

Studebaker

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1956

ENGINE MISS OR SKIP - 56J MODELS

Please record this article on the Service Bulletin Reference page at the end of the Engine section of your 1956 Passenger Car Shop Manual.

There have been some reports of a miss or skip occurring in the Golden Hawk engines used on 56J models. The reports were that the condition still exists after the engine has been thoroughly checked and tuned.

There is a possibility that some cross firing may exist at the ignition cable support brackets.

If the engine fails to respond smoothly on acceleration, particularly at the lower speed ranges, it may be caused by a cross fire between #5 and #7 cylinders. The cross firing may be the result of a pinched ignition cable between fingers of the cable supports breaking the wire insulation or because wires running parallel are too close to one another.

Recently, new ignition brackets and cables were released which may be installed where necessary to correct the misfiring. These new support brackets and cables are available as listed:

For Overdrive equipped cars:

- 1 - 6484554 Ignition Cable Set
- 1 - 6489377 Spark Plug Cable Support Bracket-Right
- 1 - 6489917 Spark Plug Cable Support Bracket-Left
- 8 - 6489378 Spark Plug Cable Support Bracket Grommet

For Ultramatic equipped cars:

- 1 - 6484554 Ignition Cable Set
- 2 - 6489377 Spark Plug Cable Support Bracket
- 8 - 6489378 Spark Plug Cable Support Bracket Grommet

Installation of new brackets may be accomplished as follows:

1. Lift the ignition cables from between the support fingers on all four supports, remove and discard the cylinder head supports and the supports under the coil.

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2. Install the new supports by attaching the supports under the center and rear cap screws for the rocker cover. Only one support is used per side.
3. It will be necessary to cut off some of the cables to obtain the proper length between the supports and the distributor cap.

STROMBERG CARBURETOR REVISION - 259 CU. IN. AND 289 CU. IN. ENGINES

Please record this article on the Service Bulletin Reference page at the end of the Gasoline section of your 1956 Passenger Car Shop Manual.

Stromberg 2-barrel carburetors used in current production have been revised to provide a better seal of the choke thermostat cover.

There has been a gasket between the thermostatic baffle and the air horn housing and an identical gasket between the baffle and the thermostatic cover. The inner gasket has now been eliminated and the air horn housing has been revised by reducing the depth of the

thermostat housing counter bore an amount equal to the thickness of the gasket. Carburetors with this revised housing will be built without the gasket and will be identified by the Stromberg model No. WW6-117A.

The Parts Department will exhaust their stock of WW6-115 and WW6-117 (Studebaker Part Nos. 537649 and 1539944) carburetors and then substitute the WW6-117A carburetor (Part No. 1539944).

To obtain proper choke operation, the proper carburetor-to-engine manifold gasket *must* be used as follows:

For model 6-115 carburetors, use gasket Part No. 684059.

For model 6-117 and 6-117A carburetors, use gasket Part No. 1540006.

The gasket Part No. 684059 will obstruct the vacuum passages to the choke when installed with a Stromberg model 6-117 or 6-117A carburetor.

HYDRAULIC VALVE LIFTER CHECKING TOOL - GOLDEN HAWK MODELS

Please record this article on the Service Bulletin Reference page at the end of the Engine section of your 1956 Passenger Car Shop Manual.

The Hydraulic Valve Lifter Checking Tool J-5978 has been revised by Kent-Moore so that the tool can be used for both the early and the later type hydraulic valve lifters. The original tool J-5978 has now been substituted by J-5978-A.

The new valve lifters, having the greater oil reservoir, have a narrower oil groove in the body and the groove is raised slightly as shown by the right hand lifter in Fig. 1.

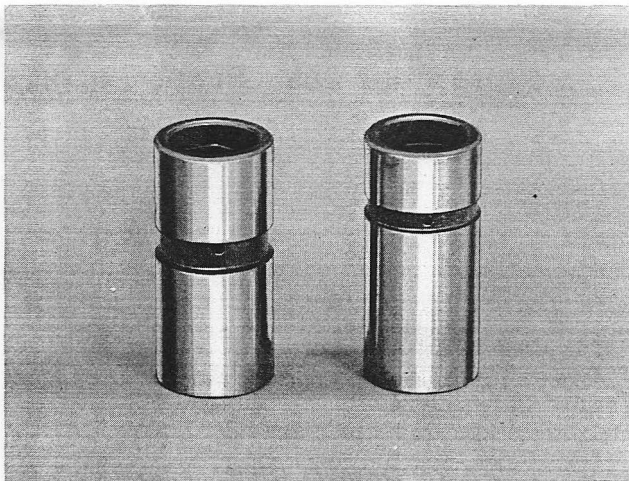


FIG. 1

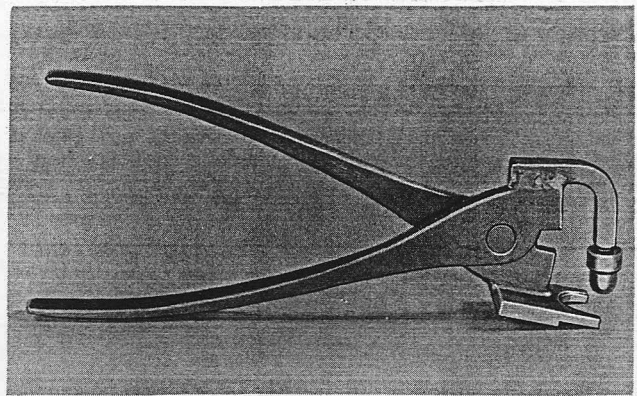


FIG. 2

Figure 2 illustrates the new tool J-5978-A that will test either type lifter.

The J-5978 Checking Tool can be modified so that it can be used on the later type lifters by grinding down the lower jaw of the tool as shown in Fig. 3 and using an Adapter Kit J-5978-6 (see Fig. 4). Grind the two ears of the lower jaw down to a $5/32$ " thickness and back $5/8$ " as shown.

IMPORTANT: Orders for the Adapter Kit, which will be supplied at no charge, *must* be

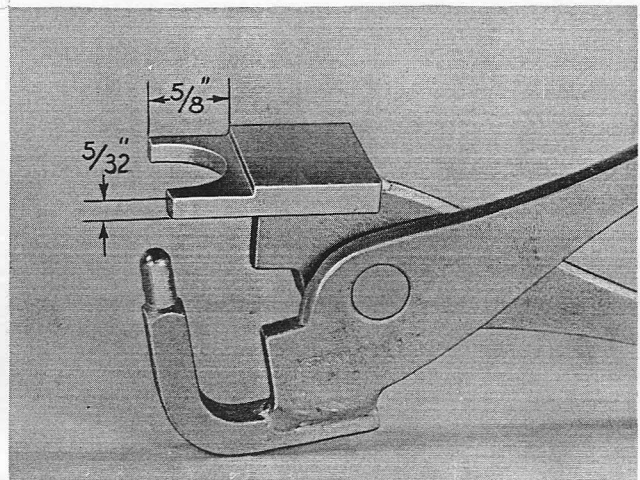


FIG. 3

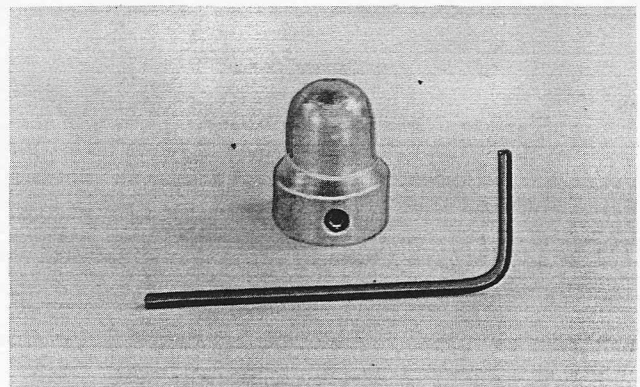


FIG. 4

sent to Kent-Moore Organization Inc., 1501 South Jackson Street, Jackson, Michigan.

Dealers that wish to purchase the complete tool J-5978-A Hydraulic Valve Lifter Checking Tool, should order direct from Kent-Moore Organization Inc., 3044 W. Grand Blvd., Detroit 2, Michigan. The price is \$9.50.

NOTE: Export Dealers may order from the Studebaker-Packard Corporation, Export Division, 635 South Main Street, South Bend, Indiana.

CHAMPION NO. N-8-64B SPARK PLUG

Please record this article on the Service Bulletin Reference page at the end of the Electrical section of your 1956 Passenger Car Shop Manual.

The Champion No. N-8-64B spark plug is released for 56J engines under Part No. 472178. This spark plug is one step colder than the standard spark plug released for production and is available for use when a colder spark plug is desirable.

SHIFT SPEEDS - ULTRAMATIC TRANSMISSION

Please record this article on the Service Bulletin Reference page at the end of the Ultramatic transmission section of your 1956 Passenger Car Shop Manual.

Listed below are the shift speeds for 1956 Golden Hawk models equipped with Ultramatic transmission. This shift speed data does not necessarily fix limits for shift points but is intended to serve as a general pattern which is subject to slight variations.

'D SELECTOR LEVER POSITION

	HRC to HRD	HRD to HRC
Light throttle upshift	23-28 mph.	-----
Kickdown upshift	85-95 mph.	-----
Maximum kickdown	-----	70-80 mph.
Closed throttle downshift	-----	20-25 mph.

D' SELECTOR LEVER POSITION

	LRC to HRC	HRD to HRD	HRD to LRC	HRD to HRC	HRC to LRC
Light throttle upshift	17-23 mph.	23-28 mph.	-----	-----	-----
Kickdown upshift		(no shift)	-----	-----	-----
Maximum kickdown	-----	-----	40-50 mph.	70-80 mph.	40-50 mph.
Closed throttle downshift	-----	-----	-----	20-25 mph.	10-15 mph.

MANUAL LOW SELECTOR LEVER POSITION

	LRC to LRD	LRD to LRC
Light throttle upshift	23-28 mph.	-----
Kickdown upshift	(no shift)	-----
Maximum kickdown	-----	40-50 mph.
Closed throttle downshift	-----	20-25 mph.

LRC - Low Range Converter HRC - High Range Converter
 LRD - Low Range Direct HRD - High Range Direct

CHECKING TRANSMISSION ASSEMBLY END PLAY - FLIGHTOMATIC TRANSMISSION

Please record this article on the Service Bulletin Reference page 102G at the end of the Flightomatic transmission section of your 1956 Passenger Car Shop Manual.

Paragraph 4 under the heading, "Checking Transmission Assembly End Play," on page 77 of the Flightomatic Transmission section of the 1956 Passenger Car Shop Manual should be changed to read as follows:

"Insert the screwdriver between the planet carrier and the output ring gear and pry the planet carrier toward the front of the transmission case. Read and record the dial indicator reading. End play should be .010" to .029"."

FRONT SERVO PISTON SPRING - FLIGHTOMATIC TRANSMISSION

Please record this article on the Service Bulletin Reference page at the end of the Flightomatic transmission section of your 1956 Passenger Car Shop Manual.

A number of Flightomatic transmissions have been built using a front servo piston spring that is different from that previously used. This spring has closed coils and a flat ground seating surface at one end. The coils at the other end are not closed or flat ground but have an abrasive cutoff. While this spring may appear to be broken it is entirely serviceable, and is interchangeable with the original type spring.

LOW SPEED GOVERNOR - ULTRAMATIC TRANSMISSION

Please record this article on the Service Bulletin Reference page at the end of the Ultramatic Transmission section of your 1956 Passenger Car Shop Manual.

A new Low Speed Governor Assembly, Part No. 6489627, has been released. After present stock of No. 470234 Low Speed Governor Assembly is exhausted, the Parts Department will substitute and carry the latest Part No. 6489627.

This change was made to eliminate possible interference of the governor with the rear of the transmission case. The new low speed governor went into production effective with transmission serial #S-3935.

ULTRAMATIC TRANSMISSION CHANGE

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

To prevent the bolt head from digging into the pressure plate, causing steel shavings to fall into the converter and transmission, Part No. 338405 Flat Washers are now installed under the heads of the direct clutch pressure plate bolts. When repairs are performed on the direct clutch pressure plate, it is advisable to install one of these flat washers under each bolt head.

GASOLINE TANK ATTACHMENT - 1956 PASSENGER CARS

Please record this article on the Service Bulletin Reference page at the end of the Gasoline System section of the 1956 Passenger Car Shop Manual.

The gasoline tank attachment method for all 1956 models has been changed in production from a flexible right hand mounting to a rigid type of mounting.

Until recently the right hand side of all gas tanks was mounted with a Part No. 653518 Insulator Shim, Part No. 194383 Spring, and the necessary bolt, nut and cotter pin.

The above parts have been eliminated and the gas tank will be mounted with the following parts:

- 1 - G-181361 Bolt
- 1 - G-103026 Nut
- 1 - G-103341 Plain Washer
- 1 - G-103321 Lock Washer

2" DIAMETER REAR PROPELLER SHAFT - MODEL 56B - W-F-D

Please record this article on the Service Bulletin Reference page at the end of the Propeller Shaft and Universal Joints section of your 1956 Passenger Car Shop Manual.

A 2" rear propeller shaft is now used in production on Commander 56B Sedan and Station Wagon models in place of the 2-1/2" diameter previously used on Commanders.

The Parts Department will not carry the new 2" shafts but will continue, for the time being, to carry only the 2-1/2" parts. They will therefore substitute on service orders as follows:

Substitute	For	
2-1/2"	2"	
538020	1541615	} Prop. Shafts and Supt. Assy. Complete
538022	1541616	
1539631	1541617	
1540832	1541622	
532228	1541597	Prop. Shafts and Joint Assy. Rear
532234	1541603	Prop. Shaft Assy. Rear

COMPLAINTS OF "NO REVERSE" - WARNER GEAR AUTOMATIC TRANSMISSION

Please record this article on the Service Bulletin Reference page at the end of the Transmission - Flightomatic section of your 1956 Passenger Car Shop Manual and Automatic Transmission section of your 2E Series Truck Shop Manual.

This article is a review of "No Reverse" complaint causes and corrections on cars and trucks equipped with Flightomatic transmissions.

Although we are specifically referring to sticking or stuck valves affecting reverse operation, the same corrective procedures would apply to all valves within the assembly.

These are the more common causes of inability to reverse as related to valve trouble:

1. **STICKING 1-2 SHIFT VALVE.** If this valve is sticking or stuck inward, it prevents the application of the rear band.
2. **STICKING 2-3 SHIFT VALVE. OR 2-3 SHIFT VALVE GOVERNOR PLUG.** When the 2-3 shift valve sticks in the inner position, it prevents the application of the rear clutch and allows the front band to apply.

3. **STICKING GOVERNOR VALVE.** If the governor sticks in a certain position, it will trap pressure at the head of the 1-2 shift valve, 2-3 shift valve, and compensator valve. When this occurs, it prevents the 1-2 shift valve from moving to its outward position and the rear band won't apply. A similar condition may exist if the governor drive ball has been left out allowing the governor assembly to shift on the output shaft.
4. **STICKING COMPENSATOR VALVE.** This may be the cause of insufficient control pressure in reverse, allowing the rear clutch or rear band to slip.
5. **STUCK TRANSITION VALVE** in outer position, preventing application of the rear band.

It is possible that a valve would stick between a fully closed or open position. Therefore, variations of the above outlined conditions can exist. In a condition of no-reverse, either a total slippage or a full stall may be experienced.

The following procedure should be used whenever stuck valves in either the Pressure Regulator Valve Assembly or the Control Valve Assembly are suspicioned.

1. Check control pressure with a pressure gauge as outlined in the Shop Manual. If the control pressure is normal or adjustable to normal, it is reasonable to assume that the pressure regulating valves are operating satisfactorily.
2. Remove, clean, and inspect *ALL* of the control valves. If some light scoring exists, it may be removed by careful use of crocus cloth. At the same time, carefully inspect the edge of the valves at a point where the side of the valve meets the ground surface. If this edge has a sharp, ragged appearance, it would be advisable to clean it up in the following manner:
 - a. Use a fine grit, flat stone. Very carefully, stone the side of the valve 90° to the ground surface face. When completed, a smooth but sharp valve edge should be the result. *Under no circumstances* should the valve edge be rounded-off or broken. It is important that the ragged edges and burrs be removed from the side of the valves, but a sharp 90° edge must be maintained.
 - b. Carefully clean all valves and bores, and reassemble.

This procedure is particularly important with the large diameter land of the 1-2 shift valve, and the 2-3 shift valve governor plug.

If this procedure doesn't correct the difficulty, it may be that an abnormal amount of foreign matter is entering the valves because of failure elsewhere in the converter or transmission.

Refer to the Shop Manual for possible causes when foreign matter is found.

REPAIR OF FIBERGLASS REINFORCED PLASTIC REAR FENDER FINS - STATION WAGON AND GOLDEN HAWK MODELS

The following repairs are recommended using Polyester resins. Room temperature cures are possible and infrared lamps also may provide ample heat for more rapid curing if desirable.

NATURE OF REPAIR

1. Cracks
2. Fractures and demolished sections
3. Replacement of metal clips - "D" fins

#1 - CRACKS

These may be repaired with chopped strands of glass mixed with a catalyzed resin. Inorganic fillers (aluminum silicate, calcium carbonate) may be added to give the resin a putty-like consistency for easier working.

Repair Procedure

- (a) Remove the paint in the immediate area.
- (b) Using small hand grinder - grind the cracks wider to provide a larger repair area.
- (c) Clean the area thoroughly with steam or air and then wipe with naphtha.
- (d) Fill the ground-out areas with resin wax.
- (e) Smooth to the contour of the piece.
- (f) Air dry or apply heat for curing.
- (g) Sand out and finish.

#2 - FRACTURES AND DEMOLISHED SECTIONS SS

The material used is the same as in the previous repair; with the exception that for impregnating fabric to place over the damaged areas, a resin without filler should be used.

Repair Procedure

- (a) Remove the paint from around the damaged area.
- (b) Remove the damaged pieces and feather sand or grind the remaining edges.
- (c) Clean thoroughly with steam or air and then wipe with naphtha.
- (d) With mat, fabric and resin, duplicate the original constructions. In many instances, where the damaged area is large, it may be necessary to add an additional layer of impregnated fabric to each side of the repair and allow it to cure in place.
- (e) Allow to cure at room temperature, or apply heat for a more rapid cure.
- (f) Sand out and refinish.

#3 - REPLACEMENT OF METAL CLIPS TO "D" FINS

The material used is the same as in repair #1. Where maximum strength is required, an epoxy resin may be used.

Repair Procedure

- (a) Grind out the plastic from the broken bond.
- (b) Clean the plastic from the clip.
- (c) Rough-up the bonding area with a grinder or sanding.
- (d) Apply the resin mixture.
- (e) Attach the clip.
- (f) Allow to cure at room temperature or apply heat for a more rapid cure.

Resin tends to require a longer curing rate when it is exposed directly to the air; therefore, in some instances it is advisable to cover the repair areas with cellophane to speed the rate of cure. This also gives the repaired area a smoother surface which aids in faster refinishing.

It is also advisable on large repair areas to apply some form of pressure thus instilling a higher gloss to resin ratio and imparting more strength. Due to the complexity of the shapes of the parts, no definite procedure can be recommended, although the use of clamps, braces, weights, tape, etc., have been successfully used.

Complete plastic repair kits may be obtained from your Parts and Accessories Division or by

placing your order direct with Fibreglas Industries Division of Schramm Fiber Glass Products, Inc., 5434 West Higgins Road, Chicago 30, Illinois. Repair kits are available in various sizes. Repair Kit No. SSE330, the small one, contains sufficient material for several repairs. NOTE - It is most important that instructions as prepared by the kit manufacturer be followed during the application of the material.

FINISHING OF FIBRE GLASS FINS**A. Sanding**

1. The correct procedure to obtain a smooth paintable surface requires sanding lengthwise of the fiber glass panel.

B. Cleaning, Filling and Puttying

1. Wipe clean with naphtha.
2. Fill the pits, voids and small depressions with a pyroxylin putty (Rinshed-Mason Green Stuff, No. 74, wipe-on type).
3. Allow to dry thoroughly and sand the putty surfaces smooth.

4. Wipe with naphtha.

C. Undercoat

1. Apply a coat of DuPont 65-1773 Red Oxide Primer Surfacer or Rinshed-Mason U28Q001 Red Oxide.
2. After a short flash dry of above, apply a coat of: DuPont 65-1772 Gray Primer Surfacer or Rinshed-Mason U28A009 Gray Primer Surfacer.
3. Bake for 25 minutes at 230° F.

- a. The total film build after sanding should be no less than .001". All primer surfacer should spray dry in order to obtain a heavy film build rapidly.

D. Sanding

1. The sanding at this point levels out the high spots and the degree of sanding (wet or dry) will give the luster desired. The two coat primer system acts only as a guide for sanding.

E. Enamel Coat

1. Wash with water.
2. Dry.
3. Wipe with naphtha.

4. Apply a coat of finish enamel.
5. Bake for 25 minutes at 235° F.

It is imperative that the temperatures of all baking ovens or banks of lights be less than 250° F. when drying enamel or lacquer on fibre glass.

POWER STEERING GEAR AND PUMP CHANGES

Please record this article on the Service Bulletin Reference page at the end of the Front Suspension and Steering section of your 1956 Passenger Car Shop Manual.

Power Steering Pump

A new Power Steering Pump Assembly, Part No. 1540150, went into production effective with the following serial numbers:

56G - W-F-D	Serial No.	G-1369982
	C-K	G-1373431
56B - W-F-D		8443917
	C-K	8446573
56H - W-F-D-Y		7183537
	K	7185371
56J		6031693*

* A few cars were built after this serial with the early type pump.

The new pump has more volume throughout the range. It differs in construction from the previous pump and most of the service parts are not interchangeable, but the disassembly procedures are essentially the same. The new pump

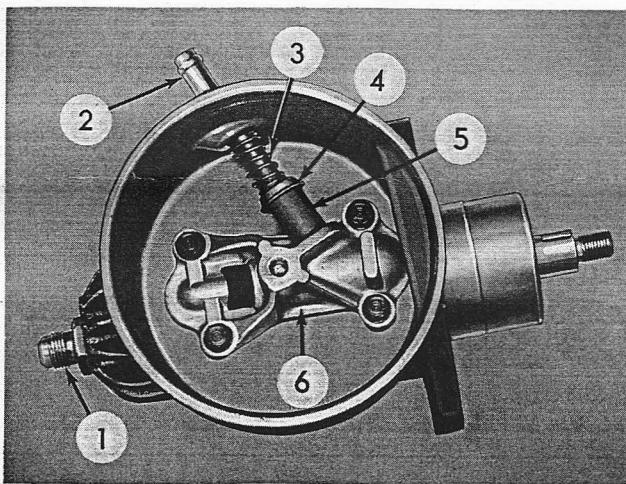


FIG. 5

- | | |
|--------------------------|----------------------------|
| 1. PRESSURE HOSE FITTING | 4. SCREEN RETAINER |
| 2. RETURN HOSE TUBE | 5. SCREEN |
| 3. SCREEN SPRING | 6. PUMP RESERVOIR MANIFOLD |

assembly can readily be identified because the hydraulic return hose is attached to a tube in the reservoir, rather than to the pump cover assembly. Further, the return hose no longer uses high pressure fittings; it is assembled with wrap-around hose clamps. This pump has a small screen (5, Fig. 5) located in the reservoir to filter the oil as it is returned.

The return tube (2) attached to the reservoir is shorter on the assemblies used on the 56G - W-F-D models than the tube of the unit used on the other models. This is necessary to prevent interference between the return hose and the battery. The unit as received from the Parts Depot will have the longer tube. Therefore, it will be necessary to modify the tube before it is used on the 56G - W-F-D models. Before installation, cut off approximately 1/2" of the tube, using a tube cutter. Every precaution should be taken to prevent chips or foreign matter from entering the return tube.

Power Steering Gear

A new Power Steering Gear Assembly, Part No. 1541976, has been released for service for all models, 1953 to current production. It is furnished without the hoses so that it can be readily adapted to Part Nos. 535716 or 1540150 pump assembly.

Part No. 1541976 may be substituted for the following parts:

534344	1953 - early 1956	W-F-D-Y
534345	1953 - early 1956	C-K
1540526	Early 1956 - 56J	
1539918	Present prod.	- all models

The Parts Depots will exhaust their present stock and then substitute Part No. 1541976.

Inasmuch as the gear, Part No. 1541976, is furnished without the hoses, if used with the early type pump Part No. 535716, the following will be required:

- | | |
|---------|--|
| 534666 | Pump-to-control valve pressure hose - W-F-Y-D |
| 534667 | Pump-to-control valve pressure hose - C-K except 56J |
| 1540103 | Pump-to-control valve pressure hose - 56J |
| 534672 | Pump-to-control valve return hose - All except 56J |
| 1540527 | Pump-to-control valve return hose - 56J |

If used with the latest type pump, Part No. 1540150, the following parts are required:

- | | |
|---------|---------------------------------------|
| 1540103 | - Pump-to-control valve pressure hose |
| 1541403 | - Pump-to-control valve return hose |
| 1541400 | - Return hose clamps (2) |
| 1541404 | - Return hose pipe and nut |

LIGHT BULB - MAZDA NO. 53

Please record this article on the Service Bulletin Reference page at the end of the Electrical System section of your 1956 Passenger Car Shop Manual and the 2E Series Truck Shop Manual.

The 12-volt light bulb, released for the Ultramatic and automatic transmission remote control, cigar lighter, oil pressure indicator, head lamp driving beam indicator, and directional signal indicator, has been cancelled. It is superseded by Part No. 1541674, (Mazda-1445), an 18-volt bulb which has a much longer life.

The Parts Depots will exhaust their stock of G-131282 (Mazda 53) for use in locations other than the transmission remote control indicator, and then substitute Part No. 1541674.

When replacement of the transmission remote control indicator bulb is necessary, install the 18-volt bulb, Part No. 1541674.



TRUCK SERVICE

**CHANGES IN 2E13 AND 2E14
MODEL TRUCKS**

Please record this article on the Service Bulletin Reference page at the end of the Rear Axle and Brakes sections of the 2E Series Trucks Shop Manual.

To provide for the use of tubeless tires, changes have been made in the rear axle, front brakes, front hub and drum assemblies, and wheels.

The rear axle assembly has been changed from the split type axle to a banjo type housing assembly. This new axle is a smaller version of the single speed banjo type assembly used on the 2E38 model.

Servicing procedures are the same as for the single speed differential carrier assembly described on pages 15 through 19 in the Rear Axle section of the 2E Series Trucks Shop

Manual except for the following torque specifications:

Drive pinion universal joint flange nut	175-250 ft.lbs.
Carrier-to-housing retaining cap screws	23- 31 ft.lbs.
Differential case retaining nuts	23- 31 ft.lbs.
Differential bearing cap retaining cap screws	81-106 ft.lbs.

The front brake drum diameter has been increased from 12" to 12-1/8". The design of the brake remains the same so a thicker lining is used to compensate for the 1/8" larger drum. There is no change in the rear brake assembly.

To retain a desired wheel tread and because the dish (offset) in wheels used for single rear wheel trucks is different than the dish in wheels used on dual rear wheel trucks it is necessary to have two different front wheel hub and drum assemblies. For trucks with single rear wheel front hub and drum assembly Part No. 1686104 is used. For trucks with dual rear wheels Part Nos. 1686106 right, and 1686107 left hub and drum assemblies are used.

These changes entered production with the following serial numbers:

E13-1236

E14-2263

Twenty-one trucks were built with split type rear axle assemblies and related parts after serial number E13-1236. They are serial numbers E13-1243 to E13-1246 and E13-1254 to E13-1270 inclusive.

**MANZEL REPAIR STANDS**

You will find enclosed with this issue of the Service Bulletin, a folder and order blank describing Manzel repair stands, cranes and adaptors.

STUDEBAKER DIVISION
Studebaker-Packard Corporation
South Bend 27, IND.