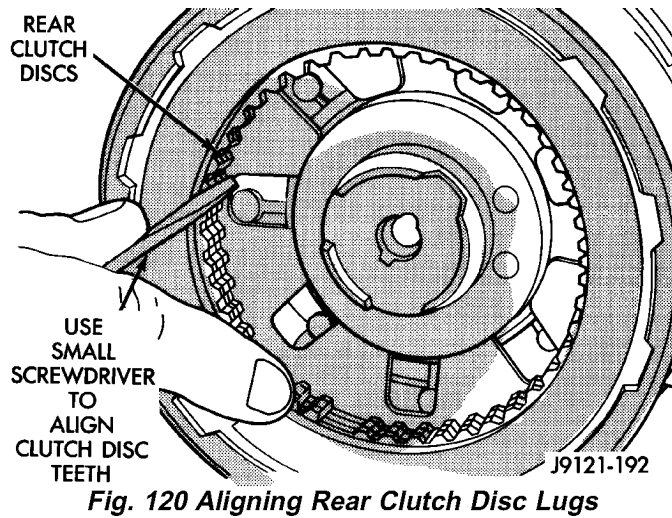
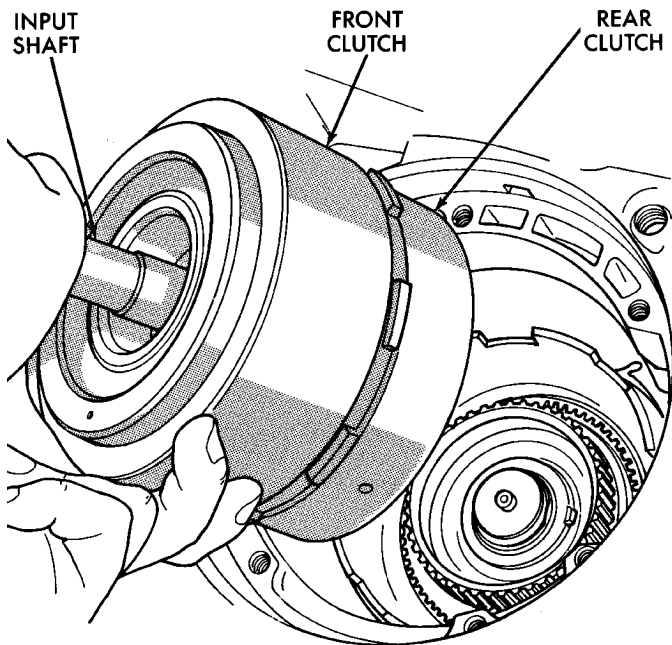
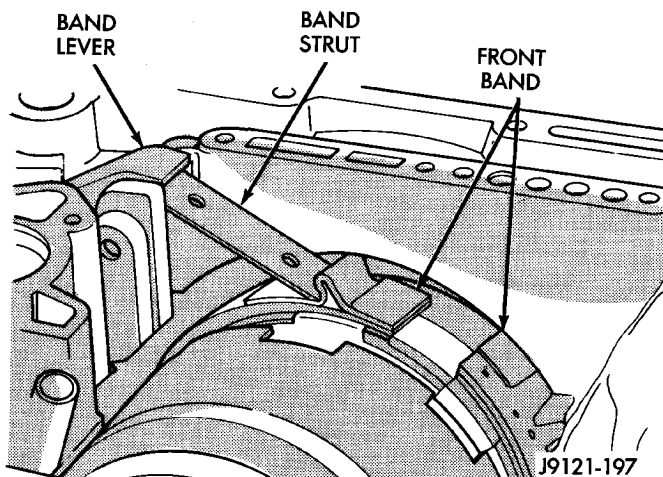
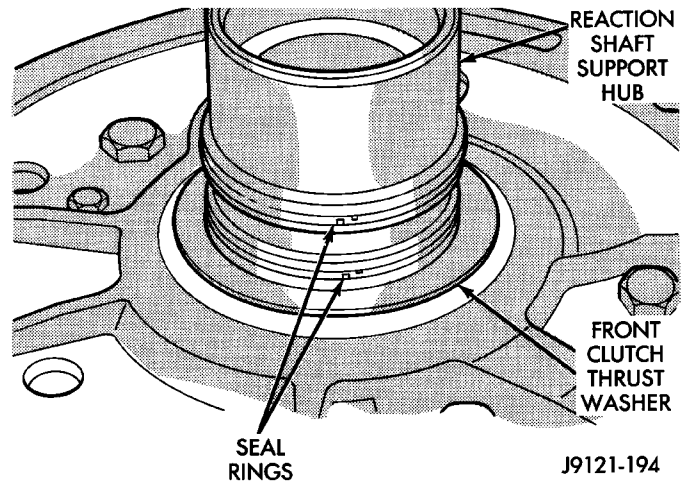
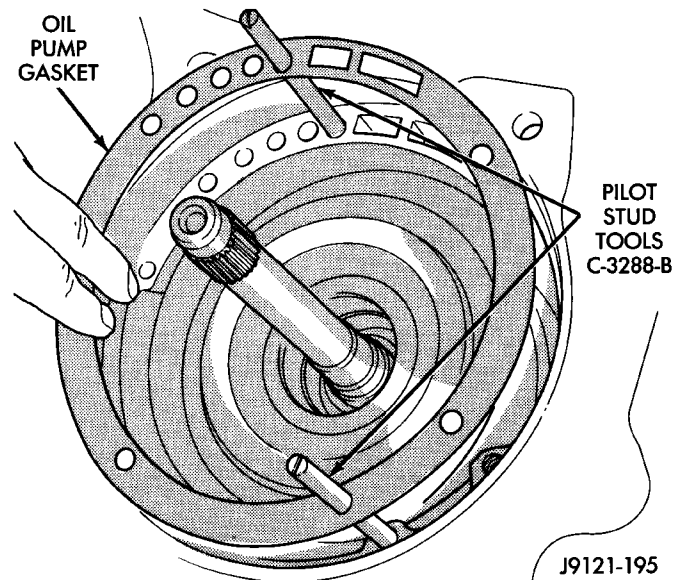


DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 120 Aligning Rear Clutch Disc Lugs****Fig. 121 Installing Front/Rear Clutch Assemblies****Fig. 122 Front Band Linkage Installation**

(25) Thread two Pilot Stud Tools C-3288-B into bolt holes in oil pump bore flange (Fig. 124).

(26) Align and install oil pump gasket (Fig. 124).

**Fig. 123 Reaction Shaft Support Seal Rings And Front Clutch Thrust Washer****Fig. 124 Installing Pilot Studs And Oil Pump Gasket**

(27) Install oil pump (Fig. 125). Align and position pump on pilot studs. Slide pump down studs and work it into front clutch hub and case by hand. Then install 2 or 3 pump bolts to hold pump in place.

(28) Remove pilot stud tools and install remaining oil pump bolts. Tighten bolts alternately in diagonal pattern to 20 N·m (15 ft. lbs.).

(29) Measure and if necessary, correct input shaft end play as follows (Fig. 126):

(a) Attach dial indicator to converter housing.

(b) Position indicator plunger against input shaft and zero indicator.

(c) Move input shaft in and out and record reading. End play should be 0.56 - 2.31 mm (0.022 -

DISASSEMBLY AND ASSEMBLY (Continued)

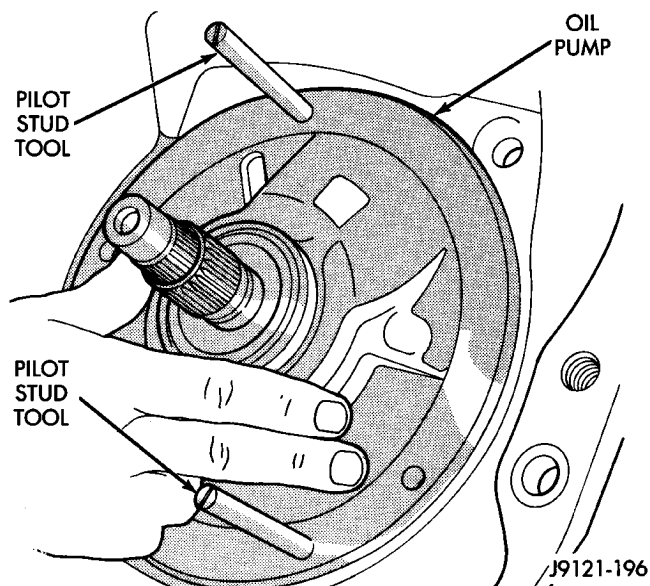


Fig. 125 Installing Oil Pump Assembly In Case

0.091 in.). Proceed to next step if end play is not within specified limits.

(d) Intermediate shaft thrust washer (in hub of rear clutch retainer) controls end play. Washer is a select fit part and can be changed to adjust end play. If end play turns out to be incorrect, remove oil pump, and clutches. Then install thinner/thicker thrust washer as necessary.

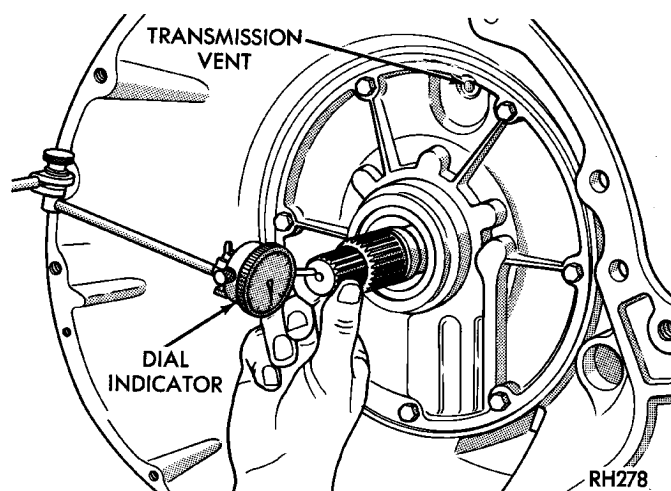


Fig. 126 Measuring Input Shaft End Play

(30) Install accumulator piston and inner and outer springs (Fig. 127).

(31) Verify that valve body solenoid harness is secured in 3-4 accumulator housing cover plate.

(32) Install valve body as follows:

(a) Align and carefully insert park rod into pawl. Rod will make click noise as it enters pawl. Move rod slightly to check engagement.

(b) Align and seat valve body on case. Be sure manual lever shaft and overdrive connector are

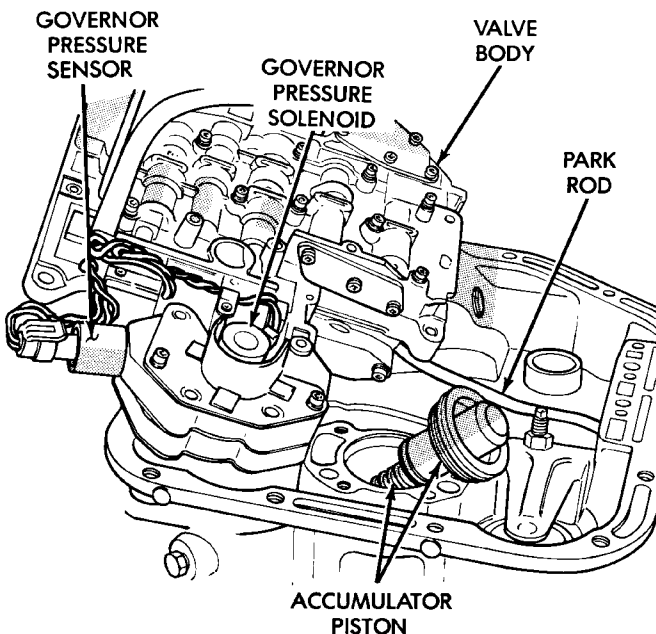


Fig. 127 Accumulator Piston And Springs

fully seated in case. Also be sure valve body wiring is not pinched or kinked.

(c) Install and start all valve body attaching bolts by hand. Then tighten bolts evenly, in a diagonal pattern to 12 N·m (105 in. lbs.) torque. **Do not overtighten valve body bolts. This could result in distortion and cross leakage after installation..**

CAUTION: It is possible for the park rod to displace into a cavity just above the pawl sprag during installation. Make sure the rod is actually engaged in the pawl and has not displaced into the cavity.

(33) Install new filter on valve body. Tighten filter screws to 4 N·m (35 in. lbs.).

(34) Adjust front and rear bands.

(35) Install seal on park/neutral position switch (Fig. 128). Then install and tighten switch to 34 N·m (25 ft. lbs.).

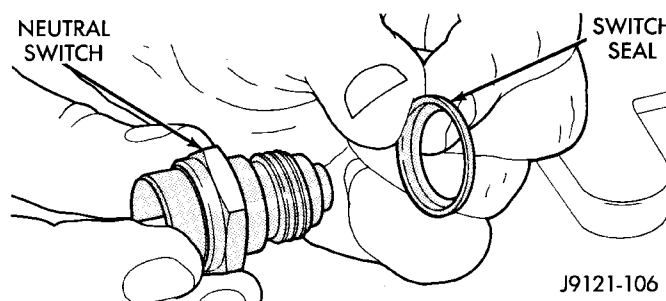


Fig. 128 Park/Neutral Position Switch Seal Position

(36) Install magnet in oil pan. Magnet goes on small protrusion at corner of pan.

DISASSEMBLY AND ASSEMBLY (Continued)

(37) Position new oil pan gasket on case and install oil pan. Tighten pan bolts to 17 N·m (13 ft. lbs.).

(38) Install new valve body manual shaft seal in case (Fig. 129). Lubricate seal lip and manual shaft with petroleum jelly. Start seal over shaft and into case. Seat seal with 15/16 inch, deep well socket.

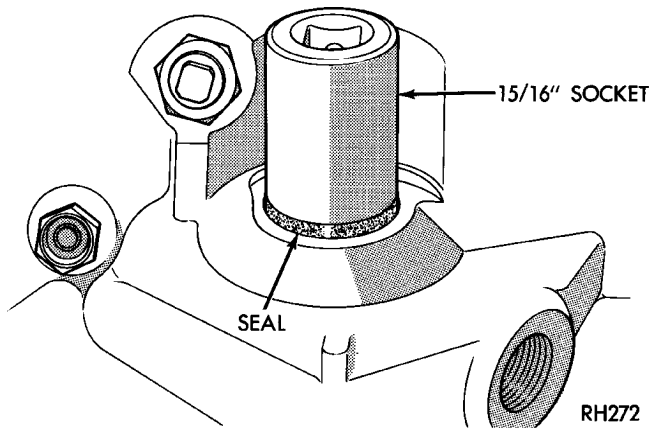


Fig. 129 Installing Manual Lever Shaft Seal

(39) Install throttle valve and shift selector levers on valve body manual lever shaft.

OVERRUNNING CLUTCH CAM/OVERDRIVE PISTON RETAINER**DISASSEMBLY**

NOTE: TO SERVICE THE OVERRUNNING CLUTCH CAM AND THE OVERDRIVE PISTON RETAINER, THE TRANSMISSION GEARTRAIN AND OVERDRIVE UNIT MUST BE REMOVED FROM THE TRANSMISSION.

- (1) Remove the overdrive piston (Fig. 130).
- (2) Remove the overdrive piston retainer bolts.
- (3) Remove overdrive piston retainer.
- (4) Remove case gasket.
- (5) Mark the position of the overrunning clutch cam in the case (Fig. 131).
- (6) Remove the overrunning clutch cam bolts.
- (7) Remove the overrunning clutch cam.

ASSEMBLY

(1) Examine bolt holes in overrunning clutch cam. Note that one hole is **not threaded** (Fig. 132). This hole must align with blank area in clutch cam bolt circle (Fig. 133). Mark hole location on clutch cam and blank area in case with grease pencil, paint stripe, or scribe mark for assembly reference.

(2) Mark location of non-threaded hole in clutch cam and blank area in bolt circle with grease pencil.

(3) Align and install overrunning clutch and cam in case (Fig. 134). **Be sure cam is correctly installed. Bolt holes in cam are slightly counter-sunk on one side. Be sure this side of cam faces rearward (toward piston retainer).**

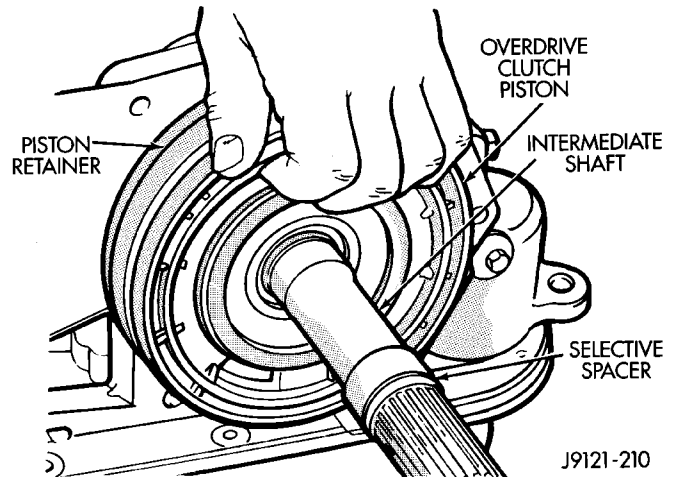


Fig. 130 Overdrive Piston Removal

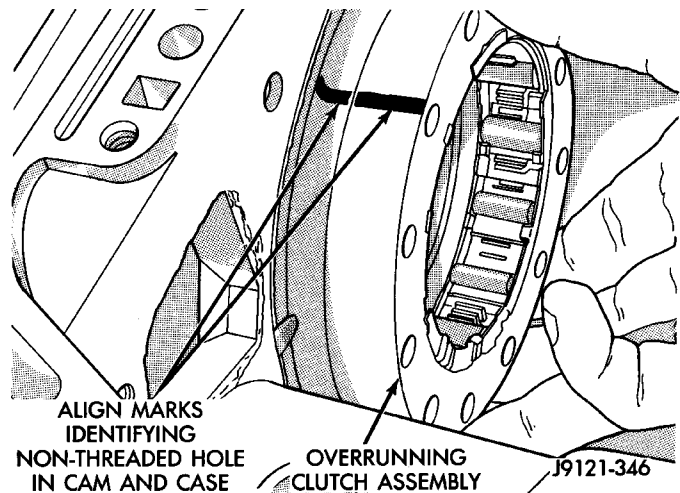


Fig. 131 Overrunning Clutch Cam Removal

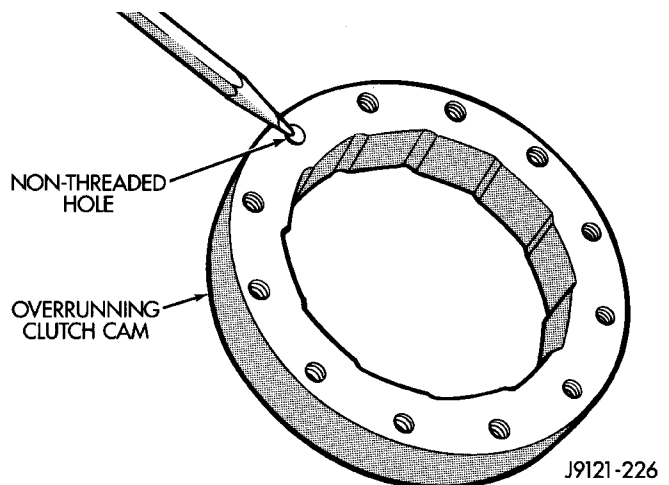
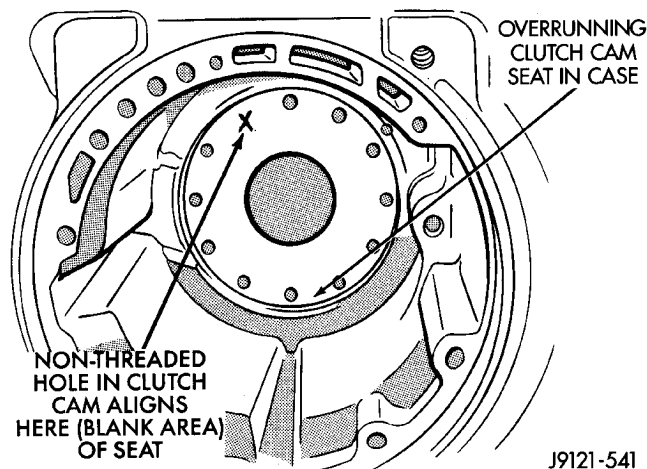
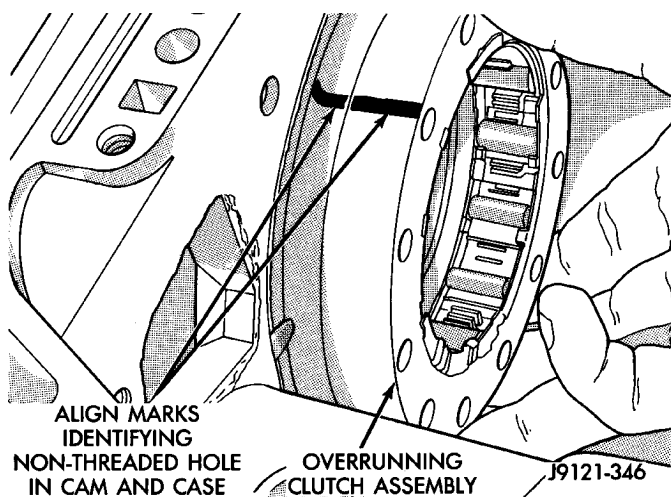


Fig. 132 Location Of Non-Threaded Hole In Clutch Cam

DISASSEMBLY AND ASSEMBLY (Continued)

J9121-541

Fig. 133 Location Of Blank Area In Clutch Cam Bolt Circle

J9121-346

Fig. 134 Overrunning Clutch Installation

(4) Verify that non-threaded hole in clutch cam is properly aligned. Check alignment by threading a bolt into each bolt hole. Adjust clutch cam position if necessary.

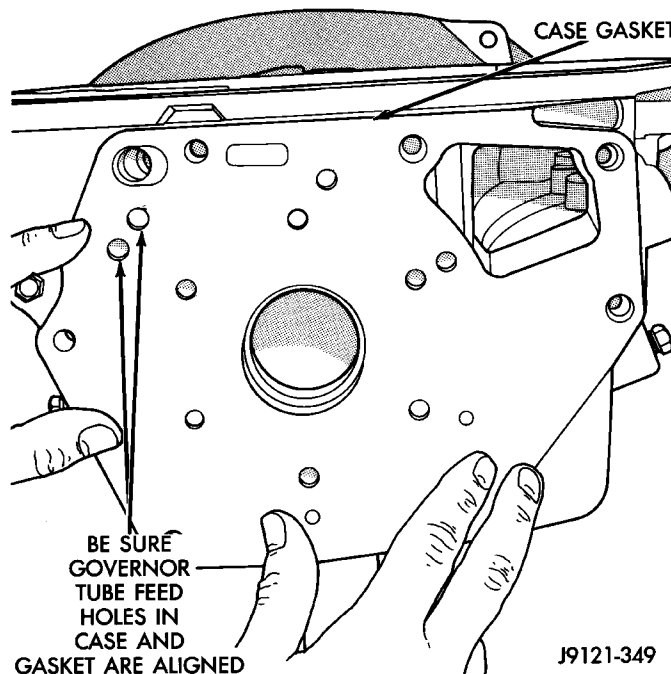
(5) Install and tighten overrunning clutch cam bolts to 17 N·m (13 ft. lbs.) torque. Note that clutch cam bolts are shorter than piston retainer bolts.

(6) Install new gasket at rear of transmission case. Use petroleum jelly to hold gasket in place. Be sure to align governor feed holes in gasket with feed passages in case (Fig. 135). Also install gasket before overdrive piston retainer. Center hole in gasket is smaller than retainer and cannot be installed over retainer.

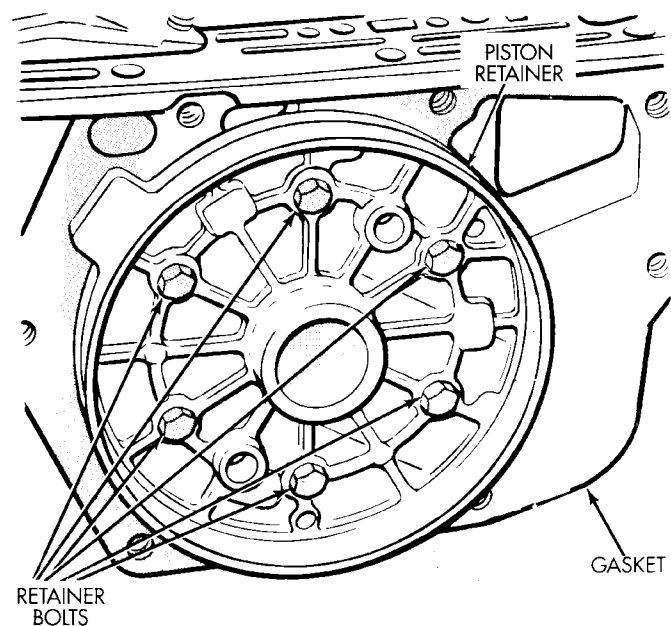
(7) Position overdrive piston retainer on transmission case and align bolt holes in retainer, gasket and case (Fig. 136). Then install and tighten retainer bolts to 17 N·m (13 ft. lbs.) torque.

(8) Install new seals on over drive piston.

(9) Stand transmission case upright on bellhousing.



J9121-349

Fig. 135 Installing/Aligning Case Gasket

J9321-464

Fig. 136 Aligning Overdrive Piston Retainer

(10) Position Guide Ring 8114-1 on outer edge of overdrive piston retainer.

(11) Position Seal Guide 8114-2 on inner edge of overdrive piston retainer.

(12) Install overdrive piston in overdrive piston retainer by: aligning locating lugs on overdrive piston to the two mating holes in retainer.

(a) Aligning locating lugs on overdrive piston to the two mating holes in retainer.

DISASSEMBLY AND ASSEMBLY (Continued)

- (b) Lubricate overdrive piston seals with Mopar® Door Ease, or equivalent.
- (c) Install piston over Seal Guide 8114-2 and inside Guide Ring 8114-1.
- (d) Push overdrive piston into position in retainer.
- (e) Verify that the locating lugs entered the lug bores in the retainer.

NOTE: INSTALL THE REMAINING TRANSMISSION COMPONENTS AND OVERDRIVE UNIT.

FRONT SERVO PISTON

DISASSEMBLY

- (1) Remove seal ring from rod guide (Fig. 137).
- (2) Remove small snap ring from servo piston rod. Then remove piston rod, spring and washer from piston.
- (3) Remove and discard servo component O-ring and seal rings.

ASSEMBLY

Clean and inspect front servo components.

- (1) Lubricate new O-ring and seal rings with petroleum jelly and install them on piston, guide and rod.
- (2) Install rod in piston. Install spring and washer on rod. Compress spring and install snap ring (Fig. 137).
- (3) Set servo components aside for installation during transmission reassembly.

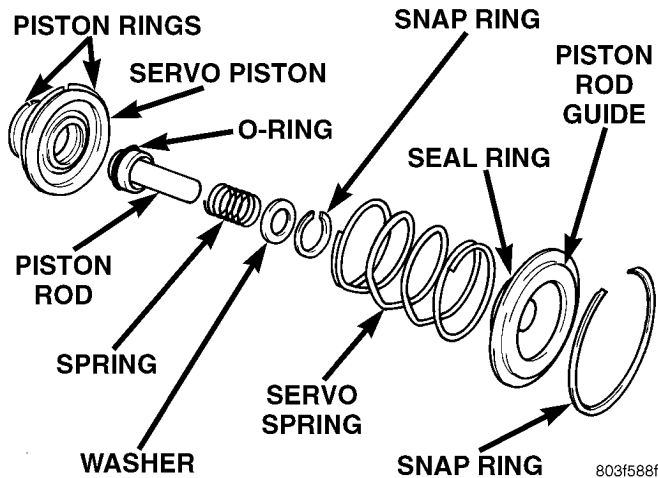


Fig. 137 Front Servo

REAR SERVO PISTON

DISASSEMBLY

- (1) Remove small snap ring and remove plug and spring from servo piston (Fig. 138).
- (2) Remove and discard servo piston seal ring.

ASSEMBLY

- (1) Lubricate piston and guide seals with petroleum jelly. Lubricate other servo parts with Mopar® ATF Plus 3, Type 7176, transmission fluid.
- (2) Install new seal ring on servo piston.
- (3) Assemble piston, plug, spring and new snap ring.
- (4) Lubricate piston seal lip with petroleum jelly.

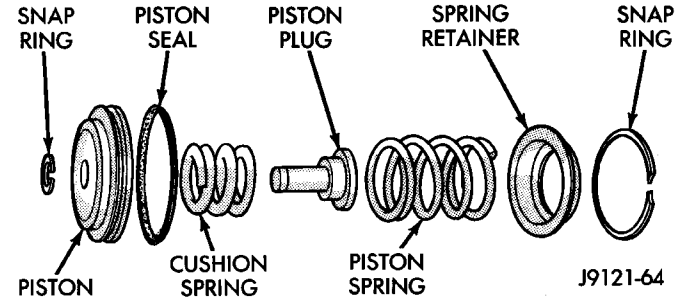


Fig. 138 Rear Servo Components

OIL PUMP AND REACTION SHAFT SUPPORT

DISASSEMBLY

- (1) Remove seal ring from housing and reaction shaft support (Fig. 139).
- (2) Mark pump housing and support assembly for alignment reference.
- (3) Remove bolts attaching pump body to support (Fig. 140).

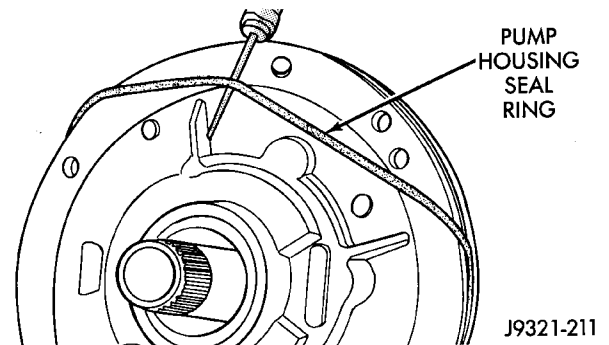
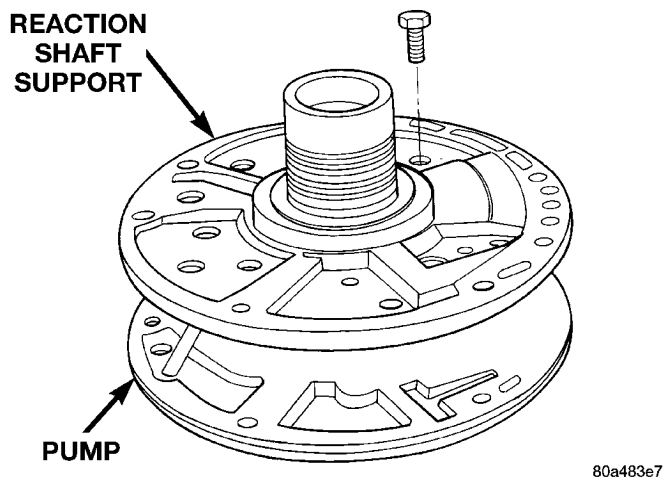
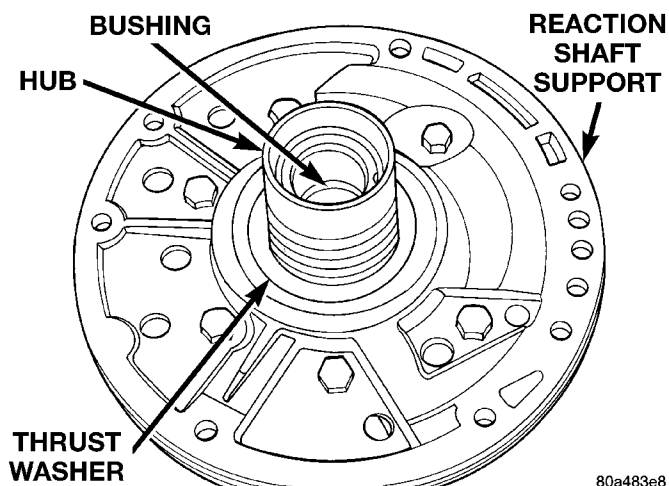
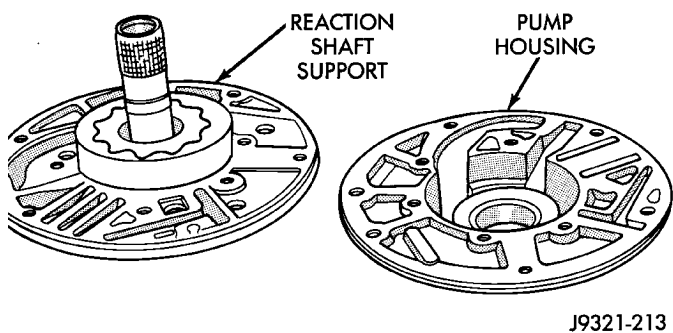
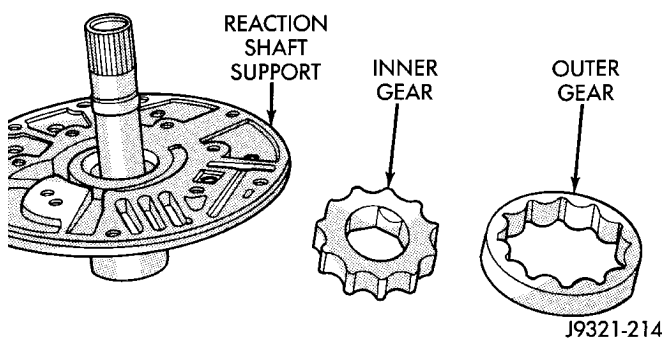


Fig. 139 Removing Pump Seal Ring

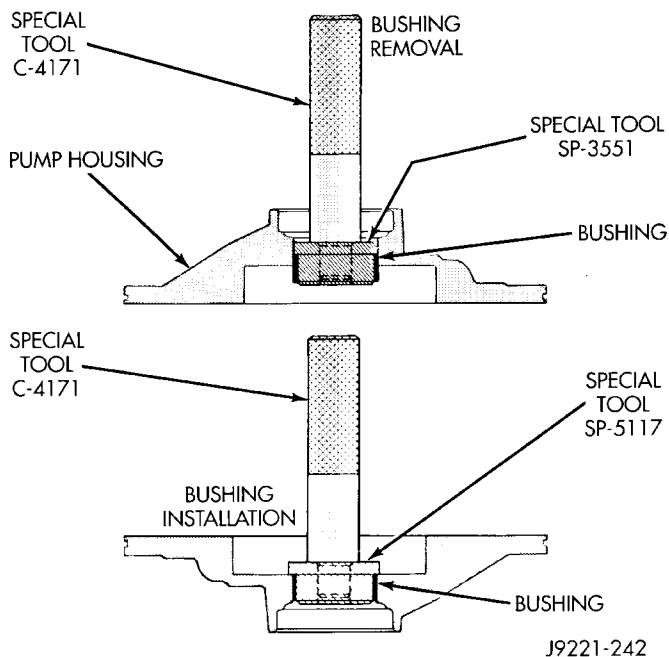
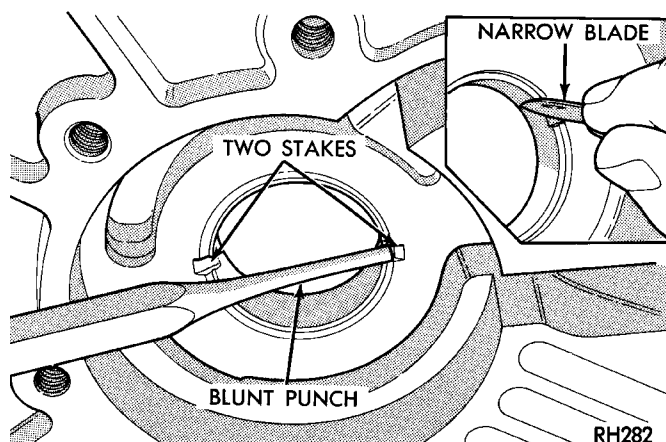
- (4) Separate support from pump housing (Fig. 141).
- (5) Remove inner and outer gears from reaction shaft support (Fig. 142).
- (6) If pump seal was not removed during transmission disassembly, remove seal with punch and hammer.
- (7) Remove front clutch thrust washer from support hub (Fig. 143).

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 140 Pump Support Bolts****Fig. 143 Support Hub Thrust Washer****Fig. 141 Separating Pump Housing From Reaction Shaft Support****Fig. 142 Pump Gear Removal****OIL PUMP BUSHING REPLACEMENT**

(1) Remove pump bushing with Tool Handle C-4171 and Bushing Remover SP-3551 from Tool Set C-3887-J (Fig. 144).

(2) Install new pump bushing with Tool Handle C-4171 and Bushing Installer SP-5117 (Fig. 144). Bushing should be flush with pump housing bore.

(3) Stake new pump bushing in two places with blunt punch (Fig. 145). Remove burrs from stake points with knife blade afterward.

**Fig. 144 Removing Oil Pump Bushing****Fig. 145 Staking Oil Pump Bushing**

DISASSEMBLY AND ASSEMBLY (Continued)**REACTION SHAFT SUPPORT BUSHING REMOVAL**

(1) Assemble Bushing Remover Tools SP-1191, 3633 and 5324 (Fig. 146). **Do not clamp any part of reaction shaft or support in vise.**

(2) Hold Cup Tool SP-3633 firmly against reaction shaft and thread remover SP-5324 into bushing as far as possible by hand. Then thread remover tool 3-4 additional turns into bushing with a wrench.

(3) Turn remover tool hex nut down against remover cup to pull bushing from shaft. Clean all chips from shaft after bushing removal.

(4) Lightly grip old bushing in vise or with pliers and back remover tool out of bushing.

(5) Assemble Bushing Installer Tools C-4171 and SP-5325 (Fig. 146).

(6) Slide new bushing onto Installer Tool SP-5325.

(7) Position reaction shaft support upright on a clean smooth surface.

(8) Align bushing in bore. Then tap bushing into place until Bushing Installer SP-5325 bottoms.

(9) Clean reaction shaft support thoroughly after installing bushing.

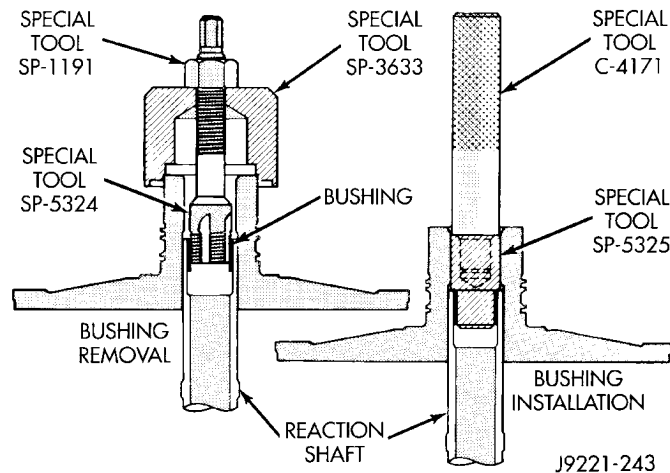


Fig. 146 Replacing Reaction Shaft Support Bushing
ASSEMBLY

(1) Lubricate gear bore in pump housing with transmission fluid.

(2) Lubricate pump gears with transmission fluid.

(3) Support pump housing on wood blocks (Fig. 147).

(4) Install outer gear in pump housing (Fig. 147). Gear can be installed either way (it is not a one-way fit).

(5) Install pump inner gear (Fig. 148).

CAUTION: The pump inner gear is a one way fit. The bore on one side of the gear inside diameter (I.D.) is chamfered. Be sure the chamfered side faces forward (to front of pump).

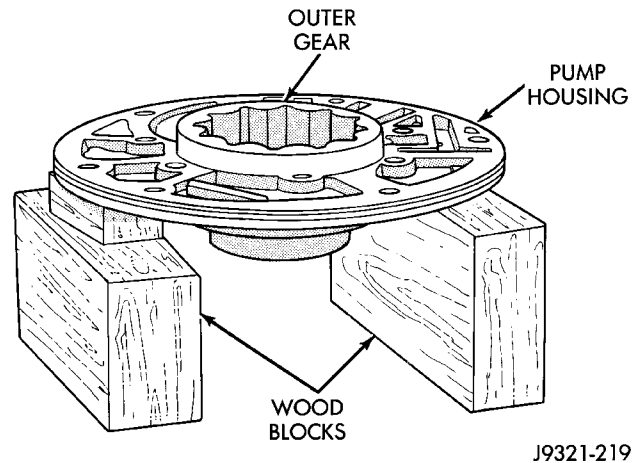


Fig. 147 Supporting Pump And Installing Outer Gear

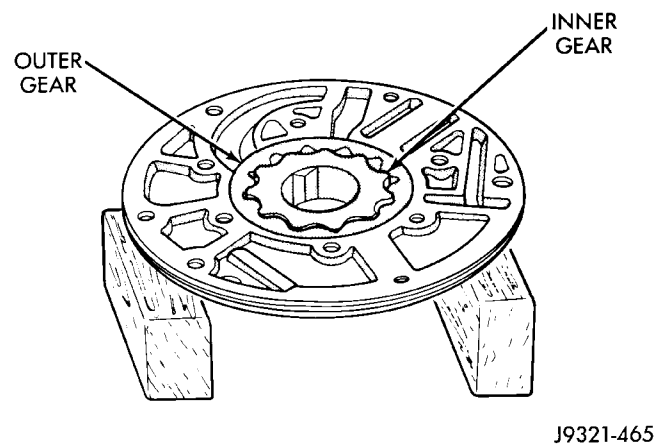


Fig. 148 Pump Inner Gear Installation

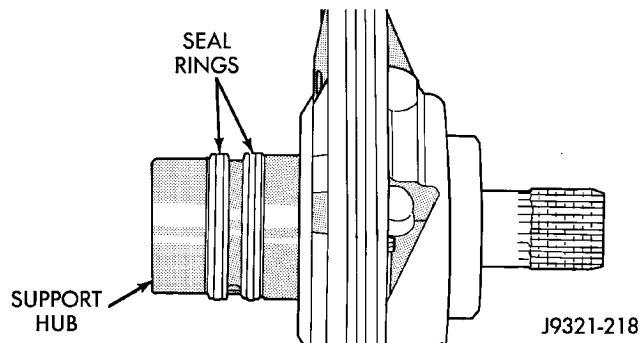
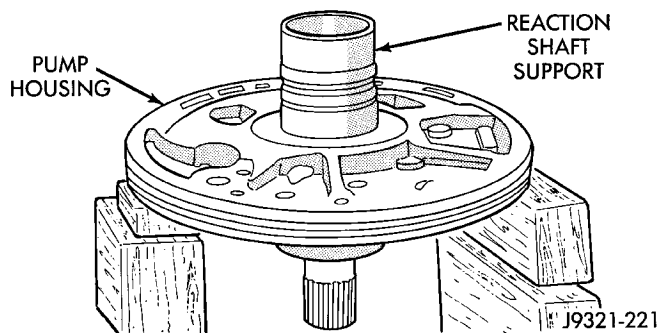
(6) Install new thrust washer on hub of reaction shaft support. Lubricate washer with transmission fluid or petroleum jelly.

(7) If reaction shaft seal rings are being replaced, install new seal rings on support hub (Fig. 149). Lubricate seal rings with transmission fluid or petroleum jelly after installation. Squeeze each ring until ring ends are securely hooked together.

CAUTION: The reaction shaft support seal rings will break if overspread, or twisted. If new rings are being installed, spread them only enough for installation. Also be very sure the ring ends are securely hooked together after installation. Otherwise, the rings will either prevent pump installation, or break during installation.

(8) Install reaction shaft support on pump housing (Fig. 150).

(9) Align reaction support on pump housing. Use alignment marks made at disassembly. Or, rotate

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 149 Hub Seal Ring Position****Fig. 150 Assembling Reaction Shaft Support And Pump Housing**

support until bolt holes in support and pump housing are all aligned (holes are offset for one-way fit).

(10) Install all bolts that attach support to pump housing. Then tighten bolts finger tight.

(11) Tighten support-to-pump bolts to required torque as follows:

(a) Reverse pump assembly and install it in transmission case. Position pump so bolts are facing out and are accessible.

(b) Secure pump assembly in case with 2 or 3 bolts, or with pilot studs.

(c) Tighten support-to-pump bolts to 20 N·m (15 ft. lbs.).

(d) Remove pump assembly from transmission case.

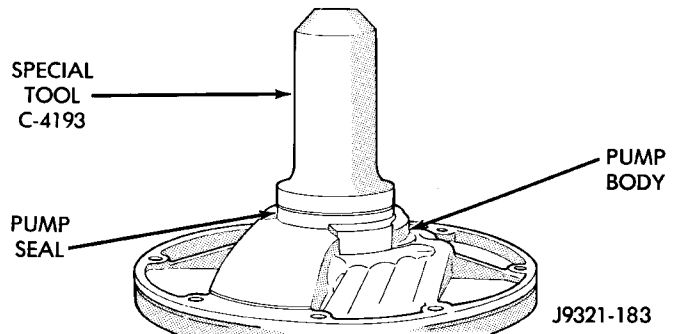
(12) Install new oil seal in pump with Special Tool C-4193 and Tool Handle C-4171 (Fig. 151). Be sure seal lip faces inward.

(13) Install new seal ring around pump housing. Be sure seal is properly seated in groove.

(14) Lubricate lip of pump oil seal and O-ring seal with transmission fluid.

FRONT CLUTCH

NOTE: The 42RE transmission uses four plates and discs for the front clutch. The 44RE uses five plates and discs for the front clutch. The front clutch retainer is not interchangeable between these transmissions.

**Fig. 151 Pump Oil Seal Installation****DISASSEMBLY**

(1) Remove waved snap ring and remove pressure plate, clutch plates and clutch discs (Fig. 152).

(2) Compress clutch piston spring with Compressor Tool C-3575-A (Fig. 153). Be sure legs of tool are seated squarely on spring retainer before compressing spring.

(3) Remove retainer snap ring and remove compressor tool.

(4) Remove spring retainer and clutch spring. Note position of retainer on spring for assembly reference.

(5) Remove clutch piston from clutch retainer. Remove piston by rotating it up and out of retainer.

(6) Remove seals from clutch piston and clutch retainer hub. Discard both seals as they are not reusable.

ASSEMBLY

(1) Soak clutch discs in transmission fluid while assembling other clutch parts.

(2) Install new seals on piston and in hub of retainer. Be sure lip of each seal faces interior of clutch retainer.

(3) Lubricate lips of piston and retainer seals with liberal quantity of Mopar® Door Ease. Then lubricate retainer hub, bore and piston with light coat of transmission fluid.

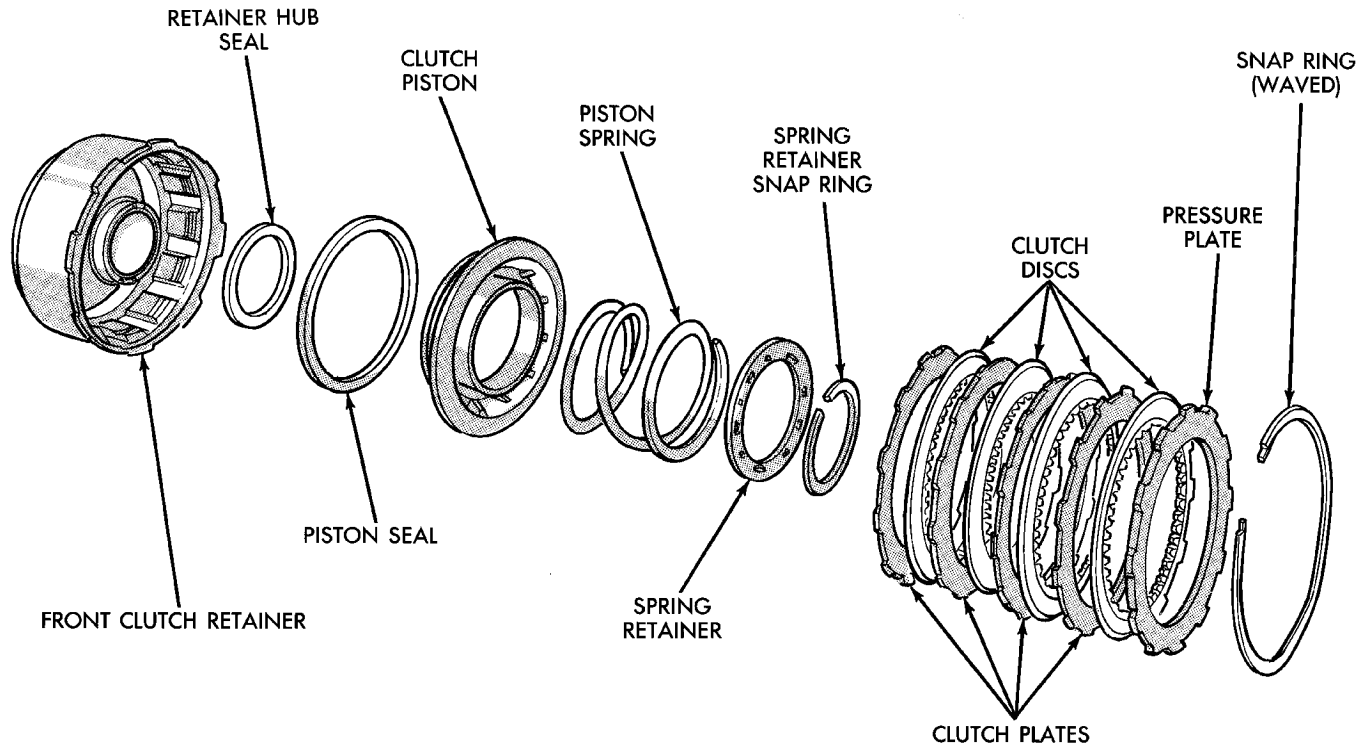
(4) Install clutch piston in retainer (Fig. 154). Use twisting motion to seat piston in bottom of retainer.

CAUTION: Never push the clutch piston straight in. This will fold the seals over causing leakage and clutch slip.

(5) Position spring in clutch piston (Fig. 155).

(6) Position spring retainer on top of piston spring (Fig. 156). **Make sure retainer is properly installed. Small raised tabs should be facing upward. Semicircular lugs on underside of retainer are for positioning retainer in spring.**

DISASSEMBLY AND ASSEMBLY (Continued)



J9321-222

Fig. 152 42RE Front Clutch Components

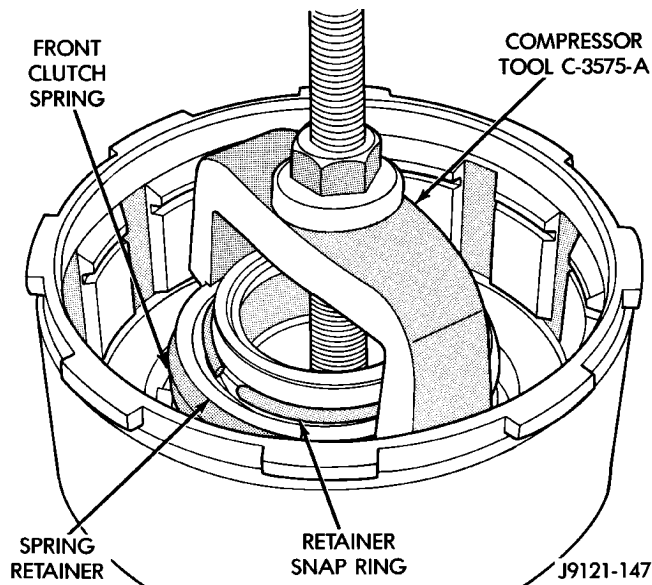


Fig. 153 Compressing Front Clutch Piston Spring

(7) Compress piston spring and retainer with Compressor Tool C-3575-A (Fig. 153). Then install new snap ring to secure spring retainer and spring.

(8) Install clutch plates and discs (Fig. 152). Install steel plate then disc until all plates and discs are installed. The front clutch uses 4 clutch discs and

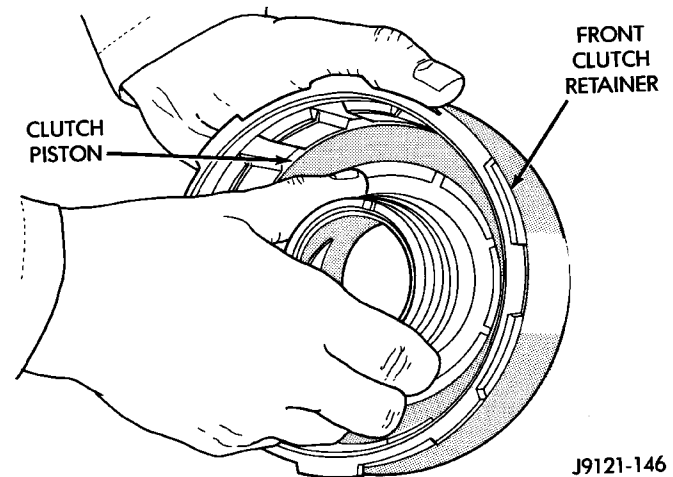


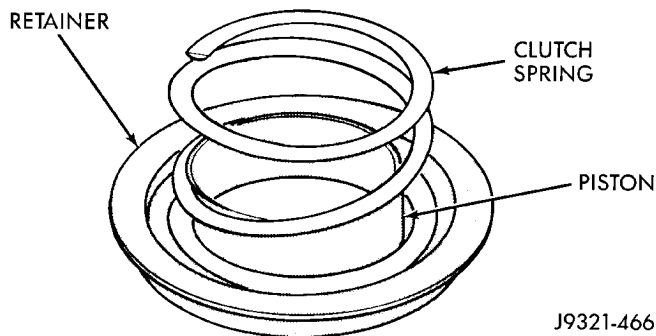
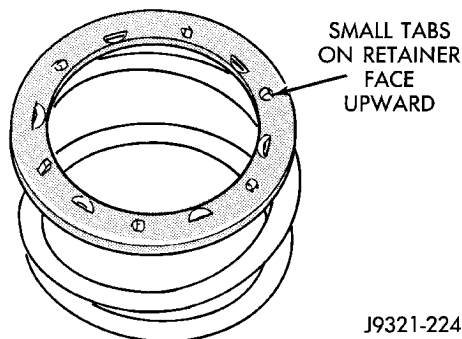
Fig. 154 Front Clutch Piston Installation

plates in a 42RE transmission. In a 44RE transmission 5 discs and plates are used.

(9) Install pressure plate and waved snap ring (Fig. 152).

Front clutch clearance specifications for the 42RE and 44RE transmission are the same.

Clearance should be 1.70 to 3.40 mm (0.067 to 0.134 in.). If clearance is incorrect, clutch discs, plates, pressure plates and snap ring may have to be changed.

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 155 Clutch Piston Spring Installation****Fig. 156 Correct Spring Retainer Installed Position****REAR CLUTCH****DISASSEMBLY**

- (1) Remove fiber thrust washer from forward side of clutch retainer.
- (2) Remove input shaft front/rear seal rings.
- (3) Remove selective clutch pack snap ring (Fig. 157).
- (4) Remove top pressure plate, clutch discs, steel plates, bottom pressure plate and wave snap ring and wave spring (Fig. 157).
- (5) Remove clutch piston with rotating motion.
- (6) Remove and discard piston seals.
- (7) Remove input shaft snap-ring (Fig. 158). It may be necessary to press the input shaft in slightly to relieve tension on the snap-ring.
- (8) Press input shaft out of retainer with shop press and suitable size press tool. Use a suitably sized press tool to support the retainer as close to the input shaft as possible.

ASSEMBLY

- (1) Soak clutch discs in transmission fluid while assembling other clutch parts.
- (2) Install new seal rings on clutch retainer hub and input shaft if necessary (Fig. 159).
 - (a) Be sure clutch hub seal ring is fully seated in groove and is not twisted.
- (3) Lubricate splined end of input shaft and clutch retainer with transmission fluid. Then press input

shaft into retainer. Use a suitably sized press tool to support retainer as close to input shaft as possible.

- (4) Install input shaft snap-ring (Fig. 158).
- (5) Invert retainer and press input shaft in opposite direction until snap-ring is seated.
- (6) Install new seals on clutch piston. Be sure lip of each seal faces interior of clutch retainer.
- (7) Lubricate lip of piston seals with generous quantity of Mopar® Door Ease. Then lubricate retainer hub and bore with light coat of transmission fluid.
- (8) Install clutch piston in retainer. Use twisting motion to seat piston in bottom of retainer. A thin strip of plastic (about 0.020" thick), can be used to guide seals into place if necessary.

CAUTION: Never push the clutch piston straight in. This will fold the seals over causing leakage and clutch slip. In addition, never use any type of metal tool to help ease the piston seals into place. Metal tools will cut, shave, or score the seals.

- (9) Install piston spring in retainer and on top of piston (Fig. 162). Concave side of spring faces downward (toward piston).
- (10) Install wave spring in retainer (Fig. 162). Be sure spring is completely seated in retainer groove.
- (11) Install bottom pressure plate (Fig. 157). Ridged side of plate faces downward (toward piston) and flat side toward clutch pack.
- (12) Install first clutch disc in retainer on top of bottom pressure plate. Then install a clutch plate followed by a clutch disc until entire clutch pack is installed (4 discs and 3 plates are required) (Fig. 157).
- (13) Install top pressure plate.
- (14) Install selective snap ring. Be sure snap ring is fully seated in retainer groove.
- (15) Using a suitable gauge bar and dial indicator, measure clutch pack clearance (Fig. 163).

(a) Position gauge bar across the clutch drum with the dial indicator pointer on the pressure plate (Fig. 163).

(b) Using two small screw drivers, lift the pressure plate and release it.

(c) Zero the dial indicator.

(d) Lift the pressure plate until it contacts the snap-ring and record the dial indicator reading.

Clearance should be 0.64 - 1.14 mm (0.025 - 0.045 in.). If clearance is incorrect, steel plates, discs, selective snap ring and pressure plates may have to be changed.

The selective snap ring thicknesses are:

- .107-.109 in.
- .098-.100 in.
- .095-.097 in.
- .083-.085 in.

DISASSEMBLY AND ASSEMBLY (Continued)

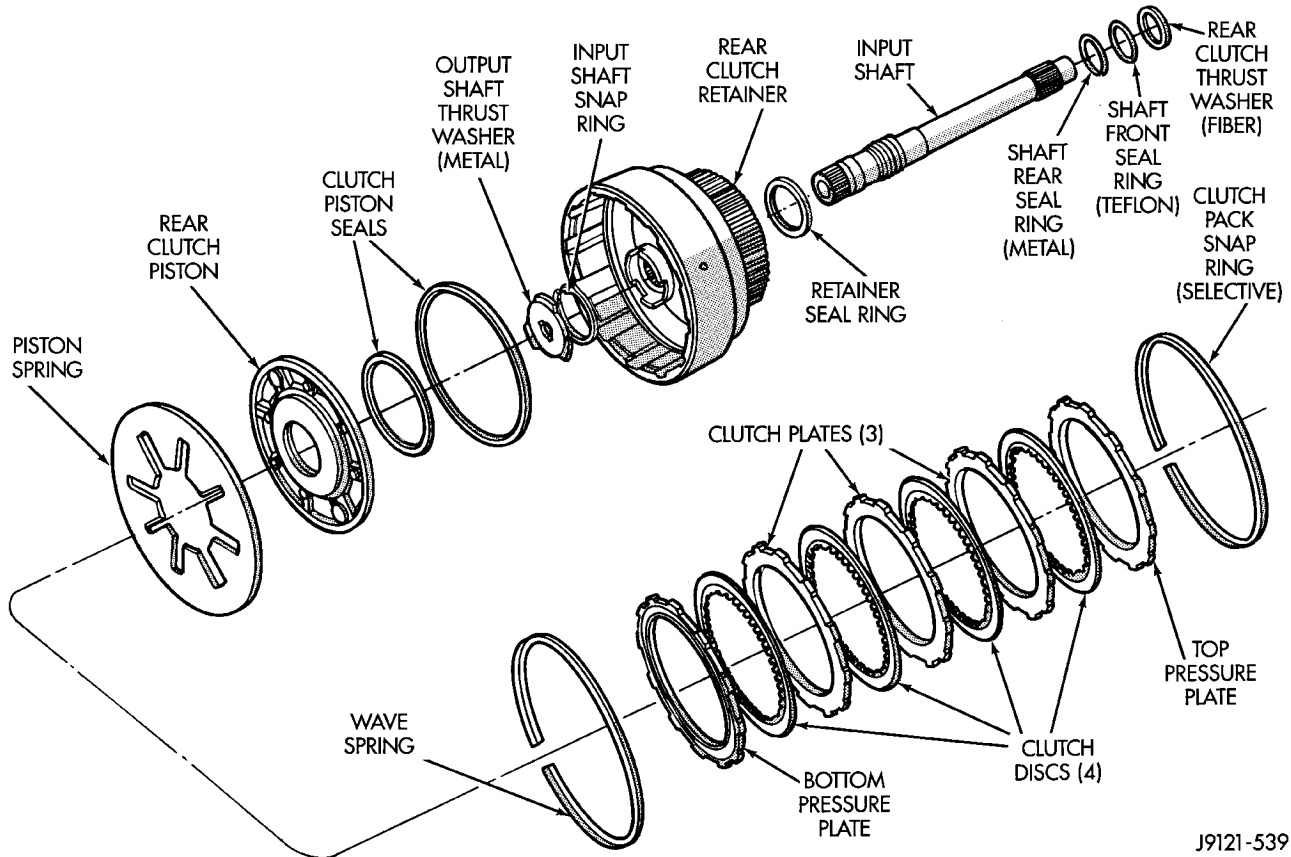


Fig. 157 Rear Clutch Components

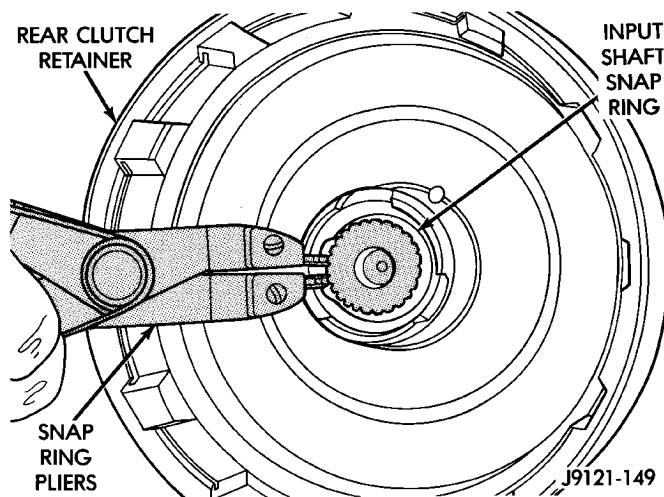


Fig. 158 Removing/Installing Input Shaft Snap-Ring

- .076-.078 in.
- .071-.073 in.
- .060-.062 in.

(16) Coat rear clutch thrust washer with petroleum jelly and install washer over input shaft and into clutch retainer (Fig. 164). Use enough petroleum jelly to hold washer in place.

(17) Set rear clutch aside for installation during final assembly.

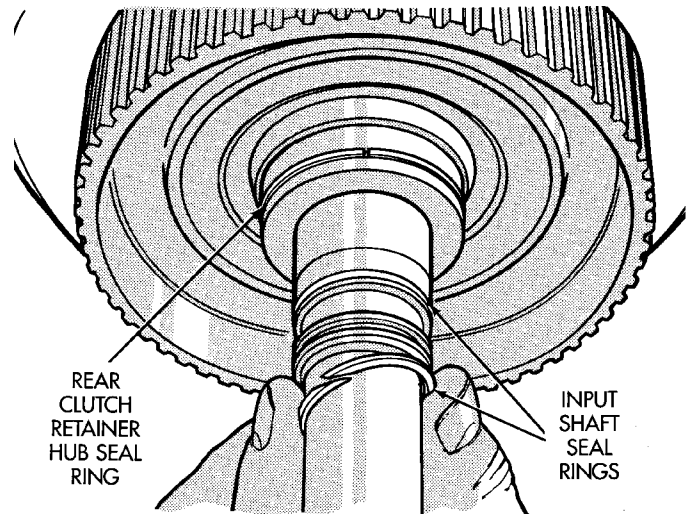
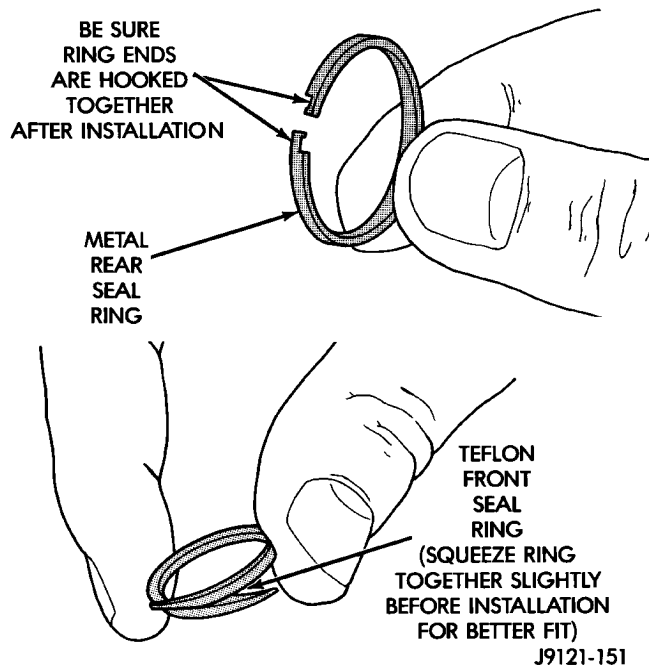
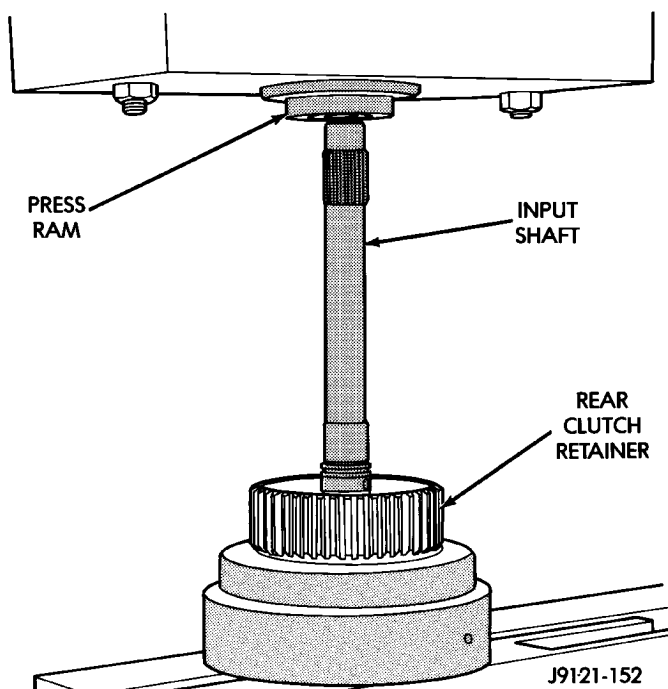


Fig. 159 Rear Clutch Retainer And Input Shaft Seal Ring Installation

PLANETARY GEARTRAIN/OUTPUT SHAFT

DISASSEMBLY

- (1) Remove planetary snap ring (Fig. 165).

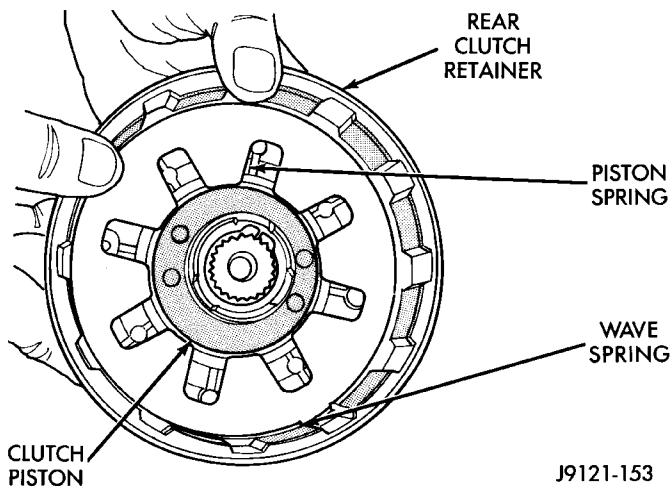
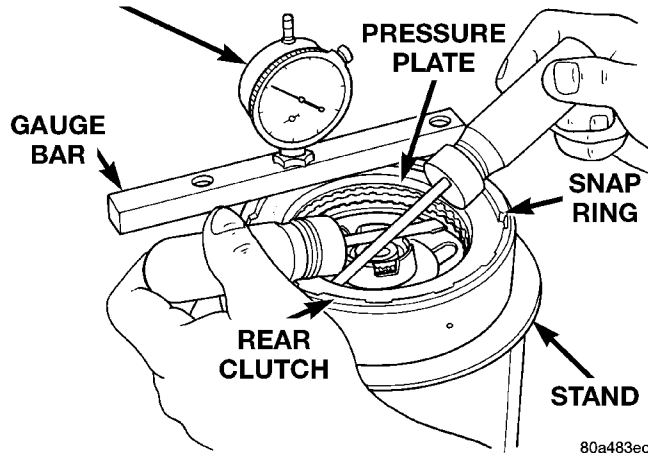
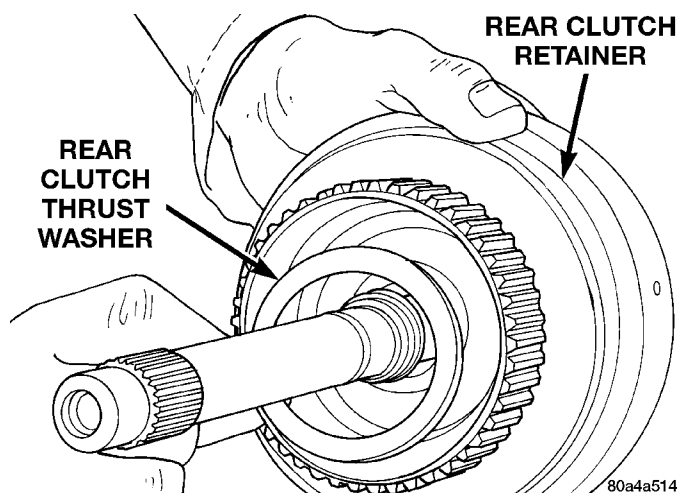
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 160 Input Shaft Seal Ring Identification****Fig. 161 Pressing Input Shaft Into Rear Clutch Retainer**

(2) Remove front annulus and planetary assembly from driving shell (Fig. 165).

(3) Remove snap ring that retains front planetary gear in annulus gear (Fig. 166).

(4) Remove tabbed thrust washer and tabbed thrust plate from hub of front annulus (Fig. 167).

(5) Separate front annulus and planetary gears (Fig. 167).

**Fig. 162 Piston Spring/Wave Spring Position****Fig. 163 Checking Rear Clutch Pack Clearance****Fig. 164 Installing Rear Clutch Thrust Washer**

(6) Remove front planetary gear front thrust washer from annulus gear hub.

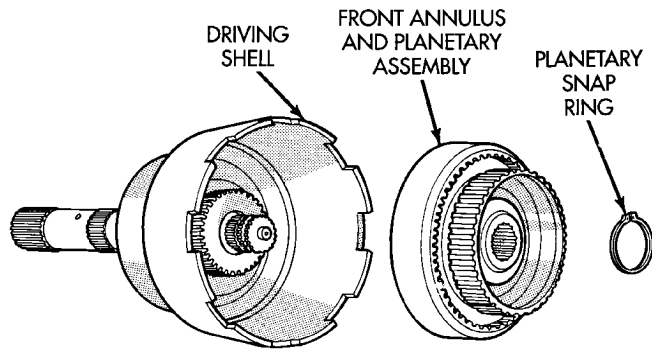
(7) Separate and remove driving shell, rear planetary and rear annulus from output shaft (Fig. 168).

DISASSEMBLY AND ASSEMBLY (Continued)

(8) Remove front planetary rear thrust washer from driving shell.

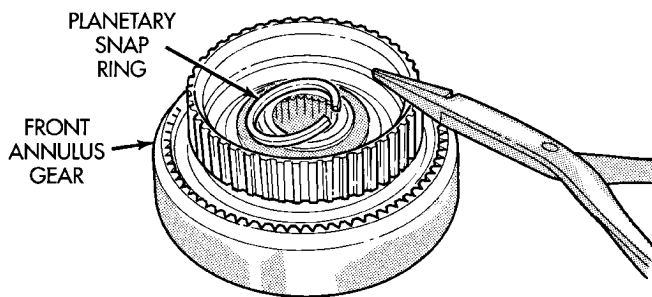
(9) Remove tabbed thrust washers from rear planetary gear.

(10) Remove lock ring that retains sun gear in driving shell. Then remove sun gear, spacer and thrust plates.



J9421-175

Fig. 165 Front Annulus And Planetary Assembly Removal



J9421-176

Fig. 166 Front Planetary Snap Ring Removal

ASSEMBLY

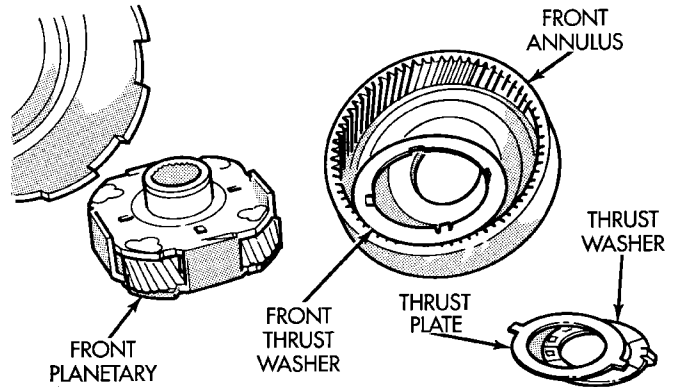
(1) Lubricate output shaft and planetary components with transmission fluid. Use petroleum jelly to lubricate and hold thrust washers and plates in position.

(2) Assemble rear annulus gear and support if disassembled. Be sure support snap ring is seated and that shoulder-side of support faces rearward (Fig. 169).

(3) Install rear thrust washer on rear planetary gear. Use enough petroleum jelly to hold washer in place. Also be sure all four washer tabs are properly engaged in gear slots.

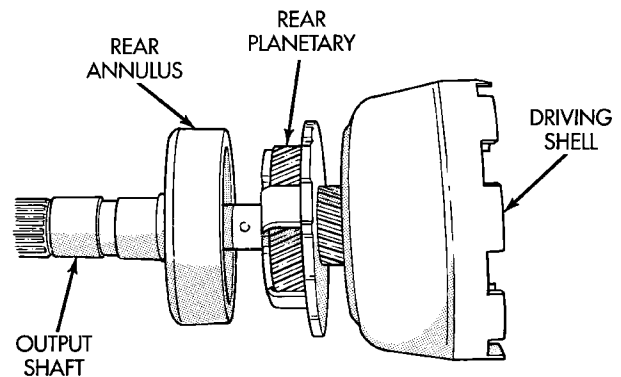
(4) Install rear annulus over and onto rear planetary gear (Fig. 169).

(5) Install assembled rear planetary and annulus gear on output shaft (Fig. 170). Verify that assembly is fully seated on shaft.



J9421-177

Fig. 167 Front Planetary And Annulus Gear Disassembly



J9421-178

Fig. 168 Removing Driving Shell, Rear Planetary And Rear Annulus

(6) Install front thrust washer on rear planetary gear (Fig. 171). Use enough petroleum jelly to hold washer on gear. Be sure all four washer tabs are seated in slots.

(7) Install spacer on sun gear (Fig. 172).

(8) Install thrust plate on sun gear (Fig. 173). Note that driving shell thrust plates are interchangeable. Use either plate on sun gear and at front/rear of shell.

(9) Hold sun gear in place and install thrust plate over sun gear at rear of driving shell (Fig. 174).

(10) Position wood block on bench and support sun gear on block (Fig. 175). This makes it easier to align and install sun gear lock ring. Keep wood block handy as it will also be used for geartrain end play check.

(11) Align rear thrust plate on driving shell and install sun gear lock ring. Be sure ring is fully seated in sun gear ring groove (Fig. 176).

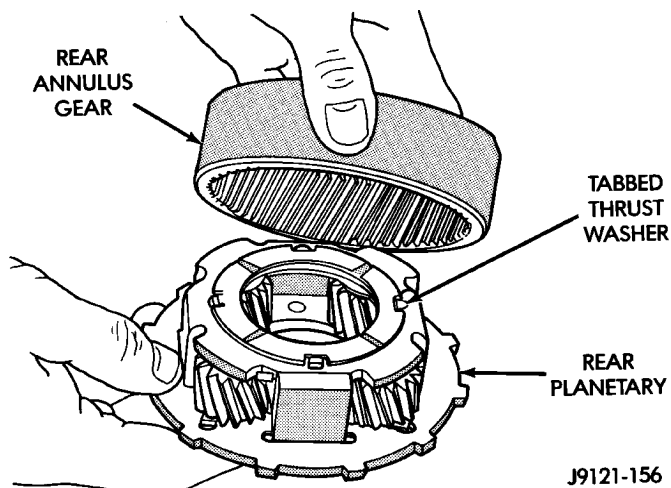
DISASSEMBLY AND ASSEMBLY (Continued)

Fig. 169 Assembling Rear Annulus And Planetary Gear

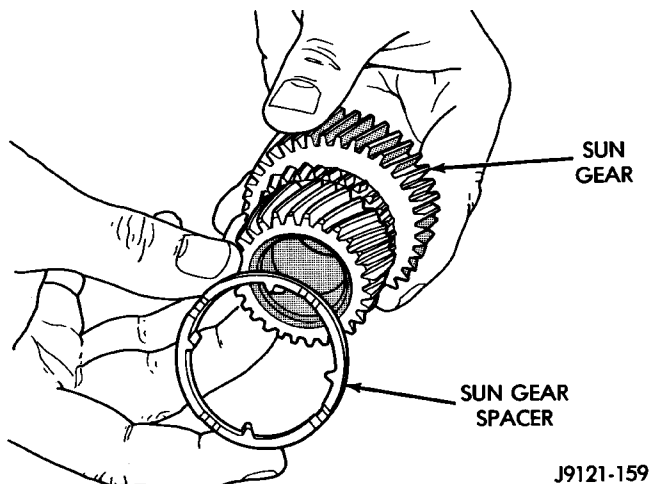


Fig. 172 Installing Spacer On Sun Gear

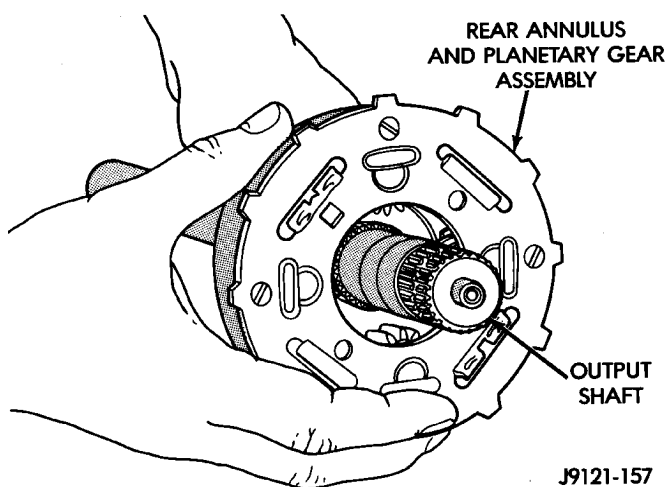


Fig. 170 Installing Rear Annulus And Planetary On Output Shaft

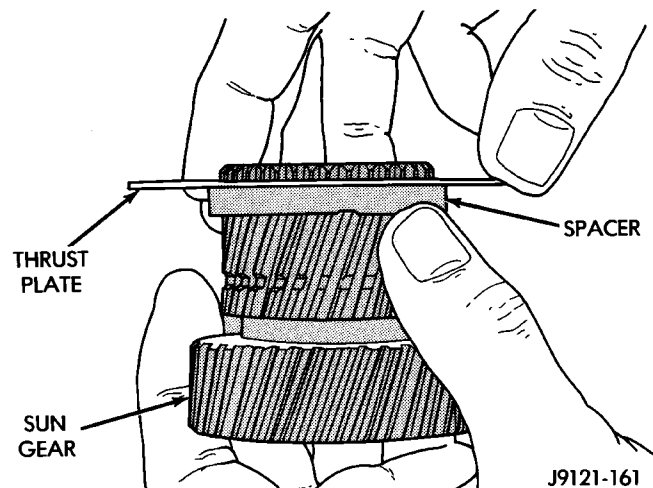


Fig. 173 Installing Driving Shell Front Thrust Plate On Sun Gear

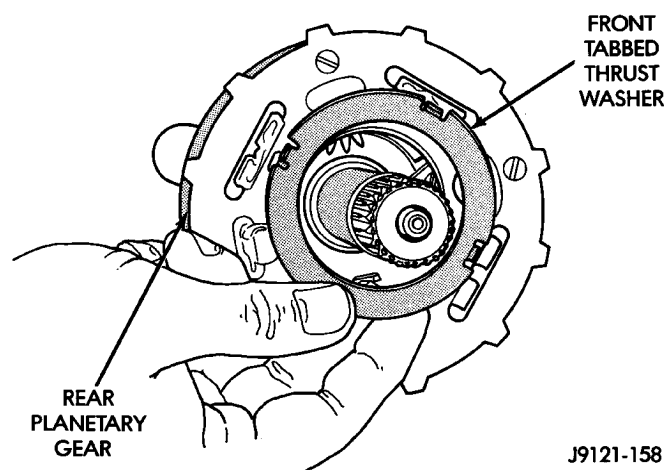


Fig. 171 Installing Rear Planetary Front Thrust Washer

(12) Install assembled driving shell and sun gear on output shaft (Fig. 177).

(13) Install rear thrust washer on front planetary gear (Fig. 178). Use enough petroleum jelly to hold washer in place and be sure all four washer tabs are seated.

(14) Install front planetary gear on output shaft and in driving shell (Fig. 179).

(15) Install front thrust washer on front planetary gear. Use enough petroleum jelly to hold washer in place and be sure all four washer tabs are seated.

(16) Assemble front annulus gear and support, if necessary. Be sure support snap ring is seated.

(17) Install front annulus on front planetary (Fig. 179).

(18) Position thrust plate on front annulus gear support (Fig. 180). Note that plate has two tabs on it. These tabs fit in notches of annulus hub.

DISASSEMBLY AND ASSEMBLY (Continued)

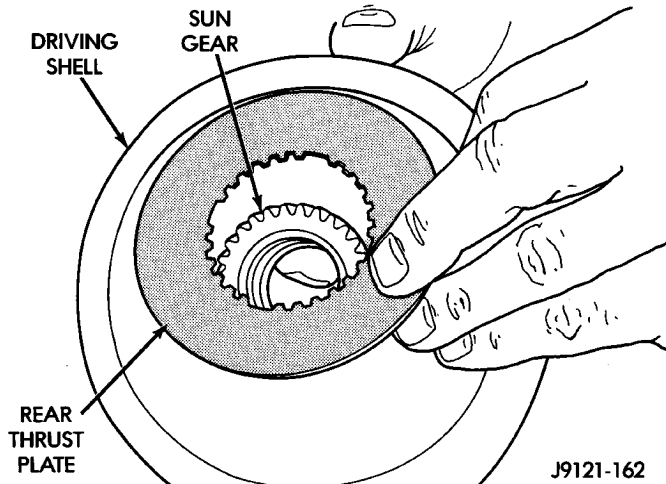


Fig. 174 Installing Driving Shell Rear Thrust Plate

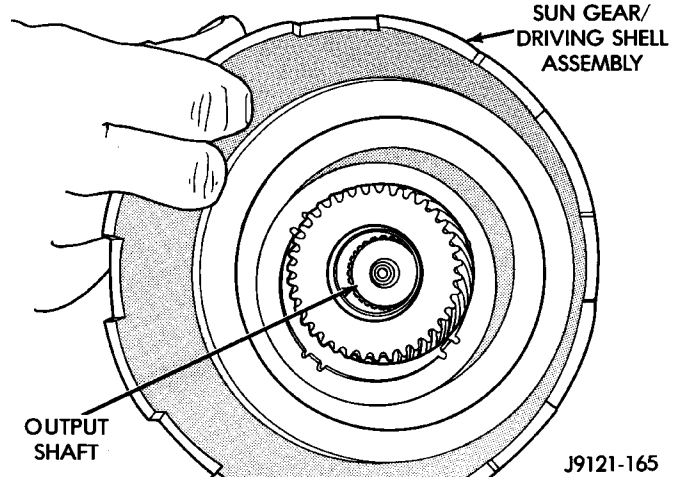


Fig. 177 Installing Assembled Sun Gear And Driving Shell On Output Shaft

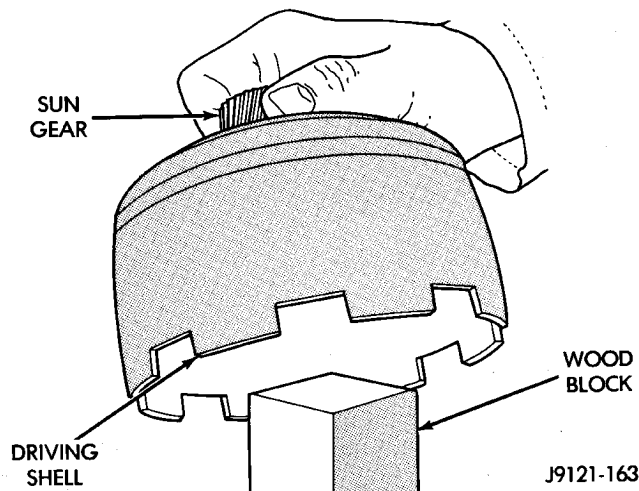


Fig. 175 Supporting Sun Gear On Wood Block

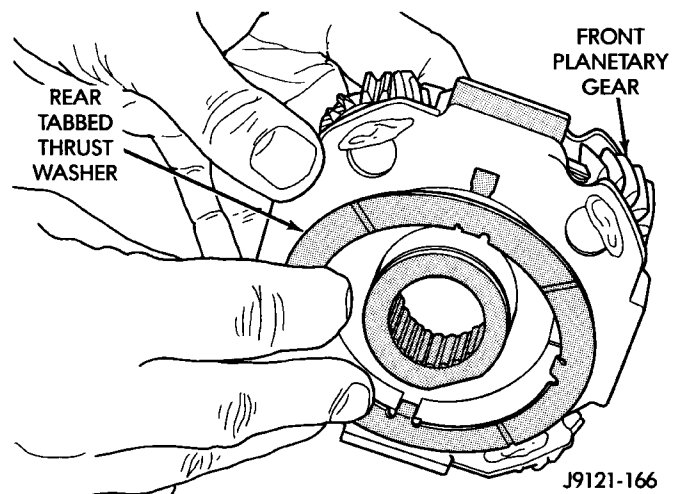


Fig. 178 Installing Rear Thrust Washer On Front Planetary Gear

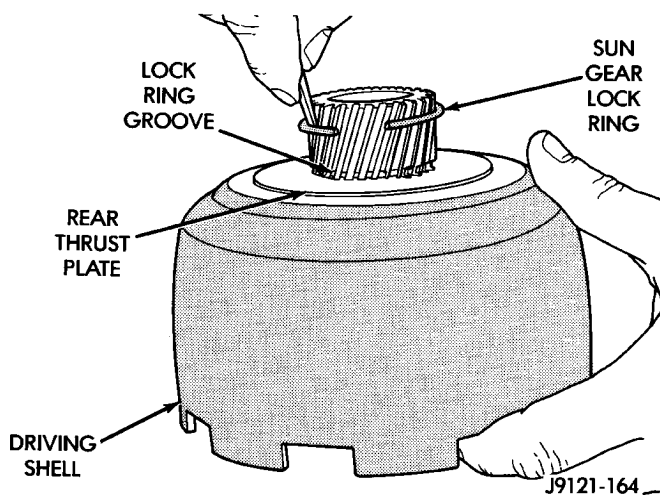


Fig. 176 Installing Sun Gear Lock Ring

(19) Install thrust washer in front annulus (Fig. 181). Align flat on washer with flat on planetary hub. Also be sure washer tab is facing up.

(20) Install front annulus snap ring (Fig. 182). Use snap ring pliers to avoid distorting ring during installation. Also be sure ring is fully seated.

(21) Install planetary selective snap ring with snap ring pliers (Fig. 183). Be sure ring is fully seated.

(22) Turn planetary geartrain assembly over so driving shell is facing workbench. Then support geartrain on wood block positioned under forward end of output shaft. This allows geartrain components to move forward for accurate end play check.

(23) Check planetary geartrain end play with feeler gauge (Fig. 184). Gauge goes between shoulder on output shaft and end of rear annulus support.

(24) Geartrain end play should be 0.12 to 1.22 mm (0.005 to 0.048 in.). If end play is incorrect, snap ring (or thrust washers) may have to be replaced. Snap ring is available in three different thicknesses for adjustment purposes.

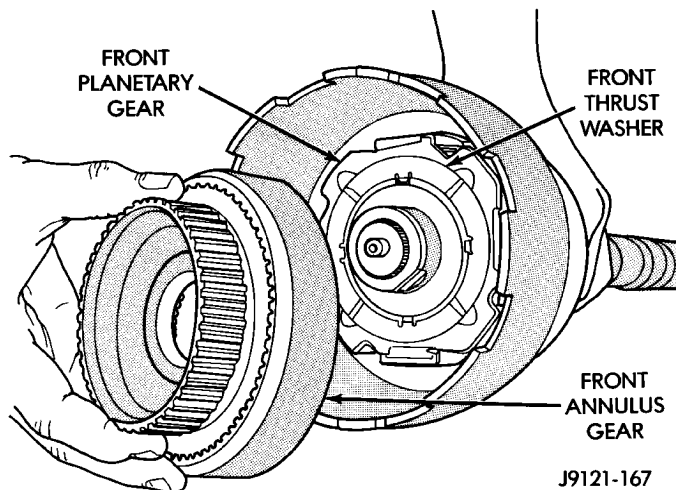
DISASSEMBLY AND ASSEMBLY (Continued)

Fig. 179 Installing Front Planetary And Annulus Gears

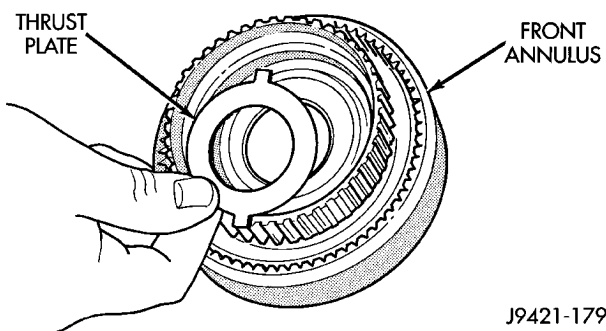


Fig. 180 Positioning Thrust Plate On Front Annulus Support

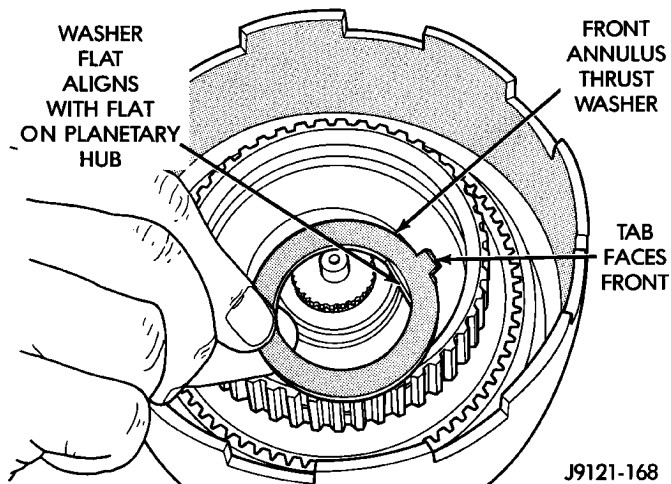


Fig. 181 Installing Front Annulus Thrust Washer
OVERDRIVE UNIT

DISASSEMBLY

(1) Remove transmission speed sensor and O-ring seal from overdrive case (Fig. 185).

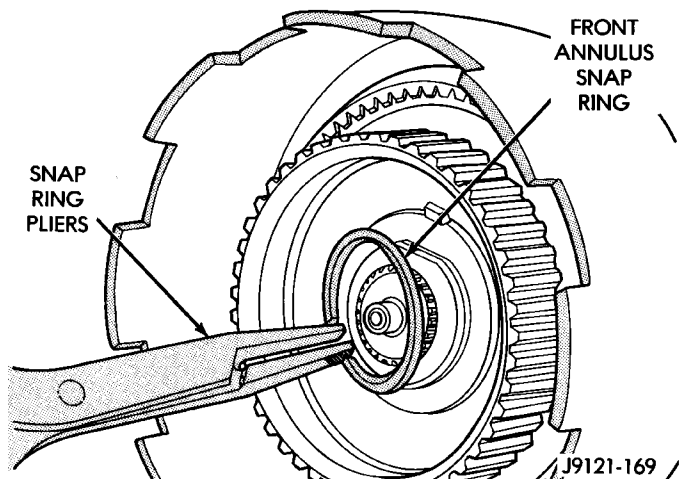


Fig. 182 Installing Front Annulus Snap Ring

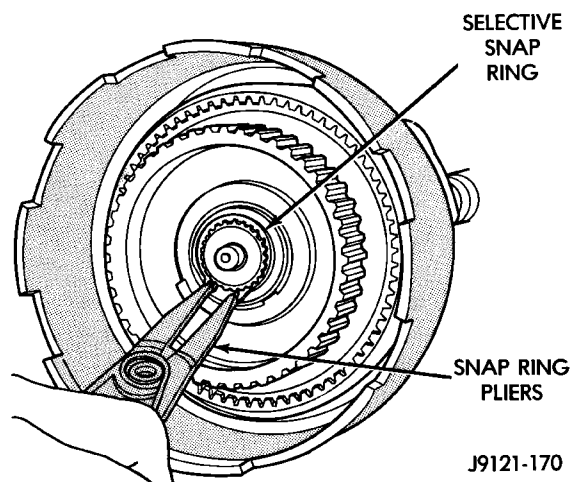


Fig. 183 Installing Planetary Selective Snap Ring

(2) Remove overdrive piston thrust bearing (Fig. 186).

OVERDRIVE PISTON DISASSEMBLY

(1) Remove overdrive piston thrust plate (Fig. 187). Retain thrust plate. It is a select fit part and may possibly be reused.

(2) Remove intermediate shaft spacer (Fig. 188). Retain spacer. It is a select fit part and may possibly be reused.

(3) Remove overdrive piston from retainer (Fig. 189).

OVERDRIVE CLUTCH PACK DISASSEMBLY

(1) Remove overdrive clutch pack wire retaining ring (Fig. 190).

(2) Remove overdrive clutch pack (Fig. 191).

NOTE: The 42RE transmission has three clutch discs and two clutch plates. The 44RE transmission has four clutch discs and three clutch plates.

DISASSEMBLY AND ASSEMBLY (Continued)

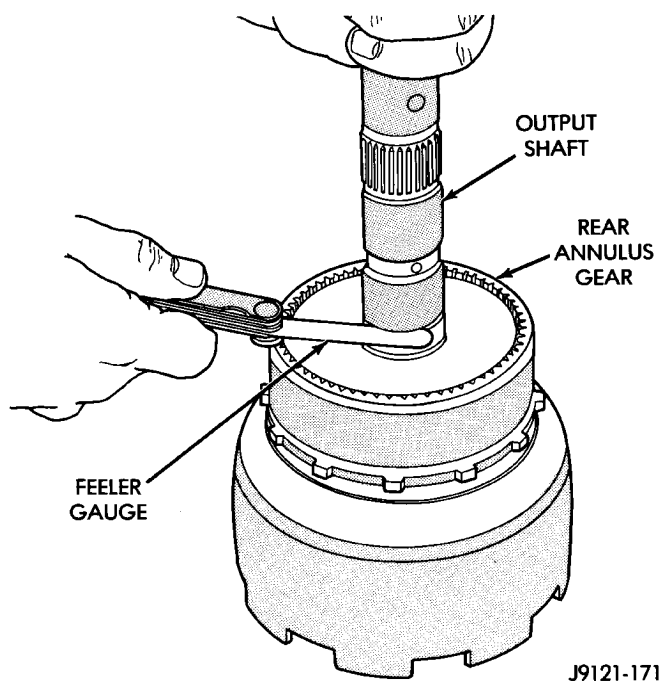


Fig. 184 Checking Planetary Geartrain End Play

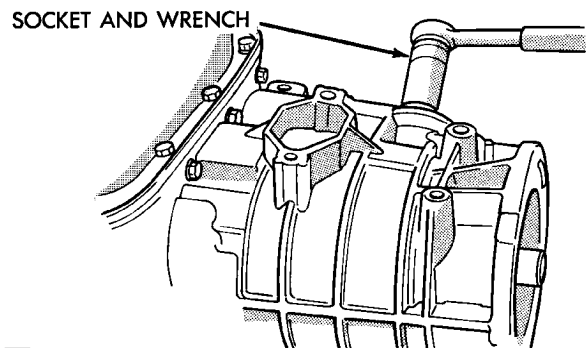


Fig. 185 Transmission Speed Sensor Removal/Installation

(3) Note position of clutch pack components for assembly reference (Fig. 192).

OVERDRIVE GEARTRAIN DISASSEMBLY

(1) Remove overdrive clutch wave spring (Fig. 193).

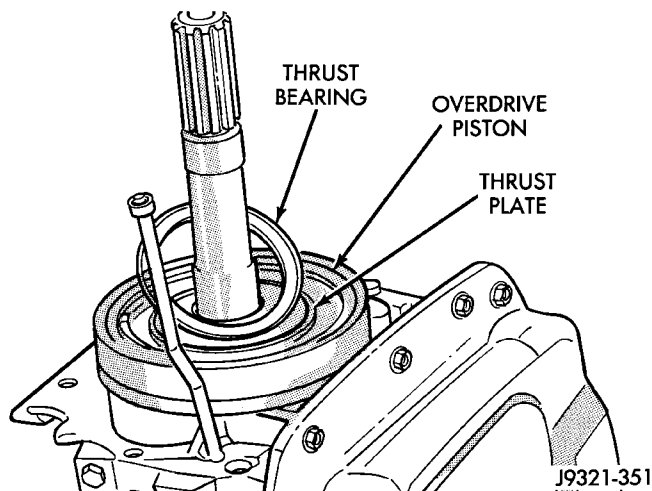


Fig. 186 Overdrive Piston Thrust Bearing Removal/Installation

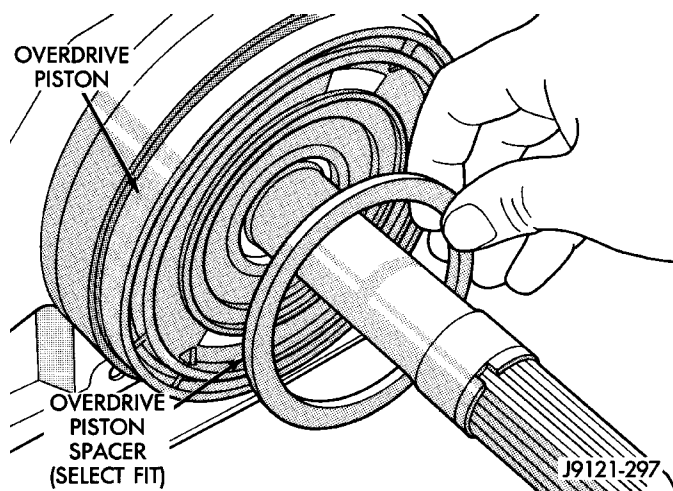


Fig. 187 Overdrive Piston Thrust Plate Removal/Installation

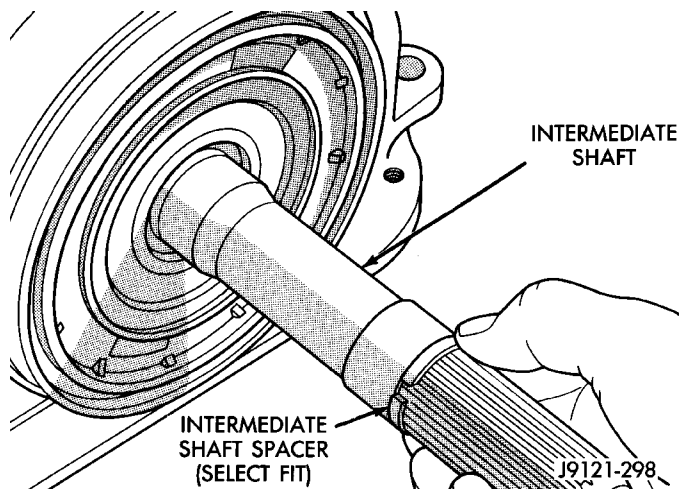
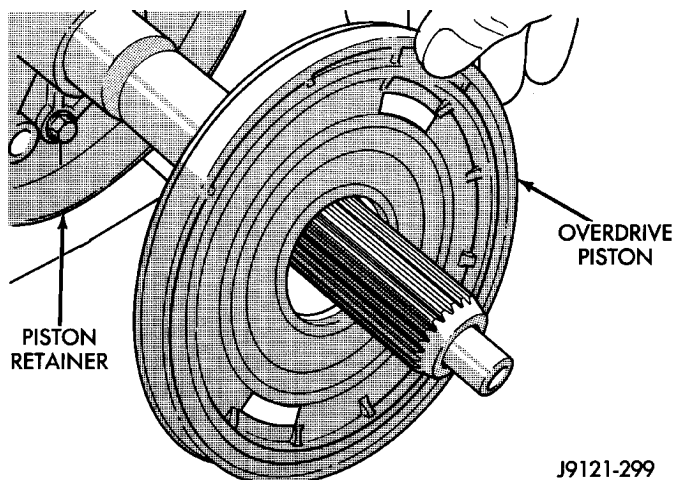
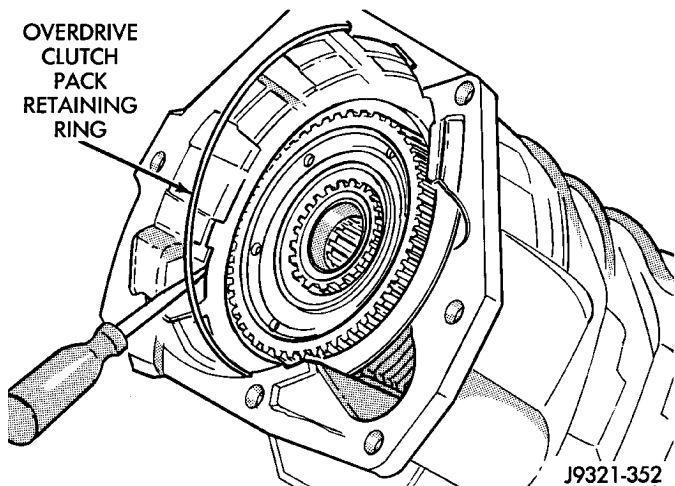
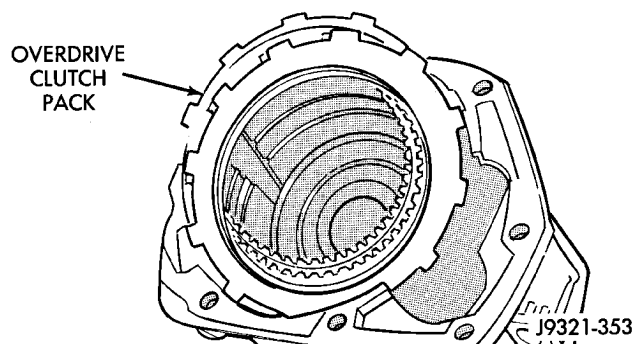


Fig. 188 Intermediate Shaft Spacer Location

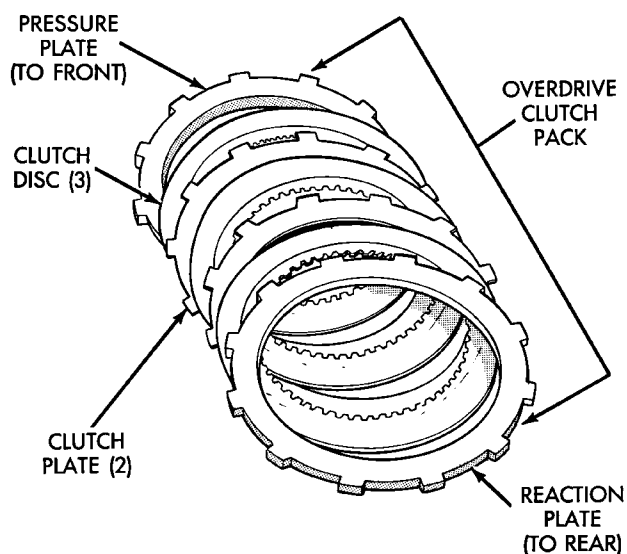
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 189 Overdrive Piston Removal****Fig. 190 Removing Overdrive Clutch Pack Retaining Ring****Fig. 191 Overdrive Clutch Pack Removal**

(2) Remove overdrive clutch reaction snap ring (Fig. 194). Note that snap ring is located in same groove as wave spring.

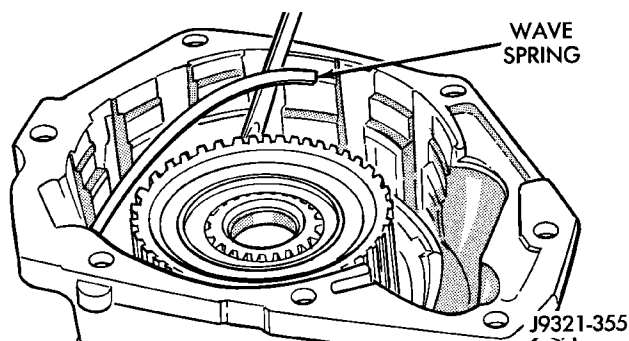
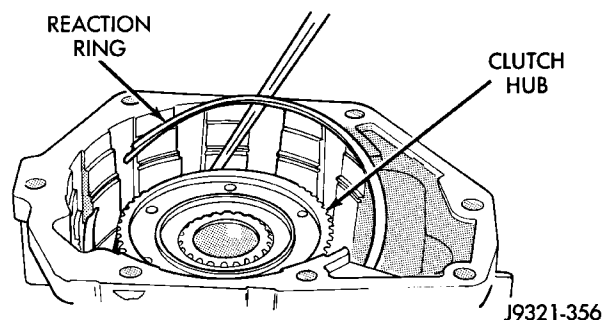
(3) Remove Torx head screws that attach access cover and gasket to overdrive case (Fig. 195).

(4) Remove access cover and gasket (Fig. 196).

(5) Expand output shaft bearing snap ring with expanding-type snap ring pliers. Then push output

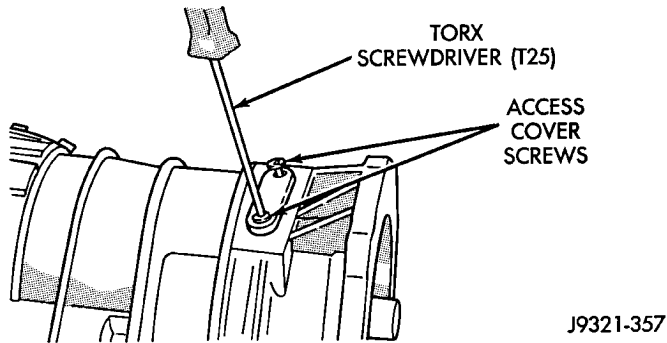
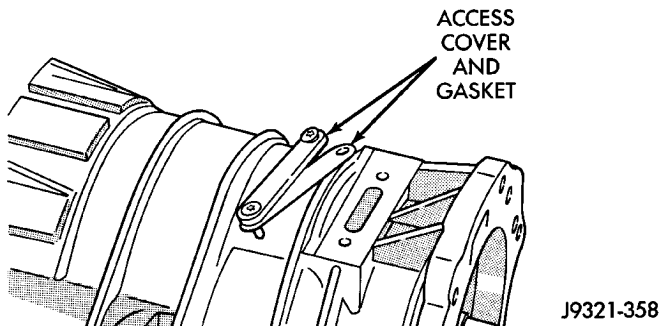
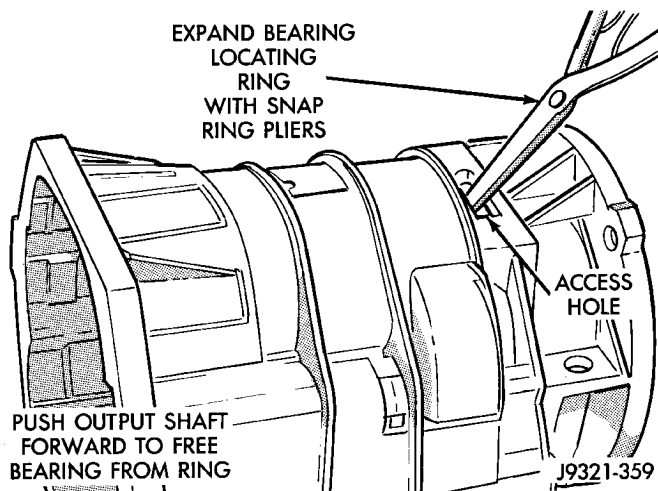


J9321-354

Fig. 192 42RE Overdrive Clutch Component Position**Fig. 193 Overdrive Clutch Wave Spring Removal/Installation****Fig. 194 Overdrive Clutch Reaction Snap Ring Removal/Installation**

shaft forward to release shaft bearing from locating ring (Fig. 197).

(6) Lift gear case up and off geartrain assembly (Fig. 198).

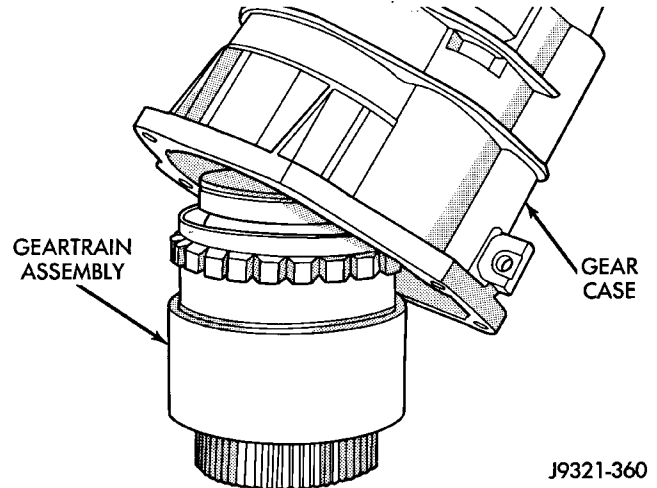
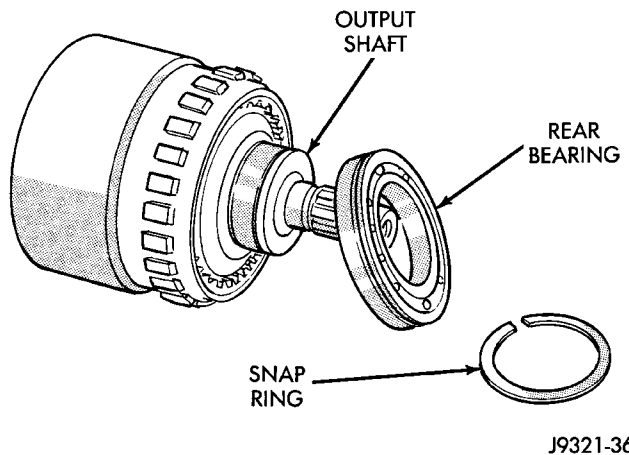
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 195 Access Cover Screw Removal/Installation****Fig. 196 Access Cover And Gasket Removal/Installation****Fig. 197 Releasing Bearing From Locating Ring**

(7) Remove snap ring that retains rear bearing on output shaft.

(8) Remove rear bearing from output shaft (Fig. 199).

DIRECT CLUTCH, HUB AND SPRING DISASSEMBLY

WARNING: THE NEXT STEP IN DISASSEMBLY INVOLVES COMPRESSING THE DIRECT CLUTCH SPRING. IT IS EXTREMELY IMPORTANT THAT PROPER EQUIPMENT BE USED TO COMPRESS THE SPRING AS SPRING FORCE IS APPROXI-

**Fig. 198 Removing Gear Case From Geartrain Assembly****Fig. 199 Rear Bearing Removal**

MATELY 830 POUNDS. USE SPRING COMPRESSOR TOOL 6227-1 AND A HYDRAULIC SHOP PRESS WITH A MINIMUM RAM TRAVEL OF 5-6 INCHES. THE PRESS MUST ALSO HAVE A BED THAT CAN BE ADJUSTED UP OR DOWN AS REQUIRED. RELEASE CLUTCH SPRING TENSION SLOWLY AND COMPLETELY TO AVOID PERSONAL INJURY.

(1) Mount geartrain assembly in shop press (Fig. 200).

(2) Position Compressor Tool 6227-1 on clutch hub (Fig. 200). Support output shaft flange with steel press plates as shown and center assembly under press ram.

(3) Apply press pressure slowly. Compress hub and spring far enough to expose clutch hub retaining ring and relieve spring pressure on clutch pack snap ring (Fig. 200).

(4) Remove direct clutch pack snap ring (Fig. 201).

DISASSEMBLY AND ASSEMBLY (Continued)

(5) Remove direct clutch hub retaining ring (Fig. 202).

(6) Release press load slowly and completely (Fig. 203).

(7) Remove Special Tool 6227-1. Then remove clutch pack from hub (Fig. 203).

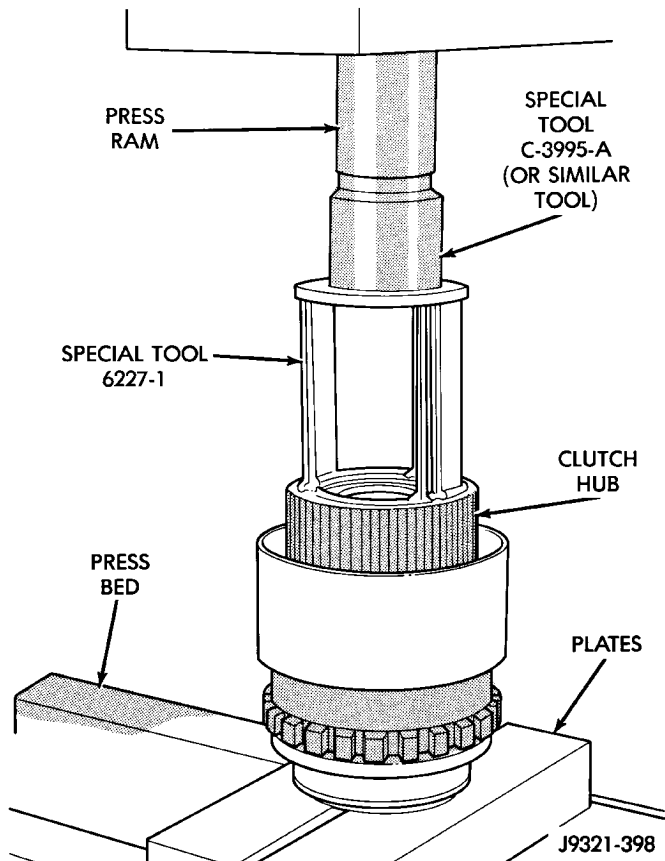


Fig. 200 Geartrain Mounted In Shop Press

Geartrain Disassembly

(1) Remove direct clutch hub and spring (Fig. 204).
 (2) Remove sun gear and spring plate. Then remove planetary thrust bearing and planetary gear (Fig. 205).

(3) Remove overrunning clutch assembly with expanding type snap ring pliers (Fig. 206). Insert pliers into clutch hub. Expand pliers to grip hub splines and remove clutch with counterclockwise, twisting motion.

(4) Remove thrust bearing from overrunning clutch hub.

(5) Remove overrunning clutch from hub.

(6) Mark position of annulus gear and direct clutch drum for assembly alignment reference (Fig. 207). Use small center punch or scribe to make alignment marks.

(7) Remove direct clutch drum rear retaining ring (Fig. 208).

(8) Remove direct clutch drum outer retaining ring (Fig. 209).

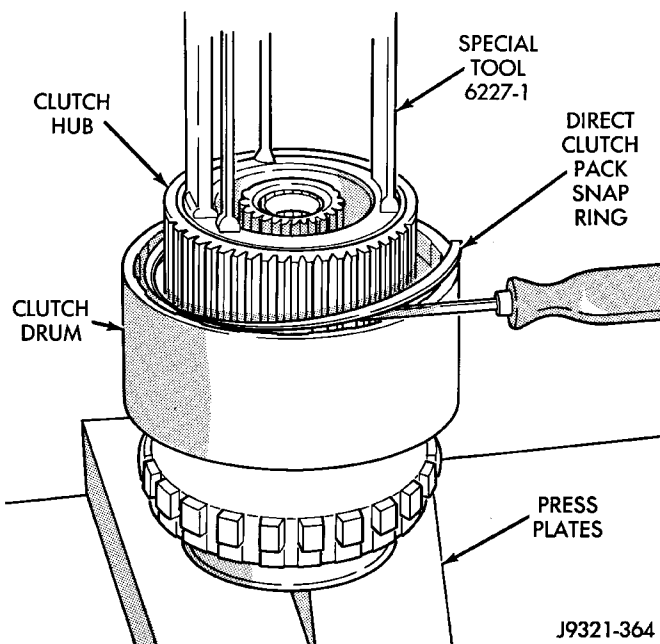


Fig. 201 Direct Clutch Pack Snap Ring Removal

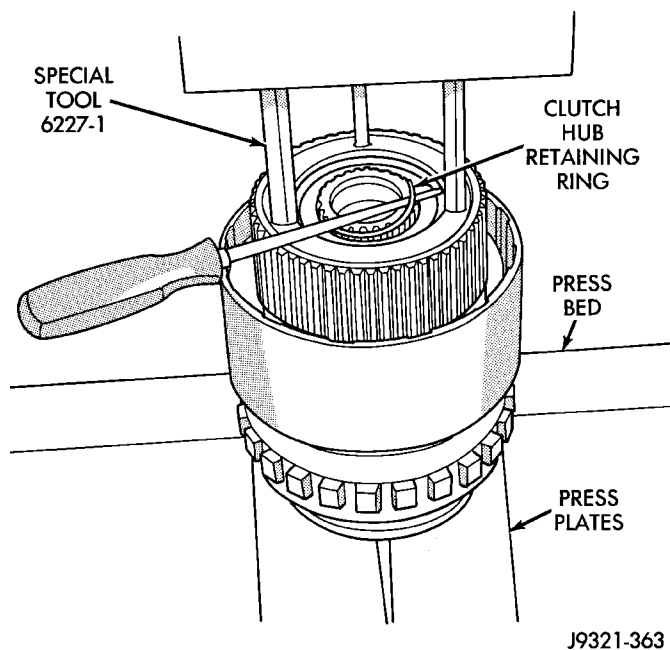
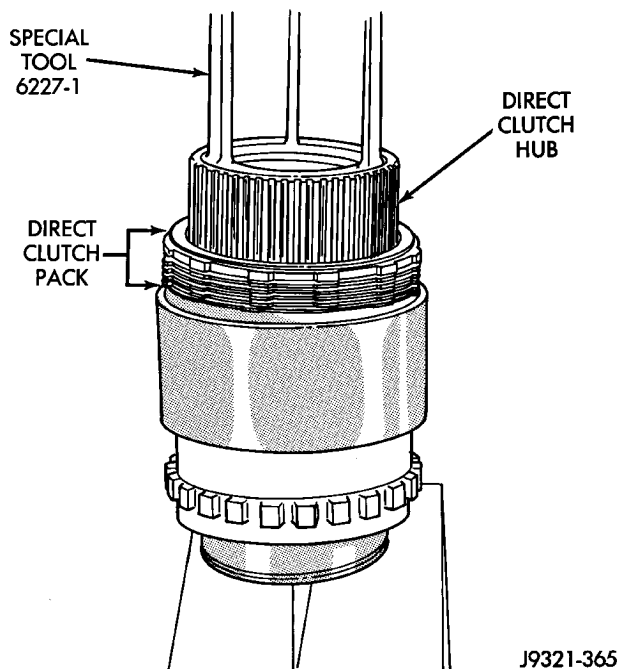
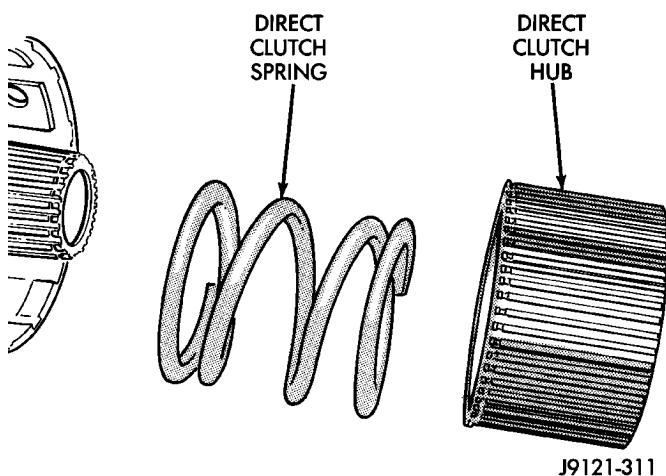


Fig. 202 Direct Clutch Hub Retaining Ring Removal

(9) Mark annulus gear and output shaft for assembly alignment reference (Fig. 210). Use punch or scribe to mark gear and shaft.

(10) Remove snap ring that secures annulus gear on output shaft (Fig. 211). Use two screwdrivers to unseat and work snap ring out of groove as shown.

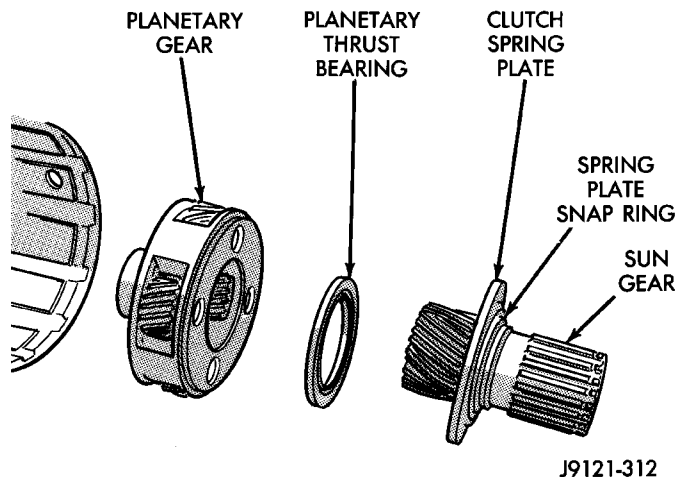
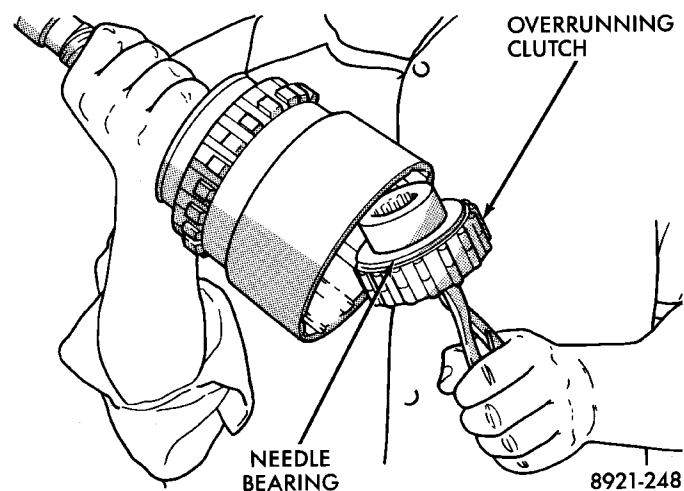
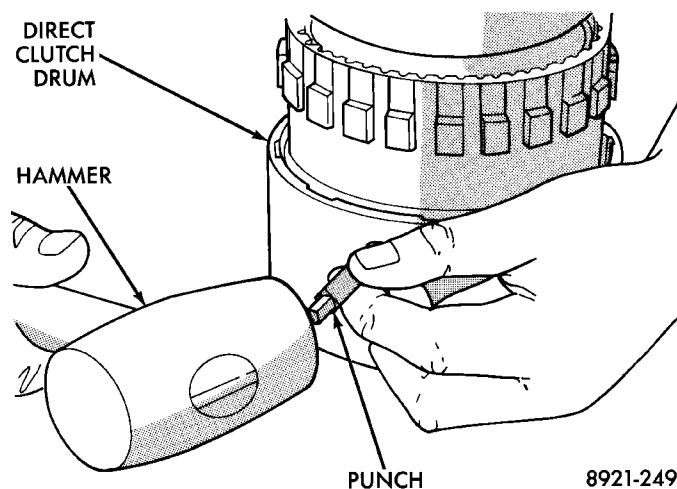
(11) Remove annulus gear from output shaft (Fig. 212). Use rawhide or plastic mallet to tap gear off shaft.

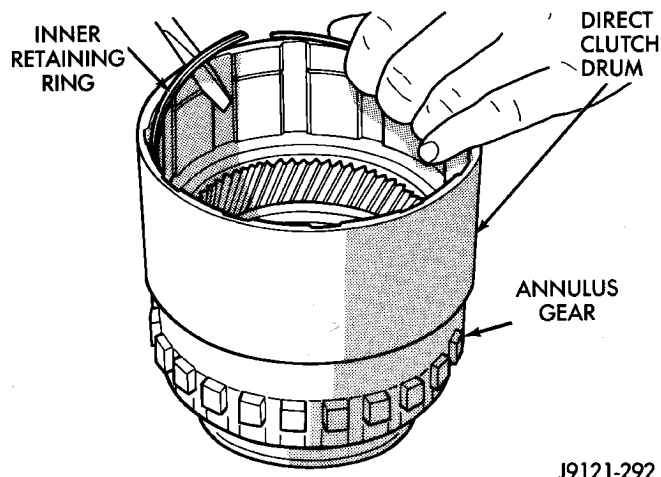
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 203 Direct Clutch Pack Removal****Fig. 204 Direct Clutch Hub And Spring Removal****GEAR CASE AND PARK LOCK DISASSEMBLY**

- (1) Remove locating ring from gear case.
- (2) Remove park pawl shaft retaining bolt and remove shaft, pawl and spring.
- (3) Remove reaction plug snap ring and remove reaction plug.
- (4) Remove output shaft seal.

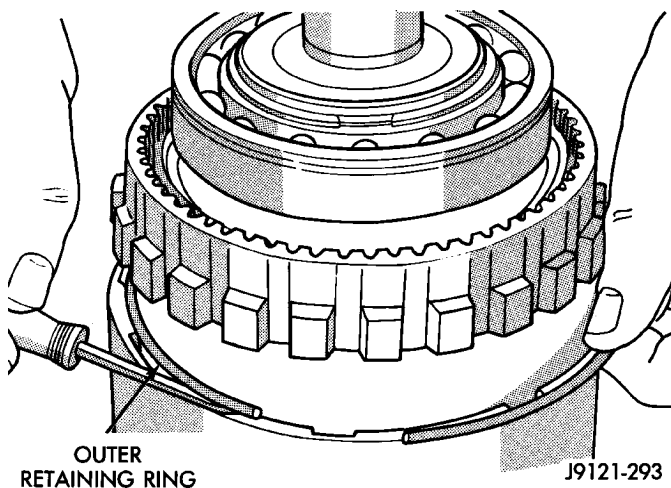
ASSEMBLY**GEARTRAIN AND DIRECT CLUTCH ASSEMBLY**

- (1) Soak direct clutch and overdrive clutch discs in Mopar® ATF Plus 3, type 7176, transmission fluid. Allow discs to soak for 10-20 minutes.

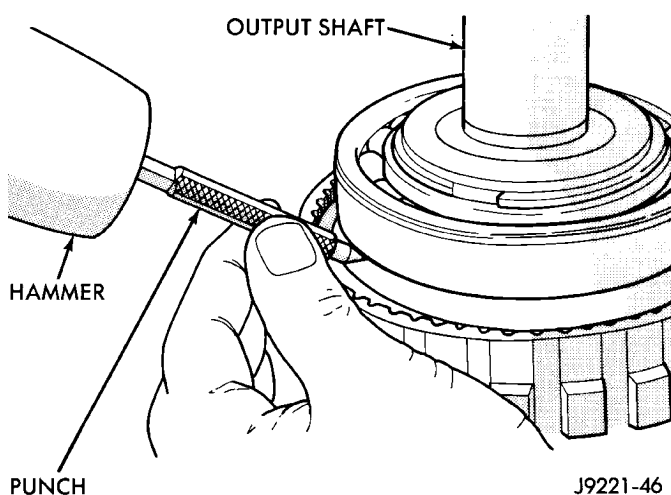
**Fig. 205 Removing Sun Gear, Thrust Bearing And Planetary Gear****Fig. 206 Overrunning Clutch Assembly Removal/Installation****Fig. 207 Marking Direct Clutch Drum And Annulus Gear For Assembly Alignment**

DISASSEMBLY AND ASSEMBLY (Continued)

J9121-292

Fig. 208 Clutch Drum Inner Retaining Ring Removal

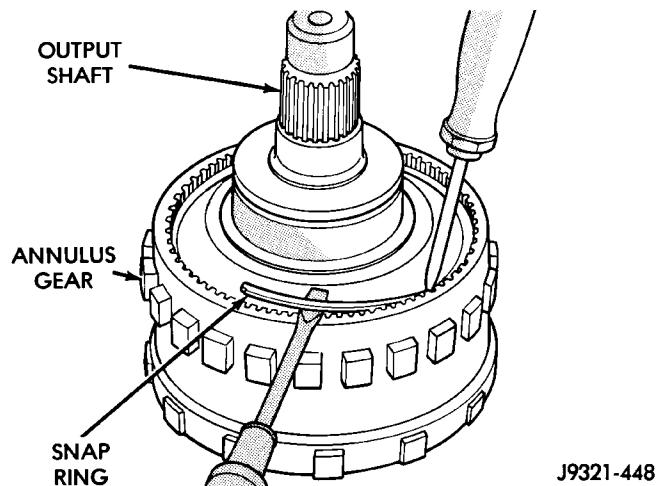
J9121-293

Fig. 209 Clutch Drum Outer Retaining Ring Removal

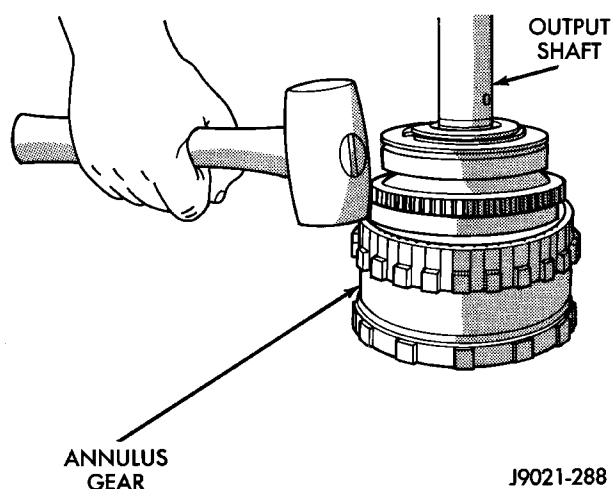
J9221-46

Fig. 210 Marking Annulus Gear And Output Shaft For Assembly Alignment

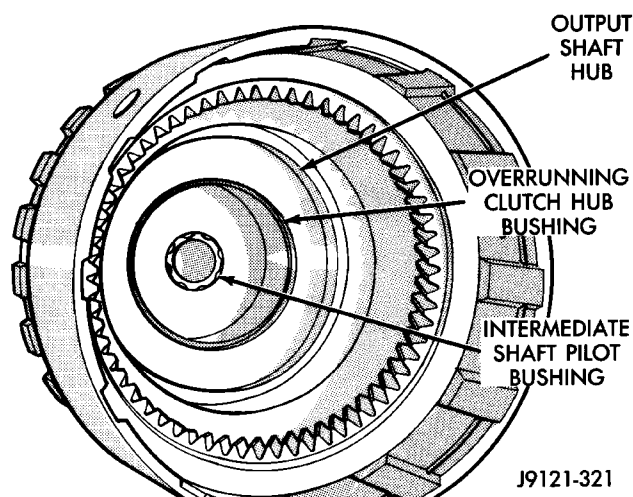
(2) Install new pilot bushing and clutch hub bushing in output shaft if necessary (Fig. 213). Lubricate bushings with petroleum jelly, or transmission fluid.



J9321-448

Fig. 211 Annulus Gear Snap Ring Removal

J9021-288

Fig. 212 Annulus Gear Removal

J9121-321

Fig. 213 Output Shaft Pilot Bushing

(3) Install annulus gear on output shaft, if removed. Then install annulus gear retaining snap ring (Fig. 214).

DISASSEMBLY AND ASSEMBLY (Continued)

(4) Align and install clutch drum on annulus gear (Fig. 215). Be sure drum is engaged in annulus gear lugs.

(5) Install clutch drum outer retaining ring (Fig. 215).

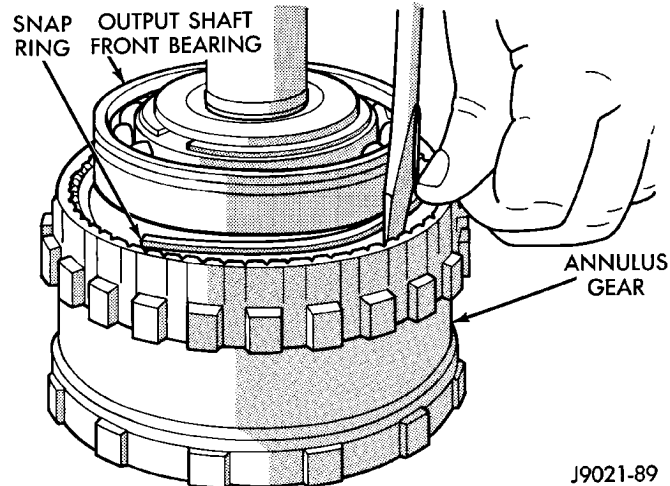


Fig. 214 Annulus Gear Installation

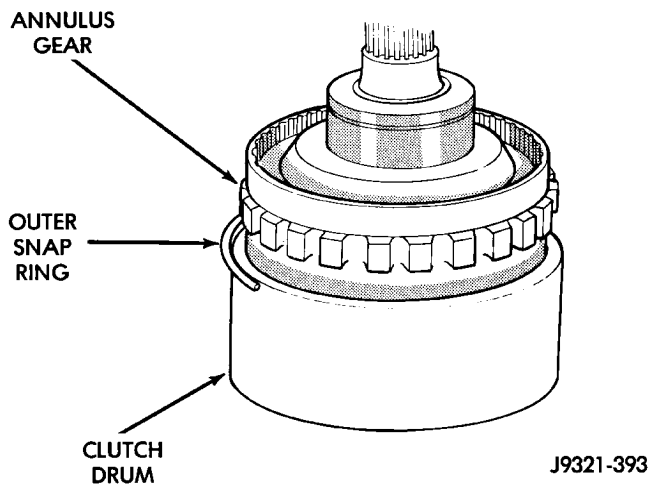


Fig. 215 Clutch Drum And Outer Retaining Ring Installation

(6) Slide clutch drum forward and install inner retaining ring (Fig. 216).

(7) Install rear bearing and snap ring on output shaft (Fig. 217). Be sure locating ring groove in bearing is toward rear.

(8) Install overrunning clutch on hub (Fig. 218). **Note that clutch only fits one way. Shoulder on clutch should seat in small recess at edge of hub.**

(9) Install thrust bearing on overrunning clutch hub. Use generous amount of petroleum jelly to hold bearing in place for installation. **Bearing fits one way only. Be sure bearing is seated squarely against hub. Reinstall bearing if it does not seat squarely.**

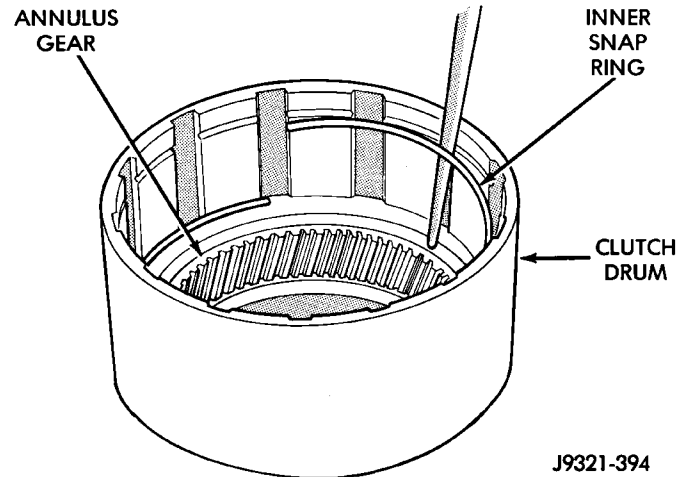


Fig. 216 Clutch Drum Inner Retaining Ring Installation

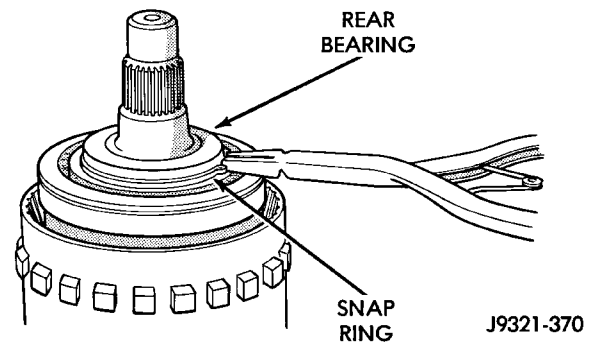


Fig. 217 Rear Bearing And Snap Ring Installation

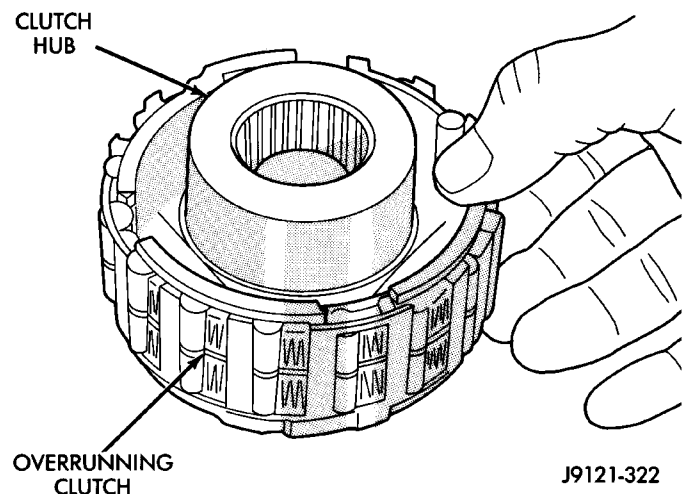


Fig. 218 Assembling Overrunning Clutch And Hub

(10) Install overrunning clutch in output shaft (Fig. 219). Insert snap ring pliers in hub splines. Expand pliers to grip hub. Then install assembly with counterclockwise, twisting motion.

DISASSEMBLY AND ASSEMBLY (Continued)

(11) Install planetary gear in annulus gear (Fig. 220). Be sure planetary pinions are fully seated in annulus gear before proceeding.

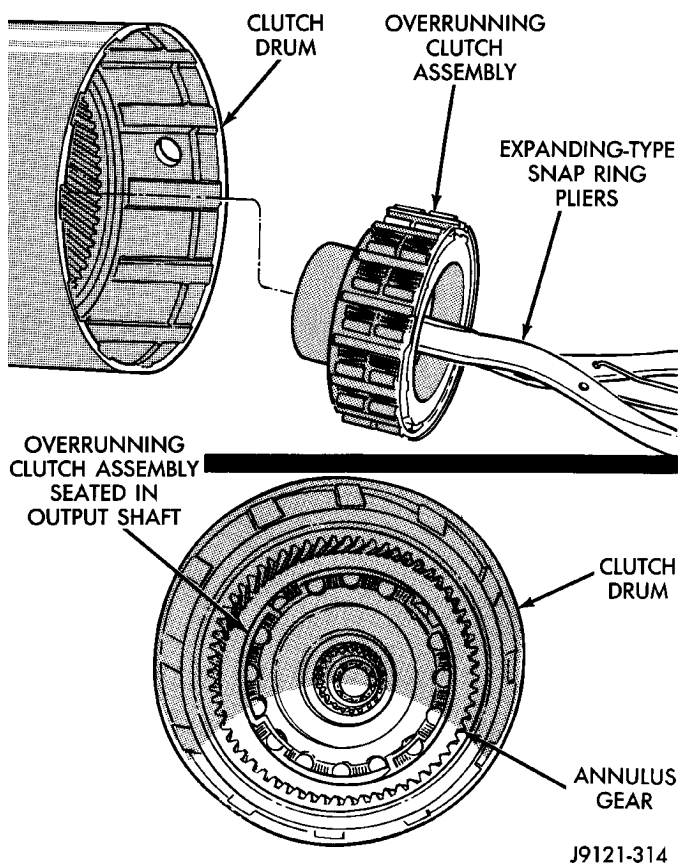


Fig. 219 Overrunning Clutch Installation

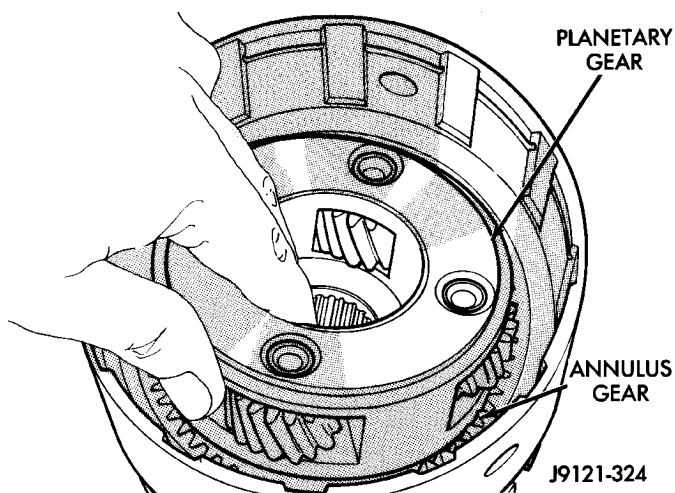


Fig. 220 Planetary Gear Installation

(12) Coat planetary thrust bearing and bearing contact surface of spring plate with generous amount of petroleum jelly. This will help hold bearing in place during installation.

(13) Install planetary thrust bearing on sun gear (Fig. 221). Slide bearing onto gear and seat it against

spring plate as shown. **Bearing fits one way only. If it does not seat squarely against spring plate, remove and reposition bearing.**

(14) Install assembled sun gear, spring plate and thrust bearing (Fig. 222). Be sure sun gear and thrust bearing are fully seated before proceeding.

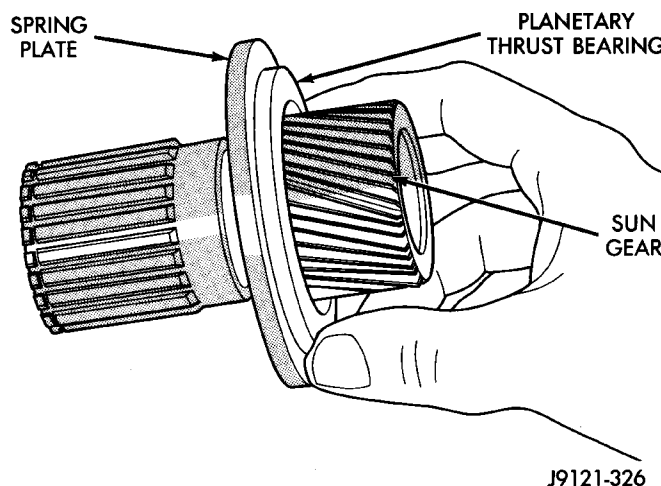


Fig. 221 Planetary Thrust Bearing Installation

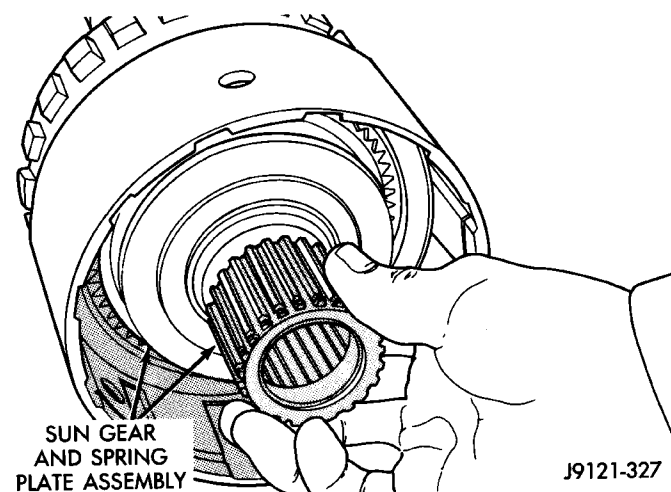


Fig. 222 Sun Gear Installation

(15) Mount assembled output shaft, annulus gear, and clutch drum in shop press. Direct clutch spring, hub and clutch pack are easier to install with assembly mounted in press.

(16) Align splines in hubs of planetary gear and overrunning clutch with Alignment tool 6227-2 (Fig. 223). Insert tool through sun gear and into splines of both hubs. Be sure alignment tool is fully seated before proceeding.

(17) Install direct clutch spring (Fig. 224). Be sure spring is properly seated on spring plate.

NOTE: The 42RE transmission has 6 direct clutch discs and 5 clutch plates. The 44RE transmission has 8 direct clutch discs and 7 clutch plates.

DISASSEMBLY AND ASSEMBLY (Continued)

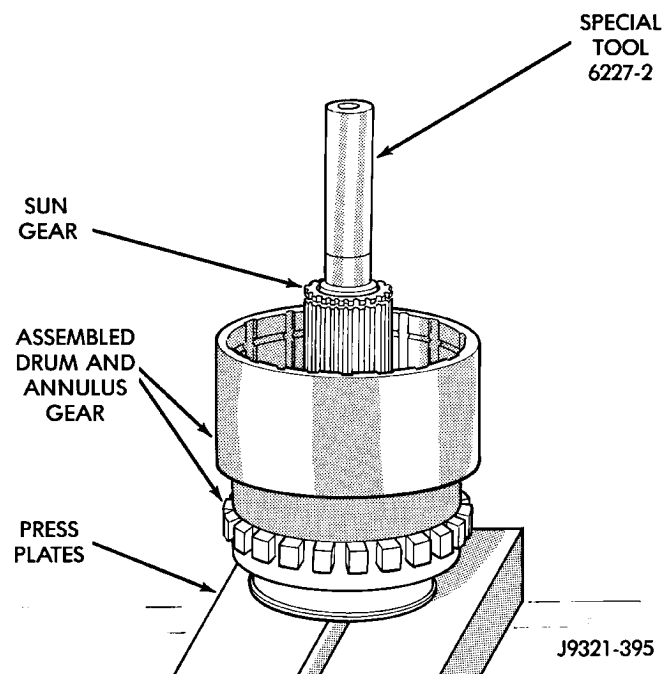


Fig. 223 Alignment Tool Installation

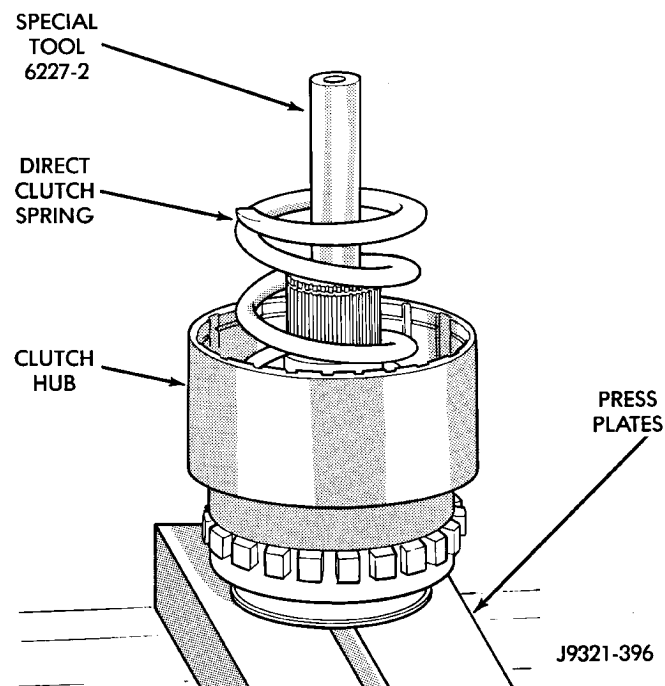


Fig. 224 Direct Clutch Spring Installation

(18) Assemble and install direct clutch pack on hub as follows:

(a) Assemble clutch pack components (Fig. 225) or (Fig. 226).

(b) Install direct clutch reaction plate on clutch hub first. **Note that one side of reaction plate is counterbored. Be sure this side faces rearward. Splines at rear of hub are raised slightly. Counterbore in plate fits over raised**

splines. Plate should be flush with this end of hub (Fig. 227).

(c) Install first clutch disc followed by a steel plate until all discs and plates have been installed.

(d) Install pressure plate. This is last clutch pack item to be installed. **Be sure plate is installed with shoulder side facing upward (Fig. 228).**

(19) Install clutch hub and clutch pack on direct clutch spring (Fig. 229). **Be sure hub is started on sun gear splines before proceeding.**

WARNING: THE NEXT STEP IN GEARTRAIN ASSEMBLY INVOLVES COMPRESSING THE DIRECT CLUTCH HUB AND SPRING. IT IS EXTREMELY IMPORTANT THAT PROPER EQUIPMENT BE USED TO COMPRESS THE SPRING AS SPRING FORCE IS APPROXIMATELY 830 POUNDS. USE COMPRESSOR TOOL C-6227-1 AND A HYDRAULIC-TYPE SHOP PRESS WITH A MINIMUM RAM TRAVEL OF 6 INCHES. THE PRESS MUST ALSO HAVE A BED THAT CAN BE ADJUSTED UP OR DOWN AS REQUIRED. RELEASE CLUTCH SPRING TENSION SLOWLY AND COMPLETELY TO AVOID PERSONAL INJURY.

(20) Position Compressor Tool 6227-1 on clutch hub.

(21) Compress clutch hub and spring just enough to place tension on hub and hold it in place.

(22) Slowly compress clutch hub and spring. Compress spring and hub only enough to expose ring grooves for clutch pack snap ring and clutch hub retaining ring.

(23) Realign clutch pack on hub and seat clutch discs and plates in clutch drum.

(24) Install direct clutch pack snap ring (Fig. 230). **Be very sure snap ring is fully seated in clutch drum ring groove.**

(25) Install clutch hub retaining ring (Fig. 231). **Be very sure retaining ring is fully seated in sun gear ring groove.**

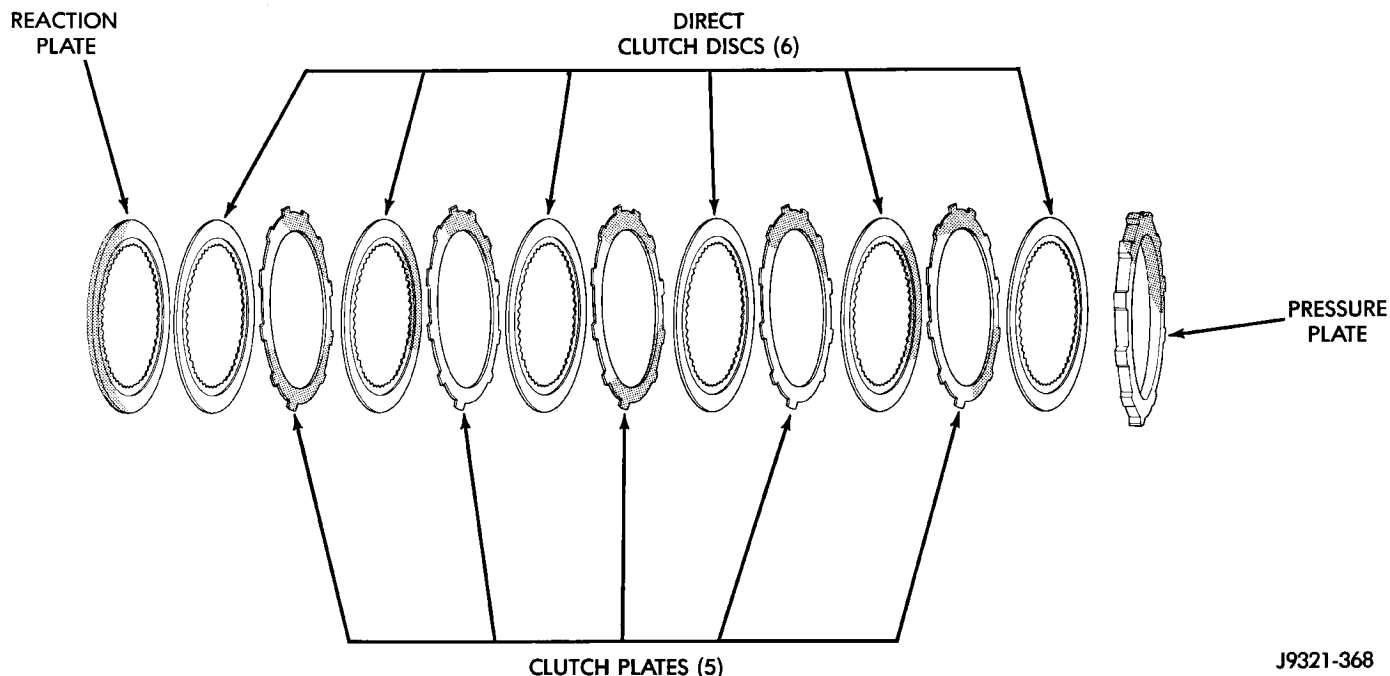
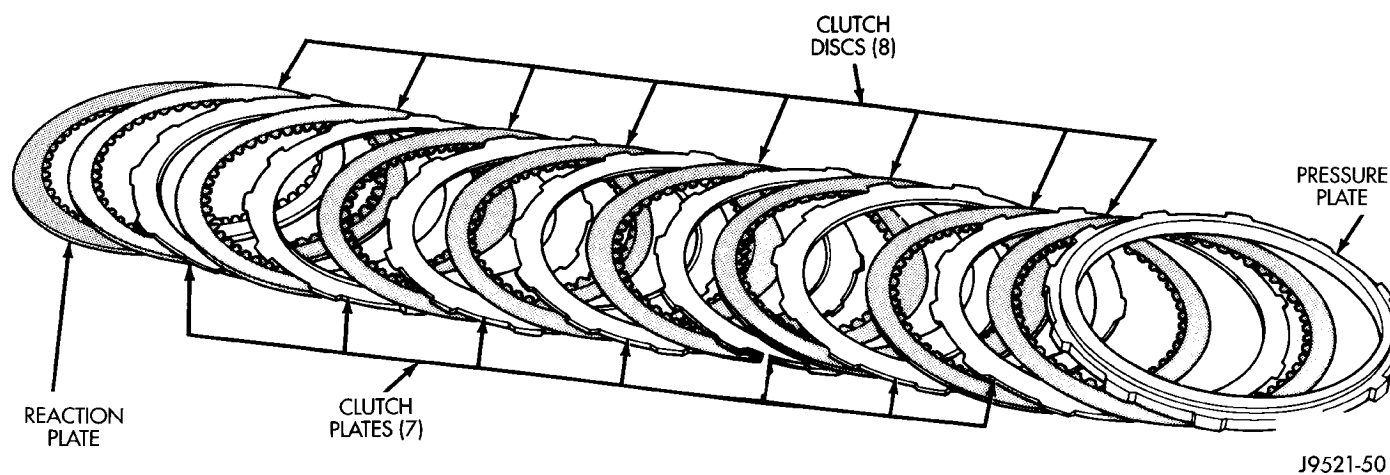
(26) Slowly release press ram, remove compressor tools and remove geartrain assembly.

GEAR CASE ASSEMBLY

(1) Position park pawl and spring in case and install park pawl shaft. Verify that end of spring with 90° bend is hooked to pawl and straight end of spring is seated against case.

(2) Install pawl shaft retaining bolt. Tighten bolt to 27 N·m (20 ft. lbs.) torque.

(3) Install park lock reaction plug. **Note that plug has locating pin at rear (Fig. 232). Be sure pin is seated in hole in case before installing snap ring.**

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 225 42RE Direct Clutch Pack Components****Fig. 226 44RE Direct Clutch Pack Components**

(4) Install reaction plug snap-ring (Fig. 233). **Compress snap ring only enough for installation; do not distort it.**

(5) Install new seal in gear case. On 4x4 gear case, use Tool Handle C-4171 and Installer C-3860-A to seat seal in case. On 4 x 2 gear case, use same Handle C-4171 and Installer C-3995-A to seat seal in case.

(6) Verify that tab ends of rear bearing locating ring extend into access hole in gear case (Fig. 234).

(7) Support geartrain on Tool 6227-1 (Fig. 235). Be sure tool is securely seated in clutch hub.

(8) Install overdrive gear case on geartrain (Fig. 235).

(9) Expand front bearing locating ring with snap ring pliers (Fig. 236). Then slide case downward until locating ring locks in bearing groove and release snap ring.

(10) Install locating ring access cover and gasket in overdrive unit case (Fig. 237).

OVERDRIVE CLUTCH ASSEMBLY

(1) Install overdrive clutch reaction ring first. Reaction ring is flat with notched ends (Fig. 238).

(2) Install wave spring on top of reaction ring (Fig. 239). **Reaction ring and wave ring both fit in same ring groove.** Use screwdriver to seat each ring securely in groove. Also ensure that the ends of the two rings are offset from each other.

DISASSEMBLY AND ASSEMBLY (Continued)

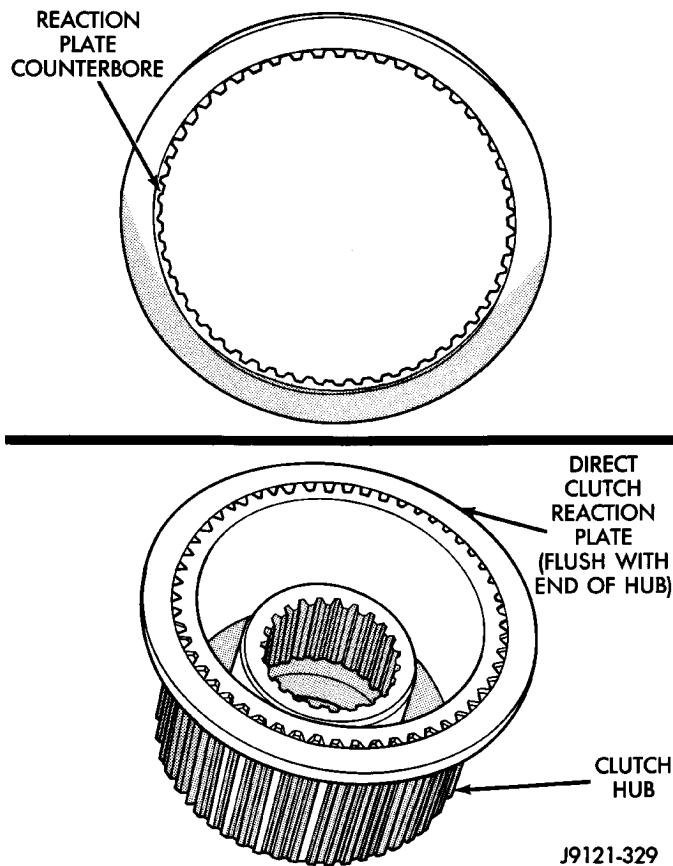


Fig. 227 Correct Position Of Direct Clutch Reaction Plate

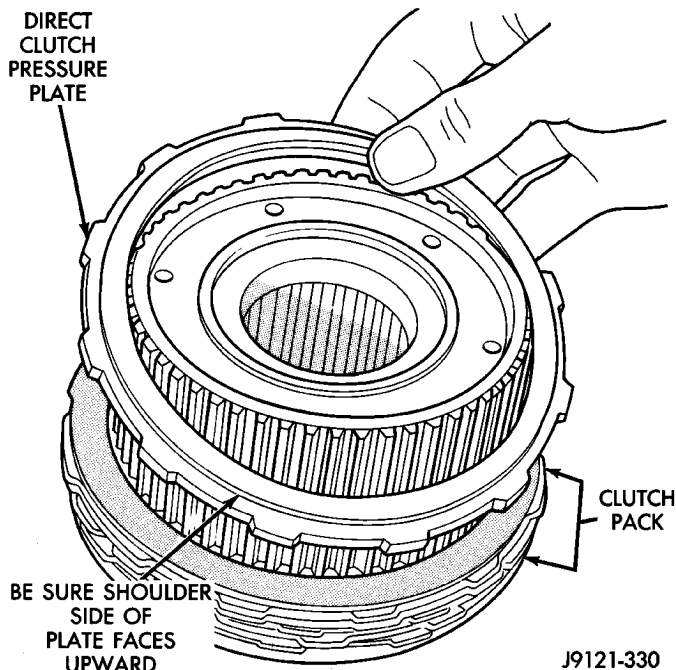


Fig. 228 Correct Position Of Direct Clutch Pressure Plate

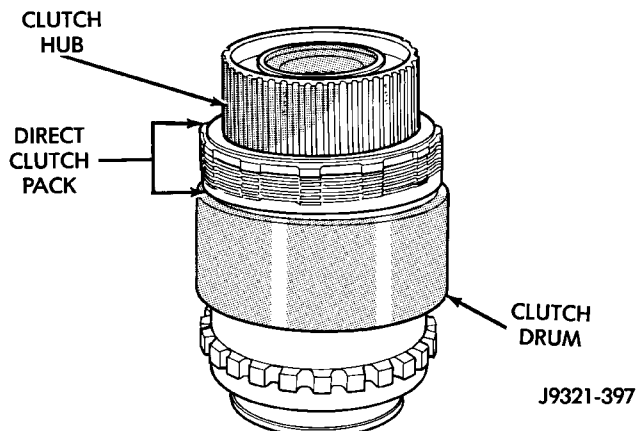


Fig. 229 Direct Clutch Pack And Clutch Hub Installation

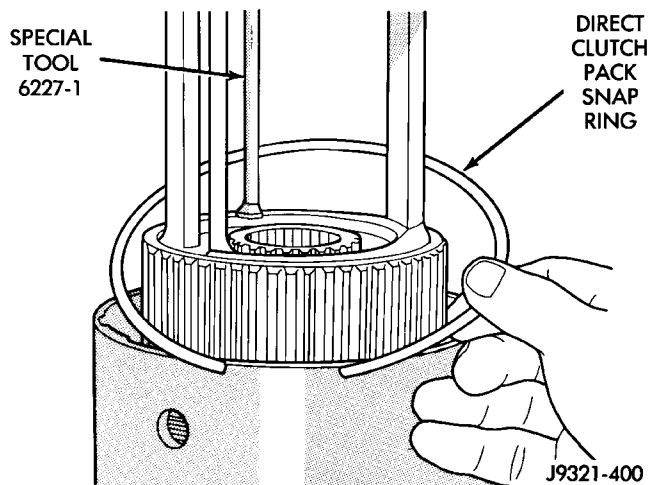


Fig. 230 Direct Clutch Pack Snap Ring Installation

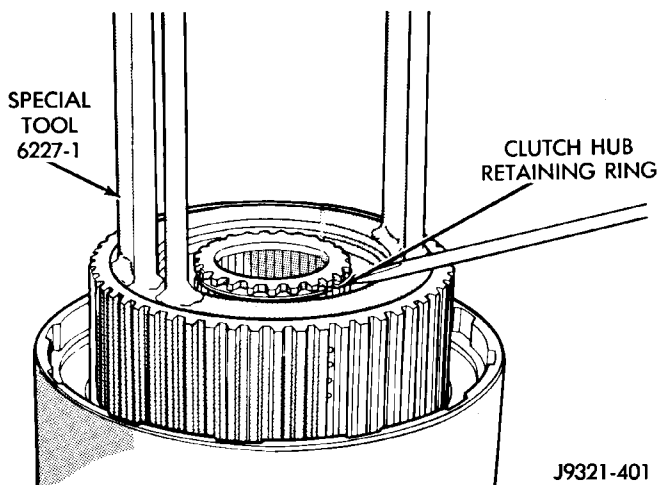
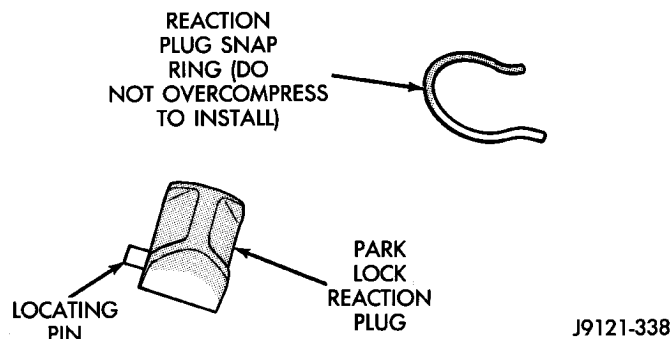
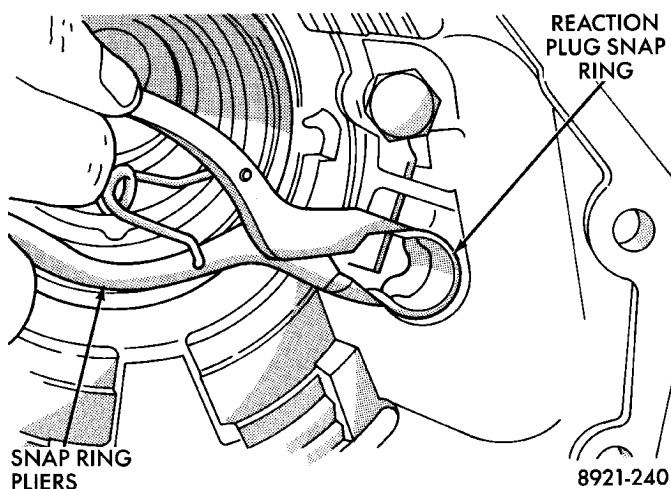
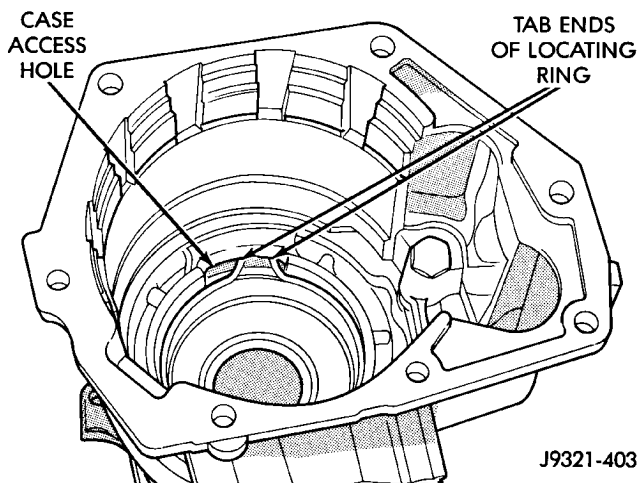
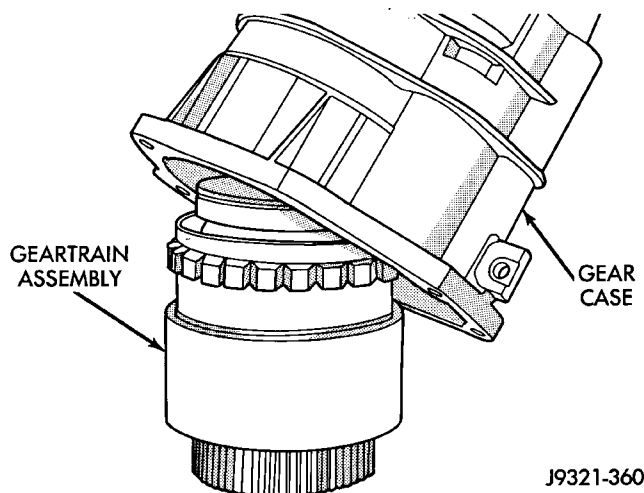
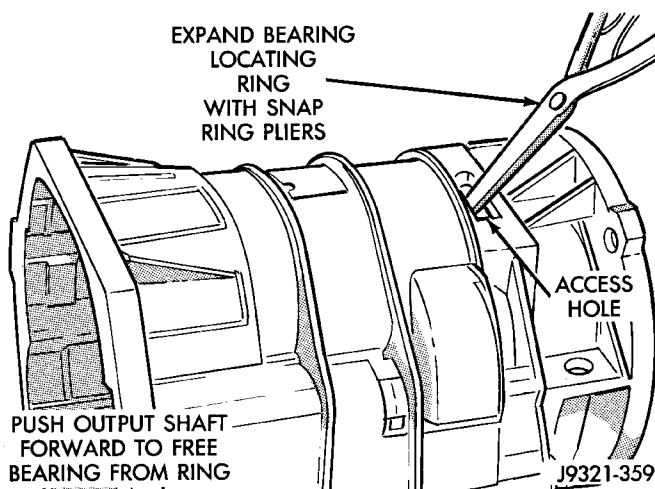
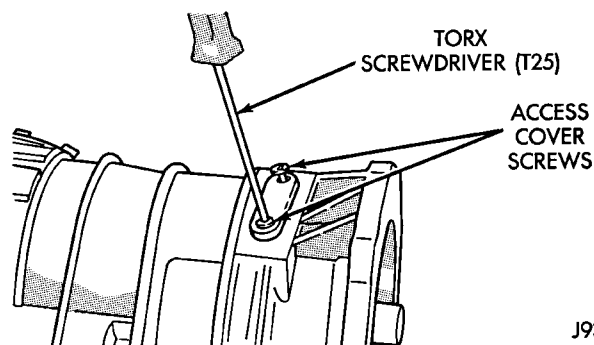


Fig. 231 Clutch Hub Retaining Ring Installation

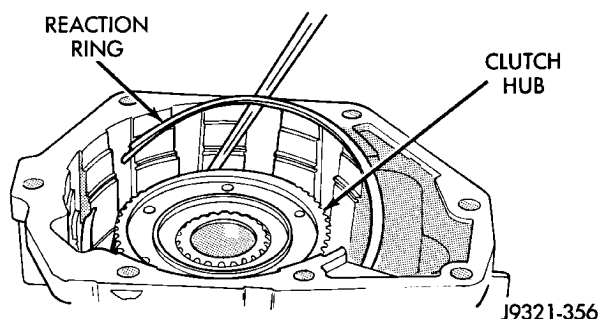
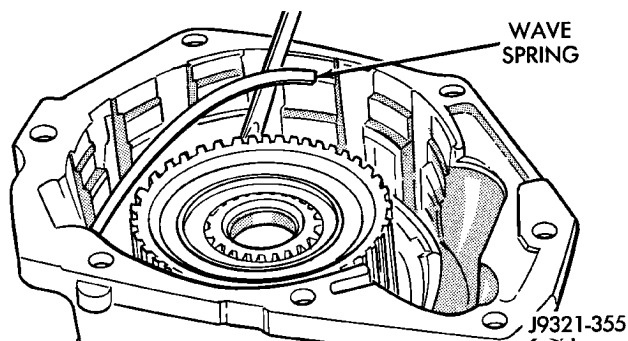
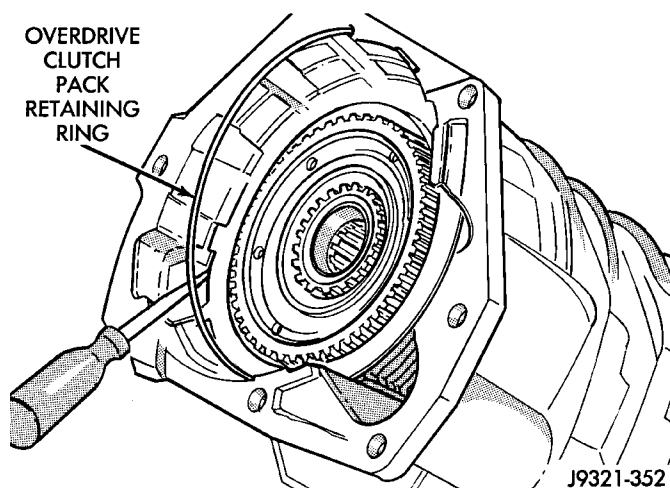
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 232 Reaction Plug Locating Pin And Snap-Ring****Fig. 233 Reaction Plug And Snap-Ring Installation****Fig. 234 Correct Rear Bearing Locating Ring Position**

NOTE: The 42RE transmission has 3 overdrive clutch discs and 2 plates. The 44RE transmission has 4 overdrive clutch discs and 3 plates

- (3) Assemble overdrive clutch pack (Fig. 240).
- (4) Install overdrive clutch reaction plate first.

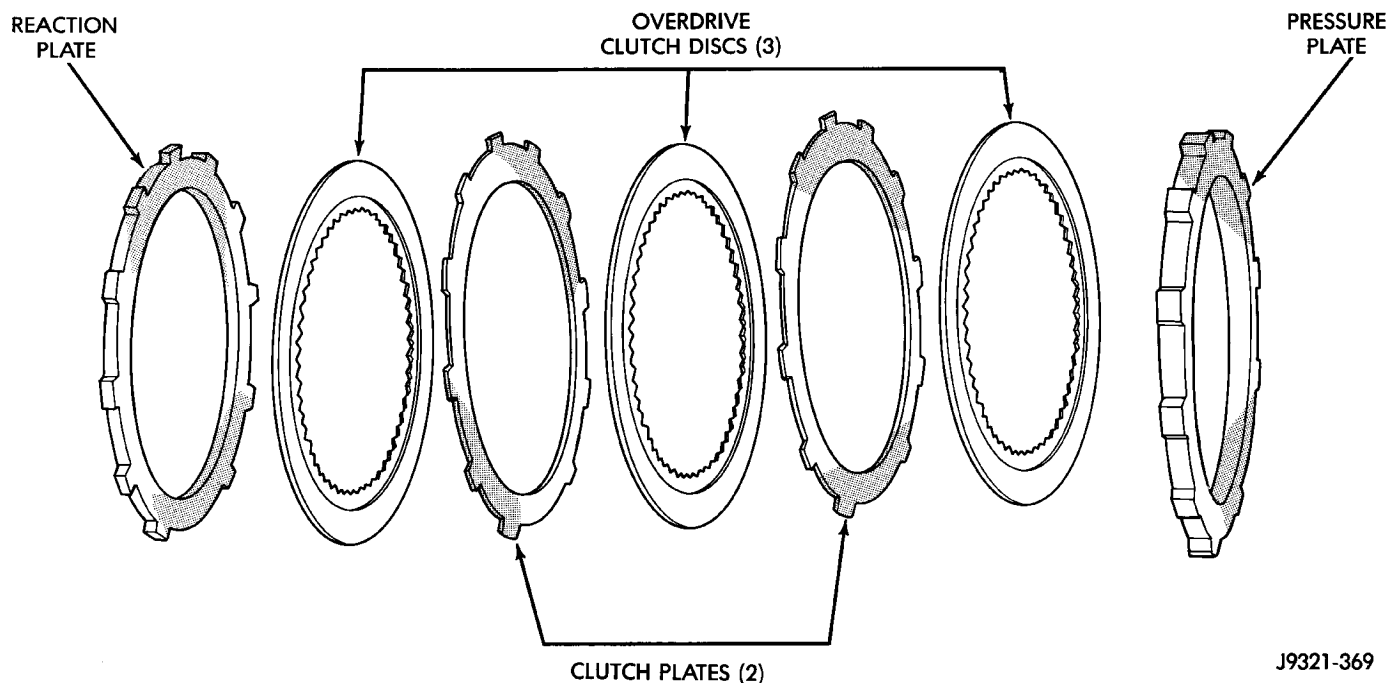
**Fig. 235 Overdrive Gear Case Installation****Fig. 236 Seating Locating Ring In Rear Bearing****Fig. 237 Locating Ring Access Cover And Gasket Installation**

- (5) Install first clutch disc followed by first clutch plate. Then install remaining clutch discs and plates in same order.
- (6) Install clutch pack pressure plate.
- (7) Install clutch pack wire-type retaining ring (Fig. 241).

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 238 Overdrive Clutch Reaction Ring Installation****Fig. 239 Overdrive Clutch Wave Spring Installation****Fig. 241 Overdrive Clutch Pack Retaining Ring Installation**

(2) Determine correct thickness intermediate shaft spacer as follows:

- (a) Insert Special Tool 6312 through sun gear, planetary gear and into pilot bushing in output shaft. Be sure tool bottoms against planetary shoulder.

**Fig. 240 42RE Overdrive Clutch Components****INTERMEDIATE SHAFT SPACER SELECTION**

(1) Place overdrive unit in vertical position. Mount it on blocks, or in workbench with appropriate size mounting hole cut into it. Be sure unit is facing upward for access to direct clutch hub. Also be sure output shaft is not loaded and internal components are moved rearward for accurate measurement.

(b) Position Gauge Tool 6311 across face of overdrive case (Fig. 242). Then position Dial Caliper C-4962 over gauge tool.

(c) Extend sliding scale of dial caliper downward through gauge tool slot until scale contacts end of Gauge Alignment Tool 6312. Lock scale in place.

DISASSEMBLY AND ASSEMBLY (Continued)

Remove dial caliper tool and note distance measured (Fig. 242).

(d) Select proper thickness end play spacer from spacer chart based on distance measured (Fig. 243).

(e) Remove Gauge Alignment Tool 6312.

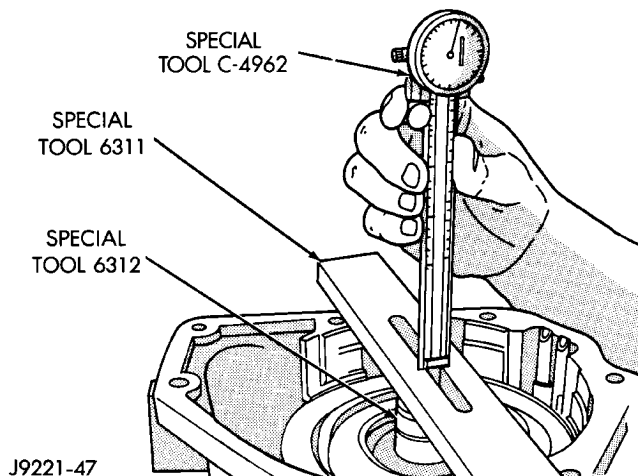


Fig. 242 Shaft End Play Measurement

End Play Measurement (Inches)	Spacer Thickness (Inches)
.7336 - .7505	.158 - .159
.7506 - .7675	.175 - .176
.7676 - .7855	.193 - .194
.7856 - .8011	.211 - .212

J9121-341

Fig. 243 Intermediate Shaft End Play Spacer Selection

OD THRUST PLATE SELECTION

(1) Place overdrive unit in vertical position. Mount it on blocks, or in workbench with appropriate size mounting hole cut into it. Be sure unit is facing upward for access to direct clutch hub. Also be sure output shaft is not loaded and internal components are moved rearward for accurate measurement.

(2) Determine correct thickness overdrive piston thrust plate as follows:

(a) Position Gauge Tool 6311 across face of overdrive case. Then position Dial Caliper C-4962 over gauge tool (Fig. 244).

(b) Measure distance to clutch hub thrust bearing seat at four points 90° apart. Then average measurements by adding them and dividing by 4.

(c) Select and install required thrust plate from information in thrust plate chart (Fig. 245).

(3) Leave Alignment Tool 6227-2 in place. Tool will keep planetary and clutch hub splines in alignment

until overdrive unit is ready for installation on transmission.

(4) Transmission speed sensor can be installed at this time if desired. However, it is recommended that sensor not be installed until after overdrive unit is secured to transmission.

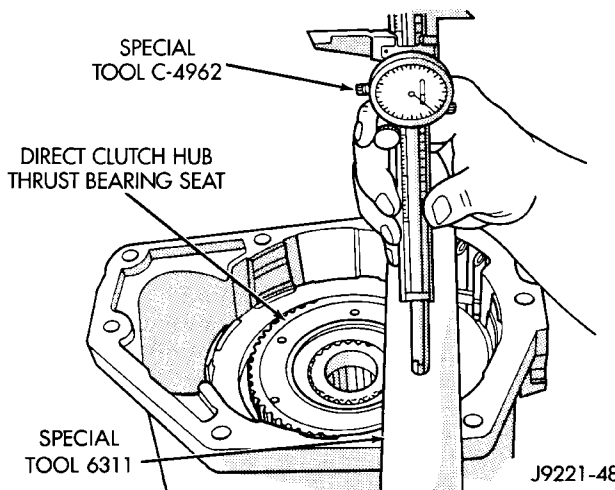


Fig. 244 Overdrive Piston Thrust Plate Measurement

End Play Measurement (Inches)	Spacer Thickness (Inches)
1.7500 - 1.7649	.108 - .110
1.7650 - 1.7799	.123 - .125
1.7800 - 1.7949	.138 - .140
1.7950 - 1.8099	.153 - .155
1.8100 - 1.8249	.168 - .170
1.8250 - 1.8399	.183 - .185
1.8400 - 1.8549	.198 - .200
1.8550 - 1.8699	.213 - .215
1.8700 - 1.8849	.228 - .230
1.8850 - 1.8999	.243 - .245

J9121-342

Fig. 245 Overdrive Piston Thrust Plate Selection

OVERDRIVE PISTON ASSEMBLY

(1) Install new seals on over drive piston.

(2) Stand transmission case upright on bellhousing.

(3) Position Guide Ring 8114-1 on outer edge of overdrive piston retainer.

(4) Position Seal Guide 8114-2 on inner edge of overdrive piston retainer.

(5) Install overdrive piston in overdrive piston retainer by: aligning locating lugs on overdrive piston to the two mating holes in retainer.

(a) Aligning locating lugs on overdrive piston to the two mating holes in retainer.

(b) Lubricate overdrive piston seals with Mopar® Door Ease, or equivalent.

DISASSEMBLY AND ASSEMBLY (Continued)

- (c) Install piston over Seal Guide 8114-2 and inside Guide Ring 8114-1.
- (d) Push overdrive piston into position in retainer.
- (e) Verify that the locating lugs entered the lug bores in the retainer.
- (6) Install intermediate shaft spacer on intermediate shaft.
- (7) Install overdrive piston thrust plate on overdrive piston.
- (8) Install overdrive piston thrust bearing on overdrive piston.
- (9) Install transmission speed sensor and O-ring seal in overdrive case (Fig. 185).

CLEANING AND INSPECTION

VALVE BODY

Clean the valve housings, valves, plugs, springs, and separator plates with a standard parts cleaning solution only. Do not use gasoline, kerosene, or any type of caustic solution.

Do not immerse any of the electrical components in cleaning solution. Clean the governor solenoid and sensor and the dual solenoid and harness assembly by wiping them off with dry shop towels only.

Dry all except the electrical parts with compressed air. Make sure all passages are clean and free from obstructions. **Do not use rags or shop towels to dry or wipe off valve body components. Lint from these materials can stick to valve body parts, interfere with valve operation, and clog filters and fluid passages.**

Wipe the governor pressure sensor and solenoid valve with dry, lint free shop towels only. The O-rings on the sensor and solenoid valve are the only serviceable components. Be sure the vent ports in the solenoid valve are open and not blocked by dirt or debris. Replace the valve and/or sensor only when DRB scan tool diagnosis indicates this is necessary. Or, if either part has sustained physical damage (dented, deformed, broken, etc.).

CAUTION: Do not turn the small screw at the end of the solenoid valve for any reason. Turning the screw in either direction will ruin solenoid calibration and result in solenoid failure. In addition, the filter on the solenoid valve is NOT serviceable. Do not try to remove the filter as this will damage the valve housing.

Inspect the throttle and manual valve levers and shafts. Do not attempt to straighten a bent shaft or correct a loose lever. Replace these components if worn, bent, loose or damaged in any way.

Inspect all of the valve body mating surfaces for scratches, nicks, burrs, or distortion. Use a straight-edge to check surface flatness. Minor scratches may be removed with crocus cloth using only very light pressure.

Minor distortion of a valve body mating surface may be corrected by smoothing the surface with a sheet of crocus cloth. Position the crocus cloth on a surface plate, sheet of plate glass or equally flat surface. If distortion is severe or any surfaces are heavily scored, the valve body will have to be replaced.

CAUTION: Many of the valves and plugs, such as the throttle valve, shuttle valve plug, 1-2 shift valve and 1-2 governor plug, are made of coated aluminum. Aluminum components are identified by the dark color of the special coating applied to the surface (or by testing with a magnet). Do not sand aluminum valves or plugs under any circumstances. This practice could damage the special coating causing the valves/plugs to stick and bind.

Inspect the valves and plugs for scratches, burrs, nicks, or scores. Minor surface scratches on steel valves and plugs can be removed with crocus cloth but **do not round off the edges of the valve or plug lands**. Maintaining sharpness of these edges is vitally important. The edges prevent foreign matter from lodging between the valves and plugs and the bore.

Inspect all the valve and plug bores in the valve body. Use a penlight to view the bore interiors. Replace the valve body if any bores are distorted or scored. Inspect all of the valve body springs. The springs must be free of distortion, warpage or broken coils.

Check the two separator plates for distortion or damage of any kind. Inspect the upper housing, lower housing, 3-4 accumulator housing, and transfer plate carefully. Be sure all fluid passages are clean and clear. Check condition of the upper housing and transfer plate check balls as well. The check balls and ball seats must not be worn or damaged.

Trial fit each valve and plug in its bore to check freedom of operation. When clean and dry, the valves and plugs should drop freely into the bores.

Valve body bores do not change dimensionally with use. If the valve body functioned correctly when new, it will continue to operate properly after cleaning and inspection. It should not be necessary to replace a valve body assembly unless it is damaged in handling.

The only serviceable valve body components are listed below. The remaining valve body components are serviced only as part of a complete valve body assembly. Serviceable parts are:

CLEANING AND INSPECTION (Continued)

- dual solenoid and harness assembly
- solenoid gasket
- solenoid case connector O-rings and shoulder bolt
- switch valve and spring
- pressure adjusting screw and bracket assembly
- throttle lever
- manual lever and shaft seal
- throttle lever shaft seal, washer, and E-clip
- fluid filter and screws
- detent ball and spring
- valve body screws
- governor pressure solenoid
- governor pressure sensor and retaining clip
- park lock rod and E-clip

TRANSMISSION

GENERAL INFORMATION

Inspect the transmission bushings during overhaul. Bushing condition is important as worn, scored bushings contribute to low pressures, clutch slip and accelerated wear of other components. However, do not replace bushings as a matter of course. Replace bushings only when they are actually worn, or scored.

Use recommended tools to replace bushings. The tools are sized and designed to remove, install, and seat bushings correctly. The bushing replacement tools are included in Bushing Tool Set C-3887-B.

Pre-sized service bushings are available for replacement purposes. Only the sun gear bushings are not serviced. Low cost of the sun gear assembly makes it easier to simply replace the gear and bushings as an assembly.

Heli-Coil inserts can be used to repair damaged, stripped or worn threads in aluminum parts. These inserts are available from most automotive parts suppliers. Stainless steel inserts are recommended.

The use of crocus cloth is permissible where necessary, providing it is used carefully. When used on shafts, or valves, use extreme care to avoid rounding off sharp edges. Sharp edges are vital as they prevent foreign matter from getting between the valve and valve bore.

Do not reuse oil seals, gaskets, seal rings, or O-rings during overhaul. Replace these parts as a matter of course. Also do not reuse snap rings or E-clips that are bent or distorted. Replace these parts as well.

Lubricate transmission parts with Mopar® ATF Plus, Type 7176, transmission fluid during overhaul and assembly. Use petroleum jelly, Mopar® Door Ease, or Ru-Glyde to prelubricate seals, O-rings, and thrust washers. Petroleum jelly can also be used to hold parts in place during reassembly.

TRANSMISSION CASE CLEANING AND INSPECTION

Clean the case in a solvent tank. Flush the case bores and fluid passages thoroughly with solvent. Dry the case and all fluid passages with compressed air. Be sure all solvent is removed from the case and that all fluid passages are clear.

NOTE: Do not use shop towels or rags to dry the case (or any other transmission component) unless they are made from lint-free materials. Lint will stick to case surfaces and transmission components and circulate throughout the transmission after assembly. A sufficient quantity of lint can block fluid passages and interfere with valve body operation.

Inspect the case for cracks, porous spots, worn bores, or damaged threads. Damaged threads can be repaired with Helicoil thread inserts. However, the case will have to be replaced if it exhibits any type of damage or wear.

Lubricate the front band adjusting screw threads with petroleum jelly and thread the screw part-way into the case. Be sure the screw turns freely.

OVERRUNNING CLUTCH/LOW-REVERSE DRUM/OVERDRIVE PISTON RETAINER

Clean the overrunning clutch assembly, clutch cam, low-reverse drum, and overdrive piston retainer in solvent. Dry them with compressed air after cleaning.

Inspect condition of each clutch part after cleaning. Replace the overrunning clutch roller and spring assembly if any rollers or springs are worn or damaged, or if the roller cage is distorted, or damaged. Replace the cam if worn, cracked or damaged.

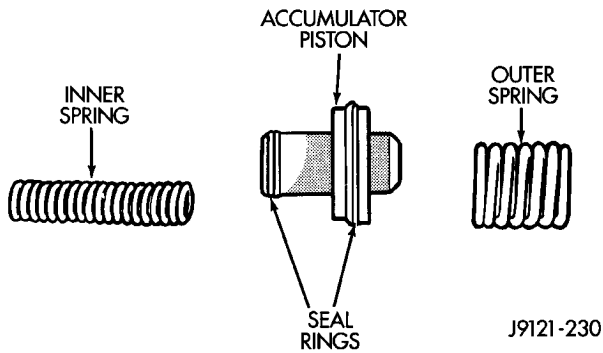
Replace the low-reverse drum if the clutch race, roller surface or inside diameter is scored, worn or damaged. **Do not remove the clutch race from the low-reverse drum under any circumstances. Replace the drum and race as an assembly if either component is damaged.**

Examine the overdrive piston retainer carefully for wear, cracks, scoring or other damage. Be sure the retainer hub is a snug fit in the case and drum. Replace the retainer if worn or damaged.

ACCUMULATOR

Inspect the accumulator piston and seal rings (Fig. 246). Replace the seal rings if worn or cut. Replace the piston if chipped or cracked.

Check condition of the accumulator inner and outer springs (Fig. 246). Replace the springs if the coils are cracked, distorted or collapsed.

CLEANING AND INSPECTION (Continued)**Fig. 246 Accumulator Components****FRONT SERVO**

Clean the servo piston components with solvent and dry them with compressed air. Wipe the band clean with lint free shop towels.

Replace the front band if distorted, lining is burned, flaking off, or worn to the point where the grooves in the lining material are no longer visible.

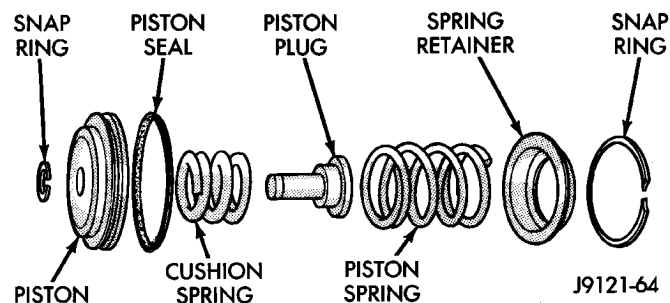
Inspect the servo components. Replace the springs if collapsed, distorted or broken. Replace the guide, rod and piston if cracked, bent, or worn. Discard the servo snap ring if distorted or warped.

Check the servo piston bore for wear. If the bore is severely scored, or damaged, it will be necessary to replace the case.

Replace any servo component if doubt exists about condition. Do not reuse suspect parts.

REAR SERVO

Remove and discard the servo piston seal ring (Fig. 247). Then clean the servo components with solvent and dry with compressed air. Replace either spring if collapsed, distorted or broken. Replace the plug and piston if cracked, bent, or worn. Discard the servo snap rings and use a new ones at assembly.

**Fig. 247 Rear Servo Components****OIL PUMP AND REACTION SHAFT SUPPORT**

(1) Clean pump and support components with solvent and dry them with compressed air.

(2) Check condition of the seal rings and thrust washer on the reaction shaft support. The seal rings

do not need to be replaced unless cracked, broken, or severely worn.

(3) Inspect the pump and support components. Replace the pump or support if the seal ring grooves or machined surfaces are worn, scored, pitted, or damaged. Replace the pump gears if pitted, worn chipped, or damaged.

(4) Inspect the pump bushing. Then check the reaction shaft support bushing. Replace either bushing only if heavily worn, scored or damaged. It is not necessary to replace the bushings unless they are actually damaged.

(5) Install the gears in the pump body and measure pump component clearances as follows:

(a) Clearance between outer gear and reaction shaft housing should be 0.010 to 0.063 mm (0.0004 to 0.0025 in.). Clearance between inner gear and reaction shaft housing should be 0.010 to 0.063 mm (0.0004 to 0.0025 in.). Both clearances can be measured at the same time by:

(I) Installing the pump gears in the pump housing.

(II) Position an appropriate piece of Plastigage[™] across both gears.

(III) Align the plastigage to a flat area on the reaction shaft housing.

(IV) Install the reaction shaft to the pump housing.

(V) Separate the reaction shaft housing from the pump housing and measure the Plastigage[™] following the instructions supplied with it.

(b) Clearance between inner gear tooth and outer gear should be 0.08 to 0.19 mm (0.0035 to 0.0075 in.). Measure clearance with an appropriate feeler gauge.

(c) Clearance between outer gear and pump housing should also be 0.010 to 0.19 mm (0.0035 to 0.0075 in.). Measure clearance with an appropriate feeler gauge.

FRONT CLUTCH

Clean and inspect the front clutch components. Replace the clutch discs if warped, worn, scored, burned or charred, or if the facing is flaking off. Replace the steel plates if heavily scored, warped, or broken. Be sure the driving lugs on the plates are in good condition. The lugs must not be bent, cracked or damaged in any way.

Replace the clutch spring and spring retainer if either is distorted, warped or broken.

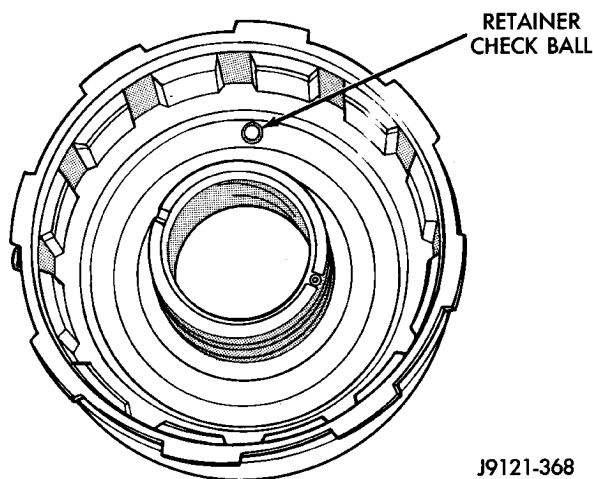
Check the lug grooves in the clutch retainer. The steel plates should slide freely in the slots. Replace the retainer if the grooves are worn or damaged.

Check action of the check ball in the retainer (Fig. 248). The ball must move freely and not stick.

CLEANING AND INSPECTION (Continued)

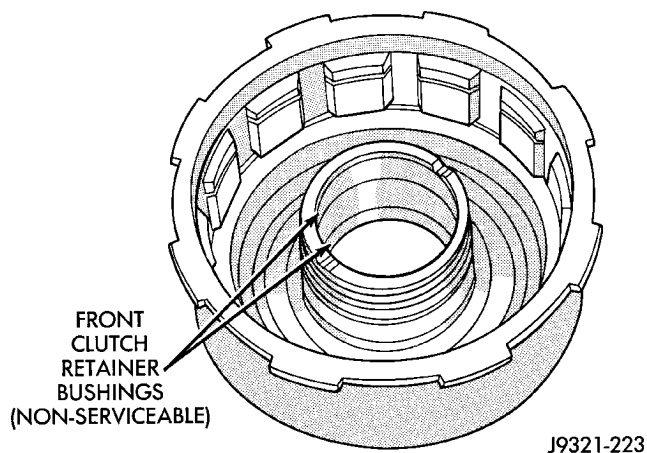
NOTE: Inspect the clutch retainer bushings carefully (Fig. 249). The retainer bushings are **NOT** serviceable. It will be necessary to replace the retainer if either bushing is scored, or worn.

Inspect the piston and retainer seal surfaces for nicks or scratches. Minor scratches can be removed with crocus cloth. However, replace the piston and/or retainer if the seal surfaces are seriously scored.



J9121-368

Fig. 248 Front Clutch Piston Retainer Check Ball Location



J9321-223

Fig. 249 Retainer Bushing Location/Inspection

REAR CLUTCH

Clean the clutch components with solvent and dry them with compressed air. Do not use rags or shop towels to dry any of the clutch parts. Lint from such materials will adhere to component surfaces and could restrict or block fluid passages after assembly.

Replace the clutch discs if warped, worn, scored, burned/charred, the lugs are damaged, or if the facing is flaking off. Replace the top and bottom pressure plates if scored, warped, or cracked. Be sure the driving lugs on the pressure and clutch plates are

also in good condition. The lugs must not be bent, cracked or damaged in any way.

Replace the piston spring and wave spring if either part is distorted, warped or broken.

Check the lug grooves in the clutch retainer. The clutch and pressure plates should slide freely in the slots. Replace the retainer if the grooves are worn or damaged. Also check action of the check balls in the retainer and piston. Each check ball must move freely and not stick.

Replace the retainer bushing if worn, scored, or doubt exists about bushing condition.

Inspect the piston and retainer seal surfaces for nicks or scratches. Minor scratches can be removed with crocus cloth. However, replace the piston and/or retainer if the seal surfaces are seriously scored.

Check condition of the fiber thrust washer and metal output shaft thrust washer. Replace either washer if worn or damaged.

Check condition of the seal rings on the input shaft and clutch retainer hub. Replace the seal rings only if worn, distorted, or damaged. The input shaft front seal ring is teflon with chamfered ends. The rear ring is metal with interlocking ends.

Check the input shaft for wear, or damage. Replace the shaft if worn, scored or damaged in any way.

PLANETARY GEARTRAIN

Clean the planetary components in solvent and dry them with compressed air.

Check sun gear and driving shell condition. Replace the gear if damaged or if the bushings are scored or worn. The bushings are not serviceable. Replace the driving shell if worn, cracked or damaged.

Replace planetary gear sets if gears, pinion pins, or carrier are damaged in any way. Replace the annulus gears and supports if either component is worn or damaged.

Inspect the geartrain spacers, thrust plates, snap rings, and thrust washers. Replace any of these parts that are worn, distorted or damaged. Do not attempt to reuse these parts.

The planetary gear thrust washers are different sizes. The large diameter washers go on the front planetary and the smaller washers go on the rear planetary. All the washers have four locating tabs on them. These tabs fit in the holes or slots provided in each planetary gear.

Inspect the output shaft carefully. Pay particular attention to the machined bushing/bearing surfaces on the shaft and the governor valve shaft bore at the shaft rear.

Replace the output shaft if the machined surfaces are scored, pitted, or damaged in any way. Also replace the shaft if the splines are damaged, or

CLEANING AND INSPECTION (Continued)

exhibits cracks at any location (especially at the governor valve shaft bore).

The annulus gears can be removed from their supports if necessary. Just remove the snap rings and separate the two parts when replacement is necessary. In addition, the annulus gear bushings can be replaced if severely worn, or scored. However it is not necessary to replace the bushings if they only exhibit normal wear. Check bushing fit on the output shaft to be sure.

OVERDRIVE UNIT

Clean the geartrain and case components with solvent. Dry all parts except the bearings with compressed air. Allow bearings to air dry.

Do not use shop towels for wiping parts dry unless the towels are made from a lint-free material. A sufficient quantity of lint (from shop towels, cloths, rags, etc.) could plug the transmission filter and fluid passages.

Discard the old case gasket and seals. Do not attempt to salvage these parts. They are not reusable. Replace any of the overdrive unit snap rings if distorted or damaged.

Minor nicks or scratches on components can be smoothed with crocus cloth. However, do not attempt to reduce severe scoring on any components with abrasive materials. Replace severely scored components; do not try to salvage them.

Check condition of the park lock components and the overdrive case.

Replace the case if cracked, scored, or damaged. Replace the park lock pawl, plug, or spring if worn or damaged. Be sure the bullet at the end of the park lock rod is in good condition. Replace the rod if the bullet is worn or the rod itself is bent or distorted. Do not attempt to straighten the rod.

Check the bushings in the overdrive case. Replace the bushings if severely scored or worn. Also replace the case seal if loose, distorted, or damaged.

Examine the overdrive and direct clutch discs and plates. Replace the discs if the facing is worn, severely scored, or burned and flaking off. Replace the clutch plates if worn, heavily scored, or cracked. Check the lugs on the clutch plates for wear. The plates should slide freely in the drum. Replace the plates or drum if binding occurs.

Check condition of the annulus gear, direct clutch hub, clutch drum and clutch spring. Replace the gear, hub and drum if worn or damaged. Replace the spring if collapsed, distorted, or cracked.

Be sure the splines and lugs on the gear, drum and hub are in good condition. The clutch plates and discs should slide freely in these components.

Inspect the thrust bearings and spring plate. Replace the plate if worn or scored. Replace the bearings if rough, noisy, brinnelled, or worn.

Inspect the planetary gear assembly and the sun gear and bushings. If either the sun gear or the bushings are damaged, replace the gear and bushings as an assembly. The gear and bushings are not serviced separately.

The planetary carrier and pinions must be in good condition. Also be sure the pinion pins are secure and in good condition. Replace the carrier if worn or damaged.

Inspect the overrunning clutch and race. The race surface should be smooth and free of scores. Replace the overrunning clutch assembly or the race if either assembly is worn or damaged in any way.

Inspect the output shaft and governor components. Replace the shaft pilot bushing and inner bushing if damaged. Replace either shaft bearing if rough or noisy. Replace the bearing snap rings if distorted or cracked.

Check the machined surfaces on the output shaft. These surfaces should be clean and smooth. Very minor nicks or scratches can be smoothed with crocus cloth. Replace the shaft if worn, scored or damaged in any way.

Inspect the output shaft bushings. The small bushing is the intermediate shaft pilot bushing. The large bushing is the overrunning clutch hub bushing. Replace either bushing if scored, pitted, cracked, or worn.

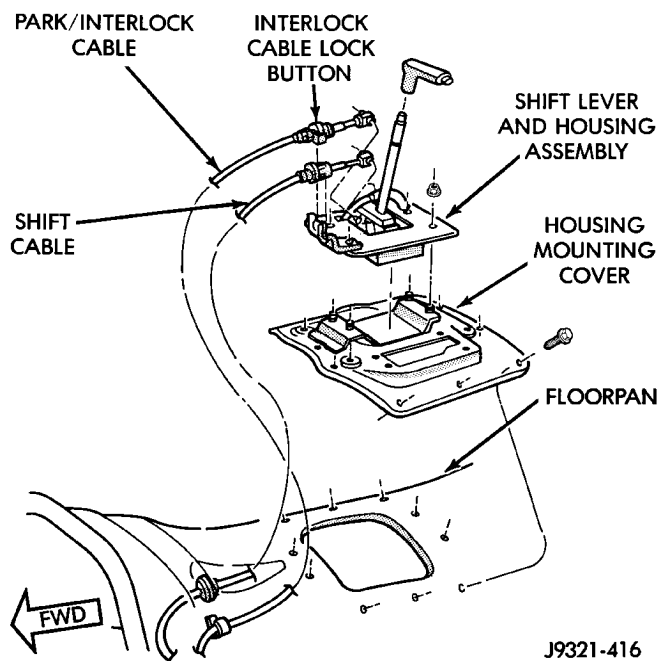
ADJUSTMENTS

BRAKE TRANSMISSION SHIFT INTERLOCK

The park interlock cable is part of the brake/shift lever interlock system. Correct cable adjustment is important to proper interlock operation. The gear shift and park lock cables must both be correctly adjusted in order to shift out of Park.

Park Interlock Cable Adjustment Procedure

- (1) Shift into Park position.
- (2) Turn ignition switch to Accessory position. **Be sure ignition key cylinder is in Accessory position. Cable will not adjust correctly in any other position.**
- (3) Remove shift lever bezel and console screws. Raise bezel and console for access to park interlock cable.
- (4) Pull cable lock button up to release cable (Fig. 250).
- (5) Pull cable forward. Then release cable and press lock button down until it snaps in place.

ADJUSTMENTS (Continued)

J9321-416

Fig. 250 Shift And Park Lock Cables**BTSI FUNCTION CHECK**

(1) Verify removal of ignition key allowed in park position only.

(2) When the shift lever is in park, and the shift handle push-button is in the out position, the ignition key cylinder should rotate freely from off to lock. When the shifter is in any other position, the ignition key should not rotate from off to lock.

(3) Shifting out of park should be possible when the ignition key cylinder is in the off position.

(4) Shifting out of park should not be possible while applying 25 lb. max. handle push-button force, and ignition key cylinder is in the run or start positions, unless the foot brake pedal is depressed approximately 1/2 inch (12mm).

(5) Shifting out of park should not be possible when the ignition key cylinder is in the accessory or lock position.

(6) Shifting between any gears neutral or park may be done without depressing foot brake with ignition switch in run or start positions and vehicle stationary or in motion.

(7) The floorshifter lever and gate positions should be in alignment with all transmission detent positions.

(8) Engine starts must be possible with floorshift lever in park or neutral gate positions only. Engine starts must not be possible in any other gate positions other than park or neutral.

(9) With floorshift lever handle push-button not depressed and lever detent in:

- PARK POSITION- apply forward force on center of handle and remove pressure. Engine start must be possible.

- PARK POSITION- apply rearward force on center of handle and remove pressure. Engine start must be possible.

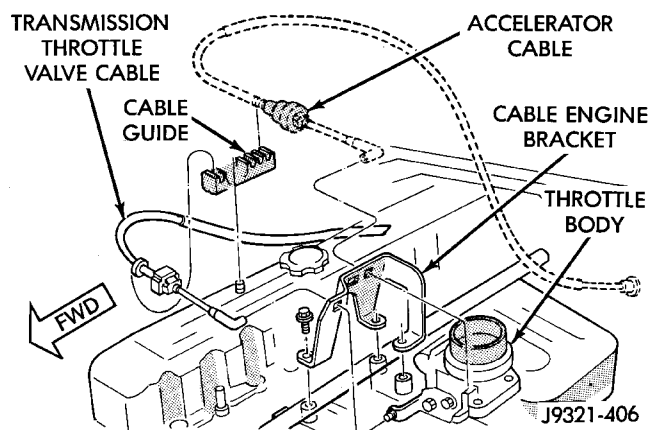
- NEUTRAL POSITION- engine start must be possible.

- NEUTRAL POSITION, ENGINE RUNNING AND BRAKES APPLIED- Apply forward force on center of shift handle. Transmission should not be able to shift into reverse detent.

TRANSMISSION THROTTLE VALVE CABLE ADJUSTMENT

The transmission throttle valve is operated by a cam on the throttle lever. The throttle lever is operated by an adjustable cable (Fig. 251). The cable is attached to an arm mounted on the throttle lever shaft. A retaining clip at the engine-end of the cable is removed to provide for cable adjustment. The retaining clip is then installed back onto the throttle valve cable to lock in the adjustment.

A correctly adjusted throttle valve cable will cause the throttle lever on the transmission to move simultaneously with the throttle body lever from the idle position. Proper adjustment will allow simultaneous movement without causing the transmission throttle lever to either move ahead of, or lag behind the lever on the throttle body.



J9321-406

Fig. 251 Throttle Cable Attachment At Engine**Checking Throttle Valve Cable Adjustment**

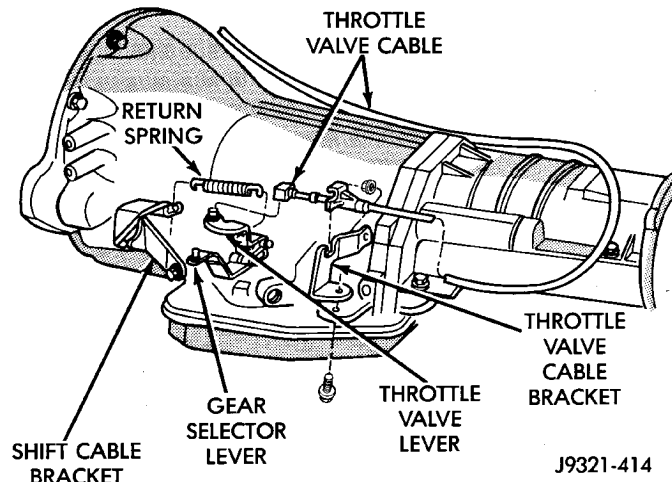
(1) Turn ignition key to OFF position.

(2) Remove air cleaner.

(3) Verify that lever on throttle body is at curb idle position. Then verify that transmission throttle lever (Fig. 252) is also at idle (fully forward) position.

(4) Slide cable off attachment stud on throttle body lever.

(5) Compare position of cable end to attachment stud on throttle body lever:

ADJUSTMENTS (Continued)

J9321-414

Fig. 252 Throttle Cable Attachment At Transmission

- Cable end and attachment stud should be aligned (or centered on one another) to within 1 mm (0.039 in.) in either direction.

- If cable end and attachment stud are misaligned (off center), cable will have to be adjusted as described in Throttle Valve Cable Adjustment procedure.

(6) Reconnect cable end to attachment stud. Then with aid of a helper, observe movement of transmission throttle lever and lever on throttle body.

- If both levers move simultaneously from idle to half-throttle and back to idle position, adjustment is correct.

- If transmission throttle lever moves ahead of, or lags behind throttle body lever, cable adjustment will be necessary. Or, if throttle body lever prevents transmission lever from returning to closed position, cable adjustment will be necessary.

Throttle Valve Cable Adjustment Procedure

- (1) Turn ignition switch to OFF position.
- (2) Remove air cleaner if necessary.
- (3) Disconnect cable end from attachment stud.

Carefully slide cable off stud. Do not pry or pull cable off.

(4) Verify that transmission throttle lever is in fully closed position. Then be sure lever on throttle body is at curb idle position.

(5) Insert a small screwdriver under edge of retaining clip and remove retaining clip.

(6) Center cable end on attachment stud to within 1 mm (0.039 in.).

(7) Install retaining clip onto cable housing.

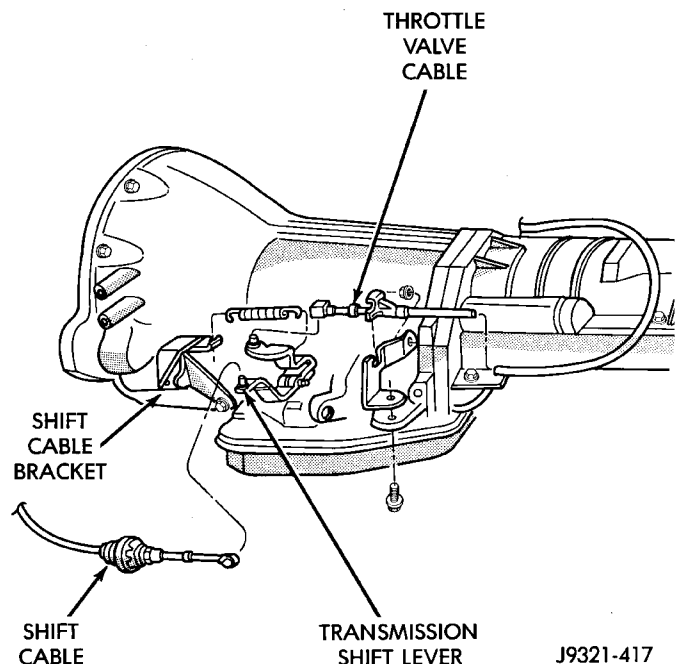
(8) Check cable adjustment. Verify transmission throttle lever and lever on throttle body move simultaneously.

GEARSHIFT CABLE

Check adjustment by starting the engine in Park and Neutral. Adjustment is OK if the engine starts only in these positions. Adjustment is incorrect if the engine starts in one but not both positions. If the engine starts in any position other than Park or Neutral, or if the engine will not start at all, the park/neutral position switch may be faulty.

Gearshift Adjustment Procedure

- (1) Shift transmission into Park.
- (2) Raise vehicle.
- (3) Release cable adjuster clamp (at transmission end of cable) to unlock cable.
- (4) Unsnap cable from cable mounting bracket on transmission (Fig. 253).
- (5) Slide cable eyelet off transmission shift lever.
- (6) Verify transmission shift lever is in Park detent by moving lever fully rearward. Last rearward detent is Park position.
- (7) Verify positive engagement of transmission park lock by attempting to rotate propeller shaft. Shaft will not rotate when park lock is engaged.
- (8) Slide cable eyelet onto transmission shift lever.
- (9) Snap shift cable adjuster into mounting bracket on transmission.
- (10) Lock shift cable by pressing cable adjuster clamp down until it snaps into place.
- (11) Lower vehicle and check engine starting. Engine should start only in Park and Neutral.



J9321-417

Fig. 253 Shift Cable Attachment At Transmission—Typical

ADJUSTMENTS (Continued)**BAND ADJUSTMENTS****FRONT BAND ADJUSTMENT**

The front (kickdown) band adjusting screw is located on the left side of the transmission case above the manual valve and throttle valve levers.

- (1) Raise vehicle.
- (2) Loosen band adjusting screw locknut (Fig. 254). Then back locknut off 3-5 turns. Be sure adjusting screw turns freely in case. Apply lubricant to screw threads if necessary.
- (3) Tighten band adjusting screw to 8 N·m (72 in. lbs.) torque with Inch Pound Torque Wrench C-3380-A, a 3-in. extension and 5/16 socket.

CAUTION: If Adapter C-3705 is needed to reach the adjusting screw (Fig. 255), tighten the screw to only 5 N·m (47-50 in. lbs.) torque.

42RE TRANSMISSION

- Back off front band adjusting screw 3-5/8 turns.
- Hold adjuster screw in position and tighten locknut to 41 N·m (30 ft. lbs.) torque.

44RE TRANSMISSION

- Back off front band adjusting screw 2-1/4 turns.
- Hold adjuster screw in position and tighten locknut to 41 N·m (30 ft. lbs.) torque.
- (4) Lower vehicle.

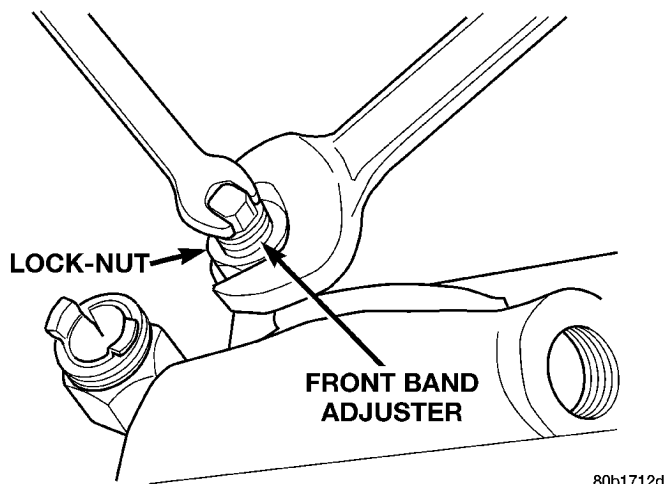


Fig. 254 Front Band Adjustment Screw Location

REAR BAND ADJUSTMENT

The transmission oil pan must be removed for access to the rear band adjusting screw.

- (1) Raise vehicle.
- (2) Remove transmission oil pan and drain fluid.
- (3) Loosen band adjusting screw locknut 5-6 turns (Fig. 256). Be sure adjusting screw turns freely in lever.

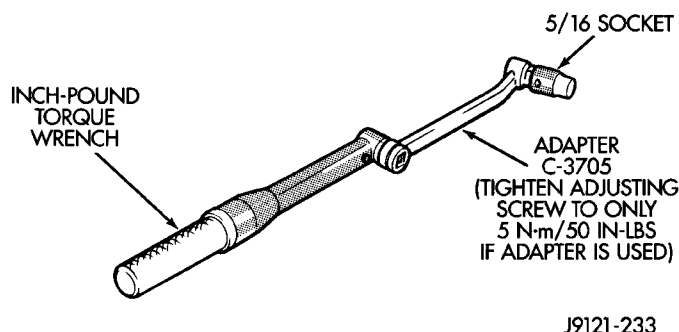


Fig. 255 Band Adjustment Adapter Tool

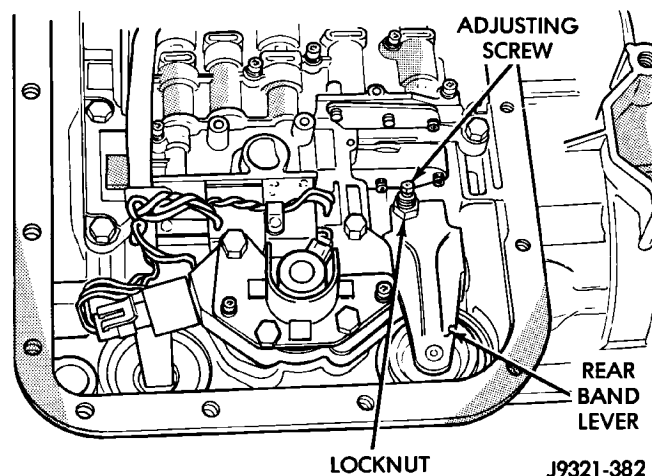


Fig. 256 Rear Band Adjusting Screw Location

- (4) Tighten adjusting screw to 8 N·m (72 in. lbs.) torque.

42/44RE TRANSMISSION

- Back off adjusting screw 4 turns.
- Hold adjusting screw in place and tighten locknut to 34 N·m (25 ft. lbs.) torque.
- (5) Position new gasket on oil pan and install pan on transmission. Tighten pan bolts to 17 N·m (13 ft. lbs.) torque.
- (6) Lower vehicle and refill transmission with Mopar® ATF Plus 3, Type 7176 fluid.

VALVE BODY**CONTROL PRESSURE ADJUSTMENTS**

There are two control pressure adjustments on the valve body;

- Line Pressure
- Throttle Pressure

Line and throttle pressures are interdependent because each affects shift quality and timing. As a result, both adjustments must be performed properly and in the correct sequence. Adjust line pressure first and throttle pressure last.

ADJUSTMENTS (Continued)

LINE PRESSURE ADJUSTMENT

Measure distance from the valve body to the inner edge of the adjusting screw with an accurate steel scale (Fig. 257).

Distance should be 33.4 mm (1-5/16 in.).

If adjustment is required, turn the adjusting screw in, or out, to obtain required distance setting.

NOTE: The 33.4 mm (1-5/16 in.) setting is an approximate setting. Manufacturing tolerances may make it necessary to vary from this dimension to obtain desired pressure.

One complete turn of the adjusting screw changes line pressure approximately 1-2/3 psi (9 kPa).

Turning the adjusting screw counterclockwise increases pressure while turning the screw clockwise decreases pressure.

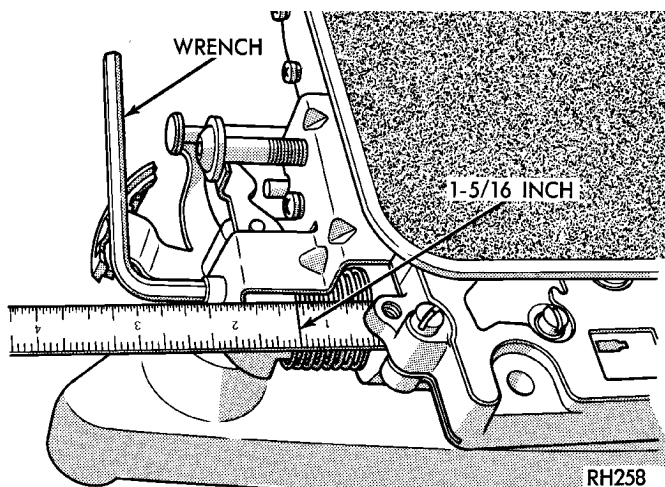


Fig. 257 Line Pressure Adjustment

THROTTLE PRESSURE ADJUSTMENT

Insert Gauge Tool C-3763 between the throttle lever cam and the kickdown valve stem (Fig. 258).

Push the gauge tool inward to compress the kickdown valve against the spring and bottom the throttle valve.

Maintain pressure against kickdown valve spring. Turn throttle lever stop screw until the screw head touches throttle lever tang and the throttle lever cam touches gauge tool.

NOTE: The kickdown valve spring must be fully compressed and the kickdown valve completely bottomed to obtain correct adjustment.

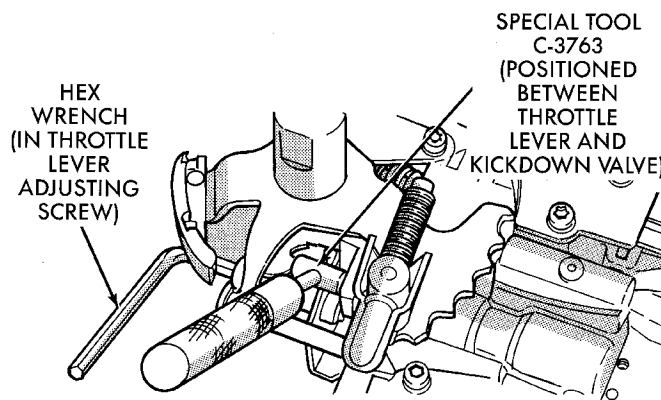
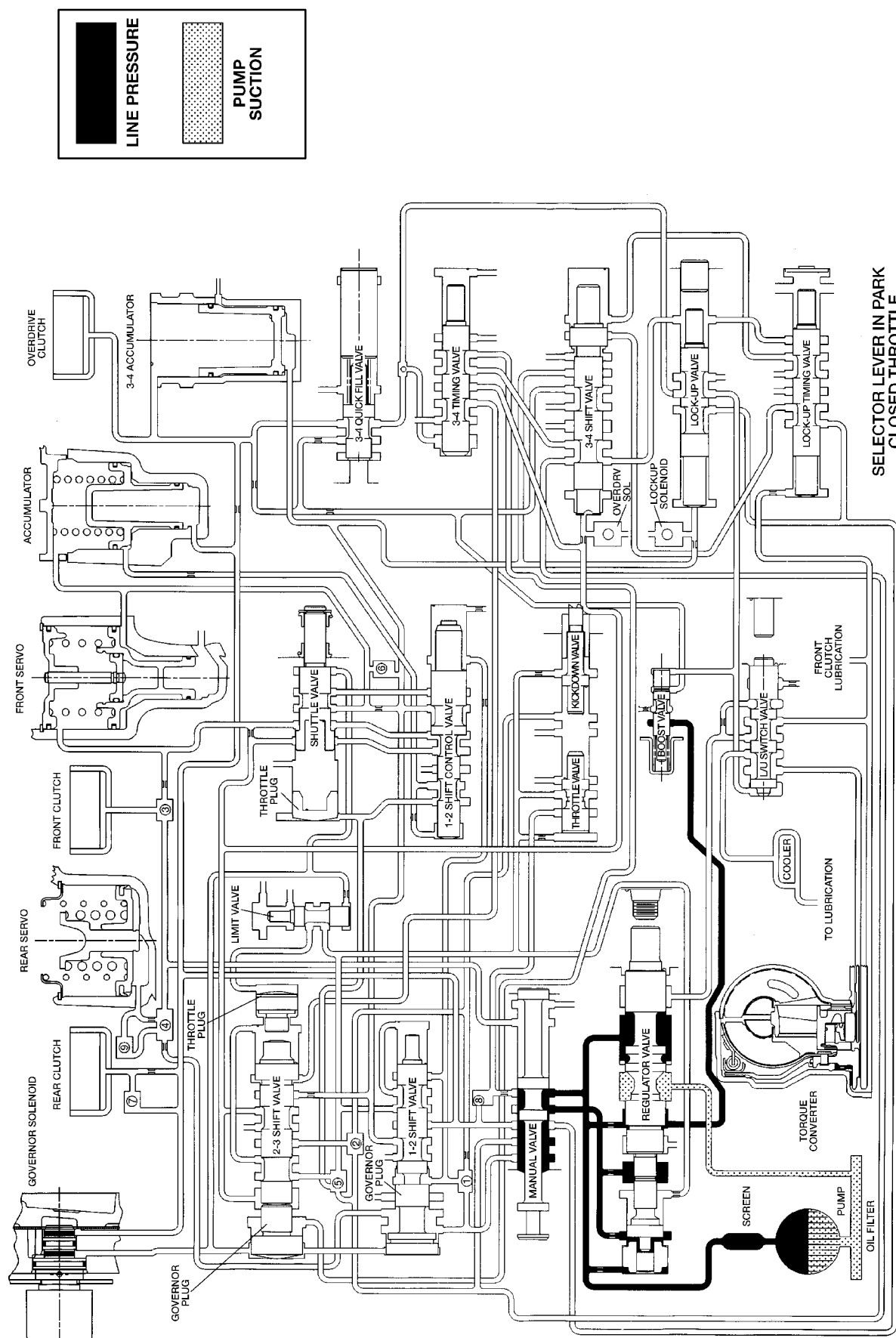


Fig. 258 Throttle Pressure Adjustment

SCHEMATICS AND DIAGRAMS

HYDRAULIC SCHEMATICS

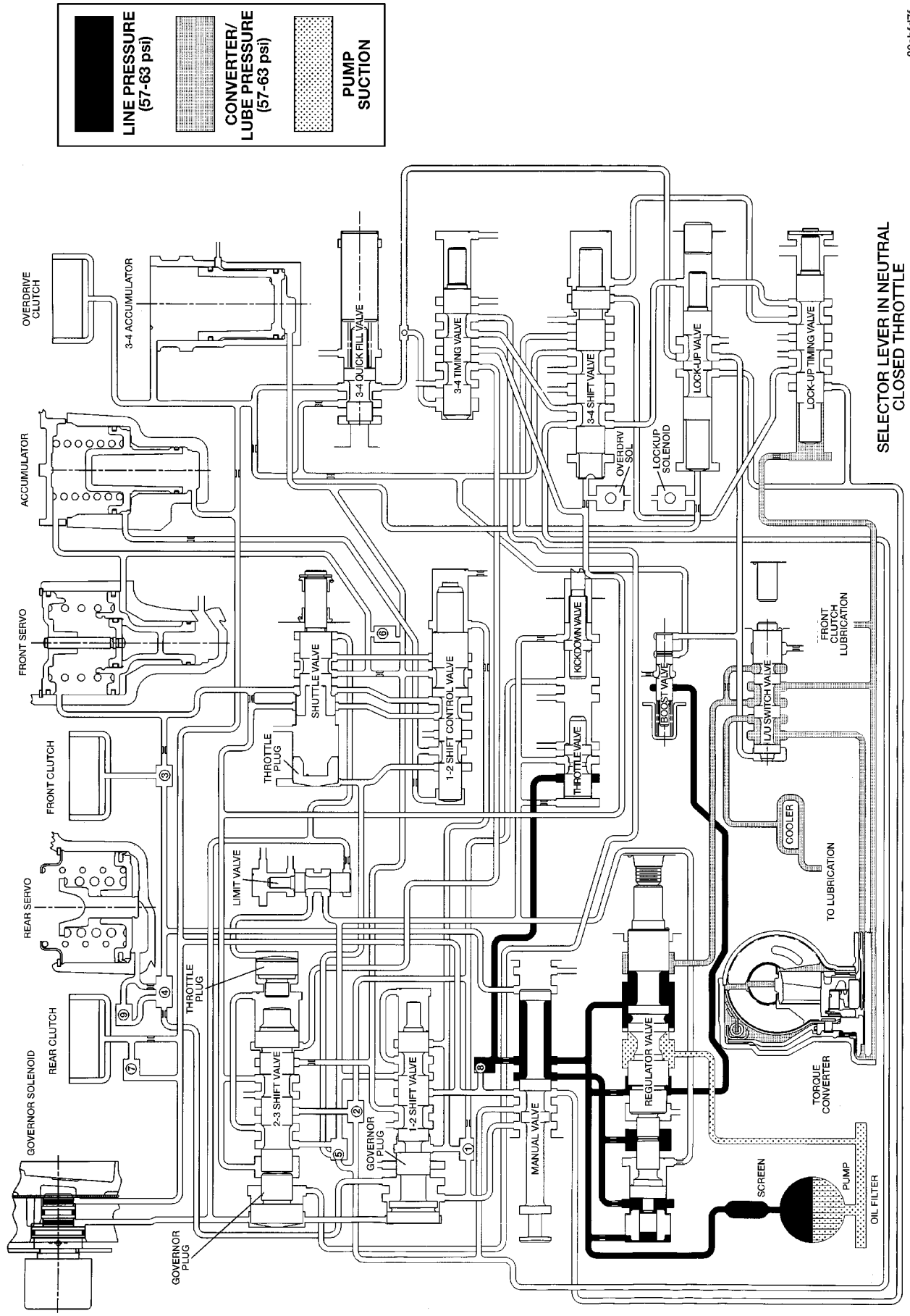


80abfd7e

HYDRAULIC FLOW IN PARK

SCHEMATICS AND DIAGRAMS (Continued)

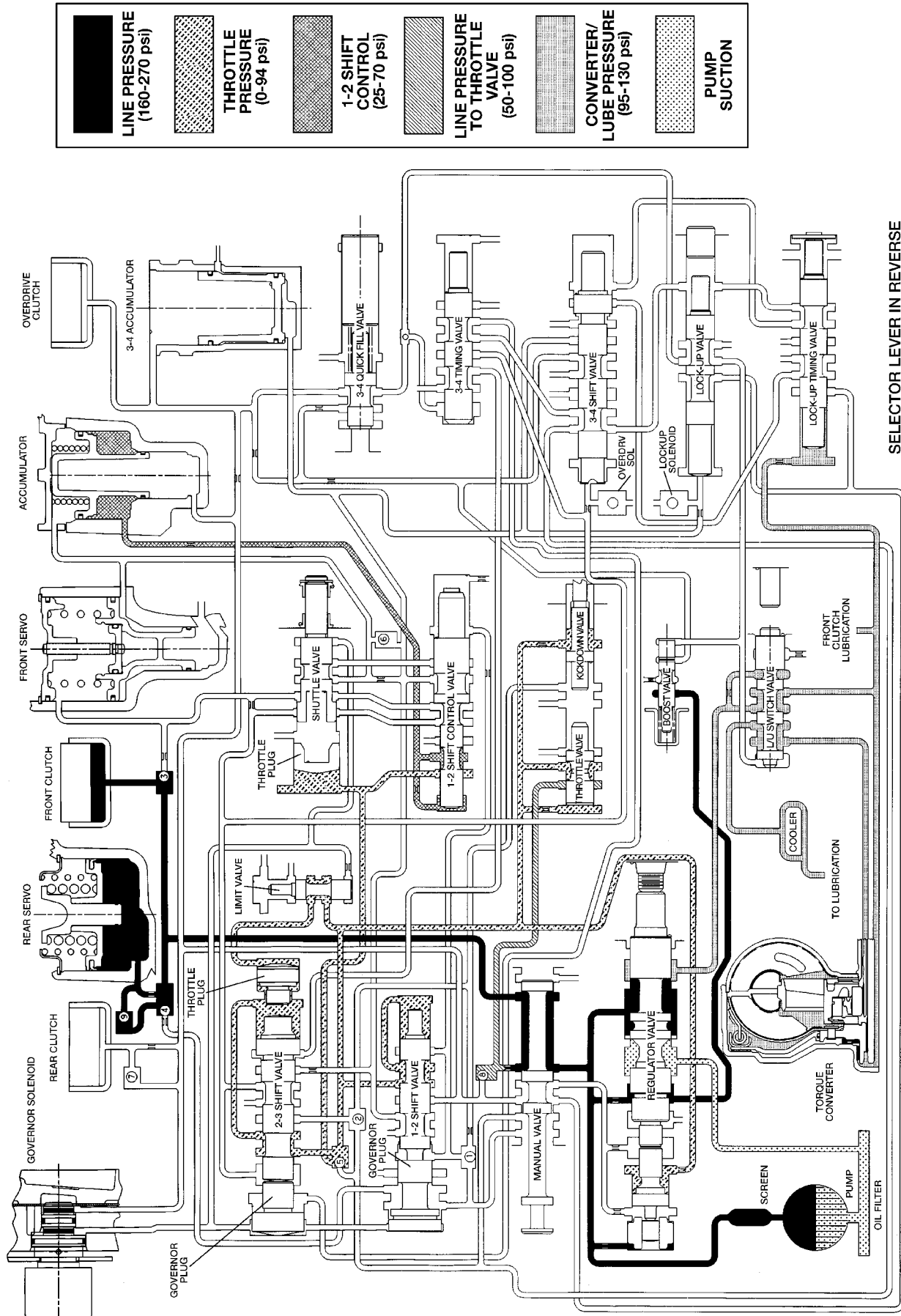
80abfd7f



HYDRAULIC FLOW IN NEUTRAL

SCHEMATICS AND DIAGRAMS (Continued)

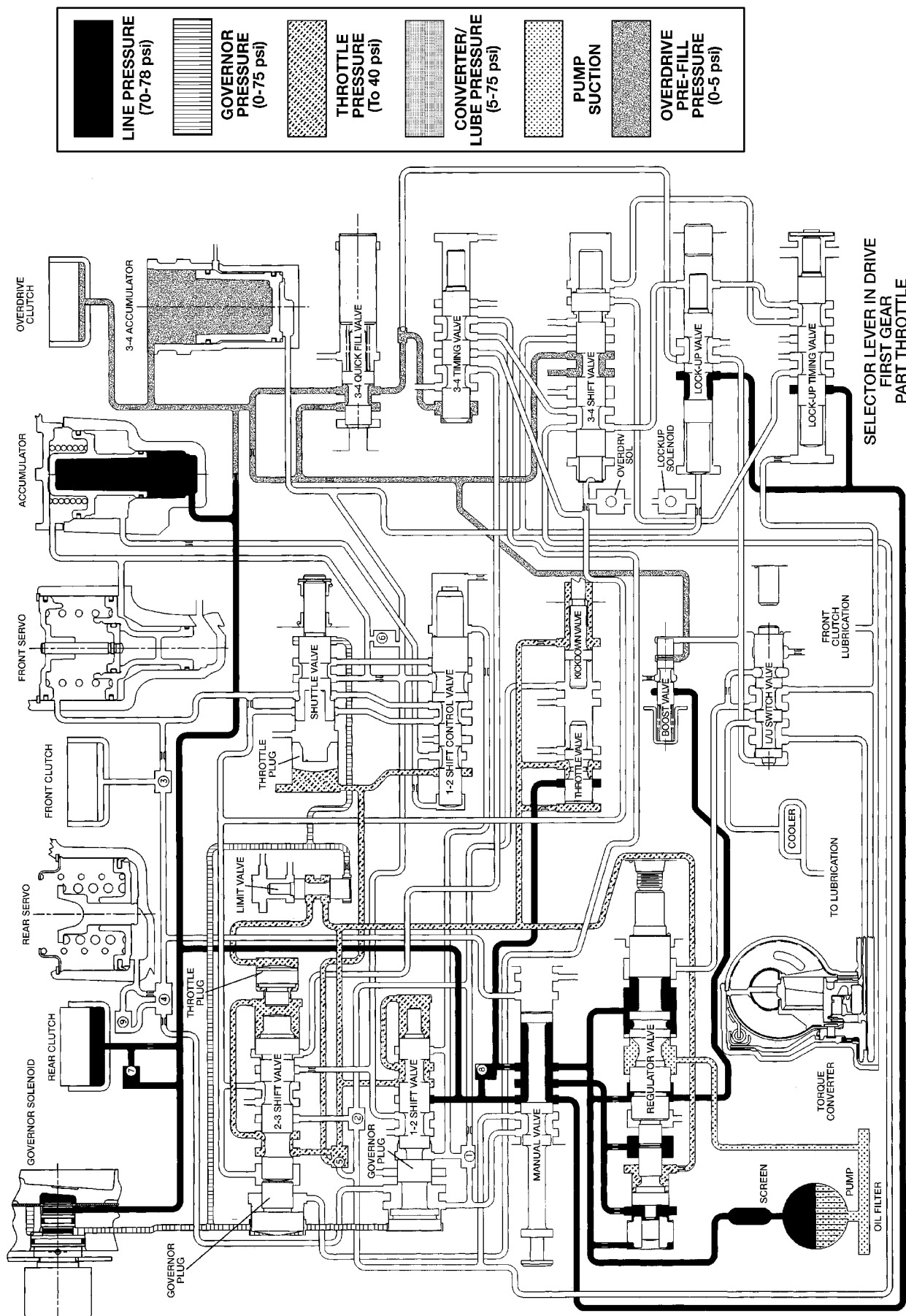
80abf680



HYDRAULIC FLOW IN REVERSE

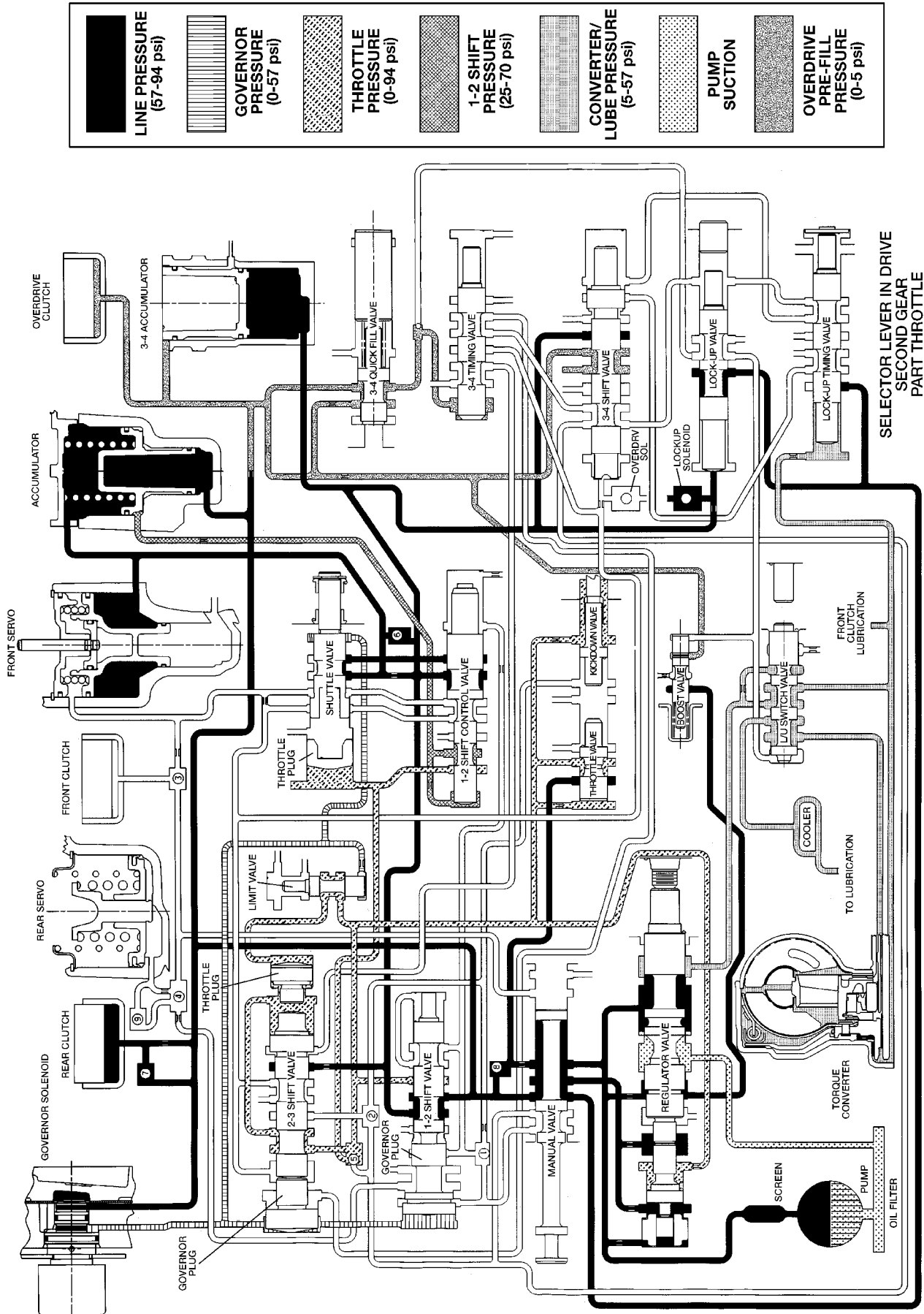
SCHEMATICS AND DIAGRAMS (Continued)

80abrd83



HYDRAULIC FLOW IN DRIVE FIRST GEAR

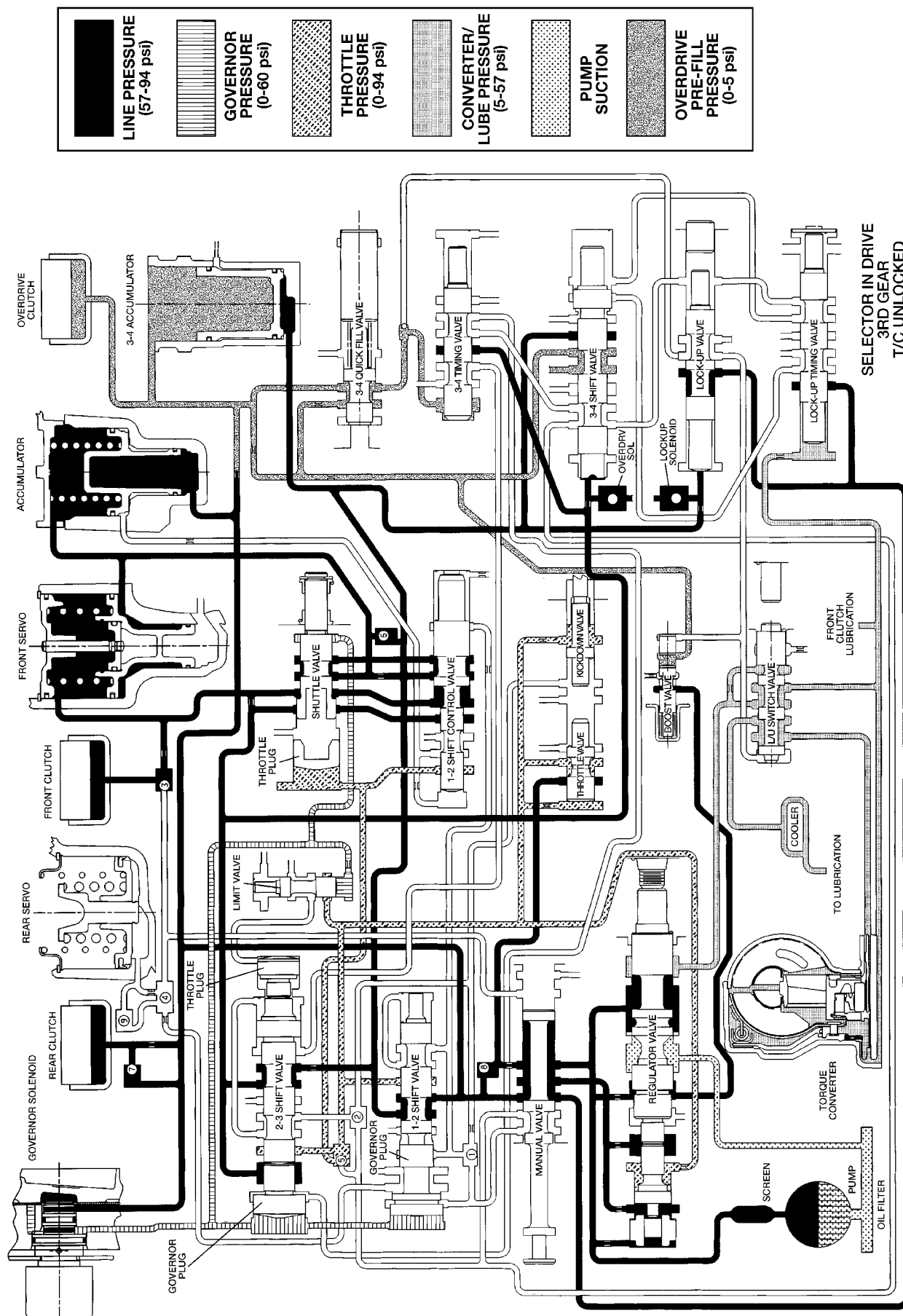
SCHEMATICS AND DIAGRAMS (Continued)



80abfd84

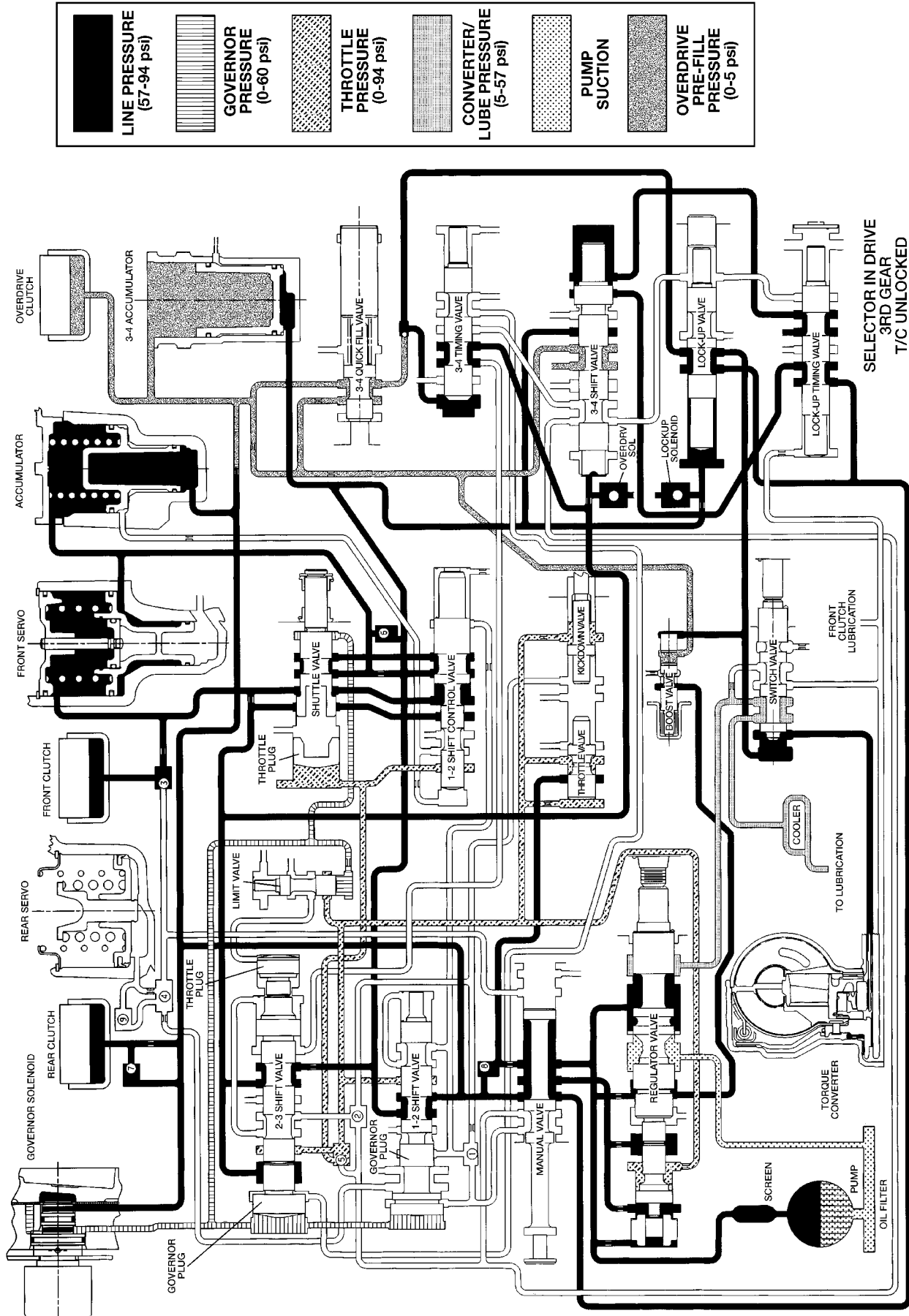
HYDRAULIC FLOW IN DRIVE SECOND GEAR

HYDRAULIC FLOW IN DRIVE THIRD GEAR (CONVERTER CLUTCH NOT APPLIED)



80abfd85

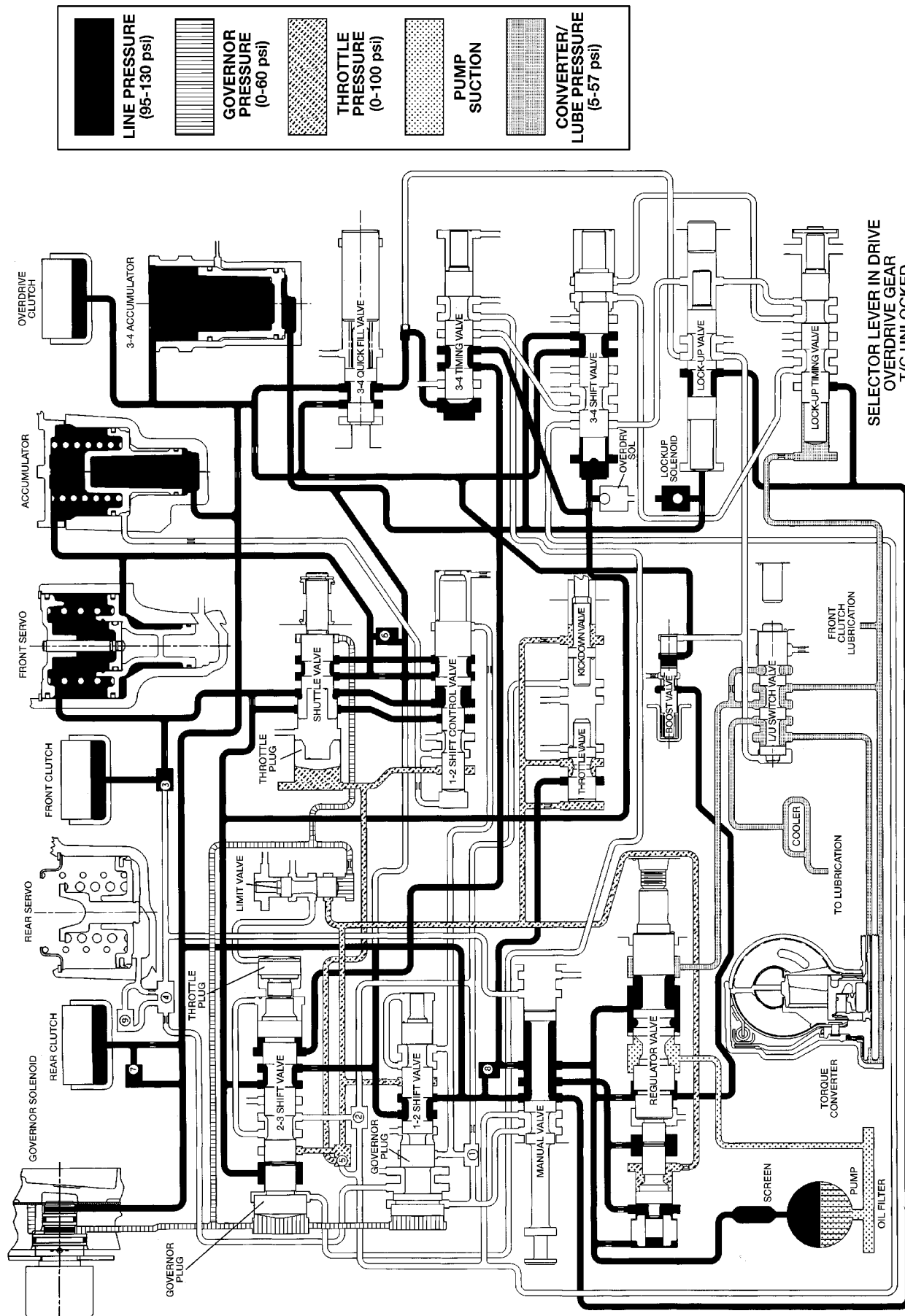
SCHEMATICS AND DIAGRAMS (Continued)



80abrd8c

HYDRAULIC FLOW IN DRIVE THIRD GEAR (CONVERTER CLUTCH APPLIED)

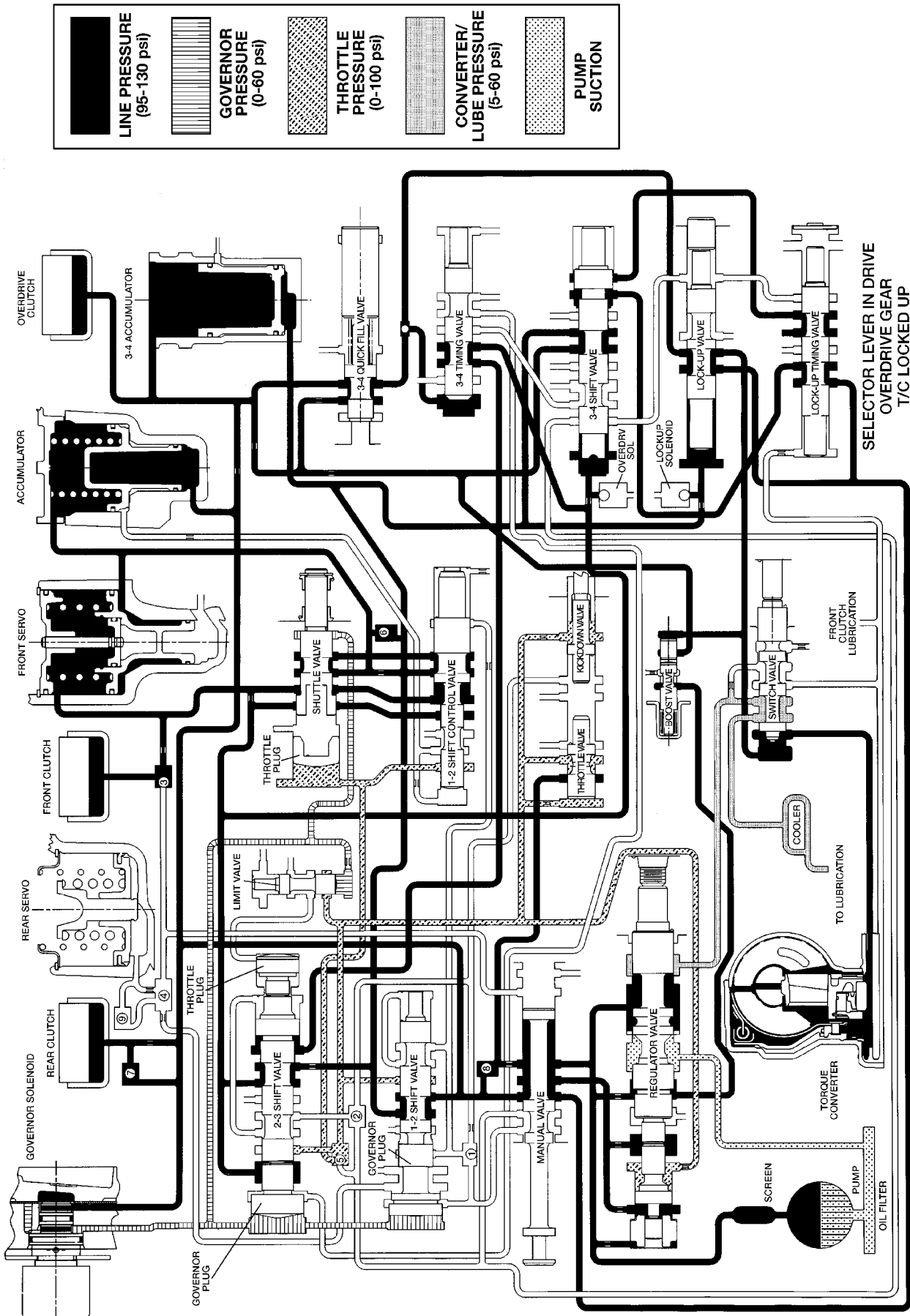
SCHEMATICS AND DIAGRAMS (Continued)



80abfd86

HYDRAULIC FLOW IN DRIVE FOURTH GEAR (CONVERTER CLUTCH NOT APPLIED)

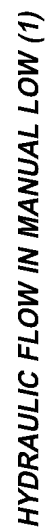
SCHEMATICS AND DIAGRAMS (Continued)



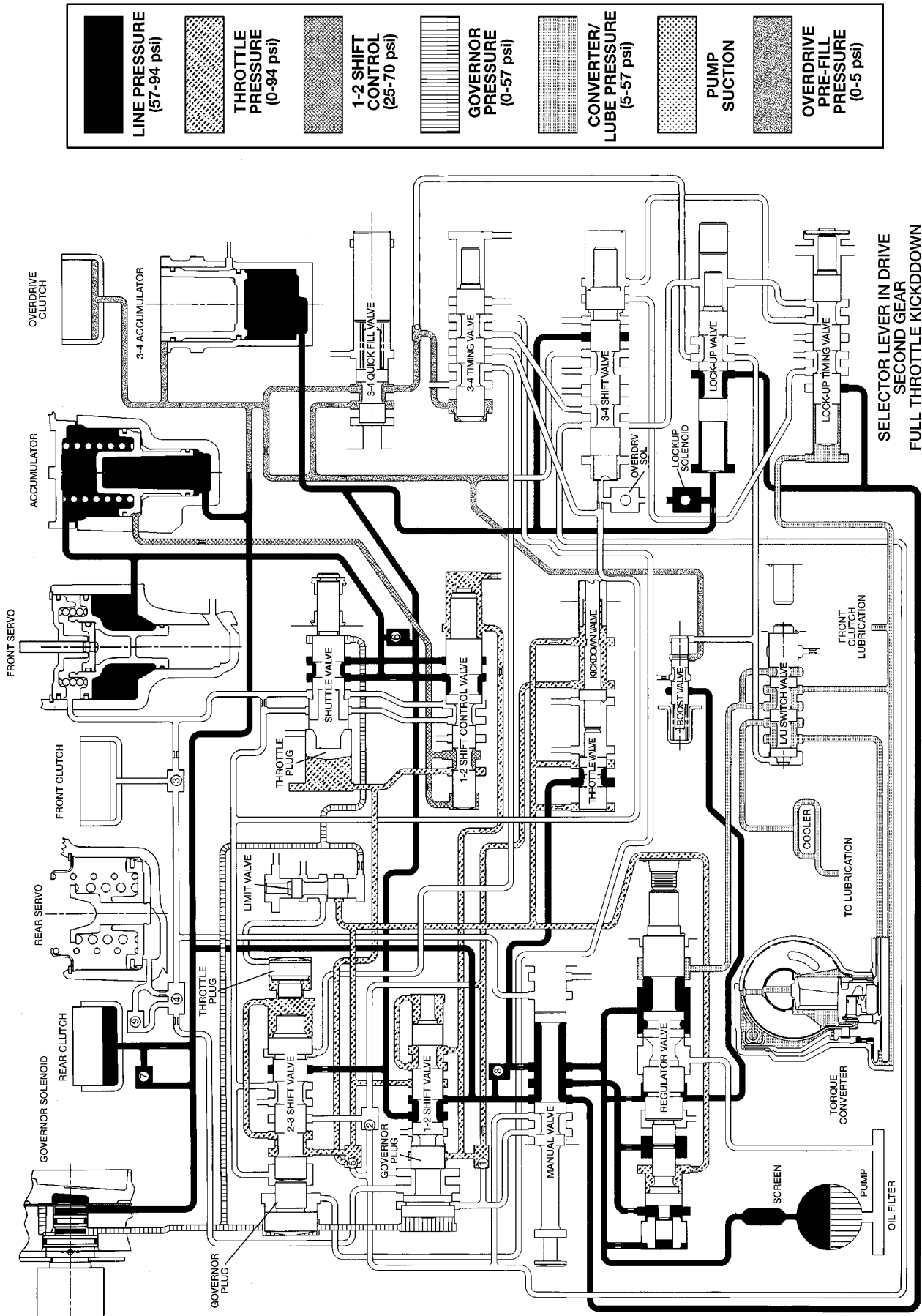
80abfd87

HYDRAULIC FLOW IN DRIVE FOURTH GEAR (CONVERTER CLUTCH APPLIED)

80abfd88



SCHEMATICS AND DIAGRAMS (Continued)



80abfd8a

HYDRAULIC FLOW DURING FULL THROTTLE 3-2 DOWNSHIFT (PASSING GEAR)

SPECIFICATIONS**TRANSMISSION****GENERAL**

Component	Metric	Inch
Planetary end play	0.127-1.22 mm	0.005-0.048 in.
Input shaft end play	0.56-2.31 mm	0.022-0.091 in.
Clutch pack clearance/ Front.	1.70-3.40mm	0.067-0.134 in.
Clutch pack clearance/ Rear.	0.81-1.40 mm	0.022-0.037 in.
Front Clutch	42RE-4 discs	
	44RE-5 discs	
Rear Clutch	42RE and 44RE-4 discs	
Overdrive clutch disc usage	42RE-3 discs	
	44RE-4 discs	
Direct clutch disc usage	42RE-6 discs	
	44RE-8 discs	
42RE Band adjustment from 72 in. lbs.		
Front band	Back off 3-5/8 turns	
Rear band	Back off 4 turns	
44RE Band adjustment from 72 in. lbs.		
Front band	Back off 2-1/4 turns	
Rear band	Back off 4 turns	
Recommended fluid	Mopar® ATF Plus 3, type 7176	

GEAR RATIOS

- 1ST GEAR-2.74
- 2ND GEAR-1.54
- 3RD GEAR-1.00
- 4TH GEAR-0.69
- REV.GEAR-2.21

TORQUE**DESCRIPTION****TORQUE**

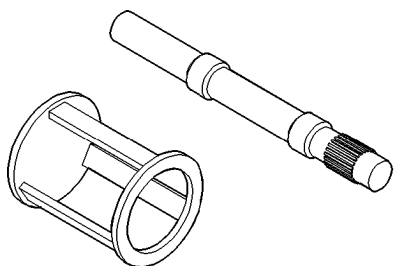
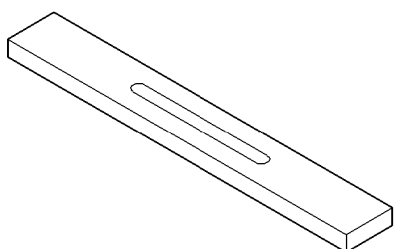
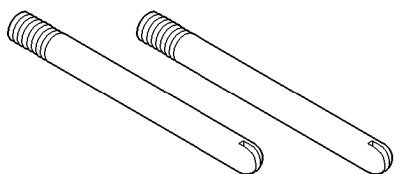
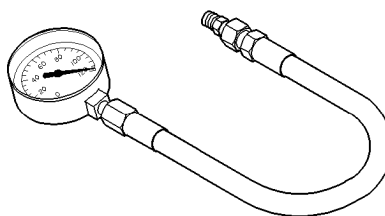
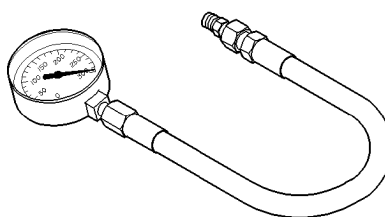
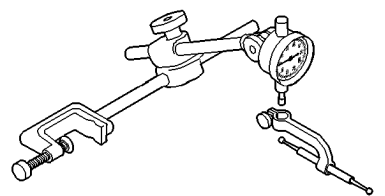
Fitting, cooler line at trans.	18 N·m (13 ft. lbs.)
Bolt, torque convertor	31 N·m (23 ft. lbs.)
Bolt/nut, crossmember	68 N·m (50 ft. lbs.)
Bolt, driveplate to crankshaft	75 N·m (55 ft. lbs.)
Plug, front band reaction	17 N·m (13 ft. lbs.)
Locknut, front band adj.	34 N·m (25 ft. lbs.)
Switch, park/neutral	34 N·m (25 ft. lbs.)
Bolt, fluid pan.	17 N·m (13 ft. lbs.)
Screws, fluid filter	.4 N·m (35 in. lbs.)
Bolt, oil pump	20 N·m (15 ft. lbs.)
Bolt, overrunning clutch cam	17 N·m (13 ft. lbs.)
Bolt, O/D to trans.	34 N·m (25 ft. lbs.)
Bolt, O/D piston retainer	17 N·m (13 ft. lbs.)
Plug, pressure test port	14 N·m (10 ft. lbs.)
Bolt, reaction shaft support	20 N·m (15 ft. lbs.)
Locknut, rear band	41 N·m (30 ft. lbs.)
Bolt, speedometer adapter	11 N·m (8 ft. lbs.)
Bolt, valve body to case	12 N·m (100 in. lbs.)
Sensor, trans speed	27 N·m (20 ft. lbs.)
Screw, solenoid wiring connector . .	.4 N·m (35 in. lbs.)
Screw, solenoid to transfer plate . .	.4 N·m (35 in. lbs.)

SPECIFICATIONS (Continued)**THRUST WASHER/SPACER/SNAP RING DIMENSIONS**

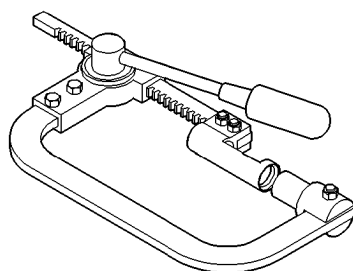
Component	Metric	Inch
Front clutch thrust washer (reaction shaft support hub)	1.55 mm	0.061 in.
Rear clutch thrust washer (clutch retainer)	1.55 mm	0.061 in.
Intermediate shaft thrust plate (shaft hub pilot)	1.5-1.6 mm	0.060-0.063 in.
Output shaft thrust washer (rear clutch hub)	Select fit to set end play	
Rear clutch pack snap ring	1.5 mm	0.060 in.
	1.95 mm	0.076 in.
	2.45 mm	0.098 in.
Planetary geartrain snap ring (at front of output shaft)	Select fit (three thicknesses available)	
Overdrive piston thrust plate	Thrust plate and spacer are select fit. Refer to size charts and selection procedures in Overdrive Unit D&A procedures	
Intermediate shaft spacer		

PRESSURE TEST

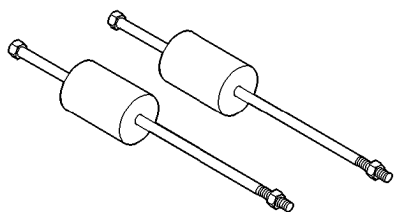
Overdrive clutch	Fourth gear only	Pressure should be 469-496 kPa (68-72 psi) with closed throttle and increase to 620-896 kPa (90-130 psi) at 1/2 to 3/4 throttle.
Line pressure (at accumulator)	Closed throttle	372-414 kPa (54-60 psi).
Front servo	Third gear only	No more than 21 kPa (3 psi) lower than line pressure.
Rear servo	1 range R range	No more than 21 kPa (3 psi) lower than line pressure. 1103 kPa (160 psi) at idle, builds to 1862 kPa (270 psi) at 1600 rpm.
Governor	D range closed throttle	Pressure should respond smoothly to changes in mph and return to 0-7 kPa (0-1.5 psi) when stopped with transmission in D, 1, 2. Pressure above 7 kPa (1.5 psi) at stand still will prevent transmission from downshifting.

SPECIAL TOOLS**RE TRANSMISSIONS*****Spring Compressor and Alignment Shaft—6227******Gauge Bar—6311******Extension Housing Pilot—C-3288-B******Pressure Gauge—C-3292******Pressure Gauge—C-3293SP***

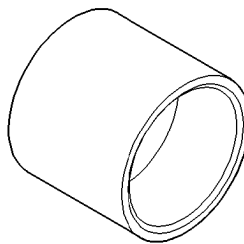
8011942b

Dial Indicator—C-3339***Spring Compressor—C-3422-B***

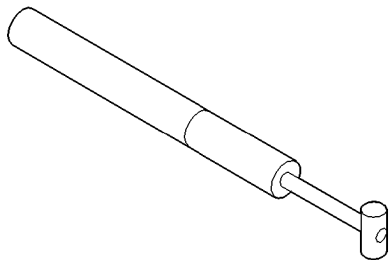
SPECIAL TOOLS (Continued)



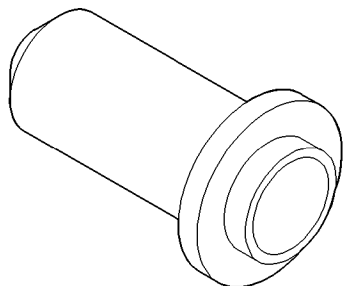
Puller, Slide Hammer—C-3752



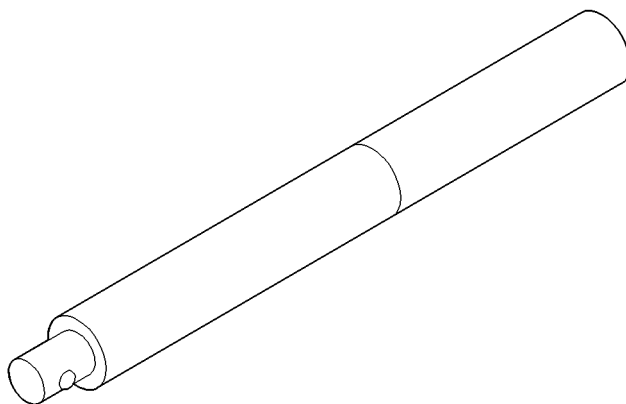
Installer—C-3995-A



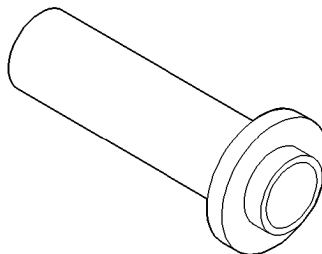
Gauge, Throttle Setting—C-3763



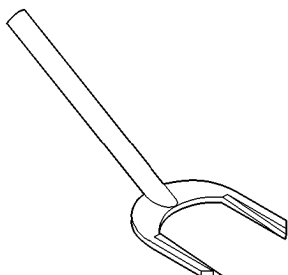
Seal Installer—C-3860-A



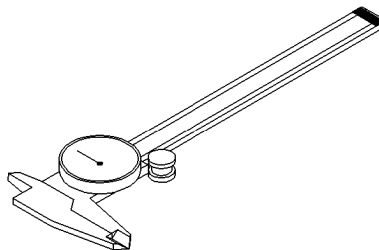
Universal Handle—C-4171



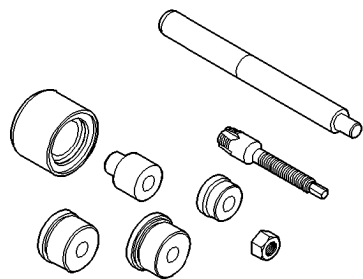
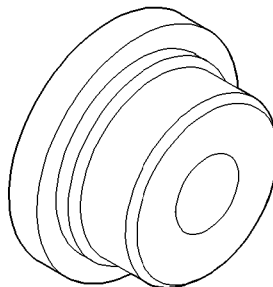
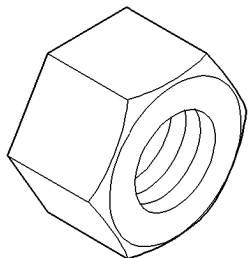
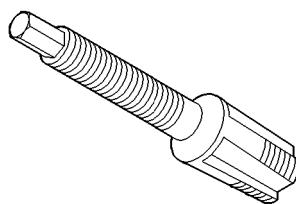
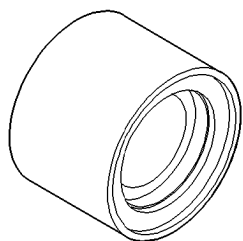
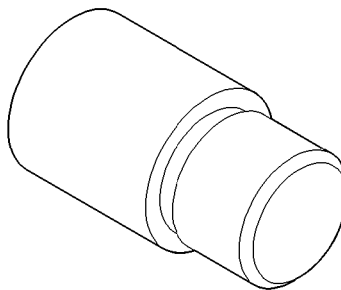
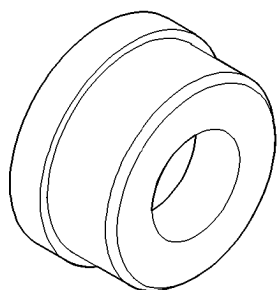
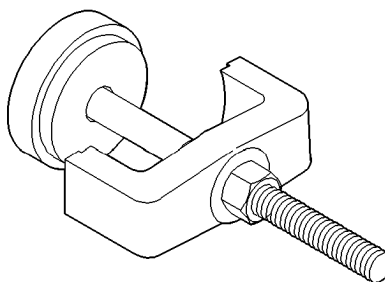
Seal Installer—C-4193-A



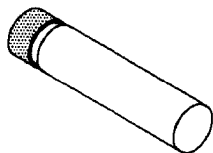
Seal Remover—C-3985-B



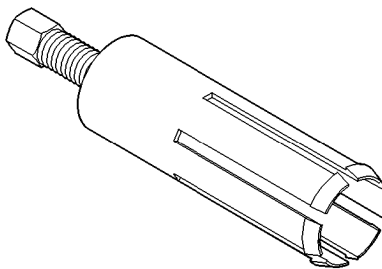
Dial Caliper—C-4962

SPECIAL TOOLS (Continued)***Bushing Remover/Installer Set—C-3887-J******Installer, Bushing—SP-5117******Nut, Bushing Remover—SP-1191, From kit C-3887-J******Remover, Bushing—SP-5324******Cup, Bushing Remover—SP-3633, From kit C-3887-J******Installer, Bushing—SP-5325******Remover, Bushing—SP-3551******Compressor, Spring—C-3575-A***

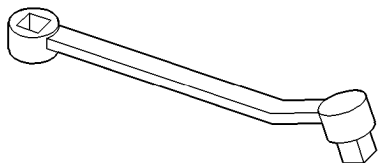
SPECIAL TOOLS (Continued)



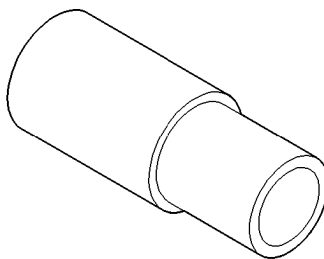
Gauge—6312



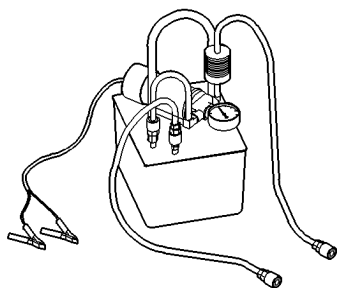
Remover—6957



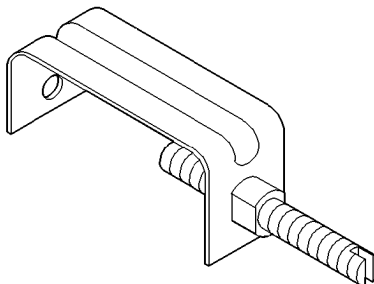
Adapter—C-3705



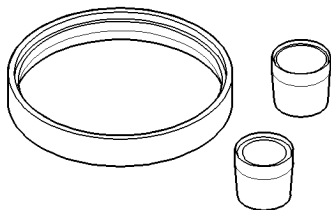
Installer—6951



Flusher—6906



Retainer—6583



Installer—8114

46RE AUTOMATIC TRANSMISSION

INDEX

	page		page
GENERAL INFORMATION		TRANSMISSION FILL PROCEDURE	147
46RE TRANSMISSION	119	REMOVAL AND INSTALLATION	
CAUSES OF BURNT FLUID	121	BRAKE TRANSMISSION SHIFT INTERLOCK . .	153
EFFECTS OF INCORRECT FLUID LEVEL	121	GEARSHIFT CABLE	153
ELECTRONIC LOCK-UP TORQUE		GOVERNOR SOLENOID AND PRESSURE	
CONVERTER	121	SENSOR	154
FLUID CONTAMINATION	121	OUTPUT SHAFT FRONT BEARING	159
GEARSHIFT MECHANISM	122	OUTPUT SHAFT REAR BEARING	159
RECOMMENDED FLUID	121	OVERDRIVE HOUSING BUSHING	158
TRANSMISSION GEAR RATIOS	122	OVERDRIVE UNIT	157
TRANSMISSION IDENTIFICATION	121	PARK/NEUTRAL POSITION SWITCH	152
DESCRIPTION AND OPERATION		SPEEDOMETER ADAPTER	151
3-4 SHIFT SEQUENCE	124	TORQUE CONVERTER	150
BRAKE TRANSMISSION SHIFT INTERLOCK		TRANSMISSION	148
MECHANISM	125	VALVE BODY	154
CONVERTER CLUTCH ENGAGEMENT	125	YOKE SEAL REPLACEMENT	151
CONVERTER DRAINBACK VALVE	125	DISASSEMBLY AND ASSEMBLY	
ELECTRONIC GOVERNOR	122	FRONT CLUTCH	192
GOVERNOR PRESSURE CURVES	123	FRONT SERVO PISTON	190
HYDRAULIC CONTROL SYSTEM	124	OIL PUMP AND REACTION SHAFT SUPPORT .	190
OVERDRIVE OFF SWITCH	124	OVERDRIVE UNIT	200
QUICK FILL VALVE	125	OVERRUNNING CLUTCH CAM/OVERDRIVE	
SHIFT VALVE OPERATION	124	PISTON RETAINER	187
DIAGNOSIS AND TESTING		PLANETARY GEARTRAIN/OUTPUT SHAFT . . .	196
AIR TESTING TRANSMISSION CLUTCH AND		REAR CLUTCH	193
BAND OPERATION	131	REAR SERVO PISTON	190
ANALYZING ROAD TEST	127	TRANSMISSION	175
AUTOMATIC TRANSMISSION DIAGNOSIS . . .	125	VALVE BODY	160
BRAKE TRANSMISSION SHIFT INTERLOCK . .	127	CLEANING AND INSPECTION	
CONVERTER HOUSING FLUID LEAK		ACCUMULATOR	216
DIAGNOSIS	132	FRONT CLUTCH	217
CONVERTER STALL TEST	131	FRONT SERVO	216
DIAGNOSIS TABLES AND CHARTS—RE		OIL PUMP AND REACTION SHAFT SUPPORT .	217
TRANSMISSION	133	OVERDRIVE UNIT	218
GEARSHIFT CABLE	127	OVERRUNNING CLUTCH/LOW-REVERSE	
HYDRAULIC PRESSURE TEST	128	DRUM/OVERDRIVE PISTON RETAINER	216
OVERDRIVE ELECTRICAL CONTROLS	127	PLANETARY GEARTRAIN/OUTPUT SHAFT . . .	218
PARK/NEUTRAL POSITION SWITCH	126	REAR CLUTCH	218
PRELIMINARY DIAGNOSIS	125	REAR SERVO	217
ROAD TESTING	127	TRANSMISSION	216
STALL TEST ANALYSIS	131	VALVE BODY	214
THROTTLE VALVE CABLE	127	ADJUSTMENTS	
SERVICE PROCEDURES		BRAKE TRANSMISSION SHIFT INTERLOCK . .	219
ALUMINUM THREAD REPAIR	148	FRONT BAND ADJUSTMENT	221
CONVERTER DRAINBACK CHECK VALVE		GEARSHIFT CABLE	221
SERVICE	147	REAR BAND ADJUSTMENT	222
FLUID AND FILTER REPLACEMENT	146	TRANSMISSION THROTTLE VALVE CABLE	
FLUID LEVEL CHECK	146	ADJUSTMENT	220
FLUSHING COOLERS AND TUBES	148	VALVE BODY	222
OIL PUMP VOLUME CHECK	147		

SCHEMATICS AND DIAGRAMS		SPECIAL TOOLS	
HYDRAULIC SCHEMATICS	223	RE TRANSMISSION	236
SPECIFICATIONS			
RE TRANSMISSION	235		

GENERAL INFORMATION

46RE TRANSMISSION

The 46RE is a four speed fully automatic transmission with an electronic governor (Fig. 1). First through third gear ranges are provided by the clutches, bands, overrunning clutch, and planetary gear sets in the transmission. Fourth gear range is provided by the overdrive unit that contains an overdrive clutch, direct clutch, planetary gear set, and overrunning clutch. The overdrive clutch is applied in fourth gear only. The direct clutch is applied in all ranges except fourth gear. The 46RE is equipped with a lock-up clutch in the torque converter. The torque converter clutch is controlled by the Power-

train Control Module (PCM). The torque converter clutch is hydraulically applied and is released when fluid is vented from the hydraulic circuit by the torque converter control (TCC) solenoid on the valve body. The torque converter clutch engages in fourth gear, and in third gear when the O/D switch is OFF. Engagement occurs when the vehicle is cruising at a steady speed after the vehicle has warmed up. The torque converter clutch disengages when the vehicle begins to go uphill or the accelerator is applied. The torque converter clutch feature increases fuel economy and reduces the transmission fluid temperature. The 46RE transmission is cooled by an integral fluid cooler inside the radiator.

GENERAL INFORMATION (Continued)

801834a2

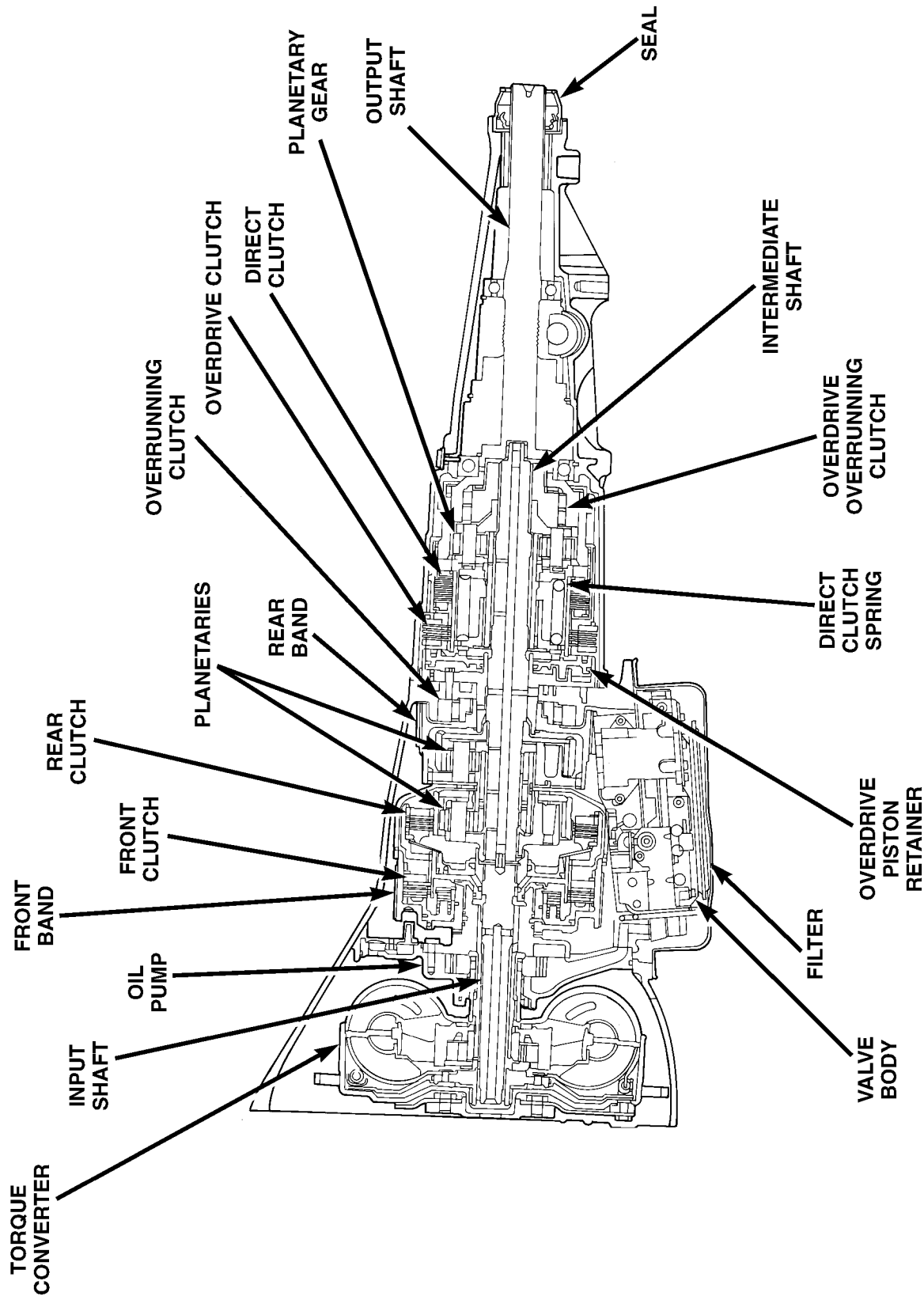


Fig. 1 46RE Transmission