

# PACKARD MOTOR CAR COMPANY

DETROIT MICHIGAN

December 28, 1923

To Packard Distributors.

Subject, Motor Lubrication of New Vehicles.

REFER TO THIS LETTER BY NUMBER

TO BE NOTED AND INITIALED BY


Gentlemen:—

It is extremely important that the cylinder lubrication of new cars be carefully watched during unloading, storage and delivery to the customer. This is particularly true during cold weather when the carburetor has to be choked to a greater extent in starting, because the raw gasoline is very apt to destroy the oil film on the cylinders and pistons, and serious difficulties may result.

Before the vehicle is unloaded from the freight car, the spark plugs should be removed, and two tablespoonfuls of oil poured into each cylinder, so that no damage through scoring will occur before the oil from the motor lubrication system has had the opportunity to reach the cylinder walls.

While the car is being held for delivery the cylinders should be lubricated at the beginning of this period and at the time of delivery. In this case the motor should be turned over with the starter for a period of 10 to 20 seconds with the choke button against the dash and the throttle closed, and the motor should not be run under its own power, because in starting the motor choking is necessary and the raw gasoline is apt to destroy the film of oil which must be maintained. Do this also each time the motor is run during storage.

If this procedure is followed carefully no difficulty will be experienced, but as a matter of additional precaution it has been felt advisable to change the oiling system to throw a greater amount of oil on the cylinder walls in order to help to offset the effects of excessive choking. For this reason a change was put into effect in all Straight-Eight motors beginning with the suffix "FA". It is described as follows:

The metering slots in the five large crankshaft bearings which deliver the oil to the connecting rod bearings now extend around the entire circumference of the bearing so that the holes in the crankshaft are always in register with the bearing slots and the connecting rod bearings are under pressure during the entire revolution.

This forces a greater quantity of oil thru the connecting rod bearings, and the throw-off from the connecting rods to the cylinders is correspondingly greater. We have found that the Teetor rings are capable of preventing any excess of oil from reaching the combustion chambers, so that the additional lubrication on the cylinder walls is secured without any excessive carbonization. The increased amount of oil which is delivered to the interior bearing surfaces of the motor has a very satisfactory effect in cushioning these surfaces and reducing certain slight noises which might otherwise be evident. It is not necessary to change jobs already in service, but in any cases where it is felt that the condition of a comparatively new motor would be benefited the work may be handled as follows:

Remove crankcase lower half.

Move generator inward to loosen front end chain as much as possible.

Remove oil manifold.

Remove front, center, rear and the two intermediate bearing caps. The four narrow bearings are not changed.

Loosen nuts on the narrow bearing caps and allow the crankshaft to drop as far as the front end chain at its loosest point will permit. This should be at least  $\frac{1}{8}$ ".

The bearings to be changed may now be driven with a small piece of hard wood so as to roll them around the crankshaft to the point where they can be removed.

The bearing halves should now be clamped together in such a way as to avoid distortion and mounted in a lathe so that a square hosed tool can be used to extend the metering slots. The front bearing and the rear bearing have only one groove and this groove should be continued the same depth and width of 3-16" wide by 1-16" deep.



The center and the two intermediate bearings have two grooves each, and while the depth should continue to be 1-16" the width of the continuations should be  $\frac{1}{8}$ ".

In making the replacement be sure that all burrs and projections are carefully removed so that the bearing clearance will not be changed. Make sure also that the bearings are returned exactly to their old positions as marked, and that the bearings are not reversed in the case.

Yours very truly,

PACKARD MOTOR CAR COMPANY,

*H. N. Davock*

H. N. DAVOCK, Manager,  
Technical Service Department.