



**Transaxle
107 Tractors
Service Manual No. 9-50251**

casecoltingersoll.com

JI Case
A Tenneco Company



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SECTION I

GENERAL SERVICE PROCEDURES AND TROUBLE SHOOTING

GENERAL SERVICE PROCEDURE

1. Before removal of unit from equipment, look for:
 - a. Loose drive belts.
 - b. Improperly adjusted or badly worn clutch.
 - c. Loose or lost setscrews and/or sheared keys in drive and driven pulleys.
 - d. Oil saturated drive belts and clutches.
 - e. Bad operating habits, such as clutch riding.
 - f. Oil leaks.
 - g. Any trouble, which might be pointed up by operating the unit and equipment, IF POSSIBLE.
2. Removal and installation of the transaxle from the tractor.
 - a. Jack up tractor so that transaxle is accessible. Use wood blocks to prevent equipment movement. Do not use bricks, cement, or cinder blocks.
 - b. Visually inspect transaxle for oil leaks, cracked housing, binding or rubbing of parts, or other symptoms of malfunction.
 - c. Disconnect brake linkage.
 - d. Remove wheels and drive belt. Be aware of positioning of parts. Scribe mark, if in doubt, as to ability to re-assemble parts quickly.
 - e. If shifter lever will interfere with unit in any way, remove it before unit is removed.
 - f. Remove "U" bolts and bracket holding transaxle to tractor frame.
 - g. With transaxle free and supported, remove it from the area of the tractor to the work bench.
 - h. Reverse removal procedure to install.
3. Preparing for dis-assembly:
 - a. Visually inspect for evidence of oil seepage, tampering, misalignment, freedom of rotating shafts, etc.
 - b. Clean unit thoroughly of dirt, oil, debris.
 - c. Remove shift housing and drain oil from unit. Observe oil to see if

- metal particles are present.
- d. Check axle shafts carefully for smoothness. Use a stone or suitable hard abrasive to rub down high spots and eliminate rust or paint.
- e. Check model number at appropriate spot. It is advisable to have the exploded parts view handy.
- f. Have seal sleeves, driver, tools, shop clothes and informational material at hand.

OIL LEAKS, SEAL AND GASKET SERVICE

1. Other than leaking seals, gaskets and "O" rings, leakage can occur due to a cracked case or cover, flats on shafts, porosity (rarely, if ever), and worn bushings and shafts.
2. Single lip inward sealing can be salvaged by use of the proper seal protector when pulling the seal over a shaft. Outward sealing seal (both single and double lip) must be replaced since there is no assurance that the initial sealing surface can be protected.
3. If you can't protect the sealing lip, replace the entire seal. The cost of the seal is small in comparison to a return repair due to reuse for seals.
4. Check seals for cracks, scuffs, cuts, and distortion. Check seal areas for evidence of oil leak both at sealing surface and between metal-to-metal contact surface areas.
5. Some seals have a "Redicoat" sealant applied, while others may need a thin coat of this or a similar sealant.
6. The surface over which the seal lips must slide must be free of all cuts, scratches, high spots, or rust. The shafts should be smooth, shiny, and a thin film of light oil applied. Sleeves should be used to clear keyways, splines, or other sharp edges machined into shafts.

TORQUE VALUES - TROUBLE SHOOTING

1. All torque values must be applied. The torque value for any fastener will be found in the assembly instruction where that fastener is used.
2. Overtightening - Can strip threads, compress the gasket excessively, possibly causing binding.
3. Cross tightening sequence to half the torque then finally to full torque value.
4. Undertightening - Oil leakage, loosening of attaching parts, possible shifting of the internal part causing complete failure.
5. Since all bolts are readily accessible, there is no reason that a torque wrench can not be used for all bolt and screw tightening. To use guess or chance, any of the previous can result:

TORQUE VALUES

| PART | TORQUE READING FT-LBS |
|--|--------------------------|
| Socket Head Cap Screws (Shift Lever Housing) | 10 |
| Socket Head Cap Screws (Case-to-Cover) | 10 |
| Hex Cap Screws (Differential) | 7 |

| CAUSE | REMEDY |
|---|---|
| UNIT CANNOT BE SHIFTED (OR DIFFICULT TO SHIFT) | |
| Gears improperly installed. | Review positioning of gearing. |
| Forks and Rod assembly incorrectly installed. | Remove assembly. Recheck and correctly position parts. |
| Axle Housing not installed or not tightened. | Seal retainers are not properly seated. Tighten axle housing bolts. |
| Same items covered under heading, "Axles Cannot Be Turned (Same Direction) While Unit In Neutral Gear". | Review remedy listed. |
| Shifting lever improperly positioned. | Determine finger of shifting lever is correct for the unit and correctly installed. Check to make sure shift lever housing has required gasket. |
| Shift lever housing misaligned to case. | Check to determine if alignment marks are on unit that they are correctly positioned. Also, determine if bend on shaft is in correct position. |

(Continued on next page.)

| CAUSE | REMEDY |
|---|---|
| UNIT CANNOT BE SHIFTED (OR DIFFICULT TO SHIFT) (Continued) | |
| Parts missing. | Install missing parts. |
| Equipment clutch not disengaging. | Adjust clutch according to equipment instructions. |
| Shifter stop assembled backwards. | Check to determine that notch in STOP aligns with shifter forks in NEUTRAL position. |
| Chamfer on shift gears on wrong side. | Check to determine that bevels on shifter gears are correct (fork flanges should be toward each other). On 3 gear cluster, small gear and medium gear chamfers go down toward big gear. |
| UNIT IS NOISY | |
| Gearing overly noisy - chatter, etc. | Check lubrication is at proper content. |
| Metallic pieces and/or other foreign objects in unit. | Check for and remove bits of broken metal, loose washers, etc. |
| Worn gears. | Remove and replace with new gears. |
| Worn bearings - mainly input shaft ball bearing. | Replace bearing. |
| UNIT JUMPS OUT OF GEAR | |
| Shifting lever improperly assembled in housing. | Disassemble shifting lever and determine if properly assembled. |
| Teeth of gears are worn beyond tolerances. | Check gears. Replace worn gears. |
| Spring in shifter fork weak or broken. | Replace spring. |
| Attaching screws for shift lever and housing assembly not properly torqued. | Torque screws to 10 lbs. ft. |
| Shift lever bent and hitting unit frame. | Replace shift lever. |
| Shift rod grooves worn. | Replace shift rods. |
| Shift rod of improper length or grooving installed. | Check rod length. Replace rod with correct part. |
| Constant mesh gears improperly installed on counter shaft. | Reposition gears. |
| AXLES CANNOT BE TURNED (SAME DIRECTION) WITH UNIT IN NEUTRAL GEAR | |
| Axle housing not installed (or not tightened). | Seal retainers are not properly seated. Tighten axle housing bolts. |
| Burrs on gearing. | Remove gear and hone with a stone. |
| Parts missing. | Install missing parts. |
| Broken shifter stop allowing unit to be shifted into two speeds at the same time. | Replace snap rings on shift rod out of groove. |

(Continued on next page.)

| CAUSE | REMEDY |
|--|--|
| AXLES CANNOT BE TURNED (SAME DIRECTION) WITH UNIT IN NEUTRAL GEAR (Continued) | |
| Thrust washers in wrong position. | Recheck thrust washer and reposition, if wrong. |
| Bearings not pressed in deep enough. | Use the proper bearing tool to seat the bearing. |
| Improper fit of case to cover. | Recheck positioning of thrust washers. A misplacement or omission of washer can cause binding. |
| Dowel pins not installed. | Install dowel pins. |
| Gears improperly installed. | Check unit for correct assembly of parts. |
| Input shaft not properly installed. | Input shaft spline must be fitted into gear and must be tapped completely into the case. |
| Differential installed improperly. | Re-check positioning of bolts in differential - must be opposite output shaft gear. |
| Seal retainers improperly positioned. | Determine seals are correctly installed. |
| UNIT DOES NOT DRIVE | |
| Differential bevel gears broken. | Replace. |
| Stripped teeth on gears. | Replace. |
| Keys sheared in drive pulleys. | Replace. |
| Broken input gear. | Replace. |

1. TESTING

The absence of binding and oil leakage are the best indications that the unit has been properly reassembled. Though other, more elaborate, tests can be done, this would be the prerogative of the servicing agency, since the following checks are considered adequate.

With the shift forks in neutral, rotate both axle ends in the same direction. They should turn smoothly although a little effort may be necessary. The brake shaft should rotate whenever the axles turn together, but in neutral, the input shaft should not turn.

By moving any shifter gear into mesh, a greater drag should be felt on the axles and both the input and brakeshaft should turn.

To ease in turning of the various shafts, insert a tool (such as a punch or a socket head screw key) into the keyway, however, do not force if the shaft is binding.

Reason for unit binding:

1. Reused or lack of gasket.
2. Oil seal retainers installed backward.
3. Mis-installed thrust washers.
4. Differential installed backward.
5. Mis-assembly of shifting parts.
6. Mis-placement of spacers.
7. Foreign matter blocking gear teeth mesh.
8. Shifter stop installed backwards.
9. Input shaft not completely in case.
10. Mis-alignment of case and cover.

SECTION 2 TRANSAXLE DISASSEMBLY AND ASSEMBLY

A. GENERAL

The transaxle in the 107 tractor has three-speeds forward and one reverse. It is not intended for use with ground engaging equipment.

B. DISSASSEMBLY

1. Perform all pre-disassembly procedures outlined in general service procedures, Section 1.

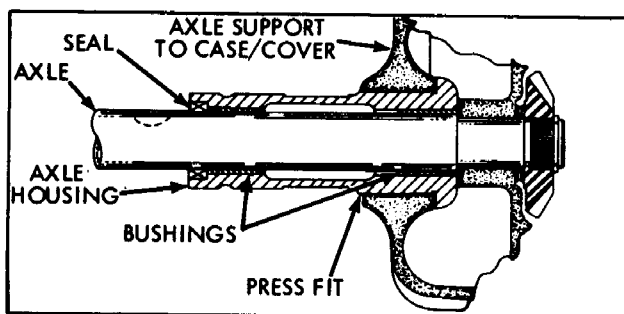


Figure 2-1

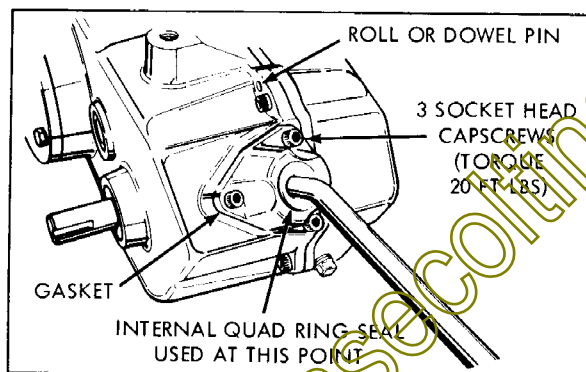


Figure 2-2

2. Position the shifter forks in neutral. (Fig. 2-3)
3. When disassembling the rest of the unit, it should be held so that:
 - a. It lies on the case, properly blocked so that no weight rests on the input shaft or differential, yet the case is rigid.
 - b. It can be worked on without the chance of falling, or causing injury.

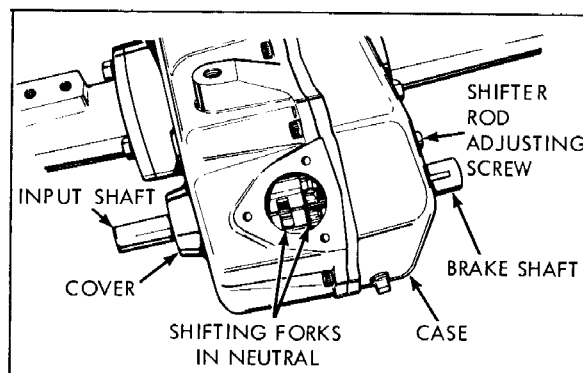


Figure 2-3

4. Oil seals have a double lip so seal sleeves do not offer much protection during removal. Upon replacement, new seals should be used.
5. Tap dowel pins into the case and remove socket head cap screws.

Lift the cover off from case. Discard gasket.

Remove output gear and shaft. (Fig. 2-4)

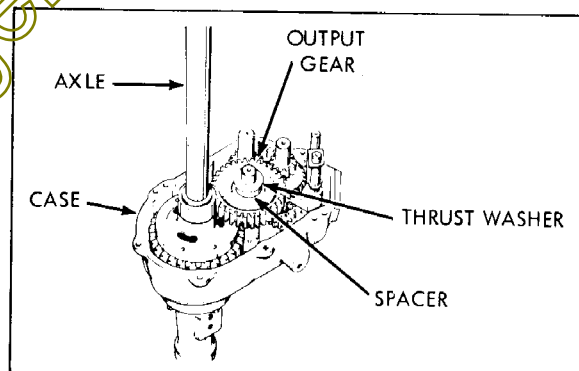


Figure 2-4

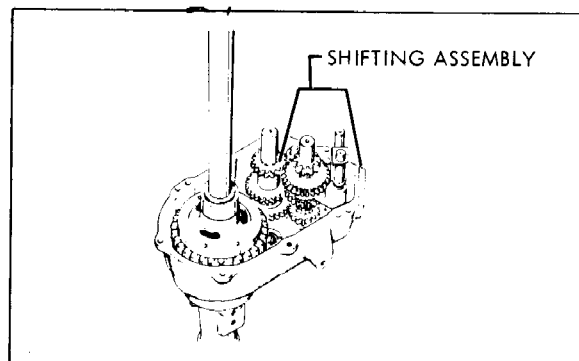


Figure 2-5

7. Remove the shifting assembly as one unit. (Fig. 2-6)

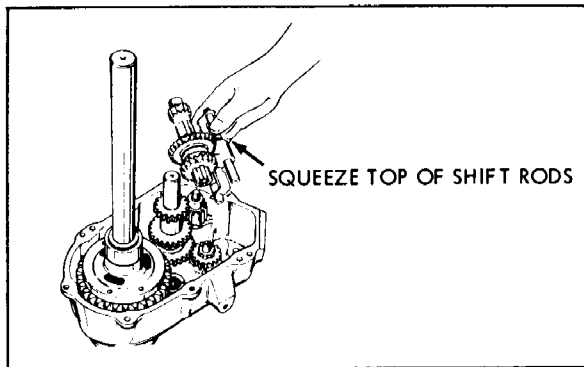


Figure 2-6

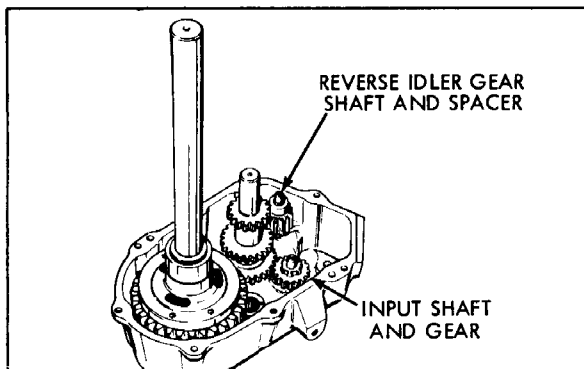


Figure 2-7

8. Remove the reverse idler shaft, spacer and gear. (Fig. 2-7)
9. Lift out the three gear cluster. (Fig. 2-8)

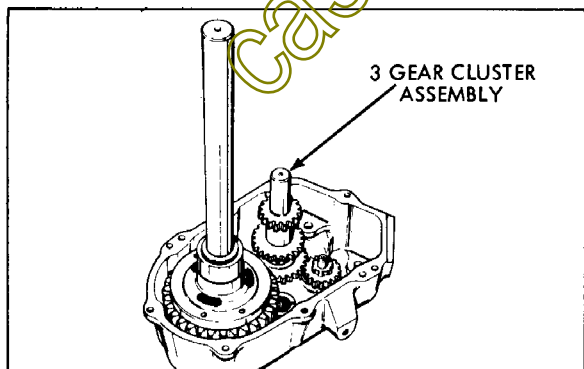


Figure 2-8

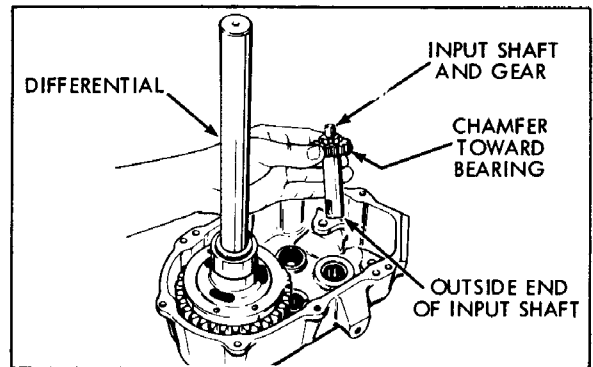


Figure 2-9

10. Remove the differential. (Fig. 2-9)

See Section 4 for differential assembly service.

11. Tap the input shaft out of the case. (Fig. 2-9)

C. INSPECTION AND REPAIR

1. Gears

- a. Check bevels for evidence of galling due to improper shifting.

NOTE: Transaxles must be stopped for shifting.

- b. Check face of teeth for wear, large shiny areas indicate much tooth contact and possible excessive wear. Replace gears indicating damage or excessive wear.

2. Shafts and Axles

- a. Check surface for rust, pitting, scratches or wear.

- b. Check keyways, splines, threads, and grooves for wear. Replace parts if worn or damaged beyond a refinishable state.

3. Case, Cover, and Axle Housings

Check for cracks, stripped threads, metal chips, flat sealing surfaces, and rust. Clean out any rust. Replace parts if any damage is found that cannot be repaired.

Inspection of the case and cover may indicate the need for replacement of the axle housings.

Use an arbor press to drive out the housing, and a protective piece of bar stock between the housing and press when replacing the housing.

Press the housing in squarely until the flange seats against the case and cover.

4. Thrust Washers and Spacers

Check for shininess indicating wear. Replace if wear is evident. Try to determine cause of thrust washer wear such as: lack of end play due to re-use of gasket or use of wrong thrust washer.

5. Shifting Assembly

Refer to SECTION 3.

6. Gaskets

Replace all gaskets.

7. Oil Seals

It is a good habit to replace all seals. It is necessary to replace all double lip seals. Refer to SECTION 1, "Oil Leaks, Seal and Gasket Service".

8. Bearings and Bushings

a. General Bearing and Bushing Care

1. Bearings, bushings and bearing surfaces should be thoroughly cleaned prior to examination. Examine closely for scuffing, wear, pitting and abnormal conditions. Replace if any conditions mentioned appear.

2. Use a good grade of clean solvent to clean bearings. After cleaning, always use clean lint-free cloth to dry and wipe bearings. Immediately coat cleaned bearing with lubricant to prevent rusting or corrosion.

3. Take care of bearings in the case and cover. Cover them to keep out foreign matter. Place gasket surface down on clean paper and cover with clean cloth.

Never clean the lubricant from new bearings. This lubricant prevents damage before the transaxle lubricant enters the bearing.

b. Needle Bearing Service

It is advisable to use an arbor press to remove and install needle bearings.

1. Use a bearing tool to press out the bearing. Insert the proper tool in the bearing and with an arbor press, press out the bearing from the inside.
2. When installing open end needle bearings, always apply pressure to the stamped side.
3. Use only the recommended tools to insert bearings. The opposite end of the same tool used for removal is used for replacement.

- The inside face of the bearing housing should be below the thrust face on the case or cover. This distance is controlled by the design of the inserting tool. By using the proper tool, bearing life will be extended. Bearings should be pressed into the case or cover .015 to .020 below the thrust surface.

- Install the differential assembly. The four cap screw heads should go down into the case.
- Install the three gear cluster, with the smallest gear up. (Fig. 2-10)

NOTE: Bevels of small and middle gear go down toward large gear. Large gear bevel is up. The short spacer goes between the large and middle gears.

c. Bushing Service

When removing bushings use the combined bushing remover and installation tool. Position the piece to be serviced on the table of an arbor press with an opening to allow the bushing to pass through.

After new bushings are pressed into the piece they must be sized. See the tool list for the proper sizing ball and driver. Use an arbor press and push the steel ball through the new bushing to expand it to the required size.

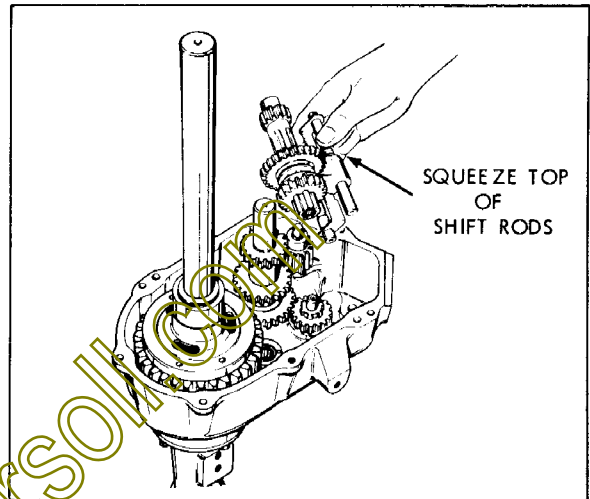


Figure 2-11

D. ASSEMBLY

- Install input shaft in case. Use a soft mallet to seat shaft and gear completely. Binding can occur if the shaft is driven in only part way (Fig. 2-10)

- Position the reverse idler shaft in the unit, then install gear and spacer. (Fig. 2-7) or (Fig. 2-11)

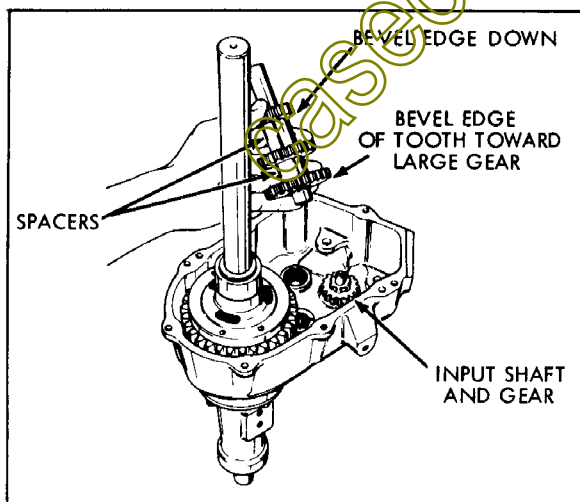


Figure 2-10

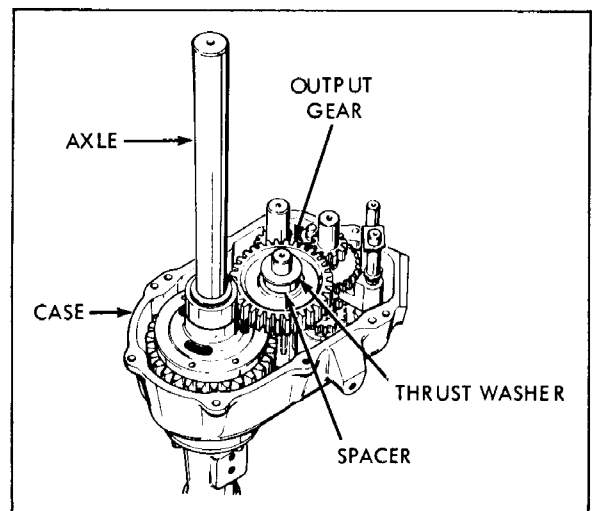


Figure 2-12

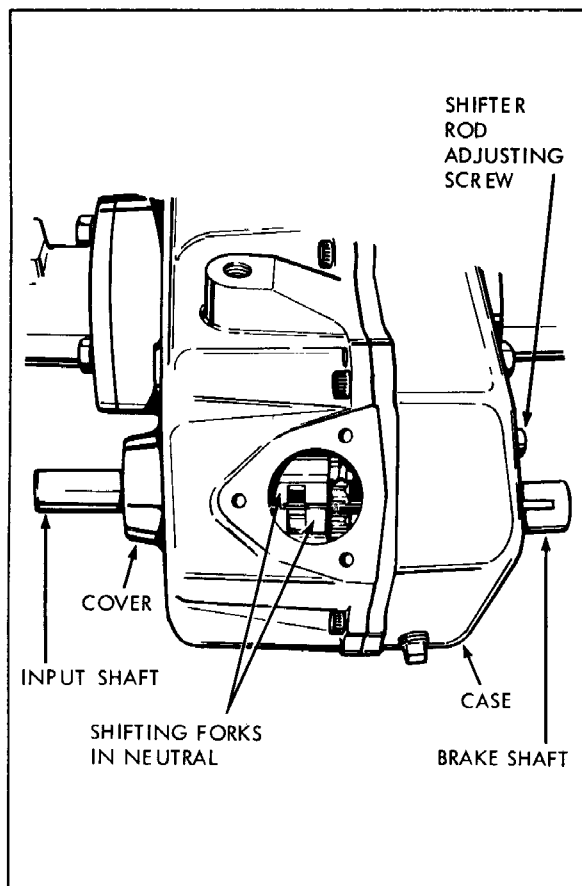


Figure 2-13

5. Install the shifter assembly as a unit into the case. When installed correctly, the neutral square formed by the shifting forks should appear through the case opening for attaching the shift housing. Both shift gears should be out of mesh. (Figure 2-11)
6. Install the output shaft, gear, spacer and thrust washer. (Fig. 2-12)
7. Install brake shaft in the unit cover.
8. Position a new gasket on the cover mounting surface, then install cover.
9. Align cover with the dowel pin and secure with the socket head cap screw. Torque to 10 lbs. ft.
10. Install axle seals using sleeve and driver.
11. Install a new gasket and shift lever housing. Torque screws to 10 lbs. ft. Be sure the shift lever is in the proper position to allow shifting.

E. LUBRICATION

Use S.A.E. 90 E.P. oil in the transaxle.

SECTION 3 SHIFTING ASSEMBLY SERVICE

A. SHIFT PATTERN

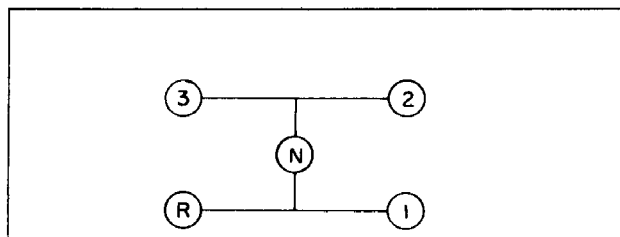


Figure 3-1

B. SHIFT LEVER ASSEMBLY

1. General

- a. Prior to removing the shift lever assembly from the transaxle, make note of the position of the shift lever so that it may be assembled correctly to the shift lever housing.
- b. Move the shift lever to Neutral, if possible, before removing it from the the transaxle. Clean around the lever housing to prevent dirt from falling into the transaxle. Cover this opening, if possible.

2. Disassembly

- a. Place the shift lever in a vise so that the shift lever housing is at least one inch from the top of the vise jaws.
- b. Use the proper compressing type of tool for removing the snap ring. Loosen the vise and disassembly the pieces (Fig. 3-2)

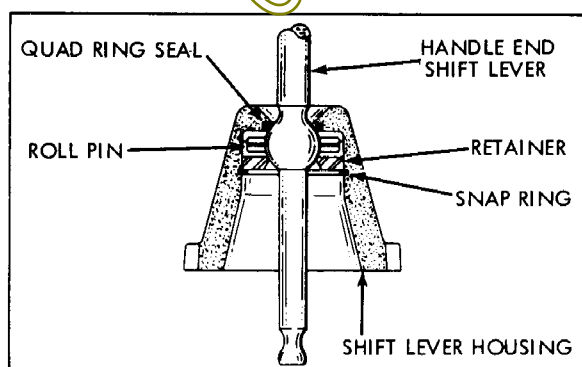


Figure 3-2

- c. Remove the shift lever from the shift lever housing. Examine the roll pin in the ball of the shift lever, (Fig. 3-2) if bent or worn, replace. When inserting a new roll pin in the ball, position so that equal lengths protrude from both sides of the ball.
- d. Oil leakage past the point where the shift lever enters the shift lever housing will require replacement of the quad ring seal in the shift lever housing. (Fig. 3-2)

- e. Prior to reassembly, be sure that bends in the shift lever correspond to the mounting on the vehicle.

3. Reassembly

- a. Snap Ring Type. Secure parts with the snap ring. Before installing the shifter lever and housing to the transaxle housing, check the shifting forks for Neutral position.
- b. Always use new gaskets between the shift lever housing and the transaxle.

C. SHIFTING ASSEMBLY

1. Removal

- a. Shifting assemblies are removed from and installed into transaxles by squeezing the top end of the shifter rods. This causes a binding that retains all parts during removal or installation.

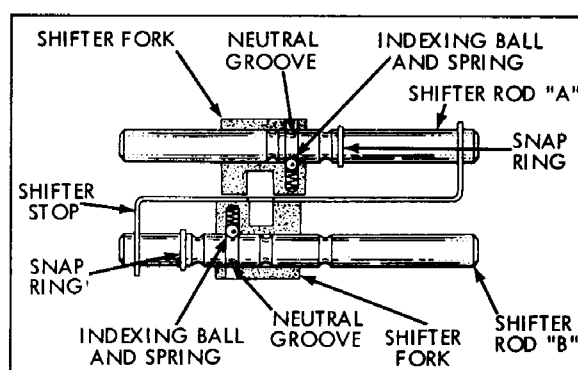


Figure 3-3

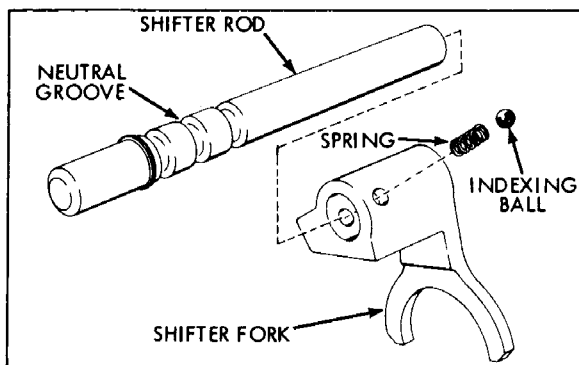


Figure 3-4

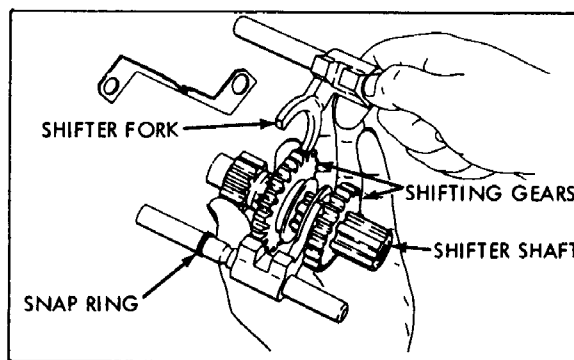


Figure 3-7

2. Disassembly

Follow the illustrations in order. Figure 3-8, 3-7, 3-6, 3-5, 3-4, 3-3. Prior to disassembly compare the assembly with the illustrations. This will aid during the reassembly.

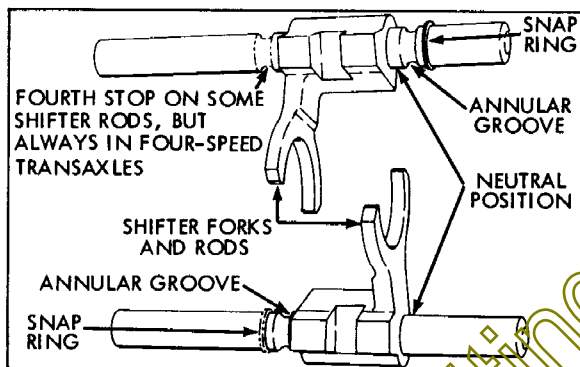


Figure 3-5

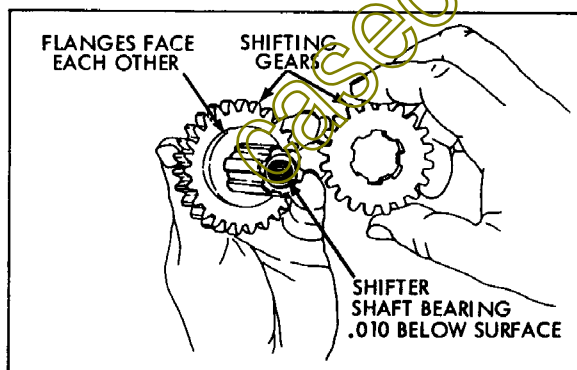


Figure 3-6

3. Inspection

- a. Replace the shifter stop if worn or damaged. (Fig. 3-8)

- b. Examine the teeth and internal splines of the two shifter gears. Replace damaged gears. The gears must slide freely on the shifter shaft. Excessive wear of the internal spline in the gears will create cocking and difficult shifting. Replace the gear if this condition is present.

- c. Replace the shifter shaft needle bearing as follows if wear is evident. Replace the shaft if the bearing surface is scuffed, pitted or worn to a diameter less than .750".

To remove the needle bearing in the splined shifter shaft proceed as follows:

NOTE: Blind bearing pullers are available to remove this bearing. There is a space between the bottom of the drilled hole and the inside end of the bearing to accommodate the ridges of the bearing puller. If no puller is available, however, proceed as follows.

1. With the needle bearing up, clamp the splined shaft vertically in a soft jaw vise so that the lower end of the shaft rests on a block of wood.
2. Prepare some pieces of paper toweling, newspaper, etc. by soaking in water.
3. Tear paper into pieces, approximately one to two inches square. Stuff these wet pieces of paper into the needle bearing until full.

4. Insert a 7/16" metal rod into this bearing. With a mallet strike the rod sharply. This will compress the wet paper. Continue to add more wet paper, this will hydraulically lift the bearing out of the shaft.

5. Use the authorized tool to install the new bearing. Needle bearings in shifter shafts should be installed .010 below flush.

d. Replace other parts showing wear, looseness, cracks, etc.

4. Assembly

a. Reassemble the shifting assembly by following the illustrations beginning with Figure 3-8 through 3-13. Pay particular attention to Figure 3-10 during the reassembly of the shifter forks and shifter rods. Lay the parts on the bench in the same manner as illustrated in Figure 3-10 on a clean paper or shop cloth. Pay particular attention to the annular grooves in the shifter rods and the snap ring.

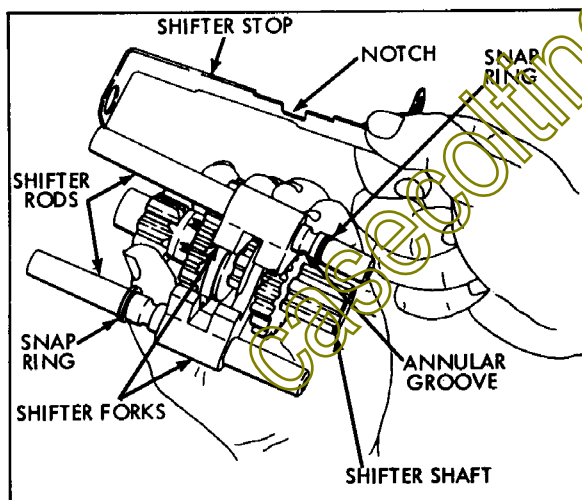


Figure 3-8

1. Assemble the shifter forks to the shifter rods as illustrated in Figure 3-9. The shifter forks are interchangeable.

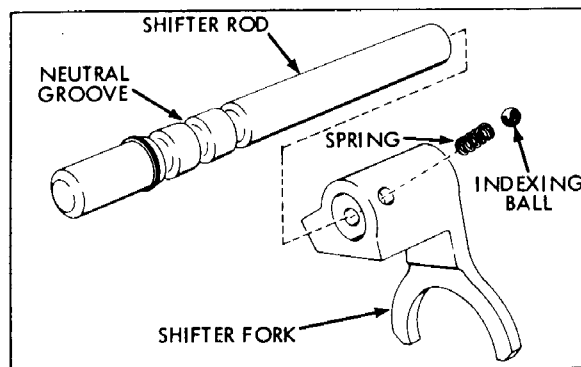


Figure 3-9

2. Refer to Figure 3-9. Slide the shifter fork onto the shifter rod until it comes to the hole with the indexing ball and spring. With a flat blade screw driver press the indexing ball into the hole and move the shifting fork completely onto the shifter rod.

3. Move the shifting fork to the Neutral position. The neutral groove is the center groove. This neutral groove can be seen through the hole in the shifter fork. See Figure 3-10, the arrow from the words "Neutral Groove" is passing through the hole for viewing.

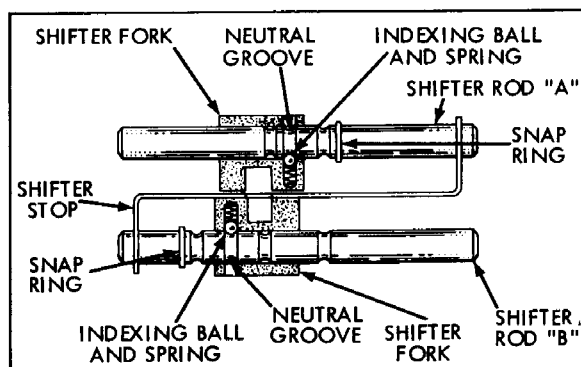


Figure 3-10

4. When the shifter forks are properly assembled to the shifter rods and positioned in neutral, the ends of the notches in the shifter forks are in alignment. (Figure 3-13)

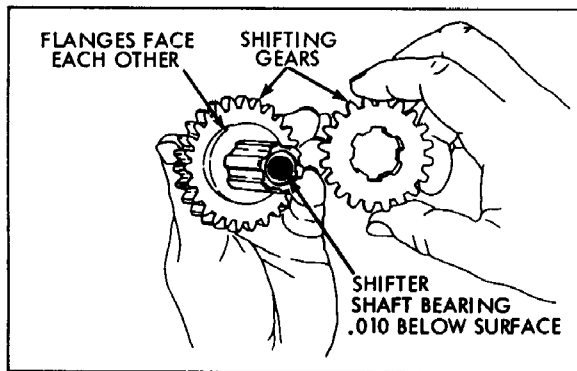


Figure 3-11

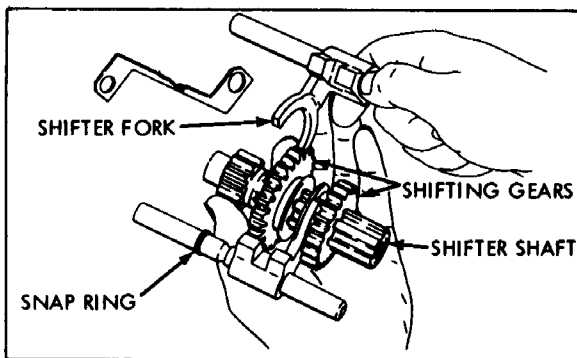


Figure 3-12

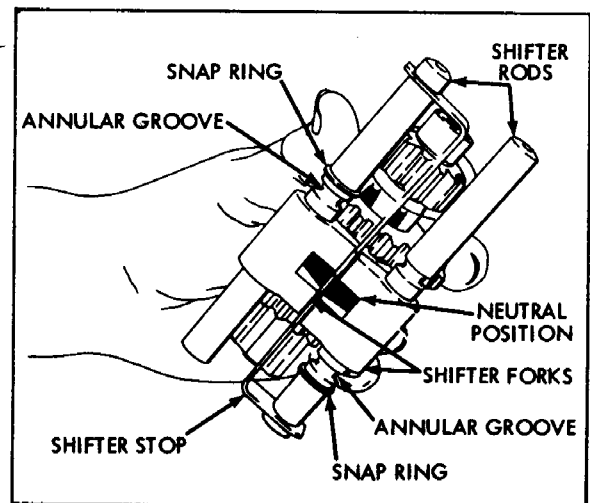


Figure 3-13

notch with the corresponding notches in the shifter forks and insert the shifter stop. Move the shifter rods together, (Figure 3-13) and insert into the transaxle. Remember to squeeze the ends of the shifter rods to cause the assembly to bind and stay together.

- b. Assemble the two flanged gears onto the shifter shaft. (Figure 3-11) Note that the large gear is placed on the shaft first with the flange side toward the needle bearing in the end of the shifter shaft. Slide on the smaller gear with the flange toward that of the larger gear. (Figure 3-11, 3-12).
- c. When assembling the shifter fork and rod to the flanged gears on the shifter shaft, Figure 3-12, that shifter fork which is on shifter rod "A" always engages in flange in the larger gear. To determine which is shifter rod "A" compare the parts to illustrations. Figure 3-10. Hold the shifter shaft in the hands as illustrated (Figure 3-14) during assembly.

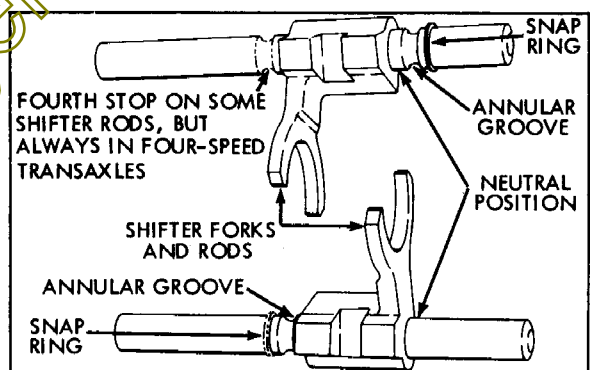


Figure 3-14

- d. After the shifter fork and rod assemblies have been engaged with the flanged gears allow the shifter rods to lay open in the hand and position the shifter stop. (Figure 3-8.) The notch in the shifter stop is the guide for correct positioning. Align this

- e. The needle bearing end is inserted first into the case to engage the end of input shaft.
- f. The shifter assembly is correctly installed in the transaxle if the notches in the shifter forks are just about in the center of the opening in the case or cover of the transaxle.

**SECTION 4
DIFFERENTIAL ASSEMBLY SERVICE**

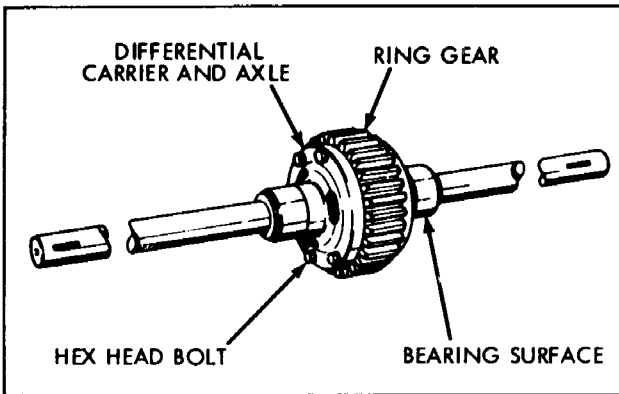


Figure 4-1

1. The differential carrier (Figure 4-2) is supported directly on the axle (1). Roller thrust bearings (2) are used between the bevel gear (3) and the differential carrier (4). This illustration shows axles with snap ring (5) retainers, some earlier production had rolled over axle ends to secure the assembly. Thrust washers (6) are used at the ends of the differential carriers and case/cover thrust face. Replace the differential carrier if worn in excess of .878 at point A.

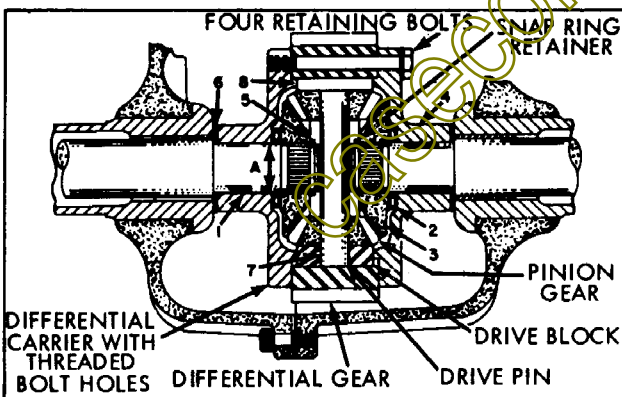


Figure 4-2

2. Disassembly

a. Clean the differential assembly, then check and note the axle lengths and their relation to the heads of the four hex head bolts.

b. If the unit will not turn freely, note where the unit binds. Check and replace those parts.

c. Place the differential in a large vise with soft jaws (hex head bolts up). Do not clamp the vise on the bearing race of a differential carrier. (Figure 4-3)

1. Remove the four hex head bolts and the upper axle and differential carrier. Remove the drive blocks, pinions, drive pin and thrust spacer if used, by lifting out of the ring gear. Tap the ring gear lightly with a mallet to loosen from the differential carrier. (Figure 4-4)

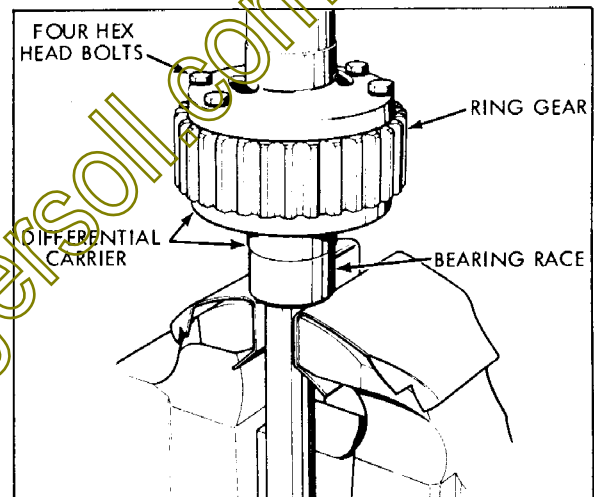


Figure 4-3

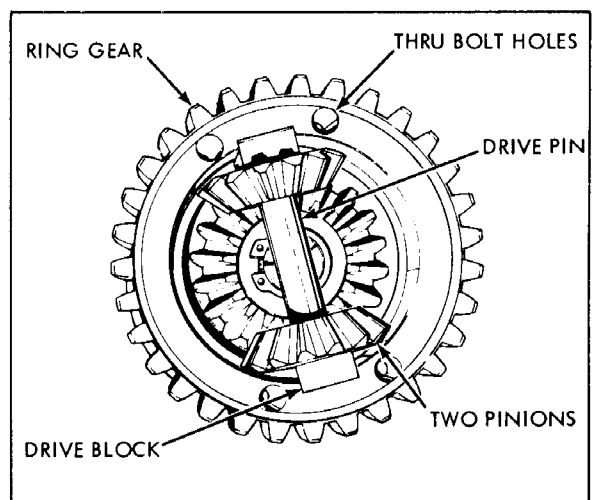


Figure 4-4

2. If a snap ring is used, the axle assembly may be disassembled. If the axle end has been rolled, do not attempt to break the rolled retaining edge. The parts are to be replaced as an assembly.
3. Remove the snap ring and the thrust washer, if used. Separate the bevel gear and differential carrier from the axle. (Figure 4-5)

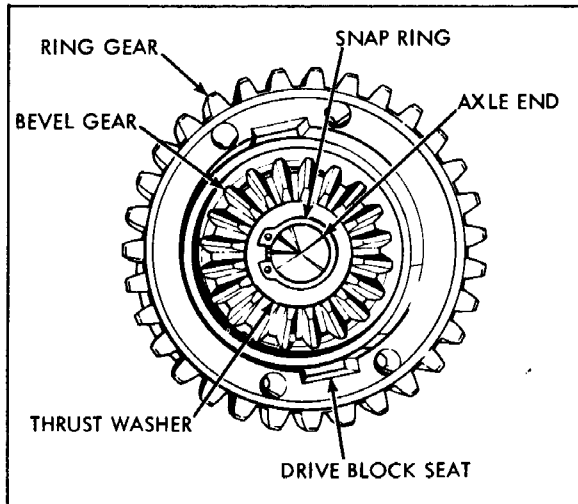


Figure 4-5

- e. Examine the internal bearing diameter of the differential carriers. If dimension is in excess of 1.004 inch at point A, replace the differential carrier or bushing, if used. See SECTION 2, paragraph C, Bushing Service, if it is necessary to replace the bushing.
- f. When assembling thrust bearings, always place a hardened thrust washer on each side of the caged thrust rollers. Never use the caged thrust rollers without the thrust washers.

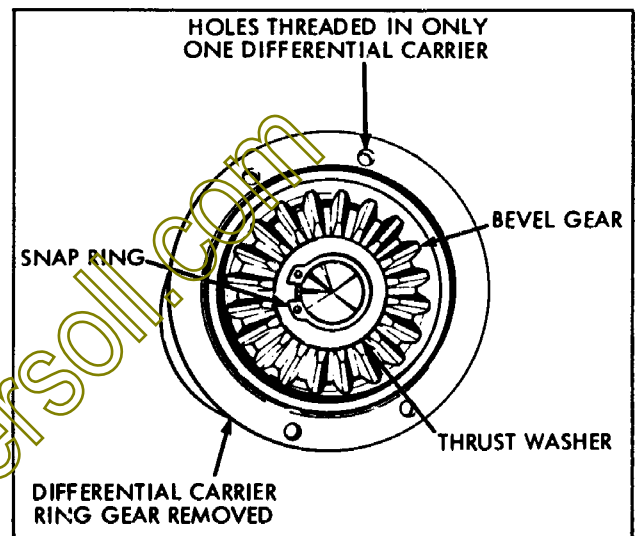


Figure 4-6

7. Inspection

- a. See SECTION 2, paragraph C, for Bushing and Bearing Service.
- b. Examine gears for wear, cracked or chipped teeth. Check the internal splines of the gears and the axle if the gear is removeable. If excess play is noted, it may be necessary to replace the individual parts or both the gear and axle.
- c. Examine drive pinions, drive pins and drive blocks for wear and damage. Replace excessively worn pinion or the drive pin.
- d. Examine the differential carriers. One has threaded holes and the other has larger holes so that the bolts will pass through. Be sure to order the correct replacement piece.

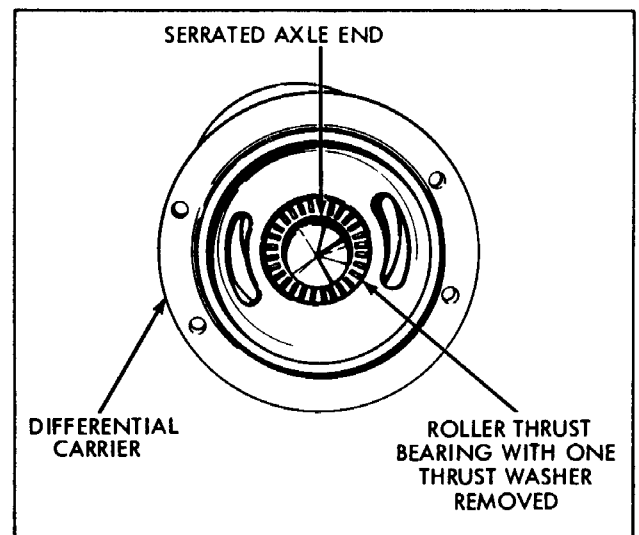


Figure 4-7

8. Assembly

a. Oil all parts during reassembly.

1. Select the correct axle for the side of the differential opposite the hex head bolts. If the wrong axle is used, it will require complete tear down of the differential, or possibly the entire transaxle if the error is not detected until later.
2. Clamp the axle, in a soft jaw vise (not bearing or oil seal surfaces). The differential carrier with threaded holes is assembled to this axle.

3. Refer to Figure 4-8 for the proper arrangement of parts.

4. Torque the four hex head bolts to 7 lbs. ft.

9. Testing

- a. Test differential action by holding the upper axle vertically, and spinning the differential. The unit should spin and rotate freely. Place the assembly on the bench and rotate both axles in different directions. If any binding is noted in either test check retaining bolt torque, gear meshing, or bearing surfaces in the differential carriers. Little or no end-play should be apparent between the axles and carriers.

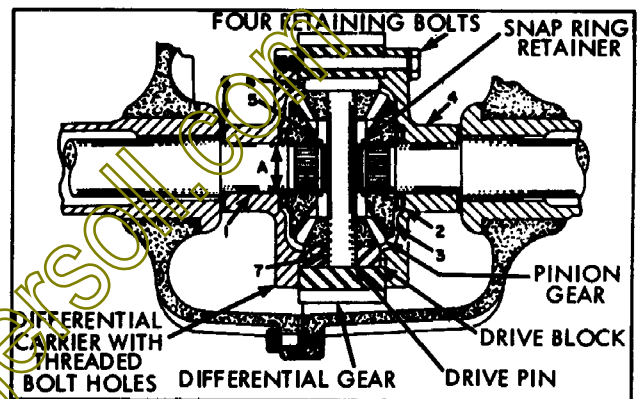


Figure 4-8

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