


REMOVAL

Clutch assemblies may be removed individually, or together. The clutch must be removed to remove the brake band. The following procedure is for removal of one assembly.

1. Raise the tractor to position the tracks so that the cut-out holes in the

drive sprockets are aligned with the sprocket drive pinion shaft covers. Block the tractor so that it cannot move.

2. Remove the operator's seat, seat support and shield. Remove the fuel tank lower mounting bracket, and filler strip on the outside of the clutch cover on the side being serviced.

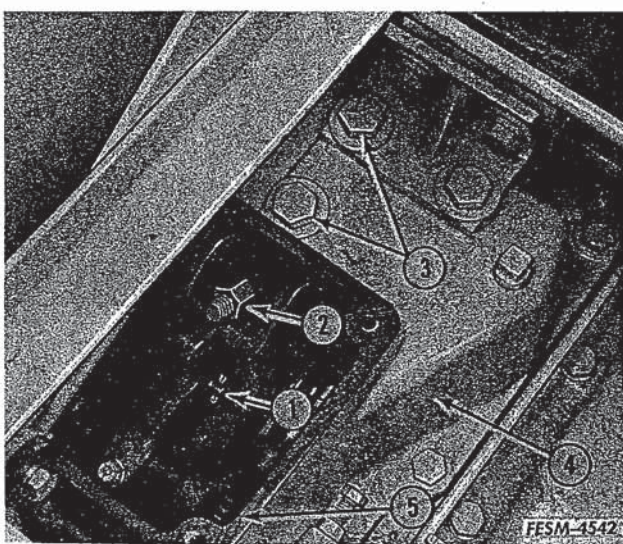
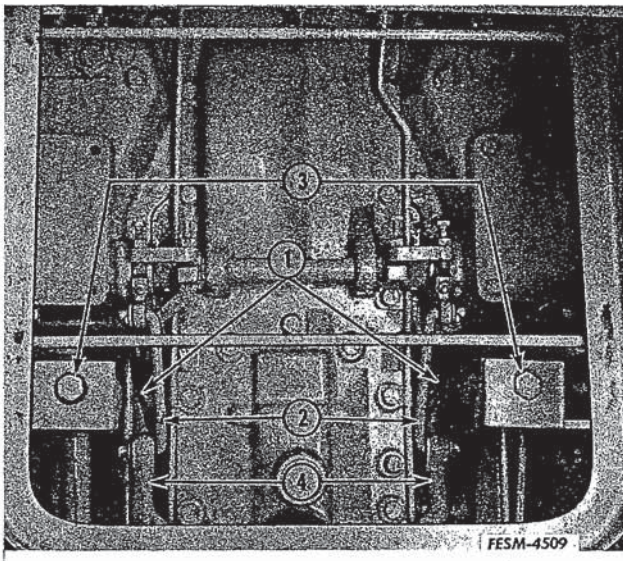
 3. **CAUTION:** Remove the tension from the steering assist spring and disconnect the steering rod.

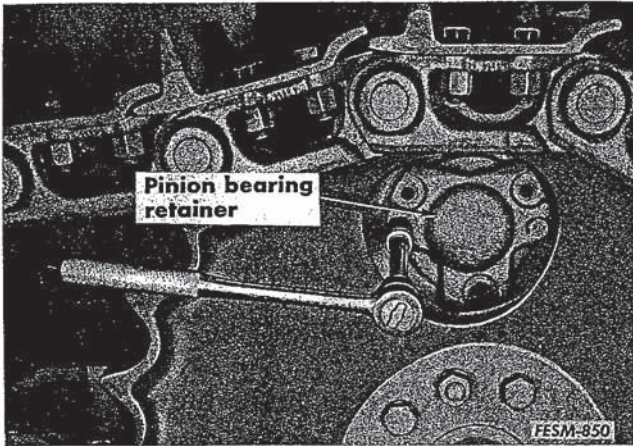
- 1. Pivot bolts
- 2. Steering rods
- 3. Assist spring adjusting bolts
- 4. Steering levers

4. Remove the clutch cover inspection plate. Remove the brake band clevis pin. Tighten the brake band adjusting nut to secure the band to the brake drum.

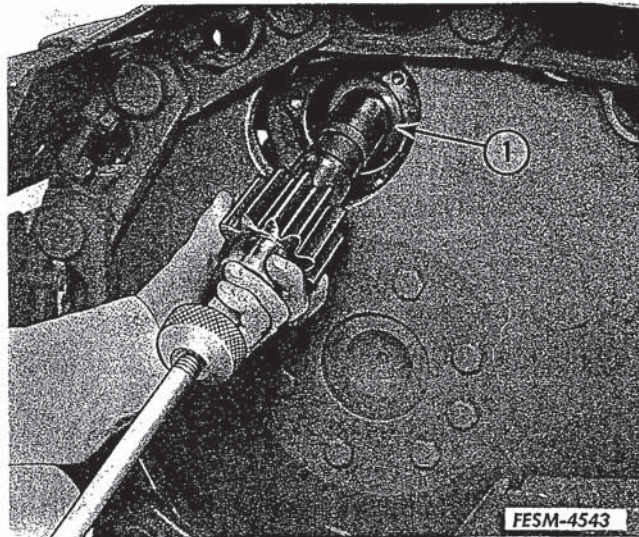
5. Remove the bolts securing the brake band anchor bracket to the cover.

- 1. Band clevis
- 2. Band adjuster nut
- 3. Brake anchor capscrews
- 4. Clutch housing cover
- 5. Inspection plate cover, removed





Removing the retainer.



Removing the pinion shaft.

1. Thrust bearing

6. If the R.H. assembly is being removed, disconnect the upper R.H. fuel tank support, and jack the fender up to allow cover removal.

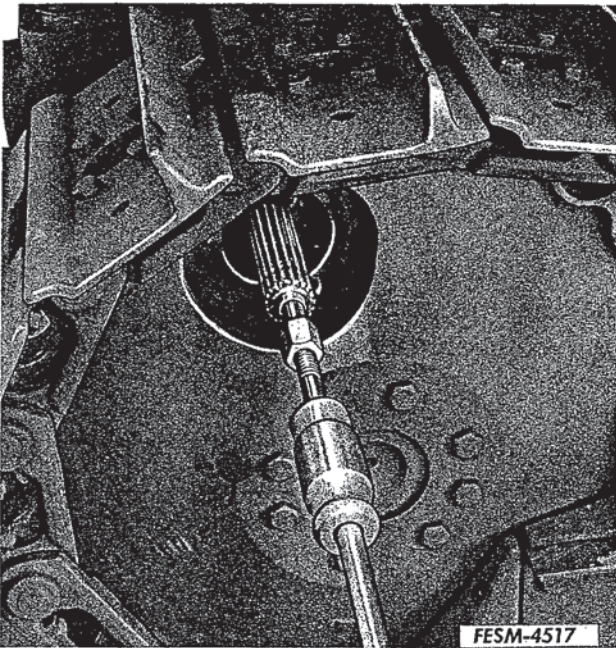
7. Tilt and raise the cover while holding the link. Then remove the steering adjustable link. Remove the cover.

8. Remove the sprocket drive pinion shaft retainers, L.H. and R.H., using the capscrews removed as jack screws.

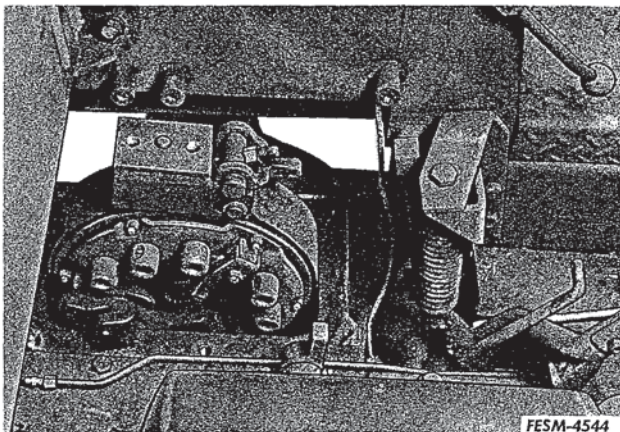
IMPORTANT: When removing the pinion shafts be careful not to drop the inner thrust bearing assemblies in the sprocket drive housings.

9. Start removal of the pinion shaft using a slide hammer. As the shaft moves out, it must be carefully tilted down as shown in the illustration. Both L.H. and R.H. shafts must be removed.

10. Support the steering clutch assembly being removed so that it does not drop.



Removing the bevel gear shaft.



Bevel gear shaft removed from the clutch assembly.

IMPORTANT: When removing the bevel gear shaft from the steering clutch, pull the shaft only far enough to allow clutch removal. If difficulty is encountered, use penetrating oil to aid shaft removal.

11. Pull the bevel gear shaft out of the steering clutch from the opposite side, using a slide hammer.

12. Remove the steering clutch assembly.

NOTE: If both clutches have been removed, remove the bevel gear shaft.

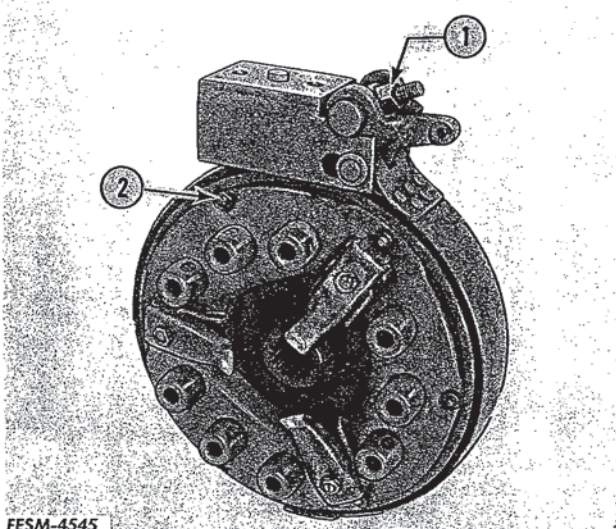
13. Remove the clutch release vertical shaft, fork, bearing, and sleeve.

14. If the bevel gear assembly requires service, refer to Section 5, "Transmission and Bevel Gear".

15. If the sprocket drive assembly requires service, refer to Section 8 "Sprocket Drives".

16. If the bevel gear or sprocket drive oil seals require replacement, proceed to "Inspection and Repair" in this section.

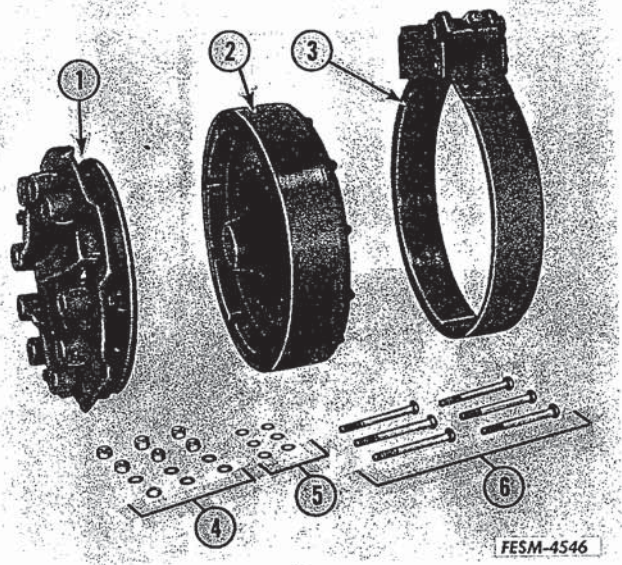
DISASSEMBLY



1. Loosen the brake band adjusting nut. Then slide the brake band from the clutch drum assembly.

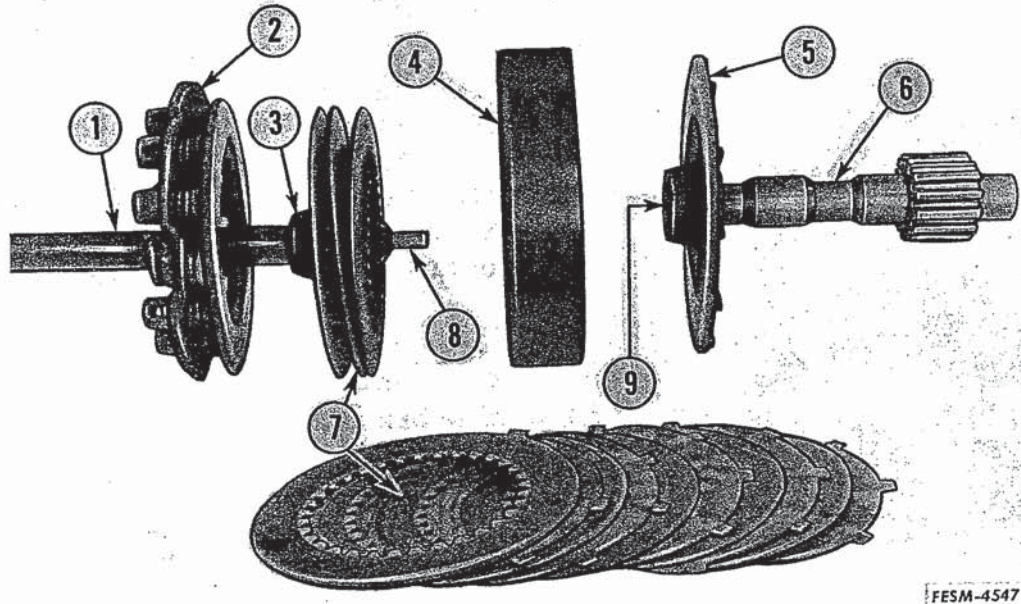
2. Lay the clutch assembly on the base plate, and remove the nuts from the "through" bolts.

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| <p>1. Brake band adjusting nut 2. Through bolt nut (6)</p> |
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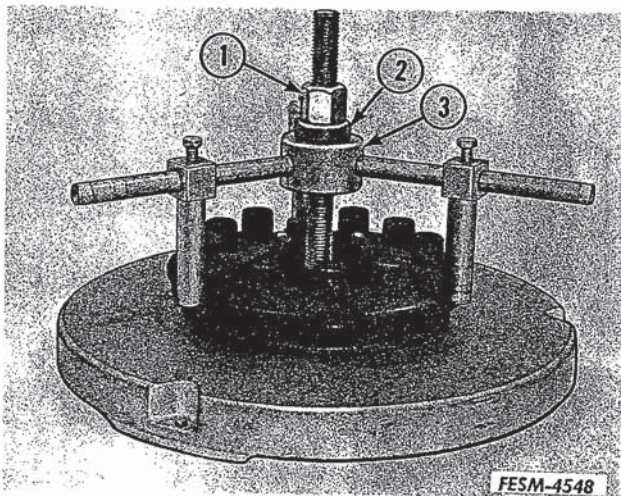
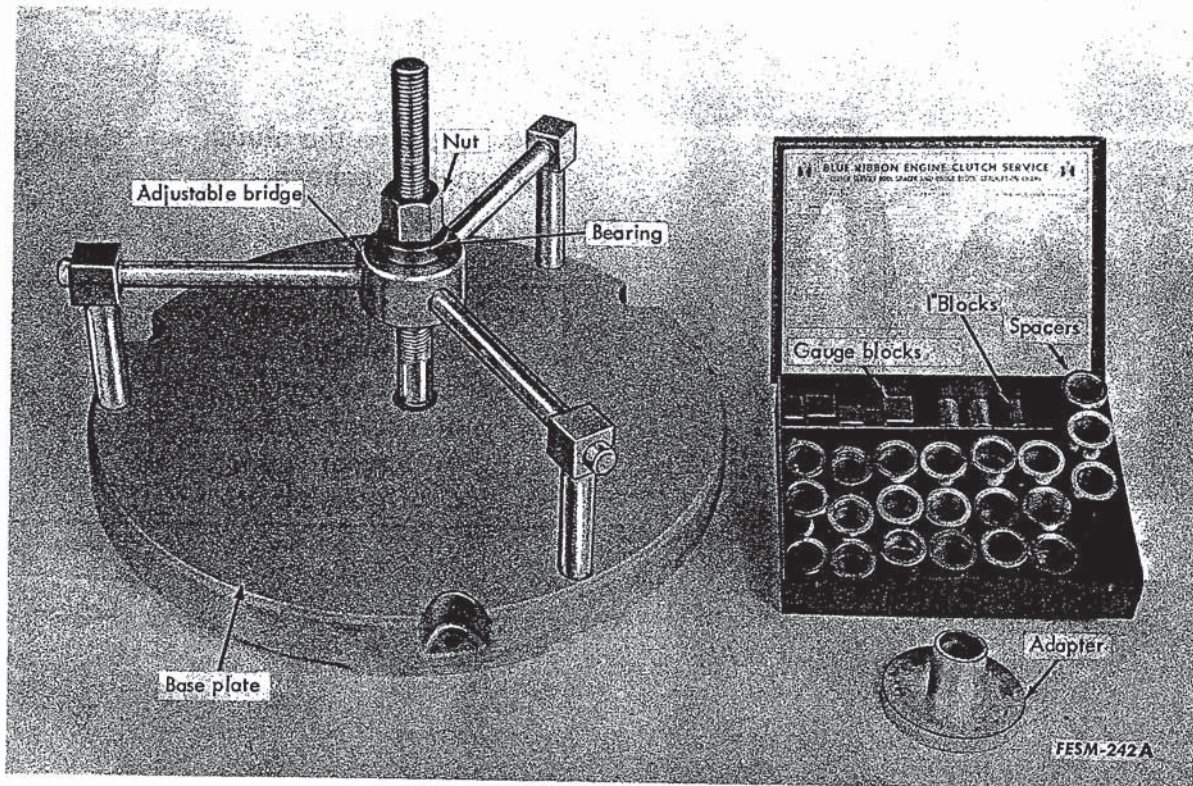
3. Remove the clutch cover assembly and spacer washers.

- 1. Clutch cover assembly
- 2. Steering clutch drum
- 3. Brake band
- 4. Nuts and lock washers
- 5. Spacer washers
- 6. Through bolts



- 1. Bevel gear shaft
- 2. Clutch cover assembly
- 3. Clutch hub
- 4. Drum
- 5. Base plate
- 6. Sprocket drive pinion shaft
- 7. Discs (7) and plates (6)
- 8. Shaft pilot
- 9. Pilot bore

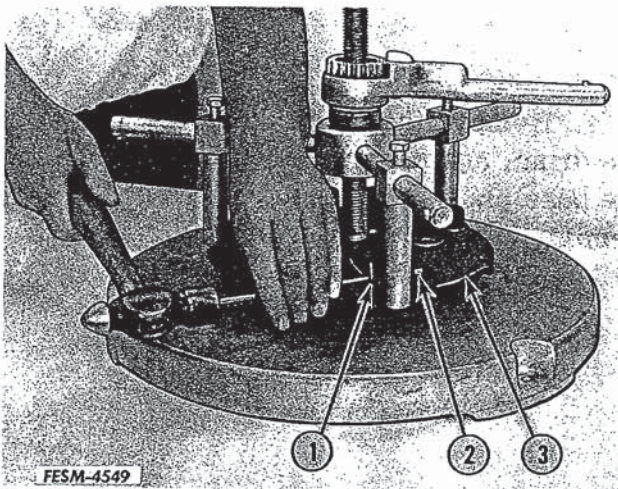
4. Remove the hub and discs from the drum, and separate the drum from the base plate. If the clutch cover assembly does not require service, proceed to Inspection and Repair.



NOTE: Clutch service tool FES-50 is recommended for servicing and adjusting the clutch cover assembly. Gauge blocks and spacers used with the clutch tool insure precision adjustment of the clutch cover assembly.

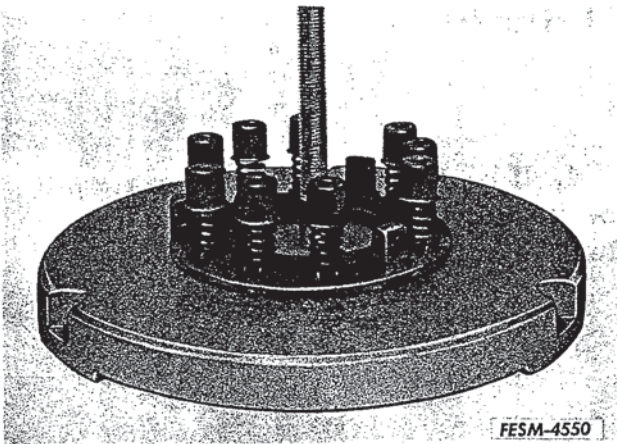
5. Place the clutch cover assembly on the clutch tool, and install the adjustable bridge, bearing and nut.

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| <ol style="list-style-type: none"> 1. Nut 2. Bearing 3. Bridge |
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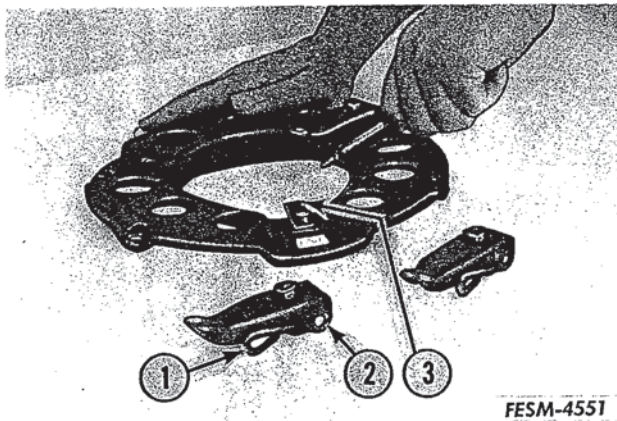
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| <ol style="list-style-type: none"> 1. Release lever (3) 2. Pin (3) 3. Back plate |
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7. Remove the bridge. Then remove the backplate.



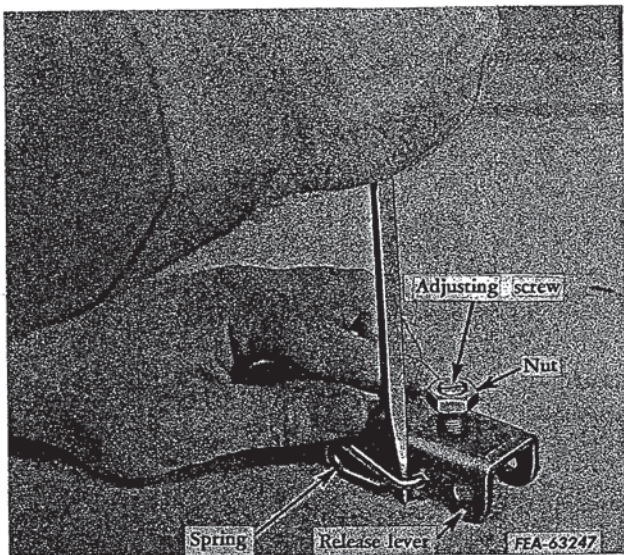
Bridge and back plate removed.

8. Using a screw driver inserted through the lever springs, pry the levers toward the center of the back plate to remove them from the spring clips.



- 1. Lever spring (3)
- 2. Lever (3)
- 3. Spring clip (3)

9. Remove the lever springs if necessary, using a screw driver to pry the springs out of the levers.



Removing the lever springs.

INSPECTION AND REPAIR

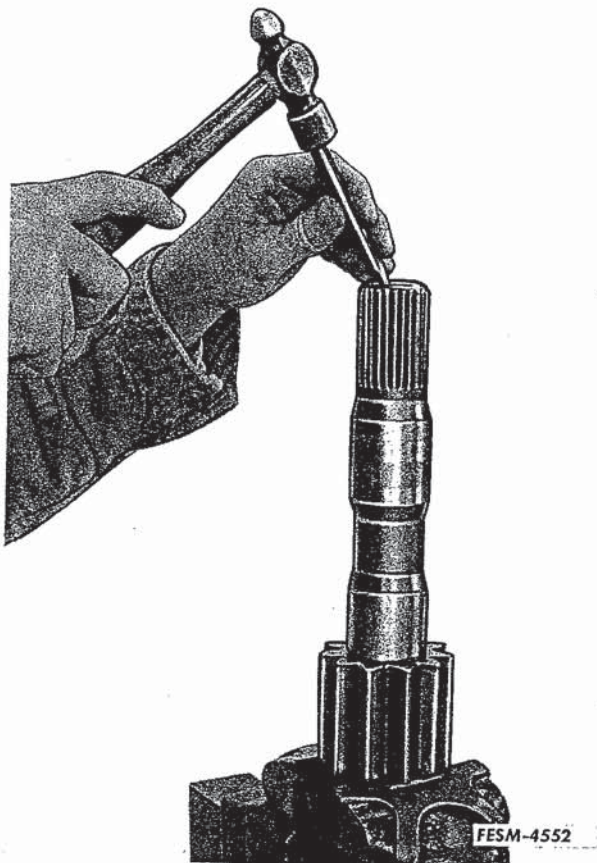
General

1. Clean the steering clutch housing and all parts in an evaporative solvent and dry with compressed air. Remove rust from shaft splines with a wire brush. Clean out the clutch drain hole. Run a tap through the threaded hole.

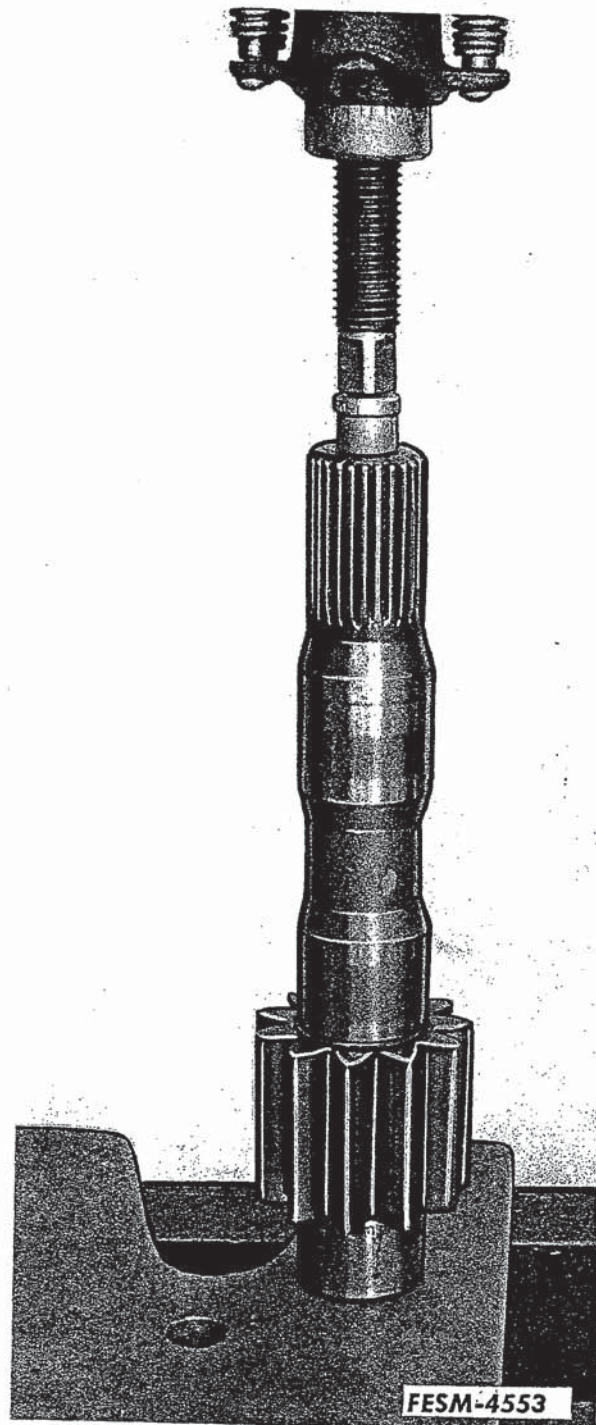
2. Inspect the bevel gear and sprocket drive pinion shaft splines for burrs. Remove burrs with a file. Polish the seal and bearing surfaces with crocus cloth.

3. Inspect the bevel gear shaft pilot and the pinion shaft pilot bushing. The shafts must fit freely, but clearance must not exceed .020 inch.

4. If replacement is necessary, split the bushing with a sharp cape chisel. Remove and press in a new bushing.

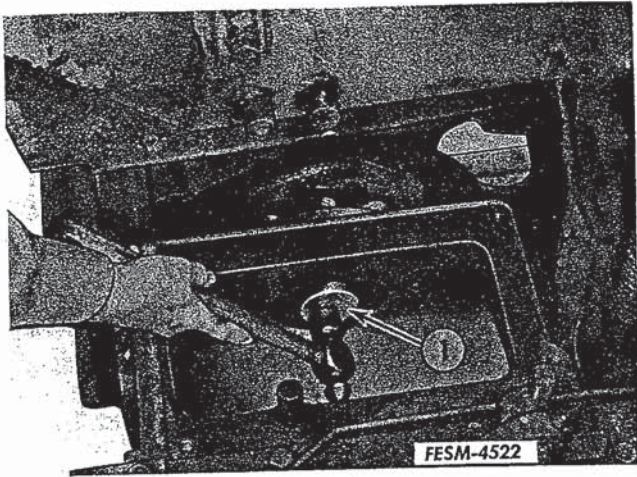


Removing the bushing.



Installing the bushing.

Sprocket Pinion Shaft Oil Seal Replacement

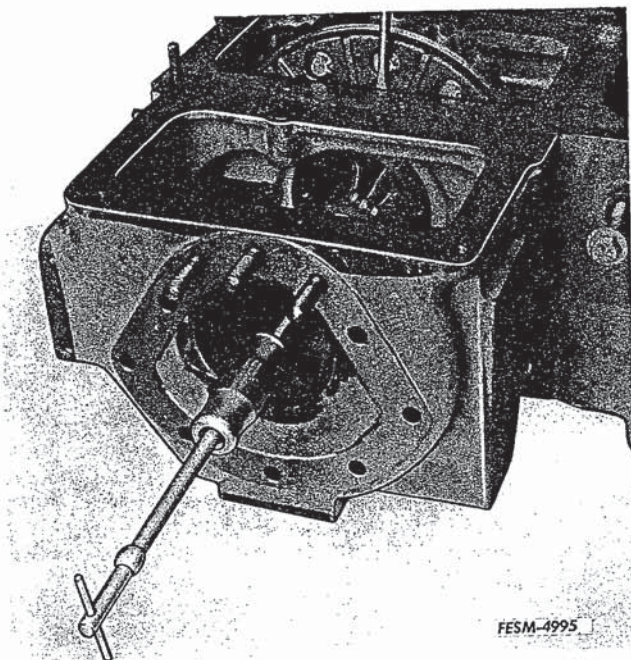


Installing the seal.

1. Pry the seal out of the steering clutch housing using a screw driver.
2. Clean the seal bore in the housing. Be careful not to damage the needle bearing behind the seal.
3. Coat the seal bore with IH Plasti-Gasket. Drive the seal into the bore, using a step plate to protect the seal.

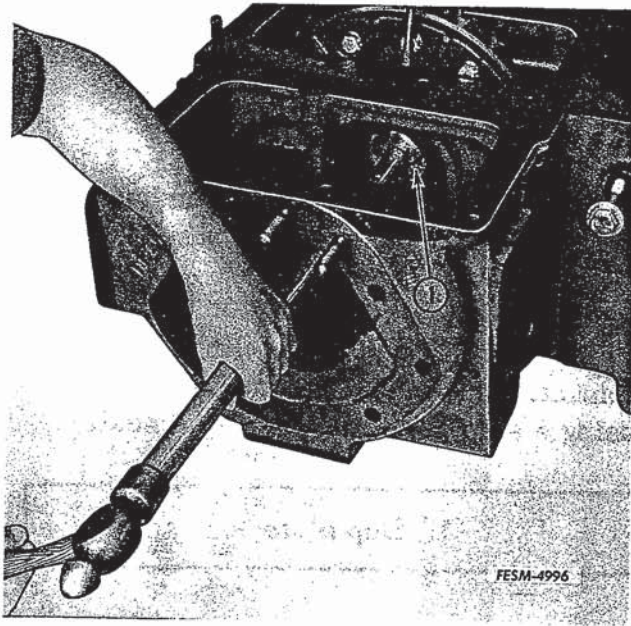
1. Step plate

Bevel Gear Oil Seal Replacement



Removing the seal.

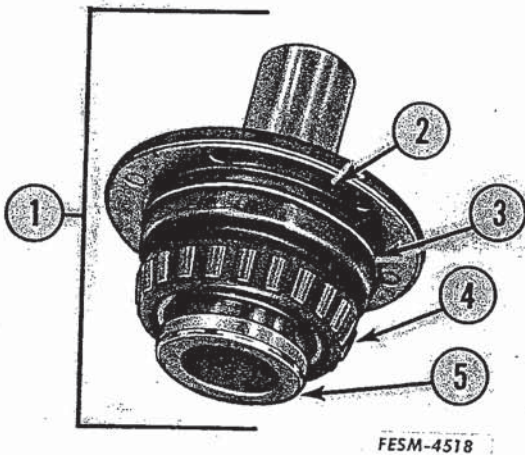
1. Remove the bevel gear cover; and drain the rear frame.
2. Block the bevel gear to support the assembly when the carrier bearing is removed.
3. Remove the bevel gear bearing retainer using the capscrews removed as jack screws in the holes provided.
4. Remove the bevel gear oil seal, using a slide hammer inserted through the sprocket drive pinion shaft bore.



Installing the seal.

5. Drive a new seal into the bevel gear hub, using a step plate to protect the seal.

1. Step plate



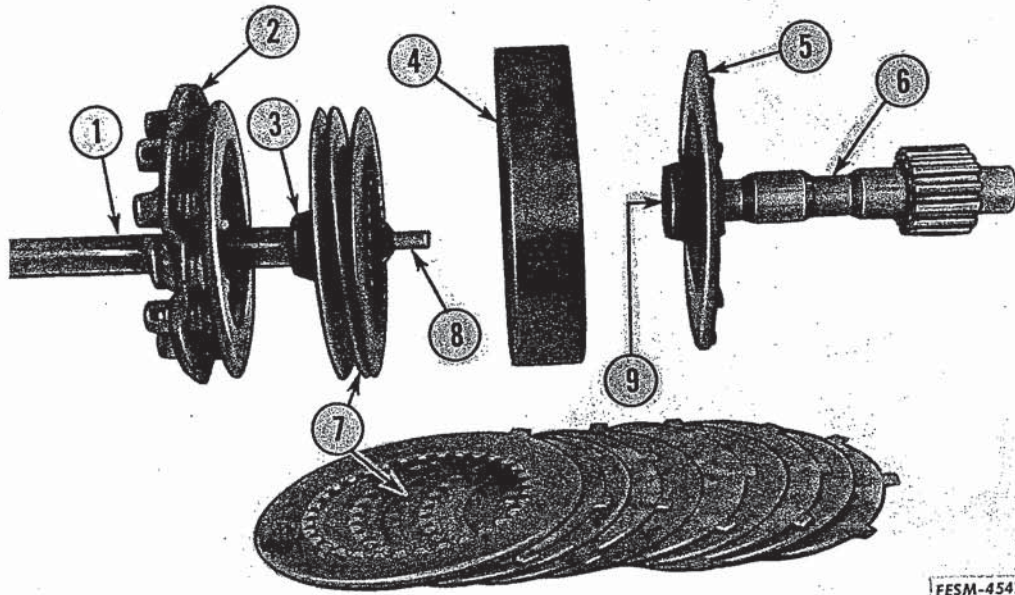
6. Inspect the seal wear sleeve on the bearing retainer. If it is worn or damaged, heat the sleeve to expand it for removal and installation.

7. Install the bearing retainer with shims, and a new O-ring seal. Tighten the capscrews to 35 ft. lbs.

8. Remove the blocks supporting the bevel gear assembly. Replace the cover, and Hy-Tran fluid.

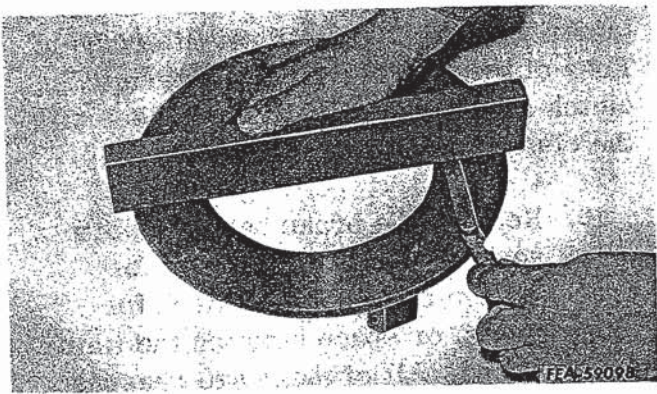
- 1. Retainer assembly
- 2. Shims
- 3. O-ring
- 4. Bearing
- 5. Wear sleeve

Clutch Brake Assembly



FESM-4547

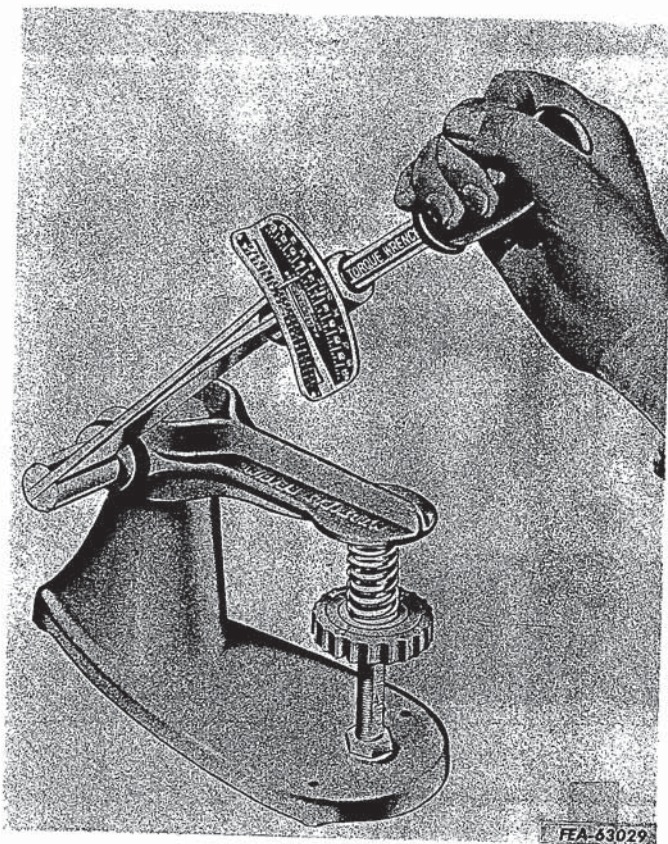
1. Bevel gear shaft
2. Pressure plate assembly
3. Clutch hub
4. Drum
5. Base plate
6. Sprocket drive pinion shaft
7. Discs (7), plates (6)
8. Shaft pilot
9. Pilot bore



Checking the pressure plate for wear and distortion.

1. Check the pressure plate and base plate for distortion and wear using a straight edge and feeler gauge. Replace parts which are .006 inch out of flat.

2. Replace the pressure plate and base plate if severe heat checking is evident.



Checking spring tension.

3. Inspect the release lever pin holes and tips where they contact the release bearing for wear. Replace weak lever springs and worn adjusting screws.

NOTE: Replace worn levers, lever springs and adjusting screws in sets of three.

4. Inspect the back plate for bending, and the drive lug slots for wear. Replace worn adjusting screw seats and bent or broken lever spring clips.

5. Check pressure spring free length and tension at test length. Springs must measure a minimum of 2.750 inches and must require 166 lbs. to compress to 1-13/16 inches. Replace springs as a set of nine.

6. Inspect the hub splines for wear or damage, and the snap ring, to be sure it is firmly seated in the groove.

7. Replace worn, glazed, and oil soaked discs, and discs which are warped or have worn splines.

8. Replace worn and warped plates.

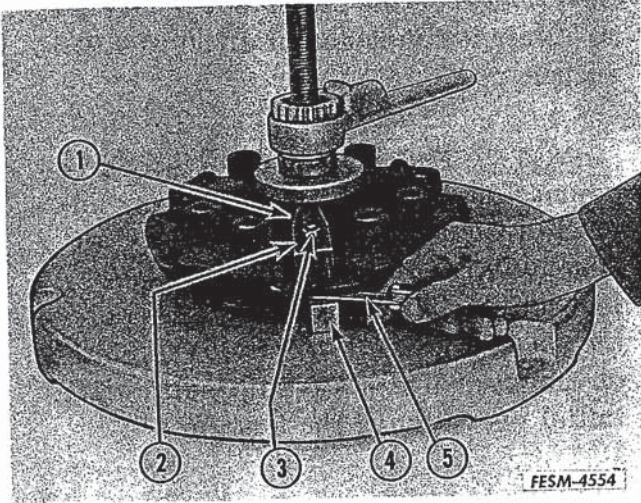
9. Insert the sprocket drive pinion shaft into the clutch back plate. The retainer ring in the plate must fit securely. Loss of the retainer ring will permit the clutch assembly to float into contact with the clutch housing.

10. Replace the brake bands if worn or oil soaked. Check the linings for cracks at the rivet holes. Check for loose rivets, or space between the lining and the band. All of these are reasons for replacement.

11. If the linings are glazed, remove the glaze with sandpaper.

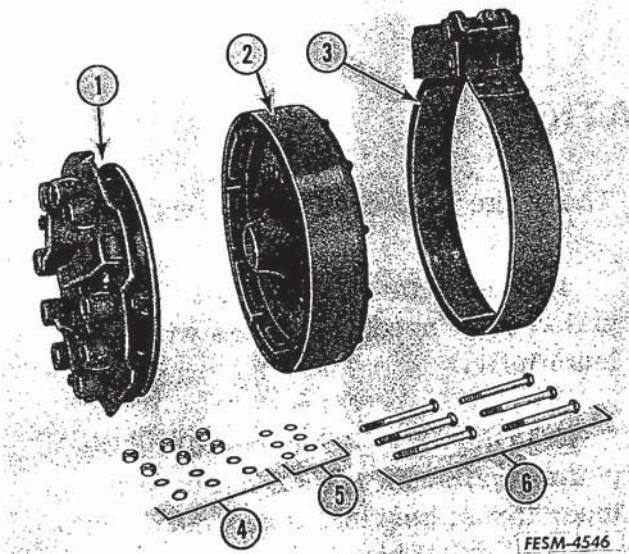
REASSEMBLY

Reverse the disassembly procedure paying particular attention to the following steps.



1. Install the assembled clutch cover assembly on the clutch tool with the number 3 tubular spacer. Then compress the back plate and adjust each lever adjusting screw to obtain a clearance of .002 inch measured with a feeler gauge between the black plate and number 3 gauge block below each lever.

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| 1. Tubular spacer |
| 2. Lever |
| 3. Adjusting screw |
| 4. Gauge block |
| 5. Feeler gauge |



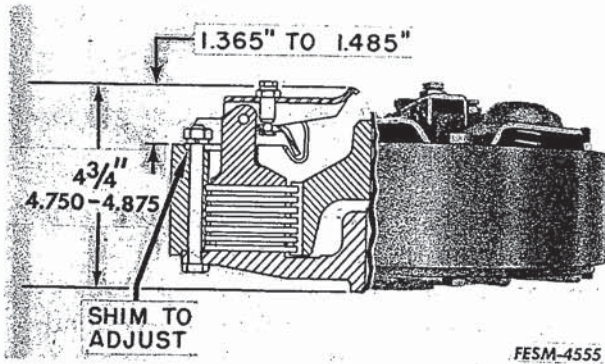
2. Insert the "through" bolts through the base plate and drum. Then rest the assembly on the base plate.

3. Install one disc and position the hub into the assembly.

4. Install the remaining 6 discs and 6 plates, starting with a plate and ending with a disc.

5. Install the cover assembly without spacer washers.

- | | |
|--------------------------|--------------------------|
| 1. Clutch cover assembly | 4. Nuts and lock washers |
| 2. Steering clutch drum | 5. Spacer washers |
| 3. Brake band | 6. Through bolts |



Positioning the cover assembly.

6. Measure the overall length of the clutch assembly from the outside of the base plate to the lever tips. Add spacer washers evenly to each bolt as necessary, between the clutch cover and drum to obtain a dimension of 4.750 to 4.875 inches.

NOTE: Under no circumstances re-adjust the clutch levers to correct uneven lever height. If the clutch cover assembly is properly adjusted, (see inspection and repair) unevenness of the fingers is due to variation in plates or discs, and will correct itself during initial operation of the tractor.

INSTALLATION

The following procedure outlines installation of one clutch brake assembly.

1. Lightly coat the bevel gear shaft splines with IH Never-Seeze. Install the bevel gear shaft.

2. Lightly coat the release sleeve with IH Never-Seeze. Install the clutch release vertical shaft with fork, bearing, and sleeve. Insure the lower bearing pocket is full of lubricant.

NOTE: Release bearing replacement is recommended when the clutch is serviced.

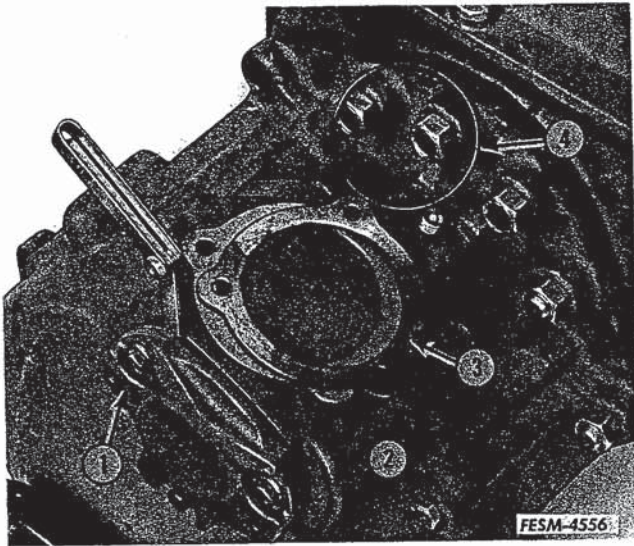
3. Position the clutch brake assembly in the housing on the bevel gear shaft.

The brake band should be fairly snug.

4. Lubricate the sprocket drive pinion shaft needle bearings with petroleum jelly.

IMPORTANT: When installing the pinion shafts, be careful not to drop the inner thrust bearings and washers into the final drive housings.

5. Install the pinion shafts with thrust bearings and washers into the clutch back plates. Use a 1/8 inch rod inserted through the gear teeth to position the inner thrust bearings and washers in a vertical position.



1. Retainer
2. Housing
3. Shims
4. O-ring

6. Slide the clutch assembly outward until the snap ring is bottomed in the clutch back plate.

7. Install the sprocket drive pinion retainers without shims and O-rings. The thrust bearings and races must be in position. Tighten the capscrews until the thrust bearings are lightly seated.

8. Measure the clearance between each retainer and sprocket drive housing with a feeler gauge to determine the shim pack required. The required shim pack will equal the clearance plus .020 inch.

9. Install each bearing retainer with a new O-ring and the shim pack. Lubricate the needle bearing before installation. Apply Loctite to the capscrews and torque to 35 ft. lbs.

10. Liberally coat both sides of the steering cover gasket with IH Gasket Maker and install it on the steering clutch housing.

11. Position the steering clutch cover on the steering clutch housing and connect the steering rod. Move the cover as required to install the adjustable steering link and loosely start the cover capscrews into the housing.

12. Install the brake anchor bolts. Push the cover toward the center line of the tractor while tightening the capscrews. Torque the capscrews to 85 ft. lbs.

13. Connect the brake link and insert the cotter pin.

14. Install the fuel tank brackets, filler strip and operators seat assembly. Fill the transmission and rear frame to the specified level with clean IH Hy-Tran.

15. For adjustments, refer to Section 12.