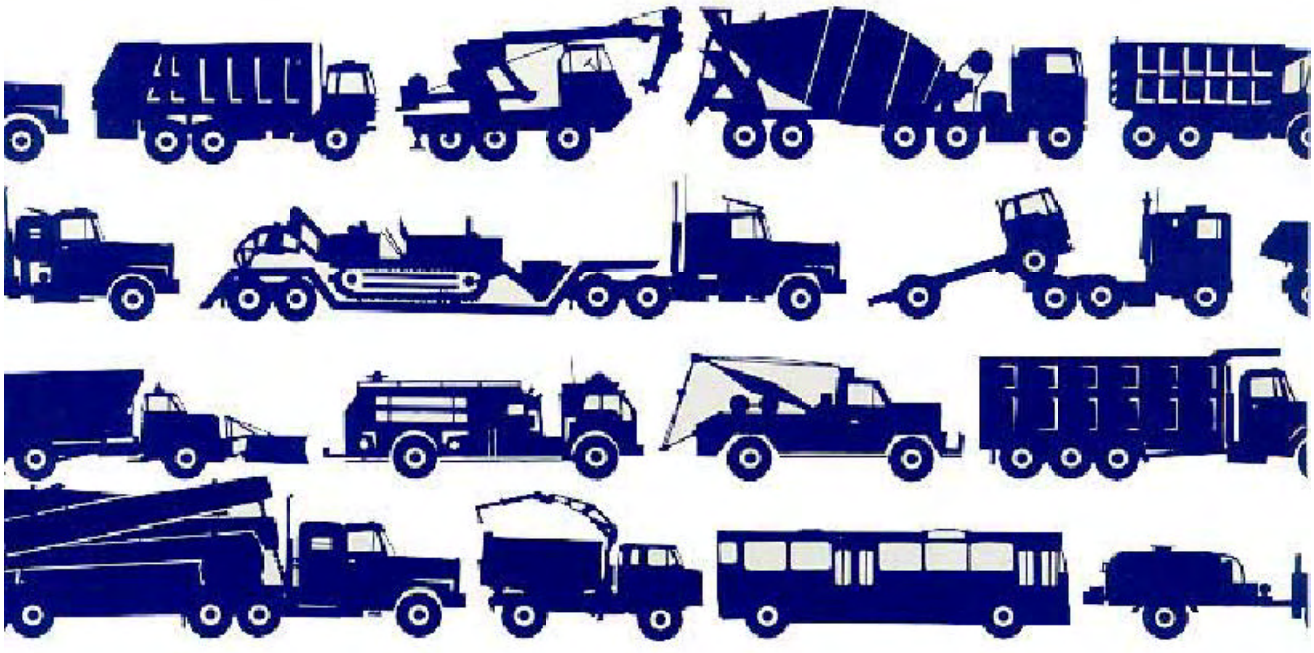
TC-140, 141 TRANSFER CASE SERVICE MANUAL

Fabco
AUTOMOTIVE CORPORATION



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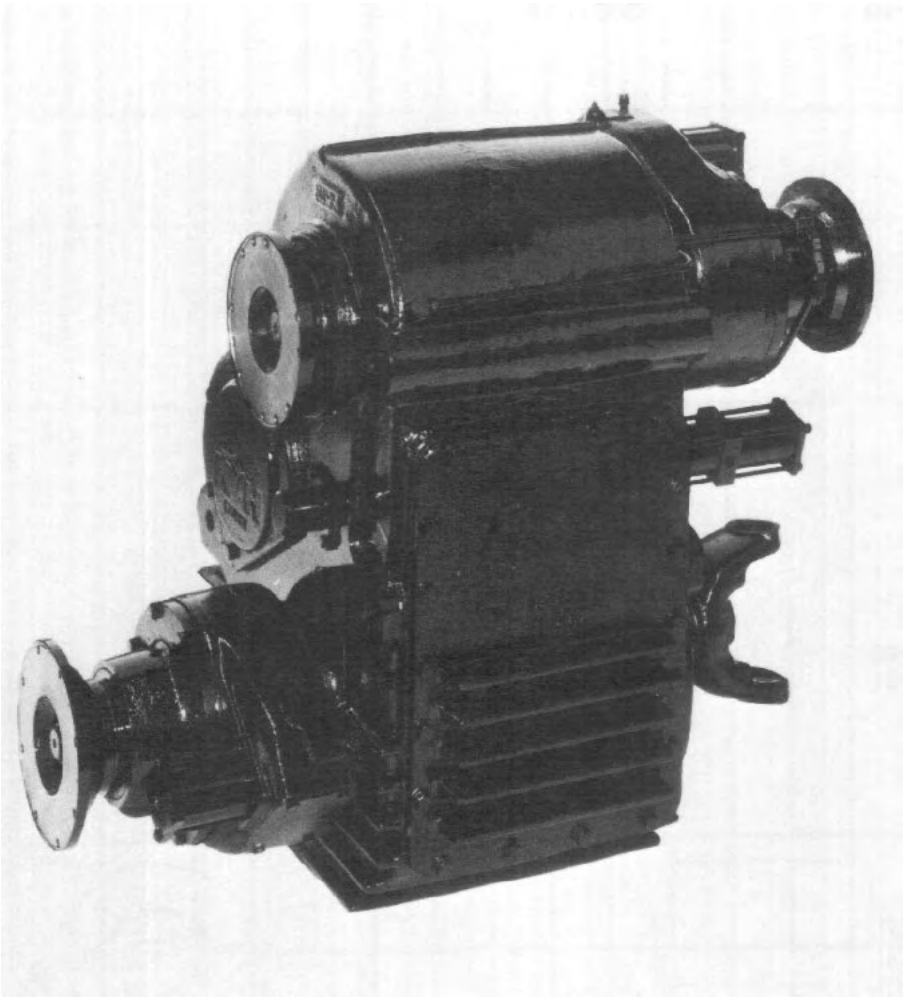
SERVICE MANUAL TC-140 TRANSFER CASE TWO SPEED, TC-141 SINGLE SPEED

Table of Contents

A. General

The Fabco model TC-140 is one of a series of Fabco twospeed transfer cases developed for use in on/off highway vehicles. The TC-140 is nominally rated at 14,000 lbs.-ft. input torque capacity, and is equipped with an integral air shift mechanism. Spur gears are used throughout, and an oil pump provides lubrication. The TC-141 is the singlespeed version.

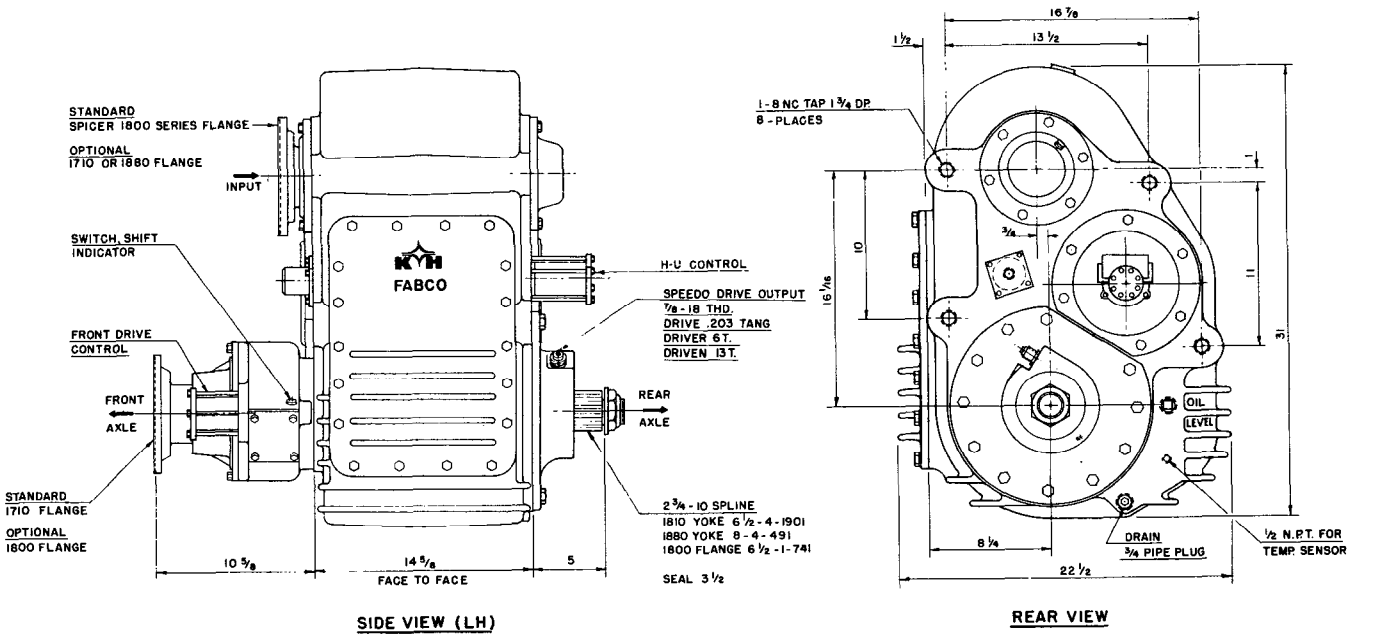


I. TC-140 TRANSFER CASE

B. Transfer Case Specifications

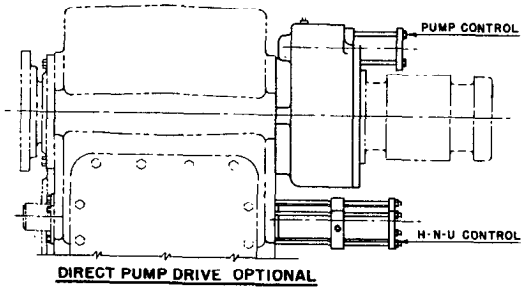
The Fabco Model TC-140 Transfer Case is a two speed, three-shaft, constant-mesh design featuring a declutch mechanism for front axle disengagement.

Ratings —	
Maximum Input Torque	14,000 Lbs.-Ft.
Maximum Input Horsepower	450 HP
Maximum Input Speed	2300 RPM
Ratios —	
Direct	1:1
Underdrive	2.174:1
Gear Type	Spur, Case Hardened
Input	1810 Series Flange
Rear Axle Output	1710 Series Flange
Drop	16”
Shift Mechanism	Integral Air Cylinders
Lubrication System	Gear Pump-30 PSI-4 GPM
Lubricant	E.P. 90 or SAE 50
Oil Capacity	20 Qts.
Weight —BASIC TC-140	1110 Lbs.
—BASIC TC-141	980 Lbs.

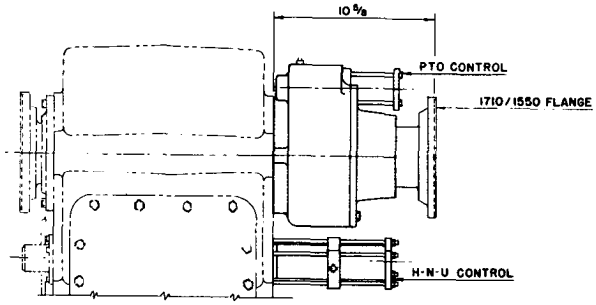


TC-140 Transfer Case without Proportional Differential

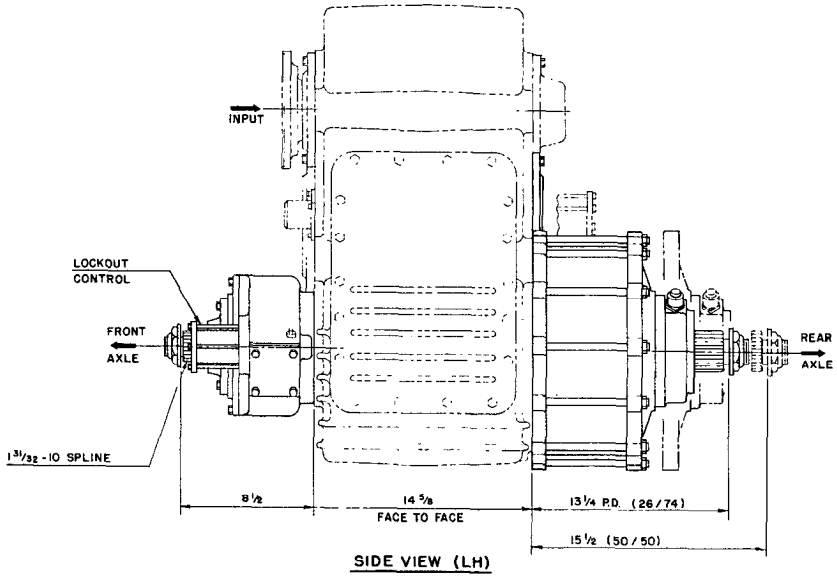
Options:
Full Power PTO
Hydraulic Pump Flange
Proportioning Differentials
(26%/74%) or (50%/50%)



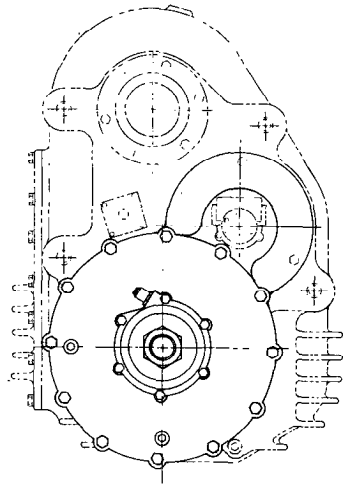
DIRECT PUMP DRIVE OPTIONAL



PTO OPTIONAL



SIDE VIEW (LH)


REAR VIEW

— NOTES —

A. General

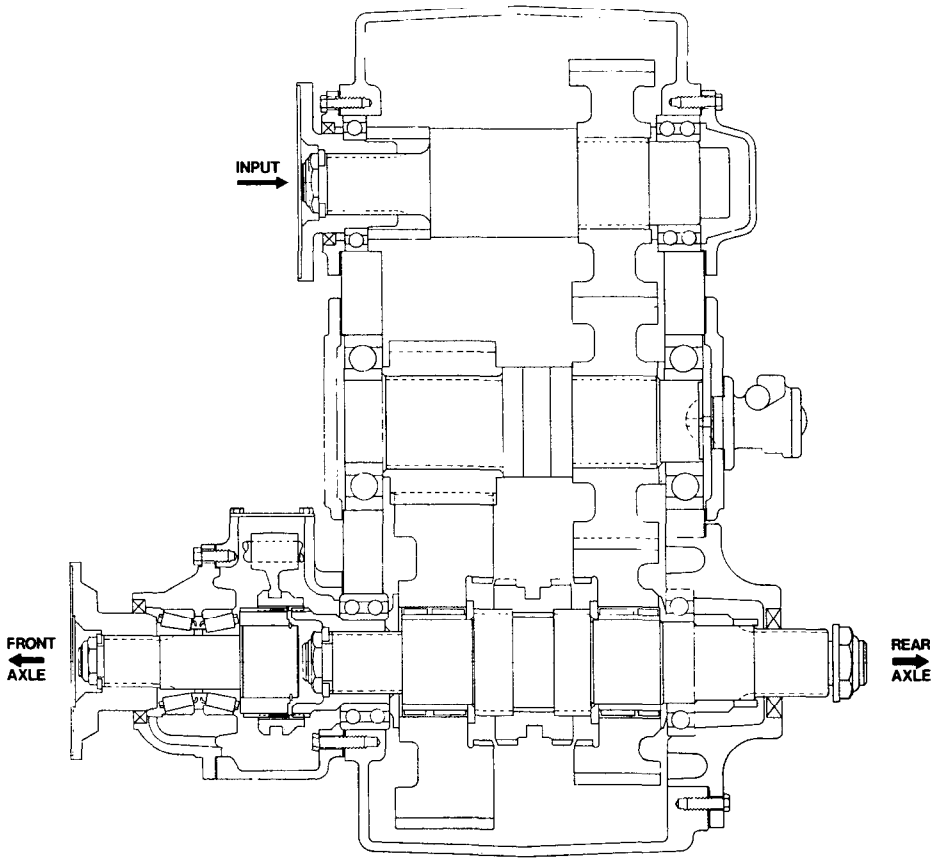
All-wheel drive is operated by means of shift controls which engage and disengage gear clutches in the transfer case. The TC-140 Transfer Case is equipped with separate controls for front axle drive engagement and underdrive selection. The TC-140 transfer case with a proportioning differential is equipped with a differential lock rather than a front drive engagement control.

B. Front Drive Declutch

When traveling through sand, loose dirt, mud, snow, or ice, and ascending grades where rear wheels might spin, engage front axle drive for improved traction. Engagement can be made at any vehicle speed, unless the rear wheels are spinning, but is best accomplished while the engine is pulling lightly.

C. Proportioning Differential

When operating a differential equipped transfer case, leave the differential control in unlocked position for normal operation. Under poor traction conditions, the control may be shifted to the locked position.



TC-140 Transfer Case without Proportional Differerential

Heavy-duty engine oil. Make sure to specify heavy-duty type meeting MIL-L-2104 specifications.

Mineral gear oil inhibited against corrosion, oxidation and foam.

RECOMMENDED LUBRICANTS
(In Order of Preference)

ON HIGHWAY VEHICLES

Type	Grade	Temperature
MIL-L-2104 Heavy Duty Engine Oil	SAE 50 SAE 30	Above + 10°F. Below + 10°F.
Mineral Gear Oil	SAE 90 SAE 80	Above + 10°F. Below + 10°F.
MIL-L-2105 E.P. Oil, except Sulfur-chlorine-lead type.	SAE 90 SAE 80	Above + 10°F. Below + 10°F.

OFF-HIGHWAY & MINING EQUIPMENT

MIL-L-2104 Heavy-Duty Engine Oil	SAE 50 SAE 30	Above + 10°F. Below + 10°F.
Special Recommendation — For extreme cold weather where temperature is consistently below 0°F.		
MIL-L-2104 Heavy-Duty Engine Oil	SAE 20W	Below 0°F.

A. Transfer Case Oil Change

Transfer case lubricant should be changed on all new transfer cases after the first 3,000 to 5,000 miles (on-highway), or first 40 hours (off-highway); thereafter, oil changes should be done at the following intervals:

On-Off Highway Service . . . . . 10,000-15,000 miles

Off-Highway Service
Logging, dirt moving, mining
and associated operations . . . . . 500-750 hours,
as indicated by operation and contamination of lubricant.

B. Draining Oil

Draining is best accomplished after the vehicle has been operated briefly, allowing the oil to become warm and flow freely. Remove both drain and level plugs and allow housing to empty completely. After transfer case has been drained and before it is refilled, the case should be thoroughly flushed with a clean flushing oil or kerosene.

C. Refilling Oil

Clean and replace drain plug and fill the transfer case with appropriate gear oil (see recommended lubricant chart). Fill transfer case to the level of the upper plug, metering approximately 20 qts. of gear oil into the transfer case. The exact amount may differ depending upon the inclination of the transfer case. Always fill to the level of the filler plug. Replace upper plug and examine transfer case for leaks around plugs and gasket sealed areas.

D. Inspection

Gear oil level is to be maintained at the level of the filler plug at all times. Check at the following intervals:

Highway Service . . . . . 1,000 miles
Off-Highway Service . . . . . 40 hours

E. Oil Change & Inspection Recommendations

The above oil change and inspection periods are based on the average use and operating conditions the transfer case may encounter. It is recommended that the individual owner make a periodic lab analysis of the lubricant to determine contamination based on the individual's own operating conditions. With this data the individual owner can better determine his own oil change and inspection periods.

F. Operating Temperature

The operating temperature of the transfer case should never exceed 250°F (120°C.)

Extensive operation at temperatures exceeding 250°F will result in rapid breakdown of the oil and shorten the transfer case life.

A transfer case used in any of the following conditions may have to be equipped with an external oil cooler to maintain the operating temperature of the case below or at 250°F:

1. A vehicle remaining in a stationary position for long periods of time while the transfer case is operating a pump or power take-off.
2. A vehicle which is used in tropical or semi-desert conditions.
3. A vehicle operating at slow road speeds.
4. A vehicle which is operating in densely overgrown plant growth that may tend to shield the transfer case from air ventilation and circulation.

G. Shift Cylinder Inspection

With every oil change the air shift cylinder lines and valves should be inspected for leaks and possible malfunctioning. Low pressure conditions and malfunctioning can cause partial gear engagement which may result in premature gear wear.

IV. REMOVAL & INSTALLATION

A. Removal

1. Remove fill and lower drain plugs and drain gear lubricant. Remove proportional differential drain plug and drain P.D. if so equipped.

2. Disconnect wires leading to indicator light switch, and temp. sensor, if used.

3. Disconnect and tag shift cylinder air lines.

4. Disconnect speedometer cable.

5. Disconnect drivelines at flanges or yokes.

6. If the transfer case is equipped with a PTO mounted hydraulic pump, remove four capscrews and slide pump out of PTO. Secure the pump to the frame to avoid damage to hydraulic lines. The pump should be secured in a position that will not hinder the removal of the transfer case.

7. Position a transmission jack of suitable capacity (1300 lbs.) beneath the transfer case. The transfer case must be seated on the jack in a safe and firm position.

8. Disconnect transfer case mountings at rubber shock insulators. Since mounting designs vary, consult vehicle service manual.

9. After inspecting that all mountings and connections to the transfer case are disconnected lower the transfer case gradually to the floor. It is imperative that the transfer case is ALWAYS safely positioned on the transmission jack to safeguard against the transfer case falling off the jack. Remove the transfer case from beneath the vehicle. It may be necessary to jack the truck up to allow room to remove transfer case.

B. Installation Into Vehicle

1. Place transfer case on transmission jack, lifting by means of the eye bolts. (See Section V-A-1.)

2. Position transmission jack underneath vehicle. Some vehicles may require that one side be jacked up in order to achieve sufficient clearance to replace the transfer case between the frame rails.

3. Raise the transmission jack to properly locate transfer case.

4. Connect transfer case mountings. Since mounting designs vary, consult vehicle service manual.

5. Connect drivelines.

6. Connect speedometer cable.

7. Connect shift cylinder air lines.

8. Connect indicator light and temperature sensor wires.

9. Fill housing with appropriate lubricant to correct level and install level plug. (Refer to lubrication, Section III).

10. Check transfer case for leaks around gaskets and seals.

V. TRANSFER CASE DISASSEMBLY

A. General Precautions For Disassembly

IMPORTANT: READ THIS SECTION BEFORE STARTING THE DISASSEMBLY PROCEDURES.

It is assumed in the disassembly instructions that the lubricant has been drained from the transfer case and the transfer case has been removed from the chassis.

Follow each procedure closely in each section, making use of both the text and pictures.

1. Obtain two forged eye bolts for lifting the transfer case. Install eye bolts in tapped holes provided. A bar or chain secured safely through the eye bolts provides a safe lifting point. (⅝-11 UNC eyebolts, see fig. 1)

2. The outside of the unit should be carefully cleaned before starting the disassembly. If steam cleaning, insure that breather and air fittings are covered to prevent water from entering assembly.

3. Cleanliness — Provide a clean place to work. It is important that no dirt or foreign material enters the unit during repairs.

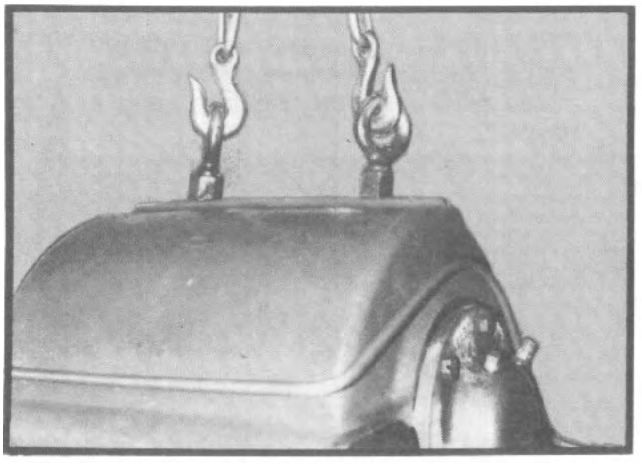
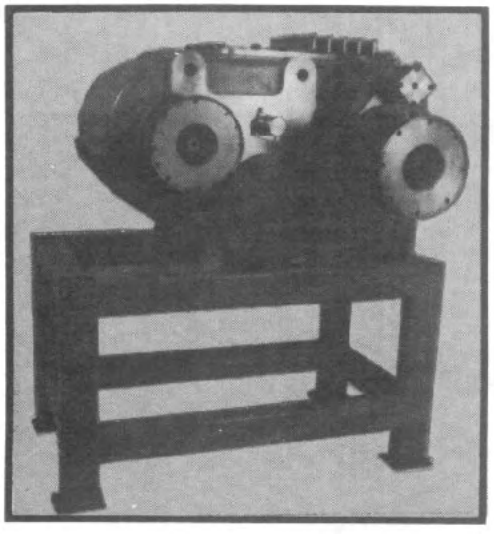


Fig. 1



4. Position the transfer case horizontally, with the cover plate facing upwards. A specially fabricated stand is desirable. (See photo at left and Tool Reference, Section X.)

5. Assemblies — When disassembling the various assemblies, lay all parts on a clean bench in the same sequence as removed. This procedure will simplify reassembly and reduce the possibility of losing parts.

6. Remove temperature sensor if installed. Disconnect and remove all oil lines on the transfer case. (See fig. 2)

7. Remove cover plate capscrews and lockwashers. Tap cover plate with a soft hammer to break loose and remove.

8. Bearings — Carefully wash and relubricate all bearings as removed and protectively wrap until ready for use. Remove bearings with pullers designed for this purpose, or in manner which will not damage those bearings that will be reused.

9. Snap Rings — Remove snap rings with pliers or special tools designed for this purpose, Rings removed in this manner can be reused.

10. When necessary to apply a force to remove a part, use of a puller or press would be preferred. However, sometimes it may be necessary to use a soft hammer or bar.

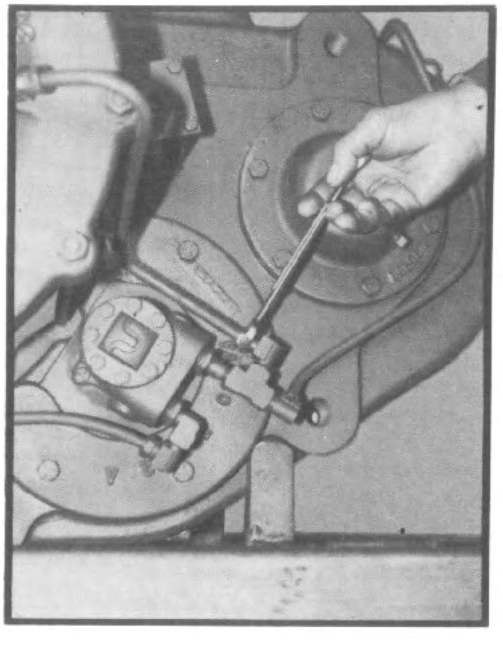


Fig. 2

V. TRANSFER CASE DISASSEMBLY

B. PTO And Declutch Assembly

1. Remove eight capscrews holding PTO/declutch carrier to PTO/declutch housing. (See fig. 3.)

2. Tap carrier to loosen and withdraw carrier and output shaft assembly.

3. Unscrew warning light switch from PTO/declutch housing and remove spacer washers. Remove plunger from inside PTO/declutch housing using a magnet.

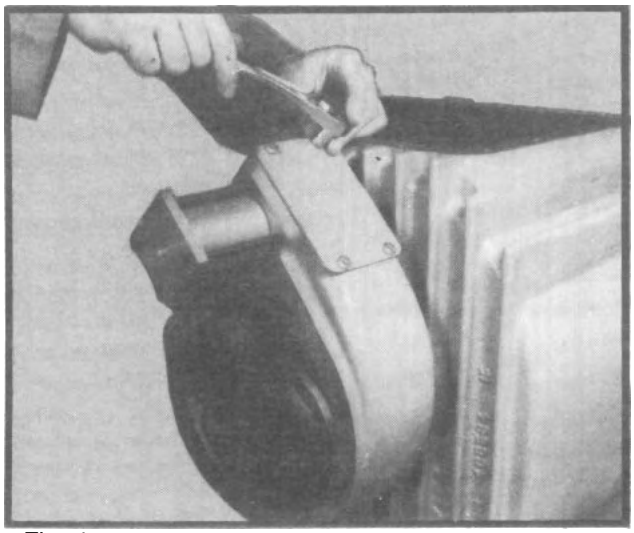


Fig. 4

7. Withdraw shift piston and shift shaft as a unit. (See fig. 5.)

   Remove shift cylinder, adapter tube, and stop ring, discarding o-rings.

9. Remove nut from shift shaft and lift off the piston and spring, discarding o-rings and felt wiper.

Fig. 6

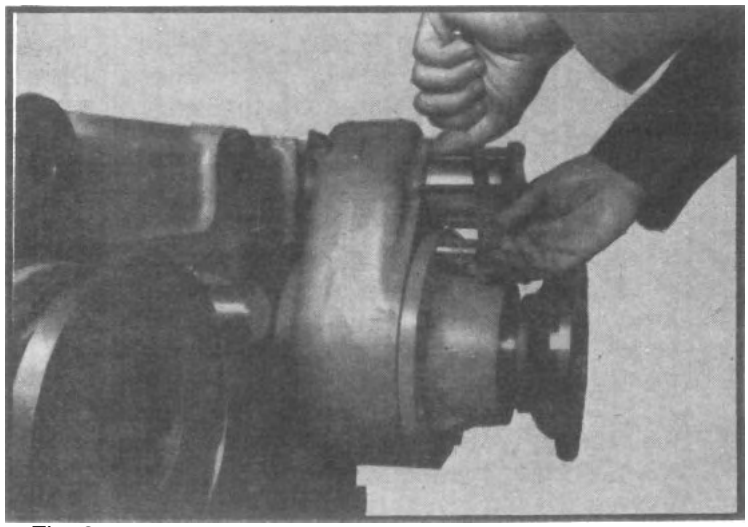


Fig. 3

4. Remove four capscrews from PTO/declutch cover plate, and tap plate to loosen. (See fig. 4.)

5. Cut the lockwires and remove the shift fork clamping screws.

6. Remove four long capscrews from shift cylinder, and lift off cylinder cap.

Fig. 5

10. Withdraw shift fork and clutch collar. (See fig. 6.)

11. Remove six capscrews holding PTO/declutch housing to main case. Remove the declutch housing by tapping it with a soft hammer loosening it from the main case.

12. Remove companion flange lock nut and washer from carrier and output shaft assembly, discarding nut. Use a new nut for reassembly.

13. Slide companion flange off output shaft.

V. TRANSFER CASE DISASSEMBLY

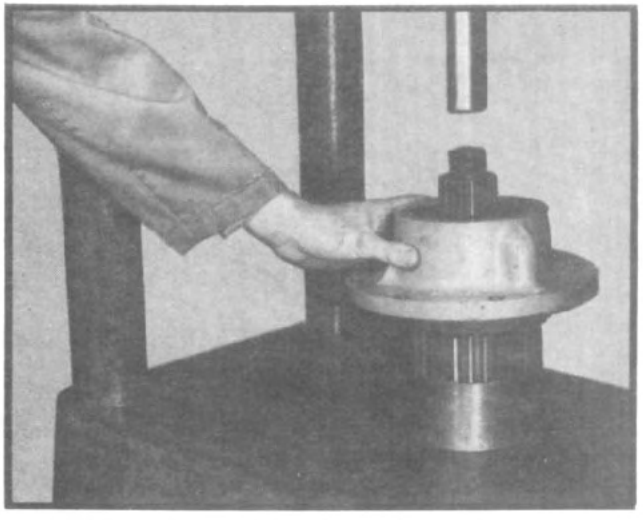


Fig. 7

14. To press output shaft from PTO/declutch carrier and clutch gear, press against threaded end of shaft while supporting by the clutch gear. (See fig. 7.)

15. Remove output seal, bearings, and end play spacer from PTO/declutch carrier, discarding seal.

16. Remove bearing cups from the PTO/declutch carrier, only if they are to be replaced.

C. Lockout Disassembly

Note: Proportional differential cases only.

1. Remove companion flange lock nut and washer from front of shaft, discarding nut, use a new nut for reassembly.

2. Slide companion flange off output shaft.

3. Remove capscrews from seal carrier. Tap carrier to loosen and remove. (See fig. 8.)

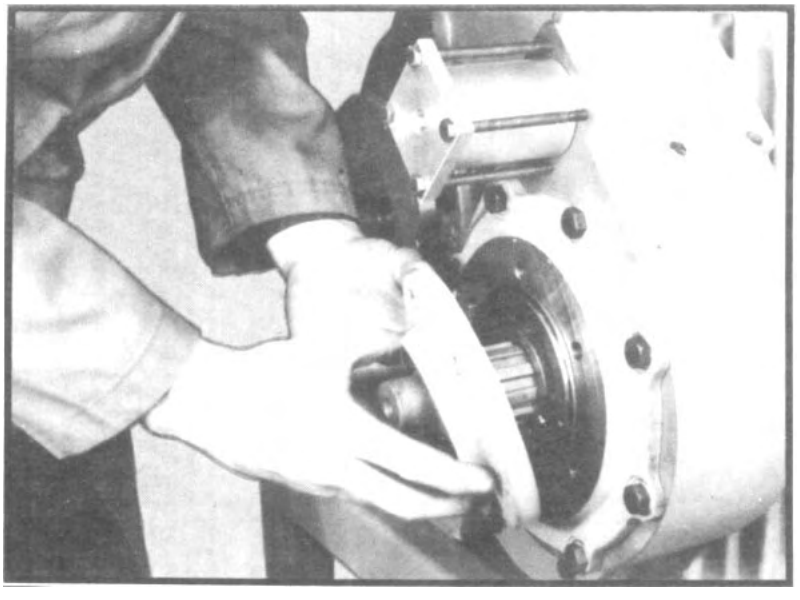


Fig. 8

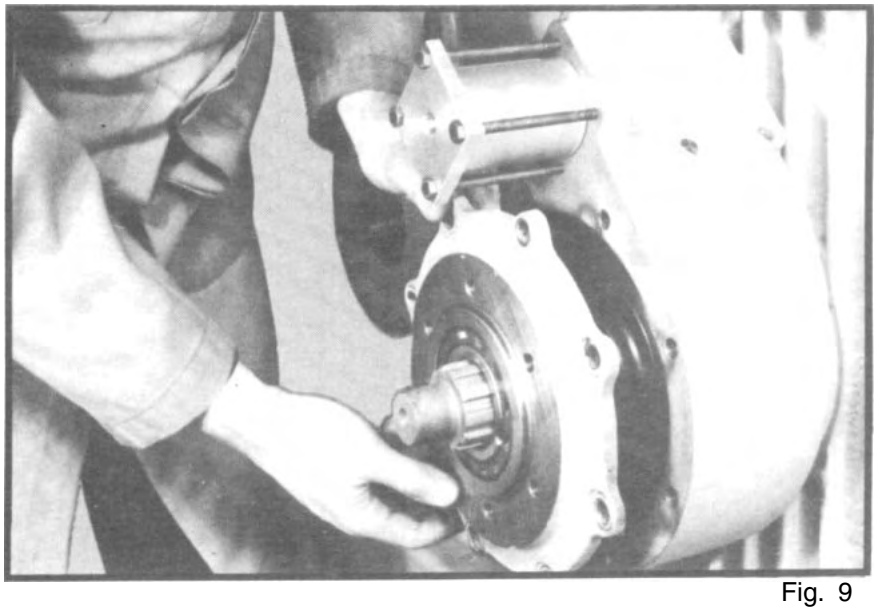


Fig. 9

4. Remove eight capscrews from lockout and bearing carrier and tap carrier to loosen. (See fig. 9.)

5. If the seal is to be replaced remove the seal from the seal carrier with a hammer and punch. Removal procedure will damage the seal and removal should not be attempted unless replacement of the seal is planned. Remove bearing from bearing carrier.

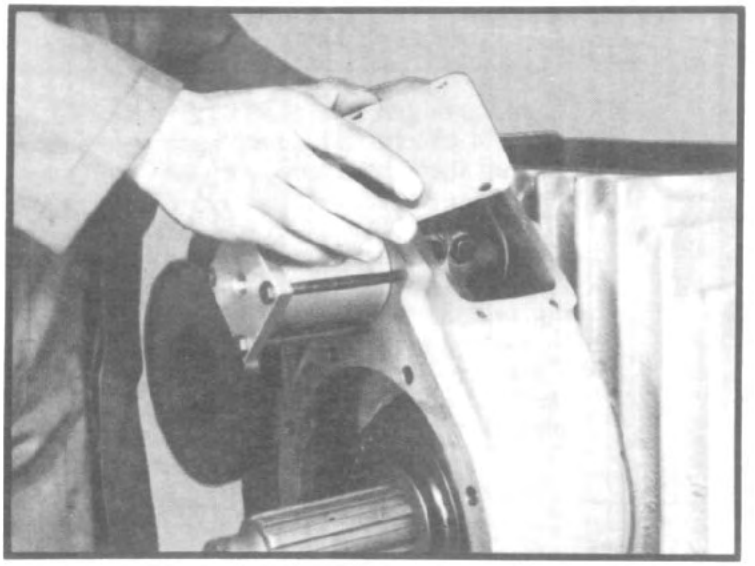


Fig. 10

6. Unscrew warning light switch from lockout housing and remove spacer washers. Remove plunger from inside housing using a magnet.

7. Remove four capscrews from lockout cover plate. Tap plate to loosen and remove. (See fig. 10.)

8. Cut the lockwires and remove the shift fork clamping screws. (See fig. 11.)

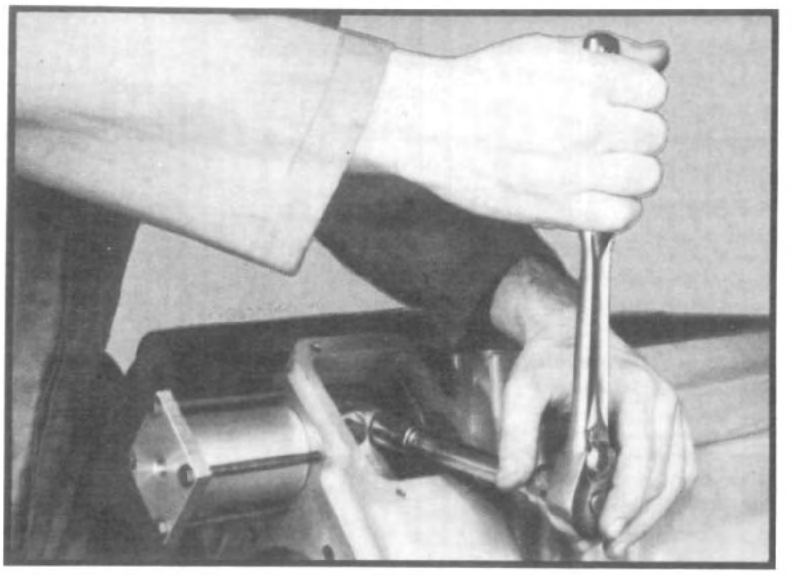


Fig. 11

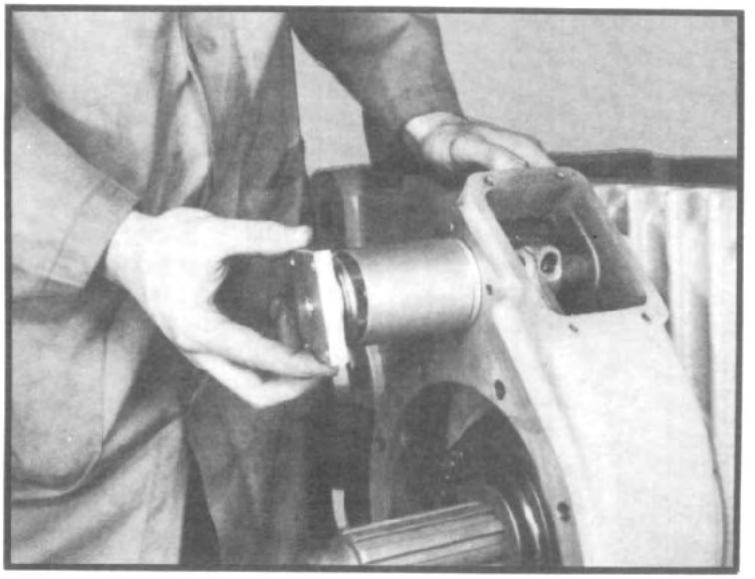


Fig. 12

9. Remove four long capscrews from shift cylinder, and lift off cylinder cap. (See fig. 12.)

V. TRANSFER CASE DISASSEMBLY

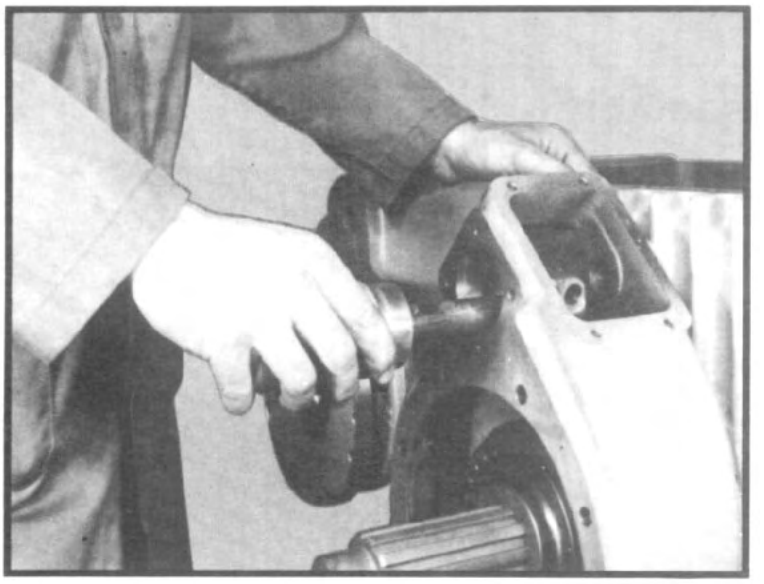


Fig. 13

10. Withdraw shift piston and shift shaft as a unit. (See fig. 13.)

11. Remove shift cylinder, adapter tube, and stop ring, discarding o-rings.

12. Remove nut from shift shaft and lift off the piston and spring, discarding o-rings and felt wiper.

13. Withdraw lockout gear, (See fig. 14), shift fork and clutch collar. (See fig. 15.)

14. Remove six capscrews holding lockout housing to main case. Remove the lockout housing by tapping it with a soft hammer, loosening it from the main case. (See fig. 16.)

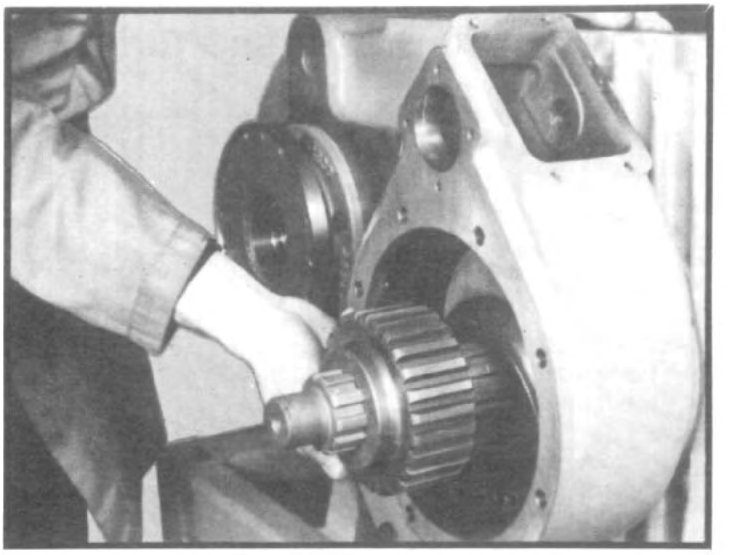


Fig. 14

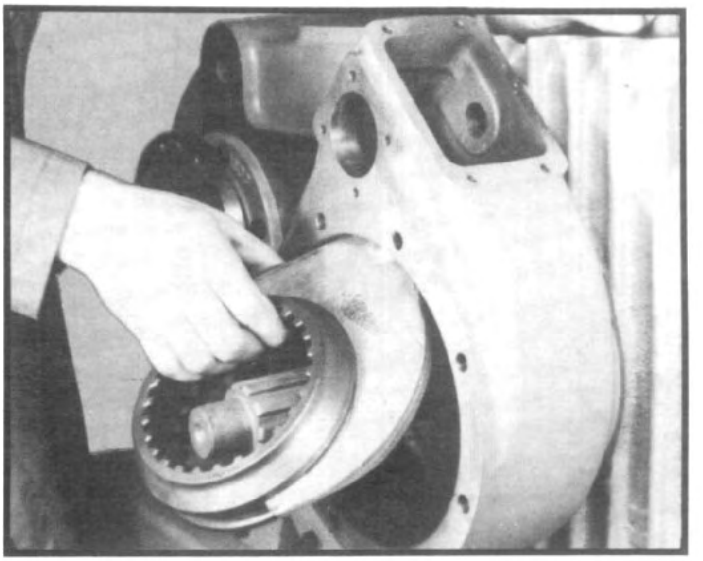


Fig. 15

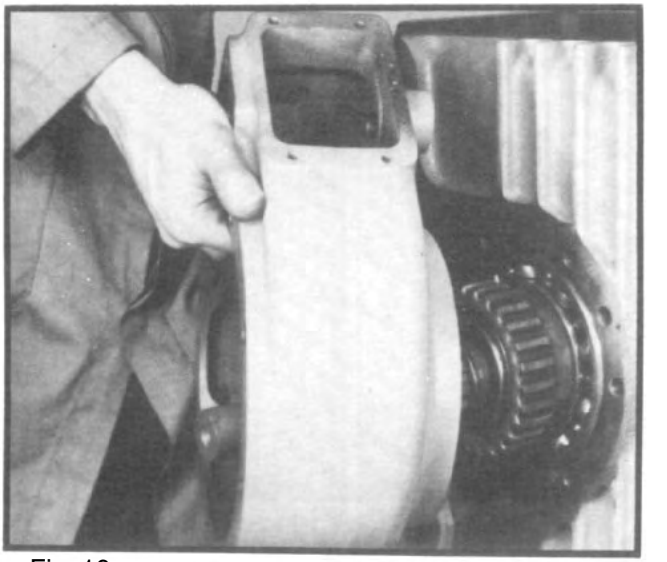


Fig. 16

D. Direct Pump Drive Disassembly

1. Remove four capscrews holding pump to mounting plate and withdraw pump.

2. Loosen setscrews and slide clutch gear off pump shaft.

3. Remove eight capscrews from mounting plate and tap to loosen.

4. Refer to section V-B and follow steps 3 - 11.

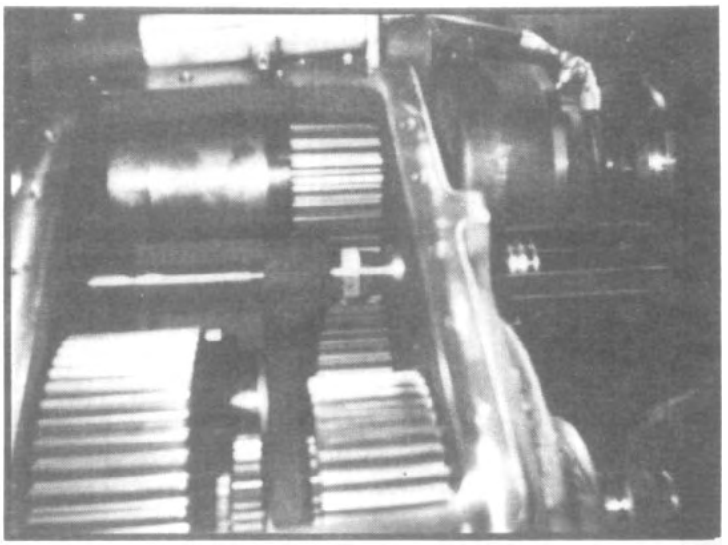


Fig. 17.A New Shift Shaft

E. Shift Shaft Disassembly

Case cover having been previously removed:

OLD STYLE:

1. Cut the lockwires and remove shift fork clamping bolts. (See fig. 17.)

NEW STYLE:

1. Remove rear shiftshaft cap & loosen jam nut on shiftshaft. (See Fig. 17A.)

2. Remove four long capscrews or stud nuts from shift cylinder, and lift off cylinder cap discarding o-ring.

3. If transfer case is not equipped with neutral position for PTO operation skip to step eight.

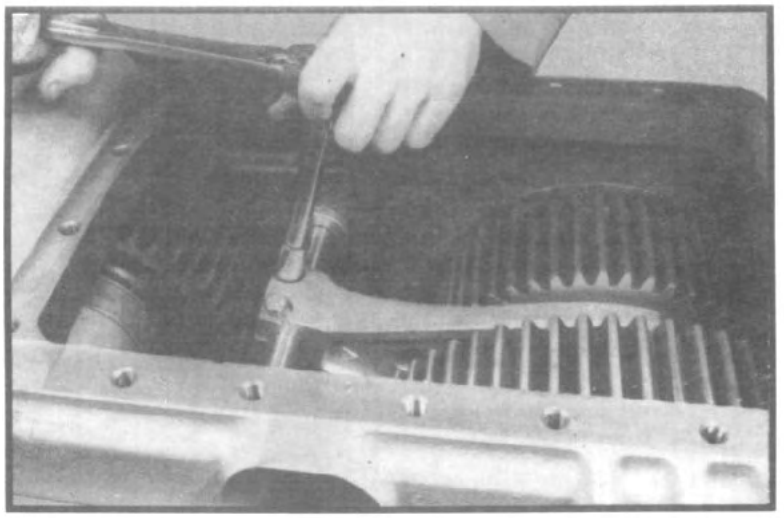
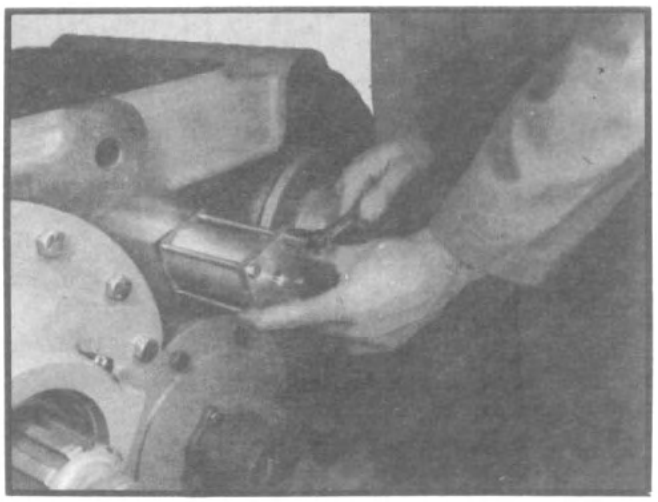
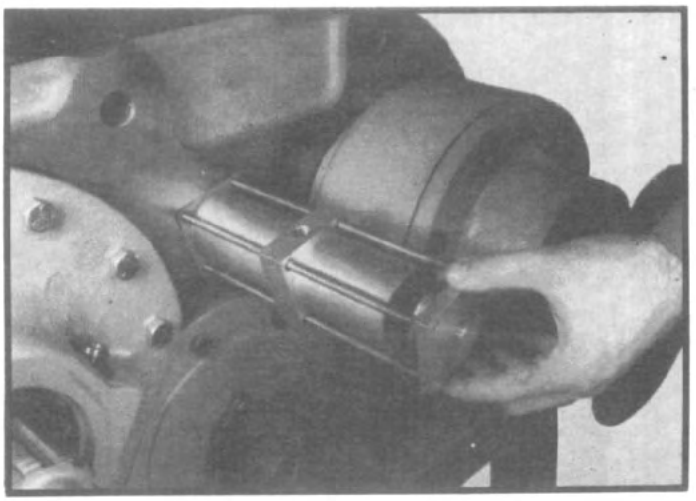


Fig. 17



High-Underdrive Shift Cylinder



High-Neutral-Underdrive Shift Cylinder

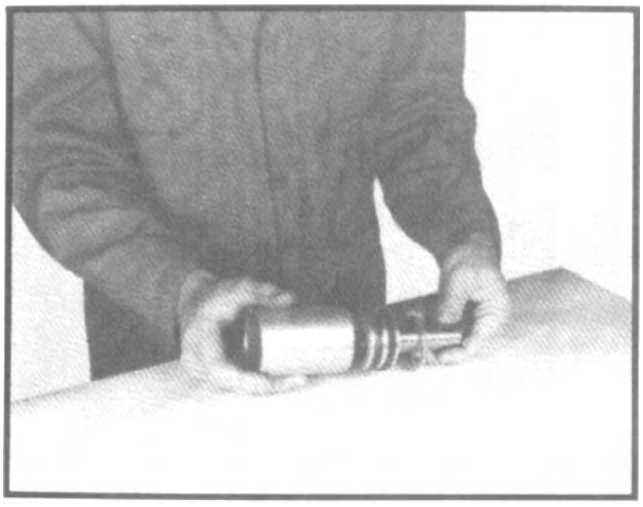


Fig. 18

4. Remove outer shift cylinder tube and outer piston as a unit. (See fig. 18.)

5. Withdraw outer piston, neutral shaft, and stop ring from the cylinder tube.

6. Remove nut and washer from shifter shaft and lift off the piston, discarding o-ring and felt wiper.

7. Remove neutral cylinder adapter, discarding o-rings. (See fig. 19.)

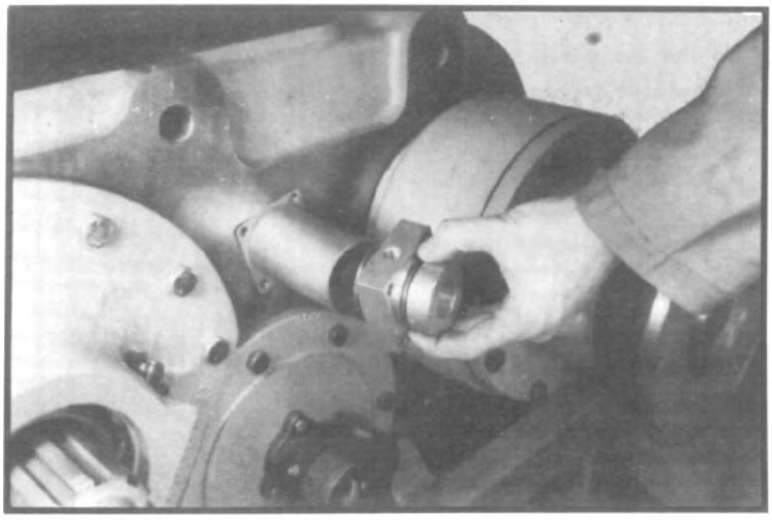


Fig. 19

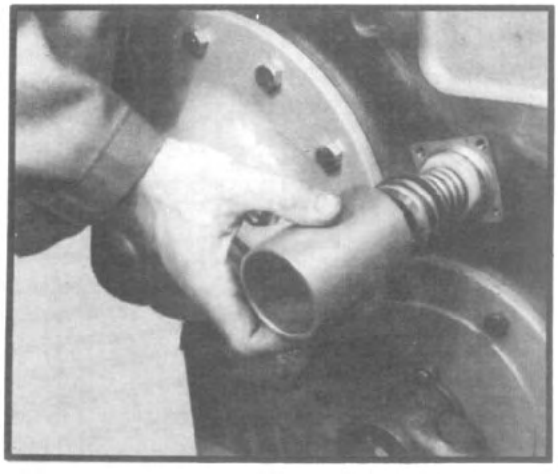


Fig. 20

8. Remove shift cylinder tube from the adapter in the transfer case, exposing piston. (See fig. 20.)

9. Using a hexwrench, unscrew shaft from fork, running jam nut down and off shaft. Withdraw shift piston and shifter shaft from case (See fig. 21.)

10. Remove the stop ring and spring from shifter shaft.

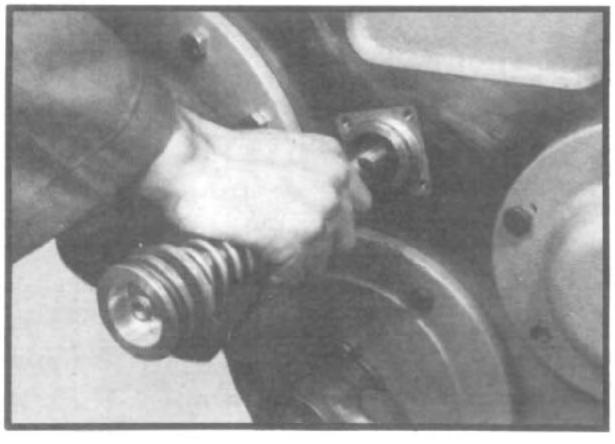


Fig. 21

V. TRANSFER CASE DISASSEMBLY

11. Remove the adapter tube from the case. Discard the o-ring from adapter tube. (See fig. 22.)

12. Remove nut and washer from shift shaft and lift off piston, discarding o-ring and felt wiper.

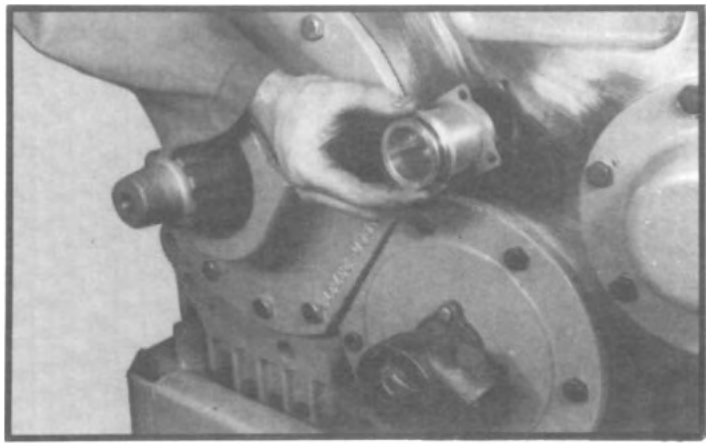


Fig. 22

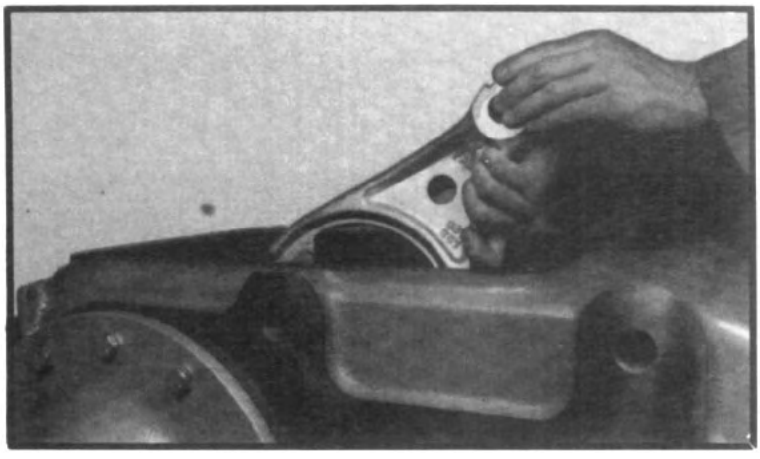


Fig. 23

13. Remove shift fork from inside case, (See fig. 23.)

OLD STYLE:

14. Remove four capscrews from shift shaft cap (located at front of case) and tap shift shaft cap free.)

    Note: If transfer case is equipped with a neutral position shift cylinder, remove four studs from case to prevent damage to the studs.

F. Upper Shaft Disassembly

1. If case is equipped with PTO or direct pump drive, refer to Section V-B, or V-D for appropriate disassembly procedure.

2. If case is not so equipped, remove six capscrews and tap upper rear cap loose.

3. If transfer case is equipped with a PTO or direct pump drive, remove locking bolt from rear of shaft. (See fig. 24.) Remove special washer, declutch gear and spacer washer from rear of shaft. Discard locking bolt, which should be replaced for assembly. (See fig. 25.)

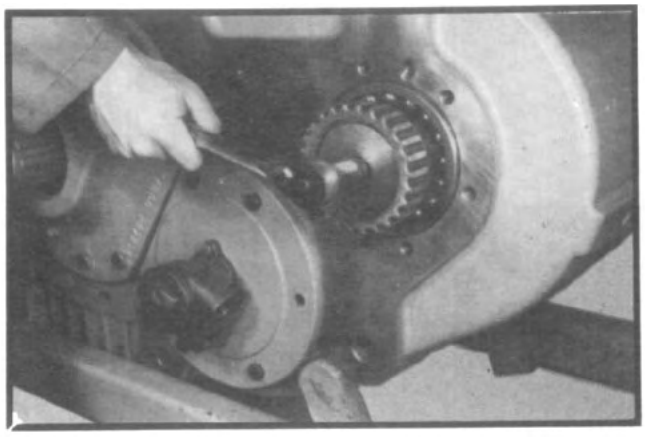


Fig. 24

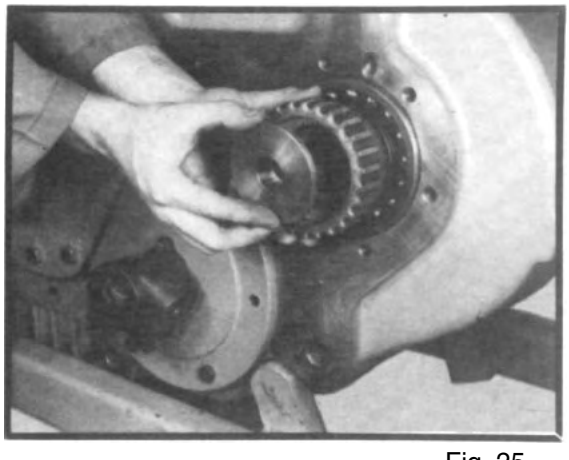


Fig. 25

4. Remove input companion flange lock nut and washer, discarding nut, use a new nut for reassembly.

5. Slide companion flange off input shaft.

V. TRANSFER CASE DISASSEMBLY

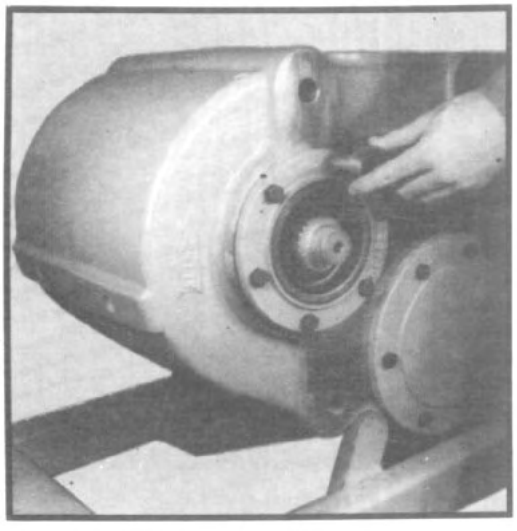


Fig. 28

6. Remove six capscrews from seal carrier and tap to loosen. (See fig. 26.)

7. Remove seal from carrier and discard.

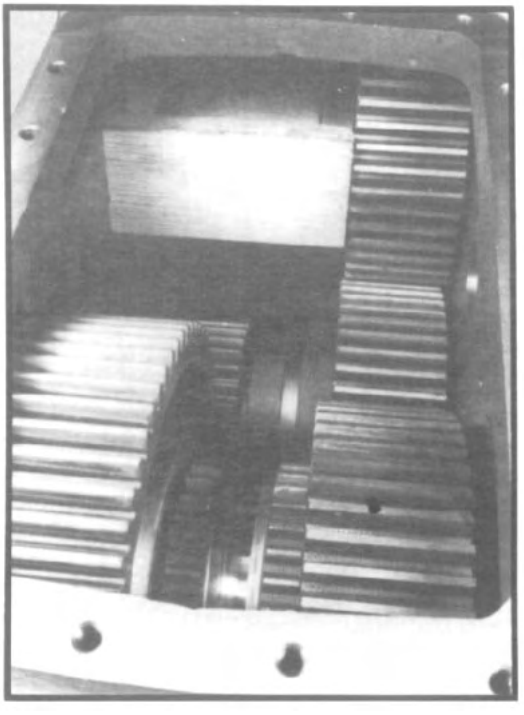


Fig. 27

8. Place a block of wood between input gear and inside of housing (See fig. 27) and drive input bearing outwards by tapping with a soft hammer on the rear of the input shaft until bearing is out of housing. (See fig. 28.)

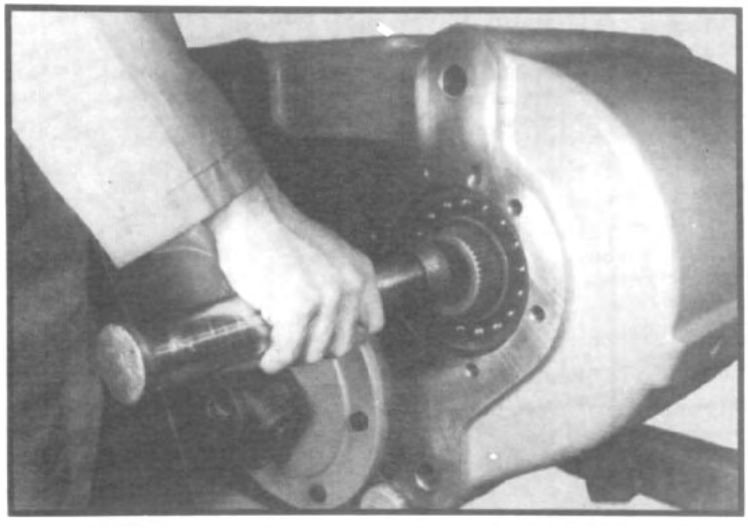


Fig. 28

9. Withdraw spacer tube from input shaft through front bearing bore. (See fig. 29.)

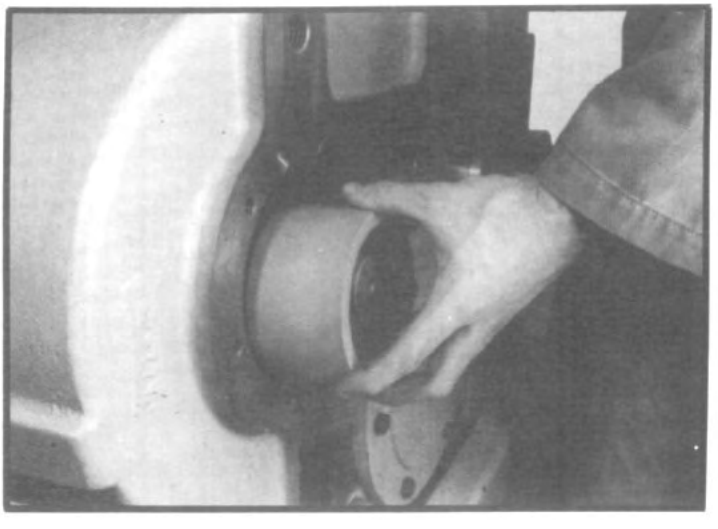


Fig. 29

V. TRANSFER CASE DISASSEMBLY

10. Continue to tap on the rear of the shaft until shaft is free from rear bearing and withdraw shaft and spacer ring (located between shaft and input gear) from front of case. Use care to prevent damage to input gear as shaft pulls free. Remove block of wood. (See fig. 30.)

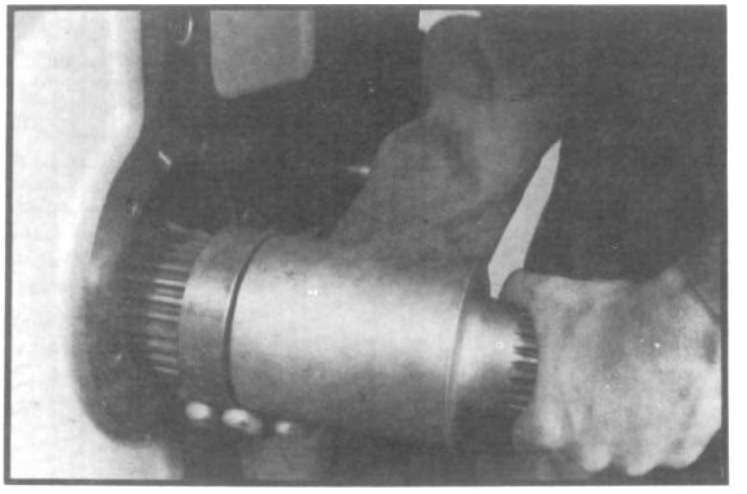


Fig. 30

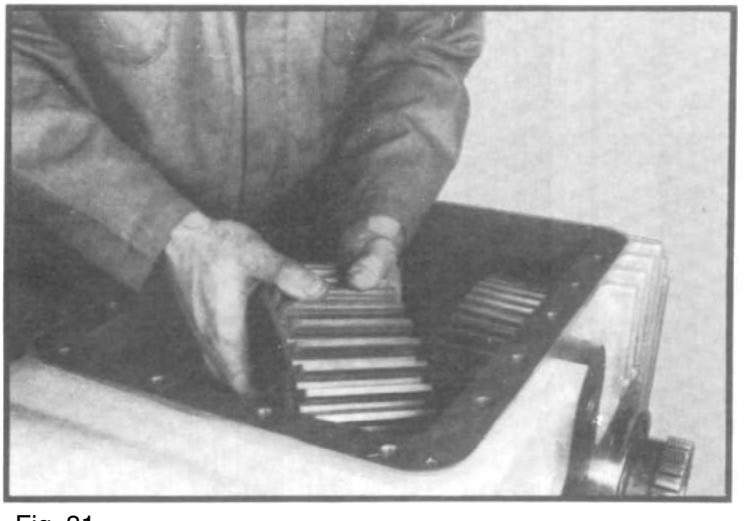


Fig. 31

11. Remove input gear from transfer case. (See fig. 31.)

12. Retrieve the spacer ring (located between the input gear and rear bearing) which will have fallen to the bottom of the case on removal of upper shaft.

13. Tap out rear bearing with a suitable driver.

G. Lower Shaft Disassembly

1.0 Lower Shaft Disassembly With Standard Case

1.1 Refer to section V-B and remove declutch assembly.

1.2 Unscrew speedometer drive sleeve from rear seal carrier and withdraw speedometer driven gear.

1.3 Remove flange or yoke locknut and washer from rear of shaft, discarding nut, use a new nut for assembly.

1.4 Slide flange or yoke off rear shaft.

1.5 Remove locknut and washer from front of lower shaft, discarding locknut, use a new nut for assembly.

1.6 Remove eleven capscrews holding speedometer gear carrier to main housing, tap carrier lightly to break loose, and remove from housing by tapping with a soft hammer on front of the lower shaft. (See fig. 32)

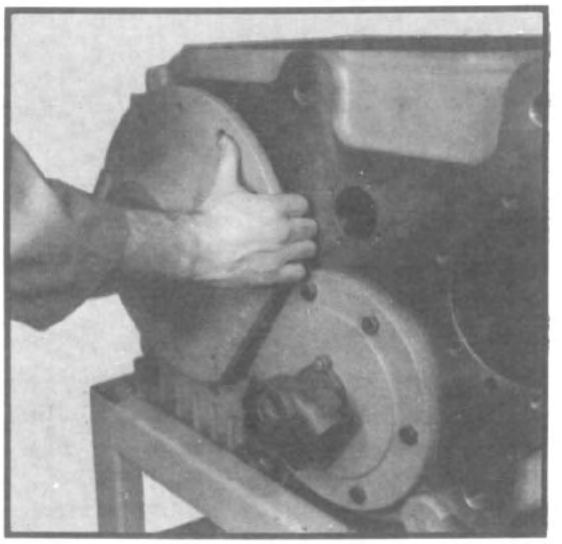


Fig. 32

1.7 Remove output shaft seal from speedometer gear carrier with a suitable tool and discard.

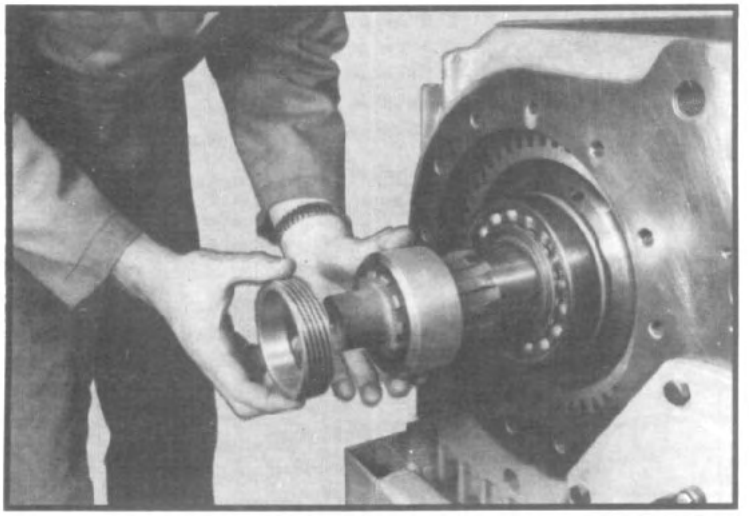


Fig. 33

1.8 Remove speedometer drive gear and spacer from shaft. (See fig. 33.)

1.9 Supporting weight of underdrive gear, remove clutch gear with bearing from front of shaft. (See fig. 34.)

1.10 Remove front bearing from clutch gear with a suitable puller.

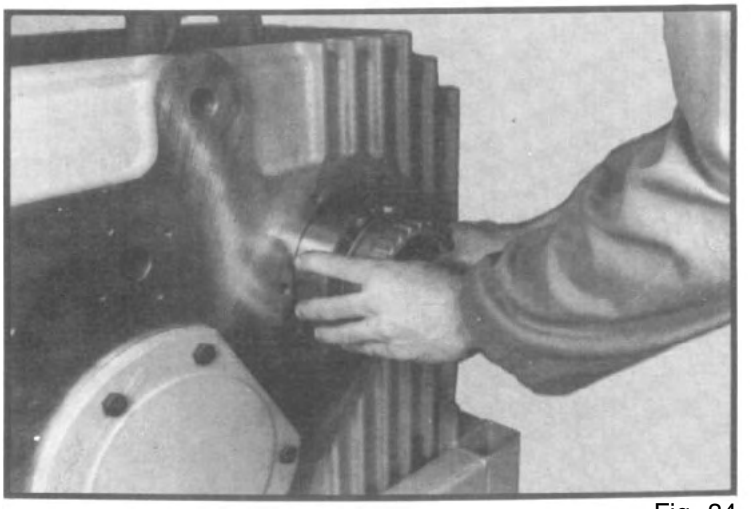


Fig. 34

V. TRANSFER CASE DISASSEMBLY

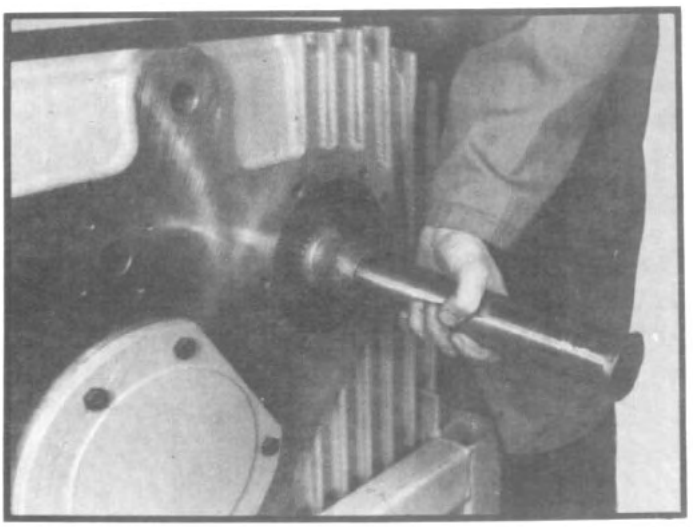


Fig. 35

1.11 Drive lower shaft assembly from case by tapping with a soft hammer on the front of the shaft. (See fig. 35.) The direct drive gear will have to be aligned with the rear case bore for shaft assembly to be removed. (See fig. 36.) Attach a chain hoist with a sling around the direct drive gear and remove the shaft assembly through the rear case bore. (See fig. 37.) Remove the needle bearing assemblies and spacer ring for the underdrive gear from the shaft or from inside the underdrive gear.

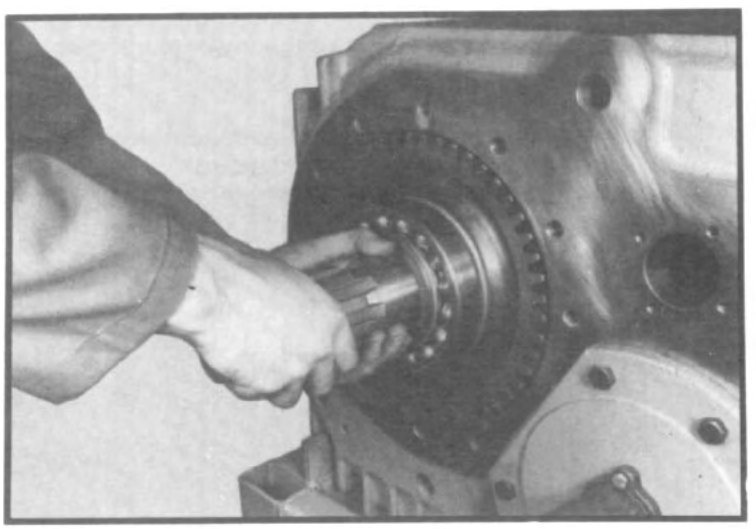


Fig. 36

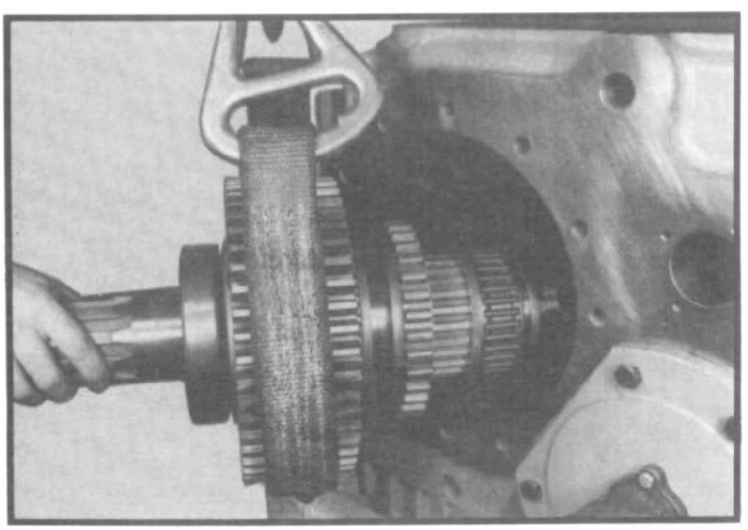


Fig. 37

V. TRANSFER CASE DISASSEMBLY

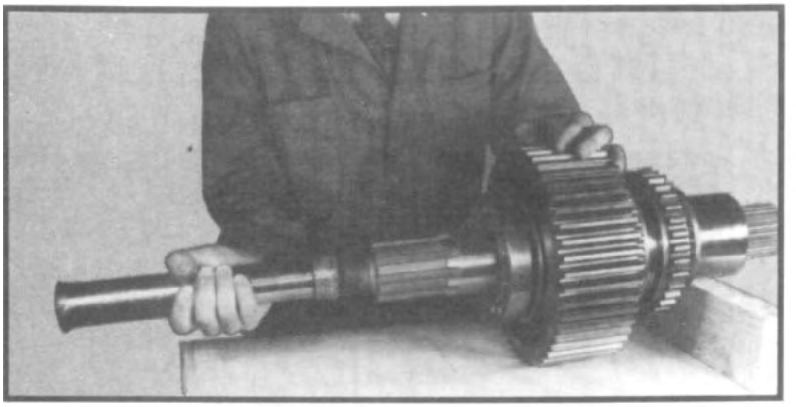


Fig. 38

1.12 Disassemble the shaft assembly by placing the front of the shaft on a block of wood for support. Tap with a soft hammer on the rear of the shaft, pushing the shaft through the direct drive gear and pushing the rear bearing and thrust washer from the shaft. (See fig. 38.)

1.13 When the rear bearing and thrust washer have been removed, remove the direct drive gear from the shaft. Remove needle bearing assemblies from inside the gear or from the shaft.

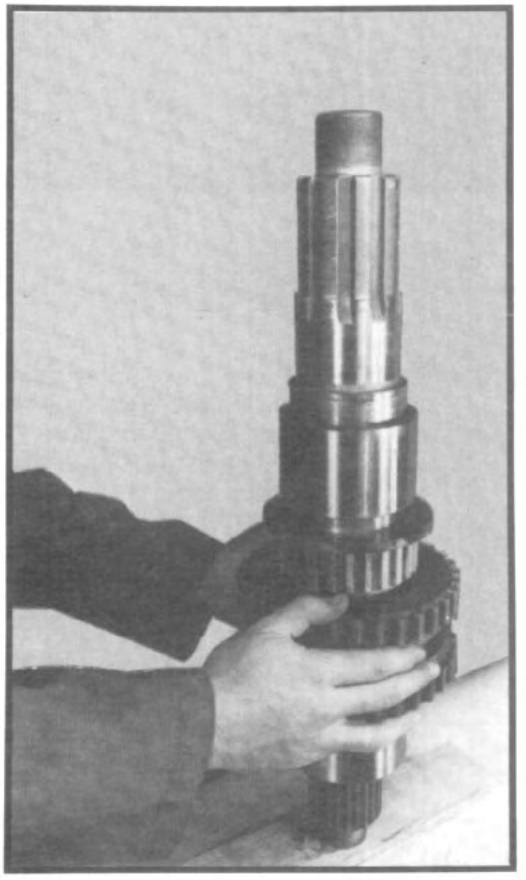


Fig. 39

1.14 If necessary to remove the needle bearing inner races and thrust rings from the shaft, place the shaft vertically on a table and tap the clutch gear on the thrust washer. This procedure will push the inner race off the shaft. Repeat this operation for the opposite side. (See fig. 39.)

1.15 Remove the clutch collar from the shaft.

1.16 Lift the underdrive gear out of the case. (See fig. 40.)

1.17 Retrieve the front thrust washer which will have fallen to the bottom of the case on removal of the lower shaft assembly.

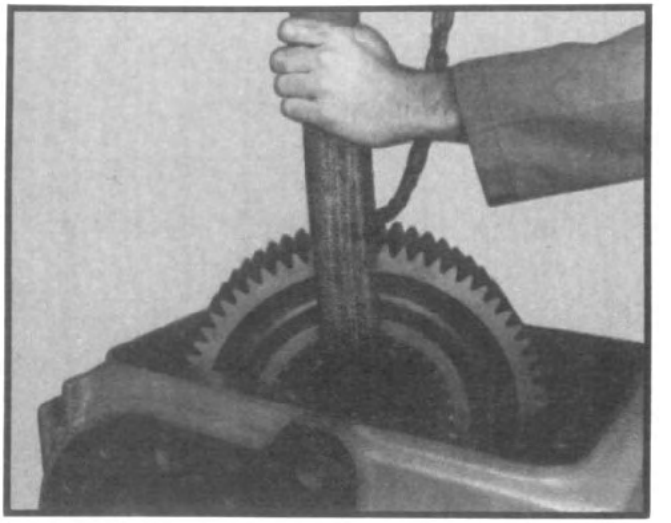


Fig. 40

2.0 Lower Shaft Disassembly with 50/50 Differential

Note: Lockout assembly having been previously removed.

2.1 Remove flange or yoke locknut and washer from rear of shaft, discarding nut, use a new nut for reassembly.

2.2 Slide flange or yoke off rear shaft.

2.3 Unscrew speedometer drive sleeve from rear seal carrier and withdraw adapter tube and speedometer driven gear.

Note: Mark differential cap, differential housing and rear face plate before disassembly. Align marks on reassembly.

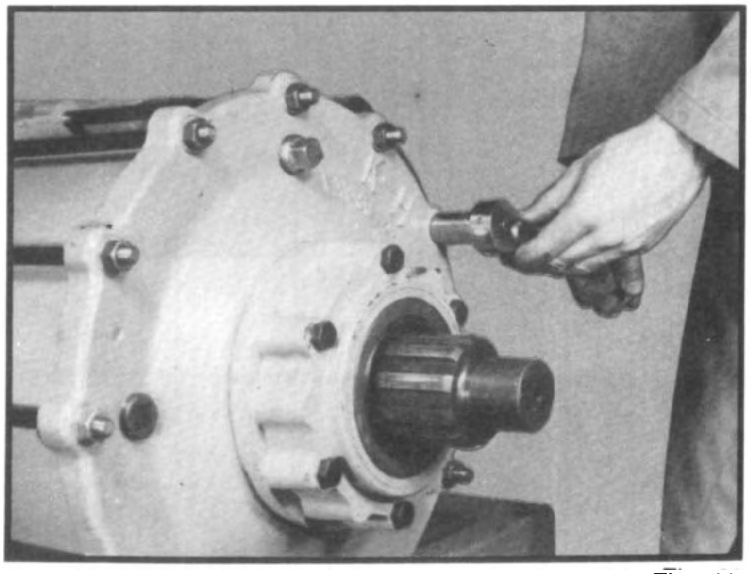


Fig. 41

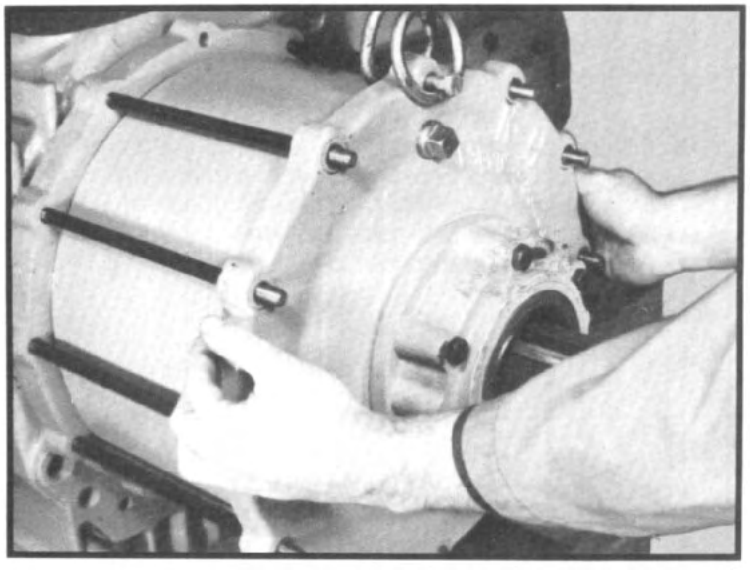


Fig. 42

2.4 Remove 12 stud nuts from studs. (See fig. 41.) Remove a top stud and install a bolt or eyebolt to differential cap through stud hole. Using a chain hoist fastened to the bolt or eyebolt, tap the differential cap until it is free from the studs. (See fig. 42.) Pull cap away from differential until it is free from the splines in the differential. (See fig. 43.)

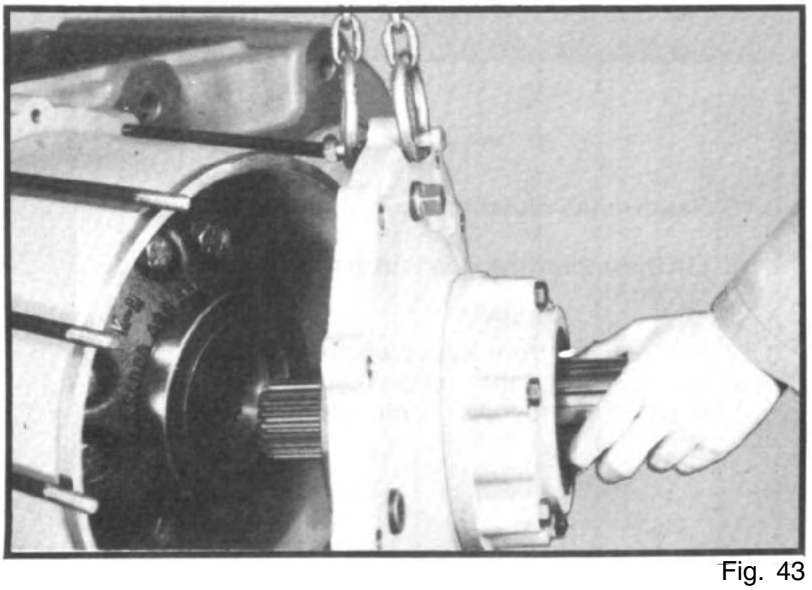


Fig. 43

V. TRANSFER CASE DISASSEMBLY

2.5 Remove six capscrews holding seal carrier to differential carrier cap. Tap seal carrier to loosen and remove. (See fig. 44.) If the seal is to be replaced remove the seal from the seal carrier. Removal procedure will damage the seal and removal should not be attempted unless replacement of the seal is planned.

2.6 Remove speedometer drive gear and spacer from shaft.

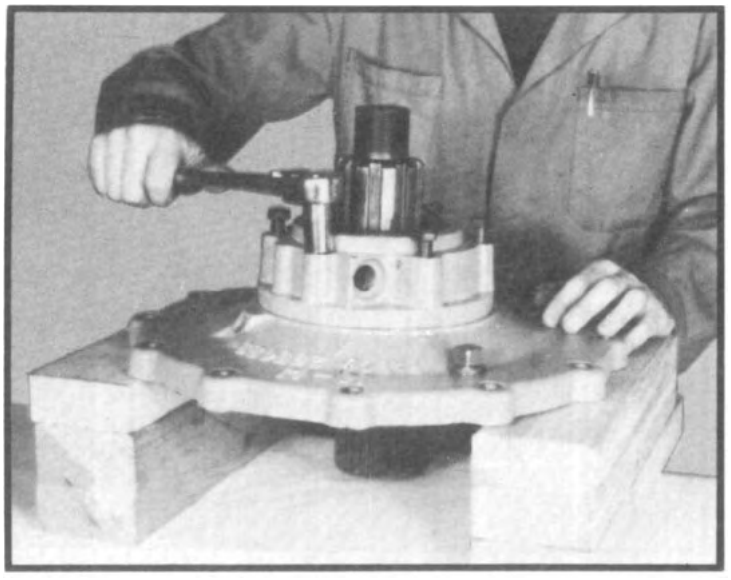


Fig. 44

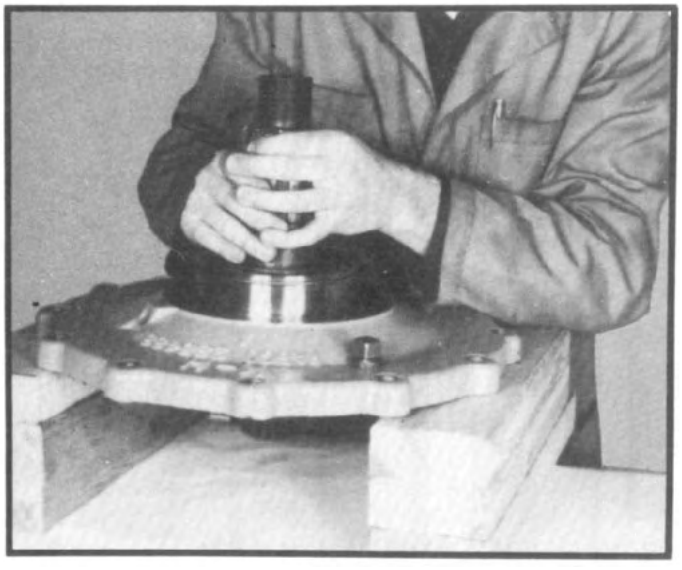


Fig. 45

2.7 Tap rear output shaft and ball bearing from differential cap with a soft hammer. Remove large diameter o-ring from differential cap. (See fig. 45.)

2.8 Press rear output shaft from ball bearing.

2.9 Tap differential housing to loosen and remove. (See fig. 46.)

2.10 Remove studs from rear face plate.

2.11 Remove bearing from rear of differential case with a suitable puller if bearing is to be replaced.

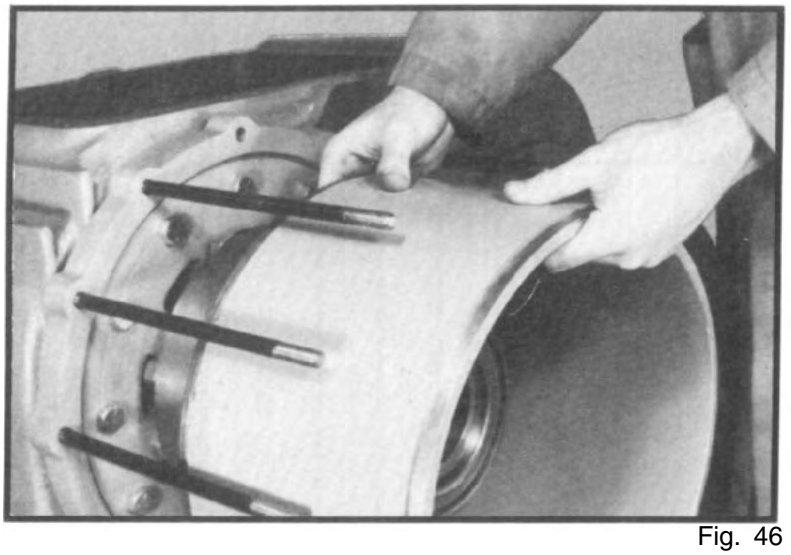


Fig. 46

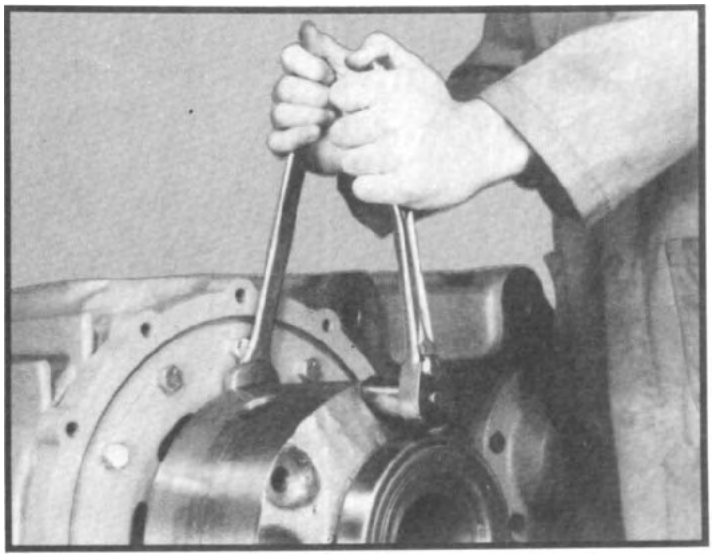


Fig. 47

2.12 Remove bolts from differential case, (See fig. 47), split the case and remove rear of case. (See fig. 48.) As the rear of the case is removed be sure to also remove the spider and pinion gear assembly with the rear of case (Do not let spider and pinion gear assembly drop from case). Remove spider and pinion gear assembly, differential side gear and thrust washer from case half. The differential spider, thrust washers and pinion gears do not have to be disassembled.

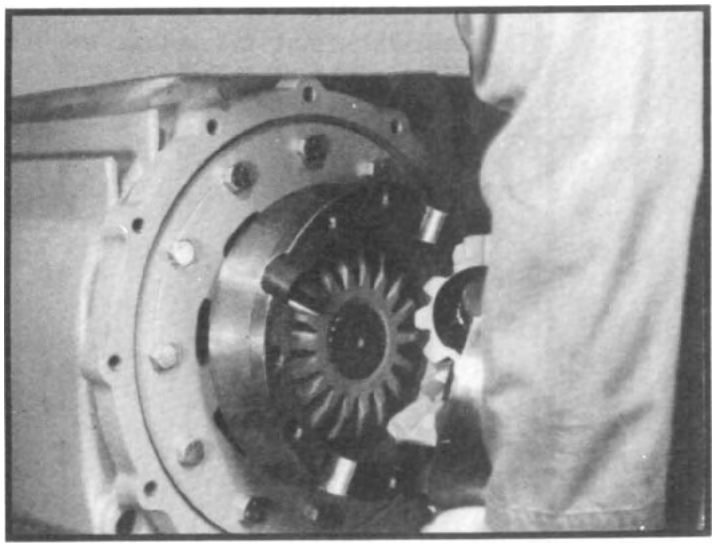


Fig. 48

2.13 Remove differential side gear and thrust washer from inner shaft. (See fig. 49.)

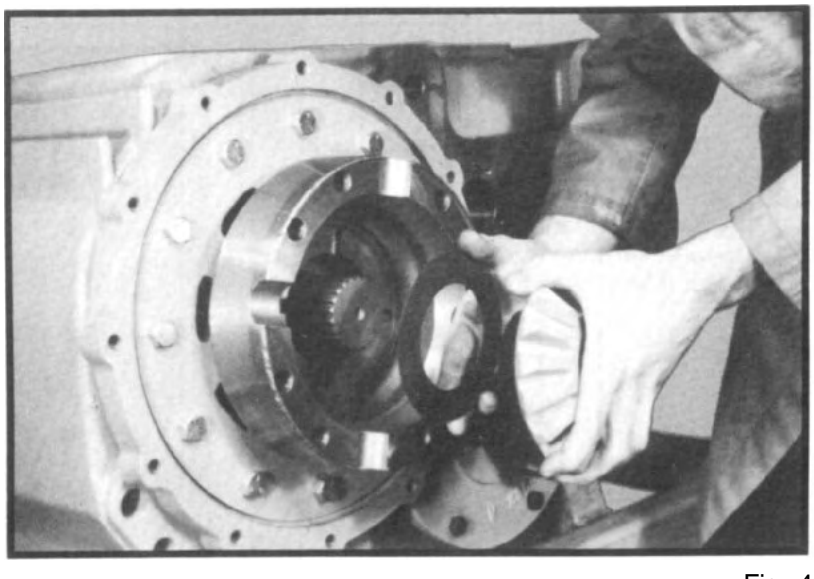


Fig. 49

V. TRANSFER CASE DISASSEMBLY

2.14 Remove retaining ring from front of inner shaft and remove inner shaft from lower shaft. (See fig. 50.)

2.15 Remove three capscrews holding oil pump to rear face plate.

2.16 Tap pump lightly to loosen and withdraw pump. (See fig. 51.)

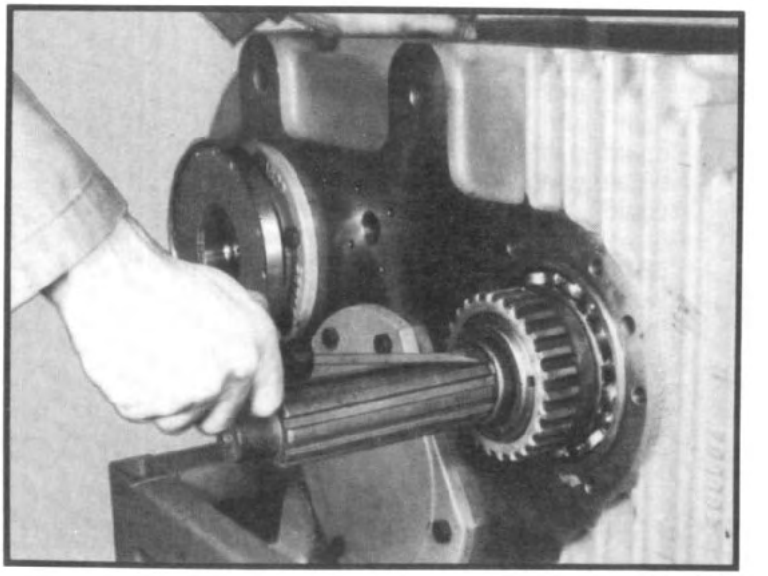


Fig. 50

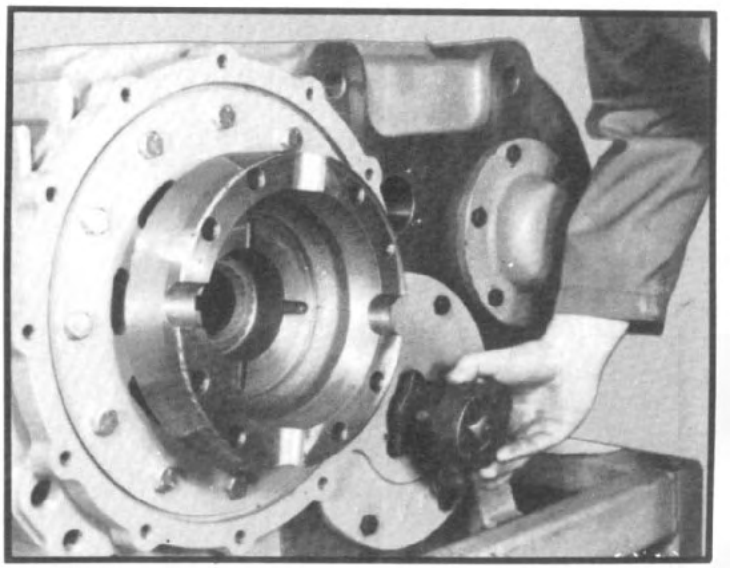


Fig. 51

V. TRANSFER CASE DISASSEMBLY

2.17 Remove fifteen capscrews from rear faceplate and remove face plate and differential case front half from housing. It is recommended that two bolts or eyebolts be attached to the face plate and a chain hoist be attached to the bolts or eye bolts with a chain. (See fig. 52.) The face plate can then be worked out of transfer case housing, supported by the chain hoist. (See fig. 53.)

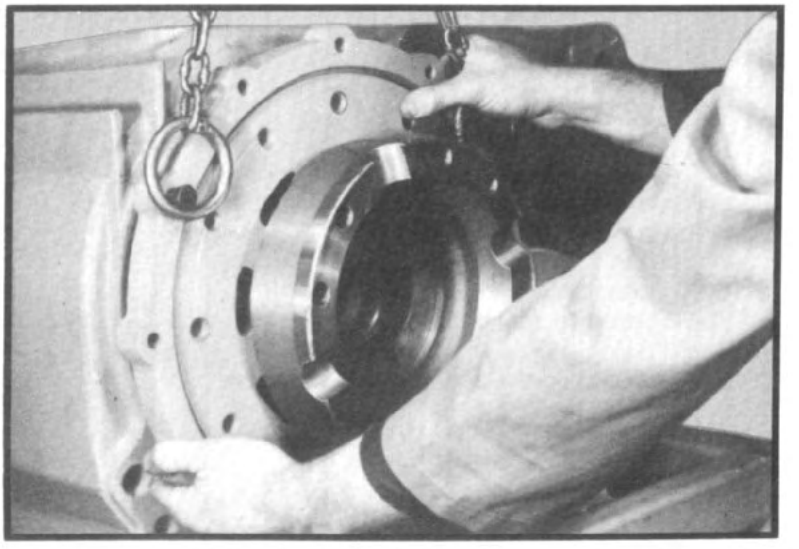


Fig 52.

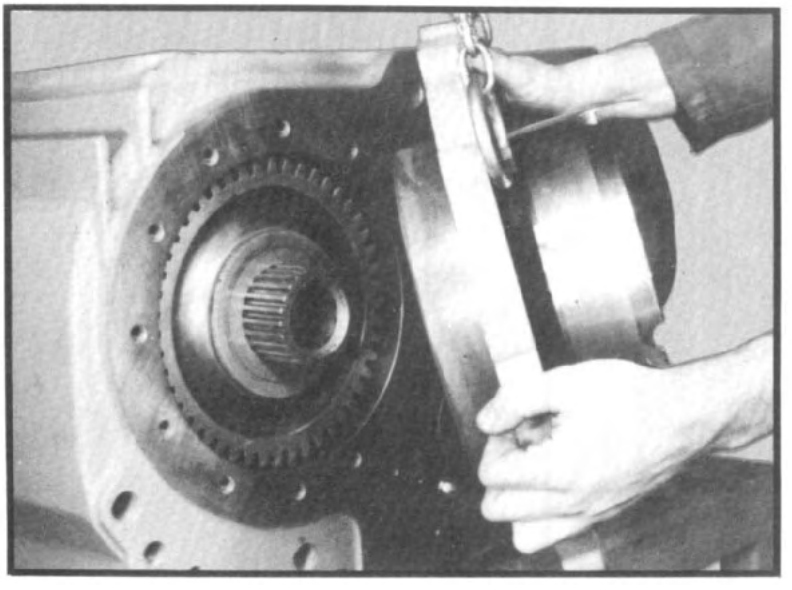


Fig. 53

2.18 If rear face plate bearing is to be replaced, drive case half from bearing and remove bearing from face plate.

2.19 Remove o-ring from face plate if replacement is necessary.

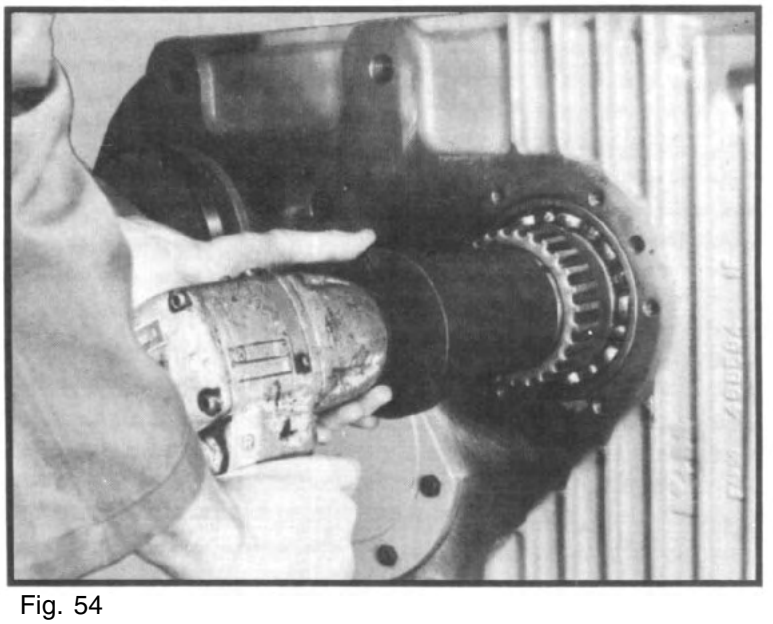


Fig. 54

2.20 Remove special nut from inside of clutch gear with special wrench (See tool reference, Section X.) and remove clutch gear from lower shaft. (See fig. 54.)

2.21 Remove the thrust washer from the rear of the lower shaft.

V. TRANSFER CASE DISASSEMBLY

2.22 Slide direct drive gear from lower shaft through rear case bore (See fig. 55.) and remove gear from shaft. (See fig. 56.) Remove two needle bearing assemblies from shaft or from inside the gear.

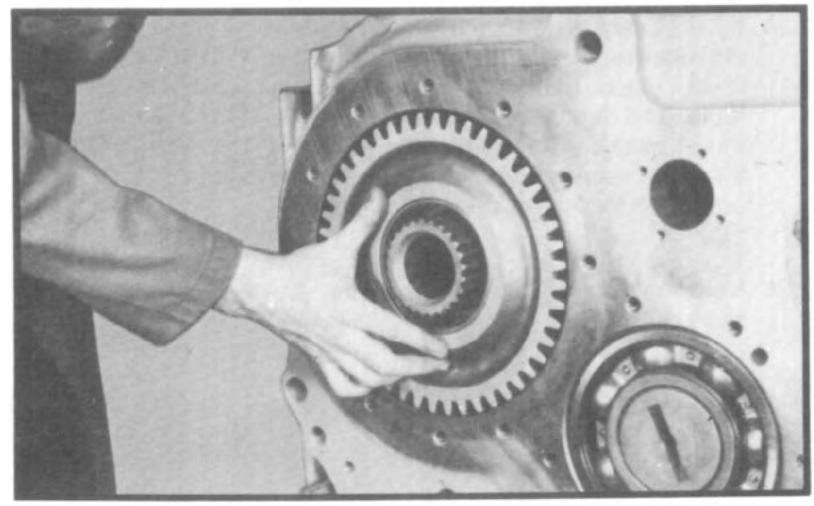


Fig. 55

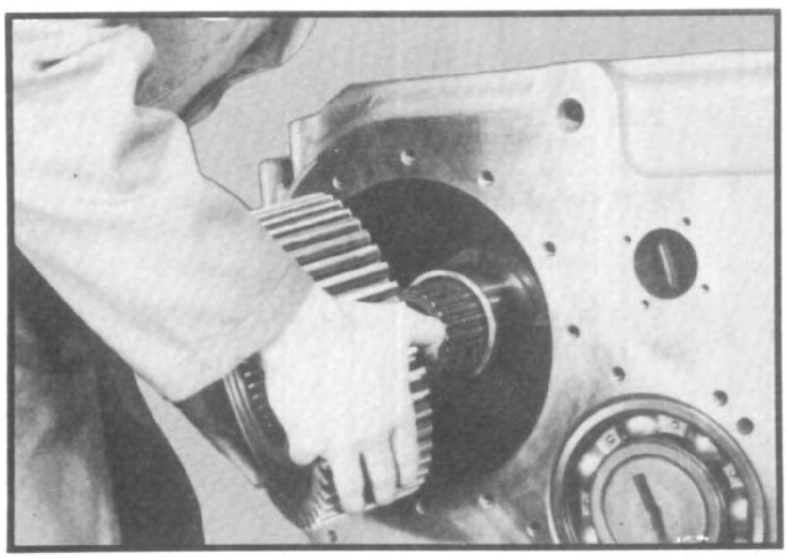


Fig. 56

2.23 Place a block of wood between the underdrive gear and inside of housing and drive lower shaft assembly from case by tapping with a mallet on a soft bar located on the front of the shaft. Use care when tapping front of shaft to not damage threads. Withdraw lower shaft from the case. (See fig. 57.) Remove the needle bearing assemblies and spacer ring for the underdrive gear from the shaft or from inside the underdrive gear.

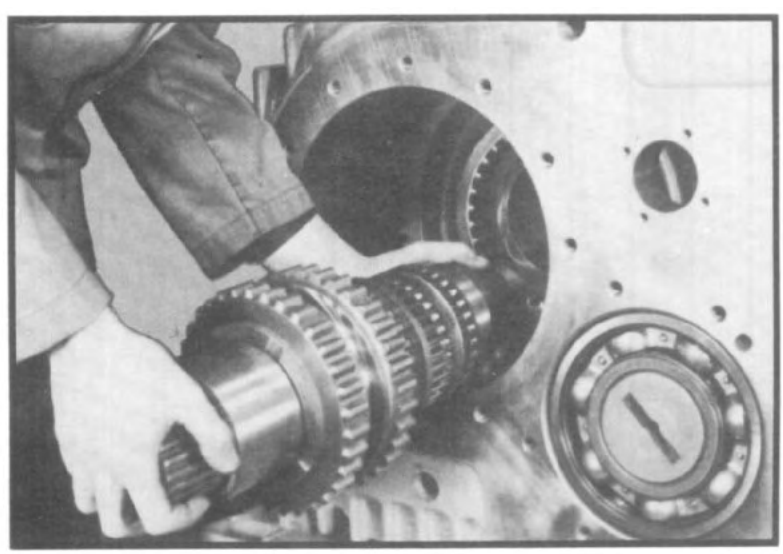


Fig. 57

2.24 If necessary to remove the needle bearing inner races and the rust rings from the shaft, place the shaft vertically on a table and tap the clutch gear on the thrust washer. This procedure will push the inner race off the shaft. Repeat this operation for the opposite side. (See fig. 58.)

2.25 Remove the clutch collar from the shaft.

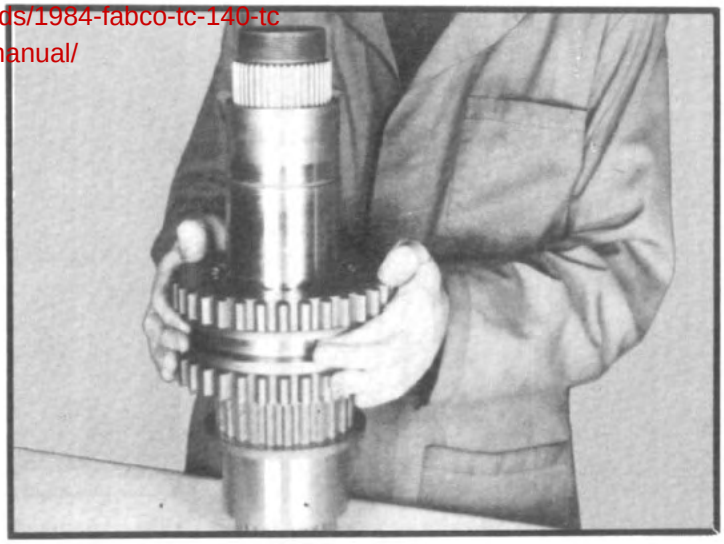


Fig. 58

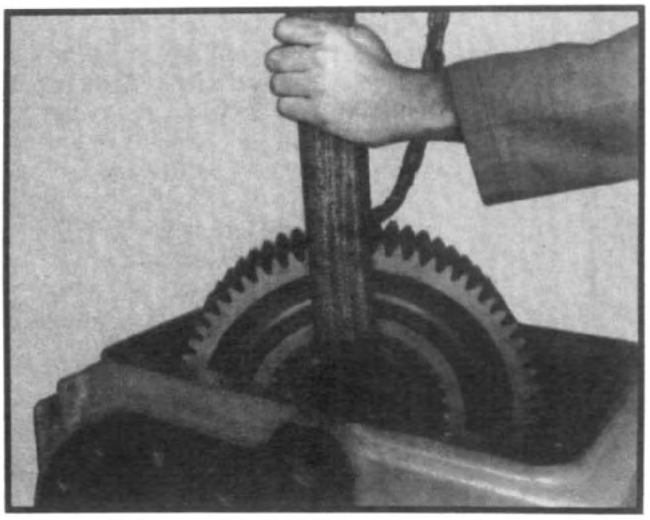


Fig. 59

2.26 Lift underdrive gear out of the case. (See fig. 59.)

2.27 Retrieve the front thrust washer which will have fallen to bottom case on removal of the lower shaft assembly.

2.28 Remove front bearing from transfer case housing.