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## Studebaker and Packard Clipper

### CARBURETOR AIR CHAMBER BASE -- 1957 GOLDEN HAWK AND PACKARD CLIPPER MODELS

Please record this article in the Service Bulletin Reference page of your 1957 Studebaker and Packard Clipper Supplements.

As you know on late production 1957 Golden Hawk and Packard Clipper models, the carburetor air chamber base was changed to eliminate the gas line fitting and to supply a more direct and improved installation of the fuel pump-to-carburetor pipe and distributor vacuum advance pipe.

When current stock of Carburetor Air Chamber Base, Part No. 1542333, is exhausted, the Parts Depots will carry only the new style base, Part No. 1543939.

Therefore when replacing the old style base, Part No. 1542333, with the new style base, Part No. 1543939, the following parts must also be installed:

- 1543941 - Fuel Pump-to-Carburetor Pipe Assembly
- G-137422 - Pipe Elbow Carburetor End
- 1543940 - Distributor-to-Carburetor Pipe Assembly
- 514133 - Pipe Elbow Carburetor End
- 1543942 - Distributor-to-Carburetor Pipe Grommet
- 1543943 - Gasoline Pipe Base Grommet

The above parts are included in a kit, Part No. 1546489 to be used when the old style base is replaced with the new style.

### INSTALLATION OF NEW FLANGE ON POWER STEERING GEAR SHAFT -- 1955-57 STUDEBAKER AND 1957-58 PACKARD MODELS

When installation of a new flange on the power steering gear shaft is necessary, the

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replacement flange must be drilled for the retaining roll pin. This drilling must be made accurately to secure registry with the hole in the shaft for proper positioning of the flange. At the time of production, the flange and the steering gear shaft are drilled as an assembly. However, specifications for the drilling operation do not require any particular uniformity between assemblies regarding the position of the hole. Therefore, the hole in the replacement flange must be drilled to suit and match the individual shaft.

The following procedure can be used to drill the hole in the flange:

1. Remove the steering wheel, steering post and jacket, and remove the flange from the steering gear shaft.

2. Remove the steering gear post from the jacket assembly. Assemble the old steering gear shaft flange to the post using a new lower rubber insulator between the two flanges. Be sure that the "T" marks on the steering post flange, the steering gear flange and the rubber insulator are aligned before assembly. Using sufficient quantity of flat washers (5/16 x 9/16) so that the two flanges can be secured together, install and tighten the nuts on two of the flange studs (see Fig. 1).

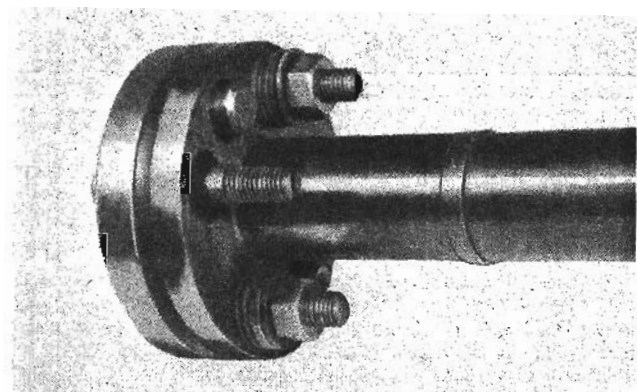


Fig. 1

3. Using a drill press vise or V blocks and clamps to hold the assembly, place the assembly on the drill press table. Insert a 3/16" drill bit in the drill chuck. Then, use the drill bit as a guide, position the assembly so that the drill is aligned with the hole in the old flange. See Fig. 2. Fasten the assembly securely to the drill press table.

4. Lift the drill bit out of the flange and

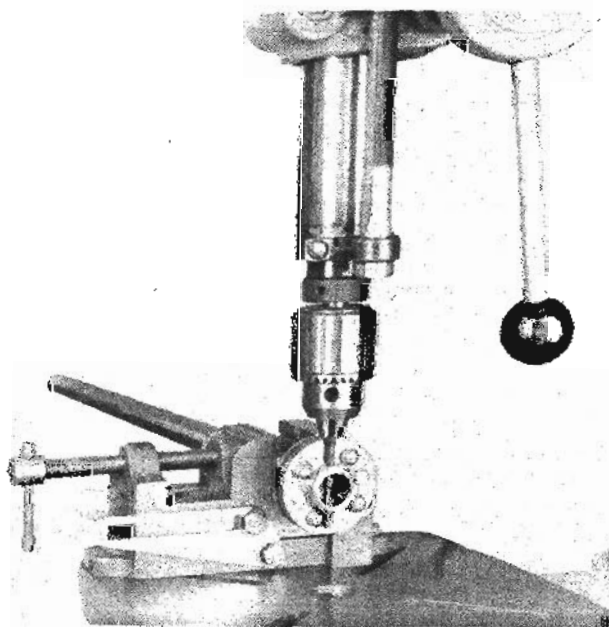


Fig. 2

remove the old flange from the steering gear post. Be very careful not to change the position of the assembly.

5. Assemble a new steering gear shaft flange to the post and insulator, making certain that it is rigid when the nuts are tightened. Be sure that the "T" marks on the two flanges and insulator are correctly aligned.

6. Carefully drill a 3/16" hole through the new flange. Remove the new flange from the steering post and assemble it to the steering gear shaft.

This procedure will correctly transfer the hole location from the old steering gear flange to the new one if performed carefully. Be sure to always use a new roll pin and flange insulators when reassembling. Also be sure that the steering gear post and the upper jacket bearing are aligned properly to prevent any strain on the flanges and post.

### SPARK PLUGS - 259 and 289 cu. in. V-8 Engines

Champion H-18Y spark plugs are now installed in production on 1958 model Studebaker and Packard cars equipped with V-8 engines. This is a projected core type plug which tends to reduce spark plug "fouling". The H-18Y spark plug is recommended as a replacement for the Champion H-11 plug.

For service replacement, Part No. 1546098 - Spark Plug H-18Y will substitute for, Part No. 532268, Spark Plug H-11.

Part No. 531485, Spark Plug H10 - 1st step cold, and Part No. 1542872, Spark Plug H9 - 2nd step cold, will also be carried. The H10 will continue to be used in truck engines.

Champion H-18Y spark plugs were installed in South Bend production beginning with engine serial numbers:

|           |          |
|-----------|----------|
| MODEL 58B | V-408540 |
| 58H       | P-82147  |
| 58H-K7    | PS-5698  |
| 58L-K9    | LS-5205  |

### PAINT FORMULATIONS - 1958 STUDEBAKER AND PACKARD PASSENGER CARS AND 3E SERIES TRUCK MODELS

JONES-DABNEY #1000-1 MIDNIGHT BLACK BAKING  
ENAMEL - BAA

| % PIGMENT COMPOSITION |        | % VEHICLE COMPOSITION |        |
|-----------------------|--------|-----------------------|--------|
| Carbon Black          | 75.0%  | Alkyd Resin           | 90.0%  |
| Toning Blue           | 25.0%  | Melamine              | 10.0%  |
|                       | 100.0% |                       | 100.0% |

**COOK'S #1055 BLUFF GRAY METALLIC BAKING ENAMEL**  
 - BCE (Their #833-A-702)

|                      |               |
|----------------------|---------------|
| Non-Leafing Aluminum | 60.0%         |
| Lamp Black           | 16.0%         |
| Indo Maroon          | 14.0%         |
| Phthalo Blue         | 10.0%         |
| Phthalo Green        | Trace         |
| Titanium Dioxide     | "             |
|                      | <u>100.0%</u> |

**DUPONT'S #1060 JEWEL BEIGE BAKING ENAMEL - BCJ**  
 (Their #253-92099)

|          |                 |               |
|----------|-----------------|---------------|
| 253-050  | White           | 66.1%         |
| B-630    | Base            | 30.0%         |
| 253-0630 | Ferrite Yellow  | 3.3%          |
| 253-0895 | Light Red Oxide | .6%           |
| 253-0222 | Carbon Black    | Trace         |
|          |                 | <u>100.0%</u> |

**DUPONT'S #1059 PARK GREEN METALLIC BAKING ENAMEL - BCI**  
 (their 282-92098)

|          |                 |               |
|----------|-----------------|---------------|
| 253-0785 | Monastral Green | 16.2%         |
| 253-0505 | Monastral Blue  | 9.6%          |
| 253-0222 | Carbon Black    | .9%           |
| 253-0913 | White           | Trace         |
| 282-0100 | Coarse Aluminum | 13.3%         |
| B-613    | Base            | 55.0%         |
| B-614    | Base            | 5.0%          |
|          |                 | <u>100.0%</u> |

**DUPONT'S #1058 SURF GREEN BAKING ENAMEL - BCH**  
 (their #253-92097)

|          |                 |               |
|----------|-----------------|---------------|
| 253-050  | White           | 37.4%         |
| B-630    | Base            | 55.0%         |
| 253-0750 | Monastral Green | 2.6%          |
| 253-0630 | Ferrite Yellow  | Trace         |
| 253-0222 | Carbon Black    | Trace         |
| B-614    | Base            | 5.0%          |
|          |                 | <u>100.0%</u> |

**O'BRIEN'S #1056 WATERFALL BLUE BAKING ENAMEL - BCF**  
 (their S-1594)

|                         |               |
|-------------------------|---------------|
| Rutile Titanium Dioxide | 98.7%         |
| Phthalocyanine Blue     | 1.0%          |
| Iron Oxide              | 0.3%          |
|                         | <u>100.0%</u> |

**COOK'S #1057 MOUNTAIN BLUE METALLIC BAKING ENAMEL - BCG**  
 (their #833-L-704)

|                      |               |
|----------------------|---------------|
| Non-Leafing Aluminum | 33.0%         |
| Phthalo Blue         | 62.0%         |
| Lamp Black           | 5.0%          |
|                      | <u>100.0%</u> |

**O'BRIEN'S #1063 GLEN GREEN BAKING ENAMEL - BCM**  
 (their S-1590-A)

|                         |               |
|-------------------------|---------------|
| Rutile Titanium Dioxide | 38.1%         |
| Chrome Green            | 50.0%         |
| Chinese Blue            | 11.9%         |
|                         | <u>100.0%</u> |

**COOK'S #1065 GLASGOW GRAY BAKING ENAMEL - BCO**  
 (their #832-A-103)

|                  |               |
|------------------|---------------|
| Titanium Dioxide | 90.0%         |
| Furnace Black*   | 10.0%         |
| Phthalo Blue     | Trace         |
| Indo Maroon      | "             |
|                  | <u>100.0%</u> |

\*Lamp Black also produces same color and more often found in blending systems.

**COOK'S #1061 WHITE GOLD METALLIC BAKING ENAMEL - BCK**  
 (their #833-Y-705)

|                      |               |
|----------------------|---------------|
| Non-Leafing Aluminum | 73.0%         |
| Burnt Sienna         | 27.0%         |
| Ferrite Yellow       | Trace         |
| Lamp Black           | "             |
| Titanium Dioxide     | "             |
|                      | <u>100.0%</u> |

**O'BRIEN'S #1064 LOCH BLUE BAKING ENAMEL - BCN**  
 (their S-1593)

|                         |               |
|-------------------------|---------------|
| Rutile Titanium Dioxide | 55.3%         |
| Phthalocyanine Blue     | 7.2%          |
| Iron Oxide              | 8.2%          |
| Chinese Blue            | 26.2%         |
| Red Oxide               | 3.1%          |
|                         | <u>100.0%</u> |

**RINSHED-MASON #1066 PARCHMENT WHITE - DCP**  
 (their E23W014)

| Pigment                   | Dry Wt. of Pigment percentage |
|---------------------------|-------------------------------|
| TiO <sub>2</sub> Titanium | 99.0%                         |
| Ferrite                   | 1.0%                          |
|                           | <u>100.0%</u>                 |

**RINSHED-MASON'S #1054 CLIFF GRAY BAKING ENAMEL - BCD**  
 (their E23A008)

| Pigment                   | Dry Wt. of Pigment Percentage |
|---------------------------|-------------------------------|
| TiO <sub>2</sub> Titanium | 99.00%                        |
| Lamp Black                | .25%                          |
| Gold Drops                | .75%                          |
|                           | <u>100.00%</u>                |

**RINSHED-MASON'S #1066 PARADE RED BAKING ENAMEL  
- BCR (their E21R054)**

| Pigment                   | Dry Wt. of Pigment Percentage |
|---------------------------|-------------------------------|
| Indo Red                  | 21.00                         |
| Moly Orange               | 70.00                         |
| TiO <sub>2</sub> Titanium | 9.00                          |
|                           | <u>100.00</u>                 |

**JONES-DAWNEY'S CANYON COPPER METALLIC BAKING ENAMEL #1062 - BCL (their #56-7565)**

| % Pigment Composition |              | % Vehicle Composition |                       |
|-----------------------|--------------|-----------------------|-----------------------|
| 75.0                  | Burnt Sienna | 75.0                  | Alkyd Resin           |
| 19.0                  | Aluminum     | 25.0                  | Melamine              |
| 6.0                   | Indo Maroon  | <u>100.0%</u>         |                       |
| <u>100.0%</u>         |              |                       | Non-Volatile - 46.00% |

**JONES-DAWNEY SHADOWTONE RED METALLIC BAKING ENAMEL #1069 - BCS (Their #56-4444)**

| % Pigment Composition |                | % Vehicle Composition |                       |
|-----------------------|----------------|-----------------------|-----------------------|
| 58.0                  | Newport Maroon | 75.0                  | Alkyd Resin           |
| 2.0                   | Indo Blue      | 25.0                  | Melamine              |
| 33.0                  | Burnt Sienna   | <u>100.0%</u>         |                       |
| 7.0                   | Aluminum       |                       |                       |
| <u>100.0%</u>         |                |                       | Non-Volatile - 46.00% |

**ULTRAMATIC CONVERTER PUMP SHAFT AND OIL PUMP ROTOR -**

54th Series Packard Gear Start, 55th-56 Series Packard and Clipper and 1956 Golden Hawk Models.

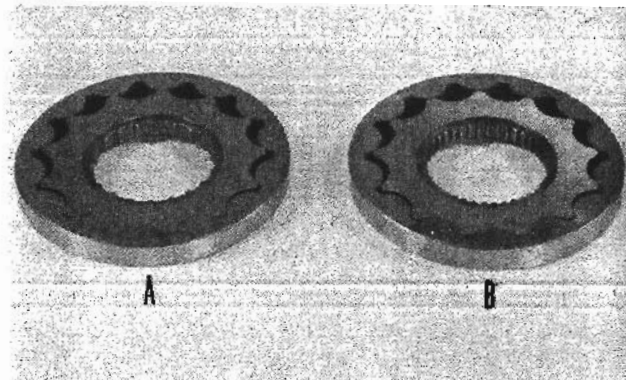
Please record this article in the Service Bulletin Reference page at the end of the Ultramatic transmission section of your 1956 Studebaker Passenger Car Shop Manual and in the 1951-54 and 1955-58 Packard Service Manuals.

This article supersedes the information given in the Packard Service Counselor Vol. 30 No. 5 of May, 1956.

When the converter shaft assembly of the gear-start type Ultramatic transmission is replaced because of worn or stripped splines, it is advisable to check the front oil pump rotor. If the rotor is one having 20 teeth in the driving section, replace it with one having 40 teeth, Part No. 6489367. Whenever it is necessary to replace both the shaft and rotor, it is advisable to order either Part No. 6484523, Rotor and Shaft Kit, or Part No. 6484524, Pump Assembly and Shaft Kit. This will insure lon-

ger service life of the converter shaft by providing a better fit of the mating rotor splines.

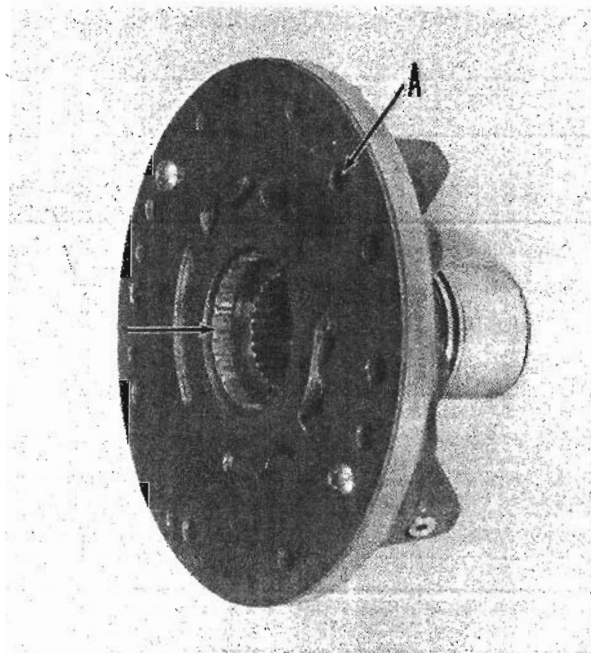
The front oil pump rotor ('A' in Fig. 3) having 20 internal splines is used in the 54th



**Fig. 3**  
A. 20 Spline Rotor  
B. 40 Spline Rotor

Series Gear-Start, 55th and early 56th Series. 'B' shown in Fig. 3 is the 40 tooth splined rotor, Part No. 6489367.

On the 54th Series Gear-Start, all 55th and early 56th Series Packard and Clipper models, the oil pressure for the direct drive clutch came out of a passage on the front side of the pump. See A, Fig. 4. The oil pressure was



**Fig. 4**  
A. Direct Drive Clutch Oil Pressure Passage

directed through a passage in the bell housing then past the open splines in the rotor to the input shaft.

On the 56th Series Packard transmission after transmission serial number 5-40469, and all Studebaker 56J Golden Hawks, the front oil pumps have the direct drive clutch oil passage in the rear side of the pump. See at A in Fig. 5. The outlet for this passage is in between the two bushings inside the pump hub. Note that there is no oil passage in the front plate. However, this type pump originally had the 20 tooth splined rotor. (40 tooth shown in the illustration)

When the present stock of part 450257 Converter Shaft is exhausted, it will be substituted by Part No. 6489467, Converter Shaft.

Front pump assemblies with 40 splined rotors have been released for service replacement as well as 40 splined rotor assemblies. The service replacement assemblies are listed as follows:

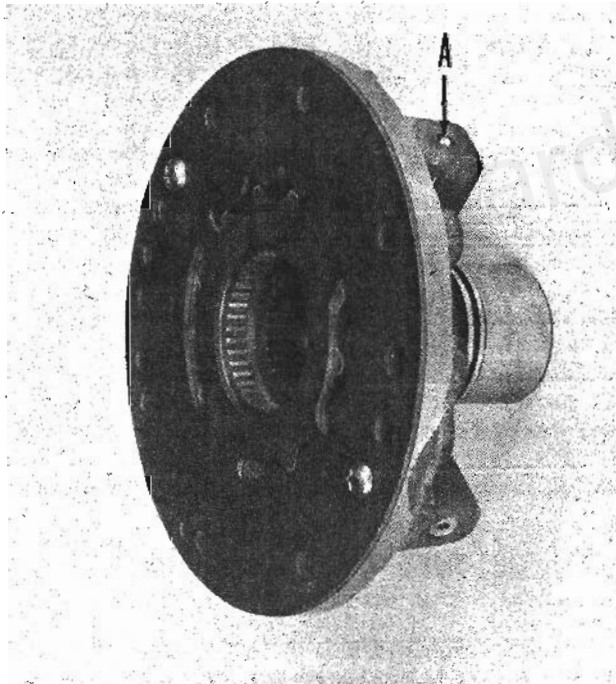


Fig. 5

A. Direct Drive Clutch Oil Pressure Passage

#### 54TH GEAR-START TRANSMISSION

Part No. 6489467 Converter Shaft Assembly  
Part No. 6484528 Front Pump Assembly  
Part No. 6489367 Front Pump Rotor Assembly

The pump assembly listed above has the oil passage in the front side of body and the rotor

has 40 splines, therefore, it will be necessary to drill six 1/8" holes evenly spaced through the annular groove just back of the splines in the converter shaft to provide an oil passage to the direct drive clutch. "See arrows Fig. 6." This also applies when replacing the rotor assembly. When necessary to drill holes in the groove of the converter shaft, remove burrs from the edges of the 1/8" holes and internal bushing after drilling.

ALL 55TH SERIES AND EARLY 56TH SERIES  
(PRIOR TO 56TH SERIES TRANSMISSION SERIAL NUMBER 5-40469.)

Part No. 6489467 Converter Shaft Assembly  
Part No. 6484527 Front Oil Pump Assembly  
Part No. 6489367 Front Oil Pump Rotor Assembly

The information described for the "54th Series Gear-Start Transmission" also applies to the 55th Series and 56th Series Transmissions prior to the above listed number.

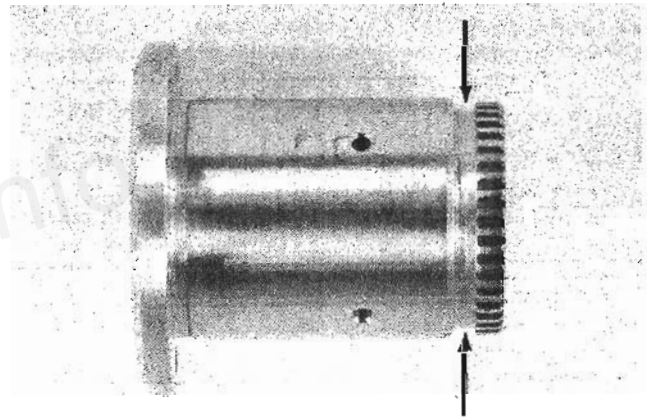


Fig. 6

56TH SERIES (STARTING WITH TRANSMISSION SERIAL NUMBERS A-1001, B-1001, C-1001)

The 1/8" holes are not required in the converter shaft annular groove because the direct clutch oil passage is in the rear side of the pump body.

Part No. 6489467 Converter Shaft Assembly  
Part No. 6489368 Front Oil Pump Assembly  
Part No. 6489367 Front Oil Pump Rotor Assembly

56th Series production transmissions starting with serial numbers A-9681, B-6012, C-1143 D-1862 have front oil pumps with the direct clutch passage in the rear and have 40 tooth splines on the internal driving section, ("B" Figure 3).

## TORQUE CONVERTER - 1956 PACKARD AND CLIPPER, 1956 STUDEBAKER GOLDEN HAWK MODELS

Please record this article on the Service Bulletin Reference page at the end of the Ultramatic Transmission section of your 1956 Studebaker Passenger Car Shop Manual and in the Ultramatic section of your 1955-56 Packard Service Manual.

To control the end play of the converter unit within the proper limits for a longer period thereby insuring longer service, it is recommended that the wave washer, Part No. 6479191, be omitted when the converters of the 1956 Packard, Clipper and, Studebaker Golden Hawk are serviced. It is suggested that the converters be reassembled as follows:

1. Omit wave washer, Part No. 6479191.
2. Part No. 6480810, Reactor Spacer (.674" wide) be replaced by Part No. 450209, Reactor Spacer (.700" wide).
3. Check end play in the same way as previously performed, making no allowance for the Wave Washer as thickness is included in the width of the Spacer, Part No. 450209. The end play limits remain at .010" to .017".

When a Converter Assembly, Part No. 6489485, is supplied without the wave washer and assembled accordingly, it will be identified with a daub of red paint near the drain plug. It is suggested that replacement units not bearing the red identification mark be modified as described above before being put into service.

Converter Assembly, Part No. 6489485, supersedes Converter Assemblies, Part Nos. 6479085 and 6479086.



## HEADLAMP RIM-TO-HOUSING SCREW - 1958 STUDEBAKER WITH DUAL HEAD- LAMPS

Early production 1958 Studebaker passenger cars equipped with dual headlamps used screw, Part No. 2081X11, to fasten the headlamp rim facing to the headlamp housing. This screw, because of its fine threads, could be readily stripped which, of course, would result not only in a loose facing but a possibility of the facing falling off. Therefore, to lessen the chance of stripping the threads, a screw having coarser threads is now being used in production.

If you encounter this condition, install the coarser thread screw, Part No. 1526X59.



## 1951-1954 PACKARD ENGINE CYLINDER AND PISTON ASSEMBLY

Two new engine cylinder and piston assemblies have been released for service. They are Part No. 1545871 and Part No. 1545872.

Part No. 1545871 will be substituted for:

|        |
|--------|
| 458217 |
| 458218 |
| 436702 |
| 436703 |

The new assemblies will not include the fly-wheel housing. We suggest that the housing of the engine being replaced be used on the new engine. But, in doing so, it is very important that the housing alignment be checked to be certain that correct alignment is maintained between the engine and the transmission.

## RADIATOR INLET HOSE COLLAPSING - 1955-56 PACKARD AND CLIPPER MODELS

There have been cases on 1955 and 1956 Packard and Clipper models of the radiator hose collapsing, causing restriction to coolant flow. We have found that where this happened a replacement hose had been installed without a wire reinforcing coil. The original production installation contained a reinforcing coil however, the service replacement hose is furnished without the coil. Therefore, before installing a replacement hose make sure that it contains the reinforcing coil. The coil may be obtained from the Parts Depot under Part No. 512768. The coil from the old hose may be used if it is in satisfactory condition.

## HINGE TYPE WEATHERSTRIP - 1956 PACKARD AND CLIPPER MODELS

Service Springs are available for the hinge type Roof Rail Weatherstrip, Part Nos. 6478366 right and 6478367 left used on the 5647-67-87-97 Packard and Clipper Models.

The part numbers are as follows:

|         |                                       |
|---------|---------------------------------------|
| 303981  | - Spring, front right and left        |
| 1327880 | - Spring, center and rear, right side |
| 1327881 | - Spring, center and rear, left side  |

The weatherstrip assemblies, Part Nos. 6478366 right and 6478367 left, supersede the assemblies, Part Nos. 475108 and 109, previously supplied for the 5547-67-87-88 as

service units.

The door opening upper weatherstrip striker may be serviced with Part No. 306000, Weatherstrip Striker Cover.



## CONTROL OIL PRESSURE - AUTOMATIC TRANSMISSION-WARNER GEAR 2E AND 3E SERIES MODEL TRUCKS

Please record this article on the Service Bulletin Reference page at the end of the Transmission Warner Gear section of your 2E Series Trucks Shop Manual.

We have had a few reports where it has been impossible to obtain the correct control oil pressure by adjusting the vacuum-solenoid control assembly. When this happens there are three possible conditions that should be carefully checked.

### EXCESSIVELY HIGH CONTROL OIL PRESSURE AT IDLE SPEED OR 1000 RPM

(a) It has been found that an improper gasket has been installed below the carburetor that either restricted or entirely cut off the vacuum to the vacuum-solenoid control assembly. With no vacuum acting on the control diaphragm, the downshift and throttle valves are held wide open. As a result, high control oil pressure and, high and rough upshift points will be experienced.

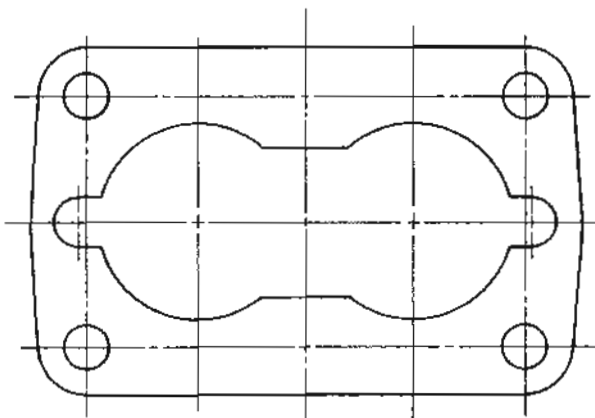


FIG. 7

Carburetor Gasket, Part No. 1540006, (see Fig. 7) must be used with the Warner Gear Automatic Transmission.

### ABNORMALLY LOW CONTROL OIL PRESSURE

(a) Whenever low control pressure difficulties are encountered, check the over-all length of

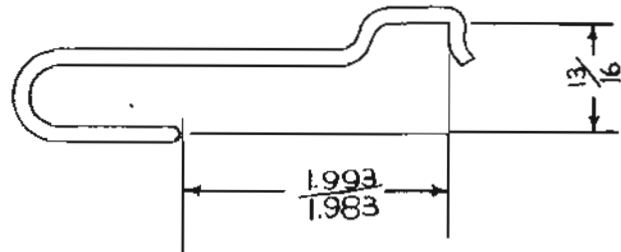


Fig. 8

the Push Rod, Part No. 1687321. The length MUST be 3.970" - 3.975". The push rod must also be straight. A bent push rod may stick in the vacuum-solenoid control assembly and contribute to irregular pressures.

(b) Also check the Downshift and Throttle Valve Control Hook, Part No. 1687316, for distortion. Should this hook be distorted it will change the relative position of the downshift and throttle valves and thereby affect control pressure.

If the control hook has "opened-up" (see Fig. 8), it can allow the downshift valve to come out of its bore far enough to cock and not re-enter the bore correctly. When this happens the downshift and throttle valves will not respond to adjustments of the vacuum-solenoid control assembly and control pressure will be abnormally low.

To check for this condition, remove the vacuum-solenoid control assembly. Insert a length of 1/8" rod directly against the control hook rocker arm. Pressure against the rod should cause the downshift valve to move inward. If the rocker arm cannot be moved in this manner, it indicates the downshift valve is sticking. In this case, remove the control valve assembly and check the control hook, downshift valve, and throttle valve.



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SOUTH BEND 27, INDIANA

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