

DISASSEMBLY AND ASSEMBLY (Continued)

assembly. Keep the transmission case and components clean. Also make sure the tools and workbench area used for reassembly operations are equally clean.

Shop towels used for wiping off tools and your hands must be made from **lint free** materials. Lint will stick to transmission parts and could interfere with valve operation or even restrict fluid passages.

Lubricate transmission clutch and gear components with Mopar® ATF Plus 3, type 7176, during reassembly. Soak clutch discs in transmission fluid before installation.

Use Mopar® Door Ease, or Ru-Glyde on piston seals and O-rings to ease installation. Petroleum jelly can also be used to lubricate and hold thrust washers and plates in position during assembly.

Do not use chassis grease, bearing grease, white grease, or similar lubricants on any part. These types of lubricants can eventually block or restrict fluid passages and valve operation. Use petroleum jelly only.

Do not force parts into place. The transmission components and sub-assemblies are easily installed by hand when properly aligned. If a part seems difficult to install, it is either misaligned or incorrectly assembled. Verify that thrust washers, thrust plates and seal rings are correctly positioned.

The planetary geartrain, front/rear clutch assemblies and oil pump are all much easier to install when the transmission case is upright. Either tilt the case upward with wood blocks, or cut a hole in the bench large enough for the intermediate shaft and rear support. Then lower the shaft and support into the hole and support the rear of the case directly on the bench.

FRONT/REAR SERVO

(1) Lubricate rear servo piston seal with Mopar® Door Ease or ATF Plus 3. Lubricate servo bore in case with ATF Plus 3.

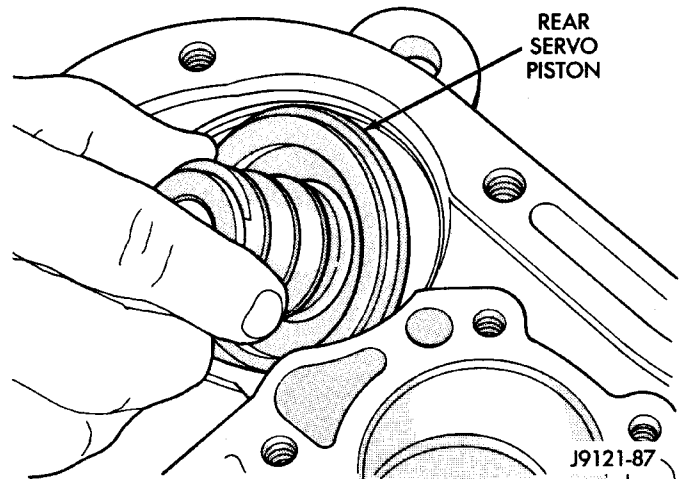
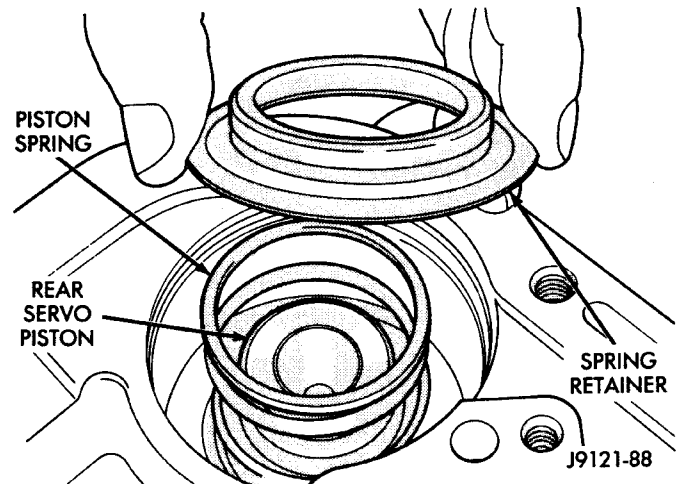
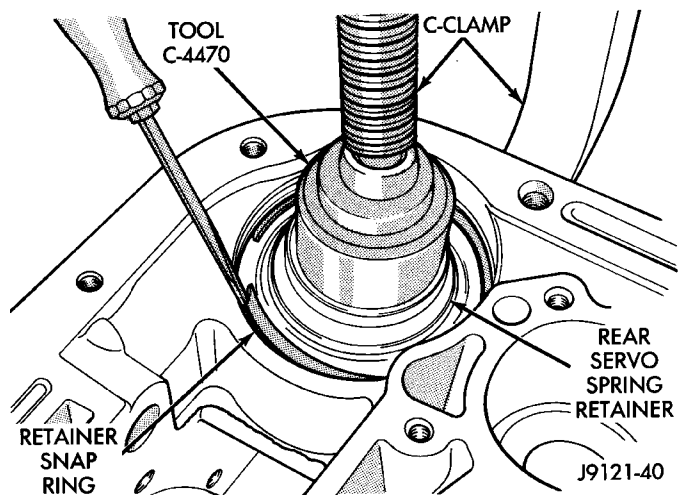
(2) Install rear servo piston in case. Position piston at slight angle to bore and insert piston with twisting motion (Fig. 123).

(3) Install rear servo spring and retainer in case bore (Fig. 124). Be sure spring is seated on piston.

(4) Compress rear servo piston with C-clamp or Valve Spring Compressor C-3422-B and install servo piston snap ring (Fig. 125).

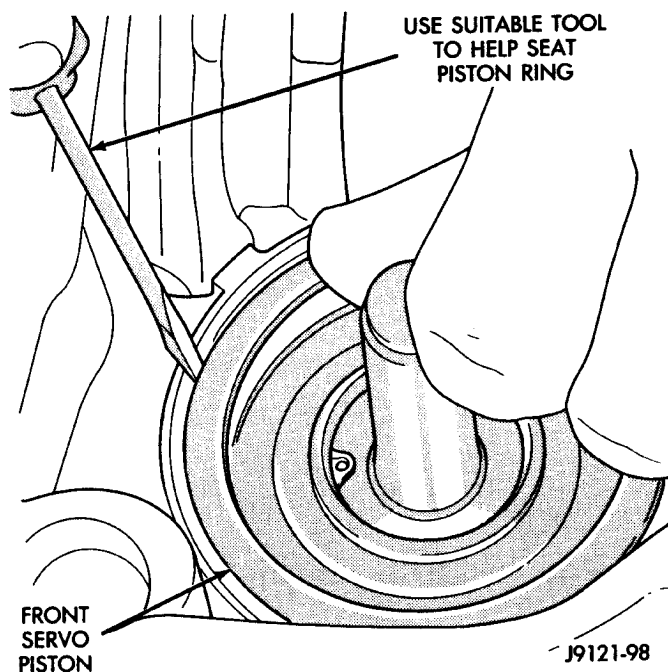
(5) Lubricate front servo piston components and servo bore in case with transmission fluid.

(6) Install front servo piston in bore. Carefully "run" small, suitable tool around piston ring to press it back into groove and ease installation (Fig. 126). Rotate piston into bore at same time. Rock piston slightly to ease piston ring past snap ring groove and into bore.

**Fig. 123 Rear Servo Piston****Fig. 124 Rear Servo Piston Spring And Retainer****Fig. 125 Rear Servo Snap Ring**

(7) Bottom front servo piston in bore and install servo spring.

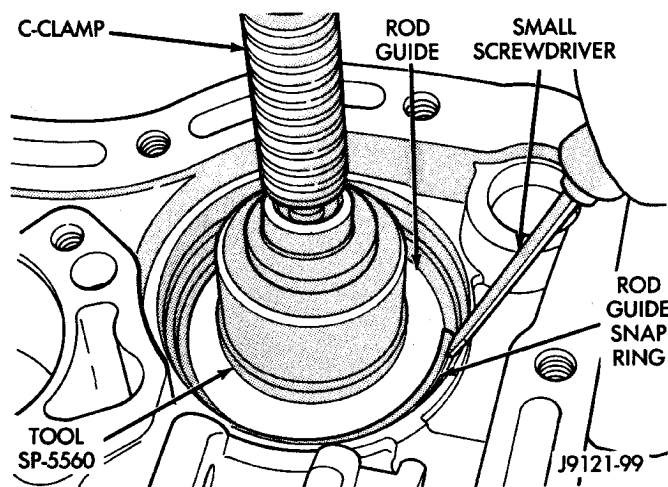
(8) Install front servo piston rod guide as follows:

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 126 Front Servo Piston**

(a) Place Tool SP-5560 (or similar size tool) on guide and position C-clamp on tool and case (Fig. 127).

(b) Slowly compress rod guide while simultaneously easing seal ring into bore with suitable tool.

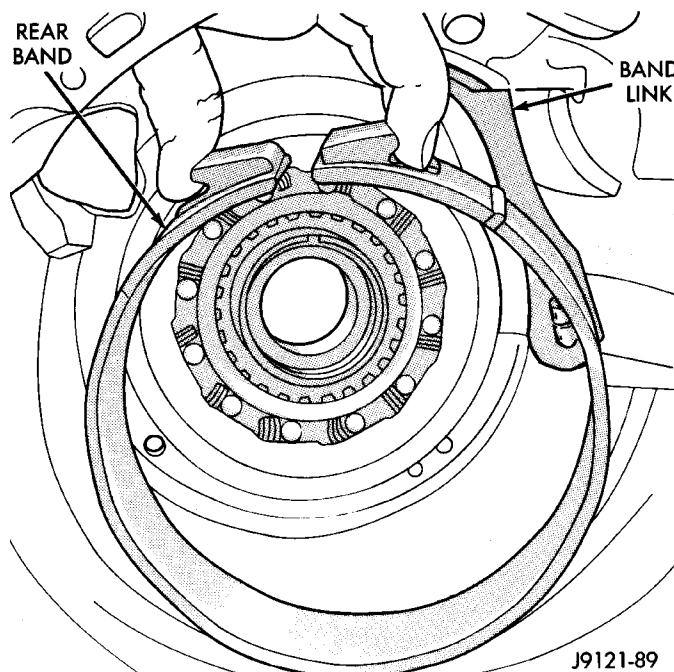
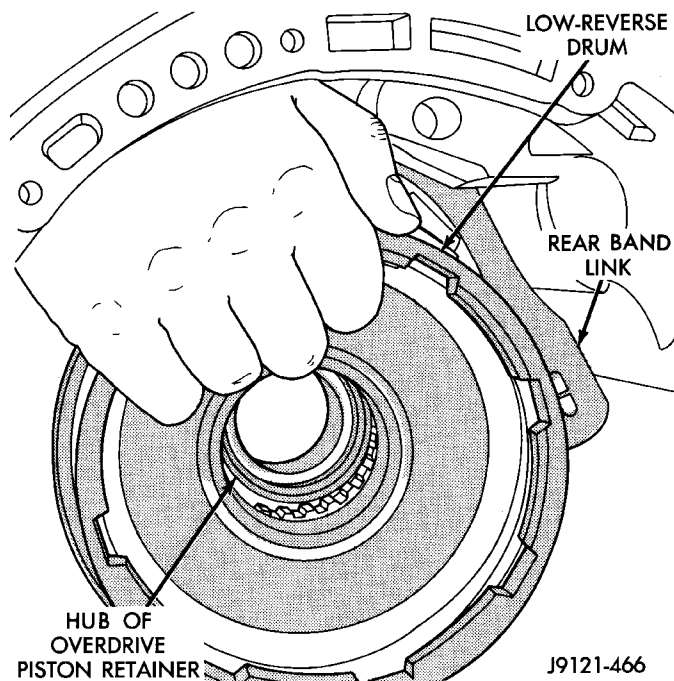
(9) Install rod guide snap ring (Fig. 127).

**Fig. 127 Front Servo Rod Guide And Snap Ring**
OVERRUNNING CLUTCH, REAR BAND, AND LOW-REVERSE DRUM

(1) Install overrunning clutch components if not yet installed.

(2) Position rear band and link in case (Fig. 128).

(3) Install low-reverse drum (Fig. 129). Slide drum through rear band, onto piston retainer hub and into engagement with overrunning clutch and race.

**Fig. 128 Rear Band And Link****Fig. 129 Low-Reverse Drum**

(4) Install thrust washer in low-reverse drum spot-face (Fig. 130). Use petroleum jelly to hold washer in place.

(5) Install snap ring that secures low-reverse drum to piston retainer hub (Fig. 130).

(6) Insert band reaction pin part way into case and band link (Fig. 131).

(7) Install rear band adjusting lever, reaction lever, and strut (Fig. 132). Be sure levers and strut are aligned and engaged before seating band reaction pin in case.

DISASSEMBLY AND ASSEMBLY (Continued)

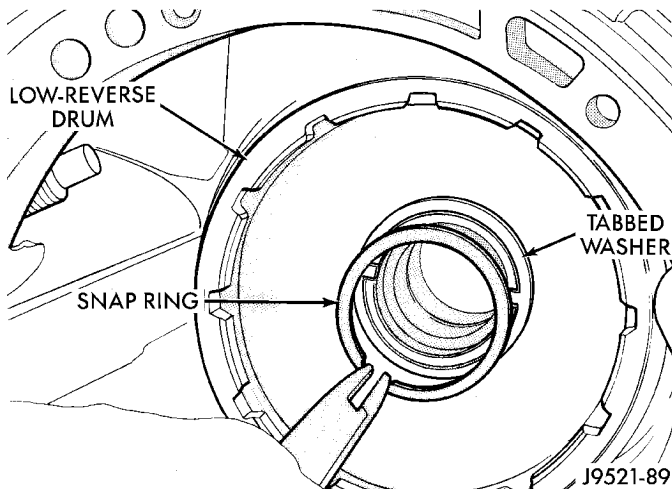


Fig. 130 Low-Reverse Drum Snap Ring

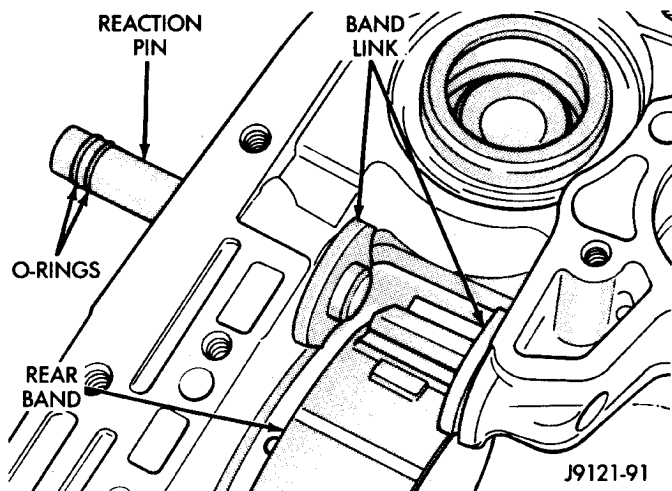


Fig. 131 Rear Band Reaction Pin

PLANETARY GEARTRAIN, FRONT/REAR CLUTCH, AND FRONT BAND

(1) Remove Alignment Shaft 6227-2, if installed previously.

(2) Install assembled intermediate shaft and planetary geartrain (Fig. 133). **Support shaft carefully during installation. Do not allow shaft bearing/bushing surfaces to become nicked or scratched.**

(3) Lubricate intermediate shaft thrust plate with petroleum jelly and install plate on shaft pilot hub (Fig. 134).

(4) Check input shaft front seal rings, fiber thrust washer and rear seal ring (Fig. 135). Be ends of rear seal ring are hooked together and diagonal cut ends of front seal rings are firmly seated against each other as shown. Lubricate seal rings with petroleum jelly after checking them.

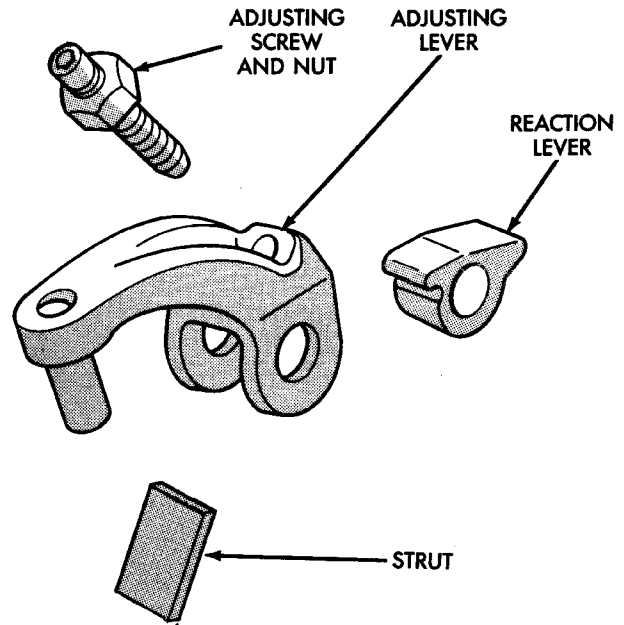


Fig. 132 Rear Band Levers And Strut

(5) Assemble front and rear clutches (Fig. 136). Align lugs on front clutch discs. Mount front clutch on rear clutch. Turn front clutch retainer back and forth until front clutch discs are fully seated on rear clutch splined hub.

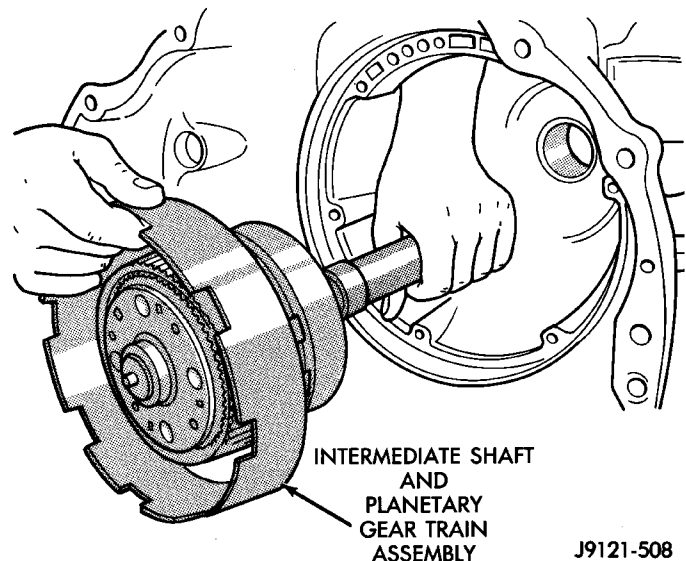
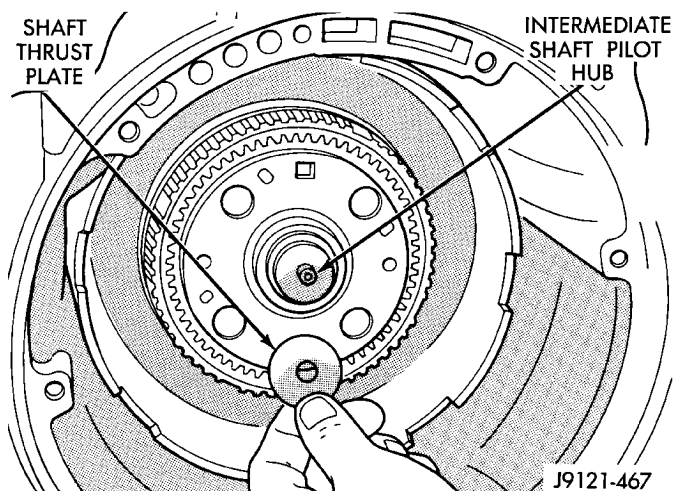
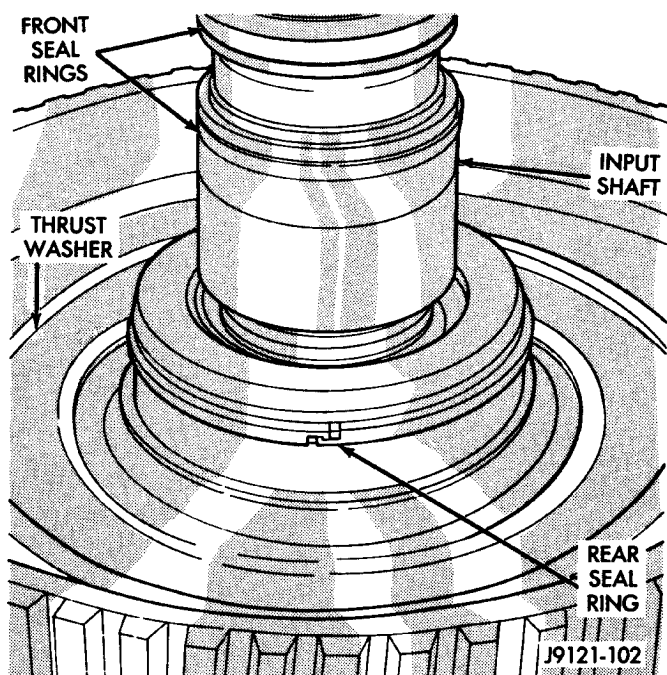


Fig. 133 Intermediate Shaft And Planetary Geartrain

(6) Install intermediate shaft thrust washer in hub of rear clutch retainer (Fig. 137). Use petroleum jelly to hold washer in place. Position washer so grooves are facing outward. **Washer only fits one way in clutch retainer hub.**

(7) Place transmission case in upright position, or place blocks under front end of transmission repair

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 134 Intermediate Shaft Thrust Plate****Fig. 135 Input Shaft Seal Ring And Thrust Washer**

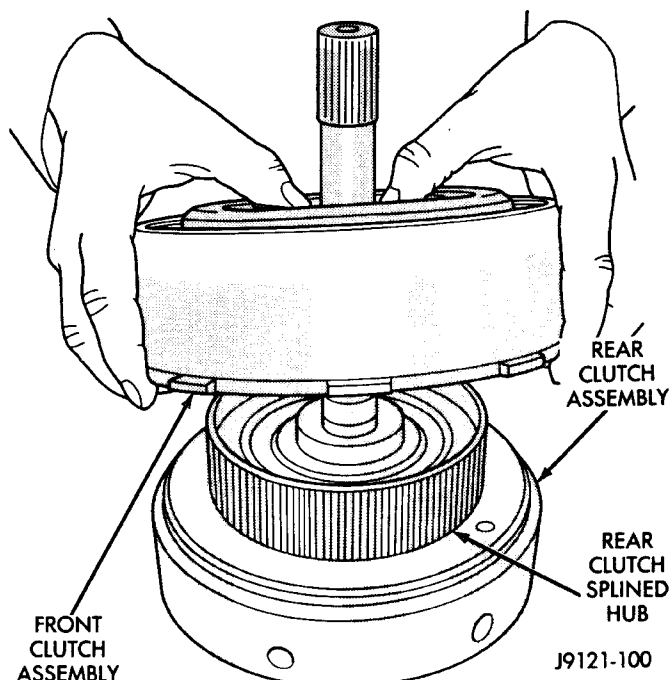
stand to tilt case rearward. This makes it easier to install front/rear clutch assembly.

(8) Align discs in rear clutch. Then install and engage assembly in front planetary and driving shell (Fig. 138). Turn clutch retainers back and forth until both clutches are seated.

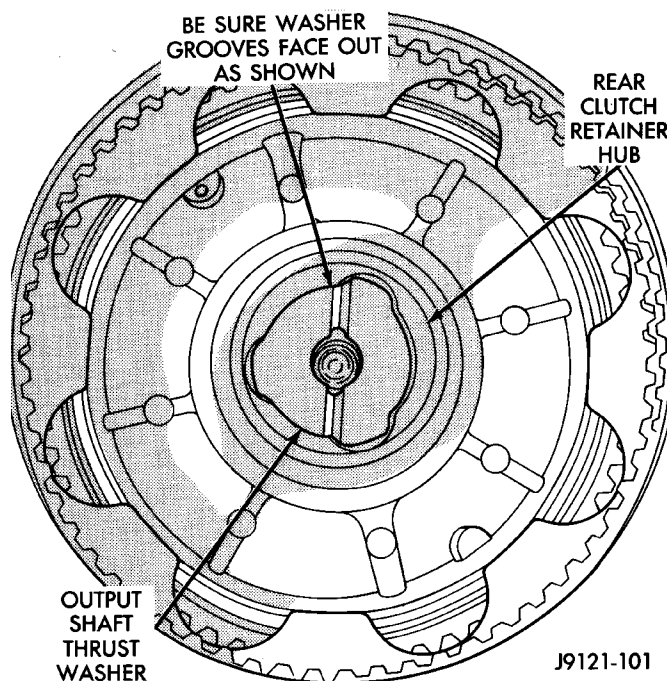
(9) Position front band lever in case and over servo rod guide. Then install front band lever pin in case and slide it through lever.

(10) Coat threads of front band pin access plug with sealer and install it in case. Tighten plug to 17 N·m (13 ft. lbs.) torque.

(11) Slide front band over front clutch retainer and install front band strut and anchor (Fig. 139).

**Fig. 136 Assembling Front And Rear Clutches**

(12) Tighten front band adjusting screw until band is tight on clutch retainer. This will hold clutches in place while oil pump is being installed. **Verify that front/rear clutch assembly is still properly seated before tightening band.**

**Fig. 137 Intermediate Shaft Thrust Washer****OIL PUMP**

(1) Install oil pump Pilot Studs C-3288-B in case (Fig. 140).

DISASSEMBLY AND ASSEMBLY (Continued)

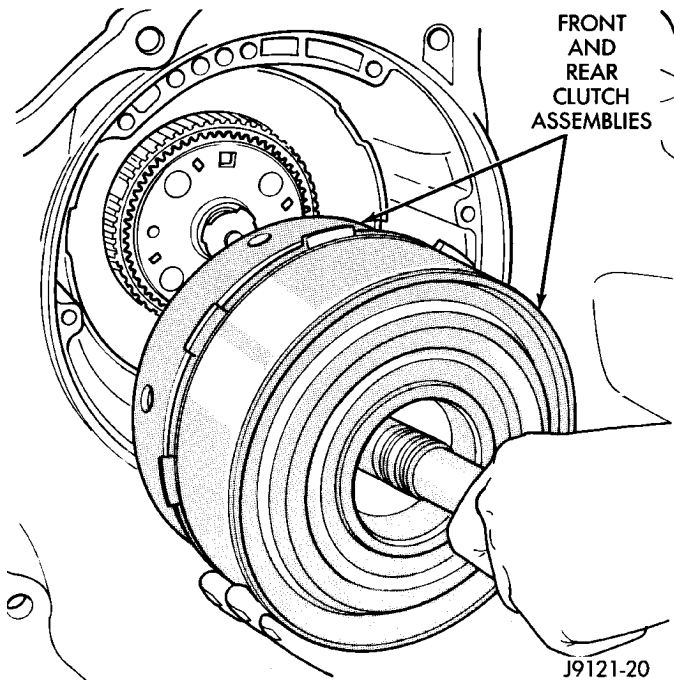


Fig. 138 Front/Rear Clutch Assemblies

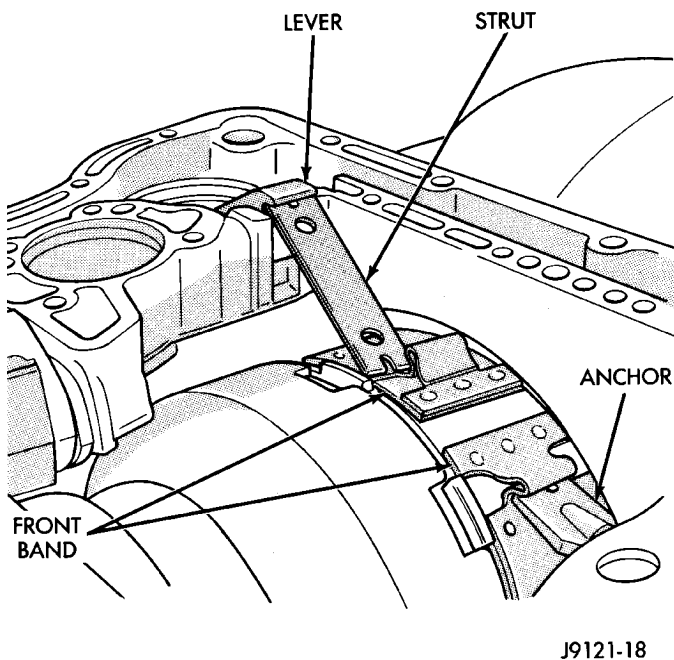


Fig. 139 Front Band And Linkage

(2) Install new oil pump gasket on pilot studs and seat it in case. Be sure gasket is properly aligned with fluid passages in case (Fig. 140).

(3) Coat front clutch thrust washer with petroleum jelly to hold it in place. Then install washer over reaction shaft hub and seat it on pump (Fig. 141).

CAUTION: The thrust washer bore (I.D.), is chamfered on one side. Make sure the chamfered side is installed so it faces the pump.

(4) Check seal rings on reaction shaft support. Be sure rings are hooked together correctly. Also be sure fiber thrust washer is in position (Fig. 142). Use extra petroleum jelly to hold washer in place if necessary.

(5) Lubricate oil pump seals with petroleum Mopar® ATF Plus 3, type 7176.

(6) Mount oil pump on pilot studs and slide pump into case opening (Fig. 143). **Work pump into case by hand. Do not use a mallet or similar tools to seat pump.**

(7) Remove pilot studs and install oil pump bolts. Tighten pump bolts alternately and evenly to fully seat pump in case. Then final-tighten pump bolts to 20 N·m (15 ft. lbs.) torque.

(8) Verify correct installation. Rotate input and intermediate shafts and check for bind. If bind exists, components are either mis-assembled, or not seated. Disassemble and correct as necessary before proceeding.

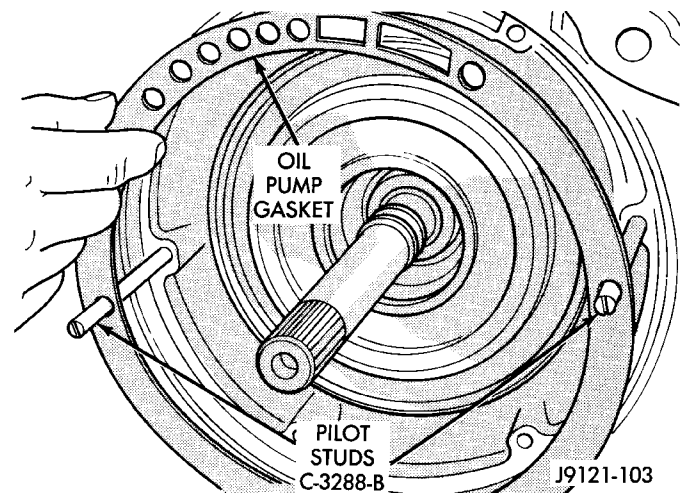


Fig. 140 Oil Pump Gasket And Pilot Studs

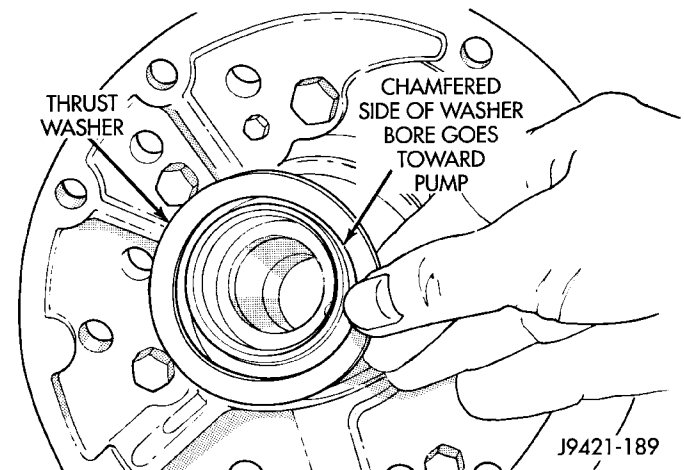


Fig. 141 Front Clutch Thrust Washer

DISASSEMBLY AND ASSEMBLY (Continued)

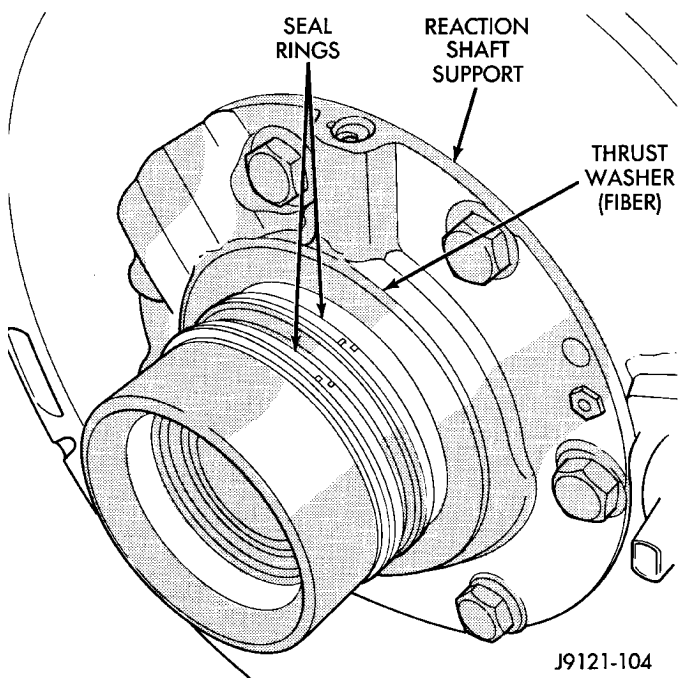


Fig. 142 Reaction Shaft Seal Ring And Thrust Washer

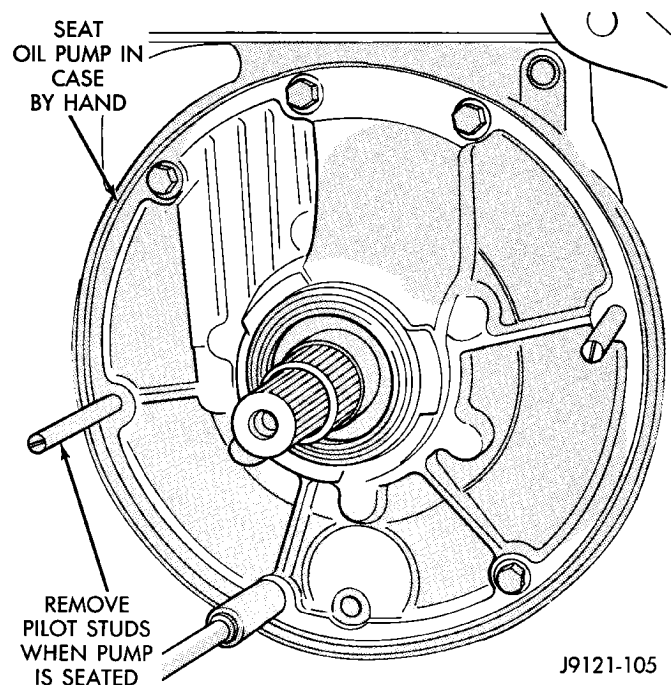


Fig. 143 Oil Pump

INPUT SHAFT END PLAY CHECK

NOTE: Overdrive unit must be installed in order to correctly measure the input shaft end-play.

- (1) Check input shaft end play as follows.
- (2) Attach dial indicator to converter housing (Fig. 144). Position indicator plunger against input shaft and zero indicator.

(3) Move input shaft in and out and record reading.

(4) End play should be 0.86 - 2.13 mm (0.034 - 0.084 in.).

(5) If end play is incorrect, change intermediate shaft thrust washer. The thrust washer controls end play and is available in three thicknesses for adjustment purposes.

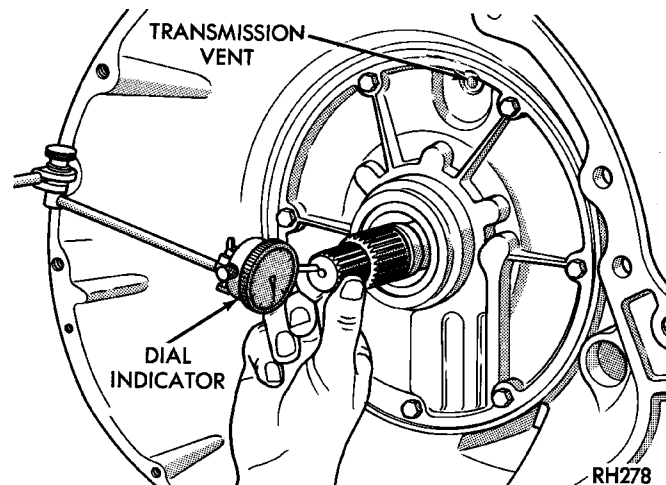


Fig. 144 Checking Input Shaft End Play

ACCUMULATOR, VALVE BODY, OIL PAN, AND TORQUE CONVERTER

(1) Install accumulator inner spring, piston and outer spring (Fig. 145).

(2) Verify that park/neutral position switch has **not** been installed in case. Valve body can not be installed if switch is in position.

(3) Install new valve body manual shaft seal in case (Fig. 146). 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.

(4) Install valve body as follows:

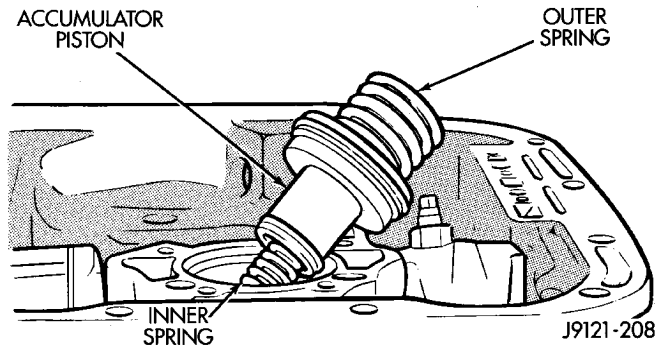
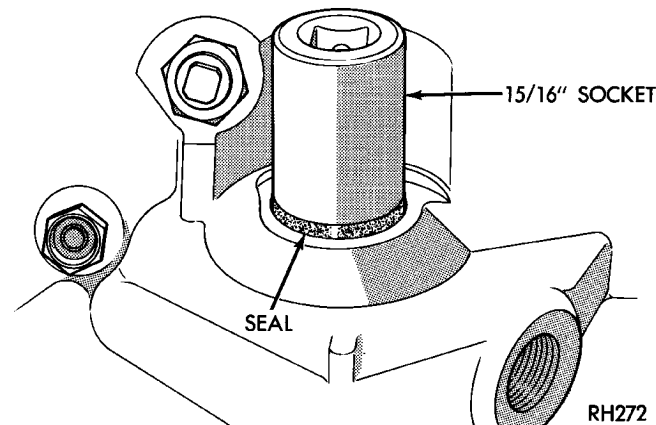
(a) Start park rod into park pawl. If rod will not slide past park pawl, pawl is engaged in park gear. Rotate overdrive output shaft with suitable size 12 point socket; this will free pawl and allow rod to engage.

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

(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.**

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

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

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 145 Accumulator Piston And Springs****Fig. 146 Manual Lever Shaft Seal**

CAUTION: If the condition of the transmission before the overhaul procedure caused excessive metallic or fiber contamination in the fluid, replace the torque converter and reverse flush the cooler(s) and cooler lines. Fluid contamination and transmission failure can result if not done.

(7) Install torque converter. Use C-clamp or metal strap to hold converter in place for installation.

BAND ADJUSTMENT AND FINAL

- (1) Adjust front and rear bands as follows:
 - (a) Loosen locknut on each band adjusting screw 4-5 turns.
 - (b) Tighten both adjusting screws to 8 N·m (72 in. lbs.).
 - (c) Back off front band adjusting screw 2-7/8 turns.
 - (d) Back off rear band adjusting screw 2 turns.
 - (e) Hold each adjusting screw in position and tighten locknut to 34 N·m (25 ft. lbs.) torque.
- (2) Install magnet in oil pan. Magnet seats on small protrusion at corner of pan.
- (3) Position new oil pan gasket on case and install oil pan. Tighten pan bolts to 17 N·m (13 ft. lbs.).
- (4) Install throttle valve and shift selector levers on valve body manual lever shaft.

(5) Apply small quantity of dielectric grease to terminal pins of solenoid case connector and neutral switch.

(6) Fill transmission with recommended fluid. Refer to Service Procedures section of this group.

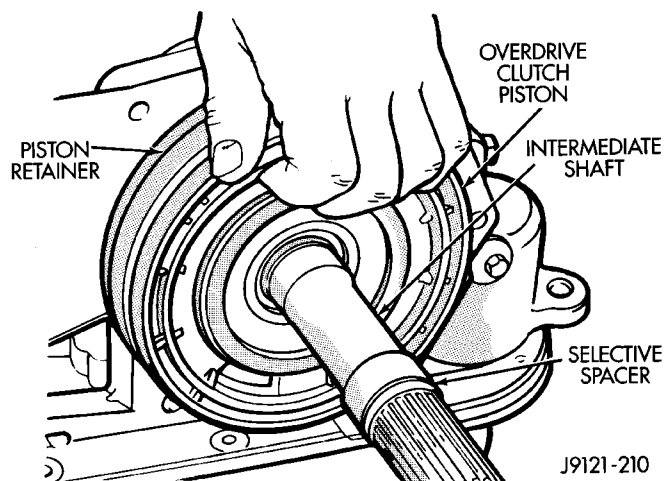
(7) Road test vehicle to verify repair.

OVERRUNNING CLUTCH CAM/OVERDRIVE PISTON RETAINER

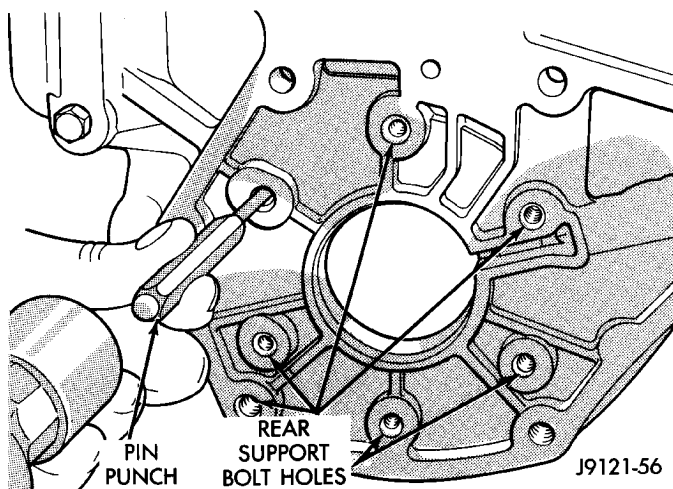
NOTE: TO SERVICE THE OVERRUNNING CLUTCH CAM AND THE OVERDRIVE PISTON RETAINER, THE TRANSMISSION GEARTRAIN AND OVERDRIVE UNIT MUST BE REMOVED FROM THE TRANSMISSION.

DISASSEMBLY

- (1) Remove the overdrive piston (Fig. 147).
- (2) Remove the overdrive piston retainer bolts.
- (3) Remove overdrive piston retainer.
- (4) Remove case gasket.
- (5) Tap old cam out of case with pin punch. Insert punch through bolt holes at rear of case (Fig. 148). Alternate position of punch to avoid cocking cam during removal.
- (6) Clean clutch cam bore and case. Be sure to remove all chips/shavings generated during cam removal.

**Fig. 147 Overdrive Piston Removal****ASSEMBLY**

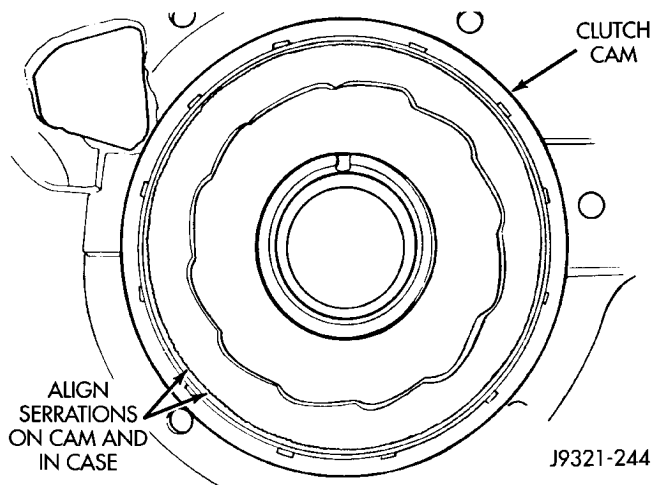
- (1) Temporarily install overdrive piston retainer in case. Use 3-4 bolts to secure retainer.
- (2) Align and start new clutch cam and spring retainer in case. Be sure serrations on cam and in case are aligned (Fig. 149). Then tap cam into case just enough to hold it in place.
- (3) **Verify that cam is correctly positioned before proceeding any further.** Narrow ends of

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 148 Overrunning Clutch Cam**

cam ramps should be to left when cam is viewed from front end of case (Fig. 149).

(4) Insert Adapter Tool SP-5124 into piston retainer (Fig. 150).

(5) Assemble Puller Bolt SP-3701 and Press Plate SP-3583-A (Fig. 151).

**Fig. 149 Positioning Replacement Clutch Cam In Case**

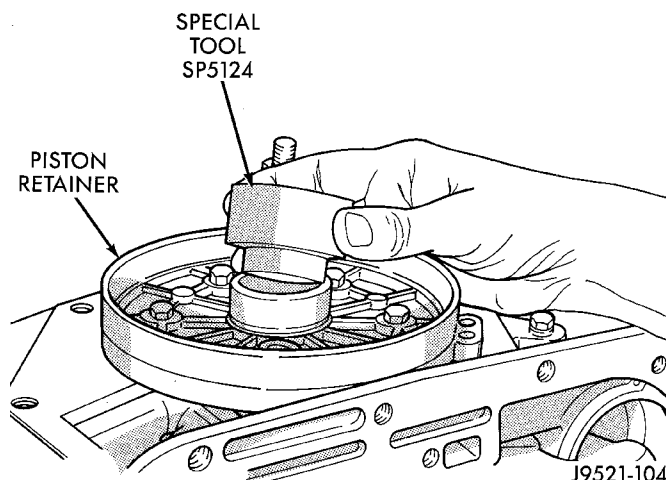
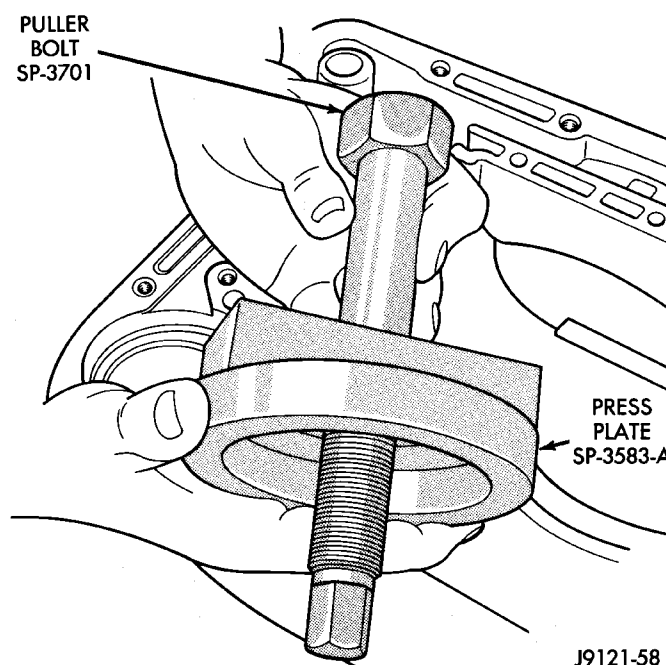
(6) Install assembled puller plate and bolt (Fig. 152). Insert bolt through cam, case and adapter tool. Be sure plate is seated squarely on cam.

(7) Hold puller plate and bolt in place and install puller nut SP-3701 on puller bolt (Fig. 153).

(8) Tighten puller nut to press clutch cam into case (Fig. 153). **Be sure cam is pressed into case evenly and does not become cocked.**

(9) Remove clutch cam installer tools.

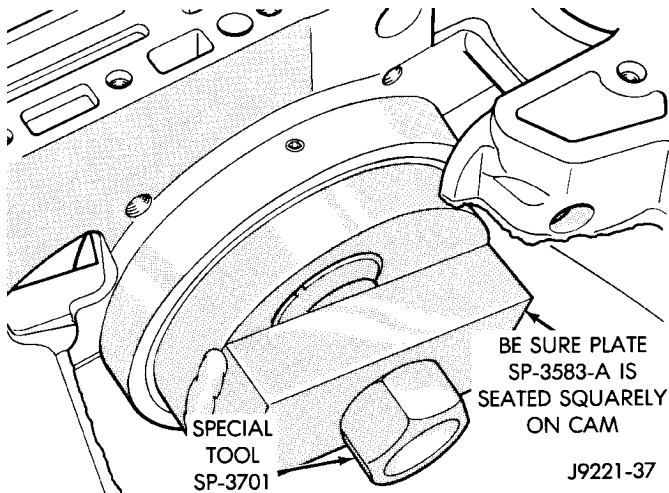
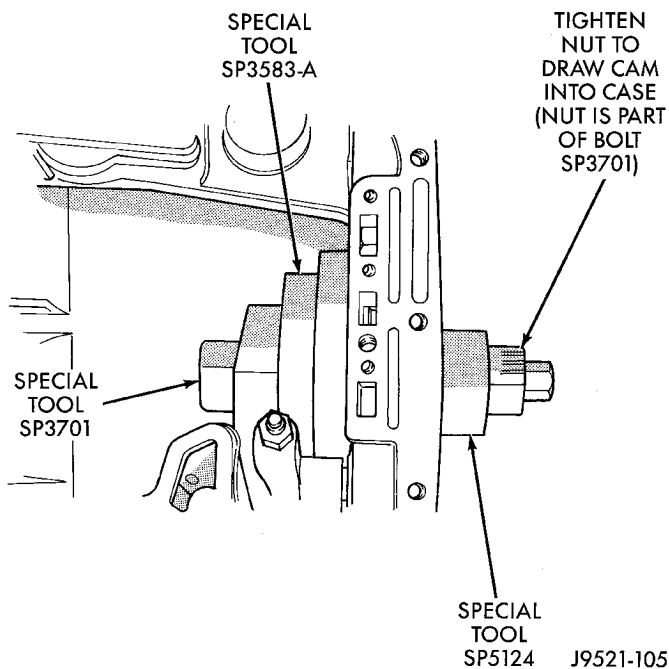
(10) **Stake case in 12 places around clutch cam to help secure cam in case. Use blunt punch or chisel to stake case.**

**Fig. 150 Positioning Adapter Tool In Overdrive Piston Retainer****Fig. 151 Assembling Clutch Cam Puller Bolt And Press Plate**

(11) Remove piston retainer from case. Cover retainer with plastic sheeting, or paper to keep it dust free.

(12) Clean case and cam thoroughly. Be sure any chips/shavings generated during cam installation are removed from case.

(13) 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. 154). Also install gasket before overdrive piston retainer. Center hole in gasket is smaller than retainer and cannot be installed over retainer.

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 152 Positioning Puller Plate On Clutch Cam****Fig. 153 Pressing Overrunning Clutch Cam Into Case**

(14) Position overdrive piston retainer on transmission case and align bolt holes in retainer, gasket and case (Fig. 155). Then install and tighten retainer bolts to 17 N·m (13 ft. lbs.) torque.

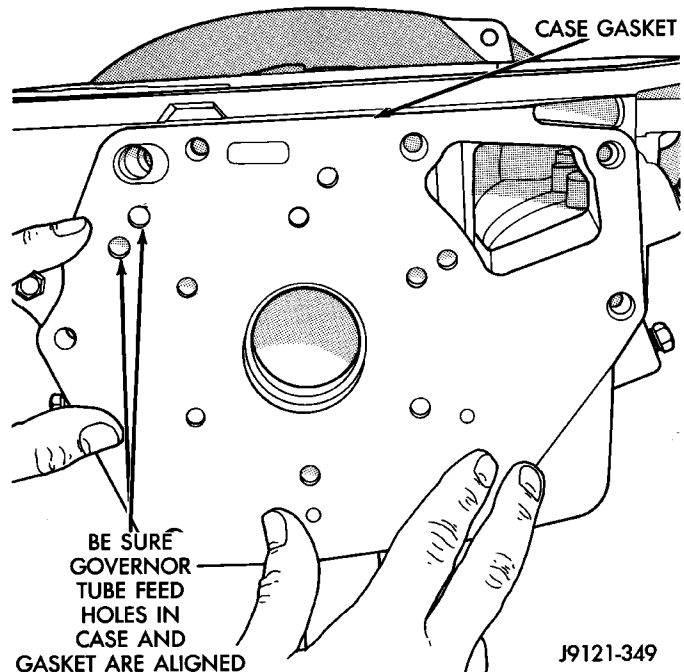
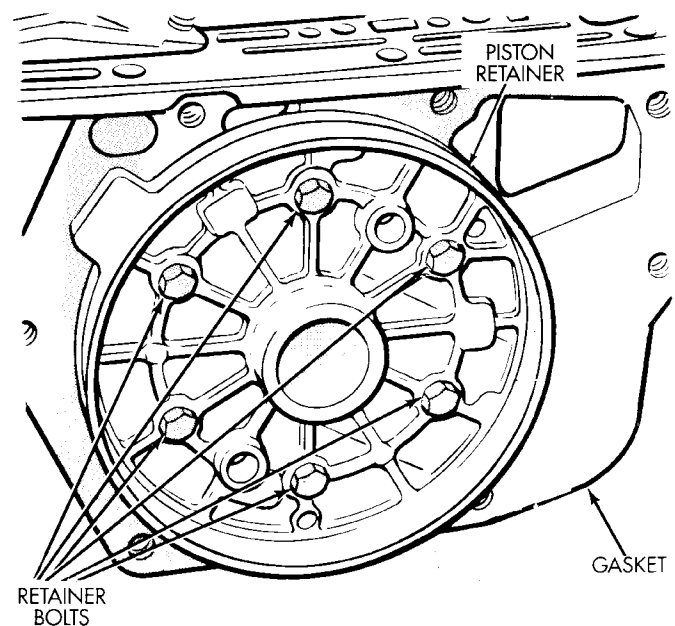
(15) Install new seals on overdrive piston.

(16) Stand transmission case upright on bellhousing.

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

(18) Position Seal Guide 8114-3 on inner edge of overdrive piston retainer.

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

**Fig. 154 Installing/Aligning Case Gasket****Fig. 155 Aligning Overdrive Piston 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.

(c) Install piston over Seal Guide 8114-3 and inside Guide Ring 8114-1.

(d) Push overdrive piston into position in retainer.

DISASSEMBLY AND ASSEMBLY (Continued)

(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. 156).
- (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. 156).

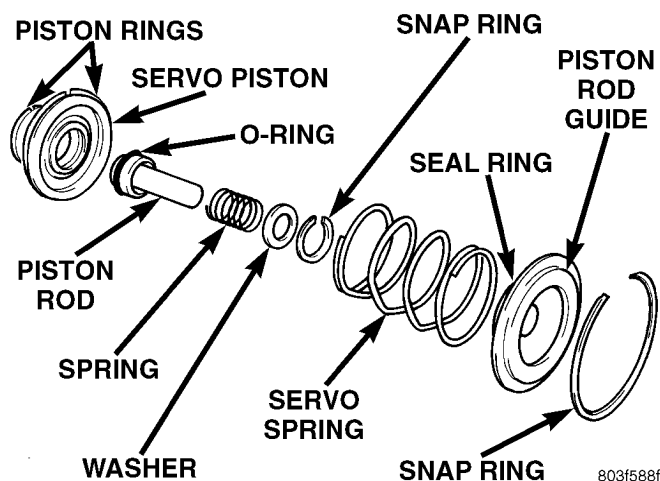


Fig. 156 Front Servo

REAR SERVO PISTON**DISASSEMBLY**

- (1) Remove small snap ring and remove plug and spring from servo piston (Fig. 157).
- (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.

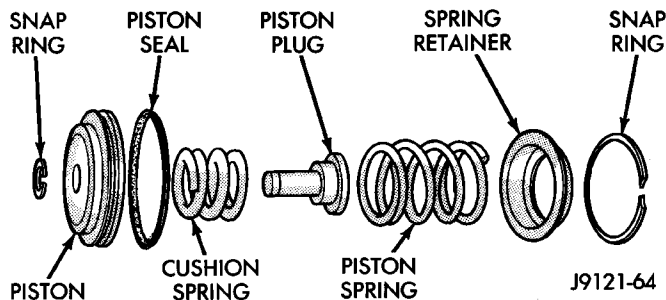


Fig. 157 Rear Servo Components

OIL PUMP AND REACTION SHAFT SUPPORT**DISASSEMBLY**

- (1) Mark position of support in oil pump body for assembly alignment reference. Use scribe or paint to make alignment marks.
- (2) Place pump body on two wood blocks.
- (3) Remove reaction shaft support bolts and separate support from pump body (Fig. 158).
- (4) Remove pump inner and outer gears (Fig. 159).
- (5) Remove O-ring seal from pump body (Fig. 160). Discard seal after removal.
- (6) Remove oil pump seal with Remover Tool C-3981. Discard seal after removal.

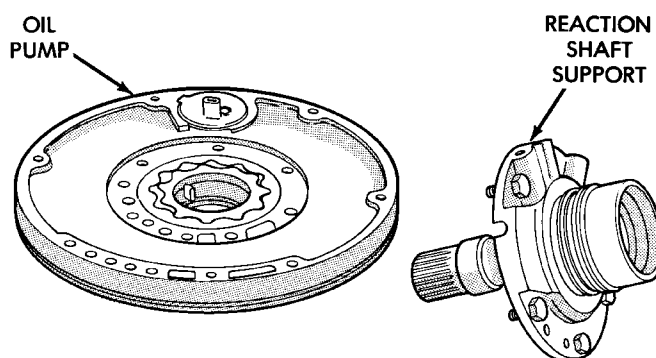


Fig. 158 Reaction Shaft Support

OIL PUMP BUSHING REMOVAL

- (1) Position pump housing on clean, smooth surface with gear cavity facing down.
- (2) Remove bushing with Tool Handle C-4171 and Bushing Remover SP-3550 (Fig. 161).

REACTION SHAFT SUPPORT BUSHING REMOVAL

- (1) Assemble Cup Tool SP-3633, Nut SP-1191 and Bushing Remover SP-5301 (Fig. 163).

DISASSEMBLY AND ASSEMBLY (Continued)

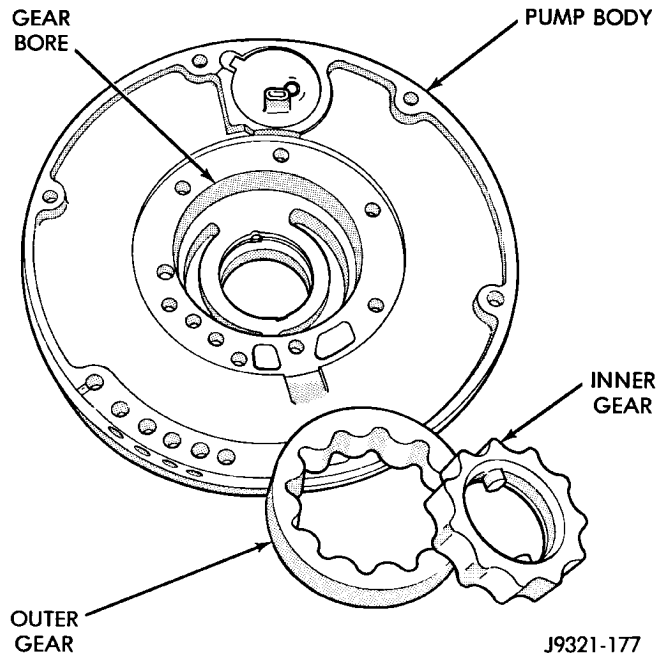


Fig. 159 Pump Gear

(2) Hold cup tool firmly against reaction shaft. Thread remover tool into bushing as far as possible by hand.

(3) Using wrench, thread remover tool an additional 3-4 turns into bushing to firmly engage tool.

(4) Tighten tool hex nut against cup tool to pull bushing from shaft. Clean all chips from shaft and support after bushing removal.

ASSEMBLY

OIL PUMP BUSHING INSTALLATION

(1) Assemble Tool Handle C-4171 and Bushing Installer SP-5118.

(2) Place bushing on installer tool and start bushing into shaft.

(3) Tap bushing into place until Installer Tool SP-5118 bottoms in pump cavity. Keep tool and bushing square with bore. Do not allow bushing to become cocked during installation.

(4) Stake pump bushing in two places with blunt punch. Remove burrs from stake points with knife blade (Fig. 162).

REACTION SHAFT SUPPORT BUSHING INSTALLATION

(1) Place reaction shaft support upright on a clean, smooth surface.

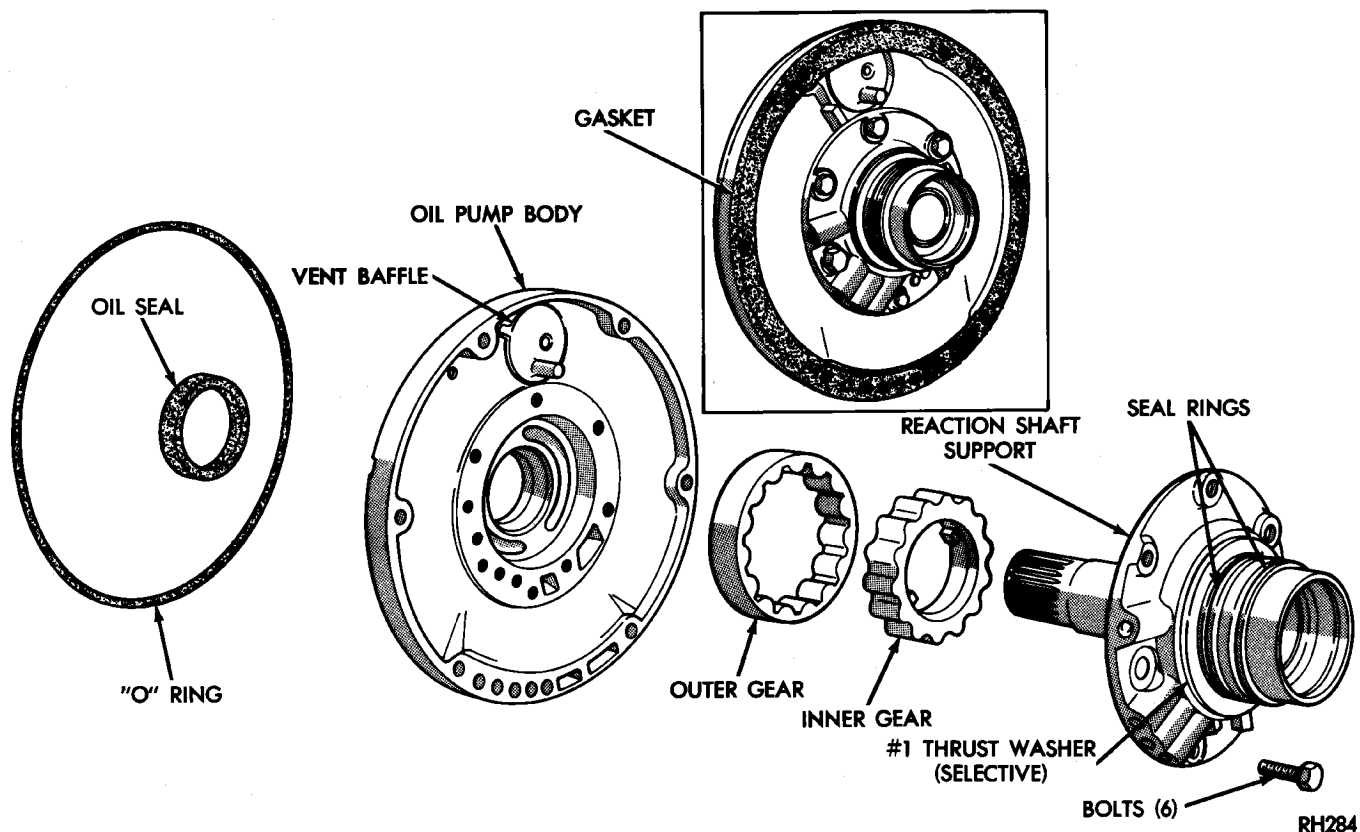
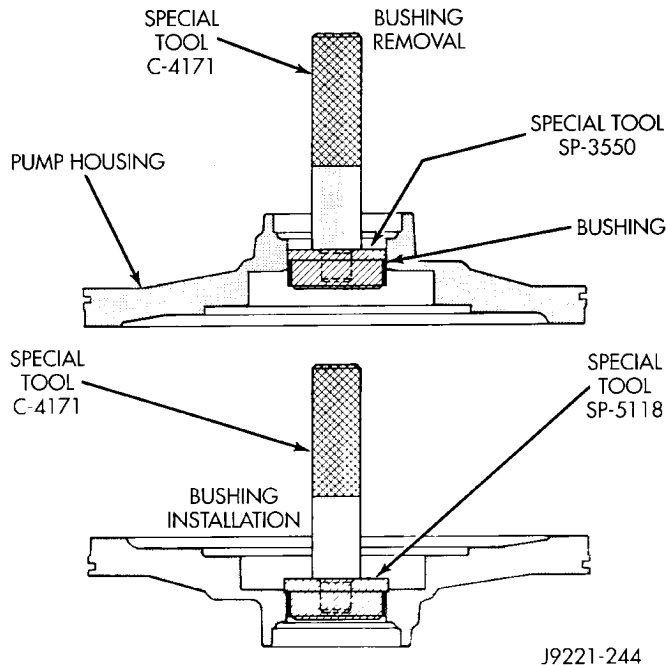
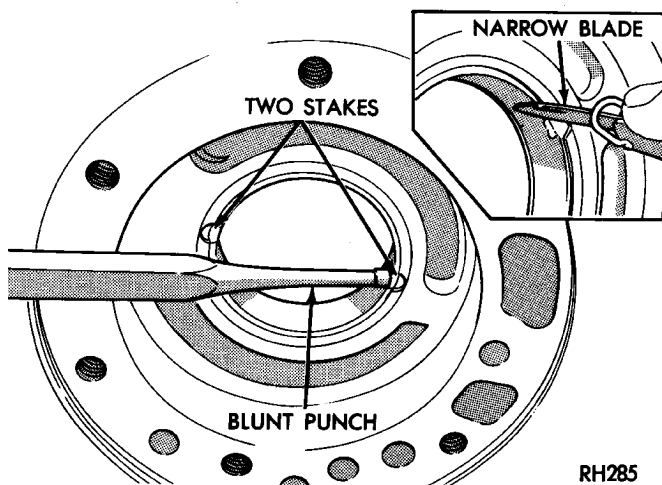


Fig. 160 Oil Pump And Reaction Shaft Components

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 161 Oil Pump Bushing****Fig. 162 Staking-Deburring Oil Pump Bushing**

(2) Assemble Bushing Installer Tools C-4171 and SP-5302. Then slide new bushing onto installer tool (Fig. 163).

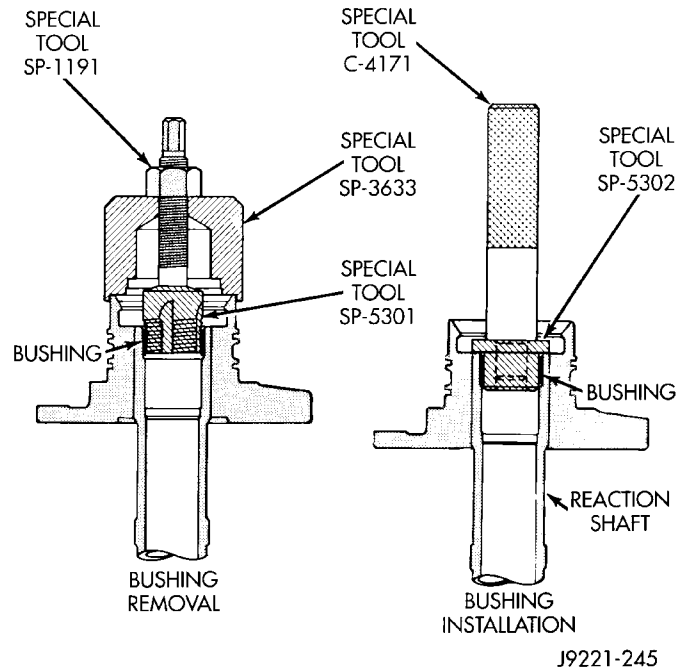
(3) Start bushing in shaft. Tap bushing into shaft until installer tool bottoms against support flange.

(4) Clean reaction shaft support thoroughly after bushing replacement (to remove any chips).

(1) Lubricate pump gears with transmission fluid and install them in pump body.

(2) Install thrust washer on reaction shaft support hub. Lubricate washer with petroleum jelly or transmission fluid before installation.

(3) If reaction shaft seal rings are being replaced, install new seal rings on support hub. Lubricate seal rings with transmission fluid or petroleum jelly after

**Fig. 163 Reaction Shaft Bushing**

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.

(4) Align and install reaction shaft support on pump body.

(5) Install bolts attaching reaction shaft support to pump. Tighten bolts to 20 N·m (175 in. lbs.) torque.

(6) Install new pump seal with Installer Tool C-3860-A (Fig. 164). Use hammer or mallet to tap seal into place.

(7) Install new O-ring on pump body. Lubricate oil seal and O-ring with petroleum jelly.

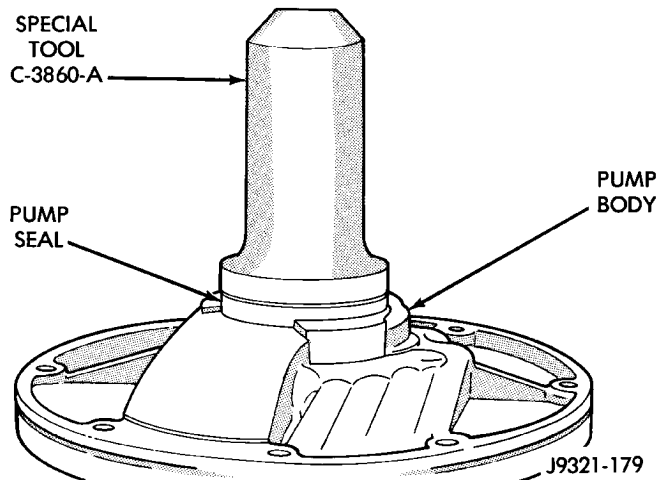
(8) Cover pump assembly to prevent dust entry and set aside for assembly installation.

FRONT CLUTCH**DISASSEMBLY**

(1) Remove waved snap ring and remove reaction plate, clutch plates and clutch discs.

(2) Compress clutch piston retainer and piston springs with Compressor Tool C-3863-A (Fig. 165).

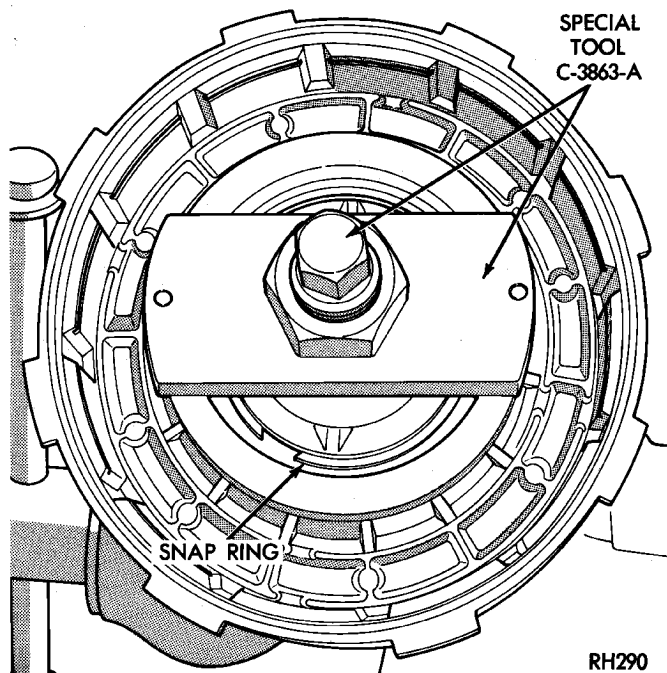
(3) Remove retainer snap ring and remove compressor tool.

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 164 Oil Pump Seal**

(4) Remove clutch piston springs (Fig. 166). **Note position of piston springs for assembly reference.**

(5) Remove clutch piston from retainer with a twisting motion.

(6) Remove and discard clutch piston inner and outer seals.

**Fig. 165 Removing Front Clutch Spring Retainer Snap Ring**

(7) Assemble Tool Handle C-4171 and Bushing Remover SP-3629 (Fig. 167).

(8) Insert remover tool in bushing and drive bushing straight out of clutch retainer.

ASSEMBLY

(1) Mount Bushing Installer SP-5511 on tool handle (Fig. 167).

(2) Slide new bushing onto installer tool and start bushing into retainer.

(3) Tap new bushing into place until installer tool bottoms against clutch retainer.

(4) Remove installer tools and clean retainer thoroughly.

(5) Soak clutch discs in transmission fluid.

(6) Install new inner and outer seals on clutch piston. Be sure seal lips face interior of retainer.

(7) Lubricate new inner and outer piston seals with Ru-Glyde, or Mopar® Door Ease.

(8) Install clutch piston in retainer. Use twisting motion to seat piston in bottom of retainer. A thin strip of plastic (about 0.015 - 0.020 in. 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 and position nine clutch piston springs (Fig. 168).

(10) Install spring retainer on top of piston springs.

(11) Compress spring retainer and piston springs with Tool C-3863-A.

(12) Install spring retainer snap ring and remove compressor tool.

(13) Install clutch plates and discs (Fig. 166). Three clutch discs, three steel plates and one reaction plate are required.

(14) Install reaction plate followed by waved snap ring.

(15) Check clutch pack clearance with feeler gauge (Fig. 169). Clearance between waved spring and pressure plate should 1.78 - 3.28 mm (0.070 - 0.129 in.). If clearance is incorrect, clutch plates, clutch discs, snap ring, or pressure plate may have to be changed.

REAR CLUTCH**DISASSEMBLY**

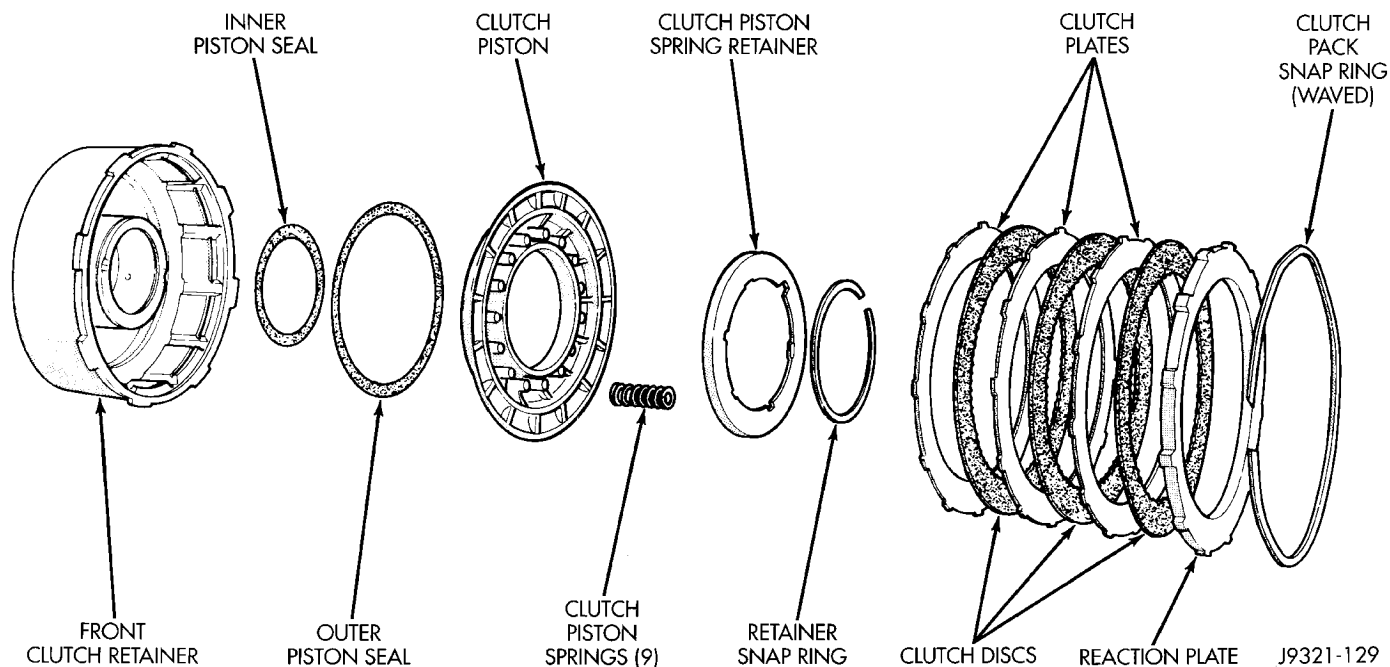
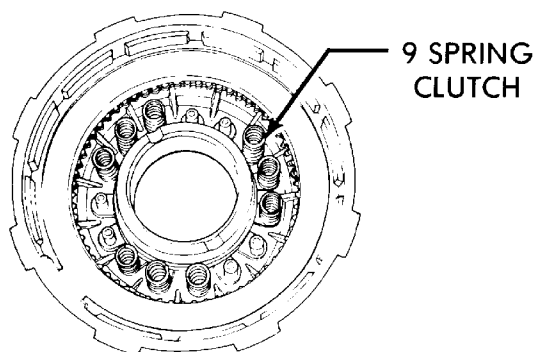
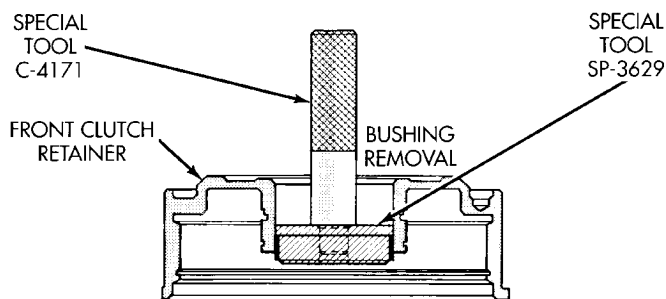
(1) Remove clutch pack select fit snap ring.

(2) Remove reaction plate and remove clutch plates and discs (Fig. 170).

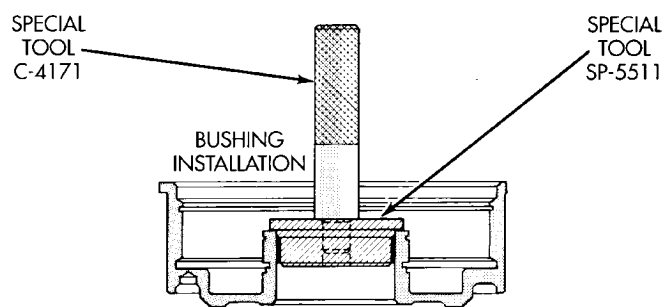
(3) Remove pressure plate, wave spring, spacer ring and piston spring from clutch retainer.

(4) Remove clutch piston from piston retainer with a twisting motion.

(5) Remove input shaft thrust washer, if washer remained in piston retainer hub during removal.

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 166 Front Clutch Components**

J9521-75

Fig. 168 Front Clutch Spring Position

J9221-247

Fig. 167 Front Clutch Retainer Bushing Replacement Tools

(6) Remove seals from clutch piston. Discard seals after removal.

If the input shaft must be replaced, first remove the retaining ring that secures the shaft in the piston retainer hub. Then press the old shaft out of the retainer with a shop press using suitable press tools to press on the shaft and to support the retainer hub as close to the shaft as possible.

ASSEMBLY

(1) Lubricate the splines of the new shaft with petroleum jelly or Mopar® ATF Plus 3, type 7176. Then align the shaft in the piston retainer and carefully press it into place using suitable press tools to press the shaft and to support the retainer hub as close to the shaft as possible. Do not allow the shaft to become cocked during installation. The retainer can be cracked if misalignment occurs.

(2) Install the shaft retaining ring after pressing the shaft into place. Be sure the ring is fully seated before proceeding with clutch assembly.

(3) Invert the input shaft in the press and using the same tools as in removal, press on shaft enough to seat the snap-ring into the retainer.

(4) Soak clutch discs in transmission fluid before assembly.

DISASSEMBLY AND ASSEMBLY (Continued)

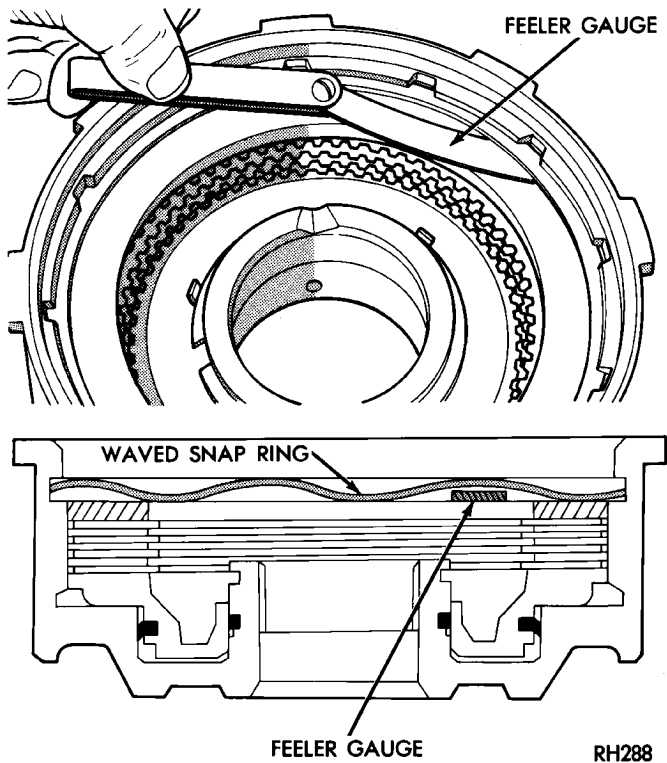


Fig. 169 Typical Method Of Measuring Front Clutch Pack Clearance

(5) Install new seals on clutch piston. Lubricate piston seals with Mopar® Door Ease, or Ru-Glyde to ease installation. **Be sure seal lips face input shaft.**

(6) 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.

(7) Assemble piston retainer and clutch retainer.

(8) Support clutch retainer with wood blocks, or insert input shaft through pre-drilled hole in work-bench. Clutch pack components are easier to install if retainers are properly supported.

(9) Install piston spring in clutch retainer. Concave side of spring faces upward and away from clutch piston.

(10) Install spacer ring on top of piston spring.

(11) Install wave spring on top of spacer ring. Then seat wave spring in retainer groove. **If wave spring will not seat properly, spacer ring has probably shifted over and into wave spring groove in retainer. Use small screwdriver to realign spacer ring if necessary.**

(12) Install inner pressure plate in clutch retainer.

(13) Install first clutch disc followed by steel plate until all discs and plates are installed. 4 clutch discs and steel plates are required (Fig. 170).

(14) Install reaction plate on top of last clutch disc.

(15) Install selective snap ring to secure clutch pack in retainer.

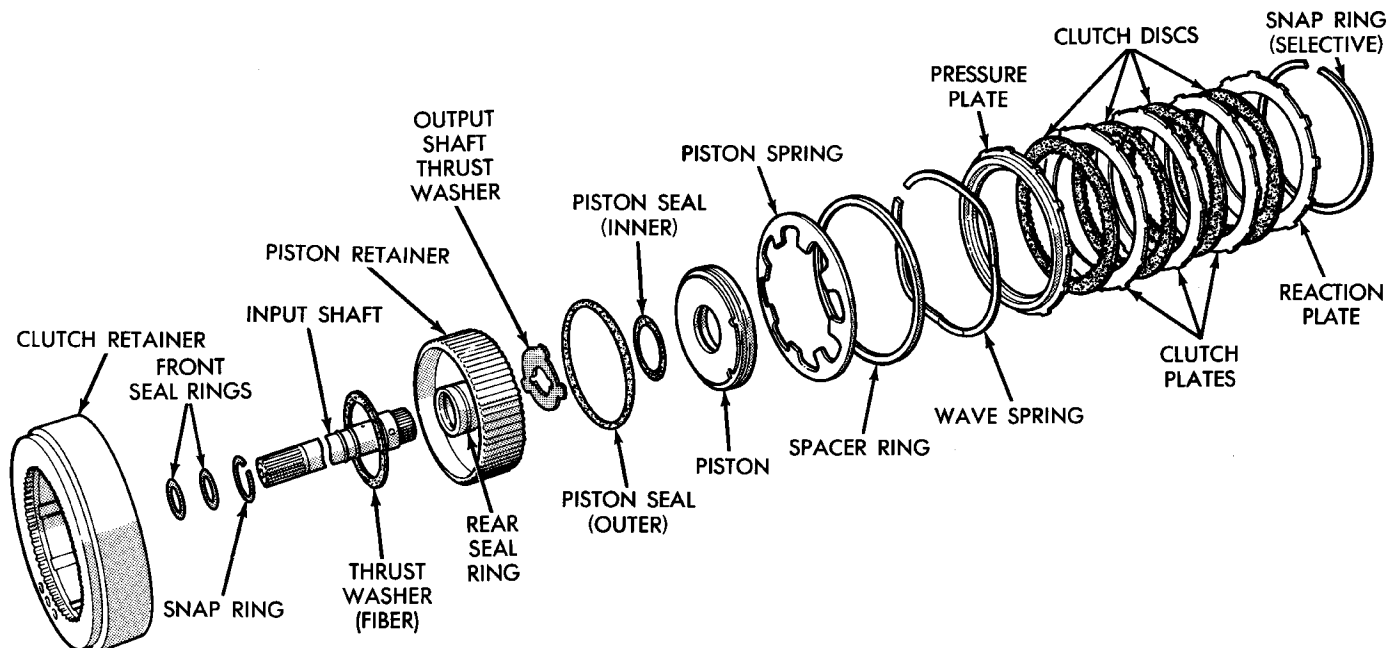


Fig. 170 Rear Clutch Components

DISASSEMBLY AND ASSEMBLY (Continued)

(16) Install new seal rings on input shaft if necessary (Fig. 171). Be very sure ring ends are all securely hooked together before proceeding.

(17) Check clutch pack clearance with feeler gauge (Fig. 172). Clearance should be 0.63 to 1.14 mm (0.025 to 0.045 in.).

(18) If clutch pack clearance is incorrect, clutch pack snap ring, may have to be replaced.

(19) Install thrust washer on piston retainer hub. Use petroleum jelly to hold thrust washer in place.

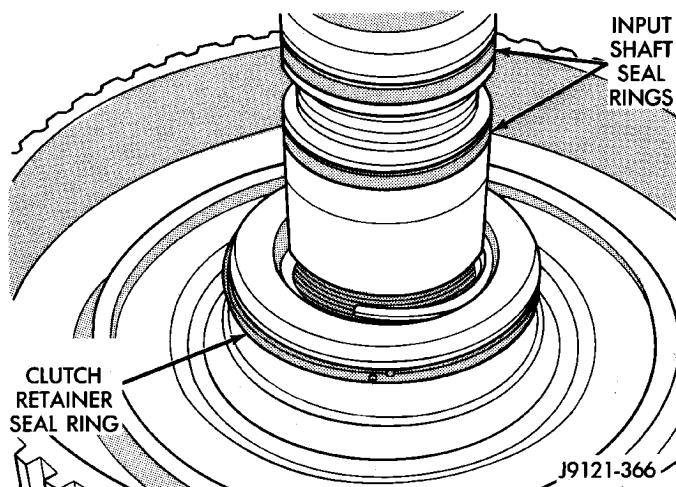


Fig. 171 Input Shaft Seal Ring Locations

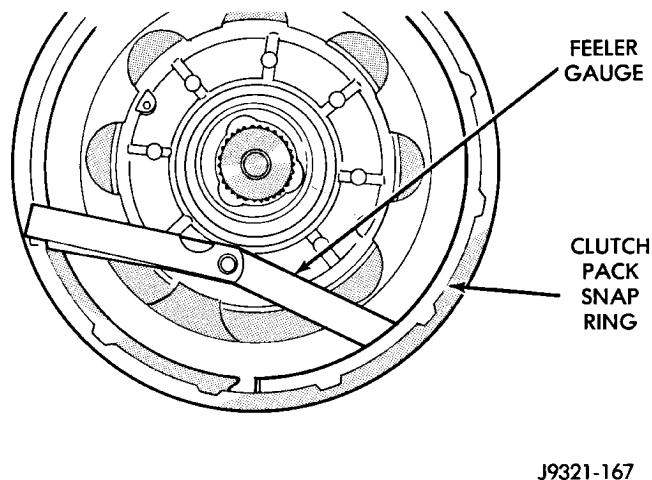


Fig. 172 Measuring Rear Clutch Pack Clearance

PLANETARY GEARTRAIN/OUTPUT SHAFT**DISASSEMBLY**

(1) Remove planetary snap ring from intermediate shaft (Fig. 173). Discard snap ring as it is not reusable.

(2) Remove front planetary gear and front annulus gear as assembly (Fig. 174).

(3) Remove front planetary gear and thrust washer from front annulus gear (Fig. 175). Note thrust washer position for assembly reference.

(4) Remove tabbed thrust washer from driving shell (Fig. 176). Note washer position for assembly reference.

(5) Remove sun gear and driving shell as assembly (Fig. 177).

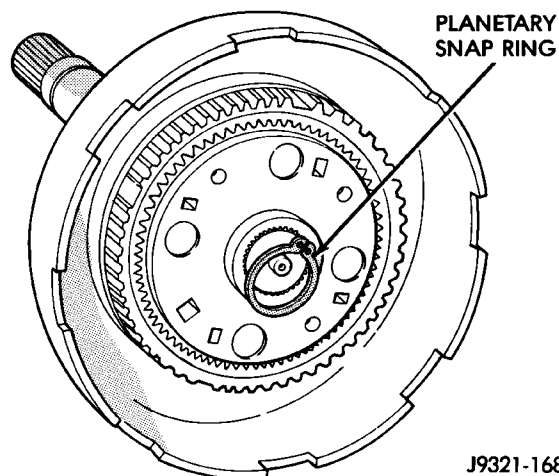


Fig. 173 Removing Planetary Snap Ring

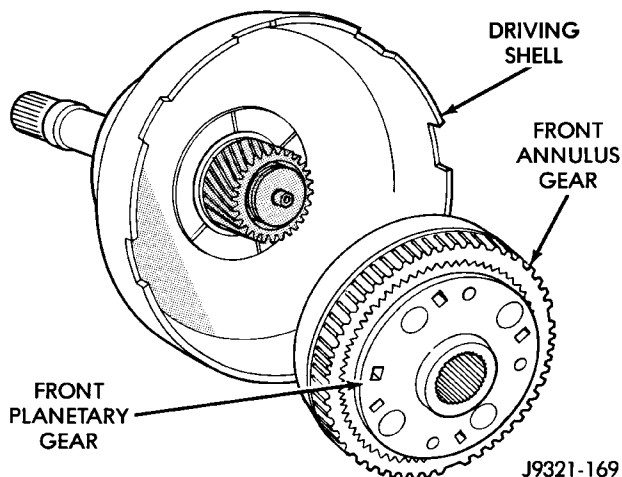


Fig. 174 Removing Front Planetary And Annulus Gears

DISASSEMBLY AND ASSEMBLY (Continued)

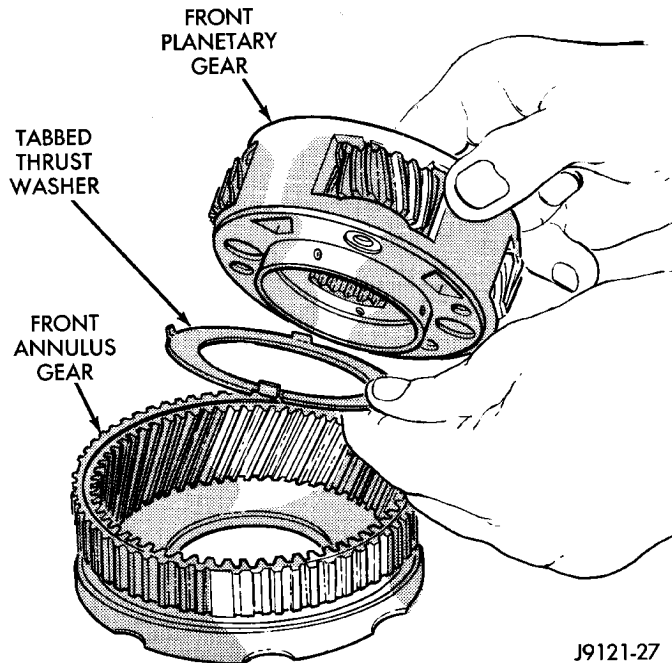


Fig. 175 Disassembling Front Planetary And Annulus Gears

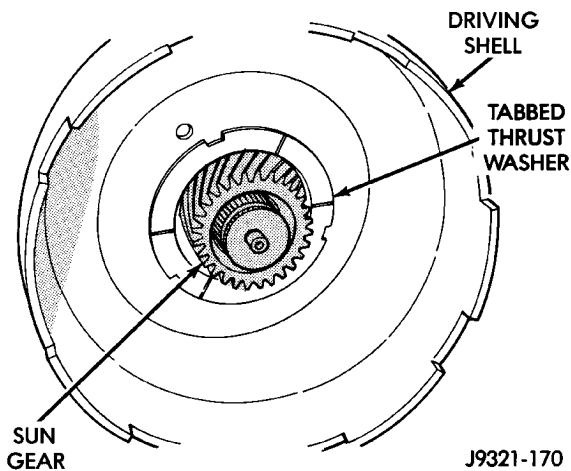


Fig. 176 Driving Shell Thrust Washer Removal

(6) Remove tabbed thrust washer from rear planetary gear (Fig. 178). Note washer position on gear for assembly reference.

(7) Remove rear planetary gear and rear annulus gear from intermediate shaft (Fig. 179).

(8) Remove thrust plate from rear annulus gear (Fig. 180).

ASSEMBLY

(1) Lubricate sun gear and planetary gears with transmission fluid during assembly. Use petroleum jelly to lubricate intermediate shaft bushing surfaces, thrust washers and thrust plates and to hold these parts in place during assembly.

(2) Install front snap ring on sun gear and install gear in driving shell. Then install thrust plate over

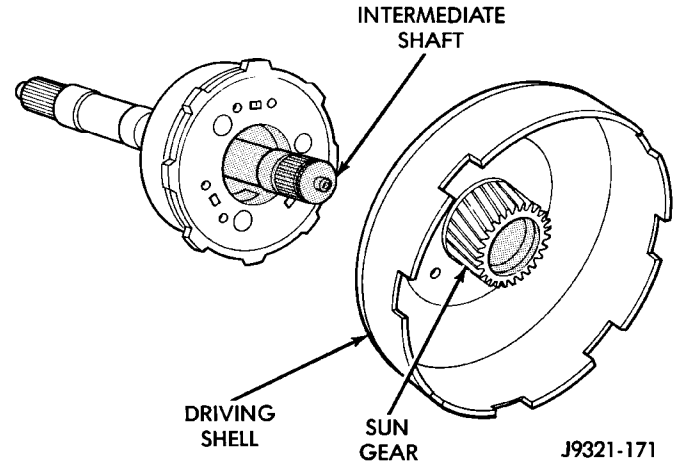


Fig. 177 Sun Gear And Driving Shell Removal

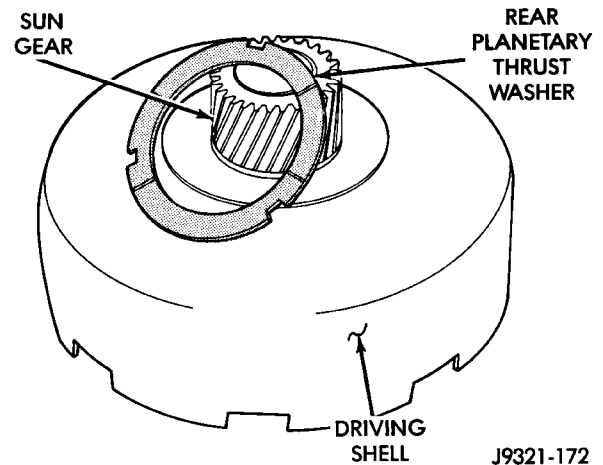


Fig. 178 Rear Planetary Thrust Washer Removal

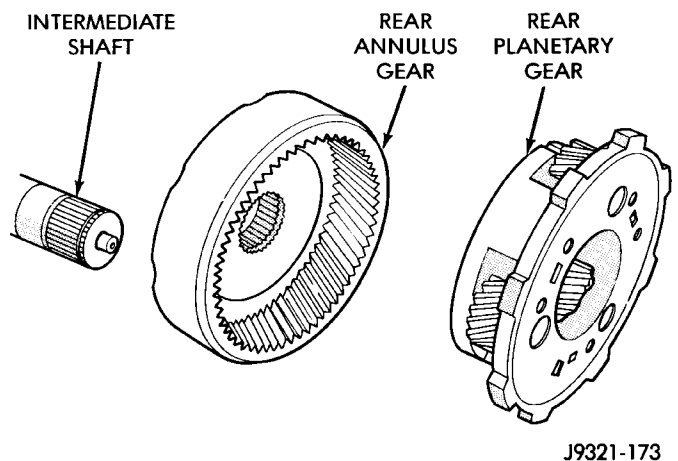
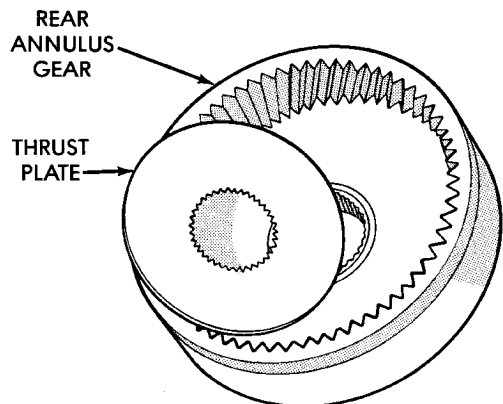


Fig. 179 Rear Planetary And Annulus Gear Removal

sun gear and against rear side of driving shell (Fig. 181). Install rear snap ring to secure sun gear and thrust plate in driving shell.

(3) Install rear annulus gear on intermediate shaft (Fig. 182).

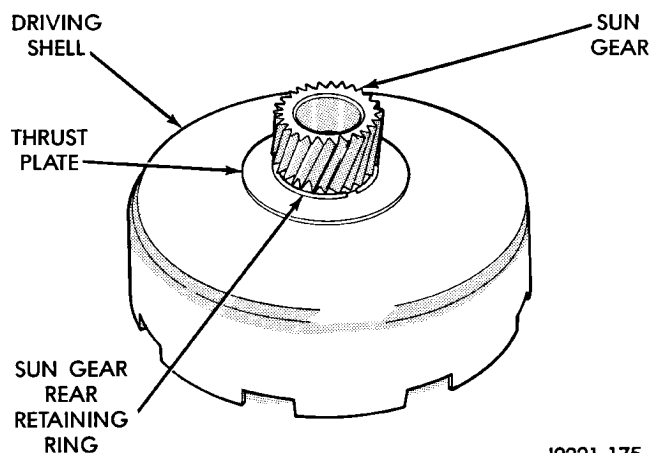
DISASSEMBLY AND ASSEMBLY (Continued)

J9321-174

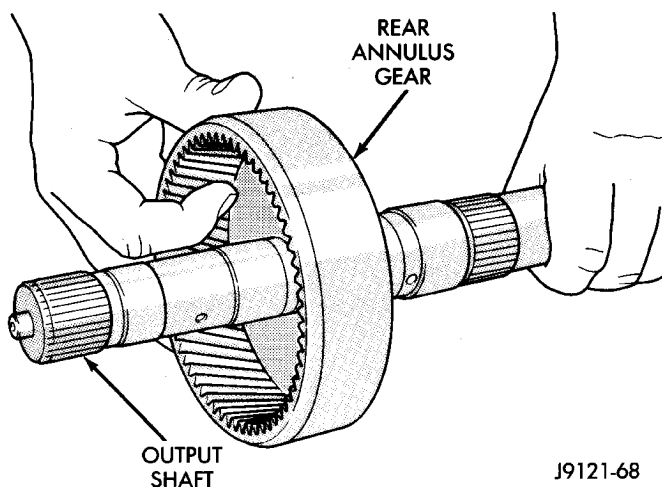
Fig. 180 Rear Annulus Thrust Plate Removal

(4) Install thrust plate in annulus gear (Fig. 183). Be sure plate is seated on shaft splines and against gear.

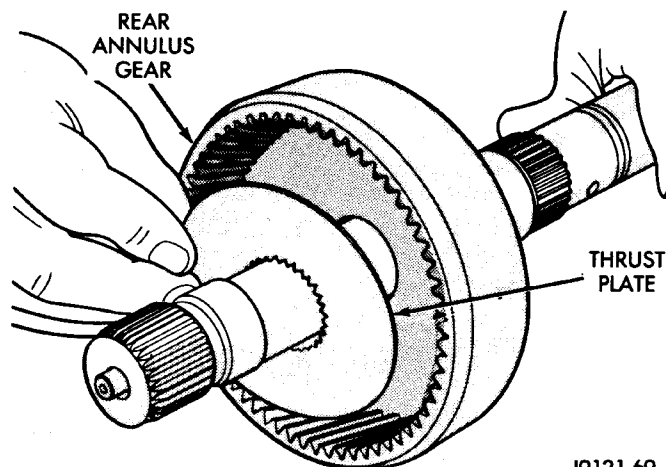
(5) Install rear planetary gear in rear annulus gear (Fig. 184). Be sure planetary carrier is seated against annulus gear.



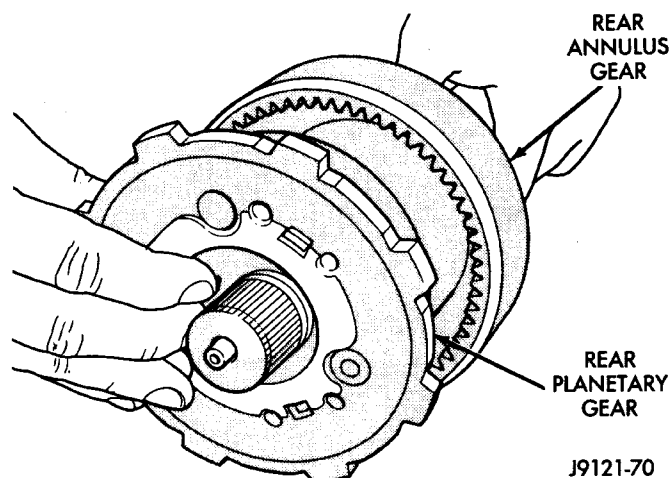
J9321-175

Fig. 181 Sun Gear Installation

J9121-68

Fig. 182 Installing Rear Annulus Gear On Intermediate Shaft

J9121-69

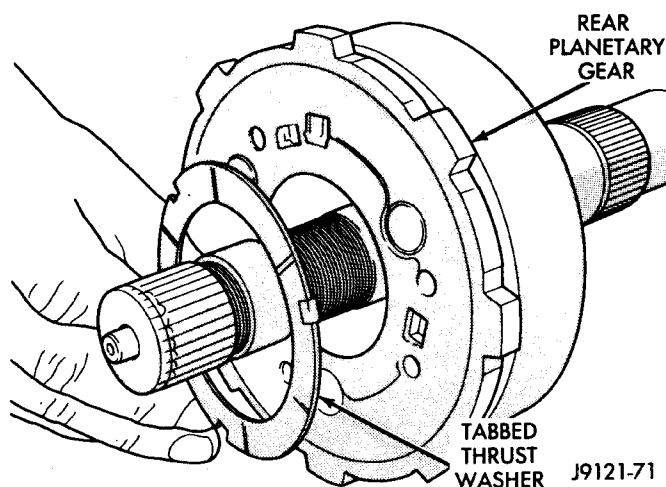
Fig. 183 Installing Rear Annulus Thrust Plate

J9121-70

Fig. 184 Installing Rear Planetary Gear

(6) Install tabbed thrust washer on front face of rear planetary gear (Fig. 185). Seat washer tabs in matching slots in face of gear carrier. Use extra petroleum jelly to hold washer in place if desired.

(7) Lubricate sun gear bushings with petroleum jelly or transmission fluid.



J9121-71

Fig. 185 Installing Rear Planetary Thrust Washer

DISASSEMBLY AND ASSEMBLY (Continued)

(8) Install sun gear and driving shell on intermediate shaft (Fig. 186). Seat shell against rear planetary gear. Verify that thrust washer on planetary gear was not displaced during installation.

(9) Install tabbed thrust washer in driving shell (Fig. 187), be sure washer tabs are seated in tab slots of driving shell. Use extra petroleum jelly to hold washer in place if desired.

(10) Install tabbed thrust washer on front planetary gear (Fig. 188). Seat washer tabs in matching slots in face of gear carrier. Use extra petroleum jelly to hold washer in place if desired.

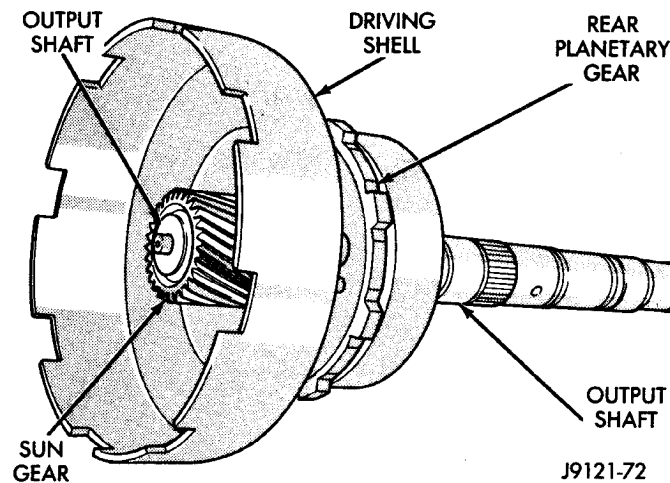


Fig. 186 Installing Sun Gear And Driving Shell

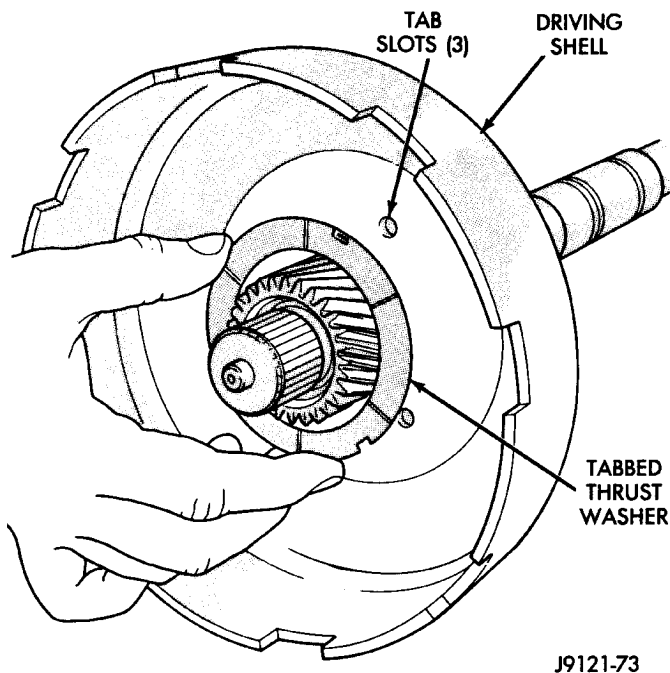


Fig. 187 Installing Driving Shell Thrust Washer

(11) Install front annulus gear over and onto front planetary gear (Fig. 189). Be sure gears are fully meshed and seated.

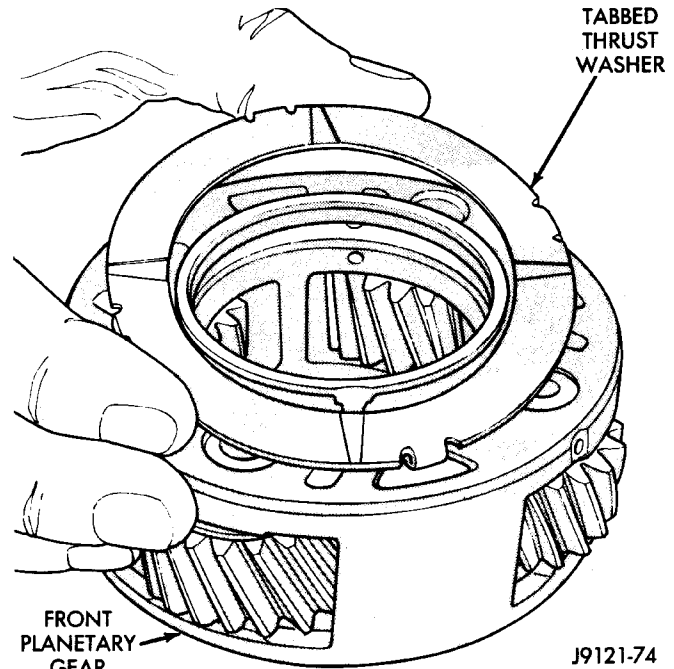


Fig. 188 Installing Thrust Washer On Front Planetary Gear

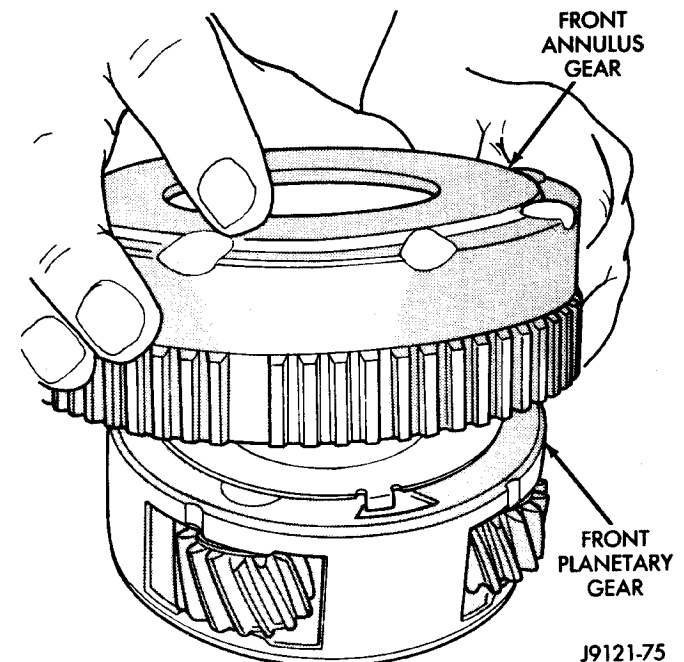


Fig. 189 Assembling Front Planetary And Annulus Gears

(12) Install front planetary and annulus gear assembly (Fig. 190). Hold gears together and slide them onto shaft. Be sure planetary pinions are seated on sun gear and that planetary carrier is seated on intermediate shaft.

(13) Place geartrain in upright position. Rotate gears to be sure all components are seated and prop-

DISASSEMBLY AND ASSEMBLY (Continued)

erly assembled. Snap ring groove at forward end of intermediate shaft will be completely exposed when components are assembled correctly.

(14) Install new planetary snap ring in groove at end of intermediate shaft (Fig. 191).

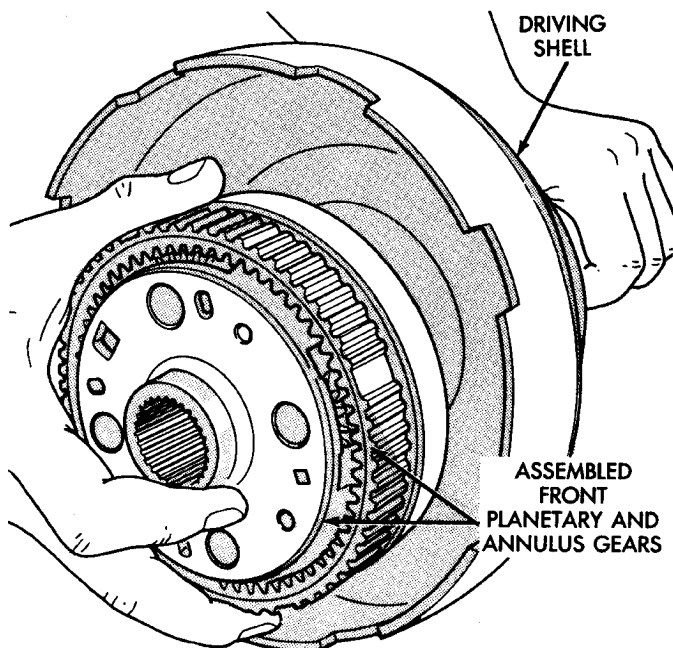


Fig. 190 Installing Front Planetary And Annulus Gear Assembly

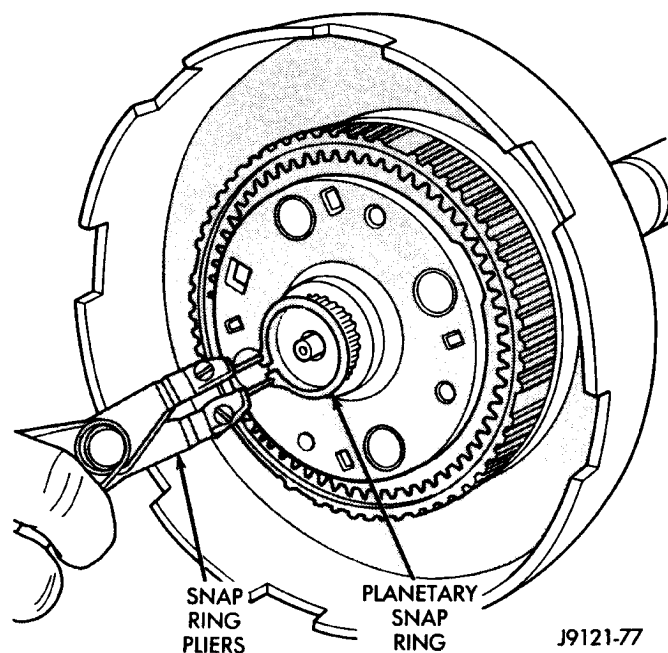


Fig. 191 Installing Planetary Snap Ring

(15) Turn planetary geartrain over. Position wood block under front end of intermediate shaft and support geartrain on shaft. Be sure all geartrain parts

have moved forward against planetary snap ring. This is important for accurate end play check.

(16) Check planetary geartrain end play with feeler gauge (Fig. 192). Insert gauge between rear annulus gear and shoulder on intermediate shaft as shown. End play should be 0.15 to 1.22 mm (0.006 to 0.048 in.).

(17) If end play is incorrect, install thinner/thicker planetary snap ring as needed.

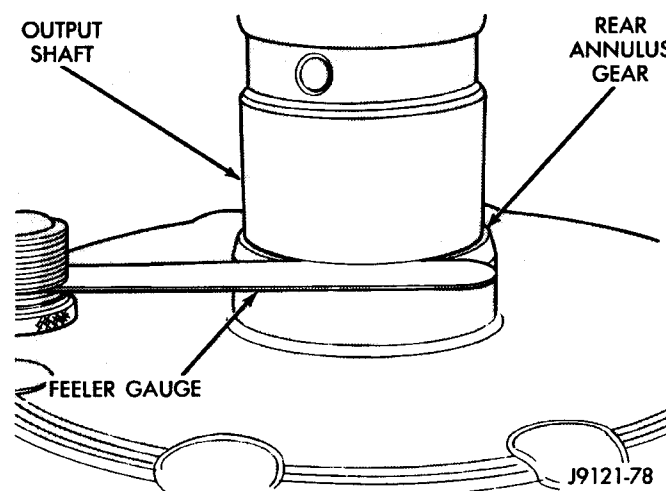


Fig. 192 Checking Planetary Geartrain End Play
OVERDRIVE UNIT

DISASSEMBLY

(1) Remove transmission speed sensor and O-ring seal from overdrive case (Fig. 193).

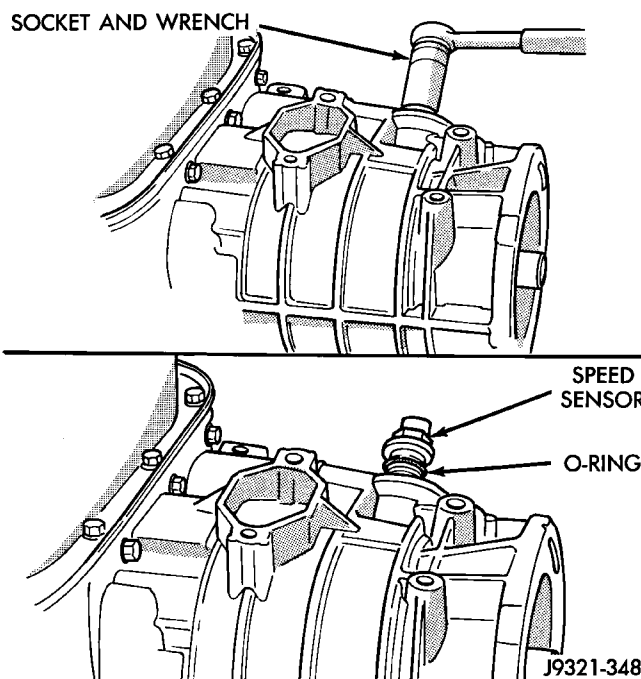


Fig. 193 Transmission Speed Sensor Removal/Installation

DISASSEMBLY AND ASSEMBLY (Continued)

(2) Remove overdrive piston thrust bearing (Fig. 194).

OVERDRIVE PISTON

(1) Remove overdrive piston thrust plate (Fig. 195). Retain thrust plate. It is a select fit part and may possibly be reused.

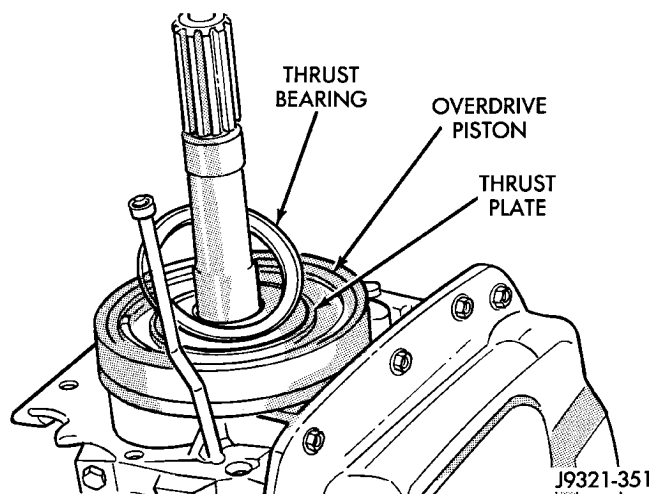


Fig. 194 Overdrive Piston Thrust Bearing Removal/Installation

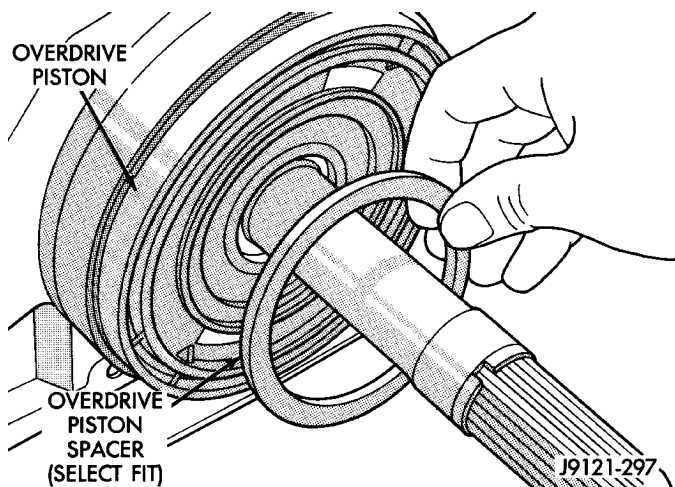


Fig. 195 Overdrive Piston Thrust Plate Removal/Installation

(2) Remove intermediate shaft spacer (Fig. 196). Retain spacer. It is a select fit part and may possibly be reused.

(3) Remove overdrive piston from retainer (Fig. 197).

OVERDRIVE CLUTCH PACK

(1) Remove overdrive clutch pack wire retaining ring (Fig. 198).

(2) Remove overdrive clutch pack (Fig. 199).

(3) Note position of clutch pack components for assembly reference (Fig. 200).

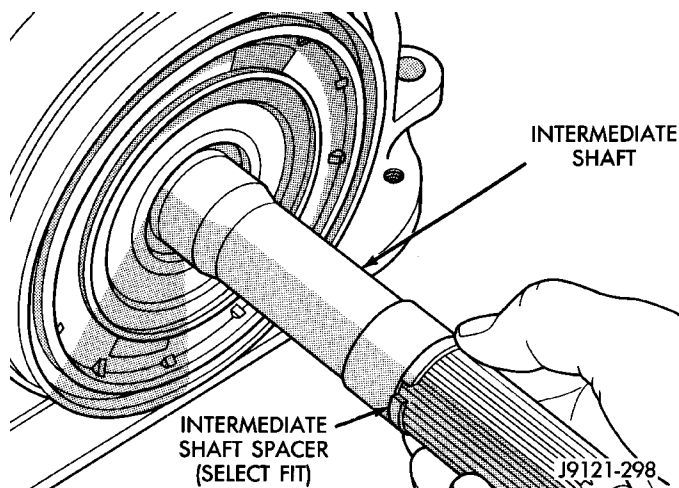


Fig. 196 Intermediate Shaft Spacer Location

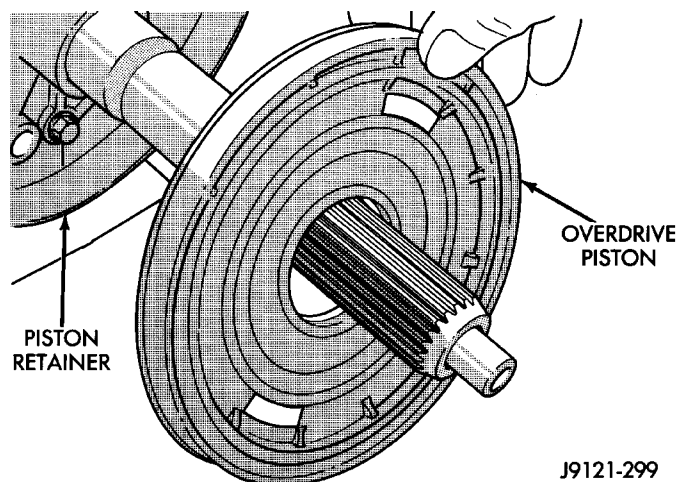


Fig. 197 Overdrive Piston Removal

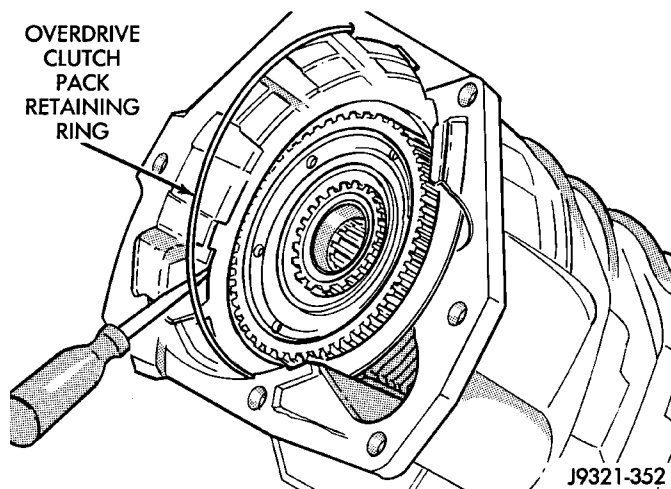
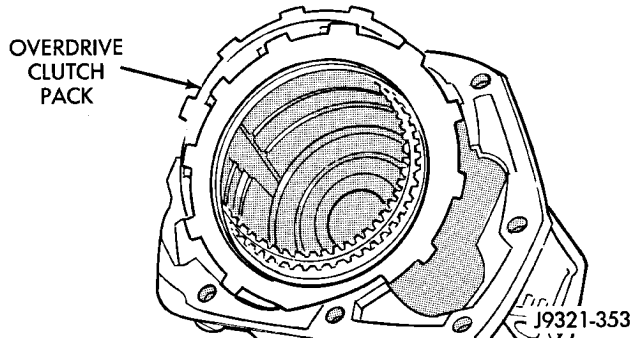
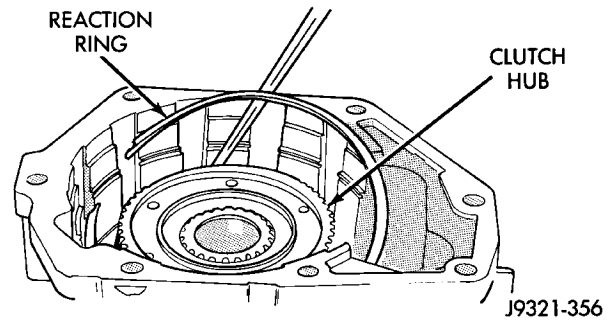
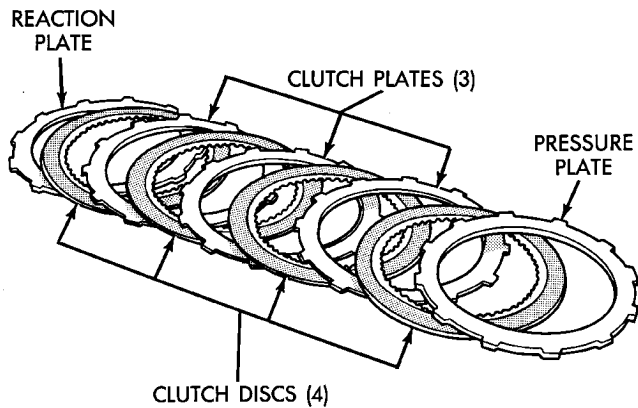
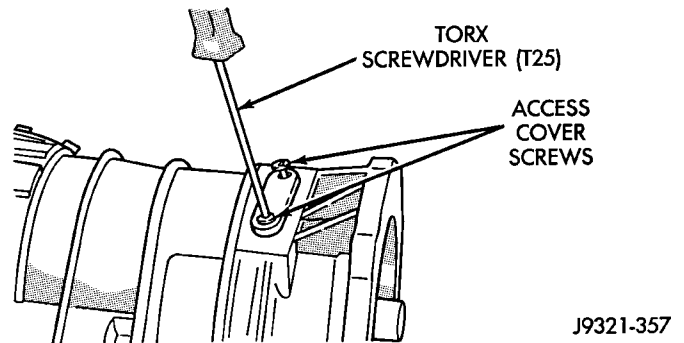
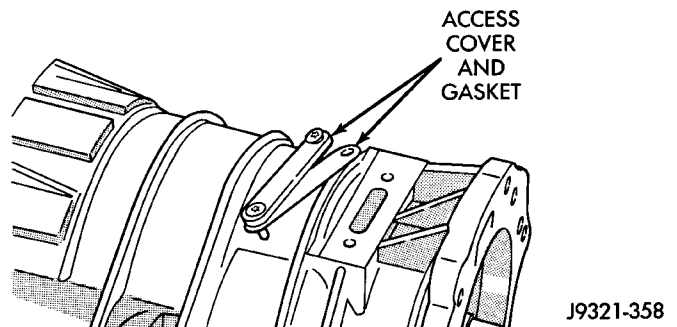
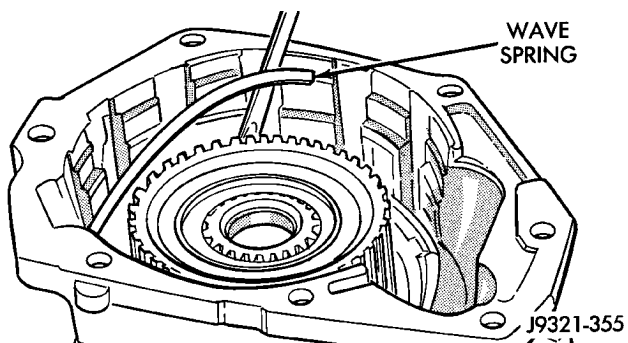


Fig. 198 Removing Overdrive Clutch Pack Retaining Ring

DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 199 Overdrive Clutch Pack Removal****Fig. 202 Overdrive Clutch Reaction Snap Ring Removal/Installation****Fig. 200 46RE Overdrive Clutch Component Position****OVERDRIVE GEARTRAIN**

- (1) Remove overdrive clutch wave spring (Fig. 201).
- (2) Remove overdrive clutch reaction snap ring (Fig. 202). 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. 203).
- (4) Remove access cover and gasket (Fig. 204).

**Fig. 203 Access Cover Screw Removal/Installation****Fig. 204 Access Cover And Gasket Removal/Installation****Fig. 201 Overdrive Clutch Wave Spring Removal/Installation**

DISASSEMBLY AND ASSEMBLY (Continued)

(5) Expand output shaft bearing snap ring with expanding-type snap ring pliers. Then push output shaft forward to release shaft bearing from locating ring (Fig. 205).

(6) Lift gear case up and off geartrain assembly (Fig. 206).

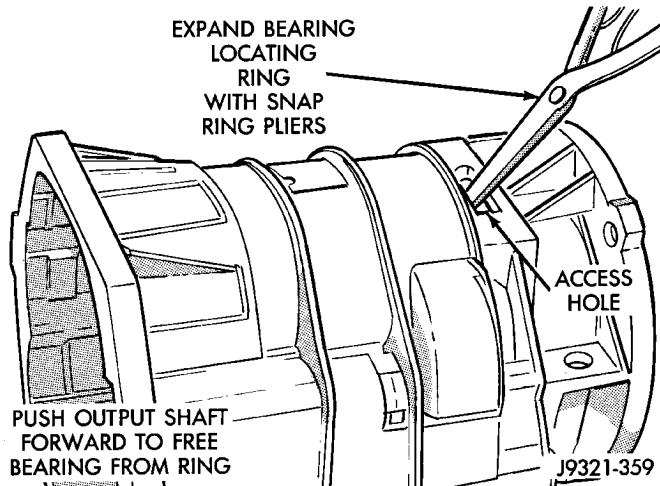


Fig. 205 Releasing Bearing From Locating Ring

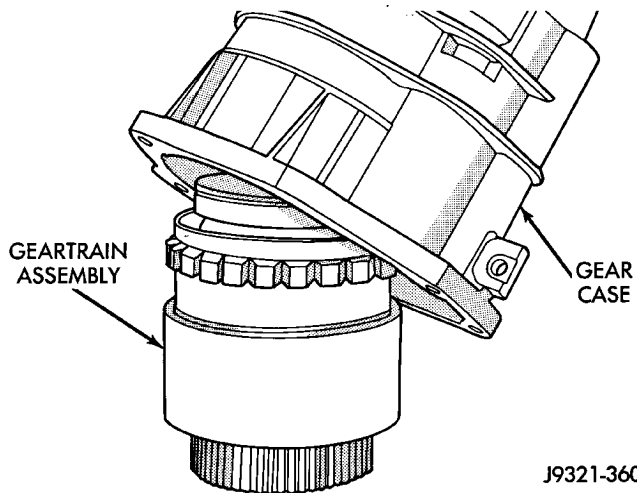


Fig. 206 Removing Gear Case From Geartrain Assembly

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

(8) Remove rear bearing from output shaft (Fig. 207).

DIRECT CLUTCH, HUB AND SPRING

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 APPROXIMATELY 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.

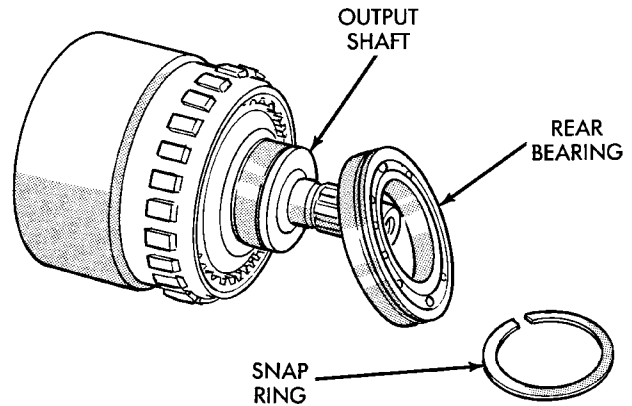


Fig. 207 Rear Bearing Removal

RELEASE CLUTCH SPRING TENSION SLOWLY AND COMPLETELY TO AVOID PERSONAL INJURY.

(1) Mount geartrain assembly in shop press (Fig. 208).

(2) Position Compressor Tool 6227-1 on clutch hub (Fig. 208). 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. 208).

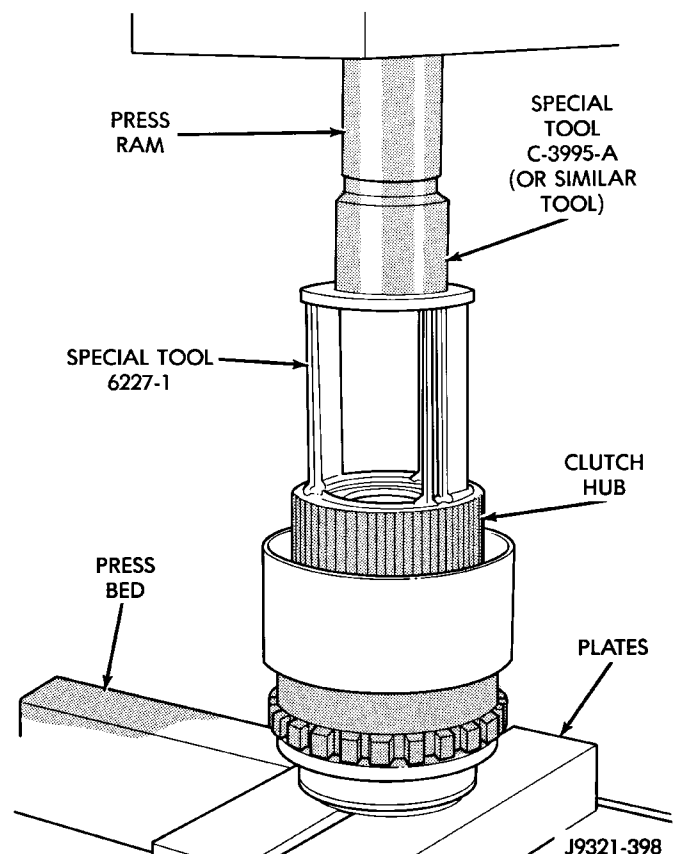
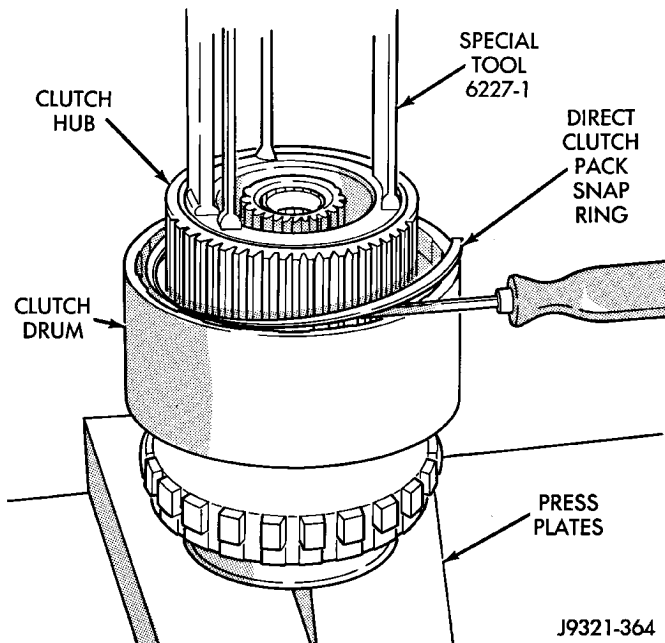
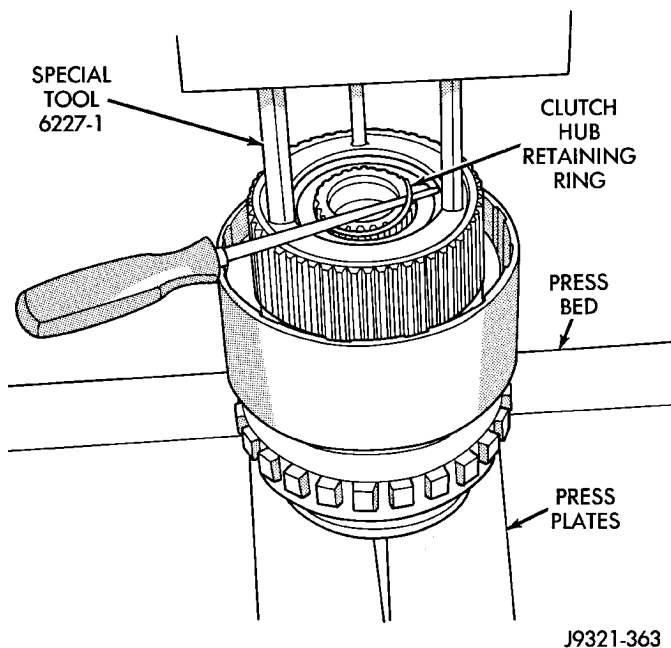
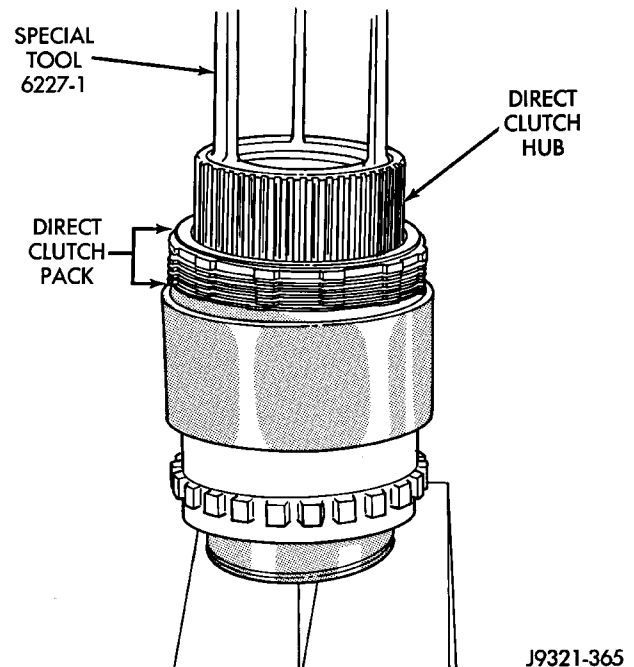


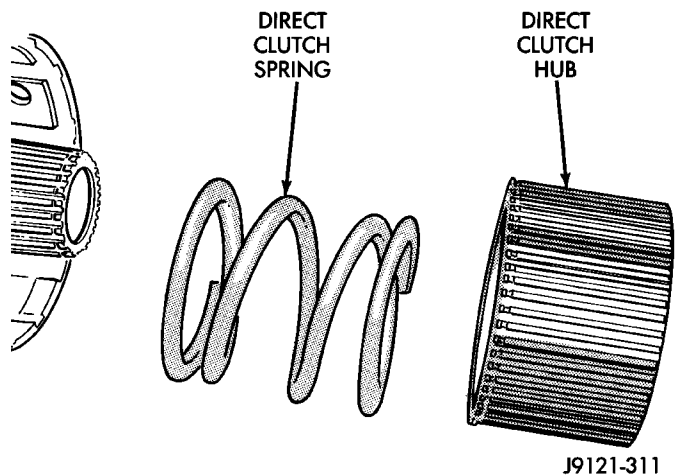
Fig. 208 Geartrain Mounted In Shop Press

DISASSEMBLY AND ASSEMBLY (Continued)

- (4) Remove direct clutch pack snap ring (Fig. 209).
- (5) Remove direct clutch hub retaining ring (Fig. 210).
- (6) Release press load slowly and completely (Fig. 211).
- (7) Remove Special Tool 6227-1. Then remove clutch pack from hub (Fig. 211).

**Fig. 209 Direct Clutch Pack Snap Ring Removal****Fig. 210 Direct Clutch Hub Retaining Ring Removal****Fig. 211 Direct Clutch Pack Removal****Geartrain**

- (1) Remove direct clutch hub and spring (Fig. 212).
- (2) Remove sun gear and spring plate. Then remove planetary thrust bearing and planetary gear (Fig. 213).

**Fig. 212 Direct Clutch Hub And Spring Removal**

- (3) Remove overrunning clutch assembly with expanding type snap ring pliers (Fig. 214). 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. 215). Use small center punch or scribe to make alignment marks.

DISASSEMBLY AND ASSEMBLY (Continued)

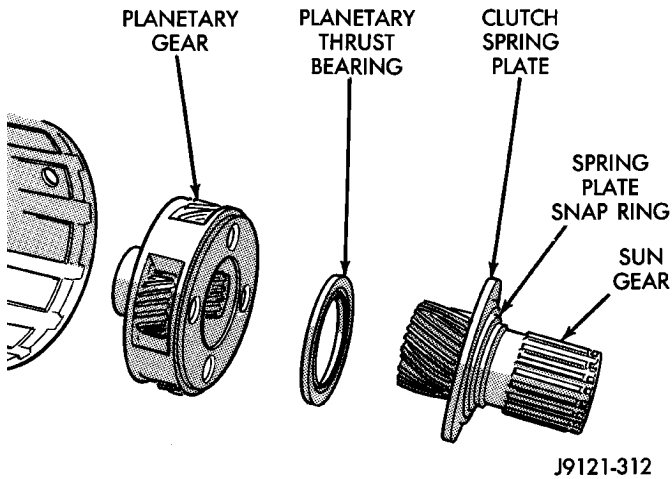


Fig. 213 Removing Sun Gear, Thrust Bearing And Planetary Gear

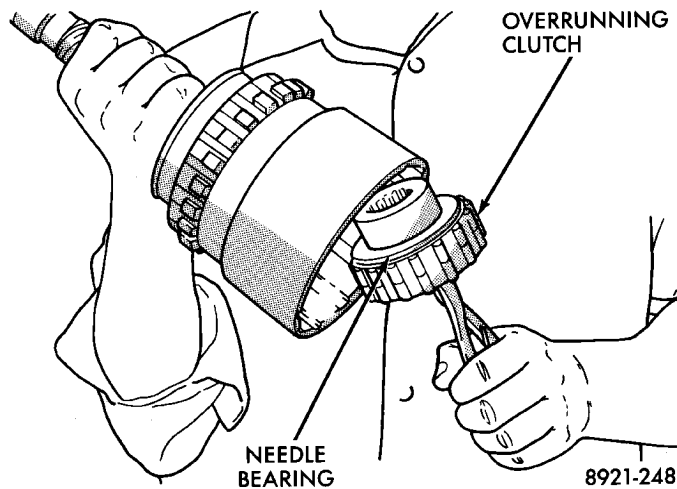


Fig. 214 Overrunning Clutch Assembly Removal/Installation

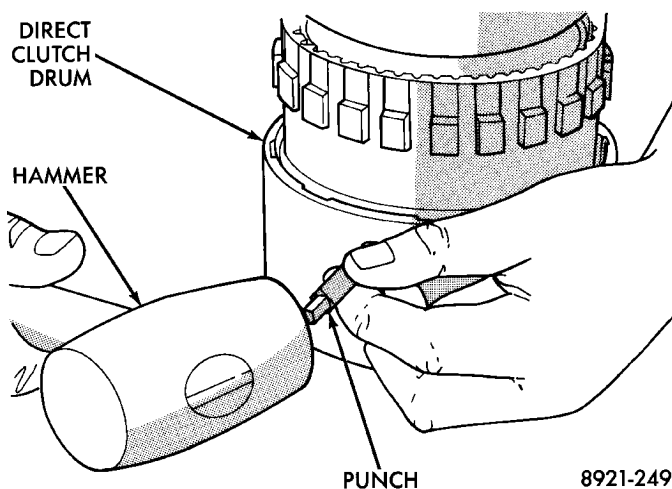


Fig. 215 Marking Direct Clutch Drum And Annulus Gear For Assembly Alignment

(7) Remove direct clutch drum rear retaining ring (Fig. 216).

(8) Remove direct clutch drum outer retaining ring (Fig. 217).

(9) Mark annulus gear and output shaft for assembly alignment reference (Fig. 218). Use punch or scriber to mark gear and shaft.

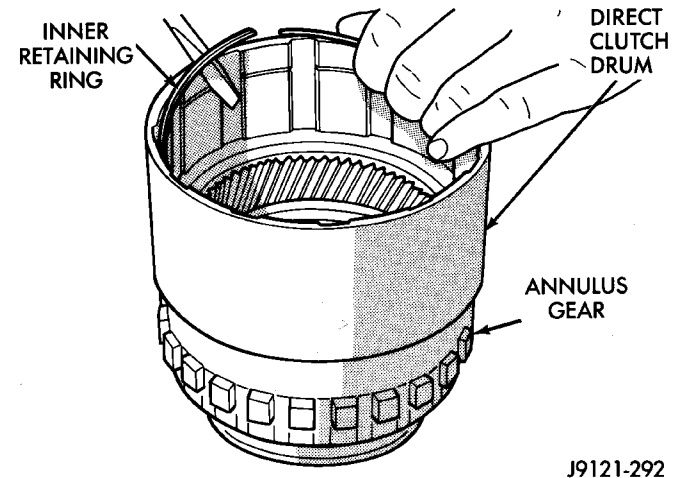


Fig. 216 Clutch Drum Inner Retaining Ring Removal

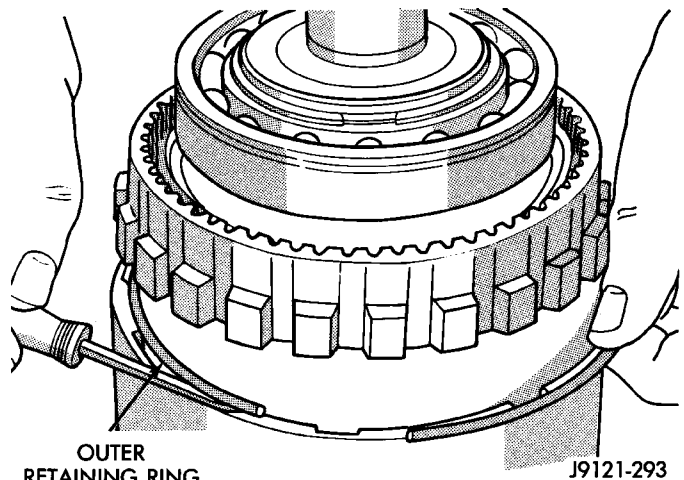


Fig. 217 Clutch Drum Outer Retaining Ring Removal

(10) Remove snap ring that secures annulus gear on output shaft (Fig. 219). Use two screwdrivers to unseat and work snap ring out of groove as shown.

(11) Remove annulus gear from output shaft (Fig. 220). Use rawhide or plastic mallet to tap gear off shaft.

GEAR CASE AND PARK LOCK

- (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.

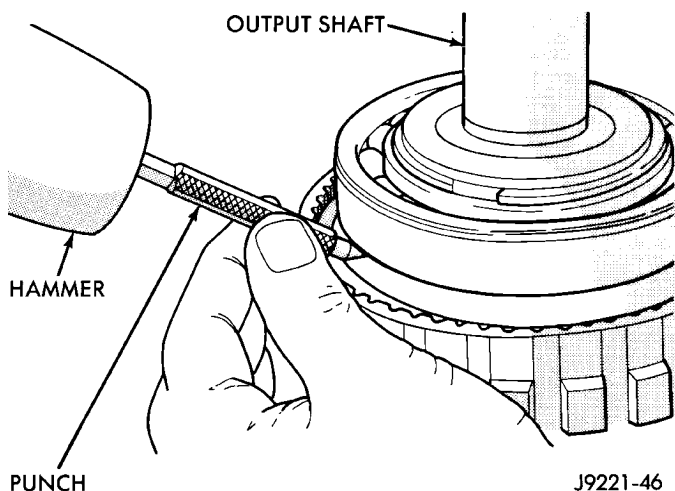
DISASSEMBLY AND ASSEMBLY (Continued)

Fig. 218 Marking Annulus Gear And Output Shaft For Assembly Alignment

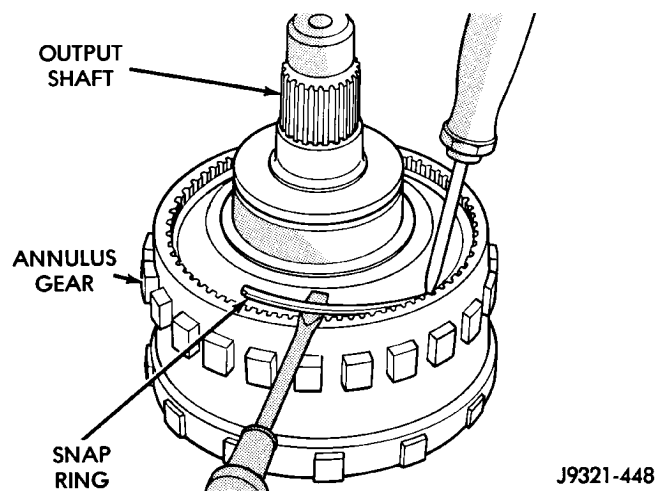


Fig. 219 Annulus Gear Snap Ring Removal

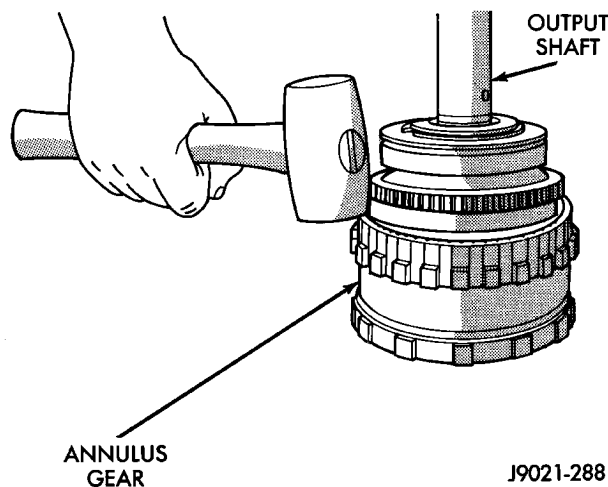


Fig. 220 Annulus Gear Removal

ASSEMBLY**GEARTRAIN AND DIRECT CLUTCH**

(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.

(2) Install new pilot bushing and clutch hub bushing in output shaft if necessary (Fig. 221). Lubricate bushings with petroleum jelly, or transmission fluid.

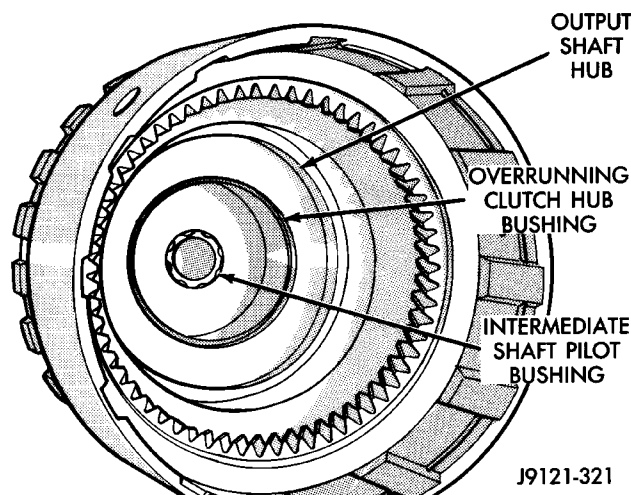


Fig. 221 Output Shaft Pilot Bushing

(3) Install annulus gear on output shaft, if removed. Then install annulus gear retaining snap ring (Fig. 222).

(4) Align and install clutch drum on annulus gear (Fig. 223). Be sure drum is engaged in annulus gear lugs.

(5) Install clutch drum outer retaining ring (Fig. 223).

(6) Slide clutch drum forward and install inner retaining ring (Fig. 224).

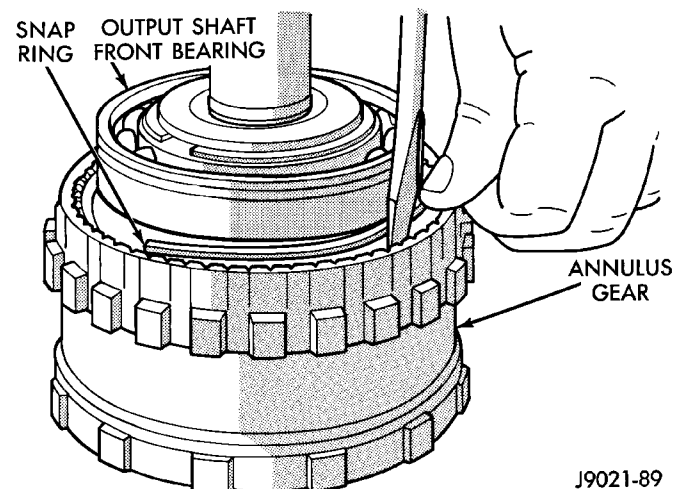


Fig. 222 Annulus Gear Installation

DISASSEMBLY AND ASSEMBLY (Continued)

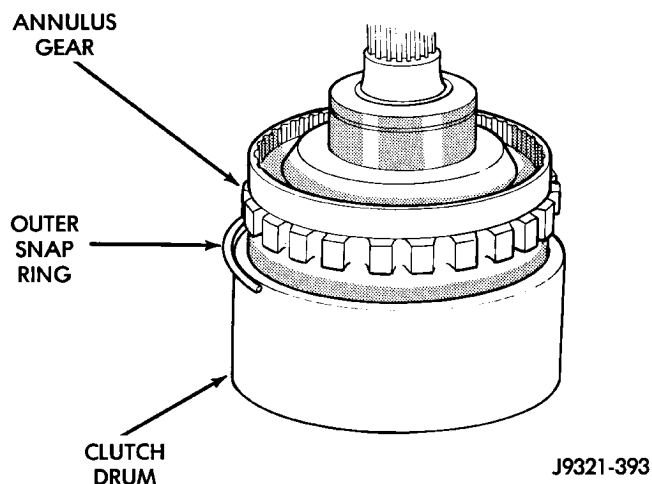


Fig. 223 Clutch Drum And Outer Retaining Ring Installation

(7) Install rear bearing and snap ring on output shaft (Fig. 225). Be sure locating ring groove in bearing is toward rear.

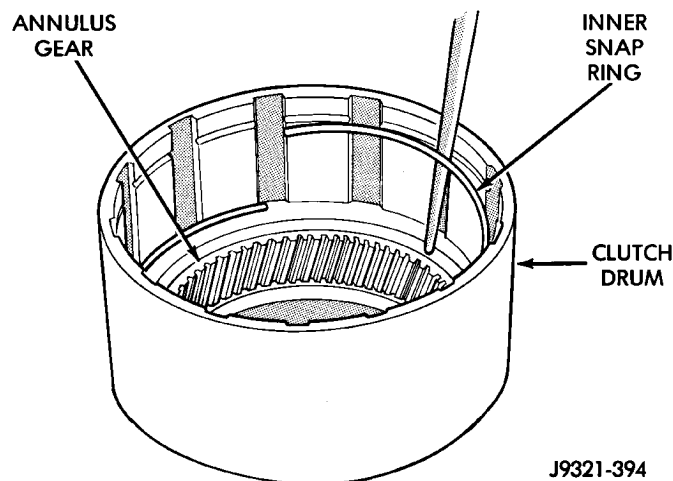


Fig. 224 Clutch Drum Inner Retaining Ring Installation

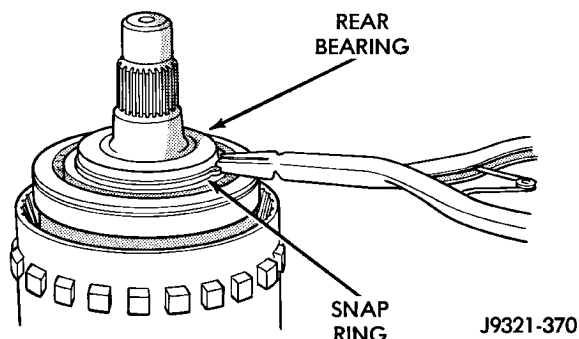


Fig. 225 Rear Bearing And Snap Ring Installation

(8) Install overrunning clutch on hub (Fig. 226). **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.**

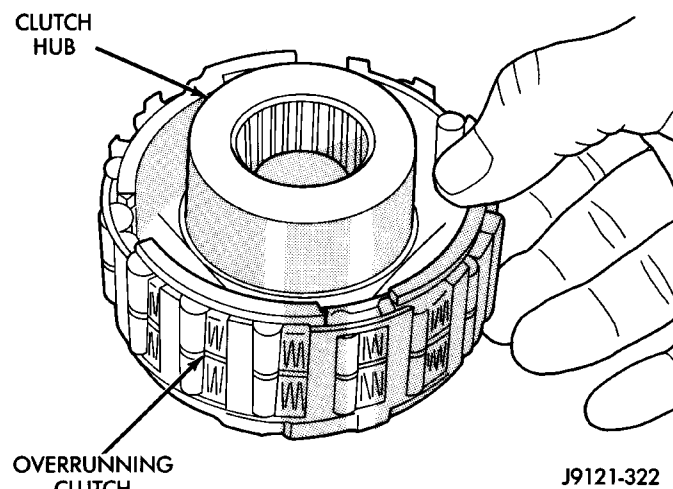


Fig. 226 Assembling Overrunning Clutch And Hub

(10) Install overrunning clutch in output shaft (Fig. 227). Insert snap ring pliers in hub splines. Expand pliers to grip hub. Then install assembly with counterclockwise, twisting motion.

(11) Install planetary gear in annulus gear (Fig. 228). **Be sure planetary pinions are fully seated in annulus gear before proceeding.**

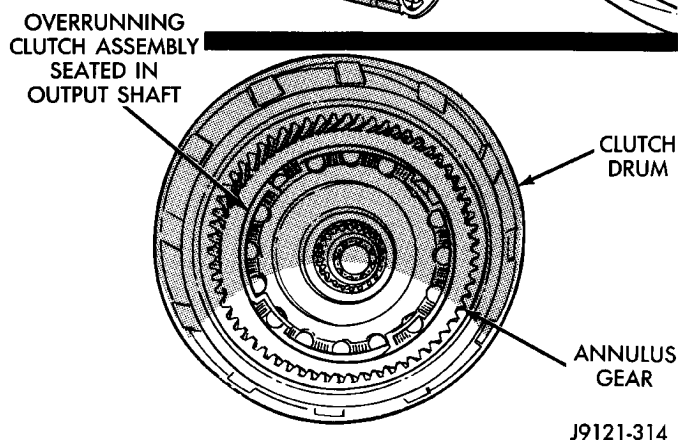
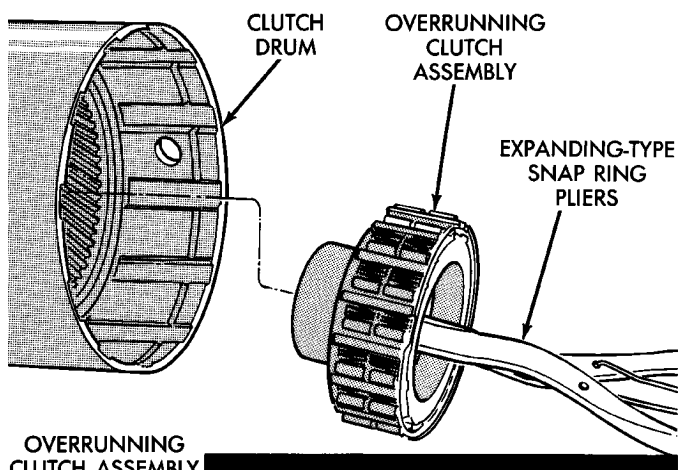
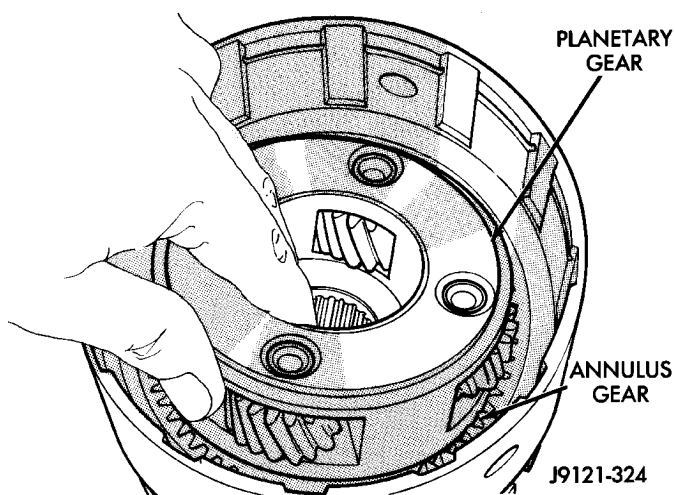
(12) Coat planetary thrust bearing and bearing contact surface of spring plate with generous amount of petroleum jelly. This will help hold bearing in place during installation.

(13) Install planetary thrust bearing on sun gear (Fig. 229). 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. 230). Be sure sun gear and thrust bearing are fully seated before proceeding.

(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. 231). Insert tool through sun gear and into splines of both hubs. Be sure alignment tool is fully seated before proceeding.

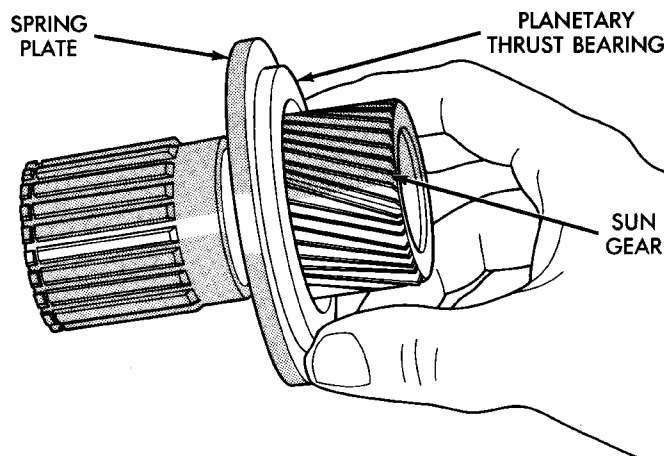
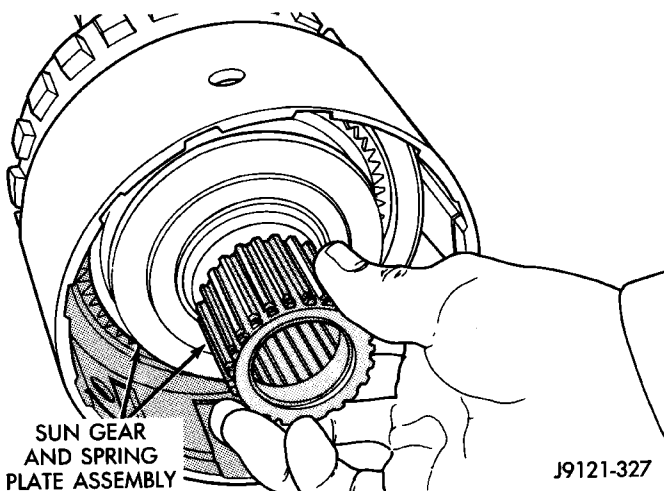
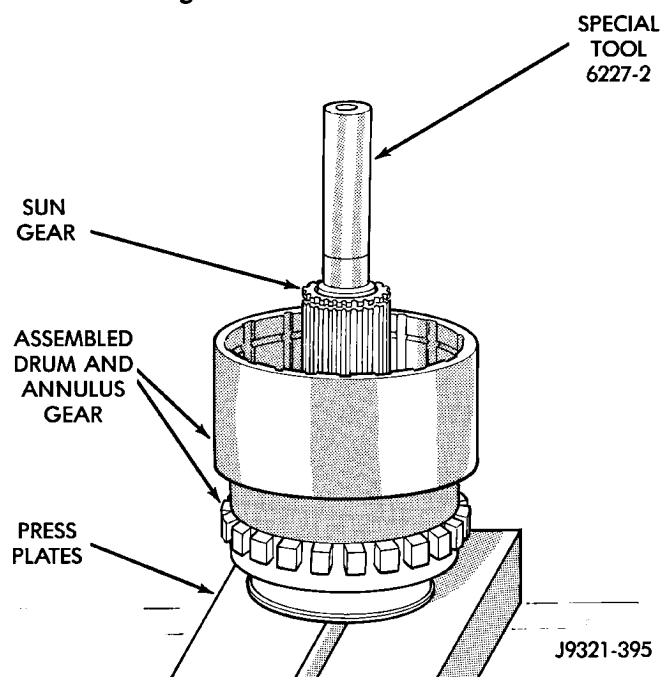
DISASSEMBLY AND ASSEMBLY (Continued)**Fig. 227 Overrunning Clutch Installation****Fig. 228 Planetary Gear Installation**

(17) Install direct clutch spring (Fig. 232). Be sure spring is properly seated on spring plate.

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

(a) Assemble clutch pack components (Fig. 233).

(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**

**Fig. 229 Planetary Thrust Bearing Installation****Fig. 230 Sun Gear Installation****Fig. 231 Alignment Tool Installation**

DISASSEMBLY AND ASSEMBLY (Continued)

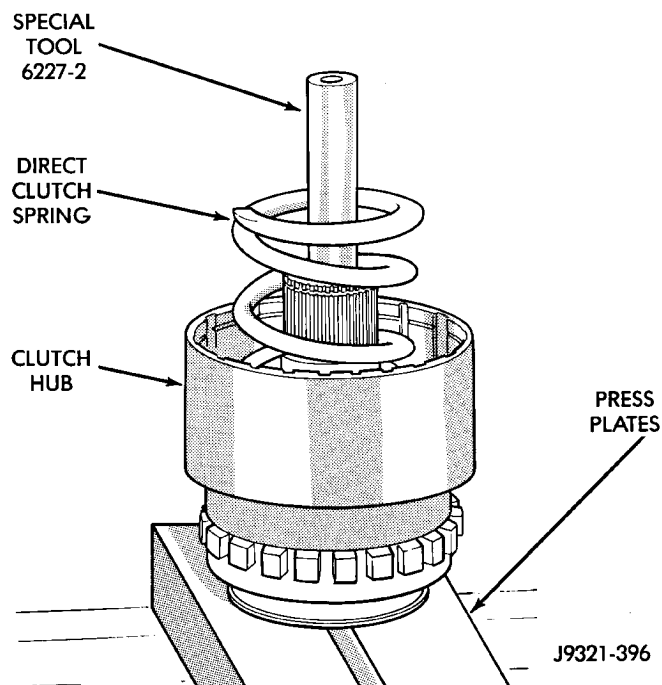


Fig. 232 Direct Clutch Spring Installation

slightly. Counterbore in plate fits over raised splines. Plate should be flush with this end of hub (Fig. 234).

(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. 235).

(19) Install clutch hub and clutch pack on direct clutch spring (Fig. 236). **Be sure hub is started on sun gear splines before proceeding.**

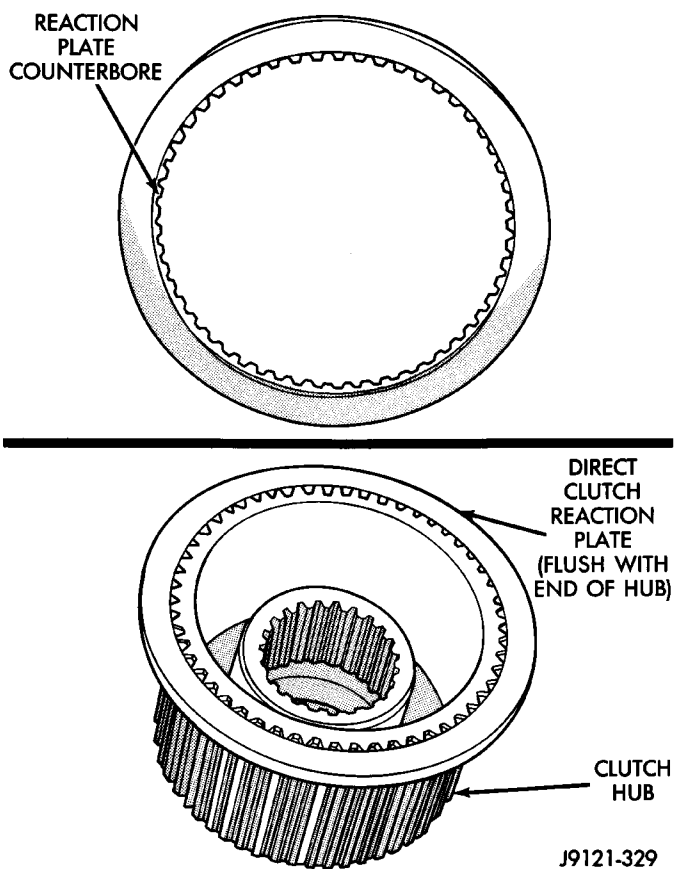


Fig. 234 Correct Position Of Direct Clutch Reaction Plate

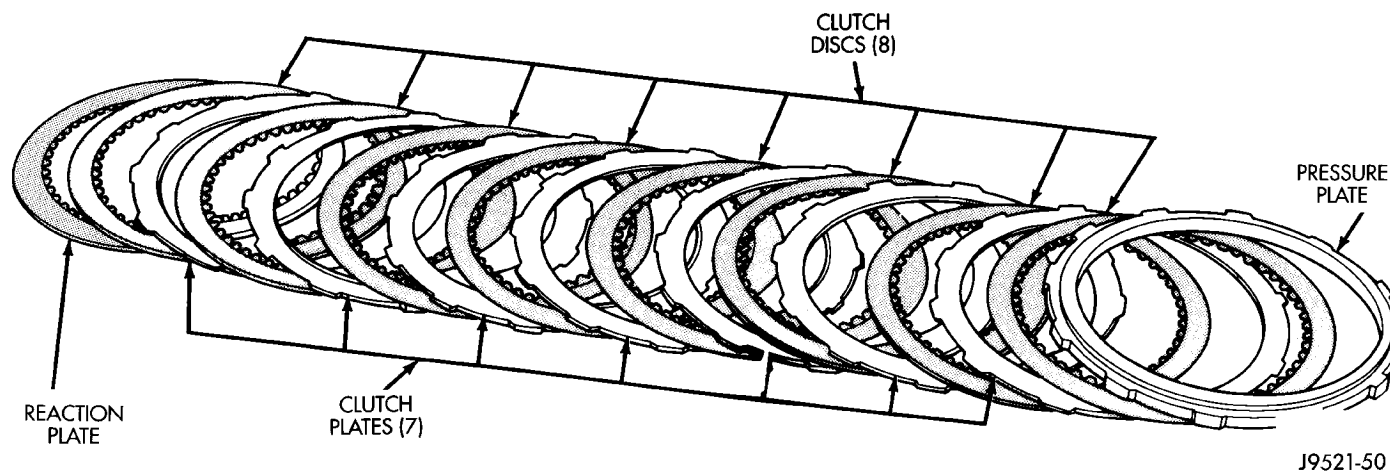


Fig. 233 46RE Direct Clutch Pack Components

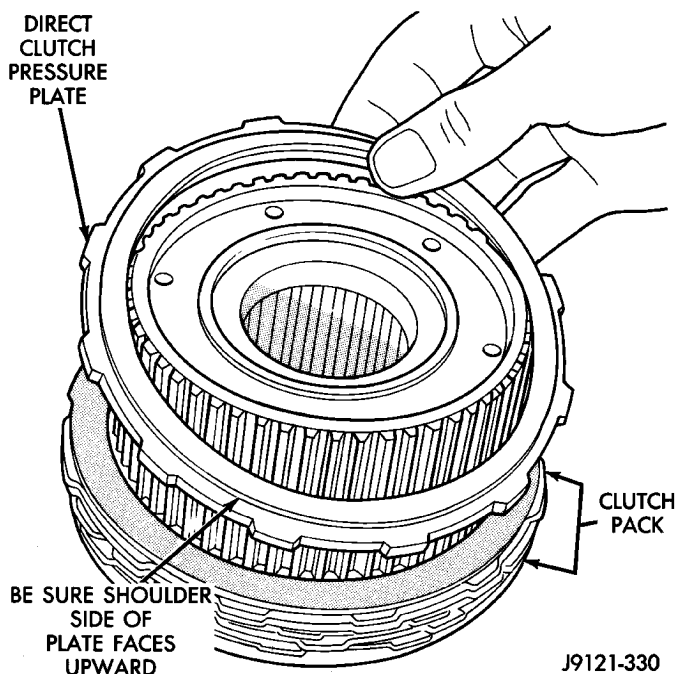
DISASSEMBLY AND ASSEMBLY (Continued)

Fig. 235 Correct Position Of Direct Clutch Pressure Plate

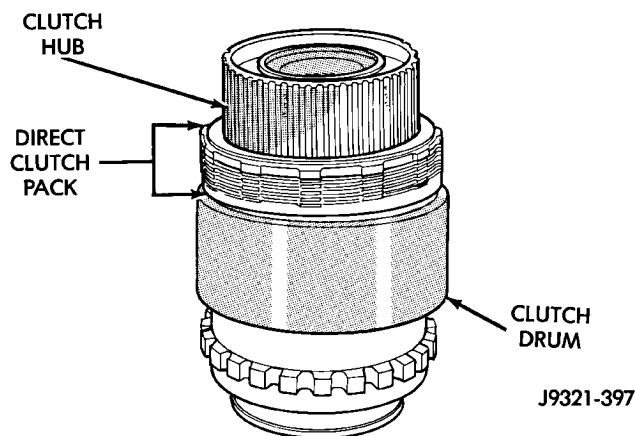


Fig. 236 Direct Clutch Pack And Clutch Hub Installation

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. 237). **Be very sure snap ring is fully seated in clutch drum ring groove.**

(25) Install clutch hub retaining ring (Fig. 238). **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.

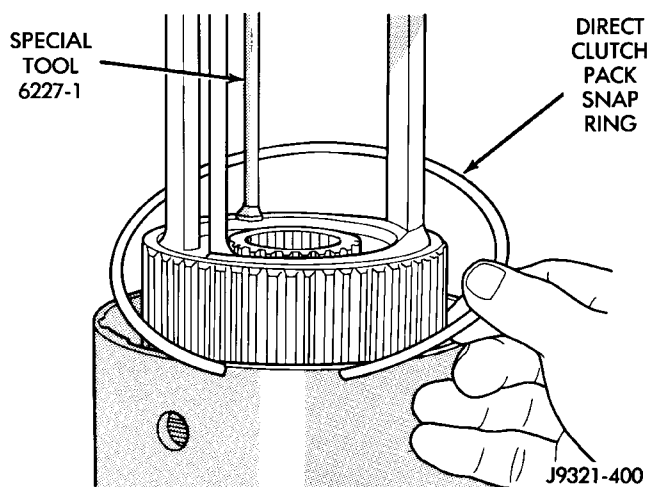


Fig. 237 Direct Clutch Pack Snap Ring Installation

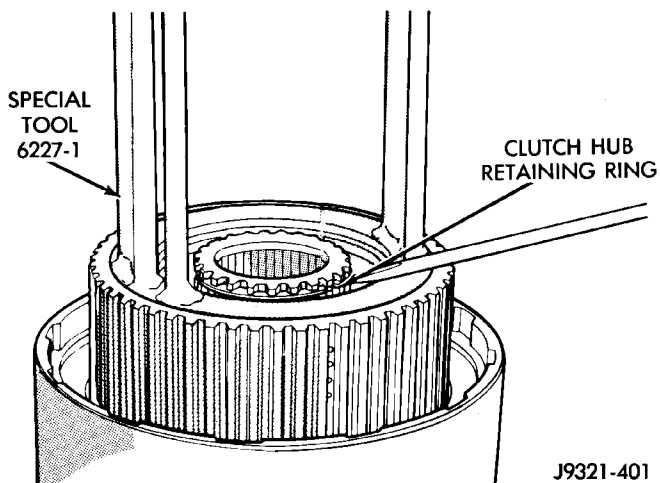


Fig. 238 Clutch Hub Retaining Ring Installation

GEAR CASE

(1) Position park pawl and spring in case and install park pawl shaft. Verify that end of spring

DISASSEMBLY AND ASSEMBLY (Continued)

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. 239).** Be sure pin is seated in hole in case before installing snap ring.

(4) Install reaction plug snap-ring (Fig. 240). **Compress snap ring only enough for installation; do not distort it.**

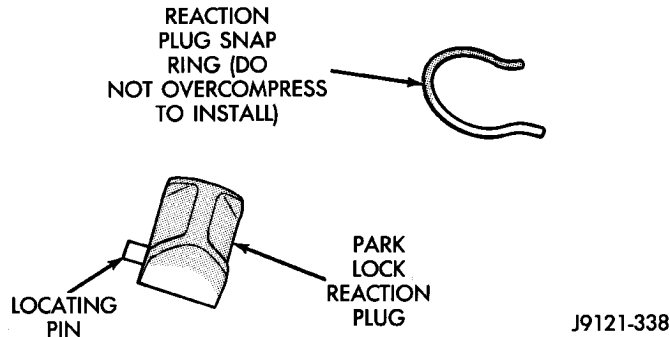


Fig. 239 Reaction Plug Locating Pin And Snap-Ring

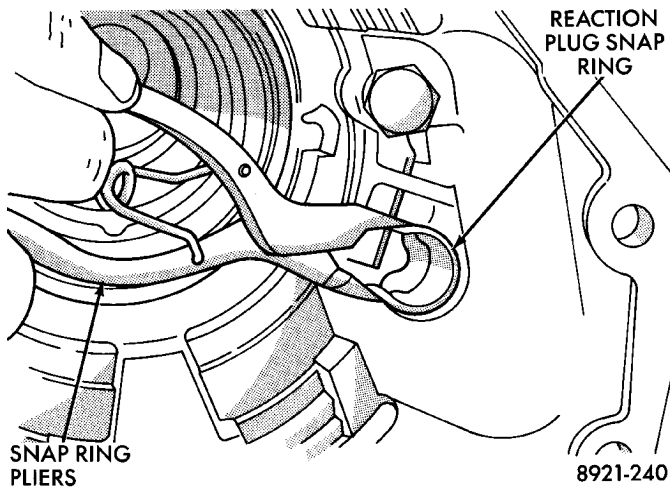


Fig. 240 Reaction Plug And Snap-Ring Installation

(5) Install new seal in gear case. Use 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. 241).

(7) Support geartrain on Tool 6227-1 (Fig. 242). Be sure tool is securely seated in clutch hub.

(8) Install overdrive gear case on geartrain (Fig. 242).

(9) Expand front bearing locating ring with snap ring pliers (Fig. 243). 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. 244).

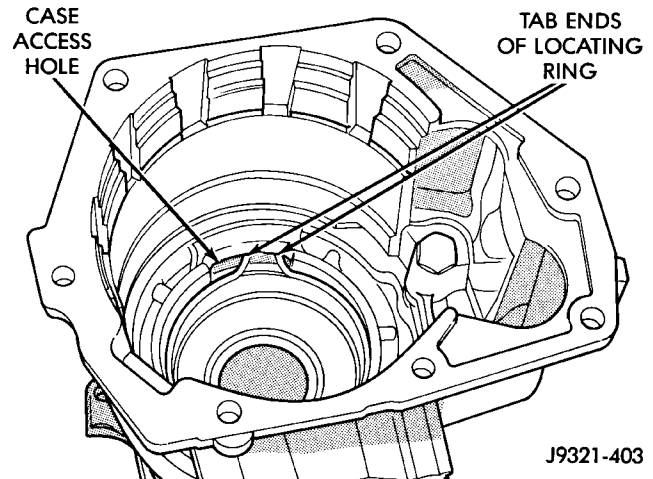


Fig. 241 Correct Rear Bearing Locating Ring Position

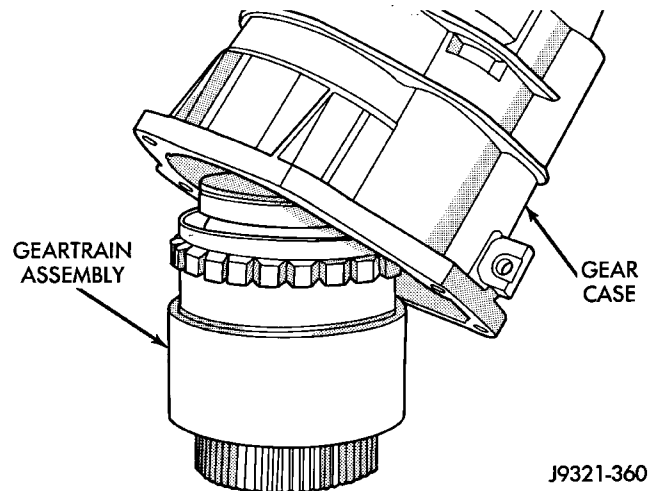


Fig. 242 Overdrive Gear Case Installation

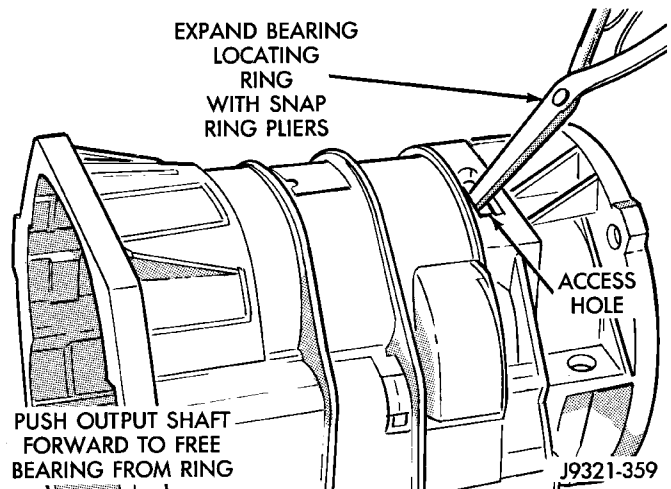


Fig. 243 Seating Locating Ring In Rear Bearing

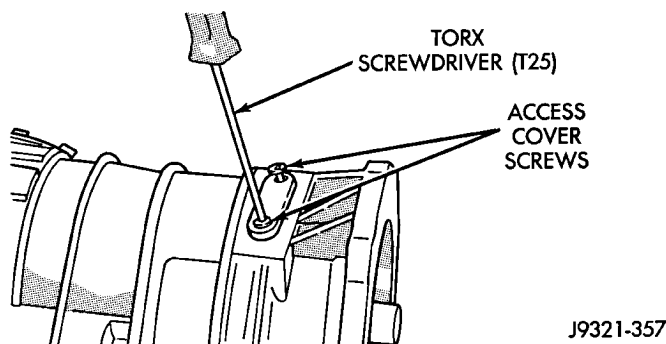
DISASSEMBLY AND ASSEMBLY (Continued)

Fig. 244 Locating Ring Access Cover And Gasket Installation

OVERDRIVE CLUTCH

(1) Install overdrive clutch reaction ring first. Reaction ring is flat with notched ends (Fig. 245).

(2) Install wave spring on top of reaction ring (Fig. 246). **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.

(3) Assemble overdrive clutch pack (Fig. 247).

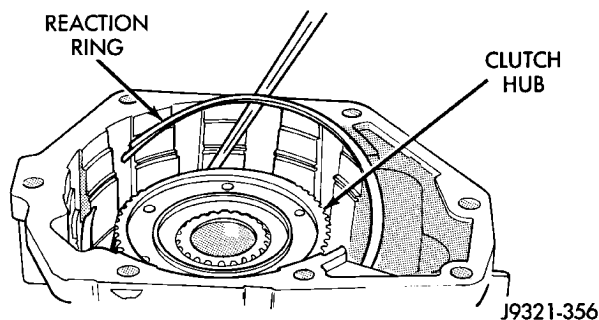


Fig. 245 Overdrive Clutch Reaction Ring Installation

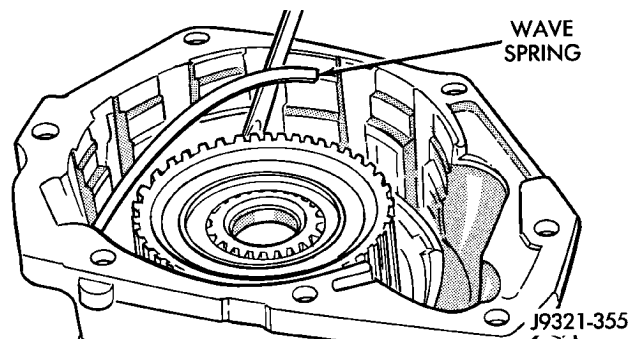


Fig. 246 Overdrive Clutch Wave Spring Installation

(4) Install overdrive clutch reaction plate first.
 (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. 248).

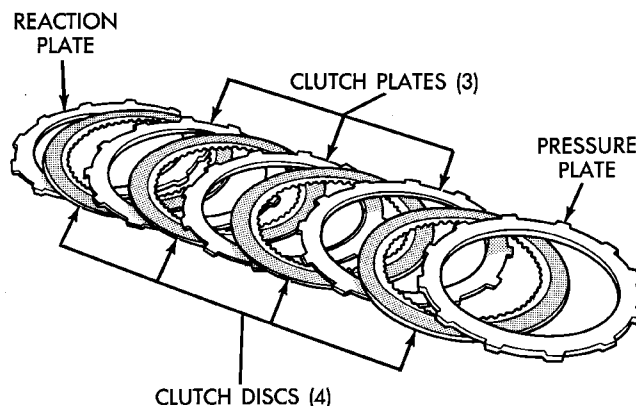


Fig. 247 46RE Overdrive Clutch Components

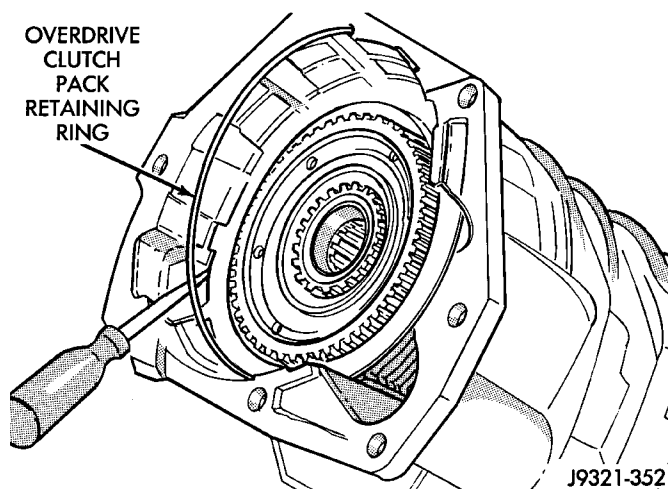


Fig. 248 Overdrive Clutch Pack Retaining Ring Installation

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.

(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.

(b) Position Gauge Tool 6311 across face of overdrive case (Fig. 249). 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. Remove dial caliper tool and note distance measured (Fig. 249).

DISASSEMBLY AND ASSEMBLY (Continued)

- (d) Select proper thickness end play spacer from spacer chart based on distance measured (Fig. 250).
- (e) Remove Gauge Alignment Tool 6312.

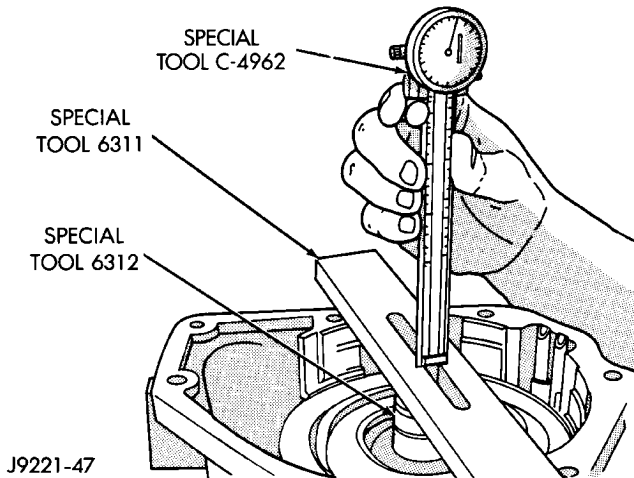


Fig. 249 Shaft End Play Measurement

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. 250 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. 251).

(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. 252).

(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.

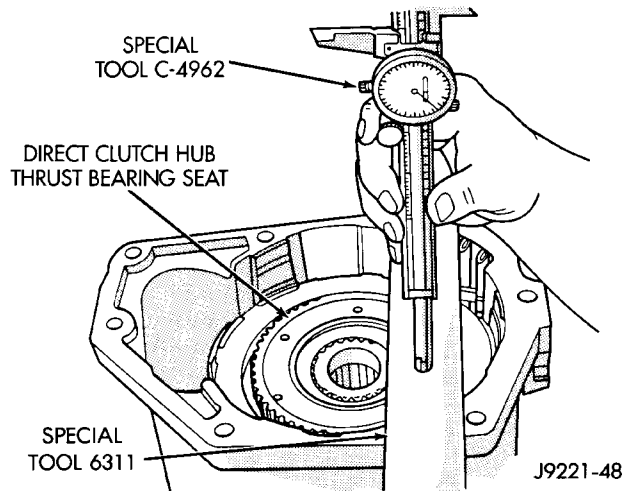


Fig. 251 Overdrive Piston Thrust Plate Measurement

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. 252 Overdrive Piston Thrust Plate Selection

OVERDRIVE PISTON

- (1) Install new seals on overdrive 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 8114-3 on inner edge of overdrive piston retainer.
- (5) Install overdrive piston in overdrive piston retainer by:
 - (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.
 - (c) Install piston over Seal Guide 8114-3 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.

DISASSEMBLY AND ASSEMBLY (Continued)

(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. 193).

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 (Fig. 253). 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 straightedge 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:

- 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

CLEANING AND INSPECTION (Continued)

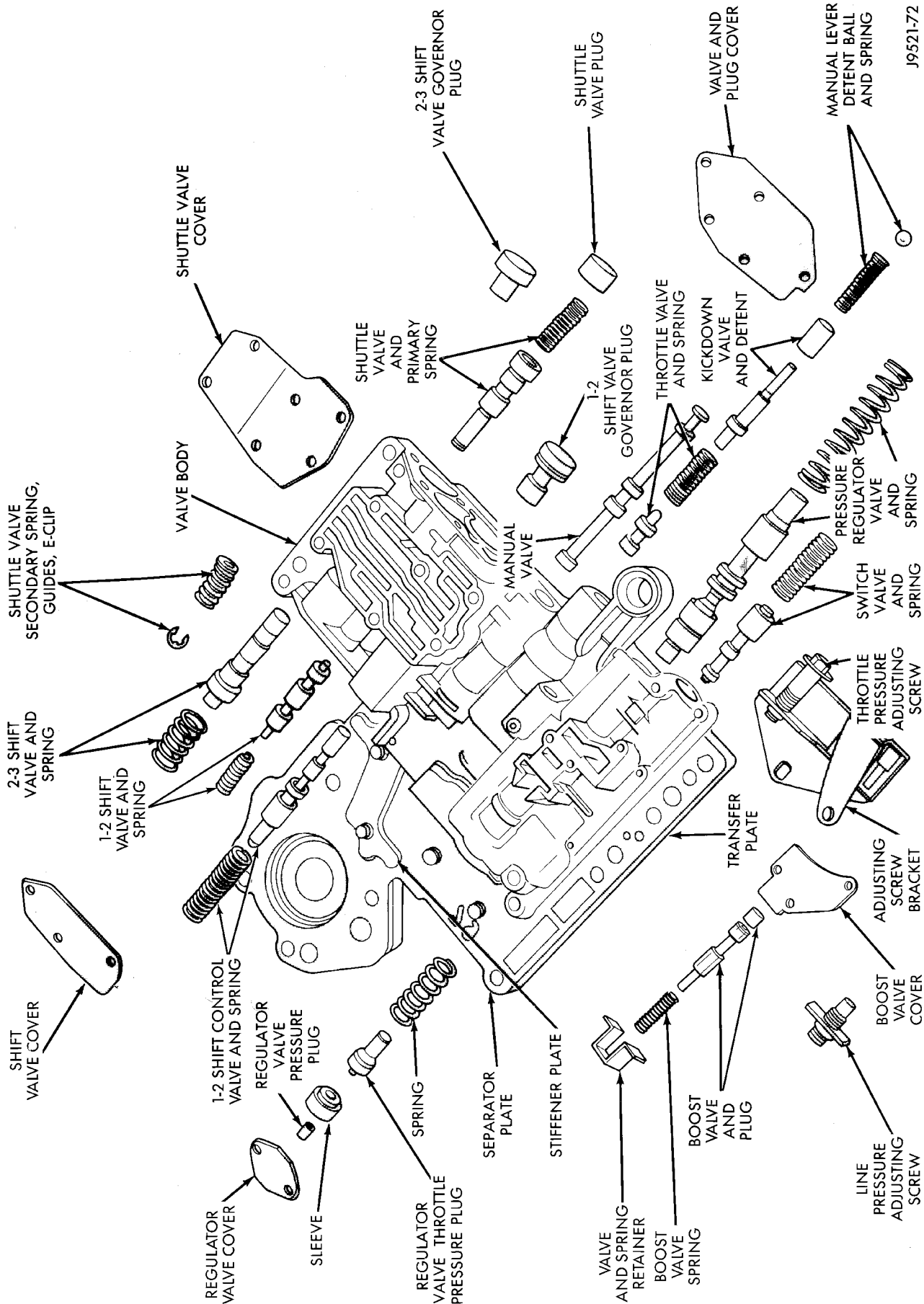


Fig. 253 Upper Housing Valves, Plug, Springs And Brackets

J9521-72

CLEANING AND INSPECTION (Continued)**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. 254). 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. 254). Replace the springs if the coils are cracked, distorted or collapsed.

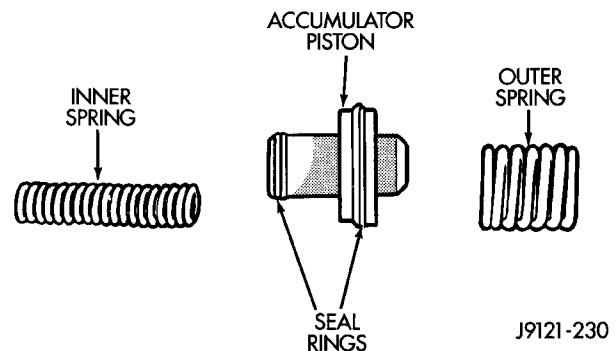


Fig. 254 Accumulator Components

FRONT SERVO

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

CLEANING AND INSPECTION (Continued)

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. 255). 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.

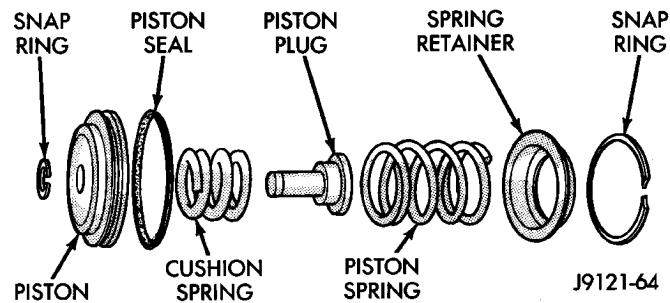


Fig. 255 Rear Servo Components

OIL PUMP AND REACTION SHAFT SUPPORT

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

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.

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.

Check the pump vent. The vent must be secure. Replace the pump body if the vent is cracked, broken, or loose.

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.

(1) 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 (Fig. 256).

(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.

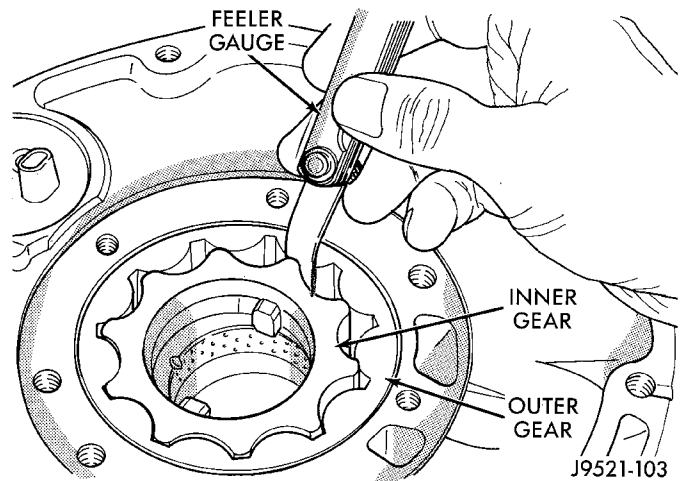


Fig. 256 Checking Pump Gear Tip Clearance

FRONT CLUTCH

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

Replace the piston springs and spring retainer if either are distorted, warped or broken.

Check the lug grooves in the clutch piston retainer. The steel plates should slide freely in the slots. Replace the piston retainer if the grooves are worn or damaged. Also check action of the check ball in the

CLEANING AND INSPECTION (Continued)

piston retainer. The ball must move freely and not stick.

Replace the retainer bushing if worn, scored, or there is any doubt 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 the clutch piston check ball. The ball should be securely in place. Replace the piston if the ball is missing, or seized in place.

REAR CLUTCH

Clean the clutch components with solvent and dry them with compressed air.

Check condition of the input shaft seal rings. It is not necessary to remove or replace rings unless they are broken, cracked, or no longer securely hooked together.

Inspect the input shaft splines and machined surfaces. Very minor nicks or scratches can be smoothed off with crocus cloth. Replace the shaft if the splines are damaged, or any of the machined surfaces are severely scored.

Replace the clutch discs if warped, worn, scored, burned/charred, the lugs are damaged, or if the facing is flaking off.

Replace the steel plates and the pressure plate if heavily scored, warped, or broken. Be sure the driving lugs on the discs and 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 steel plates should slide freely in the slots. Replace the retainer if the grooves are worn or damaged. Also check action of the retainer check ball. The ball must move freely and not stick.

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 damaged.

Check thrust washer condition. Washer thickness should be 1.55 to 1.60 mm (0.061 to 0.063 in.). Replace the washer if worn or damaged.

Check condition of the two seal rings on the input shaft and the single seal ring on the piston retainer hub. Replace the seal rings only if severely worn, cracked, or cannot be hooked together.

PLANETARY GEARTRAIN/OUTPUT SHAFT

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

Inspect the planetary gear sets and annulus gears. The planetary pinions, shafts, washers, and retaining

pins are serviceable. However, if a pinion carrier is damaged, the entire planetary gear set must be replaced as an assembly.

Replace the annulus gears if the teeth are chipped, broken, or worn, or the gear is cracked. Replace the planetary thrust plates and the tabbed thrust washers if cracked, scored or worn.

Inspect the machined surfaces of the intermediate shaft. Be sure the oil passages are open and clear. Replace the shaft if scored, pitted, or damaged.

Inspect the sun gear and driving shell. If either component is worn or damaged, remove the sun gear rear retaining ring and separate the sun gear and thrust plate from the driving shell. Then replace the necessary component.

Replace the sun gear as an assembly if the gear teeth are chipped or worn. Also replace the gear as an assembly if the bushings are scored or worn. The sun gear bushings are not serviceable. Replace the thrust plate if worn, or severely scored. Replace the driving shell if distorted, cracked, or damaged in any way.

Replace all snap rings during geartrain assembly. Reusing snap rings is not recommended.

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,

CLEANING AND INSPECTION (Continued)

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

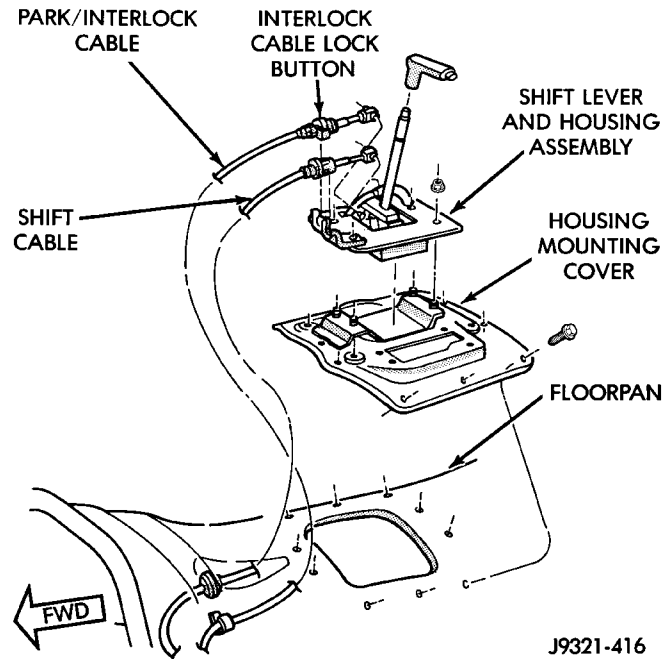
- (1) Shift into Park position.

- (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. 257).

- (5) Pull cable forward. Then release cable and press lock button down until it snaps in place.



J9321-416

Fig. 257 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.

ADJUSTMENTS (Continued)

(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. 258). 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.

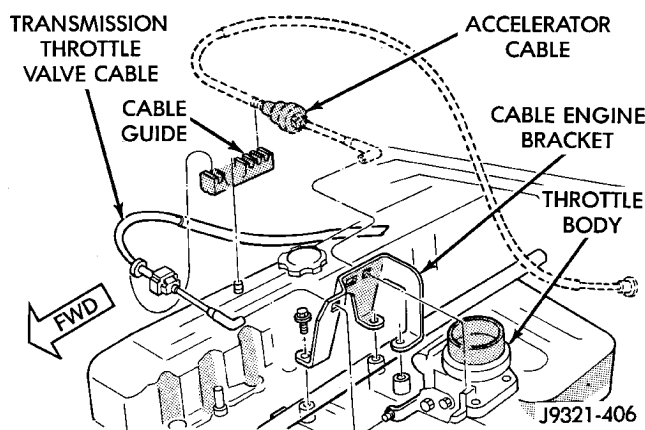


Fig. 258 Throttle Cable Attachment At Engine

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. 259) is also at idle (fully forward) position.

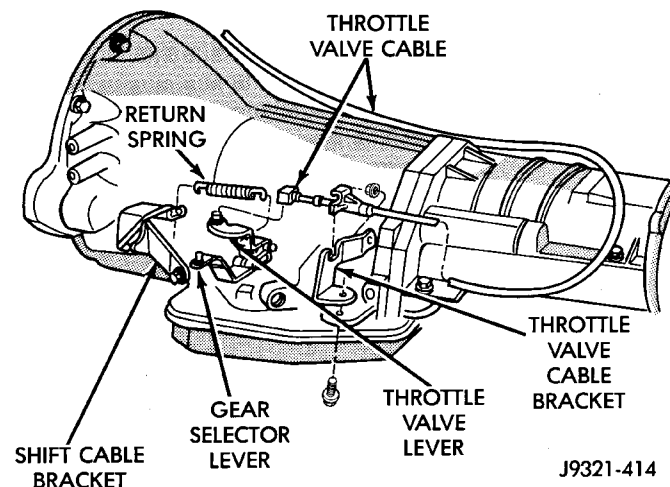


Fig. 259 Throttle Cable Attachment At Transmission

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

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

- 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.

ADJUSTMENTS (Continued)

(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. 260).
- (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.

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. 261). 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. 262), tighten the screw to only 5 N·m (47-50 in. lbs.) torque.

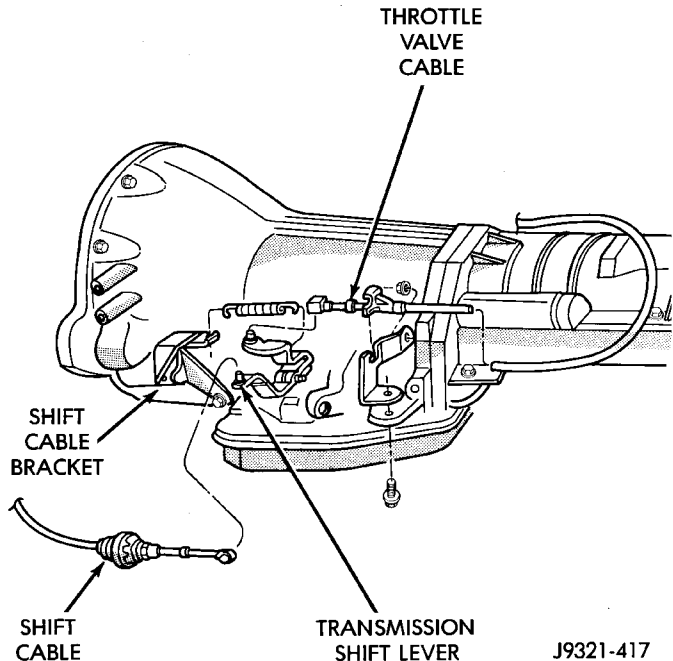


Fig. 260 Shift Cable Attachment At Transmission—Typical

- (4) Back off front band adjusting screw 2-7/8 turns.
- (5) Hold adjuster screw in position and tighten locknut to 41 N·m (30 ft. lbs.) torque.
- (6) Lower vehicle.

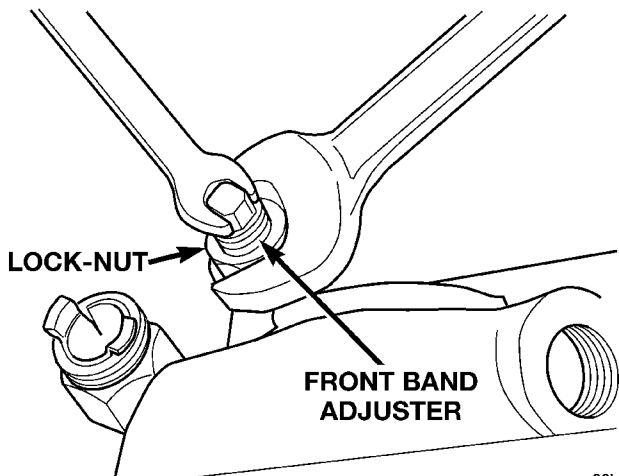


Fig. 261 Front Band Adjustment Screw Location

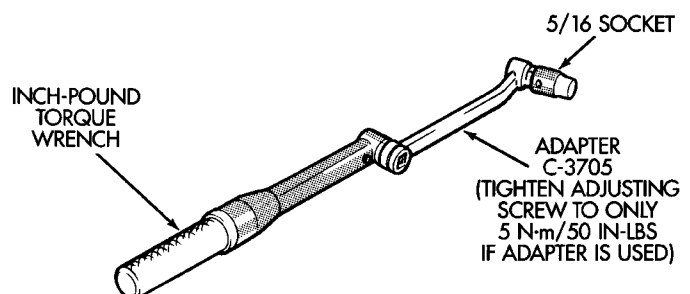


Fig. 262 Band Adjustment Adapter Tool

ADJUSTMENTS (Continued)

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. Be sure adjusting screw turns freely in lever.
- (4) Tighten adjusting screw to 8 N·m (72 in. lbs.) torque (Fig. 263).
- (5) Back off adjusting screw 2 turns.
- (6) Hold adjusting screw in place and tighten locknut to 34 N·m (25 ft. lbs.) torque.
- (7) Position new gasket on oil pan and install pan on transmission. Tighten pan bolts to 17 N·m (13 ft. lbs.) torque.
- (8) Lower vehicle and refill transmission with Mopar® ATF Plus, Type 7176 fluid.

VALVE BODY

CONTROL PRESSURE ADJUSTMENTS

There are two control pressure adjustments on the valve body;

- Line Pressure
- Throttle Pressure

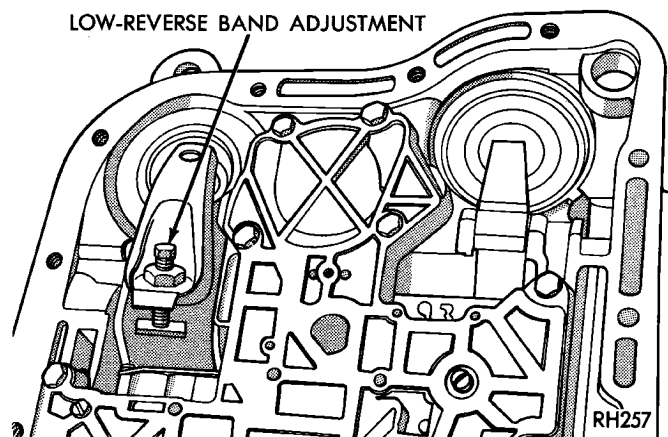


Fig. 263 Rear Band Adjustment Screw Location

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.

LINE PRESSURE ADJUSTMENT

Measure distance from the valve body to the inner edge of the adjusting screw with an accurate steel scale (Fig. 264).

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.

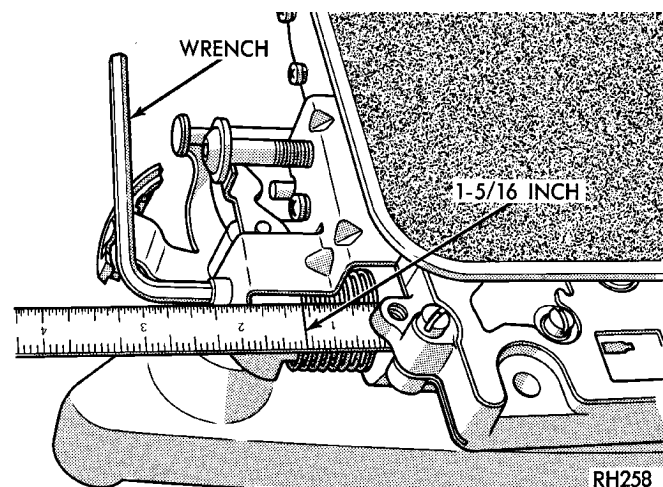


Fig. 264 Line Pressure Adjustment

THROTTLE PRESSURE ADJUSTMENT

Insert Gauge Tool C-3763 between the throttle lever cam and the kickdown valve stem (Fig. 265).

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.

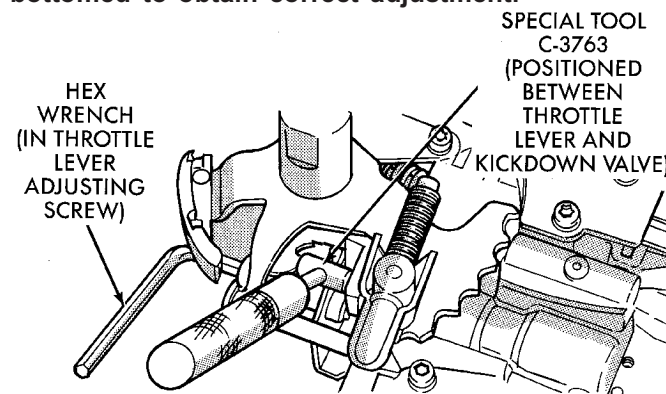
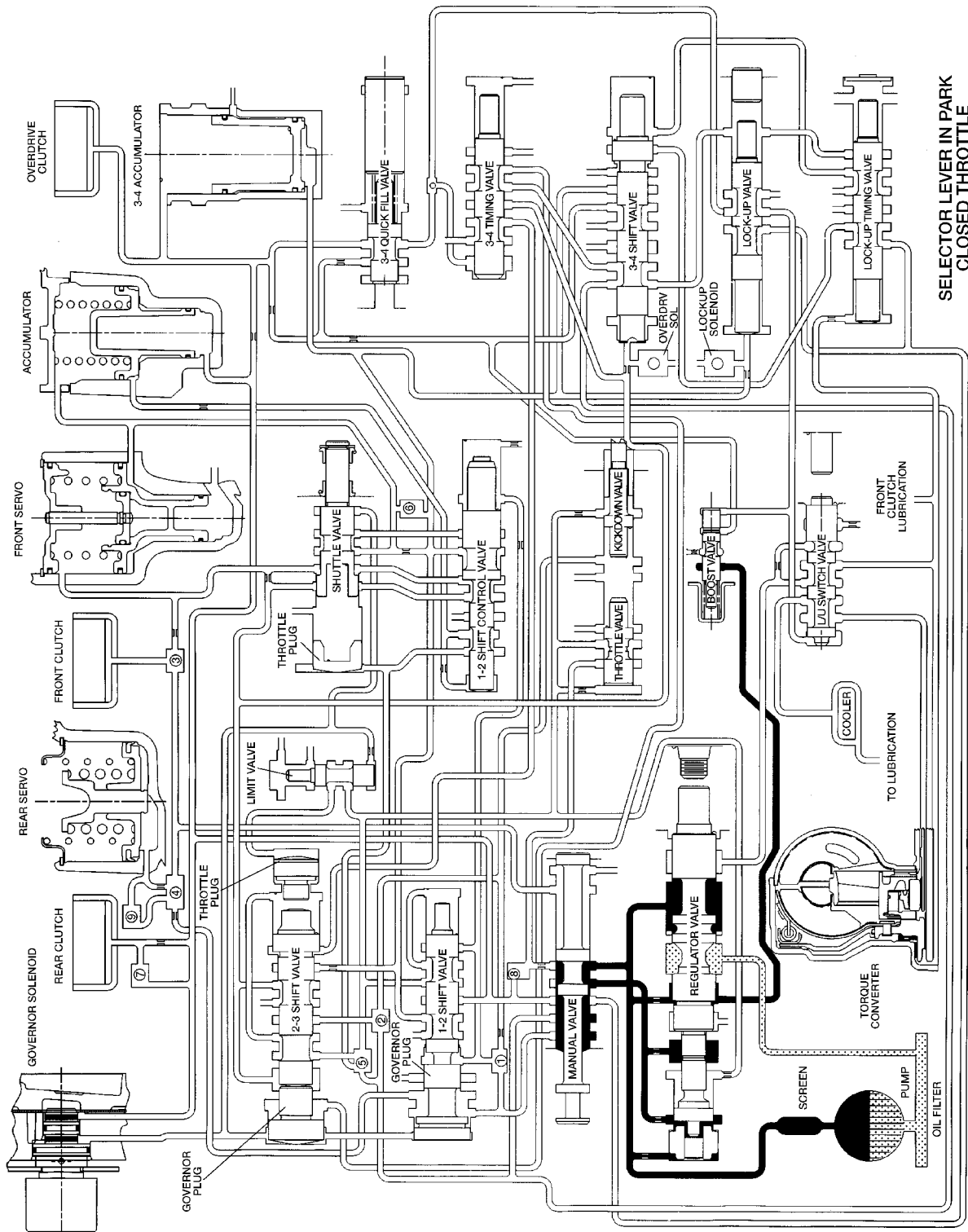
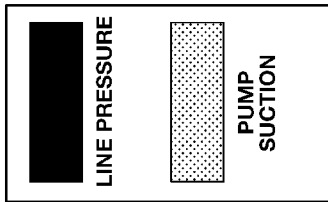


Fig. 265 Throttle Pressure Adjustment

SCHEMATICS AND DIAGRAMS

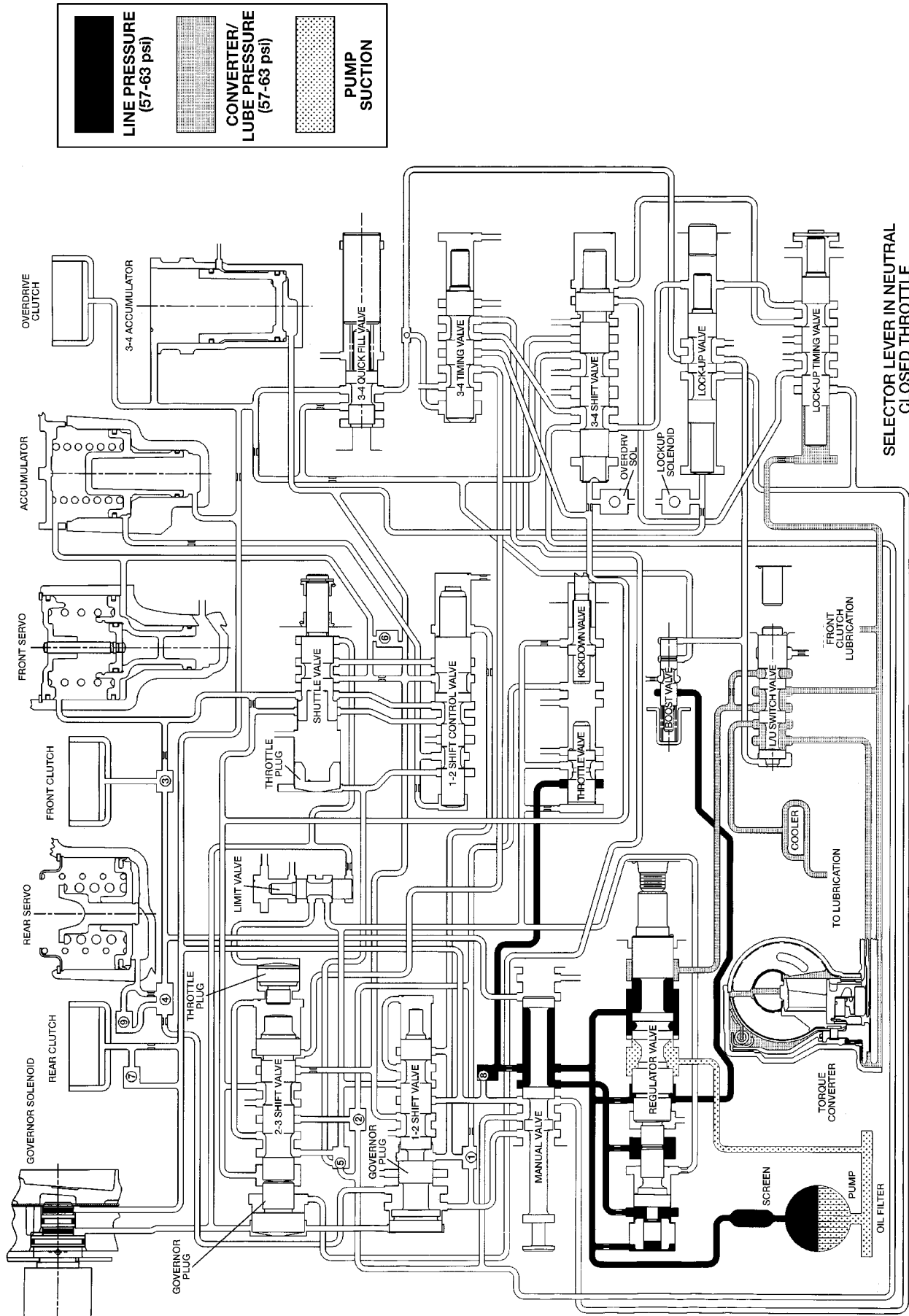
HYDRAULIC SCHEMATICS



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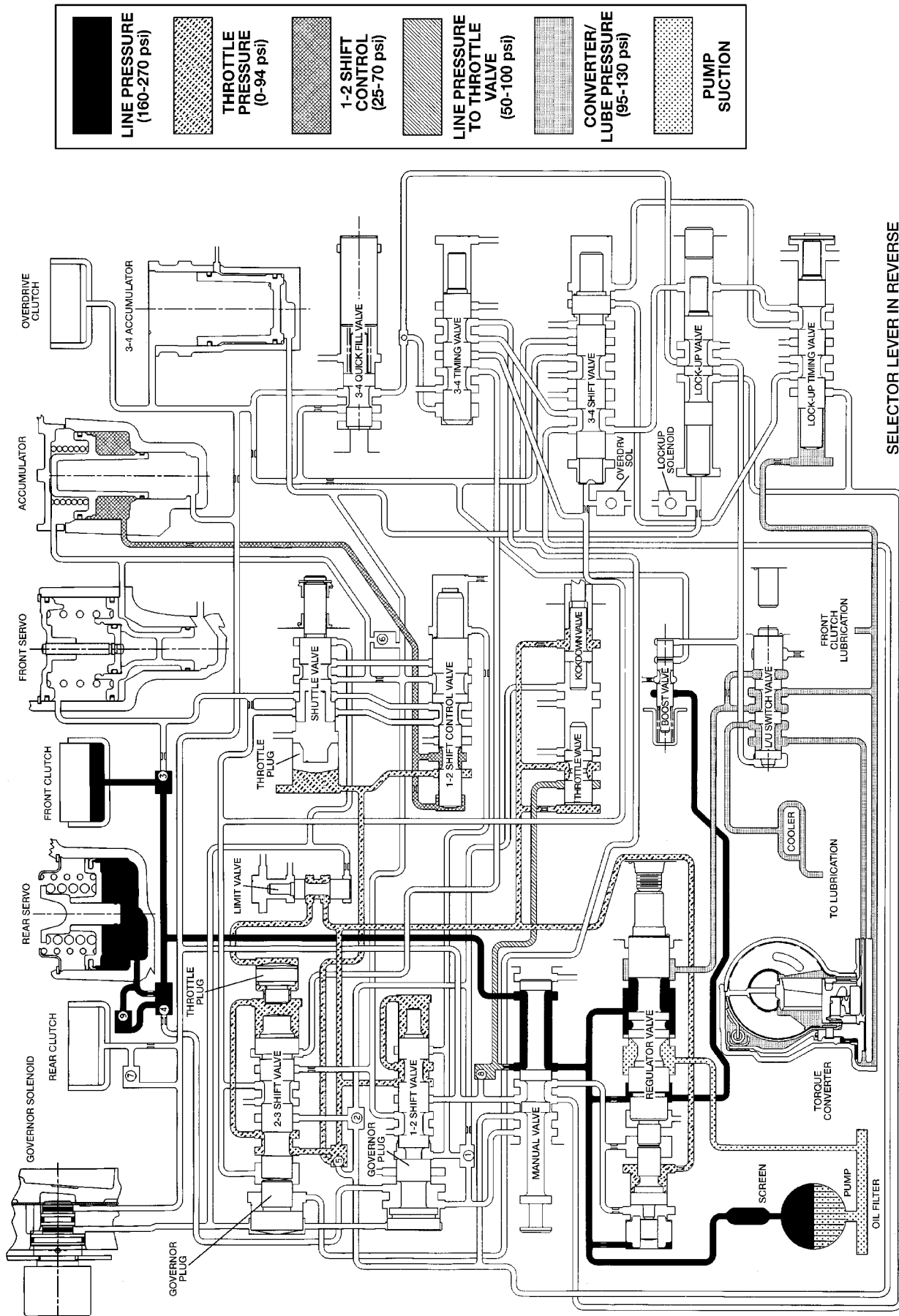
SCHEMATICS AND DIAGRAMS (Continued)

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HYDRAULIC FLOW IN NEUTRAL

SCHEMATICS AND DIAGRAMS (Continued)

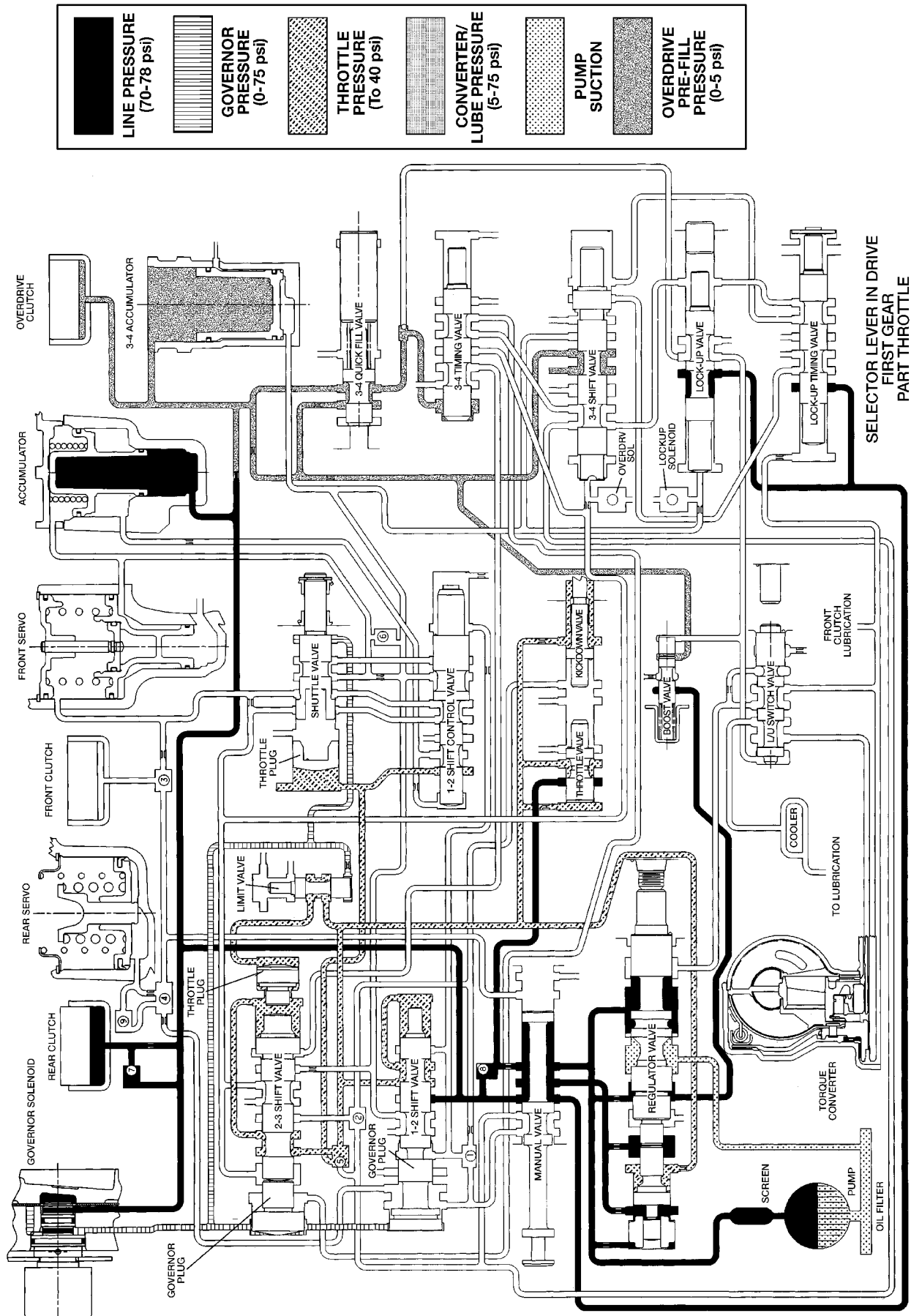


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HYDRAULIC FLOW IN REVERSE

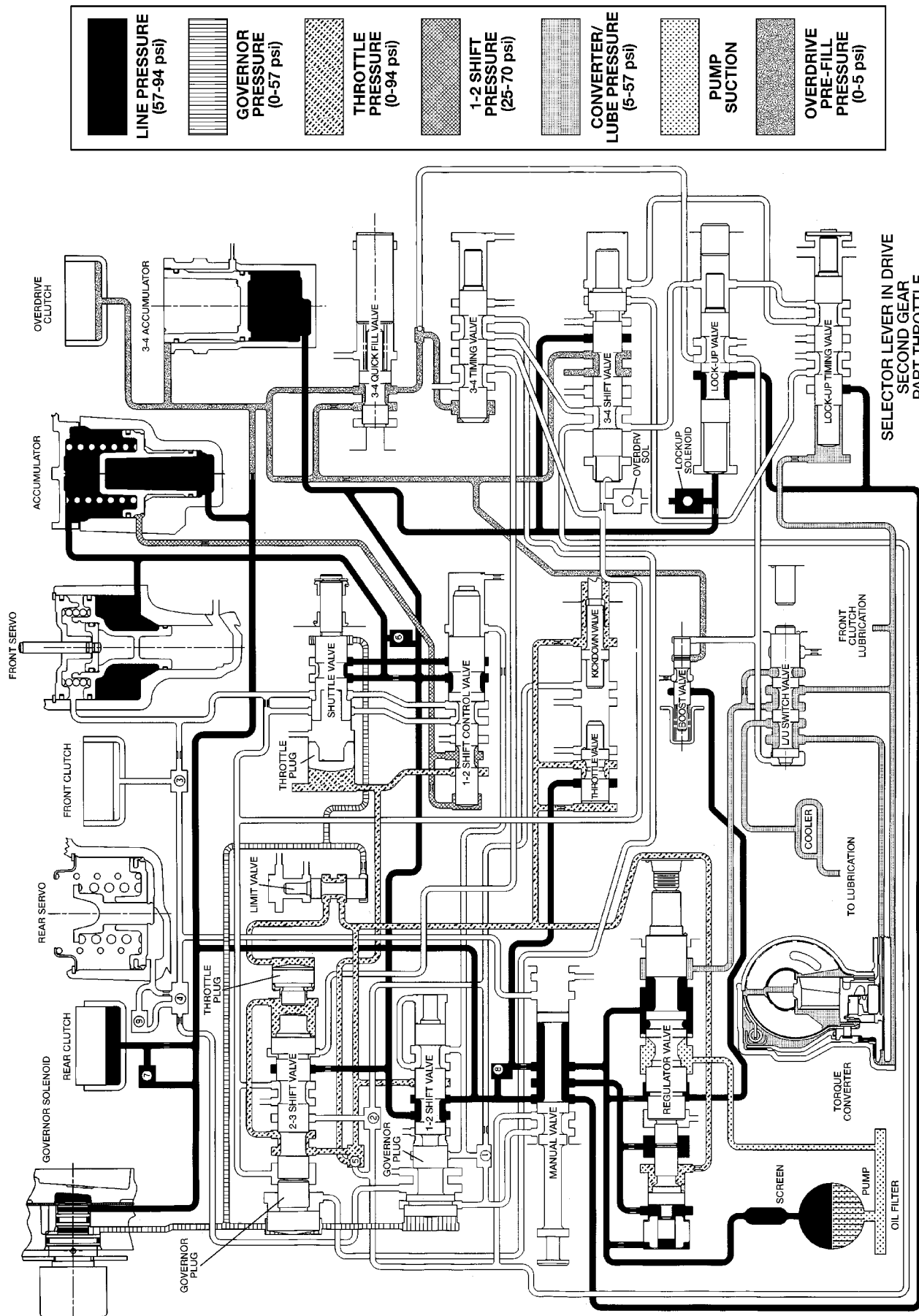
SCHEMATICS AND DIAGRAMS (Continued)

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HYDRAULIC FLOW IN DRIVE FIRST GEAR

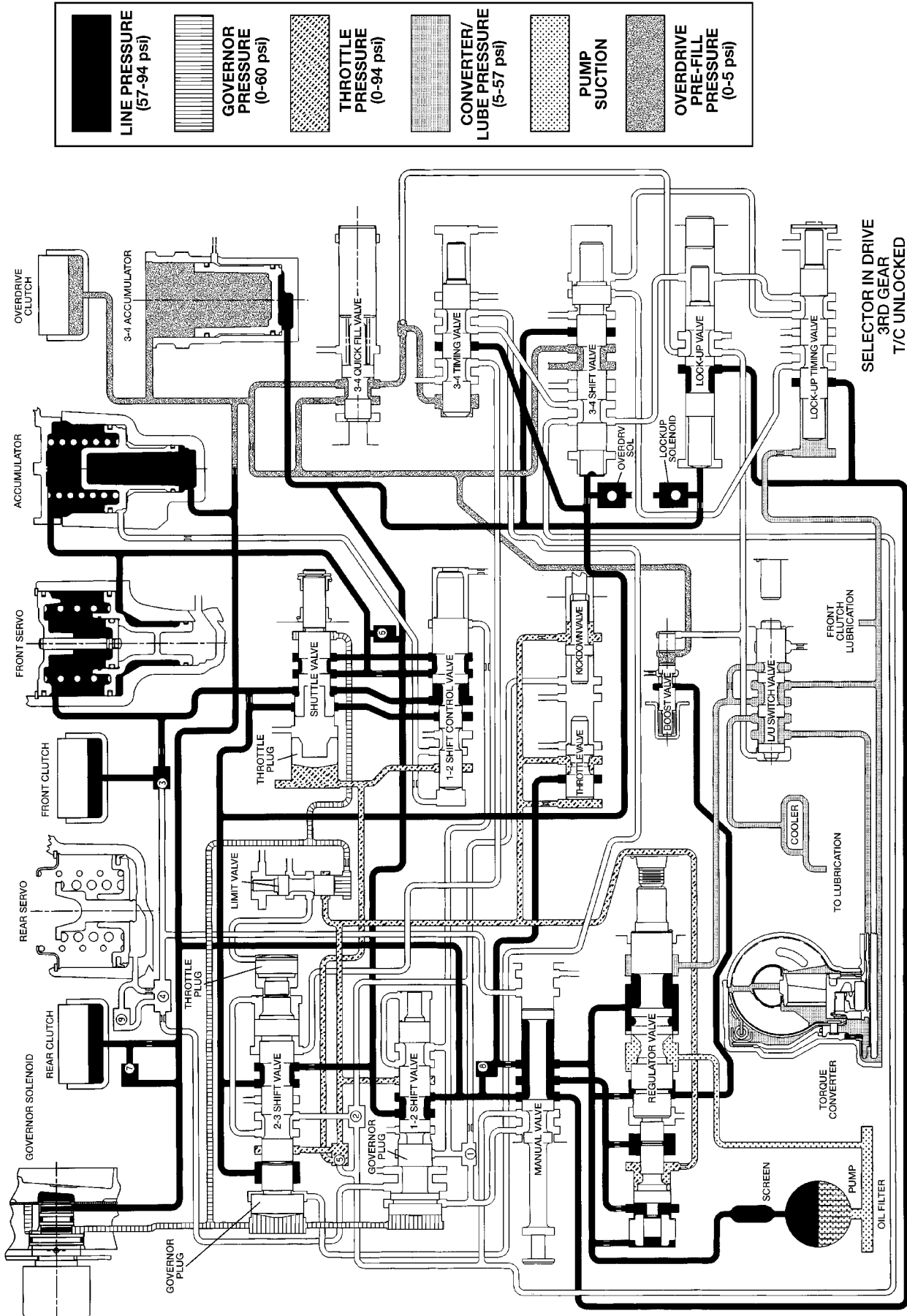
HYDRAULIC FLOW IN DRIVE SECOND GEAR



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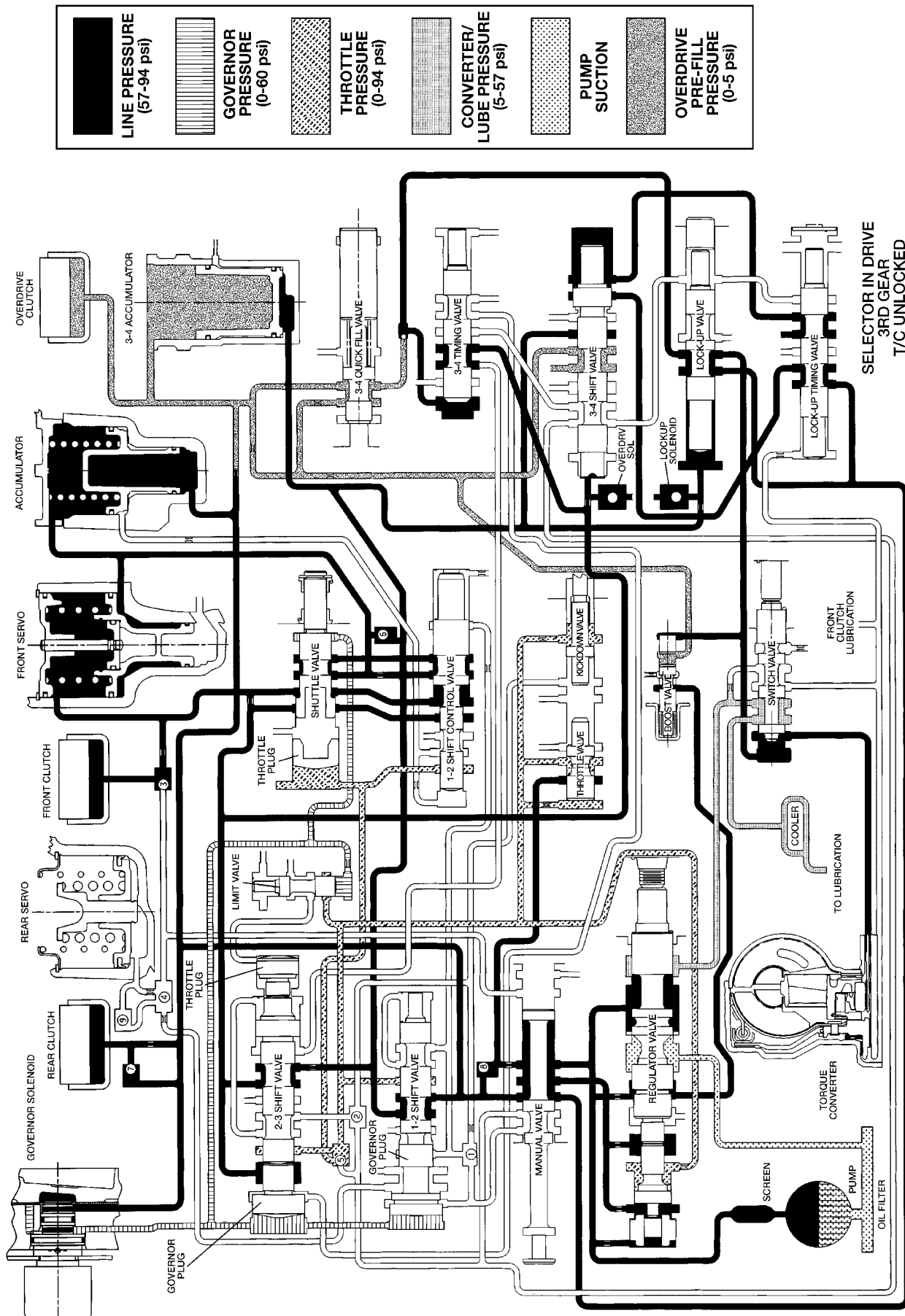
SCHEMATICS AND DIAGRAMS (Continued)

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

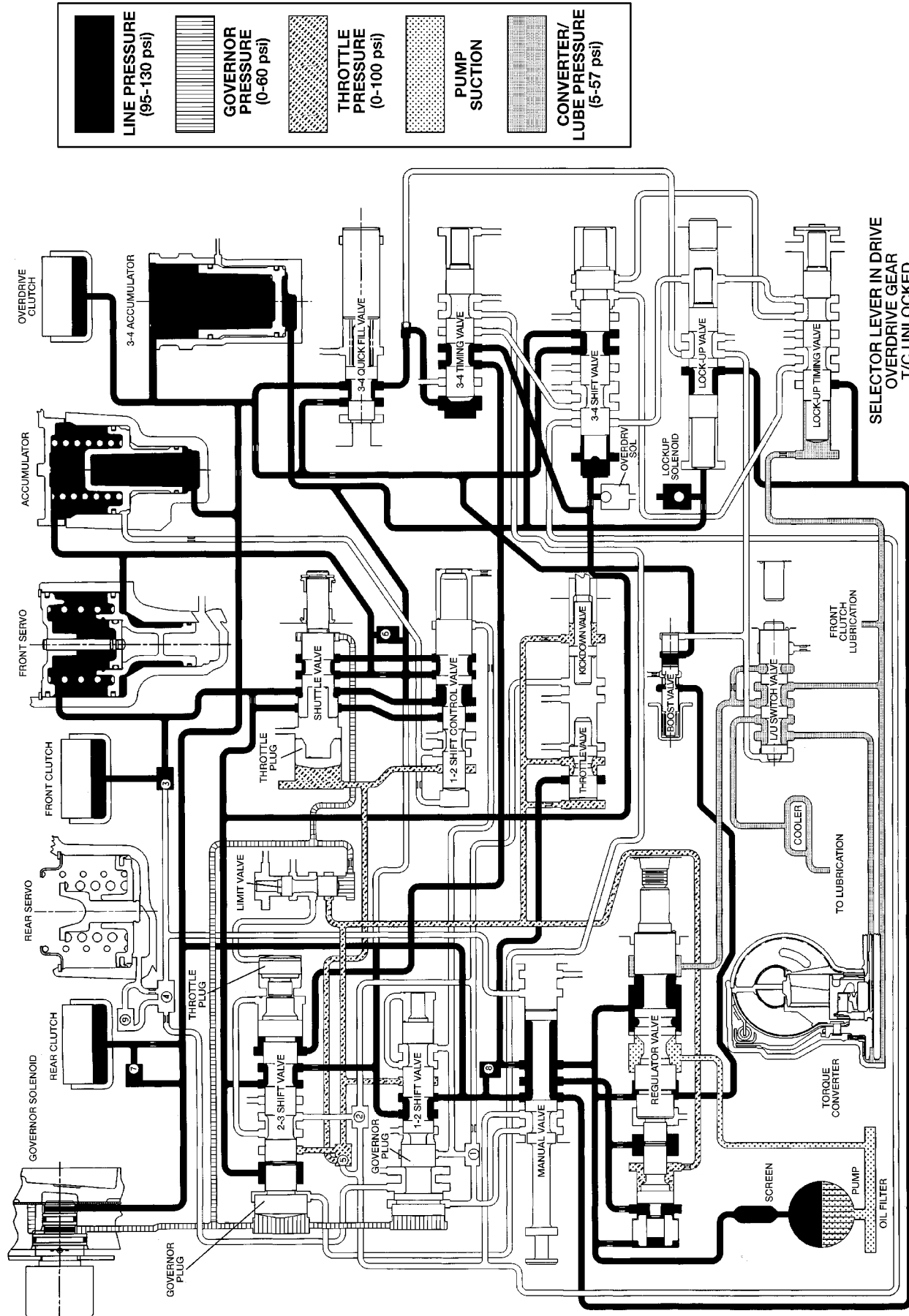
SCHEMATICS AND DIAGRAMS (Continued)



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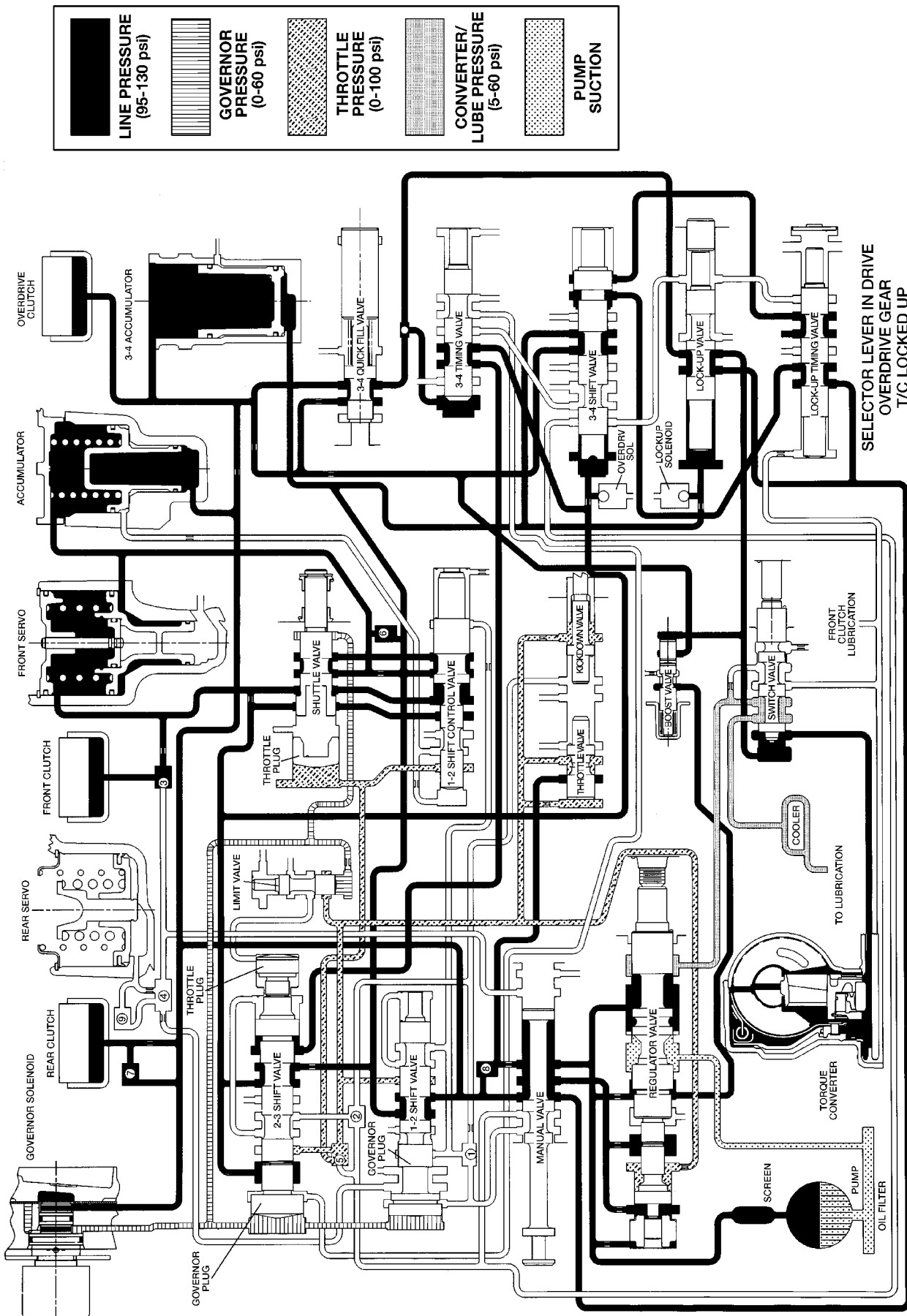
SCHEMATICS AND DIAGRAMS (Continued)



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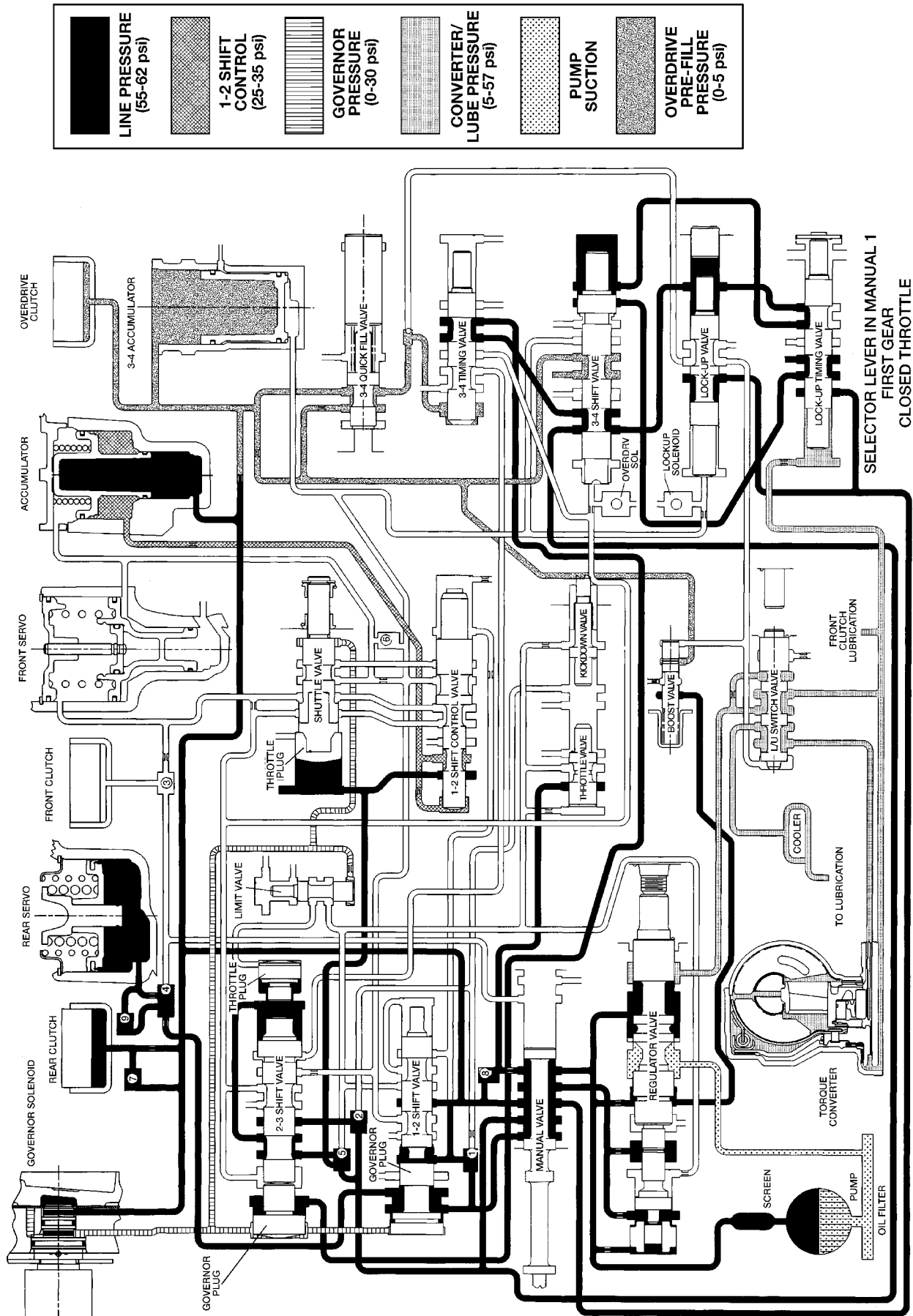
SCHEMATICS AND DIAGRAMS (Continued)



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HYDRAULIC FLOW IN DRIVE FOURTH GEAR (CONVERTER CLUTCH APPLIED)

SCHEMATICS AND DIAGRAMS (Continued)



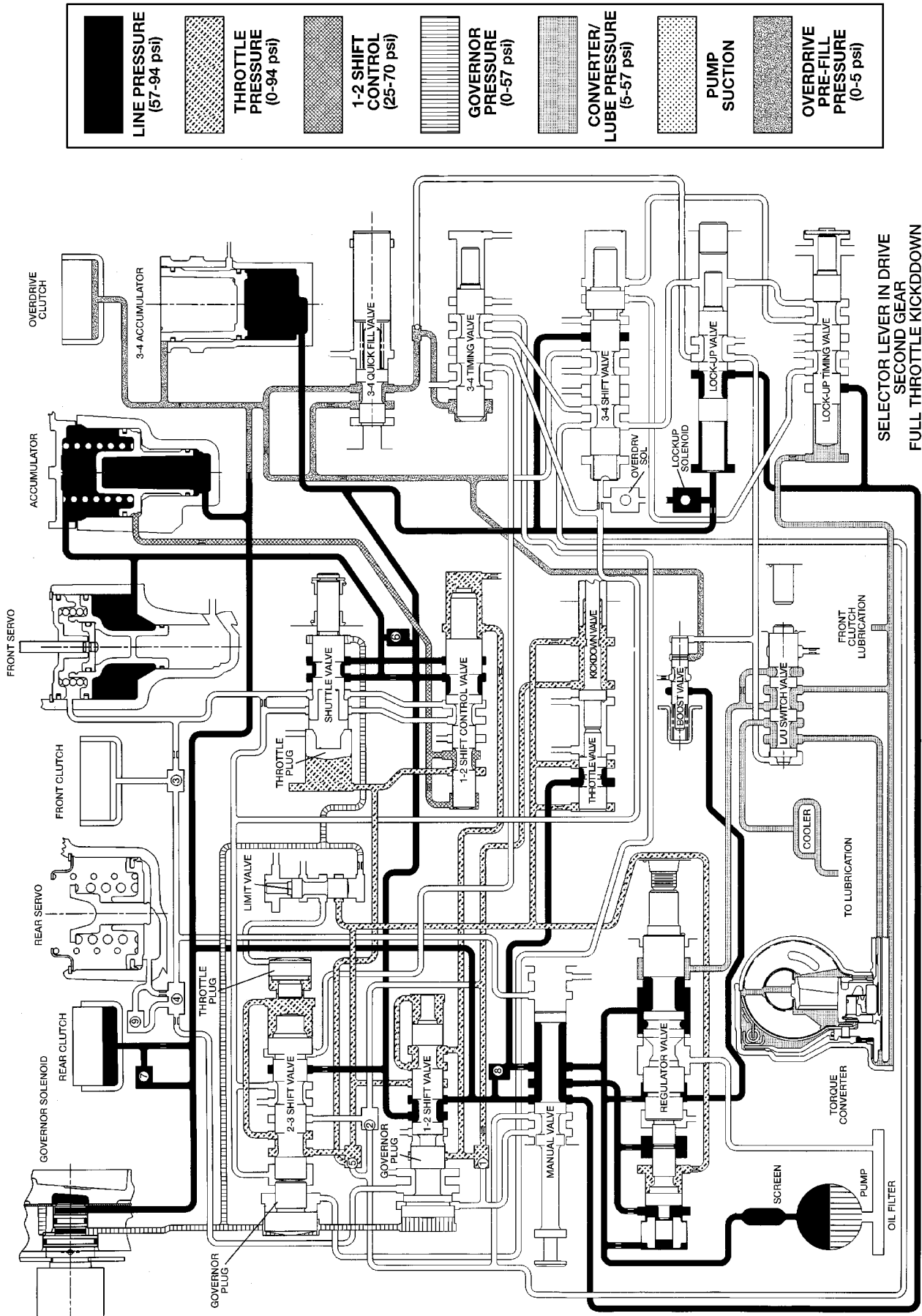
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HYDRAULIC FLOW IN MANUAL LOW (1)

80abfd89

HYDRAULIC FLOW IN MANUAL SECOND (2)

SCHEMATICS AND DIAGRAMS (Continued)



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

SPECIFICATIONS**RE TRANSMISSION****GENERAL**

Oil pump gear tip clearance	0.089-0.190 mm	0.004-0.008 in.
Planetary end play	0.150-1.22 mm	0.006-0.048 in.
Input shaft end play	0.86-2.13 mm	0.034-0.084 in.
Clutch pack clearance/Front 3-disc.	1.78-3.28mm	0.070-0.129 in.
Clutch pack clearance/Rear 4-disc.	0.64-1.14 mm	0.025-0.045 in.
Overdrive clutch disc usage	4 discs	
Direct clutch disc usage	8 discs	
Front clutch spring usage	9 spring	
Band adjustment from 72 in. lbs. Front band Rear band	Back off 2-7/8 turns Back off 2 turns	
Recommended fluid	Mopar® ATF Plus, type 7176	

TORQUE**DESCRIPTION** **TORQUE**

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.)
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.)
Screw, fluid filter	4 N·m (35 in. lbs.)
Bolt, valve body to case	12 N·m (100 in. lbs.)

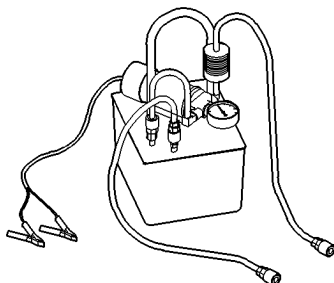
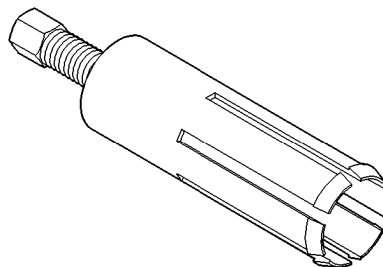
SPECIFICATIONS (Continued)**THRUST WASHER/SPACER/SNAP RING DIMENSIONS**

Front clutch thrust washer (reaction shaft support hub)	1.55 mm 2.15 mm	0.061 in. 0.084 in. 0.102 in.
Rear clutch thrust washer (clutch retainer)	1.55 mm	0.061 in.
Output shaft thrust plate (output shaft pilot hub)	1.5-1.6 mm	0.060-0.063 in.
Output shaft thrust washer (rear clutch hub)	1.3-1.4 mm 1.75-1.8 mm 2.1-2.2 mm	0.052-0.054 in. 0.068-0.070 in. 0.083-0.085 in.
Rear clutch pack snap ring	1.5-1.6 mm 1.9-1.95 mm	0.060-0.062 in. 0.074-0.076 in.
Planetary geartrain snap ring (at front of output shaft)	1.4-1.5 mm 1.6-1.7 mm	0.055-0.059 in. 0.062-0.066 in.

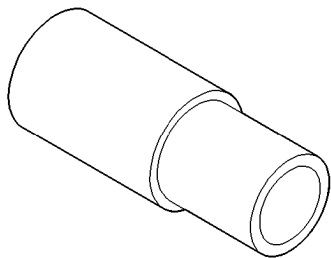
Overdrive piston thrust plate	Thrust plate and spacer are select fit components. Refer to size charts and
Intermediate shaft spacer	selection procedures in Overdrive Unit disassembly and assembly section.

PRESSURE TEST

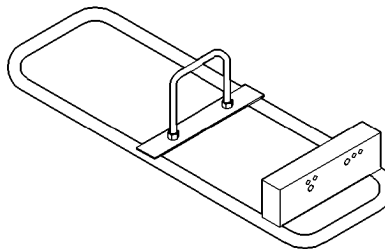
Overdrive clutch	Fourth gear only	Pressure should be 469-496 kPa (68-72 psi) with closed throttle and increase to 620-896 kPa (90-130 psi) at 1/2 to 3/4 throttle.
Line pressure (at accumulator)	Closed throttle	372-414 kPa (54-60 psi).
Front servo	Third gear only	No more than 21 kPa (3 psi) lower than 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 TRANSMISSION****Oil Cooler Flusher—6906****Remover—6957**

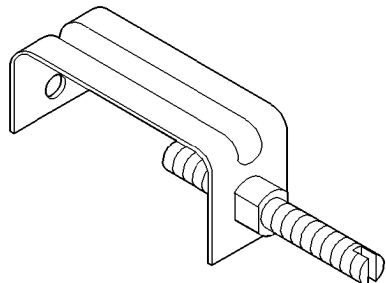
SPECIAL TOOLS (Continued)



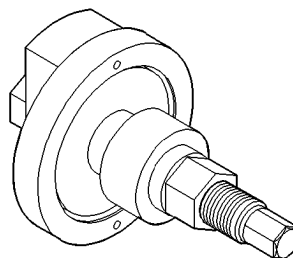
Installer—6951



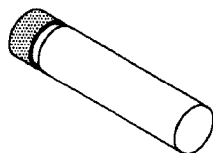
Transmission Repair Stand—C-3750-B



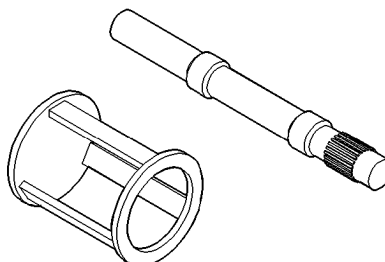
Retainer, Detent Ball and Spring—6583



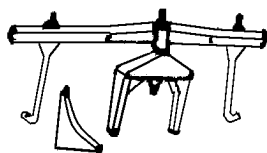
Spring Compressor—C-3863-A



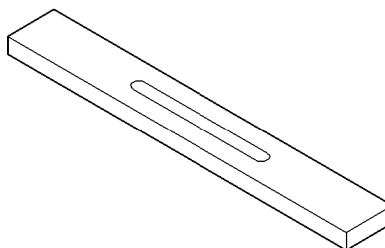
Gauge Block—6312



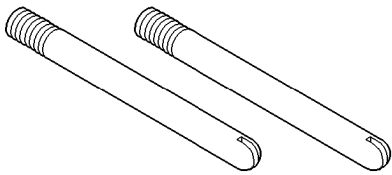
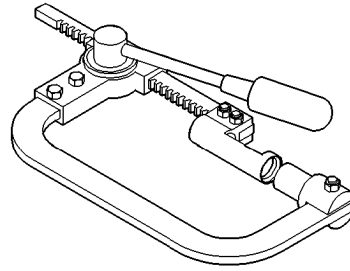
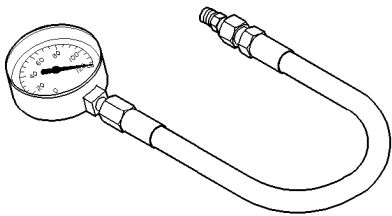
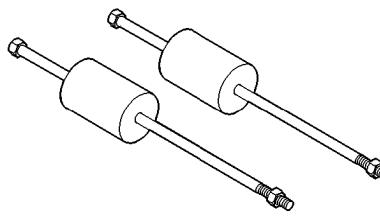
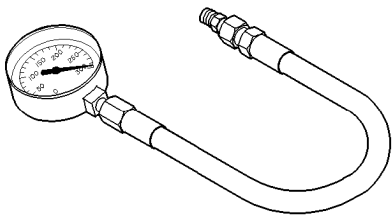
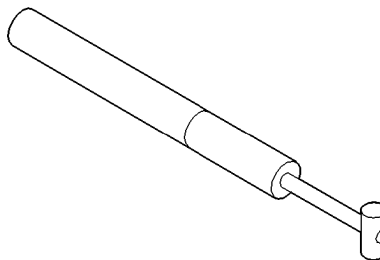
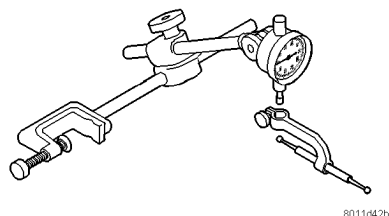
Spring Compressor and Alignment Shaft—6227



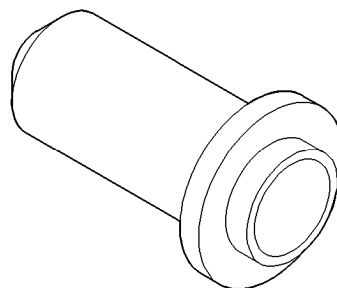
Fixture, Engine Support—C-3487-A



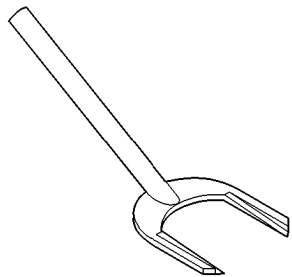
Gauge Bar—6311

SPECIAL TOOLS (Continued)***Extension Housing Pilot—C-3288-B******Spring Compressor—C-3422-B******Pressure Gauge—C-3292******Puller, Slide Hammer—C-3752******Pressure Gauge—C-3293SP******Gauge, Throttle Setting—C-3763***

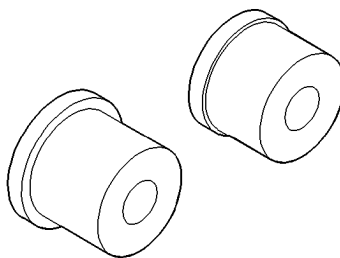
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Dial Indicator—C-3339***Seal Installer—C-3860-A***

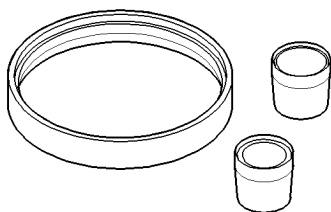
SPECIAL TOOLS (Continued)



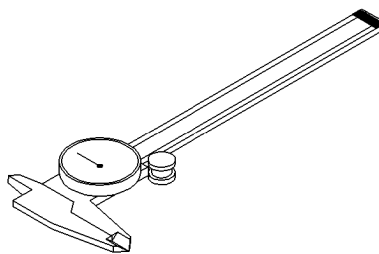
Seal Remover—C-3985-B



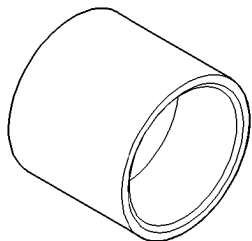
Remover/Installer—C-4470



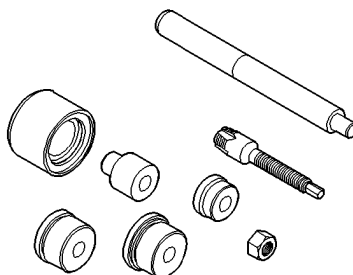
Overdrive Piston Seal Installer—8114



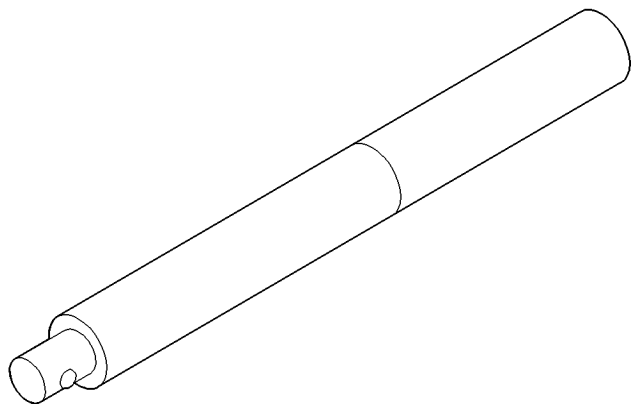
Dial Caliper—C-4962



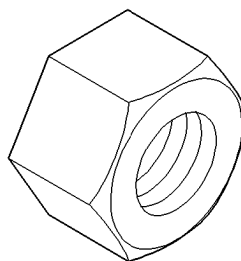
Installer—C-3995-A



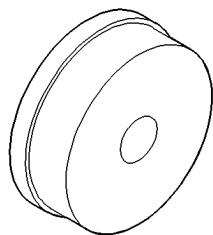
Bushing Remover/Installer Set—C-3887-J



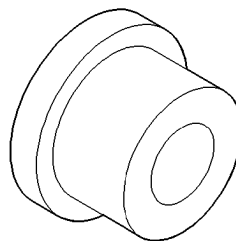
Universal Handle—C-4171



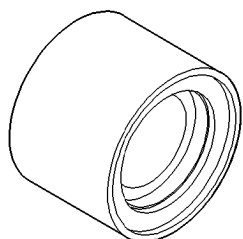
Nut, Bushing Remover—SP-1191, From kit C-3887-J

SPECIAL TOOLS (Continued)

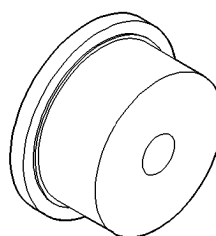
Remover, Front Clutch Bushing—SP-3629, From kit C-3887-J



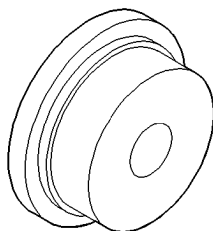
Installer, Reaction Shaft Bushing—SP-5302, From kit C-3887-J



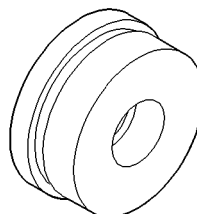
Cup, Bushing Remover—SP-3633, From kit C-3887-J



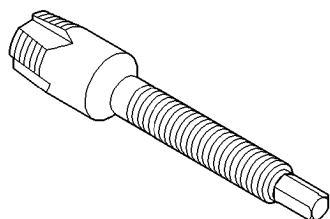
Installer, Front Clutch Bushing—SP-5511, From kit C-3887-J



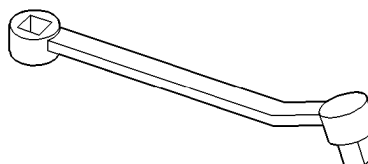
Installer, Oil Pump Bushing—SP-5118, From kit C-3887-J



Remover, Bushing—SP-3550, From kit C-3887-J



Remover, Reaction Shaft Bushing—SP-5301, From kit C-3887-J



Adapter, Band Adjuster—C-3705