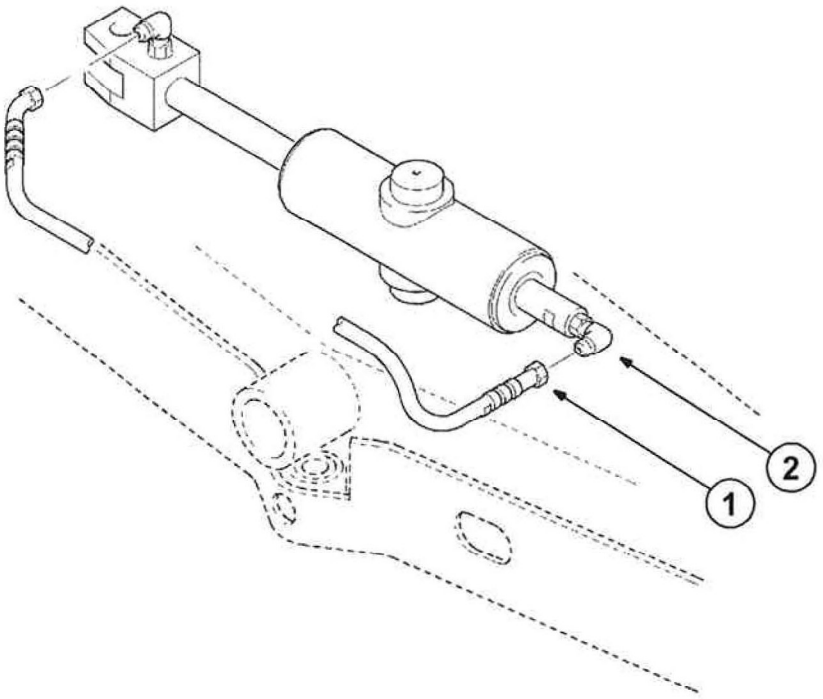
Test 3 - Steering Relief Valve Pressure and Cylinder Internal Leakage



DI97E338

1. LEFT HAND STEERING HOSE
2. STEERING CYLINDER ELBOW

STEERING RELIEF VALVE

TOOLS REQUIRED

One cap, 9/16-18 JIC (part no. 218-754).

One Number 2 adaptor, 9/16-18 JIC male - 1/8 BSPF female (part no. FT1607).

One Minimess test point, 1/8 BSPF (part no. 8172671).

One high pressure hose (part no. 8172694).

One gauge (0-275 bar (part no. FT5274-8).

TEST CONNECTIONS

Disconnect the left hand steering hose (1) and install the pressure gauge. Cap the elbow (2) on the steering cylinder.

TEST REQUIREMENTS

- Heat the hydraulic oil to a temperature of 49° C.
- Run the engine at 1000 rpm.

NOTE: *Make sure the regulated pressure is 20 bar, if the pressure is incorrect refer to Test 5 - Regulated Pressure*

- Turn the steering wheel counterclockwise with a minimum force to obtain steering relief pressure.
- Record the pressure. The pressure must be 141 to 148 bar.
- If the pressure is not correct, refer to POSSIBLE CAUSES.

POSSIBLE CAUSES

- Steering relief valve in steering hand pump set to low. Refer to Steering Hand Pump, Section 5001.
- Steering hydraulic pump faulty. Carry out Test 4 - Steering Hydraulic Pump Efficiency
- Steering hand pump faulty. Refer to Steering Hand Pump, Section 5001.

INTERNAL LEAKAGE

TEST CONNECTIONS

Turn the steering wheel clockwise against the steering stops. Disconnect the left hand steering hose (1) and place the end in a suitable container. Place a suitable container below the steering cylinder elbow (2).

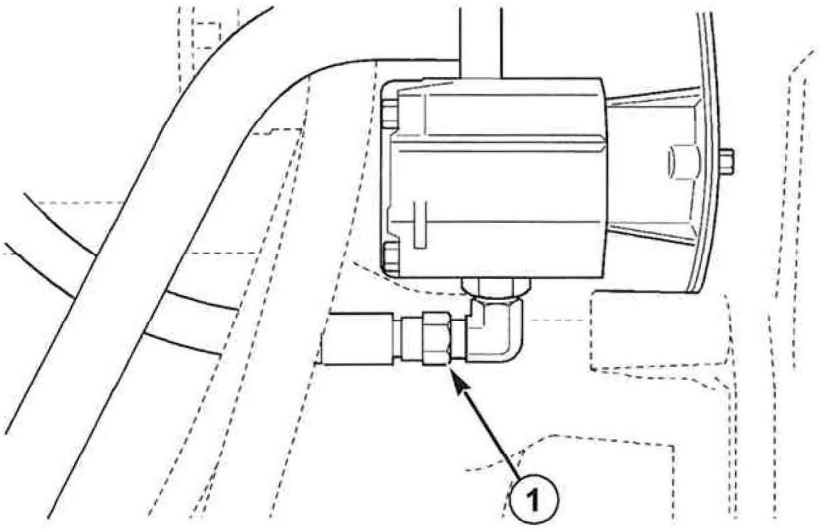
TEST REQUIREMENTS

- Heat the hydraulic oil to a temperature of 49° C.
- Run the engine at 1000 rpm.
- Hold the steering wheel against the steering stops with a minimum force. Check for leakage from the steering cylinder.
- If there is leakage from the steering cylinder, refer to POSSIBLE CAUSES.

POSSIBLE CAUSES

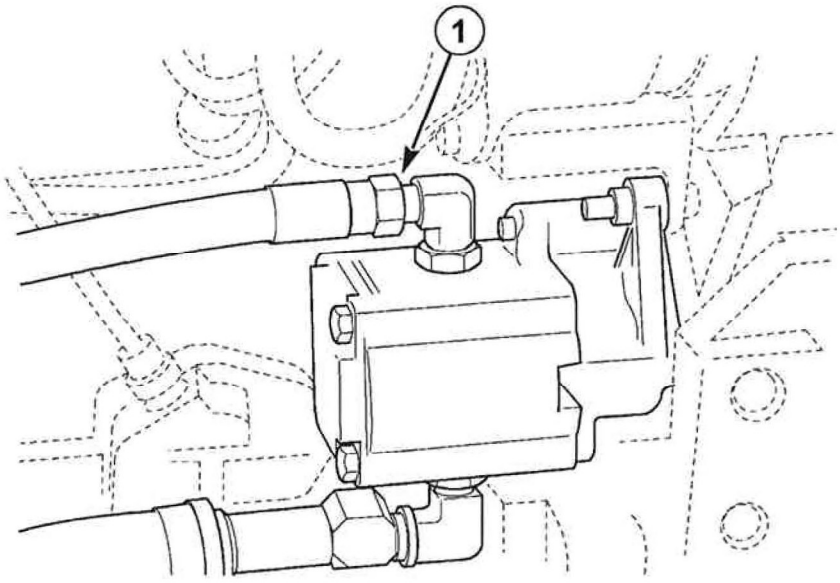
- Internal leakage in the steering cylinder.

Test 4 - Steering Hydraulic Pump Efficiency



CX50 AND CX60 TRACTORS

DI97K170



CX70, CX80, CX90 AND CX100 TRACTORS

DI97K171

1. OUTLET OF STEERING HYDRAULIC PUMP

TOOLS REQUIRED

Two flowmeter connectors.

One flowmeter.

TEST CONNECTIONS

Install the flowmeter at the outlet of the Steering Hydraulic Pump (1).

IMPORTANT: *The flowmeter restrictor must be fully open to allow full flow, otherwise damage to the Steering Hydraulic Pump will result.*

TEST REQUIREMENTS

- Heat the hydraulic oil to a temperature of 49° C
- Run the engine at rated speed.
- Make sure the restrictor on the flowmeter is **FULLY OPEN** to allow full flow. Record the flow as flow 'A'.
- Turn the restrictor on the flowmeter and restrict the flow to a pressure of 150 bar.
- Record the flow as flow 'B'.
- Calculate the pump efficiency using the formula below. The efficiency must not be less than 85%.
- PUMP EFFICIENCY FORMULA

Flow 'B' divided by Flow 'A' x 100 =% of pump efficiency
Example - Flow 'A' = 30 L/min. Flow 'B'= 28 L/min.

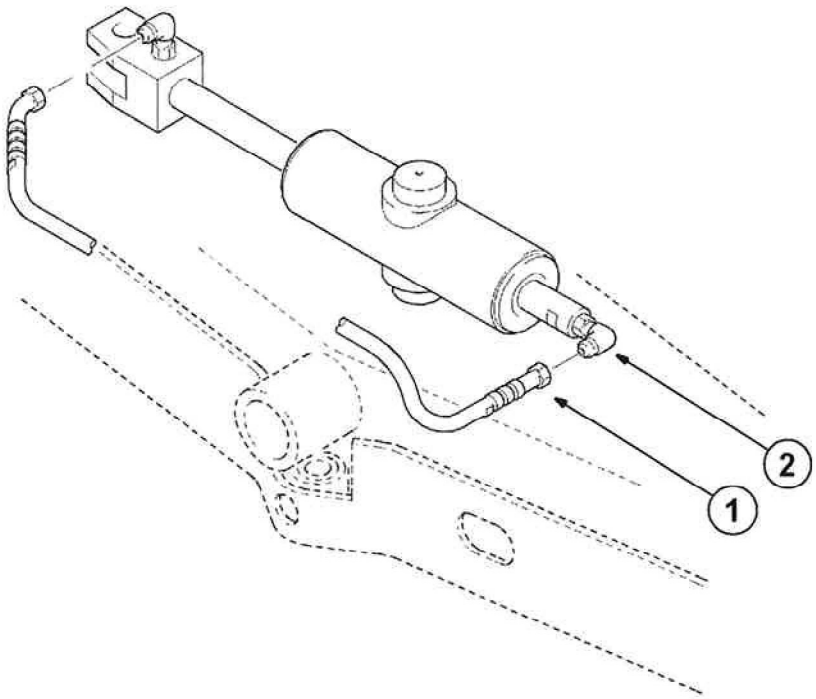
$$\frac{28}{30} \times 100 = 93\%$$

- If the flow is less than 85%, refer to POSSIBLE CAUSES.

POSSIBLE CAUSES

- Pump Flow Low:
  - Hydraulic oil level low (faulty transfer pump).
  - Hydraulic filter in filter manifold blocked
  - Intake of air around the filter bowl.
  - Pump drive gear key failed.
  - Pump inlet blocked.
  - Pump worn.

Test 5 - Regulated Pressure



DI97E338

1. LEFT HAND STEERING HOSE
2. STEERING CYLINDER ELBOW

TOOLS REQUIRED

One cap, 9/16-18 JIC (part no. 218-754).

One Number 2 adaptor, 9/16-18 JIC male - 1/8 BSPF female (part no. FT1607).

One Minimess test point, 1/8 BSPF (part no. 8172671).

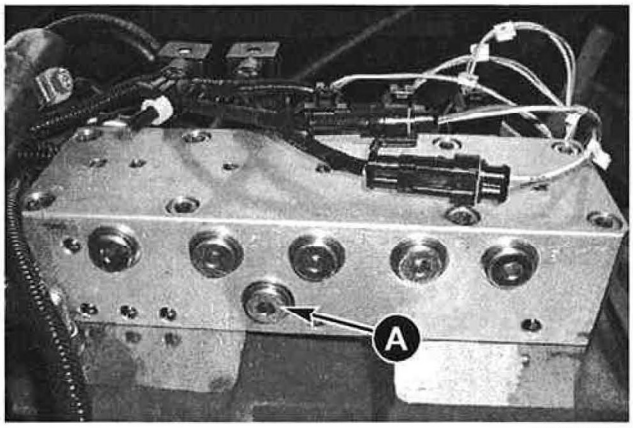
One high pressure hose (part no. 8172694).

One gauge 0-20 bar (part no. FT5274-2).

TEST CONNECTIONS

Disconnect the left hand steering hose (1) and install the pressure gauge. Cap the elbow (2) on the steering cylinder.

On XtraShift tractors the regulated pressure can also be tested at port (A) on the XtraShift valve.



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NOTE: *Regulated pressure can also be checked by carrying out Test 6 - PTO Pressure.*

TEST REQUIREMENTS

- Heat the hydraulic oil to a temperature of 49° C.
- Run the engine at low idle.
- DO NOT turn the steering wheel.
- The pressure must be 20 bar.
- If the pressure is not correct, refer to POSSIBLE CAUSES.

POSSIBLE CAUSES

- Pressure regulator valve adjustment is incorrect.

NOTE: *Turn the adjustment screw on the pressure regulator valve block one complete turn to increase or decrease the pressure 1.7 bar.*

- Excessive leakage in regulated circuits, refer to Test 8 - Regulated Circuit Leakage Test.