SERVICE MANUAL

6010 / 6510 / 7510

Tractor

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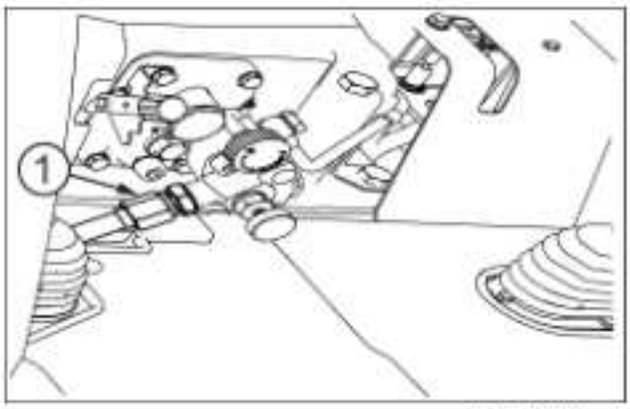
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Pump - Test

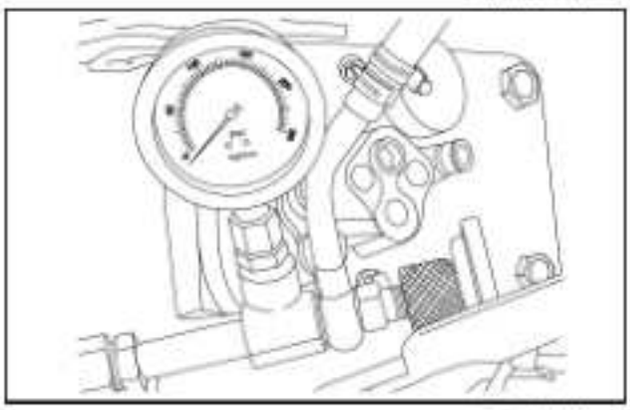
NOTE: *Hydraulic pump may be tested to ensure full pressure and flow.*

NOTICE: *Before performing any pressure or flow testing, operate the tractor until the oil in the transmission is at normal operating temperature of* ***75 °C****.*

1. Remove connection **(1)** between hydraulic pressure line and distributor assembly.
2. Install special tool no. **380000240** at hydraulic pressure line.
3. Install outlet hose of the tool into transmission oil Filter port.
4. Ensure that flow control tap is fully open.
5. Start and set engine speed to **1000 RPM**.
6. Close flow control tap slowly until pressure gauge shows **166 bar**
7. Moving quickly, transfer the tester outlet hose to a **10 L** measuring jar. Simultaneously starting a stop watch.
8. Note the time to fill the **10 L** measuring jar. Repeat the same procedure 4 to 5 times and calculate the average time.
9. At **1000 RPM** a new or reconditioned pump delivers, **18–19 L/min** at **166 bar**.
- The minimum accepted delivery of a used pump is **11 L/min** at **166 bar**.
- if more than **30 s** is required, or if the required pressure of **166 bar** can not be achieved, then a fault exists in the hydraulic pump, hydraulic filter or lines.



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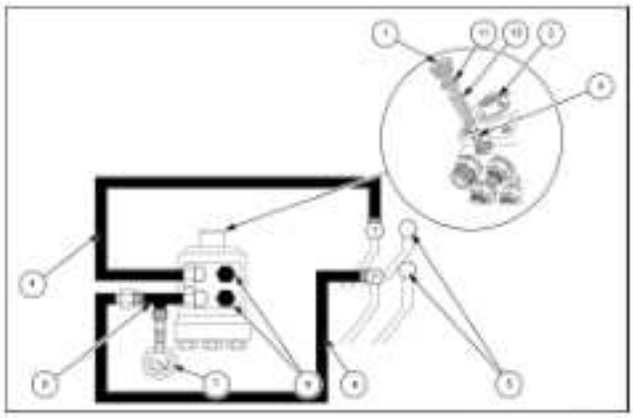
NOTICE: *Check 0il lines and filter before investigating the pump.*
The same procedure can also be performed using remote valves (if fitted), by making suitable changes to the adapter. Operate the remote valve lever, and then measure the flow and the pressure.

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Steering circuit relief valve - Adjust

NOTE: *To adjust the steering system relief valve it is necessary to remove the steering motor from the steering bracket, to gain access to the hexagon headed adjusting screw.*

1. Disconnect the steering motor from the steering bracket.
2. Fabricate suitable test hose to connect pump pipeline to steering motor. Connect locally procured 'T' joint between test hose and steering motor and Install pressure gauge.
3. Block the plug connections to steering cylinder with suitable blanking cap.
4. Connect the return hose normally. If required connect with extra hose and suitable adopter.
5. Start the engine and idle between **1450 RPM** and **1500 RPM**. Run the tractor until the transmission oil reaches normal working temperature.
6. With the engine running, turn the steering motor shaft to obtain full lock. The pressure gauge reading should read **120 bar**.
7. If the pressure readings are not correct, reset the adjuster **(11)** , using an **8 mm** hexagon key



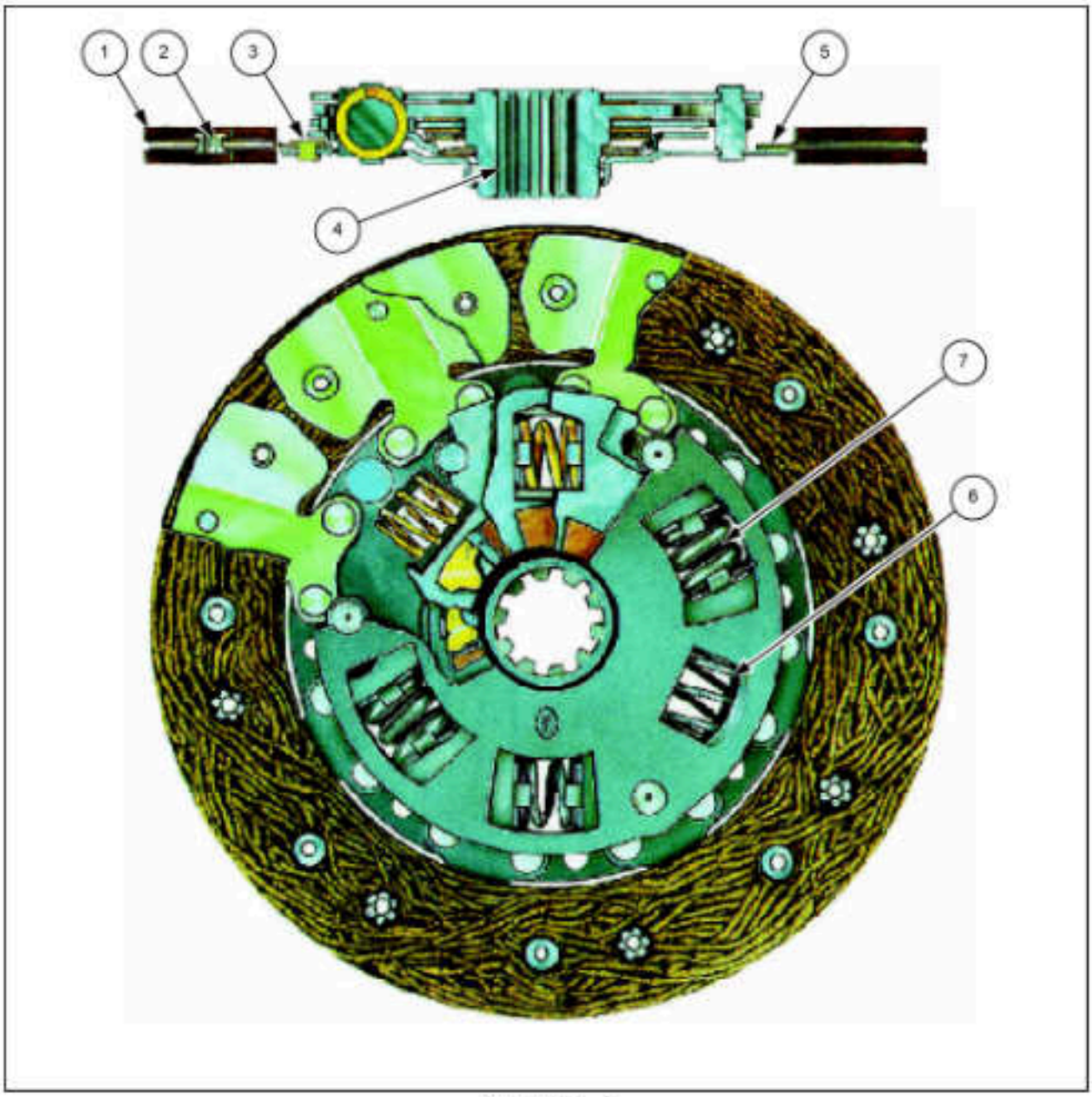
1.Plug 2.Steering shaft 3.Relief valve 4.Fabricated Steering Motor Output Hose 5.Tractor tubes to steering cylinder 6.Fabricated hose for pump supply to steering motor 7.Pressure gauge **0 - 5000 lbf** per square inches 8.Swivel running Tee 9.Blanking Cap 10.Spring 11.Adjuster

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Engine starting system - Troubleshooting

Problem	Possible Cause	Correction
Engine will not crank and starting solenoid does not engage	Battery discharged.	Check battery charge or renew.
	Safety inter locks not working.	Check the circuit and repair or renew faulty components.
	Starting circuit open or high resistance	Check circuit connections and repair or renew faulty wire connections.
Engine will not crank but solenoid engages	Battery discharged	Check battery charge or renew.
	Defective starter motor connections or loose battery connections.	Check, clean and tighten connections.
	Starting motor faulty.	Inspect, repair or renew.
Starting motor turns but not engages	Defective starter motor drive assembly.	Inspect and repair / renew.
	Defective solenoid or pinion engagements levers.	Inspect and repair / renew.
	Defective flywheel ring gear	Inspect and repair / renew.
Engine crank slowly	Discharged battery	Check the battery charge or renew.
	Excessive resistance in starting circuit.	Check circuit connections and repair or renew faulty wiring.
	Defective starter motor.	Inspect and repair / renew.

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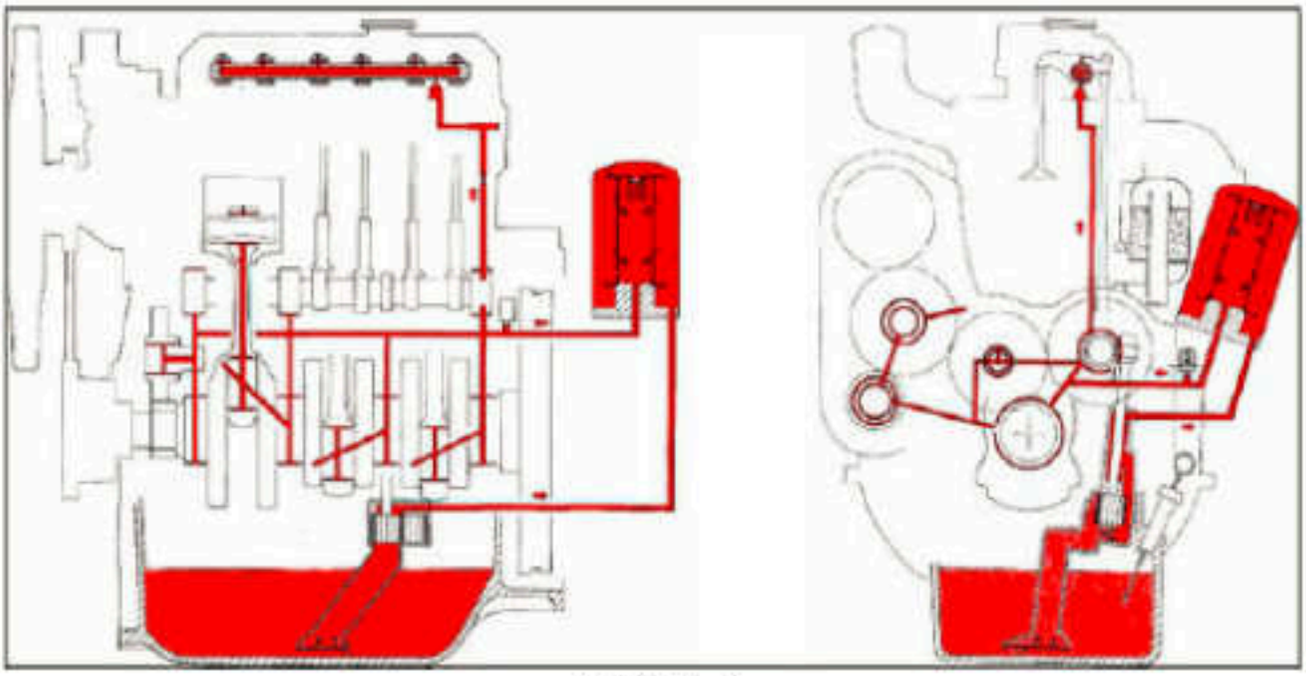
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Mechanical version

1. Clutch facing
2. Facing rivet
3. Segment rivet
4. Hub
5. Segment
6. Idle damper spring
7. Main damper spring

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An intermittent flow of oil is directed to the value rocker arm shaft assembly via a drilled passage in the cylinder block. This is located vertically above No. 3 camshaft bearing and aligns to a hole in the cylinder head. The rotation of the camshaft allows a controlled intermediate flow of lubrication.



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COOLING SYSTEM

The function of the water pump mounted at the front of the engine, is to maintain a continuous flow of water around the cooling system. This is essential to ensure engine temperature and performance within the recommended range, during vehicle operation.
The Water pump is driven by a 'V' belt by the crankshaft pulley, when the engine is running.

The cooling system for the new generation of engines is of recirculating by-pass type with full length water jackets for the bottom tank of the radiator by the water pump, which passes the coolant to the cylinder block. This coolant then flows through cored passages to cool the cylinder walls.

Passages in the cylinder head gasket allow coolant to flow from the cylinder block, into the cylinder head cored passages also conduct the coolant to the fuel injector nozzle locations before re-entering the water pump below the thermostat

The thermostat is located in the top of the water pump body, and controls the flow of the water as required by temperature changes.

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