SECTION 1
HYDROSTATIC SYSTEM



FIGURE 1-1



FIGURE 1-2

The hydrostatic system consists of a pump and gearbox assembly, relief valve, motor, and filter. The high pressure oil from the pump goes through the pressure relief valve and then to the motor. Return oil is filtered between the motor and the tongue reservoir.

If a unit loses hydraulic power, use the following procedure to troubleshoot the system.

1. Check the hydrostatic oil level in the tongue as detailed in the operator's manual.
2. Change the oil filter, A, Figure 1-1.
3. Remove the relief valve, A, Figure 1-2, from the housing. Clean the valve and inspect for wear or contamination. Inspect the O-rings for possible wear and replace them if worn or damaged. Reinstall or replace the valve and then test the machine.

WARNING: GAUGES, GAUGE FITTINGS, AND HOSES MUST HAVE OPERATING PRESSURE RATINGS AT LEAST 25 PERCENT HIGHER THAN HIGHEST PRESSURES OF THE SYSTEM.

NEVER ADJUST RELIEF VALVES TO HIGHER PRESSURES THAN THOSE SPECIFIED BY THE EQUIPMENT MANUFACTURER.

WARNING: ALWAYS PROTECT THE SKIN AND EYES FROM ESCAPING FLUID UNDER PRESSURE. FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE THE SKIN, CAUSING SERIOUS PERSONAL INJURY.

IF INJURED BY ESCAPING FLUID, OBTAIN MEDICAL ASSISTANCE AT ONCE. SERIOUS INFECTION OR REACTION CAN DEVELOP IF MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY.

BEFORE DISCONNECTING LINES OR FITTINGS, BE SURE TO RELIEVE ALL PRESSURE. BEFORE APPLYING PRESSURE TO THE SYSTEM, BE SURE ALL CONNECTIONS ARE TIGHT AND THAT LINES, PIPES, AND HOSES ARE NOT DAMAGED.

4. Remove ¼" NPT plug, B, Figure 1-2, and install a high pressure gauge.

   NOTE: The relief valve is set for 3500 PSI (24,133 kPa) and is nonadjustable.

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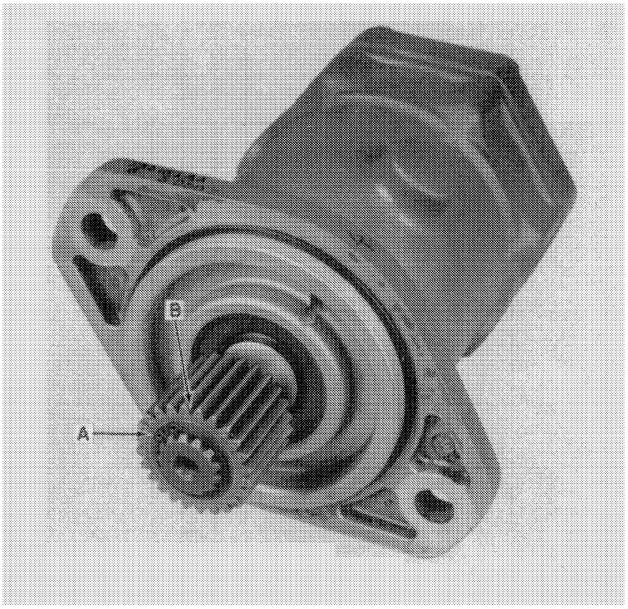


FIGURE 1-8



FIGURE 1-10

PUMP

Disassembly

1. Clean the outside of the pump thoroughly before disassembling.
2. Remove snap ring, A, Figure 1-8, and remove gear, B.
3. Remove the rear snap ring after the gear is removed.
4. Remove the six cap screws to remove back plate, A, Figure 1-9, from housing assembly, B. Use a soft hammer to loosen the back plate and then pull the back plate straight out.
5. Remove O ring, C, Figure 1-9.
6. Remove the complete piston block assembly, A, Figure 1-10, from the housing.
7. Lift the piston plate, pivot, and shoe assemblies, B, Figure 1-11, out of the rotating block. Lay these parts on cardboard to avoid damage to them.
8. Remove cam plate, B, Figure 1-10, and place it on cardboard.

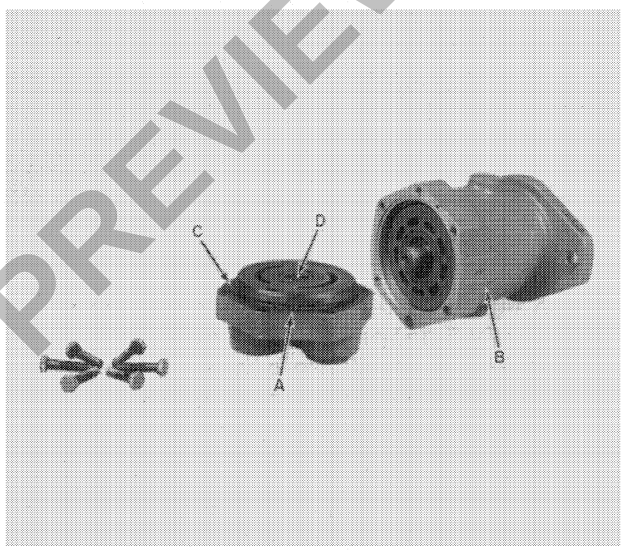


FIGURE 1-9

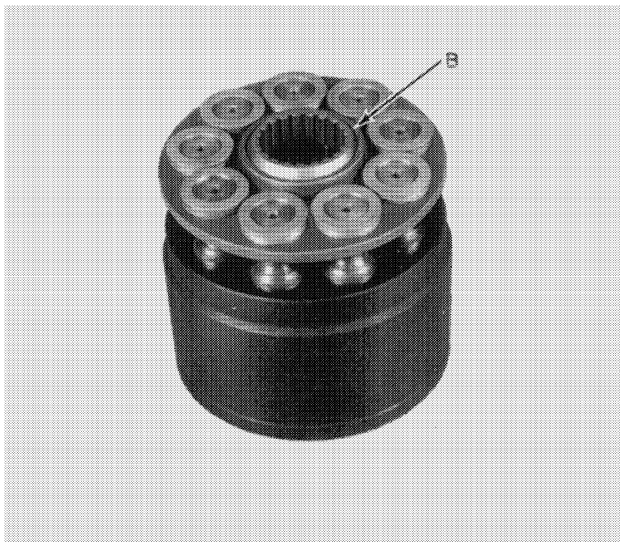


FIGURE 1-11

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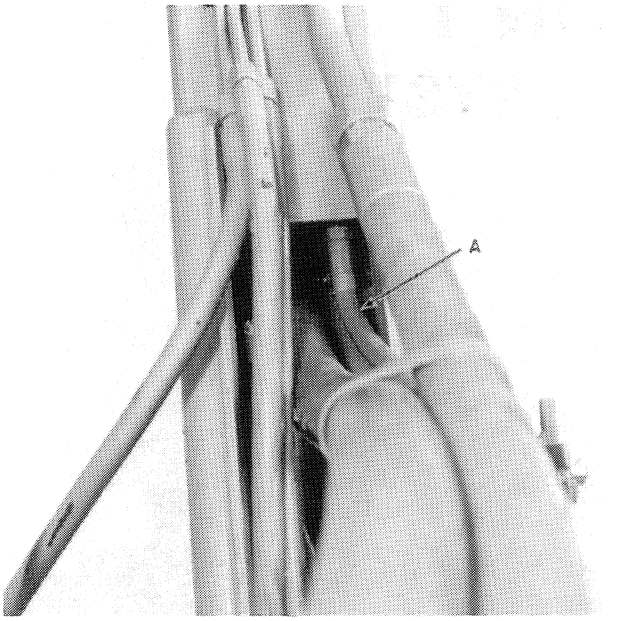


FIGURE 1-3

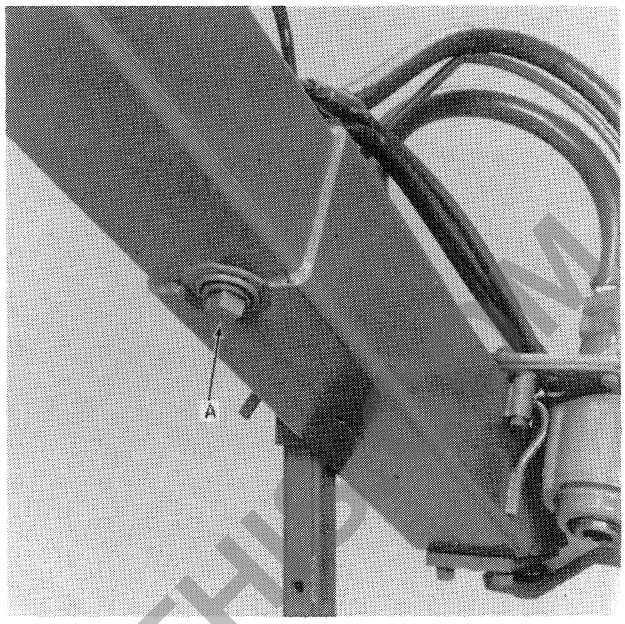


FIGURE 1-4

5. Block the machine by placing a wooden wedge between the rolls.

WARNING: MAKE SURE THE WEDGE IS PROPERLY SECURED BEFORE STARTING THE TRACTOR TO CHECK THE PRESSURE.

Start the tractor and engage the PTO. The pressure should be 3500 PSI (24,133 kPa).

IMPORTANT: Do not bypass oil through the relief valve for any length of time as tremendous heat will build up in the valve. If the pressure is normal, the relief valve is functioning properly and leakage must be checked at the pump and motor.

6. If a flow meter is not available to check case drain oil volume at the pump, oil can be collected in a measurable container. Disconnect the case drain return line, A, Figure 1-3, and install a ⅜" pipe plug in tongue.

7. Start the tractor and time a certain volume of oil collected. Normally the flow should be approximately 1½ gallons (5.5 L) per minute. Any amount over 2 gallons (7 L) indicates worn internal pump components and the pump must be rebuilt.

8. If the pump oil volume is normal, check the volume at the motor case return line. Remove the line at C, Figure 1-2. Normal flow should be approximately 1½ gallons (5.5 L) per minute. Any amount over 2 gallons (7 L) indicates worn internal motor components and the motor must be rebuilt.

HYDROSTATIC OIL

The hydrostatic oil must be kept free of dirt, dust, water, rust, etc., or hydrostatic components could be severely damaged. If a catastrophic failure occurs with a pump or motor, the system must be drained.

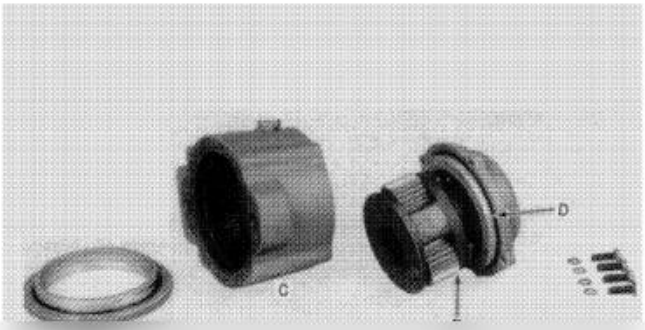
To drain the oil, lower the front of the tongue as low as possible. Remove drain plug, A, Figure 1-4. Remove the lines from the pump and the motor. Clean the hoses and tubing with air and solvent.

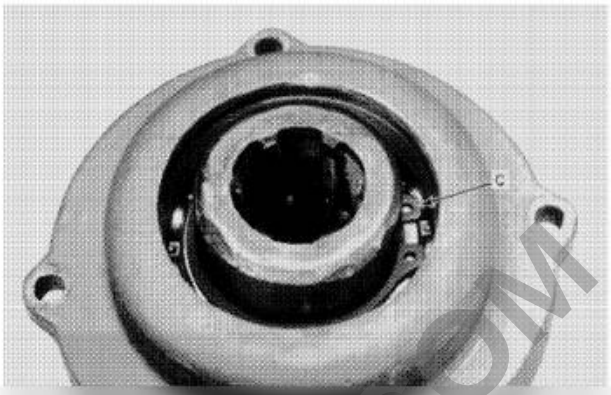
Flush the tongue by spraying solvent under pressure into the rear of the tongue so metal chips, etc., will be moved to the front of the tongue. Clean chips and foreign material from the front of the tongue through the drain port.

Install the pump, motor, hose, tubing and drain plug. Install a new filter and add five gallons (19 L) of hydraulic oil. Refer to the operator's manual for approved oils.

Start the tractor and run it at about ½ throttle to allow full flow through the filter. This procedure will help clean the system if any contamination was left in it.

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SAFETY PRECAUTIONS

1. ALWAYS DISENGAGE THE PTO, LOCK THE TRACTOR BRAKES, AND SHUT OFF THE TRACTOR ENGINE BEFORE:
   a. LEAVING THE TRACTOR SEAT.
   b. LUBRICATING.
   c. CLEANING OR UNPLUGGING ANY PART OF THE MOWER-CONDITIONER.
   d. ADJUSTING THE MOWER-CONDITIONER.
2. ALWAYS LOWER THE HEADER TO THE GROUND OR ENGAGE THE TRANSPORT STOPS WHEN PARKING THE MOWER-CONDITIONER.
3. ALWAYS USE THE HEADER TRANSPORT STOPS AND TRANSPORT LOCK PIN WHEN TRANSPORTING THE MOWER-CONDITIONER.
4. NEVER WORK UNDER A RAISED HEADER UNLESS IT IS SECURELY LOCKED WITH THE HEADER TRANSPORT STOPS.
5. ALWAYS BLOCK THE WHEELS BEFORE WORKING ON OR UNDER THE MOWER-CONDITIONER.
6. DO NOT START THE MOWER-CONDITIONER UNTIL YOU KNOW THAT EVERYONE IS CLEAR OF THE MACHINE AND HAVE MADE SURE NO TOOLS ARE LYING ON IT.
7. KEEP ALL SHIELDS IN PLACE. NEVER WORK AROUND THE MOWER-CONDITIONER IN LOOSE CLOTHING THAT COULD CATCH IN A MOVING PART.
8. DO NOT MODIFY ANY SHIELDS OR OPERATE THE MOWER- CONDITIONER WITH ANY SHIELDS REMOVED.
9. ALWAYS USE ADEQUATE LIGHTS AND SAFETY WARNING DEVICES WHEN TRANSPORTING THE MOWER-CONDITIONER ON PUBLIC ROADS OR AFTER DARK. CHECK WITH YOUR LOCAL LAW ENFORCEMENT AGENCIES FOR SPECIFIC REQUIREMENTS.
10. LIMIT TOWING SPEEDS TO 25 MPH (40 KM/HR) MAXIMUM.
11. NEVER STAND BEHIND THE MOWER-CONDITIONER WHILE IT IS RUNNING.
12. OPERATE THE MOWER-CONDITIONER ONLY AT THE PTO SPEED FOR WHICH IT IS DESIGNED. ATTACH A 540 RPM IMPLEMENT ONLY TO A 540 RPM PTO AND A 1000 RPM IMPLEMENT TO A 1000 RPM PTO.
13. LONG EXPOSURE TO LOUD NOISE CAN DAMAGE YOUR HEARING. WEAR A SUITABLE HEARING PROTECTIVE DEVICE SUCH AS EAR MUFFS OR EAR PLUGS IF YOU ARE EXPOSED TO UNCOMFORTABLE NOISE LEVELS.
14. BEFORE RAISING OR LOWERING THE HEADER, BE SURE NO ONE IS STANDING NEARBY OR TOUCHING THE MOWER-CONDITIONER.
15. USE OF THE OPTIONAL SAFETY CHAIN IS RECOMMENDED WHEN OPERATING ON A PUBLIC ROAD.

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SECTION 3
GEARBOXES

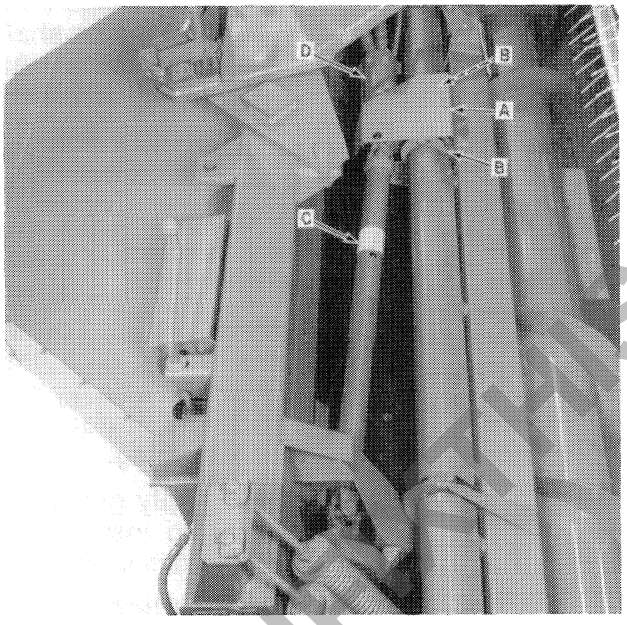


FIGURE 3-1

HEADER DRIVE GEARBOX

Removal

1. Drain the oil from the gearbox.
2. Remove shield, A, Figure 3-1.
3. Remove the three carriage bolts from each knife drive coupling, B. Be careful not to lose the flat washers between the shaft coupling and the gearbox coupling.
4. Remove the conditioner drive PTO, C.
5. Remove the two cap screws and hydrostatic motor, D. Do not disconnect the hoses. Secure the motor to the frame so it cannot be damaged.
6. Remove the four mounting cap screws and remove the gearbox.

CAUTION: USE CARE, THE GEARBOX IS HEAVY.

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