DG675

Shop Manual

630E

DUMP TRUCK

SERIAL SUFFIX **AFE42-M** **AFE46-U** and up

KOMATSU®

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MODEL DIFFERENTIATION

The TDI Air Starter may be either a single-stage, or a two-stage model. Determine whether the unit is the single-stage or two-stage model by viewing the overall external appearance of the unit.

Figure 15TC-1 illustrates the single-stage model. Figure 15TC-2 illustrates the two-stage model.

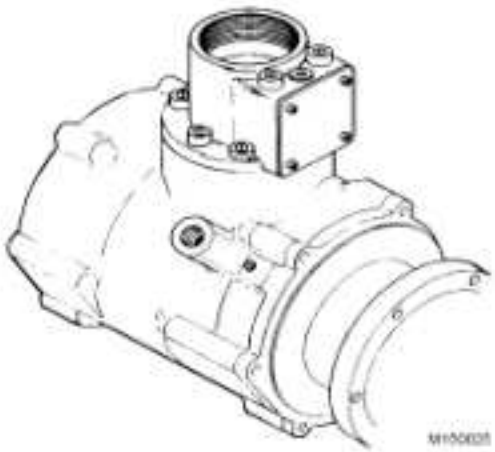


FIGURE 15TC-1. SINGLE-STAGE AIR STARTER

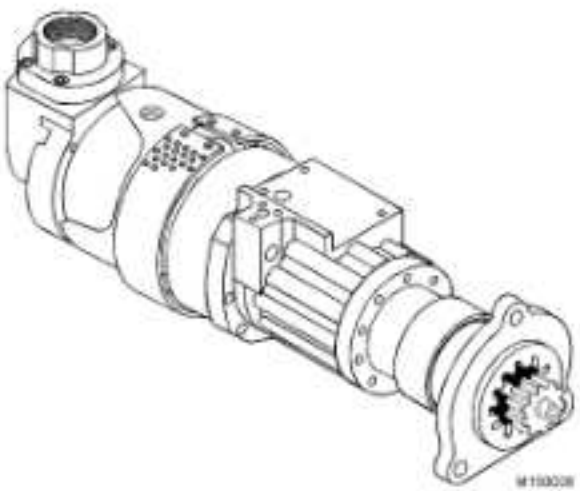


FIGURE 15TC-2. TWO-STAGE AIR STARTER

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HOIST CIRCUIT

HOIST CIRCUIT OPERATION

The following hoist circuit operation description describes the basic hoist circuit. Further circuit description is outlined under the individual component descriptions.

Hydraulic fluid is supplied by a tank located on the left frame rail. The tank's service capacity is approximately 134 gal. (507 L). Refer to (10, Figure 7-1), Hoist Circuit Schematic. Hydraulic oil is routed to a tandem vane type pump, (9). The pump is driven by an accessory drive at the end of the traction alternator.

Pump output is directed to two high pressure filters (5), one mounted to the inboard side of the right hand frame rail near hydraulic pump, and the other on the outside of the left frame rail near the hydraulic tank.

Hydraulic oil from the filters is directed to the hoist valve (2) which is mounted to the inboard side of the left hand frame rail.

The hoist valve directs oil to the body hoist cylinders (1) for raising and lowering of the dump body. The hoist valve functions are controlled by the operator through the lever connected to the hoist pilot valve (6) located below the floor of the operators cab. There is also a hoist limit solenoid located to the inboard side of the left hand frame rail near the hydraulic tank. The hoist-up limit solenoid prevents the hoist cylinders from extending to maximum physical limit.

⚠WARNING

Hydraulic hoses deteriorate with age and use. Prevent possible malfunctions by inspecting all hoses periodically. Replace any hose showing wear, damage, or deterioration.

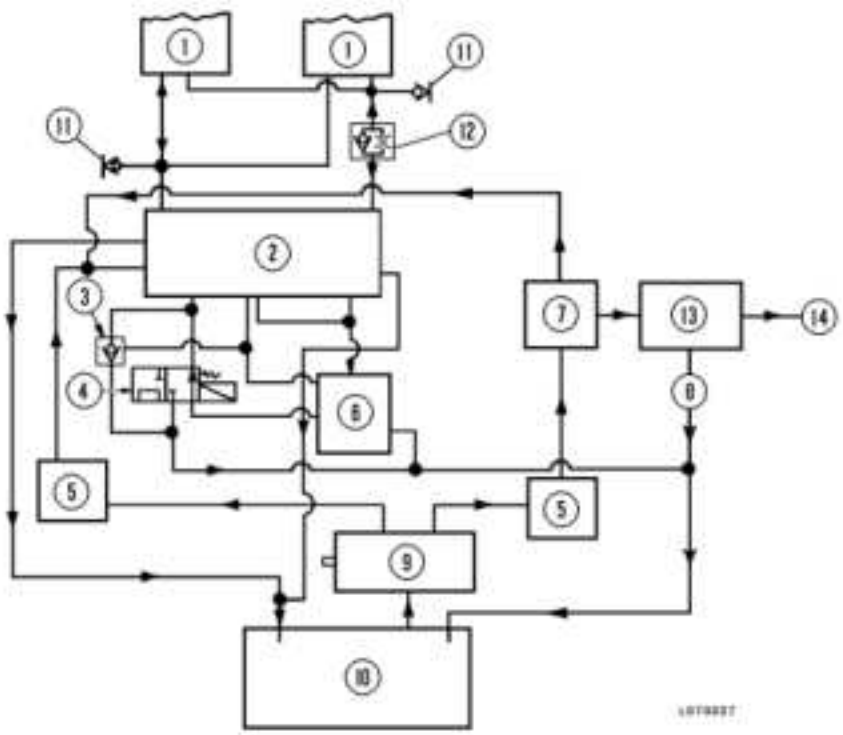


FIGURE 7-1. HOIST CIRCUIT SCHEMATIC

1. Hoist Cylinder
2. Hoist Valve
3. Pilot Operated Check Valve
4. Hoist Up Limit Solenoid
5. High Pressure Filter
6. Hoist Pilot Valve
7. Unloader Valve
8. Return From Brake & Flow Amplifier Valve
9. Pump
10. Hydraulic Tank
11. Quick Disconnect
12. Snubber Valve
13. Bleeddown Manifold
14. To Steering & Brake Accumulator

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8. Thermostat: The engine thermostat operation should be checked according to engine manufacturer's specifications and recommendations.
9. Fan clutch: After each 1000 hours, the fan clutch should be checked for signs of internal wear as follows:
   a. Bearing wear: With the engine off and no oil supply to the fan clutch, push the fan forward-rearward. No movement of the fan mounting hub should occur.

NOTE: For the next tests, it is necessary to provide an external supply of oil pressure at 40 psi (275 KPa) minimum, 100 psi (689 KPa) maximum. The oil supply should be compatible with the oil being used in the engine.

   b. Clutch Plate Drive Slot Wear: With the engine off and the clutch locked up, rotate the fan with a light force clockwise-counter-clockwise. Movement at the tip of a 68 in. (1.7 M) Dia. fan blade should not exceed 1.12 in. (28.4 mm). Excess movement indicates excessive wear at the drive tangs.
   c. Clutch Plate Wear: With the engine off, apply 40 psi (275 kPa) oil pressure to lockup the clutch. Using a pull type scale connected to the fan blade 30 in. (76 cm) from the center of fan, a pull of no less than 250 lbs. (1023 N) should be required to rotate the blade independent of the pulley.

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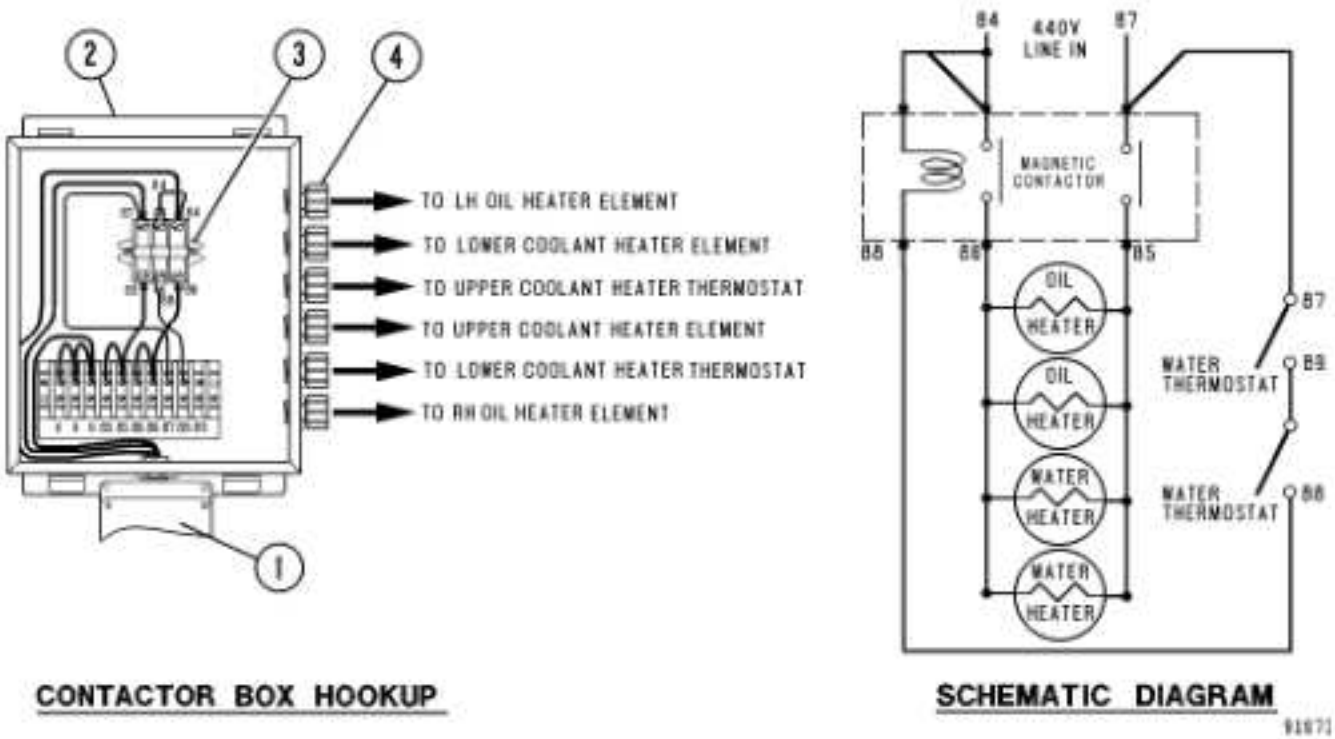


FIGURE 7-2. HEATER SYSTEM ELECTRICAL HOOKUP

1. Line Power Receptacle
2. Contactor Junction Box
3. Magnetic Contactor
4. Cord Grip

Troubleshooting

To check for proper operation of the heating units, the coolant outlet water hoses (10, Figure 7-1) and the oil pan heater mounting bosses (3, Figure 7-4) should feel warm to the touch.

If none or only several of the heaters feel warm to the touch after allowing sufficient time for warm-up, perform the following checks:

1. Open the magnetic contactor box located on the lower left of the radiator shroud (2, Figure 7-1). Visually check all electrical connections in the box and to the heating units.
2. With line voltage applied to the system, verify a nominal 440 volts across terminals "84" and "87" at the magnetic contactor (3, Figure 7-2).
3. With the coolant temperature below 120°F (48°C), verify a nominal 440 volts across terminals "85" and "86".
4. If voltage is not present on terminals "85" and "86", disconnect the power cable at the junction box receptacle and check the thermostat contacts using an ohmmeter. Verify continuity across terminals "87" and "88" at the magnetic contactor.
5. If the circuit between terminals "87" and "88" is open:
   a. Remove each of the thermostat covers 1, Figure 7-7) and check for continuity between the terminals.
   b. If no continuity exists and coolant temperature is below 120° (48°C), the thermostat is defective and should be replaced. (Refer to "Thermostat".)
6. If the circuit between terminals "87" and "88" at the magnetic contactor is closed, but operating voltage was not present at terminals "85" and "86", the magnetic contactor is defective and must be replaced.

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Optional components are shown in BOLD ITALIC type

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