7 - BRAKES

8 - HYDRAULICS

9 - MOUNTED EQUIPMENT

845B / 845B DHP
865B / 865B VHP / 865B AWD
885B / 885B DHP / 885B AWD
Grader

SERVICE MANUAL

Part number 84559576
English
October 2011

CASE

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Support/pedal group

The brake pedal is secured with support group to the floor plate of the machine.
This group regulates:

- the maximum braking pressure which is obtained through the pedal stroke against stop screw;

Braking modules

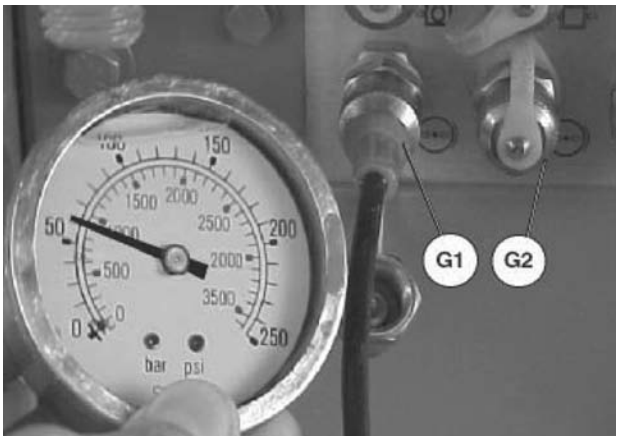
The braking modules are the elements controlling the braking pressure. Each braking module is connected to a valve and an accumulator. The accumulators are high pressure type containers with a special membrane nitrogen charge, on one side, and to the oil pressure on the other. Three threaded outlets connect the module to the brakes, the accumulator and the pressure switch controlling the stop lights.
The modules have longitudinal ducts allowing a hydraulic connection with the discharge and the charging circuit of the accumulators.

Accumulator charge valve

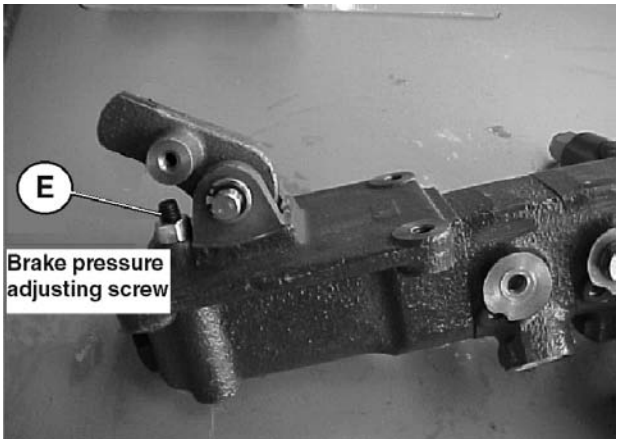
The valve maintains the value of the pressure of the accumulators at a determined range (1175-1825 psi). This pressure is set by turning the screw (6) located on the cylindrical end and is protected by a cap nut.

CHECK OF BRAKE CONTROL PRESSURES

Connect two pressure gauges G1 and G2 (100 bar 1450 psi capacity) to the pressure pick-up point indicated in figure.
Engage the parking brake.
Start the engine and at idle speed, actuate the brake pedal and check that the pressure indicated by the pressure gauges is 62 ÷ 68 bar (900 ÷ 985 psi).
Loosen locknut (E) and turn screw in or out the to adjust the pressures in case they are not within specifications.
Tighten nut after any resetting.



> ⚠ ***WARNING:*** *Disconnect and reconnect all connections with engine off and system discharged. The accumulators maintain some branches of the circuit pressurized with engine not running. Pressurized fluid escaping from loose connections can cause personal injuries. Always wear glasses with side shields.*



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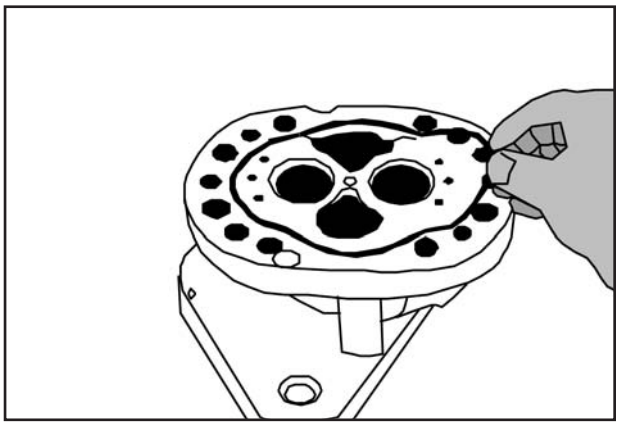
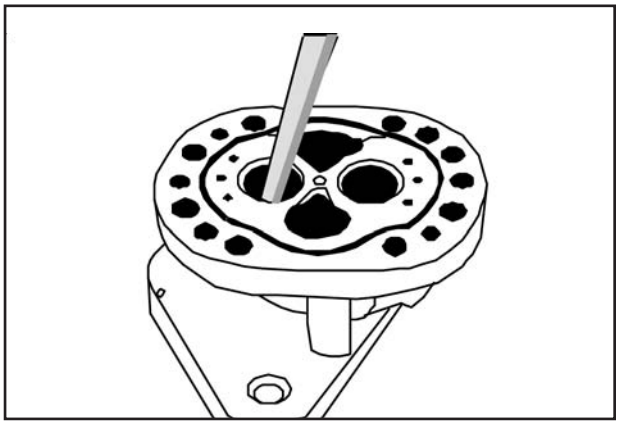
Remove the square section o-ring of the front cover and discard it. Replace it with a new part.

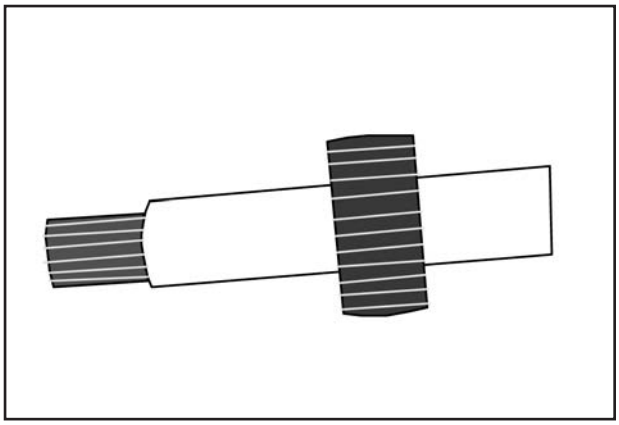


Remove the retainer if there is one installed on the front cover and use a screwdriver or another tool to remove the retainer from the front cover shaft.

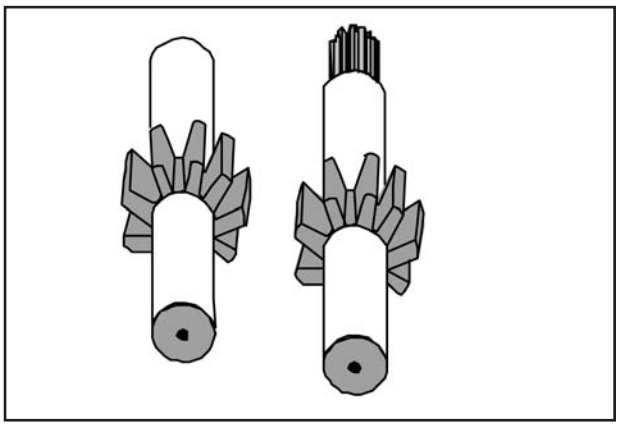


Inspection of the Parts for Wear

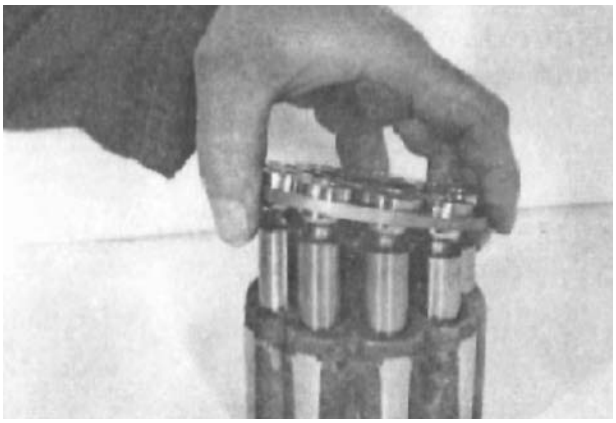
Clean all parts before inspecting them. It is not necessary to inspect the retainers that must be replaced from the front cover shaft.



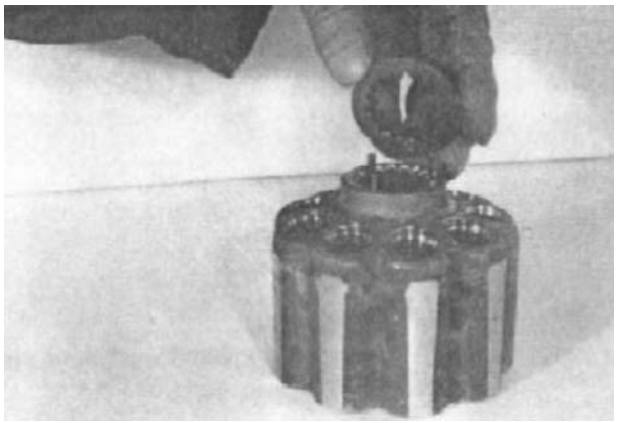
Inspect the surface of the gears of both shafts for excessive wear or scratches.



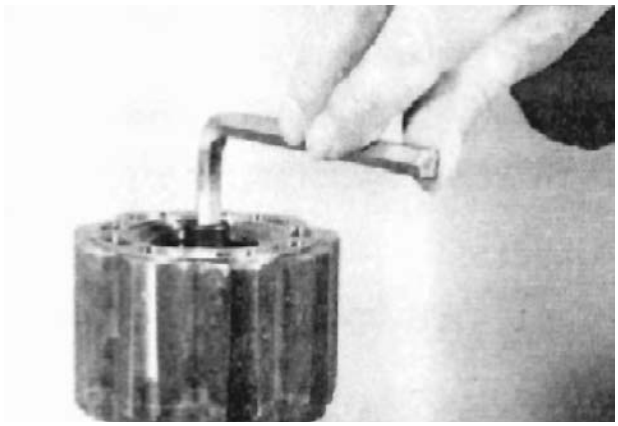
Remove the pistons and the retention plate.



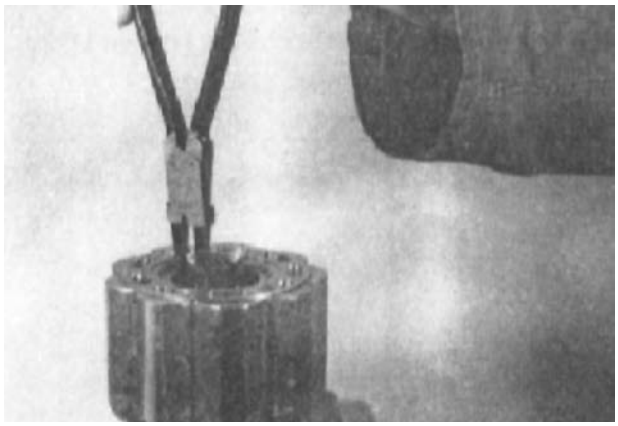
Remove the concave washer.



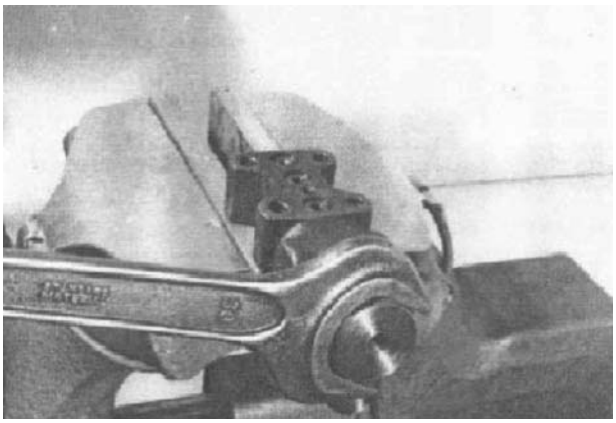
Compress the central spring to dissasemble the retainer ring.



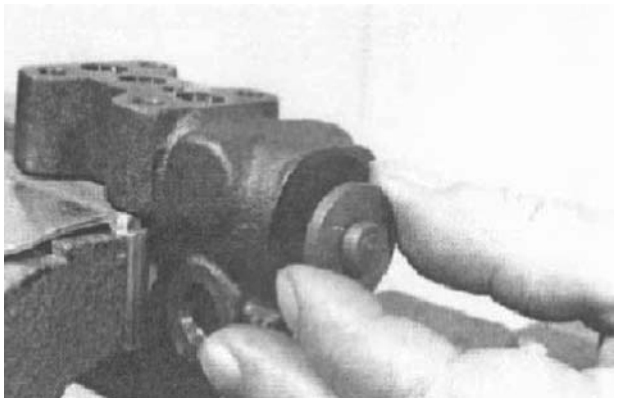
Disassemble the retainer ring.



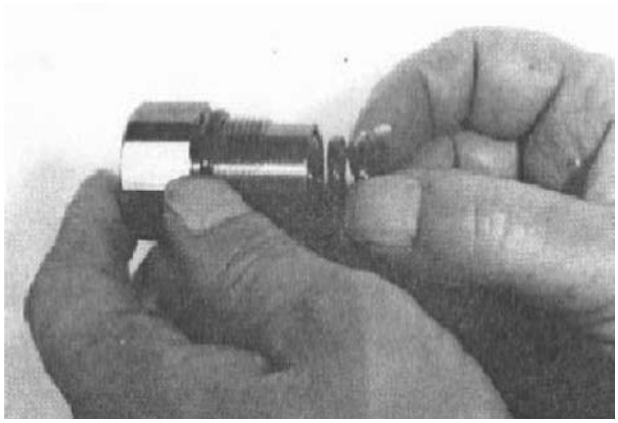
Remove the plug.



Remove the adjusting disc.



Remove the spring (two for the flow control valve).



Remove the cover of the spring.

Valve Section Disassembly

1. Lightly clamp the valve section housing in a vise with soft jaws.

NOTE: *Excessive clamping force may distort valve spool bore and compensator piston bore.*

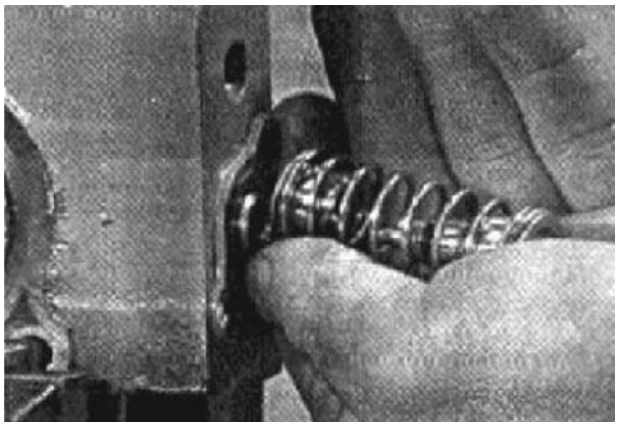
2. Remove the machine screws and the seal plate.

3. Remove the socket head screws and the spring cap.

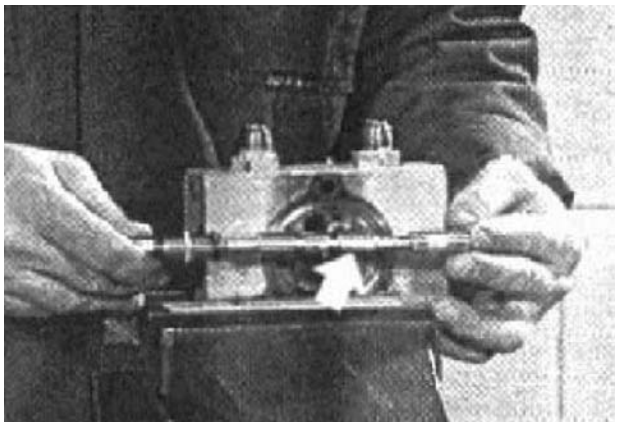
4. Remove the spool end.

NOTE: *To prevent the valve spool from rotating, insert a thin rod or similar tool in the linkage pin hole.*

5. Remove the spring seats, spring and spool stop ring.
6. Pull the valve spool out of the valve section housing.



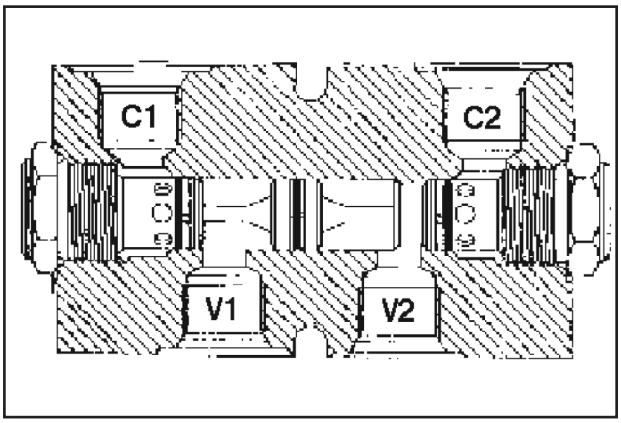
Removing Spring Seats. Spring and Spool Stop Ring.



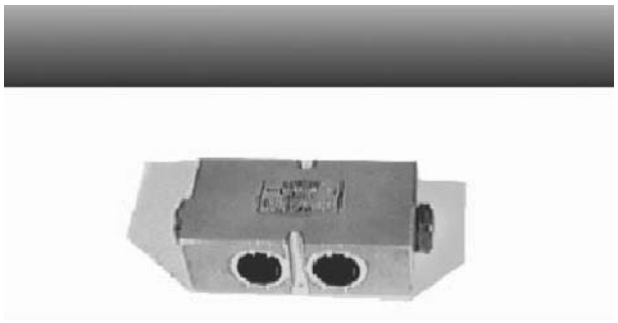
Removing Valve Spring from Valve Section Housing

DUAL CHECK VALVE

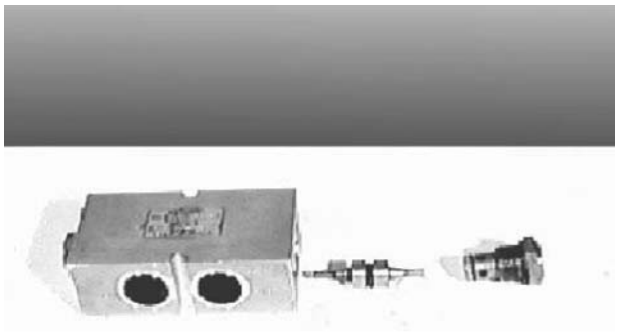
This valve allows flow from the V ports to the C ports, while blocking flow from the C ports to the V ports when pressure is applied at opposite V port.



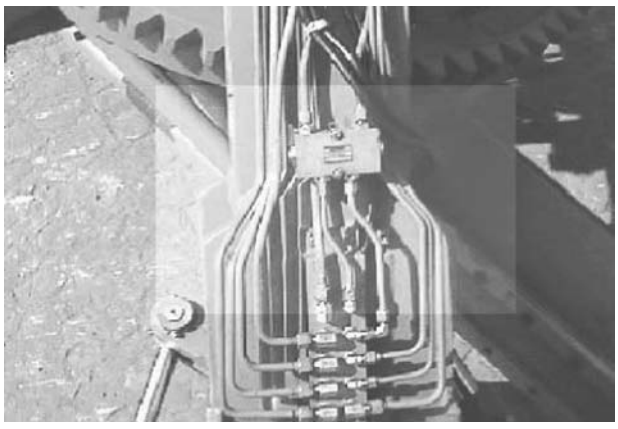
Retainer valve of wheel lean.



The retainer valve of the wheels is a simple valve, that has a safety system. It is composed of a piston and two onewayvalves.



The retainer valve of the wheel lean is located on the upper part of the frame support.



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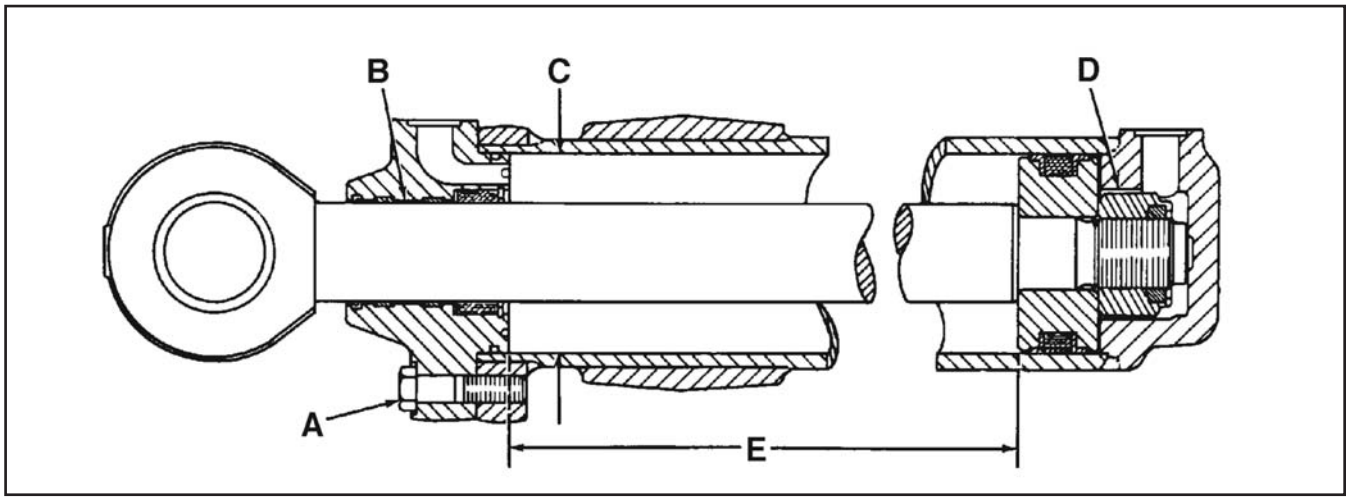
Ripper Cylinder



A. Torque cylinder head capscrews to ..... 216 -235 Nm (159.3 - 173.3 lb.ft)

B. Cylinder head rod bore I.D. ..... 60.800 - 61.000 mm (2.394 - 2.402 in)

C. Piston rod O.D. ..... 59.960 – 60.000 (2.361 - 2.362 in)

D. Cylinder I.D. ..... 120.120 - 120.260 mm (4.729 - 4.735 in)

E. Piston O.D. ..... 117.950 - 118.090 mm (4.644 - 4.649 in)

F. Lubricate and torque piston rod locknut to ..... 2196 - 2393 Nm (1620 - 1765 lb.ft)

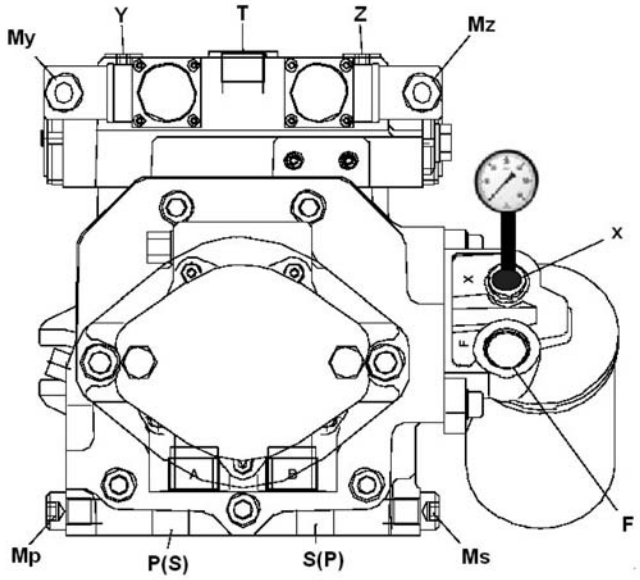
G. Stroke of the piston rod ..... 478 mm (18.8 in)

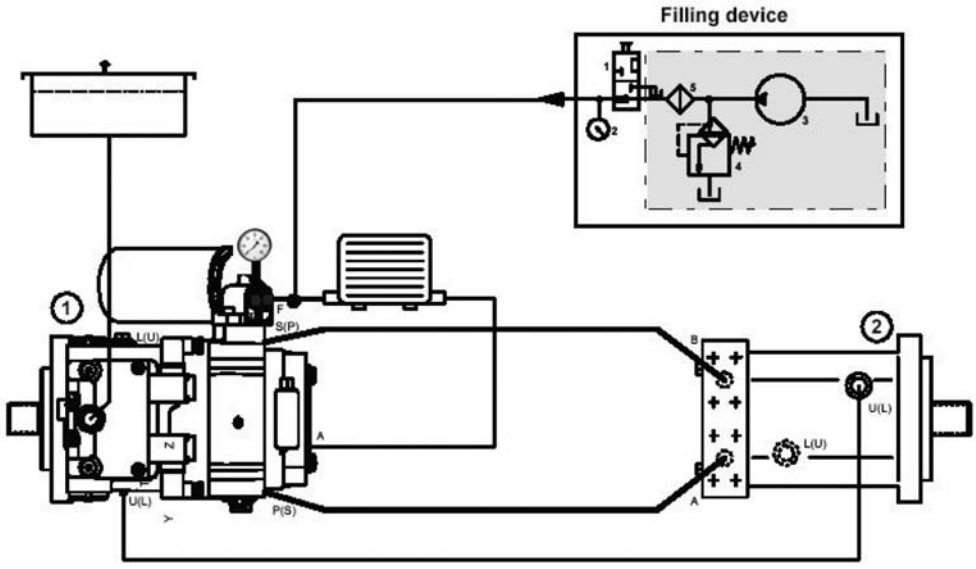
Initial Filling of HST With a Filling Device

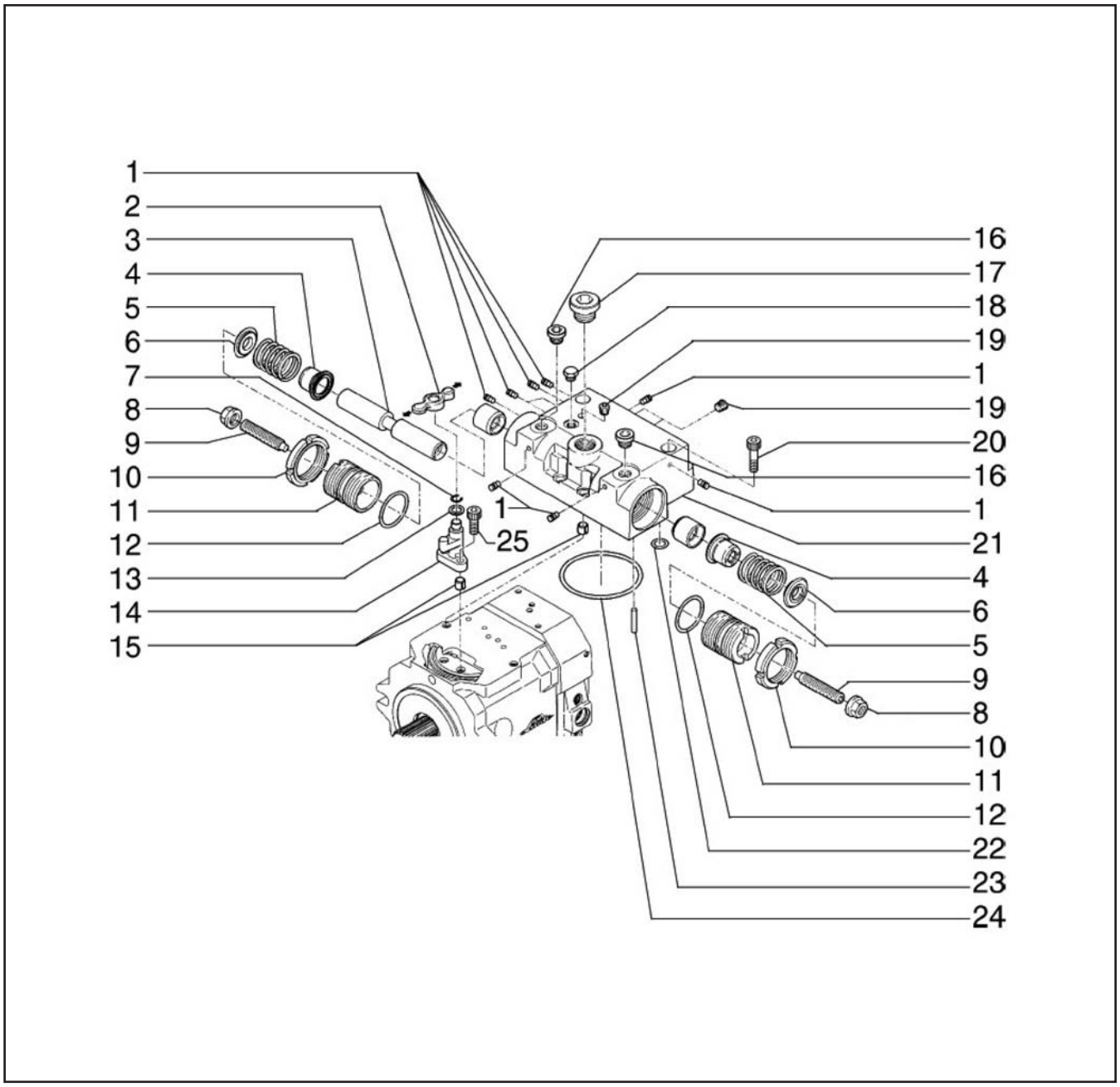
Preparation

- Connect gauge to port “X”
- Connect filling device to port “F” (boosting)
- Loosen vent plug on cooler
- Loosen fittings on gauge ports ‘Ms” and “MP” of the HPV pump and remove them. Connect two small lines for venting and lead both into a reservoir
- Loosen plug on port “L” or “U” (the one which is not occupied)
- If the housing of hydraulic motor is not easily accessible, ot must be filled with clean oil beforehand.

EXPLANATIONS	
Hydraulic Pump HPV-02	
P, S	High pressure port
B	Suction port boost pump
A	Pressure port boost pump
F	Control and boost pressure supply
T	Tank and vent port
X	Boost pressure gage port
Y,Z	Controls pressure gage port
MY, MZ	Proportional solenoid 24v
Ms , Mp	High pressure gage port
L	Oil filling, tank and vent port
U	Drain, flushing return from hydr motor

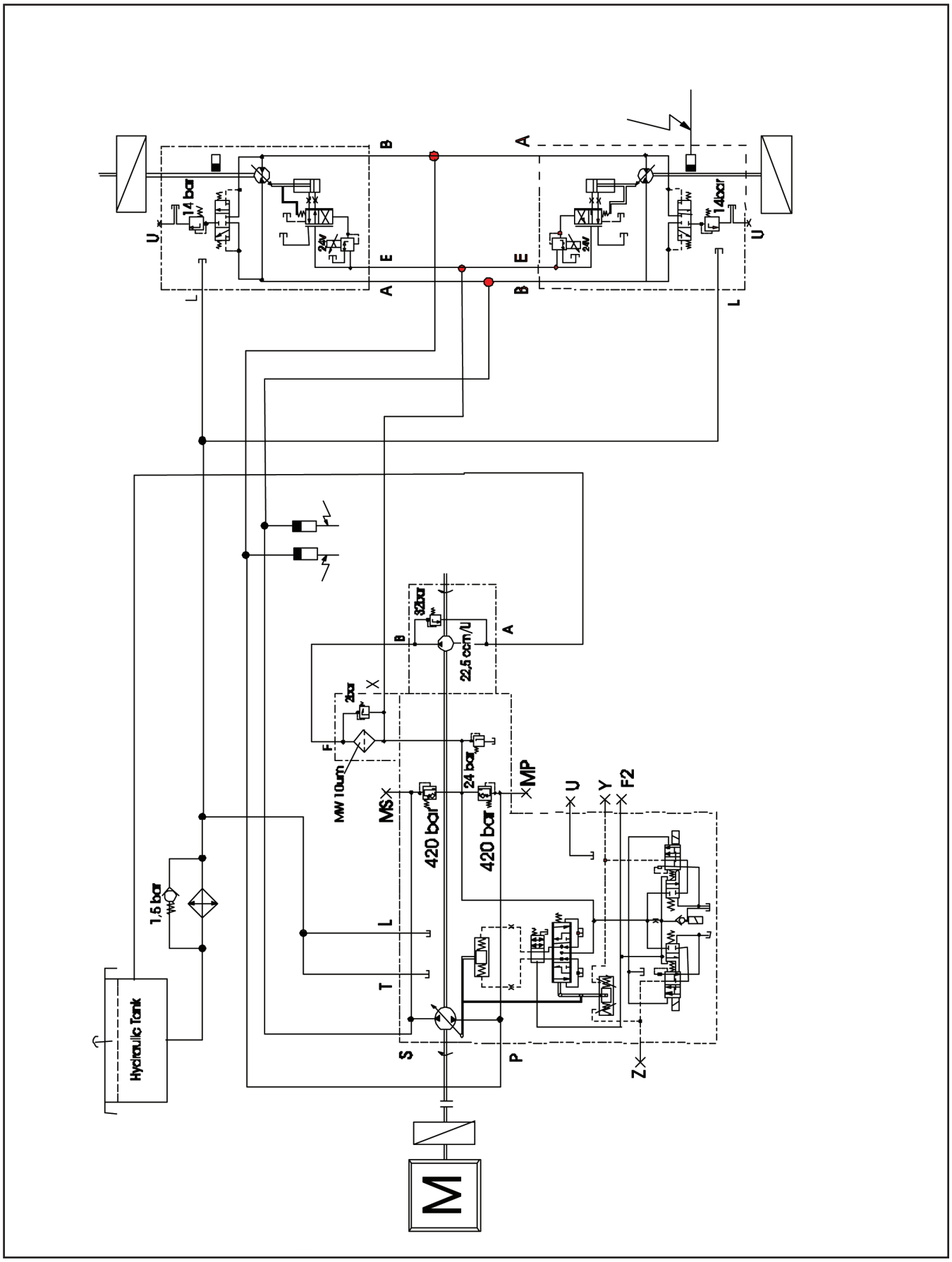






1. PLUG
2. LEVER
3. PLUNGER
4. CUP
5. SPRING
6. CUP
7. SNAP RING
8. NUT
9. STUD
10. NUT
11. PLUG
12. O'RING
13. SHIM
14. SPACER
15. PIN
16. PLUG
17. PLUG
18. PLUG
19. PLUG
20. BOLT
21. HOUSING
22. O'RING
23. PIN
24. O'RING

HYDRAULIC SCHEMATIC TO AWD

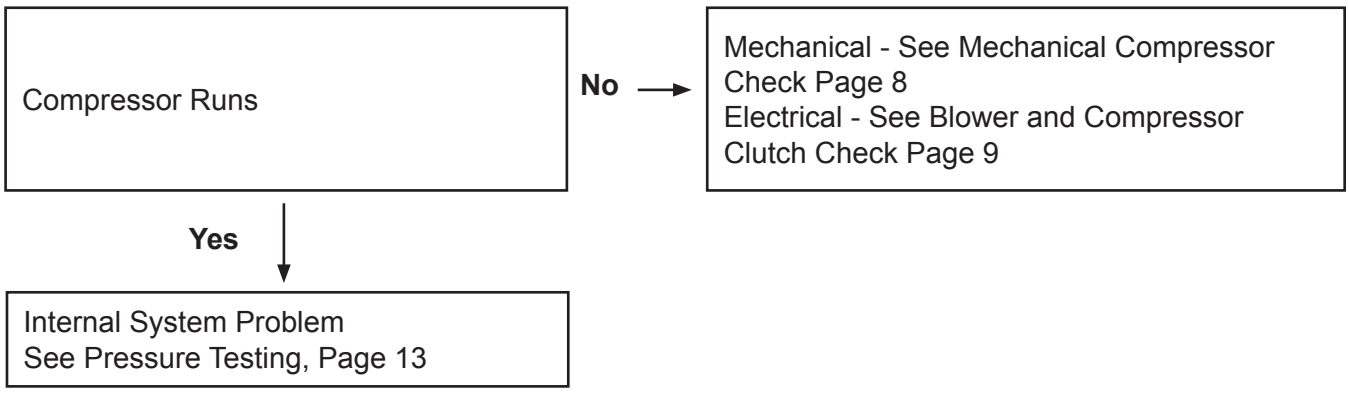


TROUBLESHOOTING

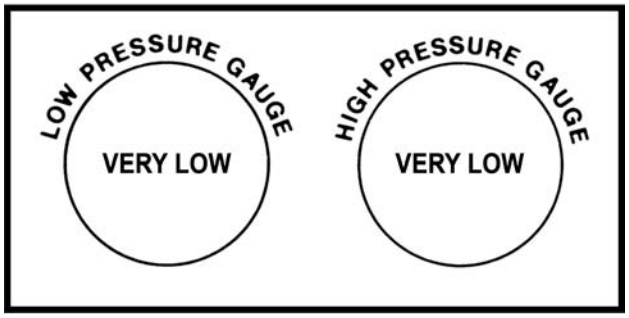
Perform a visual inspection of the machine. Check the following and correct as necessary:

1. Obtain service history if possible.
2. Is compressor drive belt in place and tensioned?
3. Are grille screens, fan blades, condenser, air filter, and evaporator unobstructed?
4. Are there any sharp bends or kinks in the hoses?
5. Are there heavy accumulations of oil, or oily dust around the fittings, indicating refrigerant leakage?
6. Are air ducts undamaged, sealed properly and in position?
7. Condensate drain hoses and check valves present and unobstructed?

Problem: No Cooling



PROBLEM – NO COOLING



SEE PRESSURE - TEMPERATURE CHART ON PAGE 14

Indication of No Refrigerant or Low Refrigerant Charge:

A. Discharge air from evaporator warm.

B. Compressor does not run, or cycles off rapidly after start-up.

Yes →

1. Leak test the system, see Page 11. It may be necessary to add refrigerant. See Section 9003.

2. Evacuate and reclaim remaining refrigerant from system. See Section 9003.

3. Repair system leaks as needed. Follow the given repair procedure.

4. Check level of oil in compressor - possible for compressor to have an oil loss.

5. Remove air and moisture from the system. Replace Receiver-Drier. See Section 9004.

6. Charge system with new refrigerant. See Section 9003.

7. Continue performance test for other possible problems.

SCREWS AND TUBE CONNECTIONS TORQUE CHART

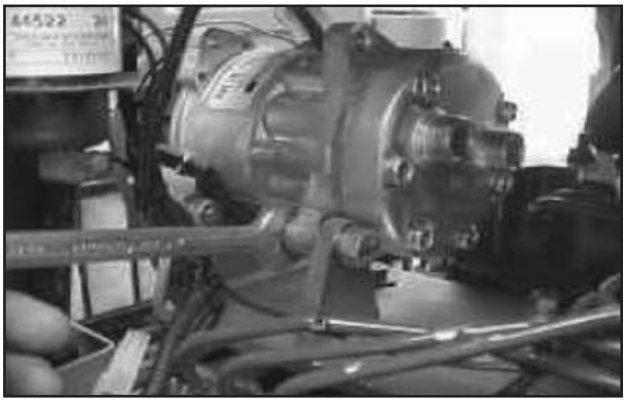
TUBING SIZE	3/8 inch		1/2 inch	5/8 inch	
THREAD SIZE	M10 -1.25	5/8-18	3/4-18 OR 3/4-16	7/8-18 OR 7/8-14	1-14
STEEL TO STEEL	31-36 Nm	31-36 Nm	40-46 Nm	45-52 Nm	45-52 Nm
ALUMINUM TO BRASS	10-14 Nm	10-14 Nm	24-30 Nm	30-37 Nm	45-52 Nm

NOTE: *When tightening air conditioning hose or pipe fittings, a second wrench serving as support must be used.*

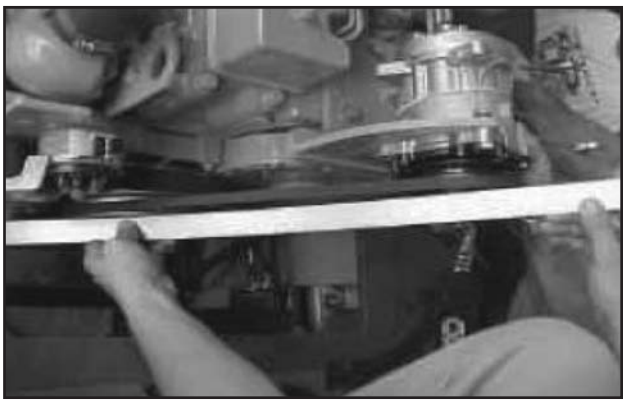
IMPORTANT: *Special care is required when tightening the fittings on the compressor, condenser and evaporator since these connections are easily distorted.*

REPLACE COMPRESSOR AND BELT

1. Remove charge with proper equipment. Never let refrigerant charge flow to air.
2. Disconnect electrical cable. Remove hose fitting. Use a 27mm wrench for suction hose and 22mm wrench for discharge hose. Remove 03 (three) bolts from compressor to make belt free. Use 17 mm wrench. Remove compressor.



3. Conduct repairs or replace compressor, mounting it at support. Check if its pulley is aligned with motor pulley. If it is not aligned, remove the bolts from compressor support. Handling support until the pulleys are aligned (used a rule or Tight the bolts.



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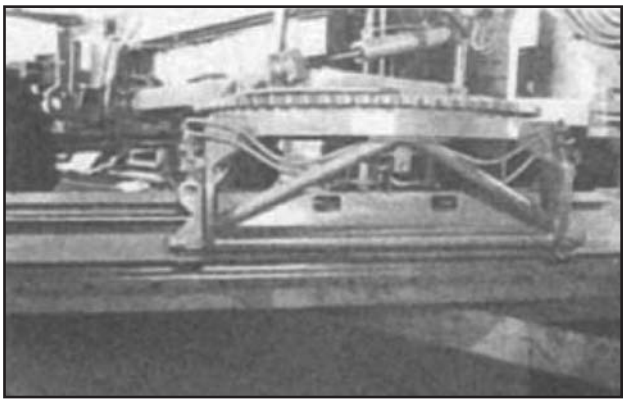
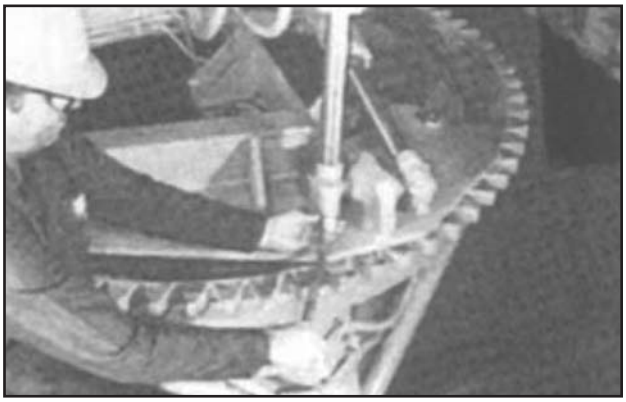
CIRCLE REMOVAL

Lower moldboard so that the blade is on the ground. Turn off the electrical master switch.

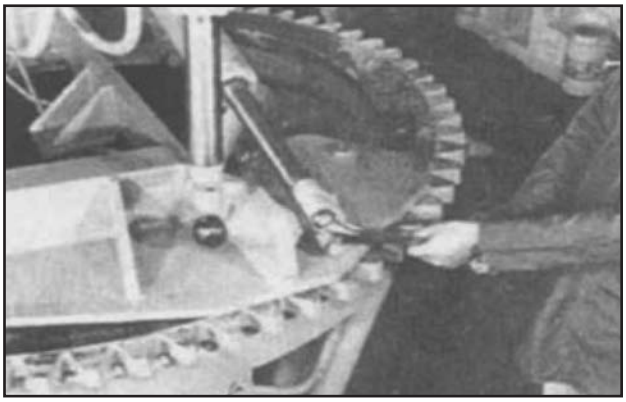


⚠ ***WARNING:*** *Always turn the master switch to the off position before cleaning, repairing, servicing or parking the machine to prevent injury.*

Disconnect the right and left moldboard lift cylinders at the lower trunnion ball joint. Keep shims in position.



Disconnect the moldboard shift cylinder at the trunnion ball on the circle. Keep shims in position.



Disconnect hoses at front of circle frame.

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