

SERVICE Counselor

PACKARD DIVISION
OF
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Twin Ultramatic Training Continues

Twin Ultramatic Drive service is important to Studebaker-Packard, the Dealer and the car owner. It must be efficient, prompt, and thorough. Parts must be available, special tools and equipment must be on hand and the "know how" must be based on study, training and experience.

It's one thing to have complete Twin Ultramatic Drive service available. The next step is to convince your customers of this. Service Training is the answer, more trained Packard servicemen can only mean more satisfied Packard Owners.

A recent two day school held by the Memphis Zone covered complete disassemble and reassembling of the transmission, oil passages were traced and operation of the hydraulic system was explained by the use of the Training Panel.



12 Volt Battery Characteristics

With all 55th Series Clippers and Packards being equipped with 12 volt batteries, it might be well to call attention to certain characteristics of this system which are important to service personnel.

1. Current leakage from the terminals to ground will be much greater on a 12 volt battery than on a 6 volt battery should spilled electrolyte bridge the battery top from terminal to ground, as the higher voltage pushes more current through the same leakage path.

Since high voltage causes more amperes to leak, all other things equal, the lower ampere-hour rating of the battery makes fewer amperes available. It might be said that a given leakage path across the top of a 12 volt battery is four times as likely to run the battery down as the same leak would be to discharge a 6 volt battery.

Remedy: Thoroughly clean and dry the top of the battery to end the leakage. Then find out *why* the battery is wet with electrolyte. Most common causes: (a) Overfilling the cells . . . Adjust to proper level. (b) Overcharging . . . Adjust the voltage regulator setting as required. (c) Cracked case or leaky sealing compound . . . Reseal or replace battery.

To minimize corrosion damage, the usual procedure of an ammonia or baking soda-water bath on all parts touched by acid, followed by vaseline on the battery and cable terminals is still sound service practice . . . more important today than ever.

2. Another 12 volt characteristic which bears comparison to the more familiar 6 volt installation is this: Often in cold weather car owners crank until the battery is dead, still failing to get a start, whereupon they leave the car for other transportation. A good 6 volt battery will cease cranking while there is still enough "anti-freeze value" to the electrolyte to prevent freeze of the battery, but under similar conditions, the higher voltage and lower amperage requirements of the 12 volt system result in nearly complete battery discharge before cranking ceases. This leaves the electrolyte so nearly pure water that it will freeze at temperatures just under 32° F., probably destroying the battery by bursting the case.

3. Greater caution than ever must be taken to avoid shorting terminals, leads, etc., to ground in 12 volt systems. First, the lighter gauge wire used with 12 volts, having less current capacity, is more easily overheated. Secondly, 12 volts forces much more current through a "short" than 6 volts often causing serious damage before the mechanic can remedy the trouble, be it a wrench dropped on a battery or whatever the cause may be.

Differential Driving Pinion Rear Bearing and Sleeve

Please refer to your Service Counselor Vol. 28, No. 2, February, 1954 on the subject "Differential Data". The following information also, applies to the "Differential Carrier Replacement" article as described in your Service Counselor Vol. 28, No. 5, May, 1954.

Some of the last run of 55th Series production will be equipped with 25° rear pinion bearings and when the present stock of 40° rear bearings are exhausted

at the Central Warehouse, Part No. 434855 (25° bearings) will be shipped for service replacement. When ordering Part No. 434855 Rear Pinion Bearing also order Part No. 434856 Pinion Bearing Sleeve.

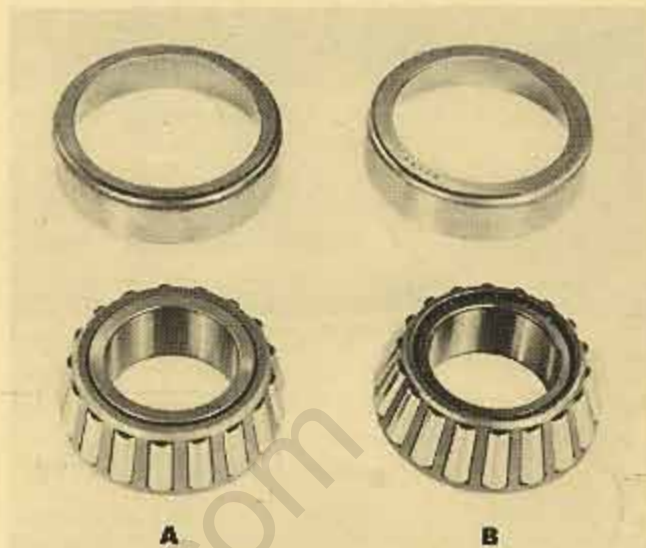


Fig. 1

Figure 1, indicated by "A", shows the 25° rear pinion bearing and cups. The 40° rear pinion bearing is indicated by "B". Note the difference in the angle of the rollers, also that the flat end section is wider on the 40° bearing cup.

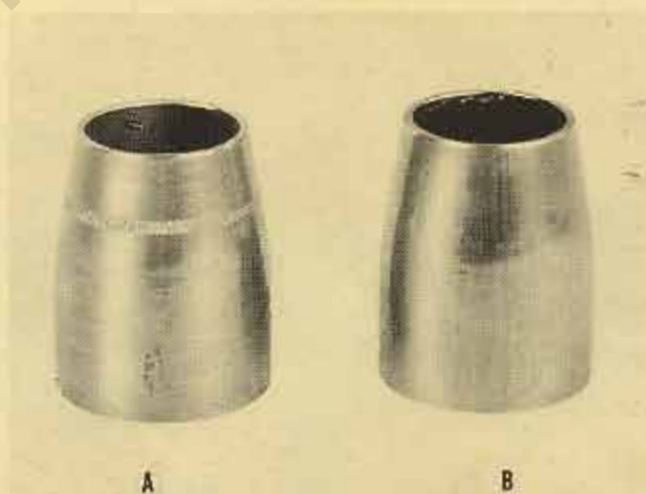


Fig. 2

Figure 2, indicated by "A" shows the pinion bearing sleeve used with the 25° bearing. The sleeve used with the 40° bearing is indicated by "B". The knurled section on the 25° bearing sleeve (A) is provided for identification purposes.

It is permissible to use either the 25° or 40° rear pinion bearings provided the proper sleeve is also used. The sleeves are slightly different in length, therefore it is important that the correct sleeve be used so as to obtain the proper preload on the pinion bearings.

Engine Runaway —Low To High Shifts

55th Series

Please refer to your Service Counselor Vol. 29, No. 7, July 1955, on the subject "Carburetor Throttle Control Shaft Lever Extension Kit."

Most cases of the engine runaway during "Low to High Shifts" can be corrected by installing the extension kit and adjusting the throttle rod. By installing the kit and adjusting the throttle rod, the transmission throttle pressure can be raised to overcome the runaway and the geometry of the lever with the extension is such that the shift pattern will not be changed to an objectionable degree. Following are installation and adjustment instructions to correct engine runaway:

1. Install the extension kit as shown in the July Service Counselor. Install the throttle rod in the hole in the extension.

2. Use the illustration of the Caribbean carburetor linkage shown in the June issue of the Service Counselor for reference when adjusting the throttle rod.

a. Loosen the throttle rod jam nuts "D" and "F" several turns. Idle the engine at 400 RPM with the selector lever in "Drive" position.

Apply a slight forward pressure on the rod "H" and tighten the jam nuts up to the adjuster.

b. Road test the car for engine runaway during low to high shift. If the runaway is excessive, loosen the jam nuts and progressively move the rod "H" rearward about $3/16$ " at a time until the runaway has been corrected.

c. In most cases, it will not be necessary to move the rod rearward over $1/4$ ". Bear in mind that moving the rod rearward will change the shift pattern slightly, however, the extension on the lever should maintain a satisfactory shift pattern.

Low Range Brake Functions Improperly

A condition which recently developed in 55th Series Vehicles equipped with Twin Ultramatic transmissions is a distortion of the low range brake piston housing cap.

A cap which has become distorted permits the piston to move below its designed release position and to either partially or completely close off the opening in the brake housing which supplies the pressure below the piston to apply the brake. When this condition exists, the transmission will operate abnormally with one or more of the following symptoms:

A. No low range operation in Drive position (to the right of the "D") nor in manual low "L" position.

B. Delayed low range brake application after coming to a stop or after shifting to the positions noted above.

C. Engine "Flare" or runaway on "kickdown" caused by delayed low range brake application.

If one of the foregoing conditions exists, remove the low range brake servo and check the end of the piston guide or shaft in relation to the shaft opening in the top of the housing. If the end of the shaft is

flush or below flush with the surface at the opening, the cap is distorted and should be replaced. If the end of the shaft protrudes and the lower edge of the chamfer around the end of the shaft is flush with the surface at the opening, the cap is not distorted and some other condition is causing the transmission to operate abnormally. If the cap requires replacement, follow the procedure outlined in the Twin Ultramatic Section of your New Service Manual.

The new caps are carried under part number 470266, Low Range Brake Piston Housing Cap.

Direct Drive Clutch Engagement —Twin Ultramatic

55th Series

Please refer to your Service Counselor, Vol. 28, No. 10, October 1954, on the subject "Direct Drive Clutch Slippage."

Production is now installing direct drive clutch plates with the facings chamfered at *only two* slots, opposite each other on both sides of the plate. This further prevents the possibility of clutch slippage and retains smooth clutch engagement.

Cutting the additional chamfers from the plate can be accomplished by following the instructions in the Service Counselor.

A new calibrated high speed governor spring started in production approximately January 17. This new spring permits the direct drive to engage at approximately 27 MPH instead of 31 to 33 MPH. It also permits the low range to high range shift to occur at slightly lower speeds.

Should it be desired to change the high speed governor spring on early production cars, follow the instructions on pages 40 and 54 in the "Twin Ultramatic Section of your new Service Manual".

The new spring is available under part number 450358.

Twin Ultramatic Transmission

Caribbean 5588

Because of the added torque and horsepower in the Caribbean engine, a number of changes have been made in the transmission.

When replacement of the transmission and/or converter is required in a Caribbean, *it is most important that it be replaced with an assembly listed for that model.* "See Parts Book listing."

Listed for your ready reference are the important parts that are different and not interchangeable on transmissions for other 55th Series cars:

1. Converter Assembly—Converter Pump

Blade angle different to provide a higher stall speed.

2. High Speed Governor Valve and Spring

To provide the desired shift pattern for the higher horsepower engine.

3. Throttle Limit Valve Spring

To increase pump pressure at high throttle and lower kickdown shift point.

4. Control Assembly and/or Individual Controls

Some of the valves and springs in each control are different to provide the desired shift pattern for the higher horsepower engine.

Rear Wheel Hub Clicks

All Models

Axle shaft clicks are generally caused by a slight expansion of the inner and outer ends of the tapered bore of the hub when the hub is tightened on the shaft. This slight expansion prevents complete contact of the tapers allowing the hub to move on the axle shaft causing the click.

In cases where the click cannot be eliminated by tightening the hub nut we suggest the following:

1. Remove the wheel, drum and hub, axle shaft key and axle shaft bearing oil guard.

Wrap a piece of cloth around the axle shaft next to the brake backing plate.

2. Apply a small amount of oil mixed lapping compound in the center of the taper in the hub.

Place the transmission in gear or park position.

Place the hub on the axle shaft and rotate it back and forth until a good fit is obtained on the tapers.

3. Wash off the lapping compound. Remove the protective cloth.

Reinstall the oil guard. Install a new axle shaft key and tighten the hub and drum nut securely. (200 to 270 ft. lbs.)

CAUTION: Be extremely careful and not allow the lapping compound to get into the axle shaft bearing.

Transmission Universal Joint Flange Bolt—Twin Ultramatic

A "click" sound may be heard in the transmission when starting or stopping a 54th Series or early production 55th Series car equipped with Twin Ultramatic.

The universal joint flange bolt holds the planetary cage shaft and rear housing output shaft tight against the spacer washer in the parking gear hub. Because of slight shaft movement in the parking gear hub, a click may occur when the end of either shaft moves on the washer.

A new type flange bolt which incorporates a nylon lock insert in the thread portion of the bolt is now used in production. The nylon lock insert provides a means of locking the bolt at a reduced torque. This reduced torque permits the end of either shaft to move freely on the washer thus eliminating the click. The nylon insert prevents the bolt from coming loose.

Installation of the new bolt with the nylon insert is as follows:

1. With the rear housing assembly tightened securely to the transmission, install the new flange bolt and torque tighten to 35 ft. lbs.

2. Back off the flange bolt a turn or two and retorque it to 50 in. lbs.

The new flange bolt is available at the Central Parts Warehouse and is carried under part number 470201.

AC Carburetor Air Cleaner

Model 5540

The new AC (snorkel type) air cleaner having the air inlet tube on the forward side of the cover shell requires a wing nut to hold the filtering element and oil reservoir in place, otherwise it may rattle and/or dump the oil from the reservoir into the carburetor air horn.

The cars that do not have the correct air cleaner stud should be reworked as follows:

Remove the air cleaner assembly and remove the retaining stud from the carburetor air horn.

Install the new stud with the long threaded portion upward.

Install the air cleaner oil reservoir and filtering element and secure them with the new wing nut.

Install the air cleaner cover with its air duct pointing forward and secure it with the original wing nut.

The new stud and wing nut are available as follows:

Part No. 6480302 Carburetor Air Cleaner and Silencer Stud—1 required

Part No. G 148312 Carburetor Air Cleaner and Silencer Wing Nut—1 required

Dust Leaks

55th Series

The openings through which dust enters the trunk compartment are sometimes difficult to locate.

Listed are the most common sources of dust leaks:

1. Rear dowel pin hole in rear fender for the wheel shroud.

2. Openings in the rear section of the body side sill near the wheel housing.

3. Welded seam in the center of wheel housing inside the trunk compartment.

4. Tail lamp openings as described in Service Counselor Vol. 29, No. 7, July, 1955.

Most of these leaks can be corrected by filling the openings with dum-dum.

After filling the wheel housing welded seam with dum-dum, it may be necessary to drill and install screws to close the flange at the welded seam.

Wheel Disc Plugs

55th Series

A few reports have been received of sand and small stones getting into the large hub shell covers creating a disturbing noise while driving.

These stones enter the wheels through the slots provided for installing strap type skid chains.

Wheel disc plugs are available for plugging the slots and may be ordered under Part Number 6484048, four are required for each wheel.

The plugs are installed in the slots from the outer side of the wheel.