

Document Title: Description, general	Function Group: 900	Information Type: Service Information	Date: 2014/9/12
Profile: EXC, FC2421C [GB]			

Description, general

The machine is equipped with a positive flow control system with variable flow. With this system, the working pump can deliver flow according to demand. A variable flow from the pump allows precision work even with high engine speed.

The hydraulic system, also known as the "Automatic Sensing Work Mode," is designed for high-productivity, high-digging capacity, high-maneuvering precision and excellent fuel economy. The summation system, boom, arm and swing priority along with boom and arm regeneration provides optimum performance.

The following important functions are included in the system:

- Summation system: Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.
- Boom priority: Gives priority to the boom operation for faster raising when loading or performing deep excavations.
- Arm priority: Gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.
- Swing priority: Gives priority to swing functions for faster simultaneous operations.
- Straight travel: Gives straight to travel functions for during simultaneous operations.
- Regeneration system: Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.
- Power boost: All digging and lifting forces are increased.
- Holding valves: Boom and arm holding valves prevent the digging equipment from creeping.

The following functions are included in the main control valve :

- Boom
- Dipper arm
- Bucket
- Slew
- Travel
- Optional equipment, X1

The optional control valve has the following functions:

- Level system
- Optional equipment, X3
- line rupture for boom and arm

Document Title: Hydraulic description	Function Group: system, 900	Information Type: Service Information	Date: 2014/9/12
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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**.

A working pump supplies the main valve block with oil. The main valve block distributes the oil to the digging equipment's four (five split boom) hydraulic cylinders and the two hydraulic motors for travel and slew. The flow of oil to the different movements is controlled with valve spools in 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.

Document Title: Hydraulic oil, description	Function Group: 900	Information Type: Service Information	Date: 2014/9/12
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Hydraulic oil, description

The oil contains selected additives that provide good oxidation stability, corrosion protection and good lubricating characteristics as well as compatibility with bearings containing lead alloys.

The ester base gives the oil a very high viscosity index and good characteristics at low temperatures.

Document Title: Hydraulic system, repair of hydraulic components in workshop	Function Group: 900	Information Type: Service Information	Date: 2014/9/12
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Hydraulic system, repair of hydraulic components in workshop

- Always wear clean coveralls and be strict about personal cleanliness.
- Work on hydraulic components should be performed separate from other work in a so-called "clean room". The room must have good ventilation and the floor must be coated with a binding material. Machining, grinding and similar work is not allowed in the "clean room".
- The workplace must be equipped with thoroughly cleaned tools and suitable containers for cleaning hydraulic components.
- Containers for cleaning hydraulic components must not be used for other cleaning. The containers must be cleaned frequently and filled with new fluid. The containers must be equipped with a removable grating on the bottom, which separates the component from any sludge on the bottom.
- Always clean components that are going to be handled in the "clean room". If an alkaline detergent is used, it should contain anti-corrosion agent.
- Always plan work on the hydraulic system so that it can be completed without any longer interruptions.
- When cleaning during repairing – use dry and clean compressed air for drying, do not use cotton waste or rags.
- Always plug a component when work is completed, use clean plastic plugs of the correct dimensions, and pack the component.
- When cleaning in the "clean room" – use methods that do not stir up dust or dirt.

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