDENHAWK

Hydraulic valve tappets that intermittently become noisy at idle speed or at speeds of 40 to 60 M.P.H. after the oil gets hot in most cases has been caused by air getting into the oil pump and gallery thereby interrupting the oil supply to the tappets.

To prevent this condition, engine oil pumps for production have been revised to include a threaded plug in the open end of the bore for the oil pressure relief valve and spring. This threaded plug also acts as a retainer for the oil pressure relief valve and spring. This revision began with engine production of April 10 with the following engine numbers:

K-1638 with Ultramatic
S-4063 with Overdrive

For Service, we have released an engine oil pump relief valve tube with attaching parts which can easily be installed on the oil pump in place of the relief valve spring retainer. The small end of this tube points downward into the oil in the oil pan thus preventing any air being drawn in past the relief valve. This engine oil pump pressure relief valve tube kit is identified as part number 6484613 and may be procured on order from your parts warehouse. In every case where intermittent hydraulic valve tappet noise is encountered on cars with engines before Nos. K-1638 and S-4063 this kit should be installed. Where the car has been in service less than 12 months or 12,000 miles, we will honor your claim for parts and 3.3 hours labor per car for installation.

TUBE INSTALLATION

1. Remove oil pan and pump assembly.
2. Remove cotter pin from oil pump relief valve and discard relief valve spring retainer.
3. Check relief valve for being free, it should fall back and forth from its own weight. Clean up with crocus cloth if necessary to free up valve.
4. Enlarge the cotter pin hole by drilling through with a 5/32" drill. Be sure to wash the oil pump thoroughly after drilling.

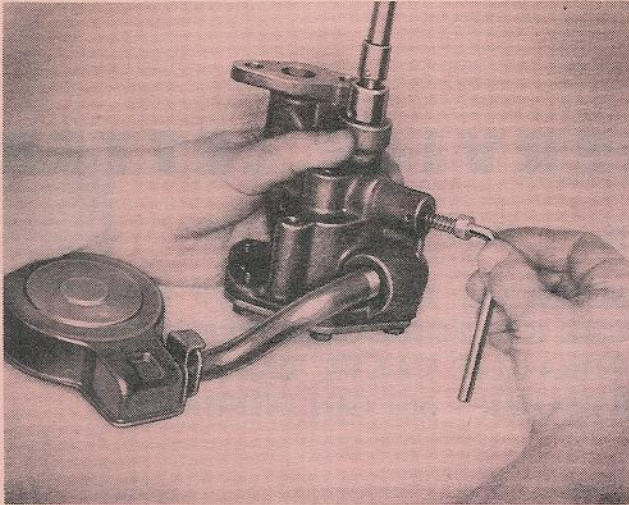


FIG. 1

5. Install the relief valve and spring, start the flanged end of the tube in the housing with small end of tube pointing downward. (Toward bottom of pump). (See Fig. 1).

Carefully drive the tube into the housing with the back side of flange just past the cotter pin holes. A tool can be made up locally for driving in the tube by using a small steel sleeve that will fit in the relief valve opening and cutting a slot in the side of the sleeve so it will straddle over the bend of the tube.

Drive a roll pin in each side of the cotter pin hole with their inner ends just touching the tube to hold it in place. (See Fig. 2).

Make sure the float operates freely before reinstalling the pump and oil pan.

6. If the oil pan screw holes do not line up when installing the pan, cut 1/4" off the rear roll pin with a hack saw and bend the lower end of the tube inward and forward slightly.

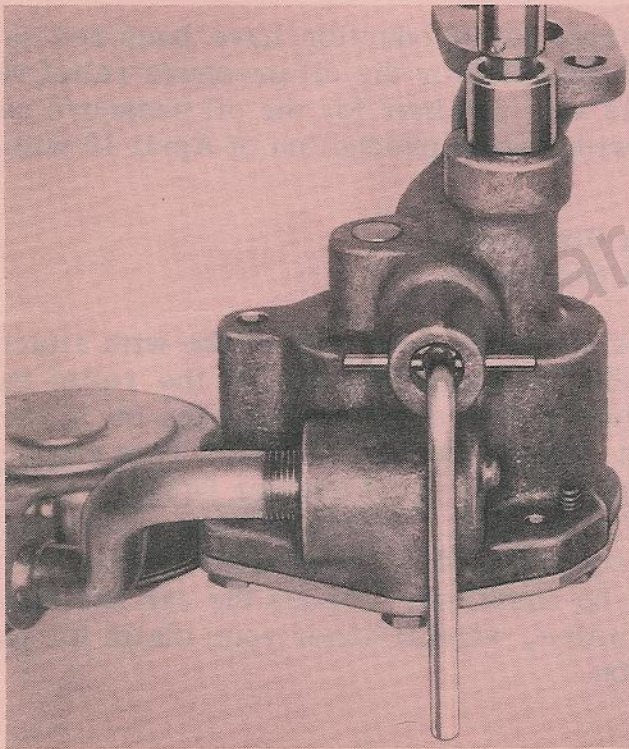


FIG. 2

When installing the oil pump tube kit on cars with engines prior to K-1150 and S-2064, the valve spring baffle kit Part No. 6484396 should be installed. This is important for oil consumption control as noisy tappets will develop if the oil level gets too low. At the same time the possibility of oil fouling of spark plugs will be greatly reduced or eliminated.

The installation instructions are as follows:

- A. Remove the rocker covers and remove rocker shaft bolts. Lift off the rocker shaft and lever assemblies.

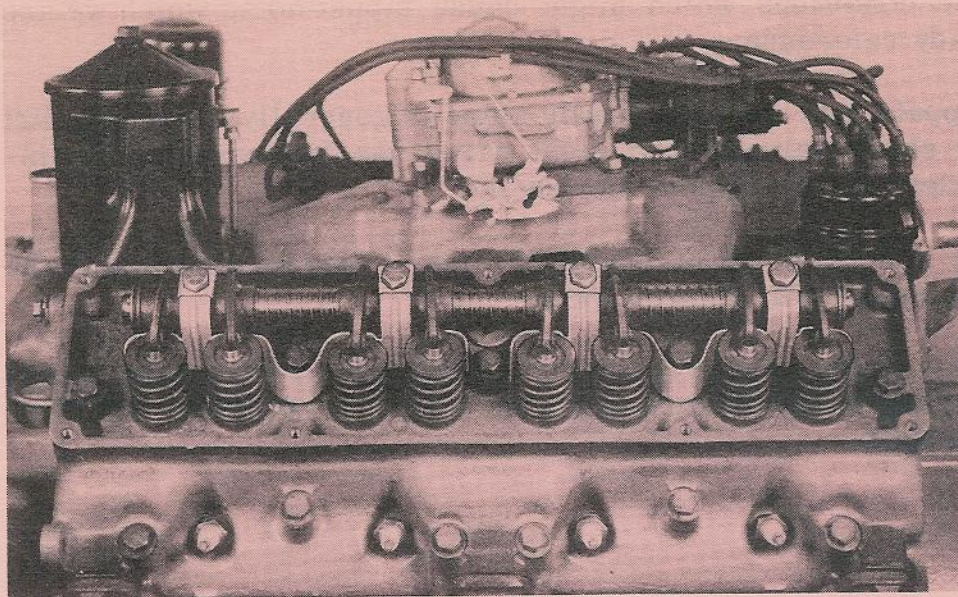


FIG. 3

- B. Position the baffles on rocker assembly, lining the bolt holes on baffle with bolt holes on rocker brackets. (See Fig. 3). Replace rocker assembly on cylinder head. Replace the rocker shaft bolt lockwasher with the square type lockwasher. Install the rocker shaft bolts, make sure the push rods are

in the sockets of the levers and torque tighten the rocker shaft bolts 55 to 60 ft. lbs. Be sure the square lockwashers do not turn with the bolt, as the baffles might be distorted.

- C. Check clearance between the baffles and the valve springs. If touching, bend the baffle away slightly with a screwdriver. Install the rocker cover using new gasket.
- D. Do not remove the intake valve rubber oil deflectors.

In all test cases thus far where we have installed the oil pump tube kit, intermittent tappet noise has been corrected. However, if after the installation of the oil pump tube kit, tappets continue to be intermittently noisy, the probable cause then is an excessive oil leakage past the camshaft thrust plate or main bearings causing low oil pressure in the gallery. Under such circumstances you should --

- a. Test the oil gallery pressure at the 1/8" opening in the left cylinder head that supplies oil to the oil filter and at the corresponding 1/8" opening at the rear of the right cylinder head.

The gallery pressure should test 6 to 10 lbs. at 400 RPM with hot oil.

- b. If the gallery pressure is below 6 lbs. at 400 RPM, install a new camshaft thrust plate, part number 6480918, and spacer, part number 6480917. The new thrust plate and spacer provides intermittent oil feed to the timing chain instead of a steady feed, resulting in a higher gallery pressure.
- c. If the preceding corrections are not 100% effective, we recommend replacing the main bearing shells to obtain a minimum bearing clearance of approximately .001".

There are several other conditions which might cause tappet noise which we are listing here for your ready reference:

1. One or more tappets that are continually noisy is generally caused by dirt under the tappet check valve and in most cases can be corrected by disassembling and cleaning the tappets thoroughly.

If the tappet has run noisy for a length of time it may be punished to the point where replacement will be necessary.

2. If the push rod and socket in the rocker arm is worn, the rocker arm should be replaced with the latest type rocker arm Part No. 6440471 (right) or Part No. 6440470 (left).

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