CEAM020605

Operation & Maintenance Manual

HD1500-7

DUMP TRUCK

SERIAL NUMBERS

A30049-A30055, A30058-A30064, A30067-A30070, A30073-A30075, A30078-A30080, A30085-A30090, A30095-A30108

With SDA12V160 Engine

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Raising the Body

5. Move the hoist control lever on the disabled truck to the HOLD position. Leave the lever in this position during the entire procedure.
6. Adjust the power down relief setting on the good truck to the maximum setting. The power down relief valve (1, Figure 30-7) is located on pilot valve (2) inside of the brake cabinet. Gently, turn the adjustment screw clockwise until it bottoms out. Count the exact number of turns that the adjustment screw is turned, and note for later adjustment.
7. Start the engine on the good truck, and adjust the engine speed to 1000 rpm.
8. Place the hoist control in the POWER DOWN position. Continue to hold in this position until the hoist cylinders reach full extension. Increase engine speed as necessary.

⚠ IMPORTANT ⚠

DO NOT move the hoist control from the POWER DOWN position until full extension is reached. DO NOT attempt to move the lever to the HOLD position during this procedure.

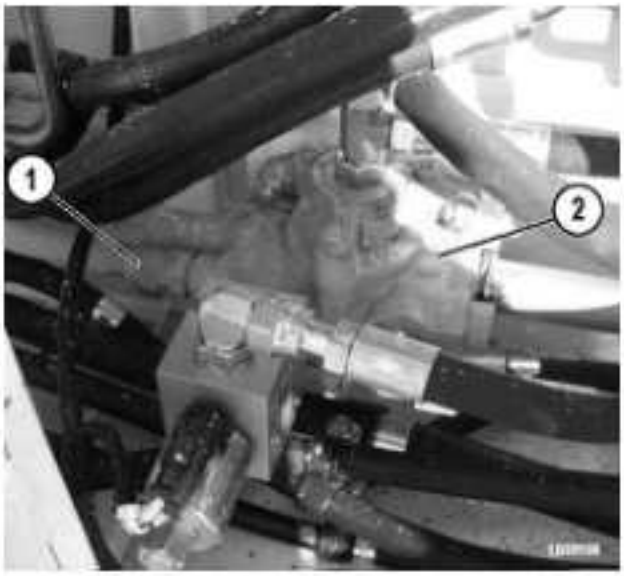


FIGURE 30-7. POWER DOWN RELIEF VALVE

1. Power Down Relief 2. Hoist Pilot Valve

Lowering the Body

9. After the load has been emptied from the body, release the hoist control lever. The body of the disabled truck should immediately begin floating downward.

   If any residual material left in the body prevents lowering, perform the following:

   a. Place the good truck hoist lever in the POWER UP position, and monitor the body of the disabled truck for downward movement. The body of the good truck may rise a small amount during this step.

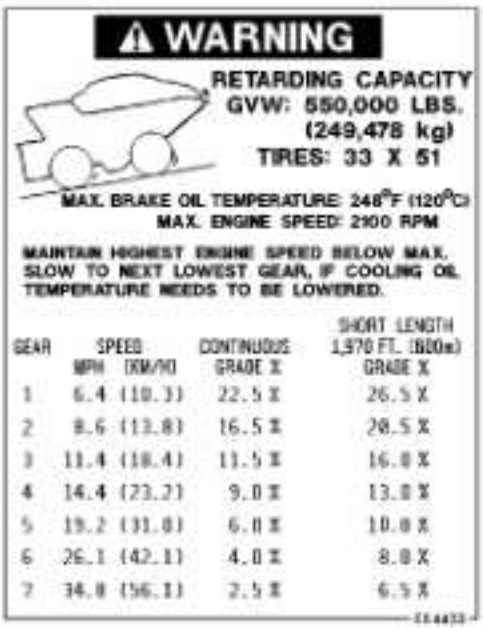
   b. Once the body of the disabled truck begins downward, move the hoist control all the way forward. Then, release the lever to the FLOAT position.

10. Turn off the engine. Depressurize the brake accumulators, steering accumulators, and the hydraulic tanks on each truck.
11. Disconnect the hoses from each truck.
12. Readjust the relief valve setting on the good truck. Turn the screw counter-clockwise the same number of turns as was noted earlier in this procedure. The power down relief valve setting is 10 342 kPa (1500 psi).

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RETARDING CAPACITY CHART

Retarding capacity chart (8, Figure 32-1 & shown below) provides the recommended *maximum* truck speeds for descending various grades with a fully loaded truck.



⚠ WARNING

RETARDING CAPACITY
GVW: 550,000 LBS.
(249,478 kg)
TIRES: 33 X 51

MAX. BRAKE OIL TEMPERATURE: 248°F (120°C)
MAX. ENGINE SPEED: 2100 RPM

MAINTAIN HIGHEST ENGINE SPEED BELOW MAX. SLOW TO NEXT LOWEST GEAR, IF COOLING OIL TEMPERATURE NEEDS TO BE LOWERED.

GEAR	SPEED MPH (KM/H)	CONTINUOUS GRADE %	SHORT LENGTH 1,970 FT. (600m) GRADE %
1	6.4 (10.3)	22.5 %	26.5 %
2	8.6 (13.8)	16.5 %	20.5 %
3	11.4 (18.4)	11.5 %	16.0 %
4	14.4 (23.2)	9.0 %	13.0 %
5	19.2 (31.0)	6.0 %	10.0 %
6	26.1 (42.1)	4.0 %	8.0 %
7	34.8 (56.1)	2.5 %	6.5 %

Reference the retarding capacity chart before descending any grade with a loaded truck. Proper selection of road grade, truck speed, transmission gear range, and use of the retarder lever and/or brake pedal are required to maintain a safe speed.

Customer specified options may cause this decal to change. Refer to the retarding capacity chart in the operator's cab, and follow the recommendations there for safe truck operation.

⚠WARNING

DO NOT exceed these recommended maximum speeds when descending grades with a loaded truck.

Refer to Operating Instructions, Retarder Operation, for more information on using the retarder function.

An automatic retard function is available on this truck. For more information refer to Automatic Retard Speed Control later in this chapter.

RADIO SPEAKERS

Radio speakers (9, Figure 32-1) for the AM/FM stereo radio are located at the far left and right of the overhead panel.

AIR CLEANER VACUUM GAUGES

Air cleaner vacuum gauges (10, Figure 32-1) provide a continuous reading of maximum air cleaner restriction reached during operation. The air cleaner(s) should be serviced when the gauge(s) reaches 25 inches of H_2O vacuum.

NOTE: After service, push the reset pin on the face of the gauge to allow the gauge to return to zero.

WARNING ALARM BUZZER

Warning alarm buzzer (11, Figure 32-1) will sound when activated by any one of several truck functions. Refer to Instrument Panel And Indicators for a detailed description of functions and indicators that will activate this alarm.

AM/FM RADIO / CD PLAYER

Radio (12, Figure 32-1) is an AM/FM radio with compact disc and MP3 capabilities.

Refer to Section 70, Cab Radio, for a more complete description of the radio and its functions. Individual customers may use this area for other purposes, such as a two-way communications radio.

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SYSTEM COMPONENTS

Filter

A filter assembly mounted on the grease reservoir filters the grease from the shop supply. A bypass indicator alerts service personnel when the filter requires replacement.

Hydraulic Motor and Pump

Hydraulic motor (3, Figure 42-1) and pump (9) together are a fully hydraulic grease pump. An integrated pump control manifold is incorporated with the motor to control input flow and pressure.

NOTE: The pump crankcase oil level must be maintained to the level of the pipe plug port. Later models are equipped with a dipstick (3, 42-6). Refill with 10W-30 motor oil.

⚠WARNING

Hydraulic oil supply inlet pressure must not exceed 20 685 kPa (3000 psi). Exceeding the rated pressure may result in damage to system components and personal injury.

Grease Reservoir

Grease reservoir (12) has an approximate capacity of 41 kg (90 lb) of grease. When the grease supply is replenished, grease entering the system passes through the filter to remove contaminants before settling into the reservoir.

Pressure Reducing Valve

Pressure reducing valve (4), located on the manifold, reduces the hydraulic supply pressure from the truck steering circuit. Hydraulic pressure is reduced to an operating pressure of 2240 to 2415 kPa (325 to 350 psi). The hydraulic motor operates at this pressure to drive the grease pump. The pressure reducing valve has been factory adjusted. DO NOT attempt to adjust the setting.

Solenoid Valve

Solenoid valve (5), when energized, allows oil to flow to the hydraulic motor.

Flow Control Valve

Flow control valve (10) mounted on the manifold, controls the amount of oil flow to the hydraulic motor. The flow control valve has been factory adjusted. DO NOT attempt to adjust the setting.

Vent Valve

Vent valve (7, Figure 42-1) opens and closes to control the pressure in the system. With the valve closed, the pump continues to operate until maximum grease pressure is achieved. As this occurs, the vent valve opens and allows the grease pressure to drop to 0, so the injectors can recharge for their next output cycle.

Injectors

Each injector (Figure 42-2) delivers a controlled amount of pressurized lubricant to a designated lube point.

Lubrication Timer

Lubrication timer (1, Figure 42-3) is a solid state controller providing a 24 VDC timed-interval signal to energize solenoid valve (5, Figure 42-1). Operation of the solenoid valve controls the oil flow to operate the hydraulic motor. This controller is mounted in the electrical compartment in the rear of the cab.

Pressure Gauge

Pressure gauge (8, Figure 42-1) monitors hydraulic oil pressure to the inlet of the hydraulic motor.

NOTE: Newer models do not come equipped with a pressure gauge. However, a gauge may be installed in the port if desired.

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24. Ensure the ground level engine shut off switch is ON.
25. Climb the ladder to the main deck. Always use the hand rails and ladder when mounting or dismounting the truck. Clean the ladder and hand rails of any foreign material, such as ice, snow, oil or mud.

⚠WARNING

Face the truck when using the ladders. Never mount or dismount the truck while the truck is in motion.

26. Check the coolant in the radiator using the coolant level sight gauge.

⚠WARNING

If the engine is hot, allow the coolant to cool before removing the radiator fill cap. Serious burns may be acquired from contact with hot coolant. Depress the pressure relief before removing the cap.

27. Inspect the battery box cover for damage. Ensure the cover is secured, tightly.
28. Check the air cleaner indicators. If the indicator is in the red area, the air filter must be cleaned or replaced before operating the truck.
29. Clean the cab windows and mirrors. Clean the cab floor, as necessary. Ensure the steering wheel, controls and pedals are free of foreign substances such as oil.
30. Stow personal gear in the cab so that it does not interfere with operation of the truck. Clean dirt or trash buildup, specifically in the operator's cab. DO NOT store tools or supplies in the cab or on the deck.
31. Adjust the seat and steering wheel so that it is comfortable for use.
32. Read and understand the information detailed in Operator Controls and Instrument Panel. Become familiar with all control locations and functions before operating the truck.

Cold Weather Heating System

Some trucks operating in cold weather climates may be fitted with an optional cold weather heating system. The system includes heaters in the transmission, hydraulic tank, engine oil pan, battery box, cooling system, and fuel system. Trucks fitted with -40°C (-40°F) equipment (or colder) may also contain heaters in the rear axle.

The power receptacle (2, Figure 30-2) is mounted inside the RH upright near the bottom of the radiator.

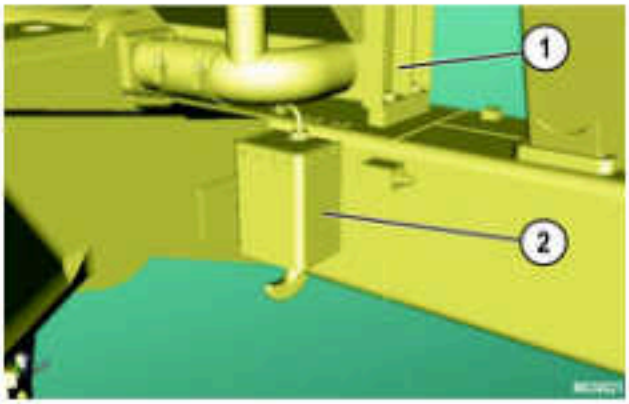


FIGURE 30-2. HEATING SYSTEM POWER RECEPTACLE

1. Radiator
2. Power Receptacle

The system operates on 220V and is controlled by various thermostats in the system. The thermostats operate the heaters within a certain temperature range.

⚠CAUTION

Do not operate the engine while the heater system is operating. Lack of coolant circulation in the heaters will burn out the heating elements.

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