SERVICE MANUAL

TD65F / TD75F / TD85F

Tractor

Part number 84574094A

English

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Hydraulic control components - General specification

TD65F	LA
TD75F	LA
TD85F	LA

General Specifications

Hydrostatic steering

Type	Independent hydrostatic control
Hydraulic circuit	Fed by hydraulic pump
Oil filter for models with front wheel drive	With paper cartridge installed in the pump intake
Oil filter for models with rear wheel drive only	With metal cartridge assembled in the steering oil reservoir
Control valve, manufacturers	Sauer Danfoss, Orsta
Type	Orbitrol, with rotating valve controlled directly by the steering column: the steering will still working even if the pump is damaged
Equipment code:	
DANFOSS	OSPC 100 ON –
ORSTA	LAG-B 100–LVP16–2
Relief valve pressure **(22)**, **Power steering control valve - Exploded view (41.200)**	
Rear wheel drive models only	**100 bar (1450.37 psi)**
Front wheel drive models	**125 bar 1812.96 psi**

Hydraulic control components - Torque

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Torque Settings

Parts	Thread	Torque Settings
Fixing bolt from the hydrostatic steering to the tractor	**3/8 in** -16 UNC	**44 N·m (32.4527 lb ft)**
Fixing bolt for the cover on the hydrostatic steering (**(13)**, **Power steering control valve - Exploded view (41.200)**)	M8 x 1	**34 N·m (25.0771 lb ft)**
(*ORSTA)	M8 x 1*	**29 N·m (21.3893 lb ft)**
Hydrostatic steering control pump fixing bolt	M6 x 1	**8 N·m (5.9005 lb ft)**
Nut for the fixing bolt on the pump housing cover (**(20)**, **Power steering pump - Exploded view (41.206)**)	M10 x 1.25	**39 N·m (28.7649 lb ft)**
Nut to fasten push sleeve to pump drive axle (**(14)** , **Power steering pump - Exploded view (41.206)**)	**7/16 in** - 20UNF-2B	**28 N·m (20.6517 lb ft)**
Mechanical drive cylinder nut, pivot pin	M18 x 1.5	**294 N·m (216.8433 lb ft)**
Mech. drive cylinder rod, nut, to steering arm	M14 x 1.5	**147 N·m (108.4216 lb ft)**
Nut, piston to rod		
• WEBER cylinder	M16 x 1.5	**83 N·m (61.2177 lb ft)**
• SIMA cylinder	M16 x 1.5	**98 N·m (72.2811 lb ft)**
• ERBER cylinder	M16 x 1.5	**98 N·m (72.2811 lb ft)**
Fixing screw, control valve bracket	M16 x 1.5	**147 N·m (108.4216 lb ft)**
Fixing screw, LVP safety valve block to body	-	**64 N·m (47.2040 lb ft)**

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Air conditioning - Service instruction

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Maintenance of the air conditioning system

At the start of the season in which it will be used, check the efficiency and operation of the system. If the system has been out of use and charged for a prolonged period, oil may have flowed out of the compressor to other parts of the system and consequently this oil must be returned to the compressor.
For this purpose, start the engine and run at **1500 RPM** for around **10 min**. Set the cab ventilation fan to maximum speed. Turn the knob (**(2), Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls - Dynamic description (55.051)**) to switch on the air conditioning
Check that the relative temperatures of the external ambient air and the air flowing out of the vents inside the cab correspond to the values indicated in the table (VARIATIONS IN WORKING TEMPERATURES OF THE CAB AIR CONDITIONING SYSTEM) in **Air conditioning - General specification (50.200)**.
If the temperature values are correct, the system is perfectly efficient and only requires a visual inspection of the main components:
(1)) COMPRESSOR: check the mountings, the tension of the drive belt and the oil level.
(2)) CONDENSER: check mounting and that the fins are free of excessive deposits. Straighten any bent fins using the comb tool **380000312**.

NOTE: *Carry out the same checks on the EVAPORATOR **(9)** and the CONDENSER **(5)**.*

(3)) FILTER/DRYER: Replace the filter/dryer after the system has been repaired on two occasions
(4)) EXPANSION VALVE: this valve does not require maintenance; in the event of malfunction, check the valve and thermostatic expansion valve and the thermostatic sensor as indicated in (**Air conditioning - Static description (50.200)**) or contact specialized personnel of the CNH service network.
If the temperature of the air at the vent outlets does not conform to the indications given in the table (VARIATIONS IN WORKING TEMPERATURES OF THE CAB AIR CONDITIONING SYSTEM) in **Air conditioning - General specification (50.200)** proceed with the system troubleshooting operations.

ATTENTION: *Caution - If any of the system components need to be replaced, follow the recovery, recycling and charging operations, using control unit **380000315**.*

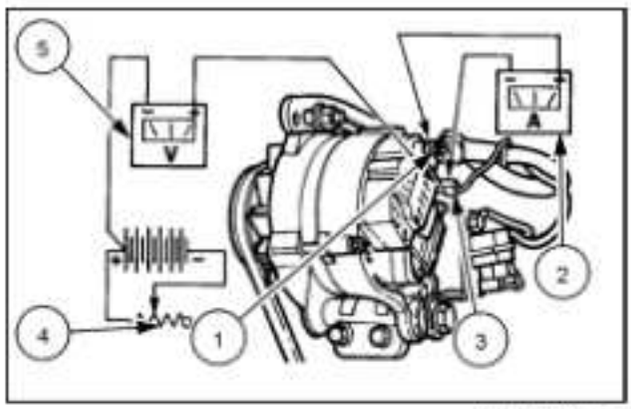
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If the ammeter reads 0, one of the alternator components is faulty. Turn off the engine and perform the alternator component test described in this chapter.

3. Low voltage tests in the charging circuit

(a) How to test for low voltage on the isolated side

Check that the key is in the OFF position.



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1. Disconnect the negative battery cable and alternator terminal B+ **(1)**.
2. Connect a millivoltmeter **(5)** between the positive battery post and the D+ cable **(3)** (positive side of the cable).
3. Connect an ammeter **(2)** between alternator terminal B+ and cable D+ (negative side of the cable).
4. Reconnect the negative battery cable and connect a variable load resistor **(4)** with the cursor at the position of minimum current absorption (maximum resistance) through the battery posts.
5. Start the engine and set the speed to **2000 RPM**.
6. Decrease the load resistance (resistance on low) slowly until the ammeter reads **45 A** or **65 A** according to the type of alternator.
7. Check the millivoltmeter reading again; it should not exceed **400 mV**.

   A higher reading indicates that there is a malfunction due to excessive resistance in the external circuits.

   If the alternator does not produce enough supply and the millivoltmeter reading is less than **400 mV**, an alternator component is faulty. Perform alternator component tests as indicated in this section.
8. Stop the engine.

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Rear three-point hitch - Dynamic description

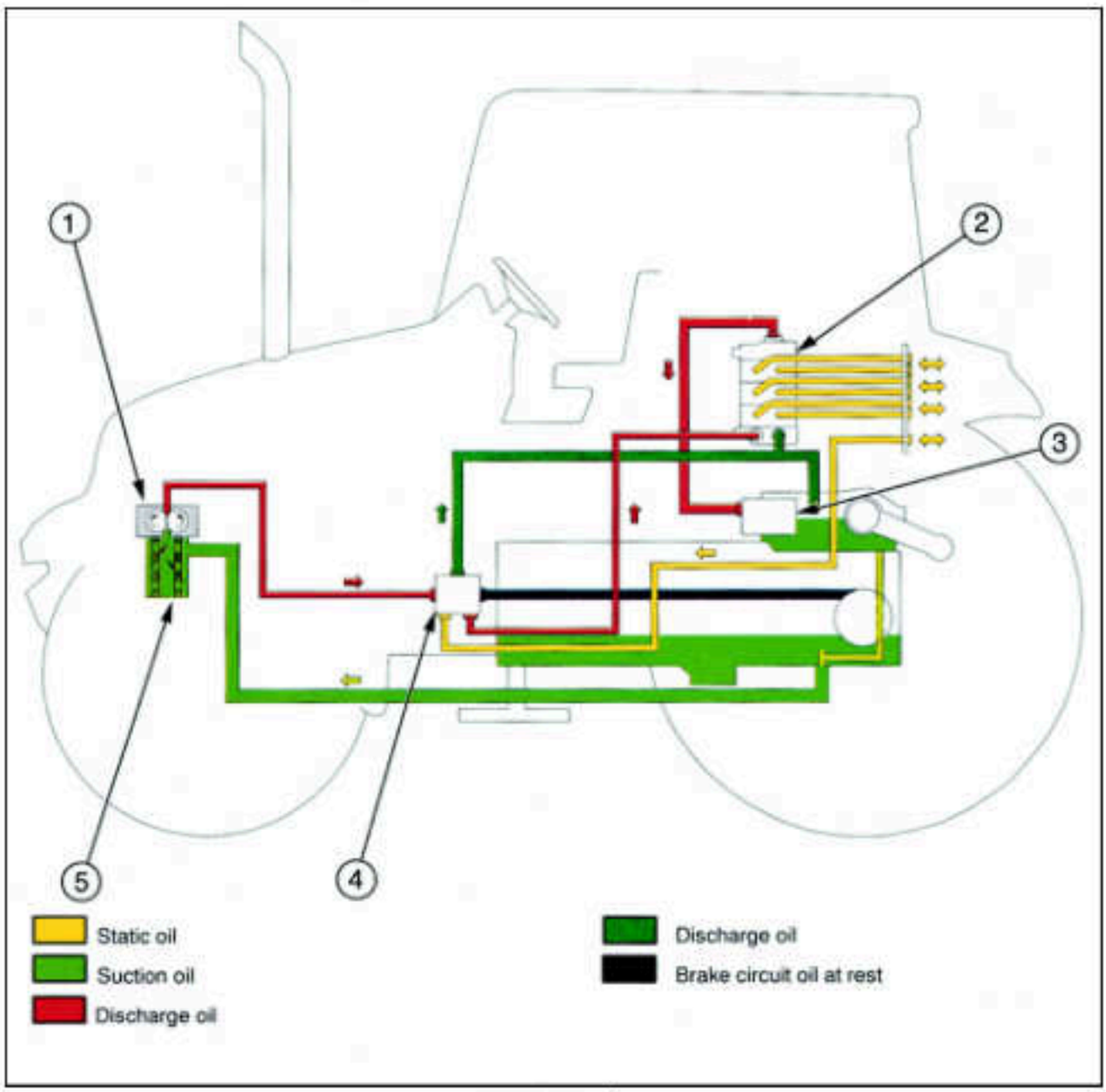
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The mechanical lift can operate with controlled position or draft control and with a combination of the two.

The lift is controlled by two levers located on the operator's right. It also features the Lift–O–Matic device which raises and lowers the implement without the need to use the position and draft control levers.

Draft control is actuated by the flex bar positioned in the special box mounted under the rear transmission.

The lower lift arms and corresponding control rods are connected to the flex bar.



Hydraulic lift circuit

1. Hydraulic pump
2. Auxiliary control valves
3. Hydraulic lift control valve
4. Trailer brake valve
5. Filter.

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Operating steps of the auxiliary control valve for the dual-acting cylinder (Fig. 3 and Fig. 4) and single-acting cylinder (Fig. 5 and Fig. 6)

Lifting: When the lever is pulled back, the valve spool **(2)** moves to connect: the pressure line **(P)** to the lower chamber of the cylinder by the line **(A)**, and the exhaust line **(T)** by the line **(B)**, intercepting the supply of oil to the lift control valve. Keep the lever back to extend the full cylinder stroke. When the lever is released, it will automatically return to the neutral position, under the action of the return spring, and the full pump flow will be sent to the lift control valve by the line **(P)**.

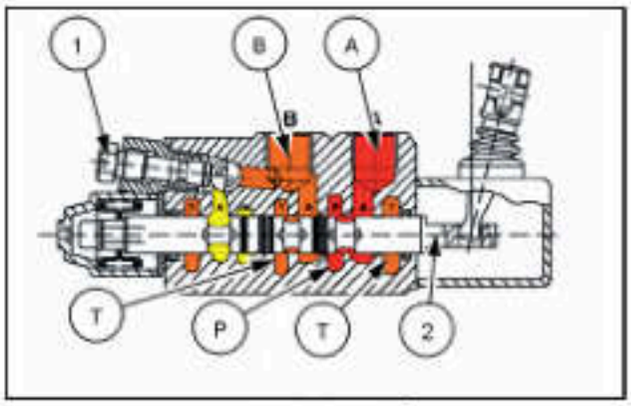
Lowering: To lower the implement, move the lever forward. The spool **(2)** will move to the position indicated in Fig. **4**, which allows oil in the lower chamber to flow to the exhaust **(T)** through the line **(A)**. The upper chamber is connected to the pressure line **(P)** by the **(B)**.

Lifting: When the lever is pulled back, the valve spool **(2)** fig. **5**, moves to connect the cylinder with the pressure line **(P)** from the line **(A)**. The line **(C)**, for control of single-acting cylinders, is used in this step since it is permanently connected to the exhaust **(T)** from the open position of the shift valve **(1)**.

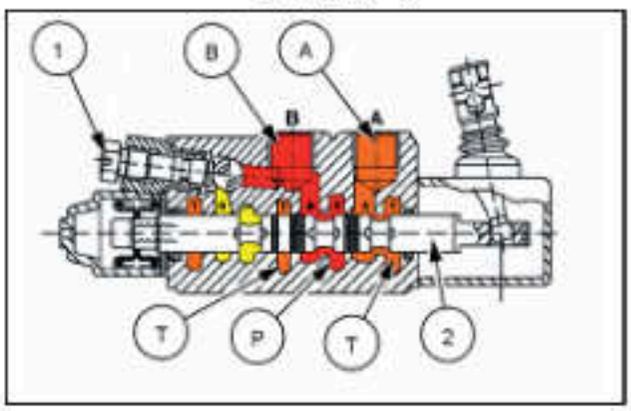
Lowering: When the lever is moved forward, the spool **(2)** will move as indicated by fig. **6**. The oil contained in the cylinder, pressurized by the weight of the implement lifted, will flow to the exhaust **(T)** through the line **(A)**. The full flow of the pump is transported to the exhaust **(T)** by the line **(B)**.

- Pressure Oil
- Suction, discharge, or return oil
- Static oil

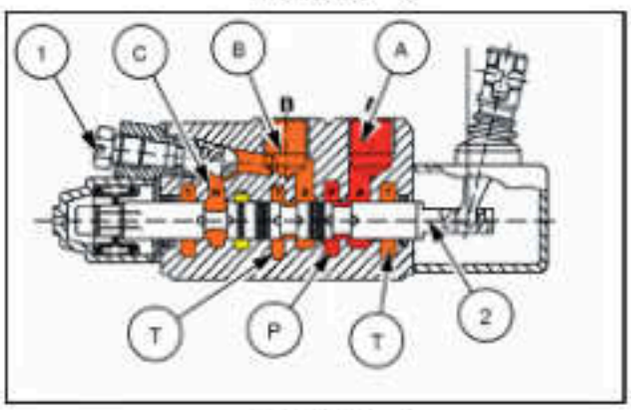
NOTE: *To operate a dual-action cylinder, tighten the bolt **(1)** completely. To operate a single-action cylinder, unscrew the bolt completely **(1)**.*



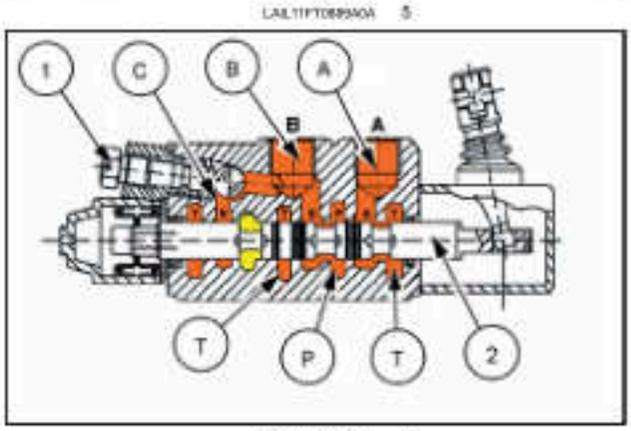
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