PACKARD
Service Counselor
PARTS ★ ACCESSORIES ★ PRODUCT ★ PROFITS
INSTITUTIONAL PROMOTIONAL
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CAUSES OF RUN-DOWN BATTERIES

No single condition is responsible for run-down batteries. We are listing those items which have been found to affect this condition and urge a complete check of every circuit with a dependable ammeter where battery trouble is encountered.

1. On convertibles it has been found that the bracket which guides the top operating valve control rod is binding the rod so that it cannot return to the neutral position when it is released. When operating the top with the engine running, it is quite possible that the pump might continue to operate and not be noticed by the driver. These brackets should be checked and aligned where necessary on all convertibles.

2. An item affecting overdrive equipped cars in which the battery runs down in a very short time is the possibility of an improperly operating overdrive solenoid. After making sure that there is no electrical drain in the system, with the ammeter still connected, place the overdrive control knob in the "IN" position. Ground the overdrive switch circuit at either the kickdown switch or the lockout switch and check the current draw. When operating properly, the current draw should momentarily go to approximately 26 amperes, then immediately drop to approximately 4.5 amperes where it should remain. If a solenoid is found to have continuous high amperage draw, it should be replaced with a new solenoid.

3. When generator voltage and current regulators are found to be improperly adjusted, they should be reset to 7.2 to 7.4 volts and 35 amperes.

4. Check the wiring of the regulators to be sure that they are properly connected.

5. Check the wiring harness terminals at the generator and regulator to be sure that they are properly soldered.

6. The battery post terminals in some cases have been loose—in others, it has been found that the taper of the terminal does not exactly fit the post. In the latter case it may be necessary to cut a portion of the lug from between the jaws of the clamp to allow the terminal to properly tighten on the post.

7. There have been quite a number of reports of loose wiring under the dash which may result in high resistance connections. In some cases wires have dropped down causing current leakage and short circuits.

8. Short circuits have been found in body wiring where the sharp edges of stampings have worn the insulation from body wires. There have been reports of tacks having been driven into the dome light wires which caused drainage of current or short circuits.

9. There have been cases reported in which the wiring harness connectors which lie in the channel of the frame have become coated with salt and moisture, causing a constant drain of current to the frame.

10. With our present type of instrument panel control switches, it is very easy for the switches to be placed in the "ON" position without the driver realizing that they are on.

11. It might be well to suggest that customers refrain from using overdrive in *city* driving during the winter months. The saving in fuel consumption at low speed is negligible whereas the increased r.p.m. of the engine will definitely increase the charging rate to the battery.

Trim Set Numbers

If delay and confusion in filling orders for trim are to be avoided, a trim set number should be shown on every trim order.

If you cannot show a trim set number on the order, furnish the vehicle number of the car for which the trim is wanted and a sample of the trim required.

Connecting Rod and Crankshaft Identification

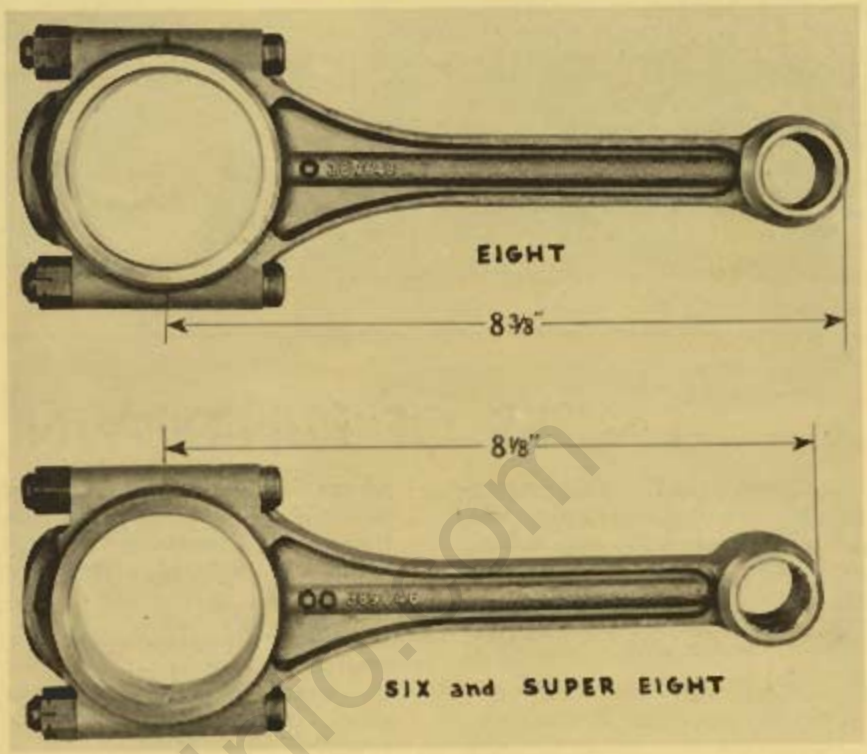
22nd Series Taxicab Six, Eight, Super Eight

When replacing connecting rods in a Six, Eight, or Super Eight engine, care should be exercised to insure installing the proper rods in the particular engine being serviced. This also holds true when replacing a crankshaft in an Eight or Super Eight engine.

The connecting rods used in the Six and the Super Eight are interchangeable. However, these rods are not interchangeable with those used in the Eight due to their difference in length. The rods used in the Eight measure 8⅜ inches from the rod and cap split line to the top of the piston pin bushing bore. The rods used in the Six and Super Eight measure 8⅛ inches from the split line to the top of the bushing bore. (See accompanying illustration.)

When a Super Eight rod (the shorter rod) is installed in an Eight engine, the compression of that particular cylinder will be lowered resulting in a weak cylinder. This is due to the fact that the piston will be approximately ¼-inch below the top of the cylinder block, instead of flush with the top, when the piston reaches its upward limit of travel. If an Eight rod (the longer rod) is installed in a Super Eight engine, the piston attached to that rod will travel upward beyond its normal limit and will strike the bottom of the cylinder head. When this condition exists, considerable damage may be done when attempting to start the engine. This is especially true if the rod is starting its downward stroke permitting the engine to build up torque before the piston is pushed up against the cylinder head.

Connecting rods now being used in production may be identified by the part number which is forged in the I-beam section of the rod and by the number of spherical segments or "pimples" below the part number. These identification marks also are shown in the accompanying illustration. The rods used in the Six and Super Eight engines carry part number 389646 and have two "pimples". Rods for the Eight engine carry part number 389648 and have one "pimple".



Early production Six and Super Eight engines were equipped with connecting rods having only one "pimple" instead of the two now being used to facilitate identification. These rods may be identified either by the part number 389646 forged in the rod or by the 8⅛-inch dimension measured from the split line to the top of the piston pin bushing bore.

Important

All "part numbers" referred to in this article are forging part numbers, NOT service part numbers.

When ordering connecting rods or crankshafts refer to the parts list for correct service part numbers.

The crankshaft used in the Super Eight and in the Eight engine are very similar, the only exception being a difference in crank "throw". The crank "throw", which is measured from the center of the main bearings to the center of the connecting rod bearing journals is ¼-inch greater on the Super Eight crankshaft than on the Eight shaft.

When an Eight crankshaft having the shorter "throw" is installed in a Super Eight engine, the stroke is reduced and the pistons will not reach their normal upward and downward limit of travel. Since the pistons cannot reach their normal limit of travel, the compression ratio will be reduced to the extent that a considerable loss of power will be experienced when the engine is operated. In fact, it is possible that the engine may not have sufficient power to drive the car at a speed above 70 or 75 miles per hour.

On the other hand, when an Eight engine is equipped with a Super Eight shaft, the pistons will attempt to travel ¼-inch beyond their normal upward and downward limit. However, since the amount of space between the top of the cylinder block and the bottom of the cylinder head is governed by the thickness of the gasket, the pistons cannot travel ¼-inch beyond their normal upward limit but will strike the bottom of the cylinder head. The engine then cannot be cranked or turned over.

The crankshaft now being used in production for the Super Eight engine may be identified by the part number 389607 which is forged in the No. 8 balance cheek of the shaft or by the raised piston displacement numerals "327" forged in the No. 2 cheek. The Eight engine shaft carries part number 389604 in the No. 8 cheek and displacement numerals "288" in the No. 2 cheek.

Early production Super Eight and Eight engines were equipped with crankshafts which did not have the displacement numerals forged in the No. 2 cheek. These crankshafts may be identified by the part numbers forged in the No. 8 cheek or by measuring the crank "throw".

* * *

Poor Engine Performance at Low Speed

2201-2211

Carburetor "flat spots" and engine sluggishness at low speeds may occasionally be reported on 22nd Series Eights having an engine serial number below G-202848.

Carburetors installed on the later engines incorporate a change in metering rods and low speed jet tubes which improved the engine performance in this low speed range.

When this low speed condition exists on one of these early cars, the low speed jet tubes, part number 393819, should be removed and replaced with the later tubes which may be ordered under part number 410280. The metering rods also should be removed and the later rods installed. These later rods, which may be ordered under part number 393895, are identified by the number "75-451" stamped on the shank of the rod. The early rods carried the number "75-608".

* * *

Caster Changed

2220-2222

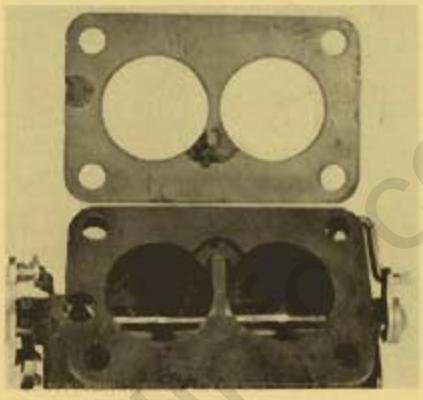
Caster specifications for the 2220 taxicab and 2222 seven-passenger-sedan and limousine have been increased to negative 2 degrees, plus or minus ½ degree, loaded. Please revise page 112 of your *Service Counselor* for December 15, 1947 to conform.

Excessive Fuel Consumption

22nd Series Eight, Super Eight, Custom Eight

When investigating reports of excessive fuel consumption, the gaskets on each side of the insulator block between the carburetor and the intake manifold should be checked.

An inspection may show that the upper and lower gaskets are not in their proper location but are interchanged. When these gaskets are interchanged, the lower gasket swells and restricts or closes off the vacumeter passage in the carburetor. The accompanying illustration shows a carburetor and a lower gasket which was installed above the insulator block instead of below the block. You will note that a portion of the gasket had swelled and had bulged up into the pocket around the vacuum passage opening, thereby closing the opening.



When the vacuum passage is closed off the vacuum piston is held in its uppermost position by the vacuum piston spring. The metering rods which are linked to the vacuum piston also are held in their uppermost position.

When the carburetor is functioning normally, metering of the fuel is accomplished by varying the position of the metering rods in their jets. The metering rods have an upper step (the large diameter of the rod), a lower step (the small diameter of the rod), and an intermediate step (the tapered portion of the rod between the upper and lower steps).

At high speeds or when power is required for hard pulling the vacuum acting on the vacuum piston is not high enough to overcome the tension of the vacuum piston spring and both the piston and the metering rods are in their raised position. At this time the lower steps of the rods are in the jets allowing enough fuel to flow to the nozzle to provide a rich mixture.

At low speeds the relatively high vacuum acting on the piston overcomes the spring tension and pulls the piston downward in its cylinder. The piston and link in turn lowers the metering rods until the upper steps of the rods are in the jets providing a lean or economy mixture.

When the car is driven at intermediate speeds the tapered portion of the rods are in the jets allowing full power with the best economy possible.

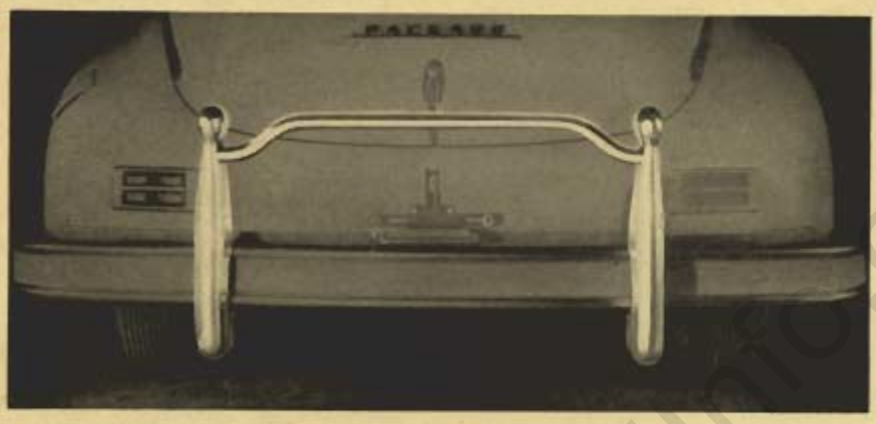
Having reviewed what takes place when the vacuum piston and metering rods are functioning normally, the trouble caused by a closed vacuum passage is readily apparent. The vacuum piston cannot be drawn downward regardless of the amount of vacuum available and the metering rods are held in their raised position. This provides a rich or power mixture even though an economy mixture is desired.

If the gaskets are found to have been interchanged, the carburetor should be removed and the gaskets installed in their proper location. It is not necessary to disassemble or service the carburetor since the vacuum piston will resume operation when the vacuum passage is again opened.

The gaskets may be identified in that the upper gasket has a woven pattern while the lower gasket is plain or smooth. The upper gasket has a perforated steel core covered with graphited asbestos anchored to the core on both sides. The lower gasket is of compressed graphited asbestos only

Both the upper and lower gaskets being shipped from the Factory as service replacement parts are of the cored type. The plain lower gasket is used only in production. Gaskets may be ordered under part number 348465.

Auxiliary Bumper Guards Afford Both Style and Protection



For added protection and modern styling, new Auxiliary Bumper Guards, front and rear, are now available for all 1948 Packard Eight, DeLuxe Eight and Super Eight models.

These auxiliary guards are of very heavy construction and are mounted over the standard bumper guards. They afford the maximum protection to the grille work of the front and to the trunk panels at the rear. They are massive in appearance and especially designed to harmonize with the front and rear end styling of the 1948 cars.

Auxiliary Bumper Guard—Front is part number PA-412002;—Rear, PA-412000.

Correction

Through error, the second last line on page 25 of the Serviceman's Training Booklet, *Transmission and Overdrive* reads: "On Transmissions *With* Overdrive."

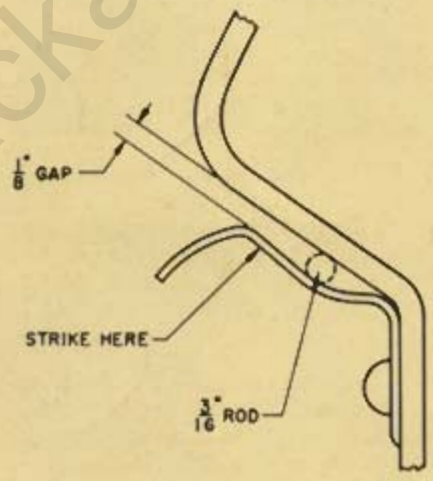
Please correct this line to read: "On Transmissions *Without* Overdrive."

Repeated Loss of Hub Shell Covers

To reduce the possibility of repeated loss of hub shell covers, the retaining clips on the wheel should be checked before the installation of the new cover. Incorrectly shaped clips do not hold the cover tightly enough against the wheel to prevent loss.

When the clips are viewed from the side, the first bend or ramp in the clip must not be over ⅛ inch away from the wheel, as shown in the illustration. This gap can be checked with a ⅛ inch piece of stock or feeler gauge. In some cases the clips may be found bent out or away from the wheel to the extent that they do not contact the shell cover.

Clips can be returned to their proper shape by bending. Insert a round pin 3/16 inch in diameter between the clip and wheel at approximately ¾ inch from the first bend and, using a hammer and punch, the gap can be reduced to ⅛ inch by driving the clip toward the wheel. See illustration. Care must be exercised not to straighten out the clips or the distance between the clip outer ends, when measured 180 degrees from each other, will be too great to enter into the hub shell cover opening. The clip end must always remain curved away from the wheel.



When the clips have been shaped properly, the gap at the ramp will be ⅛ inch and a slightly larger gap of approximately 3/16 inch will exist at the midway point where the round pin was inserted. If too large a gap is made at the midway point, the overall length of the clip will become shortened. This may result in extreme instances of the clip ramp not entering fully into the shell cover opening and causing the hub shell cover to slip away from the clips the first time the wheel strikes a bump or falls into a hole.

After determining that all clips are properly formed, the hub shell cover opening must be centered over and contacting all clips uniformly before pushing the hub cover in place. A cocked cover temporarily held in place by a clip or two will be lost when the wheel is jarred by the road surface.

Hub shell covers must also be checked for proper type before installation. An article on the different types used appears in the *Service Counselor*, Vol. 21, No. 9, issued June 1, 1947.

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