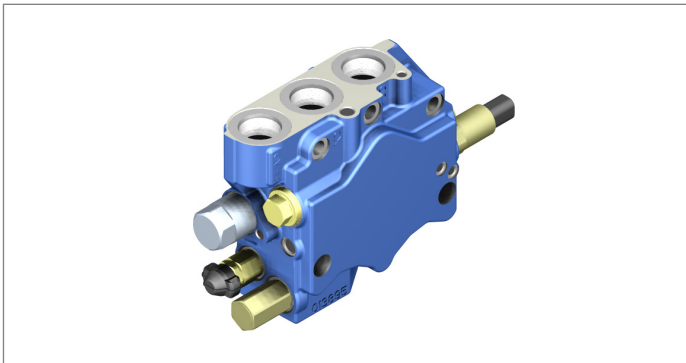


Stabilizing module RSM20



- ▶ Reduction pitching movements on wheeled vehicles, e.g. wheeled loaders, backhoe loaders
- ▶ Size 20
- ▶ Series 1X
- ▶ Maximum working pressure
 - Consumer ports **HEAD, ROD** 420 bar
 - Accumulator port **X2** 350 bar
- ▶ Nominal flow
 - **X2** ↔ **HEAD** 180 l/min

Function

The RSM stabilizing module reduces pitching movements on wheeled vehicles that effect the drivers and machine. For this purpose, the working equipment is hydraulically decoupled from the machine during transport by supporting the load on a hydro-pneumatic accumulator by means of a directional valve. This way, the compensation motion is possible to significantly reduce the pitching movements at the machine.

Design

- ▶ Integrated version
(Combination with control block RS15 or RS20)
- ▶ External version (on request)

Benefits

- ▶ Higher transport speed and higher handling rates
- ▶ Stable steering characteristics
- ▶ Shorter braking distances
- ▶ Higher comfort for the driver
- ▶ Lower mechanical loading of the entire machine
- ▶ Fewer repairs or standstill periods with identical handling rates
- ▶ Simplified installation by integration into the control block
- ▶ Smooth activation of the stabilization function by means of accumulator pressure equalization (optional)
- ▶ Variably selectable accumulator capacity for more efficiency during excavation

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Functional description

The following function elements can be found inside the housing of the stabilizing module (1):

- ▶ Control spool (2)
- ▶ Pressure compensator for accumulator pressure equalization (5) (optional)
- ▶ 3/2-way directional valve, solenoid-actuated (4)
- ▶ Pressure relief valve (EC type-examination tested) (6), selectable pressure stages at $q_{Vmax} = 110$ l/min: 250 bar, 280 bar, 300 bar, 335 bar
- ▶ Pressure compensator for charging flow limitation (9)

If the RSM20 (3/2-way directional valve (4) not energized) is in neutral position, the RSM20 does not have any effect on the bottom and rod side of the lifting frame (11). The pressure accumulator (10) is charged while the machine is in operation. As soon as the pump pressure exceeds the accumulator pressure, the LS pressure compensator (9) is opened and the flow is regulated via the orifice (8). By means of Δp regulations via the orifice, (8) the accumulator charging flow is limited and sufficient flow is always available for supply of the working hydraulics.

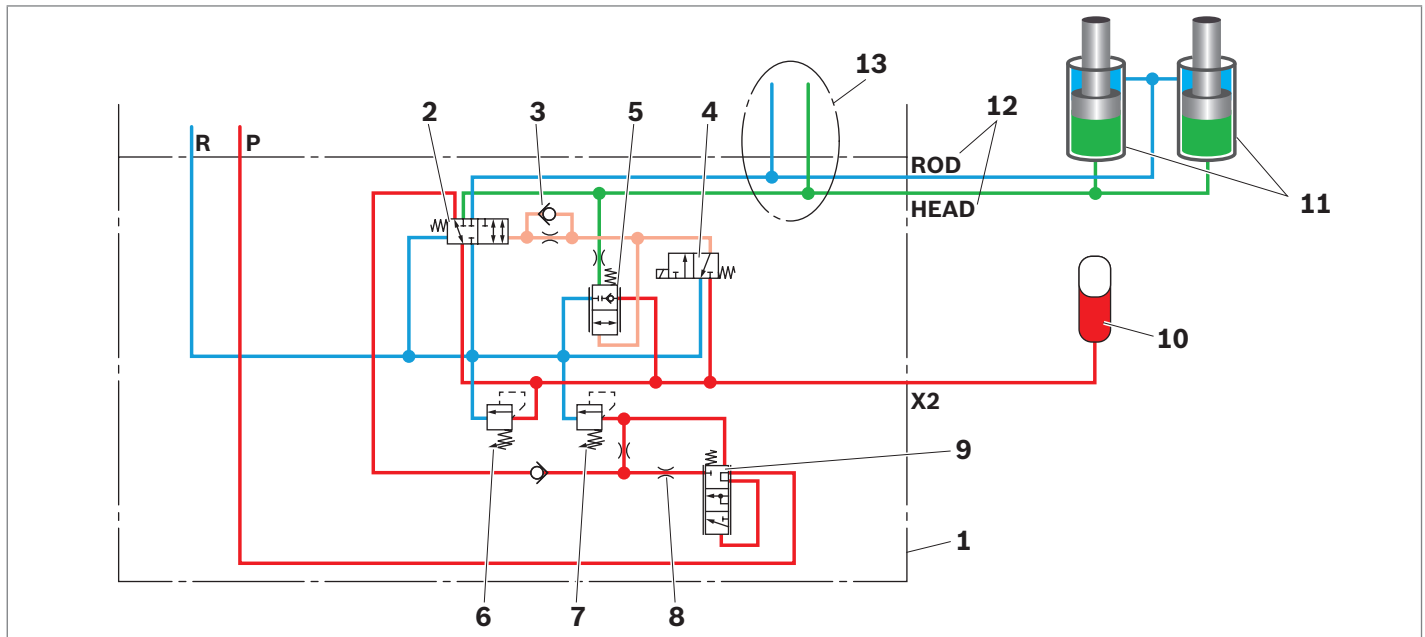
With the pressure relief valve (7), the maximum accumulator charging pressure can be limited. By default, two pressure stages can be selected (120 bar, 160 bar). The LS pressure compensator (9) is then closed as soon as this pressure is reached.

As soon as the 3/2-way directional valve (4) is energized, the control spool (2) is set to active position and the accumulator charging function is deactivated. Afterwards, the bottom side of the lifting frame (11) is connected to the accumulator (10). This way, decoupling from the lifting frame is achieved. For passive vibration reduction, the rod side is connected to the reservoir.

As high accumulator pressures may be connected to a low support pressure if the system is switched on, an optional pressure compensator can be installed to compensate the accumulator pressure (5). This way, it is ensured that the accumulator pressure is regulated to the level of the bottom before the accumulator is connected (10).

Ports	
P	Pump port
R	Tank port
HEAD, ROD	Consumer ports
X2	Accumulator port

▼ Fluid plan RSM20



- | | | | |
|---|--|--|---|
| 1 Housing | equalization (optional) | 9 LS pressure compensator | 13 Internal connection via RS20 inlet to lifting section for ROD and HEAD (only possible with RS20) |
| 2 Control spool | 6 Pressure relief valve for accumulators | 10 Accumulator | |
| 3 Spool damping | (EC type-examination tested) | 11 Stroke cylinder | |
| 4 3/2-way directional valve, solenoid-actuated | 7 Accumulator charging pressure limitation | 12 Stroke cylinder bottom and rod side ports (optional for RS20) | |
| 5 Pressure compensator for accumulator pressure | 8 Accumulator charging flow limitation | | |

Technical data

General				
Weight (approx.) ¹⁾	Integrated version	kg	19.5	
	External version	kg	On request	
Installation position	The 3/2-way directional valve type FTWE2K (4) must not face upwards.			
Consumer connection type	Pipe thread according to ISO 228/1 (inches), ISO 11926-1 (UNF)			
Ambient temperature range	ϑ	°C	-20 ... +80	
Priming (standard)	Single coat RAL 5010			
Hydraulic				
Maximum working pressure at port	HEAD, ROD	p_{\max}	bar	420
	X2	p_{\max}	bar	350
	P (only for external version)	p_{\max}	bar	380
	R	p_{\max}	bar	30 (pressure peaks)
Maximum flow at port	HEAD ↔ X2	$q_{V\max}$	l/min	180
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524, see data sheet 90220. Other hydraulic fluids on request, e.g. environmentally acceptable fluids per ISO 15380 as specified in data sheet 90221.			
Hydraulic fluid temperature range	ϑ	°C	-20 ... +80	
Maximum permissible temperature difference between RSM20 and hydraulic fluid	ΔT_{\max}	K	20	
Viscosity range	Cold start	ν	mm ² /s	380 ... 2000
	Warm-up phase	ν	mm ² /s	100 ... 380
	Recommended range ²⁾	ν	mm ² /s	20 ... 100
	Permissible range ³⁾	ν	mm ² /s	10 ... 380
Maximum admissible degree of contamination of the hydraulic fluid Cleanliness level according to ISO 4406 (c)	Level 20/18/15, we recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$			
Electrical				
Electrical pilot control valves	FTWE2K...; see data sheet 58007			
Connector version	Junior timer, 2-pin (AMP) DT04-2P (DEUTSCH)			
Type of protection according to ISO 20653	Connector version Junior timer (AMP)	IP6K5 ⁴⁾ IP6K7 and IP6K9K ⁴⁾ (only with Rexroth type R901022127)		
	Connector version DT04-2P (DEUTSCH)	IP6K5, IP6K7 and IP6K9K ⁴⁾		

Notice

- ▶ For applications outside these values, please consult us!
- ▶ The technical data was determined at a viscosity of $\nu = 32 \text{ mm}^2/\text{s}$ (HLPD32; $\vartheta_{\text{oil}} = 40^{\pm 5} \text{ °C}$).

- 1) The weight is configuration-specific and may vary by several kilograms.
- 2) Any operation outside the recommended range results in restrictions.
- 3) This corresponds, for example on the VG 46, to a temperature range of +5 °C to +85 °C.
- 4) With installed and locked plug-in connector. Plug-in connectors are not included in the scope of delivery and must be ordered separately, see data sheet 08006.