VOLVO

Construction Equipment

Service Information

Document Title: **Hydraulic system, work instructions**	Function Group: **910**	Information Type: **Service Information**	Date: **2014/11/26**
Profile:			

Hydraulic system, work instructions

- Always wear clean overalls and be strict about personal cleanliness.
- Perform thorough troubleshooting to avoid unnecessary repair work.
- If necessary – move the machine, if possible, to as dust-free an environment as possible.
- If possible, do not dismantle components in the field. Use exchange components.
- Protect both replaced components and components that are to be reused by wrapping them in plastic film.
- If the tank is to be emptied and the oil has been found to be free from discolouration and impurities – drain the oil into a clean vessel and seal it. This oil or fresh oil should always be poured back via the filler plug on the lid of the hydraulic oil filter.
- Use a suitable fluid when cleaning and pour it for use into a thoroughly cleaned container.

Document Title: **Hydraulic system, description**	Function Group: **910**	Information Type: **Service Information**	Date: **2014/11/26**
Profile:			

Hydraulic system, description

The machine's hydraulic system is divided into two subsystems - the working hydraulic system and servo hydraulic system.

All power transmission is via hydraulic oil in the **working hydraulic system**.

Five working pumps provide two valve blocks with oil. The valve blocks distribute the oil to the four hydraulic cylinders of the digging equipment and the three hydraulic motors for travel and slewing. The flow of oil to the different components is regulated by valve spools in the directional valves.

The **servo hydraulic system** is used for control.

A servo pump supplies the control levers and pedals with servo pressure. When the machine is operated, the control pressure valves reduce the servo pressure to a control pressure, which activates the directional valves.

Main components	**Diagram designation**
Hydraulic oil tank	19:c
Working pumps	1:a-c
Main valve block	A ∗)
Slew valve block	B ∗)
Hydraulic oil cooler	18:d
Fan pump	1:g
Hydraulic motor for cooling fan	4:e
Thermostat valve for cooling fan	19:e
Servo pump	1:d

∗) Pos. only applies to [Invalid linktarget] , not hydraulic diagram.

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Document Title:	Function Group:	Information Type:	Date:
Hydraulic system, location of main components	**910**	**Service Information**	**2014/11/26**
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Hydraulic system, location of main components

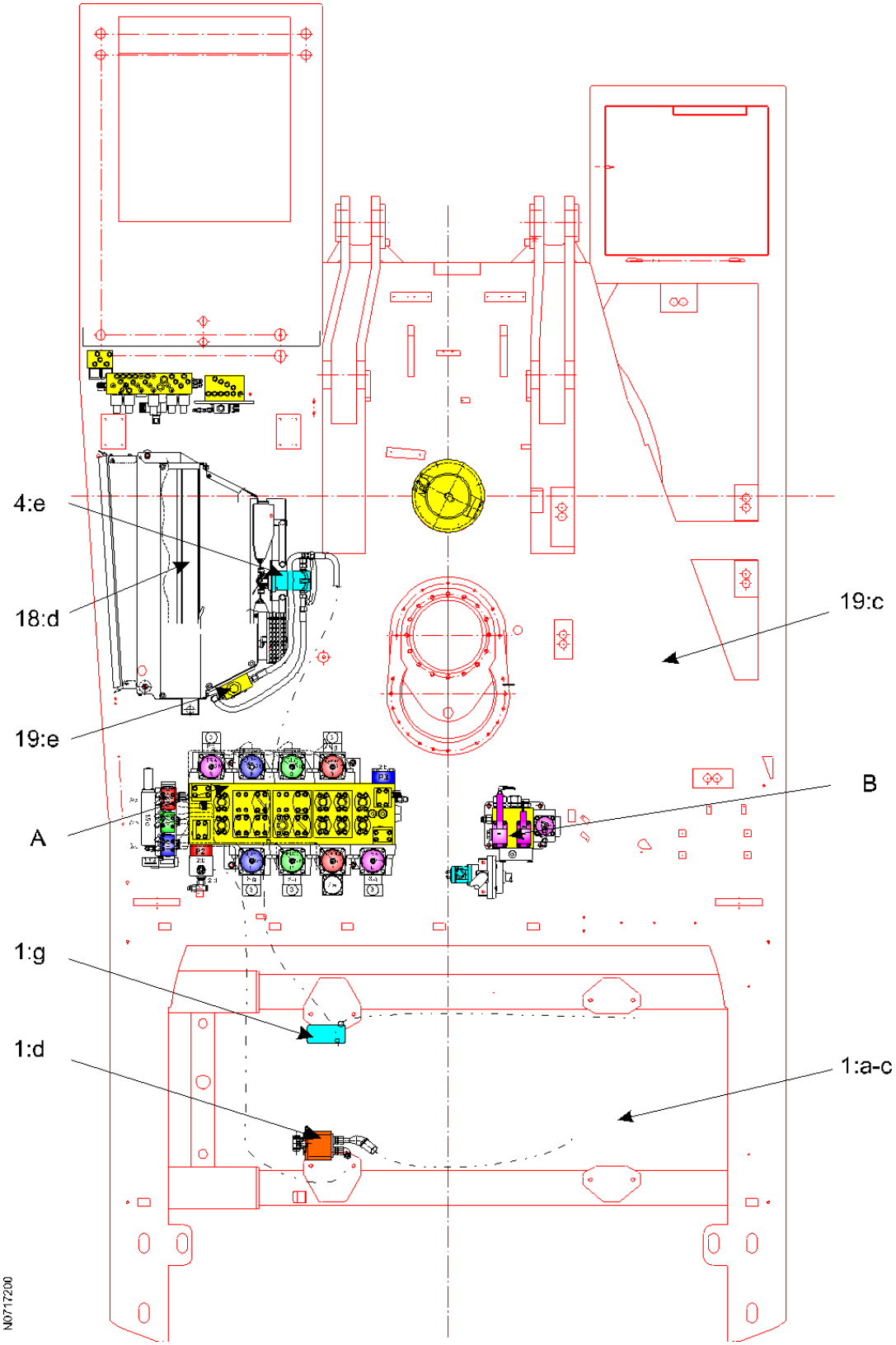

Figure 1
Main components of hydraulic system, overview

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Document Title: **Hydraulically driven oil cooler fan, description**	Function Group: **910**	Information Type: **Service Information**	Date: **2014/11/26**
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Hydraulically driven oil cooler fan, description

Fan pump **1:g** supplies oil to the fan motor **4:e** with a branch duct to thermostat valve **19:e**.

The check valve **8:g** prevents cavitation in the fan motor in case the engine stops while the cooling fan is on (internal recirculation).

When the oil becomes warmer, the sensor element **4** expands (see [Invalid linktarget]), the spool **3** is press up compressing the spring , and pressure builds up in the system. This starts the fan motor and thus the cooling fan.

When the oil cools, the sensor element **4** cools and contracts. The spring presses the spool **3** down, which opens the passage for oil. This reduces the pressure in the circuit and the cooling fan stops.

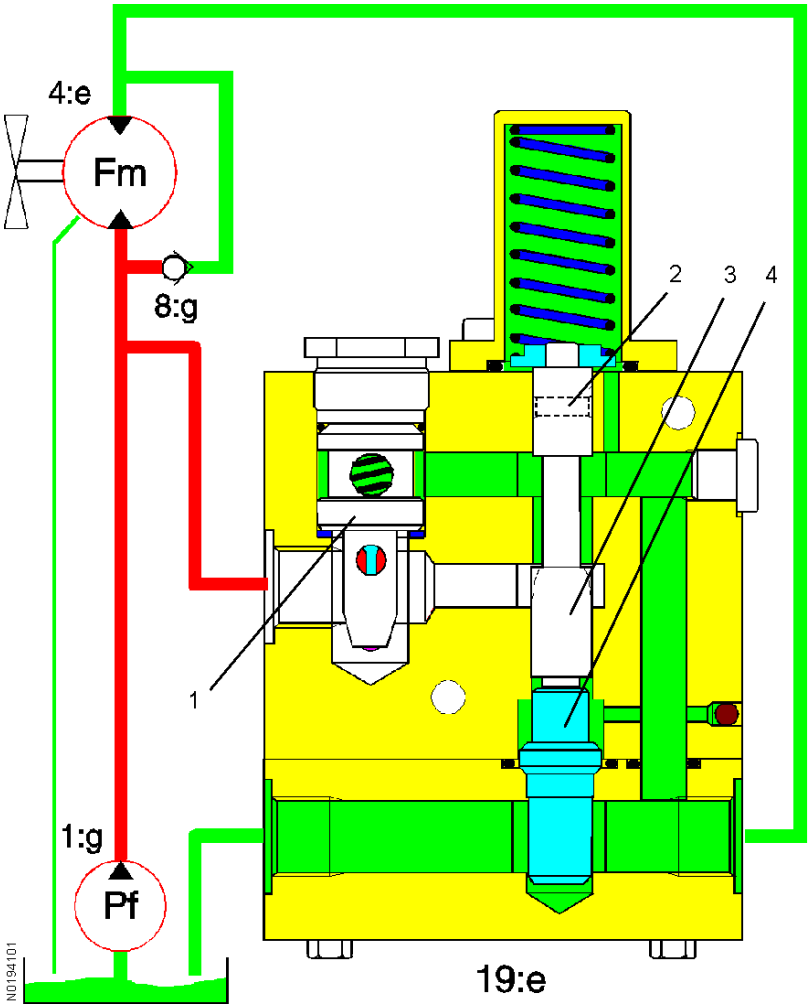

Figure 1
Thermostat valve

1. Pressure limiting valve
2. Drilled hole for force feed
3. Spool

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