PARTS • ACCESSORIES • PRODUCT

SERVICE Counselor

PACKARD MOTOR CAR COMPANY

VOL. 27, NO. 2 FEBRUARY, 1953

Ultramatic Linkage Adjustments

23rd, 24th, 25th, 26th Series

This article includes all the Ultramatic Transmission linkage adjustments used on the 23rd, 24th, 25th and 26th Series cars. It incorporates all the latest adjustments for your ready reference.

NOTE: All transmissions shipped from the Parts warehouse will incorporate the latest design parts regardless of the transmission serial number.

CAUTION: The engine and transmission should be properly warmed up. The engine should be idling properly at 375 RPM in high range ("H"), with the hand brake "on," before any adjustments are made on the Ultramatic Drive. The control linkage and throttle linkage should operate freely. Correct adjustments cannot be made with worn or binding linkage. Replace the linkage with new parts if they are worn, and free up all points of pivot before attempting to make a correct adjustment.

23rd SERIES ADJUSTMENTS

Fig. 1

1. Selector Control Linkage: Place the steering column selector lever in the low range ("L") position. Be sure the detent plunger going into the well can be felt.

Adjust the selector rod turnbuckle so the steering lever stop pin is .030 to .040 inches away from the stop on the bracket, Fig. 1. Tighten the turnbuckle lock nut. Recheck the lever in other positions. "N" neutral, "R" reverse, and "P" park should be possible without permanent overtravel when contacting stops.

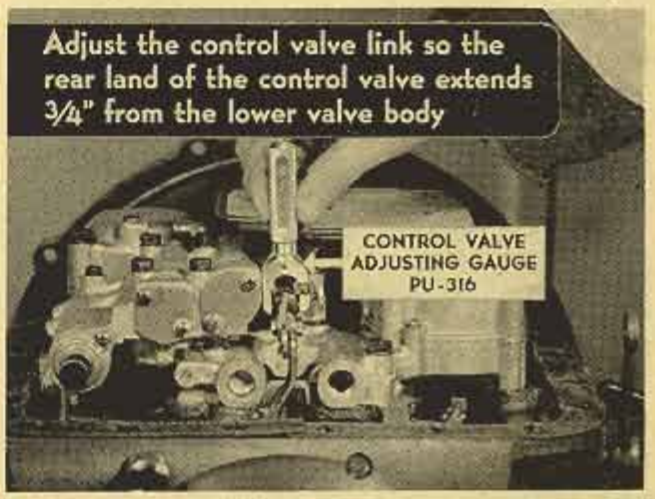


Fig. 2

2. Control Valve Adjustment: (Early 23rd Series having two piece control valve link.)

Place the control valve inner lever in the reverse ("R") position. Be sure the detent is in the well. Using control valve adjusting gauge PU-316, Fig. 2, adjust the link so that the rear land of the control valve is 3/4" out of the control valve lower body. Tighten the serrated link clamp screw.

Fig. 3

3. Throttle Valve Linkage:

Gauge Chart

Tool No.	Engine	Model
PU 333	288 cu. in.	2301 (WGD carburetor)
PU 332	327 cu. in.	2302-22-32
PU 312	356 cu. in.	2306-13-33

Be sure to use the gauge extensions shown in Fig. 3.

Remove the carburetor air cleaner; fold a piece of cardboard and insert it back of the choke valve to hold the choke valve open and off the fast idle.

Place the throttle adjusting gauge with the extension in place over the throttle cross shaft and the end of the carburetor throttle rod, Fig. 4. When the rod length is properly adjusted, the forward end of the gauge extension will rest on the upper milled surface of the carburetor throttle body. The rod can be lengthened or shortened by loosening the lock nut and turning the spring-loaded throttle override.

NOTE: If the gauge extensions are not available, use the procedure as outlined in Service Counselor, Vol. 26, No. 1, January, 1951.

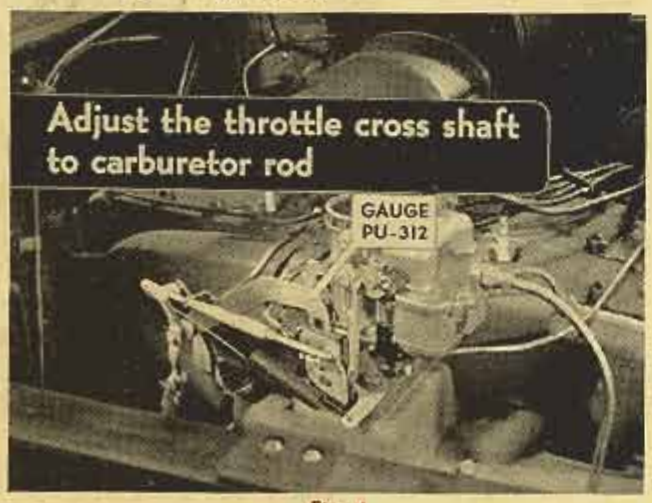


Fig. 4

4. Throttle Cross Shaft to Transmission Throttle Valve Rod:

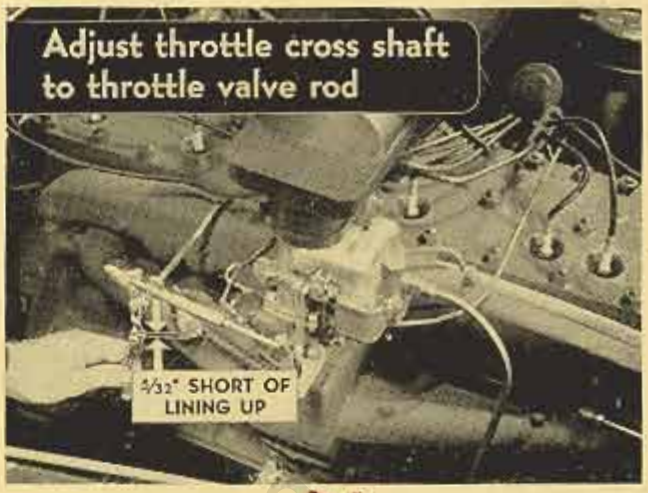


Fig. 5

Disconnect the throttle cross shaft to transmission throttle valve rod. Push the rod downward lightly to seat the transmission throttle valve plunger against the stop. Adjust the clevis so the link rod is 5/32" short of lining up with the pinhole in the throttle cross shaft, Fig. 5. Use Throttle Valve Rod Gauge PU-326 (Models 2306-13-33), PU-328 (Models 2301-02-22-32) to obtain this distance. Tighten the clevis lock nut. Connect the transmission throttle valve rod to the throttle cross shaft. Lock the pin with a cotter pin. The 5/32" upward movement of the rod will move the transmission throttle valve plunger .050" from its stop.

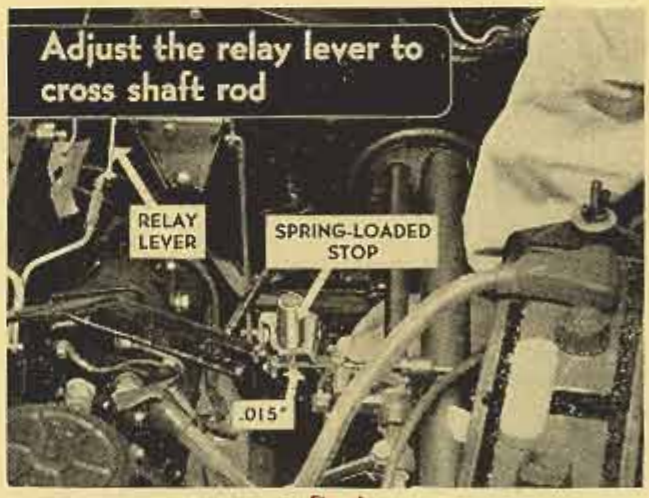


Fig. 6

5. Relay Lever to Cross Shaft Rod:

Adjust the accelerator relay lever to throttle cross shaft rod, so that when the carburetor throttle is wide open, the accelerator pedal push rod lever will come within .015" of the spring-loaded stop, Fig. 6.

NOTE: Adjustments that are different on late 23rd Series.

Selector Control Linkage: Same as early 23rd Series.

6. Control Valve Adjustment:

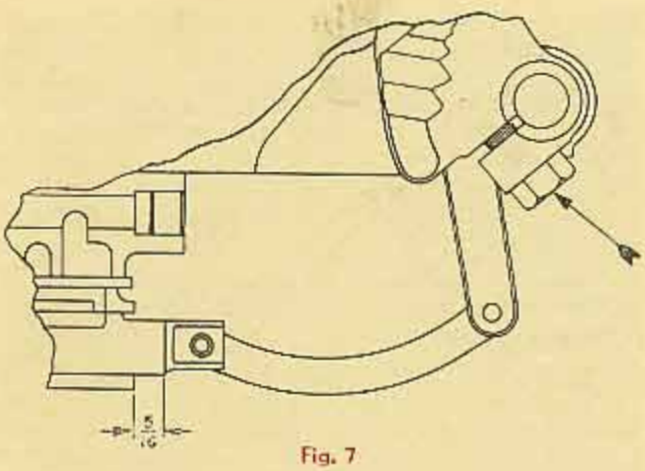


Fig. 7

The new type valve lever and link assembly, shown in the illustration, Fig. 7, incorporates a solid link in place of the two piece link. To adjust, loosen the detent lever cap screw indicated by the arrow. Set the detent lever in the reverse position. Set the control valve to the 5/16" dimension, using Tool PU-316-B, Fig. 8 and tighten the detent lever cap screw to 50 ft. lbs. torque.

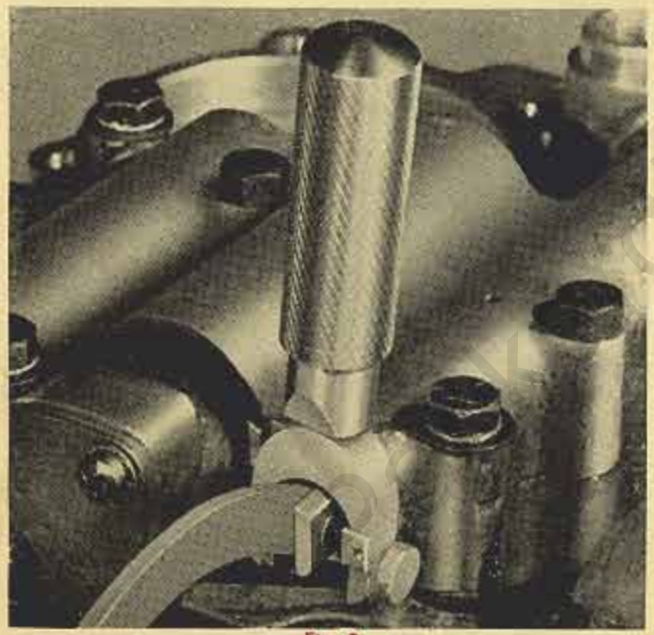


Fig. 8

The control lever shaft should have approximately .045" end play, which is governed by the position of the detent lever. It may be necessary to again loosen the cap screw and move the detent lever on the shaft to obtain this end play. When this is done, the 5/16" dimension should not be disturbed.

7. Transmission Throttle Valve Lever Adjustment:

Beginning with Ultramatic Drive Serial Number 106958 for the Eight and 6486 for the Super Eight and Custom Eight, the Woodruff key was eliminated which positioned the throttle valve outer lever on the shaft.

The key was eliminated so that the lever could be rotated on the shaft to a position which is in proper relation to the position of the carburetor control relay lever. Checking the adjustment can be made by using Tool Number PU-334 as outlined and shown by illustrations:

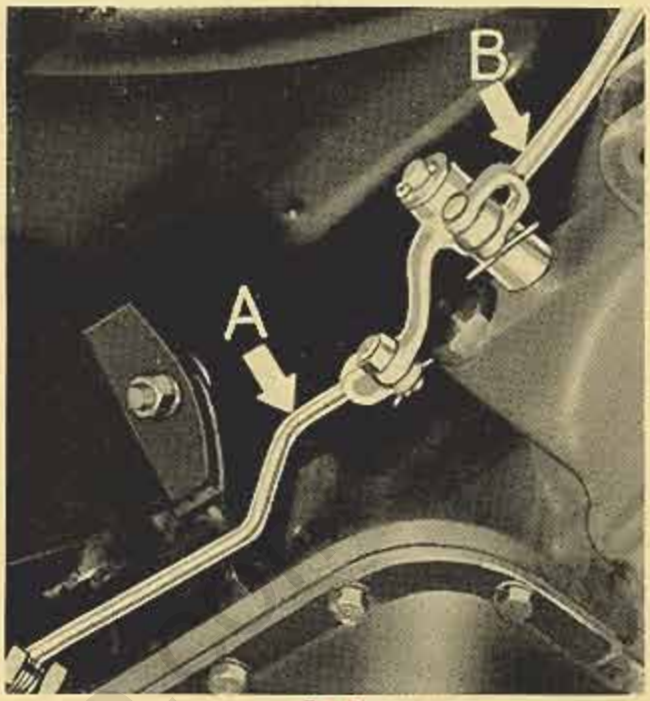


Fig. 9

Disconnect the two rods, indicated in Fig. 9, from the relay lever on bell crank on the right side of the transmission bell housing.

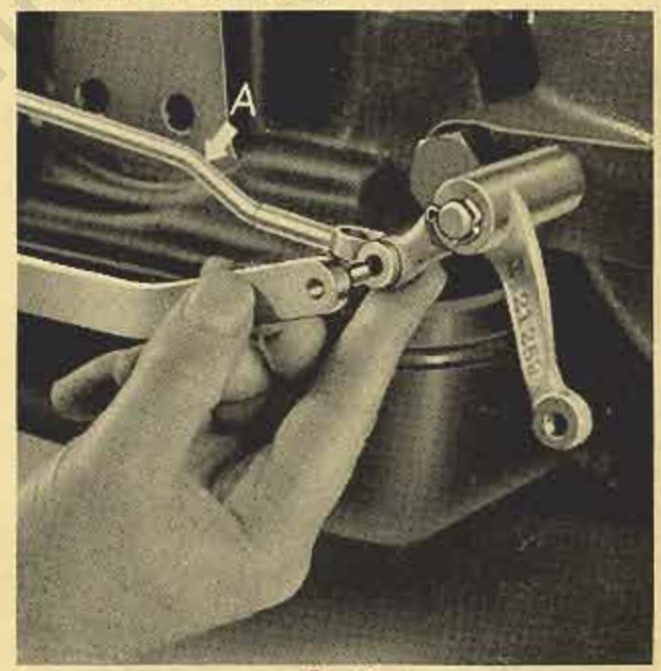


Fig. 10

Move rod "A" toward the rear of the car until the throttle valve lever reaches its rearward limit of travel. While holding the valve back against its stop, line up the clevis pin hole in rod "A" and the relay lever as shown in Fig. 10. The adjustment is correct if the dowel or pin of the gauge can be inserted into the clevis pin hole and the opening in the opposite end of the gauge placed over the end of the valve shaft lever as shown in Fig. 11.

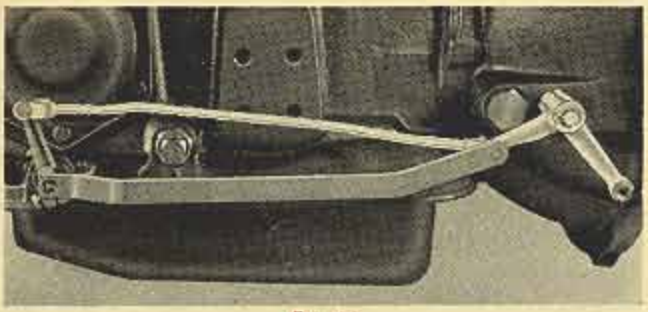


Fig. 11

If an adjustment is necessary, loosen the valve lever clamp screw so that the lever can be turned on the shaft. NOTE: If the unit being serviced is one in which a Woodruff key is installed, remove the lever and discard the key.

Snugly tighten the clamp screw so that the lever will rotate the shaft but still will turn on the shaft after the valve stop is reached.

Rotate the lever toward the front of the car (clockwise) until the stop is reached and then continue to rotate the lever on the shaft approximately ⅛ th turn.

Next, rotate the lever in the opposite direction (counterclockwise) until the stop is reached and then slowly continue to turn the lever on the shaft to a position which will permit the gauge to be installed as shown in Fig. 11. The clamp screw should be tightened to 6 to 7 ft. lbs. (80 in. lbs.) torque.

Ultramatic units having a serial number above 115749 for the Eight and above 7987 for the Super Eight and Custom Eight incorporate the latest design control assembly in which the throttle valve spring acts as a stop for the valve shaft when the outer lever is rotated counterclockwise. The throttle valve lever, on these later units, is adjusted as previously outlined except the preceding paragraph which is changed as follows:

"Next, rotate the lever in the opposite direction (counterclockwise) until the valve shaft contacts the spring, but does not compress it, and then slowly continue to turn the lever on the shaft to a position which will permit the gauge to be installed as shown in Fig. 11. The clamp screw then should be tightened to 80 in. lbs. torque."

After this adjustment has been made and rods "A" and "B" connected to the relay lever, the throttle cross shaft to throttle valve rod adjustment should be checked and, if necessary, adjusted as outlined in this article under 4, "Throttle Cross Shaft to Transmission Throttle Valve Rod."

24th, 25th, 26th SERIES ADJUSTMENTS

1. Selector Control Linkage: Same as described under 1, 23rd Series.

2. Control Valve Adjustment: Same as described under 6, 23rd Series.

3. Throttle Cross Shaft to Carburetor Rod:

NOTE: "Ultramatic Linkage Adjustment Change." Service Counselor, Vol. 25, No. 14, December 1, 1951, describes raising the gauge PU-364, .050 inch with shim stock. The tool company in making new gauges added the .050" to the gauge but failed to change the tool number. To find if the .050 has been added, the new gauge measures 2¾" from the base or lower flat surface to the center of the hole in the gauge, while the old gauges measure 2 45/64" from the base or lower flat surface to the center of the hole. The new gauges have two holes, the lower hole is *only* used for right hand drive cars.

Remove the carburetor air cleaner; block the choke valve open with a piece of cardboard to hold the choke open and off the fast idle.

Lay a piece of .050" shim stock on each of the milled surfaces on top of the cylinder head and directly ahead of the bracket supporting the cross shaft. (If new gauge is being used do not use the .050" shim stock.)

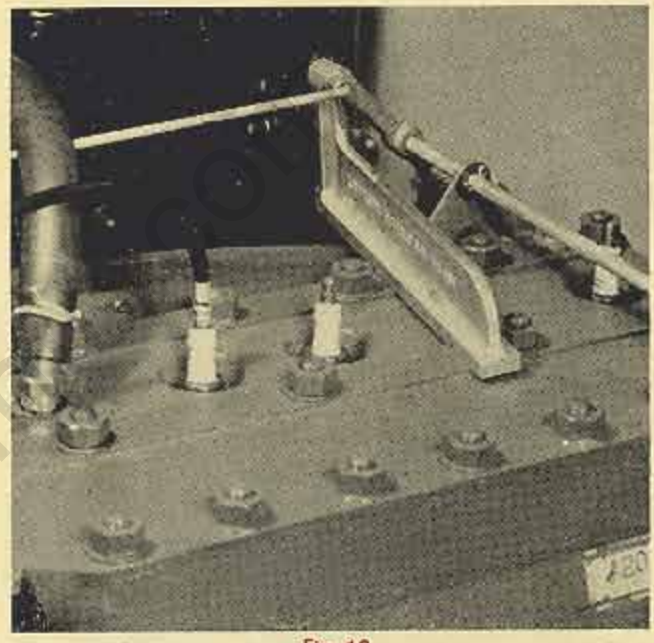


Fig. 12

Place the throttle adjusting gauge PU-364 on top of the two pieces of shim stock. When the carburetor throttle rod is properly adjusted, the end of the short bend at the rear of the rod will protrude through the hole in the cross shaft lever and enter the hole in the gauge, Fig. 12.

The rod can be lengthened or shortened by loosening the lock nut and turning the spring-loaded throttle over-ride.

4. Throttle Valve Lever: NOTE: This is a very important adjustment and should not be overlooked nor neglected.

Disconnect the relay rod from the throttle lever at the right rear side of the transmission, Fig. 13.

Loosen the lever clamp screw enough so that the lever will rotate the shaft but still turn on the shaft.

Rotate the lever forward (toward front of car) until it is horizontal.

Rotate the lever in the opposite direction (toward rear of car) until the valve is closed and against the throttle valve spring. Do *not* compress the spring.

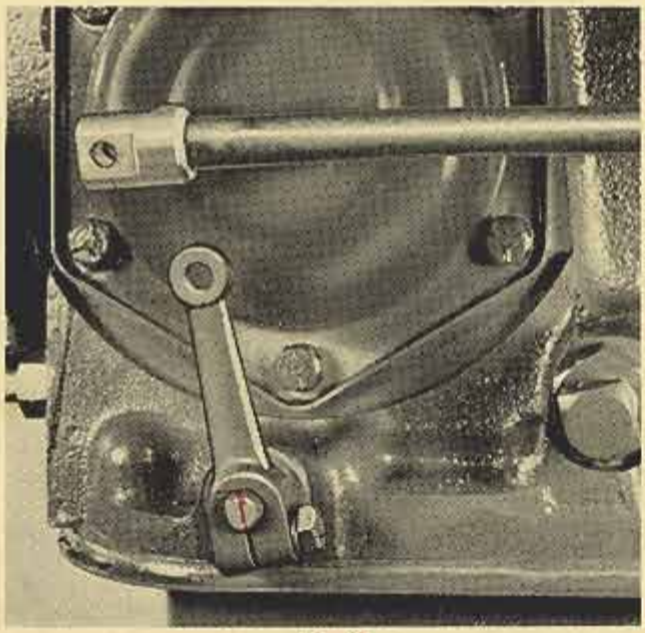


Fig. 13

Without compressing the spring, rotate the lever still further toward the rear until a piece of rod or pin 3/16" in diameter can be inserted through the holes in the lever and the relay rod, Fig. 14. Continue rotating the lever toward the rear until the pin becomes snug in the holes.

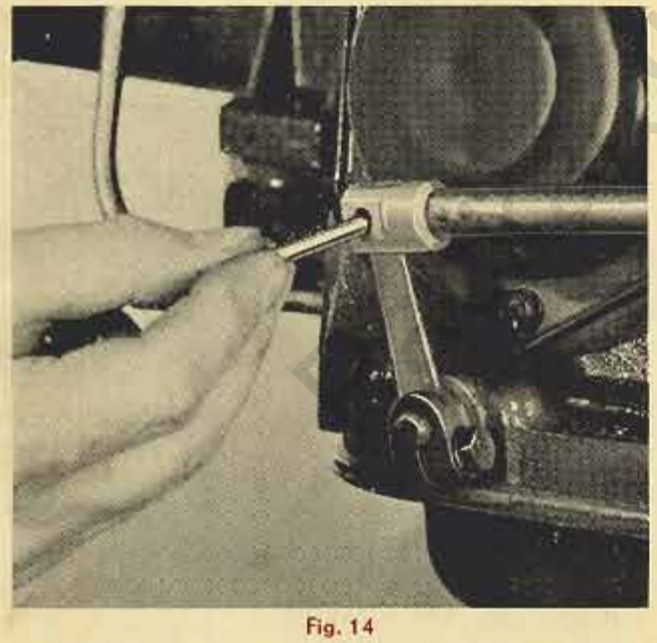


Fig. 14

Tighten the lever clamp screw and then connect the relay rod using the clevis pin which was previously used. Install a cotter pin in the clevis pin.

5. Accelerator Relay Rod to Cross Shaft Lever:

The kickdown stop plunger was discontinued during the 25th Series production. When making linkage adjustments on 24th, and 25th Series cars, the stop plunger should be removed and discarded. The relay rod should be adjusted so that kick-down can only be accomplished when the accelerator is pressed hard to the floor.

Service Transmissions

Ultramatic

The Parts Warehouse is shipping Ultramatic transmissions for Service which may in some instances carry a low serial number but has a suffix letter "X" following the serial number.

Units with the suffix letter "X" have been completely inspected and brought up-to-date with the latest design parts. Therefore, when it is necessary to make a parts replacement in one of these units, the latest parts should be used.

The latest Ultramatic Control Linkage adjustments also apply to these transmissions.

Radiator Filler Caps

There were some instances reported this past summer of coolant being lost through the overflow pipe after coming to a stop after a long fast run on extremely hot days.

Expansion of the coolant in the system, which is caused by heat, sometimes raises the pressure in the system beyond the limits of the 7 lb. radiator cap. If this occurs several times, enough coolant will be lost through the overflow pipe to cause boiling.

A new 12 lb. radiator cap is available which will withstand this pressure and will reduce the possibility of the coolant being lost through the overflow pipe. When a 12 lb. radiator cap is installed, it is advisable to inspect the condition of the hoses, clamps, water outlet gasket on the cylinder head and replace them if necessary.

The 12 lb. radiator cap is standard equipment on 2602-06-13-26-33 Models. It is available as a service part for the 24th and 25th Series cars at the parts warehouse under Part No. 377264, Radiator Filler Cap.

Service Front Fenders

24th, 25th, 26th Series

Only two front fenders are now required to service all 24th, 25th, and 26th Series cars. These service fenders have the moulding holes omitted. This simplifies the stocking of fenders for the central warehouse, zone ware-house as well as the Dealer's stock.

The service fenders will have white paint marks of round, square and triangle design which will indicate the places to drill for the moulding clips for the different model cars. The grille extension moulding holes for the 26th Series will not be indicated on the service fender; therefore, it will be necessary to lay out the location for drilling these holes.

Installation instructions (For example: 2606 Model)

1. Install the primed fender on the car. Secure it in place with all the attaching bolts. Install and tighten all of the radiator grille bolts.

2. Center punch in the exact center of each of the triangle shaped paint marks. Drill ¼" holes through

the fender at the locations just center punched. While holding the mouldings and clips in place on the fender, check the moulding alignment. It may be necessary to file out some of the holes to get correct alignment.

3. The grille extension moulding is used on the 26th Series *only.*

Double nut the grille extension moulding stud and remove the stud from the moulding.

Insert the forward end of the moulding in the grille opening. Hold the moulding in place against the fender so it is in alignment and fits the contour of the fender. Mark the outline of the moulding with a pencil as shown by the dotted lines on the illustration.

Measure up from the bottom pencil mark to the measurements shown and mark a center line as shown.

Measure 1 1/16" from rear pencil mark (end of moulding) forward to locate rear screw hole and center punch this location. Measure 4 9/16" forward of rear center punch mark and center punch center hole location. Measure 4¾" forward of *center* center punch mark and center punch front hole location.

Drill three ½" holes through the fender at the locations just described.

4. Paint the fender and install the mouldings. Be sure to install the sealing washers to prevent dirty water from leaking through and running down on the outside of the fender.

The service fenders incorporate the latest design 26th Series side splashers which extend downward and are attached to the frame with bolts. These new splashers tend to stiffen the front fenders and grille assembly which results in a sturdier front end.

After installing a front fender on a 24th or 25th Series car, it will be necessary to drill 17/64" holes in in the frame to attach the lower side of the splasher with self thread cutting screws.

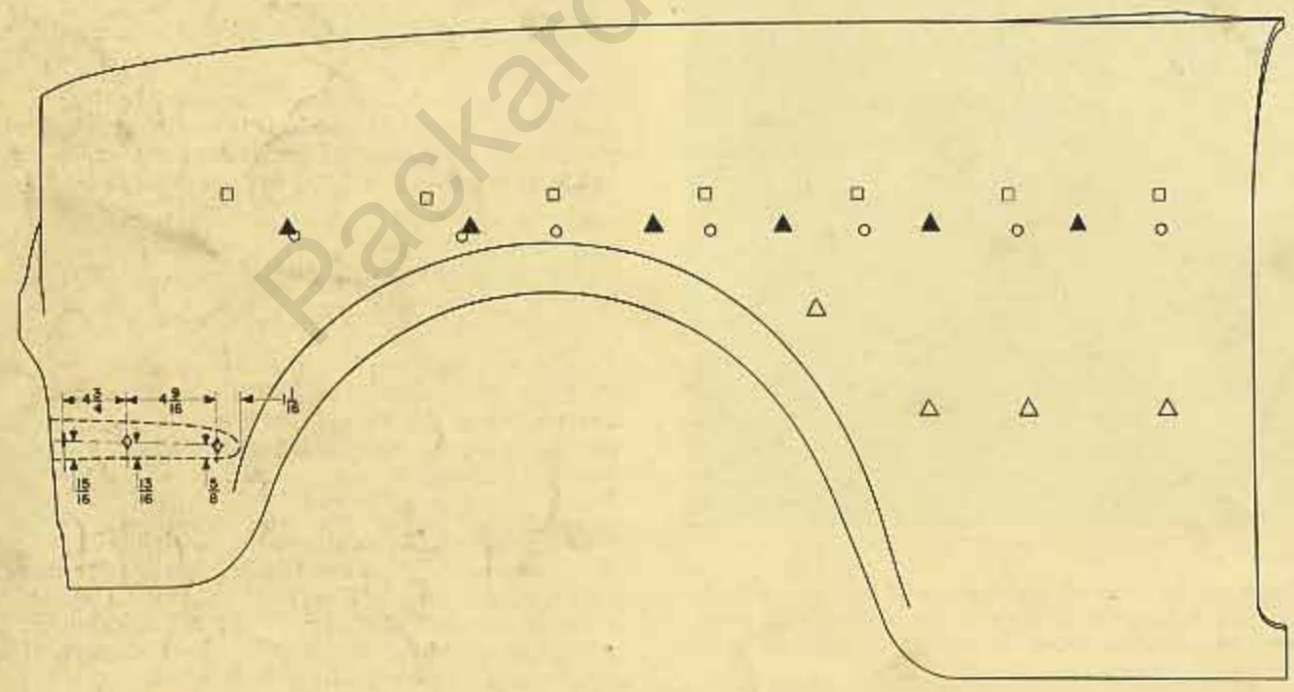
The service front fenders are available at the parts warehouse and may be ordered as follows:

Part Number 436526 Front Fender—Right—24th, 25th, 26th Series.

Part Number 436527 Front Fender—Left—24th, 25th, 26th Series.

SERVICE FENDER MOULDINGS - LOCATION CHART

24TH - 25TH - 26TH SERIES



□ 2662 - 65 - 77 - 79 - 92 - 95 ▲△ 2613 - 50 - 51 - 52 - 72 ▲ 2633

◇ 2613 - 33 - 50 - 51 - 52 - 62 - 65 - 72 - 77 - 79 - 92 - 95

○ 24TH - 25TH SERIES

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