



ADDITIONAL TROUBLE DIAGNOSIS FOR 1951 HYDRA-MATIC TRANSMISSIONS

EDITOR'S NOTE: The information on trouble diagnosis for 1951 Hydra-Matic Transmissions supplements that published in the December, 1950, Service Craftsman News, page 114.

CHECKING OIL PRESSURE IN REVERSE

If there is any indication of excessive slippage in reverse, use the following method to determine whether reverse pressure regulation is normal:

1. Drive car until transmission oil has attained normal driving temperature of approximately 200°F. (It is not necessary to check exact temperature.)
2. Remove pressure check plug and install pressure gauge.
3. Make regular check to determine if pressure regulation in Drive and Low range is normal.
4. With engine running at approximately 375 RPM, note pressure indicated on the pressure gauge with the selector lever in the Drive and Low positions. Move the selector lever to the Reverse position. The gauge should indicate a pressure as high as, or higher than either of the two previous readings.
5. If the pressure checks satisfactorily as indicated in step four, place the selector lever in the reverse position and apply the foot brake. Accelerate the engine to approximately half throttle. The pressure should gradually increase to 125 lbs. per square inch minimum.

If the pressure does not check satisfactorily, as outlined in steps four and five, a leak in the reverse oil system or a malfunctioning pressure regulator is indicated.

LOCATING LEAKS IN THE REVERSE SYSTEM

1. Check reverse booster oil circuit in the pressure regulator.
 - a. Remove pressure regulator valve and disassemble.
 - b. Inspect reverse booster plug for nicks, scores and for free movement in regulator plug.
 - c. See that both the TV pressure plug (D-51 only) and the reverse booster plug are not loose in the bore of the pressure regulator plug allowing excessive oil to dump out past them.

EDITOR'S NOTE: The first 1951 Service Craftsman News Examination is included in this issue. Remove the examination from the Craftsman News, complete and return it to the Zone Office by March 15, 1951. See back page for enrollment information.

d. Check the oil passages in the pressure regulator with air for obstructions or leaks.

e. Check pressure plug seal and gasket for damage or wear.

2. Check connecting passages between control valve assembly and pressure regulator.

a. Remove side cover and gasket.

b. Remove pressure regulator reverse oil pipe. Pipe should fit fairly tight into valve body and case.

c. Inspect pipe to be certain it does not leak.

d. See that pressure regulator reverse oil passage in case is unobstructed. Also apply air to the pressure regulator reverse oil passage on the outside of the case while blocking the opening in the pressure regulator hole to be certain the passage is not leaking.

3. Check reverse piston, piston seals and connecting passages to reverse piston. To positively locate a leak in the oil passages to the reverse piston or in the reverse clutch piston or seals proceed as follows:

a. Remove pressure regulator reverse oil pipe if it has not previously been removed.

b. Remove four valve body to case attaching bolts.

c. Slide valve body forward far enough to allow removal of the reverse clutch pipe. Check to see that clutch pipe fits properly in case and valve body and does not leak. If clutch pipe is found to be satisfactory, replace clutch pipe with a blocked up pipe (fill a clutch pipe with solder and keep it on hand for testing purposes).

d. Replace valve body, pressure regulator reverse oil pipe, side cover and throttle and shift levers.

e. Test main line pressure in reverse as described above. If pressure is correct with the reverse clutch pipe blocked, the trouble must be in the reverse unit of the transmission. If pressure is still below specifications the trouble is most probably in the valve body, pressure regulator, or connecting passages.

If trouble is isolated in the reverse unit, it will be necessary to remove the transmission from the car to correct it. With the transmission on the bench, remove parking brake bracket, rear pump and rear bearing retainer.

Completely disassemble the reverse unit except for reverse clutch piston seals and inspect oil passages and inner and outer clutch piston seals and sealing surfaces. Check reverse clutch oil passage in the case with air to be certain it is not blocked and does not leak.

4. Check control valve assembly.

If no defect has been found by the foregoing procedure, the leak or malfunction is probably in the valve body. The valve body assembly can be checked by replacing it with one which is known to be good.

CORROSION RESISTANT SURFACE COATING FOR INTERIOR BODY PANELS

The following procedure has been found very satisfactory in retarding the rusting of body panels such as doors, quarters, and floors:

1. Stop water leaks.

2. Remove floor mats, carpets or trim panels and dry thoroughly.

3. Apply a metal conditioner such as:

a. Metal-Prep. (available through Du Pont stores). Directions are printed on container.

b. Oakite #33. Mix three parts Oakite with one part water.

4. Wipe off metal conditioner with a dry rag after five minutes and allow panels to dry thoroughly.

5. Apply a coating of synthetic enamel and let dry; air drying will require approximately four hours.

6. Replace dry floor mats, carpets or trim panels.

STOP CYLINDER HEAD LEAKS

Item 8 under "Essential Work to be Performed on Every Car" (New Car Inspection Sheet) states that the cylinder head bolts should be tightened at the 1,000 mile inspection. Torque all cylinder head bolts to 60 ft. lbs.

Whenever cylinder head bolts are loose or are removed for any reason, a liberal amount of sealer (white lead and oil) should be used on the screw threads to reseal the bolts.

In some cases a "leaking cylinder head" may be corrected with proper sealing of cylinder head bolts.

ENGINE IDENTIFICATION NEW VS. OLD TYPE MAIN OIL SEAL

The casting part number which appears in raised numbers between the pan rail ribs on the left side of the engine can be used to determine if the old type (beveled) or the new type (tapered) rear main bearing wood oil seal is in the engine. (See page 87, Service News, No. 9, September, 1950.)

The numbers are as follows:

	Old Seal Block No.	New Seal Block No.
6 cylinder	511240	514245
8 cylinder	513501	514246

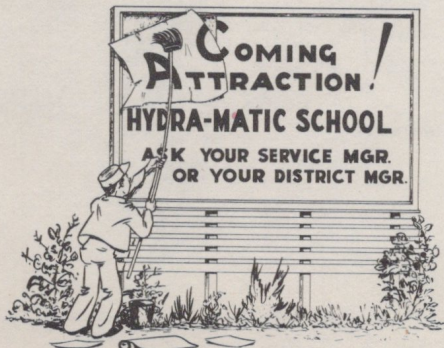
These numbers are used at the factory to identify the castings and should not be used in connection with ordering service parts in the field.

Due to stock in cylinder block banks, it was not possible to clean out the eight cylinder banks before the beginning of 1951 production. Therefore, some 1951 eight cylinder engines will include the old type, beveled wood seals.

PAINT NUMBER CHANGE

The refinish number of Sapphire Blue paint has been changed from 202-55625 to 202-55823. Sapphire Blue is used on the body and instrument panel of Super Deluxe Catalina models with paint combinations 5111, 5115, and 5122 and only on the upper instrument panel of combination 5105.

The new Sapphire Blue paint was used on all Super Deluxe Catalina bodies beginning with numbers L-1996 and P-820. Dupont warehouses and other suppliers of the old paint number have a small quantity of the old paint number on hand. When this stock has been depleted, the new number will be substituted and should be used for refinishing all cars painted Sapphire Blue including those painted with the old number.



SELL YOUR CUSTOMERS THE NEW "ELECTRICAL TONE-UP" IN FEBRUARY

Most Pontiac dealers will be advertising the "Electrical Tone-up" in February. This service is a minor engine electrical check-up designed to help Pontiac owners avoid starting difficulties in winter weather.

Yes, we said "TONE-UP" . . . not to be confused with "tune-up". Electrical Tone-Up is a new service you can offer Pontiac owners.

Here's the February direct mail folder, telling customers the advantages of keeping the electrical system in good working order:

Let Us Give Your Car Our
ELECTRICAL TONE-UP to Start-Up Fast!

It's our "Tone-up" tonic for Winter. Enjoy quicker starting—smoother driving. Safeguard your car now, when weather and longer hours of darkness put added strain on the battery and electrical system.

Protect Your Pontiac With Pontiac Service

- 1 Check battery specific gravity and capacity
- 2 Check starting circuit voltage
- 3 Check voltage drop in starting circuit
- 4 Wipe external surfaces of ignition wires, distributor cap and coil terminals
- 5 Test condenser
- 6 Space distributor points
- 7 Test coil
- 8 Inspect generator condition
- 9 Clean and re-gap spark plugs
- 10 Check lights, horn, heater, defroster, radio, signal lights, instruments, accessories
- 11 Set ignition timing

QUALITY PONTIAC COMPANY
175 Main Street HOMETOWN, U. S. A. Phone 0000

Flat rate allowances for the "Electrical Tone-up" are .7 hour on Pontiac Sixes and .8 hour on Pontiac Eights. This covers the following operations:

1. Check battery specific gravity and capacity.
2. Check starting circuit voltage.
3. Check voltage drop in starting circuit.
4. Wipe external surfaces of ignition wires, distributor cap and coil terminals.
5. Test condenser.
6. Space distributor points.
7. Test coil.
8. Inspect generator condition.
9. Clean and re-gap spark plugs.
10. Check lights, horn, heater, defroster, radio, signal lights, instruments, accessories.
11. Set ignition timing.

Winter driving means heavier starting loads and added use of lights and accessories. Suggest the "Electrical Tone-up" to your customers to help prevent starting troubles.

1950 CONVERTIBLE COUPE REAR QUARTER WATER SEALING

The September, 1950, Service Craftsman News listed a repair procedure for sealing the rear quarter curtain areas of 1950 Convertible Coupes against water leaks. The following procedure may be used as an alternate method of sealing the rear quarter curtain area.

CHECK THE FIT OF TOP MATERIAL

Check the fit of the rear quarter top material at the following locations:

- a. The rear quarter top material side binding "A" should fit as close as possible to the rear quarter glass outer draft strip "B" as shown in Fig. 1.

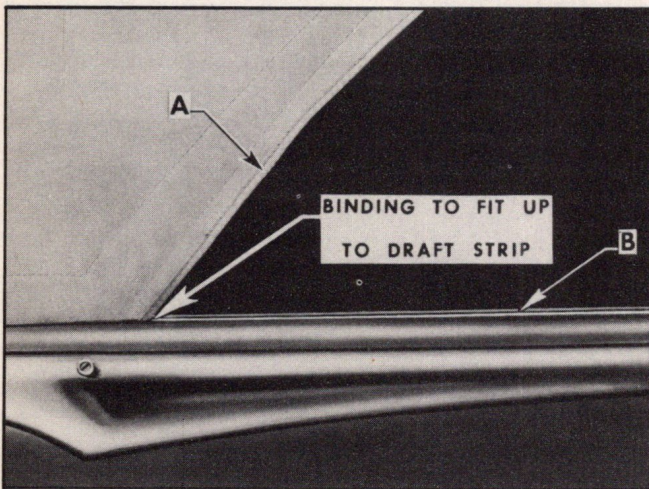


Fig. 1 Rear Quarter Curtain to Outer Draft Panel Fit

- b. The lower end of the rear quarter top material flap "C" should fit against the top of the hinge bumper "D". See Fig. 2.

If the top material has pulled away in either of the locations indicated in Fig. 2, use the following repairs to improve weathersealing in this area:

1. Remove the rear quarter side roof rail weatherstrip and weatherstrip retainer.
2. Loosen the top material flap "C", from the rear quarter side roof rail.
3. Apply 3M Trim Cement to the top material flap and to the surface of the roof rail.
4. Recement and position the top material flap to the rear quarter side roof rail to obtain the proper alignment.
5. Reinstall the weatherstrip retainer and weatherstrip.

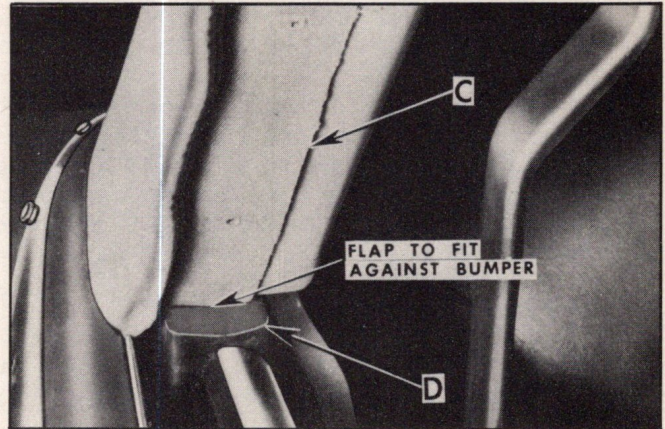


Fig. 2 Top to Hinge Bumper Fit

SEALING OPERATIONS

1. In the event waterleaks are encountered at the drain tube to rear quarter window gutter joint, the rear quarter window and guide channel can be removed and the inner gutter joint sealed with 3M Body Caulking Compound as shown in Fig. 3.
2. Completely lower the top, and remove the molding cap at the rear of the quarter window finishing molding. Remove the imitation leather trim foundation panel which covers screw holes "B" in Fig. 4.
3. Press 3M Body Caulking Compound into the opening between the two (2) metal panels shown at "A" (Fig. 4). This opening extends to the outer panel and must be completely sealed with caulking compound.
4. Press 3M Body Caulking Compound into the two (2) rear quarter window guide channel adjustment screw openings shown at "B" (Fig. 4).

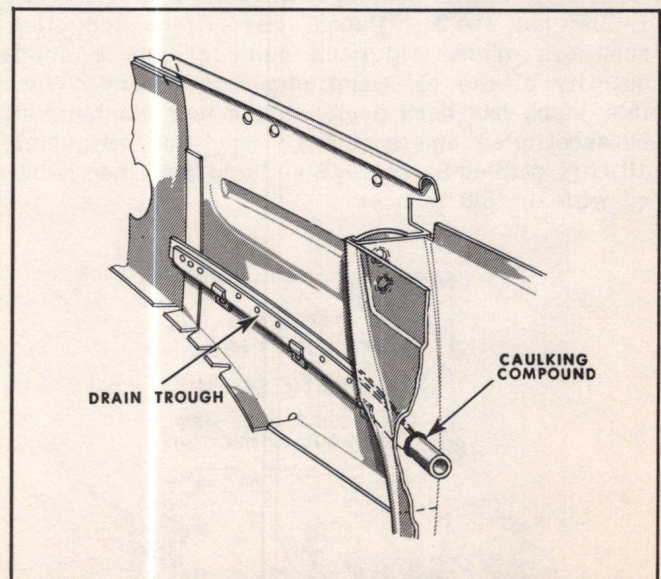


Fig. 3 Sealing Inner Gutter Joint

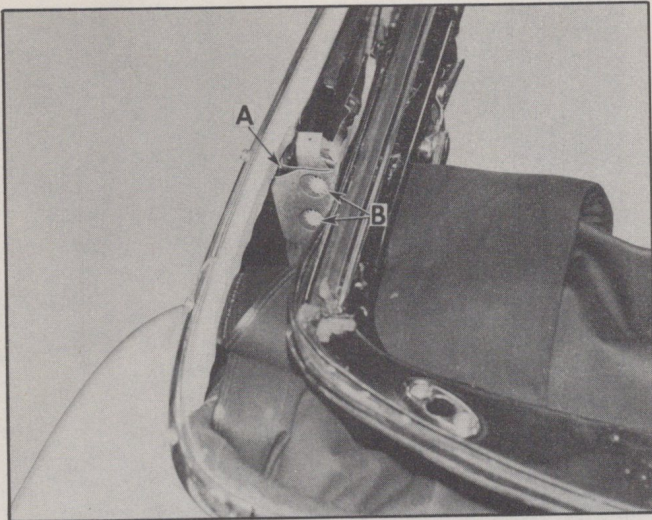


Fig. 4 Sealing Rear Quarter Window Area

5. Raise the top and remove the screws and washers holding the lower edge of the top material to the long drain trough in the rear quarter area. Remove the screw at the forward end of the aluminum pressure plate and remove the plate. (See Fig. 6 for location of plate.)

6. Place a ball of 3M Body Caulking Compound at the rear end of the drain trough at "A" in Fig. 5 to prevent water draining out the end of the trough.

7. Using 3M Trim Cement, cement the skirt of the top material to the side of the drain trough, then reinstall the screws and washers.

8. Replace the pressure plate and, if necessary, adjust it for correct pressure by loosening and moving an adjustable plate at the rear end of the pressure plate. (Refer to Fig. 6.)

INSTALLATION OF THE PLASTIC GUTTER

1. Obtain one each folding top rear quarter lower gutter (plastic pan), part #4598267 (rt.) and #4598268 (lt.) and two folding top rear quarter gutter drain hose, part #4598258. Attach the hoses to the gutters with 3M Weatherstrip Adhesive.

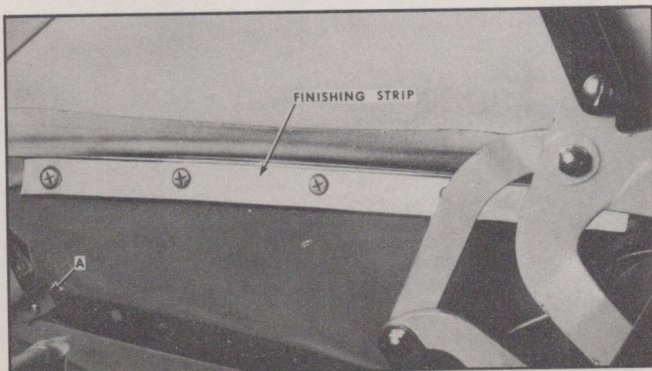


Fig. 5 Sealing Rear End of Drain Trough

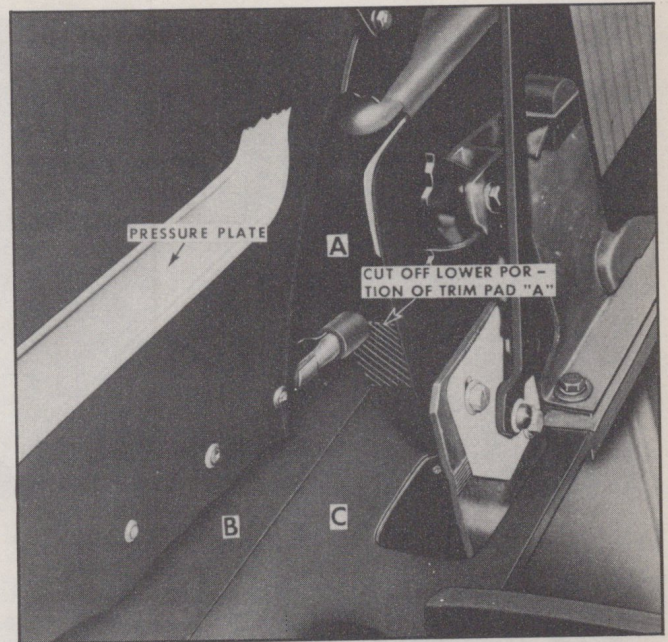


Fig. 6 Location of Trim Pad to be Removed

2. Raise the top and lock in position. Disconnect the top lift cylinder rods from the top linkage and allow the rods to drop through the openings in the folding top compartment. This is necessary to avoid damage to rods.

3. Cut and remove the cross hatched lower portion of trim pad "A" (Fig. 6). Remove trim pads "B" and "C" from their cemented positions (Fig. 6).

4. With a cold chisel and hammer, indicated at "A" (Fig. 7), cut a hole in the metal folding top compartment large enough to clear the drain tube of the new gutter when in position.



Fig. 7 Cutting Hole in Folding Top Compartment

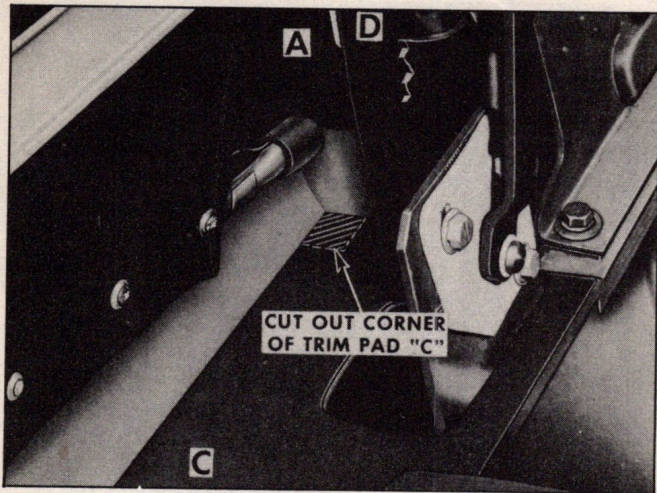


Fig. 8 Location for Cutting Trim Pad

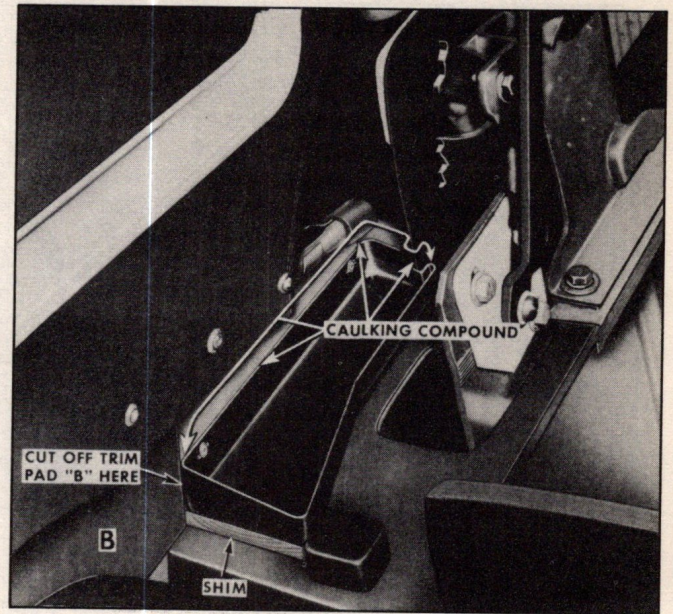


Fig. 10 Sealing Plastic Gutter

5. Cut out the corner of trim pad "C" (Fig. 8) to correspond with the hole made in the previous step. Cement trim pad "C" in position with 3M Trim Cement (Fig. 8). Also, cement trim pads "A" and "D" to the underlying metal.

6. Place the plastic gutter and hose in position in the body with the rear end of the gutter about 1/2" higher than the forward end as shown in Fig. 9. Make sure the gutter is as far forward as possible. Drill or punch two small diameter holes into the rear quarter inner panel. Cement a 1/2" square wood shim under the rear edge of the gutter to give additional support. (See Fig. 10.)

7. Remove gutter and apply a bead of caulking compound along front and outer side (contacting area) of the gutter. See Fig. 10. Install plastic gutter with two sheet metal screws and washers

8. Touch up any exposed metal or caulking compound with paint as necessary.

9. Cut off the forward portion of the trim pad "B" at the rear of the gutter and cement in position using 3M Trim Cement (Fig. 10).

10. Insert the lower end of the drain hose through the hole in the floor pan at the approximate location as shown in Fig. 11. Seal around the hose from inside the body with 3M Autobody Sealer.

NOTE: This hole is plugged with a rubber grommet. It is about 3" to rear of the rear quarter window gutter drain hose.

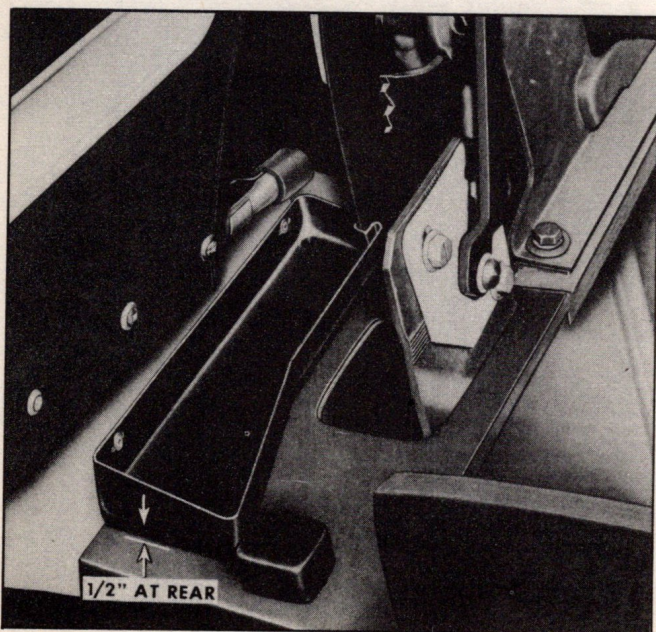


Fig. 9 Position of Plastic Gutter

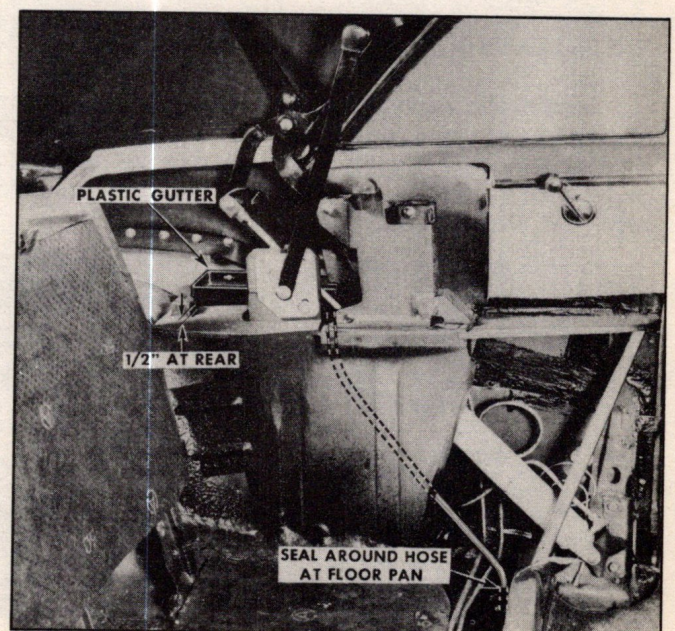


Fig. 11 Plastic Gutter Installed

NEW DELCO BATTERY FOR PONTIAC 1951 MODELS

A new battery is being used on 1951 models. This new battery is commonly referred to as the "Low Gravity Type". The important changes are confined to the chemical functioning of the battery with result that a full charge is obtained at a lower gravity reading than has been conventional in the past. The standard installation uses a Delco Model 15E6, 6 volt, Group 2E, 15 plate battery. The special heavy duty battery is a Delco Model 19E6, 6 volt, Group 2E, 19 plate unit.

The 1951 "E6" battery differs from the 1950 "E4" battery in that the specific gravity range of the "E6" is lower than the "E4". "E6" full charge is 1.260-1.280 compared to 1.275-1.290 for the "E4" battery.

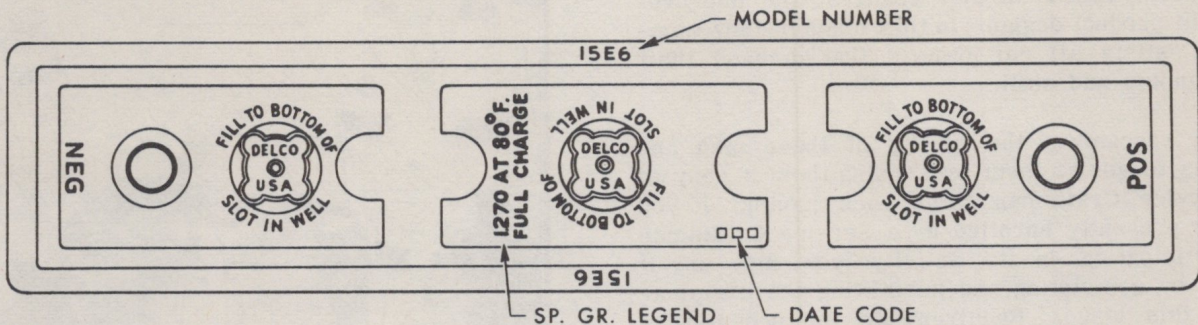
IDENTIFICATION

Positive identification of this new low gravity type battery is shown in the illustration below.

NOTE: "1.270 at 80°F. FULL CHARGE" is embossed on the top of the battery.

IMPROVED PERFORMANCE

Tests on the new "E6" models indicate that the reduction in specific gravity adjustment will increase battery life, improve resistance to damage from overcharging and improve self-discharge characteristics.



DELCO MODEL 15E6—USED ON 1951 MODELS

1.265—1.290 fully charged
 1.235—1.260 $\frac{3}{4}$ charged
 1.205—1.230 $\frac{1}{2}$ charged
 1.170—1.200 $\frac{1}{4}$ charged
 1.140—1.165 barely operative
 1.110—1.135 completely discharged

"E4" 1950 MODELS

1.260—1.280 fully charged
 1.225—1.250 $\frac{3}{4}$ charged
 1.195—1.220 $\frac{1}{2}$ charged
 1.160—1.180 $\frac{1}{4}$ charged
 1.130—1.155 barely operative
 1.100—1.125 completely discharged

"E6" 1951 MODELS

SPECIFIC GRAVITY/STATE OF CHARGE TABLE

This is very important as batteries may be unfairly condemned for "failure to take charge," if higher final gravities are expected. (These new specific gravities apply on any battery in the "E6" series.)

GENERAL SERVICE RECOMMENDATIONS

Present general service instructions on watering, charging, testing, and maintenance will apply to the "E6" batteries also.

Pontiac now specifies a minimum specific gravity of 1.250 for high rate discharge testing. New batteries should have a specific gravity of not less than 1.250 when delivered to the customer.

It is recognized that these values represent a higher state of charge proportionally on the "E6" batteries. However, to avoid the confusion of dual standards in the service field and to maintain a desirable safety factor for all batteries, it is strongly recommended that these values be continued unchanged with relation to the new "E6" batteries.

BE SURE BATTERY GRAVITY IS 1.250 OR MORE BEFORE DELIVERY TO OWNER.

PONTIAC SERVICE CRAFTSMAN ACTIVITY

The most successful mechanic, service man, shop foreman or service manager is the one who has developed pride in his ability to secure and retain a great following of customers . . . customers that come to him with their product troubles with the confidence that they will be repaired right.

Many men of this calibre have attained this pride and success through the benefits offered by the Service Craftsman Activity. This activity provides the latest product information on new features and repair procedures. It keeps craftsmen abreast of the current specifications, changes, and improvements in product design. In this manner they completely satisfy all car owners that demand their workmanship and skill.

Pontiac recognizes the ability of these men and attempts to assist them by sending them a copy of the Service Craftsman News each month. If you are not presently enrolled as a Service Craftsman or participating in its activity, you may enroll merely by completing and submitting the examination in this issue. Requirements for becoming a Pontiac Service Craftsman and remaining in good standing are as follows:

1. You must be in the employ of a Pontiac Dealer.
2. Maintain a continuous average of 80 percent or better on five examinations mailed from your Zone Office each year.
3. Attend all Factory Service Schools.
4. Live up to the Pontiac Service Integrity Code.
5. Remain in the employ of a Pontiac Dealer.

For further information on the Pontiac Service Craftsman program, refer to page 1A in the 1949-1950 Pontiac Shop Manual.

Charlie Craftsman Says-



Read the complete story at the left of this page on how to enroll and maintain an active standing in Pontiac's Service Craftsman Activity.

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.



Latest Information on '51 Hydra-Matic Diagnosis

The diagnosis information outlined in this issue supplements information given in the December 1950 and January 1951, Service Craftsman News.

CLICKING OR "RATCHETING" NOISE

Clicking or "ratcheting" noise in the transmission, with the selector lever in Reverse and the car moving forward 2 to 4 MPH, is due to the parking pawl trying to engage the reverse internal gear. This condition is usually the result of a sharp drop in line pressure.

1. Examine reverse check valve located in detent plunger housing. Valve should be firmly attached to housing by rivet. Opposite end should extend 1/4" above face of housing in free position. Hole (.062") should line up with hole in detent plunger spacer. Face of valve should be flat against spacer when installed. Replace detent plunger retainer assembly if necessary.

2. The parking blocker piston return spring stop seat should be 1/2" to 17/32" from face of bracket. (Change the note in right hand column page 102, December 1950, Service Craftsman News.) The parking blocker return spring should never be altered. If distorted it should be replaced.

A second type spring stop and a new spring are now being used in production. The new stop has a fixed setting and is mounted under both bracket attaching bolts. The new spring has a free length of approximately 1". See Fig. 1. These parts will be stocked in GMPD warehouses and will be released on a Parts Release and Change Notice.

3. Engine idle should be properly adjusted for smooth operation at 365-385 RPM.

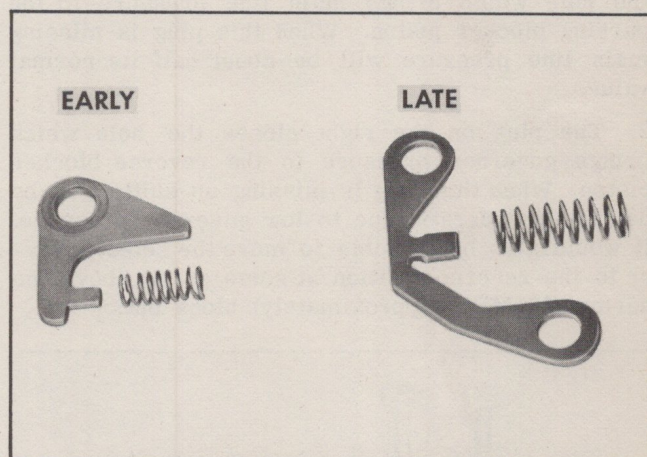


Fig. 1 Early and Late Type Spring Stop & Spring

NO DRIVE IN REVERSE

This malfunction will occur if the front servo exhaust body spacer is installed in reverse. Under this condition oil pressure does not increase when selector lever is placed in Reverse position. Pressure will increase to 150-170 lbs. when transmission shifts from 1 to 2.

ATTENTION MECHANICS

Have you completed and returned the first Service Craftsman News Examination? The first examination for 1951 was included in the January 1951, Service Craftsman News. Remember, submitting this examination automatically enrolls you in the Service Craftsman activity for 1951.

SELECTOR LEVER WILL NOT GO INTO REVERSE

A governor G-1 valve stuck in the open position will not permit the selector lever to go into the Reverse position. Governor pressure holds the reverse blocker piston in the lockout position. Remedy this condition by carefully cleaning the governor assembly.

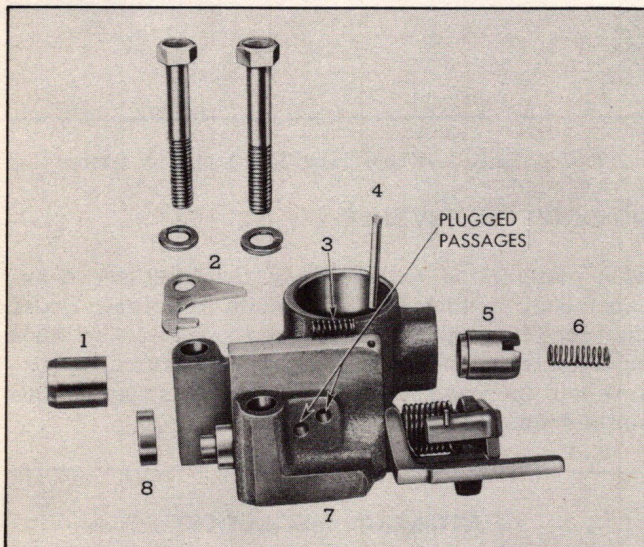
LOW OIL PRESSURE - SLIPPAGE

DELAYED ERRATIC UP-SHIFTS

These conditions will result when one or the other of the two 1/4" cup shaped plugs are missing from the parking bracket. See Fig. 2. These plugs are not service parts and should never be removed. If plugs are loose or missing, replace the bracket assembly.

1. Referring to Fig. 2, the plug on the left closes the hole which brings main line pressure to the parking blocker piston. When this plug is missing main line pressure will be about half its normal value.

2. The plug on the right closes the hole which brings governor pressure to the reverse blocker piston. When this plug is missing up-shifts will be delayed and erratic due to low governor pressure. It would also be possible to move the selector lever to the reverse position at some speed above the normal 10 MPH (approximately) block out.



1. Parking Blocker Piston
2. Parking Blocker Return Spring Stop
3. Parking Blocker Return Spring
4. Stop Pin
5. Reverse Blocker Piston
6. Reverse Blocker Piston Spring
7. Bracket and Crank Assembly
8. Crank Roller

Fig. 2 Exploded View of Parking Brake Bracket Assembly

REVERSE CONE ENGAGES WHEN IN "DRIVE"

A reverse cone engaging while the selector lever is in "Drive" can occur when there is excessive oil leakage into the reverse apply circuit.

1. Check the front servo exhaust valve for proper fit in exhaust body. (Specification .002" clearance.) If too loose, front servo apply oil will leak past valve into reverse apply circuit. Replace valve body assembly if necessary.

2. Inspect detent retainer spacer and valve body surfaces that contact spacer. A distorted spacer or damaged valve body surfaces will permit 2 to 3 shift oil to enter reverse apply circuit. Replace control valve assembly if necessary.

3. On D51 (8 cylinder) transmissions, see that neoprene seal ring on pressure regulator plug is not defective or damaged. Replace seal if necessary. See that TV plug does not fit too loosely in pressure regulator plug. (Specification .002" clearance.) Replace regulator plug assembly if necessary.

4. On P51 (6 cylinder) transmissions, see that a P51 (6 cylinder) valve body is in use. A D51 (8 cylinder) valve body on a P51 (6 cylinder) transmission will cause this condition.

SELECTOR LEVER HARD TO SHIFT

In addition to the two possible causes listed on page 114 of the December 1950, Service Craftsman News, the following may cause a bind:

The front servo exhaust body may be too close to the manual valve when attaching screws are tightened to outer valve body.

REPORT CASTING NUMBER

Give the engine block casting part number when reporting rear main bearing oil seal leaks on PI Reports. Refer to the January 1951, Service Craftsman News, page 3, Engine Identification, for proper location of the engine block casting part number.

HYDRA-MATIC TRANSMISSION TO FLYWHEEL HOUSING GASKET DISCONTINUED-1951

No gasket is used between the front end of the Hydra-Matic transmission case and the flywheel housing on 1951 Hydra-Matic equipped cars.

The 1951 Master Parts Catalog shows gasket part number 419200, group 4.005, is for use on 1948 through 1951 models. This should read "1948 through 1950" models.

SERVICE REPAIR TIP

Whenever it is necessary to remove the Hydra-Matic transmission from a car for repairs, the following "repair tip" will eliminate draining the radiator before disconnecting and removing the heater to radiator rear tube:

1. Make two (2) clamps by using two rear engine support to cross member plates, two bolts (approximately 1 1/2" long), and two nuts for each clamp.
2. Install a clamp on the rubber hose below the heater that attaches to the heater to radiator rear tube. Tighten clamp to prevent flow of coolant from the heater.
3. Remove clamp in the X member (chassis frame) that holds the heater to radiator rear tube and defroster to heater tube.
4. Loosen heater hose clamp at the front of the heater to radiator rear tube to permit tube to move from hose. DO NOT remove tube from hose.
5. Slip heater to radiator rear tube back far enough to permit installation of second clamp. Tighten clamp to prevent coolant from escaping.
6. Remove heater to radiator rear tube.
7. Proceed in the removal of the transmission.

The same clamps may be used when removing the underseat heater for repairs by pinching the two rubber hoses extending below the heater before they are disconnected.

RADIATOR GRILLE CONSTRUCTION CHANGES

A change in design of the radiator center grille bar has eliminated the use of the grille center bar inner rear reinforcement and the radiator grille center bar to lower bar rear retainer. Center bars are attached to the lower grille bar with one front inner reinforcement and one retainer for each center bar. The two rear holes and outer rectangular piercings have been omitted on late type lower grille bars.

When installing the old type center bar on the new type lower bar, the inner rear retainer and tab must be removed. File the edges smooth and paint exposed metal edges to prevent rusting.

New type center bars may be installed on old type lower grille bars without reworking either grille bar.

CLINCHING THE BOLT

It needed just an extra turn to make the bolt secure,
A few more minutes on the job and then the work
was sure;

But he begrudged the extra turn, and when the task
was through,

The man was back for more repairs in just a day or two.
Two men there are in every place, and one is only fair,
The other gives the extra turn to every bolt that's
there;

One man is slip-shod in his work and eager to be quit,
The other never leaves a task until he's sure of it.
The difference 'twixt good and bad is not so very much,
A few more minutes at the task, an extra turn or touch,
A final test that all is right - and yet the men are few
Who seem to think it worth their while these extra
things to do.

The poor man knows as well as does the good man
how to work,

But one takes pride in every task, the other likes to
shirk;

With just as little as he can, one seeks his pay to earn,
The good man always gives the bolt that clinching,
extra turn.

- Edgar A. Guest

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Lee Co., Chicago.

NEW WATER PUMP PACKAGE

For some time, there has been a shortage of Water Pump Assemblies - brought about by the scarcity of steel to manufacture the water pump body back plate for the assembly. Since investigation reveals that the old plates from pumps being replaced are re-usable in most cases, it has been decided to relieve this shortage by making available, temporarily, a new package less the back plate and attaching bolts.

These new packages will be available shortly in GMPD warehouses and will be substituted on orders for complete pumps. The part numbers affected and the replacing numbers are as follows:

509117 will be replaced by 514289

509118 will be replaced by 514290

This is a temporary measure only and the complete packages will be reinstated as soon as material to manufacture the back plate is available.

1951 ENGINE COOLING

Radiators on 1951 models both six and eight cylinder cars are equipped with pressure caps designed to operate at 7 lbs. per sq. in. With this amount of pressure in the cooling system, the coolant will not boil until it reaches a temperature of 230° to 233° F., thus giving the cooling system an extra margin of safety.

CAUTION: Extreme care must be taken when removing radiator pressure cap while engine is hot because relieving the pressure will cause the cooling system to boil, if alcohol is used for anti-freeze, with resultant loss of water or anti-freeze, solution. When removing filler cap, rotate cap toward left very slowly; if hissing of vapor is encountered, tighten cap immediately and wait for system to cool sufficiently to allow removal of cap. After pressure in the system has been relieved, turn cap more forcibly to left and remove. Turn cap all the way to the right when installing. It should not be necessary to check coolant level unless temperature gauge shows over-heating, and then not until engine is stopped and allowed to cool to normal.

REAMING FOR FLYWHEEL TO CRANKSHAFT SERVICE DOWEL PIN

Some reports have been received stating that the special tool, J-2774-15 (17/32" reamer), reams a hole that is too large. To check the size of the reamed hole, follow the procedure outlined below:

1. Take the 17/32" reamer (J-2774-15) and the service dowel pin (511733) to a competent tool maker.
2. Have the tool maker check the reamer to see if it is .002" smaller than the dowel pin.
3. If it is not, have the tool maker lap the reamer until it is .002" smaller than the dowel pin.

CAUTION: Do not try to do this lapping operation of the reamer in the dealership.

When using the reamer to install a service dowel pin, be sure to use a cutting oil liberally and hand ream the hole. As soon as the tapered lead-in protrudes through the front side of the crankshaft flange, remove the reamer by turning in the same direction as before and at the same time pulling out on the reamer. Do not turn the reamer more than two (2) turns after the lead-in is through the crankshaft flange, as this will result in an oversized hole.

SPECIFIC GRAVITY VERSUS STATE OF CHARGE OF 1950 AND 1951 BATTERIES

The Specific Gravity vs. State of Charge Table given on page 48 of the 1951 Shop Manual Supplement is in error and is superseded by the following table which was also given on page 7 of the January 1951, Service Craftsman News.

	<u>1.265 - 1.290 fully charged</u>
"E4" 1950	1.235 - 1.260 3/4 charged
	1.205 - 1.230 1/2 charged
Models	1.170 - 1.200 1/4 charged
	1.140 - 1.165 barely operative
	1.110 - 1.135 completely discharged
	<u>1.260 - 1.280 fully charged</u>
"E6" 1951	1.225 - 1.250 3/4 charged
	1.195 - 1.220 1/2 charged
Models	1.160 - 1.180 1/4 charged
	1.130 - 1.155 barely operative
	1.100 - 1.125 completely discharged

This is very important as "E6" batteries may be unfairly condemned for "failure to take charge" if higher final gravities are expected.

NOTE: Maximum specific gravity will exist when the electrolyte level is down to the top of the insulators. No adjustment of specific gravity should be made unless the electrolyte is at the "full" level and the battery fully charged. Specific gravity above 1.280 when battery is properly filled and fully charged can result in excessive acid strength when the electrolyte level drops to the minimum allowed by good maintenance practice. When an adjustment is required a specific gravity of 1.270 should be established with the battery properly filled and fully charged.

The Specific Gravity vs. State of Charge Table and the note under step 3 in the right hand column of page 48 of the 1951 Shop Manual Supplement should be corrected to read as shown in this article.

NEW DRIVEN TORUS CHECK VALVE

A new driven torus check valve is now being installed on Hydra-Matic transmissions. The new valve is hardened and has a smaller inside diameter on its sealing surface. The new valve will reduce buzz and leaks.

The new type driven torus snap ring (Service Craftsman News, October 1950, page 90) must be used whenever installing the new type driven torus check valve.

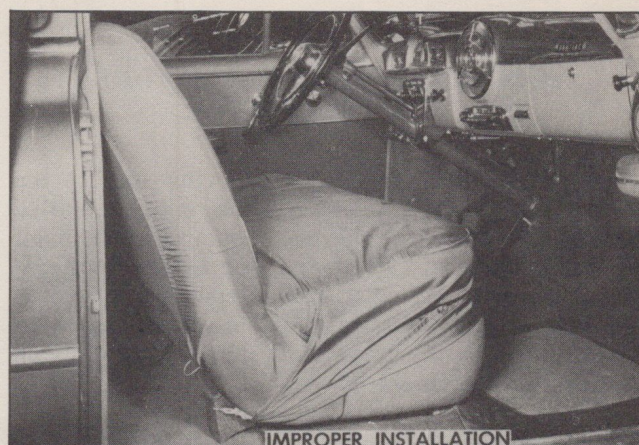
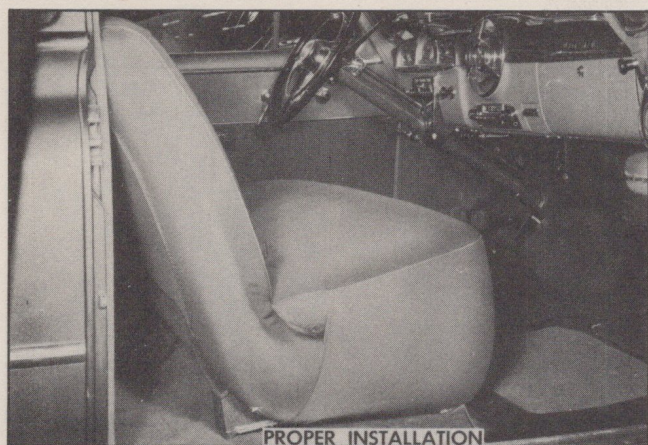


Fig. 3 Proper and Improper Seat Cover Installation

INSTALLATION AND CARE OF NYLON SLIP COVERS

Nylon slip covers have been found to be the best buy in seat covers Pontiac has to offer. Their ease of installation and care have paved a reputation of the most dollar-wise and service-wise accessory available today.

INSTALLATION

Nylon slip covers are manufactured slightly smaller than the seats and seat backs they are to cover to provide for a good snug fit after installation. It is of the utmost importance that the installation instructions be carefully read and followed before installing nylon slip covers to get the full benefit of the careful design incorporated in them.

Covers should be installed wet. In this wet state, the nylon slip covers will stretch sufficiently to be easy to install. While wet, the seams should be checked to see that they are straight and care taken to place the attaching "S" hooks in the proper locations. Be sure to push the elastic cord (in the hem) under the seat retainers on each end of the seat. See Fig. 3. This will eliminate excessive wrinkling throughout the cushion cover. The result of installing nylon slip covers in this manner will be a neat, good looking and snug fit on the seats.

NOTE: Before delivering a car newly equipped with nylon slip covers to an owner, be sure to give him the instruction sheet enclosed in each box of covers marked "Owner's Copy". The owner's copy of the instruction sheet gives complete details with illustrations of installation, removal and care of the nylon slip covers.

CARE

The only "care" needed in keeping nylon slip covers looking fresh and new is to wash them should this be necessary. Nylon slip covers can be washed in any way easiest to the person desiring to wash them.

They are of such texture and quality that they can be washed in a washing machine, in a bucket of suds, or even with a quick "wipe-wash" while the covers are on the car. Before washing slip covers that contain grease or oil stains, remove most of the stain with a volatile type spot remover or cleansing agent, wash the covers in suds and water, rinse and install while wet.

WIRING FOLDING TOP OPERATING SWITCH

Whenever cases of reverse operation of the Convertible top are experienced, proper top operation may be secured by reworking the operating switch in the following manner: (See Fig. 4.)

1. Remove the top operating switch from the instrument panel.
2. Reverse the wiring at the operating switch so that the red wire is attached to terminal "B" and the green to terminal "A".
3. After reversing the wiring, check the operation of the folding top to make certain that it is in accordance with the information in the folding top booklet "How To Operate The Folding Top".
4. Reinstall the switch to the instrument panel.

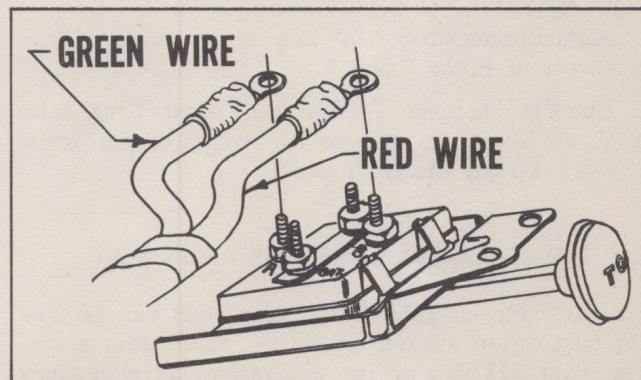


Fig. 4 Wiring Convertible Top Operating Switch

NEW PRODUCTION INSTALLATION OF REAR SEAT BACKS

In addition to the support hooks in use on the top of rear seat backs, screws are now being installed through the flange of the rear compartment shelf into the three metal retainers in the seat back assembly to hold the seat back assembly in place. The rear seat back trim panel is then notched as shown to expose the heads of the three screws from the rear compartment. See Fig. 5.

Before removing a rear seat back on styles with zig zag springs, open the rear compartment and, if the screws have been installed, remove them before proceeding with the normal seat back removal.

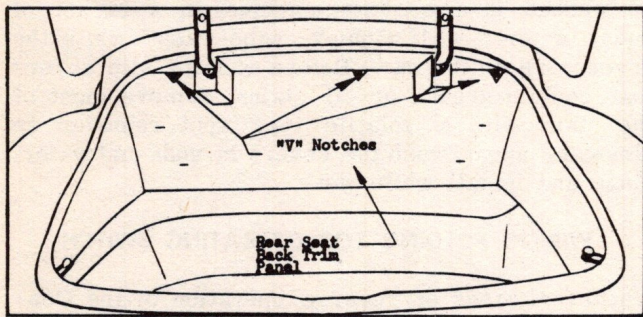


Fig. 5 Position of Notches on Trim Panel

INSTALLING SCREWS TO REAR SEAT BACK

On bodies built previous to the above production change, retention of the rear seat backs may be improved as follows:

1. Open the rear compartment lid and remove the rear seat back trim panel. (All the work below can be done from the rear compartment.)
2. Determine the location of the three metal retainers in the rear seat back assembly by inspection.
3. Drill holes through the flange of the rear compartment shelf and the metal retainers in the seat back in each of the three locations for #10 sheet metal screws. See Fig. 6.
4. Install three #10 x 3/4" long sheet metal screws as shown in Figs. 5 and 6.
5. Cut "V" notches in the rear seat back trim panel as shown to expose the heads of the three screws. Install the trim panel.

1950 CATALINA SUNSHADE ALIGNMENT

The sunshade on 1950 Cataline models can be re-aligned to give greater visibility. Use plain washers, Part #131015 or its equivalent, as necessary under the mounting bracket to obtain the desired position.

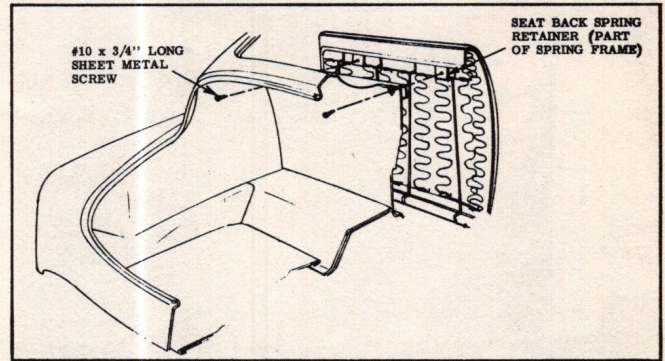


Fig. 6 Locating Sheet Metal Screws

REAR SEAT RADIO SPEAKER AND SWITCH WARRANTY AND FLAT RATE

WARRANTY

The rear seat speaker and the fade control (switch) are warranted for a period of 90 days or 4,000 miles after sale of the vehicle to the original owner; however, the 12 months and 12,000 miles extended period for warranty adjustments also applies.

The warranty will be handled through an authorized United Motors Service Radio Repair Station. When these parts prove to be defective, one or both are to be removed from the car and taken to the United Motors Service for warranty replacement or repair, and handled in the same manner as other parts and material which are warranted through the United Motors Service.

Responsibility for removing and replacing and sending to United Motors Service rests with the dealer. Credit for this will be handled on an AFA through your zone office in the usual manner. The United Motors Service No Charge Invoice is to be attached to the AFA.

FLAT RATE

The rear seat radio speaker control switch is serviced without wires that connect it to the speakers. In order to replace this control switch, it is necessary to remove the faulty switch from the instrument panel and melt the solder connections. Installing the new control switch will require resoldering the wires.

Flat Rate Time for removing and replacing the rear speaker is .2 hour; .3 hour is the time allowed for removing and replacing the rear speaker control switch.

Delivery of the 1951 Pontiac Flat Rate Manual will begin approximately March 10, 1951.

NEW WHEEL PLUG IN PRODUCTION ALSO AVAILABLE FOR SERVICE

The open area between the wheel spokes is now being plugged with a metal wheel plug (Fig. 7) on all cars equipped with deluxe chrome wheel rings. (Inspect this installation on any deluxe model by removing the chrome wheel ring.) Wheel plugs will eliminate stones entering the area behind the wheel disc which results in rattles.

This condition may be remedied in the field by installing wheel plugs, part number 514896, now available in all G.M.P.D. warehouses.

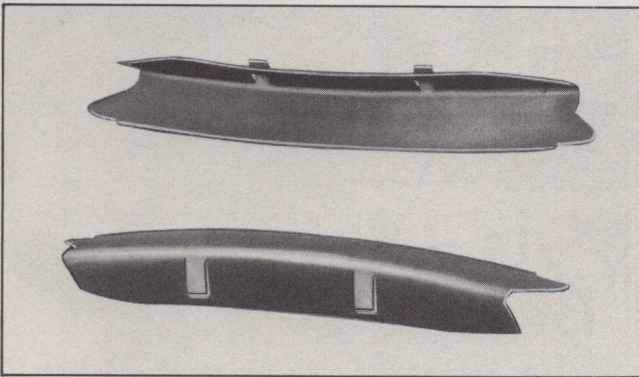


Fig. 7 Metal Wheel Plug

CONSERVE CRITICAL METALS

Due to the short supply of aluminum as a result of expanded demand, die cast materials such as used in the Hydra-Matic transmission in valve bodies, governor and clutch pistons have become very critical.

Whenever transmission malfunctions occur as the result of improper function of die cast parts, it is very possible that proper cleaning, inspection and careful removal of chips and burrs would permit the reuse of these parts.

Give careful consideration of the above facts before replacing critical die cast parts.

TEMPERATURE CONTROL VALVE PACKAGE

A new car temperature control valve package, now available for service on all 1949 through 1951 models, contains one temperature control shaft end assembly and one car temperature control valve assembly. The parts contained in this package are identical to those used on 1951 models.

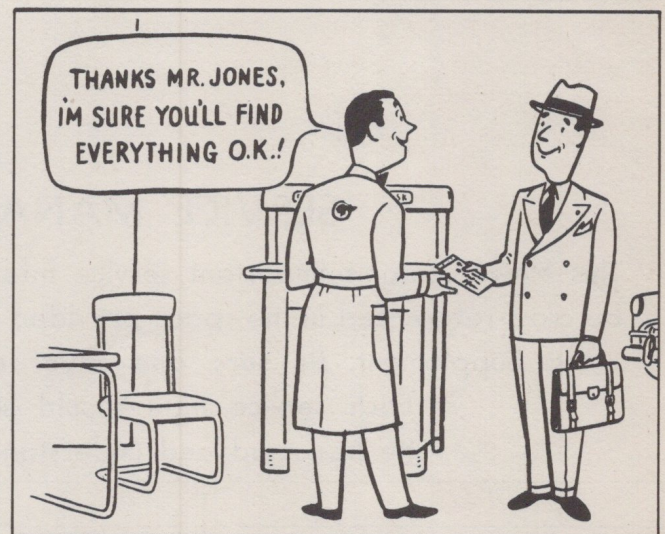
When replacement of the temperature control valve on 1949 or 1950 models is necessary, the temperature control shaft end assembly must be replaced with the one in the service package.

YOUR SERVICE PICTURE

N E G A T I V E O R P O S I T I V E



COMMON COURTESY AND PERSONAL ATTENTION???? Look out for this negative. It's easy to forget the simple little courtesies that make such a difference in customer satisfaction.



Here is the positive way. A sincere thank-you, a cordial smile - showing the customer you cared enough to give him the very best of service. A courteous place of business is always a busy place.

RETURN ALL REPLACED FRONT COIL SPRINGS

Before condemning a front coil spring as a weak spring, be sure to perform the following operations:

1. Remove all mud or ice beneath the car. It is not uncommon for cars to accumulate as much as 150 lbs. of mud or ice on suspension parts, in the frame or under fenders.
2. Check to see if the proper spring is installed. A list of springs, with the models on which they should be installed, is shown in the 1951 Pontiac Parts List Catalog in group 7.412 (pages 242 and 243). Positive identification of the spring can be made by checking the spring part number on the outside of the top coil.
3. Measure front jounce space. Procedure for performing this operation is outlined on page 3-15 of the 1949-1950 Pontiac Shop Manual and in the Service Craftsman News, March 1950, page 21.

All springs returned to the factory should be accompanied with a complete report of the operations performed in checking for spring sag. A list of all accessories installed on the car (extra heavy grille guards, etc.) and the measured front jounce space should be included with each spring returned.

BE SURE TO PROPERLY TAG ALL PARTS BEFORE RETURNING THEM TO THE FACTORY. BE SURE THE TAGS ARE SECURELY ATTACHED IN SUCH A MANNER THAT THEY WILL NOT BE DAMAGED IN TRANSIT.

Charlie Craftsman Says—



"Tone-up" is right. It's different from tune-up. Information on this new owner service appeared first in the January "News".

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.



Before Painting . . .

REMOVE SILICONE POLISHES

Polishes and waxes, both spray and wipe-on types, which contain silicone oils are extremely difficult to remove completely. They even leave a residue in the cleaning rags which contaminates any surface on which these rags are used. Therefore, thorough cleansing and precautionary measures are necessary to avoid "fish eyes", "craters" and spots (illustrated in Fig. 1) before applying new lacquer or enamel finishes.

REMOVAL OF SILICONE POLISHES

Based on laboratory studies confirmed in many shops, the following procedure is recommended for thorough removal of silicone polishes before refinishing with Duco Lacquer or Dulux Enamel:

1. Apply Du Pont "Prep-Sol" on silicone polished surfaces and wipe off with clean rags before the "Prep-Sol" has a chance to dry. Change rags frequently. Do not re-use these rags any place in the shop as they will cause "fish eyes", etc., if residue from them gets on any surface which is being refinished.
2. Wet sand with #320 paper, using Dulux T-3812 Thinner.
3. Clean again with "Prep-Sol", using the same procedure and precautions as outlined in "1".

The importance of keeping the shop clean and free from the silicone on rags, clothing or spray equipment cannot be over-emphasized. Never use a gun to spray refinishing materials after it has been used to apply silicone polishes. Do not do refinishing work near an area where silicone or wax polishes are applied.

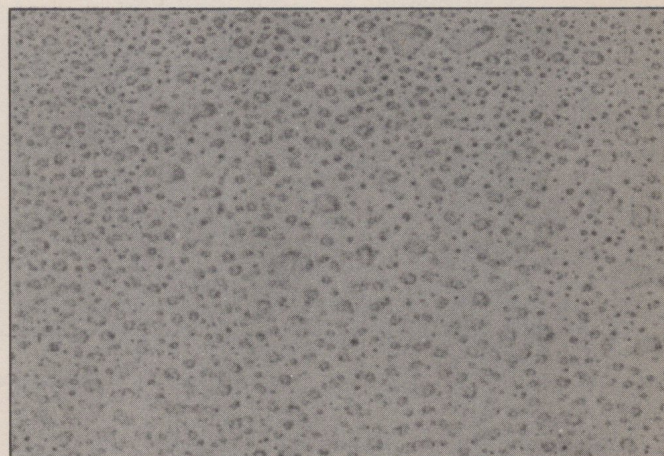


Fig. 1 Painting Over Silicone Polish

TESTING FOR SILICONE POLISH

Before performing any refinishing operations, first test to find out whether silicone polishes have been used on a car that is to be refinished. This can be done by spraying Dulux Enamel or Duco (any color) on a small vertical area of the car to be refinished. If these polishes have been used on the car, the "fish eyes" or "craters" will appear in the Dulux or Duco finish before it sets up. The painted "test area" can then be wiped off with T-3812 Thinner.

EDITORS NOTE: The second 1951 Service Craftsman News Examination is included in this issue; complete and return it to the Zone Office by May 15, 1951.

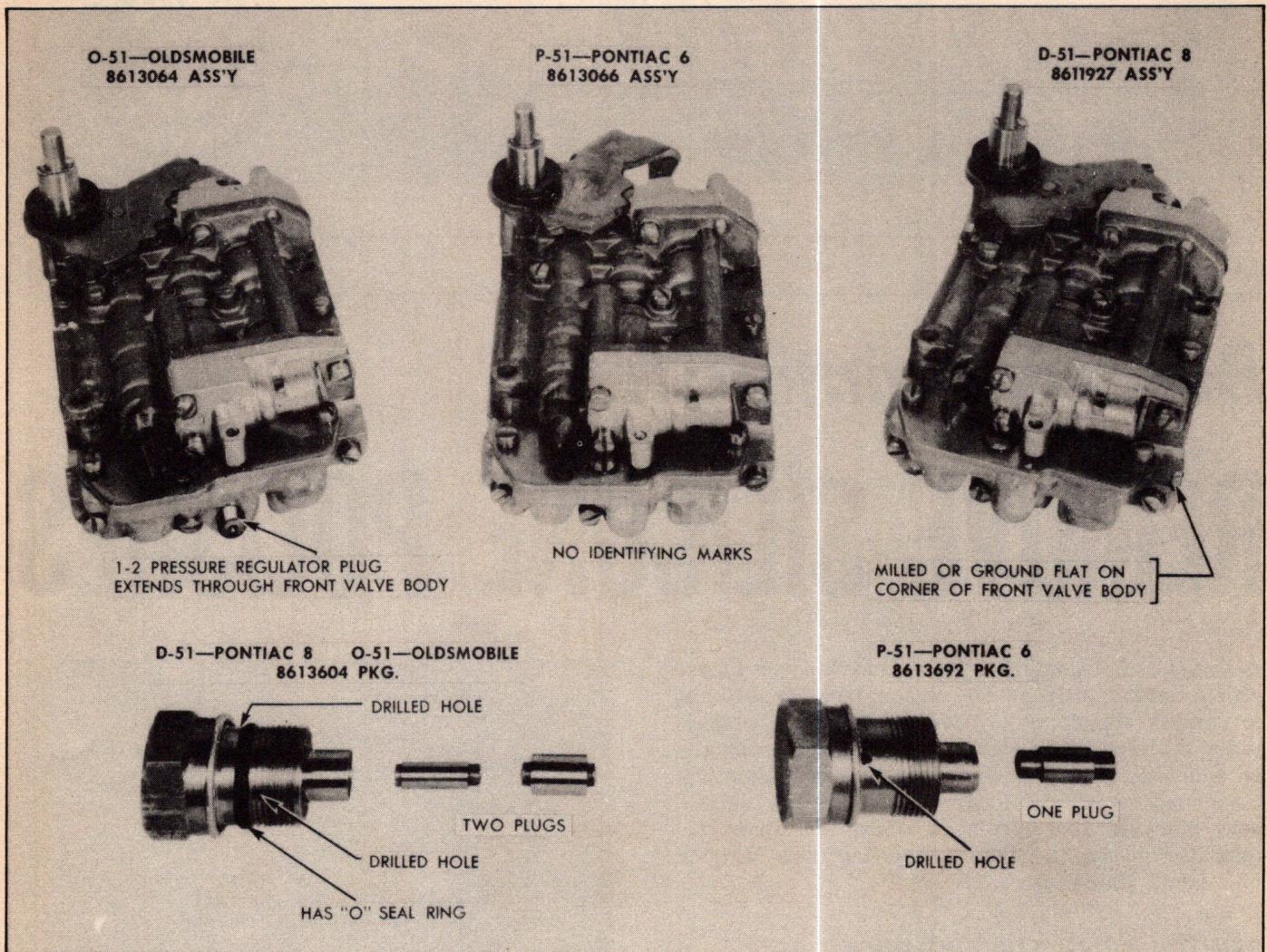


Fig. 2 Identification of Hydra-Matic Parts

IDENTIFICATION OF HYDRA-MATIC PARTS

Hydra-Matic valve bodies and pressure regulator plug assemblies used on Pontiac and Oldsmobile models can be identified by the differences shown in Fig. 2.

Before replacing any parts on Hydra-Matic transmissions, be sure to check the transmission serial number to make certain the right part is installed on the unit being repaired.

ATTENTION MECHANICS

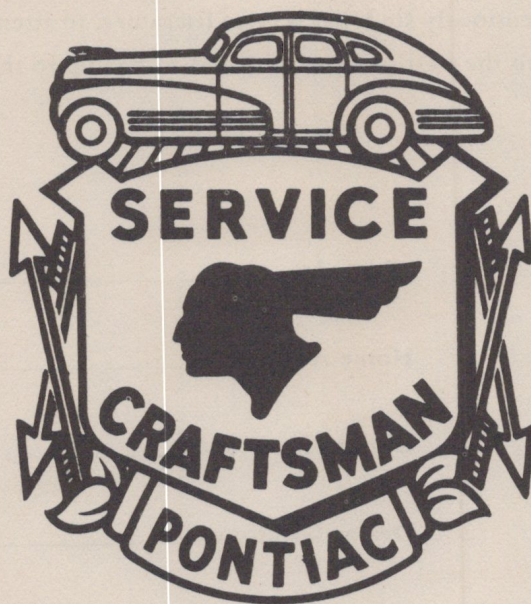
Don't be alarmed if you see a grey-black looking distributor and oil pump drive gear when repairing same or ordering this part from your Parts Department.

The distributor and oil pump drive gear is now being treated with Lubrite rather than being copper plated.

REMOVING HYDRA-MATIC SIDE PAN BOLTS

In order to provide clearance for reaching upper side pan bolts on Hydra-Matic transmissions, the following procedure can be used (the engine and transmission can be lowered to provide this clearance):

1. Place a jack (with a block of wood on the jack pad) under the rear of the engine oil pan (or use any suitable tool for supporting engine from frame) and raise jack only enough to take the weight of the engine off the rear engine support insulators.
2. Remove the two bolts holding the left engine support to flywheel housing and carefully lower engine and transmission until side cover screws can be reached (from underneath the car).
3. Clean the transmission as well as possible so dirt will not enter the assembly when the side cover is removed.



PONTIAC

SERVICE CRAFTSMAN

EXAMINATION #51-2

Second of Five Examinations for 1951

Date _____

Service Man's Name _____

Position _____

Home Address _____

Dealer _____

PONTIAC SERVICE CRAFTSMAN ENROLLMENT FORM

I hereby pledge myself to conscientiously study all service literature, to attend designated Service Craftsman Schools, to answer each of the examinations to the best of my ability and to live up to the Pontiac Service Integrity Code.

Present Position

(Check One)

- ☐ Tune Up
- ☐ Electrical
- ☐ Front End
- ☐ Brakes
- ☐ Heavy Repairs
- ☐ General Mechanic
- ☐ Body Department
- ☐ Lubrication
- ☐ Tester
- ☐ Shop Foreman
- ☐ Service Salesman or Inspector
- ☐ Service Manager

(Signed) _____

Home Address _____

Dealer Firm Name _____

Dealer Location _____

Dealer Signature _____

INSTRUCTIONS

The questions used in this examination were taken from the 1951 January and February issues of Service Craftsman News and Craftsman Training Program.

RETURN COMPLETED EXAMINATION TO YOUR ZONE OFFICE BY MAY 15, 1951

When completing this examination, it is necessary to read the question and then circle the letter on the left side of the correct answer.

CIRCLE ONLY ONE ANSWER

SERVICE CRAFTSMAN EXAMINATION NO. 51-2

1. QUESTION: The parking blocker piston return string stop seat on the 1951 Hydra-Matic transmission should be 1/2" to 17/32" from face of bracket.

ANSWER: A. True
(Circle One)

B. False

2. QUESTION: If the front servo exhaust body spacer is installed in reverse, pressure will increase to 150-170# when the transmission shifts from 1 to 2.

ANSWER: A. True B. False
(Circle One)

3. QUESTION: If the 1951 Hydra-Matic transmission can't be shifted into reverse, the G-2 governor valve could be stuck in the open position.

ANSWER: A. True B. False
(Circle One)

4. QUESTION: On the 8-cylinder Hydra-Matic transmission a reverse cone engaging while the selector lever is in "DR" can be caused by:

ANSWER: (1) Bad Neoprene Seal (2) 6-cylinder valve body
(Circle One) (3) Broken governor oil delivery sleeve rings

5. QUESTION: The new radiator pressure cap is designed to operate at 5# per sq. in.

ANSWER: A. True B. False
(Circle One)

6. QUESTION: The flywheel to crankshaft service dowel pin should be .002" larger than the dowel pin reamer.

ANSWER: A. True B. False
(Circle One)

7. QUESTION: Specific gravity of the "E6" battery should never be above:

ANSWER: (1) 1.260 (2) 1.275 (3) 1.280 (4) 1.290
(Circle One)

8. QUESTION: Nylon slip covers should first be installed, then wet thoroughly.

ANSWER: A. True B. False
(Circle One)

9. QUESTION: Three screws must be removed through rear deck compartment on late production cars when removing rear seat back on styles with zig zag springs.

ANSWER: A. True B. False
(Circle One)

10. QUESTION: To prevent stones from entering the area behind the wheel disc, the remedy in the field is to install wheel plugs - part number 514896.

ANSWER: A. True
(Circle One)

B. False

MAIL COMPLETED EXAMINATIONS TO YOUR ZONE OFFICE BY

MAY 15, 1951



IS YOUR NAME LEGIBLE?

DISTRIBUTOR BREAKER POINT SPRING TENSION

Specifications of the spring tension for the breaker point of the 6 and 8 cylinder distributors are shown in Fig. 12-52 in the 1949-50 Pontiac Shop Manual.

These specifications are correct, however, the proper location point for exerting pull 90° to the breaker point surface is indicated by arrows in Fig. 3. The arrow for the 8 cylinder lever is at the side of the contact point, while the 6 cylinder has a lever extending out from the center of the contact point.

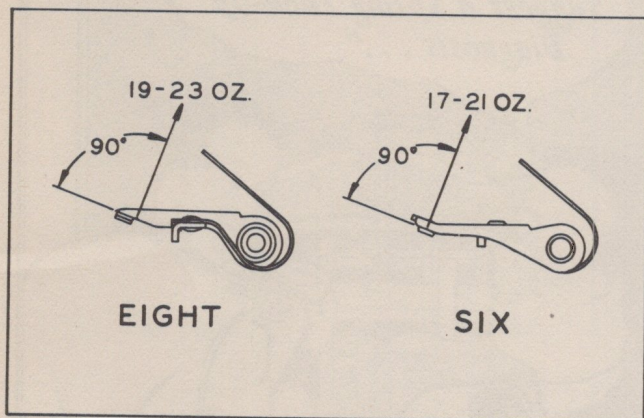


Fig. 3 Proper Location Points for Exerting Pull

Because of the differences in construction of the breaker levers used in the 6 and 8 cylinder distributors, different spring tension specifications are required. The 6 cylinder lever is so constructed that a spring tension reading can be taken at a point directly above the center line of the contact point. Due to the construction of the 8 cylinder lever, the spring tension reading must be taken immediately adjacent to the contact point. This decreases the leverage and requires a higher specification than does the 6 cylinder lever. The resultant pressure at the point of contact of both 6 and 8 cylinder levers will be the same. Taking the measurement at different locations accounts for the difference in the specifications.

Refer to pages 12-36 and 12-62 of the 1949-1951 Pontiac Shop Manual and to page 49 in the 1951 Supplement, and make a notation referring to this Service News story.

INSTALLING REAR SEAT RADIO SPEAKERS

Procedure for installing a rear seat radio speaker is outlined in the installation instructions with every rear seat speaker package. Figure 5 on these instructions, shows the proper method for wiring the rear seat speaker (also shown on page 58 of the 1951 Supplement to the 1949-1950 Pontiac Shop Manual).

The rear speaker wire is threaded through the door sill plate assembly. However, a few cars were built with a solid filler rather than a hollow sill plate support. Whenever a solid filler is encountered, it should be removed from the door sill plate assembly to permit proper installation of the rear seat radio speaker wire.

CLOCK INSTALLATION CHANGE

The method of holding the electric clock in the inner radio grille has been changed to improve its mounting by tightening directly on the bezel rather than indirectly on the back cover.

Early 1951 electric clock installation was to hold the clock in position with two screws that applied pressure on tabs riveted to the rear cover of the clock. The screws for this purpose were located in the inner radio grille below the two lower grille ribs to the rear of the center hub. See Fig. 4.

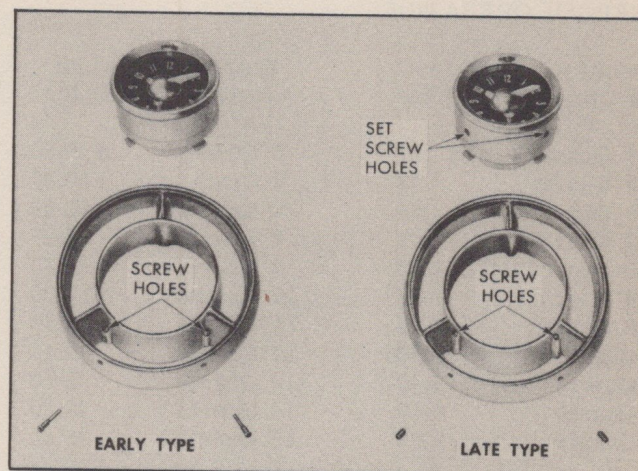


Fig. 4 Early and Late Type Clock Installation

Later 1951 electric clocks are held in position in the radio grille by two screws located below the two lower grille ribs near the front of the center hub (shown in Fig. 4). These screws extend through the center hub and hold the clock secure by registering with two drilled holes in the clock bezel.

The two drilled holes on the under side of late 1951 model clocks is the only external difference from early 1951 model clocks.

Old type or new type clocks will fit in either early or late type inner radio grilles. When an early type clock is to be installed in a late type inner radio grille, the pointed screws will bite into the die cast clock bezel to hold the clock secure. (The screw heads in this case will protrude slightly from the center hub.) **DO NOT ATTEMPT TO DRILL HOLES** in early model clocks when installing late type inner radio grilles.

1949-50-51 PONTIAC FLAT RATE MANUAL

A new flat rate manual has been released and forwarded to all dealers.

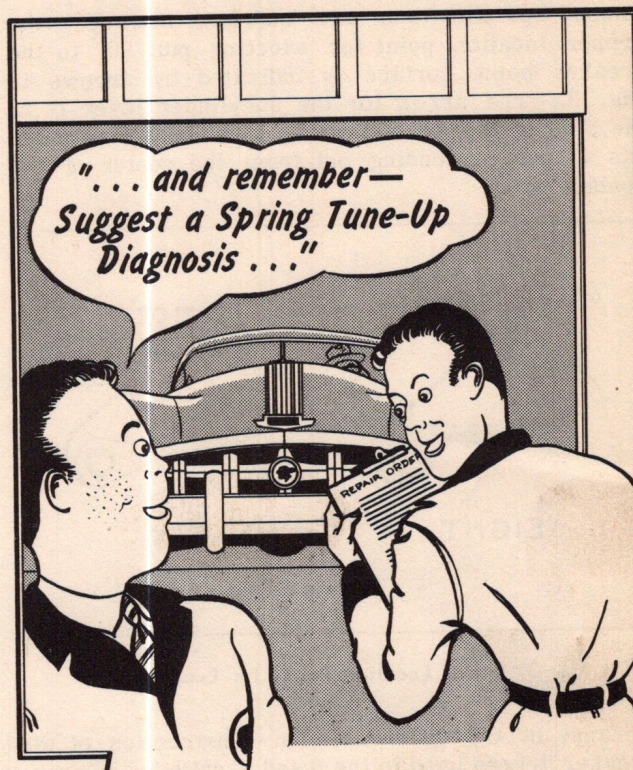
Several new features have been incorporated in this manual, one of which is the addition of the part group number directly below the operation number. In addition, the body section has been greatly simplified by the removal of the basic operation numbers and the addition of many combination operations. Time allowances, when performed on two or more operations, may now be easily computed. Paint prices have been eliminated from the refinish operations and material quantities listed in their place. This quantity includes all necessary thinner, surfacer, primer, and color to do a refinish operation. The schedule below which lists quantity and prices of mixed paint material for refinish operations, is furnished for your convenience.

MIXED PAINT MATERIAL FOR REFINISH OPERATIONS

Quantity in Qts.	List Price	Quantity in Qts.	List Price
1/8 Quarts	\$.21	5 Quarts	\$ 8.50
1/4 Quarts	.43	6 Quarts	10.20
3/8 Quarts	.64	7 Quarts	11.90
1/2 Quarts	.85	8 Quarts	13.60
5/8 Quarts	1.06	9 Quarts	15.30
3/4 Quarts	1.28	10 Quarts	17.00
7/8 Quarts	1.49	11 Quarts	18.70
1 Quart	1.70	12 Quarts	20.40
2 Quarts	3.40	13 Quarts	22.10
3 Quarts	5.10	14 Quarts	23.80
4 Quarts	6.80	15 Quarts	25.50

EDITOR'S NOTE: Give the proper nomenclature for glass on PI Reports and AFA's; i.e., Windshield Glass, Front Door Vent Glass, Front Door Glass, etc., and not just "glass".

Charlie Craftsman Says-



"... It's a service we're advertising for April... and it's recommended to help the owner get better performance and fuel economy."

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PONTIAC

Service Craftsman News



No. 4 S-225

April, 1951

PONTIAC HONORS CRAFTSMEN

TO PONTIAC SERVICE CRAFTSMEN:

It has been our pleasure to award the "Ten Year Senior Service Craftsman Certificate" to the men listed below. We wish to extend our congratulations to each for his achievement.

H. J. Hales
General Service Manager

NEW YORK ZONE

ALFRED L. BARR
Vernon Pontiac, Mt. Vernon, N. Y.
*ANTHONY M. BUCCINO
City Motor Sales, Passaic, N. J.
RAY BULWIN
Mallon Sub. Motors, Irvington, N. J.
JOSEPH CARNEY
Mallon Sub. Motors, Irvington, N. J.
*JOHN COLLINS
Mallon Sub. Motors, E. Orange, N. J.
GUS ECKERT
Queens Vehicle, Jamaica, N. Y.
HAROLD FERGUSON
Deitz Motors, New Brunswick, N. J.
JACK GALIK
Mallon Sub. Motors, E. Orange, N. J.
MARCO GREGES
Vernon Pontiac, Mt. Vernon, N. J.
S. JANOSKO
Manhattan Pontiac, New York, N. Y.
CHARLES LANCE
Mallon Sub. Motors, E. Orange, N. J.
THOMAS MAYER
Mallon Sub. Motors, E. Orange, N. J.
KENNETH McCHESNEY
Chas. H. Martin, Troy, N. Y.
L. W. MITCHELL
Vernon Pontiac, Mt. Vernon, N. Y.
ANTHONY NESTON
Manhattan Pontiac, New York, N. Y.
ARTHUR PAULL
Mohawk Pontiac, Schenectady, N. Y.
ATTILIO PAVAN
Peter Tramontin, Clifton, N. J.
*WILLIAM WOOLLEY
Mallon Sub. Motors, E. Orange, N. J.
FRANK ZEMBRUSKI
Yager Pontiac, Albany, N. Y.

ST. LOUIS ZONE

*A. EVERMON
Thompson Sales Co., Springfield, Mo.
*J. F. GARDNER
Thompson Sales Co., Springfield, Mo.
E. L. GILL
Grobelny Motor Co., Mattoon, Ill.
*R. LAHR
Knollmeyer Pontiac, Taylorville, Ill.

LEO MILLER
Travis Cad.-Pontiac Co., Peoria, Ill.
*W. J. MILLER
Owl Garage, Greenview, Ill.
*R. PETERSON
Travis Cad.-Pontiac Co., Peoria, Ill.
*R. W. RAUCH
Thompson Sales Co., Springfield, Mo.
*B. R. SPEAGLE
Grobelny Motor Co., Mattoon, Ill.
H. D. STATLER
Byron B. Webb, Inc., St. Louis, Mo.
*W. TERNIE
West End Pontiac Co., St. Louis, Mo.
RAY WIEDEWILT
C. E. Vincel Pontiac Co., St. Louis, Mo.

CHICAGO ZONE

*LOUIS HARTMAN
Comm. Motors, Michigan Ave., Chicago, Ill.
*HARRY J. HARTSHORNE
Warner Motor Sales, Inc., Chicago, Ill.
*ARTHUR MEIER
Warner Motor Sales, Inc., Chicago, Ill.
AXEL R. NIELSEN
Grossinger Motors, Chicago, Ill.
HENRY C. OBERBROECKLING
Anthony Auto Sales, Dubuque, Iowa
ALBERT PETERS
Shaver Motors, Hammond, Ind.
HENRY D. REIS
Russel's Garage, Crown Point, Ind.
*VERNON SCOTT
Warner Motors Sales, Inc., Chicago, Ill.
WALTER STUMP
Shaver Motors, Hammond, Ind.
THOMAS G. WILKINS
Community Motors, Logan Sq., Chicago, Ill.

PHILADELPHIA ZONE

LEON C. ADAM
Kutztown Auto Co., Kutztown, Pa.
*MAHLON R. ALDERFER
J. L. Freed & Sons, Inc., Lansdale, Pa.
JAMES CONNOR
E. E. Brumbaugh, Inc., Lansdowne, Pa.
CARL A. ECKROTE
Frank Eckrote, Rock Glen, Pa.

*CHARLES FULLER
Russell Motor Car Co., Scranton, Pa.
CHESTER JEZIERSKI
Kelleher's Pontiac Sls. & Serv., Scranton, Pa.
*HENRY L. PUHL
Russell Motor Car Co., Scranton, Pa.
*RAYMOND SYNDER
Dunkle Pontiac Motors, Lewisburg, Pa.
EMIL C. YAGGI
Russell Motor Car Co., Scranton, Pa.

SAN FRANCISCO ZONE

OTTO E. BARR
Doten Pontiac, Berkeley, Calif.
WILLIAM HANSEN
McKissick Pontiac, San Leandro, Calif.
L. W. HOUX
Johnson's Garages, Inc., King City, Calif.
CHARLES E. KING
Bidwell Motor Co., Chico, Calif.
ERWIN KUENZLER
George Daniels, Inc., San Francisco, Calif.
DOMINIC PORTA
Weltner Pontiac, Redwood City, Calif.
*LESTER ROTH
Eb Wells, Co., Oakland, Calif.
*CLAIR B. SHEETS
Weltner Motor Co., Palo Alto, Calif.
*EDWARD VETTER
Eb Wells, Co., Oakland, Calif.

LOS ANGELES ZONE

*J. B. BROWN
Utter Pontiac, Los Angeles, Calif.
HOWARD DAY
Marback Motor Co., East Los Angeles, Calif.
*JACK HORN
Harrison Pontiac, Santa Ana, Calif.
JOHN JANSEN
Savage-Haldeman Co., Los Angeles, Calif.
*MURRAY LEASURE
Tom Ray Pontiac, Glendale, Calif.
FLOYD PAINE
Harrison Pontiac Co., Santa Ana, Calif.
*CARL H. W. PRESTON
Savage-Haldeman Co., Los Angeles, Calif.
*LAWRENCE W. WHEELAND
Chieftain Pontiac, Los Angeles, Calif.

*Received awards in 1950.

SERVICE CRAFTSMAN NEWS

PITTSBURGH ZONE

- *JACK BAUER
C. A. Clark Pontiac, N. Braddock, Pa.
- PAUL COWHER
Mark Motor Co., Philipsburg, Pa.
- ROY DURRETT
Spoerl's Garage, Cumberland, Md.
- JOHN ENRIETTA
Heidelberg Motor Co., Carnegie, Pa.
- *O. K. GROVE
Nearhoof Motor Co., Altoona, Pa.
- *W. FRANK HULL
Ray E. Weaver, Etna, Pa.
- FRANK A. ZEMLOCK
Orillo Brothers, Barnesboro, Pa.

PORTLAND ZONE

- JAMES F. BATCHELOR
Central Pontiac Sales Co., Seattle, Wash.
- *RALPH E. HERMAN
Roseburg Motor Co., Roseburg, Oregon
- HUGH E. McCREARY
Billingsley Pontiac, Portland, Oregon
- L. C. MIZE
Tacoma Auto Sales Co., Tacoma, Wash.
- GLENN E. PARKER
Central Pontiac Sales Co., Seattle, Wash.
- ED PAULSEN
Billingsley Pontiac, Portland, Oregon
- EARLE W. ZANDER
Central Pontiac Sales Co., Seattle, Wash.

ATLANTA ZONE

- *J. ALTON BROWN
Davis Motor Co., Inc., Montgomery, Ala.
- *R. C. CRAWFORD
Boomershine Motors, Atlanta, Ga.
- D. H. FRALIC
Davis Motor Co., Montgomery, Ala.
- E. HIGGINBOTHAM
Claude Nolan, Inc., Jacksonville, Fla.
- P. H. MULLER
Boomershine Motors, Atlanta, Ga.
- FRANK RICHARDSON
Leppere Pontiac, Inc., Orlando, Fla.

CINCINNATI ZONE

- AL EVANS
Gusweiler's Pontiac, Inc., Cincinnati, Ohio
- EDWARD H. FEILER
Gusweiler's Pontiac, Inc., Cincinnati, Ohio
- *ISAAC T. NEWCOMB
Auto Supply Co., Campbellsville, Ky.
- *ORVILLE E. PARDIECK
Pardieck's Garage, Jonesville, Ind.
- P. J. POLAND
Honerkamp Motor Sales, Cincinnati, Ohio
- ROBERT WOOTON
Scott McGaw Motor Co., Henderson, Ky.

BOSTON ZONE

- *THOMAS A. FABRIZIO
The A. C. Hine Co., Hartford, Conn.
- JAMES MANGANO
Portsmouth Motor Mart, Portsmouth, N. H.
- *CARLTON J. RUSSELL
Warriner Pontiac Co., Springfield, Mass.

- E. S. VAN DYKE, JR.
Van Dyke Garage, Peabody, Mass.
- *GEORGE H. VANIER
The A. C. Hine Co., Hartford, Conn.

MILWAUKEE ZONE

- *ARNOLD M. AYRES
Olin & Ayres, Brodhead, Wis.
- *A. R. HINTZ
King-Hintz, Inc., Watertown, Wis.
- TRUMAN N. OLIN
Olin and Ayres, Brodhead, Wis.
- *HERBERT PIERSTORFF
Waters Motors Co., Madison, Wis.
- *CHESTER VIRAK
Clark's Inc., Viroqua, Wis.

MINNEAPOLIS ZONE

- *EVERT BENTS
Bents Motor Service, Comstock, Wis.
- OTTO F. NEILSON
Lake Street Pontiac, Minneapolis, Minn.
- LEO ROOKS
Lake Street Pontiac, Minneapolis, Minn.
- *HERMAN SEIDEL
Malmon Pontiac, St. Paul, Minn.
- *S. M. SUSAG
A. T. Hansord Co., Minneapolis, Minn.

BUFFALO ZONE

- RAYMOND BURNS
Knapp Motor Sales, Lockport, N. Y.
- HARRY F. CASTLE
Oneida Motor Car Co., Oneida, N. Y.
- GEORGE DULAC
DiBello Motor Sales, Buffalo, N. Y.
- *DAVID SELBIG
Taggart-Schutz, Buffalo, N. Y.

CLEVELAND ZONE

- ROY T. CLARKE
Ned Higley & Son, Leavittsburg, Ohio
- GERALD L. FOX
Tillman Motor Co., Cleveland, Ohio
- M. L. HAAKINSON
Bretzius Pontiac, Inc., New Philadelphia, Ohio
- ARCHIE KERR
Tillman Motor Co., Cleveland, Ohio

MEMPHIS ZONE

- *A. A. CALDWELL
Douthit-SanChez Co., Memphis, Tenn.
- J. LESTER HALL, SR.
Jameson Motor Co., Alexandria, La.
- *TED JACKSON
Julian Pontiac Co., Pine Bluff, Ark.
- *L. STEWART
Douthit-SanChez Co., Memphis, Tenn.

OMAHA ZONE

- WARD E. FOSTER
Summer Pontiac Co., Des Moines, Iowa
- JOSEPH HOJKA
Culver Motors, Cedar Rapids, Iowa

- JERRY JAMES
Summer Pontiac Co., Des Moines, Iowa
- *LOUIE SLITER
Smith Motors, Inc., Omaha, Nebraska

WASHINGTON ZONE

- *HENRY BUSER, JR.
Marbert Motors, Inc., Annapolis, Md.
- JAMES F. MONIHAN
Oriole Pontiac Co., Baltimore, Maryland
- CHARLES L. ROGERS
Oriole Pontiac Co., Baltimore, Maryland
- *ROY P. TUCKER
H. J. Brown Pontiac, Arlington, Virginia

DALLAS ZONE

- J. C. CORBIN
Hine Pontiac, Dallas, Texas
- ELLIS KRIKSEY
Schuch Motor Co., San Angelo, Texas
- *R. B. SHARPLESS
Frontier Pontiac, Inc., Fort Worth, Texas

DENVER ZONE

- DOUGLAS BEAN
Metropolitan Pontiac, Denver, Colorado
- *MARION L. GRITTON
Mitchell Pontiac, Sterling, Colorado
- O. C. JONES
Metropolitan Pontiac, Denver, Colorado

KANSAS CITY ZONE

- CLIFFORD E. FRAISPONT
Gridley Motor Co., Wichita, Kansas
- WALTER H. PERRY
Beloit Motor Co., Inc., Beloit, Kansas
- *W. H. SHARPE
Chief Pontiac Co., Inc., Salina, Kansas

CHARLOTTE ZONE

- *W. D. ANDERSON
Quality Motors, Florence, S. C.
- H. F. DIXON
Ray Waits Motors, Charleston, S. C.

PONTIAC ZONE

- HOWARD NEEB
Neeb Motor Sales, Elmore, Ohio
- FLOYD H. REIMERS
Garber Pontiac Co., Saginaw, Michigan

HOUSTON ZONE

- A. M. HENDERSON
Simpson Gillman Pontiac, Houston, Texas

OKLAHOMA CITY ZONE

- JOHNNIE BROTHERTON
Wat Henry Pontiac, Inc., Tulsa, Okla.

PONTIAC SERVICE CRAFTSMAN ACTIVITY

At the end of 1950, a total of 6,307 men have remained active as members in the Pontiac Service Craftsman Program. The number of men completing respective years of membership are as follows:

1-Year	2,491	6-Year	92
2-Year	1,425	7-Year	114
3-Year	727	8-Year	76
4-Year	601	9-Year	71
5-Year	569	10-Year	87
		11-Year	54

*Received awards in 1950.

NOISY RADIOS

Whenever cases of excessive static are experienced on car radios, make the following checks before removing the radio for repairs:

If radio reception is good when car is parked and engine running:

1. Check the front wheel static collectors. They may be bent or dirty. Be sure the static collectors are clean and have proper contact.
2. Check to see if curb finder "feelers", are installed. The curb finder "feelers" may be dissipating the static created as the car gains speed. A charge builds up on the sharp ends of the curb finders. Then, if the point where the electrostatic charge is concentrated is brought close enough to the road, a discharge will occur causing radio noise. This can usually be remedied by bending the "feelers" up slightly so that they will never come close enough to the road surface to cause a discharge.
3. Check antenna for loose or broken connections or intermittent shorts.
4. Check for noisy tubes:
 - a. Remove radio back cover.
 - b. Select quiet spot on radio dial.
 - c. Turn volume to maximum.
 - d. Tap each tube individually and listen for static.
 - e. Replace necessary tubes.

If static is encountered when engine is running:

1. Check the generator and voltage regulator condensers for short.

Road-check the car after performing the above corrections. If static still persists the trouble is probably in the radio set itself. Refer to page 14-11 in the 1949-1950 Pontiac Shop Manual for additional information on locating and correcting radio static noise interference.

RADIO GROUND STRAP REMOVED

The radio ground strap which was used to connect the motor block cylinder head to the fire wall, to help eliminate motor noise, has been discontinued with early 1951 model Pontiacs. The use of resistance type ignition wires makes this ground strap unnecessary.

OPTIONAL BRAKE LININGS

In brake lining package 509130 and 513110 some linings will be found drilled with extra rivet holes. These linings should never be used singularly (one wheel) but always in sets of two (two wheels).

In package 509130, for secondary linings, each lining will have 14 rivet holes for attachment to shoe. Rivets should be used in all holes. In package 513110, for primary linings, there will be 10 rivet holes in each lining for attachment to shoe.

When these primary linings are installed they should be centered on the brake shoe. This will leave two rivet holes exposed in the shoe off each end of the lining. See Fig. 1. Sufficient rivets are supplied in both packages for attachment of linings.

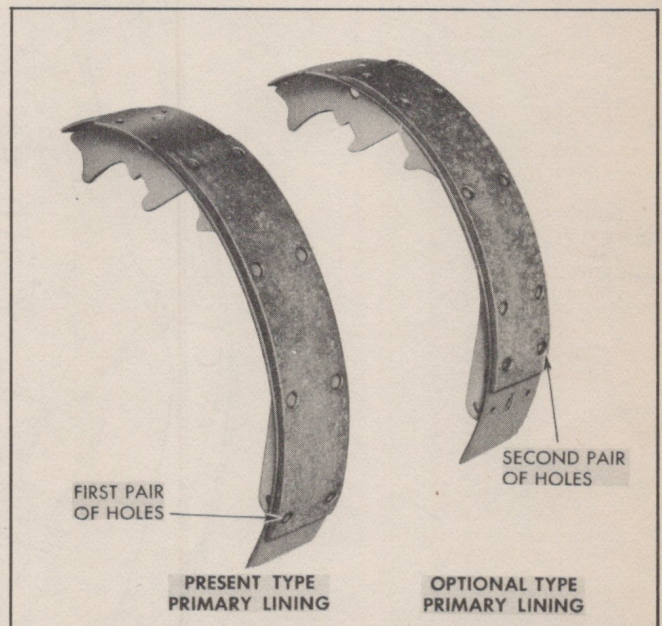


Fig. 1 Present and Optional Primary Brake Lining

FLAT RATE

Operation 6-550, Radiator Core Support - Replace, page 105 in the 1949-50-51 Flat Rate Manual was printed 1.7. The published time was a typographical error and should read 3.7.

14.488 Handicap Pedal - Install (1.1), page 134, should read (.1).

These corrections should be noted in your 1949-50-51 Flat Rate Manual.

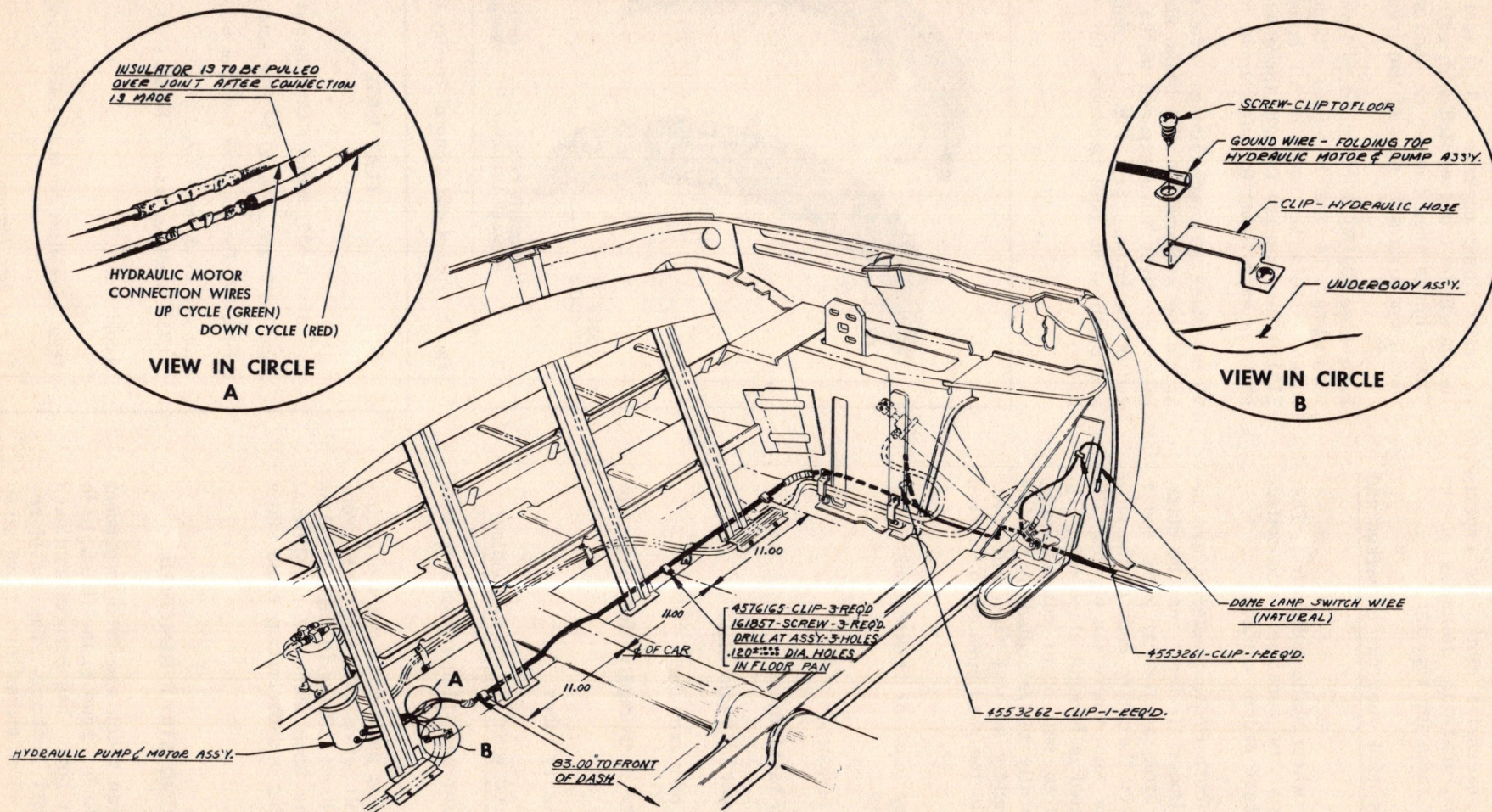


Fig. 2 Wiring Installation of 1951 Convertible Hydraulic Pump and Motor Assembly

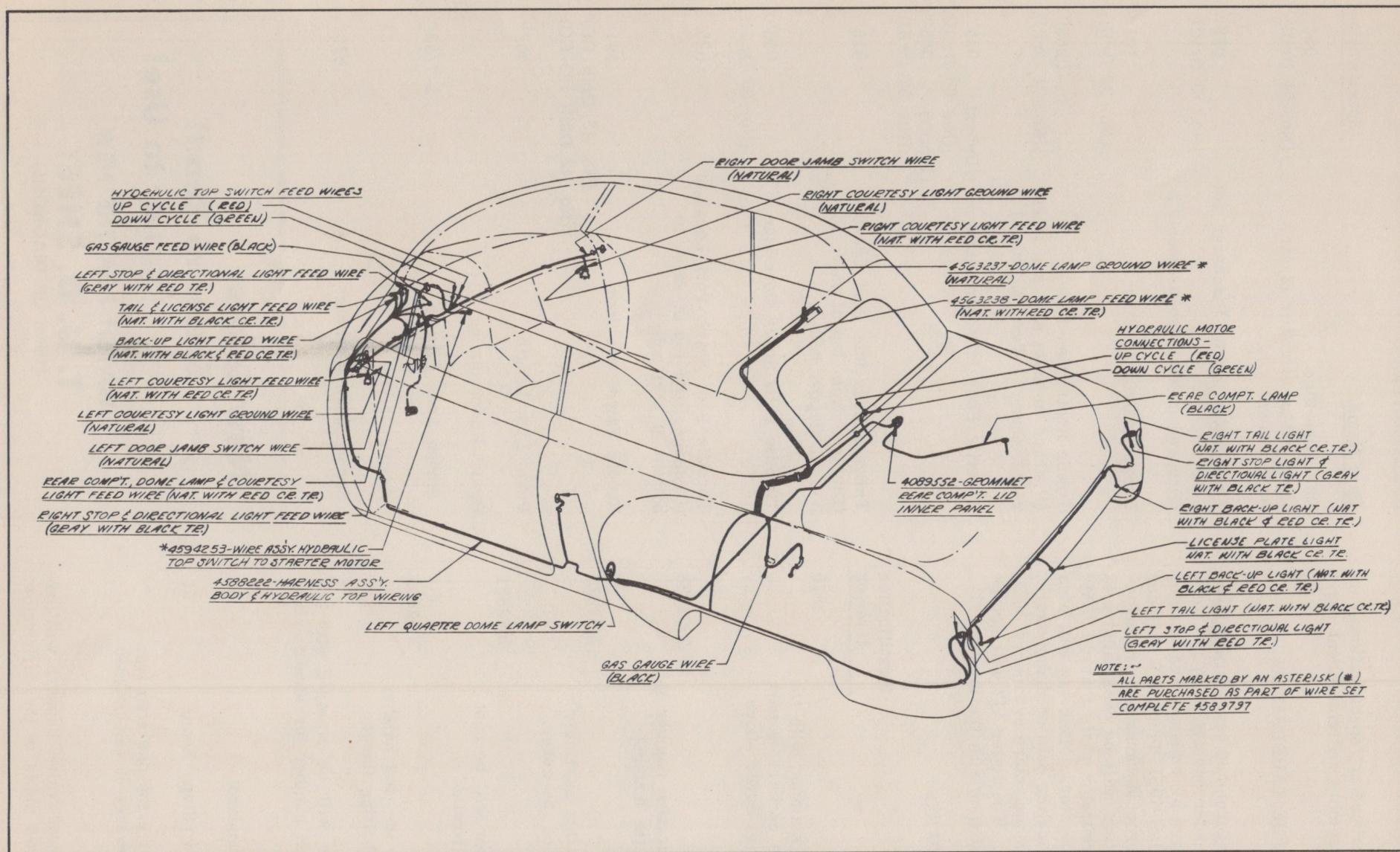


Fig. 3 Wiring Installation for 1951 Convertible Coupe

1951 CONVERTIBLE COUPE WIRING INSTALLATION

The 1951 Convertible Coupe wiring installation drawing is shown in Fig. 3. Fig. 2 shows the location of wiring for the hydraulic pump and motor assembly. Proper wiring of the Convertible top operating switch is explained on page 13 of the February 1951, Service Craftsman News.

Whenever floor pan screws holding wiring clips are removed, they should be properly re-sealed before replacing. Refer to page 12-51 and 12-67 of the 1949-1951 Pontiac Shop Manual and to page 49 in the 1951 Supplement, and make a notation referring to these Service News figures.

ROCHESTER (6 CYLINDER) CARBURETOR—1951

Data on Rochester Carburetor specifications and identification of the assembly and component parts are as follows:

IDENTIFICATION OF THE CARBURETOR ASSEMBLY

Each carburetor will be furnished with a brass identification tag attached under one air horn attaching screw. This tag will have an embossed carburetor part number 7002870 for 1951 Pontiac 6 cylinder cars and will show source of carburetor manufacture. Pontiac carburetors will be designated with the letters "RP". Carburetor parts marked "GM" are not for Pontiac carburetors. This tag will also show a code number indicating date of manufacture; i.e., "A1" will indicate manufacture in January 1951, "D1" in April 1951, etc. The letter "I" will not be used due to possible confusion with the number "1".

IDENTIFICATION OF PARTS

<u>Part Name</u>	<u>Identification Number</u>
Air Horn Assembly The air horn will be stamped with the last four digits of the carburetor part number located on bowl cover above the pump.	2870
Choke Housing Choke housing identification number is cast on the inside of the housing.	7002828
Thermostat Cover and Coil The part number for this assembly is cast on the inside of the cover.	7002830
Float Bowl Float bowl part number will be cast on the outside of the bowl.	7002831
Throttle Body The throttle body has the part number cast on the manifold bolting flange.	7002833

All main metering jets will be stamped with the last two digits of the part number for identification and will be zinc plated.

Main Metering Jet (Standard)	58
Main Metering Jet (Two Steps Lean)	56

Pontiac does not service the one step lean main metering jet, however it can be identified by number 57.

The main well and power valve support will be stamped with the last two digits of the carburetor part number (70).

SPECIFICATIONS

<u>Part Name</u>	<u>Specification</u>
Idle Tube Size (Pressed in crossbar of air horn assembly.)	.055" (No. 54 Drill)
Accelerating Pump Discharge Jet Size (Pressed in air horn assembly.)	.028" (No. 70 Drill)
Choke Restriction Size	.101" (No. 38 Drill)
Power Restriction Size (Pressed in main well and power valve support. Two (2) holes.)	.0265" (No. 71 Drill)
Throttle Body Idle Port Sizes	(Upper) .035" (No. 65 Drill) (Lower) .063" (No. 52 Drill)
Throttle Body Idle Port Location (Distance from top of valve to bottom of port hole.)	.015"
Throttle Body Spark Port Size	.040" (No. 60 Drill)
Throttle Body Spark Port Location (Distance from top of valve to bottom of port hole.)	.025"
Needle Valve Seat Size	.091" (No. 43 Drill GO) (No. 42 Drill NO-GO)
Pump Link Length	.796"
Power Piston Spring:	
Spring Free Length	2-7/32"
Active Coils	33
Spring Wire Diameter	.015"

**New Colors!
Easier to Read!
Easier to Use!**

**WATCH FOR THE NEW
T. U. D. SHEET
(TUNE-UP DIAGNOSIS)**

WASHER IMPROVES TOOL

The rear spring bushings in 1950 and 1951 Pontiacs are a press fit in the spring eyes and frame. On some high mileage cars, it may be difficult to remove these bushings because of dirt or binding from corrosive action.

To relieve undue stresses and breakage of the draw bolt (J-4161-5) caused by a cocking or off-center pull on the bolt, a washer (Fig. 5) has been designed for use on the bolt to give relief from this condition. It is positioned on the bolt as illustrated in Fig. 6.

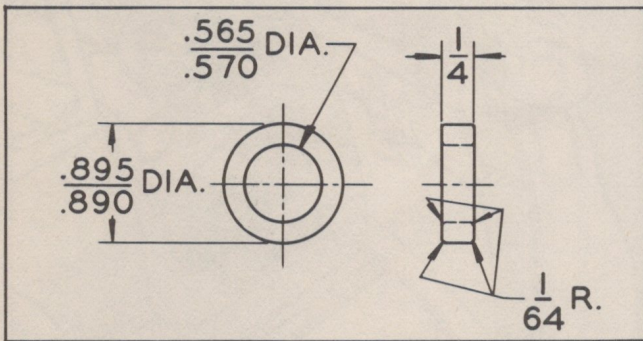


Fig. 5 Measurements for Making Washer

This washer can either be made at your dealership from cold rolled steel or equivalent, or purchased from Kent-Moore Organization by ordering J-4161-12 washer. The specifications for this washer are given in Fig. 5.

Before installing the new rear spring bushing, coat with heavy graphite grease. This will make installation of the bushing easier.

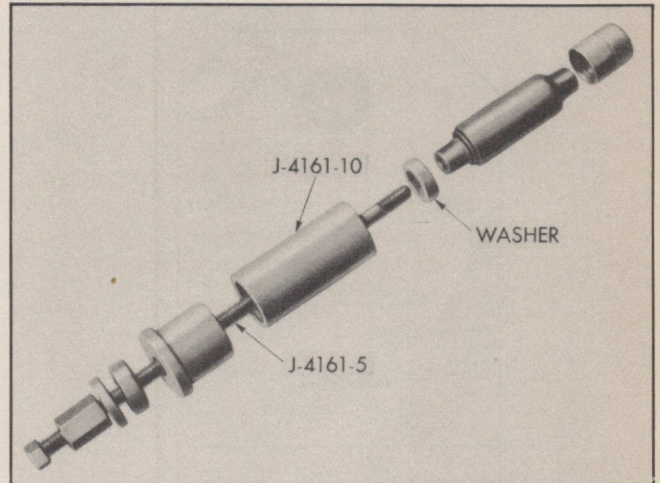


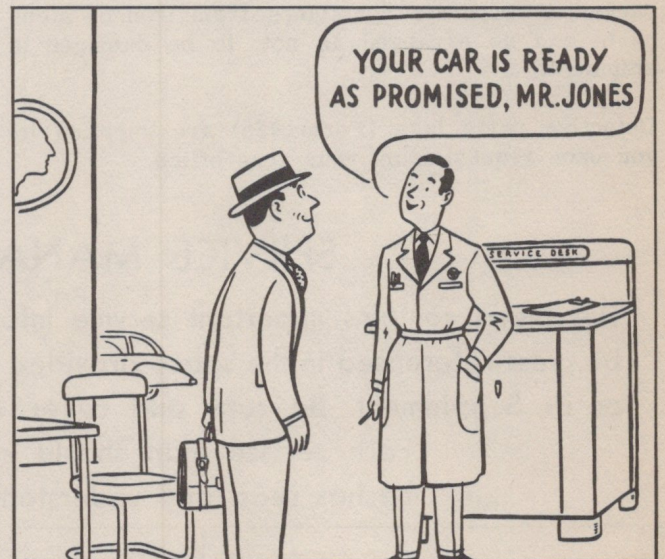
Fig. 6 Position of Washer in Tool

YOUR SERVICE PICTURE

N E G A T I V E O R P O S I T I V E



PROMPTNESS??? Keep customers waiting and they will believe your work is like your promise - unreliable. Time is just as important to the customer as it is to you.



When you make a promise, be sure you can fulfill it. If work on a car is unavoidably delayed, see that the customer is notified. Wait on 'em promptly... finish the job on time!

[illegible]

Charlie Craftsman Says-



PONTIAC

Service Craftsman News



NO. 5 S-226

MAY, 1951

SELL SAFETY!

MAY IS NATIONAL CAR SAFETY MONTH

Safety Test Your Car Yourself

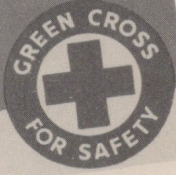

Make sure your car is safe. You can perform the following Safety Test yourself in a few minutes' time and determine if your car is up to the safety standards recommended by Pontiac Engineers.

If you prefer, we'll be glad to make this check for you—simply drive in at your convenience.

MAKE THESE TESTS AND GRADE THEM YOURSELF		SAFE	UNSAFE
1. BRAKES.	If you can push brake pedal within one inch of floor or car swerves when stopping, brakes need attention.		
2. STEERING.	Service is needed if you can turn steering wheel several inches without moving front wheels.		
3. HORN.	Check operation.		
4. WINDSHIELD WIPERS.	Check blades, wiper operation.		
5. REAR VIEW MIRRORS.	Is glass clear and unblemished?		
6. LIGHTS.	Test headlights, parking lights, tail lights, stop lights. Check headlight aim and dimmer switch.		
7. SAFETY LIGHTS.	Test operation of direction signal and back-up lights.		
8. TIRES.	Inspect for excessive tread wear, cuts, improper inflation.		
9. GLASS.	Check for visibility and cracks.		
10. EXHAUST SYSTEM.	Is exhaust noisy? Check for leaks, rust or damage.		

CHECK YOUR CAR...CHECK ACCIDENTS

After your safety check has been made, let us take care of your needs.



Here's the May Safety Folder which Pontiac Dealers are sending to 1,496,000 motorists this month to tie-in with the nation-wide Car Safety Campaign. You can help prevent accidents by performing thorough safety inspections at every opportunity during May.

[illegible]

PONTIAC TUNE-UP DIAGNOSIS

INSTRUCTIONS TO MECHANIC:

Operations and tests printed in black are to be performed as written. Tests printed in gray are to be performed only when additional tests are necessary. Recommendations for any additional needed service should be listed at the reverse side.

1 Specific Gravity

Cell No. 1

Cell No. 2

Cell No. 3

2 Add Water to Battery and Inspect General Condition

Should read above 85% with 300 amp discharge for 18 seconds.

3 Starting Circuit Voltage

Cranking should read 3 volts or more for 15 seconds.

Starting motor condition.
Brushes, brushes holder, grease in dirt bearings, commutator.

Starter Switch.
Should not read more than 1 1/2 ohms.

Starting motor amperage draw.

4 Oil Starter Pedal Shaft (1948 and earlier models)

5 Wipe External Surfaces of Ignition Wires, Distributor Cap and Coil Terminals

6 Lubricate Distributor Wick, Cam, Breaker Point Pivot (all models), Balls and Ropes (1948 and earlier models).

Distributor Cap.

Ignition Cables.

Distributor Points.

Distributor Condition Check.

Condenser Condition.

Resistance.

Insulation.

Distributor Resistance.

Should read in black band on Dwell Meter. If not, check.

Breaker Point Spring Tension.

Breaker Plate and Moving.

Bushing.

Space Distributor Points (Distributor in engine and new points.)

2 Cyls—62° and 21 to 30° Dwell Angle.

8 Cyls—16° and 21 to 30° Dwell Angle.

NOTE: If manual repairs trouble indicating difficulty in the ignition system which is not remedied by the above work, perform the following tests.

7 Coil Condition

Primary Resistance.

Ignition Switch.

Ammeter.

8 Clean and Re-Oil Air Cleaner, Crankcase Ventilator Inlet and Outlet

9 Remove and Discard Choke Screen (if present), Test Freedom of Valve

10 Lubricate Accelerator Pump Arm Shaft

11 Check Throttle Cracker Opening (1948 and earlier models)

12 Clean Fuel Pump Bowl

NOTE: If owner reports trouble indicating difficulty in fuel pump, perform the following test.

Fuel Pump Vacuum.

Fuel Pump Capacity.

At 1600 rpm. 4 to 4 1/2 in. per in.

13 Inspect Manifold Heat Control for Freedom of Movement

START ENGINE

Inspect Items 15 through 18 while engine is warming up to operating temperature.

15 Lights.

16 Radio.

17 Accessory.

18 Windshield Wiper.

19 Cooling System.

20 Inspect for Unusual Tire Wear.

21 Inspect Exhaust System for Leaks.

22 Set Engine RPM—Idle Speed.

23 Set Ignition Timing.

24 Vacuum Reading.

25 Clean and Regap Spark Plugs.

26 Inspect Generator Condition.

27 Generator Output.

28 Voltage Regulator.

29 Milliamperes Current at Spark Plugs.

30 Combustion Test.

31 Set Ignition to Borderline Detonation.

32 Test Operation and Adjustment of:

Clutch.

Steering.

Fig. 1 Front and Back Sides of the New Tune-Up Diagnosis Sheet



PONTIAC

SERVICE CRAFTSMAN

EXAMINATION #51-3

Third of Five Examinations for 1951

Date _____

Service Man's Name _____

Position _____

Home Address _____

Dealer _____

PONTIAC SERVICE CRAFTSMAN ENROLLMENT FORM

I hereby pledge myself to conscientiously study all service literature, to attend designated Service Craftsman Schools, to answer each of the examinations to the best of my ability and to live up to the Pontiac Service Integrity Code.

Present Position
(Check One)

- ☐ Tune Up
- ☐ Electrical
- ☐ Front End
- ☐ Brakes
- ☐ Heavy Repairs
- ☐ General Mechanic
- ☐ Body Department
- ☐ Lubrication
- ☐ Tester
- ☐ Shop Foreman
- ☐ Service Salesman or Inspector
- ☐ Service Manager

(Signed) _____

Home Address _____

Dealer Firm Name _____

Dealer Location _____

Dealer Signature _____

INSTRUCTIONS

The questions used in this examination were taken from the 1951 March and April issues of Service Craftsman News and Craftsman Training Program.

RETURN COMPLETED EXAMINATION TO YOUR ZONE OFFICE BY JULY 15, 1951

When completing this examination, it is necessary to read the question and then circle the letter on the left side of the correct answer.

CIRCLE ONLY ONE ANSWER

SERVICE CRAFTSMAN EXAMINATION NO. 51-3

1. QUESTION: With regard to radio noise, curb finders are often offenders in that static charge is discharged to ground through them.

ANSWER:
(Circle One)

A. True

B. False

2. QUESTION: When using brake lining packages 509130 and 513110, always use them in sets of two (two wheels).

ANSWER: A. True B. False
(Circle One)

3. QUESTION: The distributor and oil pump drive gear is no longer being copper plated.

ANSWER: A. True B. False
(Circle One)

4. QUESTION: It is of utmost importance to properly fill out defective parts tag (Form 728) to return parts.

ANSWER: A. True B. False
(Circle One)

5. QUESTION: Before repainting, when a car has been polished with silicone polish, thorough cleansing and precautionary measures are necessary to avoid an unsatisfactory job.

ANSWER: A. True B. False
(Circle One)

6. QUESTION: Due to construction of the 8-cylinder distributor point lever, the spring tension reading must be taken immediately adjacent to the contact point.

ANSWER: A. True B. False
(Circle One)

7. QUESTION: When an early type clock is installed in a late type inner radio grille, it is necessary to drill holes in the early model clock.

ANSWER: A. True B. False
(Circle One)

8. QUESTION: When installing a rear speaker, if a solid sill plate is encountered, replace it with a hollow one to permit proper installation.

ANSWER: A. True B. False
(Circle One)

9. QUESTION: The quantity listed for paint material in the 1949-50-51 Flat Rate Manual includes all necessary thinner, primer, surfacer, and color to do the refinish operation.

ANSWER:
(Circle One)

A. True

B. False

10. QUESTION: The valve bodies as used on 1951 Pontiacs and 1951 Oldsmobiles are the same and may be used interchangeably.

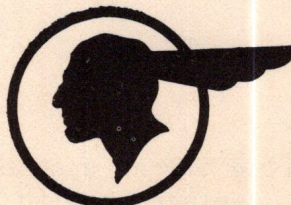
ANSWER:
(Circle One)

A. True

B. False

MAIL COMPLETED EXAMINATIONS TO YOUR ZONE OFFICE BY

JULY 15, 1951



IS YOUR NAME LEGIBLE?

YOUR NEW TUD* FORM (*Tune-Up Diagnosis)

Easier to Read . . . Easier to Use!

Pontiac's new Tune-Up Diagnosis Form provides an ideal service guide for both your customers and you. Every car needs an essential tune-up periodically, as well as an inspection such as this, which will uncover additional needed services.

In its new simplified form, the tune-up diagnosis sheet follows a logical sequence of operations and assures the customer that nothing has been overlooked. See Fig. 1.

Good tune-ups and good inspections instill owner confidence in your workmanship.

GETTING THE MOST OUT OF TIRES

GIVE EXTRA TIRE MILEAGE - BY AIR!

AIR--in properly inflated tires, pays off in extra tire life...for it's air that supports the weight of the car.

Too little air pressure increases the percentage of deflection of the tire and causes the tread in the shoulder area to wear and scuff on the road. Extra strain is placed on the cord body of the tire and this increases the chances for rim bruising and ply separation.

Too much air pressure is equally bad. Pneumatic tires are scientifically designed and are built to run at a given percentage of deflection. Over-inflation reduces the deflection from normal, causing the tire to ride on the crown, and very rapid wear in the center of the tread is the result. Over-inflated tires are also more susceptible to fabric breaks in the area under the tread.

INFLATION POINTERS

1. Use accurate gauges. Purchase a "master" gauge and check regularly every gauge you use and those you sell, to assure your customers accurate tire inflation.
2. Check tire pressure every month. Pressure should be checked when tires are cold. If one or more tires are consistently lower than others, look for a puncture. Inflation pressure should be checked before the car has been driven any considerable distance, thus avoiding warming up the tires. Temperature of tires should be at atmospheric temperature at time of inflation. **REMEMBER THAT INFLATION PRESSURE WILL DROP OR RAISE APPROXIMATELY ONE POUND PER SQUARE INCH WITH EACH TEN DEGREES FALL OR RISE IN ATMOSPHERIC TEMPERATURE.**

3. Do not "bleed" air to reduce pressure when tires are warm. It is normal for tires to build up a few pounds of air after being run.

DO NOT REDUCE (BLEED) THIS PRESSURE.

"Bleeding" of tires causes a dangerous increase in running temperatures. The tires will then be under-inflated when cool.

4. Always inflate spare tires. A spare with no air is no spare.
5. Always replace valve caps. Valve caps provide a positive seal and protect valves against dirt, moisture, or other foreign matter. Be sure to call customer's attention to missing caps.
6. Check tread area of all tires and remove any foreign objects. This slight service may prevent a failure thousands of miles later.

TIRE SWITCHING

Switching, as shown in Fig. 2, saves tires by equalizing wear and "exercising" the spare. Tires switched every 4,000 miles will carry the car 20,000 miles and only put 16,000 miles on each tire. When an owner has a spare tire that is not new, he should be advised to rotate the four new tires until they reach the approximate condition of his spare, then use the spare in periodic tire rotation.

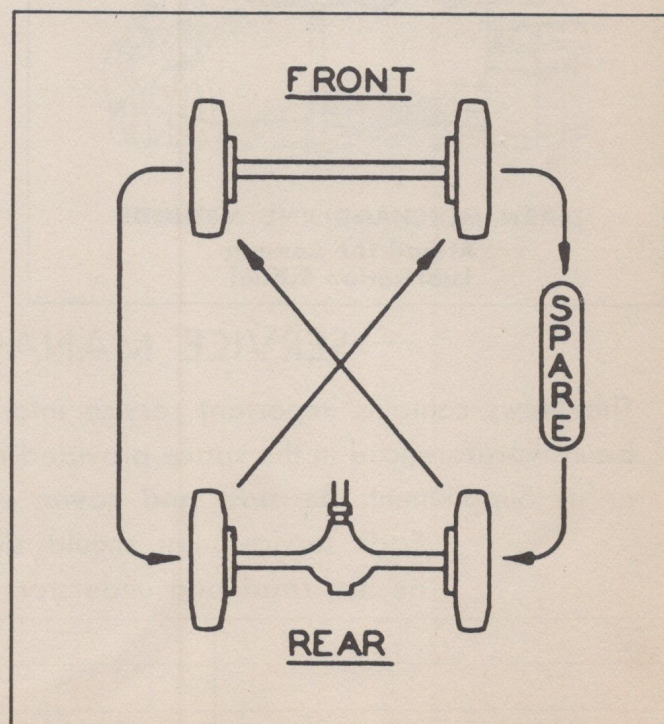


Fig. 2 Diagram for Switching Tires

ADDITIONAL PAINT INFORMATION

HUB CAP AND WHEEL DISC PAINT

The paint used on Pontiac standard hub caps 1949-1950 and the deluxe wheel discs 1949-50-51 is Transparent Red, DuPont Dulux V97-55202. Paint used on the 1951 standard hub cap is Burma Red, DuPont Dulux 94-55529.

UNDER-SIDE OF SUN SHADE

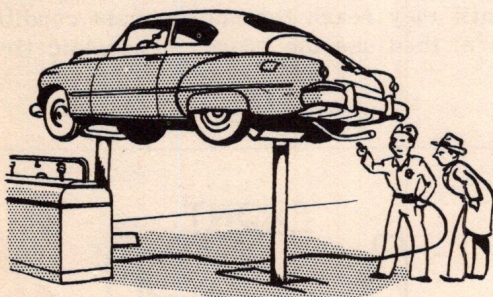
Morat Green, 246-51197 (Dull Finish), is the paint used on the under-side of the outside sun shade.

These colors are available through your DuPont dealer.

HYDRA-MATIC BAND ADJUSTMENT PERIOD CHANGE

Hydra-Matic bands can be adjusted at the 1000 Mile Inspection or any time between the 1000 and 2000 Mile Inspection, rather than specifically at the 2000 Mile Inspection.

Improved manufacturing technique, together with 1000 miles average driving, is sufficient to stabilize the bands.



LEARN MERCHANDISING METHODS
Attend The Coming
Lubrication School

Charlie Craftsman Says-



1949-51 tires should have 24 lbs. when they have cooled to atmospheric temperature.

DO NOT BLEED AIR TO REDUCE PRESSURE WHILE TIRES ARE WARM.

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.



CARE OF NEW TYPE CHROME

Material restrictions that are a result of the nation's defense effort have made it necessary to change the plating process on some bright metal parts on Pontiac automobiles.

Bright metal parts plated by the new process are protected with a clear enamel. At the present time this process is being used on the following chrome parts:

Exterior Parts

Radiator Grille Assembly
Head Lamp Rims
Hood Ornament Base
Front Door Emblems
Outside Rear View Mirror Arm
Tail Lamp Rings
Deck Lid Handle

Interior Parts

Instrument Cluster Case
Steering Column Finish Plates
Heater Control Panel
Deluxe Horn Ring
HM Selector Lever
Fog Lamp Switch Escutcheon
Radio Dial House Escutcheon
Outer Radio Speaker Grille
Inner Radio Speaker Grille
Glove Box Emblem
Tilting Non-Glare Mirror

MAINTENANCE INSTRUCTIONS MUST BE FOLLOWED to prevent damage to the protective coating. All chrome parts plated with the new process can best be maintained by frequent washing. Conventional car washing procedures are satisfactory where mild soaps or detergents are employed as cleaning agents.

CAUTION: Abrasives and strong cleaning agents are harmful to this finish; therefore, conventional methods of chrome cleaning and polishing **MUST BE AVOIDED.**

Repairs to **SCRATCHES** or **ABRASIONS** that occur on parts having the protective coating must be performed within a reasonably short time to prevent further deterioration to the finish.

PROCEDURE - REFINISHING NEW TYPE CHROME

Scratches or abrasions that occur to the protective enamel coating on the new type chrome finished parts may result in discoloration and possible damage to the surrounding area if refinishing is not done within a reasonable time.

Repairing damaged or scratched sections of these plated parts through the use of abrasives is hazardous because of the possibility of scratching through the chrome. For this reason only the damaged area should be refinished. The procedure for refinishing is as follows:

1. Feather-in the enamel scratch very lightly with only Triple-O (000) steel wool.

CAUTION: USE OF RUBBING COMPOUNDS, EMERY CLOTH, OR SAND PAPER MUST BE AVOIDED OR DAMAGE WILL RESULT TO THE CHROME.

2. Clean section with "Dulux" paint thinner or Toluol.

3. Refinishing material (page 34) can then be sprayed, wiped, or brushed on the prepared surface. Apply two coats, allowing suitable drying time between coats (page 34).

CAUTION: DO NOT POLISH.

EDITOR'S NOTE: An index of all 1951 Service Craftsman News articles through June is included in this issue. Place this index in the front of your Service Craftsman News Binder.

Failure to follow the instructions on care and re-finishing of new type chrome (page 33) will result in damage to the protective coating.

Material approved for use in refinishing new type chrome is "Air-Dry Clear Enamel" (for bright metal parts) and has a drying time of 1/2 hour. Air-Dry Clear Enamel may be secured at all zone warehouses under Part No. 984759.

This material provides an excellent protective coating against weather conditions for all chrome parts on current and past models.

RADIATOR UPPER TANK CHANGE

Due to material restrictions, Pontiac is now using radiators with the upper tank constructed of steel. This substitution of steel for brass will not in any way affect cooling efficiency.

Mechanics will be able to identify this new type radiator assembly as follows:

1. Remove the paint from a small area of the upper tank with a rag dipped in gasoline or paint thinner. A green plastic coating will be visible after the paint is removed.

2. Test metal with a magnet.

In production, a rust inhibitor will be added to the cooling solution on all cars using this steel upper tank. Whenever the radiator is drained in service, the proper volume of rust inhibitor should be added to the replaced solution. Four ounces of Borax has been found to be very effective and economical for this purpose and can be used with water or GM anti-freeze solutions.

CORRECTION

In the April 1951 Service Craftsman News, page 26, under "IDENTIFICATION OF THE CARBURETOR ASSEMBLY", the two following statements were made in error: "Pontiac carburetors will be designated with the letters 'RP'" (on brass identification tag); "Carburetor parts marked 'GM' are not for Pontiac carburetors."

What we should have stated was that Rochester products will be the sole source of the 7002870 carburetor, and this number will appear on the brass identification tag. The code number indicating the date of manufacture is also on this tag. For further identification, in case the tag is lost, the name plate on the air horn below the end of the choke shaft will carry the name "RP Rochester GM Carburetor".

Identification of parts remains the same as listed in the article.

A.A.A. REPORTS BREAKDOWNS UP 25% IN 1950

Here's Your Opportunity To Help
Keep Pontiac Owners Out of These Statistics

The American Automobile Association estimated that motorists all over the country called for emergency road service 44,000,000 times in 1950. This compares with about 35,000,000 calls for emergencies in 1949.

Reasons for the increase, according to A.A.A., were the tremendous increase in the number of vehicles in use, plus the larger proportion of older cars on the road.

You can help Pontiac owners avoid breakdowns on the road by watching for possible sources of trouble when you service their cars. This is particularly important in the summer months when most motorists do more traveling.

Here is a list of the car troubles that caused breakdowns most frequently.

ESTIMATED NUMBER OF BREAKDOWNS

Type of Service	Breakdowns	Pct. of Total
Battery	10,830,000	24.55
Tire	10,054,000	22.79
Tow	4,081,000	9.25
Ignition	3,918,000	8.88
Carburetor	2,523,000	5.72
Stuck	2,210,000	5.01
Wrecker	1,862,000	4.22
Out of Gas	1,522,000	3.45
Starter	1,006,000	2.28
Lock and Key	722,000	1.75
Brakes	701,000	1.59
Gas Line	609,000	1.38
Lights	476,000	1.08
All Others	3,551,000	8.05

By careful workmanship and inspections, you can keep Pontiac owners out of the above statistics.

DOWEL PIN ELIMINATED IN REAR UNIT DRUM

Hydra-Matic transmissions with serial numbers P51-6940 and D51-121220 and higher will no longer have a dowel pin between the rear unit internal gear and the rear unit drum.

The early type rear unit drum with the dowel and rear unit internal gear with the dowel hole will continue to be serviced for early transmissions and past models. If both parts are being replaced on an early transmission, the new parts can be used.

Never use the early and late types together as a severe out-of-balance condition will result.

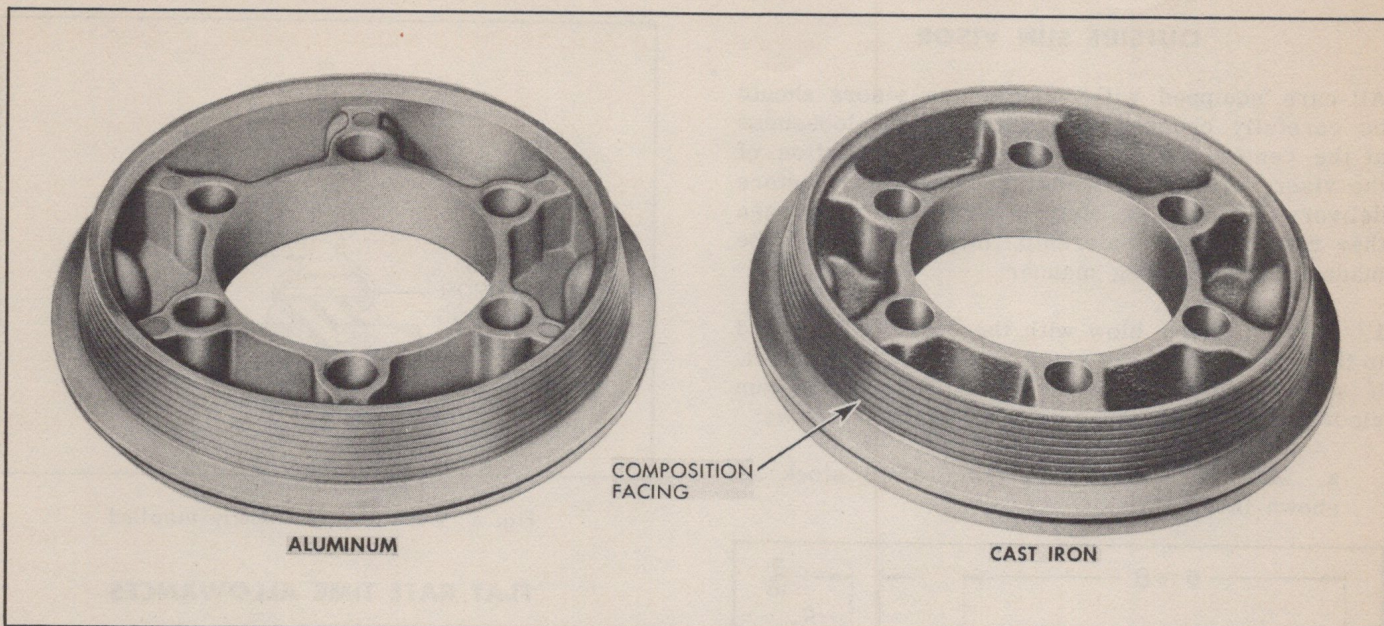


Fig. 1 Aluminum and Cast Iron Reverse Pistons

HYDRA-MATIC REVERSE PISTON

The reverse piston used on 1951 Hydra-Matic transmissions previously was made of die-cast aluminum. This piston is now being made of cast iron with molded composition facing. See Fig. 1.

The cast iron pistons may be used interchangeably with pistons made of aluminum

NOISY MUFFLERS

Investigation reveals that many mufflers are being replaced needlessly because of "rattling", "crackling", and "pinging" noises being emitted from the muffler slip joint.

The slip joint is that area of the muffler where the inner muffler tube is fitted into one end of the muffler shell (the other end being welded). The normal fitting of the joint is such that it will slip freely allowing expansion and contraction of the inner muffler tube, as the temperature of the muffler varies and still not be loose enough to rattle. When corrosion sets in, the products of this corrosion accumulate between the joint surfaces. This tightens the fit enough to make it "sticky". A heavy accumulation of rust will tighten the joint enough to "ping" whereas the "rattling" and "crackling" is caused by the accumulation being just enough to make the joint sticky.

The penetrating oils below cut the accumulation of rust and corrosion products and allow the joint to operate freely again. McKenzie, Walker and Hayes mufflers have the slip joint at the front end of the muffler and Oldberg at the rear. See Fig. 2. (The McKenzie muffler is not shown.)

Every effort should be made to correct this noise instead of replacing the mufflers. The use of penetrating oil (most effective are GM, Part #986082 or "Kwick", made by Walker Manufacturing Co., Racine, Wisconsin) at the slip joint has proven very effective in eliminating these noises in a high percentage of tests.

It is necessary to remove the muffler to apply the penetrating oil properly. Apply oil generously between the inner tube and end plate. (See Fig. 2 for location of slip joint.) After the first application has had time to penetrate, more oil should be applied to make sure the slip joint is well saturated. New mufflers are not to replace noisy mufflers until this operation has been performed and muffler checked for elimination of noise.

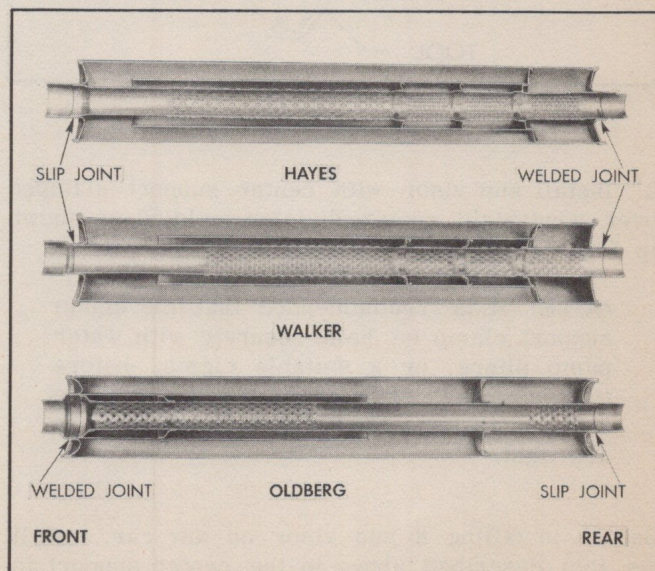


Fig. 2 Comparison of Muffler Construction

OUTSIDE SUN VISOR

All cars equipped with outside sun visors should be carefully checked to insure against looseness at the center bracket or improper installation of the visor. This inspection should be made before delivery of a new car, also on cars in service when they return to the dealership. Inspection should be made in the following manner:

1. Apply a sharp blow with the palm of the hand to the underside of the visor at the center support. If support pulls off or is loose, remove the sun visor and re-work the center support as follows:

a. Make a special tool from steel stock as shown in Fig. 3.

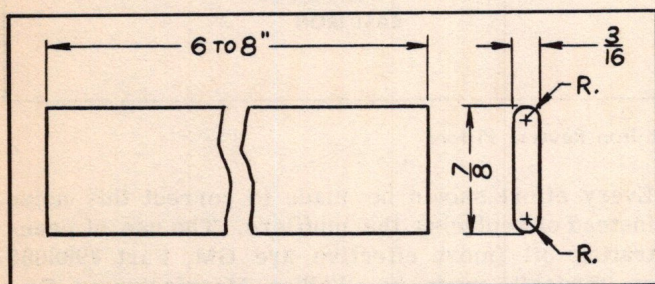


Fig. 3 Special Support Clamp Forming Tool

b. Insert the tool in the clamp end of the center support and form the edges of the clamp around the tool. See Fig. 4. This will insure that clamp will grip the windshield center division molding properly (Fig. 5).

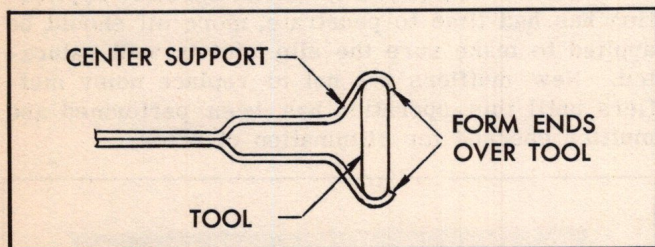


Fig. 4 Forming Clamp Over Special Tool

2. Install sun visor with center support clamped over windshield center division molding as shown in Fig. 5.

NOTE: It is recommended that the center support clamp be held securely with water pump pliers, or a suitable clamp, before tightening the center support screws. Make sure clamp bolts and visor end plate screws are tight.

Before installing a sun visor on any car, install the tool described above in the center support to check the shaping of the clamp. Re-work clamp if necessary.

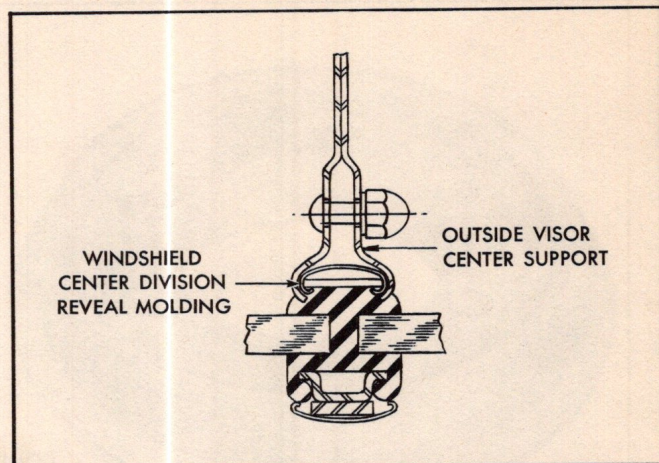


Fig. 5 Visor Support Properly Installed

FLAT RATE TIME ALLOWANCES

The following operation numbers 1-152, 1-154, 1-921, 6-2, and 6-539 are new operations; and operation numbers 6-1, 6-300, and 6-640 have additions. These should be entered in the 1949-50-51 Flat Rate Manual.

1-152 Instrument Panel - Replace and Refinish

Includes: R&R Windshield Glass and Channel, Cowl Trim Pads, Windhose Along Front Pillars, Instrument Panel Door and Hinges, Mask Panels, and Refinish Instrument Panel and Cowl Ahead of Windshield.

Chassis: D&C Battery (.1); R&R Instrument and Switches (5.0)

49-50-51 All (14.1)
(1-1/4 qt. Paint Material - 2.8)
(Metal Time - 2.5) With Radio - Add (.3)
With Underseat Heater and Defroster - Add (1.0)

1-154 Instrument Panel - Right Section - Replace and Refinish

Includes: R&R Right Windshield Glass and Channel, Cowl Trim Pad, Windhose Along Front Pillar, Instrument Panel Door and Hinges, and Refinish Instrument Panel and Cowl Ahead of Windshield.

Chassis: D&C Battery (.1); R&R Instruments (1.1)

49-50-51 All (8.5)
(7/8 qt. Paint Material - 2.2)
(Metal Time - 2.5) With Radio - Add (.3)

1-921 Cowl Panel Lower - Replace and Refinish

Includes: Remove and Replace Front Door

1951 SERVICE CRAFTSMAN NEWS INDEX

JANUARY THROUGH JUNE ISSUES

Withdraw this index from your June Service Craftsman News and place it in front of the 1951 issues in your "News" binder for ready reference.

SERVICE CRAFTSMAN INDEX

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
BATTERY				CONVERTIBLE (cont.)			
Sp. Gravity 50 vs 51	Feb. '51	2	12	Rear Qtr. Leaks - 1950	Jan. '51	1	4
				Top Switch Wiring	Feb. '51	2	13
				Wiring Installation	Apr. '51	4	25
BODY				DISTRIBUTOR			
Corrosion Resistant Coat	Jan. '51	1	2	Lubrite Drive Gear	Mar. '51	3	18
Rear Seats Install.	Feb. '51	2	14	Point Spring Tension	Mar. '51	3	19
BRAKES				DOORS, FRONT			
Drum Spring Package	June '51	6	37	Lock Striker Fix	June '51	6	40
Linings, Optional	Apr. '51	4	23				
CARBURETOR				ELECTRICAL			
Identification 6 cyl.	Apr. '51	4	26	Battery Specs.	Jan. '51	1	7
Ident. Correction 6 cyl.	June '51	6	34	Battery Specs.	Feb. '51	2	12
Rochester 6 cyl.	Apr. '51	4	26	Conv. Top Sw. Wiring	Feb. '51	2	13
Specs. 6 cyl.	Apr. '51	4	26	Convertible Wiring	Apr. '51	4	25
				Dist. Gear Lubrited	Mar. '51	3	18
				Dist. Spring Tension	Mar. '51	3	19
CATALINA				Radio Grd. Strap Removed	Apr. '51	4	23
Sun Shade Align.	Feb. '51	2	14	Tone-Up	Jan. '51	1	3
				Tune-Up Diagnosis	May '51	5	31
CHROME (New Type)				ENGINE			
Care	June '51	6	33	Casting Block No.	Jan. '51	1	2
Maintenance	June '51	6	33	Cooling - 1951	Feb. '51	2	12
Refinishing	June '51	6	33	Cyl. Head Leaks	Jan. '51	1	2
				Oil Seal Identification	Jan. '51	1	3
CLOCK				Rear Main Oil Seal	Jan. '51	1	3
Change	Mar. '51	3	19	Thermostats	June '51	6	39
				Water Pump Pkg.	Feb. '51	2	11
CONVERTIBLE				FLAT RATE			
Hyd. Pump & Motor Wiring	Apr. '51	4	24	New Manual	Mar. '51	3	20
				Radio Rear Speaker	Feb. '51	2	14
				Time Allowances	June '51	6	36

SERVICE CRAFTSMAN INDEX

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
FRONT SUSPENSION				PAINT (cont.)			
Return of Coil Springs	Feb. '51	2	16	Material Cost	Mar. '51	3	20
				Refinish New Type Chrome	June '51	6	33
HEATER				Removing Silicone Polish	Mar. '51	3	17
Removal Tip	Feb. '51	2	11	Sun Shade (Under Side)	May '51	5	32
Temp. Cont. Valve Pkg.	Feb. '51	2	15	Test for Silicone	Mar. '51	3	17
				Wheel Disc	May '51	5	32
HYDRA-MATIC				PARTS TAG			
Band Adj. Change	May '51	5	31	On Returned Material	Apr. '51	4	28
Diagnosis	Jan. '51	1	1				
Diagnosis	Feb. '51	2	9	POEMS			
Dowel Pin Reaming	Feb. '51	2	12	Clinching The Bolt	Feb. '51	2	11
Gasket Disc.	Feb. '51	2	10				
Parts, Identify	Mar. '51	3	18	PRODUCT INFORMATION REPORTS			
Rear Drum Dowel Removed	June '51	6	34	Engine Cast. Number	Feb. '51	2	10
Removal Tip	Feb. '51	2	11				
Retainer, Special Tool	June '51	6	38	RADIATOR			
Re-use of Parts	Feb. '51	2	15	Grille Const. Chg.	Feb. '51	2	11
Reverse				Pressure Cap	Feb. '51	2	12
Checking Oil Pressure	Jan. '51	1	1	Upper Tank Change	June '51	6	34
Locating Leaks	Jan. '51	1	1				
Piston Change	June '51	6	35	RADIATOR GRILLE			
Side Pan Bolts, Remove	Mar. '51	3	18	Construction Change	Feb. '51	2	11
Special Tool	June '51	6	38	Refinish New Type Chrome	June '51	6	33
Torus Check Valve	Feb. '51	2	12				
MUFFLER				RADIO			
Noise	June '51	6	35	Ground Strap Removed	Apr. '51	4	23
				Noise Checks	Apr. '51	4	23
PAINT				Rear Speaker Flat Rate	Feb. '51	2	14
Change of Number	Jan. '51	1	3	Rear Speaker Install.	Mar. '51	3	19
Clear Enamel for Chrome	June '51	6	34	Rear Speaker Warranty	Feb. '51	2	14
Coating Body Panels	Jan. '51	1	2				
Hub Cap Paint	May '51	5	32				

SERVICE CRAFTSMAN INDEX

SUBJECT DATE ISSUE PAGE

REPAIR TIPS

Heater Removal	Feb. '51	2	11
HM Removal	Feb. '51	2	11
HM Side Pan Bolts	Mar. '51	3	18

SEAT COVERS

Install. & Care	Feb. '51	2	13
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SERVICE CRAFTSMAN

Activity	Jan. '51	1	8
Awards, 10-Year	Apr. '51	4	21
Exam. #51 - 1	Jan. '51	1	
Exam. #51 - 2	Mar. '51	3	
Exam. #51 - 3	May '51	5	
Membership Summary	Apr. '51	4	22

SERVICE PROMOTION

AAA Report	June '51	6	34
Common Courtesy	Feb. '51	2	15
Electrical Tone-Up	Jan. '51	1	3
New TUD Sheet	May '51	5	31
Promptness	Apr. '51	4	27
Sell Safety	May '51	5	29
Suggestion Award	June '51	6	38
Using Factory Parts	June '51	6	39

SUBJECT DATE ISSUE PAGE

SPECIAL TOOLS

HM Ret. - Reverse Clutch	June '51	6	38
Washer Improves Tool	Apr. '51	4	27

SUN VISOR

Proper Installation	June '51	6	36
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TAGS

Form 728	Apr. '51	4	28
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TIRES

Extra Mileage	May '51	5	31
Inflation Pointers	May '51	5	31
Tire Switching	May '51	5	31

WARRANTY

Radio Rear Speaker	Feb. '51	2	14
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WATER PUMP

New Pkg.	Feb. '51	2	11
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WHEELS

New Plug	Feb. '51	2	15
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Assembly, Sill Plate, Body Pillar Trim Retainer and Windhose, and Cowl Trim Pads.

Chassis: R&R Front Fender and Rocker Molding

49 All (2.7); 50 All (1.9); Hood Assembly (1.1)
 49 All (8.6)
 50-51 All (8.5)
 (1/4 qt. Paint Material - .6)
 (Metal Time - 3.0)
 With Radio Antenna - Add (.3)

6-1 Engine Tune-Up

E. Clean Crankcase Ventilator Inlet and Outlet and Carburetor Air Cleaner
 - Oil Bath Type (.5)
 - Standard Type (.2)

6-2 Complete Engine Tune-Up (Using Pontiac Tune-Up Diagnosis Sheet)

P. Replace Points (.1)

6-300 Valves - Grind

D. Clean Crankcase Ventilator Inlet, Outlet, and Carburetor Air Cleaner
 - Oil Bath Type (.5)
 - Standard Type (.2)

6-539 Radiator Grille - Refinish (New Type Chrome)

Includes: Hood Center Grille Mask and Clean-Up

51 - All (.8)
 (1/8 qt. Paint Material)

6-640 Carburetor Air Cleaner Crankcase Inlet and Outlet Ventilators - Clean

Includes: Remove and Replace
 - Oil Bath Type (.5)
 - Standard Type (.2)

BRAKE DRUM SILENCER SPRING PACKAGE

Most cases of squeaking brakes can be corrected by installing springs over the brake drums. A Brake Drum Silencer Spring Package has been released under Part No. 514278 (Group 5.810) and will be available at all zone warehouses. The package contains two springs and six spring retainers and can be used on either front or rear drums.

To assist in installing the brake drum springs, make four installation tools, as shown in Fig. 6.

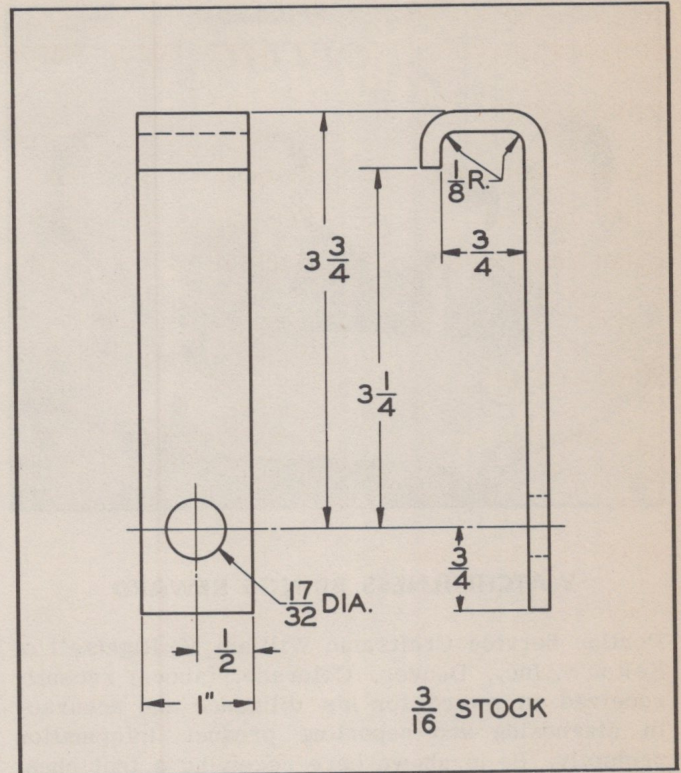


Fig. 6 Installation Tool

Brake drum silencer springs may be installed in the following manner:

1. Remove the wheel.
2. Install tools over wheel studs and secure with wheel stud nuts.
3. Place spring on drum. See Fig. 7.
4. Roll spring along drum to drum flange. Lift spring with screw driver and place three clips under spring approximately 120° apart.
5. Remove installation tools and replace wheel.

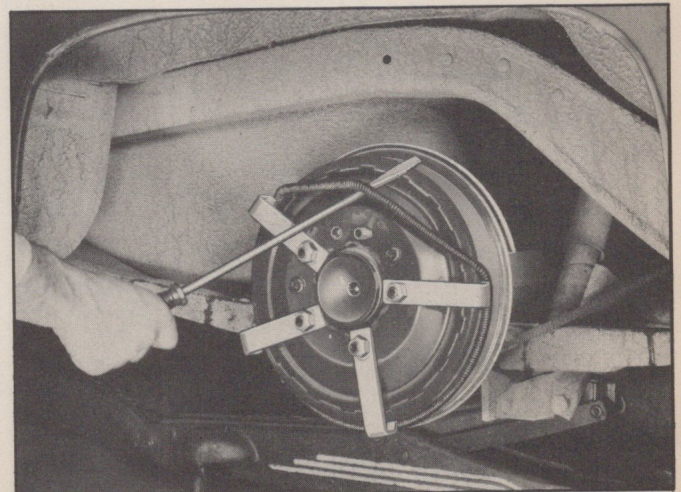


Fig. 7 Installing Drum Silencer Spring



WATCHFULNESS BRINGS REWARD

Pontiac Service Craftsman William M. Rightsell of Kelton's, Inc., Denver, Colorado, (above) recently received an award for his diligence and accuracy in diagnosing and reporting product information promptly. He is shown here receiving a tool chest as a token of Pontiac's appreciation. Left to right: W. W. Boggess, Denver Zone Service Manager; Service Instructor W. C. Eade; Kelton's Service Manager Walt Lake; and Mr. Rightsell. All Pontiac service men can render a valuable service by submitting accurate PI Reports.

CATALINA SIDE ROOF RAIL WEATHERSTRIP ANCHOR

Whenever cases are experienced where the side roof rail weatherstrip pulls away from the chrome quarter weather sealing strip, side roof rail weatherstrip may be held in the proper position (Fig. 8) by performing the following correction:

1. Drill a 1/8" hole at location shown in Fig. 9.

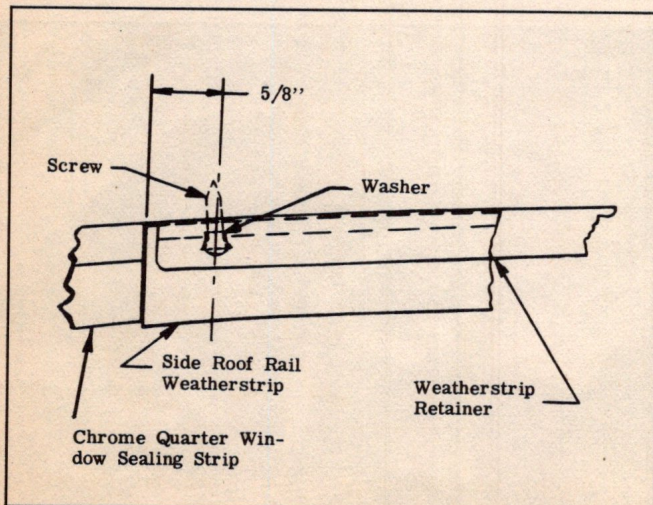


Fig. 8 Parts Identification at Side Roof Rail

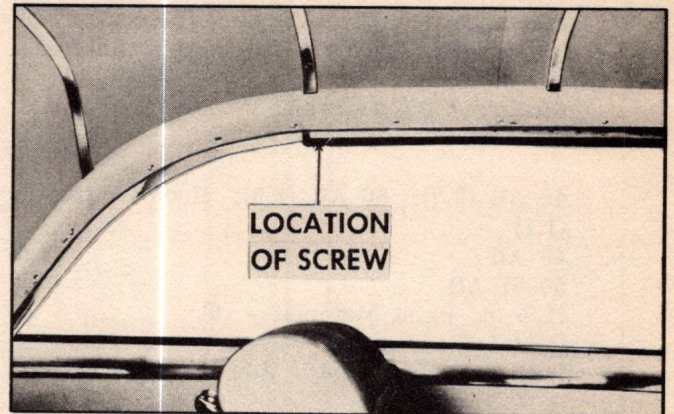


Fig. 9 Hole Location for Screw

2. Install a sheet metal screw (5/8" long) and a washer.

This will hold the rear end of the side roof rail weatherstrip in contact with the chrome quarter weather sealing strip. Be sure to properly reseal all weatherstrip before replacing.

The above procedure was incorporated in production shortly after changing to the short side roof rail weatherstrip.

HYDRA-MATIC TRANSMISSION REVERSE CLUTCH RELEASE SPRING RETAINER

The outside diameter of the Hydra-Matic reverse clutch release spring retainer has been reduced from 4-1/4" to 4-1/16". This change will require the use of tool J-4670-11 to be used with special tool J-4670 (Fig. 10) whenever the new reverse clutch release spring retainer is encountered.

Tool J-4670-11 may be secured from the Kent-Moore Organization at the cost of \$1.00 net per tool.

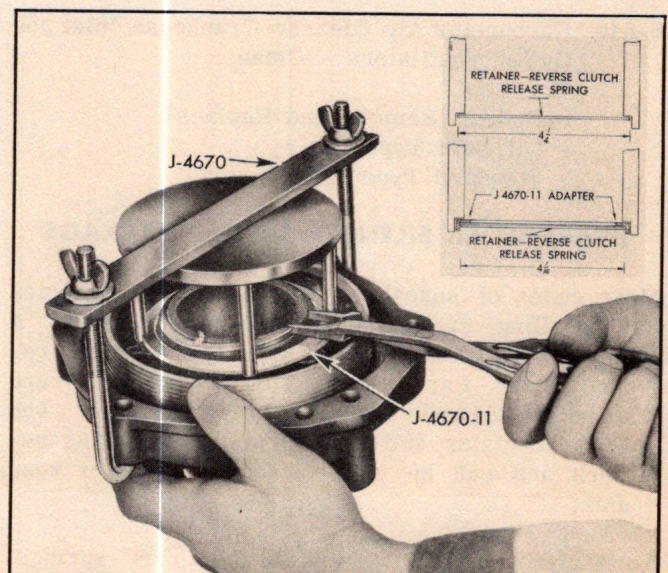


Fig. 10 Position of J-4670-11 When In Use

ENGINE WATER THERMOSTATS

Examination of thermostats returned from the field shows that many thermostats are being replaced unnecessarily. It is believed that insufficient knowledge of our production and service thermostat applications with respect to our present cooling systems, is the reason for these replacements.

The engine water thermostat is calibrated to control the coolant temperature within certain limits at atmospheric pressure. When pressure is increased as with the use of the 7 lb. pressure radiator cap, the control temperature of the thermostat is raised approximately 3° F. for each pound of pressure increase. Thus, the standard thermostat, which maintains a coolant temperature of approximately 151° F. at atmospheric pressure, would cause the temperature to rise to approximately 172° F. if the pressure were to rise to 7 lbs., as with the 1951 pressure cap.

The pressure and temperature in a 1951 Pontiac will vary as follows with the standard (151° F.) thermostat:

When the engine is first started and warms up, the coolant will expand as the temperature increases.

This will cause the pressure to rise to 7 PSI with the result that the temperature will rise above 170° F. When the car is stopped, as for an intersection for instance, the temperature of the coolant in the engine will increase because the coolant circulation practically stops. When the car again moves forward the engine coolant again starts cooling due to circulation through the radiator.

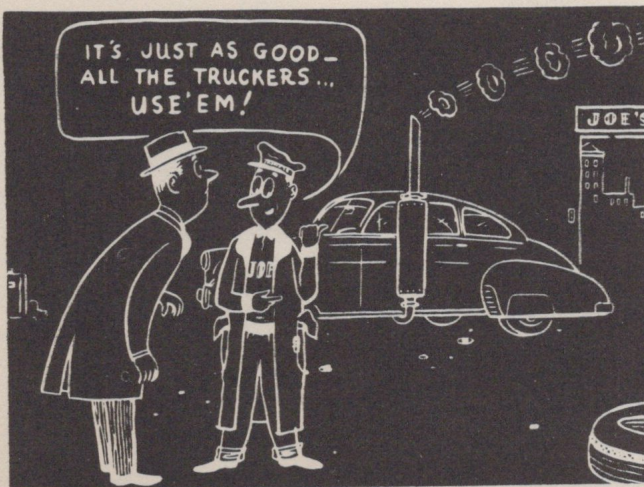
This lowering of temperature causes a decrease in the cooling system pressure with the result that the thermostat control temperature drops. Eventually the pressure will be at a low value and the thermostat will control the temperature to a value equal to its original calibration. These conditions remain as long as the car is in motion. Each time the car stops a temperature rise occurs with accompanying pressure increase which dissipates as soon as car regains motion.

Due to this characteristic of the higher pressure system, the use of a 160° or 170° thermostat with alcohol or methanol base anti-freeze solution may cause the coolant to boil under certain conditions. Therefore, only the 151° thermostat should be used with these types of anti-freeze.

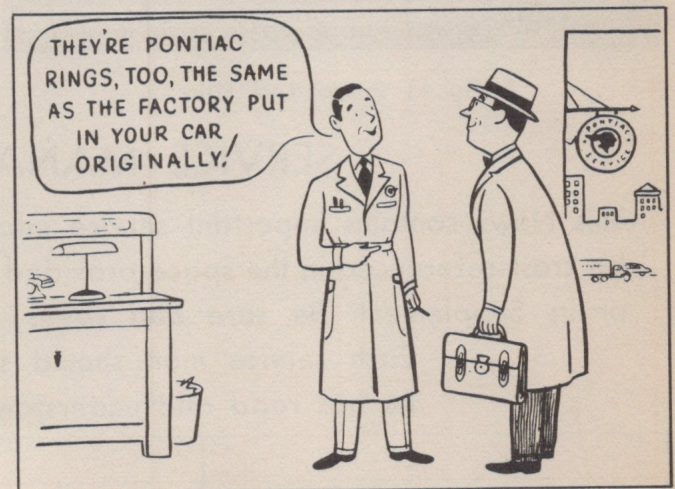
EDITOR'S NOTE: This is the sixth of a series of cartoons covering the items that influence motorists most in deciding where to go for service.

YOUR SERVICE PICTURE

NEGATIVE OR POSITIVE



Exaggerated? Perhaps but Pontiac owners want the best for their cars.



Why not take advantage of your customers' desires? Use Pontiac Engineered Parts - tell customers about 'em at every opportunity.

LOOSE FRONT DOOR LOCK STRIKER

Should the front door lock striker shift from its position on the lock pillar even though the attaching screws are tight, the trouble may be due to the serrated surface of the striker not contacting the serrated surface of the anchor plate. This condition can be corrected as follows:

1. Remove the door lock striker plate.
2. Carefully swage the lock pillar facing rearward at the striker plate area to permit a meshing contact between the striker and anchor plate serrations. See Fig. 11.

NOTE: Only the area under the striker should be swaged.

3. Reinstall and adjust the striker plate.

Check engagement of door lock bolt and striker as outlined in the August 1950 Service Craftsman News, page 69. If necessary, install door lock striker spacer with longer screws.

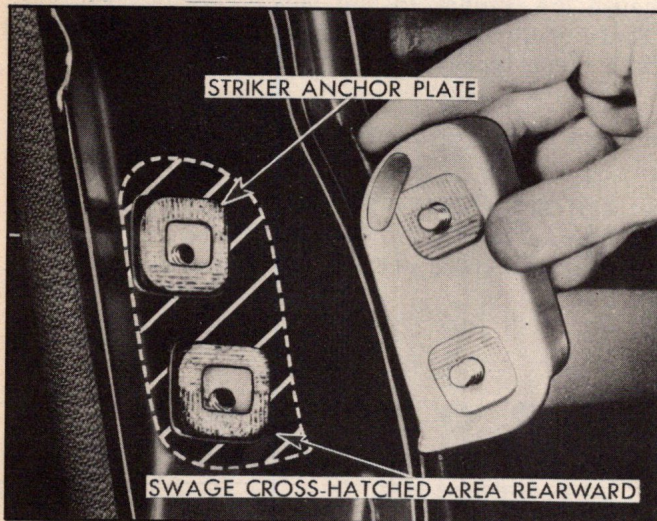
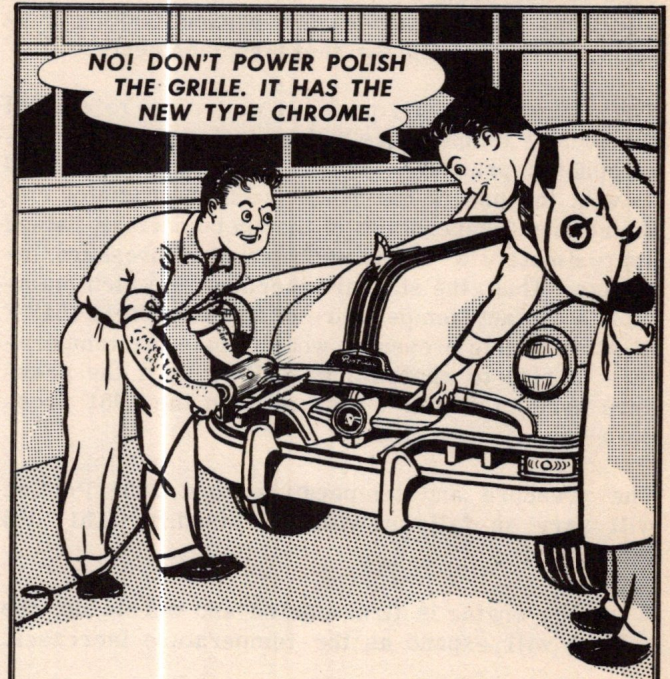


Fig. 11 Swaged Lock Pillar

Charlie Craftsman Says—



**READ THE INSTRUCTIONS
ON PROPER CARE AND
REFINISHING OF THE NEW
TYPE CHROME ON PAGE 33.**

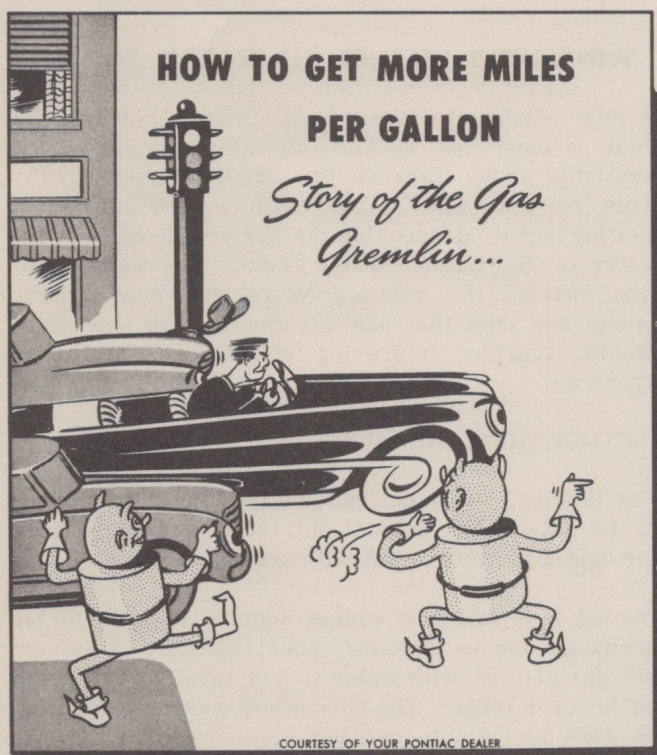
SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.



NEW BOOKLET HELPS ANSWER GAS MILEAGE INQUIRIES



Here's a booklet you will want to be acquainted with! It was prepared by Pontiac to help service men answer owners' questions about gas mileage. Much of the information given in the July, 1950, Service Craftsman News was used to explain how good driving habits and proper mechanical condition improve gas economy.

Your dealer may order copies of "How To Get More Miles Per Gallon" through your zone office. (A nominal charge is made for quantities over 100.) Make sure you're familiar with this booklet and use it in discussing gas mileage with your customers. You'll find it's a big help.

BACK WINDOW POLISH FOR CONVERTIBLE COUPE

A polish has been developed for use in removing rain spots and small surface scratches on plastic back windows on 1951 Convertible Coupes. This product is called "Cadco Anti-Static Plastic Polish" and has been tested and approved by the Fisher Body Service Section.

Before using the polish, the plastic back window should be properly cleaned as outlined in December 1950, Service Craftsman News (page 114), or in the booklet "How To Operate The Folding Top". The latter booklet is placed in the glove box of every Convertible.

After cleaning, the polish should then be applied as follows:

1. Apply Cadco Polish with a clean soft cloth. Rub lightly until water spots and fine scratches disappear.
2. Allow polish to dry.
3. Wipe off all polish with a clean soft absorbent cloth.

Cadco Anti-Static Plastic Polish, is available in pint containers from the Cadillac Plastic Company, 651 Baltimore Avenue, Detroit, Michigan, at a cost of \$1.25 per pint.

EDITOR'S NOTE: The fourth 1951 Service Craftsman Examination is included in this issue; complete and return it to the zone office by September 15, 1951.

STATION WAGON LIFT GATE SUPPORT

A new lift gate support locking lever is now being used in production. This lever is made of steel and can be installed in place of the early type die cast lever in case of breakage.

The new type lift gate support locking lever is installed as follows:

1. Remove lift gate support.
2. Disengage the inner channel from the outer channel by sliding the inner channel in the direction of the arrow stamped on the inner channel.
3. Remove the damaged locking lever from the inner channel by removing the rivet. (See Fig. 1.)

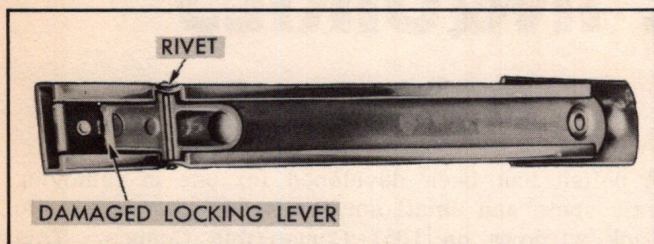


Fig. 1 Removing Damaged Locking Lever

4. Obtain a new type lever (Part #4150389), rivet (Part #4150390) and, if necessary, a spring (Part #4180878). This spring is the same as original equipment. (These parts are available through GMPD warehouses.)

5. Enlarge the locking lever rivet holes in the inner channel to 1/8" using a drill.

6. Install the new locking lever, spring and rivet in channel (Fig. 2) and peen the end of tubular rivet.

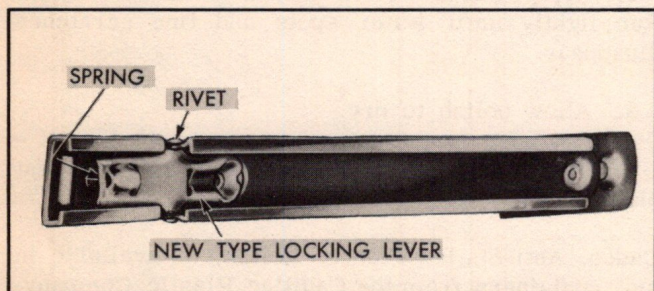


Fig. 2 Installing New Locking Lever

7. On the outer channel, carefully swage the stop, downward slightly (see Fig. 3).

NOTE: The height of this stop should be approximately 3/32" above the face of the channel to allow operating clearance for the locking lever when the inner and outer channels are assembled.

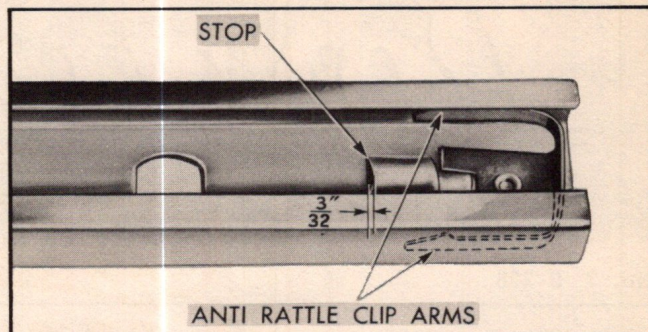


Fig. 3 Inner and Outer Channel Reassembled

8. Reassemble the inner channel into the outer channel. Use a small screwdriver to lift the arms of the anti-rattle clip, shown in Fig. 3, inside the inner channel.

9. Check the operation of the lift gate support and reinstall in body. Re-check operation of support.

WINDSHIELD WASHER ALL-SEASON SOLVENT

A new Windshield Washer All-Season Solvent, for year around use in GM windshield washers, is available under Package No. 986042 (Group 1.175). This solvent, when mixed with water, acts as a wetting agent, decreasing the surface tension of the water on the outside of the glass. The wetting action enables the solution to remove road splash, grime and dust that has accumulated on the windshield, thereby improving vision and eliminating eyestrain.

INSTRUCTIONS FOR USE

For spring, summer and early fall, pour one oz. of the All-Season Solvent into the windshield washer jar and fill washer jar with water.

During late fall and winter months to prevent jar breakage due to freezing, pour two ozs. of solvent into jar and fill with water to 3/4 level as indicated on bracket label. The windshield washer should not be used during sub-freezing weather as the solution will freeze on windshield.

All-Season Solvent is not injurious to car finish, metal or rubber parts when used as directed.

DIRECTION SIGNAL INDICATOR ARROWS

On some early model Pontiacs equipped with a direction signal, the green plastic arrow in the speedometer face was not plainly visible during the daytime. This condition can be remedied by replacing the speedometer face and indicator assembly with Part #1580861. Whenever this operation is performed, the speedometer should be checked and re-calibrated if necessary.



PONTIAC

SERVICE CRAFTSMAN

EXAMINATION #51-4

Fourth of Five Examinations of 1951

Date _____

Service Man's Name _____

Position _____

Dealer Firm Name _____

Dealer Location _____

PONTIAC SERVICE CRAFTSMAN ENROLLMENT FORM

I hereby pledge myself to conscientiously study all service literature, to attend designated Service Craftsman Schools, to answer each of the examinations to the best of my ability and to live up to the Pontiac Service Integrity Code.

Present Position**(Check One)**

- ☐ Tune Up
- ☐ Electrical
- ☐ Front End
- ☐ Brakes
- ☐ Heavy Repairs
- ☐ General Mechanic
- ☐ Body Department
- ☐ Lubrication
- ☐ Tester
- ☐ Shop Foreman
- ☐ Service Salesman or Inspector
- ☐ Service Manager

(Signed) _____**Home Address** _____**Dealer Firm Name** _____**Dealer Location** _____**Dealer Signature** _____**INSTRUCTIONS**

The question used in this examination were taken from the 1951 May and June issues of the Service Craftsman News and the Service Craftsman Training Program.

RETURN COMPLETED EXAMINATION TO YOUR ZONE OFFICE BY SEPTEMBER 15, 1951

When completing this examination, it is necessary to read the question and then circle the letter on the left side of the correct answer.

CIRCLE ONLY ONE ANSWER

SERVICE CRAFTSMAN EXAMINATION #51-4

1. QUESTION: 1949-51 tires should be inflated ____ lbs. of air with tires at atmospheric temperature.

ANSWER:
(Circle One)

A. 26

B. 24

C. 28

D. 32

2. QUESTION: Most cases of squeaking brakes can be corrected by installing springs over the brake drums.
- ANSWER: A. True B. False
(Circle One)
3. QUESTION: Abrasives and strong cleaning agents are harmful to new type chrome; therefore, conventional methods of chrome cleaning and polishing must be avoided.
- ANSWER: A. True B. False
(Circle One)
4. QUESTION: The new cast-iron Hydra-Matic reverse piston is not interchangeable with the earlier production die-cast aluminum piston.
- ANSWER: A. True B. False
(Circle One)
5. QUESTION: When refinishing the new type chrome, first use Triple-0 (000) steel wool to feather-in the scratch.
- ANSWER: A. True B. False
(Circle One)
6. QUESTION: The upper radiator tank is now being manufactured out of steel.
- ANSWER: A. True B. False
(Circle One)
7. QUESTION: Before condemning a muffler as defective, the muffler should be removed and a penetrating oil liberally applied at the slip joint.
- ANSWER: A. True B. False
(Circle One)
8. QUESTION: The dowel pin between the rear unit internal gear and the rear unit drum has been eliminated from all Hydra-Matics with serial number P51-6940 and D51-121220 and higher.
- ANSWER: A. True B. False
(Circle One)

9. QUESTION: Air should be bled from warm tires to reduce pressure.

ANSWER: A. True
(Circle One)

B. False

10. QUESTION: The refinishing material for the new type chrome may be sprayed, brushed, or wiped on a properly prepared surface.

ANSWER: A. True
(Circle One)

B. False

MAIL COMPLETED EXAMINATION TO YOUR ZONE OFFICE BY

September 15, 1951



IS YOUR NAME LEGIBLE?

OUTER ROCKER PANEL SECTION REPLACEMENT

Our present body rocker panel replacement operations provide for trim, hardware, and door removal. There are many occasions in some wreck work where some of these removal operations are unnecessary.

Where only a portion of the rocker panel is damaged, and it is not necessary to disturb the construction welds at the body pillars, metal men are making their vertical cuts in the outer panel at the extremities of the damaged area away from the welds at the body pillars.

To avoid the necessity of removing the inner panel which sandwiches a portion of the outer panel between itself and the floor pan, an upper longitudinal cut is made about 1-1/16" inward from the outer edge and the new panel is trimmed to fit that portion of the outer panel which remains on the car. This is illustrated at point "A" in Fig. 4.

To separate the bottom flanges, the spot welds are drilled and the outer panel is pulled outward to break the spot welds loose at point "B" (Fig. 4).

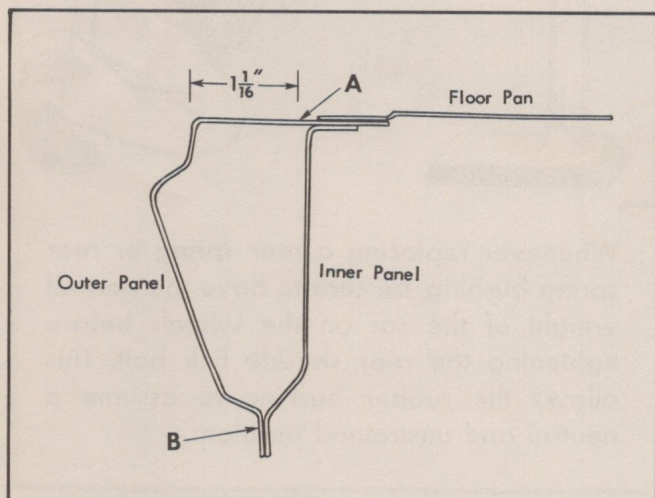


Fig. 4 Rocker Panel Construction

HYDRO-LECTRIC HYDRAULIC FLUID

It is recommended that Delco Super #11 Hydraulic Fluid be used for all service requirements when servicing the Hydro-Lectric system on Convertible Coupes.

This fluid is packaged in quart, gallon and five gallon cans and is available through GMPD Warehouses under the following part numbers:

Quart	5453724
Gallon	5451232
Five Gallon	5451233

VACATION BOUND!



MAKE THIS SIGN
EVERY OWNER'S ASSURANCE OF FRIENDLY,
DEPENDABLE SERVICE

It's Summer -- and thousands of Pontiac owners will be travelling to various parts of the country. This will be a double opportunity for you to increase your reputation for quality workmanship and friendly service.

Make sure your customers are set for carefree vacationing -- they'll appreciate your observations and advice when you check for needed work.

Touring owners will welcome friendly service -- remember, they're probably in strange towns and your courteous assistance will make a lasting impression on them.

Let's make 1951 a top-vacation year for Pontiac owners and a top year for Pontiac service.

TEST ALL "INOPERATIVE" FUEL GAUGES

When servicing malfunctioning fuel gauges, proper service procedures should be followed to eliminate extra work. In the December, 1947, issue of the Service Craftsman News and the 1949-50 Shop Manual, page 12-58, a procedure was outlined for checking inoperative gasoline gauges. This is still the best method of diagnosing this service problem. It is suggested that you familiarize yourself with this procedure.

When it is necessary to remove the fuel gauge tank unit, caution should be used in re-installing the unit so that the fuel pick-up pipe is positioned properly in the support bracket. Refer to page 37 of the 1951 Shop Manual Supplement for a cross section of the location of the fuel gauge tank unit to the filler neck support bracket.

The AC gas gauge tester (Part #1516000) is still available for \$1.00 through any UMS outlet handling AC Products.

REAR SPRING COLOR CODES

Rear springs on 1951 models can be identified by the color daubed on the rear eye as shown in the chart below. In production the color marking is covered with chassis black which can be removed with gasoline if it becomes necessary to check the color identification.

EARLY PRODUCTION

MODEL	COLOR	
	<u>Right Side</u>	<u>Left Side</u>
Catalina & Chieftain Sedan Coupes	Green	Yellow
Sedans, Business & Convertible Coupes & Streamliner Sedan Coupes	Yellow	White
Taxicabs, Police Cars & Special Order Export	Green & Aluminum	Green & Red
Station Wagon & Sedan Delivery	Brown & Aluminum	Red & Aluminum

LATE PRODUCTION

Rear spring color code on late production 1951 models is the same as above except for the following:

MODEL	COLOR	
	<u>Right Side</u>	<u>Left Side</u>
Catalina & Cheiftain Sedan Coupes	Light Blue	Green
Sedans, Business & Convertible Coupes & Streamliner Sedan Coupes	Green	Yellow

Charlie Craftsman Says-



Whenever replacing a rear spring or rear spring bushing, be sure to have the normal weight of the car on the wheels before tightening the rear shackle link bolt. This allows the rubber bushing to assume a neutral and unstrained position.

SERVICE MANAGER—IMPORTANT

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Each service man should sign in the space below after he has read and understands the information in this issue.



NEW GENERATOR AND VOLTAGE REGULATOR

GENERAL DESCRIPTION

A new 45 ampere generator is now being used in production along with a new 45 ampere regulator. The 45 ampere generator can be identified by model number 1102775 on the name plate, a new end frame design having a smaller oil reservoir, and a blue washer on the field terminal. Identification of the regulator will be the model number 1118725 stamped on the regulator base. The 1118300 model regulator used in early production had red paint on one end of the base. The new regulator will not have paint on the base.

PERIODIC SERVICE

Because the commutator end frame of the new type generator has a smaller oil reserve than the old type, it is recommended that the commutator end bearing be lubricated freely at vehicle lubrication periods. The new oil wick design effectually eliminates the hazards of over-oiling which were present on previous designs and makes the new recommendation workable. The drive end bearing does not require as frequent lubrication as the commutator end bearing but no harm will result if both are lubricated in the same way at the same intervals. It is still important that the generator not be oiled while in operation and that excess or overflow oil be wiped off.

ADJUSTMENTS ON CAR

Whenever replacement of the above parts is necessary, it is permissible to interchange the parts when like units are not available. However, the regulator, whether it is the early or late type should be adjusted according to the capacity of the

generator. In other words, if a 45 ampere regulator is used with the 40 ampere generator, the current regulator should be adjusted within the range of 40-46 amps as specified in the 1951 Shop Manual Supplement.

If the early type 40 ampere regulator is used with the late type 45 ampere generator, the current regulator should be adjusted to 45-51 amps in accordance with the specifications which follow.

SPECIFICATIONS

Model 1102775 Generator

Field Current at 6 V. @ 80°F. (amps) -- 1.90 - 2.05

Cold Output -- 45 amperes at 8.0 V. @ 2350 RPM (approx.)

Hot Output -- Max. controlled by current regulator
Brush Tension -- 28 oz.

Model 1118725 Regulator

Cutout Relay

Closing Voltage (Range 5.9 - 6.7
Adjust 6.4

Air Gap020 in.

Point Opening020 in.

Voltage Regulator

Setting (volts) (Range 7.0 - 7.7
Adjust 7.4

Air Gap075 in.

Current Regulator

Setting (amps.) (Range 45 - 51
Adjust 47

Air Gap075 in.

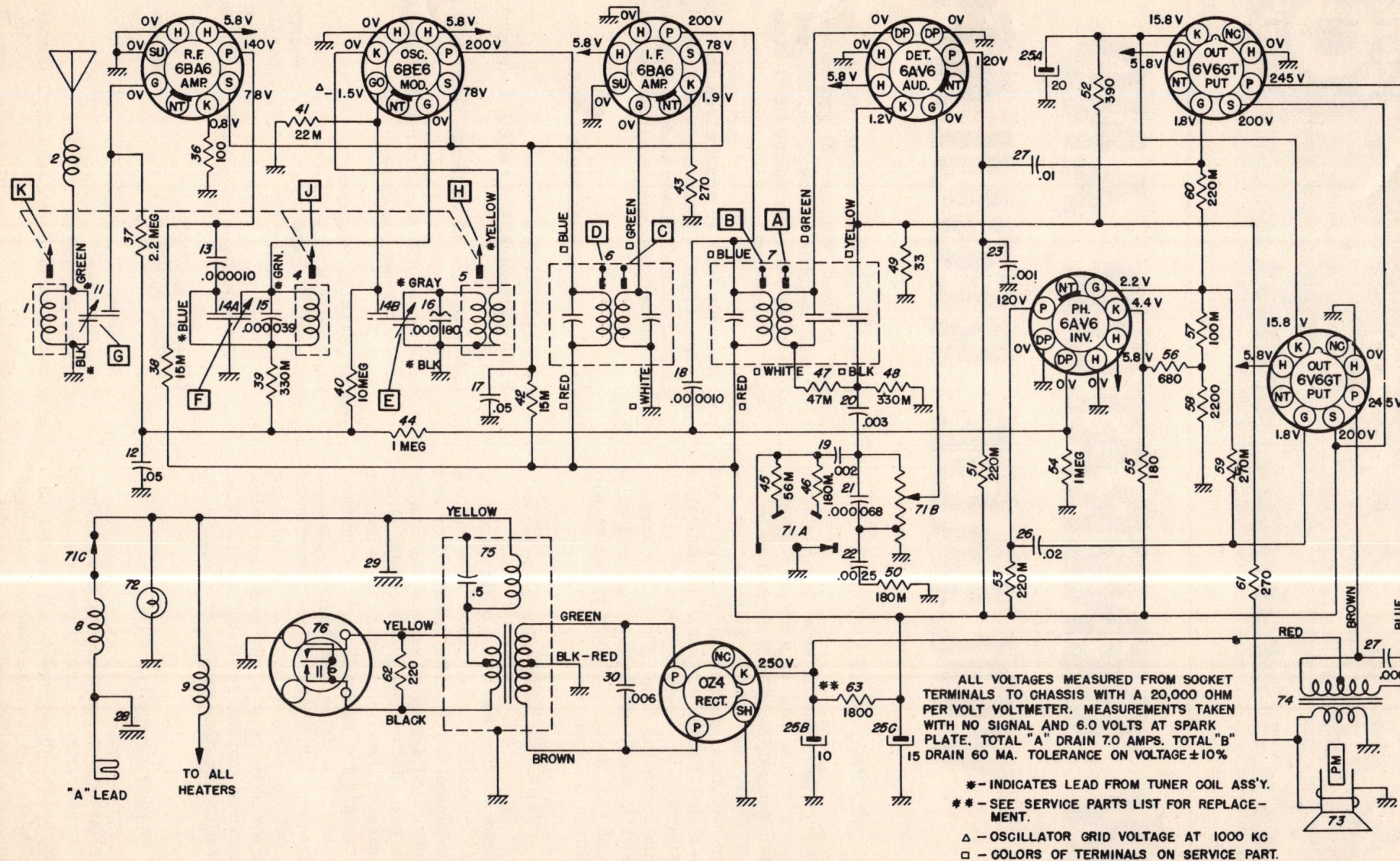


Fig. 1 Schematic Diagram For Miniature Tubes, Radio Model 984688

1951 CHIEFTAIN RADIO DEVIATION

The 1951 Pontiac Chieftain Radios are built with either octal, loctal, or miniature tubes. Tubes requiring replacement should always be replaced with the same type tube as was removed.

Schematic diagrams for radios with octal and loctal tubes were shown on pages 52 and 53 of the 1951 Shop Manual Supplement. A schematic diagram showing the circuits used with the miniature tubes is shown in Fig. 1.

SPECIFICATIONS FOR RADIO MODEL 984688

This model is identical to the early 1951 Pontiac Model 984592 radio except for the parts shown below. However, it may use several miniature tubes on an alternate basis and when these are used additional components are altered as shown below and on the schematic diagram.

Parts changed on all 984688 radios:

Illus. No.	Production Part No.	Service Part No.	Description
98	1218885	1218885	Push Button & Slide Assy.
	515718	515718	Knob - Control
	511831	511831	Knob - Dummy
	511833	511833	Knob - Tone

Additional parts changed only when miniature tubes are used:

13	1215189	G 100	.000010 Mfd. Molded Capacitor
36	1213217	A 101	100 Ohms 1/2 W. Insulated Res.
40	1215548	A 106	10 Megohms 1/2 W. Insulated Res.
	1217690	6BA6	R.F. and I.F. Tube
	1217691	6BE6	Oscillator-Modulator Tube
	1218506	6AV6	Detector-Auto & PH. Inv. Tube
	7261021	7261021	Socket - Miniature Tube

VACUUM POWER BRAKES FOR HANDICAPPED PERSONS

A new vacuum brake pickup lever assembly and vacuum brake link are now available for installation on cars equipped with vacuum brakes where the

owner complains of insufficient braking power. The new lever and link have increased leverage and will transfer more power from the vacuum cylinder to the brake master cylinder, giving an easy and more rapid braking for emergency stops. These parts are as follows:

Vacuum Brake Pickup Lever Assembly, Part No. 516257.

Vacuum Brake Pickup Lever Link, Part No. 516259.

SOLVING COOLING SYSTEM PROBLEMS

Most owner complaints of overheating can probably be remedied by giving the owner a proper understanding of how the cooling system operates.

The 1951 model uses a seven pound pressure radiator cap; therefore the temperature indicated on the gauge may be somewhat higher than in past models where the four pound cap was used. In addition, it should be pointed out that the seven pound cap is used to raise the boiling temperature of the coolant (3° per pound of pressure) to allow a greater temperature range without loss of coolant. In other words, when driving on an extremely hot day, pulling a load, or climbing a hill, the engine temperature will naturally increase, and if the pull on the engine is great enough, the temperature indicator may show upwards of 200°. However, this should be no cause for alarm since the seven pound pressure cap will raise the boiling temperature of water from 212°F. to approximately 233°F., thus preventing the water from boiling.

Under normal driving conditions the pressure in the cooling system will be considerably lower than seven pounds. However, when the engine is first warmed up (after 2 or 3 miles of driving), the temperature rise of the coolant will cause the pressure to increase to nearly seven pounds. This high pressure will raise the control temperature of the thermostat causing the coolant temperature to rise quite high in most cases. Some owners who watch the temperature indicator may be alarmed at this temperature increase. However, the increase is perfectly normal and is only temporary and after the engine is thoroughly warmed up the coolant will drop back to its own normal indicated temperature.

CHECKING RADIATOR COOLANT LEVEL

In the 1951 Owner's Service Guide, our Shop Manual Supplement and in the February Service Craftsman News, we cautioned against removing the radiator cap while the engine is hot. This caution should not be taken lightly since severe injury and

fire (if alcohol and other inflammable vapors are present) are possible if the radiator cap is removed while there is pressure in the cooling system.

As long as there is pressure in the cooling system, the temperature can be considerably higher than the boiling temperature of the solution in the radiator without causing the solution to boil. Removal of the radiator cap while the engine is hot and the pressure is high will cause the solution to boil instantaneously and possibly with explosive force, spewing the solution over the engine, fenders, and the person removing the cap. If the solution contains inflammable anti-freeze, such as alcohol, there is also the possibility of causing a serious fire.

When removing a radiator cap always turn it very cautiously, using a glove or rag, and if pressure begins to escape, tighten the cap immediately and allow the engine to cool. It is recommended that under no circumstance should the radiator cap be removed while pressure exists in the system.

STATION WAGON LIFT GATE

Station Wagons are often operated with the lift gate open during hot weather. This will give added ventilation under certain favorable conditions but there is danger of exhaust gas entering the car when operated in this manner.

Owners of Station Wagons should be informed of the possibility of exhaust gas entering the car when operated with the lift gate open.

IMPORTANT

RADIO P.I.'S AND AFA'S SHOULD HAVE A COMPLETE DESCRIPTION OF THE REPAIR, LISTING ALL PARTS REPLACED OR REPAIRED.

Charlie Craftsman Says-



... use the new Hydra-Matic Diagnosis Guide. This new guide will assist you in knowing what corrective measures are necessary to remedy any complaint on all Pontiac Hydra-Matic transmissions, 1948 through 1951 models.

SERVICE MANAGER—IMPORTANT

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HYDRA-MATIC TRANSMISSION CHANGES

ATTENTION MECHANICS

Most conditions of stalling and/or rough idling on six cylinder engines can be corrected by tightening the six air horn to float bowl attaching screws on the carburetor. The air horn gasket is specially treated to provide an effective seal; however, it takes a "set" which necessitates tightening the air horn to bowl screws.

Be sure to perform this operation at the 1000 Mile Inspection and Adjustment. It is listed under "Essential Work" on the inspection form.

OWNER'S SERVICE GUIDE CORRECTION

The fourth printing of the 1951 Owner's Service Guide (designated by the code "4-51" on the inside of the front cover at the bottom of the page) contains a printer's error. Page 16 states "The Hydra-Matic transmission should be drained and refilled every 15,000 miles." The correct fluid change interval is 25,000 miles. It is also given on page 35 of this Owner's Service Guide.

RADIO SERIAL NUMBER PLATE CHANGE

Due to material restrictions, the radio serial number plate has been replaced by a decalcomania tag. This decal is located in a slight indentation in the bottom of the radio wrap around (outside case) and is readily visible from beneath the instrument panel with the radio in position.

EDITOR'S NOTE: The fifth and final 1951 Service Craftsman News Examination is included in this issue; complete and return it to the zone office by November 1, 1951.

FRONT SERVO EXHAUST VALVE ASSEMBLY

A new front servo exhaust valve assembly has been designed to eliminate a buzzing noise encountered when shifting into reverse. The new assembly was placed in production starting with Hydra-Matic transmissions P51-9169 and D51-161050.

This new assembly (Part #8613914) is interchangeable with the old assembly (Part #8613116).

COMPENSATOR PISTON AND SPRING

An improved compensator piston was placed in production starting with transmissions P51-9208 and D51-161138. The new type piston is heat treated in a manner which permits a closer fit of the piston to the bore. Due to this closer fit, the oil seal ring formerly used on this piston is omitted, and only one spring is now used under the compensator piston instead of the two springs used with earlier compensator pistons.

The piston and spring are released as a service package under part #8613764. This service package should be used when it is necessary to replace the compensator piston. The old type compensator piston ring, inner spring and outer spring are continued as service parts for repair jobs where the piston does not need to be replaced.

TORUS COVER MARKING

The use of blue paint and punch marks to align the torus cover to the torus cover dowels when installing Hydra-Matic transmissions has been discontinued. Due to the use of a hardened flywheel to torus cover dowel it is not possible to punch mark the dowel.

The dowel and torus cover are now marked with a small grind mark. This change should be noted in your 1951 Hydra-Matic Manual under step 6 on page 151.

R & R HOOD HINGE SPRING

It only takes a few seconds to remove the hood hinge spring when using a hood hinge spring tool than can be made in your own shop. See Fig. 1.

The hood hinge spring is removed by performing the following operations:

1. Raise the hood.
2. Place open end of tool over lower spring hook.
3. Raise or lower hood to permit engagement of hood spring upper hook on upper portion of special tool.
4. Raise hood to place spring tension on tool and remove the spring.

HOW TO MAKE A HOOD HINGE SPRING TOOL

Secure a piece of $\frac{1}{2}$ " conduit pipe (or similar pipe) approximately 22" long, and make the tool (Fig. 2) in the following manner:

1. Flatten 2" of one end of the pipe.
2. Grind a notch into the flattened end of the pipe as shown in Fig. 2.
3. Measure 6" from the flattened end and bend the flattened end of pipe up $2\frac{1}{2}$ ".

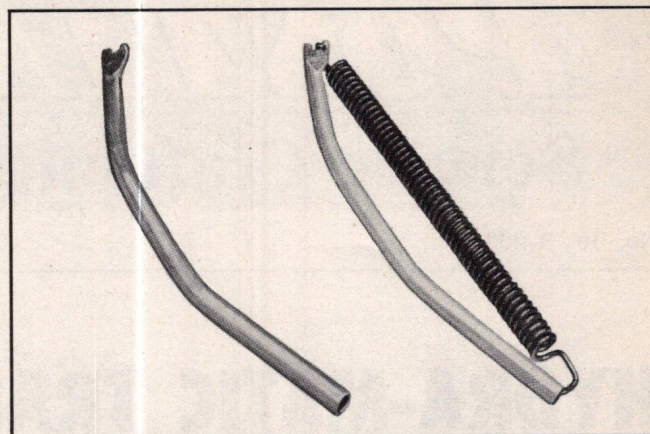


Fig. 1 Hood Hinge Spring On Tool

4. Bend open end at same angle as the flattened end allowing approximately 7" between bends.
5. Cut off the open end of the pipe to give the proper length of 19" (Fig. 2).
6. Grind clearance for spring at flattened end (Fig. 2) and remove all burrs on the tool.
7. Place notched end of tool in a vise and turn tool clockwise to give the notched end a twist as shown in Fig. 2.
8. Try tool on spring as explained above and add "twist" or grind off any excess metal to provide engagement of notched end of the tool between the upper spring hook and hood hinge, and clearance for the hood hinge spring.

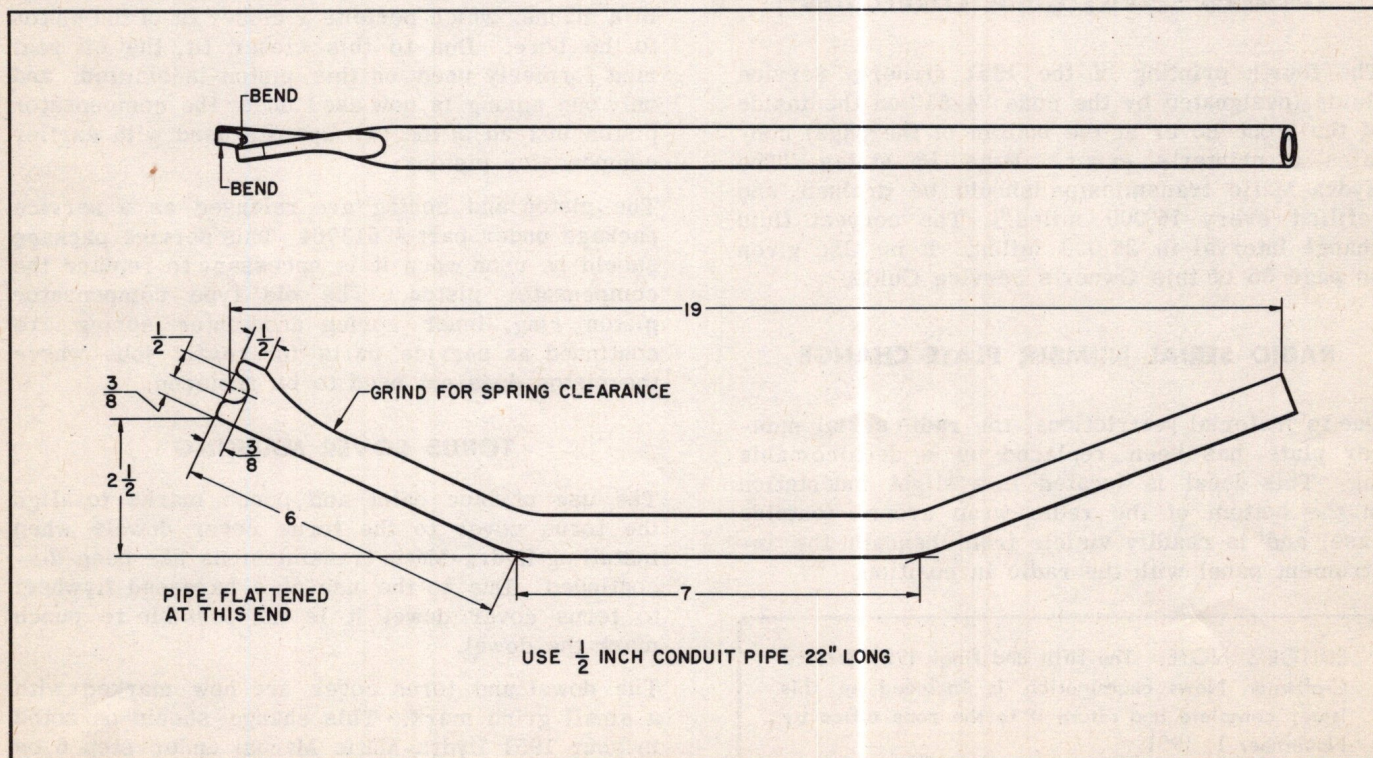


Fig. 2 Hood Hinge Spring Tool

WATER PUMP CHANGE

The water pump used on late 1951 models has a provision for lubricating the seal and bearing. This is accomplished in production by omitting the drain hole at the bottom of the pump housing (Fig. 3) and filling the seal cavity with engine oil through the upper vent hole.

Should a water pump develop a noise on idle, it can be lubricated by removing the fan and pulley and then filling the upper vent hole with engine oil. On early 1951 and past model water pumps which have a drain hole as shown in Fig. 3, the drain hole should be plugged with a bottle cork before the vent hole is filled. If the drain hole is not plugged the oil will drain off and the lubrication will not last.

Other than the above, no change has been made in water pump construction or service procedures.

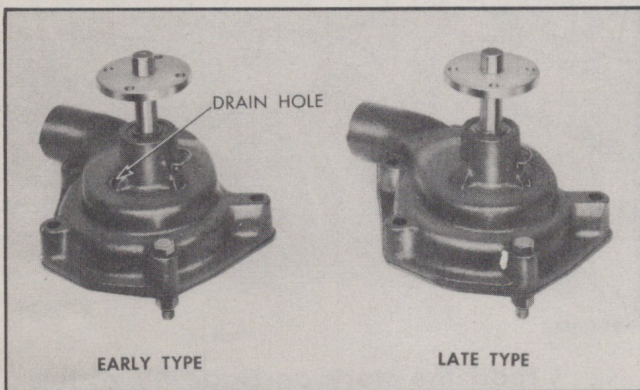


Fig. 3 Early and Late Type Water Pumps

PLASTIC SEAT ADJUSTER KNOB

Due to material conservation, a new plastic seat adjuster knob is now being used in production in place of the chrome plated die cast knob.

When installing the plastic seat adjuster knob the set screws should be turned until the knob is just snug and then given an additional quarter (1/4) turn. Over-tightening may crack the plastic knob and cause the knob to work loose.

LUBRICATION CAUTION

Over-lubrication of door lock cylinders with oil will wash away the special wax treatment applied to the surface of the lock cylinders. Door lock cylinders are wax treated during their manufacture to prevent moisture accumulation and subsequent freezing and over-lubrication may reduce this protection during cold weather.

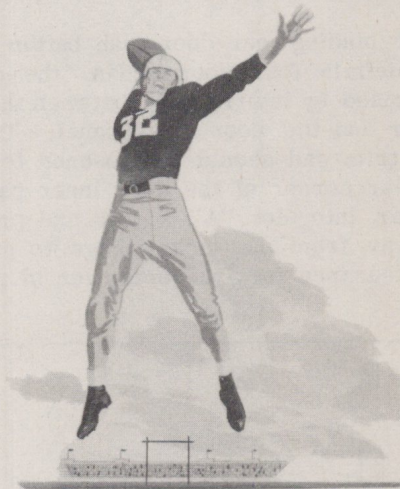
Door lock should be oiled once or twice a year and then with not more than one or two drops of oil.

NEW VISOR TRIM PLATE

Catalinas with the door rain deflectors attached to the roof went into production in early May. This change requires the use of a new type visor trim plate (Part Number 984717, Group 10.203) when installing sun visors on Catalina models.

The new trim plate can be used on cars with the early type door rain deflector construction, whereas, the early type trim plate can only be used on Catalinas with early type construction.

IT'S FALL AGAIN!



Sell Your Owners

- Fall Tune-up Diagnosis
- Oil Change & Lubrication
- Cooling System Service & Anti-freeze

Suggest all the services they need . . .
make a complete diagnosis on every car.

ASSURE YOUR CUSTOMERS

TROUBLE-FREE FALL & WINTER DRIVING

HYDRAULIC LINE COUPLING AND FITTING SEALER

An approved hydraulic line coupling and fitting sealer is now distributed by Minnesota Mining and Manufacturing Company. This sealer is known as "3M Fluid Line Sealer" and is available in 1/4 pint glass containers.

Sealer should be brushed on the male threads of the fitting and assembly made while sealer is still wet. Do not apply sealer to the first thread of fitting as it is possible to restrict the passage.

REPAIR TIP

A "buzzing" sound is occasionally heard from the vicinity of the carburetor when an 8 cylinder engine is accelerating between 1650 and 1900 RPM (35 to 40 MPH). This buzzing sound may be the result of a vibrating choke valve in the carburetor.

Most complaints of this "choke buzz" on 8 cylinder carburetors can be remedied by properly seating the choke shaft retaining washer tight against the air horn. Detailed information on the use of this washer is given on page 15-7 of the 1949-50 Shop Manual.

BINDING REAR DOOR PUSH BUTTON

Should a binding rear door push button be found on 1951 Chieftain four door sedan, the difficulty is likely caused by interference between the push button lever and the door inner panel. The top edge of door trim pad should be loosened to expose the upper rear corner of the door inner panel. Insert a pry bar into slot "A" Fig. 4, and pry the inner panel away from the lock linkage to provide sufficient clearance for free operation of push button.

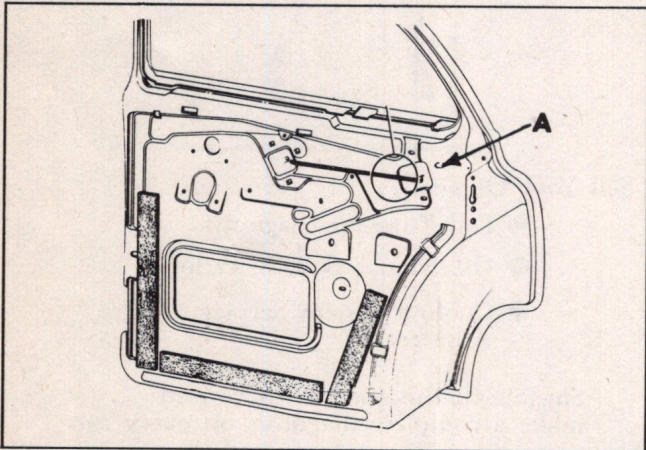


Fig. 4 Rear Door Inner Panel Construction

Charlie Craftsman Says-



... read the story on page 49 of this issue and then tighten the six air horn to float bowl attaching screws. And by the way Joe, plan to attend the coming Service Craftsman Training School. It's all about carburetor diagnosis and testing.

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.



REPAIR PROCEDURE FOR LATE 1951 FUEL AND VACUUM PUMP

A new combination fuel and vacuum pump was used on late 1951 production cars. The primary change in this pump is the incorporation of two valves on each side of the vacuum diaphragm rather than the two valves on one side formerly used, making the new pump double acting. The new pump also has a glass fuel bowl.

DISASSEMBLY OF COMBINATION FUEL AND VACUUM PUMP

1. Remove seven screws and washers holding fuel cover to pump body and remove cover.
2. Place pump in vise with soft jaws with vacuum side up and remove all vacuum cover screws except any two which are diametrically opposite.
3. Press down firmly on the vacuum cover to hold the heavy vacuum diaphragm spring compressed and remove the remaining two screws. Then release the diaphragm cover slowly and remove cover assembly, diaphragm spring and spring retainer.

NOTE: If desired, two 10-32 1-1/2" screws may be screwed diametrically opposite into the cover to aid in relieving the diaphragm spring pressure when removing the cover.

4. Lift vacuum diaphragm and remove vacuum valve from body under diaphragm at rocker arm side (Fig. 1).

5. Remove vacuum pump diaphragm by unhooking diaphragm pull rod from link. This can best be done by rotating or rolling the pull rod 90° until it is off the link with the pump in its normal position.

6. Remove fuel pump diaphragm, spring and retainer.

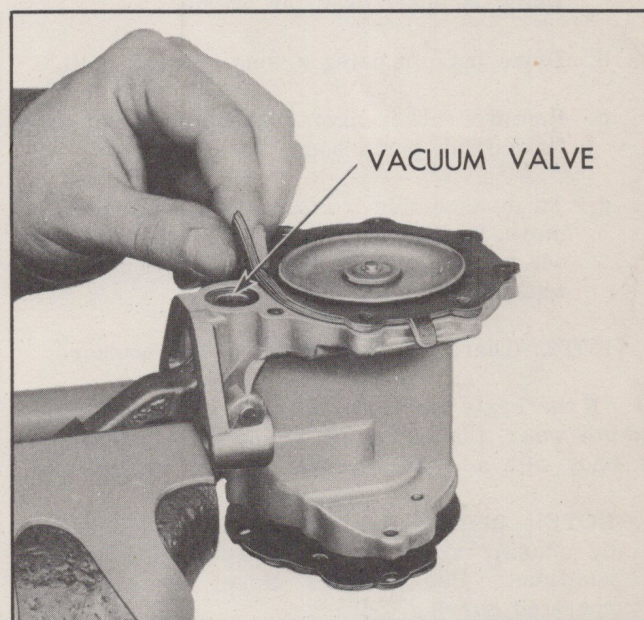


Fig. 1 Location of Vacuum Valve

7. Remove valve and cage retainer screw from fuel cover and lift out retainer, two valve and cage assemblies, and gaskets.

8. Loosen fuel bowl retaining nut and swing wire bail to side. Remove bowl, bowl gasket, and strainer.

9. If vacuum valves are to be replaced, remove valve and cage assemblies from vacuum cover and body by prying out with screw driver as shown in Fig. 2.

10. If pump requires replacement of rocker arm bushing, pin, fuel or vacuum links, complete disassembly as follows:

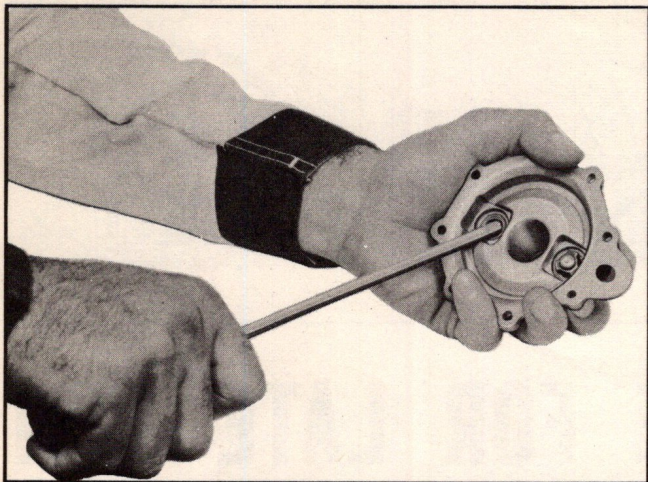


Fig. 2 Removing Valve and Cage Assemblies

- a. Use a 3/8" or slightly larger drill or a file to remove the portion of the rocker arm pin which is upset over pin washer.
- b. Drive out pin using a long tapered drift.
- c. Remove rocker arm, rocker arm spring and links from pump body.
- d. To disassemble rocker arm assembly, remove bushing from rocker arm and slide out vacuum links, fuel link, link spacer and washers.

NOTE: There may be one or two link washers.

11. If the seals for both fuel and vacuum sections exhibit wear, they must be removed by prying out of body with a screw driver or hook shaped tool.

NOTE: Remove die cast metal displaced by staking at oil seal and valve and cage positions. Use a small chisel or a hand operated burring tool.

ASSEMBLY OF COMBINATION FUEL AND VACUUM PUMP

Assembly of Pump Body

1. Install seals by placing seal in pull rod recess of pump body with rubber end down toward links and press down firmly with flat end of 7/8" diameter round bar.
2. Stake die cast lip in four places to retain seals.
3. If rocker arm was removed from pump body, proceed as follows:
 - a. Assemble link spacer over fuel link (see Fig. 3 for correct assembly of rocker arm, links and spacer).

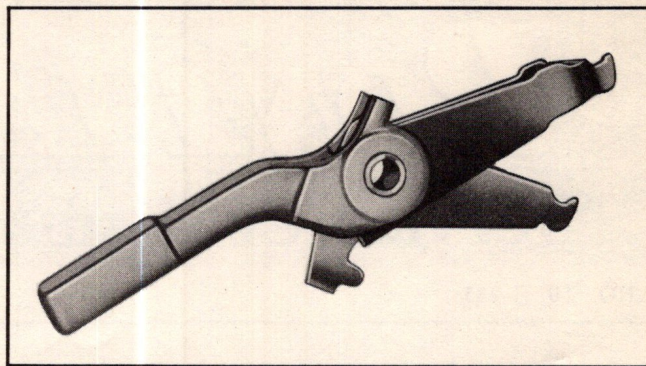


Fig. 3 Rocker Arm, Links and Spacer Assembly

- b. Place one vacuum link on each side of the fuel link. The hook ends of the vacuum link should come together so that they surround the fuel link. All link hooks should point in the same direction.
- c. Place assembly of links and spacer between lobes of rocker arm with one spacer washer on the outer side of each vacuum link.
- d. Slide rocker arm bushing through hole in rocker arm, spacer washer, and links.
- e. Position the pump body with the fuel flange down; set rocker arm spring in position with one end over cone cast into the body.
- f. Slide rocker arm and link assembly into body. Outer end of rocker arm spring slips over projection on link spacer, and the open end of all hooks must point toward vacuum flange.
- g. Slide pin through links and spacers and install flat washer on outer end. Peen over end of pin to retain in position.

4. Place valve and cage gasket in recess located on vacuum end of body, opposite mounting flange. Press valve and cage assembly against gasket with three-legged spider down (see Fig. 4). Retain by staking body in two places.

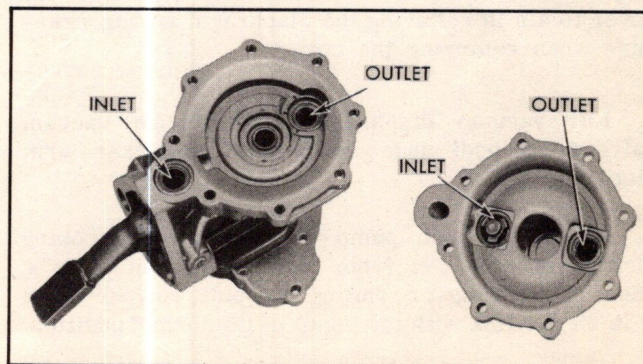


Fig. 4 Proper Installation of Inlet and Outlet Valves

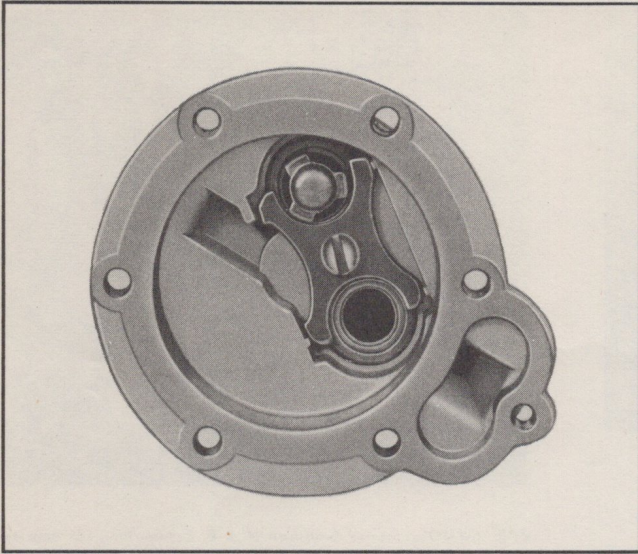


Fig. 5 Fuel Cover Valves Installed

Assembly of Fuel Cover

1. Place valve and cage gaskets in recesses in fuel cover. Place valves and cages on top of gaskets. Inlet valve must have three-legged spider facing out of cover and the outlet valve must have three-legged spider facing into cover as shown in Fig. 5. Secure valve assemblies with retainer and screw.
2. Install strainer, bowl gasket, and bowl. Retain bowl with bail assembly. Tighten bail nut only with finger pressure.

Assembly of Vacuum Cover

1. Place two valve and cage gaskets in vacuum cover and press into position. Inlet valve must have three-legged spider facing out of cover and outlet valve must have three-legged spider facing into cover as shown in Fig. 4. Secure valve and cage assemblies by staking each in two places.

Assembly of Fuel Cover to Body

1. Soak diaphragm in clean kerosene. Fuel oil may be used, but do not use shellac or sealing compound.
2. Place diaphragm spring retainer over fuel diaphragm push rod and set diaphragm spring on retainer. Hold the pump body with the fuel side down so that the fuel pump link can be seen through the seal. Insert pump diaphragm push rod through the seal and hook onto pump link (see Fig. 6).

CAUTION: Extreme care must be used when inserting the diaphragm push rod through the seal to prevent damage to the seal.

3. Clamp pump assembly in vise with fuel side up and install cover on body.

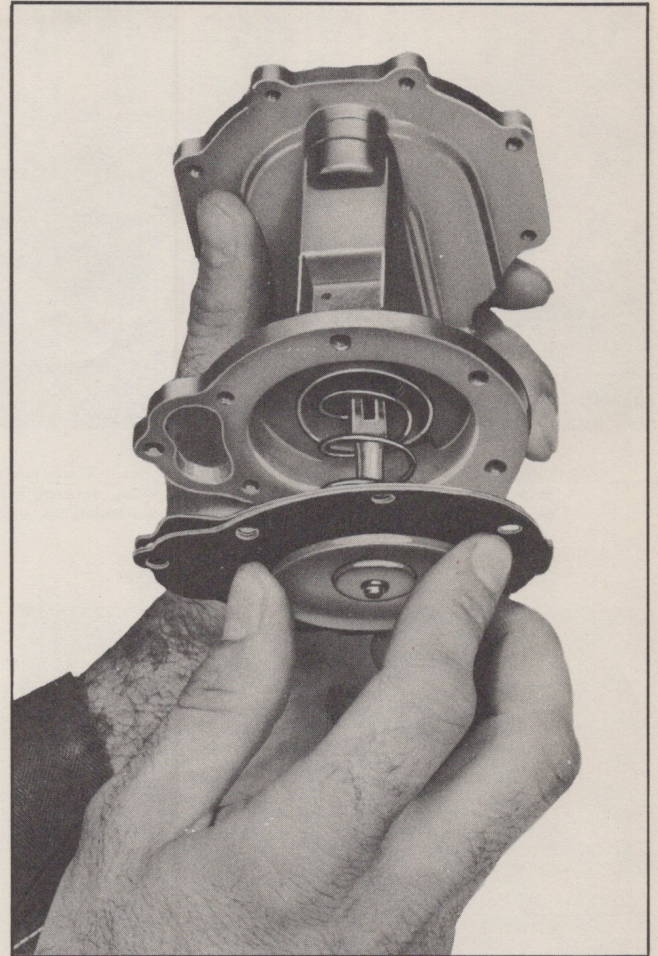


Fig. 6 Installing Fuel Pump Diaphragm

4. Rotate pump on rocker arm to hold diaphragm flat across body flange and install cover screws until they just engage lock washers.
5. Move rocker arm through its full stroke, hold in that position and tighten cover screws securely.

NOTE: Diaphragm must be flexed before tightening cover screws or pump will deliver too much pressure.

Assembly of Vacuum Cover to Body

1. Soak diaphragm in clean kerosene. Fuel oil may be used, but do not use shellac or sealing compound.
2. Clamp pump rocker arm in vise then rotate fuel pump on rocker arm to bring vacuum links about 1/2" below seal (Fig. 7). Install vacuum diaphragm push rod carefully through seal and hook to links.

CAUTION: Be extremely careful when inserting diaphragm push rod through seal to prevent damage to seal.



CARBURETOR DIAGNOSIS SCHOOL. Servicemen from five local area Pontiac dealerships attended this school at the Waltham Motor Co., Waltham, Mass. M. H. Wolfe, Boston Zone Service Instructor, is shown leading the group.



FIVE AWARDS. Service Craftsmen at J. B. Finney, Inc., Los Angeles, California, received awards at a ceremony attended by their dealer and zone personnel. Standing left to right, J. B. Finney, Dealer; Dick Franklin, District Manager; Elmer Moore, Service Manager, (8-yr. award); C. H. Barnes, Zone Service Manager; Nick Prince, Promotional Manager; John Palmer, Mechanic, (5-yr. award); Ray Engle, Service Salesman, (5-yr. award); Lee Fisher, Service Salesman, (8-yr. award); and Archie Hunter, Mechanic, (8-yr. award).



SENIOR CRAFTSMAN CERTIFICATE is presented to Service Manager Dave Fralic of Davis Motor Company, Inc., Montgomery, Alabama. Shown are dealer H. O. Davis (left) and Mr. Fralic. Thousands of Craftsmen have helped their dealers qualify for a painting of Chief Pontiac, Pontiac's Better Dealer Award.



"CHIEF PONTIAC" looks on as 10-year Craftsman Robert Wooton, receives his certificate of recognition at Scott McGaw Motor Company, Henderson, Kentucky. Left to right, T. N. Watkins, District Manager, Mr. Wooton, and H. K. Scott, dealer.

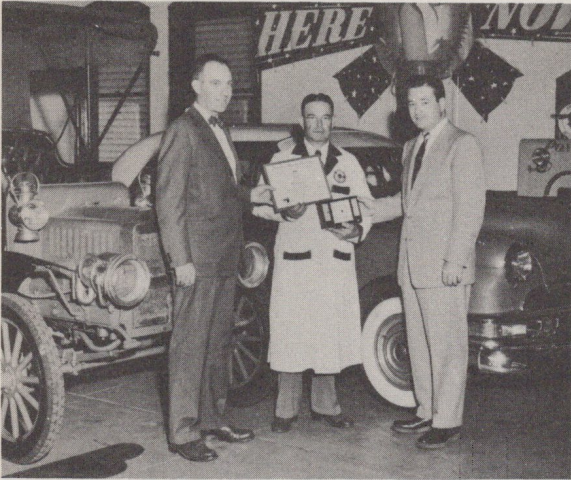
THE TRAINED PONTIAC CRAFTSMEN ATTEND SCHOOL

The photos on these pages show some of the numerous activities in which Pontiac Service Craftsmen have engaged this year. There are now well over 6,000 active Service Craftsmen in the country. Each of these men received recognition in the form of Craftsman membership cards, pins, rings, certificates, or merchandise awards for their performance during 1950.

In addition to sending in their exams, most Pontiac Service Craftsmen this year have had an opportunity to attend six



SERVICE CRAFTSMAN CLUB. A Service Craftsman Club, headed by David L. Scott, Service Manager, has been organized at Scott Pontiac, New Castle, Pa. Monthly meetings are held to discuss the Pontiac Service Craftsman News and current service problems. Pictured above (left to right) are mechanics Scott, Ed Feil, Shop Foreman; Kenneth Meyer, Ronald Braun, Dick Clark, Jim Gillford, and Jim Webster. Back Row, Leroy Madison, Body Shop Foreman, and Albert Madden, Lubrication expert.



DOUBLE HEADER. James Mangano, Service Manager at Portsmouth Motor Mart, Portsmouth, New Hampshire, received both his 10-year Service Craftsman Certificate and 6-year Outstanding Owner Service recognition. Left to right are Frank Costello, the dealer, Mangano, and Clayton Stokes, Pontiac District Manager. Novel background shows a 1908 Maxwell still in perfect operating condition, contrasted with the sleek 1951 Catalina.



NEW MODEL SCHOOL. Typical of the 1951 New Model Schools held throughout the country early this year is this photo taken at Malmon Pontiac, St. Paul, Minn. Here instructor, D. J. Berg, discusses the new 6-cylinder carburetor.

GETS AHEAD

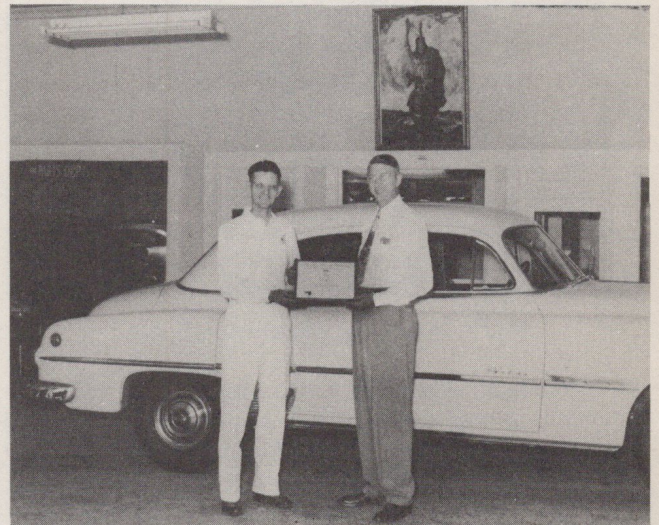
WIN RECOGNITION FOR EFFORTS

service schools covering the 1951 New Model, Hydra-Matic, Porcelainize, Fisher Body, Lubrication, and Carburetor Diagnosis. Attendance has averaged more than 7,000 men per school.

The Service Craftsman seal on your pin or ring tells your customers and friends that you know your business when it comes to servicing Pontiac cars. If you aren't already an active Craftsman, discuss enrollment with your service manager or zone representative.



LUBRICATION SCHOOL at Orrin W. Fox Pontiac, Pasadena, Calif. At left of chart, Service Instructor John Fetterman is about to direct the discussion on Lubrication Merchandising. Front row, (left to right) are Bill Ford and John Glidden of Alemite Division and Ivan Sharp, Orrin Fox Service Manager. Back row: lube men Gordon Weathermen, Bewley Allen Pontiac; Ernie Leonard, Orrin Fox Pontiac; Dick Appleton, Bewley Allen Pontiac; Gil Whitmore, Marback Motors; Service Manager Al Morris and lube man, Lee Gray, Paul Stone Motors; Service Manager Bill Medlen, Bathrick Pontiac; lube man Claude Knight, Orrin Fox Pontiac and Ray Burns, Tom Ray Pontiac.



FAMILY AFFAIR. Ellis Kirksey (left) receives his 10-year Senior Service Craftsman Certificate from District Manager W. G. Matthews at Schuch Motor Company, Ind., San Angelo, Texas. Mr. Kirksey has been an employee of this dealership since April 1, 1928. His son, Eugene, has five years continuous service with Schuch Motor.



34 YEARS OF SERVICE is represented by Service Craftsmen E. P. Femoyer and Ed Higginbotham, shown above receiving their Service Craftsman awards from District Manager Raymond Hughes. Mr. Femoyer, who is now Service Manager at Claude Nolan, Inc., Jacksonville, Fla., has had approximately 11 years of Pontiac service. Mr. Higginbotham has been working continuously with the dealership since 1928, servicing Pontiac cars.



Fig. 7 Installing Vacuum Diaphragm

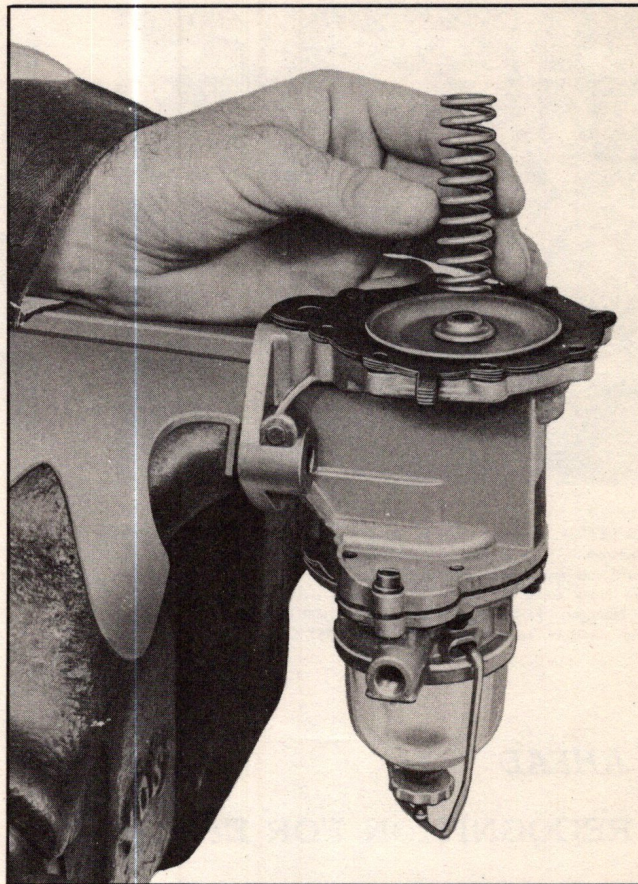


Fig. 8 Positioning Spring on Spring Retainer

3. Lift diaphragm cloth and position valve and cage in recess close to mounting flange with three-legged spider down (see Fig. 4). No gasket is required because the diaphragm seals this valve cage.

4. Before installing vacuum cover, rocker arm must be positioned so that vacuum diaphragm will be held level with the body flange while the vacuum cover is installed. This can be done by inserting tool PT-8 between rocker arm and body stop or by clamping the pump and rocker arm in a vise with the rocker arm positioned to hold the vacuum diaphragm level.

5. Place spring retainer on riveted end of diaphragm pull rod and the spring on retainer as shown in Fig. 8. Place vacuum cover on spring and align holes.

6. Press vacuum cover firmly down against diaphragm and body flange and install two screws, diametrically opposite. (Two 10-32 1-1/2" screws may be installed to pull vacuum cover down.) Install remaining vacuum cover screws and tighten until screws just engage lock washer.

7. Release rocker arm to allow heavy vacuum spring to push diaphragm to flexing stop in body. Tighten all cover screws securely.

METER READING VARIATION NORMAL

Armatures on the new 45 ampere generator should not be replaced because the readings between adjacent commutator bars on the generator armature vary.

With the new armature used in the 45 ampere generator (August 1951, Service Craftsman News), differences in meter readings between commutator bars are normal. Starting with any given bar on the periphery of the commutator the second bar "B" will produce a reading different from the first bar "A". Bar "C" will be approximately the same as "A" and bar "D" will be approximately the same as "B" etc. Armatures on previous generators did not have this characteristic.

CREASES IN CONVERTIBLE REAR WINDOW

Convertible plastic rear windows may become creased if the top is folded down for an extended period of time or in cool weather. These creases will disappear after the top is up if allowed to set at room temperature for approximately 30 minutes. In cool weather removal of creases can be hastened by sponging the plastic window with luke warm water.

ATTENTION MECHANICS

A few PI Reports have been received stating that the metering rod disks (Carter Part No. 129-22, pages 6B-40 & 41, 1949-50 Pontiac Shop Manual) were missing. This part is no longer necessary on the eight cylinder carburetor and has been eliminated by both Carter and RPD.

REVERSE BALL CHECK VALVE

A spring loaded reverse exhaust ball check valve has recently been included in the Hydra-Matic Control valve assembly. This valve is located in the outer valve body under the detent plunger retainer spacer plate. The purpose of this valve is to relieve any pressure which may build up in the reverse apply circuit during operation in DR or LO range.

EASY FIX FOR SQUEAKY BRAKES

Customers with a "squeaking brake" complaint can be handled quickly when brake drum silencer springs are installed. Brake Drum Silencer Spring Packages (Part No. 514278) are available in sufficient quantities in your zone warehouse to handle your requirements.

Refer to the June issue of the Service Craftsman News (page 37) for an easy method of installing the brake silencer springs.

HYDRA-MATIC WARM-UP IN COLD WEATHER

In areas of extremely cold temperatures, owners of Hydra-Matic equipped cars should be reminded to permit the engine and transmission to warm-up before driving their car. This practice will offer more satisfactory operation of the Hydra-Matic transmission and will reduce "wear and tear" on engine and transmission parts.

Additives to Hydra-Matic transmission fluid will not improve transmission performance in cold weather. Whenever the Hydra-Matic transmission fluid is changed, it should be refilled with "GM Hydra-Matic Transmission Fluid" or "Automatic Transmission Fluid (Type A)" from containers bearing the marking "AQ-ATF" followed by a series of numbers. NO SPECIAL ADDITIVES TO THESE FLUIDS ARE REQUIRED OR RECOMMENDED.

LAST CALL

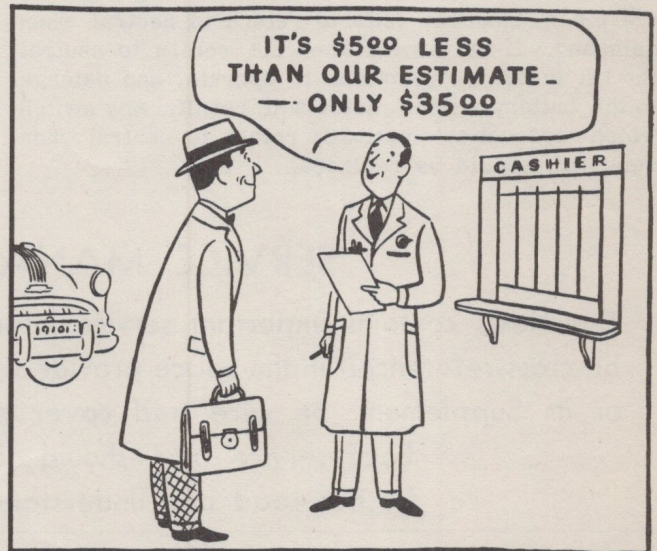
Now's the time to make sure you have submitted all five Service Craftsman examinations for this year. Check with your service manager or zone representative. If you are missing one or more exams for 1951, you can still obtain copies to be filled out and returned to your zone office.

YOUR SERVICE PICTURE

NEGATIVE OR POSITIVE



LOW PRICES??? Dollars don't go far nowadays -- everybody's trying to make them stretch. An unexpected large repair bill is a "low blow" to the average motorist.



SELL YOUR OWNERS on the economy of your service. Make accurate estimates.....recommend only needed work.....and contact your customers if additional repairs are necessary. You'll profit in the long run.

FRONT SEAT COMFORT

In addition to the forward and back adjustments, the front seat can also be raised to accommodate the driver who is taller or shorter than average stature.

By installing eight 1" blocks under the front and rear of the seat track, the driver of short stature will have a better view of the road. This will afford him more comfort and greater visibility and does not move him too far from the clutch and brake pedals. Raising the seat in this manner will not affect the forward and back adjustment of the seat.

By installing four 1/2" blocks under the front end of the seat track, the tall driver will find the seat to be much more comfortable. This does not raise the driver in relation to the top of the car, but will afford him a more comfortable sitting position.

The blocks used in this operation should be made of hardwood and should be at least 1-1/2" in diameter with a 1/2" hole in the center. The present seat track to floor attaching screws should be replaced with longer ones. Where 1" blocks are used, install 5/16"-24 cap screws 1-3/4" long. When installing 1/2" blocks, use 5/16"-24 cap screws 1-1/4" long.

It is not recommended that any attempt be made to move the seat track from its present location on the floor.

CONVERTIBLE TOP CONTROL SWITCH

On some 1951 Convertibles the control switch for the top mechanism fails to return to neutral when released. If the switch does not return to neutral the lift motor will continue to operate, and damage to the battery and/or motor will result. Any switch which does not automatically return to neutral when released, should be replaced.

Charlie Craftsman Says-



... that Air-Dry Clear Enamel is easy to apply and provides an excellent protective coating against weather conditions for all "bright metal" parts on current and past models. Remember, Joe, proper refinishing procedure for the new type chrome is explained in the June 1951, Service Craftsman News.

SERVICE MANAGER—IMPORTANT

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Each service man should sign in the space below after he has read and understands the information in this issue.

PONTIAC

Service Craftsman News



No. 11 S-232

November, 1951

1952 HYDRA-MATIC INFORMATION

OPERATING THE DUAL RANGE HYDRA-MATIC

The control lever located just below the steering wheel is used to select neutral, one of three forward speed ranges, or reverse. These positions are all shown on the indicator segment and are plainly visible. They are illuminated when the instrument lights are turned on. These positions are designated as follows:

- N - Neutral and starting.
- ▲ DR - For all normal forward driving and improved fuel economy.
- DR - For improved performance when driving in mountains or congested traffic.
- ▲ LO - For controlled power. (Note: Control lever must be lifted to change from DR to LO.)
- R - For Reverse and parking.

TABLE OF CONTENTS—HYDRA-MATIC

SUBJECT	PAGE	SUBJECT	PAGE
Operating the Dual Range Hydra-Matic	61	Pressure Regulator Assembly (Disassembly, Inspection, Assembly)	76
General Description	64	Front Servo	77
Front Pump	64	Disassembly	77
Oil Screen	66	Inspection	77
Governor Oil Delivery Pipe	66	Assembly	78
Parking Brake Bracket	66	Rear Servo	79
Rear Pump Discharge Pipe	66	Disassembly	79
Pressure Regulator Assembly	66	Inspection	79
Main Line Exhaust Valve	66	Assembly	79
Control Valve Assembly	67	Parking Brake Bracket Assembly	80
Front Servo	67	Disassembly	80
Rear Servo	68	Inspection	80
Front and Rear Units	68	Assembly	80
Torus Cover	68	Line Exhaust Valve	80
Reverse Unit	69	Disassembly	80
Adjustments with Transmission in Car	69	Inspection	81
Selector Lever Linkage Adjustment	69	Assembly	81
Neutralizer Switch Adjustment	69	Rear Band Release Spring (Inspection)	81
Disassembly of Units from Case	69	Transmission Case (Inspection)	81
Control Valve Assembly	70	Assembly of Units in Transmission Case	82
Disassembly	70	Shift Speed Chart	83
Inspection	72		
Assembly			
Front Pump	74		
Disassembly	74		
Inspection	75		
Assembly	75		

EDITOR'S NOTE: It is suggested that you be especially careful to preserve this copy of the Service Craftsman News. At the present time there are no plans for producing a new Hydra-Matic Manual and, therefore, this issue of the News should serve as a permanent source of reference material on the 1952 Hydra-Matic Transmission.

This issue covers only the new features of the 1952 transmission and the changes in overhaul procedures which result from these new features. All other operations are the same as for 1951.

TO START ENGINE

Place the Hydra-Matic control lever in N (neutral) position; the starting circuit is wired so the starter will not operate unless the lever is in neutral. Press accelerator pedal to toe-board once and release (in order to set the AUTOMATIC CHOKE); turn the ignition switch on and press starter button. Release starter button as soon as the engine starts.

NOTE: When starting a warm or hot engine hold accelerator pedal down half way while pressing the starter button.

CAUTION: Do not "pump" the accelerator pedal at any time. Avoid racing the engine during the warm-up period.



Fig. 1 Gearshift Indicator

NOTE: Should the car fail to start in five to ten seconds, it is possible that the engine is flooded. In that case, press the accelerator slowly to the floor and hold it there when starting. This renders the choke inoperative and relieves the flooded condition.

OPERATING IN DRIVE RANGE

In extremely cold weather the engine should be permitted to idle with the control lever in the N position until the engine and transmission are warmed up.

After the engine is started, move the control lever to the desired position. When the engine is cold and running at fast idle, the car will tend to creep forward after the control lever is moved to either of the two DR positions. A slight application of the foot brake or hand brake will hold the car under these conditions. After releasing the brakes the car will move forward when the accelerator is depressed.

The position marked by the left hand arrow in DR position is the four speed range and is provided for all normal forward driving; it reduces engine speed, provides better driving comfort and improves fuel economy. The position indicated by the right hand arrow in DR position is a three speed range; except at very high car speed, transmission will upshift to fourth and then downshift to third as car speed is reduced. This range is provided for better performance when driving in congested traffic and is also effective when climbing or descending long mountain grades. The control lever can be moved from one position to the other in DR range when driving at any car speed on dry roads.

ACCELERATION--The shift from first speed to second, second speed to third, and third speed to fourth (direct drive) will occur at progressively higher speed ranges depending upon the amount of pressure on the accelerator pedal. With slight accelerator pedal pressure, the shifts will occur at lower speeds. As accelerator pressure is increased, the shifts will occur at higher car speeds.

FORCED DOWNSHIFT--To obtain an extra burst of speed when driving in either of the two drive positions or LO range position, depress the acceleration pedal completely. The transmission will then shift to a lower speed for rapid acceleration and will return to a higher speed automatically as car speed is increased. The downshifts will occur as follows (also see page 83):

1. When driving at a speed below 60 MPH with the selector lever in the left DR position the trans-

mission will shift from fourth speed to third when the accelerator is fully depressed.

2. When driving at a speed less than 20 MPH in either DR position the transmission will downshift to second speed when the accelerator is fully depressed.

3. When driving in either of the DR positions or LO at a speed of less than 10 MPH the transmission will downshift to first speed when the accelerator is fully depressed.

CAUTION AGAINST COASTING IN NEUTRAL:

Do not coast with the control lever in the N (neutral) position. This procedure is unlawful in many states and under some conditions is harmful to the transmission.

STOPPING THE CAR--To stop the car, release the pressure on the accelerator pedal. Leave the control lever in the DR position; the engine will then give additional braking to help slow down the car. For further retarding effort apply the brakes in the conventional manner.

CAUTION: Under no circumstances should the control lever remain in any other position except N when the driver leaves car with the engine still running. For additional safety, apply parking brake when opening garage doors or removing mail from rural mail box, etc. This precaution prevents movement of the vehicle, should the accelerator pedal be accidentally depressed by a passenger.

LO RANGE POSITION

The LO range position (second speed) is provided for pulling through deep sand or snow and ascending or descending steep grades where traffic signs call for placing the transmission in first or second gear. It is also best for getting the car in motion on icy roads.

The change from either of the two DR positions to LO is made by lifting the control lever and moving it to the LO position. This change can be made at any car speed; however, LO range will not engage until the car speed is reduced to below 50 MPH.

CAUTION: The change from either of the two DR positions to LO should only be made on dry roads where traction is good. It is not recommended to change to LO on slippery roads since this change could induce a skid. On slippery roads, safety demands that the car speed be reduced by judicious use of your brakes.

Release the accelerator pedal when moving the selector lever from either of the two DR positions to LO.

FORCED DOWNSHIFT--When driving in the LO range position at a car speed of less than 10 MPH, the transmission will shift down to first speed when the accelerator pedal is completely depressed. The transmission will automatically shift to second speed at a higher car speed.

REVERSE

It is not necessary to bring the 1952 Pontiac to a complete stop before engaging reverse; simply raise the control lever and move it to the R position. Moving the lever between LO and R with light accelerator pressure permits rocking the car when required to get out of deep snow, mud or sand. Avoid engaging reverse at speeds above 5 MPH.

NOTE: The control lever will stop at the left DR position when moved from reverse towards neutral with the lever raised. This prevents unwanted "over-selecting" into neutral.

PARKING--For additional safety while parking, turn off ignition key and move selector lever to R position. This permits engagement of transmission parts thereby providing "in gear" parking ability. When parking on an incline, hold the car with foot brake a few seconds to permit engagement of transmission parts.

TO START ENGINE BY PUSHING CAR

If it becomes necessary to start engine by pushing the car for a short distance due to a low battery, move control lever to the N position. When a speed of approximately 25 MPH is attained, turn ignition switch on and move the control lever to either DR position.

TOWING THE CAR

FOR TRANSMISSION NOT FUNCTIONING PROPERLY--Disconnect the propeller shaft at the rear universal joint and remove from the car by sliding the front universal joint and shaft assembly backwards, or raise the rear wheels off the ground to prevent possible damage to the transmission.

FOR MECHANICAL FAILURES OTHER THAN TRANSMISSION--Propeller shaft need not be disconnected if transmission has been operating normally providing that car has been driven a minimum of 1,000 miles and that towing speeds of not more than 25 MPH are maintained. When towing, place selector lever in neutral.

GENERAL DESCRIPTION

The 1952 Hydra-Matic transmission is fundamentally the same as it has been in the past. In order to provide the new dual range feature, however, certain changes have been necessary. In addition a new improved front pump is being used. Both 6 and 8 cylinder models use the same transmission which is identified by a serial number plate having a light green background and a serial number with a prefix P52-.

FRONT PUMP

The new vane type front pump regulates its output to the requirements of the transmission hydraulic system. The pump consists of the pump body, cover, slide, rotor, seven vanes, two guide rings and a priming spring (Fig. 2a).

The output of the pump is determined by the position of the slide. When the slide is up, the pump delivers maximum output; when the slide is centered the output is zero; when the slide is down the pump acts as a relief valve for excessive rear pump output.

The pump rotor is driven by the engine. Therefore, when the engine starts, the pump rotor turns. The priming spring keeps the slide up causing the pump to deliver maximum output to the transmission. The pressure regulator valve spring holds the valve in (Fig. 2a) until the transmission hydraulic system comes up to operating pressure. This allows the pressure regulator valve to meter oil into the lower control chamber, thus oil pressure keeps the slide up. If any oil should be trapped in the upper control chamber, it will bleed through the hole in the slide to the suction side of the pump or exhaust past the land on the pressure regulator valve.

When the hydraulic system comes up to operating pressure, the pressure regulator valve will move out against spring pressure and TV pressure (Fig. 2b). With the pressure regulator valve in the "out" position, pump pressure is directed through the pressure regulator valve to build up pressure in the upper control chamber (above the slide). Pressure in the lower chamber (below the slide) is allowed to exhaust around the pressure regulator valve. The slide then moves down reducing the output of the pump.

As the slide moves down, it uncovers a port that allows oil pump pressure to flow to the fluid coupling and supply lubrication.

Since the pump supplies the proper amount of oil to the system any time it is running, the front pump relief valve has no effect while the front pump is operating. However, the front pump relief valve is required in order to relieve excessive

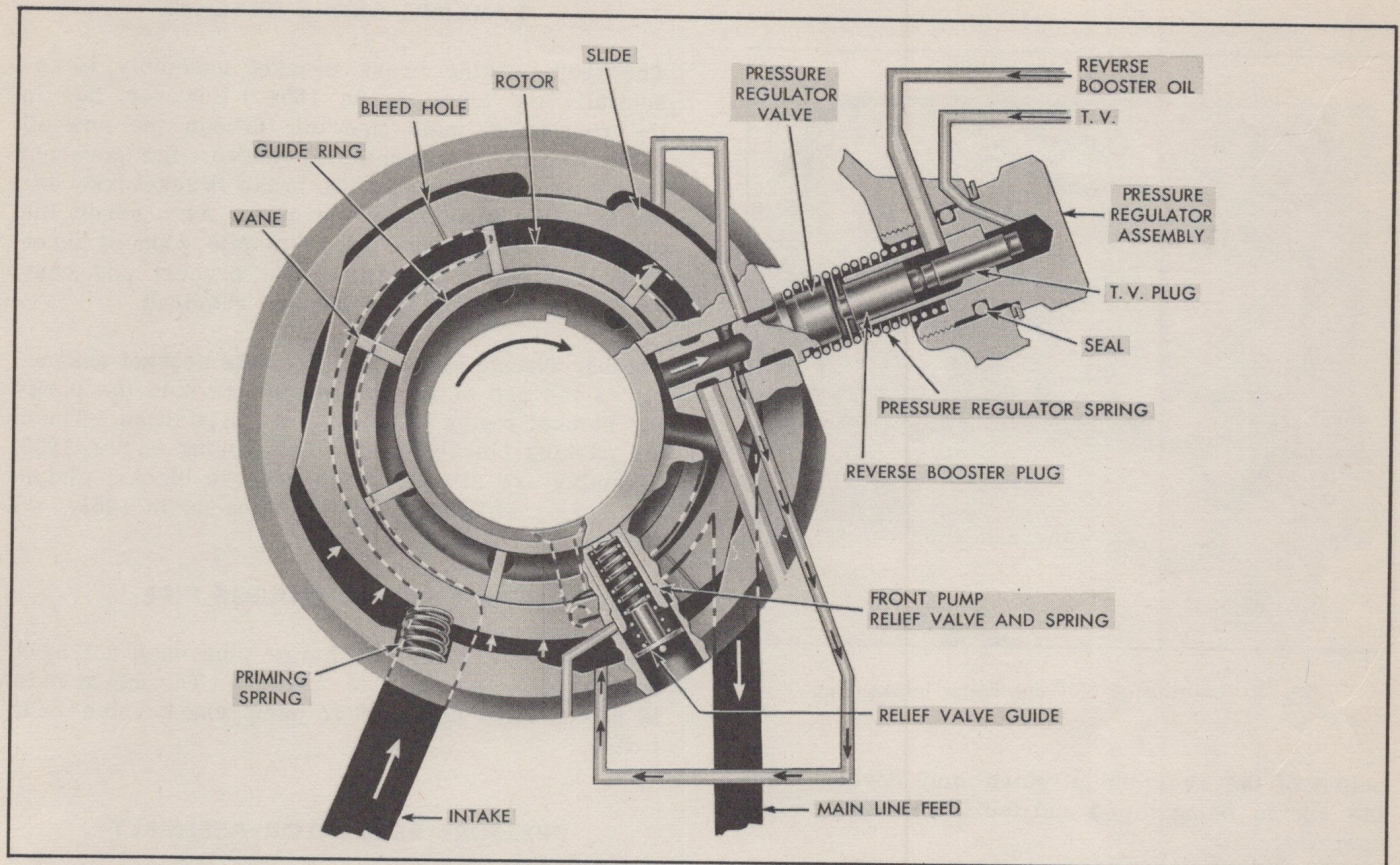


Fig. 2a Slide Up, Pump Delivers Maximum Output

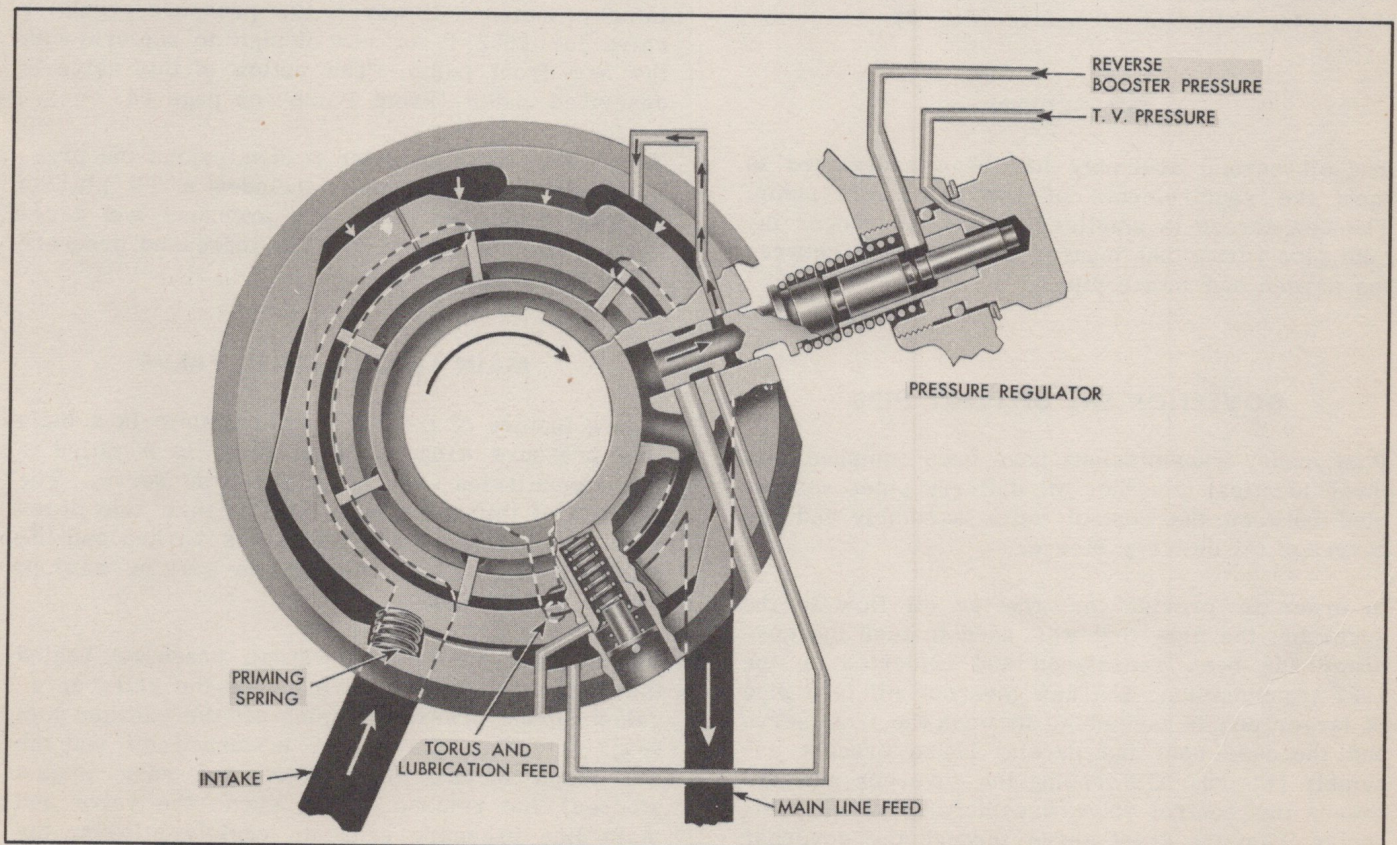


Fig. 2b Slide Down, Pump Output Reduced

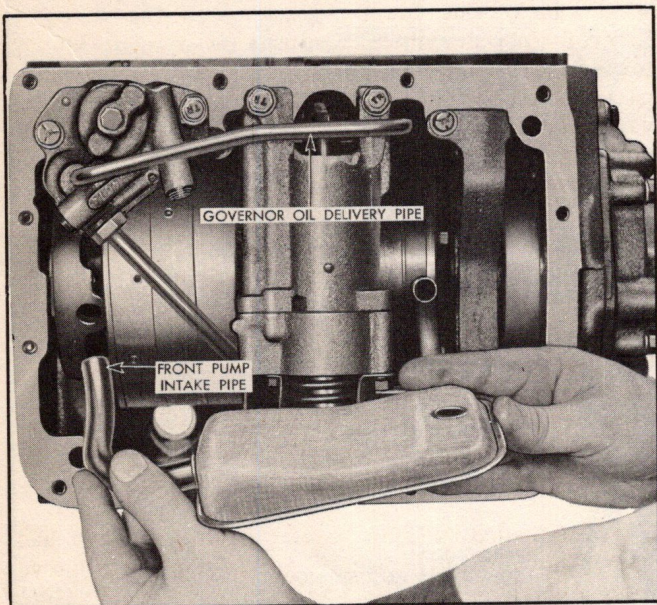


Fig. 3 Installation of Front Pump Intake Pipe

output of the rear pump which may develop when the car is being towed and the front pump is not operating.

The front pump intake pipe now assembles through an oil seal ring in the front pump housing rather than being bolted on as before (Fig. 3).

OIL SCREEN

The oil screen assembly has been redesigned to meet the requirements of the new front pump. The new screen is smaller and has a stronger intake pipe fitting that insures a better seal between the screen and intake pipe.

GOVERNOR OIL DELIVERY PIPE

Past model transmissions have been equipped with three identical governor oil delivery pipes assembled between the control valve assembly and the governor oil delivery sleeve.

In order to provide for greater oil flow to the governor, the pipe that was used to feed the governor has been redesigned and relocated in the 1952 transmission. The new governor oil feed pipe is larger and is assembled between the front servo and the case near the parking brake bracket assembly (Fig. 3). Oil feeding the governor now bypasses the control valve assembly by flowing directly from the front servo through the governor oil delivery pipe and case into the parking brake bracket assembly to the governor.

PARKING BRAKE BRACKET

The 1952 parking brake bracket assembly is essentially the same as in 1951. However, due to the routing of main line oil through the new oil delivery pipe as mentioned above, the governor feed passage in the parking brake bracket body indexes with a passage in the case. As a result the previous oil delivery pipe (middle pipe of three pipes connecting parking brake bracket and control valve in 1951) is no longer required.

Another change in the parking brake bracket assembly is the use of a recessed pin to hold the parking blocker piston release spring in position. Thus, the parking blocker piston and spring on the 1952 assembly are similar to the reverse blocker piston and spring which is still the same as in 1951.

REAR PUMP DISCHARGE PIPE

The new rear pump discharge pipe does not have a bleed hole as in past models. The bleed hole is now located in the rear pump check valve seat fitting.

PRESSURE REGULATOR ASSEMBLY

The 1952 pressure regulator assembly is very similar to the 1951 eight cylinder pressure regulator assembly. However, the pressure regulator valve for 1952 is of new design to conform with the new front pump. The action of this valve is described under "Front Pump" on page 64.

As on 1951 eight cylinder transmissions the pressure regulator assembly includes a TV plug to provide modulated main line pressure and a reverse booster plug to provide increased pressure when operating in reverse.

MAIN LINE EXHAUST VALVE

A new feature of the 1952 Hydra-Matic is a main line pressure exhaust valve which is installed in the transmission case under the front servo. The purpose of this valve is to exhaust main line pressure very rapidly when the car is parked and the engine is shut off, permitting the parking pawl to engage immediately.

When either pump is operating, pressure behind the main line exhaust valve moves the valve up against spring pressure closing off the exhaust port (Fig. 4). When the engine is turned off and the car stops moving (both front and rear pumps stopped), the release spring opens the valve and main line pressure exhausts rapidly allowing the parking blocker piston to release the parking pawl so it can engage immediately.

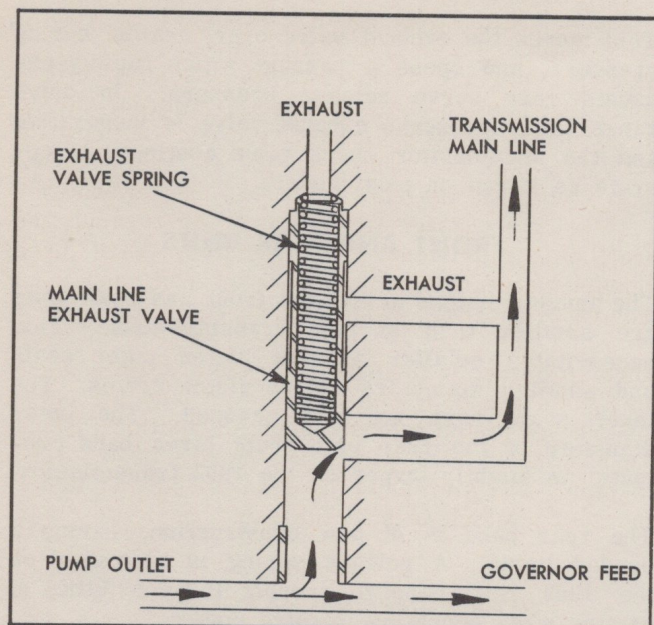


Fig. 4 Schematic View of Main Line Exhaust Valve

CONTROL VALVE ASSEMBLY

The control valve assembly for 1952 has been changed in order to accommodate the new three speed drive range. It also provides full throttle downshifts within set speed ranges regardless of which forward range the selector lever is in.

The names of some of the valves have been changed to correspond to the purpose they have in the new design. The 2-3 regulator plug is now called the 3-2 detent plug and the previous 1-2 governor plug is now called the 2-1 detent plug. These valves play an important part in controlling the 3-2 and 2-1 forced downshift. In addition, LO range pressure is directed onto the 2-1 detent plug to move the shift valve giving a second speed start in LO range.

The nomenclature of valve body is shown in Fig. 19, page 72.

Most important of the new valves are the 3-2 timing valve and the TV regulator valve. The purpose of the 3-2 timing valve is to delay the application of the rear band on a 3-2 forced downshift, thus providing a smoother shift. The TV regulator valve is controlled by TV pressure and spring force. When TV pressure reaches a certain value it opens the TV regulator valve and allows regulated TV pressure to act on the TV plug in the front pump pressure regulator and on the shifter valves to help time the shifts. Thus, on light throttle upshifts there will be no TV pressure to delay shifts, while on heavy throttle upshifts TV regulated pressure will be used to improve the shifts.

Other valve body changes are 3-4 lockout valve which locks out fourth speed when the selector lever is in the right hand drive position, a spring loaded ball check valve in the throttle pressure passage in the front valve body, a 2-3 auxiliary valve between the 2-3 shift valve and governor plug, and the elimination of the front servo exhaust valve assembly (see Fig. 19).

FRONT SERVO

The front servo for 1952 has been redesigned in order to give a greater holding force to the front band under closed throttle conditions. This increased holding force will be effective any time the band is applied but is provided primarily to insure adequate holding force when the transmission is operating as a brake in third gear.

In order to provide this feature the front servo has been redesigned to utilize an additional front servo apply piston and include an over-run control valve. In first, third and reverse, a spring behind the over-run control valve positions it as shown in Fig. 5. In this position the over-run control valve directs front servo apply oil behind the larger diameter apply piston.

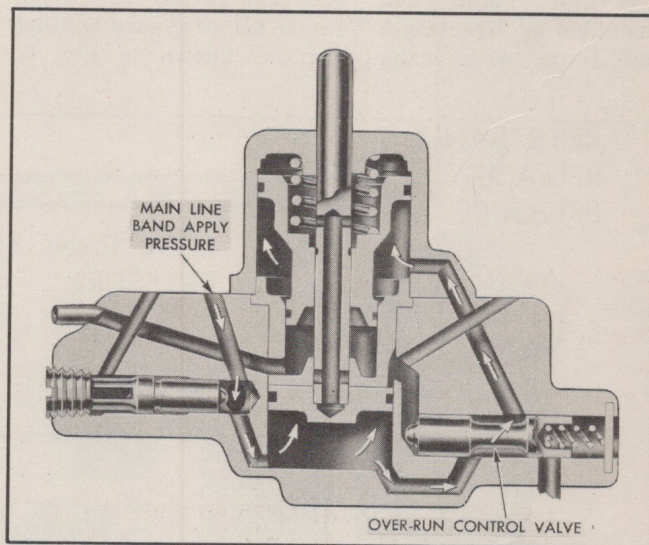


Fig. 5 Front Servo, Applied

In second or fourth gear, oil directed to the front servo release piston is also directed to the end of the over-run control valve forcing it back against the spring as shown in Fig. 6. In this position the valve cuts off the supply of oil to the new apply piston and allows the oil that was behind this piston to be exhausted so that front servo release oil can move the piston to the released position.

The compensator piston and 3-4 downshift valve operate the same as in 1951.

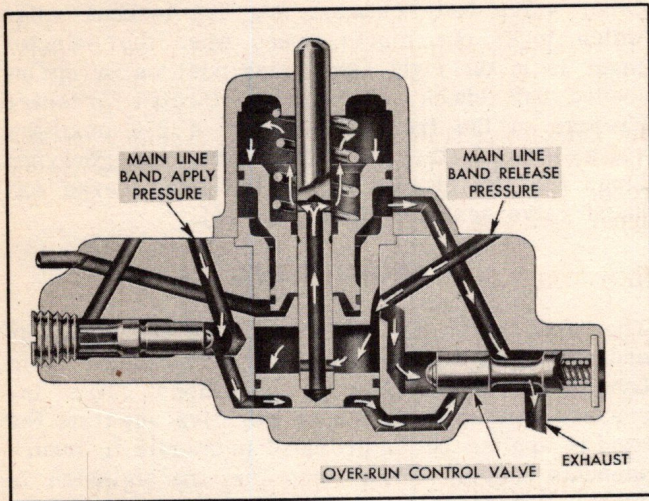


Fig. 6 Front Servo, Released

REAR SERVO

The rear servo has been redesigned to allow faster rear band application in LO range. This results in better "car-rocking" by speeding up the low and reverse engagement.

The more rapid rear band application in LO is provided by directing LO range oil pressure against the rear servo exhaust valve shown in Fig. 7.

This moves the exhaust valve over, against spring pressure, and opens a passage which rapidly exhausts rear servo release pressure. In drive range the rear servo exhaust valve is inoperative and the accumulator check valve continues to operate as it has on past models.

FRONT AND REAR UNITS

The annular pistons in both the front and rear units are smaller than in past transmissions. This necessitates smaller annular piston outer seals and smaller diameters in the clutch drums. The inner seals have not been changed. The outer diameter of the rear unit drum (area band contacts) is slightly larger on the 1952 transmission.

The rear band is of new construction, having a bonded lining. A release spring is also used on the 1952 rear band to prevent the possibility of chatter when operating in third speed.

The changes in front and rear units and rear band have no effect on overhaul procedures.

TORUS COVER

The 1952 torus cover is the same as previous models except for new dampener hub. It can be identified by a blue "O" stenciled on the cover.

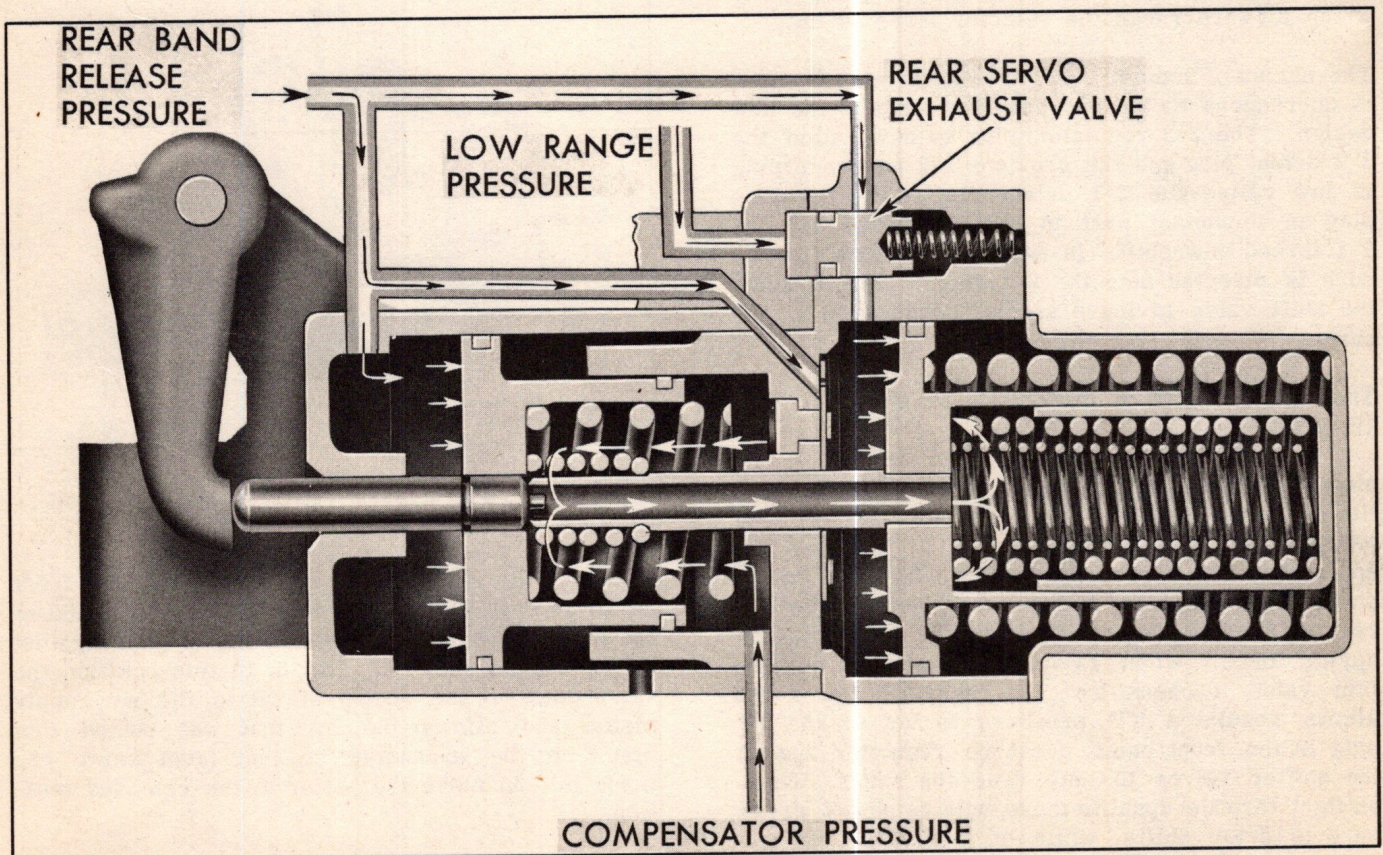


Fig. 7 Schematic View of Rear Servo

REVERSE UNIT

The reverse unit of the 1952 Hydra-Matic transmission is the same as in 1951. However, a new speedometer driven gear will be used to accommodate the new 3.08 rear axle ratio. This speedometer driven gear will have 18 teeth (18-8 ratio) and will be manufactured from yellow nylon plastic to correspond with the yellow paint identification on the end of the axle shaft.

The 3.63 axle ratio will be optional with the 1952 Hydra-Matic and will still be identified by violet paint on the end of the axle shaft. When this axle ratio is used a 21 tooth (21-8 ratio) speedometer driven gear will be used. This gear will be manufactured from dark violet nylon plastic for identification.

ADJUSTMENTS WITH TRANSMISSION IN CAR

Except for slight changes in the selector lever linkage adjustment and the neutralizer switch adjustment, all adjustments with the transmission on the car are the same as in 1951. The new procedures for adjusting the selector lever and neutralizer switch linkage are necessary because of the new indicator head.

SELECTOR LEVER LINKAGE ADJUSTMENT

1. If the gearshift control shaft upper bracket is loose, tighten the clamp screw while holding the selector lever firmly against the stop between the right hand drive position and LO.
2. Place selector lever in the right hand drive position (DR▲) against the stop which prevents accidental shift to LO.
3. Back off both gearshift control rod trunnion lock nuts (Fig. 8).

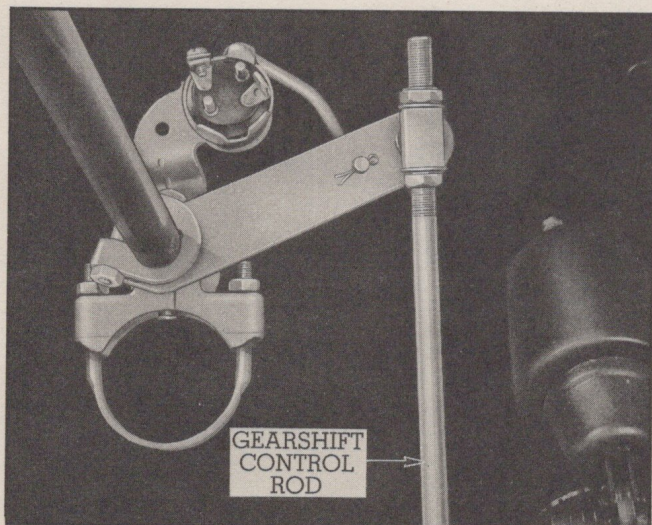


Fig. 8 Location of Gearshift Control Rod

4. See that transmission outer shift lever is in the three-speed drive position (third position from front or rear).
5. Turn lower trunnion nut against trunnion (finger tight) to remove clearance in linkage. Then lengthen rod by turning rear trunnion one full turn. Tighten upper lock nut securely.

NEUTRALIZER SWITCH ADJUSTMENT

The neutralizer switch linkage should be adjusted the same as on 1951 models except that in step 1 the selector should be positioned over the left arrow (four-speed range) in drive range (▲DR).

DISASSEMBLY OF UNITS FROM CASE

Disassembly of the units from the transmission case is practically the same as in 1951. There are a few changes which should be noted, although they will cause no difficulty.

1. The front pump intake pipe is a slip fit in the front pump which makes it much easier to remove.
2. Before removing servos, the governor oil delivery pipe must be removed from the front servo and case by prying the ends out with a screwdriver as shown in Fig. 9.
3. After the rear servo is removed, remove rear band release spring from between struts of rear band (Fig. 10).

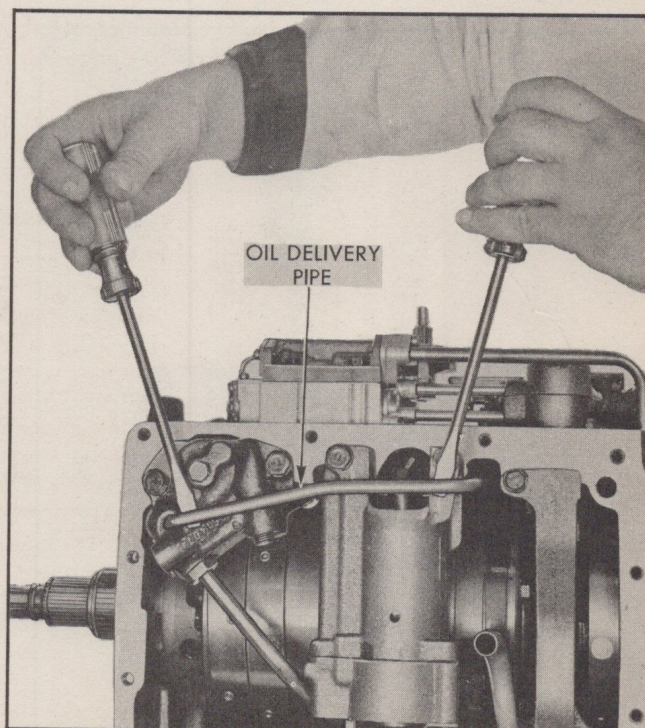


Fig. 9 Removing Governor Oil Delivery Pipe

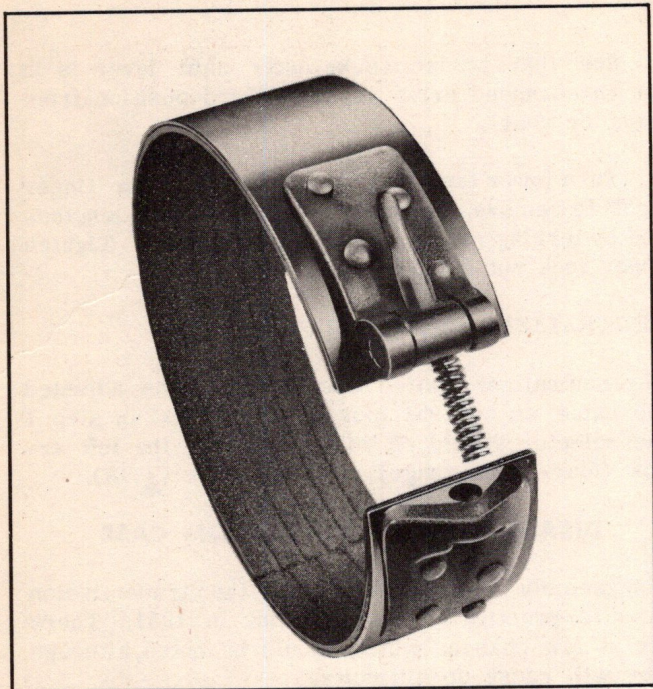


Fig. 10 Location of Rear Band Release Spring

CONTROL VALVE ASSEMBLY

DISASSEMBLY OF CONTROL VALVE ASSEMBLY

1. Move inside detent control lever slowly counter-clockwise to remove detent tension spring and plunger.
2. Remove manual shaft rubber seal and outer and inner shaft seal washers from shaft.

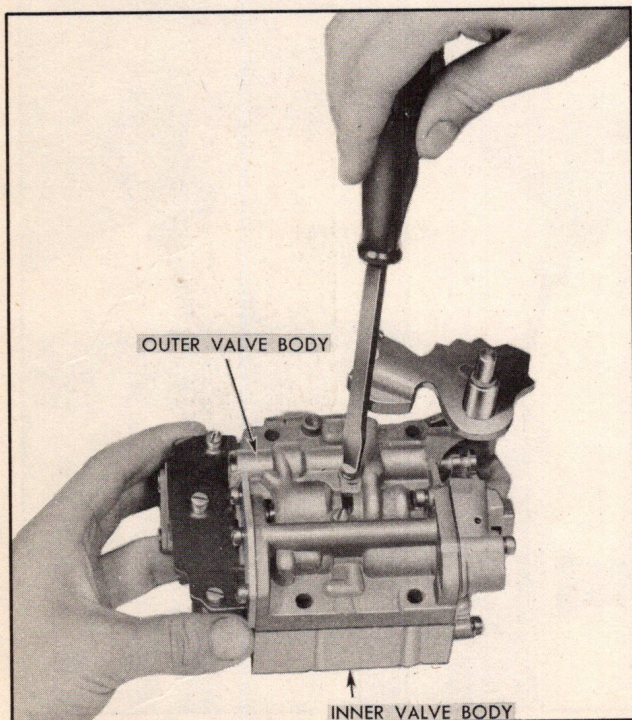


Fig. 11 Separating Inner and Outer Valve Body

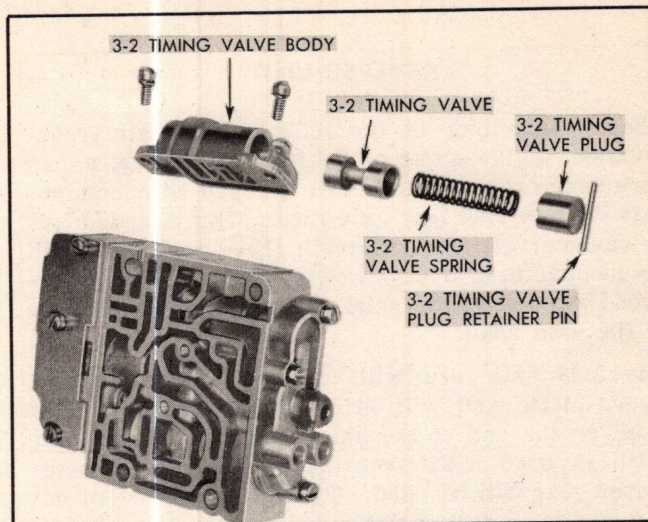


Fig. 12 Disassembly of Timing Valve Body Assembly

3. Remove two (2) screws holding inner and outer valve bodies together (Fig. 11).
4. Separate inner and outer valve bodies and remove valve body spacer plate.
5. Remove two (2) screws and remove 3-2 timing valve body assembly. Remove timing valve plug retainer pin, timing plug, spring and valve (Fig. 12).
6. Remove three (3) screws holding rear valve body assembly to inner valve body and remove rear valve body and spacer plate (Fig. 13).
7. Remove 3-4 governor plug, 2-1 detent plug, 2-1 detent plug spring, and 2-3 governor plug (Fig. 14).
8. Remove three (3) screws holding front valve body plate to front valve body and remove plate and "T" oil ball check valve and spring. ("T" oil ball check and spring were not used in early production.)

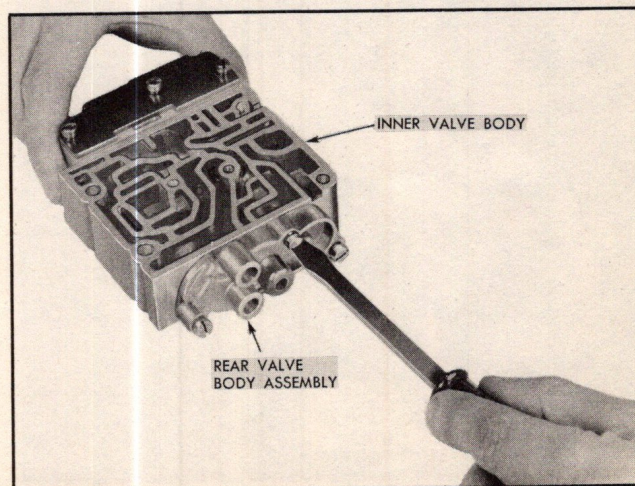


Fig. 13 Removing Rear Valve Body Assembly

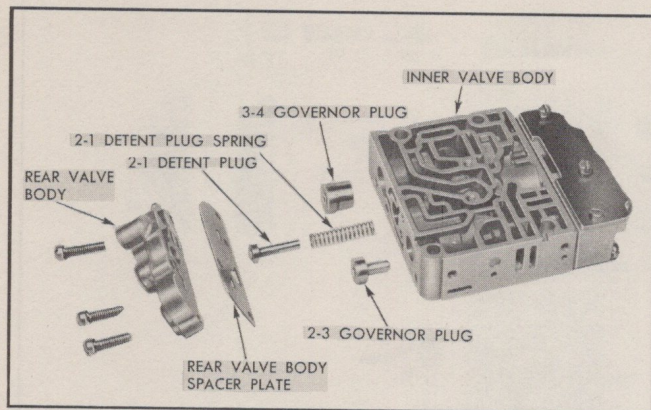


Fig. 14 Governor Plugs, 1-2 Detent Plug and Spring

9. Remove three (3) screws holding front valve body assembly to inner valve body assembly and remove front valve body assembly and separator plate.

10. Remove 3-4 regulator plug, 1-2 regulator plug, TV regulator valve and spring, from front valve body (Fig. 15).

11. Remove two (2) screws and 3-2 detent plug plate and remove 3-2 detent plug from front valve body (Fig. 16).

12. Remove 3-4 shift valve spring, 3-4 lockout valve assembly, 3-4 auxiliary shift spring, 3-4 shift valve, 1-2 regulator plug spring, 1-2 shift valve, 2-3 shift valve spring, 2-3 spring guide pin and 2-3 shift valve (Fig. 17).

13. Remove 2-3 governor sleeve and 2-3 auxiliary valve by pushing out with a pencil or similar wooden rod (Fig. 18).

14. Remove manual valve from outer valve body.

15. Remove three (3) screws from detent plunger retainer and remove retainer and plate.

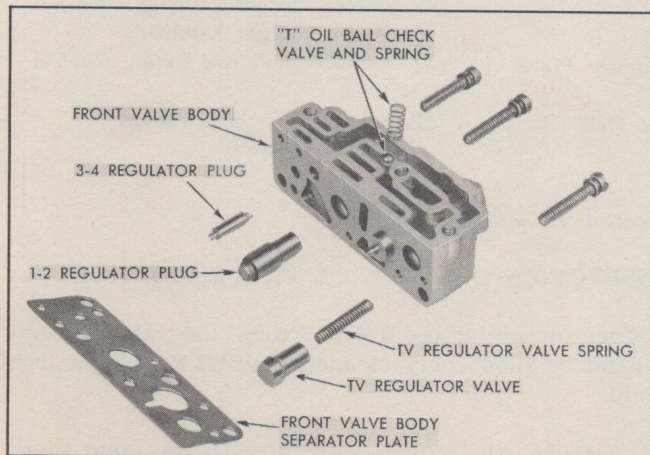


Fig. 15 Regulator Plugs, TV Regulator Valve and Spring

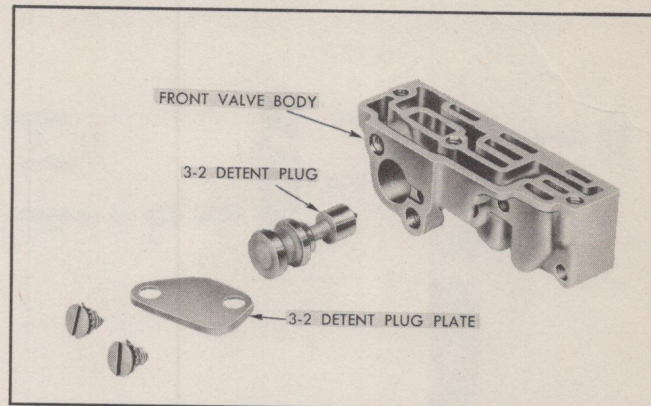


Fig. 16 Location of 3-2 Detent Plug

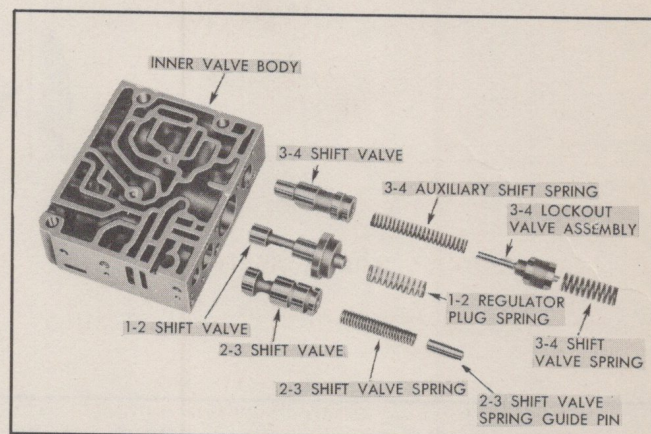


Fig. 17 Shift Valves and Springs Removed

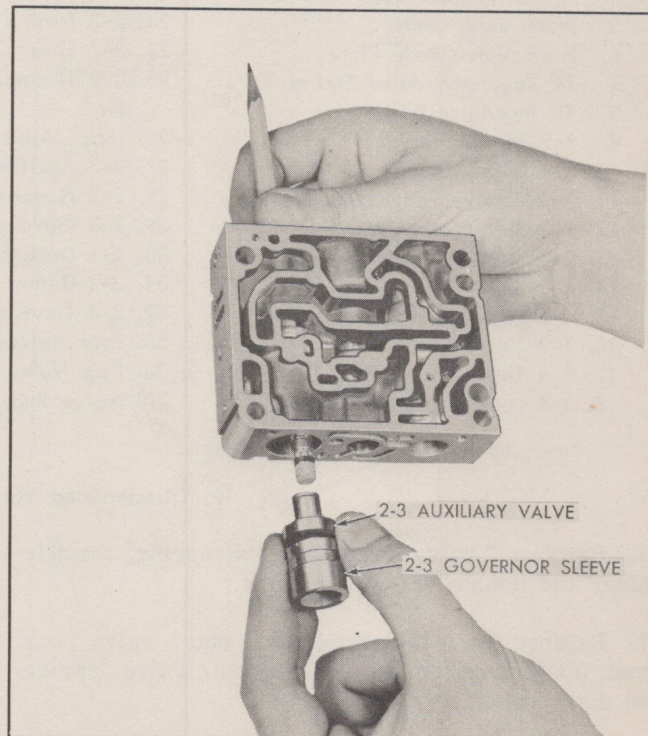
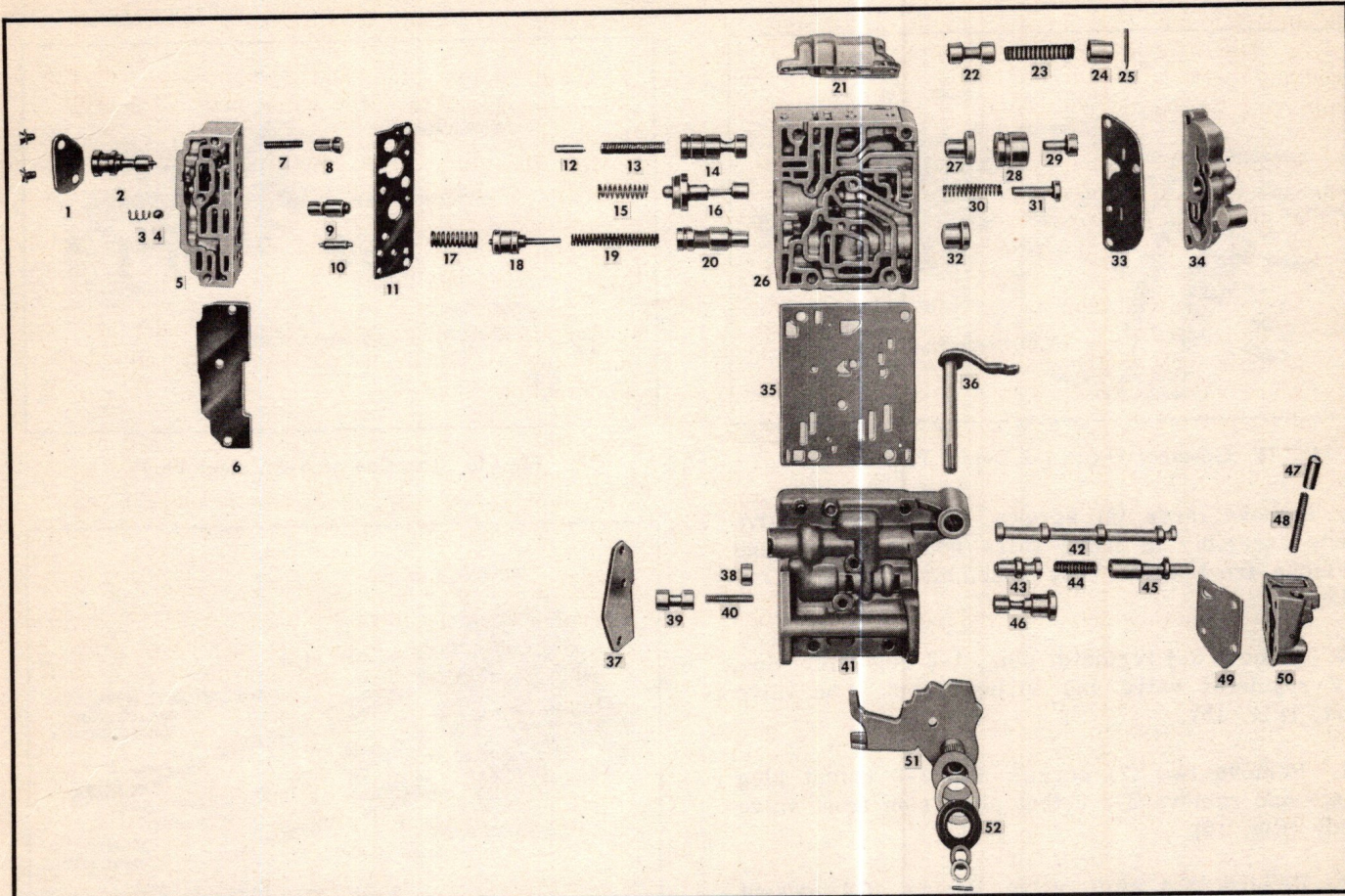


Fig. 18 Removing 2-3 Governor Sleeve and Auxiliary Valve



- | | | |
|--------------------------------------|--|---|
| 1. 3-2 Detent Plug Plate | 19. 3-4 Auxiliary Shift Spring | 36. Inner Throttle Lever |
| 2. 3-2 Detent Plug | 20. 3-4 Shift Valve | 37. Outer Valve Body Front Plate |
| 3. "T" Oil Ball Check Valve Spring* | 21. 3-2 Timing Valve Body | 38. Detent Plug |
| 4. "T" Oil Ball Check Valve* | 22. 3-2 Timing Valve | 39. Compensator Valve |
| 5. Front Valve Body | 23. 3-2 Timing Valve Spring | 40. Compensator Valve Spring |
| 6. Front Valve Body Plate | 24. 3-2 Timing Valve Plug | 41. Outer Valve Body |
| 7. TV Regulator Valve Spring | 25. 3-2 Timing Valve Plug Retainer Pin | 42. Manual Control Valve |
| 8. TV Regulator Valve | 26. Inner Valve Body | 43. Throttle Valve |
| 9. 1-2 Regulator Plug | 27. 2-3 Auxiliary Valve | 44. Throttle Valve Spring |
| 10. 3-4 Regulator Plug | 28. 2-3 Governor Sleeve | 45. T Valve |
| 11. Front Valve Body Separator Plate | 29. 2-3 Governor Plug | 46. Double Transition Valve |
| 12. 2-3 Shift Valve Spring Guide Pin | 30. 2-1 Detent Plug Spring | 47. Detent Plunger |
| 13. 2-3 Shift Valve Spring | 31. 2-1 Detent Plug | 48. Detent Plunger Spring |
| 14. 2-3 Shift Valve | 32. 3-4 Governor Plug | 49. Detent Plunger Retainer Plate |
| 15. 1-2 Regulator Plug Spring | 33. Rear Valve Body Spacer Plate | 50. Detent Plunger Retainer |
| 16. 1-2 Shift Valve | 34. Rear Valve Body | 51. Manual Shaft and Detent Control Lever |
| 17. 3-4 Shift Valve Spring | 35. Valve Body Spacer Plate | 52. Rubber Seals and Washers |
| 18. 3-4 Lockout Valve Assembly | | |

* Not used in early production models.

Fig. 19 Disassembled View of Control Valve Assembly

16. Remove T valve, throttle valve spring, throttle valve, and double transition valve.

17. Remove three (3) screws and outer valve body front plate and remove compensator valve, spring and detent plug.

NOTE: Do not remove compensator stop pin from outer valve body.

INSPECTION OF CONTROL VALVE ASSEMBLY

Before inspecting the valve bodies and valves, they should be thoroughly cleaned with CLEAN cleaning fluid.

1. Inspect all valves carefully to see that they are free from burrs and not damaged (scored, for example) in any way. Burrs can be removed by

carefully using fine crocus cloth. This type of valve has sharp corners to prevent dirt from wedging between valve and body; therefore, when removing burrs, do not round off square edges.

2. With the valves and valve bodies clean and dry, check each shifter valve, governor plug, and regulator plug for free movement in their respective bores and operating positions.

NOTE: Valves can be assumed to be free in their operating positions if they will fall of their own weight in their respective bores when valve body is shaken slightly. Do not drop valves.

The manual control valve is the only valve furnished separately. If it becomes necessary to replace one of the other valves or one of the bodies (inner or outer), the complete control valve assembly should be replaced. Refer to Master Parts Catalog for component parts which are replaceable on the control valve assembly.

3. Check fit of throttle valve inside lever and shaft in hub of inside detent control lever, on outer valve body. If shaft binds in hub, is excessively worn, or if oil seal is missing or damaged, it will be necessary to replace defective parts.

4. Before reassembly make sure springs can be accurately identified for correct assembly by comparing with Fig. 20.

ASSEMBLY OF CONTROL VALVE ASSEMBLY

1. Install detent plug, and compensator valve and spring assembly in outer valve body (Fig. 19).

2. Install outer valve body front plate and three attaching screws.

3. Install double transition valve, throttle valve, throttle valve spring and T Valve.

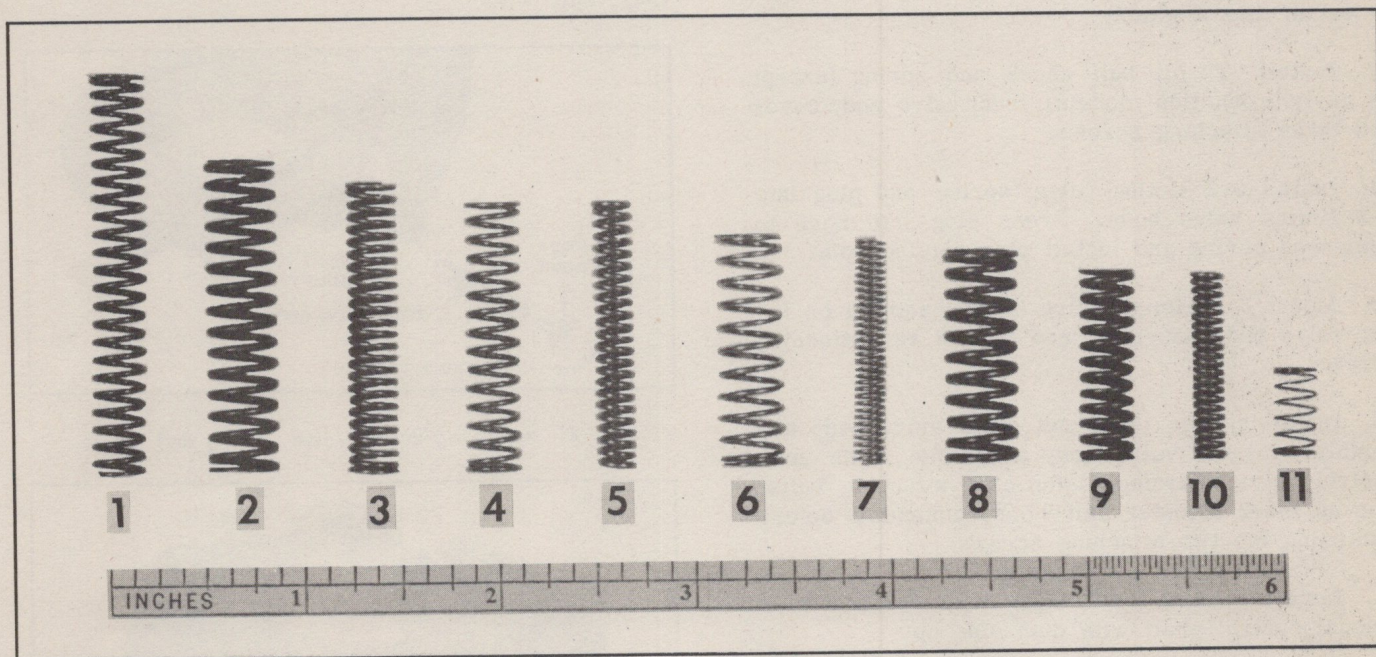
4. Install detent plunger retainer and plate, with inner throttle lever in position, and tighten three (3) attaching screws.

5. Install manual valve, detent spring and plunger. Align manual valve with the inside detent control lever, and rotate lever clockwise to index the plunger on the detent control lever assembly.

6. Install 2-3 auxiliary valve and 2-3 governor sleeve. Work in carefully to prevent cocking on sleeve counterbore. Shake inner valve body assembly to make certain 2-3 auxiliary valve is free in bore.

7. Install 3-4 governor plug, 2-3 governor plug, 2-1 detent spring and plug.

8. Install rear valve body assembly and spacer plate. (The detent plug can be held in position with the plate while starting the three attaching screws.)



1. 3-4 Auxiliary Shift
2. Timing Valve
3. 2-3 Shift Valve
4. 2-1 Detent Plug

5. Detent
6. 1-2 Regulator Plug
7. Compensator Valve

8. 3-4 Shift Valve
9. Throttle Valve
10. TV Regulator Valve
11. "T" Oil Ball Check Valve

Fig. 20 Comparison of Springs in Valve Body Assembly

9. Install 2-3 shift valve, spring and spring guide pin and 1-2 shift valve and spring.

10. Install 3-4 shift valve and 3-4 auxiliary shift valve spring.

11. Install 3-4 lockout valve and 3-4 shift valve spring. Valve and spring will protrude from bore. However, with the inner valve body assembly lying on a clean, flat surface, valve and spring will remain in place.

12. Install 3-2 detent plug in the front valve body.

13. Install 3-2 detent plug plate on front valve body with two attaching screws. Make certain plate is installed correctly to cover bore in front valve body.

14. Install TV regulator valve and spring, 1-2 and 3-4 regulator plugs in front valve body assembly.

15. Install spacer plate and three screws in front valve body.

16. With front valve body assembly and inner valve body assembly on a clean, flat surface, bring the two assemblies together. It will be necessary to start the 3-4 lockout valve into the inner valve body before the attaching screws can be installed. Be sure that all springs line up with the respective valves and bores. Tighten the screws alternately to bring the two valve body assemblies together evenly. A special clamp, tool J-5157 can be used to aid in this assembly.

17. Install "T" oil ball check and spring (except on early production models), front valve body cover and three attaching screws.

18. Install 3-2 timing valve, spring and plug into 3-2 timing valve body. Press plug into bore to compress spring and install plug retainer pin.

19. Mount 3-2 timing valve body assembly on inner valve body assembly and tighten two attaching screws.

20. Install spacer plate and outer valve body assembly on inner valve body assembly. With four control valve to transmission case attaching bolts, line up inner to outer valve body assembly before tightening the two attaching screws.

21. Install manual shaft seal inner washer over manual control shaft with dish side up.

22. Install manual shaft seal with large diameter over manual control shaft with dish side down.

23. Install rubber manual shaft seal over shaft with lip extending into inside diameter of outer washer.

FRONT PUMP

DISASSEMBLY OF FRONT PUMP

1. Remove front pump and front drive gear from transmission together. Remove drive gear and cover gasket. Remove four pump cover to body attaching screws and washers. Use J-2184-A pump holder and socket set.

2. Lift pump body from the cover.

NOTE: Never lift the cover from the body. This could permit the internal parts to fall from the assembly.

3. Remove front pump relief valve guide from the body by pressing on the guide with a blunt screwdriver and slipping the pin from the body. Hold the guide with finger pressure to prevent it from popping out too fast. Remove guide, spring and valve (Fig. 21). (The valve can be removed with snap ring pliers.)

4. Remove "O" seal ring from pump body intake port with a jack knife or similar instrument (Fig. 22). This seal should always be replaced since the slightest damage may effect front pump operation.

5. Mark face of rotor with pencil or prussian blue so that it will be returned to its same position.

6. Remove guide rings, rotor and seven vanes (Fig. 23).

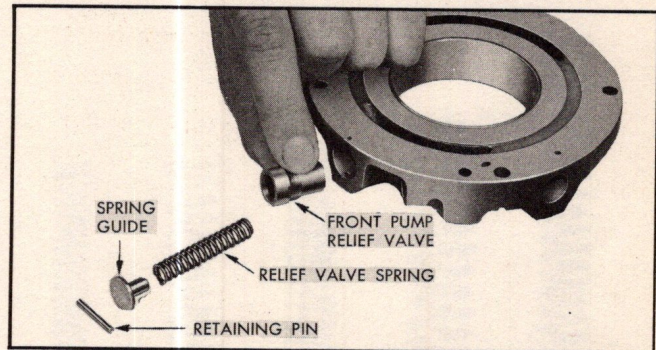


Fig. 21 Removing Relief Valve, Spring and Guide

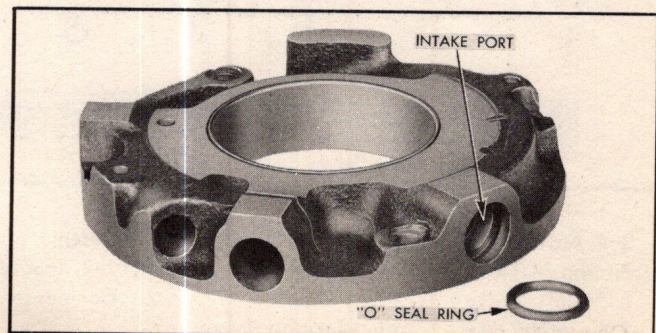


Fig. 22 Front Pump Intake Pipe "O" Seal Ring

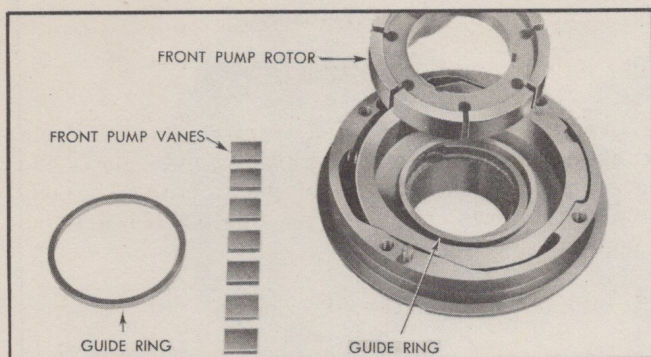


Fig. 23 Removing Front Pump Rotor

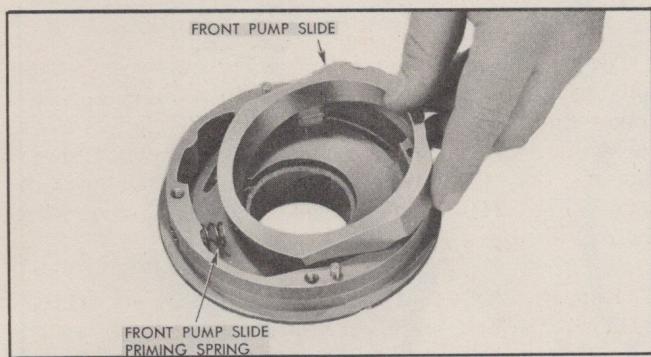


Fig. 24 Removing Front Pump Slide

7. Remove slide and priming spring by first lifting out end opposite spring (Fig. 24).

INSPECTION OF FRONT PUMP

1. The entire unit should be inspected for dirt or scoring.
2. Check slide to be sure the two (2) bleed holes are open and free of dirt. A piece of tag wire should be pushed through the holes to insure that they are open.
3. Check vanes to see that they are not scored or burred.
4. Be sure slide is free in pump cover. It should not bind under any circumstances.
5. Check freeness of pressure regulator valve in pump body bore.
6. Check freeness of vanes in rotor slots.
7. Check freeness of oil seal ring in its groove and see that it is not broken.
8. Check pump bushing for scores or flaking. Slight wear is permissible.
9. Check woodruff key slot in rotor for burrs or wear.

10. Inspect all passages for obstructions.

11. Check freedom of relief valve in pump body bore.

ASSEMBLY OF FRONT PUMP

1. Install relief valve, spring, spring guide, and retaining pin in pump body. (See Fig. 25, page 76.) Use a blunt screwdriver, or snap ring pliers slightly opened, to compress the guide and spring while installing retainer pin.

2. Install new "O" seal ring in pump body intake port.

3. Install priming spring and slide in pump cover.

CAUTION: Be sure spring is located properly by moving slide against it until slide bottoms against lower stop in cover.

4. Install one guide ring and rotor. Be sure marked face of rotor is up.

5. Install seven (7) vanes in rotor slots. Be sure vanes fit between guide ring and slide.

NOTE: Check edges of vanes for wear pattern. One edge will be polished for its full length; this edge should face the slide. The opposite edge will be polished only where it contacts the guide rings.

6. Install second guide ring. Guide ring can be installed easier if rotor is centered within slide.

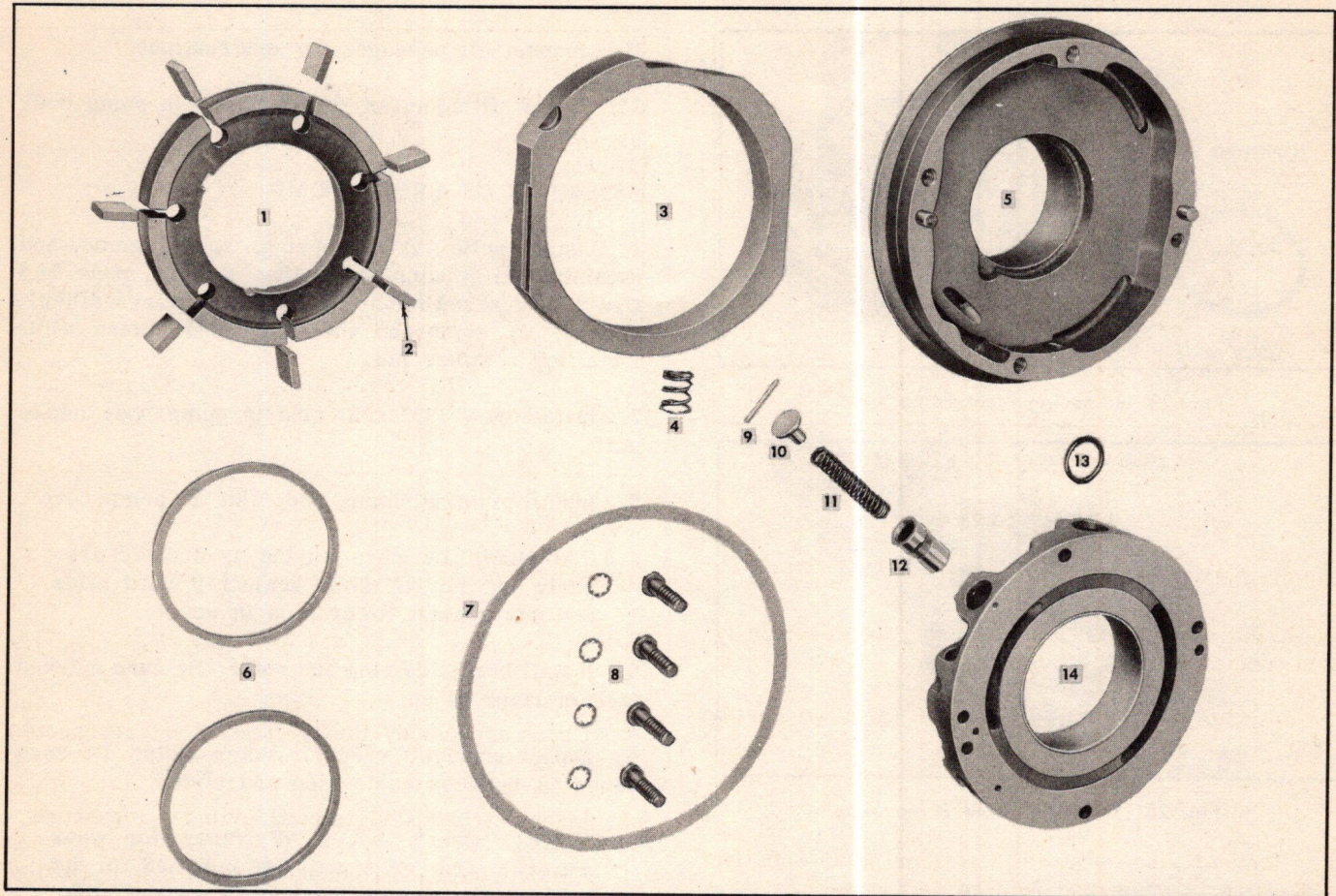
7. Total clearance between vanes and slide, with guide rings installed, should be 0-.003". Check with feeler gauge between each vane and I. D. of slide to make certain the clearance does not exceed .003" (with vanes contacting slide on one side, clearance should not exceed .003" on opposite side). If clearance is excessive pump must be replaced.

8. Place pump body over dowel pins in pump cover. Pump body should fit freely on dowel pins.

9. Install four (4) pump cover to body screws with washers and tighten to 12-15 ft. lbs. using a torque wrench and front pump holding tool set J-2184-A.

10. With pump completely assembled move rotor by hand to be sure rotor, vanes and slide are free. Be sure priming spring will return slide after spring is compressed.

11. Front pump should be assembled to the front drive gear before they are installed in the transmission. Be sure pump assembles to front drive gear freely. Do not force pump onto drive gear.

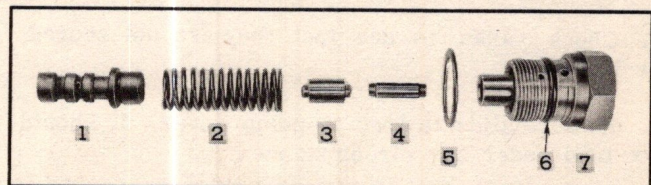


- | | |
|------------------------------------|--|
| 1. Front Pump Rotor | 8. Front Pump Cover to Body Attaching Screws and Washers |
| 2. Front Pump Vanes | 9. Relief Valve Guide Pin |
| 3. Front Pump Slide | 10. Relief Valve Guide |
| 4. Front Pump Slide Priming Spring | 11. Relief Valve Guide Spring |
| 5. Front Pump Cover | 12. Front Pump Relief Valve |
| 6. Guide Rings | 13. Intake Pipe "O" Seal Ring |
| 7. Front Pump Cover Gasket | 14. Front Pump Body |

Fig. 25 Disassembled View of Front Oil Pump

PRESSURE REGULATOR ASSEMBLY

1. Disassemble pressure regulator assembly as in 1951.
2. Inspect reverse booster plug and TV pressure plug for nicks or scores and free movement in regulator plug (Fig. 26).
3. Inspect pressure regulator valve for nicks or scores and free movement in pump body. Check drilled passages in valve to see that they are not obstructed.
4. Check pressure regulator spring for distortion or collapsed coils. Free length should be approximately 2-11/64".
5. Inspect drilled passages in pressure regulator plug and remove any foreign matter.



1. Pressure Regulator Valve
2. Pressure Regulator Spring
3. Reverse Booster Plug
4. TV Pressure Plug
5. Pressure Regulator Plug Gasket
6. Pressure Regulator Plug Seal
7. Pressure Regulator Plug

Fig. 26 Disassembly of Pressure Regulator Assembly

6. Inspect neoprene seal and gasket on pressure regulator plug. Neoprene seal should be replaced if there is the slightest doubt about its condition.

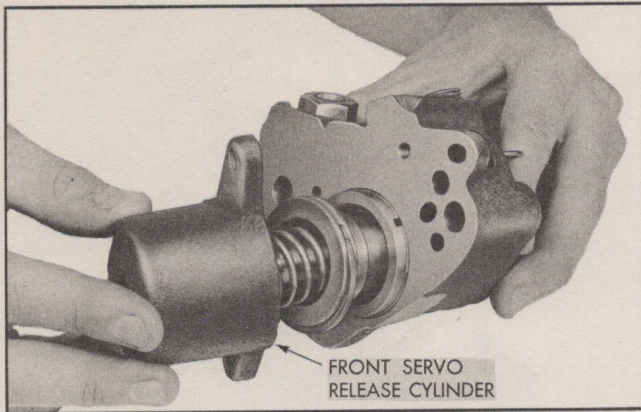


Fig. 27 Removing Front Servo Release Cylinder

FRONT SERVO

DISASSEMBLY OF FRONT SERVO

1. Remove two (2) release cylinder to servo body cap screws and lock washers using a 7/16" wrench.
2. Remove release cylinder and front servo spring (Fig. 27).
3. Remove servo piston assembly.
4. Remove pipe plug and retainer spring holding 4-3 valve in place and remove 4-3 valve.
5. Remove rear pump check valve seat, ball and spring.
6. Round off end of over-run control valve pin with file and pull pin with pliers. Keep finger over port while removing pin to prevent loss of spring.
7. Remove over-run control valve spring and valve (see Fig. 28).
8. Remove compensator pipe from front servo if loose.
9. Remove 1/8" pipe plug from servo body.

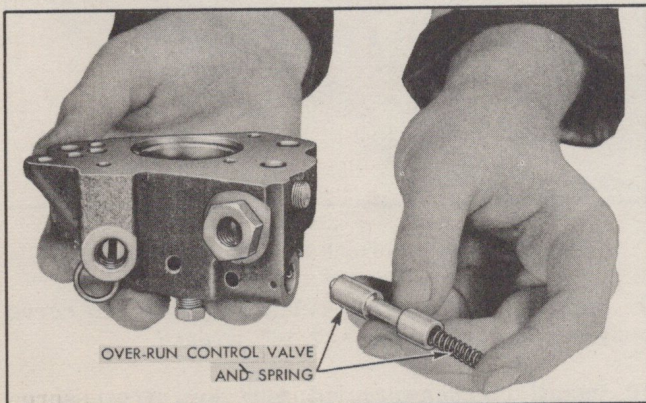


Fig. 28 Removing Over-Run Control Valve

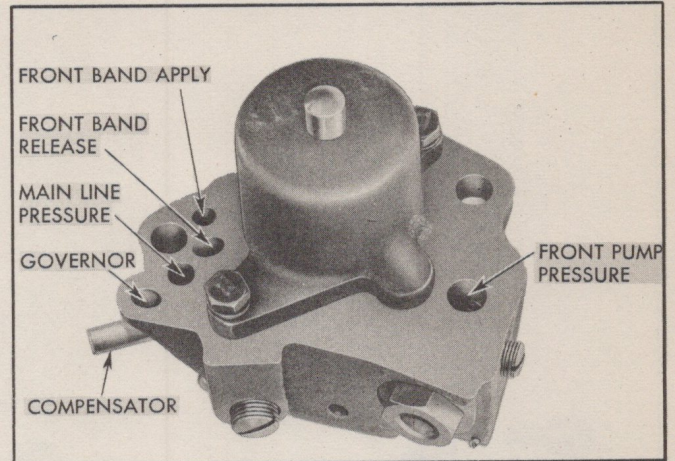
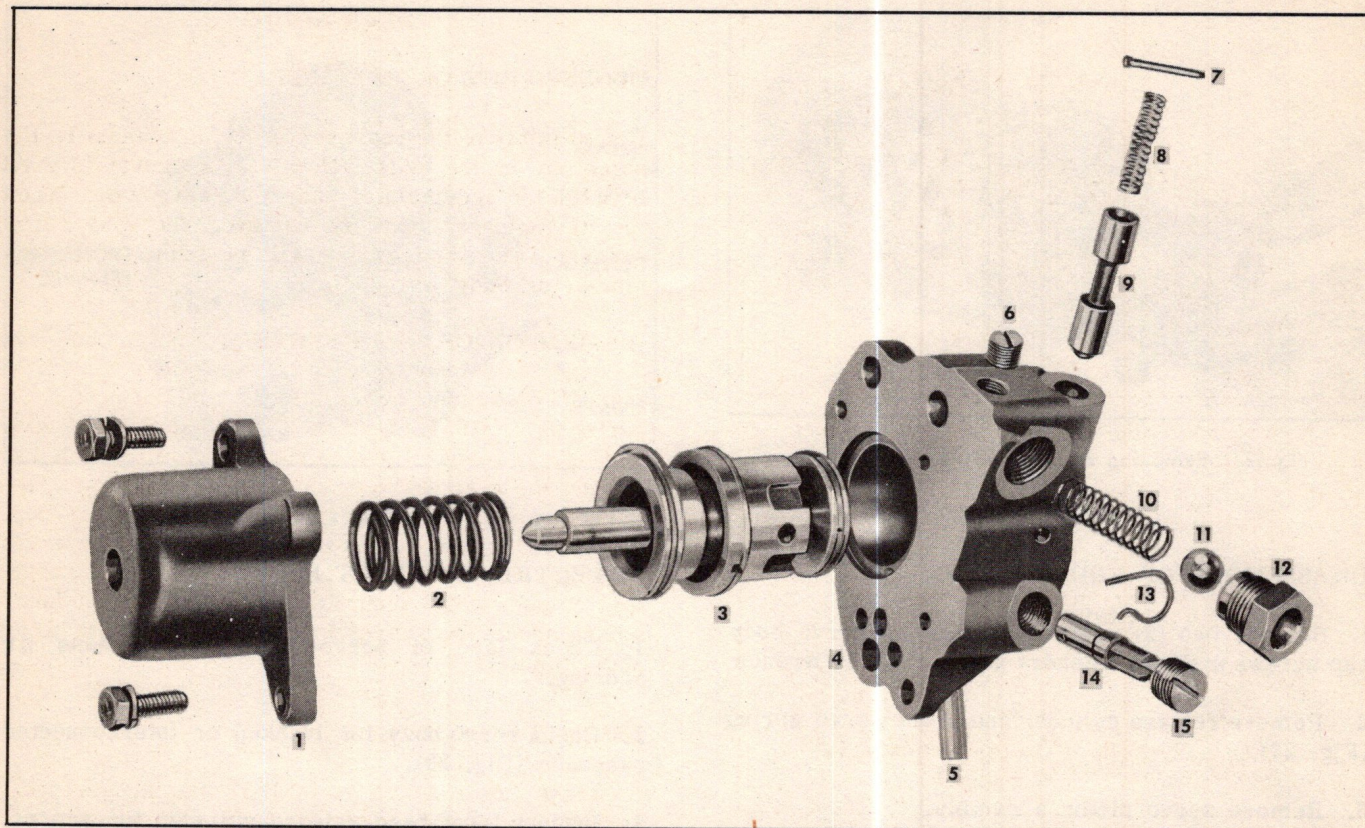


Fig. 29 Oil Passages in Front Servo

INSPECTION OF FRONT SERVO

1. Check face of servo body for roughness or scoring.
2. Check servo body for blocked or interconnected passages (Fig. 29).
3. Inspect front band release cylinder for scores.
4. Check front band release piston and apply piston assembly for scores, broken rings and freedom of rings in grooves, and see that oil passages are clear.
5. Check 4-3 valve for freedom in bore and obstructed orifice.
6. Inspect the front servo spring for distortion or collapsed coils. The free length should be approximately 1-33/64".
7. Inspect rear pump check valve seat, ball, and spring for damage.
8. Be sure bleed hole (shallow drilled hole) in rear pump check valve seat is open.
9. Be sure over-run control valve is free in its bore and is not scored.
10. Check free length of over-run control valve spring, approximately 1-9/64".
11. Check to see that compensator piston works freely in its bore, within the servo piston assembly.
12. Be sure two (2) steel plugs are staked in place sealing oil passages in servo body.
13. Be sure servo piston locating pin is snugly in place and protrudes to just below servo body face.



1. Release Cylinder
2. Front Servo Spring
3. Servo Piston Assembly
4. Servo Body
5. Compensator Pipe

6. 1/8" Pipe Plug
7. Over-Run Control Valve Pin
8. Over-Run Control Valve Spring
9. Over-Run Control Valve
10. Rear Pump Check Valve Spring

11. Rear Pump Check Valve
12. Rear Pump Check Valve Seat
13. 4-3 Valve Retainer Spring
14. 4-3 Valve
15. Plug

Fig. 30 Disassembled View of Front Servo

ASSEMBLY OF FRONT SERVO

1. Install 1/8" pipe plug in servo body.
2. Install rear pump check valve spring, ball and valve seat.
3. Install 4-3 valve, spring retainer and 3/8" pipe plug.
4. Install over-run control valve, spring, and new stop pin (see Fig. 28).
5. Peen end of pin to stake it in place.
6. Install servo piston assembly into servo body by carefully compressing and starting oil seal ring. Be sure groove in piston assembly locates on positioning pin (Fig. 31).
7. Install servo release spring.
8. Install servo release cylinder by carefully starting ring on release piston into release cylinder (Fig. 32).

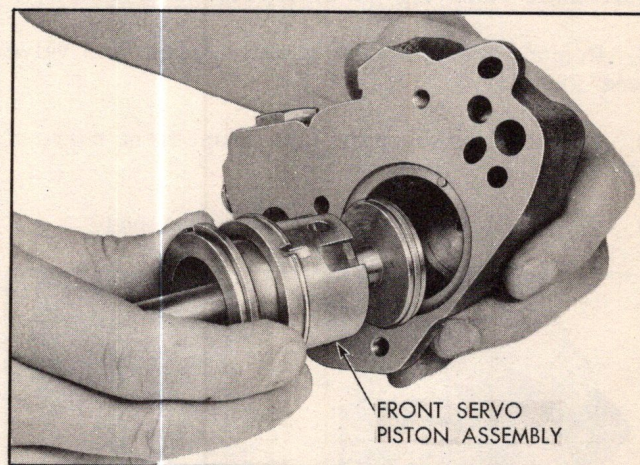


Fig. 31 Installing Front Servo Piston Assembly

9. Install two (2) servo release cylinder to servo body cap screws using a 7/16" wrench.
10. Install compensator oil pipe into front servo body if it was previously removed. Use a soft hammer to tap pipe in place gently.

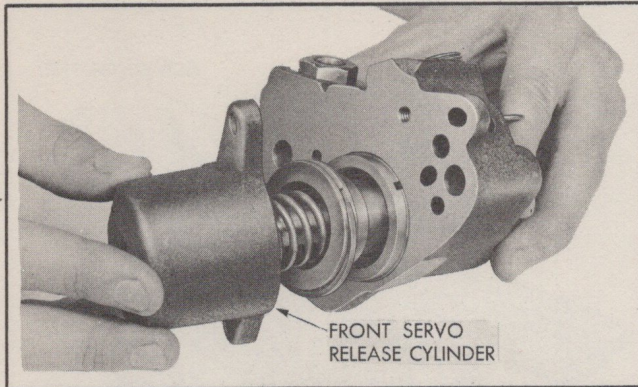


Fig. 32 Installing Front Servo Release Cylinder

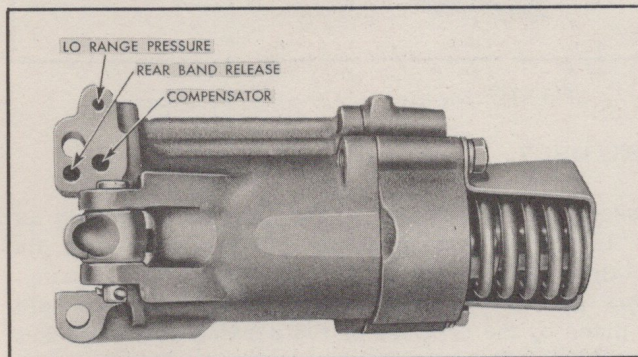


Fig. 33 Oil Passages in Rear Servo

REAR SERVO

DISASSEMBLY OF REAR SERVO

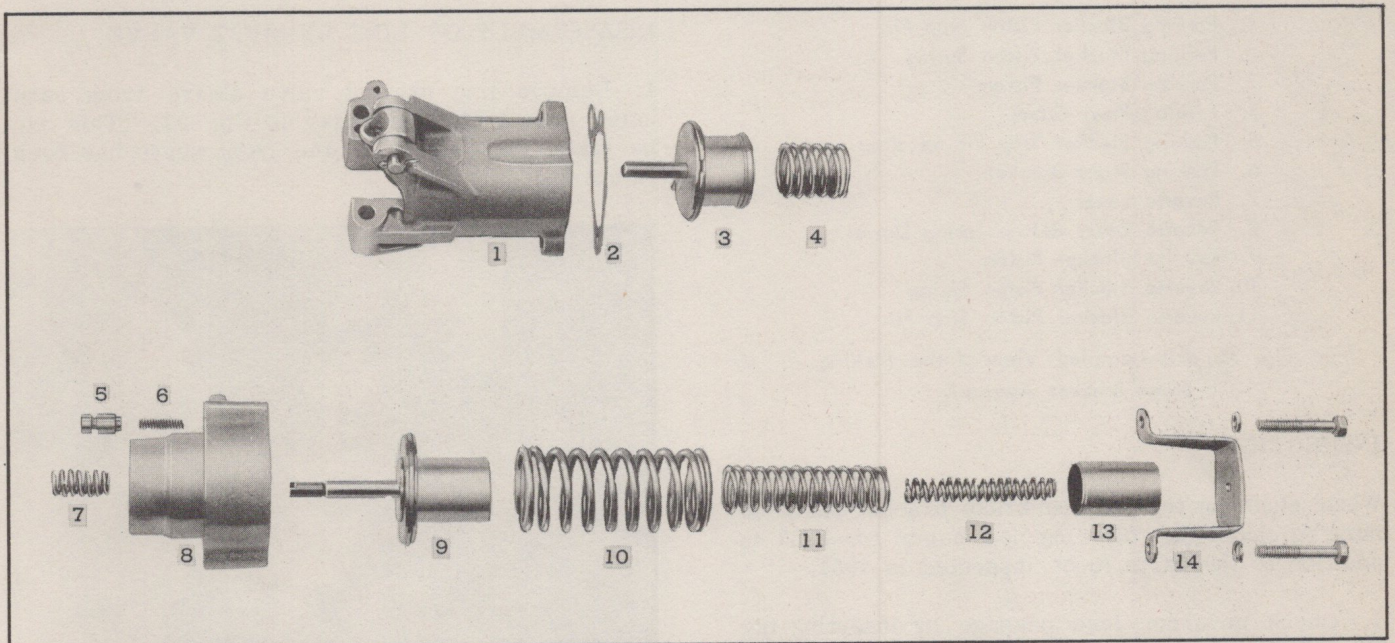
Disassembly of the rear servo is fundamentally the same as in the past. However, a gasket is used between the accumulator body and servo body. When the accumulator body is removed the rear servo exhaust valve and spring will be found in the accumulator body.

INSPECTION OF REAR SERVO

Inspect passages, body, pistons and rings and all parts as in 1951. Note in Fig. 33 that there is a new passage where low range pressure is directed against the rear servo exhaust valve. Exhaust valve must operate freely in accumulator body. Inspect servo gasket and replace if damaged. Free length of rear servo springs is same as in 1951 except for compensator inner and outer spring. Inner spring should be approximately 3-15/32" and outer approximately 3-59/64".

ASSEMBLY OF REAR SERVO

Assemble rear servo as in 1951 making sure that servo body to accumulator body gasket and rear servo exhaust valve are in place.



1. Servo Body
2. Servo Body Gasket
3. Booster Piston
4. Booster Spring
5. Rear Servo Exhaust Valve
6. Rear Servo Exhaust Valve Spring
7. Accumulator Apply Spring

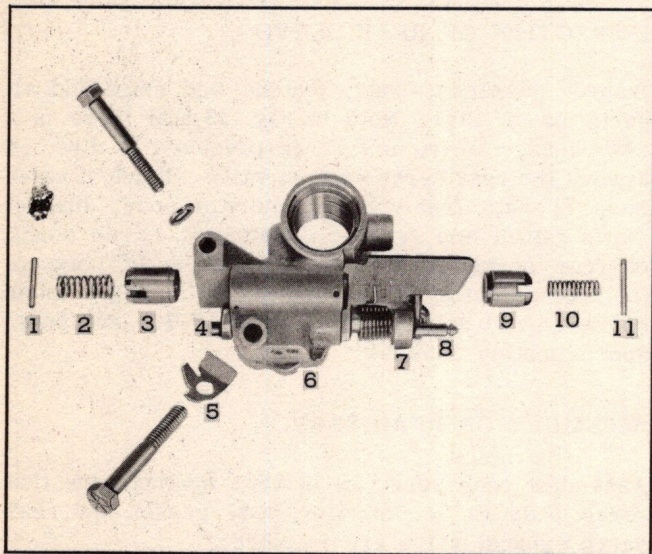
8. Accumulator Body
9. Accumulator Piston
10. Rear Servo Spring
11. Compensator Spring, Outer
12. Compensator Spring, Inner
13. Compensator Piston
14. Spring Retainer

Fig. 34 Disassembled View of Rear Servo

PARKING BRAKE BRACKET ASSEMBLY

DISASSEMBLY

In general the 1952 parking brake bracket is disassembled the same as in the past. The parking blocker piston can be removed by removing the stop pin with needle nose pliers while holding finger over blocker piston spring.



1. Parking Blocker Piston Stop Pin
2. Parking Blocker Piston Spring
3. Parking Blocker Piston
4. Parking Pawl Crank
5. Parking Blocker Stop Pin Retainer
6. Parking Brake Bracket
7. Reverse Lever
8. Reverse Lever Return Spring Dowel
9. Reverse Blocker Piston
10. Reverse Blocker Piston Spring
11. Reverse Blocker Piston Stop Pin

Fig. 35 Disassembled View of the Parking Brake Bracket Assembly

INSPECTION

When checking the parking brake bracket parts be sure to check the following new points for 1952 in addition to the parts to be inspected in 1951.

1. Check governor feed passage by inserting tag wire (Fig. 36).
2. Be sure center hole in governor oil delivery sleeve is plugged and that the plug is firmly staked in place.
3. Check blocker piston springs. Parking blocker piston spring should have free length of approximately 1-1/16" and reverse blocker piston spring should be approximately 15/16".

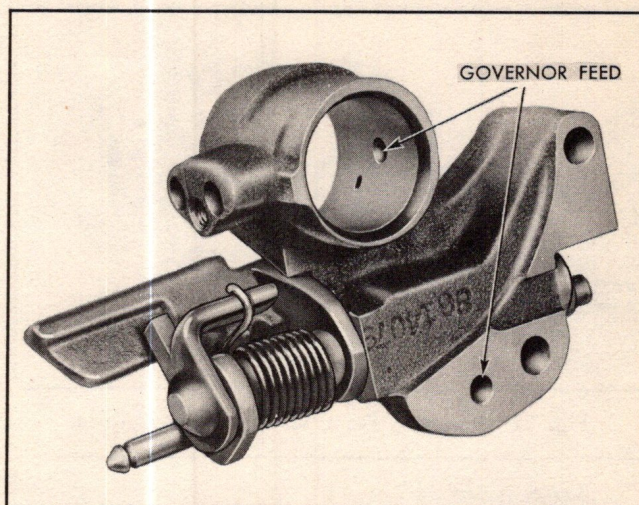


Fig. 36 Location of Governor Feed Passage

ASSEMBLY

Assemble the parking brake bracket assembly as in 1951. Be sure, however, to insert the stop pin retainer behind the parking blocker piston spring. This pin is not peened over since it will be held in place by the retainer on the parking brake bracket mounting bolt.

LINE EXHAUST VALVE

DISASSEMBLY OF LINE EXHAUST VALVE

1. Remove line exhaust valve sleeve from case using tool J-5177 as shown in Fig. 37. (This can be taken out only after the front servo has been removed.)

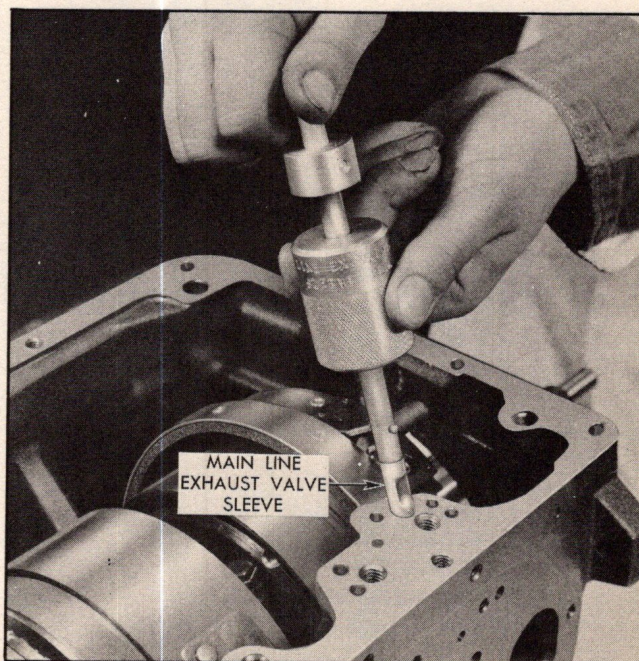


Fig. 37 Removing Main Line Exhaust Valve Sleeve

2. Remove line exhaust valve by pushing it down into the case against spring pressure with welding rod or slim screwdriver and then releasing it quickly so the spring will push it out. Spring can be removed by hooking it with a piece of wire.

INSPECTION OF LINE EXHAUST VALVE

1. Inspect the line exhaust valve for nicks or score marks. The valve should be free in the bore in case.
2. Inspect the sleeve for damage.
3. Check the line exhaust valve spring for collapsed coils or distortion. Free length should be approximately 2-27/64".

ASSEMBLY OF LINE EXHAUST VALVE

1. Install the line exhaust valve spring and valve in bore. Using a piece of welding rod or similar tool, work valve up and down several times against spring pressure to make certain the spring has bottomed in the valve bore.
2. Install the line exhaust valve sleeve by tapping in gently with a soft hammer. The relieved side of the sleeve should be toward the front servo to provide clearance for the front servo to case attaching bolt (see Fig. 38).

CAUTION: The sleeve should bottom on a shoulder in the bore with the edge of the sleeve just inside of being flush with the case. It is possible to force the sleeve deeper than the bottoming shoulder. This condition would impair the valve operation.

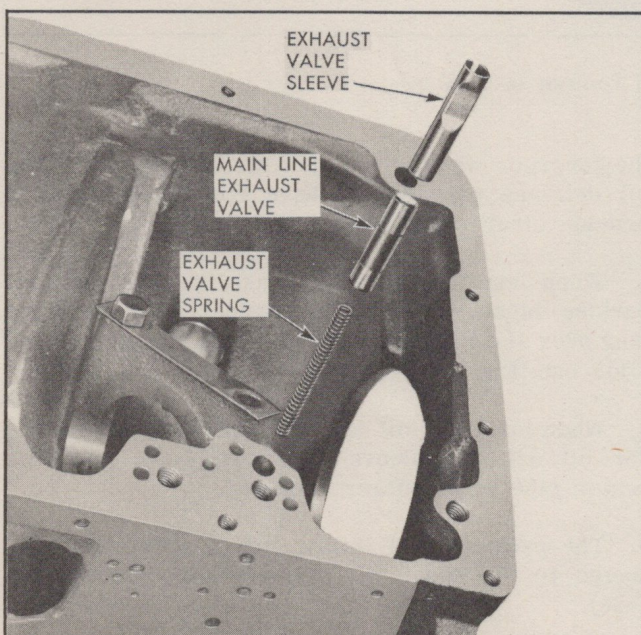


Fig. 38 Assembly of Main Line Exhaust Valve

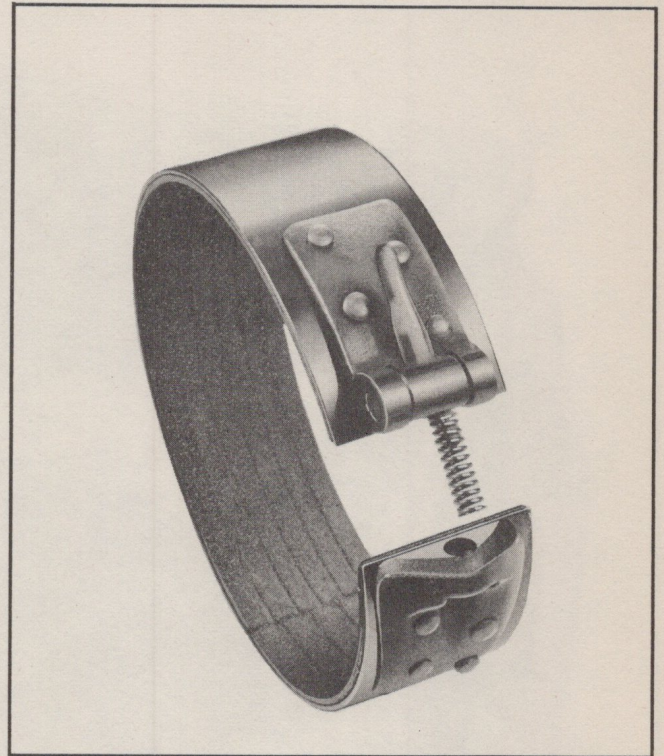


Fig. 39 Location of Rear Band Release Spring

REAR BAND RELEASE SPRING

Check the rear band release spring for distortion or collapsed coils. (See Fig. 39.) Free length should be approximately 1-7/64".

TRANSMISSION CASE

The 1952 case has been modified slightly to provide oil passages for the new features and the new main line pressure exhaust valve. Identification of the oil passages in the case is shown in Fig. 40.

The main line passages in the case will have four openings. The main line hole which is shown in Fig. 40 at the top of the case (hole in which main line exhaust valve and sleeve are installed) should have a small drilled hole at the bottom to allow exhaust oil to be dumped inside the case. In addition, this passage opens to the main line hole and to the line exhaust hole in the side of the case as shown in Fig. 40. When checking the main line passages by applying air to the main line hole at the top of the case (under front servo) it will, therefore, be necessary to block all other holes in this passage except the one hole being checked. In other words, if air is applied at the main line hole at the top of the case and no other holes are blocked, air will blow out of the case in the following three places; line exhaust hole and main line hole in side of case and the exhaust hole at the bottom of the main line passage bore inside the case.

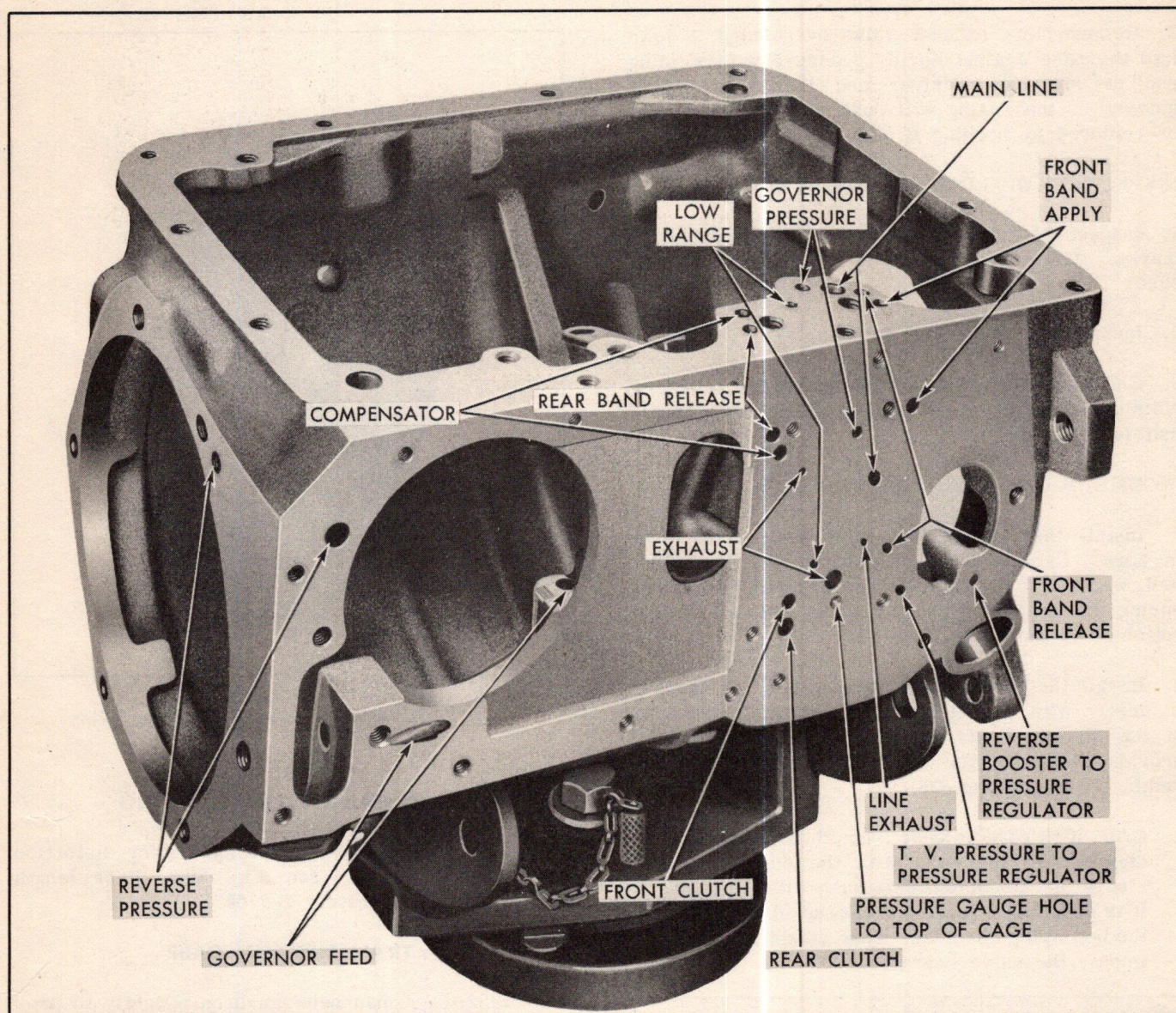


Fig. 40 Identification of Oil Passages in Case

ASSEMBLY OF UNITS IN TRANSMISSION CASE

Assembly of units into the case is much the same as in 1951. The same precautions, checks and alignments are required. However, the following new points should be kept in mind.

1. Before installing rear servo, install rear band release spring between the struts of the rear band (Fig. 39).
2. When installing front pump intake pipe, be sure to slide it well down into the "O" seal ring in pump intake port (Fig. 41).
3. After servos have been installed, install governor oil delivery pipe between front servo and passage in case between rear servo and rear pump (see Fig. 41). Rotate governor a full turn to make sure

the governor weights will not strike the pipe. The oil delivery pipe should have the proper bend to provide clearance for governor weights.

4. When installing parking brake bracket, position parking blocker piston pin retainer with the large tang over the end of the pin so that the pin cannot slide out (Fig. 42).
5. When installing oil delivery pipes between governor oil delivery sleeve and valve body, note that center pipe is no longer required.
6. The parking pawl return spring should be connected to the inner oil delivery pipe (closest to case).
7. Note that the pressure regulator reverse oil pipe installs into the valve body in a new position.

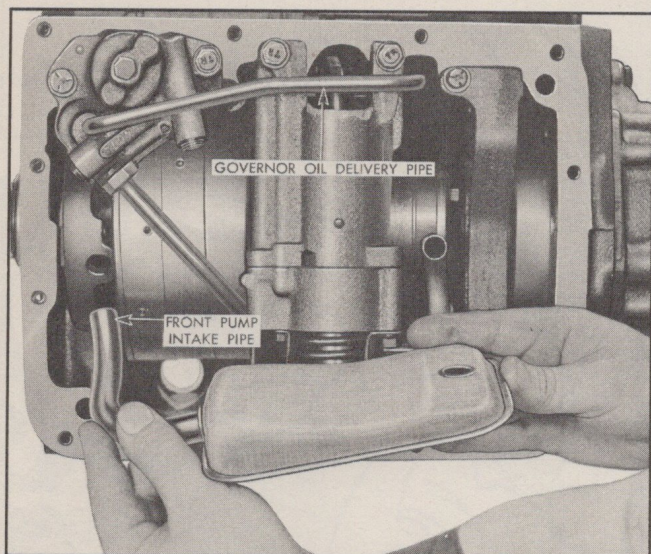


Fig. 41 Installing Front Pump Intake Pipe

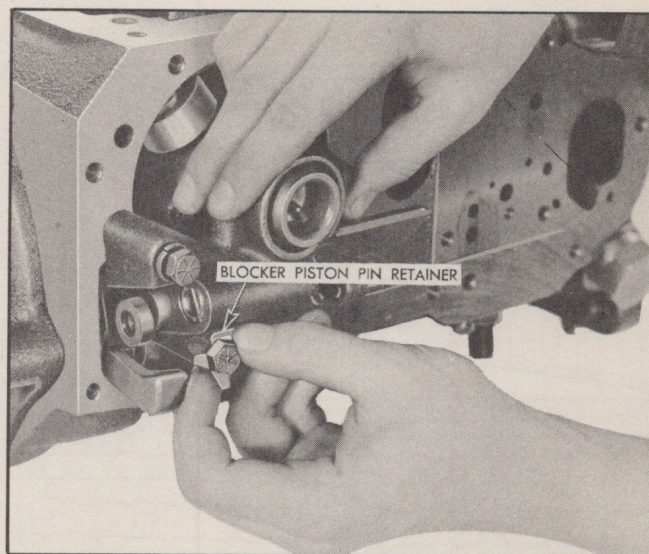


Fig. 42 Blocker Piston Pin Retainer Installed

PONTIAC DUAL RANGE HYDRA-MATIC SHIFT POINTS IN INDICATED M.P.H.

UPSHIFTS

SHIFT	LEFT DRIVE RANGE		RIGHT DRIVE RANGE		LO RANGE
	MINIMUM THROTTLE	FULL THROTTLE	MINIMUM THROTTLE	FULL THROTTLE	FULL THROTTLE
1-2	7-10	19-23	7-10	19-23	19-23
2-3	12-16	35-40	12-16	35-40	
3-4	20-24	69-75	*	*	

DOWNSHIFTS

SHIFT	LEFT DRIVE RANGE			RIGHT DRIVE RANGE			LO RANGE		
	CLOSED THROTTLE	FULL THROTTLE	FORCED (Approx.)	CLOSED THROTTLE	FULL THROTTLE	FORCED (Approx.)	FULL THROTTLE	FORCED	LOCKOUT
4-3	17-14	22-19	20-63	*	*				
3-2	12-9	11-8	7-24	12-9	11-8	7-24			53-48
2-1	8-5	11-8	0-11	8-5	11-8	0-11	11-8	0-11	
4-2			20-15						53-48
3-1			11-8			11-8			

NOTE: There are no minimum throttle upshifts or closed throttle downshifts in the LO Range position.

*A 3-4 upshift is possible at very high car speeds only. The transmission will automatically return to third speed as the car speed is reduced.

ATTENTION CRAFTSMEN

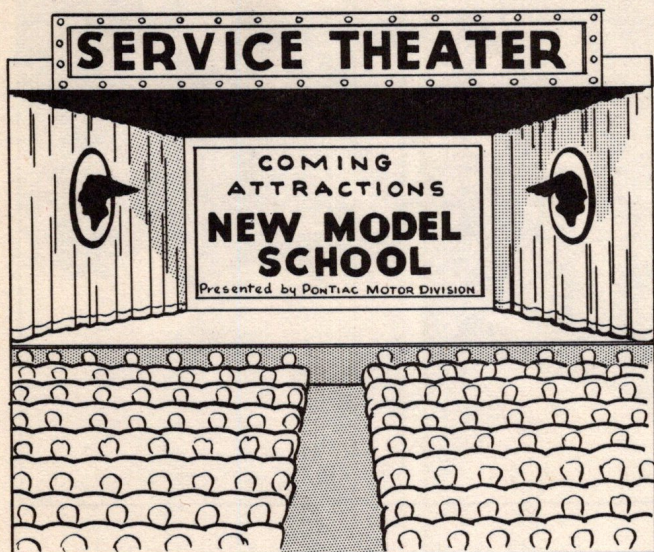
Reports are again being received stating that gasoline tanks are being replaced because of "leaks at seam". Careful inspection of tanks returned indicate that these reports are in error. It was found that the reported leaks were actually leaks that could be repaired at the filler neck or through tightening the screws sealing the gasket at the fuel gauge.

Every attempt should be made to repair a "leaking" gas tank, thereby conserving critical materials

vital to the national defense program.

Review the following information on fuel tanks, leaks and rattles, in past issues of the Service Craftsman News and make repairs where possible before considering the replacement of a gasoline tank:

Floor Screw Damage, March 1950, page 23
Filler Pipe Rattle Fix, June 1950, page 48
Leaks and Rattles, October 1950, page 90



NEW SCHOOL AHEAD

Our next Service Craftsman Training School will cover information on our new 1952 Pontiac. This program is specifically designed to cover information and the correct procedures to properly service the Pontiac car. Schools will be held throughout the country starting approximately the middle of December. Two-day and five-day Hydra-Matic schools on the new Dual Range Hydra-Matic Transmission will follow the New Model Schools.

As you know, all Service Craftsman Training Schools are designed to assist you in your service training needs. Questionnaires returned by dealers and Craftsmen have been our guide for these programs.

Your continued, whole hearted support of the Service Craftsman Training Schools will keep you up-to-date on the product and assist you in obtaining greater efficiency in your work.

Charlie Craftsman Says-



...Both six and eight cylinder cars will use the same Hydra-Matic Transmission for 1952. You'd better read this issue carefully before attempting any repairs on the 1952 Hydra-Matic.

SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.

PONTIAC

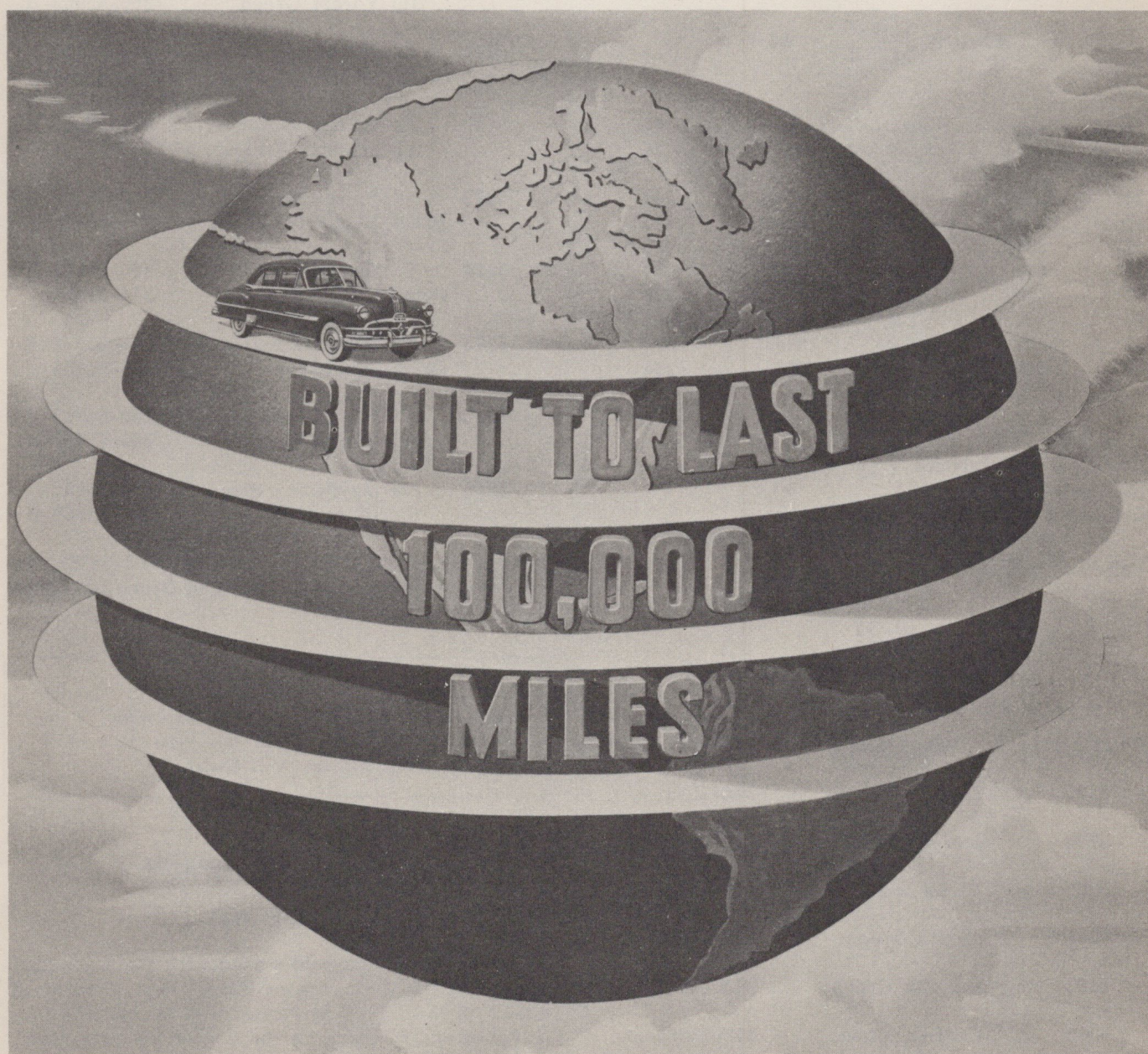
Service Craftsman News



No. 12 S-233

December, 1951

1952 NEW MODEL INFORMATION



1952 NEW MODEL INFORMATION

This Service Craftsman News contains information on the 1952 Pontiac cars. The material herein is presented in the same general sequence as the information in the 1949-1950 Pontiac Shop Manual and the 1951 Shop Manual Supplement.

To make your shop manuals a complete source of current information, they should be cross-indexed with the articles contained in this and following issues of the Service Craftsman News.

GENERAL INFORMATION

SPEED RELATIONS ON MODELS WITH A 3.08 TO 1 AXLE RATIO

$$\text{ENGINE } \frac{\text{R.P.M.}}{\text{M.P.H.}} = 37.8$$

Speed M.P.H.	Engine R.P.M.	Water Pump & Fan R.P.M.	Generator R.P.M.	Rear Wheels R.P.M.
20	760	669	1398	247
30	1138	1001	2094	370
40	1517	1335	2791	493
50	1899	1671	3494	617
60	2277	2004	4190	740
70	2655	2336	4885	863
80	3037	2673	5588	987
90	3412	3003	6278	1109

Tire Size	7:10 - 15
Rolling Circumference	86:1
Rolling Radius	13.7
Generator (with 3-1/2" pulley) to Engine Ratio	1.84 (Dynamic)
Fan to Engine Ratio	.88

BODY

PONTIAC 1952 COLORS

Combination	Body Color	Refinish Paint Number
5200	Black	246-2048
5201	Potomac Blue	260-55952-H
5203	Victoria Maroon	202-85638-M
5204	Smoke Grey	202-55953
5205	Seamist Green	246-55954
5206	Cherokee Red	246-55955-M
5207	Placid Green	246-55922

5208	Mayflower Blue	202-55957
5209	Shell Grey	246-55958
5210	Forest Green	260-55959-H
5211	Saturn Gold	260-55652-H
5212	Belfast Green	246-55961-H
5214	Lo Shell Grey Up Smoke Grey	246-55958 202-55953
5215	Lo Seamist Green Up Belfast Green	246-55954 246-55961-H
5217	Lo Placid Green Up Forest Green	246-55922 260-55959-H
5219	Lo Shell Grey Up Mayflower Blue	246-55958 202-55957
5222	Lo Belfast Green Up Seamist Green	246-55961-H 246-55954
5223	Forest Green Panel Placid Green	260-55959-H 246-55922
5224	Saturn Gold Panel Lido Beige	260-55652-H 246-39865
5225	Imperial Maroon Panel Sand Grey	246-55571-M 202-55454
5226	Placid Green Panel Forest Green	246-55922 260-55959-H
5228	Lo Mayflower Blue Up Potomac Blue	202-55957 260-55952-H

Instrument panel lower Silver Grey 202-55389, except super deluxe Catalina Seamist Green 246-55954.

EDITOR'S NOTE: An index of all 1951 Service Craftsman News articles through December is included in this issue. Place this index in front of your Service Craftsman News Binder.

REAR END SUSPENSION

DIFFERENTIAL

The ring and pinion gears used with the 1952 Dual Range Hydra-Matic transmission have a ratio of 40-13 (3.08). This new ratio will be identified by a yellow paint mark on the end of the axle shaft, and the number "0" on the pad of the differential carrier.

UNIVERSAL JOINTS

The universal joints used on 1952 Pontiacs have larger journals on the cross shaft and smaller needle bearings. This necessitates the use of 26 needle rollers in each bearing instead of 19 formerly used.

The new universal joint assemblies can be used on past models, but because of the difference in size of the needles and cross shaft journals, the individual parts are not interchangeable.

Service procedures on the new universal joints are the same as previously used.

REAR SPRINGS

The color coding used on 1952 rear springs is as follows:

MODEL	COLOR	
	R.H.	L.H.
Catalina and Chieftain Sedan		
Coupe	Lt. Blue	Green
Sedans, Business and		
Convertible Coupe	Green	Yellow
Station Wagon and Sedan		
Delivery	Brown	White
Taxicab, Police, and Special		
Order Export except		
Station Wagon and Sedan		
Delivery	Aluminum	Red

BRAKES

A new brake lining is being used on 1952 models but other than this there is no change in construction or servicing.

With these brakes, as in the past, it is important that the owner apply the brakes carefully for the first several hundred miles. Harsh use of new brakes will damage the linings and result in unsatisfactory brake operation.

ENGINE MECHANICAL

The 1952 engines are the same as 1951 engines except for a change in compression ratio, manifold heat control valve, spark plugs and distributor. Spark plug and distributor changes are covered in the Electrical Section.

All Hydra-Matic equipped 1952 Pontiacs will have a 7.7 compression ratio head as standard equipment. High compression eight cylinder engines will develop 122 H.P. at 3600 R.P.M. Six cylinder high compression engines will develop 102 H.P. at 3400 R.P.M. Premium fuels must be used with these engines.

On Synchro-Mesh equipped cars the standard cylinder head will give 6.8 compression ratio. The eight cylinder engine will develop 118 H.P. at 3600 R.P.M. and the six will develop 100 H.P. at 3400 R.P.M.

The manifold heat control valve on the 1952 engine is mounted on a shaft having a smaller diameter than in the past. In addition the clearance between shaft and bushing has been increased. This design change will reduce the tendency of shaft to stick at high mileage.

All service procedures are the same as on 1951 engines.

ENGINE COOLING AND OILING

WATER PUMP

Water pumps used on the first 1952 cars are exactly the same as those used in late 1951. In later production, however, the pump body will be changed to provide a tighter press fit for the water pump bearing. The same bearing will still be used, but due to a reduction in the bore of the pump body into which the bearing fits, the bearing will be a .0015" to .0025" press fit.

Because of the extreme force required to press the bearing into the pump body it is imperative that pressure be exerted against the outer bearing race using tool J-5175 when installing the bearing. This tool should be used as follows:

1. Place pump body in press with fan hub up.
2. Place bearing and shaft assembly on hub with long end of shaft up.
3. Install tool J-5175 over shaft to engage outer race of bearing.
4. Bring ram down and press bearing into housing so groove in outer race will index with groove in body for wire retainer (Fig. 1).
5. Continue assembly of water pump as described in 1949-50 Shop Manual.

STEERING

A new tool is now available which should be used to protect the pitman shaft seal when installing the pitman shaft through the seal. This seal protector J-2199 should be used on past models as well as 1952 since there has been no change in the construction of the steering gear. Without this means of protecting the seal the pitman shaft splines may cut the seal causing lubricant to leak. Tool J-2199 should be used as follows when installing pitman shaft into housing:

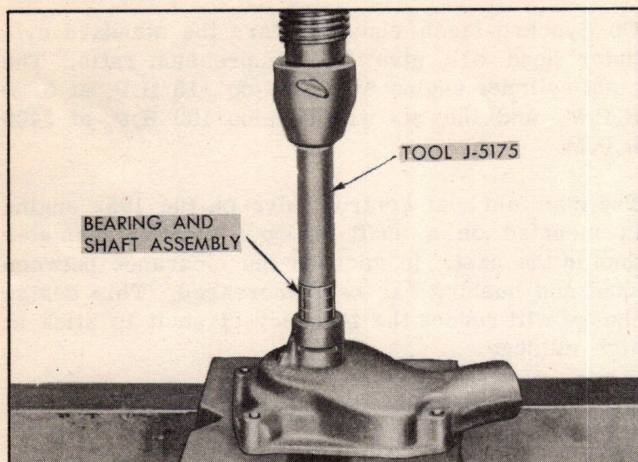


Fig. 1 Installing a Water Pump Bearing

1. Slide thrust washer and bushing onto pitman shaft and then slide seal protector J-2199 down over the splines (Fig. 2).

2. With seal installed in housing, install pitman shaft into housing. Seal protector will slide through seal (Fig. 3).

3. Remove seal protector and continue assembly of steering gear according to 1949-50 Shop Manual.

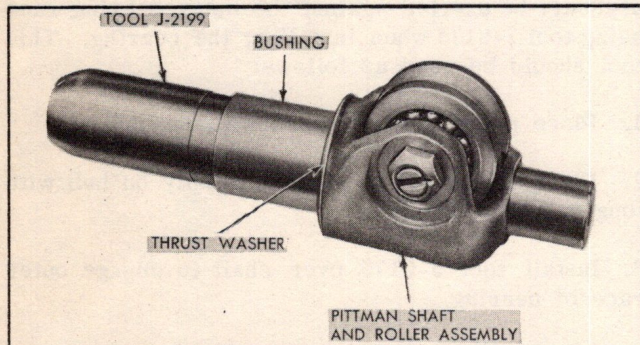


Fig. 2 Protector J-2199 Installed

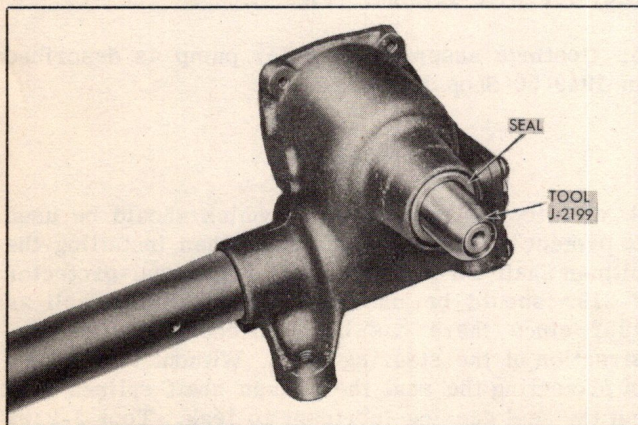


Fig. 3 Pitman Shaft Installed

ELECTRICAL AND INSTRUMENTS

WIRING DIAGRAM

The 1952 wiring diagram shown in Fig. 4 is the same as 1951 except for the following:

1. A line fuse has been added on models which are equipped with the new electric drive antenna. This fuse (30 ampere AGC Type) is located in a line fuse holder immediately above the accessory fuse block.

2. When a hand brake warning lamp is installed the feed wire is connected to terminal 14 of the accessory fuse block.

STANDARD GENERATOR AND REGULATOR

A new extruded frame 45 ampere generator is being used on 1952 models. This generator model No. 1102769 has a new appearance and other structural differences (Fig. 5). However, it has the same armature and performance specifications as the late 1951 generator.

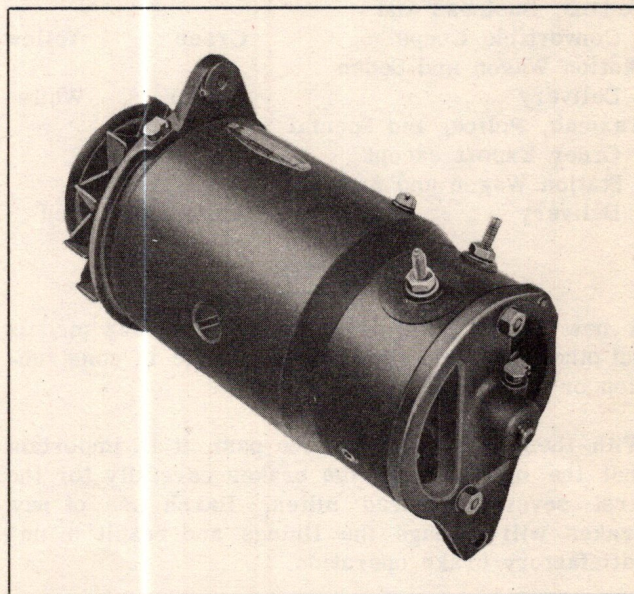
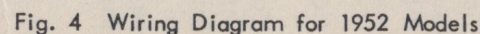


Fig. 5 New Extruded 45 Ampere Generator

The armature used in late 1951 and on the 1952 extruded frame generator is referred to as an alternate wound armature. It gets this name since it is manufactured with an unequal number of turns in adjacent slots. Pontiac armatures contain alternate 2 and 3 turn windings and because of this feature are referred to as 2-1/2 turn armatures.

The alternate wound or 2-1/2 turn armature will show a regular pattern of variation in readings when tested bar to bar on a growler. On an armature of this type, readings will be low for 2 bars,



high for 2 bars, low for 2 bars, etc. around the commutator. A damaged winding will cause a wide deviation from the regular pattern which can be readily noted. The regular variation in readings on the alternate wound armature is normal for this design and does not indicate a defect.

Alternate wound and the previous uniform wound armatures should never be interchanged since such practice may cause burn-outs or run down batteries. Always use the armature specified in the Parts Catalog for the generator being serviced.

The 1952 extruded frame generator is used with model No. 1118725 regulator which was used in late 1951. All generator and regulator specifications and adjustments are the same as shown in the August 1951 Service Craftsman News. The generator performance curve is shown in Fig. 6.

GENERATOR SERVICE

Generator service is generally the same as on past generators. However, the extruded frame and the elimination of the inspection cover band necessitate some changes in service procedures.

COMMUTATOR CLEANING

Commutator and brush inspection can be made through openings in the end frame. When making this inspection with generator on car, it may help to use a mirror. If commutator is dirty, it may be cleaned with a brush seating stone or No. 00 sandpaper.

CAUTION: Never use emery cloth for this purpose.

If commutator is rough, out of round, or has high mica, it should be removed from the generator and turned down on a lathe as outlined on page 12-13 of the 1949-50 Pontiac Shop Manual.

BRUSH REPLACEMENT

In order to replace brushes on the extruded frame generator it is necessary to remove the generator from the car. Since there is no inspection cover band the commutator end frame must be removed to gain access to brushes.

BRUSH SPRING TENSION

The generator must be removed from car in order to check brush spring tension. With generator on bench, hook the end of the specially constructed spring scale J-5184 under end of brush tension arm next to brush and check tension reading as shown in Fig. 7. Spring tension should be approximately 28 oz. Correct if necessary by bending spring stop or installing new spring.

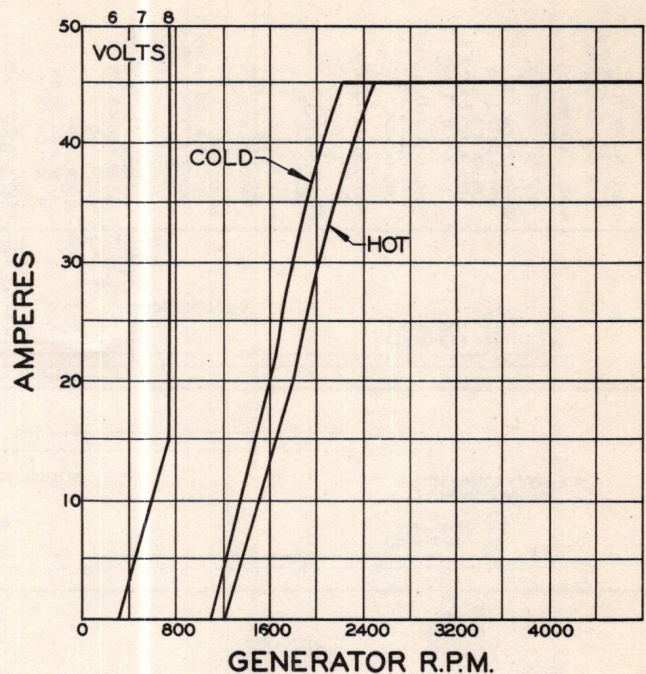


Fig. 6 Performance Curve for 45 Ampere Generator



Fig. 7 Measuring Brush Spring Tension

BRUSH HOLDER REPLACEMENT

If it should become necessary to replace brush holders on the extruded frame generator, the following procedure should be used. Refer to Fig. 8 for generator construction.

1. Remove generator from car and disassemble by removing thru bolts and separating end frames from field frame.
2. Disconnect brush leads and remove brushes, brush arms, brush springs and plain washers.
3. Remove armature terminal.

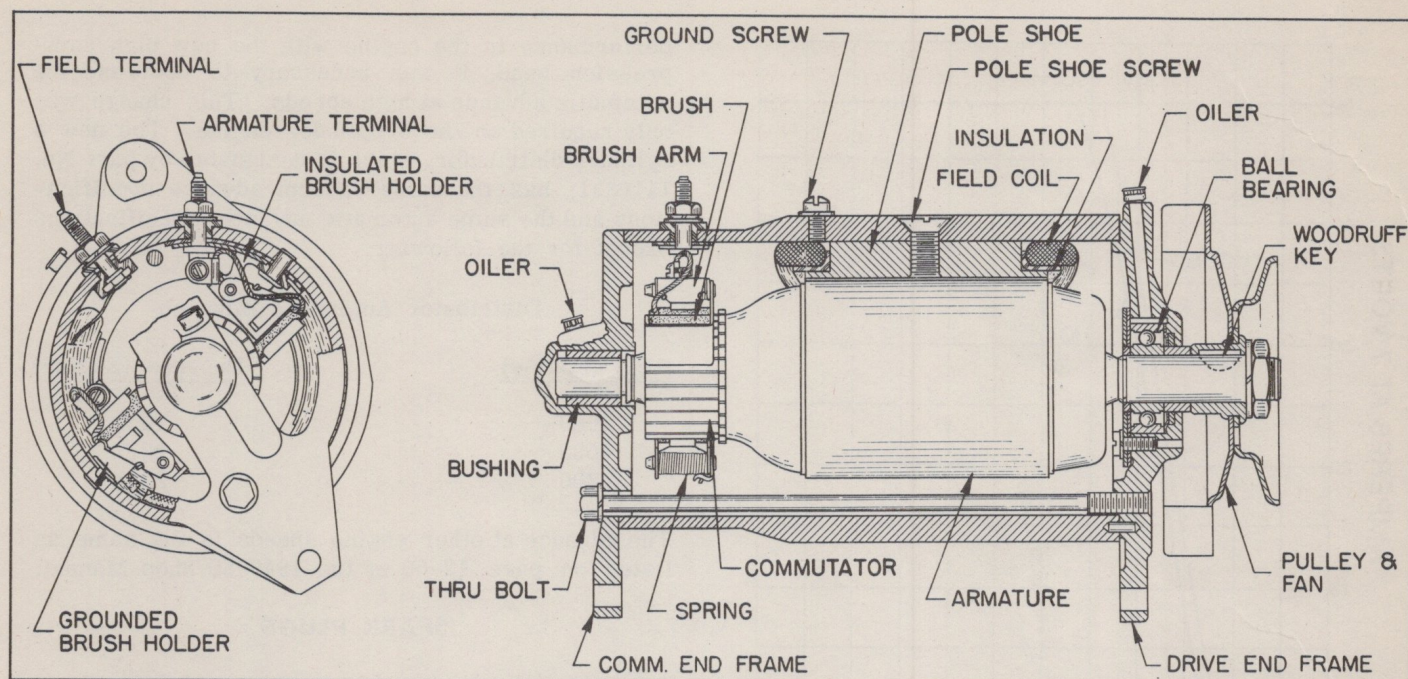


Fig. 8 Construction of 45 Ampere Generator

4. Drill out brush holder attaching rivets and remove brush holders.

5. Attach new ground brush holder with screw, nut and lockwasher (Fig. 9).

6. Attach new insulated brush holder as follows:

a. Place insulating bushing on attaching screw with flat side of bushing against screw head.

b. Locate bushing and screw in brush holder and force flat-sided hole of insulation strip over screw threads. Tight fit of screw in insulation strip will hold assembly together.

c. Locate assembled parts in field frame and fasten finger tight with nut and lockwasher. Assembly armature terminal stud from inside field frame by threading through slot in brush holder and round hole in insulation strip. Install insulator, plain washer, lockwasher and nut on armature terminal and tighten both armature terminal nut and brush holder attaching nut securely.

7. Install plain washers, brush arms and springs and brushes in brush holders. Attach insulated brush lead to armature terminal and grounded brush lead to terminal on brush holder.

8. Check brush spring tension as shown in Fig. 7 and correct if necessary by bending spring stop on brush holder.

9. Install end frames on field frame and reassemble thru bolts.

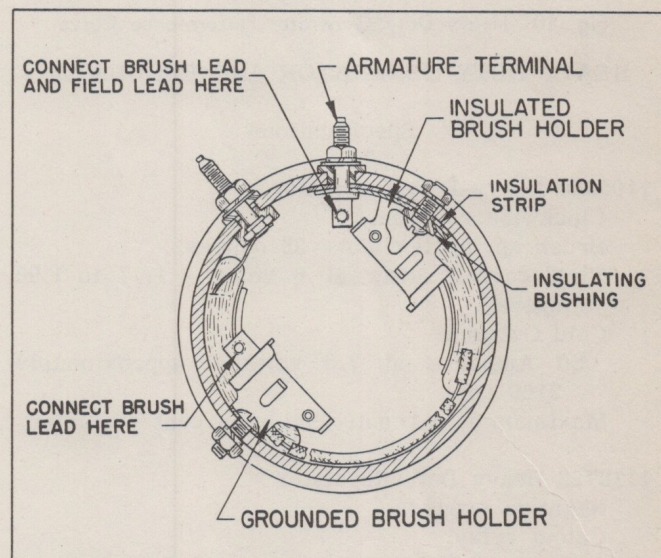


Fig. 9 Location of Ground Brush Holder

HEAVY DUTY GENERATOR AND REGULATOR

A special equipment heavy duty generator (Part No. 1105900) is available for installation in cars which have unusually heavy electrical loads. This generator has a 50 ampere maximum output (Fig. 10) which is reached at a lower speed than the maximum output of the standard generator, but is not damaged by high speed operation. It is used with model 1118722 regulator and a special 3" pulley which increases generator speed for a given car speed. Additional electrical capacity can also be attained by using a heavy duty (19 plate) battery.

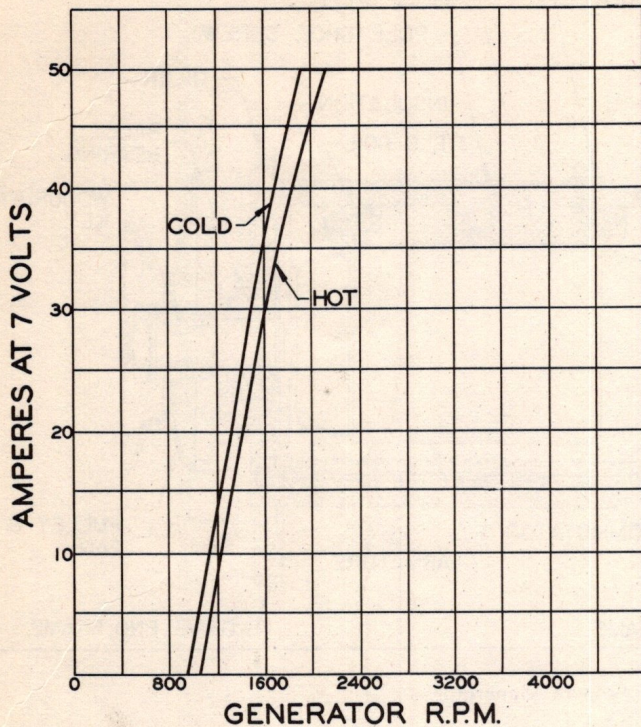


Fig. 10 Heavy Duty Generator Performance Curve

HEAVY DUTY GENERATOR AND REGULATOR

Specifications

1105900 Heavy Duty Generator

- Clockwise rotation.
- Brush spring tension - 28 ounces.
- Field current draw at 6 volts - 1.77 to 1.93 amperes.
- Cold Output
 - 50 Amperes at 7.0 volts at approximately 2100 rpm
- Maximum output controlled by current regulator.

1118722 Heavy Duty Regulator

- Negative ground.
- Cutout relay.
 - Air gap - .020 inches.
 - Point opening - .020 inches.
 - Voltage range - 5.9 - 6.7 volts.
 - Adjust to 6.4 volts.
- Voltage regulator.
 - Air gap - .075 inches.
 - Voltage range - 6.8 - 7.5 volts.
 - Adjust to 7.2 volts.
- Current Regulator.
 - Air gap - .075 inches.
 - Current setting range - 48-52 amperes.
 - Adjust to 50 amperes.

DISTRIBUTOR

The 1952 8 cylinder distributor is the same as 1951 in all respects except the centrifugal or automatic advance curve. In order to provide the maximum

performance in the engine with the new high compression head, it was necessary to decrease the automatic advance at high speeds. This change was only required on the 8 cylinder engine. The new 8 cylinder distributor, which is designated by part No. 1110831, has the same vacuum advance specifications and the same automatic advance specifications except for the following:

Distributor Automatic Advance

<u>RPM (Engine)</u>	<u>Degrees (Engine)</u>
3600	19.5
4000	22.0
4200	22.0

The advance at other engine speeds is the same as listed on page 12-60 of the 1949-50 Shop Manual.

SPARK PLUGS

A new type spark plug designated as 44-5 has been released for 1952 production on both 6 and 8 cylinder engines. This new spark plug has been designed to provide better performance and durability with the compression ratio and distributor used on the 1952 engines. Spark plug gaps should be adjusted to .025" as they were on previous models. New rubber rain coats are used on the spark plug terminals because of the new shape of the upper porcelain.

NOTE: The regular AC 45 spark plug should be used in all 1951 and earlier engines.

SPEEDOMETER DRIVEN GEAR

The speedometer driven gears on 1952 model cars are made of a colored nylon plastic material and will match the color code for the rear axle ratio. The number of teeth on each gear will be indicated by raised characters near the hole in the gear.

These colors are as follows:

<u>Speedometer Driven Gear Ratio</u>	<u>Rear Axle Ratio</u>	<u>Color Identification</u>
Synchro-Mesh Transmission		
20-7	39:10	Red
21-7	41:10	Green
22-7	43:10	Natural
19-7	40:11	Light Violet

Hydra-Matic Transmission

21-8	40:11 (1951)	Dark Violet
18-8	40:13 (1952)	Yellow

1951

SERVICE CRAFTSMAN NEWS

INDEX

JANUARY THROUGH DECEMBER ISSUES

Withdraw this index from your December Service Craftsman News and place it in front of the 1951 issues in your "News" binder for ready reference. Abbreviations are in accordance with those on page 15 of the 1952 Parts Catalog.

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
ACCESSORIES				CARBURETOR			
Antenna, Mtr. Oper.	Dec. '51	12	93	Buzz Fix 8 Cyl.	Sept. '51	9	52
Dir. Signal Arrows	July '51	7	42	Fix 6 Cyl.	Sept. '51	9	49
Hand Brake Warn. Lamp	Dec. '51	12	95	Identification 6 Cyl.	Apr. '51	4	26
W/shield Washer Solvent	July '51	7	42	Ident. Correction 6 Cyl.	June '51	6	34
ANTENNA, MOTOR OPERATED				Metering Rod Discs	Oct. '51	10	59
Alignment	Dec. '51	12	95	Rochester 6 Cyl.	Apr. '51	4	26
Assembly	Dec. '51	12	94	Specs. 6 Cyl.	Apr. '51	4	26
Disassembly	Dec. '51	12	93	CATALINA			
Install on Car	Dec. '51	12	94	Sun Shade Align.	Feb. '51	2	14
Operation	Dec. '51	12	93	CHROME (New Type)			
Removal from Car	Dec. '51	12	93	Care	June '51	6	33
Trouble Diagnosis	Dec. '51	12	95	Maintenance	June '51	6	33
BATTERY				Refinishing	June '51	6	33
Sp. Gravity '50 vs '51	Feb. '51	2	12	CLOCK			
BODY				Change	Mar. '51	3	19
Catalina Side Roof Rail				CONVERTIBLE			
Sealing, Strip, 1952	Dec. '51	12	98	Back Window Creases	Oct. '51	10	58
Convertible Hydro-Lectric				Back Window Polish	July '51	7	41
Systems	Dec. '51	12	97	Hyd. Pump & Motor Wiring	Apr. '51	4	24
Corrosion Resist. Coat	Jan. '51	1	2	Hydro-Lectric Hyd. Fluid	July '51	7	43
Outer Rocker Panel Repl.	July '51	7	43	Rear Qtr. Leaks '50	Jan. '51	1	4
Paint Colors, 1952	Dec. '51	12	86	Top Switch Opr.	Oct. '51	10	60
Rear Seats Install	Feb. '51	2	14	Top Switch Wiring	Feb. '51	2	13
BRAKES				Wiring Installation	Apr. '51	4	25
Drum Spring Package	June '51	6	37	DIFFERENTIAL			
Handicap Equip.	Aug. '51	8	47	HM Ratio, 1952	Dec. '51	12	86
Linings, 1952	Dec. '51	12	87				
Linings, Optional	Apr. '51	4	23				
Special Spring Tool	June '51	6	37				
Squeak Fix	Oct. '51	10	59				
Warning Lamp	Dec. '51	12	95				

SERVICE CRAFTSMAN INDEX

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
DISTRIBUTOR				FUEL			
Lubrited Drive Gear	Mar. '51	3	18	Economy Booklet	July '51	7	41
Point Spring Tension	Mar. '51	3	19	Gauge Test	July '51	7	43
Specs.	Dec. '51	12	92				
DOOR				FUEL PUMP			
Lock Lube Caution	Sept. '51	9	51	New Pump Repair	Oct. '51	10	53
DOOR, FRONT				GASOLINE TANK			
Lock Striker Fix	June '51	6	40	Leaks and Rattles	Nov. '51	11	83
DOOR, REAR				GAUGES			
Push Button Bind	Sept. '51	9	52	Fuel Test	July '51	7	43
ELECTRICAL				GENERAL INFORMATION			
Battery Specs.	Jan. '51	1	7	Speed Rel. (3.08 axle)	Dec. '51	12	86
Battery Specs. (Cor.)	Feb. '51	2	12				
Conv. Top Sw. Opr.	Oct. '51	10	60	GENERATOR			
Conv. Top Sw. Wiring	Feb. '51	2	13	Armature check	Oct. '51	10	58
Conv. Wiring	Apr. '51	4	25	Brush Holder Repl.	Dec. '51	12	90
Dist. Gear Lubrited	Mar. '51	3	18	Brush Repl.	Dec. '51	12	90
Dist. Specs.	Dec. '51	12	92	Commutator Cleaning	Dec. '51	12	90
Dist. Spring Tension	Mar. '51	3	19	Heavy Duty	Dec. '51	12	91
Gen. Armature Check	Oct. '51	10	51	New 45 Ampere	Dec. '51	12	88
Gen. Heavy Duty	Dec. '51	12	91	Service	Dec. '51	12	90
Gen., New	Aug. '51	8	45	Special Tool	Dec. '51	12	90
Gen. New 45 Amp.	Dec. '51	12	88	Specs. Heavy Duty	Dec. '51	12	92
Gen. Specs., New	Aug. '51	8	45	Specs. New	Aug. '51	8	45
Gen. Specs., New	Dec. '51	12	92	Trouble Diagnosis	Dec. '51	12	97
Radio Grd. Strap Rem.	Apr. '51	4	23				
Radio Schematic	Aug. '51	8	46	HAND BRAKE WARNING LAMP			
Radio Specs.	Aug. '51	8	47	Adjustment	Dec. '51	12	95
Spark Plugs, New	Dec. '51	12	92	HANDICAP EQUIPMENT			
Tone-Up	Jan. '51	1	3	Vacuum Brakes	Aug. '51	8	47
Tune-Up Diagnosis	May. '51	5	31	HEATER			
Volt. Reg., New	Aug. '51	8	45	Removal Tip	Feb. '51	2	11
Volt. Reg. Specs.	Aug. '51	8	45	Temp. Cont. Valve Pkg.	Feb. '51	2	15
Wiring Diagram, 1952	Dec. '51	12	88	HOOD			
ENGINE				Hinge R & R	Sept. '51	9	50
Casting Block No.	Jan. '51	1	2	Special Tool	Sept. '51	9	50
Compression Ratios	Dec. '51	12	87	HYDRA-MATIC			
Cooling - 1951	Feb. '51	2	12	1952 Model Info.	Nov. '51	11	62
Cooling System	Aug. '51	8	47	Axle Ratio, 3.08	Dec. '51	12	86
Cyl. Head Leaks	Jan. '51	1	2	Band Adj. Chg.	May '51	5	31
Fuel Pump Repair	Oct. '51	10	53	Changes for 1951	Sept. '51	9	49
Oil Seal Ident.	Jan. '51	1	3	Changes for 1952	Nov. '51	11	62
Rear Main Oil Seal	Jan. '51	1	3	Compensator Piston	Sept. '51	9	49
Thermostats	June '51	6	39	Diagnosis	Jan. '51	1	1
Water Pump Chg.	Sept. '51	9	51	Diagnosis	Feb. '51	2	9
Water Pump Chg.	Dec. '51	12	87				
Water Pump Pkg.	Feb. '51	2	11				
FLAT RATE							
New Manual	Mar. '51	3	20				
Radio Rear Speaker	Feb. '51	2	14				
Time Allowances	June '51	6	36				
FRONT SUSPENSION							
Return of Coil Springs	Feb. '51	2	16				

SERVICE CRAFTSMAN INDEX

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
HYDRA-MATIC (cont.)				PAINT (cont.)			
Dowel Pin Reaming	Feb. '51	2	12	Sun Shade (Under-Side)	May '51	5	32
Fluids	Oct. '51	10	59	Test for Silicone	Mar. '51	3	17
Flywheel Hsg. Align. Tool	Dec. '51	12	96	Wheel Disc	May '51	5	32
Front Servo. Exh. Valve	Sept. '51	9	49				
Gasket Discontinued	Feb. '51	2	10	PARTS TAG			
Parts, Identify	Mar. '51	3	18	On Returned Material	Apr. '51	4	28
Rear Drum Dowel							
Removed	June '51	6	34	POEMS			
Removal Tip	Feb. '51	2	11	Clinching The Bolt	Feb. '51	2	11
Retainer - Rev. Clutch				Think Well of Your Job	Dec. '51	12	97
Rel. Spring	June '51	6	38				
Re-use of Parts	Feb. '51	2	15	PRODUCT INFORMATION REPORTS			
Reverse				Engine Cast. Number	Feb. '51	2	10
Ball Check Valve	Oct. '51	10	59				
Checking Oil Pressure	Jan. '51	1	1	RADIATOR			
Locating Leaks	Jan. '51	1	1	Coolant Level Check	Aug. '51	8	47
Piston Change	June '51	6	35	Grille Const. Chg.	Feb. '51	2	11
Side Pan Bolts, Remove	Mar. '51	3	18	Pressure Cap	Feb. '51	2	12
Special Tool	June '51	6	38	Upper Tank Change	June '51	6	34
Special Tools	Dec. '51	12	96				
Torus Check Valve	Feb. '51	2	12	RADIATOR GRILLE			
Torus Cover Marking	Sept. '51	9	49	Construction Chg.	Feb. '51	2	11
Valve Body, Assy. of	Dec. '51	12	95	Refinish New Type			
Warm-Up	Oct. '51	10	59	Chrome	June '51	6	33
HYDRAULIC SYSTEMS				RADIO			
Conv. Fluid	July '51	7	43	Deviation	Aug. '51	8	47
Coupling & Fit. Sealer	Sept. '51	9	51	Ground Strap Removed	Apr. '51	4	23
				Min. Tube Schematic	Aug. '51	8	46
INSTRUMENTS				Noise Checks	Apr. '51	4	23
Speedo. Driven Gears	Dec. '51	12	92	Rear Speaker Flate Rate	Feb. '51	2	14
				Rear Speaker Install.	Mar. '51	3	19
LOCKS				Rear Speaker Warranty	Feb. '51	2	14
Door Lube Caution	Sept. '51	9	51	Specs., 984688	Aug. '51	8	47
Push Button Bind	Sept. '51	9	52				
				REAR SUSPENSION			
LUBRICATION				HM Axle Ratio, 1952	Dec. '51	12	86
Door Lock Caution	Sept. '51	9	51	Speed Relations			
				(3.08 Axle)	Dec. '51	12	86
MUFFLER				U-Joint Chg.	Dec. '51	12	87
Noise	June '51	6	35				
				REGULATOR			
NEW MODEL (1952)				Heavy Duty Gen.	Dec. '51	12	91
Information	Dec. '51	12	86	Specs. Heavy Duty	Dec. '51	12	92
OWNER'S SERVICE GUIDE				REPAIR TIP			
Correction	Sept. '51	9	49	Carb. 6 Cyl.	Sept. '51	9	49
				Carb. Buzz, 8 Cyl	Sept. '51	9	52
PAINT				Heater Removal	Feb. '51	2	11
Change of Number	Jan. '51	1	3	Hood Hinge R&R	Sept. '51	9	50
Clear Enamel for Chrome	June '51	6	34	HM Removal	Feb. '51	2	11
Coating Body Panels	Jan. '51	1	2	HM Side Pan Bolts	Mar. '51	3	18
Colors, 1952	Dec. '51	12	86				
Hub Cap	May '51	5	32	SEAT COVERS			
Material Cost	Mar. '51	3	20	Install. & Care	Feb. '51	2	13
Refinish New Type Chrome	June '51	6	33				
Removing Silicone Polish	Mar. '51	3	17				

SERVICE CRAFTSMAN INDEX

SUBJECT	DATE	ISSUE	PAGE	SUBJECT	DATE	ISSUE	PAGE
SEAT, FRONT				SPRINGS, FRONT			
Fix for Comfort	Oct. '51	10	60	Check	Feb. '51	2	16
Plastic Adj. Knob	Sept. '51	9	51				
SERVICE CRAFTSMAN				SPRINGS, REAR			
Activity	Jan. '51	1	8	Color Codes	July '51	7	44
Awards, 10 Yr.	Apr. '51	4	21	Color Codes	Dec. '51	12	87
Exam. #51 - 1	Jan. '51	1					
Exam. #51 - 2	Mar. '51	3		STATION WAGON			
Exam. #51 - 3	May '51	5		Lift Gate Support	July '51	7	42
Exam. #51 - 4	July '51	7		Operation Caution	Aug. '51	8	48
Exam. #51 - 5	Sept. '51	9					
Last Call	Oct. '51	10	59	STEERING			
Membership Summary	Apr. '51	4	22	Special Tool	Dec. '51	12	87
New Model School	Nov. '51	11	84				
Schools and Awards	Oct. '51	10	56	SUN VISOR			
SERVICE PROMOTION				New Trim Plate	Sept. '51	9	51
AAA Report	June '51	6	34	Proper Installation	June '51	6	36
Accurate Estimates	Oct. '51	10	59	Special Tool	June '51	6	36
Common Courtesy	Feb. '51	2	15				
Electrical Tone-Up	Jan. '51	1	3	TAGS			
It's Fall Again	Sept. '51	9	51	Form 728	Apr. '51	4	28
New TUD Sheet	May '51	5	31				
Promptness	Apr. '51	4	27	TIRES			
Sell Safety	May '51	5	29	Extra Mileage	May '51	5	31
Suggestion Award	June '51	6	38	Inflation Pointers	May '51	5	31
Using Factory Parts	June '51	6	39	Tire Switching	May '51	5	31
Vacation Bound	July '51	7	43				
SPARK PLUGS				U-JOINTS			
New	Dec. '51	12	92	Change	Dec. '51	12	87
SPECIAL TOOLS							
Essential 1952	Dec. '51	12	96	VOLTAGE REGULATOR			
Gen. Spring Tension	Dec. '51	12	90	Specs.	Aug. '51	8	45
Hood Hinge	Sept. '51	9	50	Specs. Heavy Duty	Dec. '51	12	92
HM Flywheel Hsg. Align	Dec. '51	12	96				
HM Ret. Rev. Clutch	June '51	6	38	WARRANTY			
HM Valve Body	Dec. '51	12	95	Radio Rear Speaker	Feb. '51	2	14
Outside Sun Visor	June '51	6	36				
Steering Gear	Dec. '51	12	87	WATER PUMP			
Washer Improves Tool	Apr. '51	4	27	Change	Sept. '51	9	51
Water Pump	Dec. '51	12	87	Change	Dec. '51	12	87
SPECIFICATIONS				New Pkg.	Feb. '51	2	11
Battery, '50 vs '51	Jan. '51	1	7	Special Tool	Dec. '51	12	87
Battery, '50 vs '51, Cor.	Feb. '51	2	12				
Carburetor, 6 Cyl.	Apr. '51	4	26	WHEELS			
Distributor	Dec. '51	12	92	New Plug	Feb. '51	2	15
Generator	Aug. '51	8	45				
Gen. Heavy Duty	Dec. '51	12	92	WINDSHIELD			
Radio, 984688	Aug. '51	8	47	Washer Solvent	July '51	7	42
Voltage Regulator	Aug. '51	8	45				
Volt. Reg. Heavy Duty	Dec. '51	12	92	WIRING DIAGRAM			
SPEEDOMETER				1952 Models	Dec. '51	12	88
Driven Gears	Dec. '51	12	92				

ACCESSORIES**PONTIAC MOTOR
OPERATED ANTENNA****OPERATION**

The electric antenna operating switch is located to the right of the steering column below the cigar lighter. To raise antenna sections, lift operating switch lever up. To lower the sections, push switch lever down. When lever is released it returns automatically to the "Off" position. Antenna sections can be raised or lowered to any intermediate height by releasing switch lever when desired position is reached.

CAUTION: Do not hold switch in operating position beyond full travel of antenna (up or down) any longer than necessary to make sure antenna has reached the end of its travel. Such practice would result in motor overload and excessive wear of the drive mechanism.

For best operating results, keep antenna sections clean by wiping occasionally with a damp cloth to remove road film or dirt which may accumulate.

REMOVAL FROM CAR

1. Disconnect motor cable connectors from switch wires on engine side of dash and remove ground wire spade connector.
2. Disconnect antenna lead-in cable from antenna tube under fender.
3. Remove two fender to antenna bracket bolts.
4. Remove upper mounting nut with spanner wrench J-5185-1 and remove bakelight adapter (Fig. 11).
5. Tilt bottom of antenna away from fender and withdraw from grommet in top of fender, removing complete assembly from beneath fender.

DISASSEMBLY

1. Remove tube brace holding motor cable and aluminum tube.
2. Unscrew nut holding aluminum tube to motor and carefully slide tube down away from motor to remove nylon strip from tube (Fig. 12).
3. Remove three body tube to motor cover screws and remove body tube.
4. Remove mast sections and nylon strip assembly from motor as follows:

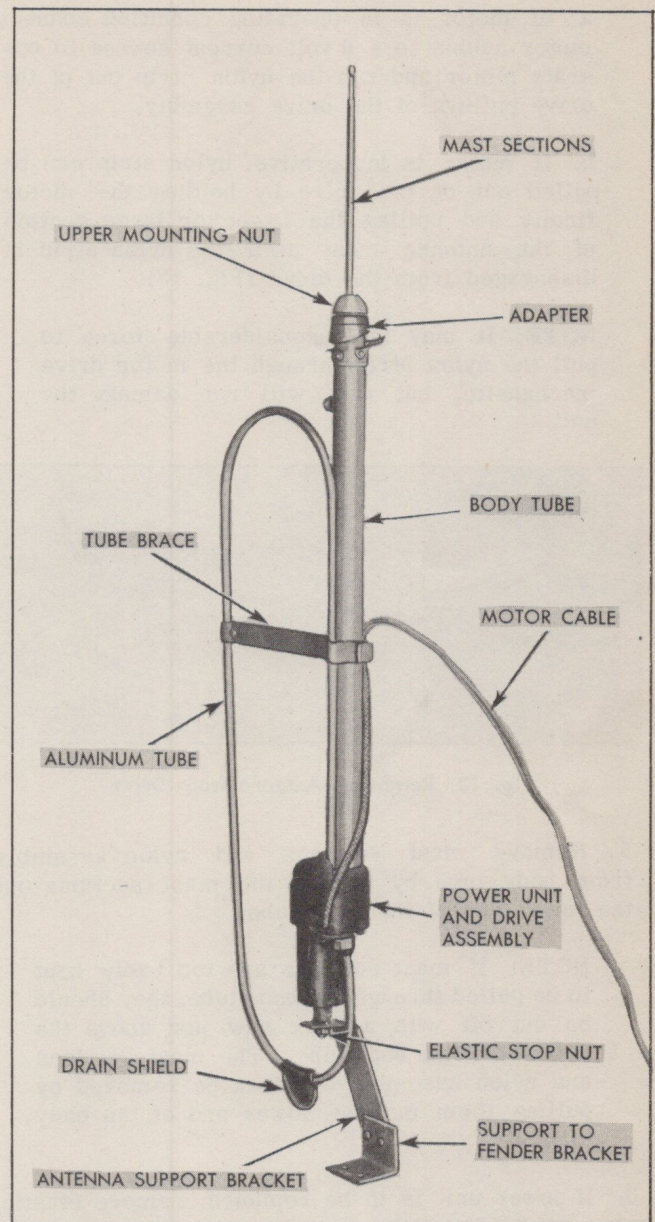


Fig. 11 Part Nomenclature for New Antenna

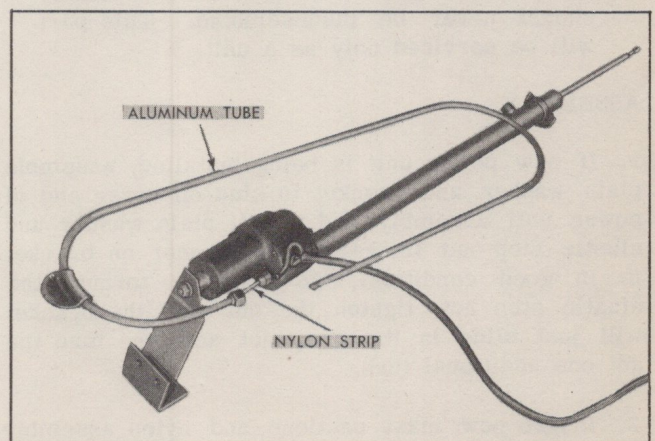


Fig. 12 Aluminum Tube Detached

a. If motor is in operating condition connect motor cables to a 6 volt current source to operate motor and run the nylon strip out of the drive pulleys of the drive assembly.

b. If motor is inoperative, nylon strip can be pulled out of the drive by holding the motor firmly and pulling the lower or large section of the antenna mast until the nylon strip is disengaged from the drive (Fig. 13).

NOTE: It may take considerable force to pull the nylon strip through the motor drive mechanism, but this will not damage the unit.

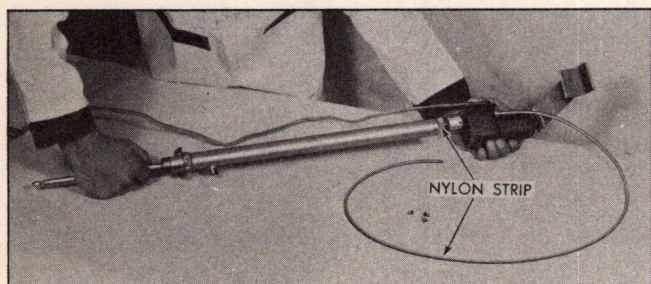


Fig. 13 Removing Antenna from Drive

5. Remove mast sections and nylon assembly from body tube by sliding the mast sections out the lower end of the body tube.

NOTE: If mast sections are too badly bent to be pulled through the body tube, they should be cut off with a hack saw just above the tube end of the body tube. The mast sections and nylon assembly can then be removed by pulling them out the lower end of the body tube.

6. If power unit is to be replaced, remove elastic stop nut holding antenna support bracket to power unit and drive assembly.

CAUTION: Power unit and drive assembly should never be disassembled. This part will be serviced only as a unit.

ASSEMBLY

1. If new power unit is being installed, assemble plain washer and bracket to stud on lower end of power unit assembly and install plain washer and elastic stop nut (make sure grommet on bracket is in good condition). To properly torque the elastic stop nut, tighten the nut until the bracket will just slide in the grommet and then turn the nut one additional turn.

2. Insert new mast sections and nylon assembly into the body tube by entering the upper section of the antenna through the lower end of the tube.

Guide the antenna section through the bushing and connector (the part which resembles a fuse clip) in the body tube by watching through top end while inserting mast sections.

CAUTION: Extreme caution must be used when pushing the upper end of the antenna mast through the connector to prevent damage to the connector.

When the assembly is pushed in as far as it will go the lower insulator should be installed in the tube by slipping it over the nylon strip.

3. Install body tube assembly and mast sections on motor as follows:

a. Insert end of nylon strip into opening in motor assembly and connect motor terminals to 6 volt source to operate motor and drive unit. This will draw the nylon strip through the motor.

b. While nylon strip is being drawn through motor drive unit, guide mast sections and body tube into place on top of motor (see Fig. 13).

c. Install three body tube to motor cover screws.

4. Inspect aluminum tube to make sure it is free of any obstruction due to mutilation or broken nylon strip. Check hole in drain shield on aluminum tube to be certain it is open. Insert nylon strip in tube, position tube on antenna assembly as shown in Fig. 11 and fasten aluminum tube to motor attaching nut.

5. Install tube brace on aluminum tube so that tube is clamped on one side of body tube and motor cable on opposite side as shown in Fig. 11.

6. Operate antenna for 10 to 15 complete cycles to make certain it operates properly.

INSTALLATION ON CAR

1. Install antenna assembly on car by inserting the upper end of the antenna through the grommet and hole in the fender from beneath car.

2. Install adapter and upper mounting nut on upper end of antenna. Tighten mounting nut by turning it until it is finger tight and then turning it one complete revolution using spanner wrench J-5185-1.

3. Install antenna mounting bracket to fender bolts and tighten.

4. Connect antenna lead-in to body tube.

5. Connect motor cable terminals to wire connectors from which they were removed and connect spade terminal (ground) to main wire harness retainer screw from which it was removed.

6. Operate antenna switch on instrument panel of car to make certain antenna operates properly.

ALIGNMENT

Check to see that antenna mast is vertical. The lower end of the antenna can be moved sideways or forward and back to secure the proper alignment.

The holes in the lower end of antenna support (where support bolts to fender bracket) are elongated for fore and aft adjustment. The hole in the upper end of the antenna support is elongated so that the rubber grommet can be moved sideways for alignment.

Sideways alignment can be made by loosening elastic stop nut and moving lower end of motor in elongated hole of antenna support. Be sure that elastic stop nut is properly retightened as covered in step 1 under "Assembly", page 94.

TROUBLE DIAGNOSIS

In case of failure to operate, check for following possible sources of trouble:

1. Examine electrical connections at switch and under hood to make sure they are securely tightened. Test live cable at switch with test lamp or meter. See that 30 ampere fuse in line holder at top of accessory block is not burned out.
2. Stalling or slowly operating motor may be caused by bent antenna sections.
3. If motor fails to operate, remove complete antenna from car to service according to instructions.
4. Excessive tightening of elastic stop nut at bottom of motor or mounting nut on fender will result in excessive operating noise in the car.

HAND BRAKE WARNING LAMP

The Hand Brake Warning Lamp is a new accessory of 1952. It is mounted with the hand brake linkage at the left side of the instrument panel. The warning lamp which is visible below the instrument panel to the left of the hand brake handle should flash continuously when the ignition switch is turned on and the hand brake handle is pulled out 2 notches or more.

ADJUSTMENT OF HAND BRAKE WARNING LAMP

Warning lamp should operate when handle is pulled out 2 notches. If it operates sooner than this or will not operate until the handle is pulled out farther than 2 notches, adjust the striker which is mounted on the hand brake lever (lever which fastens to hand brake handle)

HYDRA-MATIC TRANSMISSION

ASSEMBLY OF VALVE BODY

Experience has shown that it is very difficult to position the front valve body against the inner valve body because of the many springs and parts which must be lined up during this assembly. This job is made much easier by means of a special regulator end casting assembling clamp which can be used to hold the spacer plate in position on the inner valve body while the front valve body is being installed.

In order to make use of this new tool, it will be necessary to assemble the inner valve body and front valve body in a different order than described in the November Service Craftsman News. This assembly should be made as follows.

ASSEMBLY OF INNER AND FRONT VALVE BODY

1. Install 2-3 auxiliary valve and 2-3 governor sleeve. Work in carefully to prevent cocking on sleeve counterbore. Shake inner valve body assembly to make certain 2-3 auxiliary valve is free in bore.
2. Install 2-3 shift valve, spring and spring guide pin; 1-2 shift valve and spring; 3-4 shift valve and 3-4 auxiliary shift valve spring.
3. Install 3-4 lockout valve and 3-4 shift valve spring. Valve and spring will protrude from bore. However, with the inner valve body assembly lying on a clean, flat surface, valve and spring will remain in place.
4. Install 3-2 detent plug in the front valve body.
5. Install 3-2 detent plug plate on front valve body with two attaching screws.
6. Install TV regulator valve and spring in front valve body assembly.
7. Install 1-2 and 3-4 regulator plugs in front valve body assembly.
8. Push 3-4 lockout valve and spring into bore in inner valve body and position front valve body plate on end of inner valve body holding it tightly against the valve body to retain the 3-4 lockout valve and spring.
9. Slide tool J-5157 over the inner valve body so that the lips on the open end of the clamp will hold the front valve body spacer plate in position (Fig. 14).
10. Lay the inner valve body assembly on a clean, flat surface and slide the front valve body into position against the inner valve body (Fig. 15).

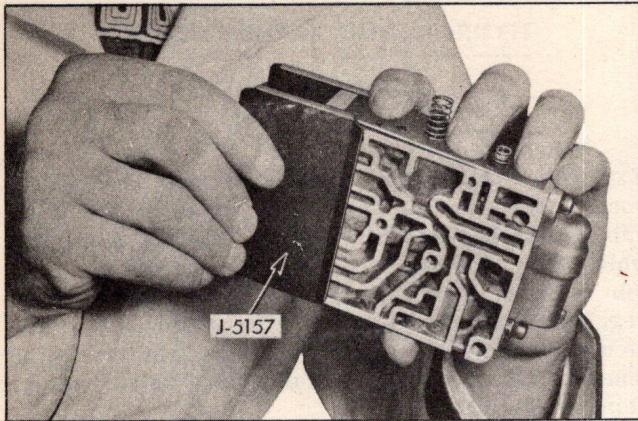


Fig. 14 Using Special Tool J-5157

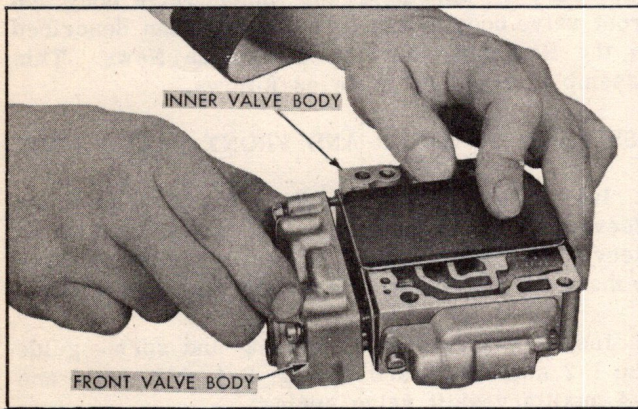


Fig. 15 Assembly of Inner and Front Body

Be sure to guide the 2-3 shift valve spring and 1-2 regulator spring into place as front valve body is being assembled.

11. Install three screws in front valve body and tighten just enough to hold front valve body in place. Slide clamp off of inner valve body and then proceed to tighten the three front valve body screws.

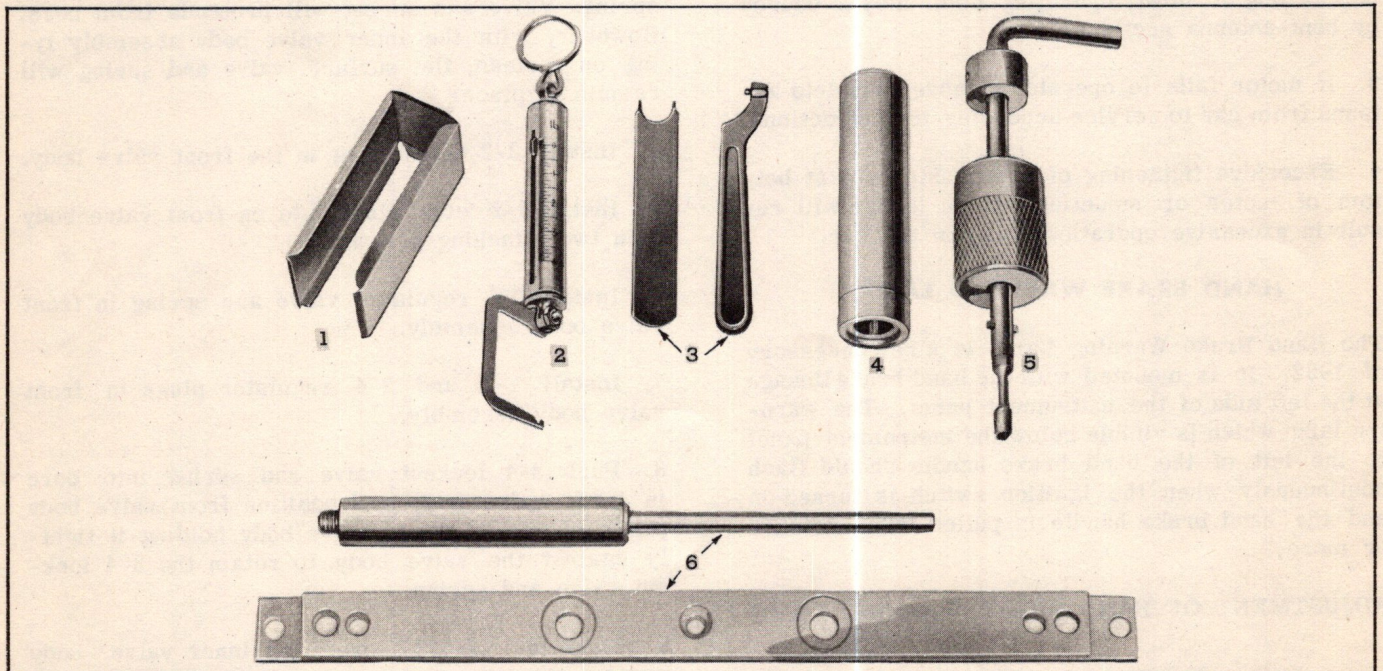
12. Install 3-4 and 2-3 governor plugs, 2-1 detent spring and plug, and rear valve body assembly and spacer plate on inner valve body as covered in Steps 7, 8, 9 and 10 under ASSEMBLY OF VALVE BODY in the November Service Craftsman News.

Continue assembly of valve body as covered in Steps 17 through 23 under ASSEMBLY OF VALVE BODY in the November Service Craftsman News.

FLYWHEEL HOUSING ALIGNMENT TOOL SET

Tools J-5128 shown in Fig. 16 have been designed for easy and accurate location of the dial indicator when checking flywheel housing alignment. The flat bar bolts either to the crankshaft flange or to the flywheel, and the dial indicator stud screws into the center hole in the flat bar.

It is essential that this tool set be used for checking alignment any time a flywheel housing is replaced or transmission wear or vibration indicates the possibility of misaligned housing.



1. J-5157 Regulator End Casting Assembling Clamp
2. J-5184 Armature Brush Tension Checking Scale
3. J-5185 Electric Antenna Nut Wrench Set

4. J-5175 Water Pump Shaft and Bearing Assembly Tool
5. J-5177 Line Exhaust Valve Sleeve Remover
6. J-5128 Flywheel Housing Alignment Tool Set

Fig 16 1952 Pontiac Essential Service Tools

Think Well of Your Job

Wherever you're working, in office or shop,
 And however far you may be from the top,
 And though you may think you're treading the mill,
 Don't ever belittle the job that you fill:
 For however little your job may appear,
 You're just as important as some little gear
 That meshes with others in some big machine
 That helps keep it going--though never is seen.
 They could do without you--we'll have to admit--
 But business keeps on when the big fellows quit!
 And always remember, my lad, if you can,
 The job's more important--Oh, yes--than the man!
 So if it's your hope to stay off of the shelf,
 Think more of your job than you do of yourself.
 Your job is important--don't think it is not--
 So try hard to give it the best that you've got!
 And don't ever think you're of little account--
 Remember, you're part of the total amount.
 If they didn't need you, you wouldn't be there--
 So, always, my lad, keep your chin in the air.
 A digger of ditches, mechanic, or clerk--

THINK WELL OF YOUR
 COMPANY, YOURSELF
 AND YOUR WORK!

Anonymous

GENERATOR TROUBLE DIAGNOSIS

Generator models 1102750 and 1102775 on 1951 cars may have the field cross-over lead touching the insulated brush holder (Fig. 17). A short circuit at this point will cause excessive field current resulting in burned regulator points, high generator cut-in speed, failure to charge, and run-down batteries.

On any complaint of run-down batteries, remove the generator cover band and check the field cross-over lead to see that it is clear of the insulated brush holder. If the lead is near or touching the brush holder, push it toward the field coils but not against the frame or armature.

Where short circuits have occurred, always check the regulator points. Regulator points which have been only slightly burned should be cleaned or replaced and adjusted wherever possible. Follow procedure given on page 12-16 of the 1949-50 Shop Manual except that upper contact supports must be removed to permit thorough contact cleaning. If points are badly burned or welded together the regulator should be replaced.

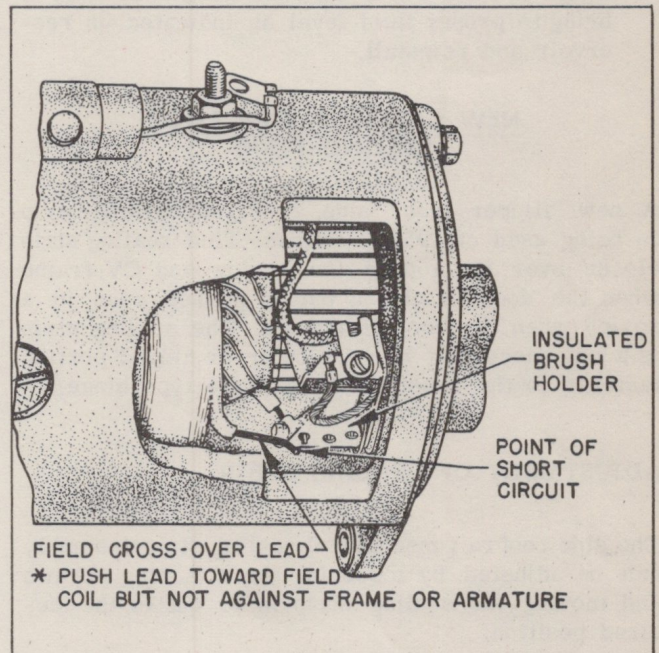


Fig. 17 Generator Field Cross-Over Lead

CONVERTIBLE COUPE HYDRA-LECTRIC SYSTEMS

Hydro-Lectric systems used on Pontiac Convertibles are basically of two types; the vented system and the sealed system. The air vented Hydro-Lectric system was used on Pontiacs from 1946 through 1950 and require periodic changing of the hydraulic fluid. No fluid change of the Hydro-Lectric system is required on the 1951 and 1952 models since this system is of the sealed type.

If the vented systems which require periodic fluid changes are not drained and refilled with new recommended hydraulic fluid once a year, preferably in the fall, moisture or sludge can accumulate in the fluid system and cause corrosion with resultant part failures.

Convertible top operating systems having the air vented systems should be drained and refilled as follows:

1. Remove and empty the fluid reservoir.
2. Reinstall empty fluid reservoir.
3. Move top up and down by hand through its complete raising and lowering cycle.
4. Again remove reservoir. Empty old fluid, clean, refill with new fluid and reinstall.
5. Operate top through two complete cycles.
6. Again remove reservoir, add additional fluid to bring to proper fluid level as indicated on reservoir and reinstall.

NEW CATALINA SIDE ROOF SEALING STRIP

A new "flipper type" side roof rail weatherstrip is being used on 1952 Catalinas. This sealing strip closes over the top of the window and CV frame when the door is closed but is pushed open by a spring when the door is opened. The sealing strip is a one piece unit with the outer or hinged portion fastened to the assembly by a piano type hinge.

ADJUSTMENT OF SEALING STRIP

The side roof rail mechanical sealing strip assembly can be adjusted by loosening the attaching screws and moving the sealing strip in or out to the desired position.

The sealing strip assembly can be adjusted down by removing the assembly and shimmming between the side roof rail lower gasket ("F" in Fig. 18) and the side roof rail upper gasket.

CAUTION: Never attempt to adjust the sealing strip by hammering or caulking. Such force applied to the sealing strip will result in damage to the hinge causing the flipper to be inoperative. No attempt should be made to bend the hinged portion to the contour of the window and CV frame. The hinged flipper must be straight in order to operate properly.

INSTALLATION OF SIDE ROOF RAIL SEALING STRIP

1. Apply a ribbon of 3-M Autobody Sealer along the outer edge of the roof panel rear molding "A" and install the molding.

2. Apply 3-M Weatherstrip Adhesive to the side roof rail and to the roof panel rear molding. Also apply 3-M Weatherstrip Adhesive to the top surface of the side roof rail upper gasket "B". Allow sufficient time for the adhesive to become tacky, then install the upper gasket along the entire length of the side roof rail.

3. Apply 3-M Weatherstrip Adhesive along the outer edge of the rear quarter window sealing strip "C" and install the sealing strip.

4. Install the front body hinge pillar weatherstrip "D".

5. Holding the side roof rail mechanical sealing strip "E" in the closed position (flipper down) with tape, apply a light coat of 3-M Weatherstrip Adhesive to the top surface of the mechanical sealing strip.

CAUTION: When applying weatherstrip adhesive to the top surface of the mechanical sealing strip, the cement must not be permitted to enter the hinge portion of the flipper by running over the edge or by entering the attaching screw holes.

NOTE: In production, a double coated tape (adhesive on both surfaces) is applied to the top surface of the mechanical sealing strip to cement the lower gasket to the mechanical sealing strip. However, in service operations 3-M Weatherstrip Adhesive will be used as described above.

6. Apply a light coat of 3-M Weatherstrip Adhesive to the bottom surface of the side roof rail lower gasket "F". A light coat of cement should be applied to the lower gasket to prevent cement entering the flipper hinge and also to prevent the gasket from curling.

7. Cement the lower gasket to the mechanical sealing strip. It is important that the flipper be held in the down position so that the lip of the gasket can be precisely located over the outside radius of the mechanical sealing strip hinge throughout the entire length of the assembly.

8. Apply 3-M Weatherstrip Adhesive to the front corner outer weatherstrip "G" and cement the weatherstrip to the sealing strip.

9. Apply a continuous 1/8" diameter ribbon of 3-M Caulking Compound on the top side of the lower gasket "F".

10. Remove the tape holding the flipper in a down position and install the mechanical sealing strip assembly to the side roof rail.

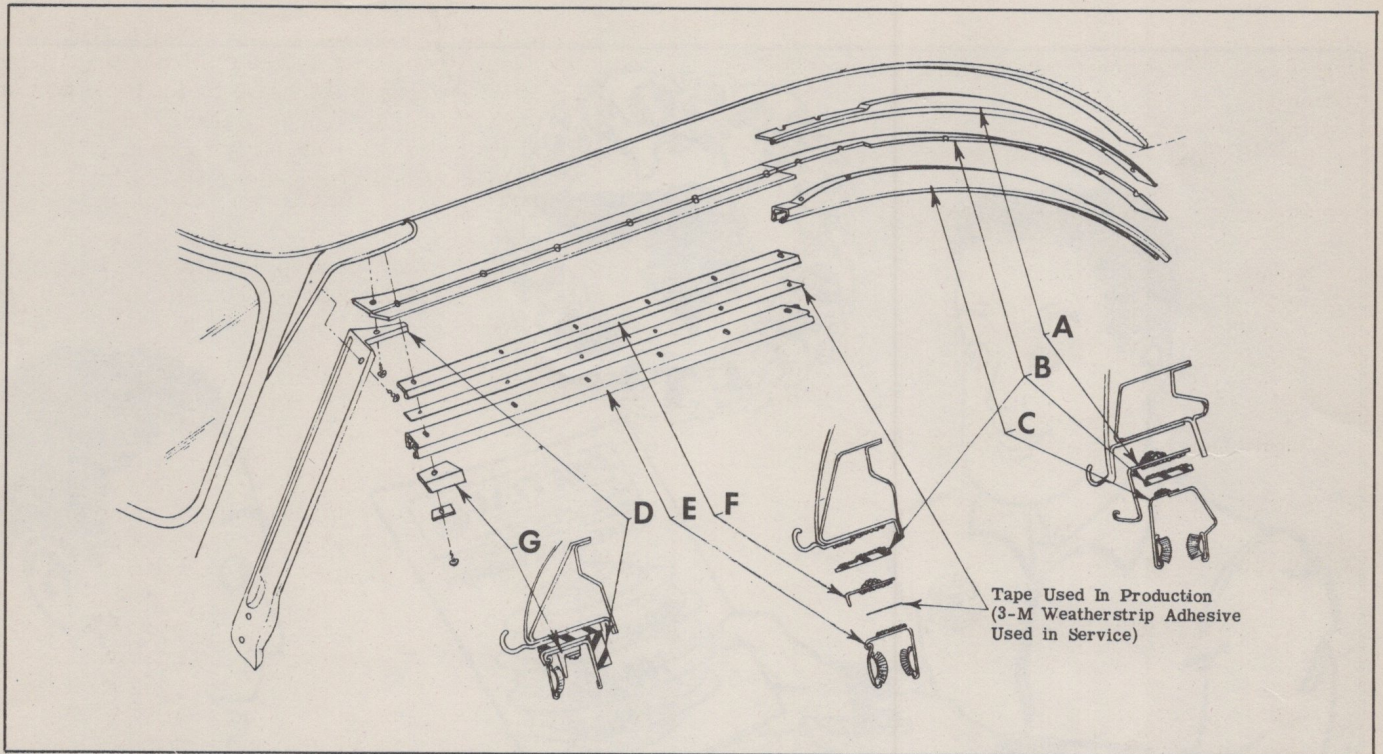
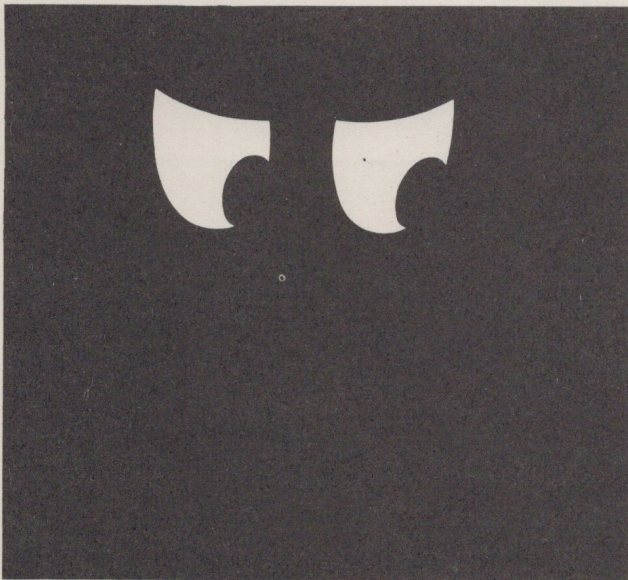


Fig. 18 Exploded View of 1952 Catalina Side Roof Rail Sealing Strip

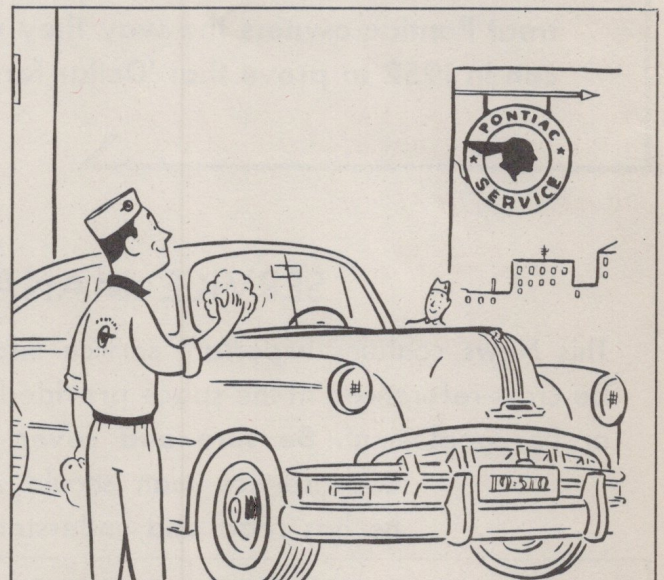
YOUR SERVICE PICTURE

EDITOR'S NOTE: This is the last of a series of eight cartoons covering the items that influence motorists most in deciding where to go for service.

NEGATIVE OR POSITIVE



CLEANLINESS??? Here's the negative of the cleanliness picture. You can't see the customer; and the customer can't see doing business in a place that's dirty.



NEAT personal appearance and a clean shop give customers confidence in your workmanship. Wiping off the windshield and lights shows you are just as interested in the owner's comfort and safety as his neighborhood service station.



SERVICE MANAGER—IMPORTANT

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.
