PACKARD
Service Counselor
PARTS ★ ACCESSORIES ★ PRODUCT ★ PROFITS
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PARTS AND ACCESSORIES NEWS—

A new "department" has been added to the Service Counselor with the title "Parts and Accessory News—direct from the Packard Factory Warehouse". This section will contain items of particular interest to Parts men and Service Salesmen as well as Mechanics. We believe it will be a most welcome addition and your suggestions for improving it will be appreciated.

The group shown are responsible for gathering this news and represent all phases of the business of operating the Factory Warehouse. Starting at the right is Gardner, stockroom foreman; Hoffmeyer shipping; Beekler, stockroom foreman; Van Valkenburg, Warehouse Manager; Burns, ordering and chairman of parts news committee; Luth, billing; Reha, pricing; Peters, wire orders; Harbaugh, accessories and literature stock control.

From a length of service standpoint this group totals 265 years, an average of 29 apiece. They have been in the parts business a long time and you can depend on them for not only good parts service but correct parts news.

Parts and Accessories Department News—

direct from the Packard Factory Warehouse

RED PEDAL PADS

We are again in a position to furnish part No. 367315 red clutch pedal rubber pad used on electromatics only.

This, is important due to the fact, that when the clutch pedal is of the red material the mechanic knows immediately that the car is equipped with the electromatic..

CLOCK—DETAIL PARTS

We are still receiving calls for detail parts of instrument board clocks.

Please refer to Parts and Accessories Bulletin 46P-27, Dealer 20, issued on 6-17-46, in which it was stated that clocks are to be sent to the vendor for necessary repairs; therefore, detail parts should not be ordered.

REAR DOOR WINDOW WING PARTS

A small but important item used on the current Clipper might be the cause of some confusion when ordering.

This item is part No. 372537, Rear Door Window Wing Pivot Lower (Male.)

This is classed as a non-serviceable part. It is carried and shipped under the Retainer Assemblies. You may order the Retainer Assembly for the right side, 37280, and 372781 for the left, as the pivot lower, 372537, is used in both assemblies.

Time and Trouble Saving Tips for Mechanics

from the Technical Service Section

THE AUTOMATIC HEAT CONTROL

All Models

In order for a gasoline engine to run efficiently and economically, the fuel must be completely vaporized before it reaches the cylinders.

Since this complete vaporization must take place in the intake manifold, the manifolds of the modern engine are designed to utilize the heat of the exhaust gas for this purpose. To control the degree of heat necessary for the vaporization of fuel under varying conditions of engine temperature and speed, an automatic heat control is provided.

This automatic heat control, consisting of a butterfly valve, shaft, balancing weight and a thermostatic spring, is fitted into the exhaust manifold in such a manner that exhaust gas may be circulated around the center portion of the intake manifold.

In the "cold" position of the valve, all of the exhaust gas circulates through the jacket in the center of the intake manifold. In the extreme "hot" position, all of the exhaust gas is directed into the exhaust pipe.

When the engine is started and the exhaust manifold is cold, the thermostatic spring holds the valve in the cold position and permits the hot exhaust gas to circulate around the fuel mixture inlet passages in the center of the intake manifold. This circulation of hot gas causes the intake manifold to heat up rapidly resulting in vaporization of the fuel mixture before the engine has reached normal operating temperatures.

As the engine warms up, the thermostatic spring expands reducing the tension which holds the valve in the cold position. The balancing weight then begins to turn the valve toward the hot position permitting part of the exhaust gas to be directed into the exhaust pipe, by-passing the jacket around the inlet passages.

When the engine temperature is up to normal the greater portion of the exhaust gas is by-passed directly into the exhaust pipe. The movement of the valve toward the hot position is accomplished by the balance weight and the pressure of the exhaust gas. As the engine speed is increased, the valve will move toward the hot position as the pressure of the exhaust gas increases. As the engine speed is reduced, the exhaust gas pressure decreases allowing

the valve to move toward the cold position.

If the heat control valve is not operating, due to sticking or improper adjustment, and stays in the hot position when the engine is cold, the fuel mixture will not be vaporized until the engine reaches full operating temperature. Even then vaporization may not be complete. This lack of vaporization generally results in poor acceleration, loping, and loss of gasoline mileage.

If the control valve stays in the cold position when the engine is hot, the engine will ping upon acceleration even though the timing is properly adjusted and will have an apparent flat spot due to overexpansion of the fuel mixture in the intake manifold. The excessive amount of exhaust gas circulating around the fuel mixture inlet passages will cause the intake manifold to become very hot. This heat will be transmitted to the carburetor and may cause the gasoline to boil. This may result in percolation when the engine is stopped and cause an excessive amount of gasoline to drain into the intake manifold resulting in a flooded condition.

If the thermostatic spring should become disengaged and is not re-installed, the entire heat control system is destroyed, causing a decided loss in engine performance and gasoline mileage.

The most frequent cause of sticking heat controls is rust. When this rust, caused by the condensation of moisture in the exhaust manifold, forms on the valve shaft, it usually causes the shaft to stick in the bushings or openings in the manifold. This condition is more pronounced in cars that make short runs with frequent stops during which time the engine does not reach temperatures high enough to evaporate the moisture in the manifold.

A valve shaft that is sticking due to rust may be freed up by using a mixture of kerosene and graphite as a lubricant while opening and closing the valve. An oil-base lubricant never should be used on the valve shaft as the heat of the manifold will carbonize the oil and cause sticking.

Adjustment of the heat control valve should be made when the temperature of the manifold is between 60 and 70 degrees or at room temperature. The thermostat should hold the valve firmly in the cold position. If the valve does not seat firmly, shorten the thermostat by bending the free end to increase the tension and recheck.

On the Six and Eight models, the free end of the thermostat hooks over an anchor pin; on Super Eight models, the free end is anchored in a slot in the thermostat cover. The adjustment and method of adjusting is the same for both.

For additional information on sticking heat control valves see "Sticking Heat Controls", this issue.

REFACING THE WATER PUMP BODY

All Models

The success of water pump rebuilding depends upon the sealing face in the pump body being smooth and flat. If the face is scored it must be refaced prior to installing a new seal or seal kit assembly. It also is necessary to maintain the proper distance between the inner face of the impeller and the sealing face of the pump body to insure efficient pump operation.

In the February 1946 issue of the Service Counselor we described the new water pump seals which are being used in the 21st Series cars and which also are being shipped as replacement parts for cars prior to this series.

The new seal incorporates a short, stiff, high rate spring whereas, the old type seal used a long, soft, low rate spring; However, when either type seal is assembled in a pump the actual pressure of the spring against the pump body is approximately the same.

The overall length of the new seal assembly (384890) and the thrust washer (384891) is 23/32 inch at its most effective sealing point. Proper sealing action still will be assured when the overall length extends up to .030 inch beyond this point and the pump may be built up standard if less than .030 inch of metal is removed from the pump body during the refacing operation. Removing more than .030 inch of metal may be compensated for by pressing the impeller further onto the shaft provided the minimum clearance between the impeller and pump body is not exceeded.

The following method for disassembling and refacing the pump is recommended to determine accurately the amount of metal which may be removed from the pump body during the refacing operation.

1. Remove the water pump rear cover and gasket.

2. Place a straightedge across the rear face of the pump housing and measure the distance between the rear face of the impeller and the straightedge with a feeler gauge and record the measurement.

3. Measure the distance between the front face of the im-

peller vanes and the pump body with feeler gauges and make a record of this clearance. Clearance is measured by working through the water inlet.

4. Dismantle the pump and inspect the sealing surface of the pump body. If the scored surface can be cleaned up by removing less than .030 inch of metal, reface with Water Pump Seal Seat Refacer J-1720-A just enough to clean up the surface. This tool takes a light smooth cut from the surface. After cutting, the seal surface is polished by placing a piece of fine emery cloth between the cutter and seal surface and rotating the cutter shaft.

If it is definitely known that the amount of metal removed *did not* exceed .030 inch, the seal or seal kit assembly can be installed and the pump assembled.

If any doubt exists as to the amount of metal removed, or when a sealing face is scored heavily, the following steps should be followed:

A. Cut a piece of 1 inch or 1¼ inch O. D. pipe or bar stock, 23/32 inch long, making sure that the two faces are parallel. (This will be used as a spacer and will represent the overall length of the thrust washer and seal assembly at its most effective sealing point.)

B. Place the spacer on the pump body sealing surface and place the impeller over the spacer, centering the impeller as nearly as possible.

C. Place the straightedge across the rear face of the housing and measure the clearance between the rear face of the impeller and the straightedge.

D. Subtract the clearance obtained in Step 3 from this clearance.

E. Subtract the figure obtained in Step D from the measurement recorded in Step 4. This figure will represent the clearance between the front face of the impeller and the body when the seal space is 23/32 inch.

EXAMPLE:

Measurement obtained in Step C = .080 inch

Measurement obtained in Step 2 = .068 inch

Difference obtained in Step D = .012 inch

Clearance obtained in Step 3 = .028 inch

Difference obtained in Step D = .012 inch

Clearance at front of impeller obtained in Step E = .016 inch

F. If the impeller to body clearance obtained in Step 9 is less than .015 inch, the pump body has been refaced beyond the point where the seal will properly function and the pump should be replaced.

G. Press the impelle rshaft into the pump housing and locate in position with the shaft bearing lock.

H. With a flat plate on the bed of an arbor press, place the impeller and seal assembly on the plate with shim stock equal in thickness to the measurement obtained in Step C under the impeller on each side of the impeller shaft hole.

I. Place the pump body and shaft assembly over the impeller and press the shaft into the impeller until the housing bottoms on the plate. Use care not to press shaft too far, jamming shaft bearing lock in its groove.

J. Recheck the clearance between the front face of the impeller vanes and the pump body Clearance must be not less than .015.

WATER IN GASOLINE

To reduce the danger of ice forming in the carburetor and fuel pump during cold weather, the fuel pump sump and the carburetor should be cleaned The plug should be removed from the gas tank and a small amount of gas drained out to remove any water that may have settled to the tank bottom.

Keeping the gasoline tank as full as possible during cold weather will greatly reduce the amount of water in the fuel system. When a gasoline tank is only partially filed, the portion of the inside of the tank that is not covered by gasoline will "sweat". This "sweat" or condensation runs to the bottom of the tank.

When the car is driven, agitation of the fuel in the tank permits a portion of this water to be picked up by the gasoline and carried to the fuel pump sump and the carburetor.

The water deposited at these two points, or in the lines, will of course freeze during cold weather and, if the accumulation is great enough, will restrict or stop the gas flow.

After the fuel system has been cleaned thoroughly to remove the water, two suggestions to the owner will prevent the recurrance of this complaint.

1. Advise him to keep his gasoline tank as full as possible at all times.

2. Add 4 ounces (¼ pint) of alcohol to each full tank.

The full tank will reduce the amount of water condensed in the system and the alcohol will prevent the freezing of any water that may accumulate.

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