

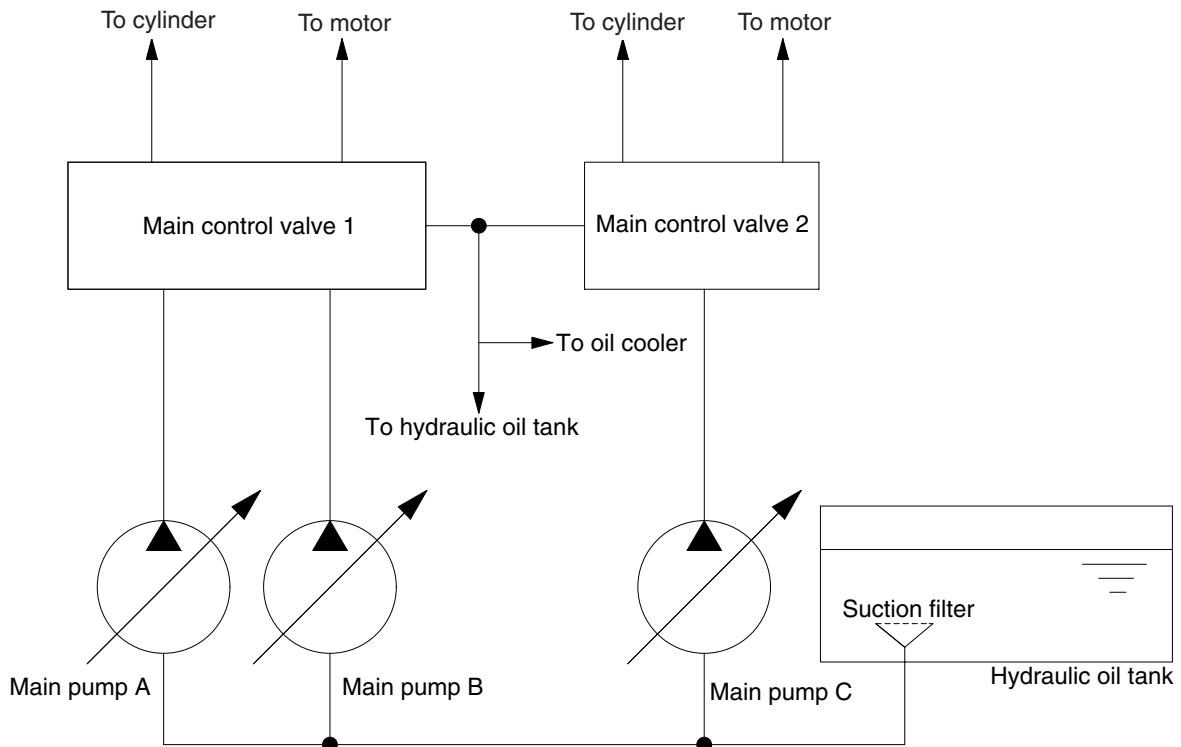
GROUP 2 MAIN CIRCUIT

The main hydraulic circuit consists of suction circuit, delivery circuit, return circuit and drain circuit.

The hydraulic system consists of three main pumps, two control valves, two swing motors, four cylinders and two travel motors.

The swash plate type variable displacement axial piston pump is used as the main pump and is driven by the engine at ratio 1.0 of engine speed.

1. SUCTION AND DELIVERY CIRCUIT



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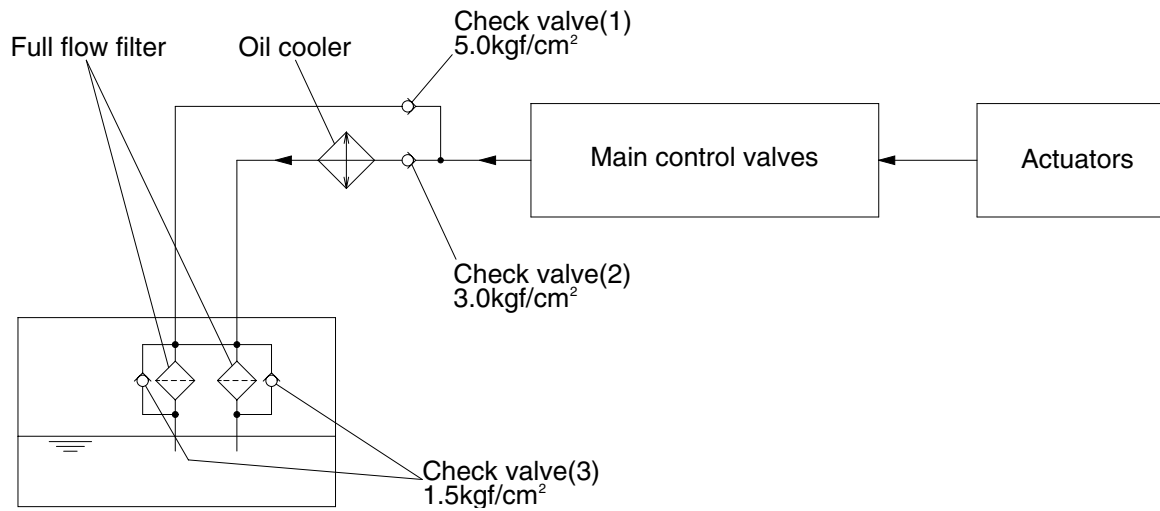
The pumps receive oil from the hydraulic tank through a suction filter. The discharged oil from the pump flows into the control valve and goes out the tank ports.

The oil discharged from the main pump flows to the actuators through the control valves.

The control valves control the hydraulic functions.

The return oil from the actuators flows to the hydraulic tank through the control valves and the oil cooler.

2. RETURN CIRCUIT



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All oil from each actuator returns to the hydraulic tank through the control valves.

The bypass check valves are provided in the return circuit.

The setting pressure of bypass check valves are 1.5 kgf/cm² (21psi) and 5.0 kgf/cm² (71psi). Usually, oil returns to the hydraulic tank from the left side of control valves through oil cooler.

When oil temperature is low, viscosity becomes higher and flow resistance increases when passing through the oil cooler. The oil pressure exceeds 5.0 kgf/cm² (71psi), the oil returns directly to the hydraulic tank, resulting in the oil temperature being raised quickly at an appropriate level.

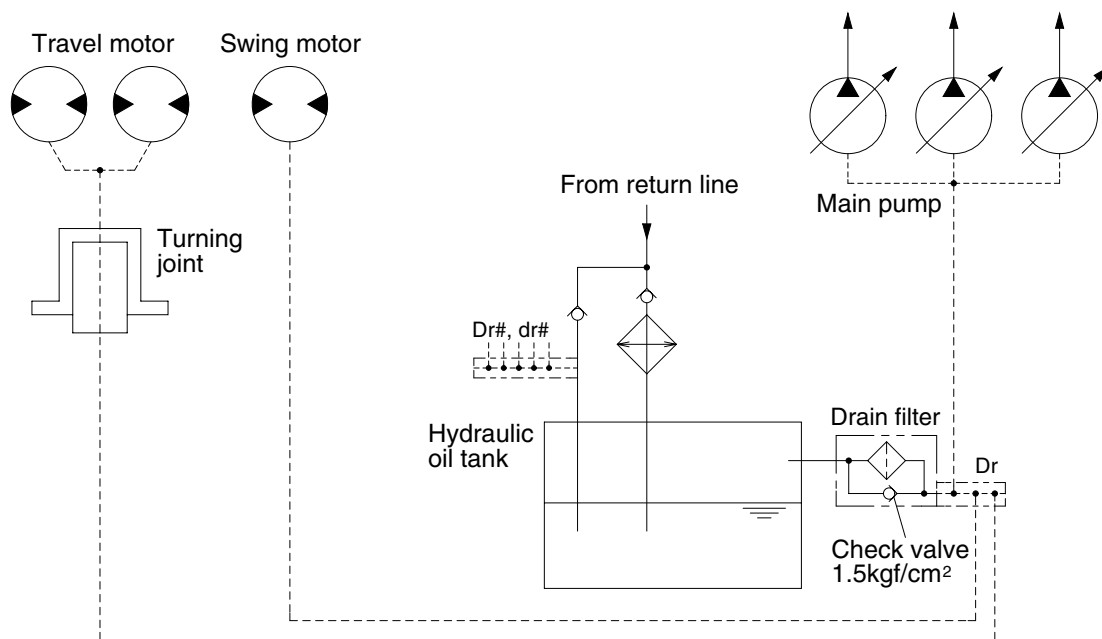
When the oil cooler is clogged, the oil returns directly to the hydraulic tank through bypass check valve (1).

The full-flow filter and bypass relief valve are provided in the hydraulic tank.

The oil from control valves is combined and filtered by the return filter. A bypass relief valve is provided in the full-flow filter.

When the filter element is clogged, the bypass relief valve opens at 1.5 kgf/cm² (21psi) differential pressure.

3. DRAIN CIRCUIT



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Besides internal leaks from the motors and main pumps, the oil for lubrication circulates. These oil have to be fed to the hydraulic tank passing through drain filter and full flow filter in the hydraulic tank. When the drain oil pressure exceed 1.5 kgf/cm² (21psi), the oil returns to the hydraulic tank directly.

1) TRAVEL MOTOR DRAIN CIRCUIT

Oil leaking from the right and left travel motors comes out of the drain ports provided in the respective motor casing and join with each other. These oils pass through the turning joint and return to the hydraulic tank after being filtered by full flow filter in the hydraulic tank.

2) SWING MOTOR DRAIN CIRCUIT

Oil leaking from the swing motors come out and return to the hydraulic tank passing through a drain filter.

3) MAIN PUMP DRAIN CIRCUIT

Oil leaking from main pumps come out and return to the hydraulic tank passing through drain filter.