Fuller® Heavy Duty Transmissions

Roadranger® More time on the road®

Service Manual

Fuller Heavy Duty Transmissions

TRSM0505

July 2007

RT-7608LL

TIMING

Timing Procedures:

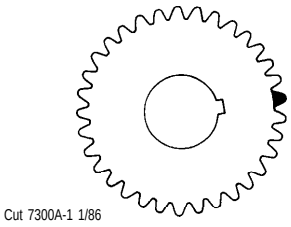
It is essential that both countershaft assemblies of the front and auxiliary sections are "timed." This assures proper tooth contact is made between mainshaft gears seeking to center on the mainshaft during torque transfer and mating countershaft gears that distribute the load evenly. If not properly timed, serious damage to the transmission is likely to result from unequal tooth contact causing the mainshaft gears to climb out of equilibrium.

Timing is a simple procedure of marking the appropriate teeth of a gear set prior to installation and placing them in proper mesh while in the transmission. In the front section, it is necessary to time only the drive gear set. And depending on the model, only the LO range, deep reduction, or splitter gear set is timed in the auxiliary section.

Front Section

A. Marking countershaft drive gear teeth.

1. Prior to placing each countershaft assembly into the case, clearly mark the tooth located directly over the drive gear keyway as shown. This tooth is stamp with an "0" to aid identification.

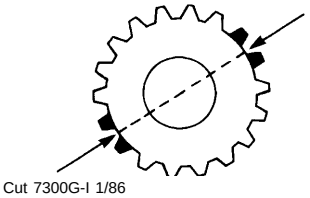


Cut 7300A-1 1/86

Tooth on Countershaft directly over keyway marked for timing'.

B. Marking main drive gear teeth.

1. Mark *any* two adjacent teeth on the main drive gear.
2. Mark the two adjacent teeth located directly opposite the first set marked on the main drive gear. As shown below, there should be an equal number of unmarked gear teeth on each side between the marked sets.



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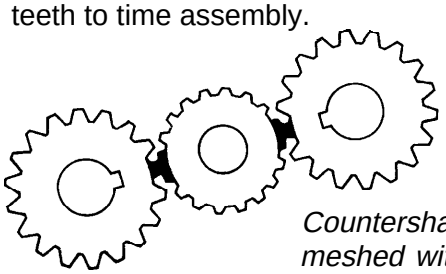
Drive gear teeth correctly marked for timing.

C. Meshing marked countershaft drive gear teeth with marked main drive gear teeth. (After placing the mainshaft assembly into the case, the countershaft bearings are installed to complete installation of the countershaft assemblies.)

1. When installing the bearings on the left countershaft, mesh the countershaft drive gear marked tooth with either set of main drive gear two marked teeth.
2. Repeat the procedure when installing the bearings on the right countershaft, make use of the remaining set of main drive gear two marked teeth to time assembly.



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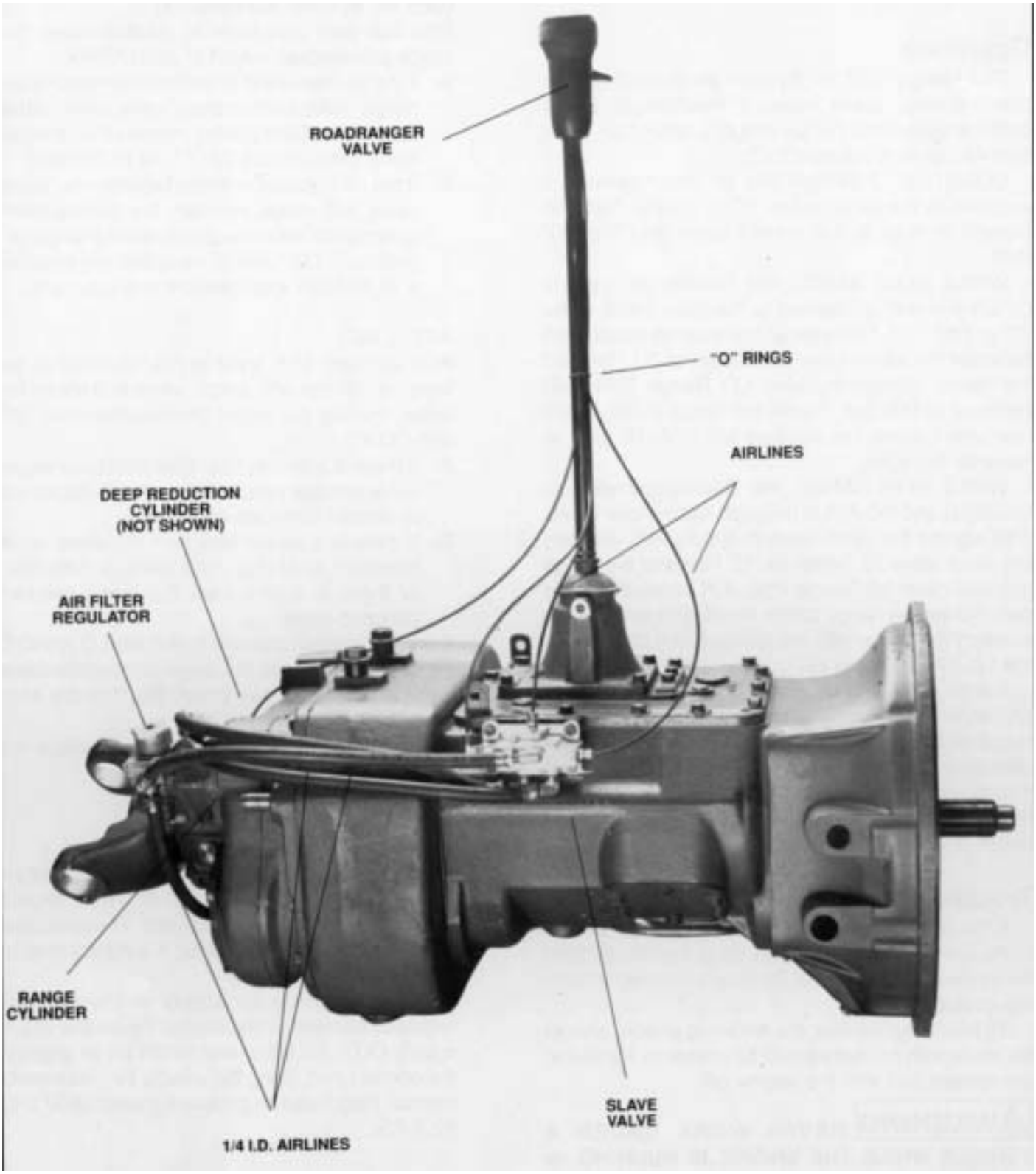
Countershaft gear teeth meshed with drive gear teeth for correct timing.

Auxiliary Section

A. Timing the Deep Reduction Gears Set of the "L" Model

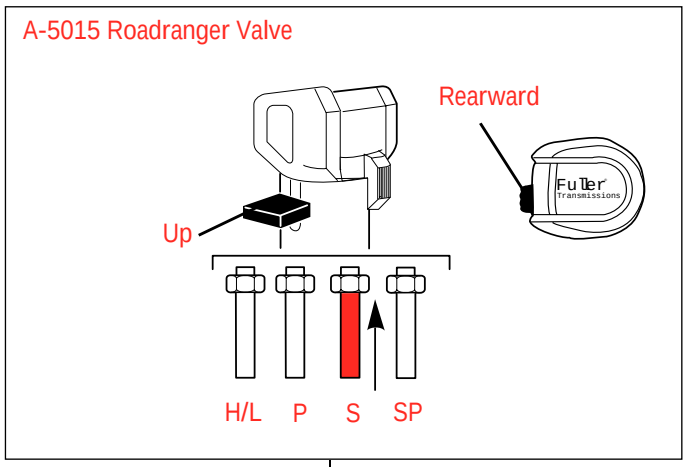
1. Mark *any* two adjacent teeth on the mainshaft gear of set to be timed. Then mark the two adjacent teeth located directly opposite the first set marked as shown in illustration B.
2. Prior to placing each auxiliary countershaft assembly into housing, make the tooth stamped with an "O" on gear to mate with timed mainshaft gear as shown in illustration A.
3. Install the mainshaft gear in position on range mainshaft OR output shaft.
4. Place the auxiliary countershaft assemblies into position and mesh the marked teeth of mating countershaft gears with the marked teeth of mainshaft gear as shown in illustration C.
5. Fully seat the rear bearings on each countershaft to complete installation.

AIR SYSTEM


ROADRANGER VALVE
"O" RINGS
AIRLINES
DEEP REDUCTION CYLINDER (NOT SHOWN)
AIR FILTER REGULATOR
RANGE CYLINDER
SLAVE VALVE
1/4 I.D. AIRLINES

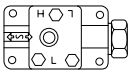
7608LL Models

Range—HI

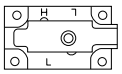


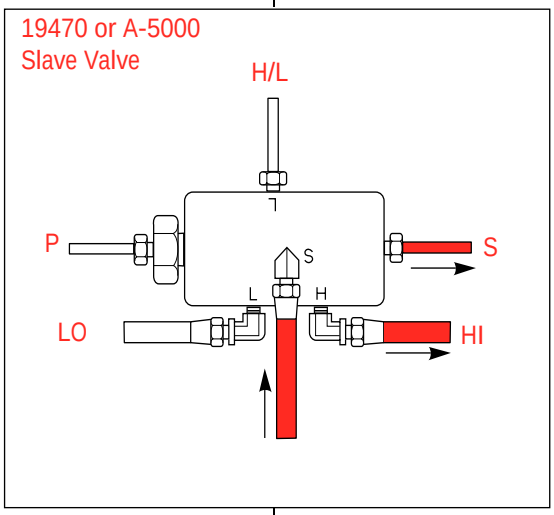
Slave Valve Identification

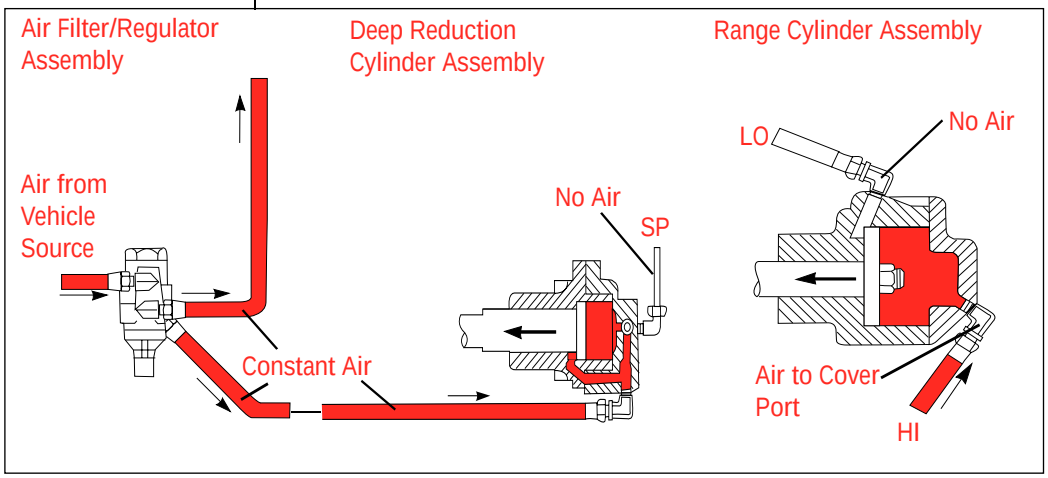
A-5000 Valve



19470 Valve





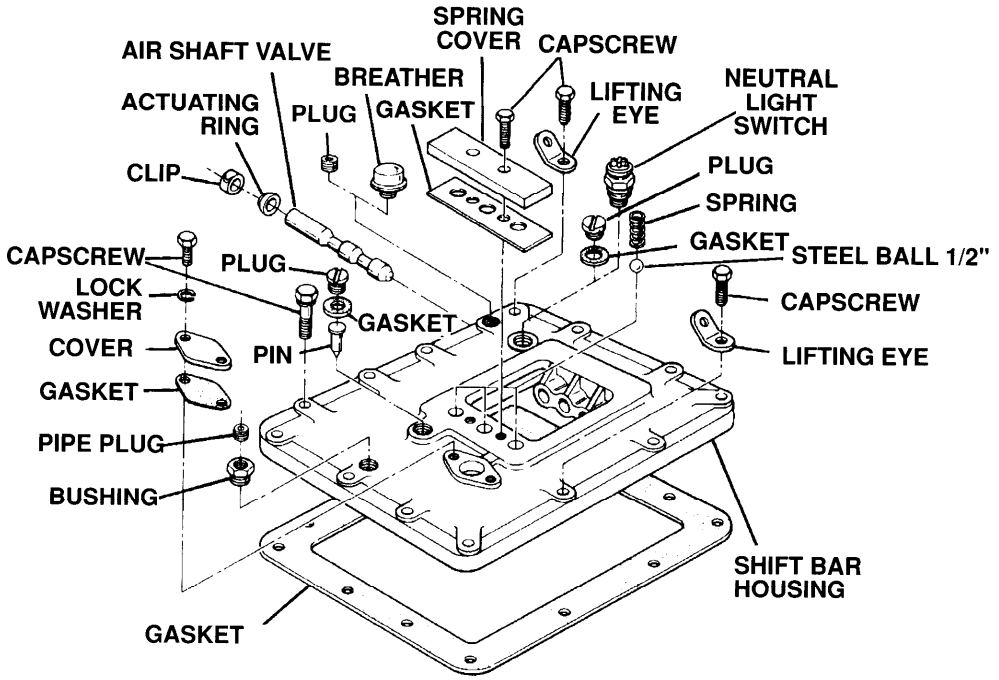


Schematic

For all questions concerning removal and replacement, refer to Eaton Service and Parts Literature.

REASSEMBLY - SHİFT BAR HOUSING

B. Reassembly of the Shift Bar Housing



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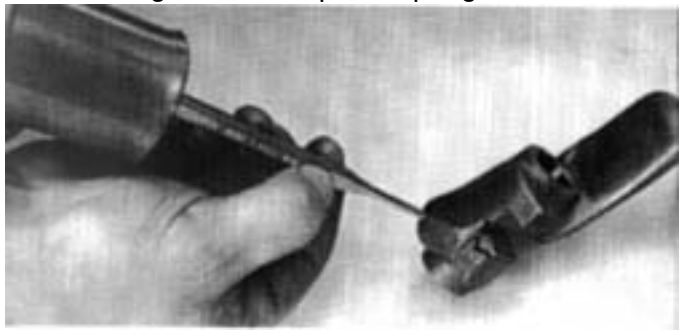
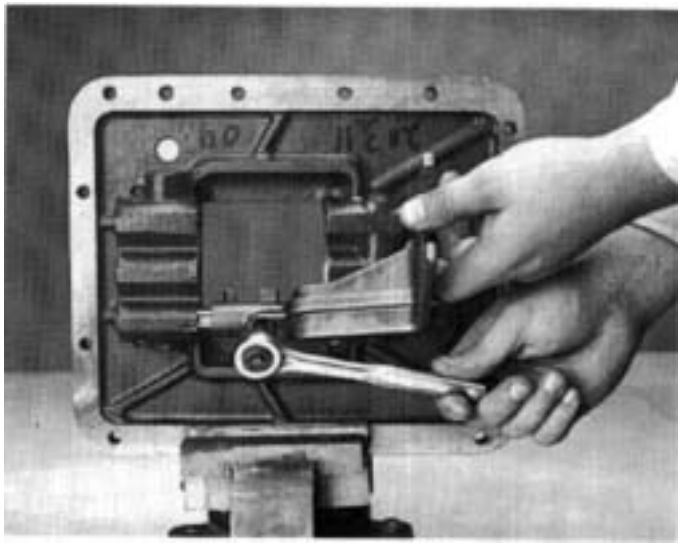
1. If previously removed, place plunger stop in Lo-reverse shift yoke block, install spring in bore of yoke and onto shank of plunger. Install the plug and tighten to compress spring.



2. Back the plug out 1-1/2 turns and stake plug through the small hole in yoke.



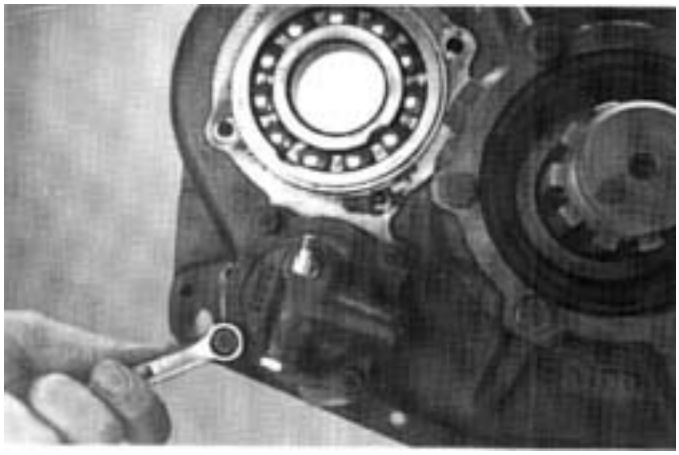
3. Place the housing in a vise with the front of housing to the right as shown. Install the 3rd-4th speed shift bar in bottom bore with detent notches to the front, installing yoke, lockscrew, and safety wire.

NOTE: Keep bar in neutral position during installation. Do not exceed the recommended torque rating for yoke lockscrews as over tightening may distort shift bars.

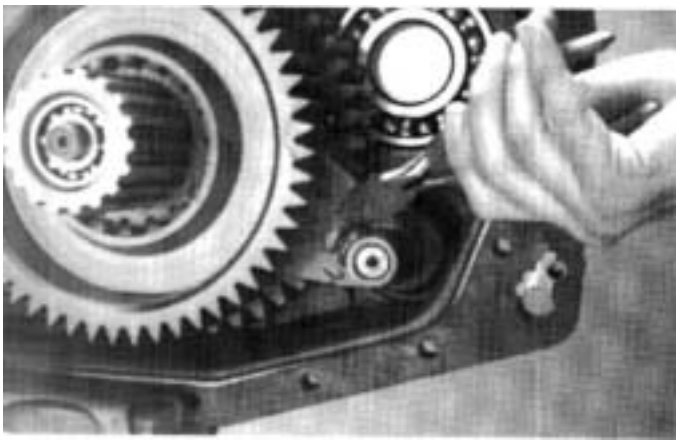
DISASSEMBLY - AUXILIARY SECTION

E. Removal and Disassembly of the Deep Reduction Cylinder Assembly.

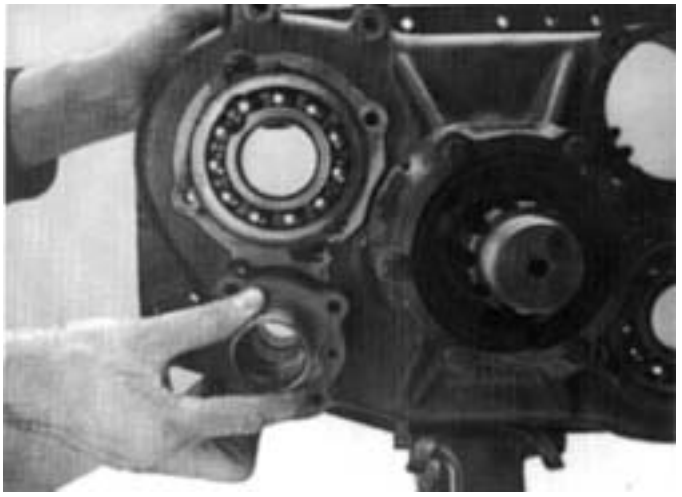
1. If necessary, remove the insert valve retaining cover nut and remove the insert valve from the bore.



2. Remove the capscrews and the deep reduction cylinder cover and gasket.



3. Cut the lockwire and remove the lockscrew from the shift yoke.

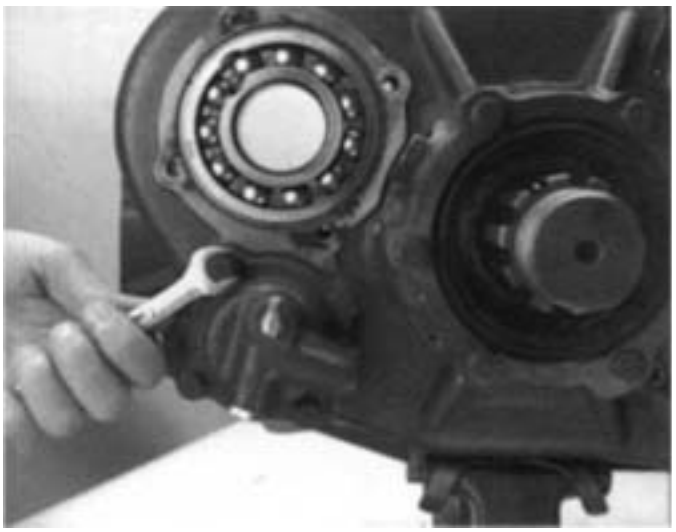


4. Pull the yoke bar from the cylinder housing and remove the shift yoke.

5. If necessary, remove the O-ring from the piston O.D.

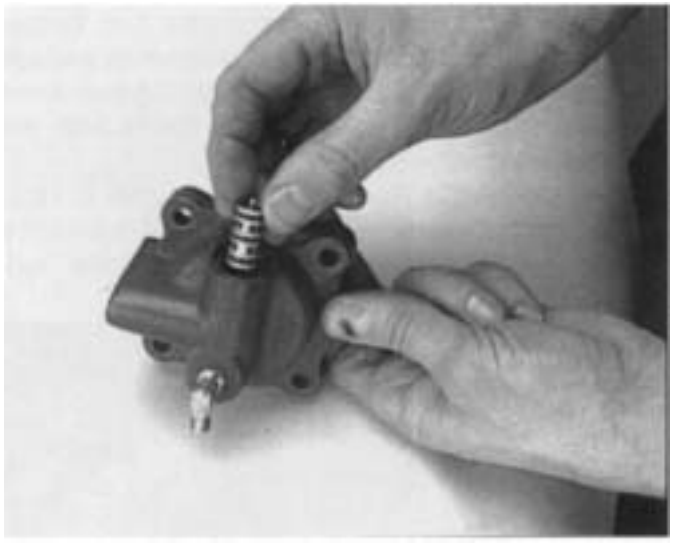
6. Remove the deep reduction cylinder housing and gasket from the auxiliary housing. If necessary, remove the small O-ring from the cylinder housing bore.

REASSEMBLY - AUXILIARY SECTION



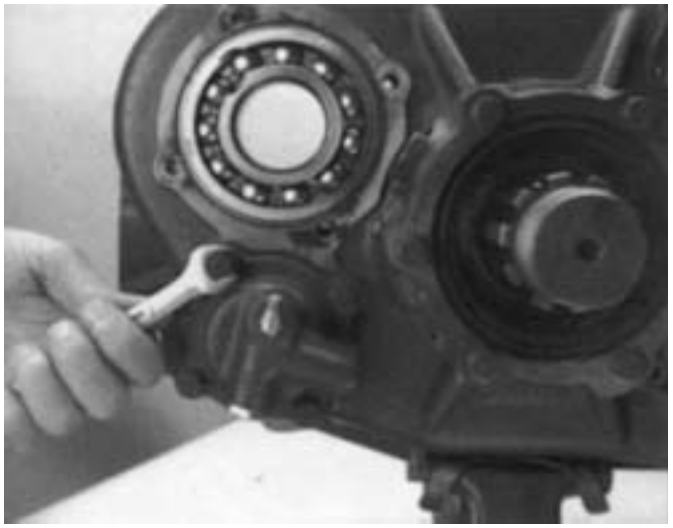
4 . Install the yoke lockscrew, tighten and wire securely.

6. Install the valve retaining nut in cover exhaust port and tighten to the recommended torque.



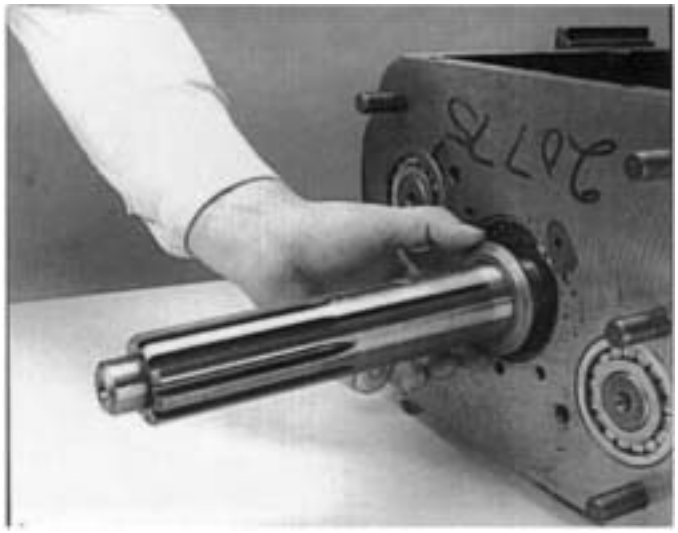
5 . Install the insert valve in cylinder cover exhaust port.

NOTE: Prior to installation of insert valve, apply a small amount of silicone lubricant to the O-rings on the valve O.D.



7. Position the corresponding new gasket on the cover mounting surface and install the deep reduction cylinder cover, align the air channel with cylinder housing channel. Tighten the capscrews to secure cover to the cylinder housing.

DISASSEMBLY - FRONT SECTION



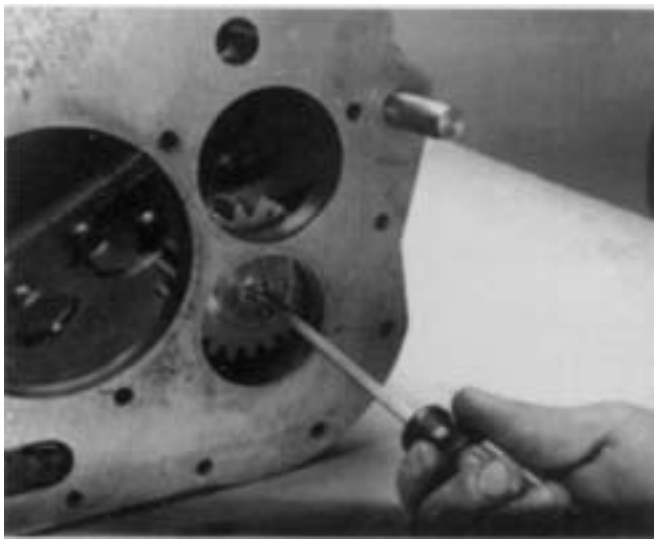
5. Remove the drive gear spacer.

7. Pull the input shaft forward and out of the drive

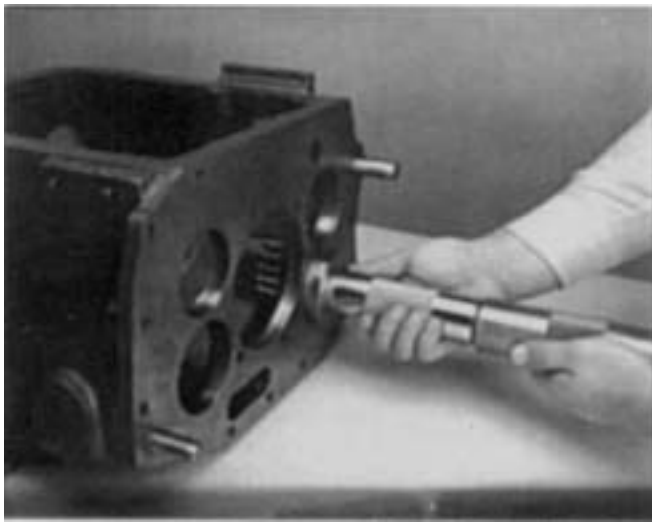
6. Remove the drive gear snap ring.

8. Check the bushing in the input shaft pocket, replace if worn.

REASSEMBLY - FRONT SECTION

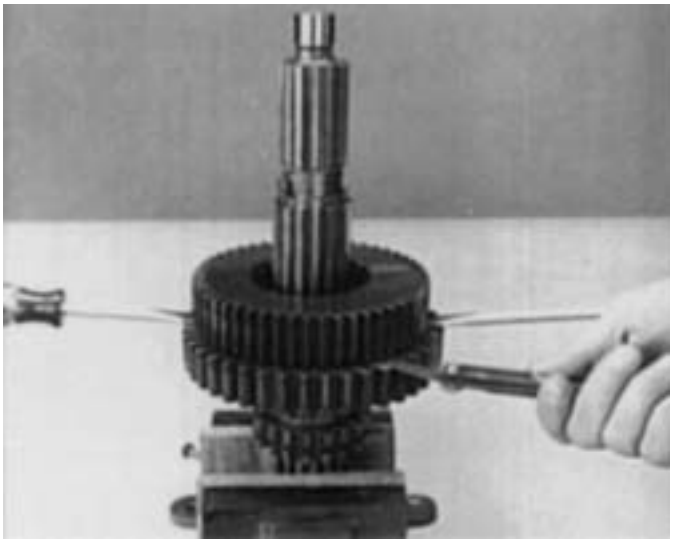


3. Install the reverse idler shaft plug.

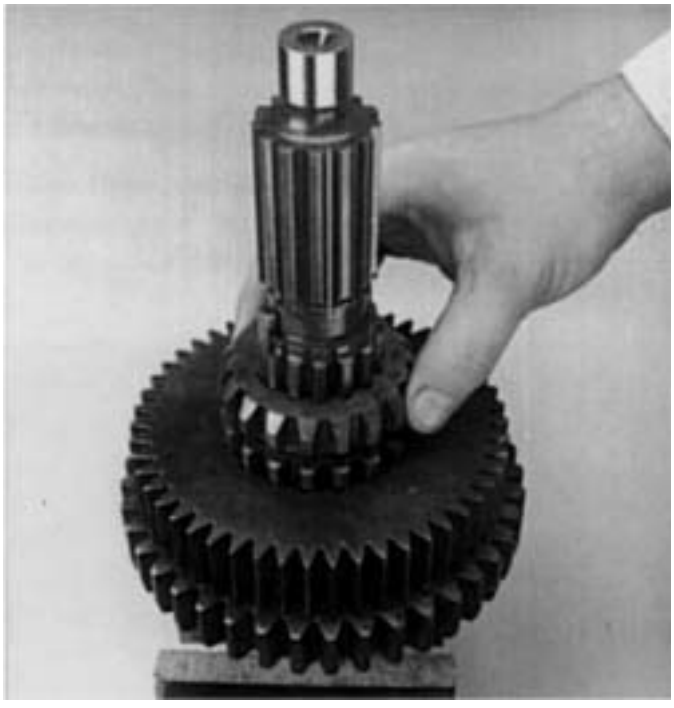


4. Install the auxiliary countershaft front bearing into the reverse idler gear case bore.

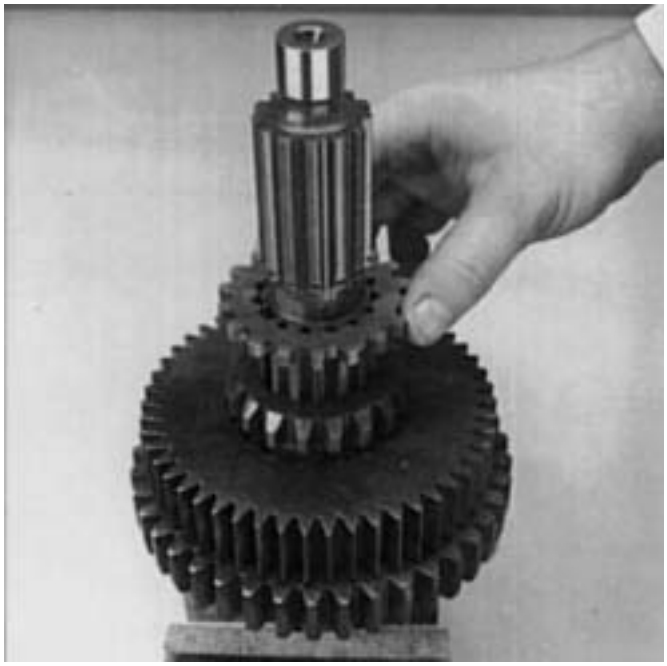
REASSEMBLY - FRONT SECTION



15. Check axial clearances and make adjustments if necessary.

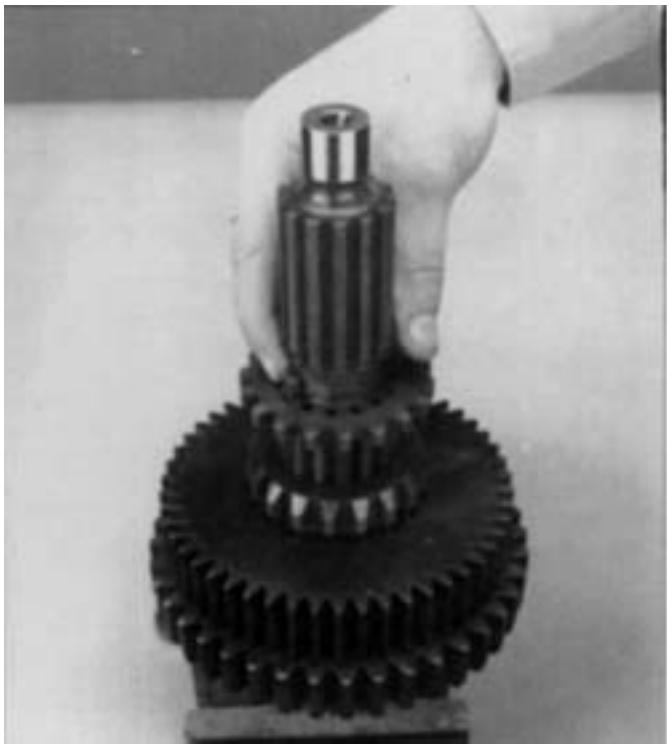


16. Install the 1st-2nd speed sliding clutch, aligning sliding clutch slot with key; engage with first speed gear.



17. Remove the mainshaft key and install 2nd gear tolerance washer. Install mainshaft key.

NOTE: It will be necessary to pull the mainshaft key up slightly to fit in keyway.



18. Reposition the key so it rests on the mainshaft grooved shoulder.