Hydraulic systems - Dynamic description

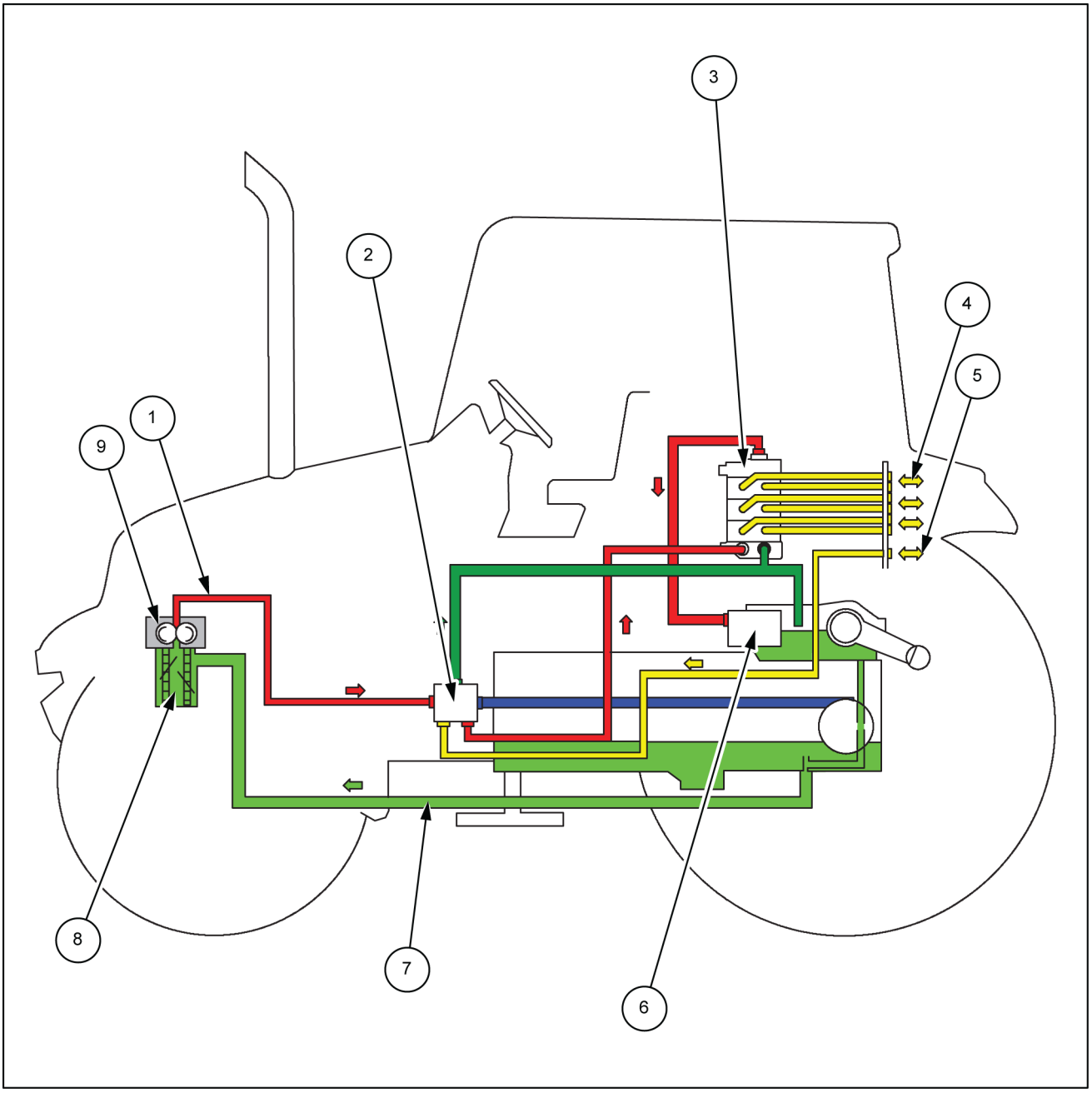
TD5.

Hydraulic lift circuit

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.



ANIL12TR00681GB 1

Static oil

Oil in suction

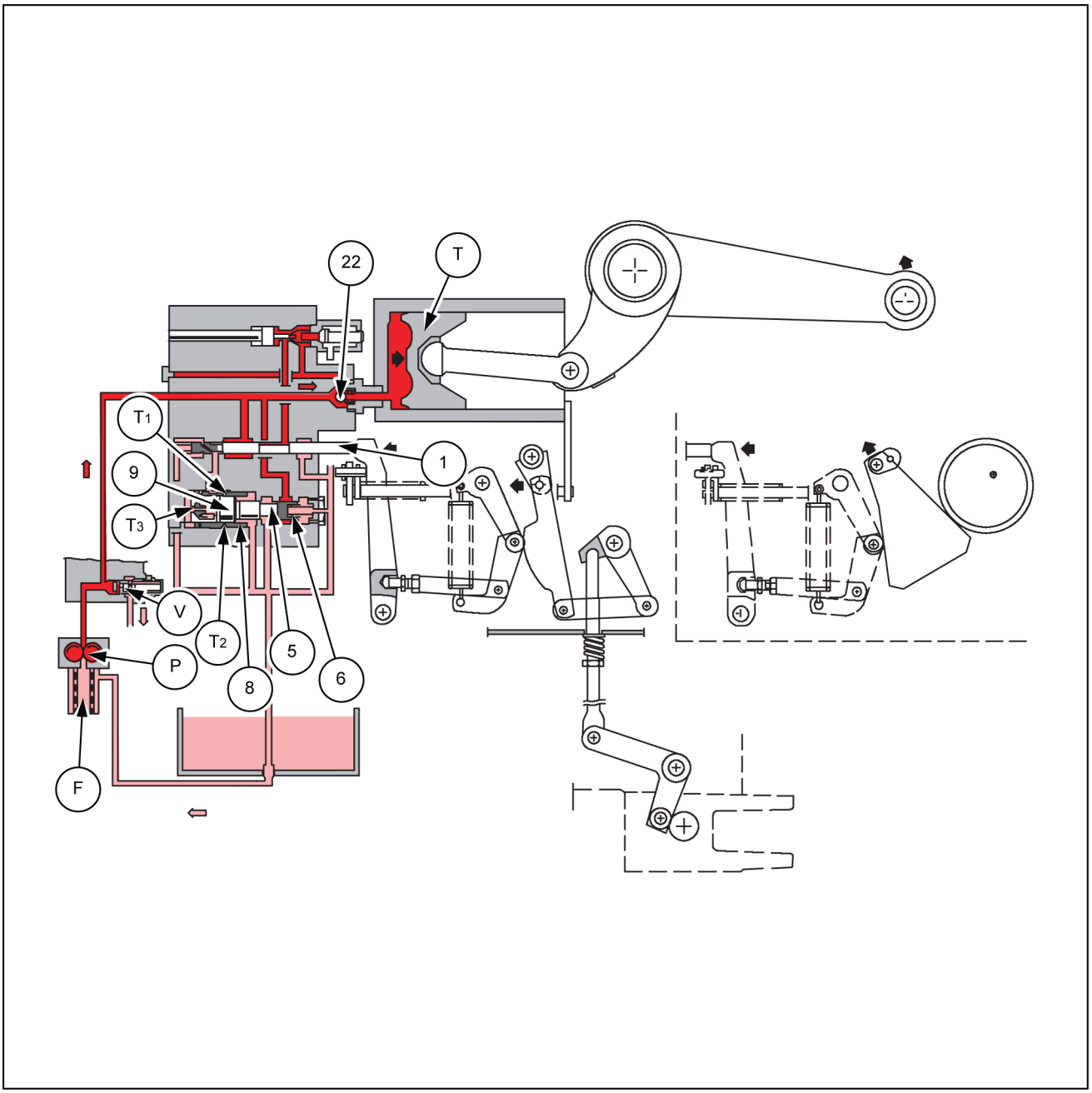
Tractor brake circuit oil (brakes off)

Pressurised oil

Exhaust oil flow

1. Delivery line to control valve **(3)**.
2. Trailer brake control valve.
3. Auxiliary control valves.
4. Auxiliary control valve lines.
5. Trailer brake control valve line.
6. Lift control valve.
7. Suction line.
8. Oil filter.
9. Hydraulic pump.

Arm lift phase



ANIL12TR00682GB 2

Pressurised oil

Oil in suction, delivery or return

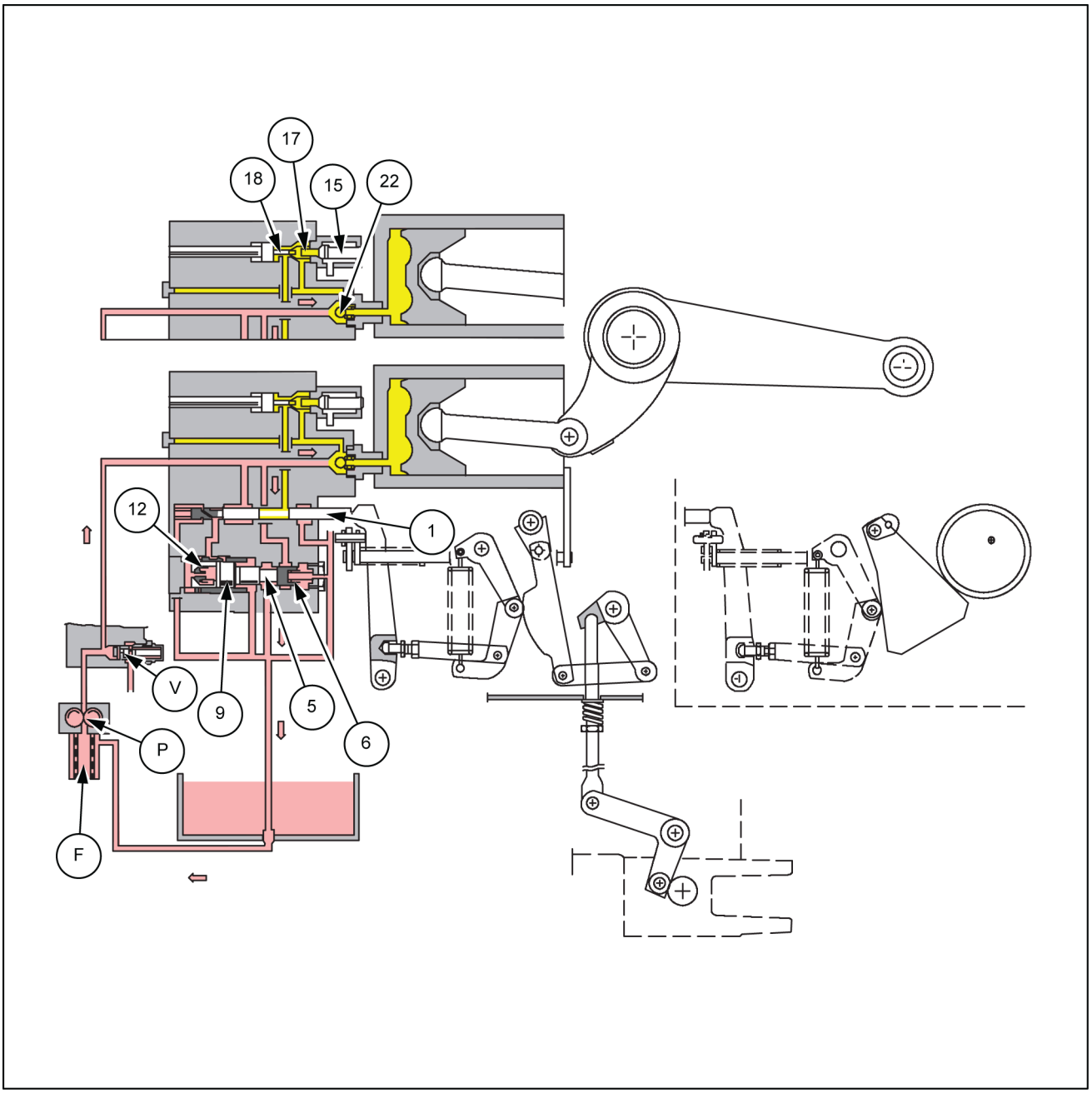
Static oil

F. Filter.
P. Hydraulic pump.
T. Lift arm piston.
V. Relief valve.
1. Valve spool.
5. Plunger.
6. Plunger spring.
8. Piston seat.
9. Piston.
22. Check valve.

When the position control lever (located on the operator’s right-hand side) is used to raise the arms, the movement shown by the arrows is transmitted by the internal lever mechanisms to the control valve block pin **(1)**.

Oil flow to piston **(9)** is cut off and plunger **(5)** is forced to the left by spring **(6)**, thus closing the exhaust port. Pressure oil opens check valve **(22)** and operates piston **(T)** to raise the arms.

Neutral phase



ANIL12TR00683GB 3

Pressurised oil

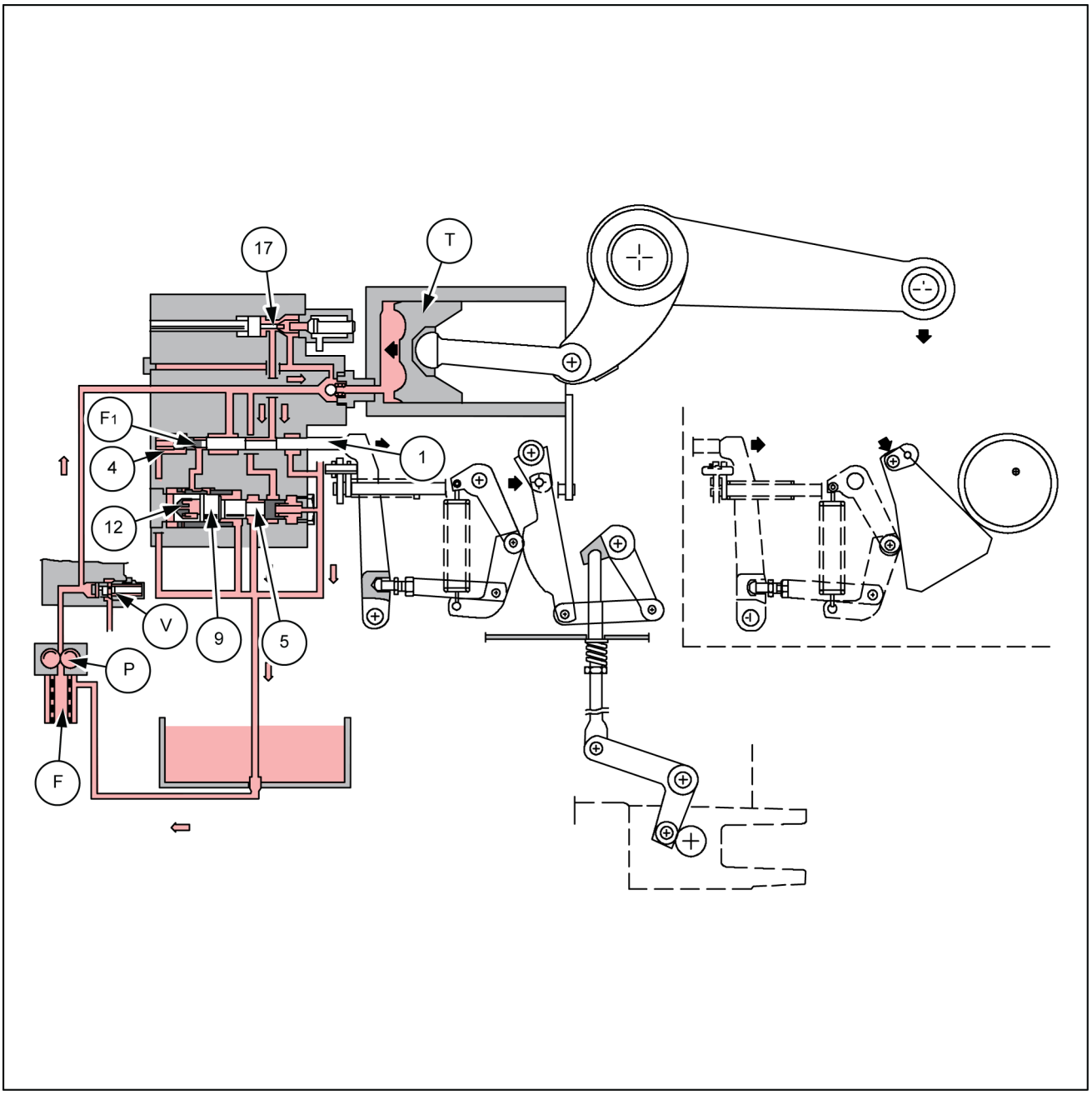
Oil in suction, delivery or return

Static oil

F. Filter.
P. Hydraulic pump.
V. Relief valve.
1. Valve spool.
5. Plunger.
6. Plunger spring.
9. Piston.
12. Draft sensitivity valve.
15. Cylinder safety valve.
17. Arm lowering speed control valve.
18. Ball.
22. Check valve.

With spool **(1)** in the neutral position, oil is delivered through the response adjusting valve **(12)** to piston **(9)**, which overcomes spring reaction **(6)** and moves plunger **(5)** to the right. This opens the exhaust port and directs oil flow to the tank in the rear transmission housing rather than to the cylinder.

Arm lowering phase



ANIL12TR00684GB 4

Pressurised oil

Oil in suction, delivery or return

Static oil

F. Filter.
P. Hydraulic pump.
T. Lift arm piston.
V. Relief valve.
1. Valve spool.
4. Spool return spring.
5. Plunger.
9. Plunger spring.
12. Draft sensitivity valve.
17. Arm lowering speed control valve.
F1. Spool port.

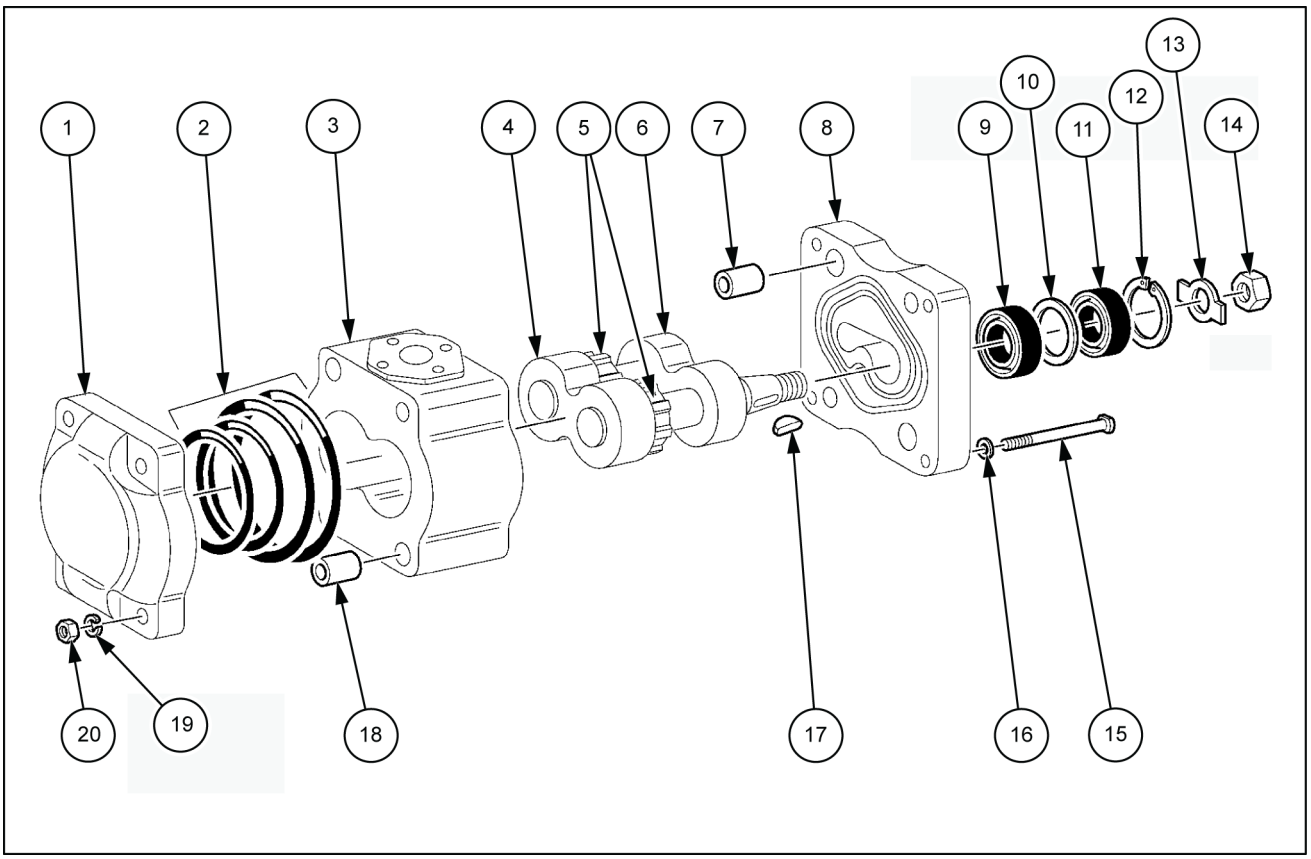
When the operator lowers the position control lever on his right, the return spring **(4)** pulls spool **(1)** to the right. Cylinder oil is exhausted under piston pressure **(T)** through lowering speed adjustment valve **(17)** and the port uncovered by spool.

Through spool port **(F1)** and draft sensitivity valve **(12)** oil flows to piston **(9)**, which holds plunger **(5)** in the position shown, thus allowing pump delivery to be exhausted past plunger **(5)**.

Unscrewing the screw **(16)** decreases the load on the spring **(15)**, therefore the valve **(14)** can vibrate faster, slowing down the descent speed. Tightening the screw **(16)** slows down the vibration of the valve **(14)** that increases the descent speed of the arms since the valve **(14)** can remain in position in correspondence with the larger orifice where the oil flows out from the cylinder. After adjusting the arm descent speed it will not depend on the weight bearing on the arms but will be virtually constant.

Hydraulic systems - Component localisation

TD5.



ANIL12TR00960FB 1

Hydraulic lift control pump components

1. Front cover
2. Cover seals
3. Pump body
4. Gear support
5. Driven and driving gear shafts
6. Gear support
7. Bushing
8. Control side cover
9. Driving shaft seal
10. Spacer
11. Driving shaft seal
12. Snap ring
13. Safety washer
14. Nut
15. Bolt
16. Washer
17. Key
18. Bushing
19. Safety washer
20. Nut