Control block RCS

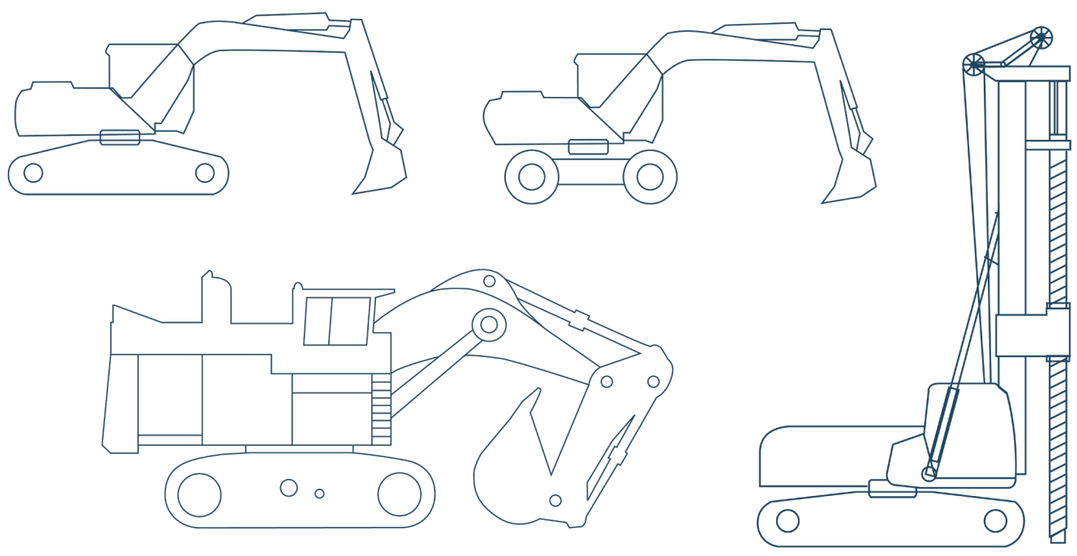
Flexibly configurable valve platform for excavators and other construction machines

The excavator market has been asking for a customer specific differentiation for years. Even crawler excavators are no longer mere diggers, but increasingly used for other tasks such as material handling or with attached auxillaries. Therefore the market requirements are focusing on flexible system layouts, cost-efficiency and energy optimization in order to react quickly on customer specific demands. Together with the Bosch Rexroth Virtual Bleed Off (VBO) software, the new RCS control block platform offers flexible and energy-optimized control concepts for crawler, wheeled and mining excavators as well as for other construction machines

CUSTOMER BENEFITS

- Consumer specific section configuration
- Use of the same VBO software for all RCS sizes
- Flexible flow prioritization and summation
- Different operator modes by software
- Cost efficient partial or full EH (electrohydraulic) control
- Increased pump line pressure level up to 400 bar

APPLICATIONS



FUNCTION AND BENEFITS

Consumer specific section configuration

The Rexroth RCS closed center control block is a control valve platform for two or multiple circuit systems for energy efficient and variable flow and pressure control of all actuators. It offers a scalable valve architecture for pump flows up to 2x 300 l/min (=RCS30), 2x 400 l/min (=RCS35) and 2x 550 l/min (=RCS50) with the same software interfaces. That means the section configurations and layout in all RCS sizes is enabling the use of the same VBO software or other software modules in different machine sizes.

The RCS main control block can be configured with two different spool sizes to match the consumer flow in the best optimal way. It is also possible to configure and combine customer specific sections to achieve the best cost and energy efficiency for the hydraulic system. The sections can be also equipped with additional valves according to individual demands, like Rexroth eValves for summation and prioritization, Anti-Drift valves for leak free consumer ports as well as various pressure and feeding valves. The RCS can be also equipped with integrated electro-proportional pressure reducing valves (EPPRV) for all functional axis.

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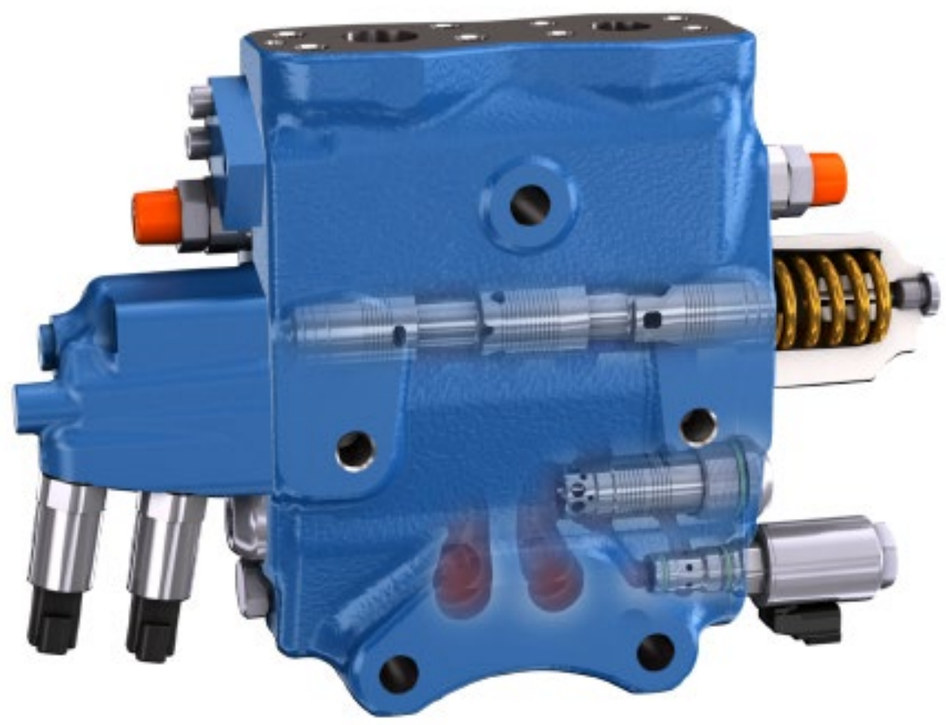
Flexibly configurable valve platform for excavators

TECHNICAL DATA

RCS30 / RCS35 / RCS50			
Sizes:	30	35	50
Maximum pressure (bar):	400	400	380
Secondary pressure (bar):	420	420	420
Max. flow (l/min):	2x 300	2x 400	2x 550
Spool diameters:	25/36	32/40	40/56
Data sheet:	In preparation		



RCS functional axis of the excavator boom

Flexible flow prioritization and summation
The pump flow summation and prioritization of the pump flow to the different actuators is possible through the use of electric controlled Rexroth eValves. The number of eValves can be freely configured according to the customer specific demands.
The RCS control block with its optimized channel system provides low delta p values and allows the highest pump pressure rates in the market. The internal flow summation in front of the main spool improves the MTTFd values. Through the intelligent operation by VBO software of the eValves and main spools, the RCS offers the optimal way of electronification.

Different operator modes by software
The many possible electrical interfaces and functions, like the full integrated electrohydraulic operation of the main axis, enables the maximum flexibility to program different operator modes and additional software functions for the intelligent control of the actuators.

Cost efficient partial or full electrohydraulic control
The type of actuation for the main axis can be freely choosen between full electrohydraulic control, partial electrohydraulic control or full hydraulic control. Therefore it is possible to fit the main control valve exact according the needs in the application as cost effective as possible.

Increased pump pressure level up to 400 bar
The channel system is designed for pump pressures up to 400 bar (RCS30, RCS35) and secondary pressures up to 420 bar to meet future demands of the increasing power density of the hydraulic systems.

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