

Group 15

SEPARATING TRANSMISSION FROM CLUTCH HOUSING

To separate the tractor between the transmission case and the clutch housing use the following procedure:

- Remove the rear bottom plate.
- Drain the transmission.
- Remove the seat and seat support assembly.
- Remove fenders and footrests.
- Disconnect track (Section 180).
- Remove cap screws attaching rock guards to final drive housing oil pans.
- Remove sprocket shields. Remove bracket caps attaching final drive housing to rear cross-bar.

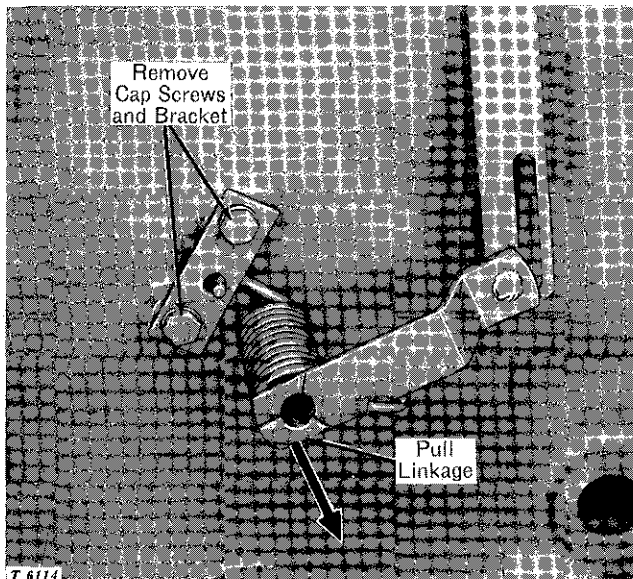


Fig. 20-15-1—Disconnecting Hydraulic Pump

If tractor is equipped with a hydraulic pump disengaging lever, refer to Fig. 20-15-1 and do the following:

Loosen the two cap screws that secure the hydraulic pump disengaging lever retaining spring bracket to the clutch housing and pull linkage out as far as possible.

Disconnect speed change rod from shifter arm on left side of transmission case.

Remove the clamps which secure wiring harness to the transmission top cover.

Disconnect the rear wiring harness and tag for identification.

Disconnect wire leads from starter safety switch.

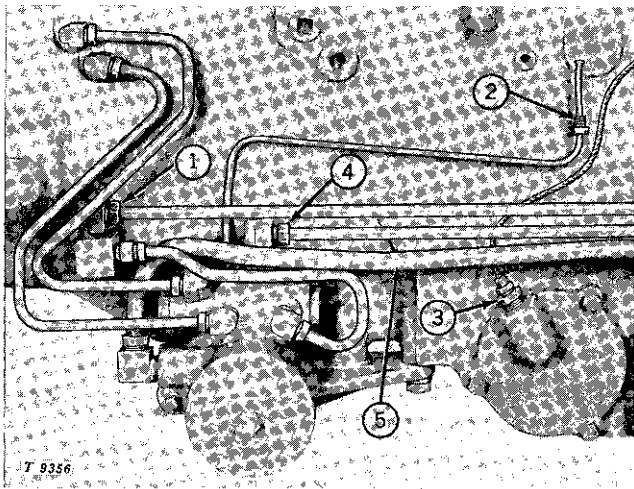
Remove speed change arm and shaft (refer to Fig. 120-10-6, steps 3, 5, 6, and 7).

Remove the three cap screws that attach the junction block to the top of the clutch housing, if tractor is so equipped. Remove junction block from clutch housing.

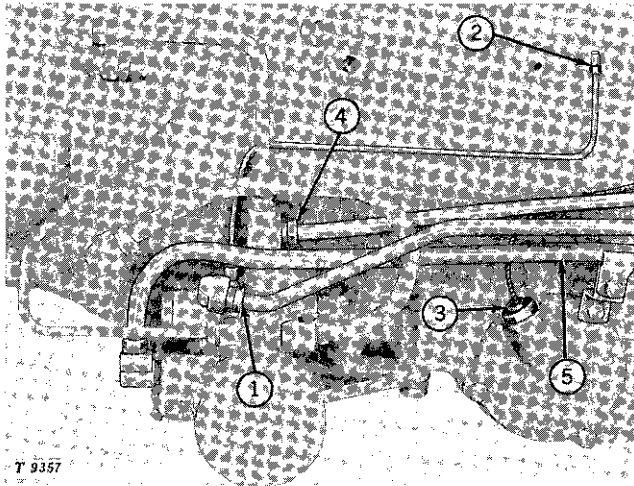
If tractor is not equipped with a junction block, remove the three cap screws and plate covering the hole and pull the adapter from the clutch housing.

Remove the cap screws attaching the cowl support to the transmission case.

If tractor is equipped with a constant mesh transmission, remove the clutch housing access plate and remove throw-out bearing return spring. Disconnect oil cooler lines from right side of transmission and remove clamps which secure cooler lines to engine block.



Units (-45155)



Units (45156-Up)

Fig. 20-15-2—Disconnecting H-L-R Lines

If tractor is equipped with an H-L-R transmission, refer to Fig. 20-15-2 and do the following:

- (1) Disconnect the oil cooler line.
- (2) Separate the oil pressure sending unit line.
- (3) Disconnect the oil temperature sending unit from the oil filter cover.
- (4) Disconnect the oil cooler line from the transmission oil filter.
- (5) Disconnect rear pressure line from elbow in port hole (-46295) or from flexible front

pressure line in port hole and remove clamp fastening line to clutch housing (46296-up).

On units (46296-up), push flexible line and grommet from port hole cover into clutch housing. Remove port hole cover.

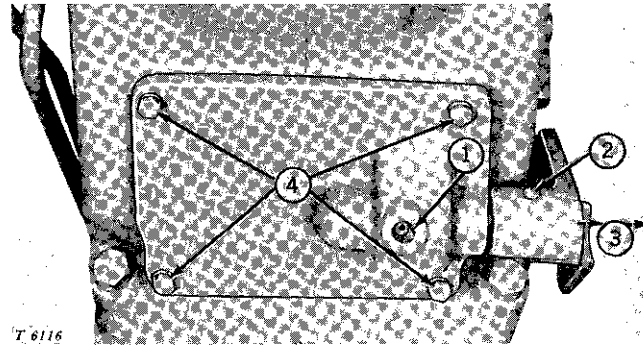


Fig. 20-15-3—Removing Clutch Access Hole Cover

If tractor is equipped with an H-L-R transmission, refer to Fig. 120-15-3 and do the following:

- (1) Remove pipe plug from hole in cover. Place punch through hole and drive out roll pin from clutch disconnect shaft.
- (2) Drive out roll pin and remove arm from end of shaft.
- (3) Pull shaft free of cover.
- (4) Remove cap screws attaching cover and drop cover.

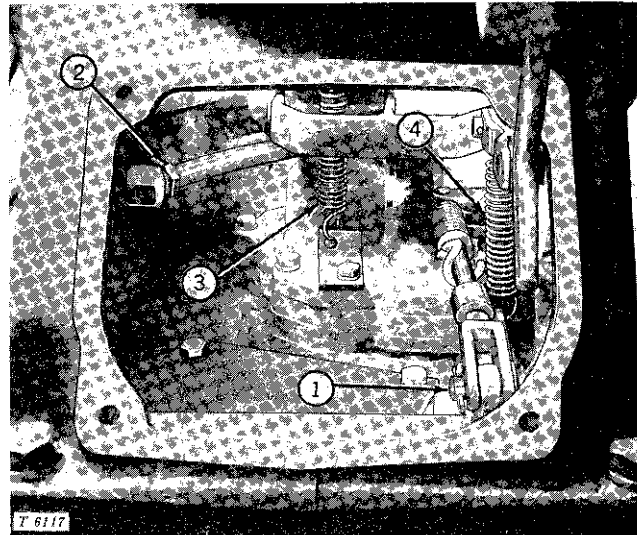


Fig. 20-15-4—Disconnecting Oil Pump Line and Linkage (H-L-R)

If tractor is equipped with H-L-R transmission, refer to Fig. 20-15-4 and do the following:

- (1) Reach through clutch housing access hole and remove cotter pin and pin from linkage.
- (2) On units (-46295), disconnect front pressure line from port hole connector. Remove port hole cover.
- (3) Remove clutch throw-out spring.
- (4) Remove clutch throw-out yoke spring.

Disconnect the brake rods from the brake operating arms by removing pin and cotter pin.

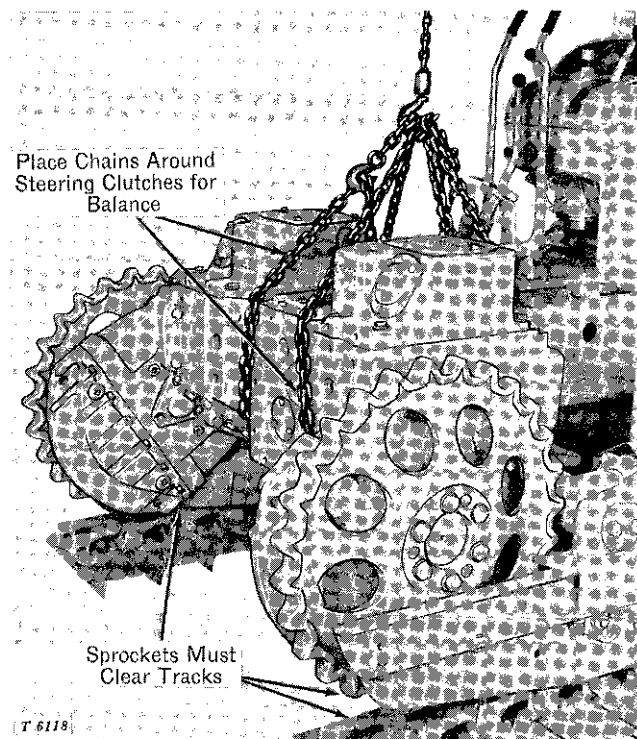


Fig. 20-15-5—Securing Hoist to Transmission Case

Secure hoist to transmission case as shown in Fig. 20-15-5. Raise rear of tractor high enough so that the sprockets clear the track. Place blocking under rear crossbar. Place blocking under grille housing to support engine after the transmission is removed.

NOTE: Blocking under grille housing must be secure to prevent tractor from rolling ahead as the transmission is separated.

Remove the cap screws that attach the side frames to the steering clutch housing.

Remove the cap screws and nuts that secure the transmission case to the clutch housing.

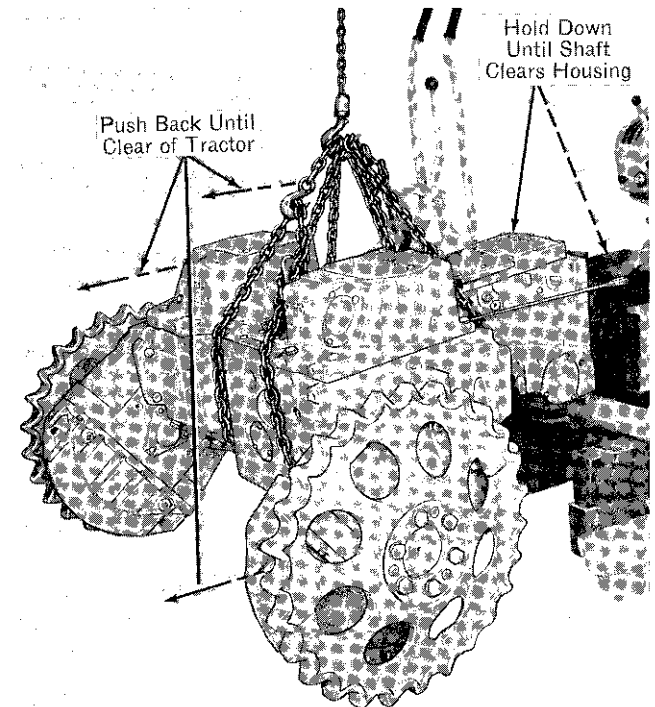


Fig. 20-15-6—Separating Transmission

Using the hoist pull the transmission back and away from the tractor as shown in Fig. 20-15-6.

ASSEMBLY

Move transmission toward clutch housing until throw-out bearing carrier support tube has passed through clutch yoke far enough to allow installation of bearing and its carrier.

Reach through bottom opening of housing and slide throw-out bearing and carrier onto carrier support tube until carrier is snug against clutch yoke.

Join transmission case to clutch housing. Tighten attaching cap screws to 170 ft-lbs.

CAUTION: On tractors with constant-mesh transmission, the indexing of the front transmission drive shaft with the driven disk takes place before the indexing of the powershaft drive shaft with the pressure plate. Due to the time delay during indexing, it is possible that the powershaft drive shaft might not index with the pressure plate. This results in breakage of the pressure plate and driven disk. Make certain that both points are indexed before installing attaching cap screws.

Attach side frames to steering clutch housing and torque cap screws to 275 ft-lbs (3 dashes on head) or to 420 ft-lbs (6 dashes on head).

If tractor is equipped with an H-L-R transmission, refer to Fig. 20-15-4 and perform the following:

(1) Reach through clutch housing access hole and insert pin and cotter pin in linkage.

(2) On units (-46295), install port hole cover. Connect front pressure line to clutch port hole connector. On units (46296-up), push flexible front pressure line and rubber grommet into place in port hole cover. Lubricate groove in grommet before installing and be sure grommet is seated securely in cover.

(3) Install clutch throw-out spring.

(4) Install clutch throw-out yoke spring.

On tractor with H-L-R transmission, install clutch housing access plate and external linkage (Fig. 20-15-3).

If tractor is equipped with a constant mesh transmission, install clutch throw-out bearing return spring and secure clutch housing access plate with cap screws and lock washers. Connect oil cooler lines to right side of transmission case and secure with clamps to engine block.

Install hydraulic pump disengaging lever, if tractor is so equipped (see Fig. 20-15-1).

Connect speed change rods. Refer to Section 120 or 130 for adjustment.

If tractor is equipped with an H-L-R transmission, refer to Fig. 20-15-2 and perform the following:

(1) Connect oil cooler drain line.

(2) Connect oil pressure sending unit line.

(3) Install oil temperature sending unit to oil filter cover.

(4) Connect oil cooler inlet line to transmission oil filter.

(5) Connect rear pressure line to elbow in port hole cover (-46295) or, on units (46296-up), to flexible front pressure line on cover, and install clamp on line.

Install adapter and junction block (or plate cover) to clutch housing.

Connect wire leads to starter safety switch.

Secure rear wiring harness to transmission top cover.

Secure cowl to transmission case.

Install bracket caps attaching final drive housing to rear crossbar.

Install cap screws attaching rock guards to final drive housing oil pans.

Install sprocket shields.

Connect track (Section 180). Remove blocking.

Install footrests and fenders.

Install battery, seat support and seat.

Connect rear wiring harness.

Install rear bottom plate.

Fill transmission with the proper quantity and viscosity of oil as recommended in chart in Section 30.

Group 20

SEPARATING STEERING CLUTCH HOUSING FROM TRANSMISSION

Remove the final drive as instructed in Group 25 of this Section. Remove fender and seat support.

Remove control housing cover.

Remove brake band adjusting screw, spring, and washer (Fig. 20-20-1).

Disconnect brake linkage (Fig. 20-20-1).

Disconnect foot brake rod from brake operating bellcrank (Fig. 20-20-1).

Unscrew jam nut and adjusting nut and remove clutch operating rod (Fig. 20-20-1).

Remove steering control lever.

Remove the four attaching cap screws and lift off the steering clutch control housing.

Refer to Fig. 150-15-1 and remove cotter pins (A) from throw-out shaft (K). Pull shaft out and remove washers (B) and spring (C).

Remove steering clutch housing drain plug and brake band positioning screw (X and Z, Fig. 150-15-5) as a unit. Slip brake band assembly out of clutch housing.

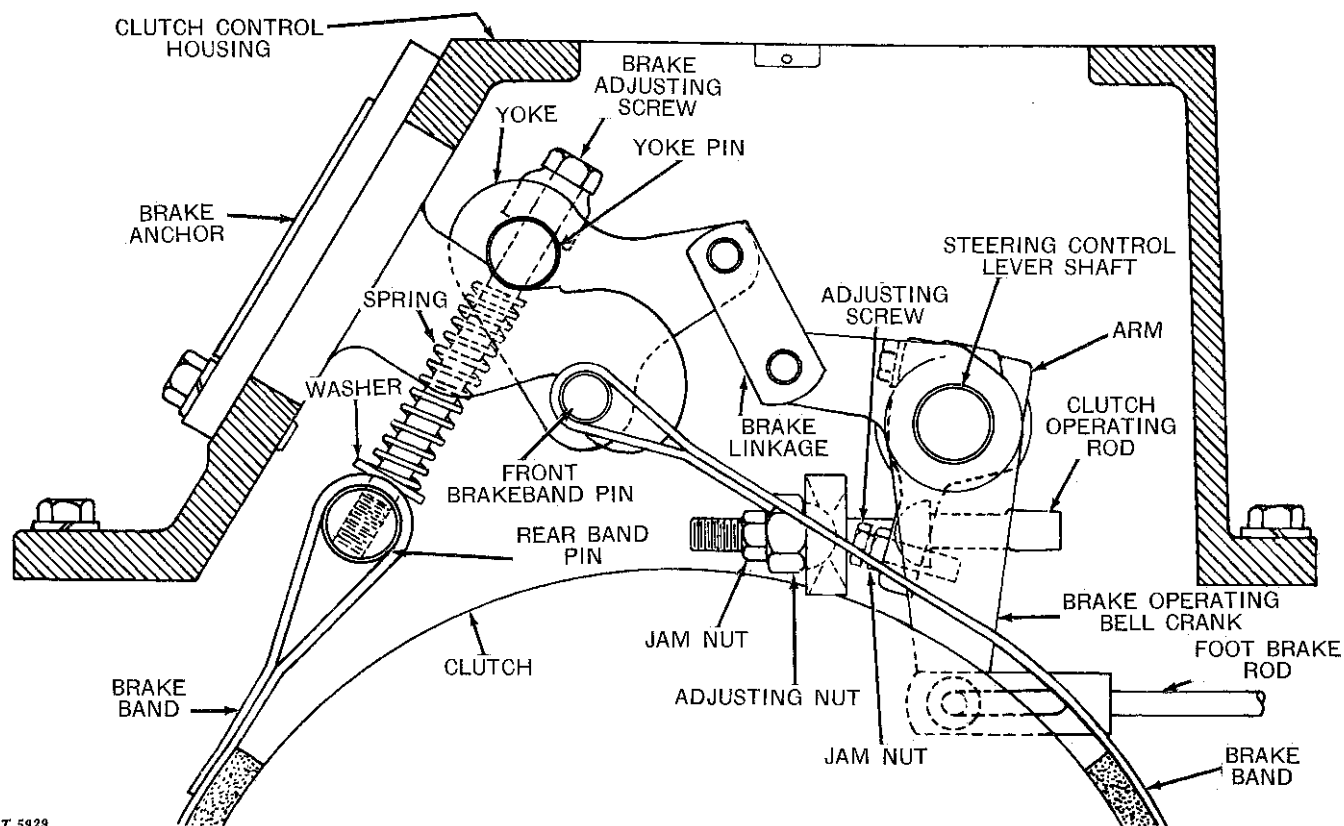


Fig. 20-20-1—Steering Clutch and Brake Controls



Fig. 20-20-2 - Relieving Snap Ring Tension (-42000)

On tractors (-42000) remove set screw in end of steering clutch drive shaft in order to relieve tension on the snap ring (Fig. 20-20-2).

Support the steering clutch assembly. This can be done most easily by wrapping heavy wire around the pressure plate fingers and lifting assembly with the wire (after removing clutch drive shaft).

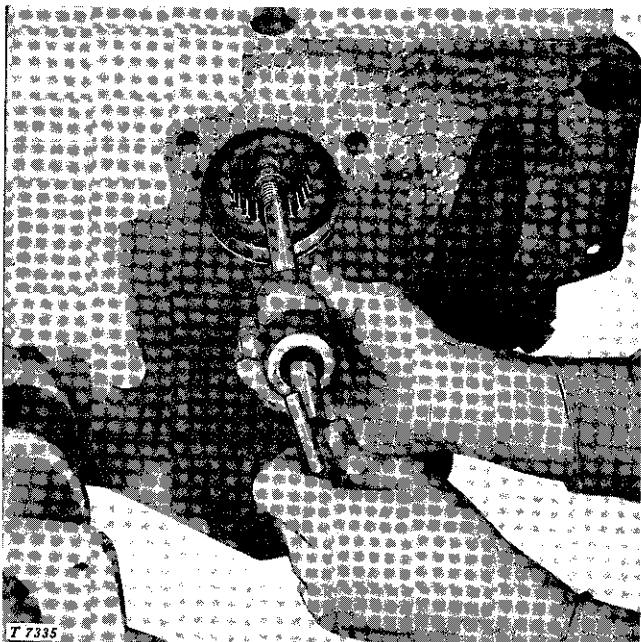


Fig. 20-20-3 - Removing Steering Clutch Drive Shaft

Install puller in end of steering clutch drive shaft and remove shaft (Fig. 20-20-3).

Detach side frame and rear mounted equipment.

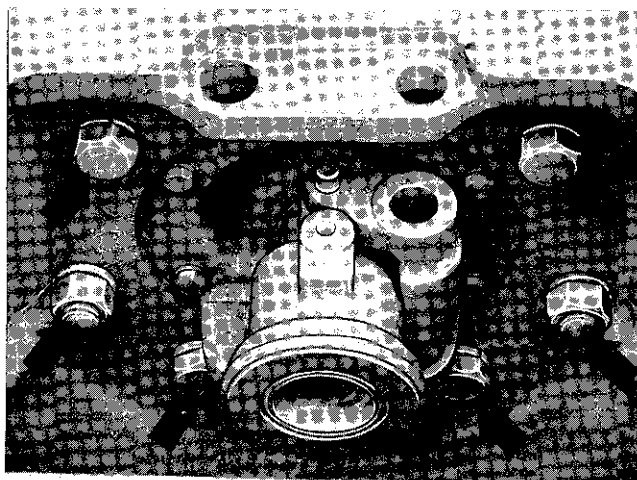


Fig. 20-20-4 - Clutch Throw-Out Bearing Assembly and Housing Attaching Hardware

Slide throw-out bearing and carrier assembly off sleeve. Attach a hoist to the housing and remove housing-to-transmission case hardware (Fig. 20-20-4). Tap housing free from dowels and remove from transmission case.

INSTALLATION

With the aid of a hoist, position steering clutch housing onto transmission case. Install cap screws and hex. nuts with washers (Fig. 20-20-4) and tighten to 300 foot-pounds.

Attach side frame to housing and tighten cap screws to 275 ft-lbs (3 dashes on heads) or to 420 ft-lbs (6 dashes on heads).

Position clutch throw-out bearing and carrier on sleeve (Fig. 20-20-4).

Place steering clutch in housing and support clutch assembly so that steering clutch drive shaft can be inserted. Insert drive shaft (Fig. 20-20-3). On tractors (-42000), be sure that snap ring on end of shaft covers all three expander pins. Also on tractors (-42000), install snap ring as described at top of next page.

Push shaft into position making certain that snap ring is able to seat to groove in clutch hub. Hold shaft in position against spring in ring gear hub and tighten set screw securely (Fig. 20-20-2).

Slip brake band into housing and position on brake drum so that band positioning slot on bottom of brake band assembly is lined up with center of plug hole in bottom of steering clutch housing. Install plug, brake band positioning screw, and positioning screw adjusting washers (X, Z, and Y, Fig. 150-15-5).

If brake lining has been replaced or if a new brake band assembly has been installed, reset band positioning cap screw as follows:

Screw band positioning cap screw (without adjusting washers) through plug until screw pushes brake band tight against brake drum. Determine number of washers (Y, Fig. 150-15-5), required to fill gap between drain plug and positioning screw head. Add one more washer to this number of washers and install between drain plug and positioning screw head.

Install clutch throw-out shaft (with spring and washers) in yoke so that lever at top of throw-out shaft is perpendicular to yoke arms. Insert new cotter pins. Hook spring over pin on throw-out bearing yoke.

Install clutch control housing on clutch housing with a new gasket and tighten cap screws.

Install clutch operating rod with adjusting nut and jam nut (Fig. 20-20-1).

Hook front brake band pin under brake anchor and install yoke pin through yoke (Fig. 20-20-1).

Insert brake adjusting screw through yoke pin, slide spring and washer onto adjusting screw, and start adjusting screw into tapped hole in rear band pin (Fig. 20-20-1).

Connect brake linkage.

Install pin with washer and cotter pin to connect foot brake rod yoke to brake operating bell-crank (Fig. 20-20-1). Use a magnet to recover any parts which may be accidentally dropped into the clutch housing.

Replace final drive parts as instructed in Group 25 of this Section.

Adjust steering clutch, steering brake, and foot brake as instructed in Group 5 of Section 150.

Replace control housing cover with gasket.

Connect track and adjust tension (Section 180).

Replace seat, fender, and rear mounted equipment.

Group 25

SEPARATING FINAL DRIVE FROM STEERING CLUTCH HOUSING

Remove sprocket shield from track frame.
Disconnect track (Section 180).

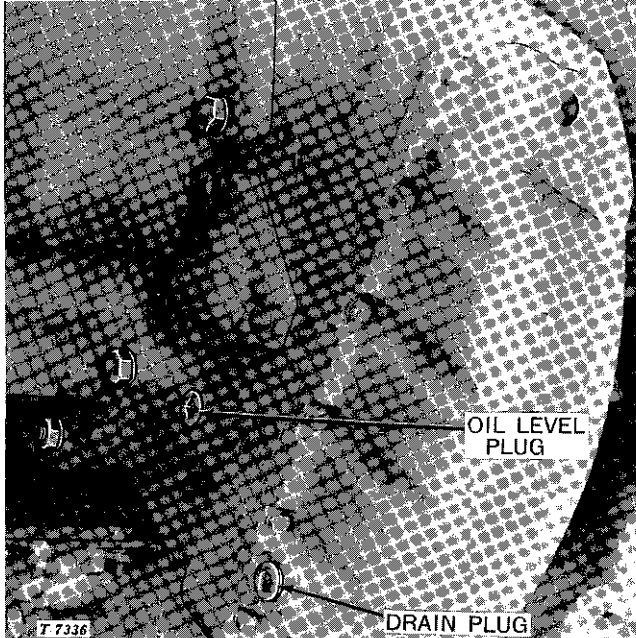


Fig. 20-25-1—Final Drive Drain Plug

Drain final drive (Fig. 20-25-1).

Loosen attaching cap screws at front and rear
crossbars. Remove cap screw attaching rock
guard to final drive oil pan. Block up side of
tractor and pry out track frame as far as pos-
sible.

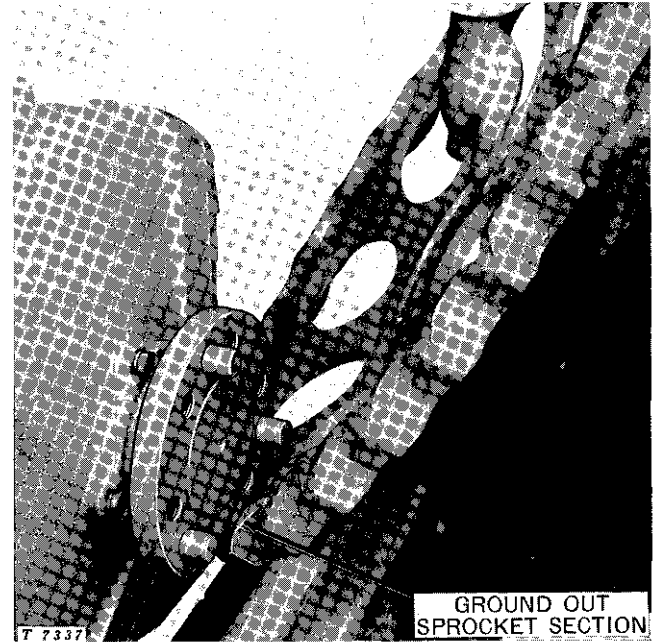


Fig. 20-25-3—Removing Drive Sprocket

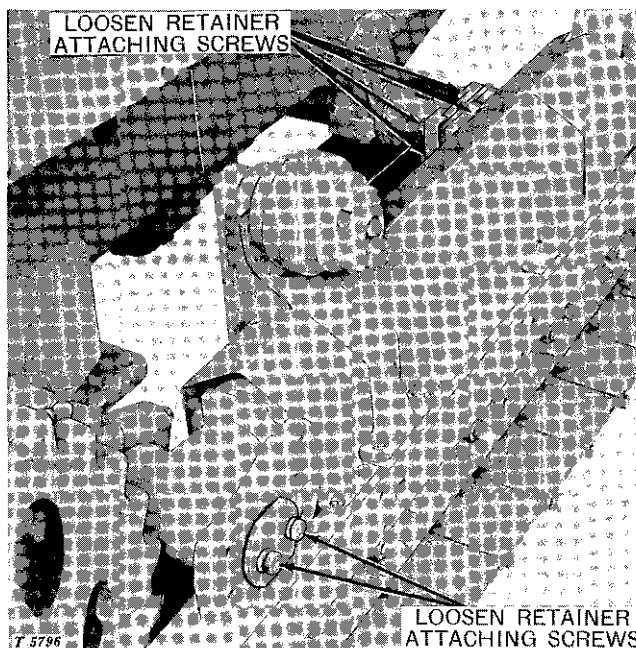


Fig. 20-25-2—Attaching Screws on Cross Bars

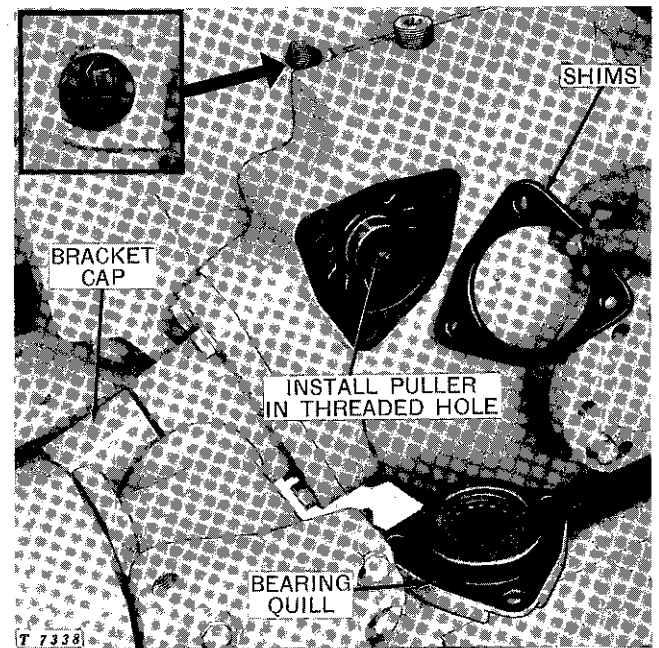


Fig. 20-25-4—Final Drive Housing

Remove the cap screws attaching track drive sprocket to the flanged axle. Tap drive sprocket free from dowels. Rotate sprocket so that notch clears flanged axle (Fig. 20-25-3) and remove sprocket.

Remove bracket cap which attaches final drive housing to rear crossbar (Fig. 20-25-4).

Remove large pipe plug from steering clutch housing (Fig. 20-25-4). Rotate steering clutch until set screw is visible in steering clutch opening. Back off lock nut and loosen, but do not remove set screw.

Remove the three long cap screws and pull out the bearing quill (Fig. 20-25-4).

Install suitable puller in threaded center hole of final drive pinion shaft (Fig. 20-25-4). Remove shaft carefully to avoid damage to the inner oil seal.

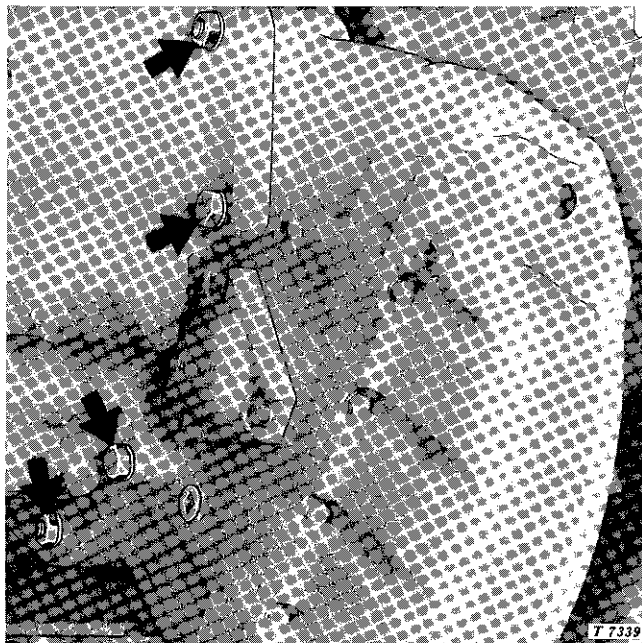


Fig. 20-25-5—Inner Attaching Screws

Remove the attaching cap screws and hex. nuts on the inner side of the final drive housing (Fig. 20-25-5).

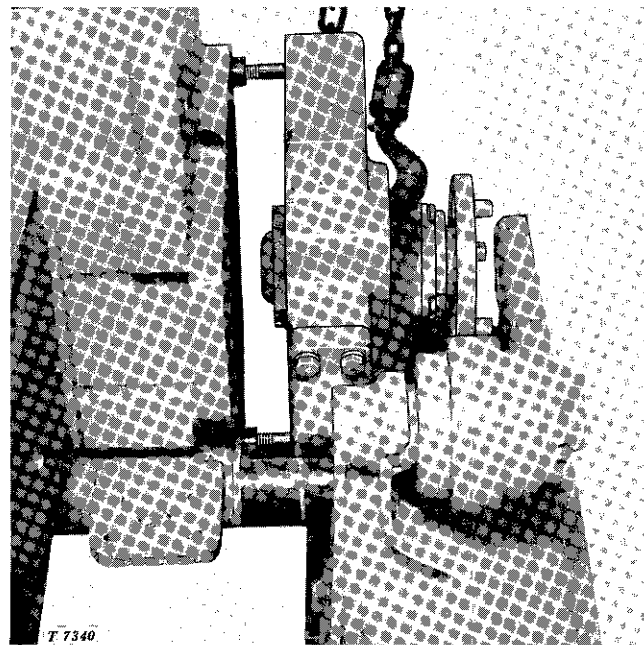


Fig. 20-25-6—Removing Final Drive Housing

Support housing with hoist and separate housing from steering clutch housing (Fig. 20-25-6).

INSTALLATION

Before installing final drive housing on tractor, install final drive pinion shaft in housing and determine the number of shims necessary behind quill to obtain .004 to .013-inch end play. Then remove final drive pinion shaft and proceed with installation.

NOTE: If tractor is equipped with T14361T Quill, it may be necessary to install new style quill to obtain proper end play.

Support final drive housing with hoist and move into position.

Install the attaching cap screws and hex. nuts on the inner side of the final drive housing (Fig. 20-25-5). Tighten to 170 foot-pounds.

Install bracket cap which attaches final drive housing to the rear crossbar.

Make certain that spacer (Fig. 20-25-7) is positioned on end of steering clutch shaft (raised shoulder to the outside).

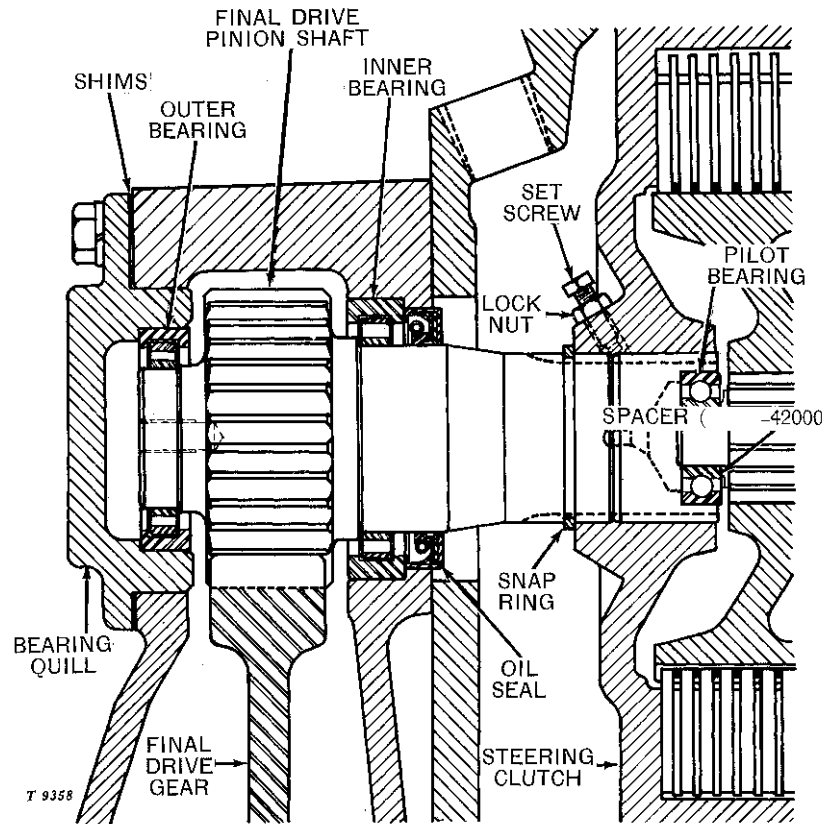


Fig. 20-25-7—Final Drive and Pinion Shaft Installed

NOTE: This spacer is not used on units (42001-up).

Fill bearing bore in end of final drive pinion shaft (Fig. 20-25-7) half full of high temperature grease and coat pinion and bearing surfaces with oil. Carefully insert pinion shaft with snap ring through final drive housing and pinion shaft oil seal, and on into steering clutch. Do not force the pinion shaft into position as forcing the shaft could damage the oil seal and misalign the bearings.

CAUTION: Do not allow snap ring to drag across seal lip when installing pinion shaft. To accomplish this, use a puller installed in the threaded hole as an aid in guiding the pinion shaft.

Tap pinion shaft into final position with a soft hammer, making sure that snap ring on shaft is seated against steering clutch brake drum (Fig. 20-25-7).

Tighten set screw securely and lock in place with lock nut (Fig. 20-25-7).

Replace large pipe plug in steering clutch housing and tighten securely.

Install calculated number of shims (page 20-25-2) on bearing quill (Fig. 20-25-7) and coat bearing with oil. Insert quill into final drive housing. Install mounting cap screws and tighten to 170 foot-pounds.

Position drive sprocket on flanged axle dowels and tap into place. Install the attaching cap screws and tighten to 300 foot-pounds.

Tighten track frame attaching screws at front and rear crossbars (Fig. 20-25-2). Attach rock guard to final drive oil pan.

Connect and adjust the track (Section 180). Replace sprocket shield.

Fill the final drive housing to proper oil level (Section 30). Be sure all pipe plugs are securely tightened into final drive housing (Fig. 20-25-1).



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