

## Group 15

# STEERING CLUTCHES AND BRAKES

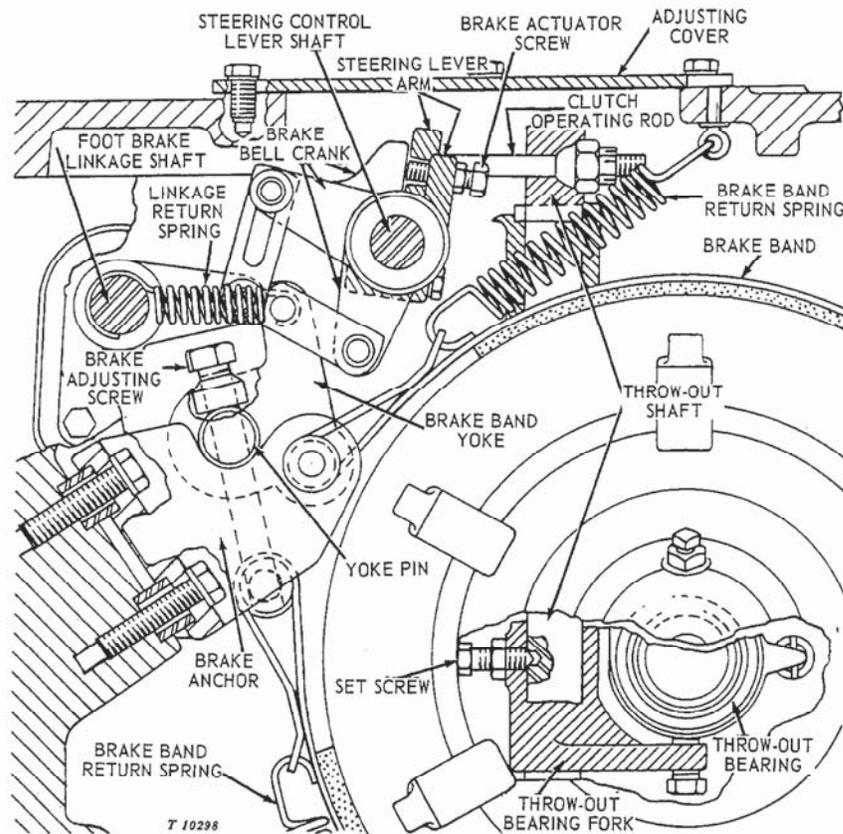


Fig. 140-15-1—Cutaway View of Steering Clutch and Brake Mechanism

### DESCRIPTION

The combination clutch and brake mechanism on each rear axle engages or disengages the flow of power to each rear axle by means of individual steering levers. In addition, a brake pedal is used to stop tractor motion on both axles by means of a contracting brake band device. The relationship of steering clutch and brake linkage is shown above in Fig. 150-15-1.

### TROUBLE SHOOTING

To trouble shoot the steering clutches for various difficulties, refer to the charts in Section 210, Group 20 of this manual.

### REMOVAL AND DISASSEMBLY

Remove final drive housing from tractor as outlined in Section 20, Group 15.

*NOTE: If steering clutch housing does not require service, you need not remove the final drive housing from the tractor. In this case, you can service the steering clutches as follows: Split track and remove drive sprocket and final drive pinion shaft (see Section 20, Group 20). If this method is used, be sure to reset final drive bearing preload before reinstalling steering clutches. To do this, install shaft and record a measurable amount of end play at end of shaft. Then remove pinion shaft and install steering clutch. Before reinstalling pinion shaft, deduct from shim pack the thickness of shims equal to end play reading PLUS an extra 0.002 inch to give the desired preload of 0.000 to 0.003 inch to the pinion shaft.*

To disassemble the steering clutches, refer to procedure in Section 20, Group 20.

## INSPECTION AND REPAIR

## CLUTCH THROW-OUT BEARING AND SHAFT

Examine throw-out bearing (Fig. 140-15-2) for binding, excessive looseness, or evidence of heat. Replace worn or defective bearing. This is a sealed, factory lubricated bearing and should not be washed in solvent. Press a new throw-out bearing onto bearing carrier so that the highly polished surface of the bearing faces away from the long part of the carrier casting.

**CAUTION:** Rotate bearing when installing it on carrier to prevent internal damage to the bearing.

See that carrier rides freely on sleeve without any binding. Replace excessively worn links or pins.

Check clutch throw-out shaft (Fig. 140-15-2) for excessive wear.

## CLUTCH PACK AND BRAKE DRUM

Remove pressure plate (Fig. 140-15-3) and inspect steel plates and composition facings (Fig. 150-15-2) for burrs, warpage, or excessive wear. Excessive wear can be detected by comparing the thickness of contact areas with that of non-contact areas. All plates and facings should be flat and free from defects of any kind. DO NOT wash composition facings in any type of solution

as it will tend to glaze them. Examine brake drum for galls or scores. Remove any defects which may cause the brake to drag or operate improperly.

Refer to Group 20 of this Section for inspection and repair of the steering clutch pressure plate.

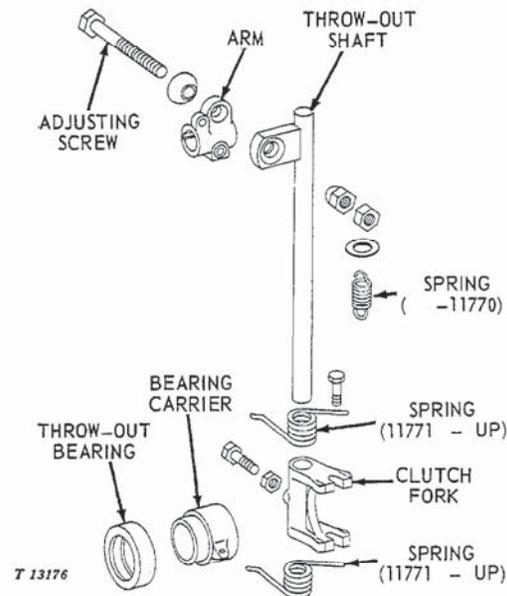


Fig. 140-15-2—Exploded View of Clutch Throw-Out Shaft and Bearing Assembly

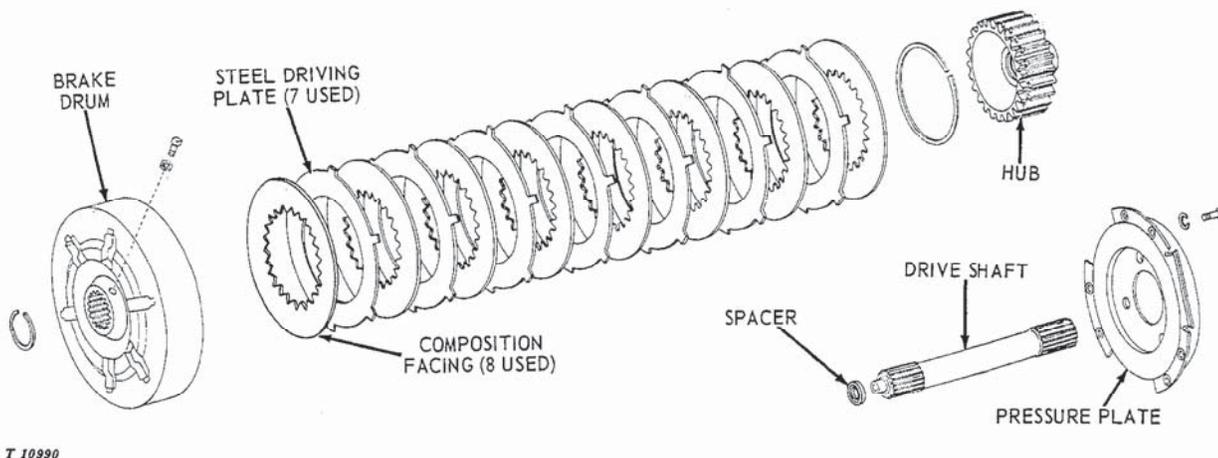


Fig. 140-15-3—Exploded View of Steering Clutch

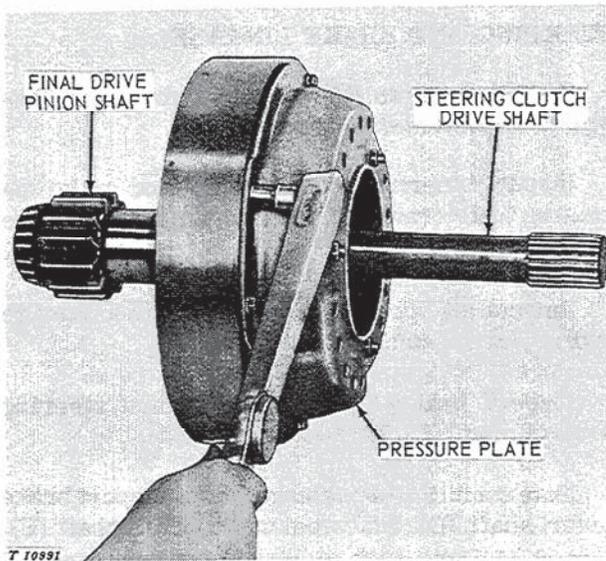


Fig. 140-15-4—Installing Pressure Plate

To assemble steering clutch, first align hub (Fig. 140-15-3) with brake drum by installing final drive pinion shaft with pilot bearing and steering clutch drive shaft (Fig. 140-15-4).

With shafts in place, install steel driving plates and composition facings in hub as follows:

Install one composition facing against the brake drum. With snap ring in place on hub; alternately install seven steel plates and seven composition facings on hub.

Install pressure plate and tighten cap screws to 21 ft-lbs (Fig. 140-15-4). Remove both shafts.

### STEERING CLUTCH DRIVE SHAFT

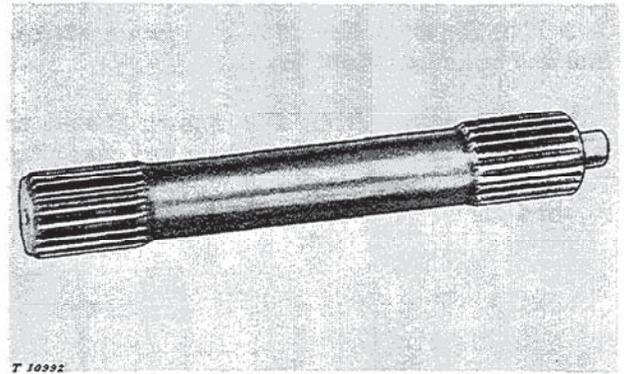


Fig. 140-15-5—Steering Clutch Drive Shaft

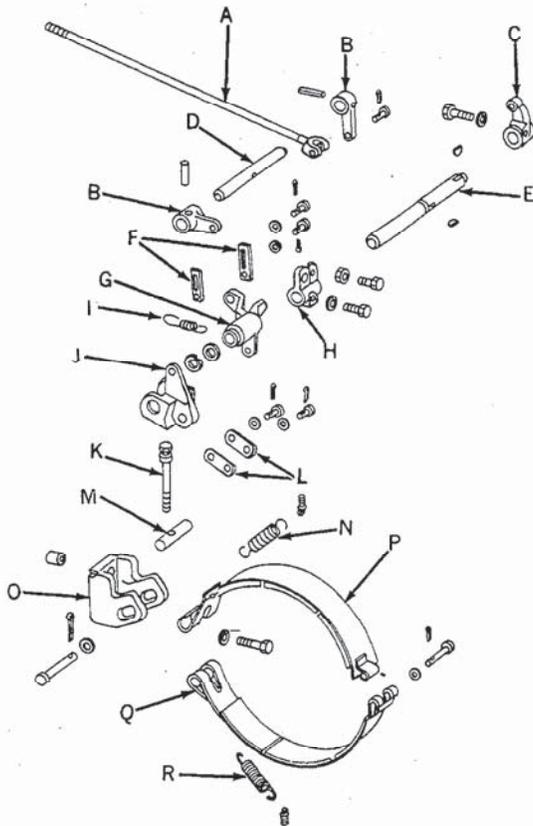
Examine splines on shaft for damage or abnormal wear (Fig. 140-15-5). Clutch hub is not intended to be a tight fit on clutch drive shaft. Do not be concerned if it is slightly loose.

*NOTE: If T37091 Shaft is used to replace old drive shaft, do not use spacer in assembly (Fig. 140-15-3).*

## BRAKE AND RELATED PARTS

*NOTE: Refer to Fig. 140-15-6 for identification and relationship of parts.*

Replace brake lining if it is torn, glazed, or oil-soaked. Inspect brake linkage and yoke (Fig. 140-15-6) and replace all damaged or excessively worn parts.



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- |                              |                                |
|------------------------------|--------------------------------|
| A - Brake Rod                | J - Brake Band Yoke            |
| B - Brake Lever              | K - Brake Band Adjusting Screw |
| C - Steering Control Arm     | L - Links                      |
| D - Brake Lever Shaft        | M - Yoke Pin                   |
| E - Steering Control Shaft   | N - Upper Spring               |
| F - Slotted Links            | O - Brake Anchor               |
| G - Bell Crank               | P - Upper Brake Band           |
| H - Steering Lever Shaft Arm | Q - Lower Brake Band           |
| I - Spring                   | R - Lower Spring               |

Fig. 140-15-6—Exploded View of Brake Bands and Steering Control

## STEERING AND BRAKE LINKAGE

*NOTE: Refer to Fig. 140-15-6 for identification and relationship of parts.*

Inspect steering lever arm (H) and brake operating bell crank (G) for damage or excessive wear.

Inspect all springs, links and pins for damage and replace if necessary.

Inspect brake lever shaft (D) and steering control shaft (E) for excessive wear.

Note condition of bushings which support brake lever shaft (D) and steering control shaft (E). Use a suitable tool to install new bushings if replacement is necessary.

When assembling spring (I) be sure open sides of spring hooks are up.

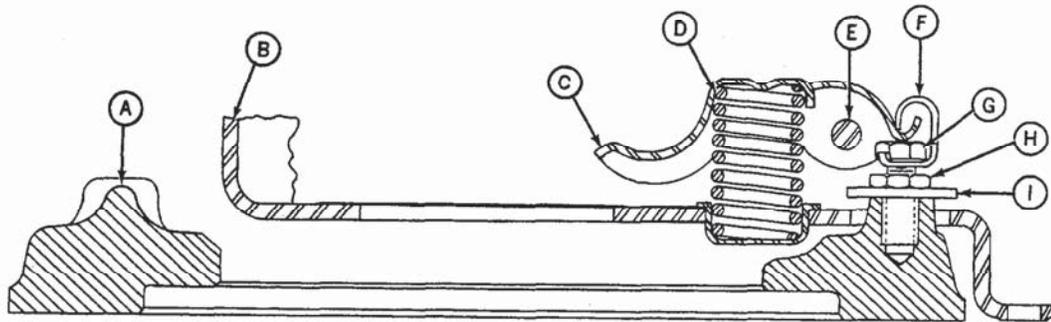
## INSTALLATION

Refer to Section 20, Group 20, for instructions on installing final drive assembly on tractor.

Install final drives (if removed). Refer to procedure in Section 20, Group 15.

## Group 20

# STEERING CLUTCH PRESSURE PLATE



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- |                     |                              |
|---------------------|------------------------------|
| A - Pressure Plate  | F - Return Clip              |
| B - Bracket         | G - Adjusting Screw          |
| C - Release Lever   | H - Adjusting Screw Lock Nut |
| D - Pressure Spring | I - Adjusting Screw Washer   |
| E - Pivot Pin       |                              |

Fig. 140-20-1—Sectional View of Steering Clutch Pressure Plate

### DISASSEMBLY

Refer to Fig. 140-20-1 for identification of parts.

Place the pressure plate assembly on a brake drum, pressure plate down, and centrally located. Depress the inner ends of the release levers (C) as far as possible without forcing against bracket (B). This can be done by placing the brake drum on a hydraulic press and applying the load through a steel plate representing the clutch release bearing.

Remove return clips (F). With an open end wrench, loosen lock nuts (H). Back out the three adjusting screws (G) from the pressure plate.

Release assembly by gradually releasing load on press. The clutch may then be disassembled for inspection. To separate release levers (C) from bracket (B), first grind off peened ends of pivot pins (E).

### INSPECTION

Check pressure plate for cracks, warped condition, and excessive wear. Check pressure springs in the assembly for damaged, weak, or rusty coils. Each part should be carefully inspected for wear and replaced if there is any question of its serviceability.

Pressure springs should check 176-194 pounds at a height of 1-11/16 inches. Replace springs if not to specification.

Release levers (C), bracket (B), and pivot pins (E) should be replaced if any wear is found on these parts. Note carefully the condition of return clips (F) and replace as necessary.

**REASSEMBLY**

Assemble release levers (C) to bracket (B) using new pivot pins (E). Peen ends to secure assembly.

Place pressure springs (D) into the spring recesses in the clutch bracket and lever assembly. Assemble bracket, spring, and lever sub-assembly over pressure plate (A) making certain slots in bracket (B) align with pressure plate drive lugs and washers (I) are in position.

*NOTE: Lubriplate driving lugs on pressure plate to insure free clutching action.*

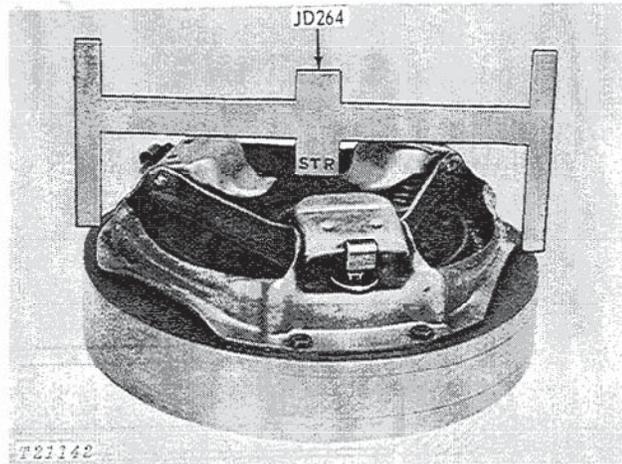
Place this assembly on hydraulic press and apply pressure on the lever (C) directly above the pressure spring (D) while forcing the spring into position in bracket (B).

Assemble return clips (F) under adjusting screws (G) in pressure plate. Make certain return clips are in proper position, and then tighten lock nuts (H).

#### ADJUSTING CLUTCH RELEASE LEVERS (Fig. 140-20-2).

Bolt the pressure plate assembly to the brake drum.

Place "STR" side of JD264 gauge over pressure plate with legs of gauge resting on brake drum (Fig. 140-20-2). The three clutch release levers should be adjusted to just touch the center of the gauge.



Adjust release levers by loosening lock nuts and turning adjusting screws in or out until ends of levers contact gauge. Then tighten lock nuts.

After release levers are adjusted and lock nuts tightened, exercise the release levers several times. Recheck adjustment with gauge and change if necessary. If levers dropped excessively when exercised, this process should be repeated until the setting is permanent.