

# Service Bulletin

JULY 1958 NO. 339

SOUTH BEND 27, INDIANA

## Studebaker and Packard

### WINDSHIELD WASHER NOZZLE - AC KIT NO. 2774 AND NO. 2911

Some of the spray nozzles included in AC-2774 and AC-2911 Windshield Washer Kits are undersize. Instructions in the kit specify that a 1/4" hole be drilled in the cowl for the spray nozzles. A 1/4" hole will be too large for the undersize nozzles.

Before drilling the holes for the nozzles, check the diameter of the nozzle in the kit. The simplest way to check the size is to drill a 1/4" hole in a piece of sheet metal. If the nozzle is undersize at the lower end of threaded boss, it will pass freely through the hole. Therefore, for the undersize nozzle drill a 3/16" hole in the cowl. If the nozzle is tight on the first (lower) thread, then a 1/4" hole is the correct size.

The spray nozzles have been changed in all AC-2774 and AC-2911 Windshield Washer Kits in Parts Depot stocks.

### TWIN-TRACTION DECAL - INSTRUMENT PANEL - ALL MODELS

Please record this article on the Service Bulletin Reference page of your 1958 Passenger Car Shop Manual Supplement.

During the introductory period of the Twin-Traction rear axle it was considered necessary to bring to the attention of the servicing mechanic certain precautions to observe regarding this equipment. To identify the car as being Twin-Traction equipped, we originally used a caution sticker on the left front door facing. Later we placed a decal on the instrument panel adjacent to the ignition switch.

Since the Twin-Traction type rear axle is no longer new in the service field and also since

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we identify the vehicle by means of the deck lid emblem and adequately cover servicing precautions in our shop manual and owner's guides, we feel that the need for the decal no longer exists.

Therefore, effective in production with body serial numbers listed below, the Twin-Traction decal will NOT be used.

MODEL	BODY SERIAL NO.
58G-C3	1335
58H-C3	3474
58H-K7	736
58L-K9	542
58L-Y8	805
58L-P8	103
58L-J8	548

## NEW TWIN-TRACTION REAR AXLE

*Please record this article on the Service Bulletin Reference page of your 1958 Passenger Car Shop Manual Supplement and the 2E Series Trucks Shop Manual.*

A new Twin-Traction rear axle has been released for production. The new axle has a 45° pinion shaft ramp angle as compared with the present 30° ramp angle. This change provides a quicker application and release of the Twin-Traction clutches thereby reducing backlash. This reduction in backlash results in quieter operation, particularly at low road speeds.

Generally, the servicing information now contained in the 1958 Shop Manual Supplement will apply to the new axle, with the following exceptions:

1. The pinion mate shaft ramp angle is 45°. This means that the differential case, pinion mate shafts, and differential case screws are not interchangeable with their present counterparts. The remaining individual service parts are interchangeable.

2. The stack-up of clutch discs and plates provides five effective surfaces. The clutch plates and discs are installed as follows: Starting with a clutch plate against the differential side gear ring, alternately follow with a disc, plate, and disc on each side.

3. With one of the pinion mate shafts rotated securely against its ramps, the clearance should not exceed .010" when measuring under the cams of the opposite pinion mate shaft.

4. With one axle shaft and drive pinion locked, the other axle shaft should not turn radially more than 3/8" measured on a 6" radius.

These assemblies entered production mixed with the present Twin-Traction rear axles and therefore, no definite starting serial numbers are available.

The new rear axle assembly is interchangeable with the present axle and will be carried in service stock under the same part numbers. The new differential case assembly and lubricant kits are also interchangeable with the present kits and will be substituted when present stock is exhausted.

Following is a brief review of the Twin-Traction rear axles used up to the present time:

1. Identified with a "T" on the tag which used cone clutches and had 30° pinion mate shaft ramps.

2. Identified by a "TD" on the tag, which had 30° ramp angles, and three effective clutch surfaces.

3. Identified by numerals "45" on the tag which has 45° ramp angles with five effective clutch surfaces.

## TWIN-TRACTION REAR AXLE THRUST PIN OUT OF POSITION

*Please record this article on the Service Bulletin Reference page of your 1958 Passenger Car Shop Manual Supplement and the 2E Series Trucks Shop Manual.*

When removing an axle shaft, one end of the shaft thrust pin may be pulled out of position and the roll pin which retains the two parts of the thrust pin may drop out. This is usually not discovered until you attempt to reinstall the shaft; because the thrust pin is out of position, it will not permit the full installation of the shaft. This, of course, makes it necessary to tear-down the axle and replace the thrust pin and retaining roll pin.

The following procedure will prevent the dislodging of the thrust pin when the axle shaft is removed.

1. Drain the rear axle differential case.
2. Remove the differential case cover.
3. Using a modified hacksaw blade as shown in Figs. 1, 2 and 3, insert the hacksaw blade between the pinion mate shaft and the differential side gear. The hacksaw blade should be

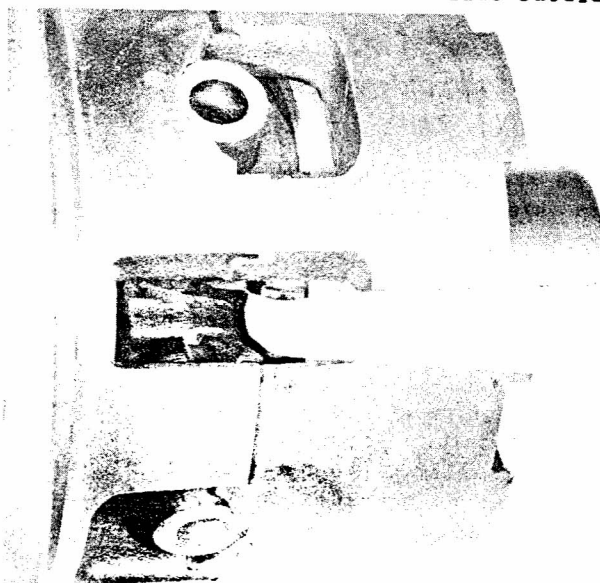


Fig. 1

N-163

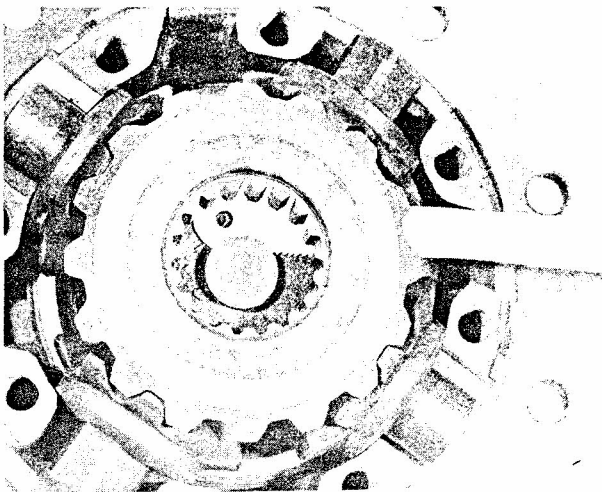


Fig. 2

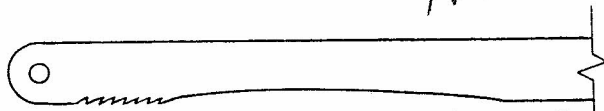


Fig. 3

positioned so that it bears against the thrust pin with the saw teeth forward.

4. Pressure should be maintained against the hacksaw blade and thrust pin while the rear axle shaft is removed. The hacksaw blade should be placed between the pinion mate shaft and right hand differential side gear while removing the right side axle shaft and between the pinion mate shaft and left hand differential side gear while removing the left side axle shaft.

5. After replacement of the axle shaft, the differential case cover should be replaced and unit refilled with lubricant.

### AUXILIARY FUEL PUMP KIT FOR MODELS EQUIPPED WITH SUPERCHARGER

*Please record this article on the Service Bulletin Reference page of your 1957 Studebaker and 1957 Packard Supplements and, the 1958 Shop Manual Supplement.*

Engine cutting-out on acceleration and rough idle may be encountered on a car equipped with a supercharger after the car is operated at sustained high speed with high outside temperatures.

To prevent this condition, a dual electric fuel pump kit has been released under Part No. 1547161.

The kit includes the installation instructions as well as a drawing for drilling the

muffler support bracket to provide a mounting for the fuel pumps.

### TWIN-TRACTION OPERATION

*Please record this article on the Service Bulletin Reference page of your 1958 Passenger Car Shop Manual Supplement and your 2E Series Trucks Shop Manual.*

Unequal or worn treads at the rear wheel tires can be a cause of unsatisfactory operation of the Twin-Traction rear axle because the clutches will not apply properly.

If you have a complaint of a Twin-Traction axle not operating as it should, check the rear tires carefully. If a rear tire shows more wear than the others, rotate the tires on the car so that the tires on the rear wheels have equal tread.

### OIL LOSS AT BREATHER - ULTRAMATIC

*Please record this article in your 1955-56 Packard Service Manual and in the 1956 Studebaker Passenger Car Shop Manual.*

The first and most important item - transmission must not be filled above the correct level.

#### 1950-1954 PRIOR TO GEAR START

The vent hole should be checked in the oil filler cap. Venting is accomplished through a 1/16" vent hole in the brass spring disc in the cap. The hole is drilled through the disc only, inside the circular groove in the disc, and not through the cap.

This information applies also to the 23rd and 24th series transmission.

#### 24TH SERIES - MODEL 200

If a Model 200 with a serial number prior to J202136 should have a loss of oil through the breather located on top of the transmission rear housing, the following procedure for checking and correcting is suggested:

1. Place the car on jacks or raise it in a hoist; keeping the car level.
2. Move the selector lever to the high range position.
3. Disconnect the relay rod from the throttle cross shaft or from the throttle valve lever on the right side of the transmission.

4. Remove the breather from the transmission rear housing.

5. Move the throttle lever to the kick-down position (as far as it will go toward the front of the car).

6. Run the engine at approximately 40 to 50 mph road speed for 3 to 4 minutes while watching for oil emerging from the breather opening. This should be done with the selector lever in high range and the throttle shaft lever in the kick-down position.

If the breather oil hole fills up and there is a slight spill-over, the transmission rear housing should be removed and the oil return passage enlarged. The oil return passage is the straight 1/4" hole in the lower half of the rear housing. This hole should be enlarged to 3/8". It should not be enlarged to exceed 3/8" nor should additional holes be made.

If the oil gushes out of the opening, remove the transmission and remove those sub-assemblies necessary to check and, if necessary, correct the following:

(a) A missing or broken planetary cage and oil ring.

(b) Loose rear oil pump assembly. The rear oil pump assembly retaining screws should be tightened to 15 to 18 ft. - lbs. torque.

The later type breather unit, Part No. 423435, used after the 24th series and installed in the top of the transmission case in place of the 3/4" filler plug, may be installed in all Ultramatic transmissions prior to 1954 gear start type that have the breather in the transmission rear housing. Install a plug in the breather opening in the rear housing when the later type breather is installed in the case.

When making this type of breather installation, it may be necessary to hammer a depression on the oil filler hole cover to provide clearance for the breather. Cut a hole in the jute pad of the floor mat above the depression to eliminate a bulge in the mat. The parts required for the change-over are:

- 1 423435 Transmission Case Breather Assembly
- 1 G123398 Plug
- 1 G137281 Washer

INCORRECT SPEEDOMETER DRIVE GEAR INSTALLATION - Models with Breather on Transmission Case at Rear.

In cases where the breather is located on

top of the transmission housing, and oil is thrown out at speeds above approximately 30 mph, the speedometer drive gear may be installed incorrectly with the radial grooves in the gear toward the front. This will cause a spray of oil to be directed to the breather. When this condition is found, the gear should be removed and installed with the grooves toward the rear. The purpose of the grooves is to direct a spray of oil on the parking gear bushings in the rear housing.

#### CONVERTER REACTOR CLUTCH - All Types of Ultramatic Transmission

A reactor clutch in the converter that fails to release will cause over-heating of the transmission fluid and excessive foaming. This may cause fluid to be expelled through the breather. Make sure all parts affected are replaced when reconditioning a reactor clutch for this type of problem.

#### 1956 SERIES ULTRAMATIC - Packard and Studebaker 56J Models

When a condition of oil loss through the breather is encountered when accelerating to high speeds in Low Range or after down-shifting from Direct Drive to Low Range Converter at high speeds, if fluid in transmission is to correct level, the breather may be relocated to the top of the rear transmission housing as covered in Service Bulletin No. 319 dated January 1957.

#### TORQUE CONVERTERS - 1956 PACKARD AND 1956 STUDEBAKER GOLDEN HAWK MODELS

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

On page 6 of Service Bulletin No. 331 dated November 1957, we covered the elimination of the wave washer to insure better end play control. In line with this change, Repair Kit, Part No. 6484614, Wave Washer, Part No. 6479191 and Spacer, Part No. 6480810 were cancelled. A note to this effect should be made in your parts book.

When parts are required to modify a converter for better end play control, order by individual part numbers and use only Converter Reactor Thrust Spacer, Part No. 450209 and, if required, Converter Reactor Washer, Part No. 470219.

All 1955 Packard model converters were

originally assembled without the wave washer and must be serviced in the same manner. Spacer, Part No. 450209 is the original 1955 part and when used without the wave washer No. 6479191 now applies to both the 1955 and 1956 Packard converters as well as 56J Studebaker Golden Hawk models.

### FLUID TEMPERATURE AFFECTS ULTRAMATIC UPSHIFT

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

Fluid temperature affects the upshift pattern, especially after the transmission has had considerable mileage or service operation.

With the early type transmission the shift is from high converter with direct drive clutch engagement following and, with the gear start the shift is from low to high converter and then to direct drive.

The pattern of upshift may act as follows: Starting in 'D' or drive position, when the oil is cold the cycle is normal. But, when the transmission fluid reaches normal operating temperature, the transmission refuses to shift into direct drive or will not stay in direct drive following the clutch engagement.

This difference in shift pattern between hot and cold fluid is an indication of oil pressure loss. The loss of pressure is usually caused by bushings and shaft wear, creating excessive clearances over the allowable tolerances. There may also be faulty governor operation or low rear pump pressures.

In this type of condition, pressure readings of the direct drive clutch pressure will readily show the abnormal difference between the pressures with hot and cold fluid and why the unit completes its upshifts with cold fluid or when the transmission is cold. The fluid, when hot, may show a drop in pressure of 20 to 30 lbs. below required tolerance figures at direct drive engagement speed and as a result the direct drive clutch will not engage.

It is advisable when taking direct drive pressure readings to also take the governor pressure readings to be sure they are within the limits and that the rear pump pressure is operating normally.

Consult the Service Manual and Service Bulletin for the pressure readings as they apply to the type of Ultramatic being checked.



### SPECIAL DECK LID HINGES - 58G-YI TAXICAB MODELS

Please make a note of this article in Service Bulletin No. 332.

With an advertising sign mounted on the deck lid, you may find that when the deck lid is opened it will not remain in the open position because of the additional weight of the sign. To correct this condition special hinge assemblies having double springs have been released.

The part numbers are:

- 1330230 Deck Lid Hinge Assembly, Right
- 1330231 Deck Lid Hinge Assembly, Left
- 1312118P Deck Lid Hinge Assembly Spring

These special hinges are available as optional equipment, at extra cost, at the time of production.

### TRANSMISSION GEAR CLASHING 58G - YI TAXICAB MODELS

Please make a note of the article in Service Bulletin No. 332.

Under certain circumstances it is possible some gear clashing may occur even though the clutch pedal free travel is properly adjusted. Where this condition occurs it is recommended that Clutch Operating Shaft and Lever Assembly, Part No. 1546329, be installed.

This shaft and lever assembly has a lever radius of 2" instead of 1 11/16" radius originally installed and provides a greater release area for the clutch driven plate (See Fig. 4)

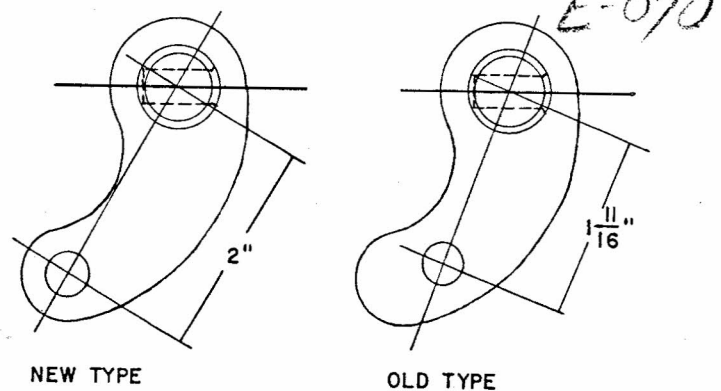


Fig. 4

Effective with Serial No. G-1428648 the clutch operating shaft and lever assembly with the 2" lever radius entered production.



*Please record this article on the Service Bulletin Reference page of your 1957 Packard Supplement.*

When the 1957 type instrument board crash pad material supply is exhausted, 1958 L model crash pad material will be substituted for service on 1957 models.

Because the 1958 type material is not subject to shrinkage as was the 1957 material,

there is no extension required on the inner end of the pad.



**HEAVY DUTY STRIPPED ENGINE  
ASSEMBLY - 3E1, 3E5 AND 3E10  
MODEL TRUCKS**

*Please record this article on the Service Bulletin Reference page of your 3E Series Trucks supplement to the 2E Shop Manual.*

A heavy duty 6-185 stripped engine assembly has been released for service under Part No. 1547306. This engine has heavy duty inlet valves, heavy duty exhaust valves and, chrome-face top compression rings.

For identification purposes, a clover leaf will be stamped on the engine serial number pad.

**STUDEBAKER-PACKARD CORPORATION  
SOUTH BEND 27, INDIANA**