SECTION 6

POWER TRAIN

CONTENTS OF THIS SECTION

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GENERAL DESCRIPTION

The 1961 Corvair passenger car power train (fig. 6-1) incorporates the following design revisions which should be noted relative to its removal and installation from the vehicle.

- Engine rear mount now shear-type.
- Revised fuel induction system incorporating manual choke.
- Optional Perimeter heater which utilizes engine heat for passenger compartment.

The "Corvair" power train consists of a horizontally-opposed, air-cooled six-cylinder engine integrated with a transaxle to form a compact unit (fig. 6-1).

The standard driveline is a manual shift three speed transmission coupled with a 3.27:1 rear axle. Optional transmissions include a four-speed transmission and an automatic transmission. 3.55:1 ratio rear axle is available with any of the transmissions.

As illustrated, the transmission is separated from the engine by the differential carrier (rear axle). In relation to their installed positions, the transmission is toward the front of the vehicle and the engine is at the rear.

Tracing the power flow engine torque is transmitted to the transmission by means of a shaft from the clutch which runs axially through the pinion shaft. The torque is then multiplied in the transmission or passed on in the same ratio to the rear axle pinion which is splined to the transmission shaft. From this point, the power flow is conventional as the pinion drives a ring gear bolted to a differential which drives the axle shafts through its side gears.

An essentially alike power flow results with the optional automatic transmission version, the major exceptions being that a torque converter is mounted at the clutch location and two shafts run from the converter to the Powerglide unit. Considering the turbine shaft as functionally comparable to the clutch shaft except that it is hollow, the second shaft is necessary to drive the front pump of the automatic transmission.

A three point mounting is used with the power train. Two mounts attached to the transmission support the front of the unit at the rear suspension cross-member and the third mount is located at the rear center of the engine and attaches to the integrated body-frame.

Descriptions of the individual power train components are provided in Sections 6A through 6E.

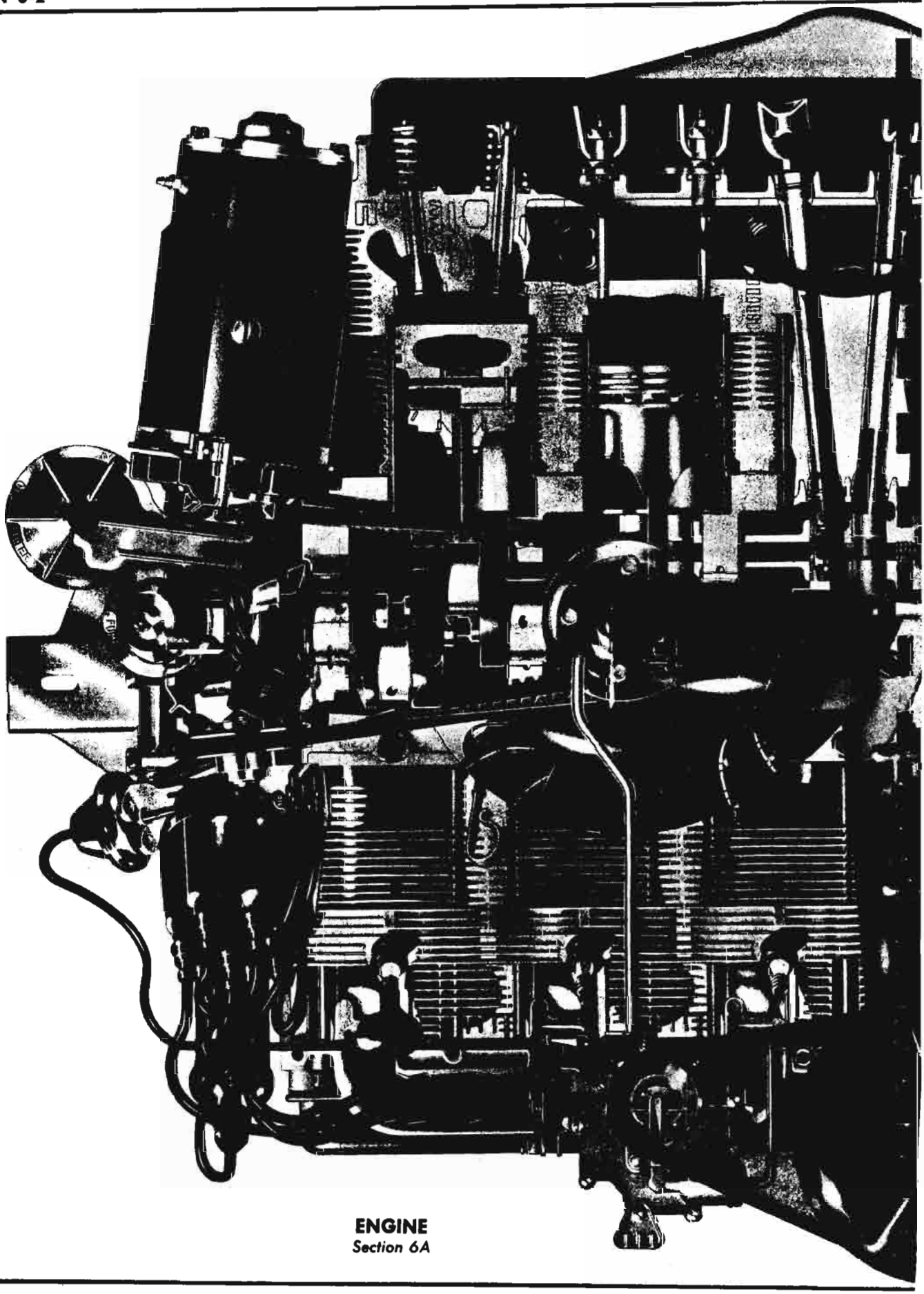
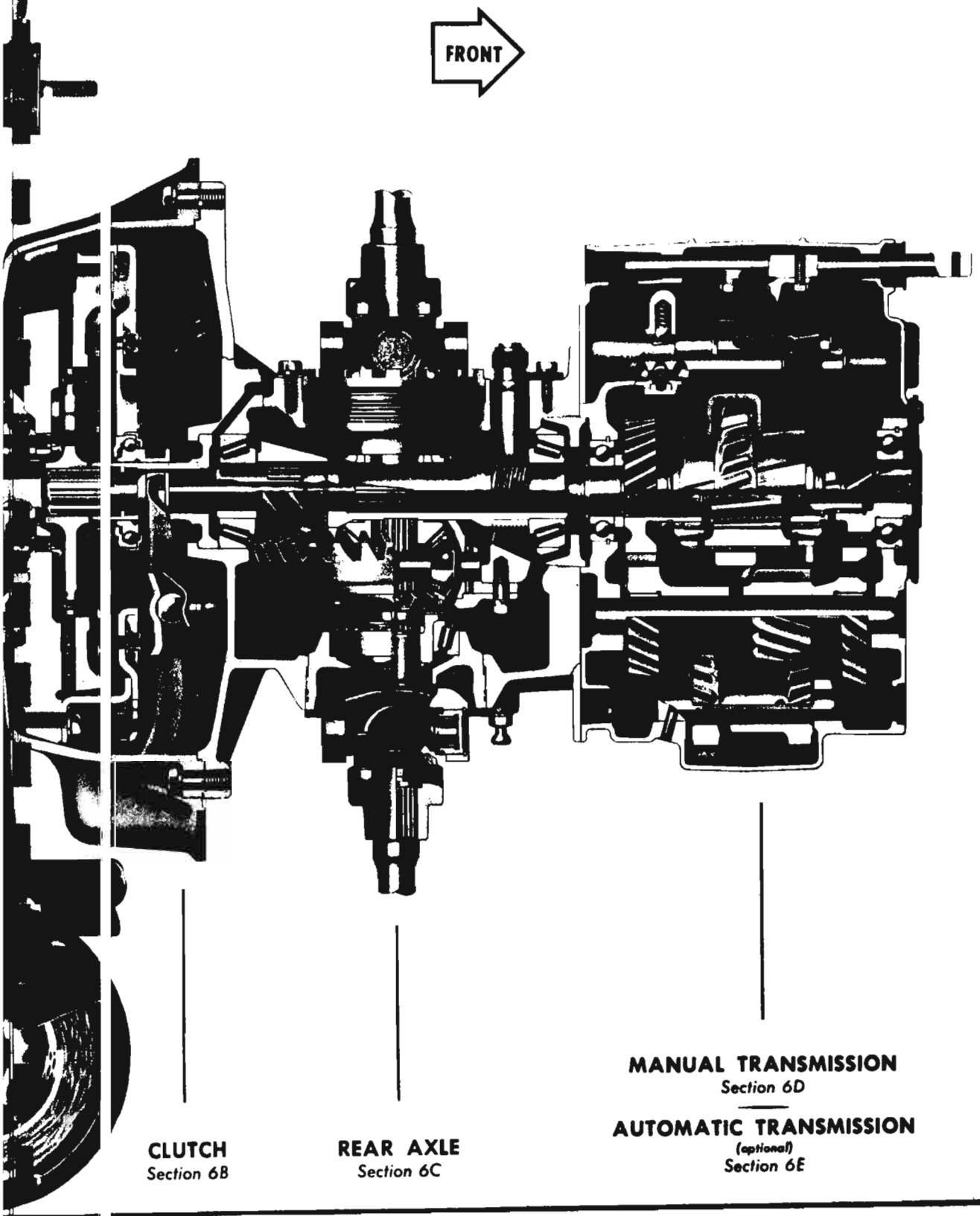


Fig. 6-1—Power Train—Sectional View


FRONT
MANUAL TRANSMISSION
Section 6D
AUTOMATIC TRANSMISSION
(optional)
Section 6E
CLUTCH
Section 6B
REAR AXLE
Section 6C

SERVICE OPERATIONS

INTRODUCTION

In order to service components of the Corvair power train efficiently, the serviceman must familiarize himself with the location and accessibility of the engine, axle and transmission components.

Many service operations may be performed on the vehicle without disturbing the power train unit. In other cases, however, it will be necessary to remove the entire power train from the vehicle to perform the necessary servicing. Toward this end the power train has been designed for "package" removal from the vehicle.

To the serviceman inexperienced with the Corvair power train, the exact approach to a particular service problem will not always be obvious. For this reason adequate introductory information, including a "Service Reference Guide," has been included in the more complex power train component sections to assist the serviceman in determining the best approach for his particular service problem. Before beginning any service operation, the serviceman should consult this material until he has become thoroughly familiar with the best approaches for all service operations. In general, the primary question to be answered is: "Will it be necessary to remove the power train to do the job?". The "Service Reference Guide" will answer this question as well as offer other valuable service information.

The importance of using proper equipment and following recommended procedures when removing and installing the power train cannot be over-emphasized. This is extremely important from the standpoint of both safety to the serviceman and prevention of damage to the power train components.

The preferred method of removal and installation described in this manual utilizes Power Train Fixture J-7894 mounted to a suitable hydraulic jack, such as J-8394, with the vehicle on a hoist. Equipment limitations may require a modified approach to this operation, but the basic principles and precautions remain the same.

Listed below are some of the major precautions to be observed when removing or installing a power train.

- Do not support the complete power train except at the engine pan rail. Under no circumstances should it be supported on the pan itself. Jacking Fixture J-7894 has been designed to properly support and lock the power train in a balanced position.
- No jacking fixture (or floor support) should be used unless it is capable of supporting the weight of the power train (approximately 460 pounds).
- No jacking fixture of questionable stability should be used. The base must be sufficiently wide and the jack adequately braced to prevent tipping or collapsing with the power train raised to the maximum lift position of the jack. Rough or uneven floors will complicate this problem. The center of gravity or balance point of the complete power train is located approximately .200" behind the front face of the cylinder block.
- No jack should be used that does not permit the power train to be lowered **gradually.** This is essential to avoid damage to components when "tight" clearances are encountered during removal.

If in doubt as to whether existing equipment can adequately and safely handle the power train, consult the equipment manufacturer.

All service operations contained in this section pertain to the removal and installation of the complete power train as well as the separation and assembly of the engine-axle-transmission components. Refer to Sections 6A through 6E for service information on the individual power train components.

REMOVAL OF POWER TRAIN

1. On coupe and sedan models remove spare tire; on station wagon models, remove engine access cover.
2. Remove carburetor air cleaners.
3. Disconnect return air hose for air heater if car is so equipped.
4. Remove engine-to-body front seal retainer.
5. Disconnect return spring and throttle rod from left carburetor at the carburetor cross-shaft.
6. Disconnect tunnel choke cable (fig. 6-2) at its attachment to the choke bridle by loosening the screws securing the cable sheath clamp and cable clamp (Inset, fig. 6-2).
7. Make the following electrical disconnections (fig. 6-3).
   a. Disconnect battery cable from battery positive terminal.
   b. At generator, disconnect ground strap and blue and brown leads to voltage regulator.
   c. Disconnect yellow and purple ignition leads at the starting motor harness connector in the engine compartment.
   d. Disconnect the left and right engine-to-body ground straps (not shown).
   e. Disconnect yellow lead from ignition coil and disconnect leads to temperature and oil pressure switches.
8. Raise vehicle on hoist, then complete electrical disconnections by removing the battery cable and

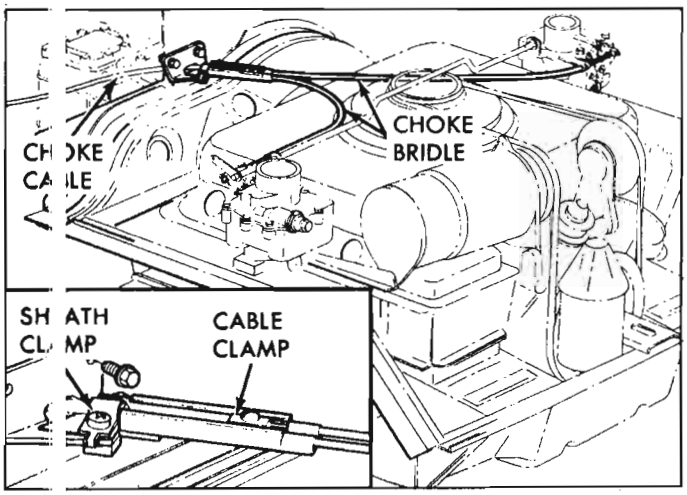


Fig. 6-2—Choke Cable Installation

yellow and violet ignition leads from the starter solenoid (Inset, fig. 6-3).

9. Remove engine rear grille and skid plate, then remove retainers from rear and side engine seals.
10. Disconnect parking brake return spring from engine front mount crossmember.
11. Pull choke cable forward until it clears the engine front mount.
12. Disconnect accelerator control rods at the transmission idler lever (fig. 6-4). Push the lever-to-carburetor rod up into the engine compartment.
13. Disconnect fuel line by loosening clamps securing fuel line hose connection and plug lines to prevent leakage. Disconnect speedometer cable at the differential carrier.
14. If vehicle is equipped with an air heater, disconnect flexible hoses at the engine.

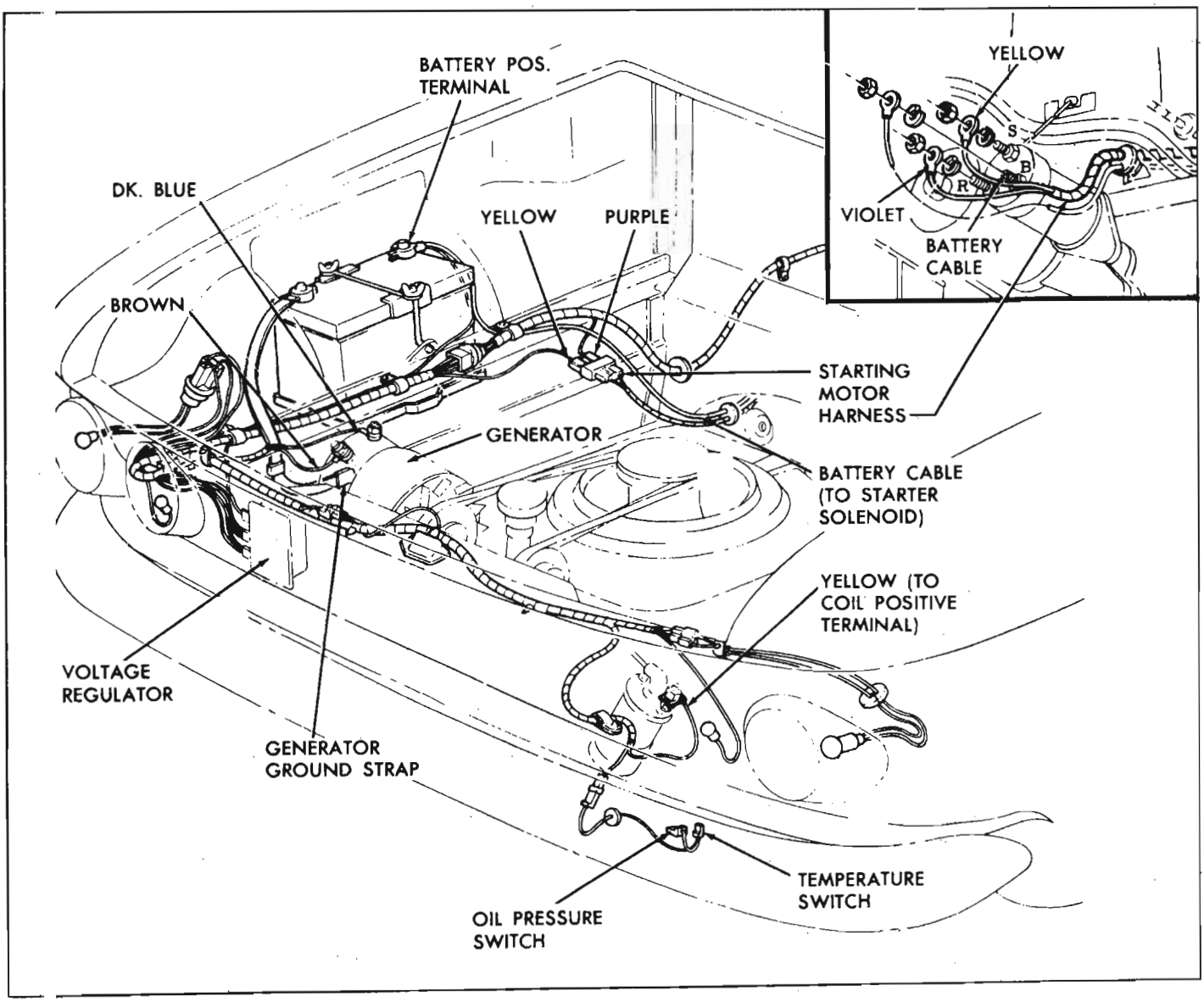


Fig. 6-3—Electrical Connections

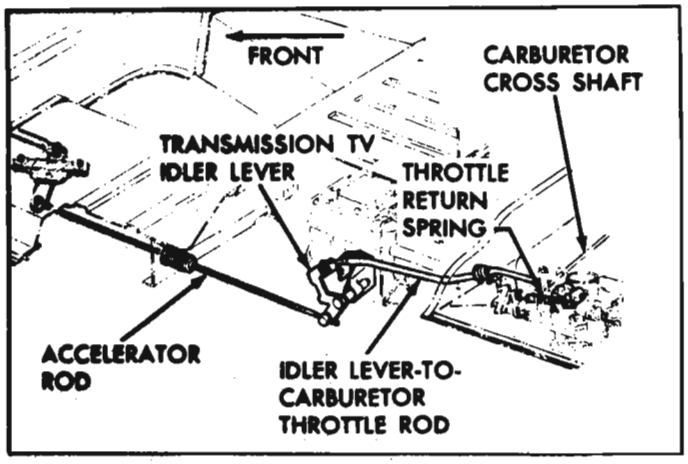


Fig. 6-4—Accelerator Control Rods

15. If vehicle is equipped with gasoline heater, disconnect heater fuel line.

16. Pull U-joints from differential carrier by removing axle shafts as described in Section 6C.

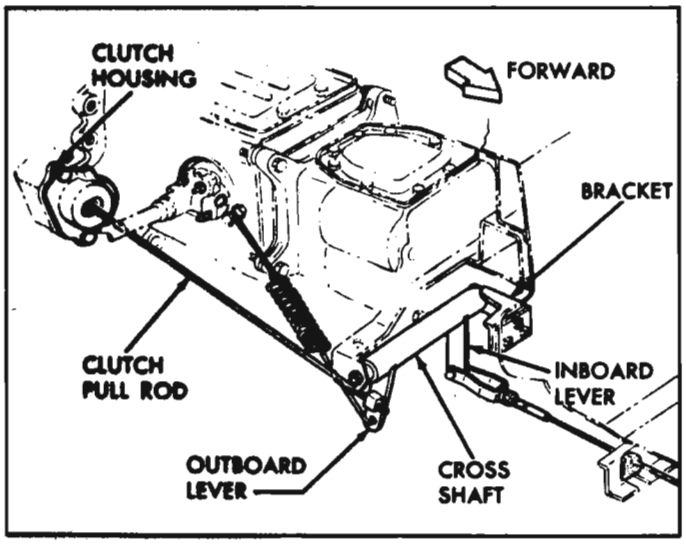


Fig. 6-5—Clutch Control Linkage Installation

17. The following procedures apply only to vehicles equipped with the manual three or four speed transmission.

a. Disconnect shift tube coupling at transmission shifter shaft by removing cotter pin and removing pin securing coupling to transmission shifter shaft. Then loosen coupling clamp nut and push shift tube coupling into tube until it is clear of the engine front mount.

b. Disconnect clutch return spring, then disconnect clutch pull rod from outer lever (fig. 6-5).

c. Remove nut securing clutch cross shaft (fig. 6-5) to engine front mount and loosen stud nut at inboard end, then push inboard end from slot in mount and remove cross shaft. Unfasten clutch cable sheath clamp at engine front mount and drop clutch cable and cross shaft clear of power train.

d. If equipped, remove back-up light switch from four speed transmission housing. Provide a container for oil as switch is below normal transmission oil level.

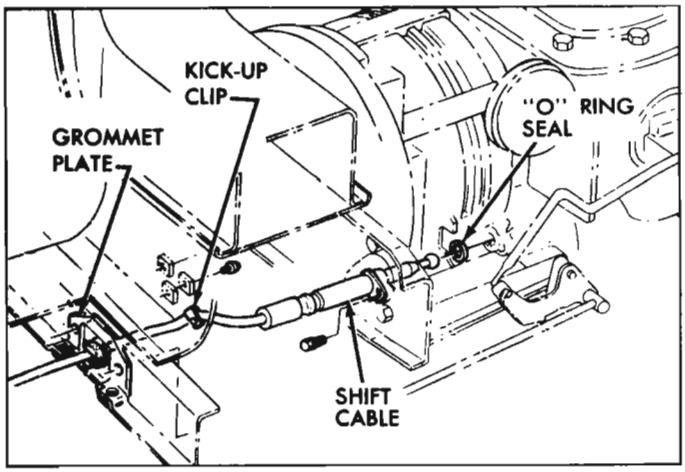


Fig. 6-6—Automatic Transmission Shift Cable Installation

18. If vehicle is equipped with automatic transmismission, the following steps are necessary.

a. Disconnect the transmission shift cable by removing the screw securing cable to transmission case and removing grommet plate in rear of control tunnel (fig. 6-6). Remove cable from transmission by rotating throttle valve (TV) lever its full limit counterclockwise and then withdraw cable from case.

b. Place a receptacle for transmission oil beneath transmission, then remove transmission filler tube.

19. Position a hydraulic transmission jack stand under the engine assembly, using J-7894. Insert locking knob shown in Figure 6-7 and tighten securely. A hole in the rear of J-7894 is provided

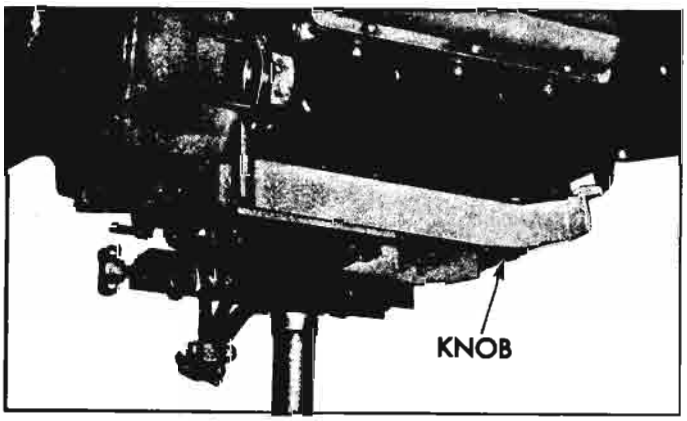


Fig. 6-7—Engine Lift Fixture J-7894 Installed

for a bolt and nut, which can be used to lock J-7894 in place.

20. Remove cotter pins and two castellated nuts from front engine mount (at transmission) and one cotter pin and castellated nut from the engine rear mount.

NOTE: If front engine mounting bracket and shims are removed from the transmission, the same amount of shims removed must be replaced. Rear "toe-in" will be affected if shims are altered. See "Section 3—Suspension" for rear "toe-in" adjustment.

21. Lower the power train gradually and watch for possible interference at rear mount and left rear lower control arm.
22. Remove exhaust pipe and muffler assembly as outlined in Section 9.

SEPARATION OF POWER TRAIN MAJOR COMPONENTS

THREE OR FOUR SPEED TRANSAXLE

Removal of Transaxle from Engine

1. Support the Transaxle with a chain-falls or other suitable lift and an improvised sling.
2. Drain the transmission and differential carrier.
3. Remove the starter as described in Section 8.
4. Remove the two screws securing the clutch pull rod dust seal assembly, then remove the pin attaching the pull rod to the clutch fork (fig. 6-8).
5. Separate the Transaxle from the engine by removing the attaching bolts securing the differential carrier to the clutch housing. Pull Transaxle away horizontally to prevent damaging the clutch shaft, but use care not to damage clutch fork.
6. Remove clutch shaft.

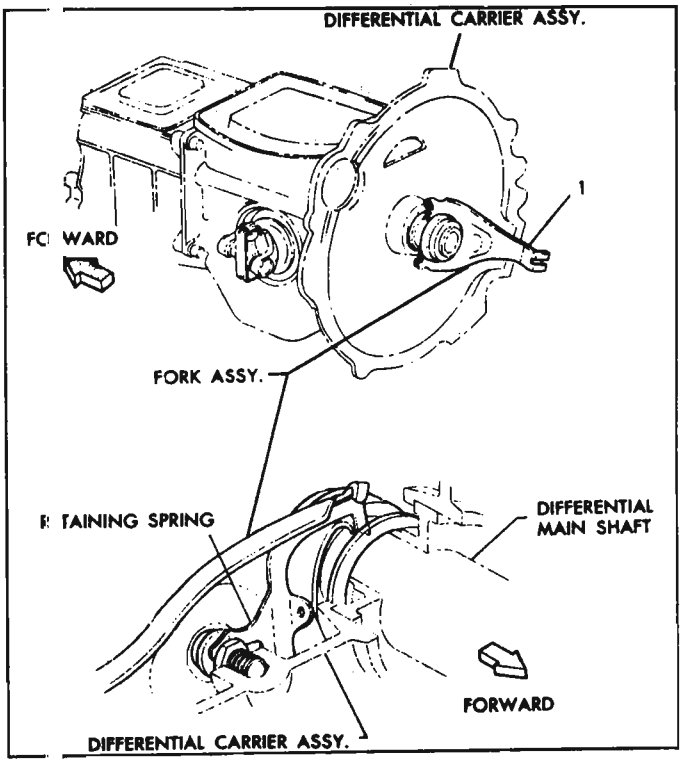


Fig. 6-8—Clutch Fork Installation

6. To complete the operation, remove the clutch fork and clutch release bearing from the differential carrier. The fork is attached to the carrier by a ball socket and spring retainer which is easily slipped off to allow the clutch release bearing to be slipped off its shaft in the carrier.

Separation of Three or Four Speed Transmission and Differential Carrier

To separate the three or four speed transmission from the differential carrier, simply remove the four attaching bolts (fig. 6-9). Two bolts are driven from the transmission on the right side and the two left bolts are driven from the carrier side.

Repair Procedures

Complete repair procedures for the differential carrier and three or four speed transmission are provided in Section 6C and 6D, respectively.

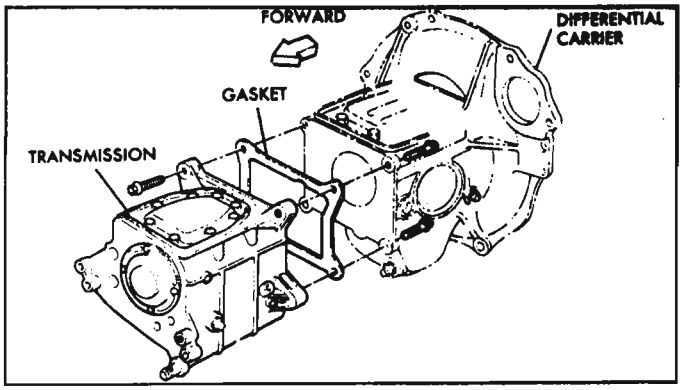


Fig. 6-9—Three Speed Transmission—Differential Carrier Attachment

AUTOMATIC (POWERGLIDE) TRANSAXLE

Removal of Transaxle from Engine

1. Disconnect short length of hose connecting vacuum modulator tube to the carburetor balance tube and disconnect from vacuum modulator.
2. Remove the starter. This procedure is provided in Section 8.
3. Disconnect the converter from the engine flex plate by removing the three attaching bolts via the

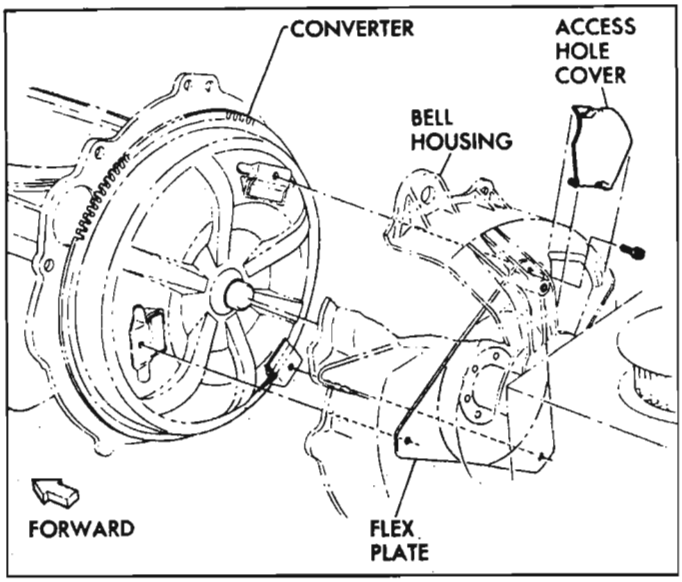


Fig. 6-10—Converter-to-Flex Plate Attachment

access hole at the 12 o'clock position in the converter housing. The converter may be rotated by prying against the starter gear teeth on the converter housing with a screwdriver.

4. Support the Transaxle with a chain-fall or other suitable lift and an improvised sling.
5. Complete removal of Transaxle by removing the attaching bolts and lockwashers securing the differential carrier to the converter housing, then pull the Transaxle unit away from the engine. Remove converter immediately once accessible to prevent its being dropped and damaged and remove turbine shaft (fig. 6-11).

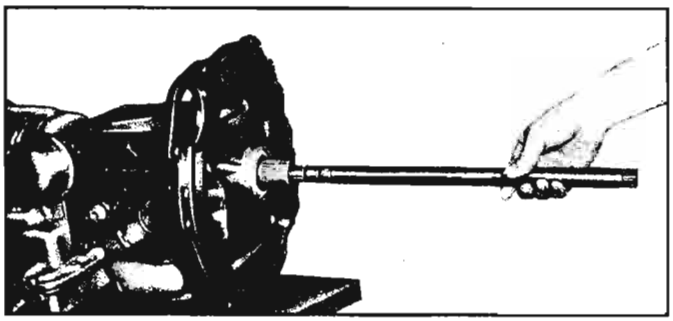


Fig. 6-11—Removing Turbine Shaft

Separation of Automatic (Powerglide) Transmission and Differential Carrier

1. Place the Transaxle on a flat surface.
2. Pull the turbine shaft carefully through the transmission and carrier being careful not to damage the turbine shaft bushings on the pump shaft splines.
3. Remove the screw securing the governor assembly to the Transaxle and remove governor (fig. 6-12).
4. Remove the three remaining bolts securing the transmission to the carrier, then carefully pull the transmission **straight** away from the carrier to prevent the pump shaft from damaging the bushings in the transmission and pinion shaft.

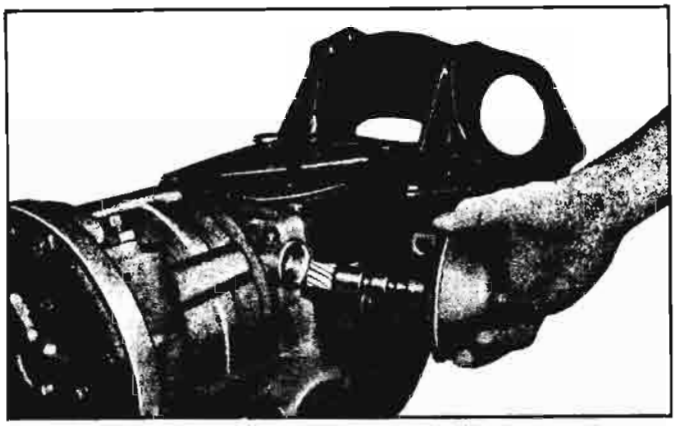


Fig. 6-12—Removing Governor

5. Remove transmission to differential carrier gasket and remove the governor gear and selective spacers from the pinion shaft of the differential carrier (fig. 6-13).

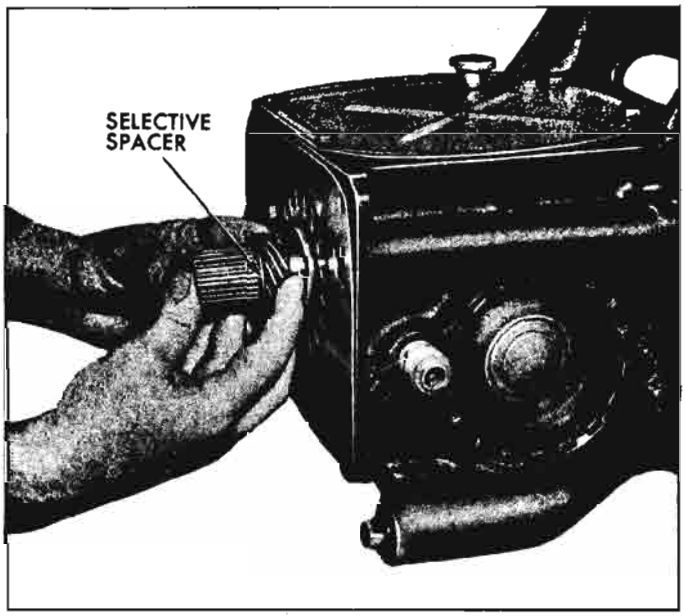


Fig. 6-13—Removing Governor Drive Gear and Spacers

Repair Procedures

Complete instructions for the repair of the differential carrier and automatic transmission are provided in Sections 6C and 6E, respectively.

Powerglide Transmission Selective Thrust Washer Determination

For proper operation, it is necessary that sufficient end play of "Powerglide" transmission components be maintained by selection of thrust washers of various thicknesses.

In the "Corvair" Powerglide, selective thrust washers are used at two locations (fig. 6E-1).

1. At the front of the transmission between the front pump body and the clutch drum.
2. At the rear of the transmission between the rear face of the planet carrier hub (transmission output member) and the front face of the governor gear.

From the serviceman's standpoint, the use of selective thrust washers at both the front and rear is a distinct advantage as **final transmission end play adjustment can be made from either end of the transmission whichever is most advantageous. Also, there is no condition in which the selective washers would be gauged for both locations.**

For example, assume that a new ring gear and pinion is to be installed in the differential carrier but no work is done on the transmission. This requires that the differential carrier be separated from the transmission. After completing the repair, the serviceman would perform the thrust washer selection procedure at the rear with J-8364 and a dial indicator, install the required washers on the governor gear, and then reassemble the transmission and axle.

As a second example, assume that the Powerglide high clutch fails but no rear axle repair is required. In this case, the repair should be performed with the transmission left assembled to the axle and engine; it is not necessary to remove the power train from the lifting fixture used to remove the unit from the vehicle. Once the repair was completed, thrust washer selection would be made prior to installation of the front pump at the clutch drum (front) with J-8371, the thrust washer selected installed, and then the remaining assembly operations completed.

In the third and final case, assume that repairs are required in both the transmission and axle. This requires separation of the axle from the transmission. Rebuild of the axle would be exactly as described in Section 6C and Powerglide overhaul would be exactly as described in Section 6E with the exception that the thrust washer would be installed at the front (clutch drum–front pump) location during assembly without performing any selection procedure. Once both the axle and transmission are fully assembled, selection of final end play washers would be made at the rear (governor gear) and assembly of the Powerglide to the differential carrier could be completed.

Analyzing the three cases, the serviceman can summarize the thrust washer selection requirements in one phrase—**"If the repair requires axle and transmission separation, make the selection at the rear."** Obviously, if they are not separated, the rear thrust washer is inaccessible and the selection must be made at the front.

To the serviceman experienced with conventional automatic transmissions, the use of a selective washer at the front is common and easily understood but the "why" of the rear selective thrust washer is not readily apparent.

The reason for the rear selective thrust washer is more easily understood by considering the proximity of the components involved and the designs embodied in the integration of the transmission and differential carrier (rear axle). Observing the sectional view (fig. 6E-1), it will be noted that the transmission governor gear mounts on the pinion gear shaft, the position of which is controlled by pinion bearings in the differential carrier and the machining of the pinion shaft and the differential carrier bearing bores. The differential pinion shaft couples with the hub of the transmission planet gearset and thus creates the vehicle output shaft. Relative to the transmission, the governor gear front face is the first "solid" forward driveline point available to absorb transmission thrust and useable as a locating line for transmission internal components. Selective fit washers are used at this point to compensate for differential carrier and transmission tolerances to permit unit interchangeability.

ASSEMBLY OF POWER TRAIN MAJOR COMPONENTS

THREE OR FOUR SPEED TRANSAXLE

Assembly of Three or Four Speed Transmission and Differential Carrier

1. Apply a new gasket (fig. 6-9) to either the mounting face of the transmission or carrier with petroleum jelly.
2. Couple the transmission to the carrier, being sure to engage the splines of the transmission mainshaft to the internal splines of the pinion in the differential carrier.
3. Secure the transmission to the carrier with four bolts; two on the right are driven from the transmission side and the two left bolts are driven from the carrier side. Torque bolts to 24-32 ft-lbs.

Assembly of Three or Four Speed Transaxle to the Engine

1. Install the clutch release bearings and clutch fork (fig. 6-8) on the differential carrier. The bearing slips over the shaft and the fork has a spring retainer and socket which attaches to a ball stud on the carrier.
2. Install the clutch shaft in the Transaxle, then check the distance from the end of the clutch release bearing shaft to the end of the clutch shaft. If fully engaged, the dimension should be $2\frac{11}{16}'' \pm \frac{1}{16}''$.
3. Support the Transaxle with a chain-falls or other suitable lift and an improvised sling, then align the attaching bolt holes in the differential carrier and clutch housing.

4. Pilot the clutch shaft splines into the clutch, then secure the differential carrier to the clutch housing with the attaching bolts.
5. Connect the clutch push rod to the clutch fork with pin, then position and secure the clutch push rod dust seal assembly to the clutch housing with two screws.
6. Install the starter as described in Section 8.
7. Fill the transmission and differential carrier as described in Section 6D.

AUTOMATIC (POWERGLIDE) TRANSAXLE

Assembly of Automatic Transmission to Differential Carrier

1. Prior to reassembly of the differential carrier to the Powerglide transmission after any repair which required separation of these units, perform the procedure outlined below to determine the thrust washers required at the front face of the governor gear.

   CAUTION: Be sure low band is properly adjusted to prevent disengagement or cocking apply linkage before tipping transmission on end.

Rear Selective Thrust Washer Determination:

Strict adherence to the procedure outlined below is mandatory to insure Powerglide internal running clearance of .025"—.045". If transmission is assembled with less clearance, transmission failure is probable.

Running clearance specified and spacers to be installed also apply to 1960 Powerglide.

a. Install dial indicator on support J-8364 and install 3" indicator extension provided.

b. Without gasket, place support on rear pump cavity surface of the transmission case with transmission on front end as illustrated (fig. 6-14) so that dial indicator tip rests on planet carrier hub. Adjust indicator on J-8364 as required to permit maximum indicator travel and set indicator dial to zero.

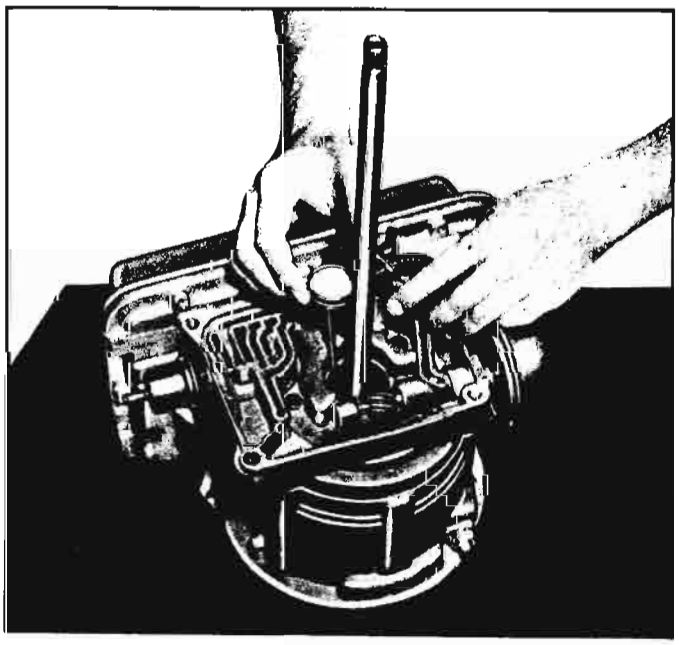


Fig. 6-14—Zeroing Dial Indicator on J-8364 on Output Shaft

NOTE: Front end of transmission must face downward when indicator is zeroed.

c. Slowly lift support J-8364 and indicator off transmission rear pump cavity and note its range of needle deflection from zero position. Properly positioned on support, indicator should not deflect more than .050" (one-half turn) when removed; otherwise raise or lower dial indicator on support post as required and again zero gauge as described in step b.

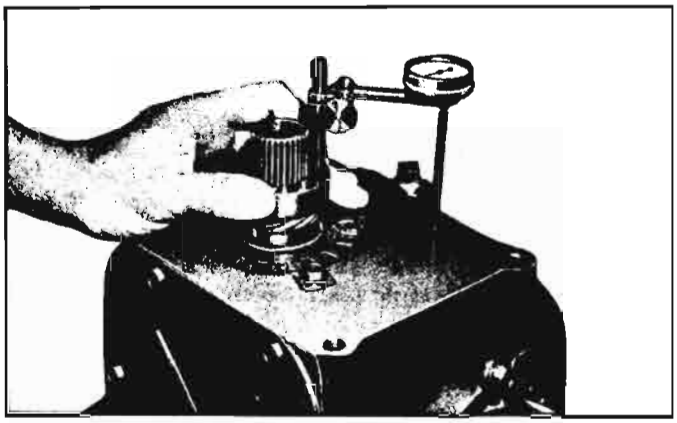


Fig. 6-15—Mounting Difference with J-8364 and Dial Indicator

d. Place J-8364 and dial indicator on governor gear on the differential carrier pinion shaft as illustrated (fig. 6-15) and lower support slowly so that revolutions of indicator needle can be counted. Measurement starts once the indicator needle again reaches zero. Fully depress support on governor gear, note indicator reading and refer to the following chart for spacers to be installed on governor gear.

POWERGLIDE REAR THRUST SPACER USAGE CHART

INDICATOR READING	NUMBER .016" SPACERS REQ'D	THICKNESS OF SPACERS INSTALLED
*.025—.046	None	
.047—.062	1	.016 ± .001
.063—.078	2	.032 ± .002
.079—.094	3	.048 ± .003
.095—.110	4	.064 ± .004
.111—.126	5	.080 ± .005
.127—.142	6	.096 ± .006
.143—.155	7	.112 ± .007

*If initial indicator reading is below .025", replace thrust washer at the clutch hub—front pump with .050" thrust washer, then repeat entire rear thrust spacer selection procedure.

e. Install spacers selected on governor gear (fig. 6-16), then check that proper total thickness has been installed by again measuring with J-8364 as described in step d. **If shim stack is**

correct, indicator reading will now be between .025"—.045"; otherwise add or remove spacers until reading is within this range.

2. Apply a new gasket to either the carrier or the rear face of the transmission with petroleum jelly.
3. Align the carrier and transmission on a flat surface and carefully guide the pump shaft through the differential carrier so as not to damage the bushing in the pinion. Then engage the splines of the pinion shaft with the planet carrier internal splines in the transmission (fig. 6-17).
4. Install governor, then secure the transmission to the carrier with four bolts. Drive the two bolts from the carrier side first to minimize the chance of cocking the mating surfaces of the transmission and carrier. Tighten bolts to 24-32 ft-lbs.

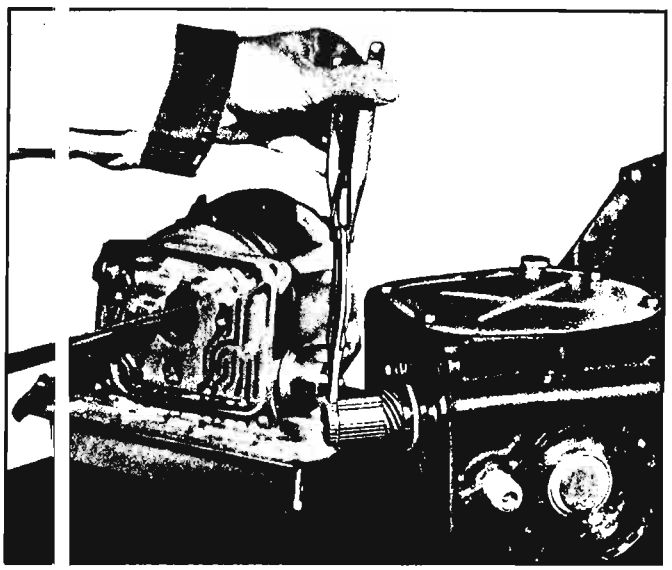


Fig. 6-16—Installing Rear Selective Spacer

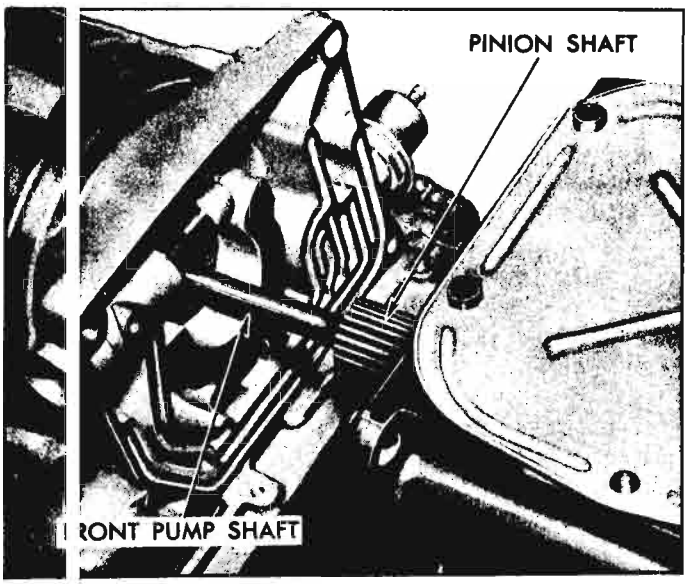


Fig. 6-17—Engaging Pinion Shaft-to-Transmission Planet Carrier Spline

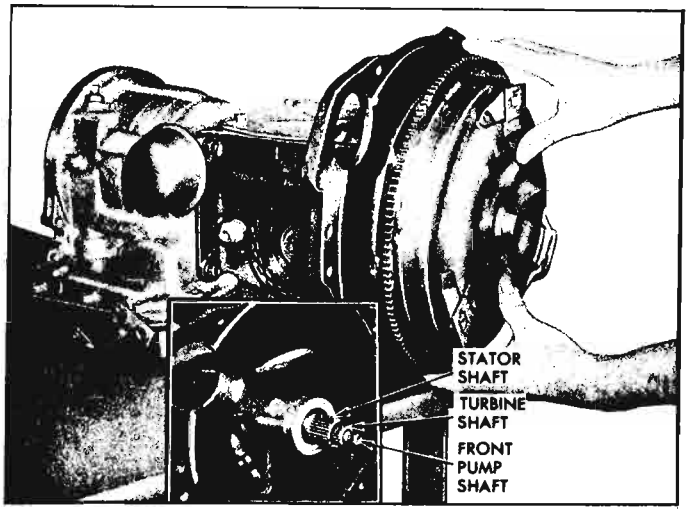


Fig. 6-18—Installing Converter on Transaxle

5. Install the turbine shaft being careful not to damage its bushings as it is inserted over the pump shaft splines. Be sure to engage the two sets of shaft splines; the forward splines engage the clutch drum and the rear set engage the input sun gear in the planet gearset.
6. Install the converter, being sure to get full engagement of the splines on the stator shaft, turbine shaft, and front pump shaft with the applicable converter splines (fig. 6-18).

CAUTION: Once the converter is installed, do not tip rear of Transaxle downward unless some improvised converter holding plates are used as the converter will fall off.

Assembly of the Transaxle to the Engine

1. Position the Transaxle adjacent to the engine on a chain-falls or similar lift, using an improvised sling.
2. Remove converter holding clips, if installed.
3. Align the converter with the flex plate (fig. 6-19), then pilot the converter hub into crankshaft. Align the mounting bolt holes in the differential carrier and converter housing, then secure the Transaxle to the converter housing by installing the top left bolt (11 o'clock position).
4. Install the flex plate to converter bolt accessible at the 1 o'clock position to prevent accidental

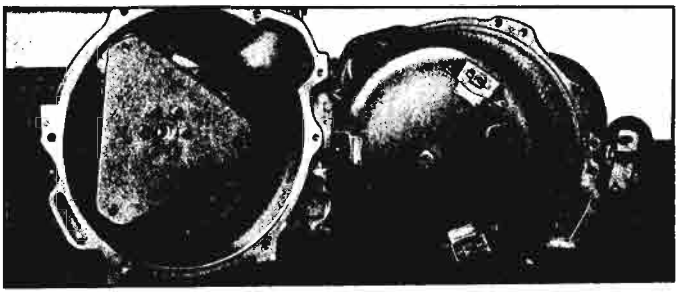


Fig. 6-19—Aligning Flex Plate and Converter

turning of the converter or flex plate and loss of attaching hole alignment.

5. Drive the remaining converter housing to differential carrier mounting bolts.
6. Install the starter as described in Section 8.
7. Drive the two remaining converter-to-flex plate bolts via the access hole in the converter housing. The converter can be rotated to make the attaching points accessible by turning the converter with a screwdriver against its starter gear teeth.
8. Connect vacuum modulator to vacuum modulator and to engine vacuum balance tube.

INSTALLATION OF POWER TRAIN TO VEHICLE

Be sure all harness wires, fuel lines, and levers are out of the way prior to installation of the power train to prevent damage.

1. Position hydraulic jack stand with power train assembly under engine compartment.
2. Raise power train until front and rear engine mounting brackets are in place on mounts, then install nuts. Torque front mounts to 60-80 ft. lbs. and rear mount 50-60 ft. lbs. Install cotter pins at both mountings.

   NOTE: If engine front mounting bracket and shims are removed from the transmission, the same amount of shims removed must be replaced. Rear "toe-in" will be affected if shims are altered. See "Section 3—Suspension" for rear "toe-in" adjustment.

3. On vehicles equipped with an automatic transmission, perform the following operations:
   a. Install filler tube in transmission oil pan, then fill transmission as directed in Section 6E.
   b. Lubricate new "O" ring seal (fig. 6-6) and insert into bore in transmission case.
   c. Rotate the TV lever (fig. 6-6) its full limit counterclockwise and insert ball end of shift cable into transmission until shoulder seats against transmission case. Secure cable to case with cap screw, then install cable grommet plate in tunnel rear cover. If cable is properly installed, hole in TV lever will be approximately 3/8" below transmission pan rail. Install cable clip in kick-up area.
4. On manual transmission equipped vehicles, perform the following operations:
   a. Connect shift tube coupling to transmission shifter shaft by installing clevis pin and securing with flat washer and cotter pin. Pull shift coupling boot so it fully covers transmission shifter shaft seal.
   b. Shift three speed transmissions into first or four speed transmissions into fourth, then with an assistant holding the gear shift lever in the gear position, tighten clamp nut.
   c. Insert outboard ball stud end of clutch cross shaft (fig. 6-5) through engine front mount. then rotate inboard stud end into cross shaft bracket. Secure cross shaft in bracket and transmission front mount by tightening stud nuts at each end.
   d. Attach clutch return spring (fig. 6-5) to lower hole in outboard lever and to stud on differential carrier, then pull clutch rod full forward until swivel aligns with upper hole in outer lever. Back off swivel two complete turns, then insert swivel into upper hole in lever and secure with clips. Specifications for clutch adjustment are provided in Section 6B.
   e. On four speed transmissions equipped with back-up lights, install back-up light switch. Fill transmission and differential carrier to level of filler plug holes with SAE 80 Multipurpose Gear Lubricant.
5. Install axle shafts in differential carrier as described in Section 6C.
6. On gasoline heater equipped vehicles, connect heater fuel line.
7. On vehicles equipped with air heater, connect flexible air delivery hoses to the left and right sides of the engine.
8. Connect engine fuel line to line from tank with hose and secure with two clamps. Connect speedometer cable to speedometer driven gear in the differential carrier.
9. Connect accelerator control rods (fig. 6-4) to transmission idler lever.
10. Push choke cable through its grommet up into the engine compartment.
11. Connect parking brake return spring to engine front mount and parking brake cable bridle. Install engine rear and side seal retainers, then install skid plate and engine rear grille.
12. Connect battery cable to starter solenoid terminal "B" and install the violet and yellow leads from the starting motor harness to the solenoid terminals marked "R" and "S", respectively (Inset, fig. 6-3).
13. Lower vehicle to floor, then make the following electrical connections (fig. 6-3).
   a. Connect yellow lead to ignition coil and connect leads to temperature and oil pressure switches.
   b. Connect left and right engine-to-body ground straps (not shown).
   c. Connect yellow and purple ignition leads by inserting them into the connector of the starting motor harness.
   d. Connect ground strap to generator, then connect brown lead from voltage regulator to rear terminal of generator and dark blue to forward terminal of generator.

13. Connect battery cable to battery positive terminal.
14. Connect tunnel choke cable to choke bridle (fig. 6-2) by first tightening cable clamp and then securing cable sheath clamp (Inset, fig. 6-2). Procedures for the adjustment of the choke linkage are provided in Section 9.
15. Connect throttle rod to left carburetor (fig. 6-4) and connect throttle return spring. If position of swivel on throttle rod has been disturbed, it will be necessary to check carburetor synchronization as described in Section 9.
16. Install engine-to-body front seal retainer.
17. If vehicle is equipped with air heater, connect return air hose to passenger compartment duct and to duct in engine top shroud.
18. Install carburetor air cleaners. Air cleaner installation procedures are provided in Section 9.
19. On coupe and sedan models, install spare tire; on station wagon models, install engine access cover. Start engine and check for oil leaks. Also check for proper operation of throttle linkage, shift linkage, and clutch linkage.

CORVAIR 95 AND GREENBRIER—1200 SERIES

Power train removal and installation procedures for 1200 Series vehicles are almost identical to those for Corvair coupe and sedan models. Therefore, remove and install the power train from 1200 Series vehicles according to the passenger car procedures with the following exceptions.

- On all 1200 Series vehicles, it is necessary to remove the engine access cover from the rear floor of the vehicle to work on upper components of the engine.
- On all 1200 Series vehicles, the electrical disconnections (or connections) must be made in order to remove or install the power train (fig. 6-20).

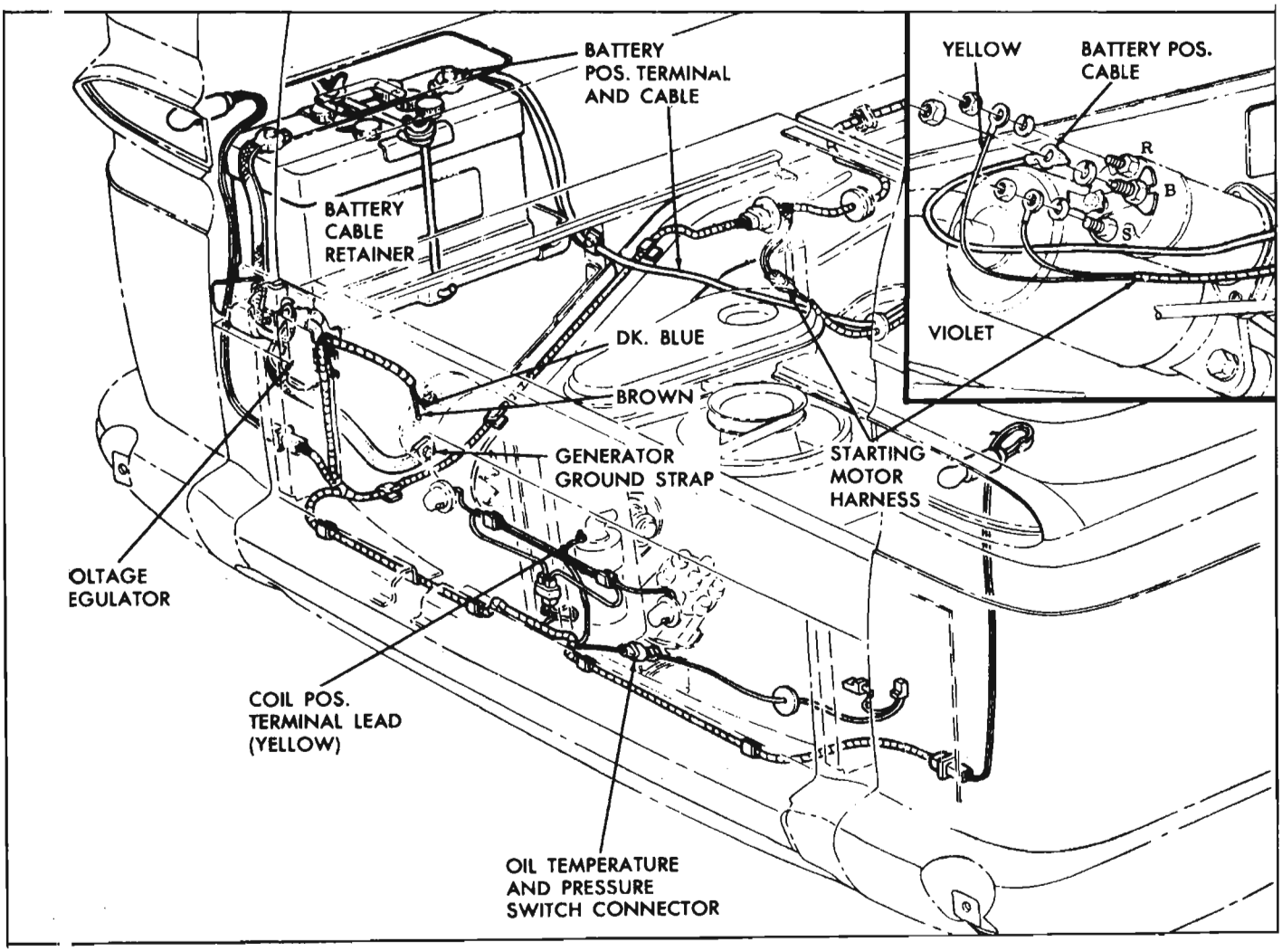


Fig. 6-20—Electrical Connections—1200 Series Vehicles

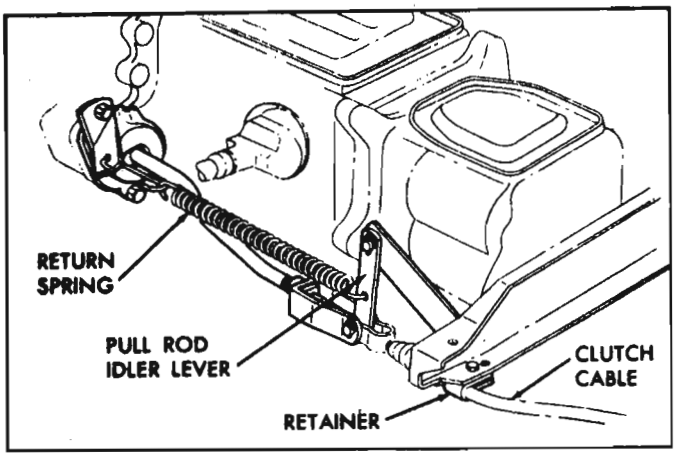


Fig. 6-21—Clutch Linkage—1200 Series Vehicles

1. Battery cable at battery positive terminal and battery cable retainer at left of engine compartment.
2. Generator ground strap at generator and brown lead at rear generator terminal and dark blue lead at forward generator terminal.
3. Starting motor harness at connector in engine compartment.
4. Left and right engine-to-body ground straps (not shown).
5. Yellow lead at ignition coil positive terminal and at connector to oil pressure and oil temperature switches.
6. With vehicle on hoist, battery positive cable from "B" terminal on starter solenoid, then the leads from the starter motor harness. The violet lead to terminal "S" and the yellow lead to terminal "R".

- On all 1200 Series vehicles equipped with a manual transmission, the clutch linkage must be disconnected (or connected) as described below for removal or installation of the power train (fig. 6-21).

1. Clutch return spring at clutch housing and pull rod idler lever.
2. Clutch cable retainer at engine front mount, then clevis pin retaining pull rod clevis, idler lever, and cable clevis.

NOTE: Clutch adjustment procedures are provided in Section 6B.

- On 1200 Series vehicles equipped with the automatic transmission, the transmission oil cooler lines must be disconnected (or connected) at the front of the transmission for power train removal and installation.

SPECIAL TOOLS

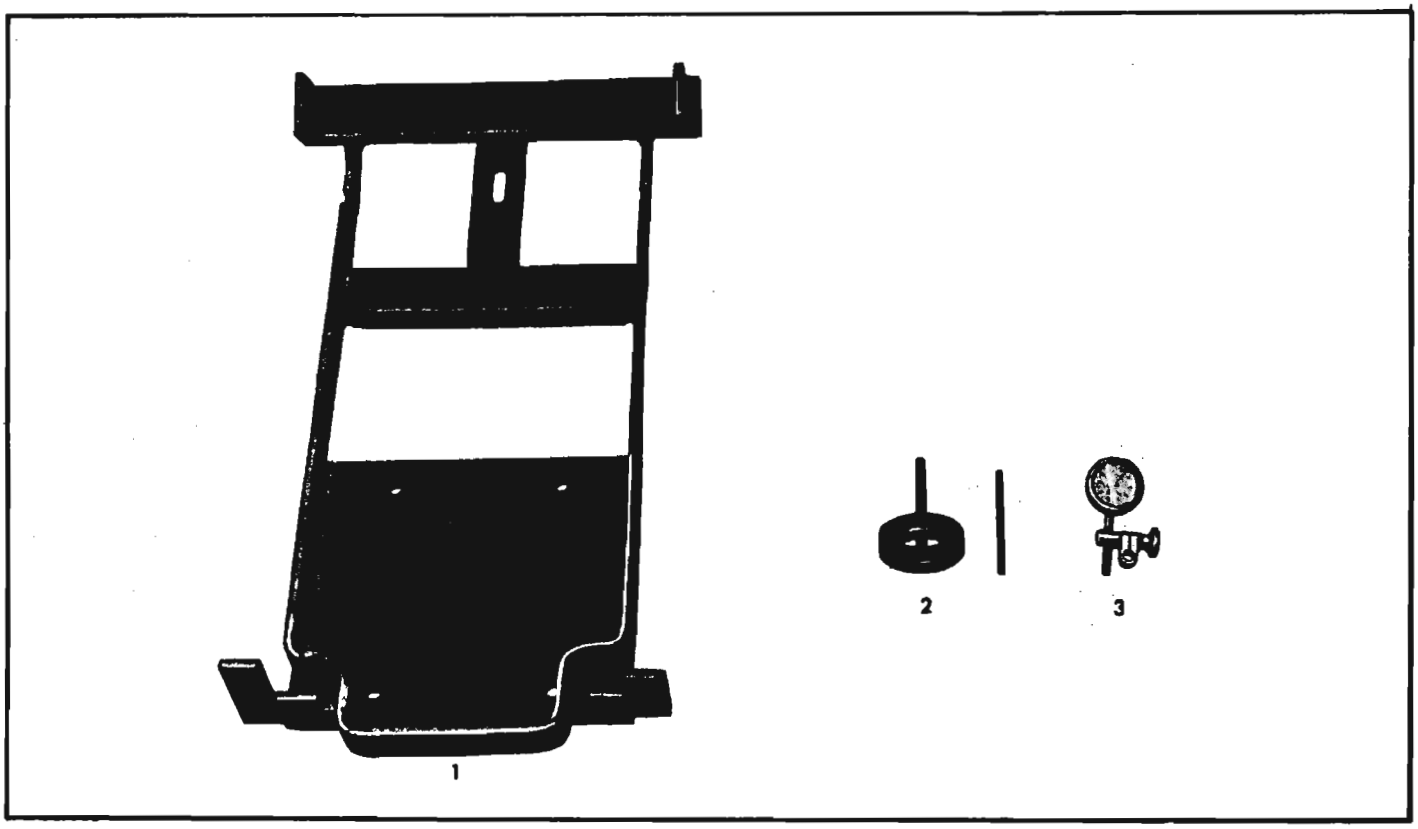


Fig. 6-22—Special Tools

1. J-7894 Power Train Cradle
2. J-8364 Rear Thrust Spacer Indicator Stand
3. J-8001 (KMO 30) Dial Indicator