

**All Wheel Drive**

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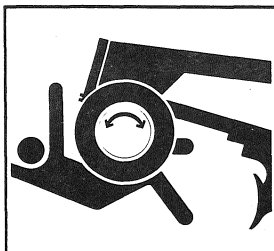
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## All Wheel Drive Safety Precautions

- Do not bypass or alter any switch or other component in the All Wheel Drive System. Modifications can cause premature engagement or prevent disengagement of the system. Property damage and personal injury can result.
- Do not drive the grader downhill in excess of its rated maximum speed. Excessive speed will cause damage to the wheel motors and planetary hubs.
- Do not allow the grader to coast (freewheel) downhill in NEUTRAL .
- Do not operate the All Wheel Drive System with the planetary hubs disengaged.
- Do not operate the All Wheel Drive System with the front wheels off the ground except when testing the system. Only qualified service personnel are allowed to test the system.

- Disconnect the planetary hubs before driving the grader for extended distances between work sites. This will eliminate unnecessary component wear, and extend the service life of these components.
- Disconnect the planetary hubs before towing a grader equipped with All Wheel Drive.
- Use clean, new oil and the cleanest possible shop practice when adding oil to the All Wheel Drive System. Small amounts of contamination can cause excessive wear to precision components, reducing service life.
- Do not use any oil or filter other than those recommended by Champion.
- Keep hose connections clean and tight to prevent contaminants from entering the system.
- Use extreme care around All Wheel Drive System components and hoses. The All Wheel Drive System operates at a higher pressure than most hydraulic systems. A high pressure leak could result in personal injury.



### **⚠ WARNING**

**Wheels may rotate unexpectedly when raised off the ground. Keep clear when engine is running.**

### All Wheel Drive Safety Precautions continued

- Check the All Wheel Drive System oil. Never operate the system with a low oil level. If a loss of oil or charge pressure occurs, stop the grader as quickly as possible and shut down the engine. Loss of fluid can result in component damage. Report the problem and have it repaired by a qualified service technician.
- Have defective components repaired or replaced immediately. Using defective components may cause serious damage to other parts in the system.
- Turn the All Wheel Drive System OFF and shut down the engine before leaving the operator's cab or when performing maintenance.

### All Wheel Drive Pre-start Checks

Make the following checks for graders equipped with All Wheel Drive in addition to those detailed in the section **Pre-start Checks** page 7-23

### Daily Pre-start Checks-Hydraulic Reservoir

The hydraulic reservoir is located between the fuel tank and the cab.

- Locate the level sight glass on the left-hand side of the grader, on the reservoir.
- Check the oil level in the sight glass.
- Add hydraulic oil as required. Refer to the section **Maintenance and Lubrication - Lubrication Specifications** page 14-26, for the correct oil type.

### Oil Cooler

The oil cooler is located at the rear of the grader mounted between the radiator and the radiator grille.

- Inspect the oil cooler for clogged or damaged cooler fins.
- If necessary, remove the radiator grille and clean the oil cooler.
- Clean the cooler with compressed air in the opposite direction to the normal air flow.

### WARNING

**When using pressurized air for cleaning, wear a face shield and protective clothing. Do not direct the air hose nozzle at yourself or others. Severe personal injury could result.**

## Hoses and Fittings

Inspect all hoses and fittings for wear, cracks or leaks.

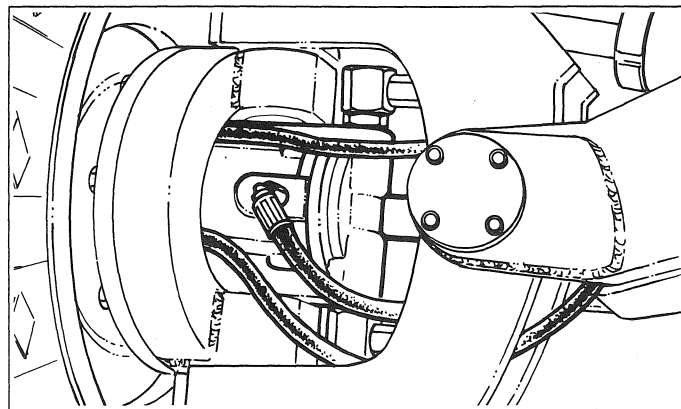
### **⚠ WARNING**

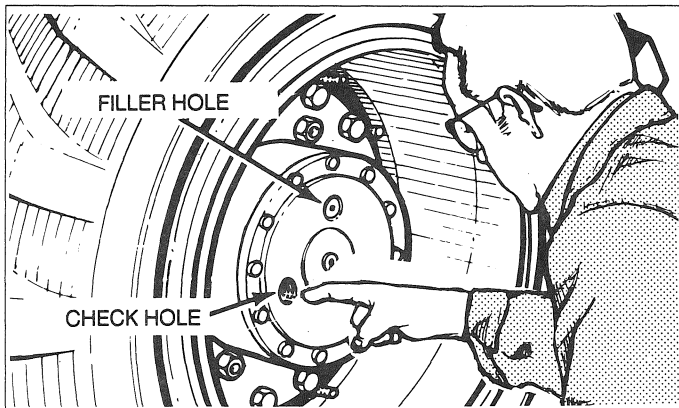
Sudden loss of any fluid indicates a serious malfunction. Stop grader. Consult a qualified service technician.

### **⚠ WARNING**

Fluid escaping under pressure can penetrate the skin causing serious injury. Relieve all pressure before disconnecting hoses. Do not use your hand to check for hydraulic leaks

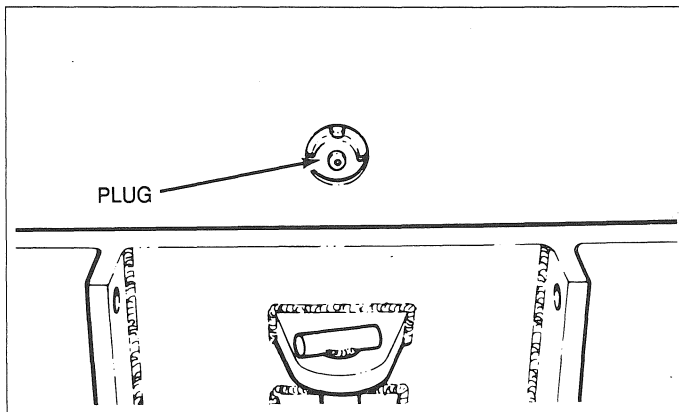
- If contact occurs seek medical attention immediately.
- Use cardboard or a similar material to check for hydraulic leaks.





### Weekly Pre-start Checks- Planetary Hubs

- Clean the planetary hub, especially the filler and check hole areas.
- Rotate the wheel until the oil filler hole is above the center hole and the oil check hole is left of the center hole.
- Remove the plug from the oil check hole. The oil should be at this level.
- Add oil through the filler hole as required. Refer to the section - **Maintenance and Lubrication - Lubrication Specifications** page 14-27, for the correct oil type.
- Clean, inspect and install the plug(s).



### Pump Drive Gearbox Oil Level

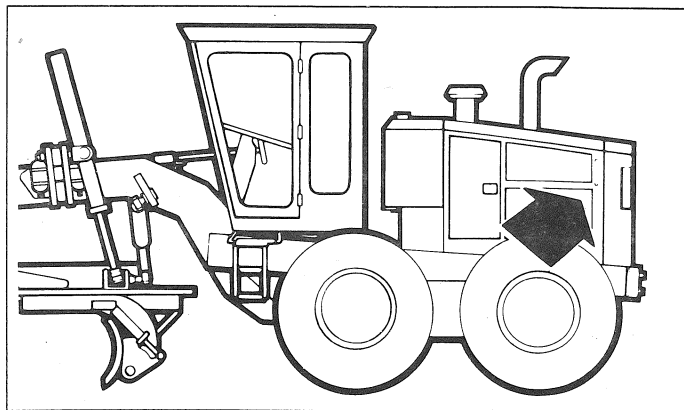
- To check the pump drive gearbox oil level, remove the plastic plug from the access hole in the gearbox cover plate.
- Remove the socket head plug from the gearbox housing. A small amount of oil should flow from the hole.
- Add more oil through the same hole as required. Refer to the section - **Maintenance and Lubrication - Lubrication Specifications** page 14-27, for the correct oil type.



## All Wheel Drive Hydraulic Filter

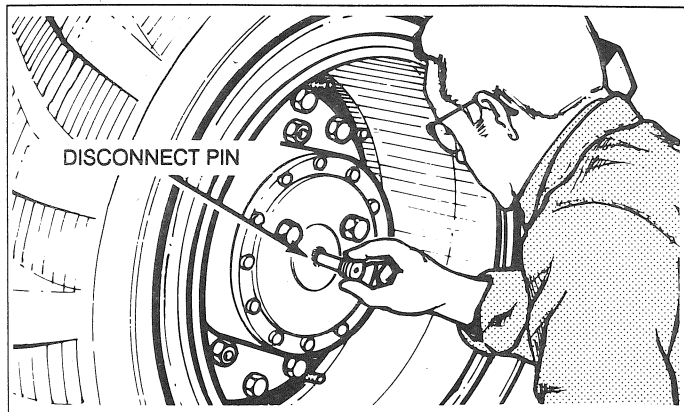
The All Wheel Drive hydraulic system oil filter is located inside the left rear engine compartment door at the top of the fan shroud.

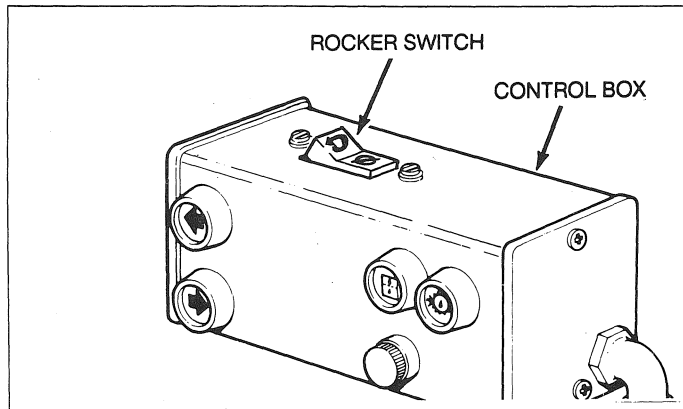
- Replace it every 1000 hours of operation.
- The filter element is a spin-on type and can be removed with a filter wrench.
- Clean any accumulated dirt from the old filter before removing it.
- To install a new filter element, first apply a coating of clean hydraulic oil to the gasket.
- Install the new element on the filter head and hand tighten only.
- Do not use a filter wrench to tighten the element.



## Controls and Warning Lights- Planetary Hub Disconnect

- Disconnect the planetary hubs if you are not using the All Wheel Drive System for an extended period of time.
- Clean the planetary hub, especially around the the dowel pin plug hole.
- Remove the center plug.
- Install the dowel pin plug (one each side; found in the toolbox or the All Wheel Drive controller box bracket) in the center hole.
- Reverse this procedure to reconnect the hubs.

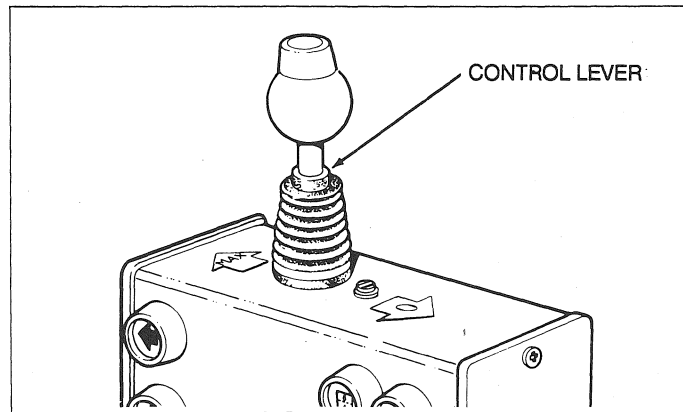




### Control Box

The control box is mounted on the right-hand side of the cab. It contains all the controls and warning lights to operate the All Wheel Drive System. These features are fully described on the next few pages.

The system is activated by a rocker switch on the top of the control box. On earlier machines, a control lever activates the system.



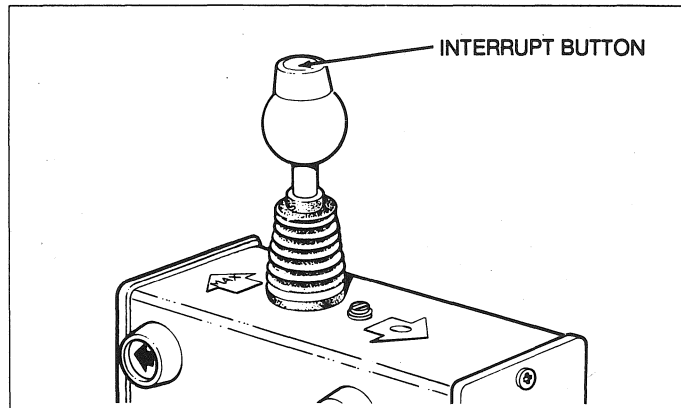
### Control Lever (Up To S/N 21528)

The control lever allows the operator to vary the torque at the front wheels.

- Move the lever to the '0' position to stop all torque at the front wheels. Lubrication pressure is maintained throughout the system.
- Move the lever to the 'MAX' position to obtain maximum torque at the front wheels.
- To vary the torque, choose a lever position between 'MAX' and '0'.
- Heavy attachments on the front end, or a change in tire pressure can affect front end performance. Compensate for these factors by adjusting the control lever.

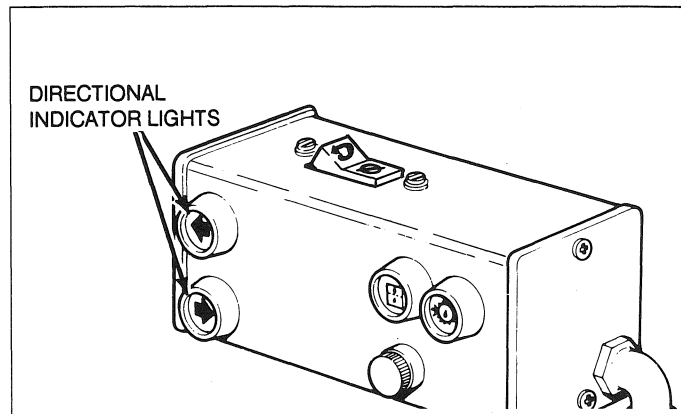
## Interrupt Button (Up To S/N 21528)

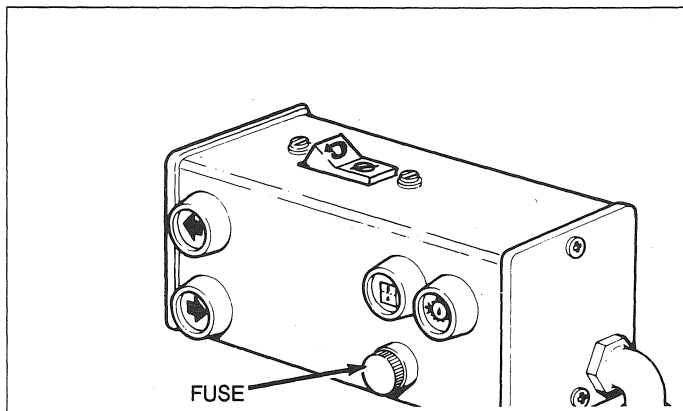
- The interrupt button is located at the top of the control lever.
- Push the interrupt button to momentarily disengage the system.



## Directional Indicator Lights

The directional indicator lights indicate the direction of travel.

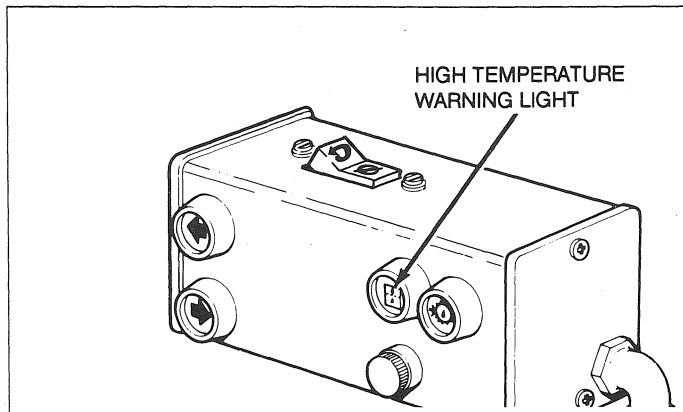




## Fuse

The fuse protects the electrical circuit from excess current.

- Replace a failed fuse by rotating the fuse holder counter-clockwise.
- Remove it from the control box and discard the old fuse.
- Replace with a 3AG slow blow fuse.
- If the fuse fails repeatedly, do not attempt to bypass the fuse or use the All Wheel Drive System.
- Report the malfunction to your supervisor and have a qualified service technician correct the problem.



## High Temperature Warning Light

If the oil temperature becomes too high, the system automatically turns off and the high temperature warning light energizes.

- Move the rocker switch to the OFF position, (on earlier models move the control lever to the '0' position).
- Allow the system to cool and investigate the cause of the overheating.
- Do not attempt to use the All Wheel Drive System until it is repaired.

### Charge Pressure Buzzer Light

If the charging pressure drops below a safe value, the charge pressure light energizes and the buzzer sounds. Have the system repaired by qualified service personnel.

### Side Loading

You can counteract the side loads encountered when working across a slope or when grading heavy material by using All Wheel Drive. Driving the front wheels against the side loads maintains directional control.

### All Wheel Drive Applications- Traction and Steering Control

When traction is poor and the rear wheels of the grader are slipping, use the All Wheel Drive to transfer power to the front wheels. By counteracting rear wheel slip, All Wheel Drive allows the grader to carry a greater load on the blade, reduces rear tire wear and reduces shock loads on the primary drivetrain. All Wheel Drive can also give you better steering control on low traction surfaces by keeping the front wheels turning instead of sliding.

