

TRANSFER CASE - NV241HD

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TRANSFER CASE - NV241HD

DESCRIPTION

The NV241HD is a part-time transfer case with a low-range gear system. The transfer case provides three operating ranges plus a NEUTRAL position. The low range position provides a gear reduction ratio of 2.72:1 for increased low speed torque capability. Operating ranges are: 2H, 4H, and 4LO.

The synchronizer mechanism consists of a brass stop ring, synchronizer hub, and the sliding clutch

(Fig. 1). The synchronizer components allow the transfer case to be shifted between the 2H and 4H operating ranges while the vehicle is in motion.

The gear cases, retainer and extension are all of aluminum. Drive sprockets and an interconnecting drive chain are used to transmit engine torque to the front/rear propeller shafts. The mainshaft, input gear and front output shaft are supported by ball and needle bearings.

TRANSFER CASE - NV241HD (Continued)

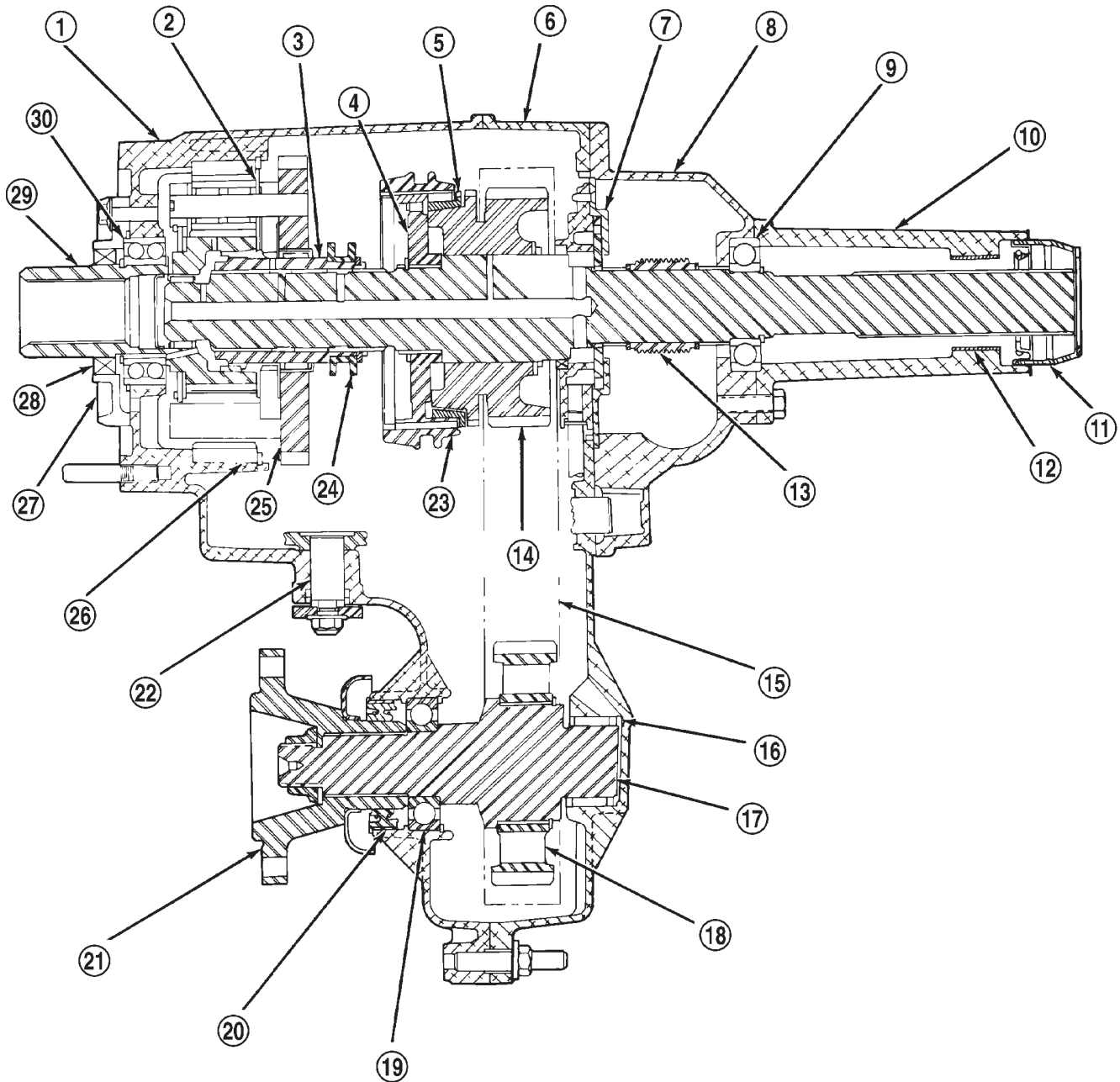


Fig. 1 NV241HD Transfer Case

- | | |
|------------------------|-----------------------------|
| 1 - FRONT CASE | 16 - NEEDLE BEARING |
| 2 - PLANETARY ASSEMBLY | 17 - FRONT OUTPUT SHAFT |
| 3 - SUPPORT SLEEVE | 18 - SPROCKET |
| 4 - SYNCHRO HUB | 19 - ROLLER BEARING |
| 5 - STOP RING | 20 - SEAL |
| 6 - REAR CASE | 21 - COMPANION FLANGE |
| 7 - OIL PUMP | 22 - SECTOR SHAFT |
| 8 - REAR RETAINER | 23 - SLIDING CLUTCH |
| 9 - OUTPUT BEARING | 24 - SLIDING HUB |
| 10 - REAR EXTENSION | 25 - PTO GEAR |
| 11 - SEAL | 26 - ANNULUS GEAR |
| 12 - BUSHING | 27 - INPUT BEARING RETAINER |
| 13 - SPEEDOMETER GEAR | 28 - SEAL |
| 14 - DRIVE SPROCKET | 29 - INPUT GEAR |
| 15 - CHAIN | 30 - INPUT BEARING |

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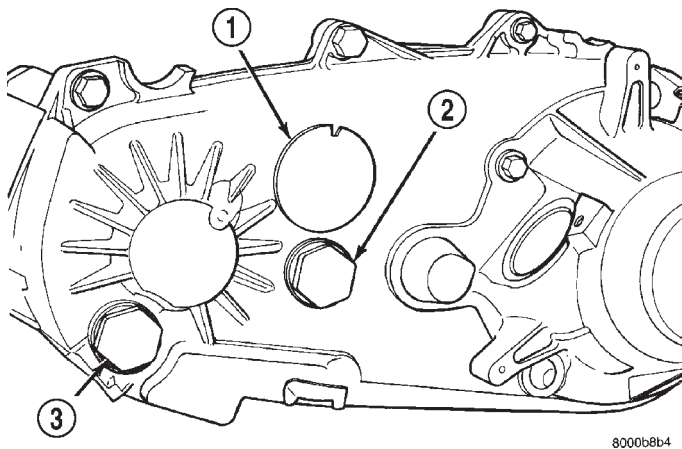
PTO CAPABILITY

The NV241HD transfer case has power take-off capability. A PTO gear permanently attached to the planetary carrier, and a removable PTO cover are provided for this purpose.

IDENTIFICATION

An identification tag (Fig. 2) is attached to the rear case of every transfer case. The tag provides the transfer case model number, assembly number, serial number, and low range ratio.

The transfer case serial number also represents the date of build.



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Fig. 2 Transfer Case Identification Tag - Typical

- 1 - I.D. TAG
- 2 - FILL PLUG
- 3 - DRAIN PLUG

OPERATION**OPERATING RANGES**

Transfer case operating ranges are:

- 2H (2-wheel drive)
- 4H (4-wheel drive)
- 4LO (4-wheel drive low range)

The 2H range is for use on any road surface at any time.

The 4H and 4LO ranges are for off road use only. They are not for use on hard surface roads. The only exception being when the road surface is covered by ice and snow or other loose, slippery material.

The low range reduction gear system is operative in 4LO range only. This range is for extra pulling power in off road situations. Low range reduction ratio is 2.72:1.

A front axle disconnect system is used to achieve two-wheel drive mode. The axle disconnect vacuum motor is actuated by a vacuum switch on the transfer case. The switch is operated by the transfer case range rod.

SHIFT MECHANISM

The transfer case is operated by an adjustable floor mounted shift linkage. The transfer case shift lever is directly attached to the shift sector. The sector operates the range and mode forks within the transfer case.

A straight line shift pattern is used with a NEUTRAL detent. Lever range positions are imprinted in the shift knob.

SHIFTING

The synchronizer components allow the transfer case to be shifted between the 2H and 4H operating ranges while the vehicle is in motion. The vehicle must have the transmission placed in NEUTRAL, or the clutch depressed in the case of a manual transmission, and be moving less than 2-3 MPH when shifting into the 4L operating range.

DIAGNOSIS AND TESTING - TRANSFER CASE

Before beginning repair on a suspected transfer case malfunction, check all other driveline components beforehand.

The actual cause of a problem may be related to such items as: front hubs, axles, propeller shafts, wheels and tires, transmission, or clutch instead. If all other driveline components are in good condition and operating properly, refer to the Diagnosis Chart for further information.

TRANSFER CASE - NV241HD (Continued)

DIAGNOSIS CHART

Condition	Possible Cause	Correction
Transfer Case difficult to shift or will not shift into desired range.	<ol style="list-style-type: none"> 1) Vehicle speed too great to permit shifting. 2) If vehicle was operated for an extended period in 4H on a dry paved surface, the driveline torque load may be causing a bind. 3) Transfer case external shift linkage binding. 4) Insufficient or incorrect lubricant. 5) Internal components binding, worn, or damaged. 	<ol style="list-style-type: none"> 1) Stop vehicle and shift into desired range. Or, reduce speed to below 3-4 km/h (2-3 mph) before attempting the shift. 2) Stop vehicle and shift the transmission into neutral. Shift the transfer case to 2H and operate vehicle in 2H on dry paved surfaces. 3) Lubricate, repair, or replace linkage bushings, or tighten loose components as necessary. 4) Drain and refill to edge of fill hole with Mopar® ATF +4, type 9602, Automatic Transmission fluid. 5) Disassemble the transfer case and replace worn or damaged components as necessary.
Transfer Case noisy in all operating ranges.	<ol style="list-style-type: none"> 1) Insufficient or incorrect lubricant. 	<ol style="list-style-type: none"> 1) Drain and refill to edge of fill hole with Mopar® ATF +4, type 9602, Automatic Transmission fluid.
Noisy in, or jumps out of, four wheel drive low range.	<ol style="list-style-type: none"> 1) Transfer case not completely engaged in 4L position. 2) Shift linkage out of adjustment. 3) Shift linkage loose or binding. 4) Range fork damaged, inserts worn, or fork is binding on the shift rail. 5) Low range gear worn or damaged. 	<ol style="list-style-type: none"> 1) With the transmission in NEUTRAL, or the clutch depressed in the case of a manual transmission and the vehicle moving under 3-4 km/h (2-3 mph), shift the transfer case to NEUTRAL and then shift into the 4L position. 2) Adjust linkage. 3) Tighten, lubricate, or repair linkage as necessary. 4) Disassemble unit and repair as necessary. 5) Disassemble unit and repair as necessary.
Lubricant leaking from output shaft seal or vent.	<ol style="list-style-type: none"> 1) Transfer case overfilled. 2) Vent closed or restricted. 3) Output shaft seals damaged or installed incorrectly. 	<ol style="list-style-type: none"> 1) Drain lubricant to the correct level. 2) Clear or replace vent as necessary. 3) Replace seal as necessary. Check to ensure that another component, the propeller shaft slip yoke for example, is not causing damage to seal.
Abnormal tire wear.	<ol style="list-style-type: none"> 1) Extended operation on hard, dry surfaces in the 4H position. 	<ol style="list-style-type: none"> 1) Operate vehicle in the 2H position on hard, dry surfaces.

TRANSFER CASE - NV241HD (Continued)

REMOVAL

- (1) Raise and support vehicle.
- (2) Remove skid plate, if equipped. (Refer to 13 - FRAMES & BUMPERS/FRAME/TRANSFER CASE SKID PLATE - REMOVAL)
- (3) Position drain oil container under transfer case.
- (4) Remove transfer case drain plug and drain lubricant into container.
- (5) Disconnect vent hose and vacuum harness at transfer case switch.
- (6) Disconnect shift rod from grommet in transfer case shift lever, or from floor shift arm whichever provides easy access. Use channel lock style pliers to press rod out of lever grommet.
- (7) Support transmission with jack stand.
- (8) Remove rear crossmember.
- (9) Mark front and rear propeller shafts for assembly reference.
- (10) Remove front and rear propeller shafts. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - REMOVAL)
- (11) Support transfer case with suitable jack. Secure transfer case to jack with safety chains.
- (12) Remove nuts attaching transfer case to transmission.
- (13) Move transfer case assembly rearward until free of transmission output shaft.
- (14) Lower jack and move transfer case from under vehicle.

DISASSEMBLY

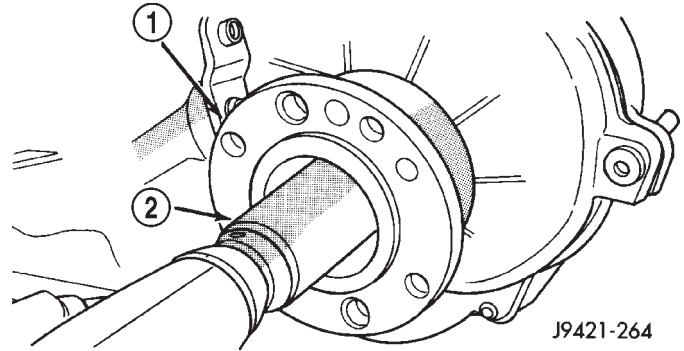
Position transfer case in a shallow drain pan. Remove drain plug and drain any remaining lubricant remaining in case.

EXTENSION HOUSING

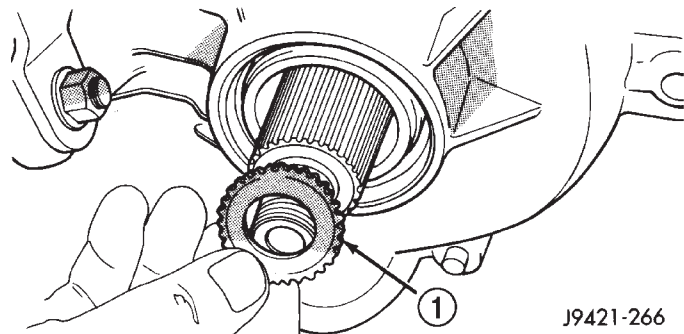
- (1) Remove extension housing snap-ring access cover.
- (2) Remove bolts holding extension housing to rear case half.
- (3) Tap extension housing with plastic or rawhide hammer to loosen sealant.
- (4) Disengage extension housing snap-ring from rear output shaft bearing.
- (5) Separate extension housing from transfer case.

COMPANION FLANGE AND SHIFT LEVER

- (1) Shift transfer case into NEUTRAL.
- (2) Remove companion flange nut (Fig. 3). Discard nut after removal. It is not reusable.
- (3) Remove companion flange from front output shaft. Use a suitable puller if flange can not be removed by hand.
- (4) Remove companion flange rubber seal from front output shaft (Fig. 4).

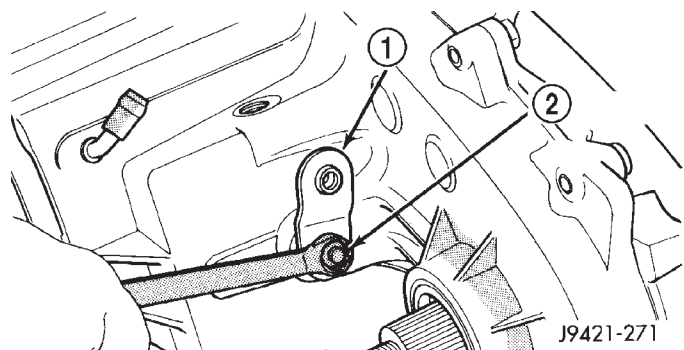
**Fig. 3 Removing Companion Flange Nut**

- 1 - COMPANION FLANGE
2 - SOCKET

**Fig. 4 Companion Flange Seal Removal**

- 1 - FLANGE SEAL

- (5) Remove nut and washer that retain shift lever to sector shaft. Then remove shift lever from shaft (Fig. 5).

**Fig. 5 Shift Lever Removal**

- 1 - SHIFT LEVER
2 - NUT/WASHER

TRANSFER CASE - NV241HD (Continued)

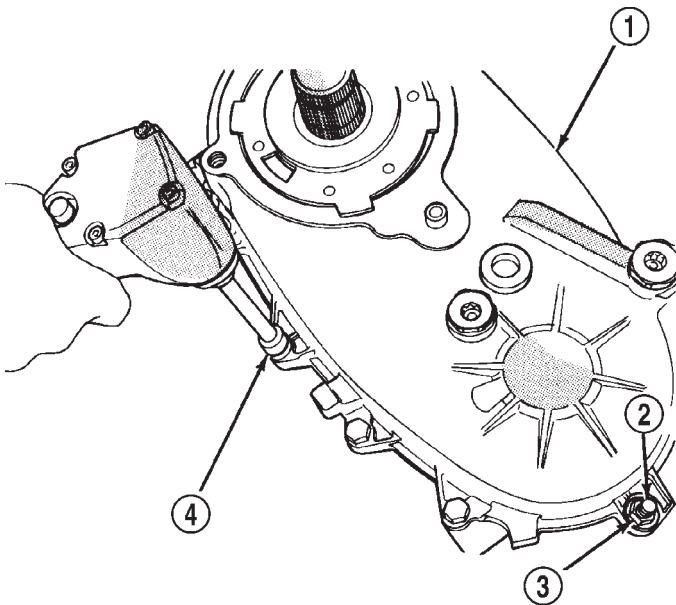
FRONT OUTPUT SHAFT AND DRIVE CHAIN

(1) Remove output bearing retaining ring with heavy duty snap-ring pliers.

(2) Remove output shaft bearing.

(3) Note position of bolts that attach rear case to front case (Fig. 6). Some bolts/studs at ends of case require flat washers. Mark position of these bolts with paint or scribe.

(4) Remove rear case-to-front case bolts.

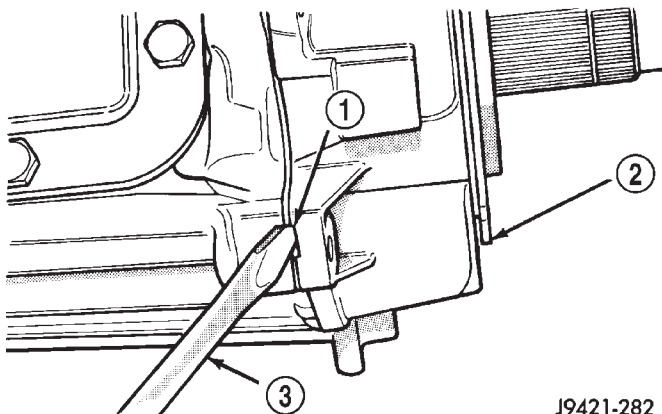


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Fig. 6 Removing Case Attaching Bolts

- 1 - REAR CASE
- 2 - STUD
- 3 - NUT AND WASHER
- 4 - SOCKET

(5) Loosen rear case with pry tool to break sealer bead. Insert tool in slot at each end of case (Fig. 7).

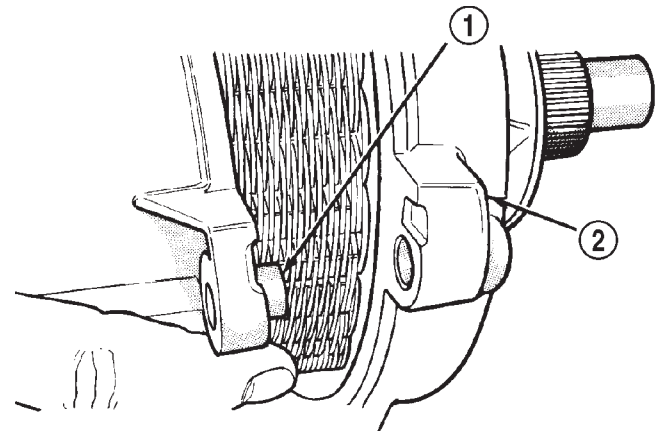


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Fig. 7 Loosening Rear Case (Breaking Sealer Bead)

- 1 - SLOT
- 2 - REAR CASE
- 3 - PRY TOOL

(6) Unseat rear case from alignment dowels (Fig. 8).



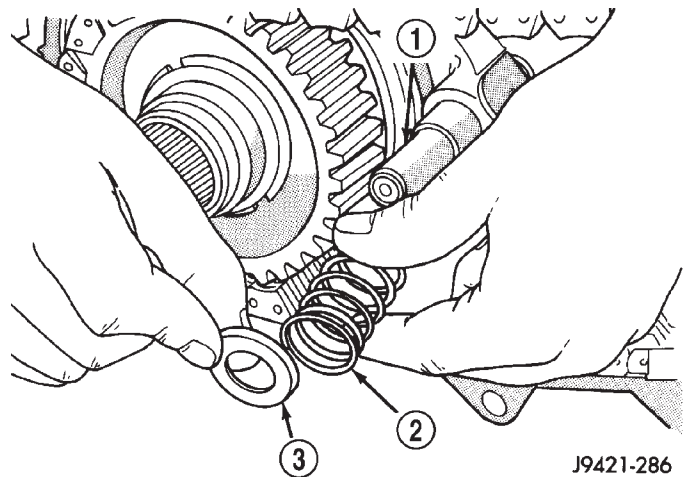
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Fig. 8 Removing Rear Case From Alignment Dowels

- 1 - CASE DOWELS (2)
- 2 - REAR CASE

(7) Remove rear case and oil pump assembly from front case.

(8) Remove shift rail cup and spring (Fig. 9).



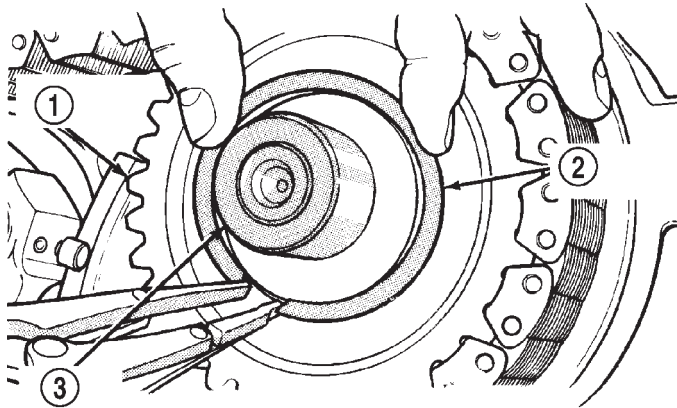
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Fig. 9 Shift Rail Cup And Spring Removal

- 1 - SHIFT RAIL
- 2 - SPRING
- 3 - CUP

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(9) Remove front sprocket retaining ring (Fig. 10).



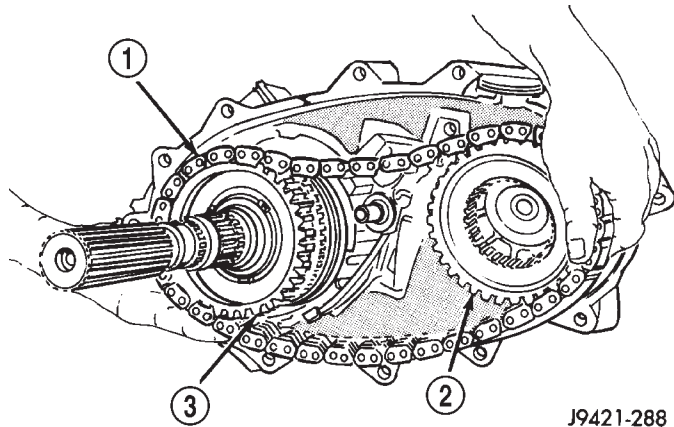
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Fig. 10 Removing Front Drive Sprocket Retaining Ring

- 1 - FRONT SPROCKET
- 2 - RETAINING RING
- 3 - FRONT OUTPUT SHAFT

(10) Pull mainshaft, front sprocket, and chain outward about 25.4 mm (1-inch) simultaneously (Fig. 11).

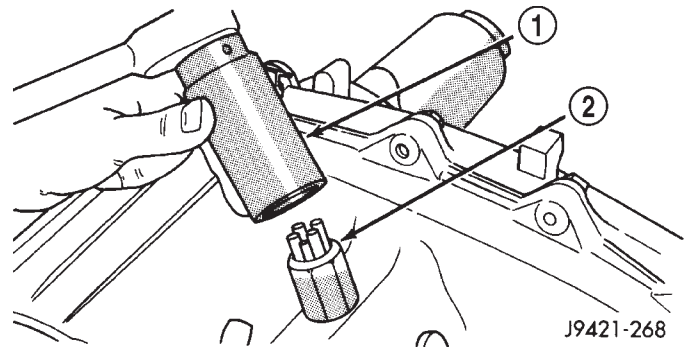
(11) Remove chain from mainshaft drive sprocket and remove front sprocket and chain as an assembly.



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Fig. 11 Removing Drive Chain And Front Sprocket

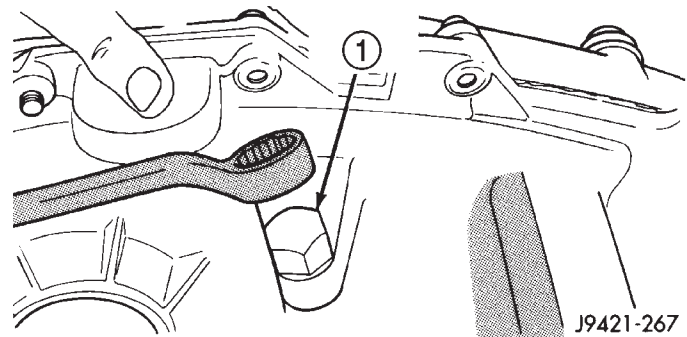
- 1 - CHAIN
- 2 - DRIVE SPROCKET
- 3 - FRONT SPROCKET



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Fig. 12 Vacuum/Indicator Switch Removal

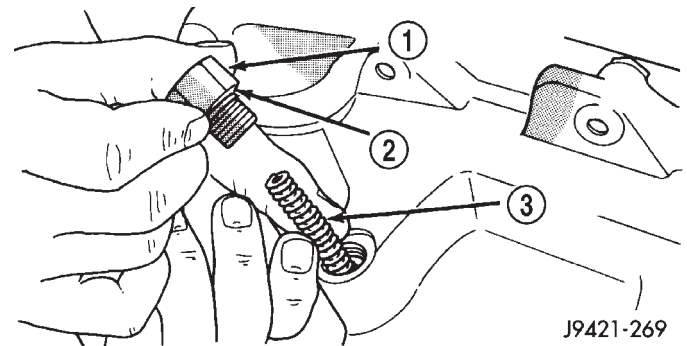
- 1 - 1-1/16" SOCKET
- 2 - INDICATOR SWITCH



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Fig. 13 Loosening Poppet Plunger Screw

- 1 - POPPET PLUNGER SCREW



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Fig. 14 Poppet Plunger Screw And Spring Removal

- 1 - POPPET PLUNGER SCREW
- 2 - O-RING
- 3 - PLUNGER SPRING

SHIFT FORK AND MAINSHAFT

(1) Remove vacuum/indicator switch (Fig. 12).

(2) Loosen poppet plunger screw (Fig. 13).

(3) Remove poppet plunger screw and spring (Fig. 14). Note that screw has o-ring seal. Remove and discard seal this seal.

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(4) Remove poppet plunger with magnet (Fig. 15).

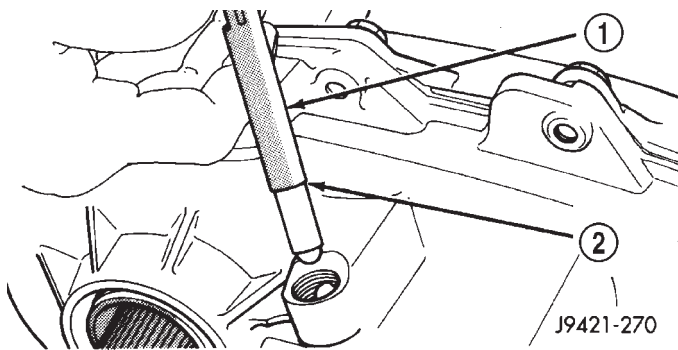


Fig. 15 Poppet Plunger Removal

- 1 - MAGNET
2 - POPPET PLUNGER

(5) Remove front output shaft from bearing in case (Fig. 16).

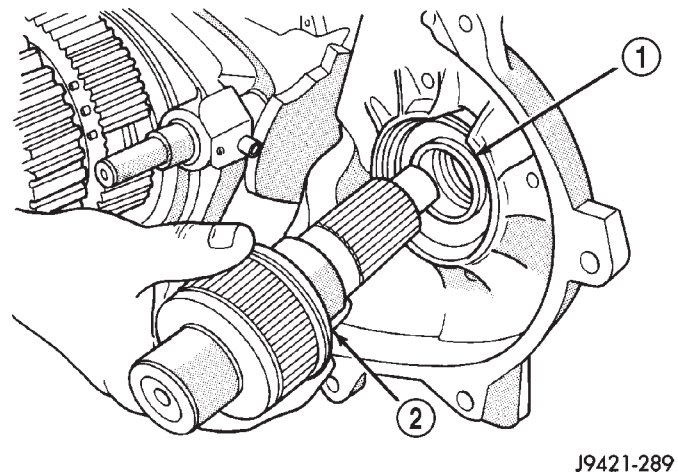


Fig. 16 Front Output Shaft Removal

- 1 - BALL BEARING
2 - FRONT OUTPUT SHAFT

(6) Pull mainshaft assembly out of input gear, sliding clutch and case (Fig. 17).

(7) Remove mode fork, sliding clutch and shift rail as assembly (Fig. 18). Note which way clutch fits in fork (long side of clutch goes to front).

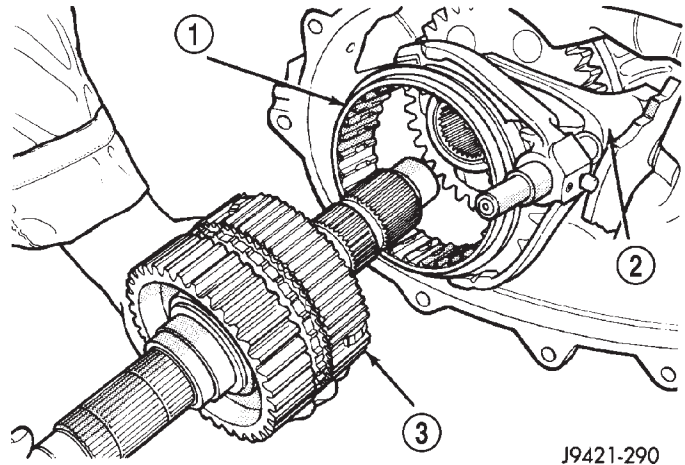


Fig. 17 Mainshaft Assembly Removal

- 1 - SLIDING CLUTCH
2 - MODE FORK
3 - MAINSHAFT ASSEMBLY

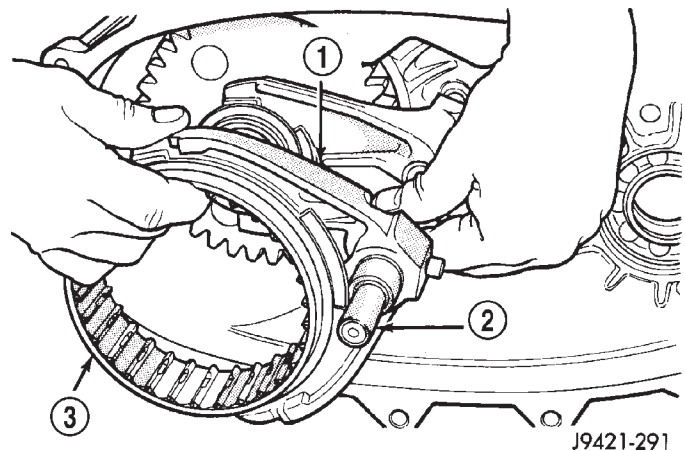
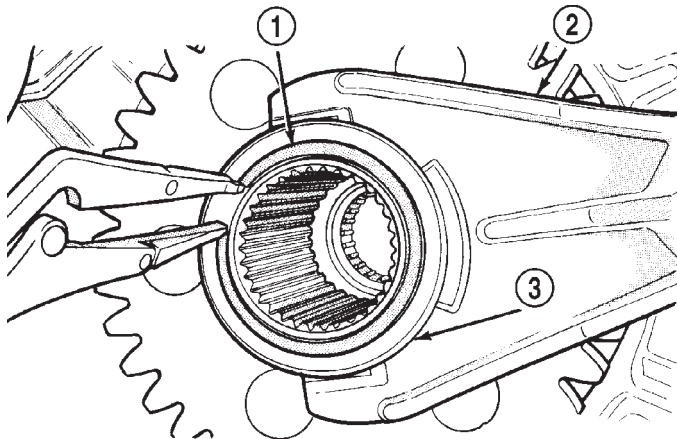


Fig. 18 Mode Fork, Shift Rail And Sliding Clutch Removal

- 1 - MODE FORK
2 - SHIFT RAIL
3 - SLIDING CLUTCH

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(8) Remove sliding hub retaining ring (Fig. 19).

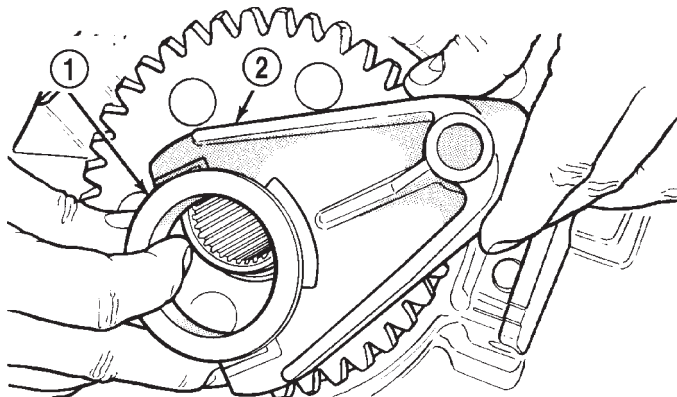


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Fig. 19 Sliding Hub Retaining Ring Removal

- 1 - RETAINING RING
- 2 - RANGE FORK
- 3 - SLIDING HUB

(9) Remove range fork and sliding hub as an assembly (Fig. 20).



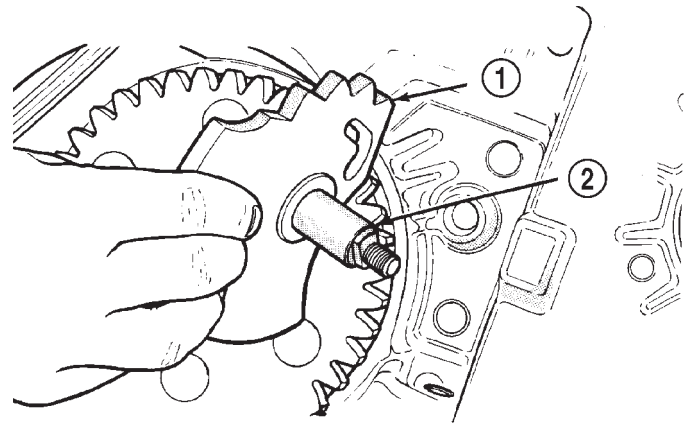
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Fig. 20 Range Fork And Sliding Hub Removal

- 1 - SUPPORT SLEEVE
- 2 - RANGE FORK

(10) Remove shift sector (Fig. 21).

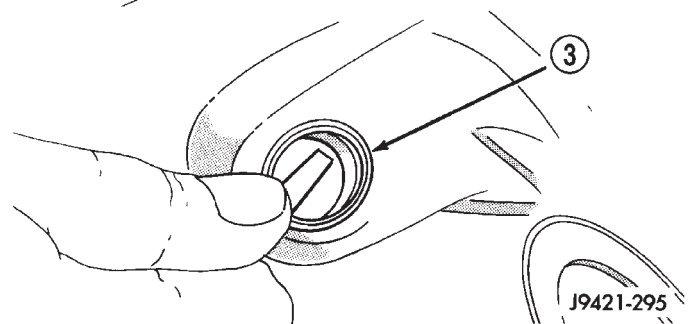
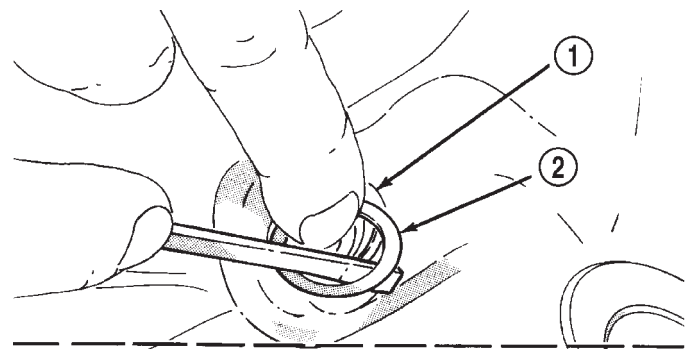
(11) Remove shift sector shaft nylon retainer and o-ring from shaft bore in front case (Fig. 22).



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Fig. 21 Shift Sector Removal

- 1 - SHIFT SECTOR
- 2 - SECTOR SHAFT



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Fig. 22 Removing Sector Shaft O-Ring And Retainer

- 1 - SHAFT BORE
- 2 - NYLON RETAINING RING
- 3 - SECTOR SHAFT O-RING

TRANSFER CASE - NV241HD (Continued)

MAINSHAFT

(1) Remove retaining ring that secures synchronizer hub on mainshaft (Fig. 23). Use standard (instead of parallel jaw) snap-ring pliers to remove this retaining ring.

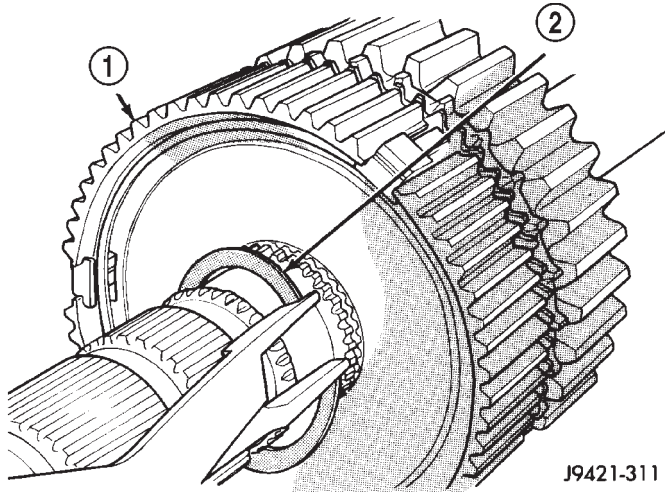


Fig. 23 Synchronizer Hub Retaining Ring Removal

- 1 - SYNCHRONIZER HUB
- 2 - RETAINING RING

(2) Remove synchronizer hub (Fig. 24).

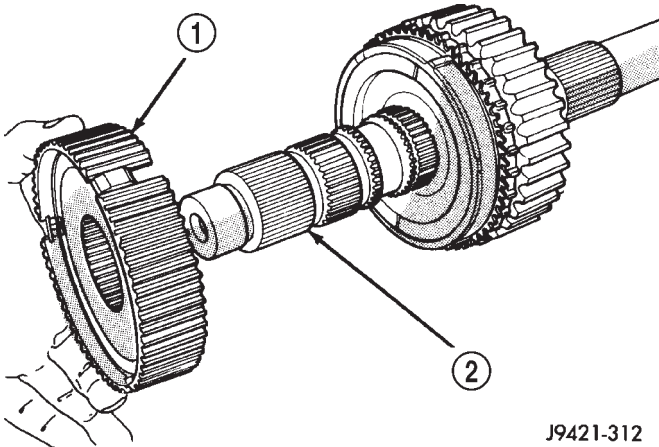


Fig. 24 Synchronizer Hub Removal

- 1 - SYNCHRONIZER HUB
- 2 - MAINSHAFT

(3) Inspect synchronizer hub struts and springs. If struts appear worn, remove struts and springs from hub. Note position of springs for installation reference (Fig. 25).

(4) Remove brass stop ring (Fig. 26). Discard stop ring if worn, cracked, or any teeth are missing.

(5) Remove drive sprocket (Fig. 27).

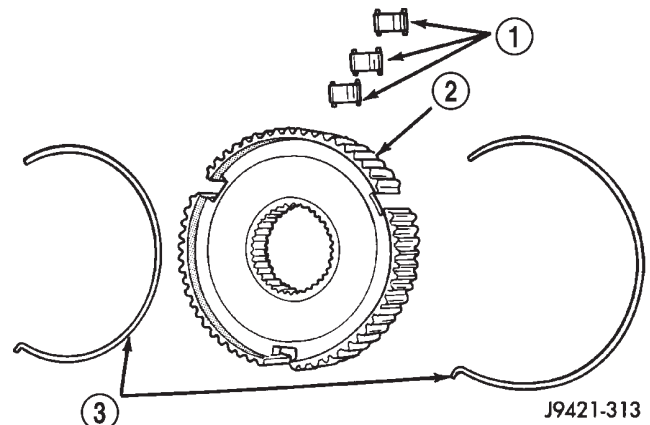


Fig. 25 Synchronizer Strut And Spring Removal

- 1 - SYNCHRONIZER STRUTS
- 2 - SYNCHRONIZER HUB
- 3 - SYNCHRONIZER SPRINGS

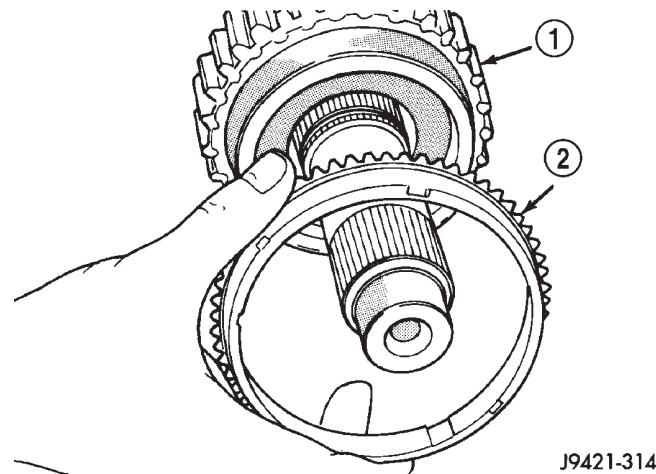


Fig. 26 Synchronizer Stop Ring Removal

- 1 - DRIVE SPROCKET
- 2 - STOP RING

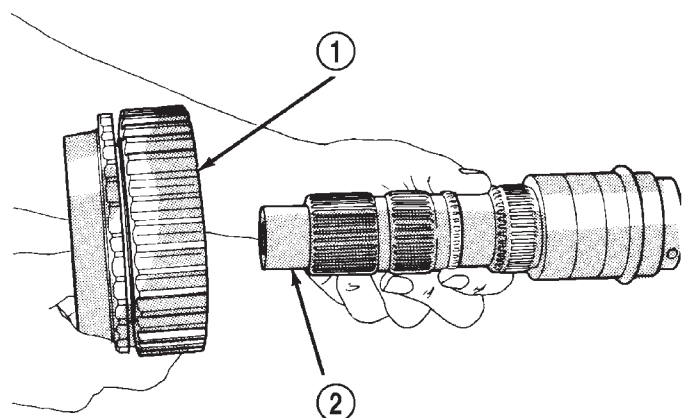


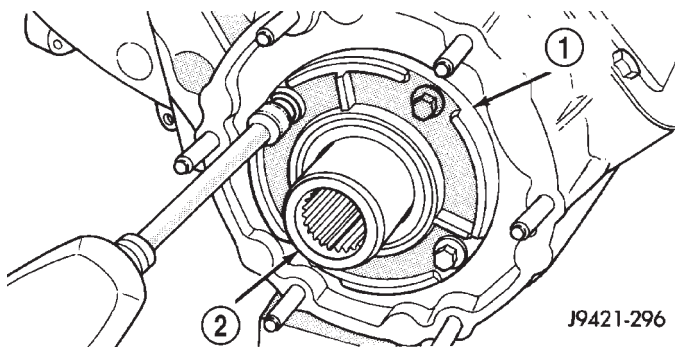
Fig. 27 Drive Sprocket Removal

- 1 - DRIVE SPROCKET
- 2 - MAINSHAFT

TRANSFER CASE - NV241HD (Continued)

INPUT AND PLANETARY GEAR

(1) Remove input bearing retainer bolts (Fig. 28).

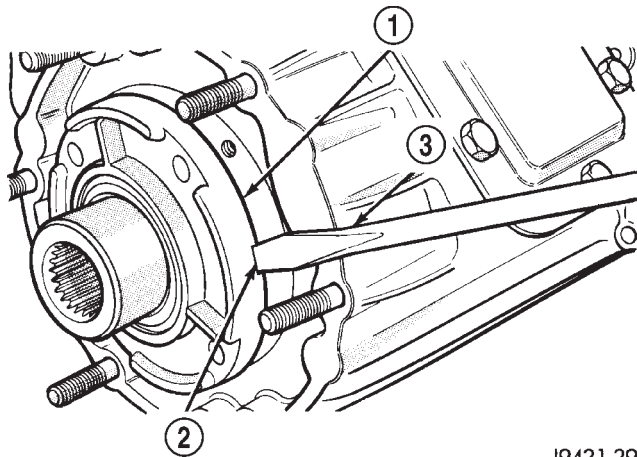


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Fig. 28 Removing Input Bearing Retainer Bolts

- 1 - BEARING RETAINER
2 - INPUT GEAR

(2) Loosen bearing retainer with pry tool. Insert tool in retainer slot as shown (Fig. 29). Then remove retainer.



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Fig. 29 Loosening/Removing Input Bearing Retainer

- 1 - BEARING RETAINER
2 - SLOT
3 - PRY TOOL

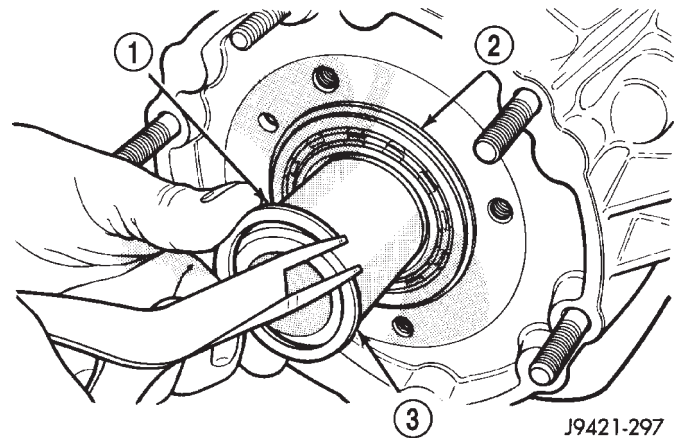
(3) Remove input gear retaining ring with heavy duty parallel jaw snap-ring pliers (Fig. 30).

(4) Tap input gear out of bearing with plastic mallet (Fig. 31).

(5) Remove input gear and planetary/PTO gear as assembly (Fig. 32).

INPUT AND PLANETARY GEAR

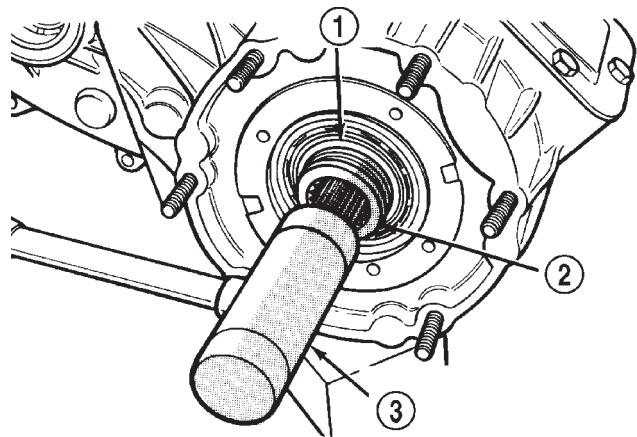
The only removable parts in the planetary assembly are the snap-rings, needle bearing, thrust washers, lock ring, input gear, and support sleeve. **The planetary carrier, PTO gear, planetary pinions, and remaining planetary components are fixed parts and are serviced as an assembly.**



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Fig. 30 Removing Input Gear Retaining Ring

- 1 - RETAINING RING
2 - INPUT BEARING
3 - INPUT GEAR



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Fig. 31 Removing Input Gear

- 1 - BEARING
2 - INPUT GEAR
3 - PLASTIC Mallet

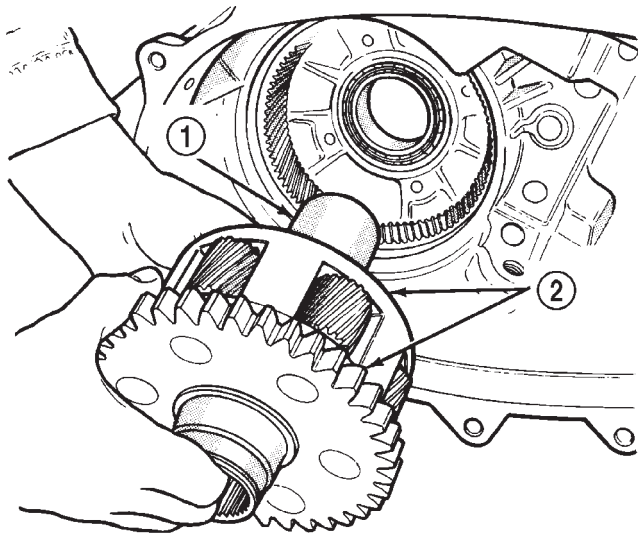
(1) Position planetary assembly so PTO gear is on bench (Fig. 33).

(2) Remove retaining ring that secures input gear and lock ring in planetary assembly.

(3) Remove lock ring and front thrust washer from carrier (Fig. 34). Note that lock ring and thrust washer are both tabbed.

(4) Remove input gear from planetary carrier (Fig. 35). Lift gear straight up and out of carrier.

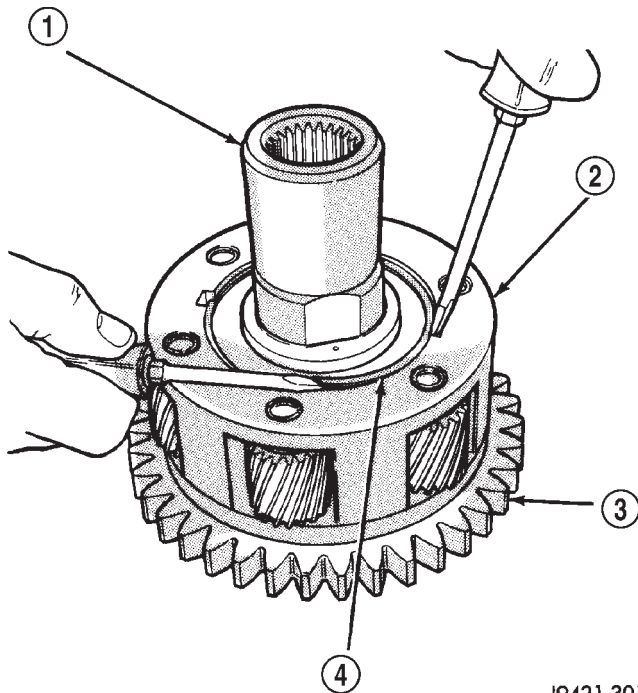
TRANSFER CASE - NV241HD (Continued)



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Fig. 32 Input Gear And Planetary Assembly Removal

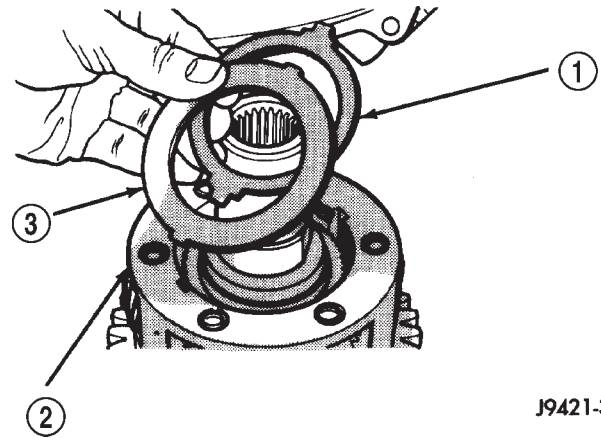
- 1 - INPUT GEAR
- 2 - PLANETARY AND PTO GEAR ASSEMBLY



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Fig. 33 Removing Lock Ring/Input Gear Retaining Ring

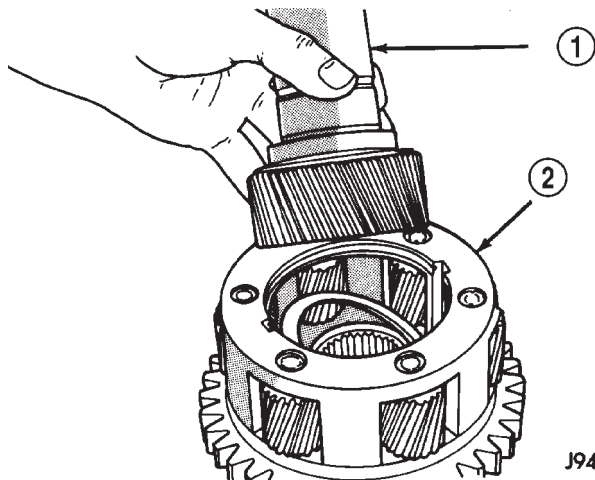
- 1 - INPUT GEAR
- 2 - PLANETARY ASSEMBLY
- 3 - PTO GEAR
- 4 - RETAINING RING



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Fig. 34 Planetary Lock Ring And Front Thrust Washer Removal

- 1 - THRUST WASHER
- 2 - PLANETARY
- 3 - LOCK RING

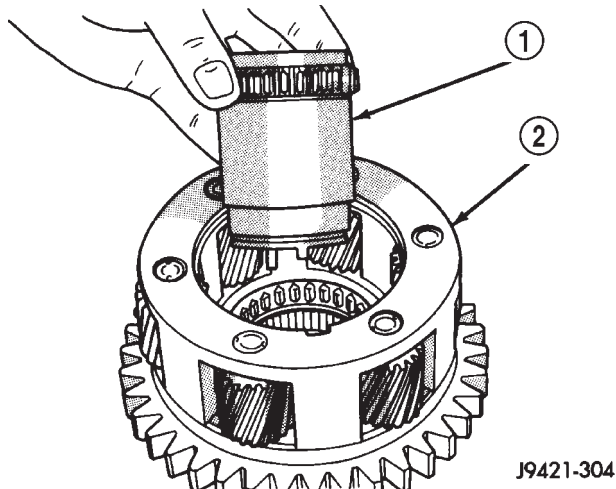


J9421-303

Fig. 35 Removing Input Gear From Planetary Carrier

- 1 - INPUT GEAR
- 2 - PLANETARY CARRIER

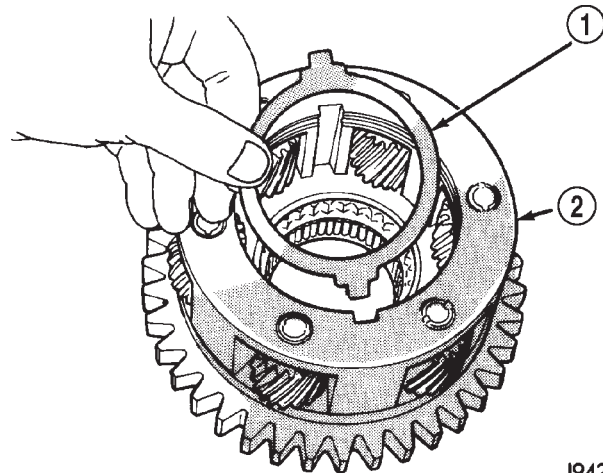
TRANSFER CASE - NV241HD (Continued)



J9421-304

Fig. 36 Support Sleeve Removal

- 1 - SUPPORT SLEEVE
- 2 - PLANETARY CARRIER



J9421-305

Fig. 37 Rear Thrust Washer Removal

- 1 - REAR THRUST WASHER
- 2 - PLANETARY CARRIER

- (5) Remove support sleeve from carrier (Fig. 36).
- (6) Remove rear thrust washer (Fig. 37).

CLEANING

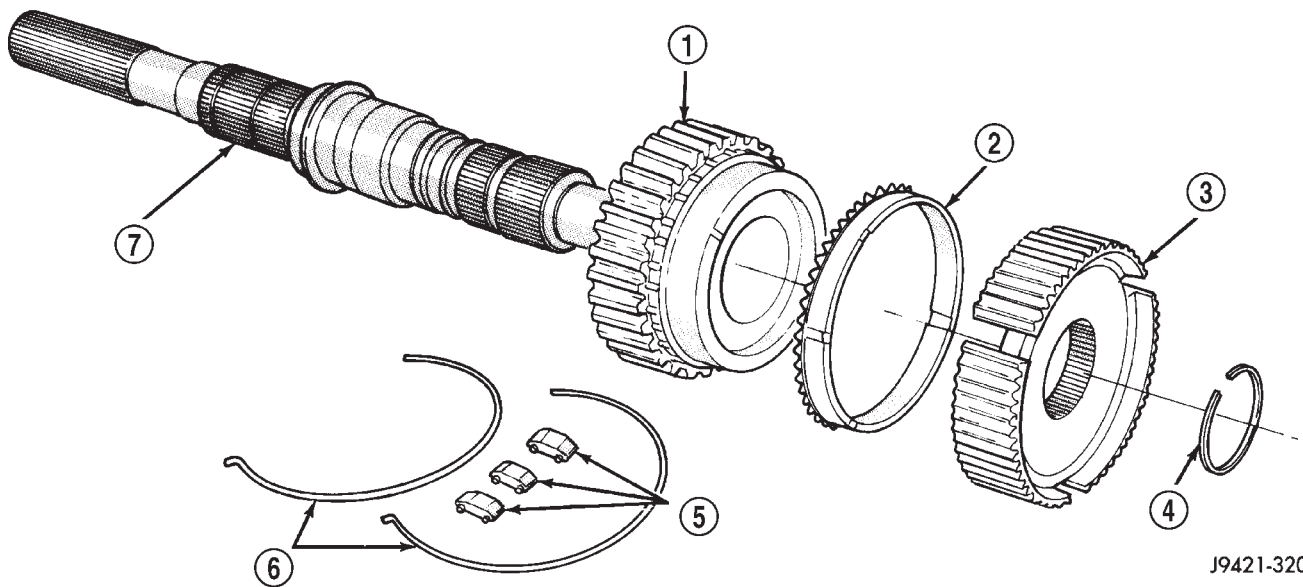
Clean the transfer case parts with a standard parts cleaning solvent. Remove all traces of sealer from the cases and retainers with a scraper and 3M™ all purpose cleaner. Use compressed air to remove solvent residue from oil feed passages in the case halves, retainers, gears, and shafts.

INSPECTION

If any pump component is worn, or damaged, the pump must be replaced as an assembly.

Inspect the spline teeth on the synchronizer hub (Fig. 38). If evidence of chipping or excessive wear is apparent, replace the hub. The hooked end of each synchronizer spring should be inserted in one of the struts. In addition, the springs should not interfere with the polished gear cone or inside diameters of the hub.

Inspect the stop ring for cracks and wear. Replace the ring if necessary or if doubt exists over condition.



J9421-320

Fig. 38 Mainshaft Components

- 1 - DRIVE SPROCKET
- 2 - STOP RING
- 3 - SYNCHRONIZER HUB
- 4 - RETAINING RING
- 5 - STRUTS
- 6 - SYNCHRONIZER SPRINGS
- 7 - MAINSHAFT

TRANSFER CASE - NV241HD (Continued)

Check a replacement synchronizer ring for proper fit on the cone with a minimum of wobble. Also check the synchronizer struts for wear or damage.

Inspect all gear teeth and splines for wear or damage. Also check splines for burrs, or nicks. Remove minor nicks and scratches with an oil stone. Replace any part with damaged splines.

It is recommended that all retaining rings be replaced during overhaul. Most of the retaining rings can be distorted during removal and should not be reused.

Inspect the two case halves, for cracks, porosity, damaged mating surfaces, stripped bolt threads, or distortion. Replace either case half if necessary. However, stripped threads can be repaired with Heli-Coil™ stainless steel thread inserts. The case vent tube can be resecured with Loctite™ 680 if necessary.

Inspect the annulus gear. Be sure the gear teeth are in good condition. Replace the front case and annulus as an assembly if the gear is damaged.

Check condition of the shift fork pads (Fig. 39). The pads should be replaced if cracked, worn, or loose (won't stay on fork).

The shift forks, clutch and sleeve should all be checked for wear, cracks, or any type of damage (Fig. 40). The shift sector shaft and detents should be inspected for wear. The mode fork and shift rail are a one-piece unit. If either part is damaged, replace the fork and rail as an assembly. Replace the shift rail cup and spring if they exhibit wear.

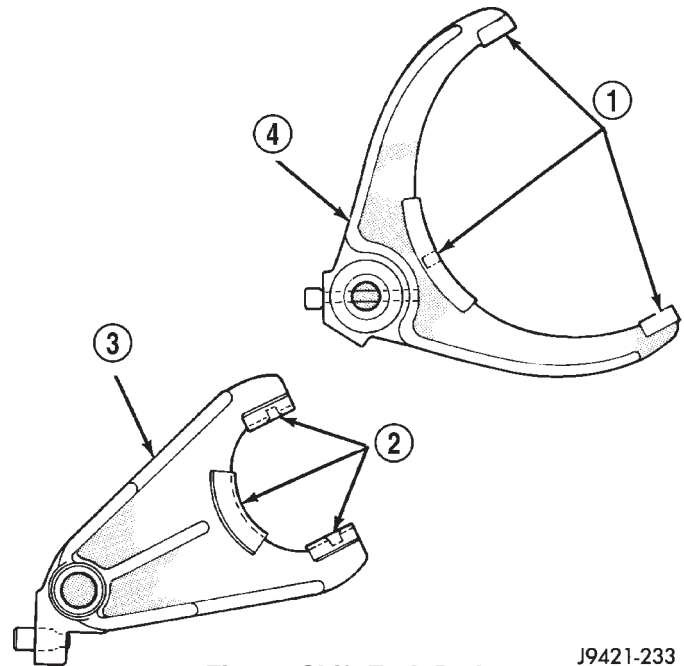


Fig. 39 Shift Fork Pads

J9421-233

- 1 - PADS
- 2 - PADS
- 3 - RANGE FORK
- 4 - MODE FORK

Inspect the planetary thrust washers (Fig. 41) carefully for wear or damage. Replace both washers if necessary.

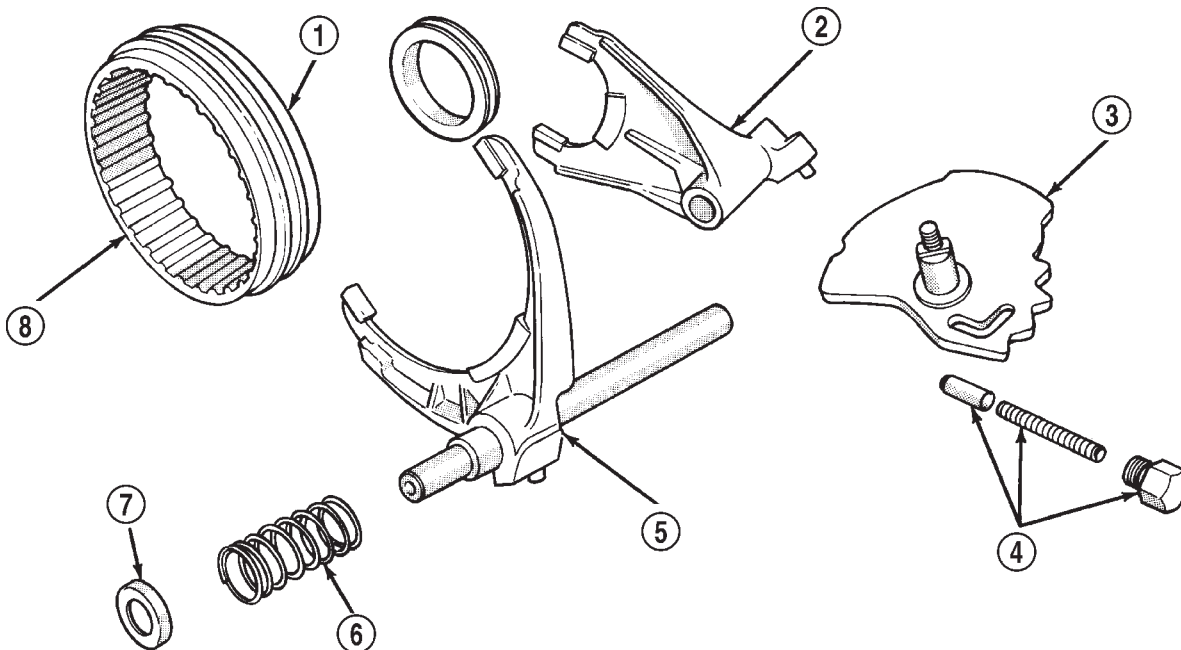
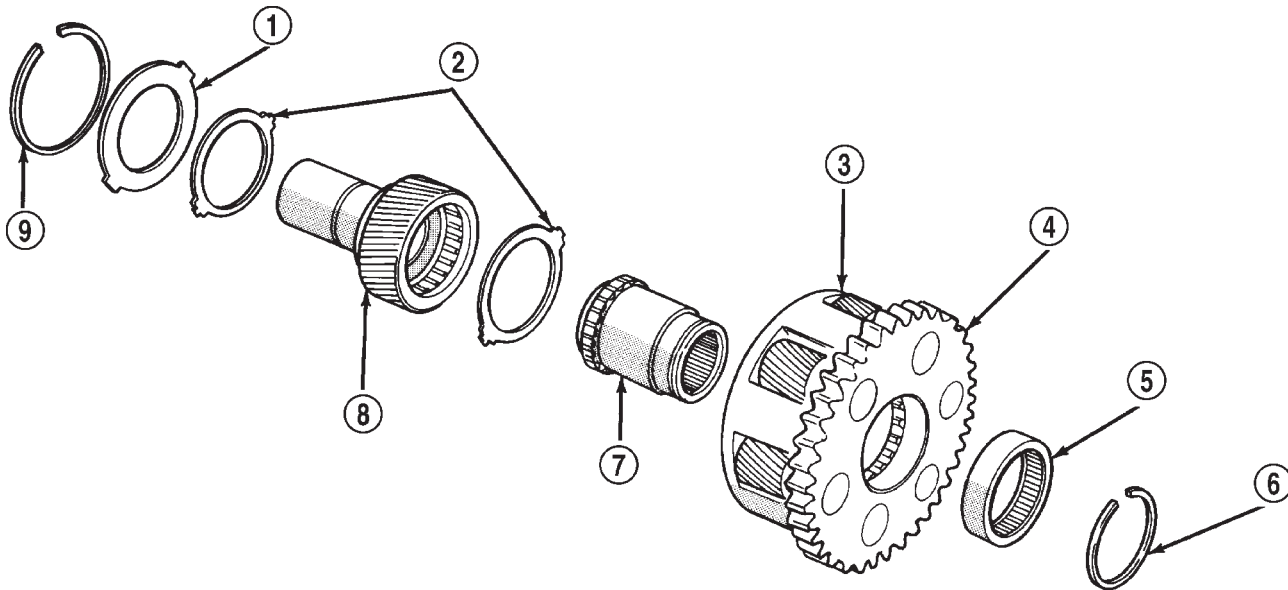


Fig. 40 Shift Fork Components

J9421-323

- 1 - SUPPORT SLEEVE
- 2 - RANGE FORK
- 3 - SHIFT SECTOR
- 4 - POPPET PLUNGER, SPRING, SCREW

- 5 - MODE FORK AND SHIFT RAIL
- 6 - SPRING
- 7 - CUP
- 8 - SLIDING CLUTCH



J9421-322

Fig. 41 Planetary And Input Gear Components

- | | |
|-----------------------|--------------------|
| 1 - LOCK RING | 6 - RETAINING RING |
| 2 - THRUST WASHERS | 7 - SUPPORT SLEEVE |
| 3 - PLANETARY CARRIER | 8 - INPUT GEAR |
| 4 - PTO GEAR | 9 - RETAINING RING |
| 5 - BEARING | |

The planetary carrier cannot be disassembled. It must be serviced as an assembly if damaged. Check condition of the pinion teeth and PTO gear teeth. If pinion tooth wear is evident, it will also be necessary to check condition of the annulus gear teeth.

ASSEMBLY

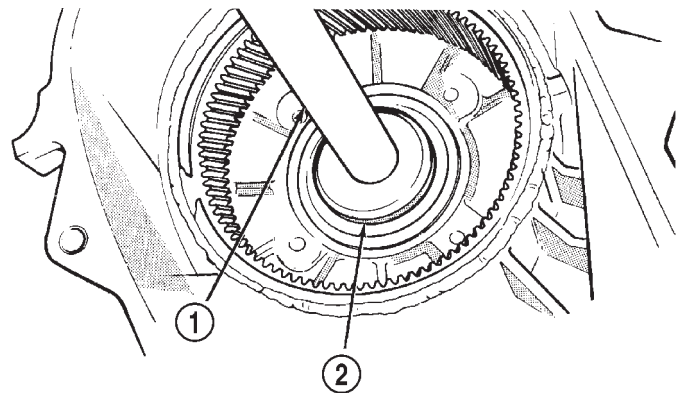
BEARINGS AND SEALS

(1) Using Remover C-4210 and Handle C-4171, drive input shaft bearing from case from inside annulus gear opening (Fig. 42).

(2) Install locating ring on new bearing.

(3) Position case so that the forward end is facing upward.

(4) Using Remover C-4210 and Handle C-4171, drive input shaft bearing into case. The bearing locating ring must be fully seated on case (Fig. 43).



J9521-43

Fig. 42 Input Shaft Bearing Removal

- | |
|-------------------------|
| 1 - SPECIAL TOOL C-4171 |
| 2 - SPECIAL TOOL C-4210 |

TRANSFER CASE - NV241HD (Continued)

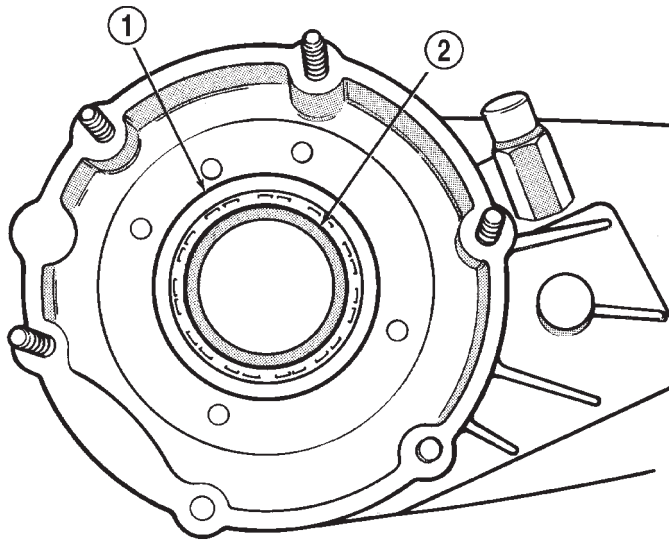


Fig. 43 Seating Input Shaft Bearing J8921-219

- 1 - SNAP-RING
2 - INPUT SHAFT BEARING

(5) Using Installer 6953, remove front output shaft bearing.

(6) Start front shaft output bearing in case (Fig. 44). Then seat bearing with Handle C-4171 and Installer 6953.

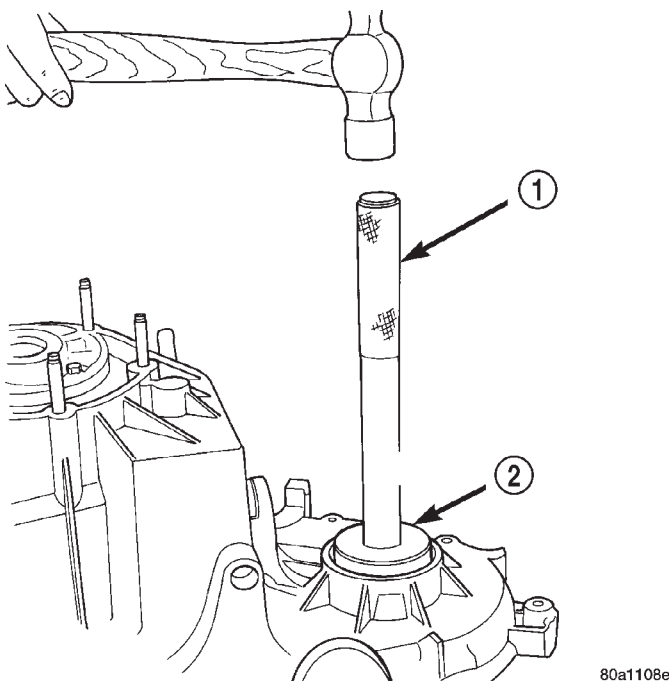


Fig. 44 Front Output Bearing Installation 80a1108e

- 1 - HANDLE C-4171
2 - REMOVER/INSTALLER 6953

(7) Install front output bearing retaining ring.

(8) Install new front output seal in front case with Installer Tool 6888 (Fig. 45) and Tool Handle C-4171 as follows:

(a) Place new seal on tool. **Garner spring on seal goes toward interior of case.**

(b) Start seal in bore with light taps from hammer (Fig. 46). Once seal is started, continue tapping seal into bore until installer tool bottoms against case.

(c) Remove installer and verify that seal is recessed the proper amount. Seal should be 2.03 to 2.5 mm (0.080 to 0.100 in.) below top edge of seal bore in front case. This is correct final seal position.

CAUTION: Be sure the front output seal is seated below the top edge of the case bore as shown. The seal could loosen, or become cocked if not seated to recommended depth.

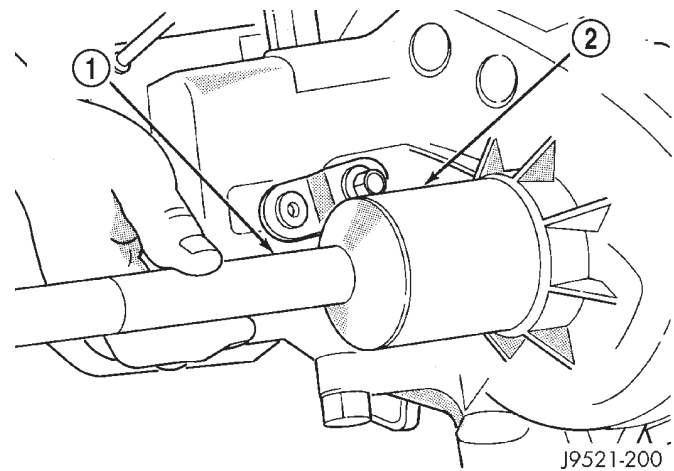


Fig. 45 Front Output Seal Installation J9521-200

- 1 - SPECIAL TOOL C-4171
2 - SPECIAL TOOL 6888

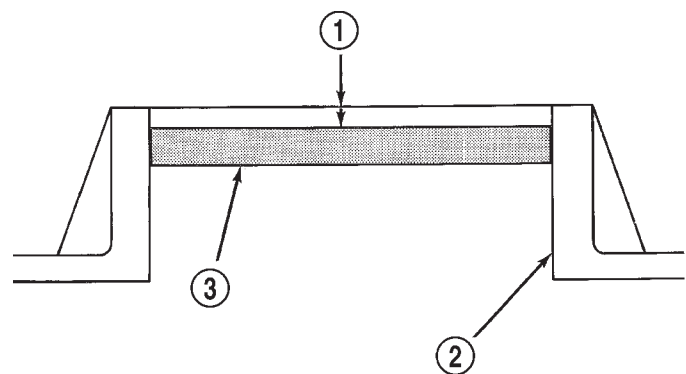


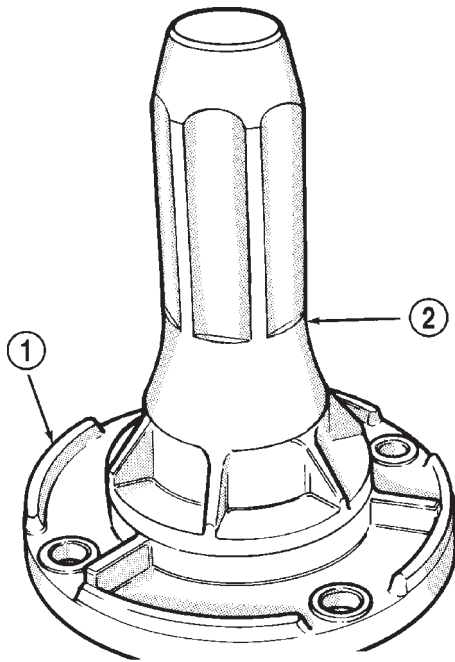
Fig. 46 Checking Front Output Seal Installation Depth J9521-190

- 1 - CORRECT SEAL DEPTH IS 2.03-2.5 mm (0.080-0.100 in.) BELOW TOP EDGE OF BORE
2 - FRONT CASE SHAFT BORE
3 - FRONT OUTPUT SEAL

TRANSFER CASE - NV241HD (Continued)

(9) Remove seal from front bearing retainer with suitable pry tool.

(10) Install new oil seal in front bearing retainer with Installer 7884 (Fig. 47).



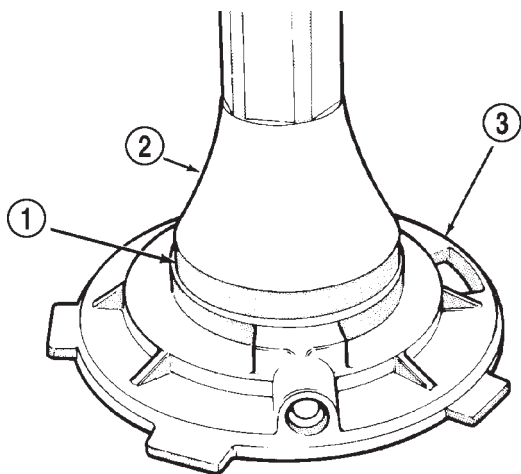
J9521-41

Fig. 47 Install Front Bearing Retainer Seal

- 1 - FRONT BEARING RETAINER
- 2 - SPECIAL TOOL 7884

(11) Remove seal from oil pump with suitable pry tool.

(12) Install new seal in oil pump with Installer 7888 (Fig. 48).

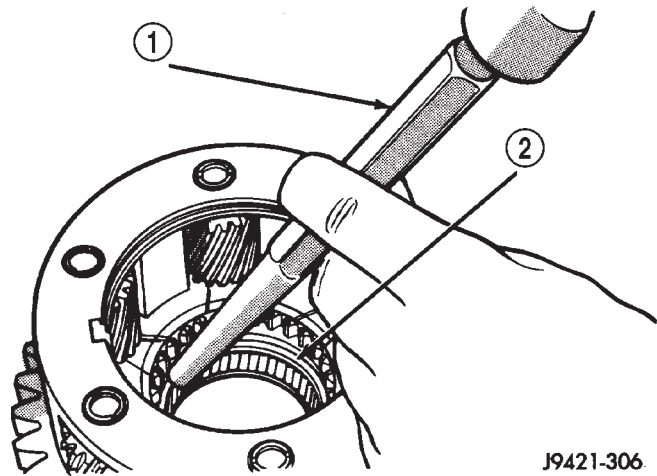


J9521-35

Fig. 48 Install Oil Pump Seal

- 1 - HOUSING SEAL
- 2 - SPECIAL TOOL 7888
- 3 - OIL PUMP FEED HOUSING

(13) Inspect carrier needle bearing. If bearing is worn, rough, or damaged in any way, remove it with a brass punch and hammer (Fig. 49).

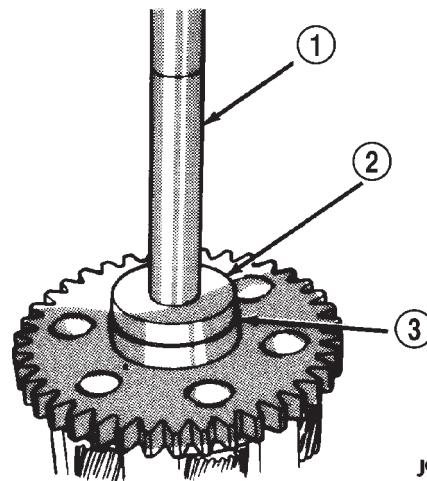


J9421-306

Fig. 49 Carrier Needle Bearing Removal

- 1 - BRASS PUNCH
- 2 - CARRIER NEEDLE BEARING

(14) Install new needle bearing in planetary carrier (Fig. 50). Use Handle C-4171 and Installer 5062 to install bearing.



J9421-329

Fig. 50 Planetary Carrier Needle Bearing Installation

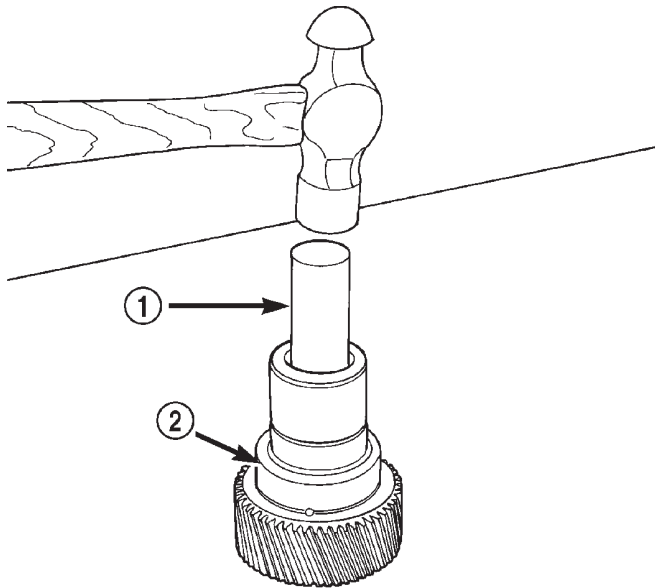
- 1 - SPECIAL TOOL C-4171
- 2 - SPECIAL TOOL 5062
- 3 - CARRIER BEARING

(15) Remove input gear pilot bearing by inserting a suitably sized drift into the splined end of the input gear and driving the bearing out with the drift and a hammer (Fig. 51).

(16) Install new pilot bearing with Plug C-293-3.

(17) Remove the output shaft rear bearing with the screw and jaws from Remover L-4454 and Cup 8148 (Fig. 52).

TRANSFER CASE - NV241HD (Continued)

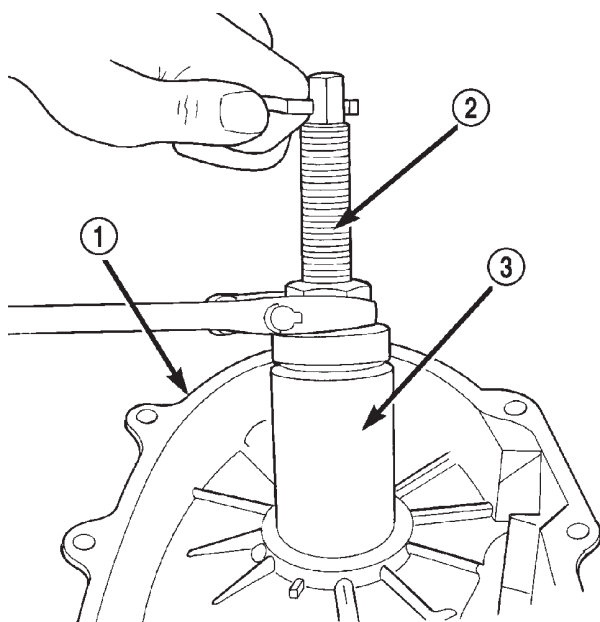


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Fig. 51 Remove Input Gear Pilot Bearing

- 1 - DRIFT
- 2 - INPUT GEAR

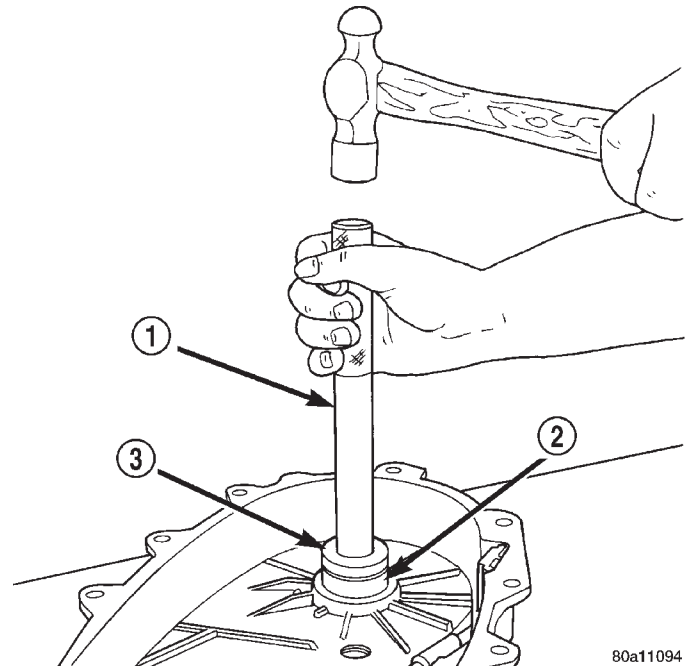
(18) Install new bearing with Tool Handle C-4171 and Installer 5066 (Fig. 53). The bearing bore is chamfered at the top. Install the bearing so it is flush with the lower edge of this chamfer (Fig. 54).



80a98366

Fig. 52 Output Shaft Rear Bearing Removal

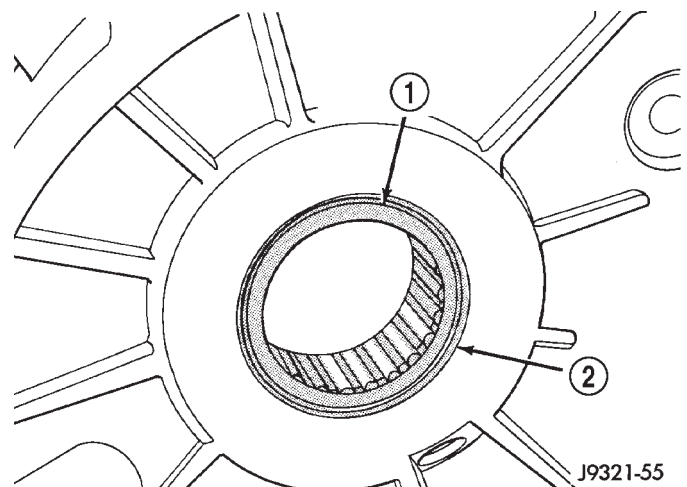
- 1 - REAR CASE
- 2 - SPECIAL TOOL L-4454-1 AND L-4454-3
- 3 - SPECIAL TOOL 8148



80a11094

Fig. 53 Output Shaft Rear Bearing Installation

- 1 - HANDLE C-4171
- 2 - OUTPUT SHAFT INNER BEARING
- 3 - INSTALLER 5066



J9321-55

Fig. 54 Output Shaft Rear Bearing Installation Depth

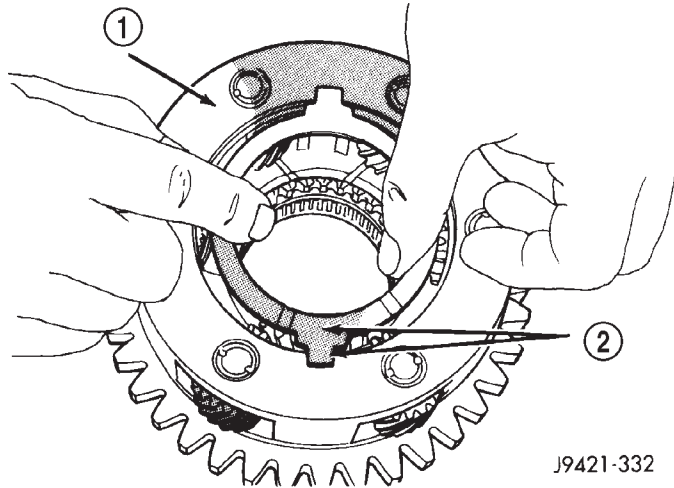
- 1 - BEARING (SEATED) AT LOWER EDGE OF CHAMFER
- 2 - CHAMFER

TRANSFER CASE - NV241HD (Continued)

INPUT AND PLANETARY GEAR

(1) Lubricate planetary components with transmission fluid.

(2) Install first thrust washer in carrier (Fig. 55). Lube washer with petroleum jelly before installation.



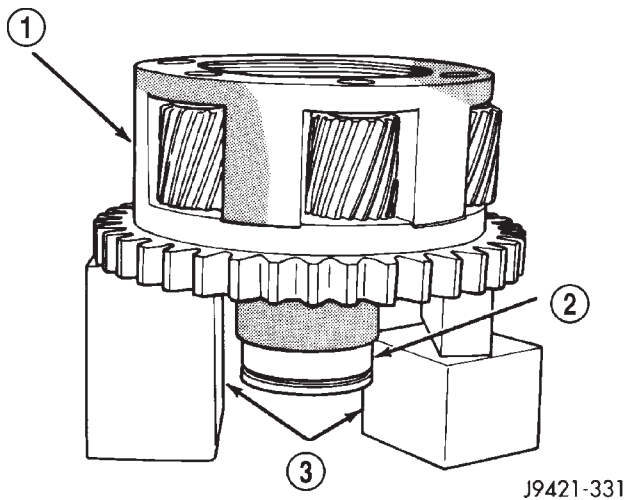
J9421-332

Fig. 55 Thrust Washer Installation

- 1 - THRUST WASHER
- 2 - TABS IN SLOTS

(3) Support carrier with wood blocks under PTO gear (Fig. 56).

(4) Install support sleeve in planetary carrier. Be sure sleeve is seated.



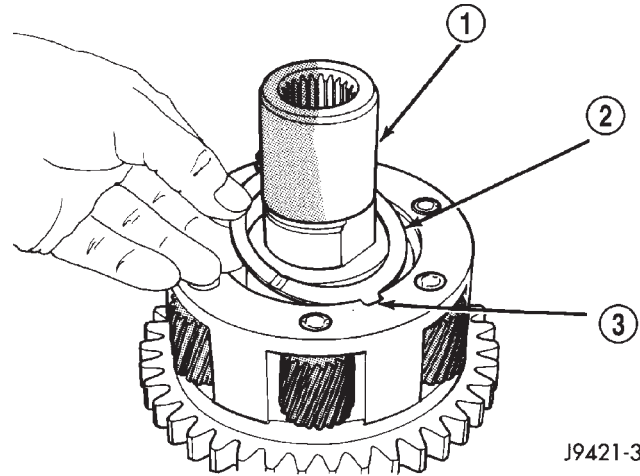
J9421-331

Fig. 56 Support Sleeve Installation

- 1 - PLANETARY
- 2 - SUPPORT SLEEVE
- 3 - WOOD BLOCKS

(5) Install input gear in planetary carrier (Fig. 57).

(6) Install second thrust washer in planetary carrier. Be sure washer tabs are seated in carrier slots.

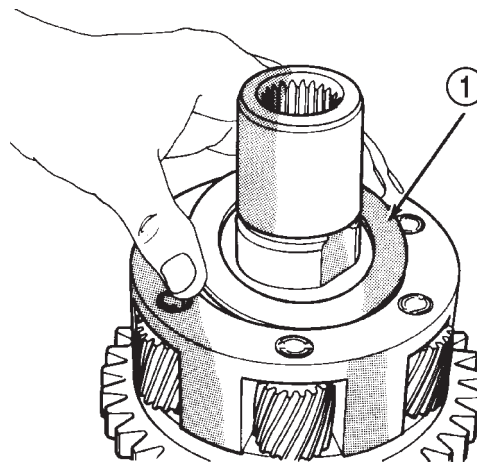


J9421-333

Fig. 57 Input Gear And Thrust Washer Installation

- 1 - INPUT GEAR
- 2 - THRUST WASHER
- 3 - TABS IN SLOTS

(7) Install lock ring (Fig. 58).



J9421-334

Fig. 58 Lock Ring Installation

- 1 - LOCK RING (BE SURE TABS ARE SEATED IN SLOTS)

TRANSFER CASE - NV241HD (Continued)

- (8) Install retaining ring (Fig. 59).

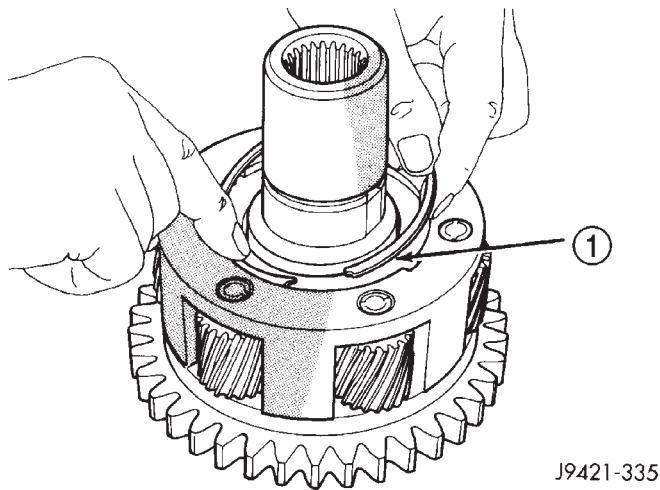


Fig. 59 Retaining Ring Installation

1 - RETAINING RING

INPUT AND PLANETARY GEAR

- (1) Lubricate planetary pinions and annulus gear with transmission fluid.
 (2) Install planetary/input gear assembly in case (Fig. 60).
 (3) Start planetary pinions in low range annulus gear. Then tap PTO gear, with hammer handle to seat planetary pinions in annulus gear.

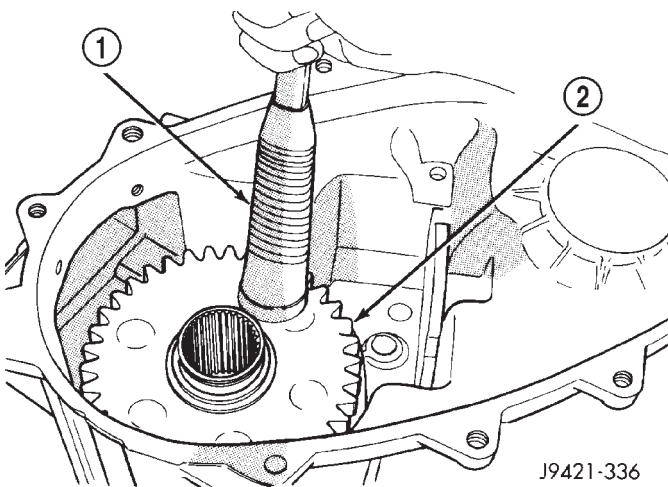


Fig. 60 Planetary/Input Gear Assembly Installation

1 - WOOD/RUBBER HAMMER HANDLE
 2 - PLANETARY ASSEMBLY

- (4) Install retaining ring on input gear (Fig. 61).
 (5) Apply bead of Mopar® Gasket Maker, or equivalent, to mating surface of input retainer. Keep sealer bead width to maximum of 3/16 inch. Do not use excessive amount of sealer as excess could be displaced into oil channel and feed hole in case.

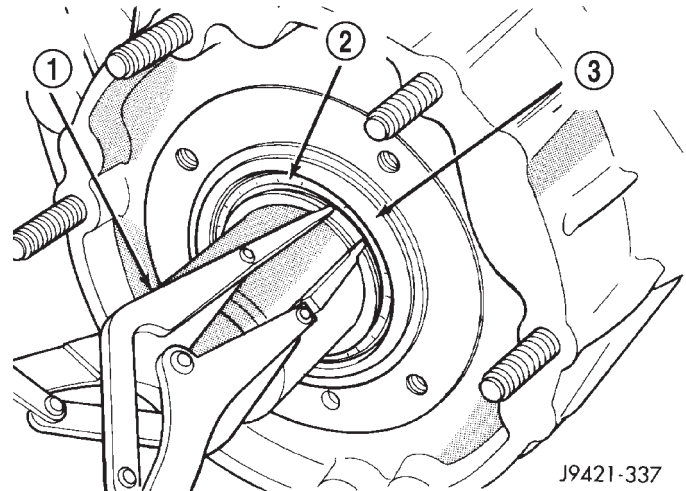


Fig. 61 Installing Input Gear Retaining Ring

1 - INPUT BEARING RETAINING RING
 2 - SNAP-RING PLIERS
 3 - INPUT GEAR

- (6) Align oil channel in retainer with oil feed hole in front case (Fig. 62).
 (7) Install retainer on input gear shaft and front case (Fig. 63).

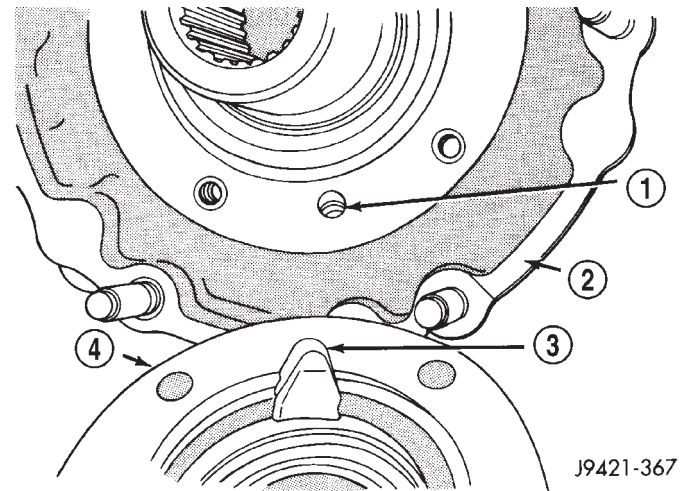
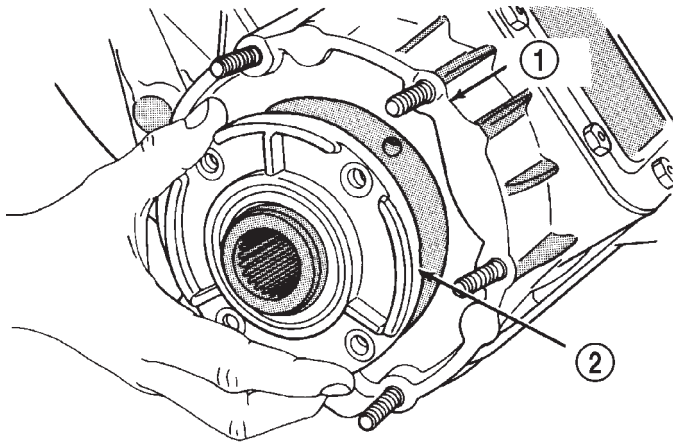


Fig. 62 Aligning Retainer Oil Channel and Case Feed Holes

1 - FEED HOLE
 2 - FRONT CASE
 3 - FEED CHANNEL
 4 - BEARING RETAINER

TRANSFER CASE - NV241HD (Continued)



J9421-368

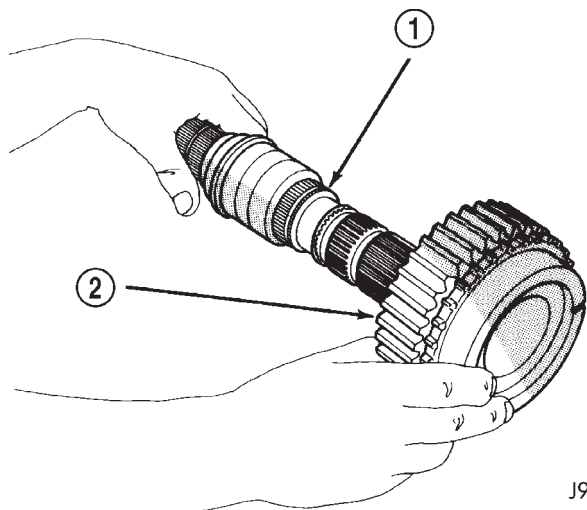
Fig. 63 Input Bearing Retainer Installation

- 1 - FRONT CASE
- 2 - INPUT BEARING RETAINER

(8) Apply Mopar® Silicone Sealer to threads of input retainer bolts. Then install and tighten bolts to 27-34 N·m (20-25 ft. lbs.) torque.

MAINSHAFT

- (1) Install drive sprocket on mainshaft (Fig. 64).



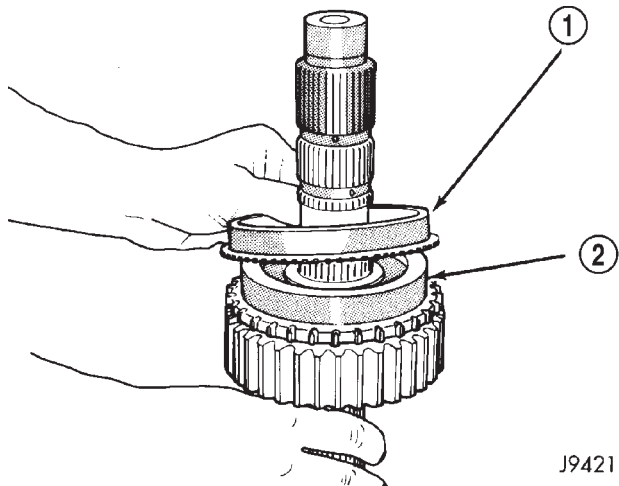
J9421-338

Fig. 64 Drive Sprocket Installation

- 1 - MAINSHAFT
- 2 - DRIVE SPROCKET

(2) Install brass stop ring on drive sprocket (Fig. 65).
 (3) Install 3 synchronizer struts and 2 springs in hub as follows:

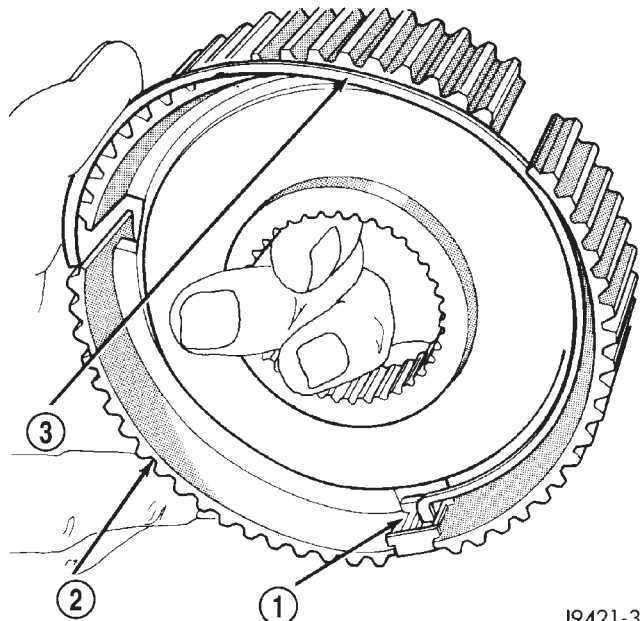
(a) Insert first strut in hub (Fig. 66). Strut shoulders rest (and slide) on sides hub slot as shown.



J9421-339

Fig. 65 Synchronizer Stop Ring Installation

- 1 - BRASS STOP RING
- 2 - DRIVE SPROCKET



J9421-341

Fig. 66 Installing First Synchronizer Strut And Spring

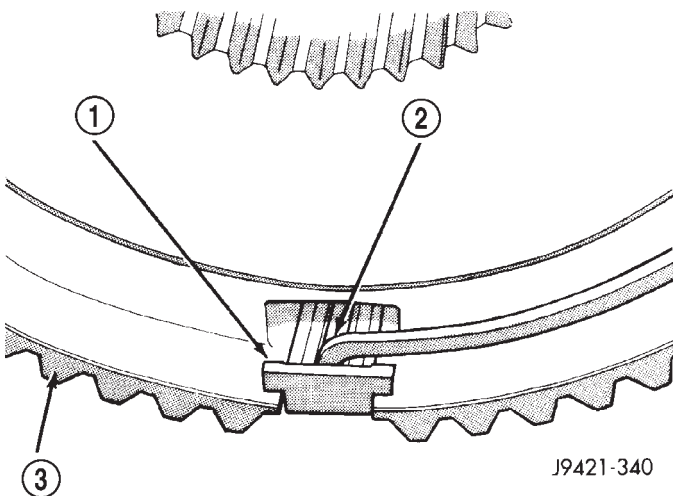
- 1 - FIRST STRUT
- 2 - SYNCHRONIZER HUB
- 3 - SPRING

TRANSFER CASE - NV241HD (Continued)

(b) Insert hooked end of first spring in center of strut to secure it. Then work spring into hub (Fig. 67).

(c) Press spring inward and insert last two struts in hub slots. Be sure spring is positioned under struts to properly secure them (Fig. 68).

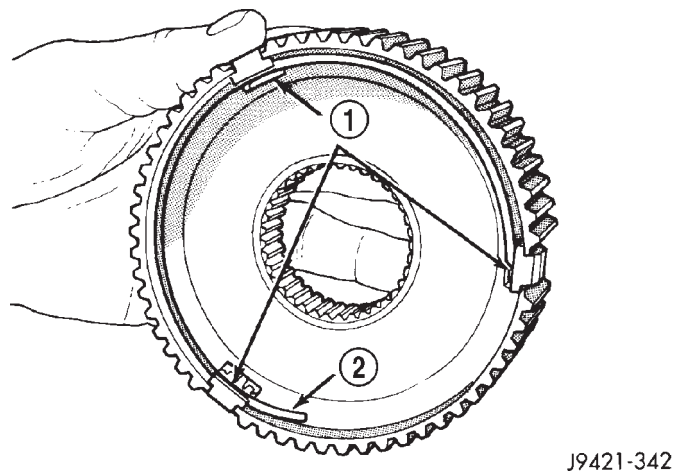
(d) Turn hub over and install remaining spring in hub. Position hooked end of second spring opposite the first spring's hooked end.



J9421-340

Fig. 67 Synchronizer Spring Installation

- 1 - STRUT SHOULDER
- 2 - SPRING (SEATED IN STRUT)
- 3 - HUB



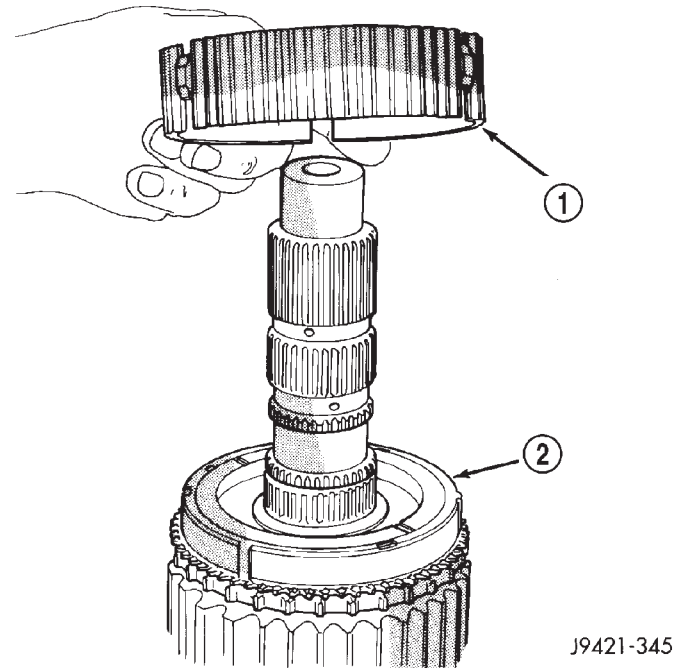
J9421-342

Fig. 68 Correct Position Of Struts And Springs

- 1 - STRUTS
- 2 - SPRING

(4) Install assembled synchronizer hub on main-shaft (Fig. 69). Hub has shoulder on one side which goes toward sprocket (rear of shaft). Flat side of hub faces front of shaft.

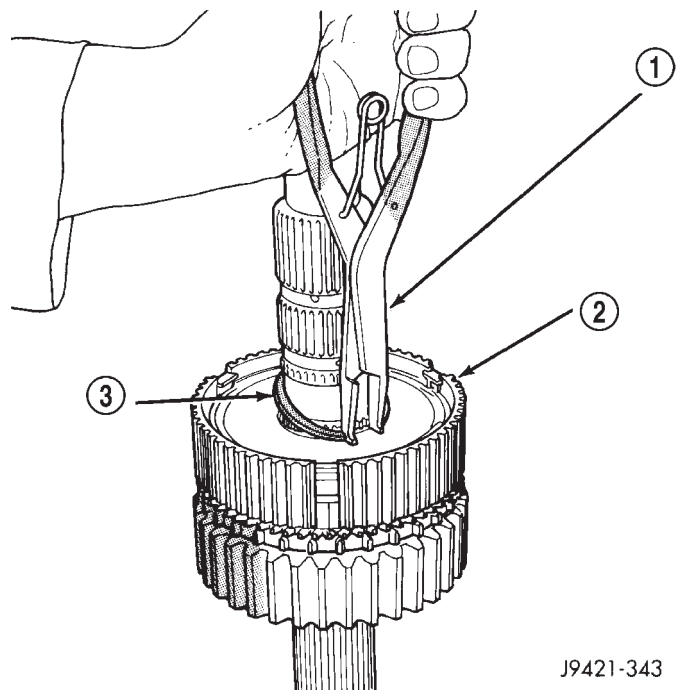
(5) Install synchronizer hub retaining ring (Fig. 70). Be sure ring is fully seated before proceeding.



J9421-345

Fig. 69 Synchronizer Hub Installation

- 1 - SYNCHRONIZER HUB (SHOULDER SIDE DOWN)
- 2 - STOP RING AND SPROCKET



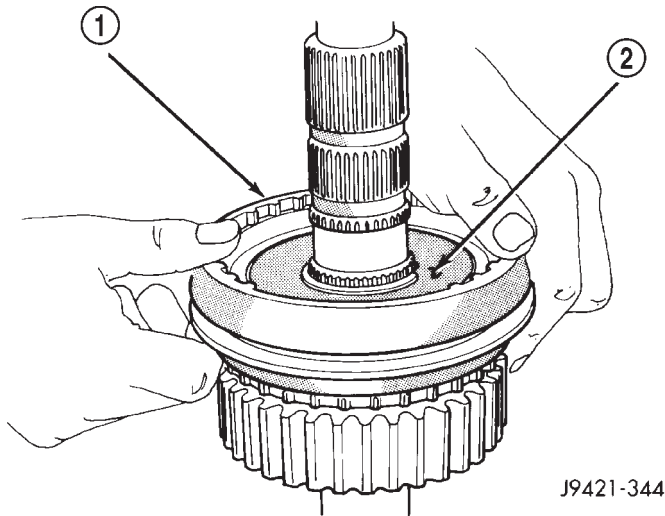
J9421-343

Fig. 70 Synchronizer Hub Retaining Ring Installation

- 1 - SNAP-RING PLIERS
- 2 - SYNCHRONIZER HUB
- 3 - HUB RETAINING RING

TRANSFER CASE - NV241HD (Continued)

(6) Install sliding clutch (sleeve) on synchronizer hub (Fig. 71).



J9421-344

Fig. 71 Sliding Clutch Installation

- 1 - SLIDING CLUTCH
- 2 - SYNCHRONIZER HUB

CAUTION: The sliding clutch must be correctly positioned to ensure proper shifting. Position the clutch on the hub so a clutch spline is centered over each strut as shown (Fig. 72). If the clutch is installed so a gap between splines is aligned with one or more struts, gear clash will result.

SHIFT FORKS AND MAINSHAFT

(1) Support front case on wood blocks so case interior is facing up. Place blocks between mounting studs on forward surface of case. Be sure blocks will not interfere with input gear installation.

(2) Lubricate mainshaft components with transmission fluid.

(3) Lubricate sector shaft with transmission fluid and install shift sector in case (Fig. 73). Position slot in sector so it will be aligned with shift fork pin when shift forks are installed.

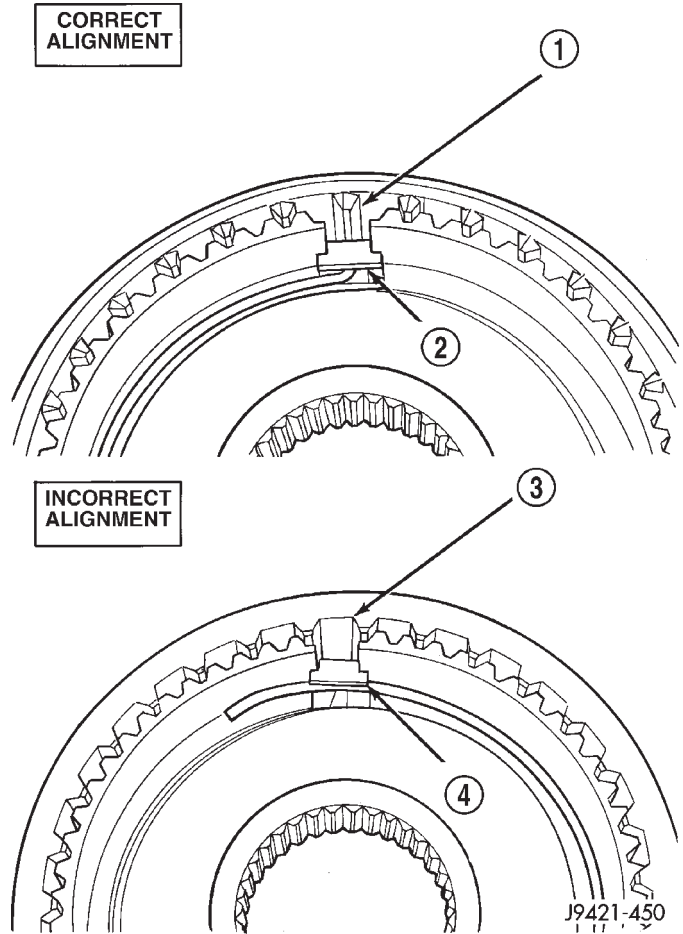
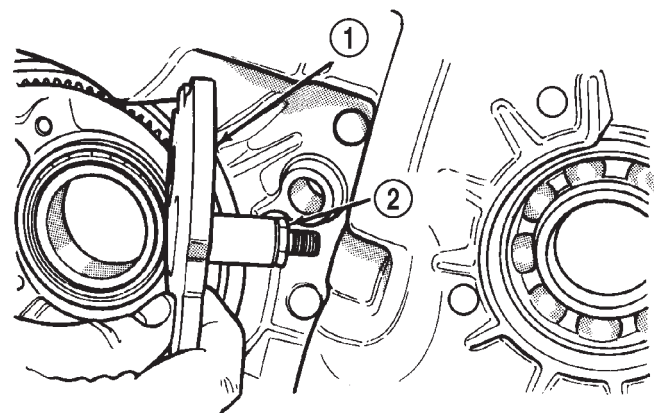


Fig. 72 Correct Alignment Of Struts And Sliding Clutch

- 1 - SLEEVE TOOTH ALIGNED WITH STRUT
- 2 - STRUT
- 3 - SLEEVE TOOTH NOT ALIGNED WITH STRUT
- 4 - STRUT



J9421-328

Fig. 73 Shift Sector Installation

- 1 - SHIFT SECTOR
- 2 - SECTOR SHAFT

TRANSFER CASE - NV241HD (Continued)

(4) Assemble range fork and sliding hub (Fig. 74). Then install fork and hub in case. Seat hub on support sleeve and seat range fork pin in shift sector slot (Fig. 75).

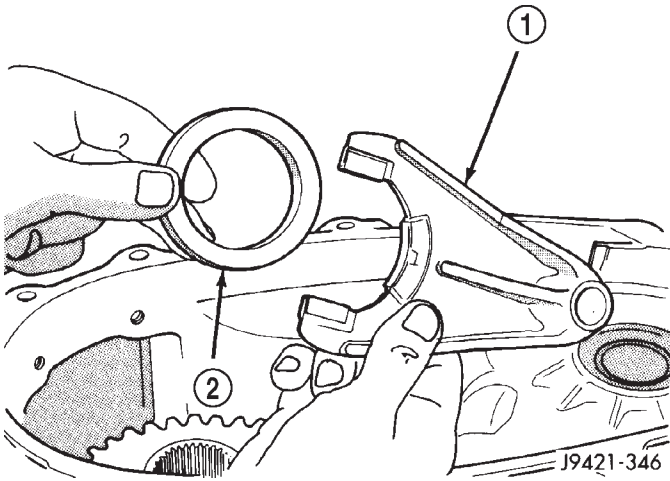


Fig. 74 Assembling Range Fork And Sliding Hub

- 1 - RANGE FORK
- 2 - SLIDING HUB

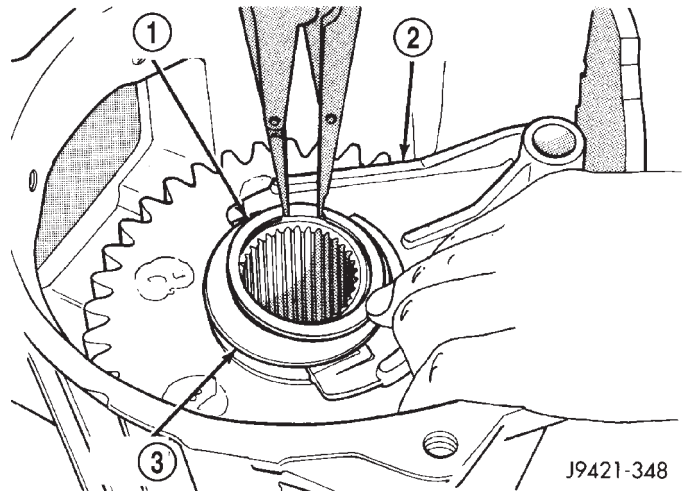


Fig. 76 Sliding Hub Retaining Ring Installation

- 1 - RETAINING RING
- 2 - RANGE FORK
- 3 - SLIDING HUB

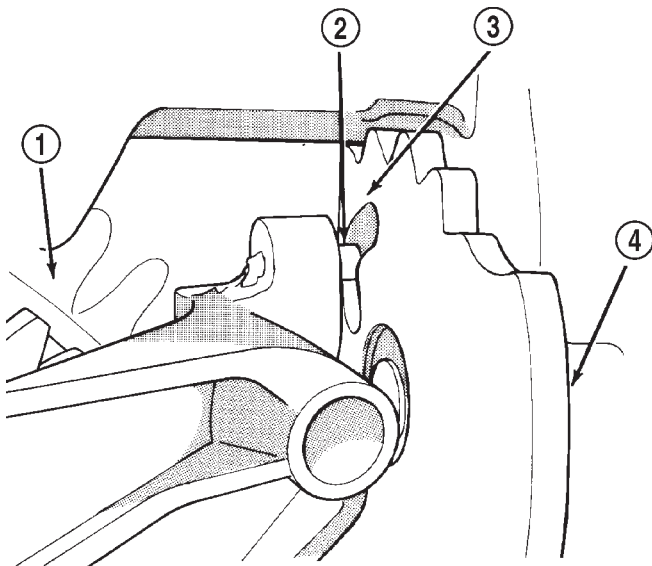


Fig. 75 Seating Range Fork And Hub

- 1 - RANGE FORK
- 2 - RANGE FORK PIN
- 3 - SECTOR SLOT
- 4 - SHIFT SECTOR

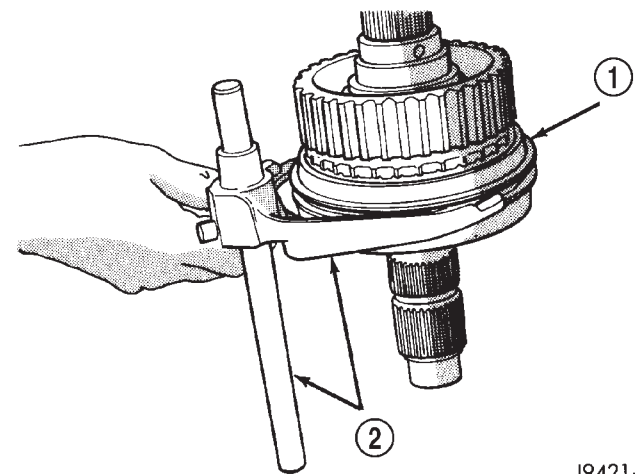


Fig. 77 Assembling Mode Fork And Mainshaft

- 1 - SLIDING CLUTCH
- 2 - MODE FORK AND SHIFT RAIL

(5) Install sliding hub retaining ring (Fig. 76). Be sure ring is fully seated before proceeding.

(6) Install mode fork and shift rail in sliding clutch (Fig. 77).

TRANSFER CASE - NV241HD (Continued)

(7) Install mainshaft/mode fork assembly (Fig. 78). Guide mainshaft through hub and into input gear and shift rail through range fork and into case bore.

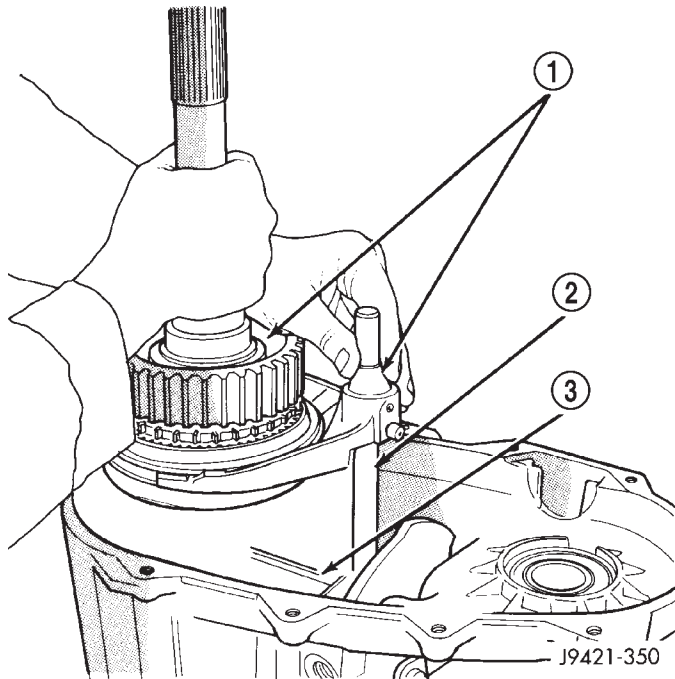


Fig. 78 Installing Mainshaft And Mode Fork Assembly

- 1 - MAINSHAFT AND MODE FORK ASSEMBLY
- 2 - SHIFT RAIL
- 3 - RANGE FORK

(8) Install new o-ring on vacuum/indicator switch, if necessary. Install vacuum/indicator switch (Fig. 79). Tighten switch to 20-34 N·m (15-25 ft. lbs.) torque.

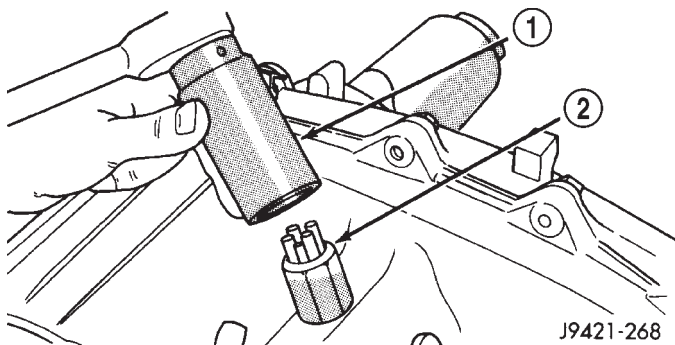


Fig. 79 Vacuum/Indicator Switch Installation

- 1 - 1-1/16" SOCKET
- 2 - INDICATOR SWITCH

(9) Install new sector shaft o-ring and o-ring retainer in sector shaft bore (Fig. 80). Lubricate o-ring with transmission fluid or petroleum jelly after installation.

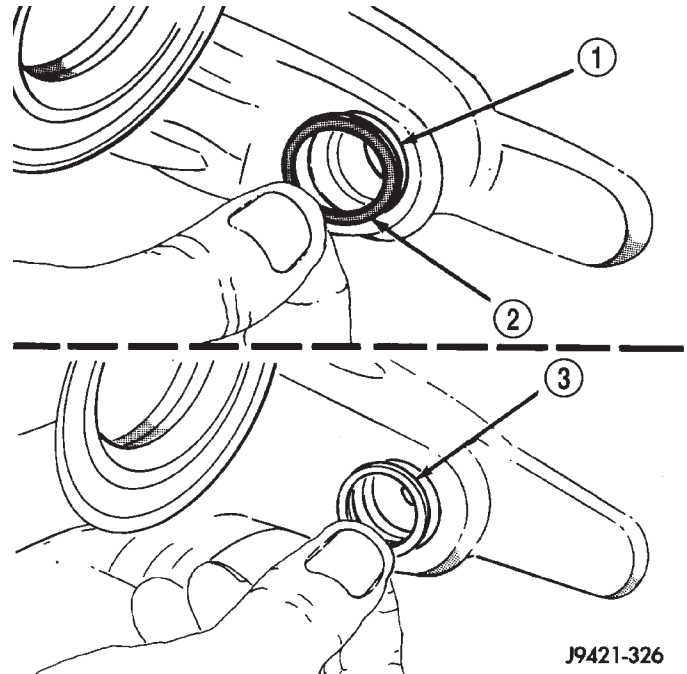


Fig. 80 Sector Shaft O-Ring And Retainer Installation

- 1 - SECTOR SHAFT BORE
- 2 - O-RING
- 3 - O-RING RETAINER

(10) Install shift lever on sector shaft (Fig. 81).
 (11) Install washer and nut on sector shaft to secure shift lever. Apply 1-2 drops Mopar® Lock N' Seal, or equivalent, to nut threads before installation. Then tighten nut to 27-34 N·m (20-25 ft. lbs.) torque.

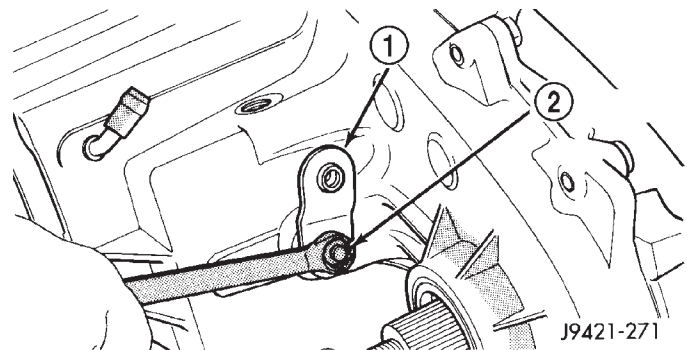


Fig. 81 Shift Lever Installation

- 1 - SHIFT LEVER
- 2 - NUT/WASHER

TRANSFER CASE - NV241HD (Continued)

(12) Install poppet plunger and spring (Fig. 82).

(13) Install new o-ring on poppet screw and install screw in front case (Fig. 83). Tighten screw to 16-24 N·m (12-18 ft. lbs.).

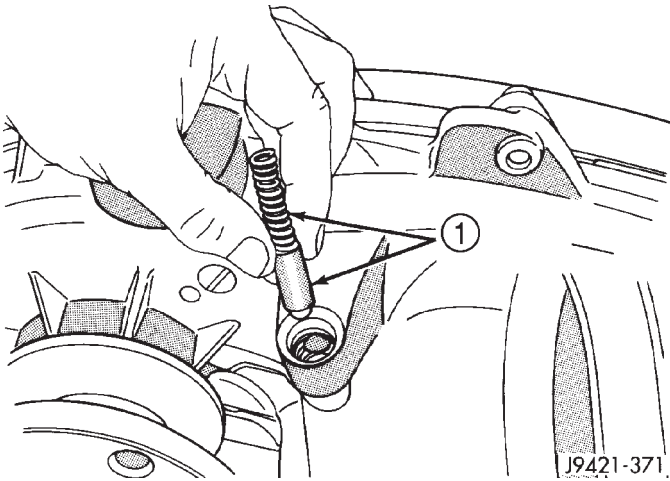


Fig. 82 Poppet Plunger And Spring Installation

1 - POPPET PLUNGER AND SPRING

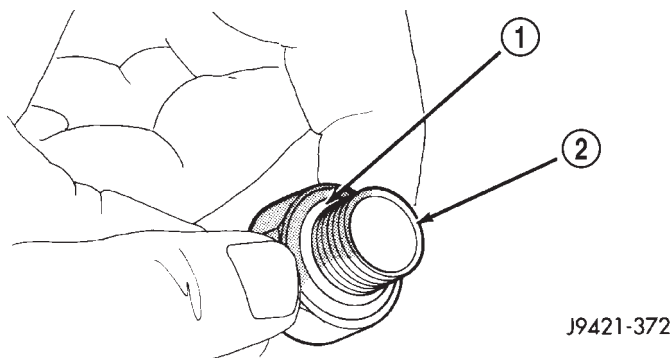


Fig. 83 O-Ring Installation On Poppet Plunger Screw

1 - O-RING
2 - PLUNGER SCREW

FRONT OUTPUT SHAFT AND DRIVE CHAIN

(1) Install front output shaft in bearing (Fig. 84).

(2) Insert front sprocket in drive chain (Fig. 85).

(3) Install drive chain around mainshaft sprocket (Fig. 85). Then position front sprocket over front shaft.

(4) Raise mainshaft about 2.54 cm (one inch) and seat front sprocket on front output shaft.

(5) If mainshaft and sliding clutch were unseated during chain installation, align and reseat mainshaft in input gear and hub. Then reseat synchronizer hub in sliding clutch. Press synchronizer struts inward to ease clutch back onto hub.

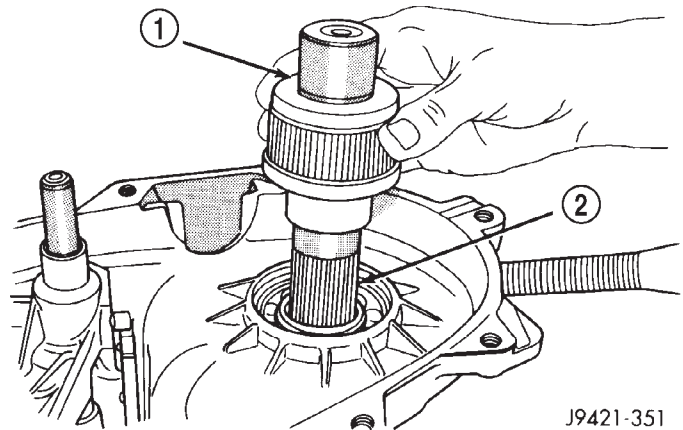


Fig. 84 Front Output Shaft Installation

1 - FRONT OUTPUT SHAFT
2 - BEARING

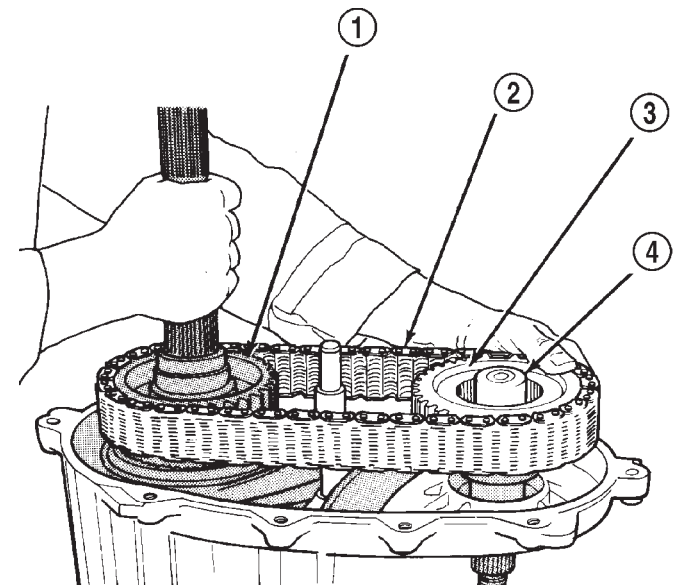


Fig. 85 Drive Chain And Front Sprocket Installation

1 - DRIVE SPROCKET
2 - DRIVE CHAIN
3 - FRONT SPROCKET
4 - FRONT SHAFT

TRANSFER CASE - NV241HD (Continued)

(6) Install front sprocket retaining ring (Fig. 86).

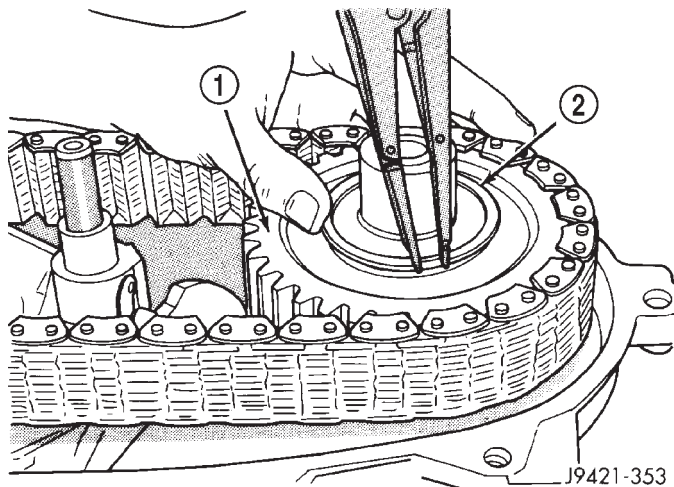


Fig. 86 Front Sprocket Retaining Ring Installation

- 1 - FRONT SPROCKET
- 2 - RETAINING RING

(7) Realign sliding clutch on synchronizer hub if necessary. Press synchronizer struts inward to ease realignment. Be sure mainshaft is fully seated before proceeding.

(8) Install spring and cup on shift rail (Fig. 87).

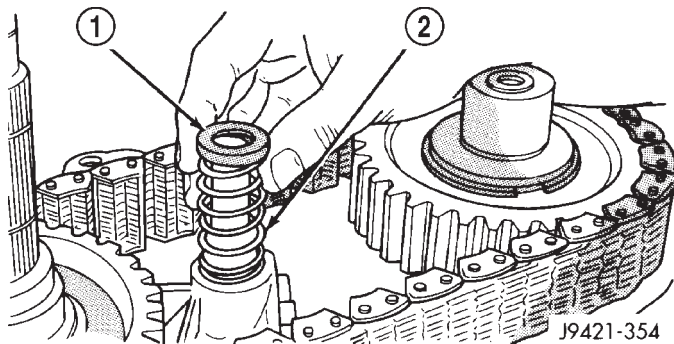


Fig. 87 Shift Rail Spring And Cup Installation

- 1 - CUP
- 2 - SPRING

(9) Insert magnet in front case pocket (Fig. 88).

OIL PUMP AND REAR CASE

Lubricate the oil pump components before installation. Prime the oil pickup tube by pouring a little oil into the tube before installation.

(1) Install new o-ring in pickup tube inlet of oil pump (Fig. 89).

(2) Position oil pickup tube and filter in rear case. Be sure pickup filter is seated in case pocket and that pickup tube is aligned in case notches (Fig. 90). Be sure hose that connects tube to filter is securely positioned.

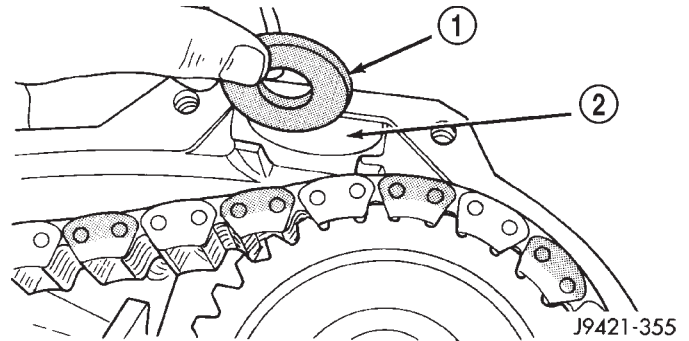


Fig. 88 Case Magnet Installation

- 1 - MAGNET
- 2 - CASE POCKET

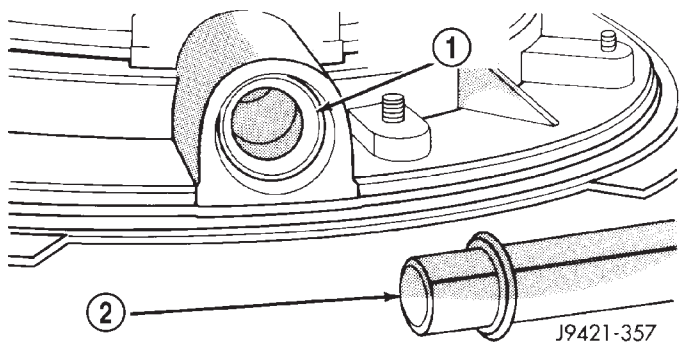


Fig. 89 Pickup Tube O-Ring Installation

- 1 - O-RING (PUMP PICKUP)
- 2 - PICKUP TUBE

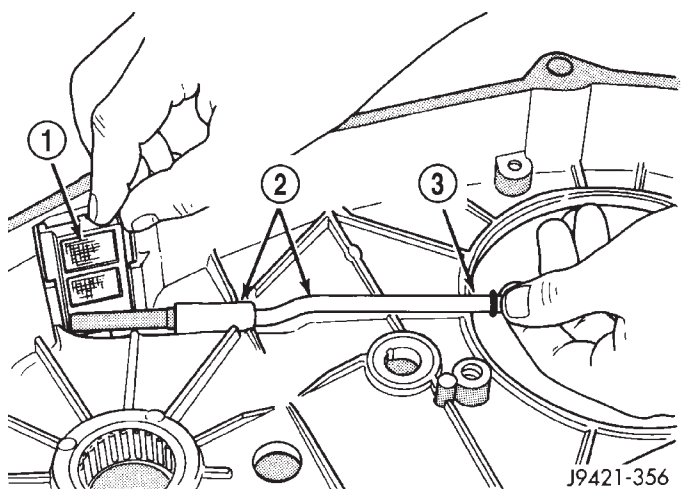


Fig. 90 Oil Pickup Tube And Filter Position In Rear Case

- 1 - FILTER
- 2 - TUBE AND HOSE
- 3 - TUBE IN NOTCH

(3) Insert oil pickup tube in oil pump and position pump in rear case (Fig. 91).

TRANSFER CASE - NV241HD (Continued)

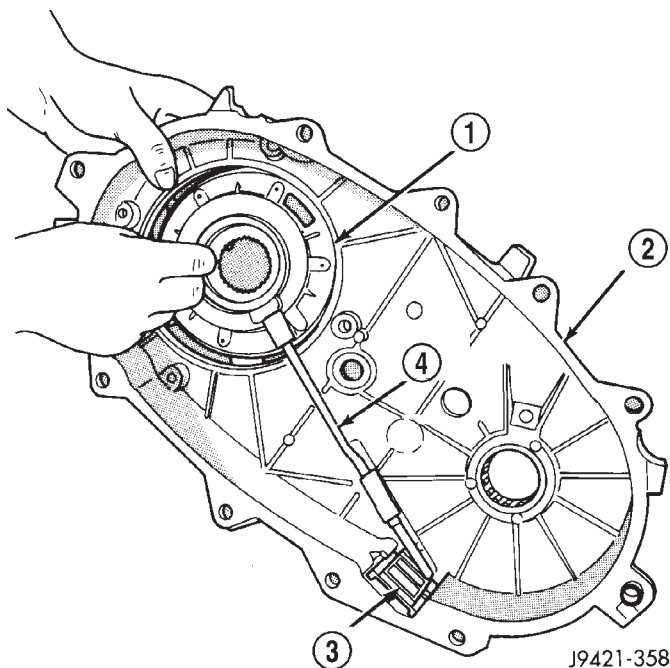


Fig. 91 Positioning Oil Pump In Rear Case

- 1 - OIL PUMP
- 2 - REAR CASE
- 3 - FILTER
- 4 - PICKUP TUBE

(4) Apply bead of Mopar® Gasket Maker, or equivalent, to mating surface of front case. Keep sealer bead width to maximum of 3/16 inch. Do not use excessive amount of sealer as excess will be displaced into case interior.

(5) Align oil pump with mainshaft and align shift rail with bore in rear case. Then install rear case and oil pump assembly (Fig. 92). Be sure oil pump and pickup tube remain in position during case installation.

(6) Install 4-5 rear case-to front case bolts to hold rear case in position. Tighten bolts snug but not to specified torque at this time.

CAUTION: Verify that shift rail (Fig. 93), and case alignment dowels are seated before installing any bolts. Case could be cracked if shaft rail or dowels are misaligned.

(7) Verify that oil pump is aligned and seated on rear case. Reposition pump if necessary.

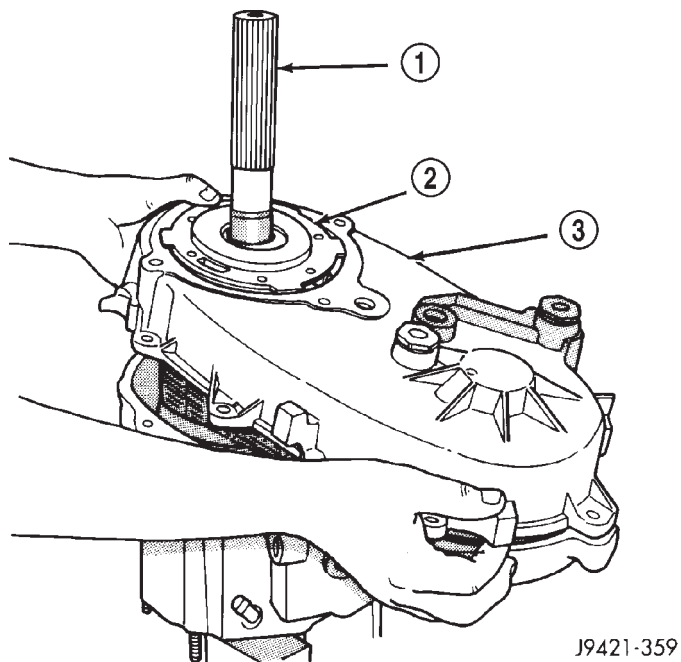


Fig. 92 Rear Case And Oil Pump Installation

- 1 - MAINSHAFT
- 2 - OIL PUMP
- 3 - REAR CASE

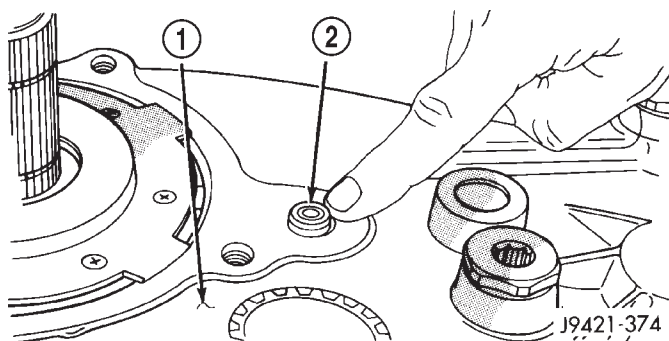


Fig. 93 Shift Rail Seated In Rear Case Bore

- 1 - REAR CASE
- 2 - SHIFT RAIL

TRANSFER CASE - NV241HD (Continued)

(8) Check stud at end of case halves (Fig. 94). If stud was loosened or came out during disassembly, apply Loctite™ 242 to stud threads and reseal stud in case.

(9) Apply Loctite™ 242 to remainder of rear case-to-front case bolt threads and install bolts. Be sure lock washers are used on studs/bolts at case ends. Tighten bolts, or stud nuts as follows:

- flange head bolts to 47-61 N·m (35-45 ft. lbs.)
- all other bolts/nuts to 27-34 N·m (20-25 ft. lbs.)

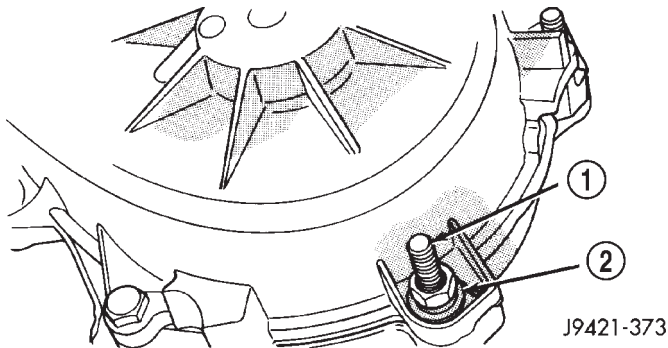


Fig. 94 Washer Installation On Case Stud And Dowel Bolts

- 1 - CASE STUD/BOLT
2 - WASHER

(10) Install oil pump retaining ring on mainshaft (Fig. 95).

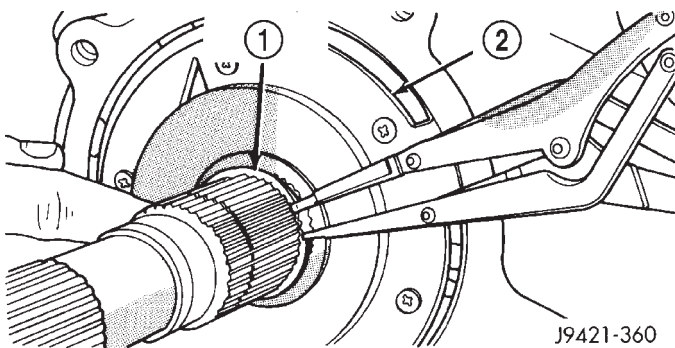


Fig. 95 Oil Pump Retaining Ring Installation

- 1 - RETAINING RING
2 - OIL PUMP

(11) Install rear output bearing and snap-ring to output shaft.

COMPANION FLANGE

(1) Install companion flange seal on front shaft (Fig. 96).

(2) Install companion flange on front shaft (Fig. 97). Then install and tighten flange nut to 176-271 N·m (130-200 ft. lbs.) torque.

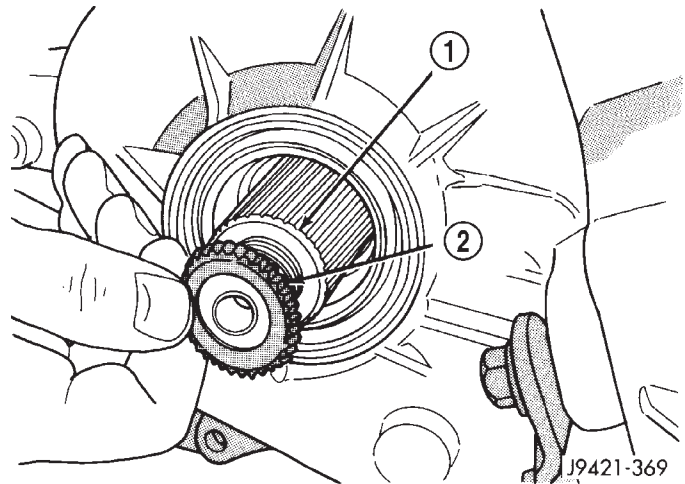


Fig. 96 Installing Flange Seal On Front Shaft

- 1 - FRONT OUTPUT SHAFT
2 - FLANGE SEAL

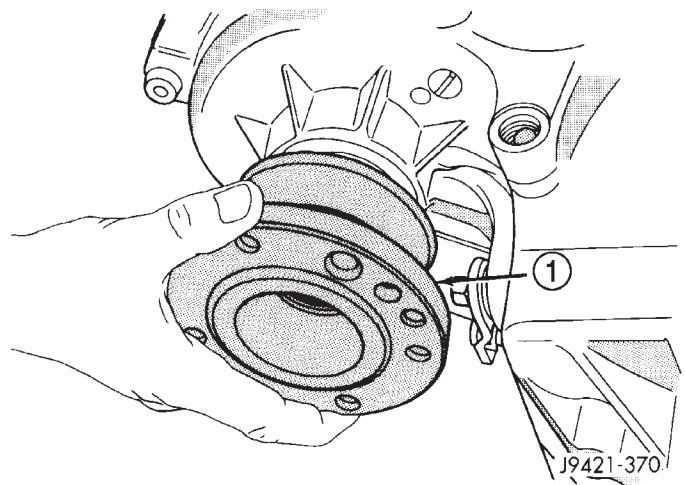


Fig. 97 Installing Companion Flange On Front Shaft

- 1 - COMPANION FLANGE

EXTENSION HOUSING AND PTO COVER

(1) Apply bead of Mopar® Gasket Maker, or equivalent, to mating surface of extension housing. Keep sealer bead width to maximum of 3/16 inch. Do not use excessive amount of sealer as excess could be displaced into oil pump.

(2) Position extension housing over output shaft.

(3) Spread extension housing retaining ring and seat extension housing on rear case. Verify that the retaining ring is seated in output shaft rear bearing.

(4) Install retaining ring access cover.

(5) Apply Mopar® Silicone Sealer, or equivalent, to threads of extension housing bolts. Then install bolts finger tight.

(6) Tighten extension housing bolts to 27-34 N·m (20-25 ft. lbs.) torque.

TRANSFER CASE - NV241HD (Continued)

(7) Apply Mopar® Silicone Sealer to mating surface of PTO cover and to cover bolt shanks and underside of bolt heads. Then install and tighten bolts to 27-34 N·m (20-25 ft. lbs.) torque.

INSTALLATION

(1) Align and seat transfer case on transmission. Be sure transfer case input gear splines are aligned with transmission output shaft. Align splines by rotating transfer case rear output shaft yoke if necessary. Do not install any transfer case attaching nuts until the transfer case is completely seated against the transmission.

(2) Install and tighten transfer case attaching nuts. Tighten nuts to 30-41 N·m (20-30 ft.lbs.).

(3) Install rear crossmember.

(4) Remove jack stand from under transmission.

(5) Align and connect propeller shafts. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - INSTALLATION)

(6) Connect vacuum harness and vent hose.

(7) Connect shift rod to transfer case lever or floor shift arm. Use channel lock style pliers to press rod back into lever grommet.

(8) Adjust shift linkage, if necessary.

(9) Fill transfer case with recommended transmission fluid and install fill plug.

(10) Install skid plate, if equipped. (Refer to 13 - FRAMES & BUMPERS/FRAME/TRANSFER CASE SKID PLATE - INSTALLATION)

(11) Lower vehicle

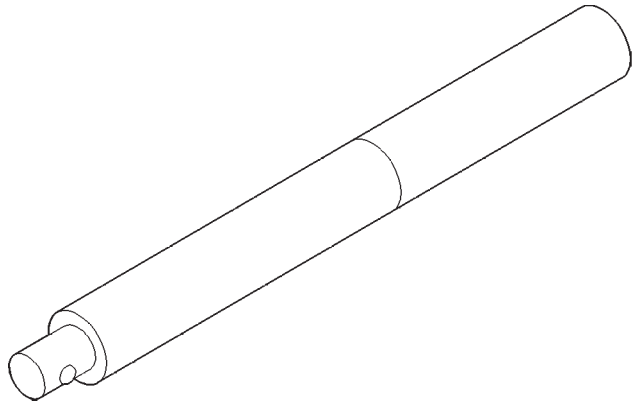
SPECIFICATIONS**TRANSFER CASE****TORQUE SPECIFICATIONS**

DESCRIPTION	N-m	Ft. Lbs.	In. Lbs.
Plug, Detent	16-24	12-18	-
Bolt, Diff. Case	17-27	15-24	-
Plug, Drain/Fill	40-45	30-40	-
Bolt, Extension Housing	35-46	26-34	-
Bolt, Front Brg. Retainer	16-27	12-24	-
Bolt, Case Half	35-46	26-34	-
Nut, Front Yoke	122-176	90-130	-
Screw, Oil Pump	1.2-1.8	-	12-15
Nut, Range Lever	27-34	20-25	-
Bolt, Rear Retainer	35-46	26-34	-
Nuts, Mounting	30-41	20-30	-
Bolts, U-Joint	19	17	-
Vacuum Switch	20-34	15-25	-

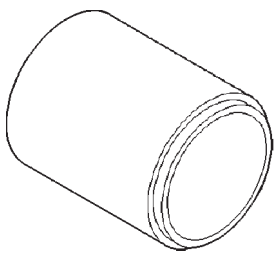
TRANSFER CASE - NV241HD (Continued)

SPECIAL TOOLS

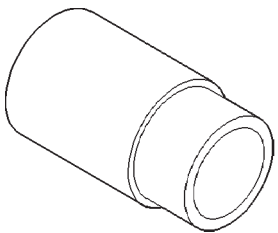
TRANSFER CASE - NV241HD



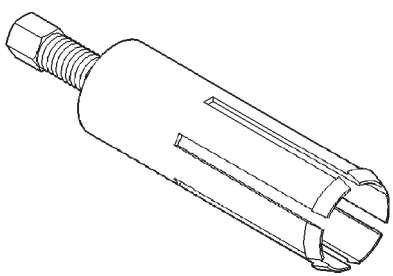
Handle, Universal - C-4171



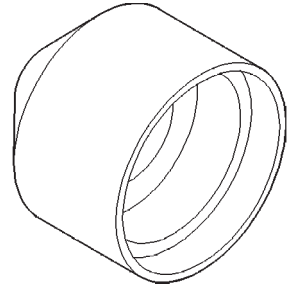
Installer, Seal - 6888



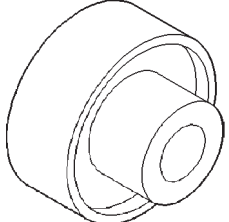
Installer, Bushing - 8156



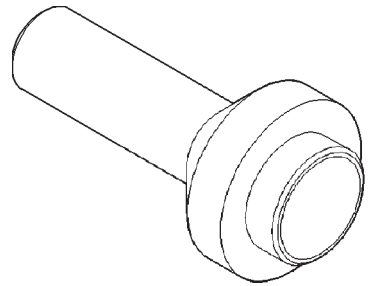
Remover, Bushing - 8155



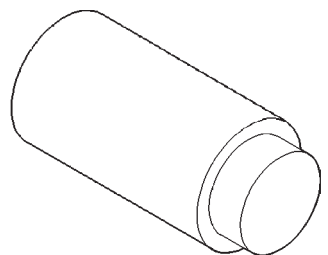
Installer, Seal - 8154



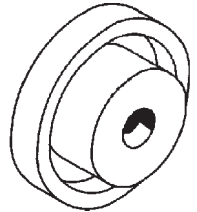
Installer, Bearing - 6953



Installer, Seal - 7884

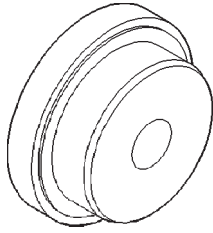
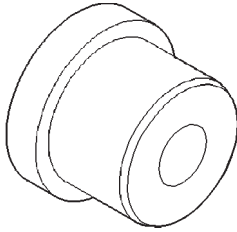
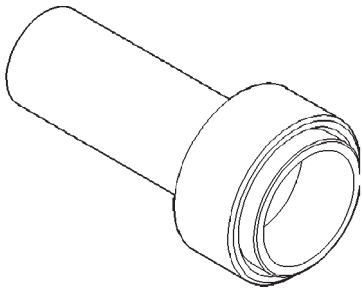
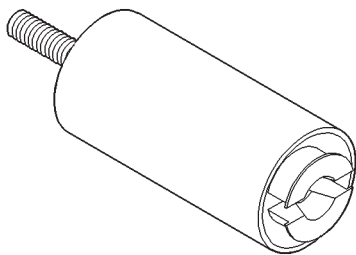
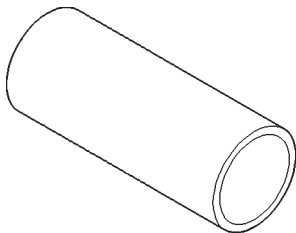


Plug, Extension - C-293-3



Installer, Seal - C-4210

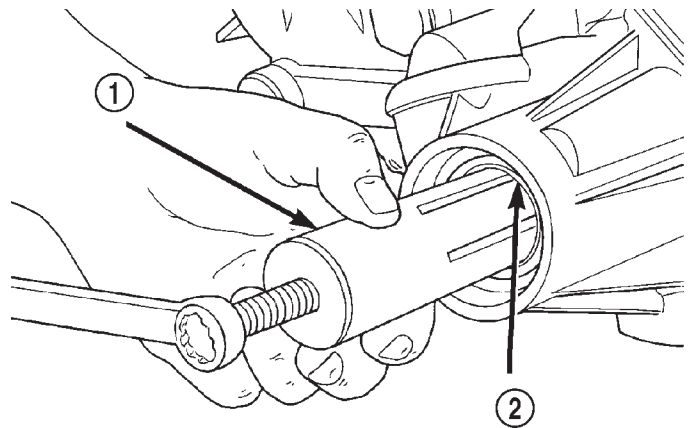
TRANSFER CASE - NV241HD (Continued)

**Installer, Bearing - 5062****Installer, Bushing - 5066****Installer, Pump Housing Seal - 7888****Remover, Bearing - L-4454****Cup - 8148**

EXTENSION HOUSING BUSHING AND SEAL

REMOVAL

- (1) Raise and support vehicle.
- (2) Remove rear propeller shaft. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - REMOVAL)
- (3) Using a suitable pry tool or slide-hammer mounted screw, remove the extension housing seal.
- (4) Using Remover 8155, remove bushing from extension housing (Fig. 98).



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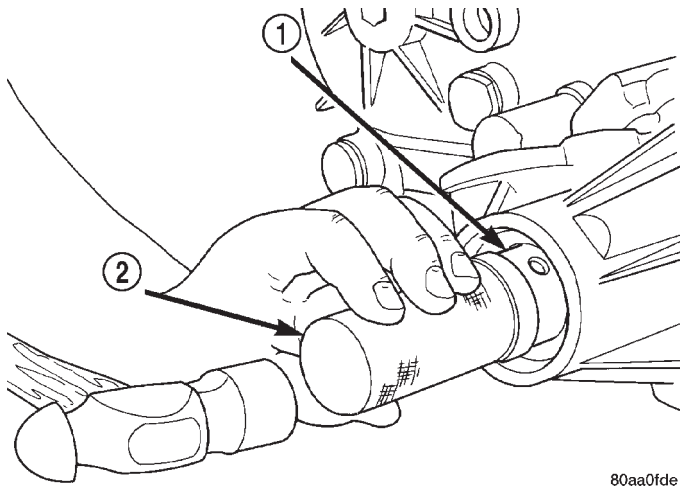
Fig. 98 Extension Housing Bushing Removal

- 1 - REMOVER 8155
- 2 - EXTENSION HOUSING BUSHING

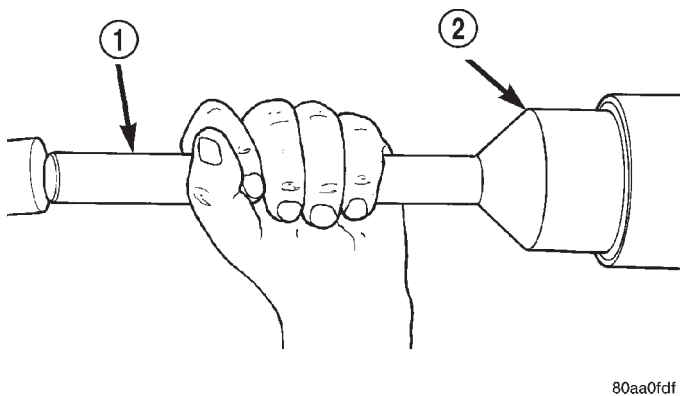
INSTALLATION

- (1) Clean fluid residue from sealing surface and inspect for defects.
- (2) Position replacement bushing in extension housing with fluid port in bushing aligned with slot in housing.
- (3) Using Installer 8156, drive bushing into housing until installer seats against case (Fig. 99).
- (4) Using Installer 8154, install seal in extension housing (Fig. 100).
- (5) Install propeller shaft. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - INSTALLATION)
- (6) Verify proper transfer case fluid level.
- (7) Lower vehicle.

EXTENSION HOUSING BUSHING AND SEAL (Continued)

**Fig. 99 Extension Housing Bushing Installation**

- 1 - EXTENSION HOUSING BUSHING
2 - INSTALLER 8156

**Fig. 100 Install Extension Housing Seal**

- 1 - SPECIAL TOOL C-4171
2 - SPECIAL TOOL 8154

FLUID

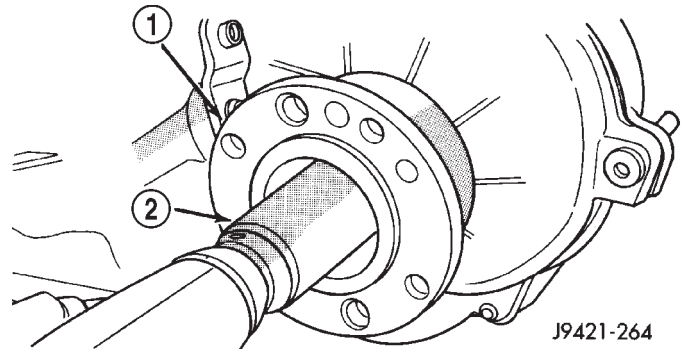
STANDARD PROCEDURE - FLUID DRAIN AND REFILL

- (1) Raise vehicle.
- (2) Position drain pan under transfer case.
- (3) Remove drain and fill plugs and drain lubricant completely.
- (4) Install drain plug. Tighten plug to 41-54 N-m (30-40 ft. lbs.).
- (5) Remove drain pan.
- (6) Fill transfer case to bottom edge of fill plug opening with Mopar® ATF +4, type 9602, Automatic Transmission fluid.
- (7) Install and tighten fill plug to 41-54 N-m (30-40 ft. lbs.).
- (8) Lower vehicle.

FRONT OUTPUT SHAFT SEAL

REMOVAL

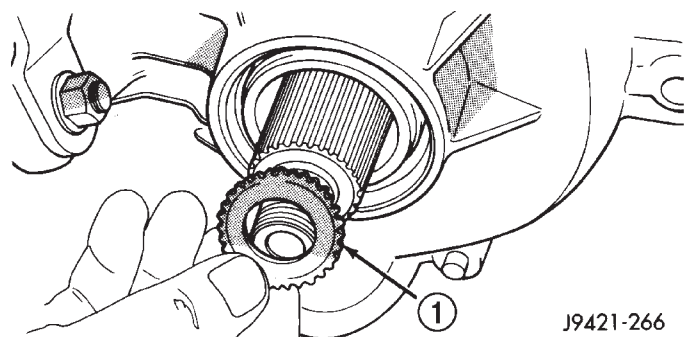
- (1) Shift transfer case into NEUTRAL.
- (2) Raise vehicle.
- (3) Remove front propeller shaft. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - REMOVAL)
- (4) Remove companion flange nut (Fig. 101). Discard nut after removal. It is not reusable.

**Fig. 101 Removing Companion Flange Nut**

- 1 - COMPANION FLANGE
2 - SOCKET

(5) Remove companion flange from output shaft. Use a suitable puller if flange can not be removed by hand.

(6) Remove companion flange rubber seal from front output shaft (Fig. 102).

**Fig. 102 Companion Flange Seal Removal**

- 1 - FLANGE SEAL

(7) Remove front output shaft seal with suitable pry tool, or a slide hammer mounted screw.

INSTALLATION

(1) Install new front output seal in front case with Installer Tool 6888 and Tool Handle C-4171 (Fig. 103) as follows:

- (a) Place new seal on tool. Garter spring on seal goes toward interior of case.

FRONT OUTPUT SHAFT SEAL (Continued)

(b) Start seal in bore. Once seal is started, continue tapping seal into bore until installer tool bottoms against case.

(c) Remove installer and verify that seal is recessed the proper amount. Seal should be 2.03 to 2.5 mm (0.080 to 0.100 in.) below top edge of seal bore in front case (Fig. 104). This is correct final seal position.

CAUTION: Be sure the front output seal is seated below the top edge of the case bore as shown. The seal could loosen, or become cocked if not seated to recommended depth.

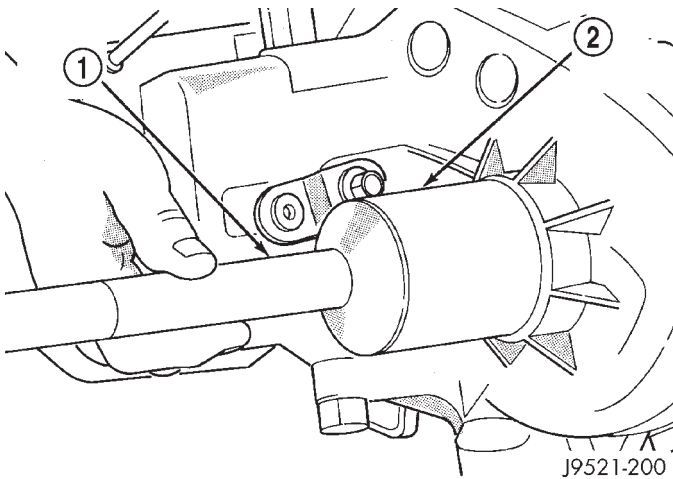


Fig. 103 Front Output Seal Installation

- 1 - SPECIAL TOOL C-4171
- 2 - SPECIAL TOOL 6888

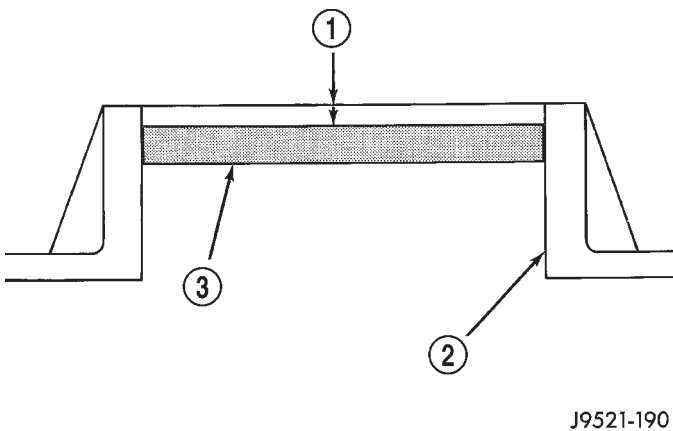


Fig. 104 Checking Front Output Seal Installation Depth

- 1 - CORRECT SEAL DEPTH IS 2.03-2.5 mm (0.080-0.100 in.) BELOW TOP EDGE OF BORE
- 2 - FRONT CASE SHAFT BORE
- 3 - FRONT OUTPUT SEAL

(2) Install companion flange seal on front shaft (Fig. 105).

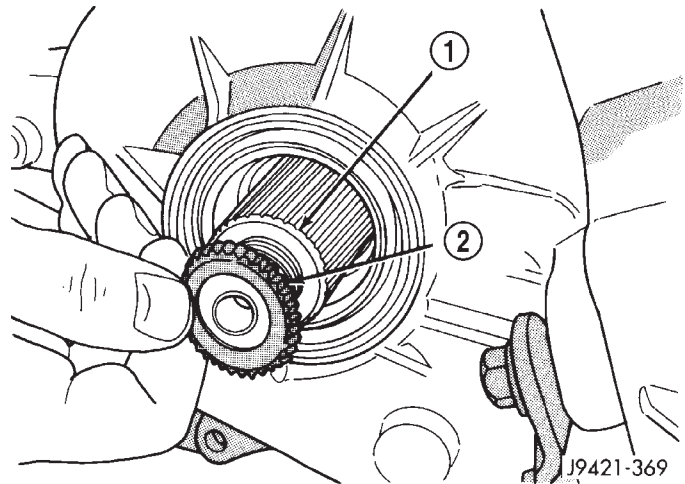


Fig. 105 Installing Flange Seal On Front Shaft

- 1 - FRONT OUTPUT SHAFT
- 2 - FLANGE SEAL

(3) Install companion flange on front shaft (Fig. 106). Then install and tighten flange nut to 176-271 N·m (130-200 ft. lbs.) torque.

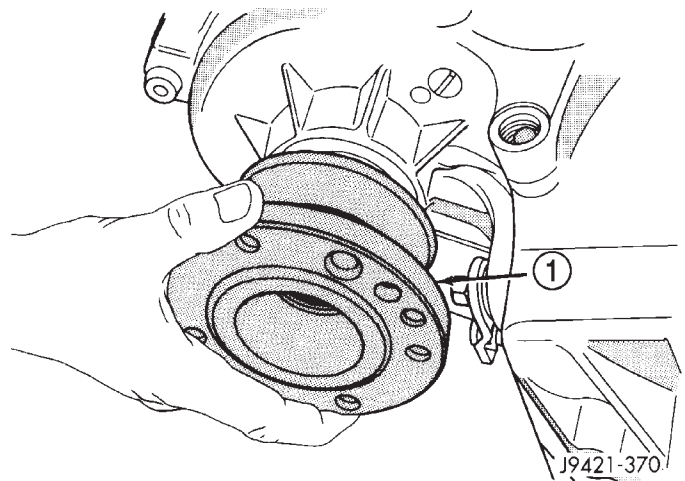


Fig. 106 Installing Companion Flange On Front Shaft

- 1 - COMPANION FLANGE

(4) Install propeller shaft. (Refer to 3 - DIFFERENTIAL & DRIVELINE/PROPELLER SHAFT/PROPELLER SHAFT - INSTALLATION)

SHIFT LEVER

REMOVAL

- (1) Shift transfer case into 2H.
- (2) Remove transfer case shifter knob cap.
- (3) Remove nut holding shifter knob to shift lever.
- (4) Remove shifter knob.
- (5) Remove the shift boot from the shifter bezel.
- (6) Remove the bolts securing the shifter mechanism to the floor pan along the driver's side of the transmission tunnel (Fig. 107).

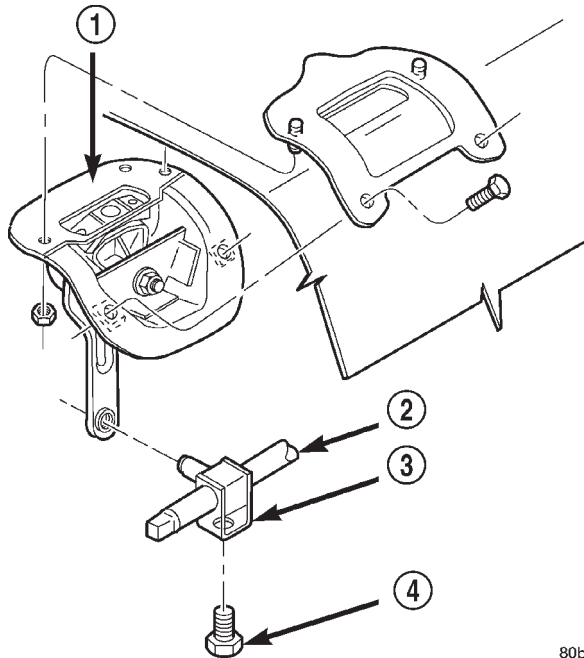


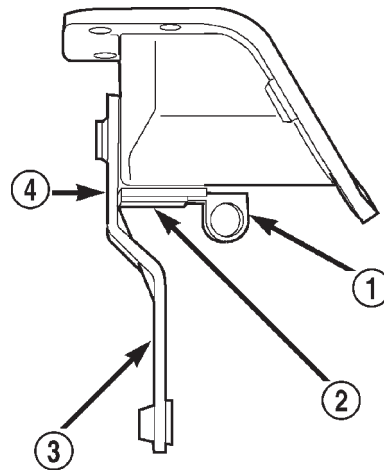
Fig. 107 Transfer Case Shifter

- 1 - TRANSFER CASE SHIFTER ASSEMBLY
- 2 - SHIFT ROD
- 3 - TRUNNION
- 4 - LOCK BOLT

- (7) Raise and support the vehicle.
- (8) Loosen adjusting trunnion lock bolt and slide shift rod out of trunnion. If rod lacks enough travel to come out of trunnion, push trunnion out of shift lever.
- (9) Remove the nuts holding the shifter mechanism to the underside of the floor pan.
- (10) Separate shift lever mechanism from the vehicle.

INSTALLATION

- (1) If the shifter mechanism does not have an adjustment locating pin installed, align the adjustment channel on the shifter assembly to the locating hole in the lower shift lever and install an appropriately sized pin to retain the position (Fig. 108).



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Fig. 108 Shifter Adjustment

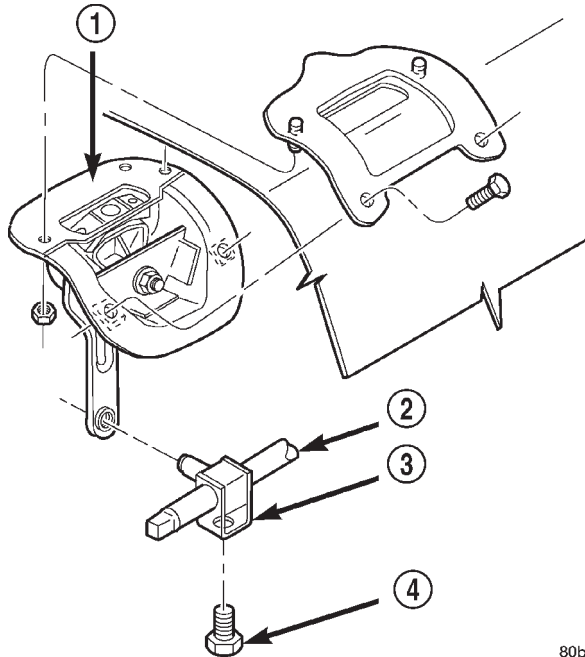
- 1 - LOCATING PIN
- 2 - ADJUSTMENT CHANNEL
- 3 - LOWER SHIFTER LEVER
- 4 - LOCATING HOLE

- (2) Position shift lever on vehicle.
- (3) Install nuts to hold shift lever to the underside of the body.
- (4) Install trunnion to shift lever, if necessary.
- (5) Install shift rod to trunnion, if necessary.
- (6) Tighten the shift rod lock bolt to 10 N·m (90 in.lbs.).
- (7) Remove the shifter adjustment locating pin from the adjustment channel and the locating hole.
- (8) Lower vehicle.
- (9) Install the bolts to hold the shifter mechanism to the floor pan.
- (10) Install the transfer case shifter bezel.
- (11) Install the shifter boot and the shifter knob onto the shifter lever.
- (12) Install nut to hold shifter knob to shift lever.
- (13) Install shifter knob cap.
- (14) Verify transfer case operation.

SHIFT LEVER (Continued)

ADJUSTMENT - SHIFT LEVER

- (1) Move shift lever into 2H position.
- (2) Raise vehicle.
- (3) Loosen shift rod lock bolt at trunnion (Fig. 109).



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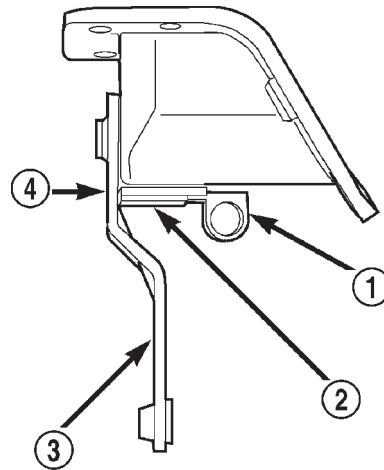
Fig. 109 Shift Rod Lock Bolt Location

- 1 - TRANSFER CASE SHIFTER ASSEMBLY
- 2 - SHIFT ROD
- 3 - TRUNNION
- 4 - LOCK BOLT

(4) Check shift rod fit in trunnion. Be sure rod does not bind in trunnion. Lubricate the shift rod and trunnion if necessary.

(5) Verify that transfer case shift lever is in 2H detent position. The 2H detent position on the transfer case shift arm is the second position from full forward.

- (6) Align the adjustment locating hole on the lower shifter lever with the adjustment channel on the shifter bracket assembly (Fig. 110).



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Fig. 110 Shifter Adjustment Location

- 1 - LOCATING PIN
- 2 - ADJUSTMENT CHANNEL
- 3 - LOWER SHIFTER LEVER
- 4 - LOCATING HOLE

- (7) Insert an appropriately sized pin through into the adjustment channel and through the locating hole to hold the shifter in the correct position.

(8) Tighten shift rod lock bolt to 10 N·m (90 in. lbs.) torque.

(9) Remove the locating pin from the adjustment channel and locating hole.

(10) Check shift linkage operation. Be sure transfer case shifts into and operates properly in all ranges.