

# Here's a technical tip sent in by one of our readers that will be of interest to . . .

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# CHEVY OWNERS only.

**F**OR SOME reason unknown to this writer the Chevrolet engineers made it necessary to remove the crankcase to allow access to the two  $\frac{5}{16}$ " cap screws which screw into the timing cover thru the front main bearing skirt and the front motor support plate in order to remove the timing cover when it becomes necessary to replace timing gears or camshaft. It seems like a lot of unnecessary work just to get two cap screws out. The conversion shown here will allow removal of either unit, main bearing or timing gear cover, without interfering with the other.

The Chevrolet engineers may have had one of the following reasons in mind: To simplify production; to give more thread surface for the two cap screws; or, since timing gear teeth are sheared off so seldom it may have been felt that it was necessary to remove the pan in order to thoroughly clean the sludge out of the oil supply tube and pocket in order that the new replacement gears get the correct supply of oil. This last should by all means be done whenever replacing gears or cam and can be done with an air pressure gasoline or kerosene nozzle.

The time spent doing the following few simple steps will be saved many times over if you wish to change gears, cam, or remove your modified cam when you sell your car.

The best way to carry out these steps and at the same time thoroughly clean out the oil pocket between the motor support plate and the engine block is to remove the support plate from the block. This step is not necessary, however, if you are rushed for time.

Never try to pry or knock off the crank pulley. You will find it much simpler and less costly if you use a puller. Your Chevrolet serviceman will no doubt loan you one.

**Step 1**—After removing the crank pulley, but before removing the main bearing or timing gear cover (if you intend to remove the motor support plate, the three units can be bolted together temporarily for this step), scribe a line between the two  $\frac{5}{16}$ " tapped holes on the small plate that is spot welded to the lower edge of the timing cover. This is the little plate that the two  $\frac{5}{16}$ " cap screws fasten into, through front main bearing skirt, for which you had to drop the pan. This line is scribed tangent to the lower edge of both holes. On this line scribe a mark  $\frac{1}{2}$ " from the center of each of the two  $\frac{5}{16}$ " holes. Centerpunch these two marks on the line. Using these centerpunch marks drill two  $\frac{13}{64}$ " holes through the small plate and the motor support plate and into the main bearing just enough to form a countersink mark for drilling.

**Step 2**—Remove the main bearing and the timing cover. In the main bearing drill the new countersunk holes to  $\frac{1}{4}$ " diam. by  $\frac{1}{4}$ " deep to allow for clearance for the new  $\frac{1}{4}$ " bolts you will use. Also open up the  $\frac{13}{64}$ " holes in the timing cover to  $\frac{1}{4}$ ". This supplies the conversion method for bolting the lower edge of the timing cover securely.

**Step 3**—Tap the two  $\frac{13}{64}$ " holes you drilled into the motor support plate to  $\frac{1}{4}$ " U.S.S. thread size.

**Step 4**—There are two holes in the motor support plate which allowed clearance for the original  $\frac{5}{16}$ " cap screws. Without alteration these are tapped to  $\frac{7}{16}$ " U.S.S. thread. If you have this plate off the engine the tapping can best be done on a drill press. However, if you

**Front view of Chevy engine showing positioning of newly located bolts**

are careful the tapping can be done by hand.

**Step 5**—The  $\frac{5}{16}$ " tapped holes in the timing cover are drilled out to  $\frac{7}{16}$ " to allow for clearance for the new bolts you will use. Next, open up the  $\frac{5}{16}$ " holes in the main bearing skirt to  $\frac{7}{16}$ ".  $\frac{7}{16}$ " diameter by  $\frac{3}{4}$ " long machine cap screws are used in these holes to bolt to the motor support plate in place of the original  $\frac{5}{16}$ " cap screws. Refer to the photograph.

**Step 6**—With a flat file remove all burrs from the gasket surfaces at the drilled and the tapped holes.

**Step 7**—Open up the holes in the gasket between main bearing and motor support plate, by careful use of a small ball-peen hammer, to the new  $\frac{7}{16}$ " size. Do the same to your new timing cover gasket and also peen out the two new  $\frac{1}{4}$ " holes.

**Assembly**—Use cement on both surfaces of the timing cover gasket to prevent oil leaks, especially at the new bolting location. Use  $\frac{1}{4}$ " diam. x  $\frac{9}{16}$ " long stove bolts with split

lock washers in the new timing cover holes. If you cannot locate this length cut them to size rather than use longer bolts which might prevent future removal of the main bearing.

Use  $\frac{7}{16}$ " diam. x  $\frac{3}{4}$ " long U.S.S. cap screws with split lock washers to secure the front main bearing skirt to the motor support plate after fastening the main bearing up in place with the large main bolts. Caution is necessary here that the  $\frac{7}{16}$ " bolts not be drawn up too tightly. Remember that there is only  $\frac{3}{4}$ " of supporting threads in the motor support plate. The original lock plate on the  $\frac{7}{16}$ " cap screws is of course not needed and may be discarded.

**Summary**—Altho this may SOUND a little complicated it really is all very simple. You will be very happy that you spent the short time of less than an hour when you again find it necessary to remove your timing cover.

**Rear view of same Chevy alteration.**

