Service Manual
Hydraulic Draft and Position Control
Diesel Tractor
433 + 533
633

1091107R1

CASE IH AGRICULTURE

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Pressure in chamber (27) is .4–.8MPa = 56–86 PSI (brown). The whole pump delivery is drained into the reservoir through port (26) Illust. 5. The control valve spool remains in lifting position. Block valve (10) closes, preventing backflow and lowering.

The cut–out valve does not reset itself automatically. A constant residual pressure of .4–.6 PMa = 56–85 PSI remains in the system. By this "cutout action" the pump is protected from operating against continuous high pressure.

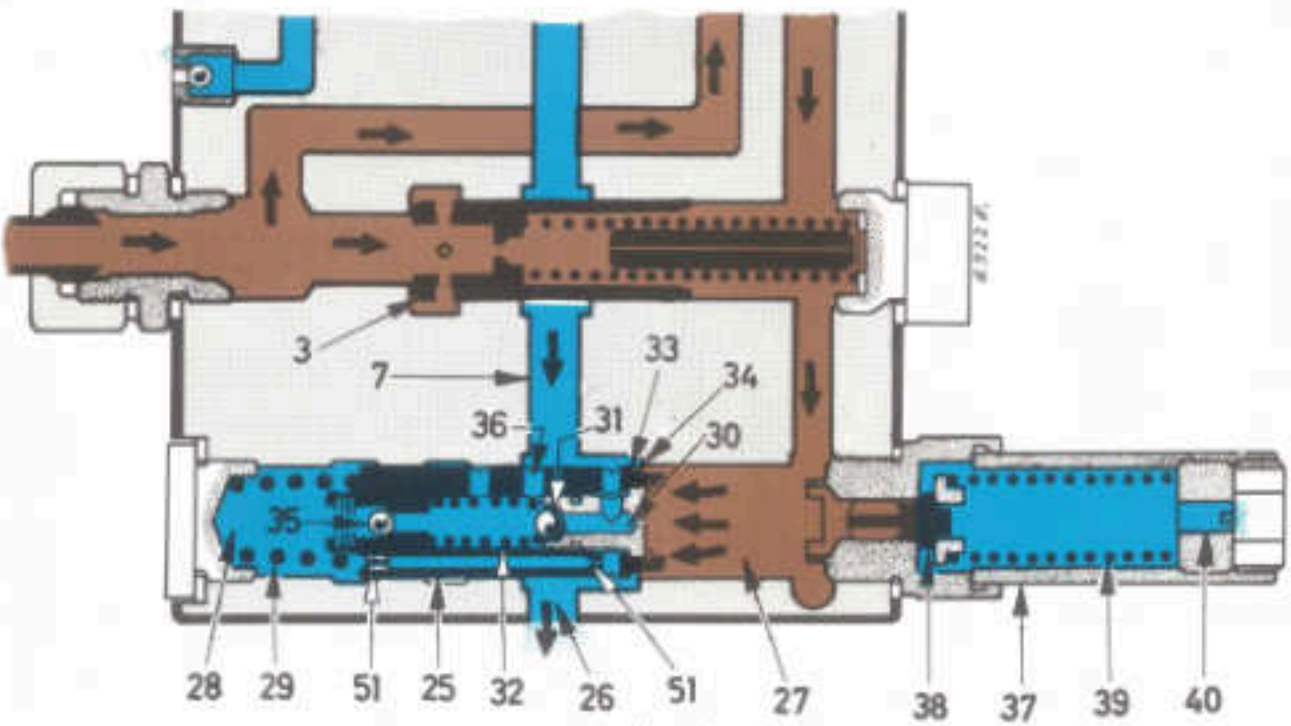
To make the system operable again, the cut–out valve must be retarded. Spring (29) Illust. 6 can only reassert itself when chamber (27) is pressureless. To do this, the system must be briefly put in the lowering position to obtain "neutral", as shown in Illust. 2, i.e. the flow divider piston (3) Illust. 6 must be run back, permitting most of the pump capacity to drain into the reservoir through return passage (7). As the cut–out valve slides back, chamber (28) must be filled with fluid. However, only a small quantity can pass through restrictor orifice (51) resulting in a suction condition in chamber (28).

This unseats ball valve (35), permitting oil in large volume from passage (7) and (26) to fill chamber (28). Rising pressure in chamber (28), due to a pressure build–up in chamber (27), will reseat ball (35).

Additional Relief Valve

We have seen that the cut–out relief valve opens only when the pressure build–up exists for .5–.7 seconds or longer. Shock loads that might occur instantaneously are reduced by the additional relief valve (37). Poppet (38) thereby becomes unseated and moves against spring (39). The pressure oil from chamber (27) can now drain into the reservoir through apertures (40).

The additional relief valve also protects the system when the cut–out relief valve should fail. The hydraulic system must, however, not be used when the cut–out valve is known to be defective because of the higher opening pressure setting of the additional relief valve.



Illust. 6

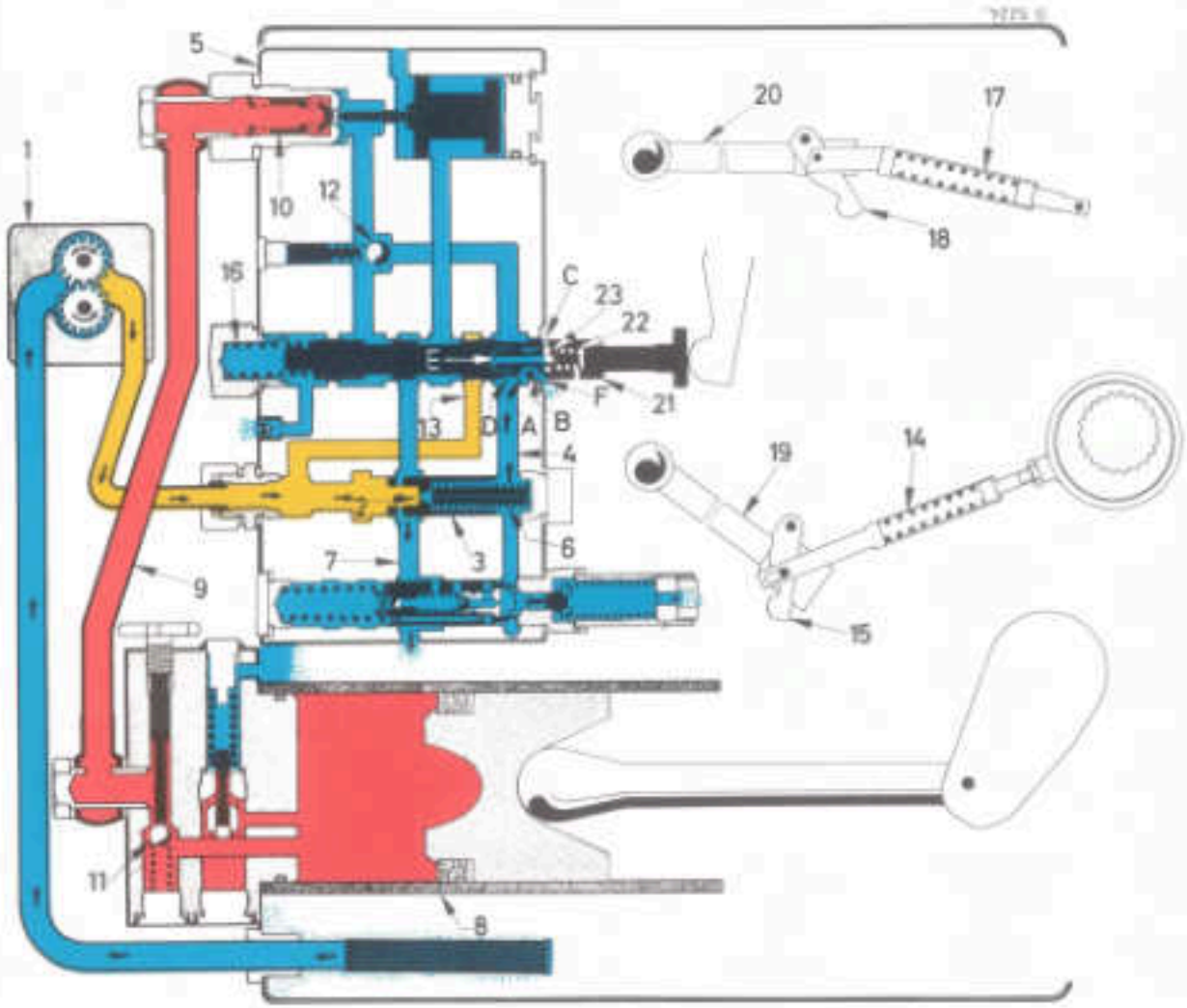
= System pressure with cut–out valve open,

= Low pressure

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HYDRAULIC SYSTEM

Neutral Position



Illust. 2

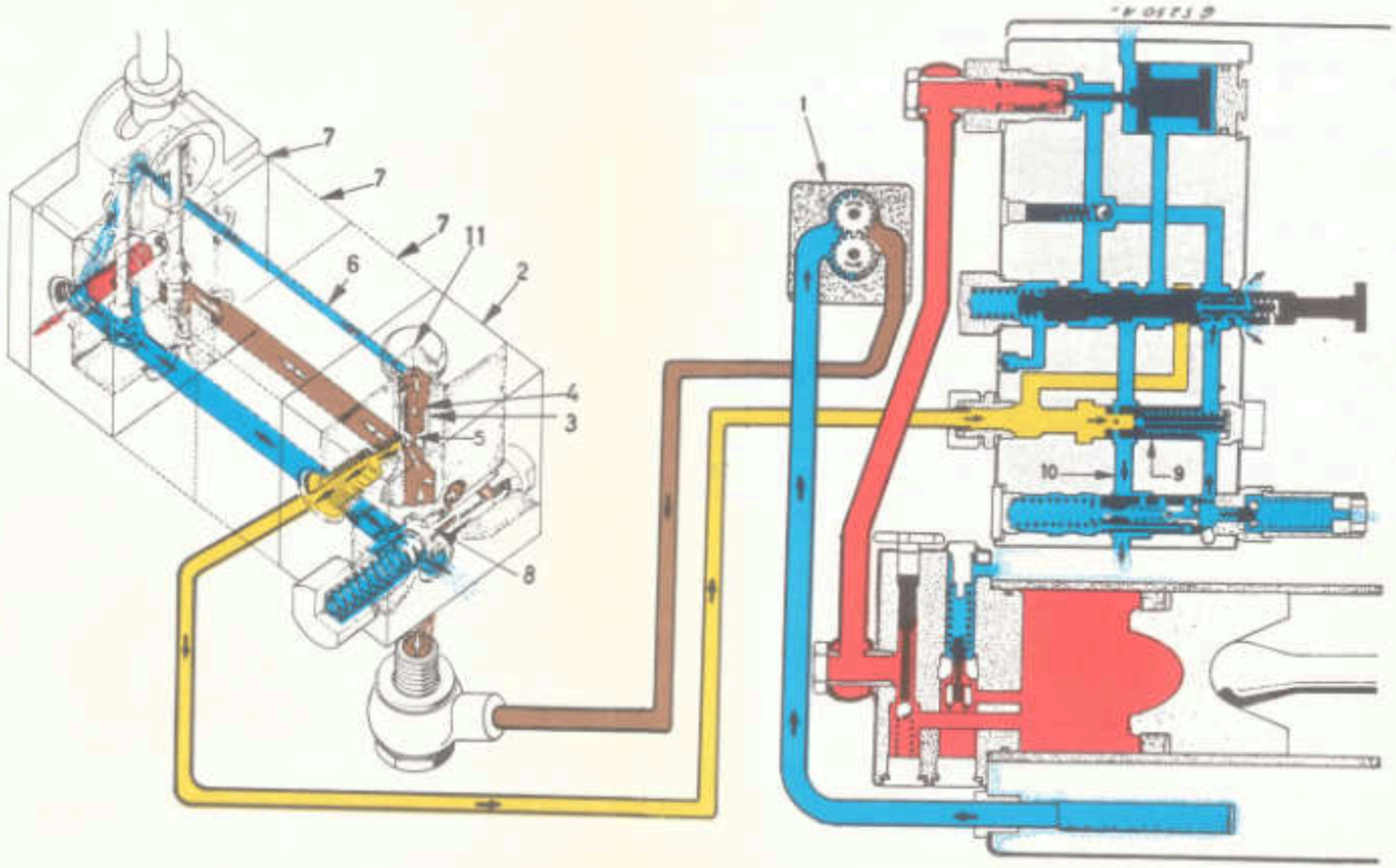
Operating pressure

Pilot stream pressure

Low pressure

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Hydraulic System with Auxiliary Control Valves



Illust. 8

Oil flow with draft control – and auxiliary circuit in "Neutral position"

= Low pressure

= Pilot pressure, .95 – 1.1 MPa 135 – 156 PSI controlled by flow divider piston (3) within mounting block (2)

= Pilot pressure, .8 – .9 MPa = 114 – 128 PSI controlled by flow divider (9) in draft control valve

= Static oil, pressure depending on load

Note: For functional description of auxiliary circuit and components see "Auxiliary Control Valves".

1 – Pump
2 – Mounting block
3 – Flow divider piston
4 – Spring
5 – Restrictor orifice
6 – Restricted passage
7 – Control valve
8 – System relief valve
9 – Flow divider
10 – Return passage
11 – Check point for system pressure

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