SECTION IX — ENGINE CLUTCH AND CLUTCH BRAKE

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Engine Clutch	1
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1. ENGINE CLUTCH

A. Description

NOTE: *The HD 6A, 6B, and 6E Model Tractors prior to Tractor Serial No. 3006 may be equipped with either an "AUBURN" or a "ROCKFORD" engine clutch. Effective with Tractor Serial No. 3006 the "AUBURN" clutch was used exclusively. The HD 6G Model Tractors prior to Tractor Serial No. 1697 may be equipped with either an "AUBURN" or a "ROCKFORD" engine clutch. All HD 6G Tractors Serial Nos. 1697 and above have an "AUBURN" clutch.* The following description pertains to the "AUBURN" clutch.

The engine clutch is a single plate, dry clutch with an over center engaging action. A shifting sleeve and bearing mechanism, carried on the clutch shaft and connected by linkage to the clutch actuating levers, is operated by the engine clutch operating lever to engage and disengage the clutch. The operating lever and the clutch shifting yoke shafts are assembled on needle bearings that are grease packed and sealed for life at assembly. The clutch shifting sleeve ball bearing and engine clutch shaft rear ball bearing are the only parts that require periodic lubrication. An adjusting ring provides a means of maintaining the necessary adjustment to compensate for normal wear on the clutch facings.

The main components of the clutch assembly are: the driven plate, pressure plate, pressure springs, pressure ring, adjusting ring, back plate, shifting sleeve and yoke assembly, clutch brake, and the clutch housing. The clutch back plate is bolted to the rear face of the engine flywheel and carries most of the clutch weight, thus adding to the flywheel effect. The pressure plate is driven by lugs which engage in slots in the clutch back plate. The clutch driven plate, which is splined to the clutch shaft, is friction engaged between the pressure plate and the rear face of the flywheel by pressure exerted against the back of the pressure plate by springs in the pressure ring. The pressure ring is actuated by the over center action of the clutch actuating levers when the clutch operating lever is pulled into its engaged position. When the clutch is disengaged, the friction between the pressure plate, driven plate, and flywheel is relieved and the clutch brake stops rotation of the driven plate and the clutch shaft. The other clutch parts continue to turn with the engine flywheel and the clutch shifting sleeve bearing turns on the clutch shifting sleeve.

The front end of the clutch shaft is supported by the clutch shaft front ball bearing (pilot bearing) installed in the counterbore of the engine flywheel; the rear end of the clutch shaft is supported by the clutch shaft rear ball bearing, installed in the clutch shaft rear bearing retainer. The clutch shaft is connected to the transmission top shaft by a universal joint assembly. By removal of the universal joint assembly, the engine clutch can be removed without disturbing the engine or transmission.

A clutch brake assembly, consisting of a stationary lined plate attached to the clutch shifting sleeve yoke assembly and clutch brake disc bolted to the clutch shaft, is provided for stopping the rotation of the clutch shaft and transmission shafts when shifting gears. The clutch brake is applied by pushing forward on the clutch operating lever after disengaging the clutch.

B. Engine Clutch Service

Specified time intervals between clutch adjustments can not be established due to the variable operating conditions which determine the amount of clutch facing wear. Keep the clutch adjusted so that a pull of 25 to 30 pounds is required on the clutch operating lever to engage the clutch (engine stopped). As the clutch wears, the pull on the clutch operating lever diminishes. When the pull on the lever diminishes to 15 pounds, an adjustment is necessary. IMPORTANT: *Do not*

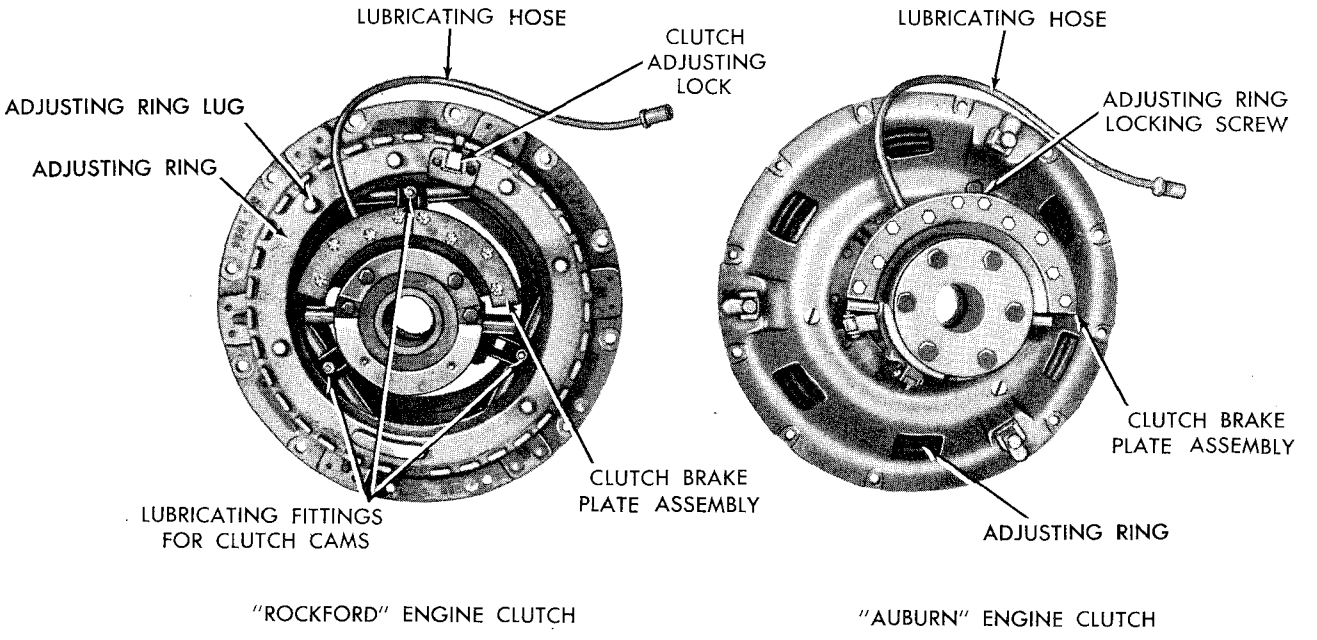

Fig. 1 — Engine Clutch Assemblies

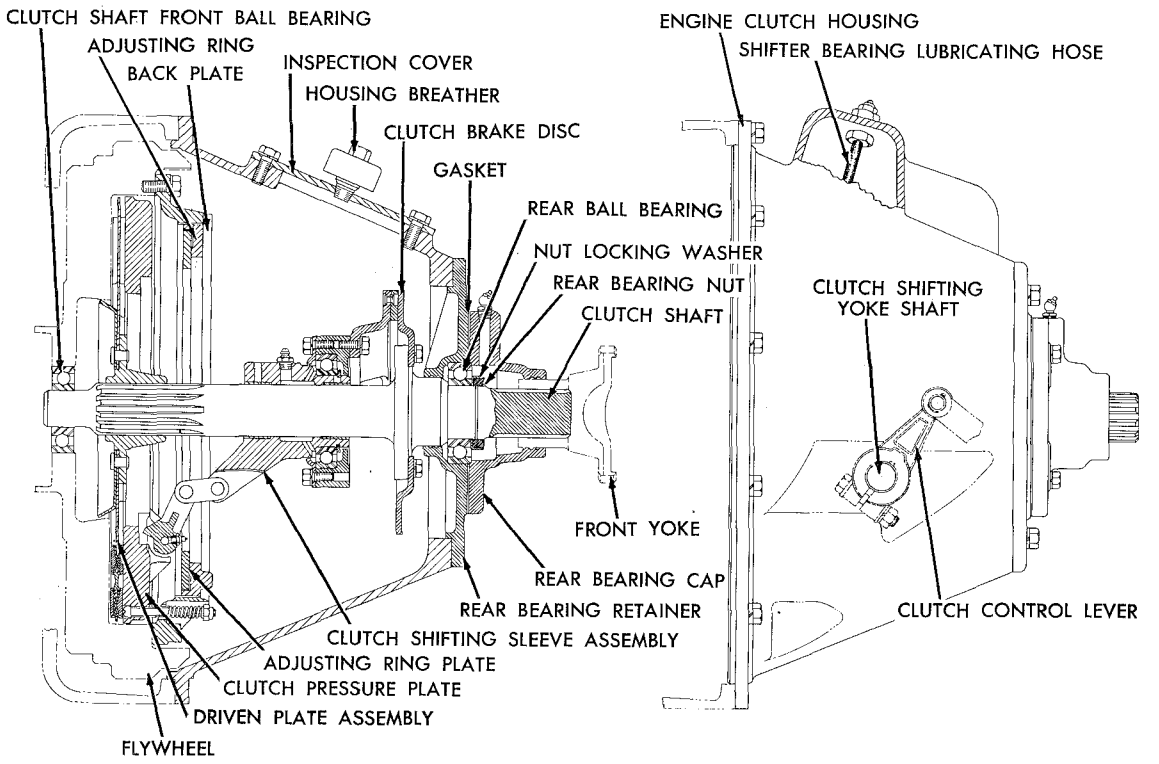

Fig. 2 — Engine Clutch and Housing — Sectional View ("Rockford" Clutch)

operate the tractor when the pull on the clutch operating lever is less than 15 pounds.

Frequent adjustments may be an indication that the facings on the driven plate are worn excessively and the driven plate must be replaced. The driven plate and facings are serviced as an assembly and can not be purchased separately.

IMPORTANT: *SINCE MOST CLUTCH FAILURES*

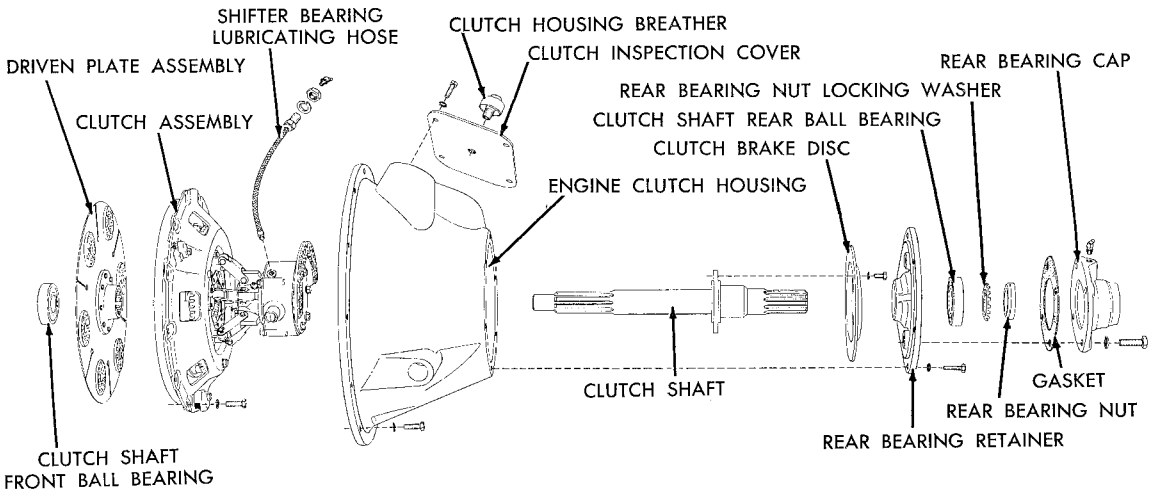

Fig. 3 — Engine Clutch and Housing ("Auburn" Clutch)

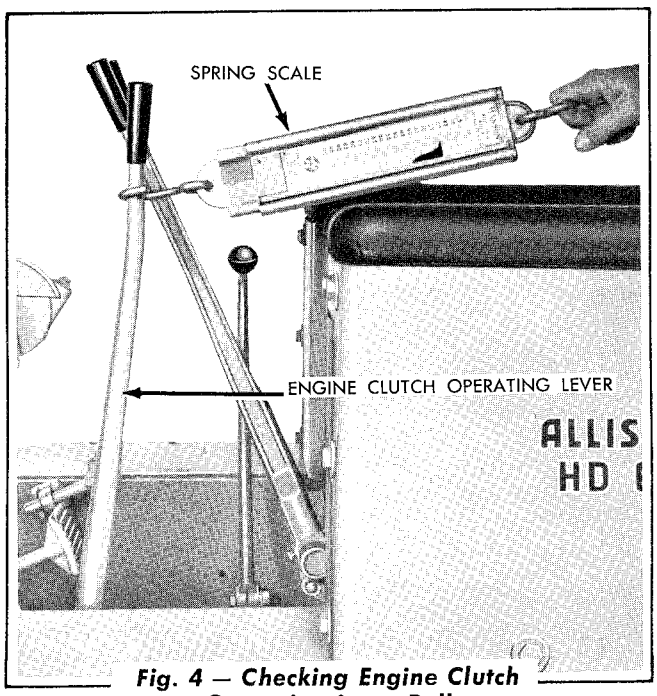

Fig. 4 — Checking Engine Clutch Operating Lever Pull

ARE THE RESULT OF IMPROPER MAINTENANCE, IT IS VERY IMPORTANT THAT THE CLUTCH AND CLUTCH BRAKE ARE KEPT PROPERLY ADJUSTED AT ALL TIMES AND THAT THE CLUTCH COMPONENTS ARE LUBRICATED AS RECOMMENDED. DO NOT SLIP THE CLUTCH EXCESSIVELY WHEN ENGAGING.

C. Engine Clutch Adjustment

Attach a spring scale to the engine clutch operating lever (attach scale just below the hexagon-nut on the lever hand grip as shown in Fig. 4) and weigh the pull required to engage the clutch. When the clutch is properly adjusted, a pull of 25 to 30 pounds (30 pounds maximum) is required on the engine clutch operating lever to engage the clutch (engine stopped). The clutch should engage with a distinct over-center snap.

D. To Adjust the "Rockford" Engine Clutch

1. Remove the floor plate. Remove the clutch inspection cover from the upper right side of the engine clutch housing.

2. With the clutch disengaged, crank the engine with the starter until the clutch adjusting lock (Figs. 1 and 5) may be reached through the inspection hole.

3. Disengage the clutch adjusting lock from the slot in the clutch back plate.

4. Using a hammer and punch, or a suitable pry bar, drive or pry against one of the adjusting ring lugs and turn the adjusting ring clockwise as necessary to tighten the clutch. Turning the adjusting ring 1 or 2 notches is generally sufficient.

5. Attach a spring scale to the clutch operating lever (attach scale just below hand grip) and weigh the pull required to engage the clutch. When the clutch is properly adjusted, a pull of 25 to 30 pounds (30 pounds maximum) is required on the clutch operating lever to engage the clutch (en-

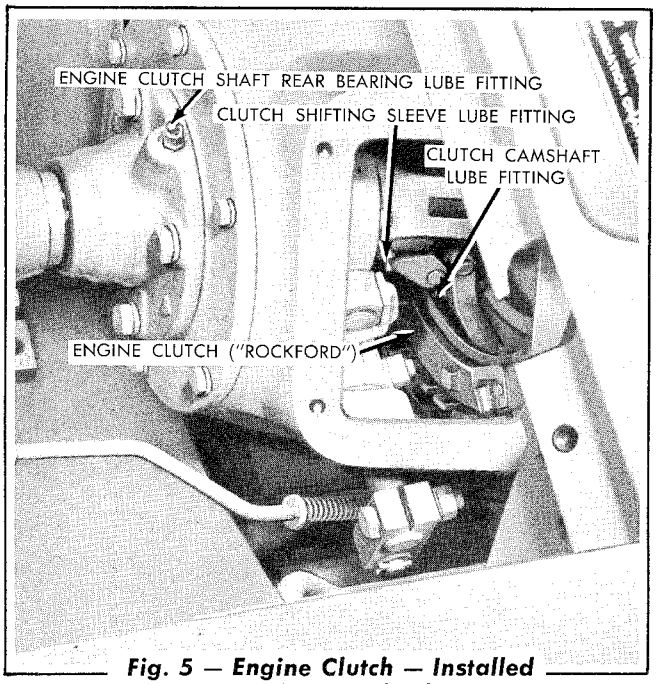

Fig. 5 — Engine Clutch — Installed ("Rockford" Clutch)

gine stopped).

6. Engage the clutch adjusting lock with the nearest slot in the clutch back plate.

7. After each adjustment of the engine clutch, inspect the clutch brake plate facing and replace the facing when badly worn.

8. Clean and install the clutch inspection cover and tighten the capscrews securely. Install the floor plate.

E. To Adjust the "AUBURN" Engine Clutch

1. Remove the floor plate. Remove the clutch inspection cover from the upper right side of the engine clutch housing.

2. Disengage the clutch and crank the engine with the starter until the clutch adjusting ring locking screw (Figs. 1 and 6) may be reached through the inspection hole. NOTE: *The adjusting ring locking screw is the one having a hexagon-head.*

3. Loosen the adjusting ring locking screw (Fig. 6) just enough so that the clutch adjusting ring can be turned. CAUTION: *Do not remove the clutch adjusting ring locking screw. Do not loosen the two slotted head screws.*

4. Tighten the clutch by turning the "notched" clutch adjusting ring clockwise with a screwdriver, or a short pry bar, until the proper adjustment is obtained. Moving the adjusting ring 1 or 2 notches is generally sufficient. Tighten the clutch adjusting ring locking screw securely.

5. Attach a spring scale to the clutch operating lever (just below lever hand grip) and weigh the pull required to engage the clutch. When the clutch is properly adjusted, a pull of 25 to 30 pounds (30 pounds maximum) is required on the operating lever to engage the clutch (engine stopped).

6. Inspect the clutch brake plate facing and replace the facing when badly worn.

7. Clean and install the clutch inspection cover and tighten the capscrews securely. Install the floor plate.

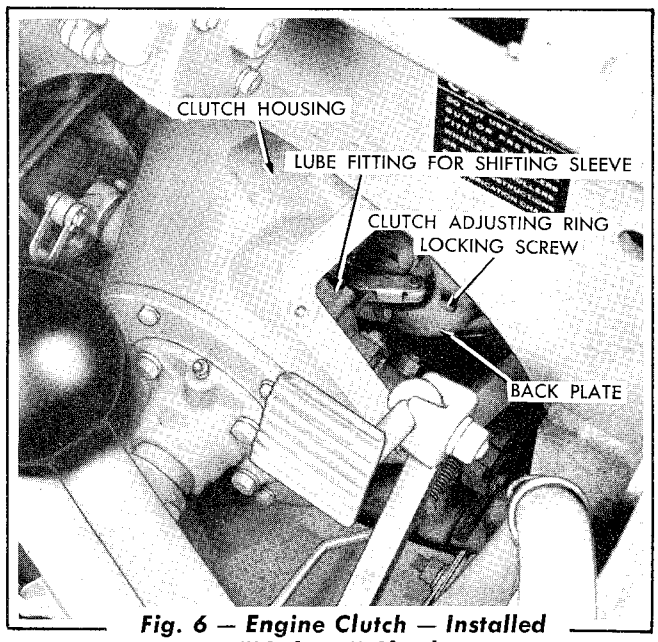

Fig. 6 — Engine Clutch — Installed ("Auburn" Clutch)

F. Engine Clutch Linkage Adjustment

The engine clutch operating rod should be adjusted to provide a clearance of approximately 1" between the front of the engine clutch operating lever (lever in its disengaged position) and the floor plate supporting bracket.

Adjust the engine clutch operating rod by turning

the operating rod yoke, (lengthening or shortening the rod as necessary) to obtain 1" clearance between the front of the engine clutch operating lever and the floor plate supporting bracket.

G. Washing Engine Clutch

Oil leaks or over-lubrication of the clutch components may cause the clutch facings to become coated with oil or grease. This will cause the clutch to slip even though it is properly adjusted. In this event, the clutch must be washed.

Two drain holes are provided in the bottom of the engine flywheel housing; install two ¼" drain plugs (furnished with tractor) in the drain holes and remove the clutch inspection cover. Pour about 1 gallon of cleaning solvent into the clutch housing. Reinstall the clutch inspection cover and operate the engine at low idle speed for approximately 5 minutes with the clutch disengaged. Stop the engine, remove the drain plugs to drain the solvent, and if the solvent is excessively "oily," repeat the washing process using clean solvent.

IMPORTANT: *THOROUGHLY LUBRICATE THE CLUTCH SHIFTING BEARING, SHIFTING SLEEVE, AND IF THE TRACTOR IS EQUIPPED WITH A "ROCKFORD" CLUTCH, LUBRICATE THE CLUTCH CAMS (3 POINTS) AFTER THE CLUTCH HAS BEEN WASHED AS THE LUBRICANT MAY HAVE WASHED OUT OF THESE COMPONENTS DURING THE WASHING PROCESS.*

Operate the tractor with a light load in low gear for a short period until the clutch dries, to prevent slippage due to the presence of solvent on the clutch parts.

H. Engine Clutch Removal

The engine clutch and engine clutch housing can be removed from the tractor without removing the cowl as follows:

1. Remove the gear shift lever and the floor plate.

2. Remove the universal joint (refer to "DRIVE SHAFT UNIVERSAL JOINT," Section X).

3. Remove the six capscrews attaching the clutch shaft rear bearing retainer to the clutch housing. Remove the clutch shaft and clutch shaft rear bearing retainer as an assembly as shown in Fig. 7.

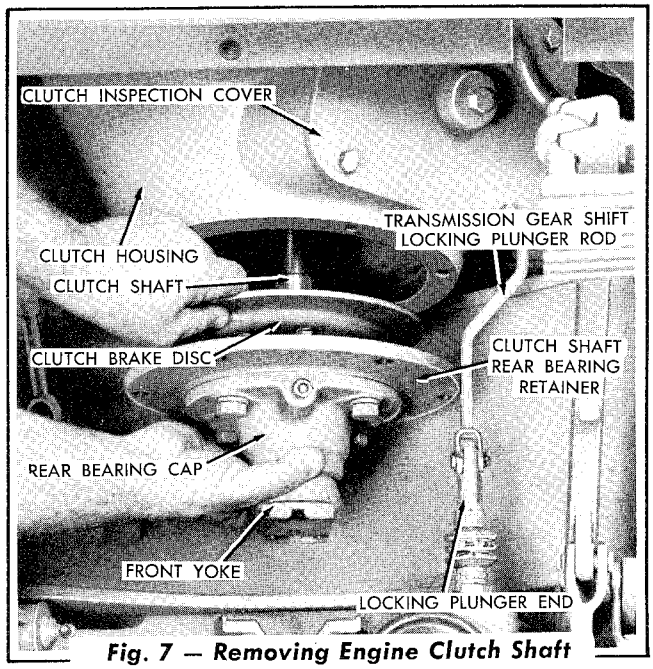

Fig. 7 — Removing Engine Clutch Shaft

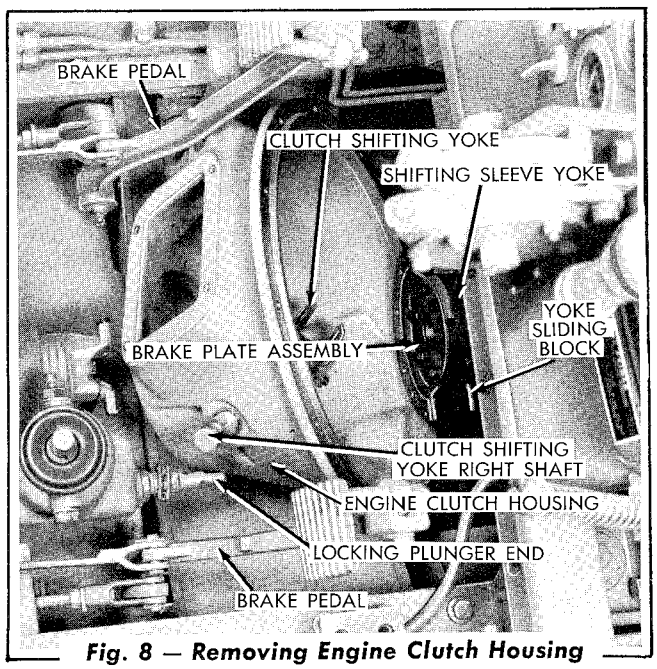

Fig. 8 — Removing Engine Clutch Housing

4. Remove the clutch inspection cover from the clutch housing. Remove the jam nut from the clutch shifter bearing lubricating hose. Push the upper end of the lubricating hose into the clutch housing.

5. Disconnect the front yoke of the clutch operating rod from the clutch control lever by removing the yoke pin. Disconnect the

transmission gear shift locking plunger rod from the locking plunger end (Fig. 7) by removing the yoke pin. Remove the gear shift lock lever from the clutch shifting yoke right shaft.

6. Remove the capscrews and lockwashers attaching the engine clutch housing to the flywheel housing and remove the engine clutch housing. As the clutch housing is removed, the clutch shifting yoke will disengage from the shifting yoke sliding blocks and will be removed with the clutch housing.

7. Remove the capscrews attaching the engine clutch assembly to the flywheel and remove the engine clutch. The clutch driven plate can now be removed. CAUTION: *When removing the clutch assembly, use care and do not drop or damage the clutch driven plate.*

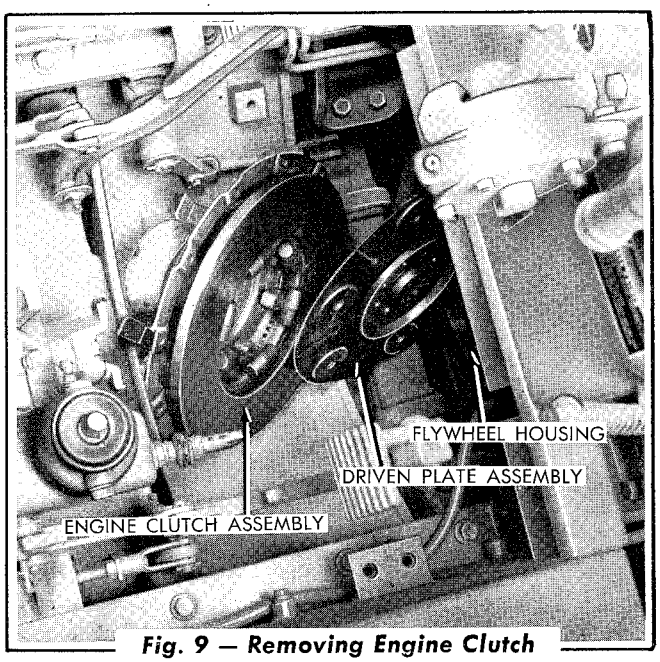

Fig. 9 — Removing Engine Clutch

I. Disassembly of Engine Clutch

1. "ROCKFORD" Clutch

Refer to Fig. 12 and disassemble the clutch as follows:

a. Place the engine clutch assembly on a clean work bench, with the pressure plate side of the clutch downward.

b. Remove the capscrews attaching the clutch brake plate to the shifting sleeve bearing carrier and remove the brake plate.

c. Remove the three connecting link pins attaching the shifting sleeve assembly to the connecting links and remove the shifting sleeve and shifting sleeve bearing carrier as a unit.

d. Remove the shifting sleeve bearing retaining ring from the shifting sleeve and press the shifting sleeve out of the bearing. Remove the bearing retaining plate from the bearing carrier; remove the bearing.

e. Unlock the clutch adjusting ring and turn the adjusting ring out of the back plate. Remove the adjusting ring plate from the back plate.

f. Remove the nuts from the three retracting spring screws and remove the retracting springs. Remove the back plate from the pressure plate.

g. Remove the connecting link pins from the camshafts and connecting links and remove the connecting links.

h. Remove the screws attaching the cam blocks to the pressure plate and remove the cam blocks and the camshafts. Remove the three retracting spring screws.

i. Remove the rear bearing cap from the clutch shaft rear bearing retainer (Fig. 3). Unlock and remove the rear bearing nut and locking washer. Drive or press the clutch shaft out of the rear ball bearing and rear bearing retainer.

j. Remove the clutch shaft rear ball bearing from the rear bearing retainer.

2. "AUBURN" Clutch

Refer to Fig. 13 and disassemble the clutch as follows:

a. Place the engine clutch on a clean work bench, with the pressure plate side of the clutch downward. Remove

the capscrews holding the pressure plate retracting springs and remove the retracting spring retainers and retracting springs. Remove the pressure plate and pressure ring as a unit.

b. Remove the capscrews, lockwashers, and guiding spacers attaching the pressure ring to the pressure plate. Remove the pressure ring from the pressure plate. Remove the pressure springs and the pressure spring cups.

c. Remove the pins connecting the actuating lever links to the actuating levers.

d. Remove the adjusting ring locking screw and the adjusting ring locking plate. Remove the two adjusting ring retaining screws and the retaining screw spacers, then remove the adjusting ring from the back plate.

e. Remove the pins attaching the actuating lever links to the shifting sleeve.

f. Remove the capscrews attaching the grease shield and the clutch brake plate to the shifting sleeve yoke and remove the shield and the brake plate.

g. Remove the capscrews attaching the bearing retainer to the front of the shifting sleeve yoke. Press the shifting sleeve and the shifting sleeve ball bearing out of the shifting sleeve yoke.

h. Remove the shifting sleeve bearing locking ring from the shifting sleeve and remove the bearing, bearing retainer, and the sealing ring (felt).

i. Remove the rear bearing cap from the clutch shaft rear bearing retainer (Fig. 3). Unlock and remove the rear bearing nut and locking washer. Drive or press the clutch shaft out of the rear ball bearing and rear bearing retainer.

j. Remove the clutch shaft rear ball bearing from the rear bearing retainer.

J. Engine Clutch Inspection and Repair

1. Thoroughly wash all clutch components and inspect for worn or damaged parts.

2. Inspect the friction discs of the driven plate assembly for wear and looseness. The specified thickness (including facings) of the driven plate for the "AUBURN" clutch when new is .451" to .475"; the specified thickness of the driven plate for the "ROCKFORD" clutch when new is .448" to .478". Measure the thickness of the clutch driven plate being inspected and if it is worn to a thickness of .326" or less, a new driven plate assembly must be installed. Check the splines in the hub of the driven plate for wear. NOTE: *The above driven plates are interchangeable and may be used with either clutch.*

3. Inspect the face of the pressure plate for roughness, heat cracks, and warpage. If the face of the pressure plate is in a rough condition, it may be machined smooth; replace the pressure plate if more than 1/16" stock must be removed.

4. Inspect the actuating lever link pins and actuating levers for wear. Inspect the link pin holes in the clutch shifting sleeve, actuating lever links, and the actuating levers for wear or elongation and replace if necessary.

5. On the "ROCKFORD" clutch, inspect the camshafts and the rollers in the camshafts for wear and make certain that the rollers are free to rotate. Also check to see that the lubricant when applied to the lubricating fitting in each camshaft emerges from around the camshaft rollers. Inspect the six camshaft blocks, attached to the back of the pressure plate, for wear and replace if necessary. NOTE: *If it is necessary to replace any of the camshaft blocks, it is recommended that all six blocks be replaced at the same time.*

6. Inspect the bushings in the shifting sleeve for wear and roughness and replace the

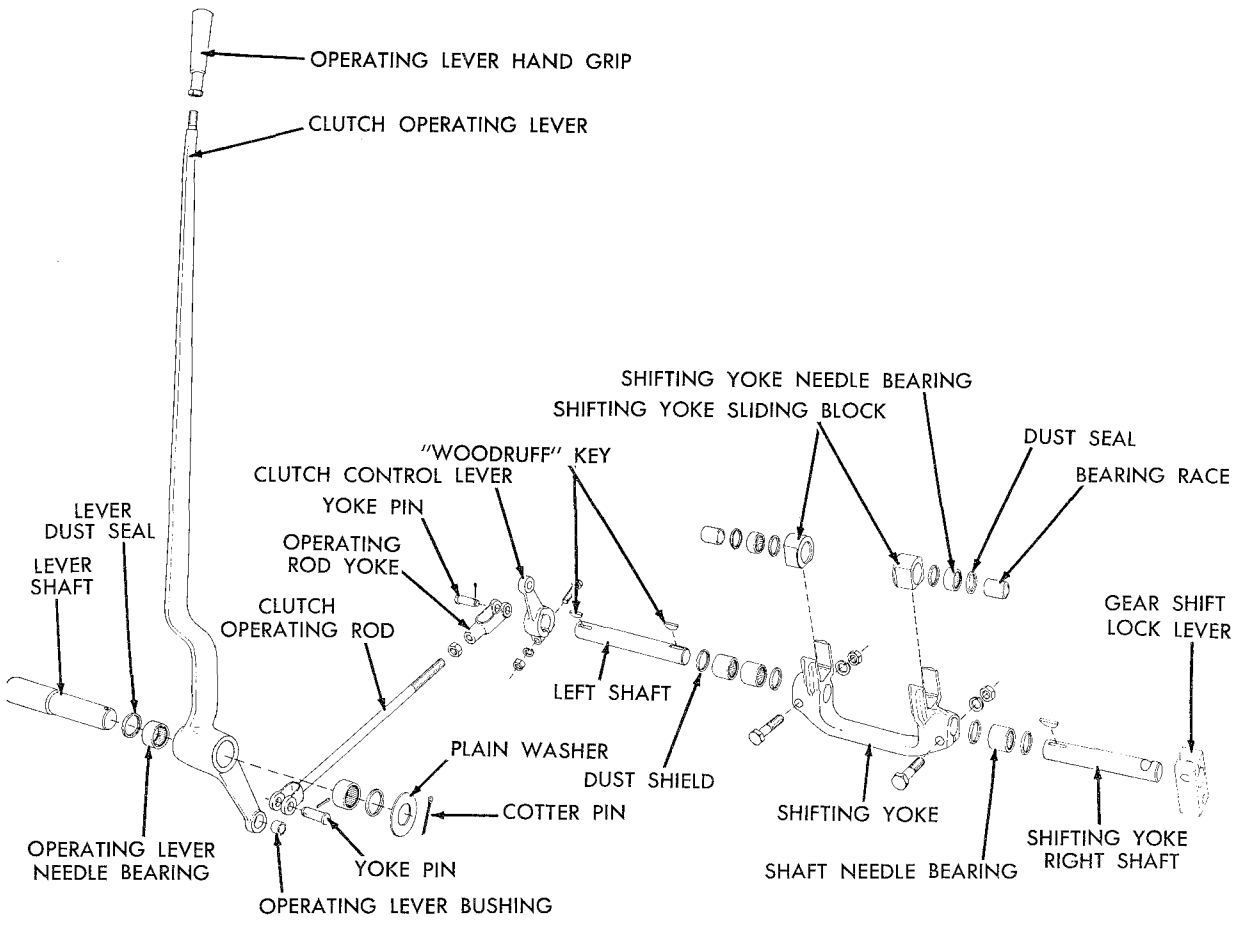

Fig. 10 — Engine Clutch Shifting Yoke Details

sleeve if necessary. NOTE: *Replaceable steel bushings are provided in the link pin holes in the shifting sleeve for the "AUBURN" clutch.*

7. Check the back plate for cracks and replace if necessary.

8. Inspect the shifting sleeve ball bearing for wear and roughness. Replace the bearing if it is worn excessively or if it does not turn smoothly when rotated by hand.

9. Remove the two shifting yoke sliding blocks. Inspect the shifting yoke needle bearings, needle bearing races, dust seals, and the shifting yoke for wear and damage and replace the necessary parts.

10. Inspect all springs for breakage and replace if necessary. *NOTE: The free length of the pressure springs for the "AUBURN" clutch is approximately 1.074" when new.*

11. Inspect the face of the flywheel and make certain the surface is flat and smooth. If the face is scored or "heat checked," the flywheel may be machined smooth; replace the flywheel if for than 1/16" stock must be removed.

12. Inspect the clutch shaft front ball bearing (pilot bearing) for wear and lubrication. If the bearing shows signs of improper lubrication, install a new oiling wick assembly in position in the rear of the crankshaft (refer to "CRANKSHAFT, CRANKSHAFT PULLEY, FLYWHEEL, AND MAIN BEARINGS," Section VIII).

13. Inspect the clutch shaft rear ball bearing for wear and roughness. Replace the bearing if it is worn excessively or if it does not turn smoothly when rotated by hand.

14. Inspect the clutch shaft. If the shaft is excessively worn at the location of the clutch shifting sleeve, or if the splines of the shaft show excessive wear, the shaft must be replaced.

15. Inspect the lubricating hose for the clutch shifting sleeve bearing and replace the hose if necessary.

16. Inspect the clutch brake assembly. If the brake plate facing is worn to the extent that the rivets may score the clutch brake disc, the facing must be replaced. Inspect the clutch brake disc for wear and scoring. Slight scoring or uneven wear can be removed by machining, however, if the disc is worn or scored excessively, replacement of the disc is necessary.

K. Assembly of Engine Clutch

1. "ROCKFORD" Clutch

Refer to Figs. 1 and 12 and assemble the engine clutch by direct reversal of the disassembly procedure.

IMPORTANT: *When installing the pins to connect the connecting links to the clutch camshafts and the shifting sleeve, install the pins so that the heads of the pins are to the left when the pins are located at the top and viewed from the rear of the clutch.*

When installing the three retracting spring nuts, turn the nuts onto the retracting spring screws until the threaded ends of the screws protrude approximately 1/32". Lubricate the clutch camshafts, clutch shifting sleeve, shifting sleeve ball bearing, and clutch shaft rear bearing thoroughly when assembly of clutch is completed. Lubricate the connecting link pins sparingly.

2. "AUBURN" Clutch

Refer to Figs. 1 and 13 and assemble the engine clutch by direct reversal of the disassembly procedure.

IMPORTANT:

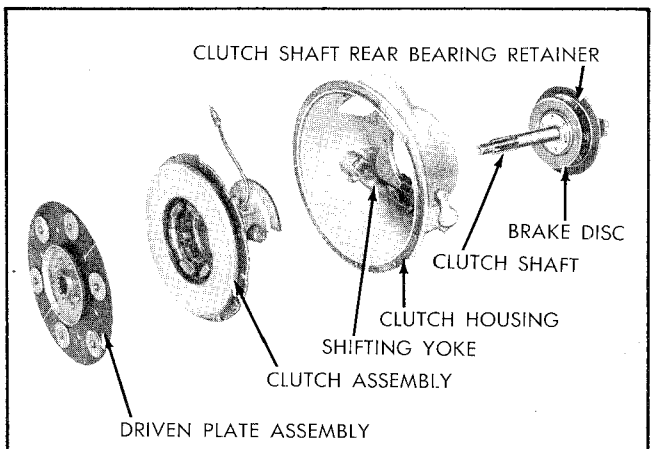

Fig. 11 — Engine Clutch Sub-Assemblies in Relative Position

a. When assembling the pressure ring to the pressure plate, position the pressure ring so that the hole marked "X" is aligned with the tapped hole in the pressure plate which is on the same center line as one of the driving lugs. This line-up assures that the actuating levers will be located at the lower end of the cam rails on the pressure ring, allowing maximum adjustment.

b. When installing the pins used to connect the actuating levers to the adjusting ring, make certain that the pins are installed so that the heads are to the right when the pins are located at the top of the clutch and viewed from the rear. When installing the pins used to connect the actuating lever links, make certain that the pins are installed so that the heads are to the left when the pins are located at the top of the clutch and viewed from the rear.

c. When installing the shifting sleeve ball bearing in position in the shifting sleeve yoke, make certain that the shielded side of the bearing is toward the rear. Lubricate the clutch linkage sparingly when assembling the clutch.

L. Inspection and Installation of Clutch Shifting Yoke

1. With the engine clutch removed, place each shifting yoke sliding block in position in the clutch shifting yoke. If there is exces-

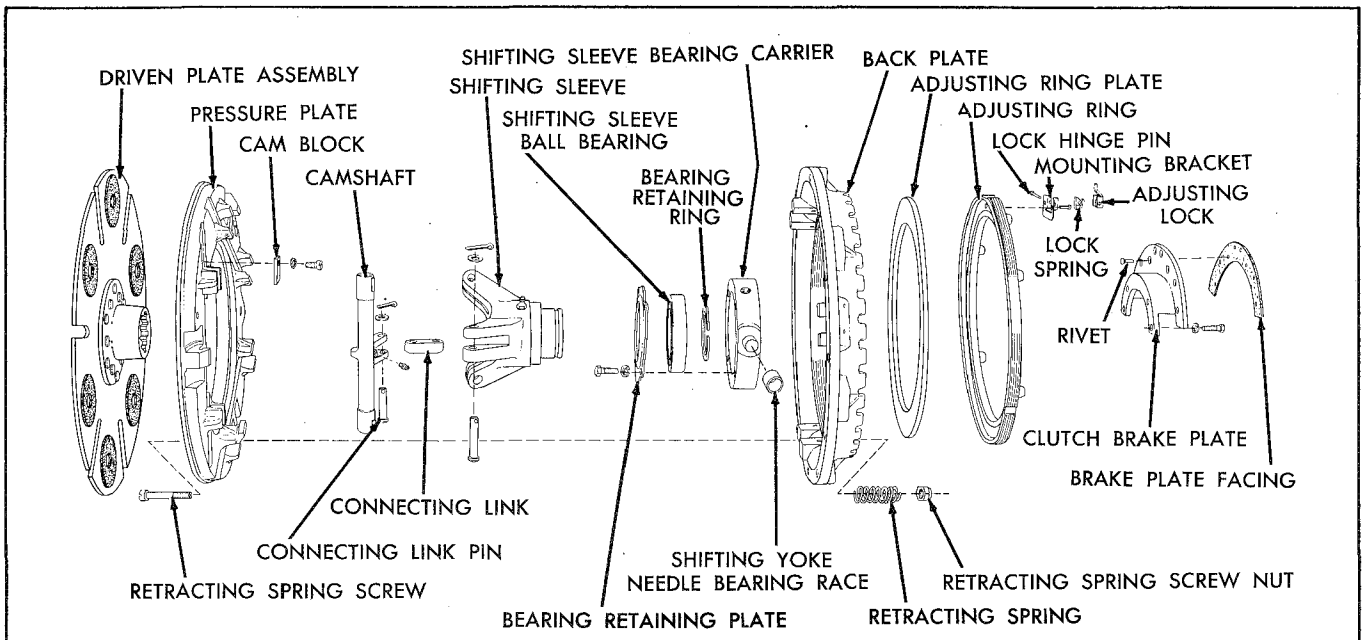

Fig. 12 — Engine Clutch Details "Rockford"

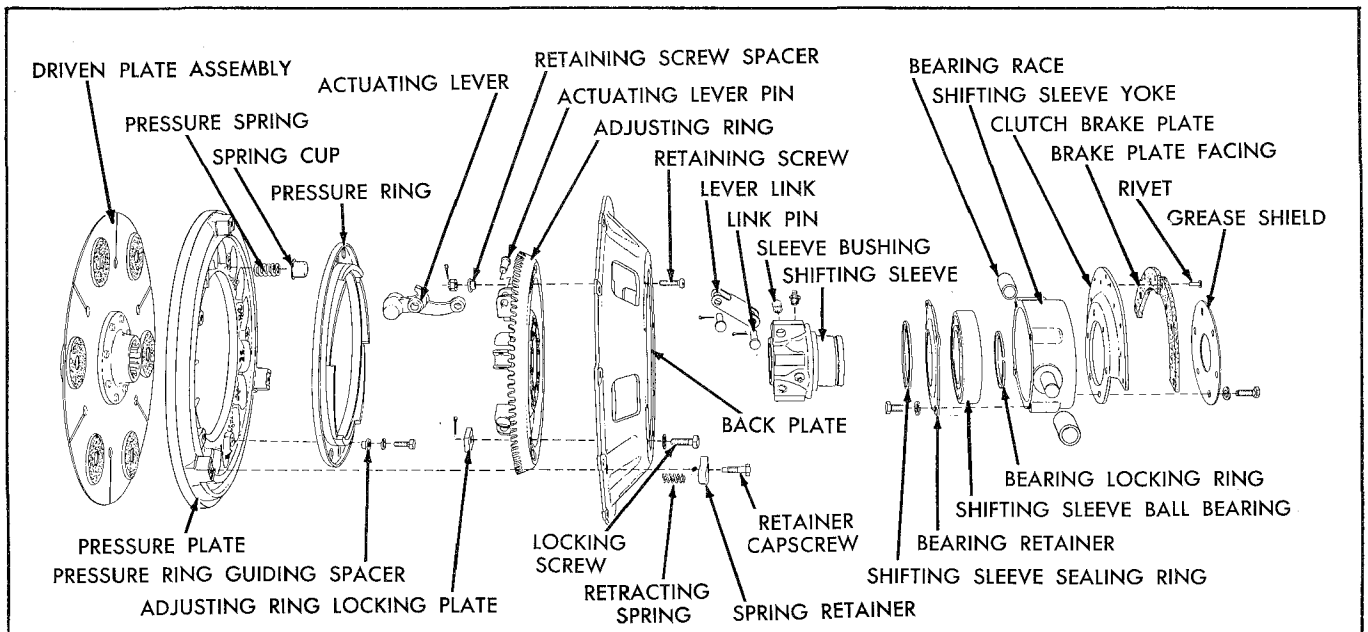

Fig. 13 — Engine Clutch Details "Auburn"

sive looseness between the parts due to wear, replace the yoke and the shifting yoke sliding blocks.

2. Refer to Fig. 10 and replace the clutch shifting yoke as follows:

   a. Remove the capscrew, nut, and lockwasher clamping the clutch control lever to the clutch shifting yoke left shaft. Spread the slot in the lever, using a broad faced chisel or similar tool, and remove the lever and "WOODRUFF" key from the shaft.

   b. Remove the two capscrews, nuts, and lockwashers clamping the clutch shifting yoke to the shifting yoke shafts and spread the slots in the shifting yoke to free the yoke on the shafts.

   c. Drive the shifting yoke shafts in (toward the center of the shifting yoke) until the "WOODRUFF" key in the inner end of each shaft can be removed. Remove the "WOODRUFF" keys.

d. Pull or drive the clutch shifting yoke shafts out of the shifting yoke (toward the outside) and remove the shifting yoke shafts and shifting yoke from the clutch housing.

e. Inspect the shifting yoke shaft needle bearings (two on the left shaft and one on the right) and dust seals (two on each shaft) in the engine clutch housing and replace any worn or damaged parts.

f. Pack the shifting yoke shaft needle bearings with grease. Install the longer shaft into position in the left side of the clutch housing. Install the shorter shaft into position in the right side of the clutch housing.

g. Hold the clutch shifting yoke in position in the clutch housing and drive the shifting yoke shafts through the shifting yoke far enough so that a "WOODRUFF" key can be installed in the inner end of each shaft. Install the "WOODRUFF" keys.

h. Drive the clutch shifting yoke shafts back (toward the outside) until the ends of the shafts are flush with the inner faces of the clutch shifting yoke. Install the capscrews, lockwashers, and nuts used to clamp the shifting yoke to each shaft and tighten the nuts securely.

i. Install the "WOODRUFF" key in the outer end of the clutch shifting yoke left shaft and position the clutch control lever on the shaft. Install the capscrew, lockwasher, and nut used to clamp the clutch control lever to the shaft and tighten the nut securely.

M. Installation of Engine Clutch

1. Make certain that the face of the flywheel is clean. Place the clutch driven plate assembly in position against the flywheel, making certain that the oil slinger faces the flywheel.

2. Place the engine clutch assembly in position on the flywheel. Start all the attaching capscrews, with lockwashers, and tighten the capscrews evenly so that the clutch back plate enters the recess in the flywheel. NOTE: *The "ROCKFORD" engine clutch is attached to the flywheel with 3/8" NC x 1 1/4" capscrews. The "AUBURN" engine clutch is attached to the flywheel with 3/8" NC x 1" capscrews. Make certain the proper length capscrews are used when installing the engine clutch.*

3. Install two 3/8" x 6" guide studs in the flywheel housing to align and to hold the clutch housing when the clutch housing is being installed. Remove the clutch brake plate assembly from the clutch assembly before installing the clutch housing; with the clutch brake plate assembly removed, the shifting yoke sliding blocks can be lined up and started into position in the shifting yoke more easily.

4. Pack the needle bearings in the shifting yoke sliding blocks with grease and place the blocks in position on the shifting sleeve yoke making certain the bearing dust seals are in good condition and properly installed. Start the engine clutch housing in position on the guide studs, start the sliding blocks in position in the shifting yoke, then push the clutch housing forward against the flywheel housing. Install and tighten the clutch housing attaching capscrews. Reinstall the clutch brake plate assembly in position on the clutch assembly.

5. Turn the clutch adjusting ring counterclockwise as necessary so that the clutch driven plate is free. Install the clutch shaft assembly (complete with its components) in the clutch housing and the clutch, inserting the front end of the clutch shaft through the shifting sleeve until the front end of the shaft engages in the splines of the driven plate hub. Tap lightly on the rear end of the shaft to drive the shaft into position in the clutch shaft front bearing (pilot bearing). Position the clutch shaft rear bearing retainer so that the lubricating fitting is to

the top, then install the attaching capscrews to secure the rear bearing retainer to the clutch housing.

6. Reach through the clutch inspection cover opening in the clutch housing and insert the upper end of the clutch shifter bearing lubricating hose into the hole in the clutch housing. Install the jam nut on the end of the lubricating hose to hold the hose in position.

7. Install the gear shift lock lever in position on the outer end of the clutch shifting yoke right shaft and secure the lever to the shaft with a capscrew, lockwasher, and nut. Install the yoke pin to connect the transmission gear shift locking plunger rod to the locking plunger end (Fig. 7). Connect the front yoke of the clutch operating rod to the clutch control lever, located on the outer end of the clutch shifting yoke left shaft.

8. Install the universal joint (refer to "DRIVE SHAFT UNIVERSAL JOINT," Section X).

9. Adjust the engine clutch (refer to "ENGINE CLUTCH ADJUSTMENT" in this Section).

10. Make certain that the clutch and clutch shaft components are lubricated thoroughly before operating the tractor.

11. Install the clutch inspection cover, floor plate, and gear shift lever.

2. CLUTCH BRAKE

A. Description

The clutch brake is designed to stop the rotation of the engine clutch shaft when the engine clutch is disengaged; stopping the rotation of the clutch shaft permits easier shifting of the transmission gears. The clutch brake is applied by pushing forward on the engine clutch operating lever after the clutch has been disengaged.

The clutch brake plate is attached to the rear of the shifting sleeve yoke. The brake plate has a friction material facing that contacts the clutch brake disc (attached to the flange on the clutch shaft) when the brake is applied. The brake assembly is not adjustable.

B. Service Inspection and Repair

Keep the engine clutch operating rod properly adjusted to provide a clearance of 1" between the front of the engine clutch operating lever (lever in its disengaged position) and the floor plate supporting bracket. If the rod is not adjusted properly, the front of the clutch operating lever, when in the disengaged position, will strike the floor plate supporting bracket and will not allow the clutch brake plate on the shifting sleeve yoke to move back far enough to contact the clutch brake disc on the clutch shaft.

In the event the clutch brake does not function properly when shifting gears, remove the clutch inspection cover from the clutch housing and inspect the clutch brake assembly. Whenever the facing on the clutch brake plate is worn down to the rivets, the facing must be replaced. Inspect the clutch brake disc for wear and scoring; slight scoring or uneven wear can be removed by machining, however, if the disc is worn or scored excessively, it must be replaced.

C. Removal of Engine Clutch Brake Plate Assembly

1. Remove the gear shift lever and the floor plate.

2. Remove the universal joint (refer to "DRIVE SHAFT UNIVERSAL JOINT," Section X).

3. Engage the engine clutch. Remove the capscrews attaching the clutch shaft rear bearing retainer to the clutch housing. Pull back on the clutch shaft (complete with its components and remove the assembly from the housing.

4. Remove the capscrews attaching the clutch brake plate assembly to the engine clutch assembly and remove the plate assembly.

D. Installation of Engine Clutch Brake Plate Assembly

The clutch brake plate assembly may be installed by a direct reversal of the removal procedure. When installing the clutch shaft assembly and universal joint assembly, refer to "INSTALLATION OF ENGINE CLUTCH" in this Section. After installation of the clutch brake plate assembly is complete, adjust the engine clutch (refer to "ENGINE CLUTCH ADJUSTMENT" in this Section).