PARTS • ACCESSORIES • PRODUCT

SERVICE Counselor

PACKARD-CLIPPER DIVISION
OF
STUDEBAKER-PACKARD CORPORATION

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Transmission Control Changes to Improve Shift Pattern

54th-55th Series

When the Central Warehouse supply of various transmission control parts for earlier models is exhausted, later model parts will be shipped in their place. This will (1) simplify the replacement parts situation and (2) greatly improve the shift pattern on the models affected. The models and parts affected are as follows:

54th Series "Gear-Start" Transmission

Transmission Valving Kit, Part No. 6484623, has been released for 54th Series "Gear-Start" transmissions. The installation of this kit will improve the shift pattern by making it more consistent with later model shift patterns. Listed are the details included in the kit.

Direct Shift Throttle Valve Spring
Throttle Valve Spring Seat
Direct Shift Valve Piston Spring
Direct Shift Valve Piston (Rear)
Direct Shift Valve Piston Spring End Cap
Pump Regulator Valve Spring
Manual Valve Lever to Link Pin
Manual Valve Inner Lever Stop
Low Regulator Valve Spring
Throttle Limit Valve Spring

If one of these parts is ordered individually from the 54th Series Parts List after the supply of that particular part is exhausted, the kit No. 6484623, which is inexpensive, will be shipped in its place.

55th Series "Twin Ultramatic" Transmissions

Transmission Valving Kit, Part No. 6484681, has been released for 55th Series transmissions. The installation of this kit will improve the shift pattern by bringing it more in line with the 56th Series shift pattern at moderate to full throttle openings.

Throttle Valve Idle Spring
Direct Shift Valve Piston Spring
Throttle Limit Valve Spring
Throttle Valve Spring
Low Regulator Valve Spring

IMPORTANT: When these springs are installed in a 55th Series unit, the throttle pressure adjusting screw should be backed out 2¼ turns to maintain the specified throttle pressure.

A still further improvement in the shift pattern can be achieved by installing the 56th Series low speed governor assembly which controls light throttle operation and downshifts on deceleration.

If one of the springs listed is ordered individually from the 55th Series Parts List after the supply of that particular part is exhausted, the kit 6484681 will be shipped in its place.

NOTE: When a kit is received, it should be installed in its entirety; otherwise the shift pattern may be disrupted.

The locations of the control details listed in this article are illustrated on pages 23 through 26, 87 and 88 in the Ultramatic Section of the Service Manual.

Rear Axle Gear Tooth Pattern

56th Series

The most common rear axle complaint is noise. However, it must be pointed out that, as gears inherently make some noise, an absolutely quiet unit is very seldom found.

If a decision is made to overhaul an axle because of gear noise, it is very helpful to take a gear tooth pattern before disassembly. This pattern will indicate whether the gears are worn and should be replaced or if they are only in need of adjustment.

An excellent paste for taking tooth patterns can be obtained from the Mergaf Oil Products Company Inc., Northville, Michigan. It is known as "Gear Marking Compound" and is packaged in two-ounce cans at a cost of $1.00.

Gear tooth pattern should be taken in the following manner:

1. Wash all lubricant from the gear teeth and with a small brush, paint eight or ten of the ring gear teeth with "Gear Marking Compound" or a mixture of ground red lead and engine oil.

2. Wrap a rag around the U-joint flange on the pinion shaft to serve as a brake, move the painted ring gear teeth over the pinion until a good impression of the tooth contact is obtained. The impressions should be similar to the one in the center of the illustration.

Most noisy axles having low mileage can be corrected by adjustment; examples of incorrect tooth patterns are illustrated for your ready reference:

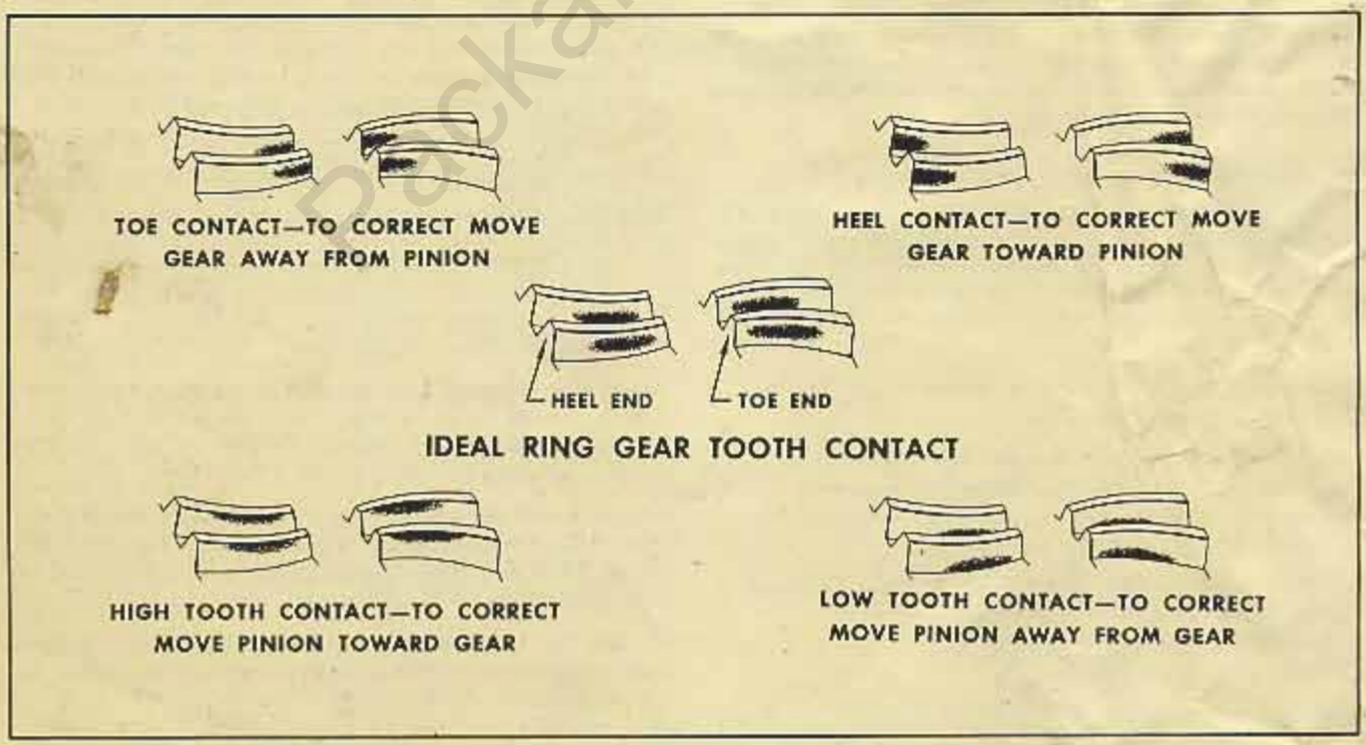
a. To correct a short toe contact, move the ring gear away from the pinion. This will increase the lengthwise contact and move the contact area toward the heel of the tooth. This adjustment of the ring gear will also increase the backlash between the two gears; therefore, if the backlash is out of limits, move the pinion toward the gear to make the backlash correction.

b. A short heel contact can be corrected by moving the ring gear toward the pinion. Then, to make the necessary backlash adjustment, move the pinion away from the ring gear.

c. To correct a high narrow tooth contact condition, move the pinion toward the ring gear. If the backlash is out of limits, move the ring gear away from the pinion.

d. A low narrow tooth contact condition is corrected by moving the pinion away from the ring gear. If necessary to correct the backlash, move the ring gear toward the pinion.

The best adjustment of the axle can be obtained by using the above information about patterns. When reconditioning or adjusting a rear axle as described in your Service Manual, before installing the rear cover plate, we recommend a tooth pattern check again be made.



Carburetor Metering Rods - Jets - Repair Kits

56th Series

Listed below are the Carburetor Assembly Numbers, Metering Rods, Jets, Gasket and Repair Kits for the 56th Series cars.

Part No.	Description	Models	No. Req.
6480530	Carburetor Assembly WGD-2393S	5640	1
6484551	Carburetor Repair Kit	5640	1
6484552	Carburetor Gasket Kit	5640	1
6484273	Metering Rod Standard (75-1223)	5640	2
6484565	Metering Rod One size lean (75-1288)	5640	2
6484566	Metering Rod Two sizes lean (75-1289)	5640	2

Note: It is recommended for high altitude areas, when installing the one or two size lean metering rods that the choke setting be adjusted two notches leaner than standard.

Part No.	Description	Models	No. Req.
6480506	Carburetor Assembly WCFB-2394S	5660	1
6484549	Carburetor Repair Kit	5660	1
6484550	Carburetor Gasket Kit	5660	1
6484169	Metering Rod Standard (75-1241)	5660	2
6484567	Metering Rod One size lean (75-1296)	5660	2
6484600	Metering Rod & Jet Kit Two sizes lean (75-1312U)	5660	1

Note: It is recommended for high altitude areas, when installing the one or two size lean metering rods that the choke setting be retained at the standard setting.

Part No.	Description	Models	No. Req.
6480253	Carburetor Assembly Rochester (4GC-7008610)	5680	1
6484316	Carburetor Repair Kit	5680	1
6484317	Carburetor Gasket Kit	5680	1
6484309	Metering Jet (Primary Std.)	5680	2
6484308	Metering Jet (Primary Lean)	5680	2
6484310	Metering Jet (Secondary Std.)	5680	2

Note: It is recommended for high altitude areas, that the choke setting be three notches lean and adjust the fast idle cam contour clearance to a high limit of .020".

Part No.	Description	Models	No. Req.
6489090	Carburetor Assembly (Front) Rochester (4GC-7009600)	5688	1
6489091	Carburetor Assembly (Rear) Rochester (4GC-7009601)	5688	1
6484469	Carburetor Repair Kit Front and Rear	5688	2
6484317	Carburetor Gasket Kit Front and Rear	5688	2

Note: It is recommended for high altitude areas, that the choke setting be three notches lean and adjust the fast idle cam contour clearance to a high limit of .020".

Hydraulic Tappets

GENERAL INFORMATION

With any hydraulic tappet some click is to be expected.

A clicking condition of temporary duration is perfectly normal. When the engine is stopped some of its valves are open. The hydraulic tappets holding valves open are subject to heavy spring pressure and will "leak down", dispelling the oil in the compression chamber of the tappet, allowing excessive lash. When the engine is started in the mornings those tappets that have been forced to leak down may click until they receive enough oil from the engine lubrication system to refill the compression chamber in the tappet to take up the lash. This click condition will exist more in the colder weather as cold oil will not supply the tappets so quickly.

Hydraulic tappets should be serviced when they are definitely noisy. A loud continued or permanent clicking is usually the result of the plunger being stuck below its normal operating position; or the check valve may not be sealing due to dirt or a damaged seat. A light click indicates that the plunger is operating only slightly below its normal position due to a slight leakage of the check valve or plunger. When all tappets are noisy the usual cause is an insufficient supply of oil reaching the tappets.

Many times a mechanic will make no attempt to locate the particular tappet that is giving trouble and will replace all the tappets in the engine with new ones. It has been found that the majority of the hydraulic tappets returned to the Factory for credit are not defective and could have been restored to normal operating condition if properly serviced.

It is most important when servicing hydraulic tappets that a clean solvent be used and thoroughly wash all parts and remove any varnish and gum condition from the plunger and inside of the tappet body; servicing one tappet at a time to avoid mixing plungers and cylinders.

To make a hydraulic tappet operate properly it must be able to "leak down" at a given measured time. The amount of "leak down" is controlled by the clearance between the plunger and tappet body. When making a "leak down" test, the tappet must be free from any motor oil, and must be filled with kerosene having a viscosity of 32 at 70° F. With the plunger spring in position and the tappet filled with kerosene, the plunger should travel .125" under 50 lbs. load in a minimum of 8 seconds and a maximum of 45 seconds. The tappet body should be rotated when making test. A very satisfactory method of testing hydraulic tappets is thoroughly covered in the Packard Shop Manual.

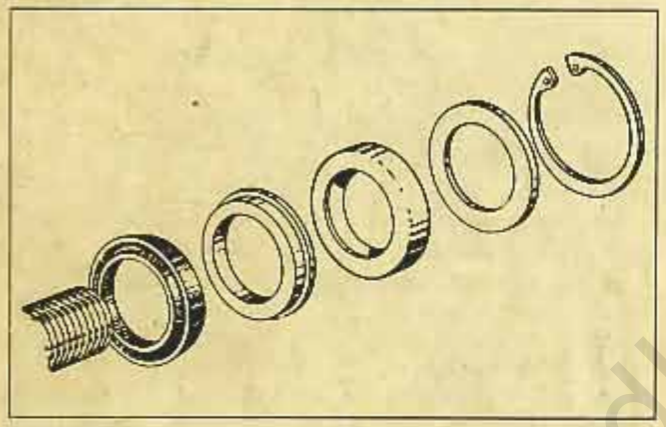
If the "leak down" is excessive the check valve may not be sealing due to dirt or damaged seat. If the valve seat is damaged or excessive clearance is found between the plunger and tappet body, the tappets will have to be replaced with new ones.

Bendix Power Steering Cylinder Seal Kit

55th-56th Series

Improper installation of the Bendix Power Steering Cylinder Seal Kit Part No. 474321 will generally result in a fluid leak past the power cylinder piston rod.

The proper sequence of installation is as follows: "See illustration."



1. The Neoprene "U" cup seal is installed with the inner lip of seal toward the cylinder.

2. The seal back-up aluminum washer spacer is installed with its small flange outward from the cylinder.

3. The dust seal is installed with its inner lip outward from the cylinder.

4. The scraper washer may be installed either way.

5. The snap ring is installed with its sharpest edge outward from the cylinder, this assures positive locking of the snap ring.

Transmission Front Oil Pump—Converter Pump Shaft Kits

54th-55th-56th Series

Please refer to your Service Counselor Vol. 30, No. 5, May 1956, on the subject "Converter Pump Shaft—Oil Pump Rotor Splines."

The Converter Pump Shaft Splines were recently altered to provide a better fit in the pump rotor which reduces wear.

The new Converter Pump Shafts, Front Oil Pump Assemblies and Front Oil Pump Rotor Assemblies are now available in Kit form for service, however, the new shaft may be ordered separately and can be used with the original pump providing the rotor teeth are not worn excessively.

54th SERIES GEAR START TRANSMISSION

Part No. 6484529 Pump Assembly and Converter Shaft Kit
Part No. 6484528 Rotor Assembly and Converter Shaft Kit
Part No. 6484522 Converter Shaft Assembly (Drilled)
Part No. 6484526 Front Oil Pump Assembly
Part No. 6489367 Front Oil Pump Rotor Assembly

55th SERIES ULTRAMATIC TRANSMISSION

56th SERIES ULTRAMATIC TRANSMISSION

(Prior to 56th Series Transmission Serial Number) 5-40469

Part No. 6484530 Pump Assembly and Converter Shaft Kit
Part No. 6484528 Rotor Assembly and Converter Shaft Kit
Part No. 6484522 Converter Shaft Assembly (Drilled)
Part No. 6484527 Front Oil Pump Assembly
Part No. 6489367 Front Oil Pump Rotor Assembly

56th SERIES ULTRAMATIC TRANSMISSION

(Starting with transmission serial numbers) A-1001, B-1001, C-1001

Part No. 6484524 Pump Assembly and Converter Shaft Kit
Part No. 6484523 Rotor Assembly and Converter Shaft Kit
Part No. 6489467 Converter Shaft Assembly (Not Drilled)
Part No. 6489368 Front Oil Pump Assembly
Part No. 6489367 Front Oil Pump Rotor Assembly

Torque Specifications — Additions

Please refer to your Service Technical Bulletin 55T-8, Dealer 7, January 31, 1955.

Two additional torque specifications have been released for service and should be added to the torque specifications under "Rear Axle" and "Suspension."

a. Rear Axle Drive Pinion Nut (56th Series) 7/8-14 200-220 lbs. ft.

b. Front Wheel Bearing Nut should be tightened to 20 ft. lbs.
Nut should be backed off till loose, retightened to 4 ft. lbs., then back off 1 hex and then back off to the first cotter pin slot in the nut. All Models.

Tail Light Cable and Sockets

56th Series

56th Series tail light socket and cables are now available for repair purposes to eliminate using complete rear wiring harness.

Part No. 6484608 Tail Light Socket and Cables 56th Series (Right and Left)

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