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Studebaker and Packard Clipper

SUPERCHARGER PLANETARY RACE REPLACEMENT - 1957 GOLDEN HAWK 57H-K and PACKARD CLIPPER 57L MODELS

Please record this article on the Service Bulletin Reference pages of the 1957 Studebaker Passenger Car Supplement and 1957 Packard Clipper Supplement.

There seems to be a question in the field on the proper use of shims (spacers) when replacing the planetary drive races.

Some of the first production superchargers were built with shims to obtain proper clearances on the races. Current production superchargers use wider races which do not require shims and clearances do not permit the use of shims.

When replacement of the planetary drive race is to be made, a kit, the Planetary Drive Element Set, Part No. 1542961 should be obtained from the Parts Depot. Depending on the width of the races, shims may or may not be included in the kit. If the new parts kit as received includes shims, it is necessary to use the shims. If the new parts kit does not include shims none should be used. Use the parts that are in the kit. If the supercharger had shims originally, discard the old parts.

FLIGHTOMATIC SERVICE PARTS - 57H-K GOLDEN HAWK and 57L PACKARD CLIPPER MODELS

Please record this article on the Service Bulletin Reference pages of the 1957 Studebaker Passenger Car Supplement and 1957 Packard Clipper Supplement.

The following is a list of service parts that are used only in the 1957 Golden Hawk and Packard Clipper models. Since these parts are specifically required for the transmission of these models, they must not be substituted by a similar part from a transmission of any other model.

In this issue

PART NUMBER	PART NAME
1543059	Case Assembly - Complete
1543076	Control Valve Body Assembly - Complete
1543079	Pressure Regulator Assembly
1543070	Front Brake Band Assembly - Complete
1543083	Front Brake Band Lubricating Tube
1543091	Governor Assembly - Service
1543085	Front Drum Assembly - Complete
1543089	Rear Clutch Piston and Ball Assembly
1543088	Rear Clutch Friction Disc
1543066	Planet Cover Thrust Washer - Front
1543064	Primary Sun Gear Assembly

CARBURETOR MODIFICATIONS ON 1957 GOLDEN HAWK 57H-K and 1957 PACKARD 57L MODELS

Please record this article on the Service Bulletin Reference pages of the 1957 Studebaker Passenger Car Supplement and 1957 Packard Clipper Supplement.

Several modifications have been made in the carburetor to prevent stalling, to improve performance and to get better economy.

ENGINE STALLING ON LEFT TURNS -

When the engine is hot, it was found that gasoline foam was being ejected from the bowl vent tube into the air stream. This is caused by the float dropping on a left turn and allowing gas to enter the float chamber under temperatures at which the gas was boiling.

A new Air Horn Gasket, Part No. 1543362 has been designed in which the vent hole in the gasket is not in line with the bowl vent tube, also a Baffle, Part No. 1543363, (see Fig. 1) has been released to be installed in the bowl chamber between the float and float needle valve (see Fig. 2). This baffle restricts the surge of gas from one end of the bowl to the other.

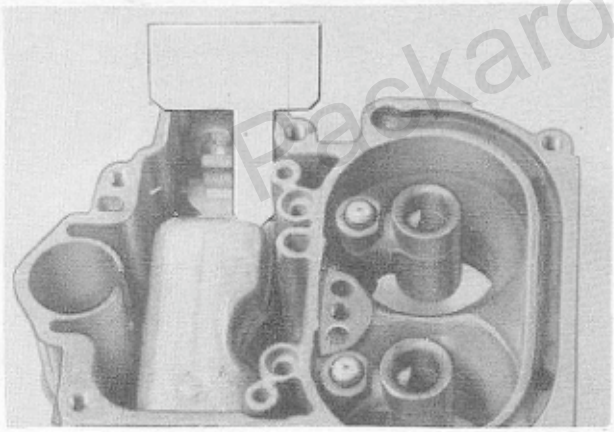

Fig. 1

CHOKE OPERATION -

A 1/4" hole will be placed in the choke butterfly to eliminate the over-rich condition after starting the engine when cold.

A lean condition that exists after starting has been corrected by shortening the choke stove-to-carburetor pipe 1 1/4". The above mentioned 1/4" hole should be drilled in the center of the choke butterfly in the wide side (see Fig. 3) and the choke stove-to-carburetor pipe shortened 1 1/4".

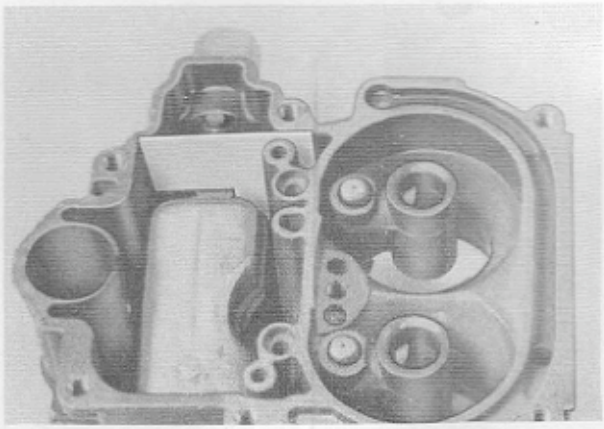

Fig. 2

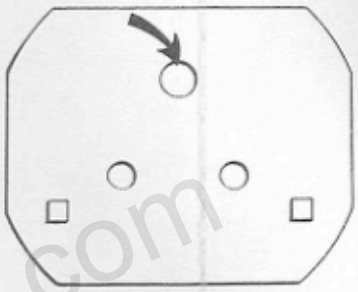

Fig. 3

When the carburetor is disassembled to install the cover gasket and baffle, the cover should be checked for flatness and corrected by filing the cover or body if necessary to make certain there is a good seal along the vacuum passage to the choke and vacuum power piston. The new choke setting is on the index mark.

GASOLINE ECONOMY -

A change was made in the spring tension on the vacuum power piston assembly. The change allows the power jet to come in at a higher speed which improves gas mileage. The new power piston assembly carries Part No. 1543290 and is interchangeable with the first type.

ALTITUDE JETS -

It is important when installing altitude jets that the proper jet is used. A .055 jet used in the standard two-barrel carburetor will have the same jet size stamped on it as used on the supercharged carburetor, but the construction on the inside of the jets is entirely different and provides a different gas flow.

The jet in the standard carburetor has a groove cut around the end where the socket

wrench fits. The supercharged carburetor jets do not have a groove.

SUPERCHARGED CARBURETOR JETS

PART NUMBER	JET SIZE	ALTITUDE
1543030x4	.057	Standard
1543030x3	.055	4,000 to 8,000 ft.
1543030x2	.053	8,000 to 12,000 ft.
1543030x1	.051	Over 12,000 ft.

Studebaker

CARBURETOR HIGH IDLE ADJUSTMENT - GOLDEN HAWK 57H-K

Please record this article on the Service Bulletin Reference page of the 1957 Studebaker Passenger Car Supplement.

The high idle adjustment data for the Golden Hawk was omitted from the 1957 Studebaker Passenger Supplement. The adjustment should be made as follows:

CARBURETOR OFF THE ENGINE -

Close the choke so that the highest part of the high idle cam is contacting the high idle screw. Then, adjust the high idle screw so that a .030" wire gage can be inserted freely between the throttle valve and the throttle body on the idle port side.

CARBURETOR ON THE ENGINE -

With the outside screw set for 550 rpm. and the engine stopped, manually close the choke and back off the high idle screw until the outside idle screw touches the stop. Then, turn the high idle screw in 7 1/2 turns. This will provide a .030"-.031" throttle valve opening.

SUPERCHARGER SLIDING PULLEY STOP WASHER - GOLDEN HAWK 57H-K

Please record this article on the Service Bulletin Reference page of your 1957 Studebaker Passenger Car Supplement.

A Sliding Pulley Stop Washer, Part No. 1543207 entered production with Supercharger Serial No. 101986. This washer is used between the end of the sliding pulley bushing and the input shaft seal spacer. Use of the stop washer provides a larger thrust surface for the sliding pulley bushing. The input shaft seal spacer was changed to allow for the thickness of the washer. The new spacer is 1/32" shorter, the thickness of the washer. The part number of the new Input Shaft Seal Spacer is 1543206 and cancels the old number 1542941.

We suggest that whenever the supercharger (before the above serial number) is disassembled, the stop washer be installed at reassembly. It is installed on the input shaft just prior to installation of the sliding pulley.

Although use of the stop washer with the longer spacer shortens the travel of the sliding pulley slightly, it has no effect on the overall performance of the unit.

SUPERCHARGER CARBURETOR AIR CHAMBER - GOLDEN HAWK 57H-K

Please record this article on the Service Bulletin Reference page of the 1957 Studebaker Passenger Car Supplement.

A number of changes were made in the air chamber base and cover since the original release without a change in part number. The most significant changes were the removal of the vent valves and the use of idle mixture adjusting screw extensions.

The two pipe plugs originally released to close the holes for the idle mixture adjustments have been cancelled and Part No. 1542985 (right) and 1542986 (left) Idle Mixture Adjusting Screw Extension Rod Assembly were released. This change entered production with Engine No. PS-2197 and Serial No. 6101154.

The vent valves were removed from both the base and the cover and the vent holes plugged. A drain pipe is installed in the base to provide a vent and drain for the air chamber. The pipe extends forward from the base and down in front of the engine. This change entered production with Engine No. PS-2375 and Serial No. 6101368.

To provide valves to service cars produced prior to the changes, the Parts Depots will stock only Valve Assembly, Part No. 1542765. Spring, Part No. 1542764 and Valve, Part No. 1542377 will be discontinued when present stock is exhausted.

The Parts Depots will stock only the latest bases and covers. If a Base Assembly, Part No. 1542839 is replaced on engines prior to Engine No. PS-2375, it will be necessary to install the following parts:

	PART NUMBER
1 Base Drain Pipe Assembly.	1543107
1 Pipe Nipple Base End.	1543108
1 Drain Pipe-to-Timing Gear Cover Clip	182317

NEW ROCKER ARM ADJUSTING SCREW - STUDEBAKER 259 and 289 CU. IN. ENGINE

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

A new Rocker Arm Adjusting Screw, Part No. 1541806 entered production effective with the following Engine Nos.:

Commander	259		V-396500
President	289		P-45703
Golden Hawk	289	Supercharged	PS-2415
Truck	3E		3E-3480
Truck	5E		5E-6902
Truck	6E		6E-201

The new adjusting screw has an additional recessed area in the head of the screw which prevents the push rod from slipping out of the screw socket should a valve stick. This will minimize bent push rods due to sticking valves. The screw is 1/2" across the flats as compared to 7/16" on the old screw. Therefore, it will be necessary to use a 1/2" wrench to make an adjustment.

Adjusting Screw Part No. 1541806 can be substituted for the previous Adjusting Screw, Part No. 532161. The Rocker Arm and Adjusting Screw Assembly part number is unchanged (536222). Only the latest type will be stocked for service after existing stock of screws and rocker arm assemblies is used up.

NEW 57G OVERDRIVE TRANSMISSION

Please record this article on the Service Bulletin Reference page of your 1957 Studebaker Passenger Car Supplement.

A new Overdrive Transmission Assembly, Part No. 1542227 was released for service for use in 57G model passenger cars. This new overdrive transmission has a different Main Shaft Rear Bearing Retainer Ring and a different Adapter. The new retaining ring is approximately 1/32" thicker and has locking tangs on it so that it maintains its position. This change was made to prevent the retaining ring from spiralling out of position and damaging the transmission. The overdrive adapter is changed only in the respect that it has a wider groove to accomodate the thicker ring. When present stock of Part No. 537681 Overdrive transmission is exhausted, Part No. 1542227 will be substituted.

The new type adapter and retaining ring are also available as separate parts which can be installed in the old transmission (Part No. 537681). It is important to note that the new thicker ring, Part No. 1543119-1543122 must always be used with the new adapter, Part No. 1543123. The new ring is approximately 1/8" thick while the old ring is 3/32". The adapter can be identified by the width of the retaining ring groove. When the present stock of Adapter, Part No. 521428 is exhausted, Part No. 1543123 will be substituted.

It is necessary to stock the old Retaining Ring Part No. 512992-512995 to service the old transmission if the adapter is not replaced.

GOVERNOR ASSEMBLY - FLIGHTO-MATIC (WARNER GEAR) TRANSMISSION - ALL MODELS except GOLDEN HAWK

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 the Automatic Transmission section of the 2E Series Truck Shop Manual.

Experience has shown that it is very seldom necessary to replace the Governor with Counterweight and Sleeve Assembly as an assembly. Therefore, Governor with Weight and Sleeve Part No. 1541098 is cancelled as a service item. Any stock on hand may be disassembled into the following part items.

1 -	1541354	Governor Assembly
1 -	1541100	Counterweight and Sleeve
2 -	G-114361	Screw, 1/4" - 20 x 1 1/2"
2 -	G-120380	Lock Washer, 1/4"

The components listed above may be substituted by the Parts Depot on an order received for Part No. 1541098.

Packard Clipper

LOSS OF DIRECT DRIVE CLUTCH ENGAGEMENT - 55TH SERIES

In the 55th series models it may develop that

the direct drive clutch will start to engage too softly, develop slipping or definitely develop complete loss of engagement.

When these cases or conditions arise, the car involved, usually has accumulated considerable mileage. The direct drive clutch will operate perfectly normal when the transmission and fluid are cold but when hot will operate as described in the previous paragraph.

In some cases, as an attempted correction, a new driven direct drive clutch plate was installed and following a low amount of additional mileage, the malfunctioning of the clutch repeated.

The problem described, may be caused by a restriction at the input shaft fluid passage opening at the groove formed by the space between the two direct clutch housing bushings. If this condition exists, the wear pattern of the rear clutch housing bushing on the shaft will give conclusive evidence of overlap at the rear bushing. This condition results in a restriction of the transmission fluid to operate the clutch piston to properly engage the direct drive clutch.

In these cases, as the direct drive clutch has performed satisfactorily for a considerable amount of accumulated service mileage, it is factual to assume that the relative alignment of the input shaft fluid passage or hole was originally closer to alignment at the groove between the direct clutch housing bushings. The restriction may have developed during driving or mileage accumulation, from one or a combination of the following conditions:

1. Excessive end play of input shaft.
2. Excessive crankshaft end play.
3. Incorrect positioning of clutch housing bushings or a shifting of a bushing during operation.
4. There is a possibility that the converter bell housing or main housing is slightly out of dimension or tolerances, fore and aft.

The following suggestions will assist in correcting the problem:

1. Check and correct end play of the input shaft, if required. For procedure and setting see Packard Service Manual 1955-1956, Ultramatic Section, pages 48 and 49. See illustrations 170, 171, 172, 173 and 174.
2. Check and correct end play of crankshaft, if necessary. See Packard Service Manual, Engine Section.
3. Check position of the bushings in the direct clutch housing, correct if necessary. If correction required, use correct service tool, see Service Counselor Volume 28, No. 12, tool PK 341-25 or Kent-Moore tool J-5945-6, check illustration Studebaker 1956 Service Manual, page 163.
4. If the previous suggestions do not provide the answer to the clutch problem and if the condition is caused by an out of tolerance condition of the housings, it may be necessary to provide an unrestricted fluid passage from the input shaft opening forward to open into the groove provided between the two clutch housing bushings. Rest the clutch end of the input shaft on a block of wood, (not necessary to remove input shaft from transmission), and with a suitable chisel, cut the groove or passage in the shaft as required. Do not cut it any wider than the diameter of the hole in the shaft or any longer than required to provide a clear opening into the space or groove between the clutch housing bushings. Make groove only deep enough to provide a sufficient volume. Check opening of fluid passage between bushings that permits fluid into clutch housing behind clutch piston for any restrictions.

   Important: Stone or smooth off all burrs, sharp edges or nicks, left by the cutting of the groove in the shaft, to prevent damage or scoring of clutch housing bushing.

HIGH RANGE CLUTCH PROBLEMS - 55TH and 56TH SERIES

The principle of the high range clutch and its functions are that of a regular multiple disc clutch, except its application and release are through hydraulic or fluid control. The alertness of its application and its timely release are largely within the functions of the components that have a part in handling such controls. As the high range clutch is subject to similar load pick up and slippage as any type clutch, when in operation, it is important that all components affecting clutch operation be within their proper adjustment or set tolerances of operation, in order to hold clutch problems to a minimum. The correct checking and setting of adjustments and tolerances will result in prolonging the service life of the

clutch. This will, also, produce as a natural result, a more satisfactory operation for the owner.

Linkage is the component in the control of operation, whose proper adjustment is so vital, it cannot be overstressed. It performs a very definite part in relation to operation, function, and life of the clutch.

56TH SERIES LINKAGE

As the information for checking and readjusting has previously been thoroughly covered and illustrated, we will not endeavor to go into a restatement at this time but will refer to the references containing such information.

The Packard Service Counselor Vol. 30, No. 5 has a write up for an easy and quick procedure to check accelerator linkage. Packard Technical Service Bulletin 56T-7, February 8, 1956 contains additional and more detailed information as to the linkage adjustments that have a bearing on operation.

55TH SERIES LINKAGE

In the matter of the 55th series linkage, as there is more involved, we are recommending more sources of information previously released in service publications.

For checking the linkage, setting and adjusting, see the Packard Service Counselor Volume 29, No. 7 and Volume 29, No. 9 Engine Runaway Low to High Shifts. The linkage adjustment is also covered in the Ultramatic Section of the 1955-56 Packard Service Manual, pages 52 and 53. In the Packard Service Manual, last paragraph under Throttle Linkage Adjustment, change the first sentence to read, "Apply a slight forward pressure on the carburetor transmission cross-shaft", in other words, cross out the word "rearward", substituting the word "forward".

MECHANICAL FUNCTIONS

While proper linkage adjustment is of basic importance, there are mechanical functions that may need attention, the corrections involved may require the checking, reworking or replacement of internal transmission parts. We will refer to information previously released covering such service corrective measures that may apply.

While we are chiefly concerned with the high range clutch in this write up, we will bring in references to additional service information that covers corrections or improvements that have a relative bearing on its functions or operation.

SLOW ACTION

A slow acting high range clutch piston will cause slow action as to high range clutch engagement, lessen the time period or separation between the shift from low range to direct drive or will give a rather harsh engagement of the direct drive clutch. This type of action of the clutch piston causes some undue fast slippage of the clutch discs over a normal acting piston.

To correct a problem of this type, refer to the Packard Service Counselor Volume 29, No. 8, article page 40, Engine Runaway - Low to High Shifts. The easy service method for a correction is illustrated as well as explained.

For a summary of service coverage for the 54th series Gear - Start and all 1955 and 1956 Ultramatic transmissions, see the Packard Service Counselor Vol. 30, No. 7. This information reference is complete in all phases as to changes, adjustments and corrective measures that bear directly on functions and shift patterns, which have a resultant affect on all important components of the transmission.

HIGH RANGE CLUTCH LOSS

When a high range clutch has burned out, it is just as imperative and important that the converter be as thoroughly cleaned out as is the transmission itself. If the converter is not cleaned out, the foreign material in the transmission fluid, trapped in the converter, will be circulated through the transmission as soon as the unit is placed in operation.

It is imperative and necessary to clean out the control valve bodies and very thoroughly check all valves for any sticking or scoring. Sticking valves, especially those affecting high range clutch pressures and application may be the cause of the clutch problem. Such a valve or valves must be absolutely cleaned and operate freely or the clutch problem will repeat. It actually is just as important that the same intense checking and corrections be applied to all valves in the valve bodies. Never replace a high range clutch without determining and correcting the cause of the problem.

The imperative importance of correct torque tightening of the valve bodies cannot be overstressed. The close tolerances of the valve

fits in their respective bores makes the correct tightening to specifications a positive must.

1957 PACKARD CUSTOM RADIO WITH AUTOMATIC TUNING

In the matter of tuning or adjusting to stations, the radio is not adjusted at the factory. There is a great variance of station frequencies geographically, also, in the number of stations, as well as variable difference in station power.

It is therefore advisable that the radio be tuned to local stations to provide a more complete and satisfactory customer reception.

The instructions are contained in the brochure in the glove box of each car so equipped or the information in the Accessory Section of the Packard 1955-1956 Service Manual, will apply.

When tuning, be sure antenna is fully extended before adjusting antenna trimmer for maximum volume on the initial low frequency station.

WINDOW REGULATOR ASSEMBLY

ELECTRIC - 1955 and 1956 PACKARD and CLIPPER MODELS

In order to provide a Window Regulator to include Arm and Bracket Assembly, less the motor and drive, new part numbers have been assigned for such assemblies.

Part No. 1323018-9, Window Regulator with Arm and Bracket Assembly - Right - Left. (less motor and drive) for models; 5547-67-87-88; 5647-67-77A-87-97-99

Under Code 30.386, Part Numbers 474396-7 include only the Sector and Arms, less the brackets. Part numbers 461858-59, include complete Regulator Assemblies with the brackets, including the Motor and Drive.

PACKARD 5522-5622 MODELS

Under Code 30.386 in the Packard 55th and 56th Series Parts book changes in the service parts set up are made to make available the arm and bracket.

Part numbers 6478420-1 should be deleted and new numbers 1323298-9 substituted. The arm and bracket assembly may now be ordered as a separate assembly. If a regulator assembly with motor, arm, and bracket is required, it will be necessary to specify the part numbers for the Regulator Assembly and the Arm and Bracket assembly.

461862-3 Regulator Assembly, Right - Left includes motor, less arm and bracket - 1955-56 Sedan Models.

1323298-9 Arm and Bracket Assembly - Regulator - Right - Left 1956 Sedan Models.

LONG TORSION BARS

In the Packard Parts Book under Code 15.997 Torsion Bar, you will note the standard long bar for the right side is not listed.

Orders received for the right side long bar are filled by supplying a pair of 9° bars. Part No. 6489154 right and Part No. 6489153 left.

When a pair of 9° bars are installed check clearance of the upper rebound bumpers to the upper control arm at the front suspension. If clearance is not sufficient or rubber bumpers ride or are too close to the upper control arms, the steering may be affected. Over bumps or bumps in the roadway, the suspension will tend to ease the wheels at the road bed contact.

To adjust, install front links of the required length to bring the clearance within approximately 1" at the rebound bumpers plus or minus 3/8".

Parts Depots will supply until stock is exhausted, the standard long bar for the left side, Part No. 445871, on single orders for this bar.

STUDEBAKER-PACKARD CORPORATION

South Bend 27, Indiana

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