CATERPILLAR®

Service Repair Manual

Models

120H NA Motor Grader

Model: 120H NA MOTOR GRADER 4MK

Configuration: 120H Motor Grader 4MK00001-UP (MACHINE) POWERED BY 3116 Engine

Disassembly and Assembly 120H & 135H MOTOR GRADERS MACHINE SYSTEM

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SENR85440037

Implement Control Valves

SMCS - 5051-016; 5051-011; 5051-012; 5051-015

Remove Implement Control Valves

1. Release the pressure in the hydraulic system as follows:



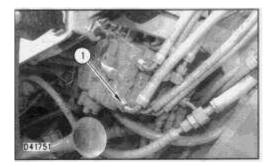
At operating temperature, the hydraulic oil is hot and under pressure. Hot oil can cause burns. Sudden movement of the machine or release of oil pressure can cause injury to persons on or near the machine. To prevent possible injury, perform the following procedure before working on the hydraulic and steering systems.

- **a.** Move the machine to a smooth horizontal location. Move away from working machines and personnel. Lower all implements to the ground. Install the wheel lean pin in front axle.
- **b.** Permit only one operator on the machine. Keep all other personnel either away from the machine or in view of the operator.
- **c.** Activate the parking brake. Place all implements on the ground and put the blade in the "FLOAT" position.
- **d.** Stop the engine.
- **e.** Turn the steering wheel back and forth several times to relieve pressure in the steering accumulator.
- **f.** Carefully loosen the filler cap on the hydraulic tank to release pressure in the tank.

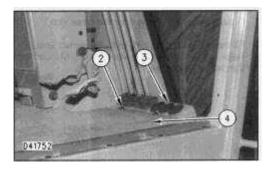
- **g.** Be sure all hydraulic pressure is released before any fitting, hose, or component is loosened, tightened, removed or adjusted.
- **h.** Tighten the cap on the hydraulic tank.
- **i.** The pressure in the hydraulic system must be released before lines or components can be removed.

WARNING

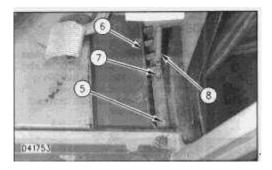
Hydraulic pressure can exist in the hydraulic lines between the control valves and the cylinders with the engine stopped. Manually relieve pressure before working on any hydraulic circuit.



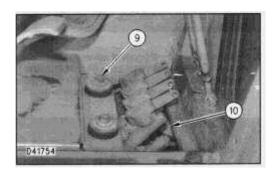
- **2.** Put identification marks on hose assemblies (1) for installation purposes. The number of control valves and hoses will vary with the amount of implements on the machine.
- **3.** Remove hose assemblies (1) from the implement control valves. Plug the fittings on the hoses in order to prevent the loss of hydraulic oil, and to keep dirt out of the hydraulic oil system.



4. Remove bolts (2) from cover (3). Raise cover (3) up and out of the way. Pull floor mat (4) back and out of the way.



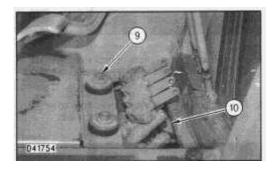
- **5.** Remove four bolts (7) from control valve linkages (8). Move four control valve linkages (8) up and out of the way.
- **6.** Remove bolts (5) and the washers from cover (6). Remove cover (6) from the floor of the cab.



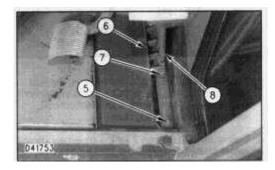
- 7. Remove bolts (9), bolt (10), the washers, the nuts and the rubber mountings that hold the implement control valves. Remove the implement control valves from the mounting plates.
- **8.** Repeat Steps 2 through 7 for the implement control valves located on the other side of the machine.

Install Implement Control Valves

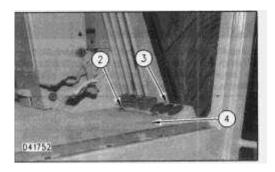
1. Make sure all of the components of the implement control valves are clean prior to installation. During the installation, check condition of all the O-ring seals used on the hydraulic hoses that were disconnected. If any of these seals are damaged, use new parts for replacement.



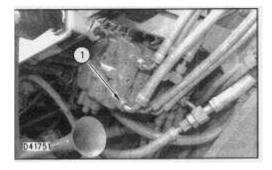
2. Position the implement control valves to their original locations and install bolts (9), bolt (10), the washers, the nutsand the rubber mountings in order to secure the valves to the mounting plates.



- **3.** Install cover (6), bolts (5) and washers that hold cover (6) to the floor of the cab.
- **4.** Install control valve linkages (8) and bolts (7) that hold the linkages to the implement control valves.



5. Position floor mat (4) to its original location on the floor of the cab. Install cover (3) and bolts (2).



- **6.** Install hose assemblies (1) to their original locations on the implement control valves.
- 7. Repeat Steps 2 through 6 for the other side.
- **8.** Fill the hydraulic tank with oil to its correct level. Refer to the "Operation & Maintenance Manual" for the proper procedure.

Disassemble Implement Control Valve

Start By:

a. remove implement control valve

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