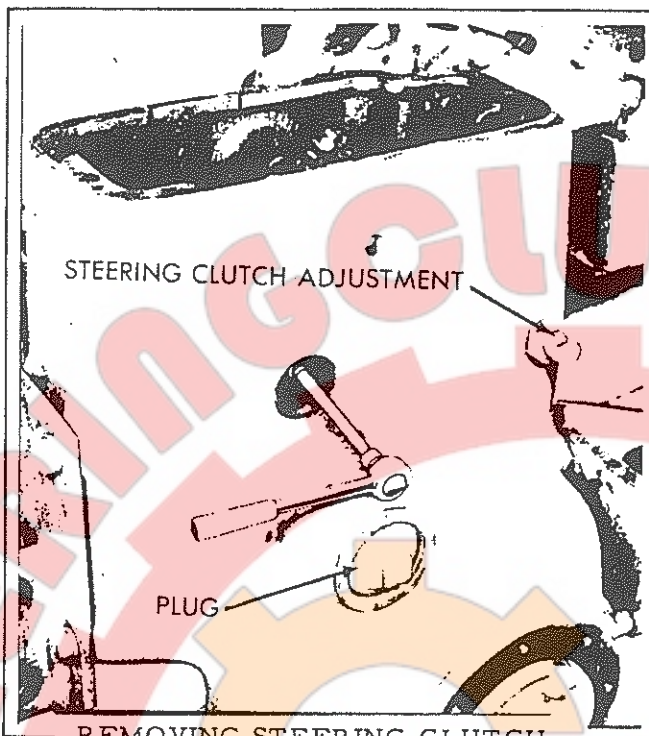


STEERING CLUTCH



REMOVING STEERING CLUTCH
ATTACHING CAPSCREWS

REMOVAL

Remove the seat and the steering clutch cover. Remove the brake band. Remove plug on the outside of steering clutch housing. Rotate clutch until holes in steering clutch drive shaft is at top. (This is easily done when unit is assembled). Loosen the clutch adjustment until maximum free travel of steering lever is obtained. Lift the spring retainer until pin is released from hole in shaft. Use a bar inserted in one of the holes and slide shaft into ring gear carrier until free of clutch.

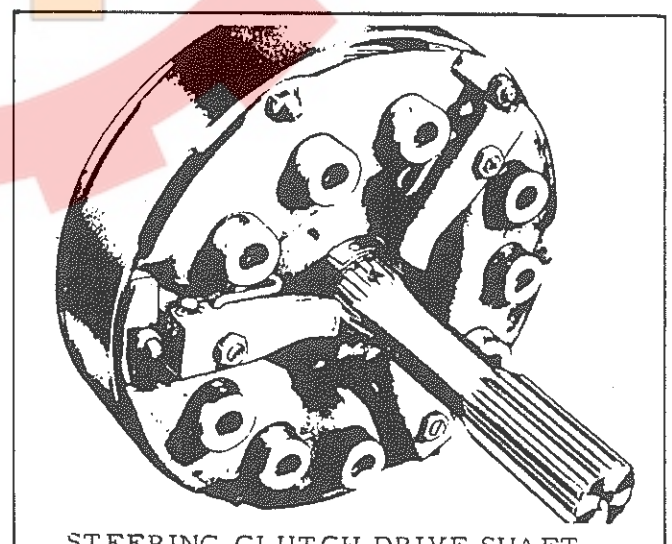
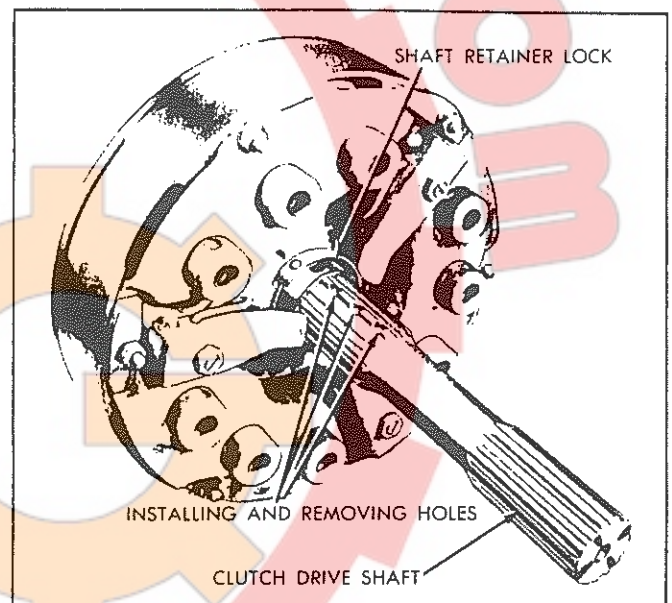
The stilt pin can be removed to allow more freedom of the fork. Unhook the stilt pin spring and use a bar behind the release fork to compress the clutch levers and allow the stilt pin to drop out. With the clutch adjustment completely loose, the pin can be easily removed and replaced in this manner.

Reach through the cover hole in outside of housing and remove the cap screws attaching clutch to the pinion shaft flange. If track is on, it is possible to remove from inside of housing. Lift clutch from housing. Calking compound should be used to seal when units are expected to work in wet conditions.

A rust preventive material can be purchased from Parts, and can be applied inside the housing on the parts. -Use caution not to get rust preventive material on clutch plate facing or brake drum and lining.



STEERING CLUTCH
REMOVAL & INSTALLATION



STEERING CLUTCH DRIVE SHAFT
W/LOCK IN POSITION IN CENTER HOLE
INSTALLED POSITION

STEERING CLUTCH

Page H-8

The pinion flange and shaft must be removed to remove the clutch drive shaft.

H-3 AND HD-3 STEERING CLUTCHES

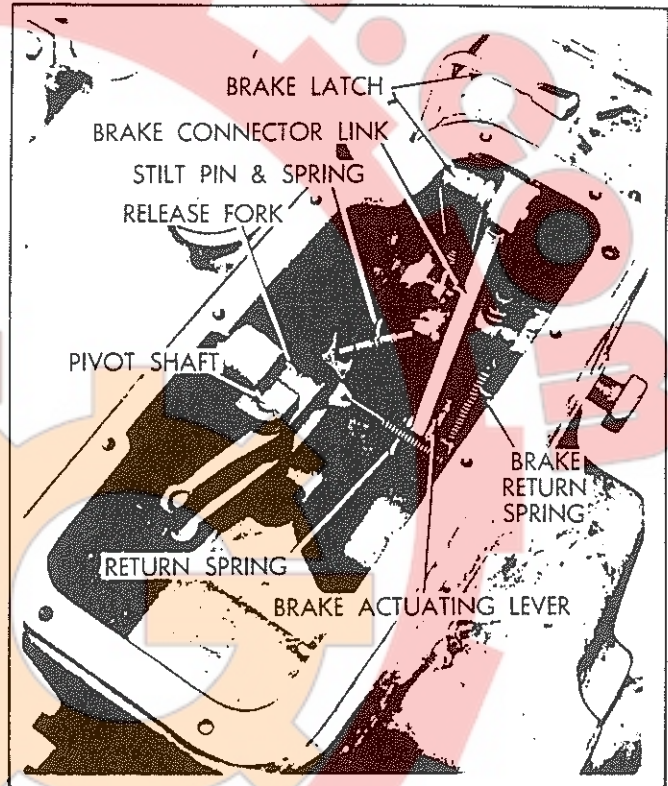
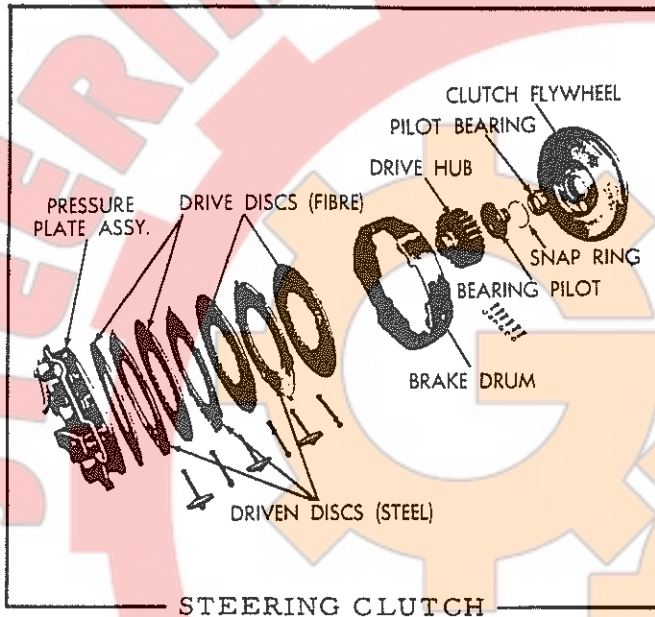
Water can and does enter the steering clutch compartment of the H-3 and HD-3 tractors. Tractors equipped with solid drain plug must be drained occasionally to remove any collected water. This plug is primarily used when the tractor is used in a condition where tractor

must be driven through deep water.

A self-draining type plug should be used in all conditions, except deep water.

Early tractors were shipped with the solid plug. Late tractors are shipped with the self-draining type. In either event, it may be necessary to change plugs according to type of operation. If using the solid plug, be sure to advise operator to drain daily or as required.

CLUTCH RELEASE BEARING AND FORK



REMOVAL

- Remove the quick hitch pin from the fork and bearing carrier. Slide assembly from sleeve. Press bearing from carrier.

Remove the stilt pin and spring from throwout fork. Remove fork return spring. Remove upper cotter pin from fork pivot shaft. Remove cover from bottom of housing directly under the pivot shaft. Drive shaft down and remove the fork. The fork may be removed without removing the steering clutch. The shifter tube and bearing carrier must be installed before the clutch is replaced.

Remove snap ring at end of bearing pilot on back side of flywheel. Press the bearing pilot and driving disc hub from pilot bearing. Remove the pilot bearing retaining snap ring and press pilot bearing from flywheel. Remove capscrew and separate the bearing pilot from the clutch disc driving hub.

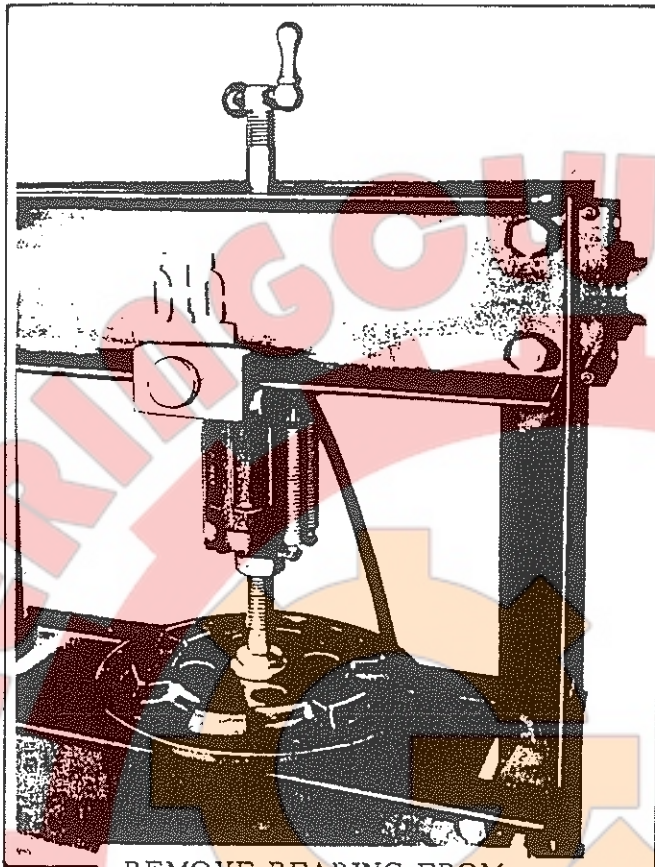
DISASSEMBLE

With the clutch assembly removed from tractor, place on work bench and remove the six cap-screws that hold the clutch assembly together. Lift the pressure plate assembly upward to remove. Lift brake drum upward over clutch disc and remove. Remove the driving and driven clutch discs.

PRESSURE PLATE

REMOVAL

With pressure plate assembly removed from clutch, clamp in vise and use vise and "C" clamps to compress the pressure plate and back plate together. Remove the lever pins and spring washers, and remove the lever assemblies. Remove the lever return springs.



REMOVE BEARING FROM
CLUTCH BACK PLATE

Release the vise and "C" clamps evenly until the assembly can be removed from vise (holding the back plate and pressure plate together) and place (pressure plate downward) on work bench. Remove back plate, pressure springs, and cups.

Check pressure plate for flatness, scoring, or cracks. Check pressure springs for free length by comparing with a new spring. The spring free length should be 2-3/8". When compressed to 1-23/32", it should have 245 to 265 lbs. pressure.

ASSEMBLE

Place pressure plate face downward on bench. Place the nine pressure springs in position on pressure plate. Place the spring cups over springs. Place the back plate over the spring cups. Attach "C" clamp to hold assembly together and place in vise, and compress the back plate and pressure plate together.

Install the lever springs on release levers, and install levers to pressure plate. Be sure lever springs are hooked under clips on back plate. Be sure to compress spring to the point the lever pins can be put in by hand. Install the lever pins with head of pin leading in the direction of rotation when tractor is moving forward. Install spring washer next to head of

pin. Install new cotter pins. Release the vise and "C" clamps evenly.

ASSEMBLE

Attach the bearing pilot to the disc driving hub, tighten capscrews 15 to 20 ft. lbs. torque. Press the pilot bearing into clutch flywheel and install retaining snap ring. Press the hub and bearing pilot into pilot bearing and install retaining snap ring.

Place the clutch flywheel assembly on bench face upward. Place the brake drum over flywheel with the flange edge upward, aligning the holes for capscrews. Install a fiber driving disc with notches engaged with driving hub. Install a steel driven disc with lugs engaged in grooves of brake drum. Proceed with alternate fiber and steel discs until three steel and four fiber discs have been used.

Install the pressure plate assembly and align capscrew holes. Install the three longer capscrews (from flywheel side) in alternate positions, using the clamp bars next to pressure plate. Install the shorter capscrews in alternate positions with lockwashers and nuts next to back plate. Tighten nuts 17 to 21 ft. lbs. torque.

NOTE: Effective with S/N 9700 and up, the three 3/8" NC x 4-1/2", Gr. 8 and the three 3/8" NC x 3-1/2", Gr. 8 socket head capscrews with six huglock nuts are used in steering clutch assembly. Tighten huglock nuts 35 to 40 ft. lbs. torque (torque on nut). Models prior to S/N 9700, the steering clutch can be reworked by redrilling the holes with a 25/64" drill bit and order necessary parts, through your ALLIS-CHALMERS dealer.

Adjust the clutch release levers evenly to a dimension of 2-1/8" from the face of the first fiber disc to the release bearing contact surface of release lever with clutch completely assembled. To adjust, loosen locknut and turn adjusting screw until the above dimension is obtained and tighten nut securely.

The fiber discs should be checked for thickness, a new fiber disc should be .141" plus or minus .005" thick. The steel discs should be checked for flatness. Any warping of the steel discs due to overheating by not fully releasing the clutch levers during operation will cause dragging of the clutch.

STEERING CLUTCH

Page H-10

INSTALLATION

With the steering clutch properly assembled and the finger adjustment properly made, the assembly can be installed in the tractor.

Cradle the steering clutch assembly in the brake band as it was removed. Locate the retainer lock ring on the hub with the open part of the ring toward front of tractor and retainer pin forward of hole in hub. Position turn clutch so hole is up and lower clutch assembly into housing.



STEERING CLUTCH
FINGER ADJUSTMENT

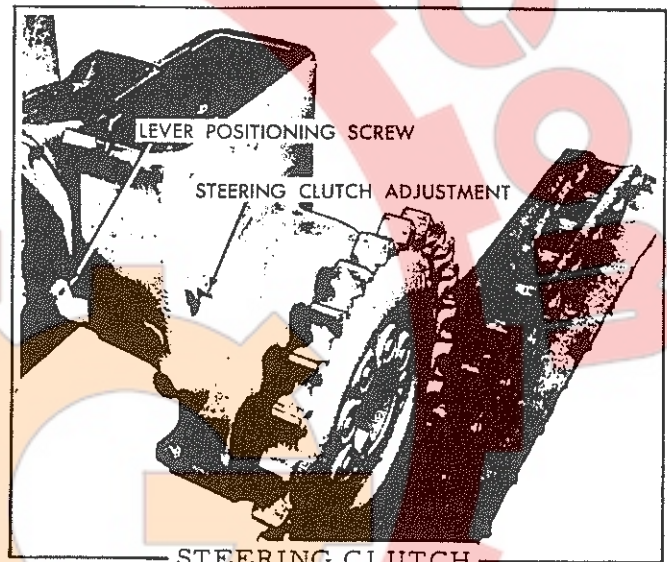
FIRST METHOD

The steering clutch drive axle must be pushed into the bearing carrier tube to install the clutch. A small 16 gauge soft wire can be used to pull the axle back out of the tube when the clutch is installed. Roll a loop on the end of the wire to fit into the first detent hole, and lay the loop in the hole with the wire running out of the nearest spline. Push axle into the shifter tube flush, and bend wire up and back over tube, to be out of the way. When the clutch is attached to the flange, pull the wire and axle out of shifter tube.

SECOND METHOD

Install the clutch assembly to the flange. Do not tighten the attaching capscrews. Use caution to have clutch indexed properly for splined hub and detent pin hole.

Attach the clutch assembly to the pinion flange, and do not tighten the capscrews completely. A small amount of freedom will allow ease of alignment of the drive axle and the clutch hub splines. With the retainer ring on the opposite side disengaged, use a pin bar in the detent hole and pry over clutch and use this axle as a hammer blow to bump axle out of carrier. Bump axle into view so pin bar can be used to engage axle into clutch. There are three detent holes in axle to be used to position axle in and out of clutch hubs. Relocate the axle into the steering clutch and engage detent pin in hub and center hole of axle. Tighten clutch to flange. Use bar and install stilt pin between push points and hook springs. Connect linkage and any clutch hand levers for proper travel.



STEERING CLUTCH

REMOVAL

Loosen the clamp bolt on the steering clutch lever. Slide lever from the shaft. Remove the clutch adjusting screw and remove shaft.

Installation, reverse procedure. The lever has a setscrew at the base which rests against the steering clutch housing. This setscrew should be adjusted so that the top of the lever is 1-1/2" to 1-3/4" from back rim of fuel tank.

The clutch is properly adjusted when the levers have 3-1/2" free movement measured from the rim of gas tank. As the clutch wears this clearance diminishes, and should be readjusted when free travel has decreased to 1-1/2" to 2".

BRAKE ADJUSTMENT

The brake rods are properly adjusted at factory, and should not need any further adjustment, unless replacement of rod is necessary.

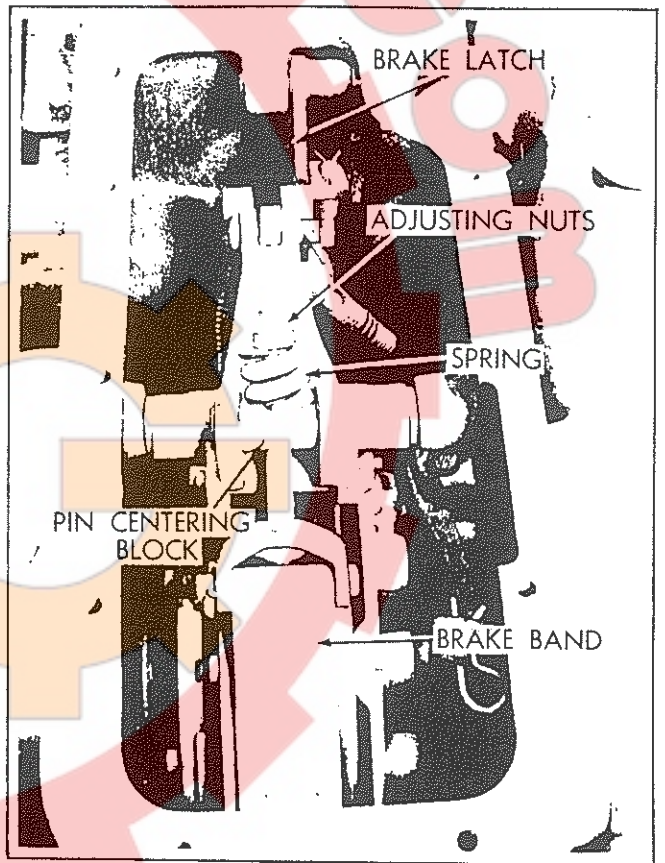
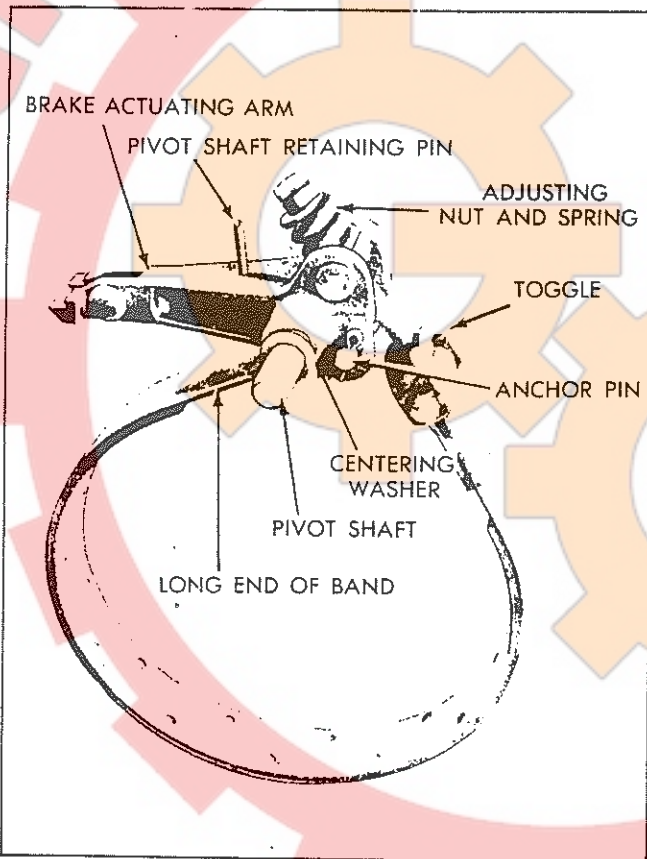
To adjust brake band, place the brake latch hand lever in the "up" or "off" position. Remove cover at top of brake compartment. Loosen the two adjusting nuts and if the brake pedal free travel is excessive, tighten brake by turning the adjusting nuts clockwise until the brake pedals have 2-1/2" of free travel.

If brake rods have broken and a new one has to be installed for any reason, it will be necessary to first determine the proper length for rod before adjusting brake.

The approximate length of the brake rods when installed will be 13-1/4" from center of hole in yoke to center of bend at end of rod.

With cover removed, loosen brake band adjusting nuts, and with the brake latch hand lever in the "down" or "on" position, place the brake arm in the upper most notch of the brake latch. Hold brake pedal in returned position (pedal arms contacting platform). Install and adjust brake rods into yokes until the rod lines up with holes in pedal arm and arm of shaft assembly, then tighten lock nut on rod. Adjust brake band as described above.

BRAKE BAND



REMOVAL

Remove seat and steering clutch cover. Remove the brake adjusting locknuts and spring. Drive the roll pin from the brake actuating arm and drive shaft from housing. Remove pins from ends of band. Turn band forward until open end

of band is at bottom of housing. Tip the top end of band towards outside of housing and pull up. The ends of the band will pass upward around the throwout bearing. Do not spring band out of shape. If the band is deformed it will not clear drum when reinstalled. The long end of band is at the front when the band is reinstalled.

BRAKE LATCH - REMOVAL

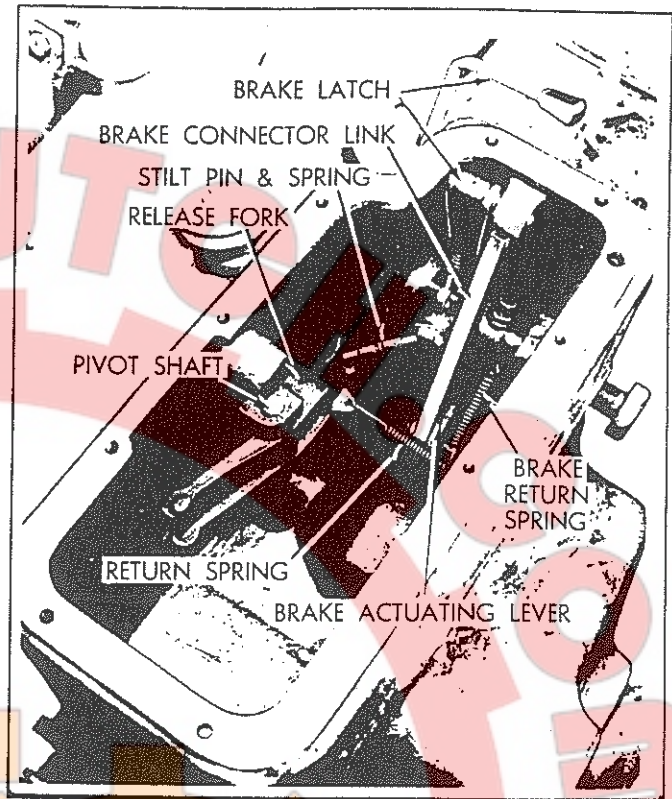
Drive the roll pin from the lever and shaft. Remove cotter pin from lower end of spring stud. Remove shaft from actuating lever and remove the lever assembly. Remove the upper cotter pin from the spring stud and slide stud from the trunnion block.

BRAKE LEVER

The brake return spring is hooked onto the clutch lever shaft and must be removed. Remove the brake pedal rod. Loosen the clamp bolt on the inner lever. Slide the splined shaft from lever. A new two piece brake return spring is being used.

To install in R. H. brake and steering clutch; to install remove fender platform and seat support, three spool valve assembly, and hydraulic filter.

1. Remove the steering clutch lever.
2. Remove the hand lever shaft adjusting screw.
3. Remove the fork lever setscrew.
4. Drive the hand lever shaft toward the center of the tractor so that the woodruff key is all of the way out of the fork lever. The key cannot be removed as in Step No. 3 left hand installation, due to the end of the hand lever shaft striking the right hand side of the transmission. The control lever is on this side of the transmission, and, therefore, the hand lever shaft cannot be shifted far enough toward the center of the tractor to remove the woodruff key.
5. To remove the key, place a bar between the key and the inside of the final drive housing and drive the shaft towards the center of the tractor until the key is pushed out of its seat.
6. Then drive the hand lever shaft toward the outside of the tractor until the brake return spring comes off the end of the shaft and the fork lever drops out of place.
7. Unhook the lower end of the production spring (open hook).
8. Hook lower end of closed hook spring first, then with a loop of wire through the closed



hook of the spring, stretch the spring into position and push the hand lever shaft back through the closed spring hook.

9. Push the hand lever shaft back through the fork lever until the full length of the woodruff key seat can be seen on the left hand end of the fork lever.
10. Reseat the woodruff key.
11. Pry the hand lever shaft back into place.
12. Reinstall the fork lever setscrew.
13. Reinstall the steering clutch lever.
14. Reinstall and adjust the hand lever adjusting screw.
15. Reinstall the platform, fender, seat support assembly, hydraulic filter, and the three spool valve assembly.

To install in L. H. brake and steering clutch; remove fender platform and seat support.

1. Remove the fork lever setscrew.
2. Remove the hand lever shaft adjusting screw.
3. Drive the hand lever shaft toward the center of the tractor and remove the woodruff key. This was accomplished by forcing the key end against the inside of the housing which pushed the key up partially out of its seat.
4. Shift hand lever shaft just far enough to allow the closed end of the spring to slip over the end of the shaft, but not far enough to force the woodruff key completely out of its seat.
5. Hook lower end of spring first, then with a loop of wire through the closed hook of the spring, stretch the spring into position and push the hand lever shaft back through the closed spring hook.
6. Reseat the woodruff key.
7. Push the hand lever shaft back into place.
8. Reinstall the fork lever setscrew.
9. Reinstall and adjust the hand lever adjusting screw.
10. Reinstall the platform, fender, and seat support assemblies.

BRAKE LEVER ASSEMBLY

Reverse removal procedure. The brake lever must be indexed on the spline. Holding the outside lever tight to the housing, the inner lever must be 13-9/16" from the top of housing at the top edge of link pin.

PLUG ASSEMBLY FOR STEERING CLUTCH HOUSINGS

A plug assembly and gasket is provided for the bottom of the steering clutch and brake housing on the H-3 and HD-3 crawler tractors. The plugs are removed from the housings when the tractor is shipped. This is done to allow any moisture to quickly drain from the housings when the unit is shipped or in storage. The plugs are shipped in the trim package with each tractor, and must be installed when the tractors are put into operation.

Periodic inspection must be made, the plugs should be removed and the housing checked for accumulation of foreign material. The self draining, vented plugs should also be checked to insure proper function of the pin to allow the vented plugs to drain.

Also, from Parts Stock a solid plug is available using the same gasket. The solid plugs should be obtained and installed in tractors that are expected to operate in wet or swamp conditions.

When using the solid plugs, the periodic inspection is most important to drain any moisture collected in the housing.