

Service Bulletin

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SOUTH BEND 27, INDIANA

Studebaker and Packard

SPEEDOMETER CORRECTIVE SERVICE

Speedometer service is usually required because of one or more of the following complaints: (1) Speedometer fails to register (speed or mileage), (2) clicking, jerky or oscillating indicator hand and, (3) intermittent loud or steady high pitch noise.

1. SPEEDOMETER FAILS TO REGISTER

Failure to register may be caused by a broken cable or a faulty instrument.

The breaking of the cable can be caused by:

- (a) Normal wear and fatigue
- (b) Lack of lubrication
- (c) Kinks or sharp bends in the conduit due to improper installation or shifting of the conduit during operation. Breakage most frequently occurs at the sharp bend in the vicinity of the fire wall or where it passes below the body enroute to the transmission. Always check the conduit to make sure it has not rubbed through or is not broken at the point of failure of the cable.
- (d) Conduit which has been rubbed through by its contact on a clip where the clip has been turned out of position causing a sharp bend, or against the body.
- (e) A locked-up speedometer. Check the speedometer head by installing a short section of a drive cable into the drive square of the speedometer and roll the extended piece of the cable back and forth between the hands to determine if the instrument is tied-up or binding. A speedometer which has locked-up or does not register should be sent to an authorized speedometer service station for repairs.

2. CLICKING, ERRATIC OR OSCILLATING INDICATOR HAND

This type of operation is usually caused by kinks or sharp bends in the conduit and is

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STUDEBAKER and PACKARD

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aggravated by the lack of lubrication. The lubricant loss may result from excessive pressure of the drive cable against the conduit at the sharp bend or kink which would also lead to a broken cable if the condition exists for a long time.

As the cable is long and flexible it will windup between the driving force end and the point of binding and when it winds sufficiently to overcome the resistance of the bind, it will break loose with an accelerating force. This

will in turn then cause the wide fluctuation of the indicator hand. As the cycle of erratic action repeats, the indicator will produce a jerky or erratic action with regularity. There may also be a clicking noise along with this type of speedometer drive action.

A small brass ferrule is crimped to the cable about 1" from the instrument end. If this ferrule is not square and concentric with the cable, it will be noted that the 1" section extending beyond the ferrule will whip or run-out. When engaged to the instrument, this condition can cause a clicking noise.

A hard spot in the cable can also cause a noise condition. This can be determined by removing the cable and laying it out in a full loop with the ends crossed. Turning it from one end in both directions with the fingers it should turn smoothly. If a jump or interruption is noted, a hard spot or defect in the coiling is indicated and the cable should be replaced.

3. HIGH PITCH STEADY NOISE OR LOUD INTERMITTENT NOISE

This type of noise is usually a result of a very dry cable and can be corrected only by removal and thorough lubrication of the cable within the conduit.

INSTALLATION, ALIGNMENT AND LUBRICATION

It is important when installing or aligning the cable and conduit that all sharp turns and kinks be eliminated at points where clips are used; provide ample radius curves and bends to and from the securing points and at the speedometer and transmission ends. At points where chafing or rubbing of the conduit might occur, provide extra protection at such points by liberal application of tape or a suitable protective material.

Secure the knurled nuts at each end of the conduit snug; avoid heavy torquing. To install the cable, start the cable at the speedometer end, turn the cable when the drive end nears the pinion drive gear socket to make sure the drive end engages correctly and the shaft refuses efforts to be turned or rotated. When installing a drive cable at the speedometer head, make sure the drive end is properly engaged in the speedometer socket and the small washer is in position, if one is used. Then, snup-up the knurled nut.

Apply lubricant (Lubriplate or its equivalent) only to the lower two-thirds of the cable. The upper section of the cable will receive sufficient lubrication by the lubricant which clings to the inside of the conduit when the

cable is slipped through the conduit.

Avoid overlubrication as excessive lubricant at the speedometer end may work into the speedometer head, since excess lubricant will work upward. Lubricant in the speedometer will cause it to register incorrectly and necessitate servicing of the unit.

NOISY WATER PUMPS - 1955-56 PACKARD AND 56J STUDEBAKER GOLDEN HAWK

New service water pumps are being replaced because of a very noticeable growl that sounds similar to a rough bearing but in most cases, the noise is in the seal. In some instances several replacements have been made in the same car in an effort to obtain a quiet pump.

Before installing a new service pump, check the action of the seal by easily turning the impeller for just a short rotation back and forth. If it has a tacky or sticky action, submerge the impeller end of the pump in S-P Cooling System Rust Resistor or a soluble oil deep enough to get to the seal. Then lift the pump up and rotate the impeller to work the fluid into the seal. Repeat the operation, if necessary, until a smooth action or rotation on the seal is obtained. Any method that will work the fluid into the seal is satisfactory.

Following the installation of the new pump, add S-P Cooling System Rust Resistor to the cooling system when filling the system with coolant. The Rust Resistor will work satisfactorily with either water or permanent type anti-freeze.

SHOCK ABSORBER NOISE - 1957-58 Passenger Cars

Please refer to the article on page 4 of Service Bulletin No. 336 and on page 2 of Service Bulletin No. 338.

REAR SHOCK ABSORBERS

With reference to alignment of the rear shock absorbers and bushing replacement as covered by the articles in Service Bulletin Nos. 336 and 338, Figure 1 provides a sketch of a suggested tool that may be easily fabricated for bending the rear frame cross member when such procedure is required to obtain satisfactory rear shock absorber alignment.

FRONT SHOCK ABSORBERS

Cancel the instructions given under the heading 'Front Shock Absorbers' in Service Bulletin No. 336. Front shock absorbers having the forked type lower mounting bar will have to

be replaced if they develop an objectionable knock or chuckle.

effect the operation of the piston and it is entirely satisfactory for service.

REAR SHOCK ABSORBER FRAME CROSS-MEMBER BENDING BAR

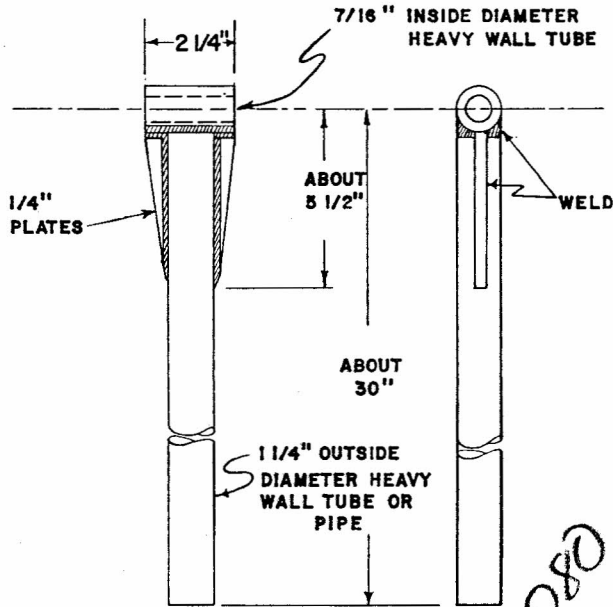


Fig. 1



TRANSMISSION OVERDRIVE GOVERNOR COVER AND GASKET KITS FOR SERVICE-1958 MODELS

Two new governor cover and gasket kits have been released for servicing the 1958 overdrive control governors. Also, the overdrive governor cover gasket is released as an additional service part. Following are the new part numbers of the kits and gasket.

Part No. 1547890 - Overdrive Governor Cover and Gasket Set - For servicing Part No. 1545213, Governor, used on the 1958 'G' with 4.55 or 4.56 rear axle ratios. This governor and cover is identified by the "TGE-4019" stamped onto the governor cover.

Part No. 1547891 - Overdrive Governor Cover and Gasket Set - Used for servicing Part No. 1545214, Governor, used on the 1958 'G' with 3.54, 4.09 and 4.10 rear axle ratios; also all 1958 B, H, and L models. This governor and cover is identified by the "TGE-4018" stamped onto the cover.

The chassis parts catalog currently lists Part No. 1544567 as a Governor Cover and Gasket Kit for the 1958 models. Since this part number does not properly identify the governor cover and gasket, it is being canceled. Part No. 1544567 is being superseded (not substituted) by the above numbers.

We are also releasing Part No. 1547892, Gasket, (Overdrive Governor Cover), as an individual service part.

BRAKE LINING - 58G - Y1 TAXICAB

In response to requests from taxicab operators, Johns-Manville brake lining #1105 is now used as standard on the 58G-Y1 taxicab. This change entered production with Serial Number G-1426619.

For service, front and rear shoe and lining sets will be furnished under the following part numbers:

Part Number	Name
1547347	Shoe and lining set, front
1547348	Shoe and lining set, rear

IMPROVED SUPERCHARGER PLANETARY OUTPUT DRIVE ELEMENT SET - 57H-K, 57L AND 58H-K Models

An improved supercharger planetary output drive element set has been released for service under Part No. 1548351.

The new drive element set, Part No. 1548351 includes the same service items as furnished in Part No. 1542961. However, the drive balls and inner race are specially heat treated to provide longer service life.

The new drive element set is interchangeable with Part No. 1542961.

SUPERCHARGER AIR CYLINDER PISTON-57H-K, 57L AND 58H-K Model

We have in Parts Depots stocks a quantity of Air Cylinder Pistons, Part No. 1542920, which have eight 1/4" diameter vent holes drilled in the piston hub instead of the two 1/4" diameter holes normally used.

This should cause no concern. Investigation has shown that the additional holes in no way



AIR CONDITIONING RELAY - 1953-54 PACKARD MODELS (Frigidaire Units)

Please make a note of this article in your 1951-54 Packard Service Manual.

Air Conditioning Relay Assembly, Part No. 439453 is no longer available and is superseded by Assembly, Part No. 6484059. The Relay Part No. 439453 used five terminals whereas Relay Part No. 6484059 has only three. This means that when using the latter assembly the wiring hookup must be changed.

Relay 6484059 has an internal ground; this eliminates the ground terminal that formerly connected to the braided ground wire. The wire from the right hand blower switch connects to the 'L' or load terminal on the relay. The two wires formerly connected to 'SW' or switch terminal, on the opposite side of the relay from the 'L' terminal, connect to the 'C' terminal. The wire from the ignition switch connects to the 'B' terminal as does the remaining loose wire (orange) that connects to the air conditioning 'Off-On' switch.

If good ground is not obtained, a ground wire may be installed on one of relay base attaching screws.

REAR AXLE TORQUE ARM AND SHOCK ABSORBER BRACKET - 55TH SERIES PACKARD

Please make a note of this article in your 1955-56 Packard Service Manual.

When the stock of Rear Axle Torque Arm and Shock Absorber Bracket, Part No. 445350 (left) and 445351 (right) for the 55th Series Packard is exhausted, the following parts will be substituted:

For Part No. 445350

- 1 6489119 Bracket, Rear Axle Torque Arm and Shock Absorber - Left
- 1 6480022 Stud
- 1 G442832 Nut

For Part No. 445351

- 1 6489120 Bracket, Rear Axle Torque Arm and Shock Absorber - Right
- 1 6480022 Stud
- 1 G442832 Nut

When the new bracket and stud are installed on a 55th Series, the shock absorber lower eye is mounted on the forward side (toward the front of the car) of the lower mounting stud and bracket and becomes an installation identical to the rear shock absorber installation on the 56th Series.

ULTRAMATIC TRANSMISSIONS WITH PACKARD STRAIGHT EIGHT MODELS - Prior to Gear Start Type

The Ultramatic transmission, prior to gear start type, used on most straight eight models may cease to function or drive in any forward position of the selector lever but will operate in reverse. This malfunction may come on instantly even when the vehicle is in forward motion.

The malfunction may be due to the front pump relief valve. This valve is located in the lower rear part of the flywheel housing just ahead of the attaching flange of the transmission housing. The valve may be sticking in the bore of the housing.

The front pump relief valve and spring may be removed after removing the relief valve retainer plugs at each end of the relief valve bore.

If it is a chronic case or repeated sticking occurs, in spite of careful cleaning and freeing-up of the valve, it may be necessary to install a new flywheel bell housing.

Some 1953 models, 26th Series, have .025" oversize front pump relief valves and these are identified by an 'O' stamped on the outer surface of the relief valve retainer.

ULTRAMATIC LOCKING IN PARK - 1954-56 Model Packard Gear Start Type

Please make a note of this article in your 1951-54 and 1955-56 Packard Service Manuals.

This condition may occur with either the manual or push button type of control valve shift. There are several factors in this problem, all must be checked and complete corrections made in order to secure satisfactory operation.

Actually what happens when this condition occurs is this: The pawl rides up on the high point of the parking gear and becomes wedged. The only way it can be released without disassembly is to rock the car back and forth

and this usually requires extreme effort.

Remove the oil pan and rear extension housing. Then remove the parts involved and thoroughly check. All worn or sprung parts must be replaced.

Check for the following:

1. Tightness of levers.
2. Bent or sprung shafts.
3. Worn roller of park operating lever.
4. Wear where the roller pin fits through the lever.
5. Damaged or worn parking gear and parking lock lever.

All these parts must provide secure and positive locking depth engagement in the indentation of the parking gear when the parking lever pawl is engaged.

The raised section of the parking gear locking pawl that engages the indentations of the parking gear requires only sufficient clearance at the high points of the parking gear when fully released to insure safe permanent disengagement. Excessive clearance would indicate that the locking pawl is not making maximum engagement when it is in the locked position of the parking gear.

ULTRAMATIC LINKAGE ADJUSTMENT - 24th, 25th, 26th and 54th Series Prior to Gear Start Type

Before any adjustments are made on the Ultramatic transmission, the engine and transmission should be at operating temperature and the engine should idle at 375 rpm in 'H' (high range) with the parking brake applied. Correct adjustments cannot be made with worn or binding linkage. The control linkage and throttle linkage should operate freely. Replace the linkage with new parts if they are worn, and free-up all points of pivot before attempting to make adjustments. Be sure the carburetor choke is fully released in the wide open position.

SELECTOR CONTROL LINKAGE ADJUSTMENT

Place the steering column selector lever in 'L' (Low Range) position. Be sure that the detent plunger is locked in its well. Adjust the selector rod turnbuckle so the steering lever stop pin is .030" - .040" away from the stop on the bracket. See Fig. 2. Tighten the turnbuckle lock nut. Recheck the lever in the other positions. Shifts to 'N' (Neutral), 'R' (Reverse) and 'P' (Park) should be made without permanent overtravel when contacting the stops.

CONTROL VALVE ADJUSTMENT

To adjust, loosen the detent lever cap screw indicated by the arrow. Set the detent lever in the reverse position. Set the control valve to the 5/16" dimension using a scale and, tighten the detent lever cap screw to 50 ft.-lbs. torque. See Fig. 3.

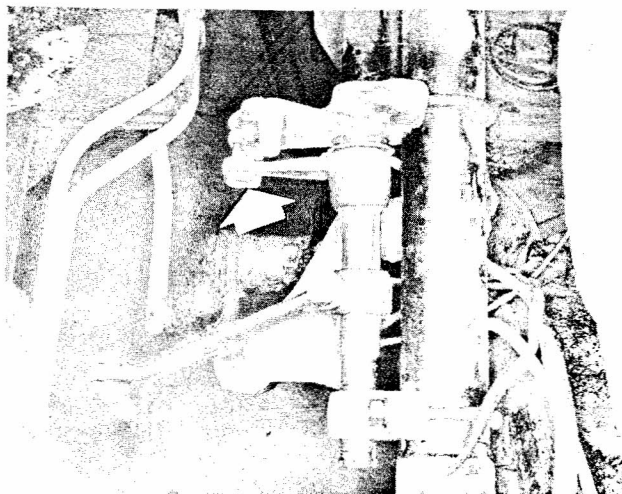


Fig. 2

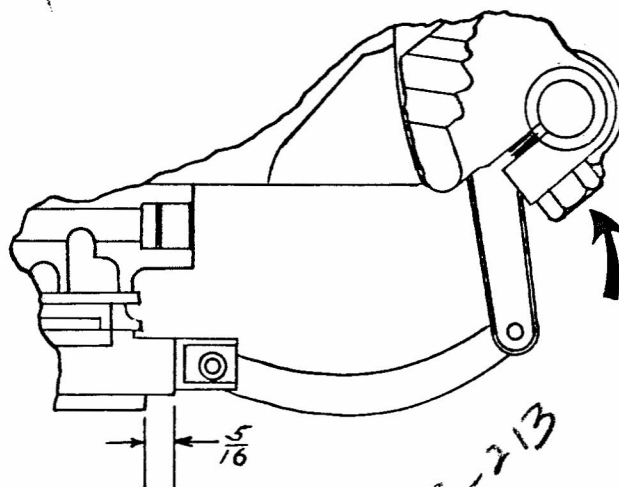


Fig. 3

The control lever shaft should have approximately .045" end play, this is governed by the position of the detent lever. It may be necessary to loosen the cap screw and move the detent lever on the shaft to obtain the desired end play. When this is done, the 5/16" adjustment should not be disturbed.

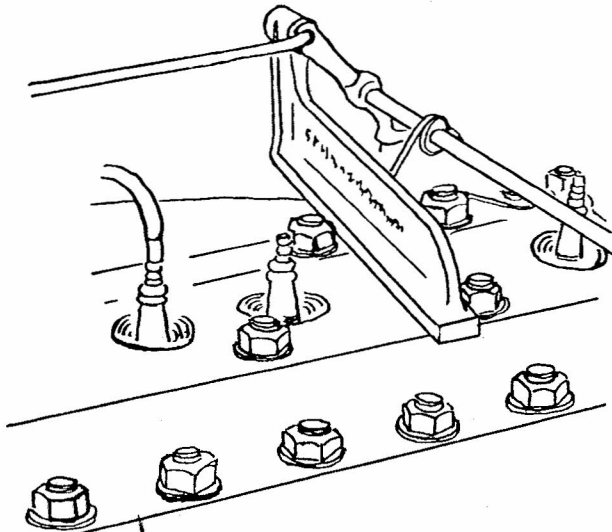


Fig. 4

THROTTLE CROSS SHAFT-TO-CARBURETOR ROD ADJUSTMENT

To check or adjust cross shaft-to-carburetor rod the choke must be wide open and the carburetor at low idle. Block the carburetor choke if necessary to be sure it is in the open position.

When the carburetor throttle rod is properly adjusted, the end of the short bend at the rear of the rod will protrude through the hole in the cross shaft lever and enter the hole in the gauge, PK-364. See Fig. 4.

The rod can be lengthened or shortened by loosening the lock nut and turning the spring-loaded throttle over-ride.

To check the gauge, for all 24th, 25th and 54th Series except the 54th Series equipped with a 359 cu. in. engines, the measurement from the base or lower flat surface of the gauge to the center of the hole for the end of the carburetor rod must be 2-3/4". All 54th Series equipped with 359 cu. in. engines, Models 5406-26-31, the measurement from the flat lower base of the gauge to the center of the hole must be 2-17/32". For right hand drive cars the same comparative measurement is 2". Only the very latest PK-364 gauge has the right hand checking hole in the gauge.

THROTTLE VALVE LEVER

This is a very important adjustment and should never be overlooked. Disconnect the relay rod from the throttle lever at the right rear side of the transmission. See Fig. 5.

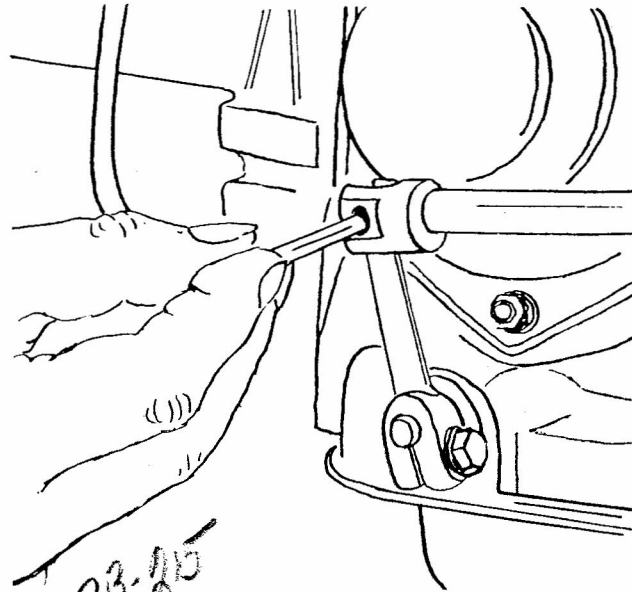


Fig. 5

Loosen the lever clamp screw just enough so that the lever will rotate the shaft but will not turn on the shaft if the shaft is held.

Rotate the lever forward (toward the front of the car) until it is horizontal.

Rotate the lever in the opposite direction (toward the rear of the car) until the valve is closed and against the throttle valve spring. Do not compress the spring.

Without compressing the spring, rotate the lever still farther toward the rear until a piece of rod or pin 3/16" in diameter can be inserted through the holes in the lever and relay rod. See Fig. 5. Continue rotating the lever toward the rear until the pin becomes snug in the holes.

Tighten the lever clamp screw and then connect the relay rod using the clevis and cotter pin.

ACCELERATOR RELAY ROD-TO-CROSS SHAFT ADJUSTMENT

The kickdown spring-loaded stop plunger was discontinued during the 25th series production. When making linkage adjustments on the 24th and 25th Series cars, the spring-loaded stop plunger should be removed and discarded. The relay rod should be adjusted so that the kickdown can only be accomplished when the accelerator is pressed hard to the floor. Adjust at the relay rod turnbuckle on the left side of the engine near the attachment at the cross shaft.

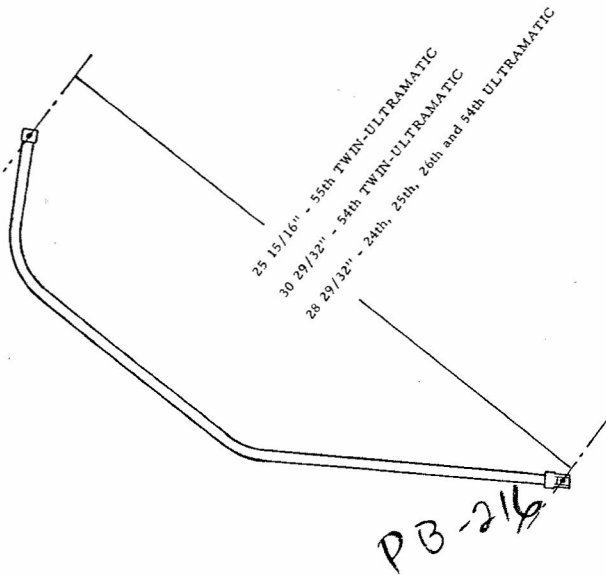


Fig. 6

ULTRAMATIC THROTTLE CONTROL ROD ADJUSTMENT - ALL MODELS

Because of the shape of this rod, it is difficult to determine if it is bent. Its function is to control throttle pressures, clutch engagements and upshifts. Therefore, it is very important that the rod is of proper length. Figure 6 shows the manner in which the rod should be checked and the proper lengths for the various models.

ULTRAMATIC THROTTLE LINKAGE ADJUSTMENTS - GEAR START TYPE

The linkage adjustment for the gear start type Ultramatic transmission for the 54th, 55th and 56th Series is covered in the Packard Service Manual. The remainder of this article deals with variations and other service information not covered in the manual.

MAKE THIS CORRECTION IN THE PACKARD SERVICE MANUAL. In the last paragraph under Throttle Linkage Adjustment on page 53 below Figure 181 it should read, "Apply a slight FORWARD pressure, etc.", change the word 'rearward' to 'forward'.

There is no single item affecting the performance and durability of the transmission that is of more importance than the proper adjustment of the accelerator linkage. The linkage matches the transmission capacity with that of the engine and can materially alter the shift pattern if maladjusted.

In adjusting the linkage, two important settings must be made before attempting any

other adjustments. The engine must be at operating temperature and off the fast idle and, the engine speed at 450 rpm with the selector lever in the 'H' position.

We will first cover service information affecting shift pattern in 1955 and 1956 models with Twin-Ultramatic Transmission.

55TH SERIES

Unexpected or unwanted kickdown into low range converter range when driving at full throttle or near full throttle position may be encountered in some 55th Series Twin-Ultramatic Transmissions.

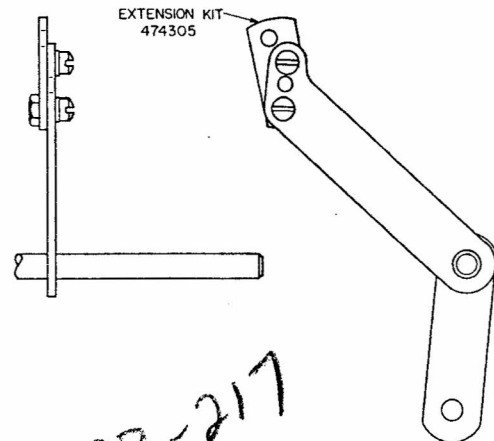


Fig. 7

Because of the stack-up of tolerances in the throttle linkage and adjustments, the throttle valve kickdown position is being reached before the carburetor throttle valves are fully open.

To take care of the slight variations, the linkage geometry can be changed by installing an extension on the throttle control cross shaft lever as shown in Fig. 7.

After installing the extension, readjust all of the linkage as described on pages 52 and 53 in the Twin-Ultramatic section of your 1955-56 Service Manual. Under 'Adjusting Accelerator Linkage - 55th-56th Series' in this article is described an easy method for checking and setting the linkage in the engine compartment.

Part No. 474305, Carburetor Control Cross Shaft Lever Extension Kit is available from your Parts Depot.

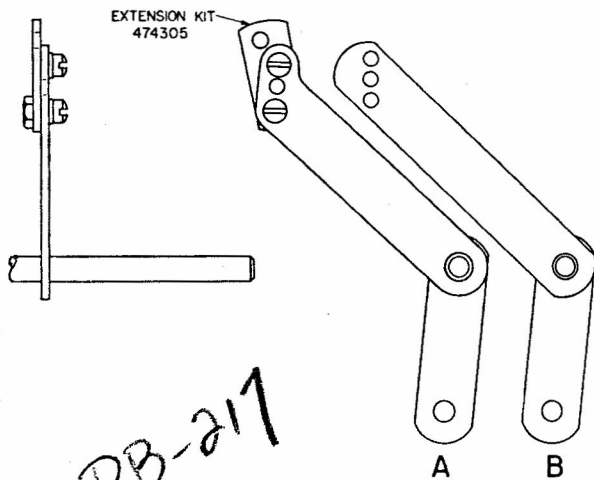


Fig. 8

55TH SERIES AND EARLY 56TH SERIES

Some early 56th Series cars had the 55th Series throttle lever 'A' as shown in Fig. 8. Some of these may be equipped with Extension Kit, Part No. 474305; depending on unwanted kickdown or too-easy-a-squeeze-out with wide open throttle.

If unwanted kickdown or squeeze-out is encountered on 56th Series cars equipped with 55th Series lever, install the Extension Kit 474305 and readjust the linkage as per the Service Manual.

All 56th Series cars having the throttle lever as indicated by 'B' in the illustration do not require the extension.

ADJUSTING ACCELERATOR LINKAGE-
55th-56th SERIES

The engine must be at operating temperature, off fast idle (idling at 450 rpm) and the selector lever in the 'H' position.

Loosen or back-off the lock nuts on both sides of adjuster 'A'. With the carburetor idle speed adjusting screw against its stop, loosen the lock nut 'D' and adjust the length of the rod to obtain 3-3/8" to 3-1/2" measurement from the front side of the dash. Measure from the bottom of the reinforcement channel in the front side of the dash to the center of the screw in the lever as shown in Fig. 9.

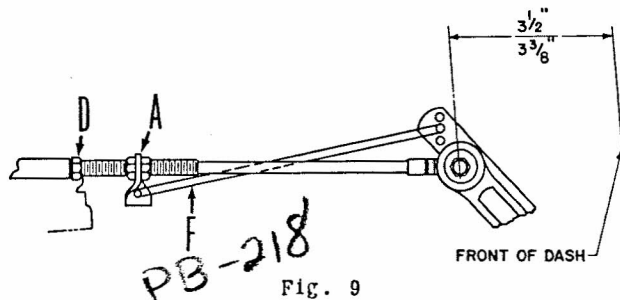


Fig. 9

Apply a slight forward pressure on the carburetor transmission cross shaft-to-adjuster rod 'F' and move up the rear lock nut and tighten. Make sure that the alignment of the adjuster is such that it does not cause the lever to bind.

In the 56th Series with the type of lever as shown, if the kickdown is premature, move the adjuster rod into the upper hole in the lever and reset the linkage. If 'flare' exists, move the adjuster rearward 1/16" to 3/32".

To adjust the throttle valve lever at the right rear side of the transmission, on all model Twin Ultramatics, see the instructions on page 52 of the 1955-56 Packard Service Manual. Also the complete instructions for adjusting the throttle linkage on the 1954 models, Packard Straight Eights, equipped with Twin Ultramatic.

CYLINDER BLOCK AND PISTON
ASSEMBLY - PACKARD STRAIGHT
EIGHT ENGINE

Please make a note of this article in your 1951-54 Packard Service Manual.

We have reports that attempts have been made to use the Packard straight eight block and piston assembly, Part No. 458220, in place of the assembly, Part No. 436705. This should not be done.

Part No. 458220 is for the 359 cu. in. displacement engine and Part No. 436705 is for a 327 cu. in. displacement engine.

If the 327 cu. in. engine crankshaft, rods and cylinder head are used in Part No. 458220, the pistons stop farther from the top of the bore because of the shorter stroke. The displacement is of a lower capacity resulting in less power and the carburetor is also out of calibration for that assembly.

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