



Monoblock Directional Control Valve RMB 202

Key valve features

RMB 202 is a 2-section mono block valve, especially designed for front-end loaders.

The valve is prepared for quick connecting couplings, ports positioned for easy piping and easy assembling of wires for cable control.

The valve is designed as an open center valve but can also be used in load-sensing-systems with fixed- or variable displacement pumps.

The LS function of RMB 202 is based on our patented "Semi Load-Sensing" (SLS) system.

Further key valve features are gentle operating characteristics, low pressure drops and a minimal internal leakage. The spools are designed for low and uniform maneuver forces which is important for cable control.

Technical data

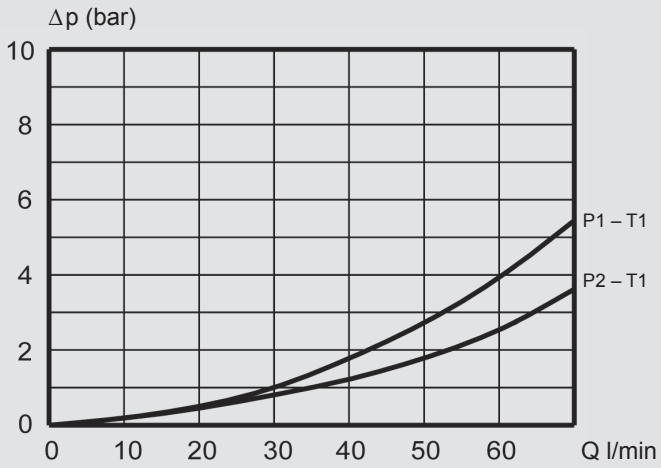
Pressure and flow values*	
Max. operating pressure per port:	
P1, P2, A1, B1, A2, B2:	300 bar
T1, T2:	20 bar
Max. permissible flow connection P1, P2:	
	90 l/min
Further data	
Spool stroke:	
Nominal:	+/- 6 mm
4 th position:	+12 mm
Spool control force:	
Nominal:	140 N
Detent in:	> 300 N
Detent out:	< 100 N
Permissible contamination level:	
	Equal to or better than 20/18/14 as per ISO 4406
Viscosity range:	
	10 – 400 mm ² /s (cSt) Higher viscosity allowed at start up
Spool leakage at 100 bar, 32 cST and 40 °C:	
	< 4 cm ³ /min without service port valve < 5 cm ³ /min with anticavitation valve and < 6 cm ³ /min with relief and anticavitation valve
Pressure fluid:	
	Mineral oil and synthetic oil based on mineral oil HL, HLP according to DIN 51524
Fluid temperature range:	
	-15 °C up to +80 °C

* Higher values are possible, depending on application. For applications with demands that exceed stated data above, please contact us for consideration. MTTFd value after consultation with HYDAC.

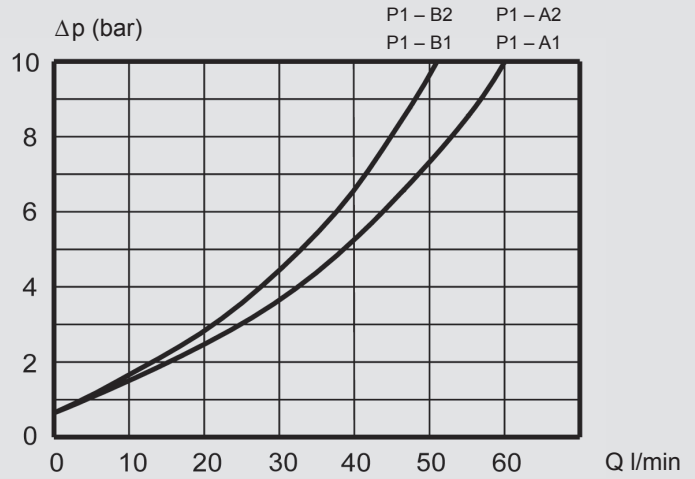


Internal pressure drop

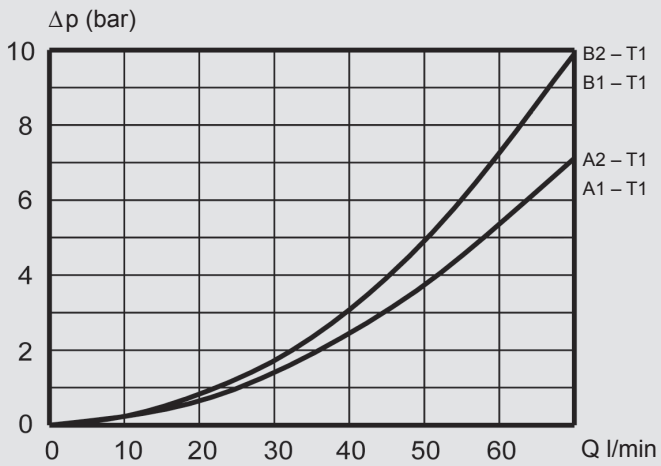
Temperature for all graphs: +40 °C and viscosity = 32 cSt



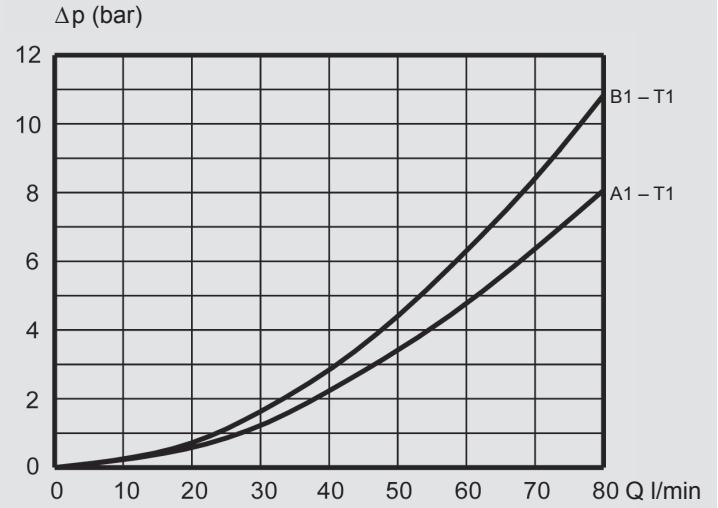
P - T



P - A/B

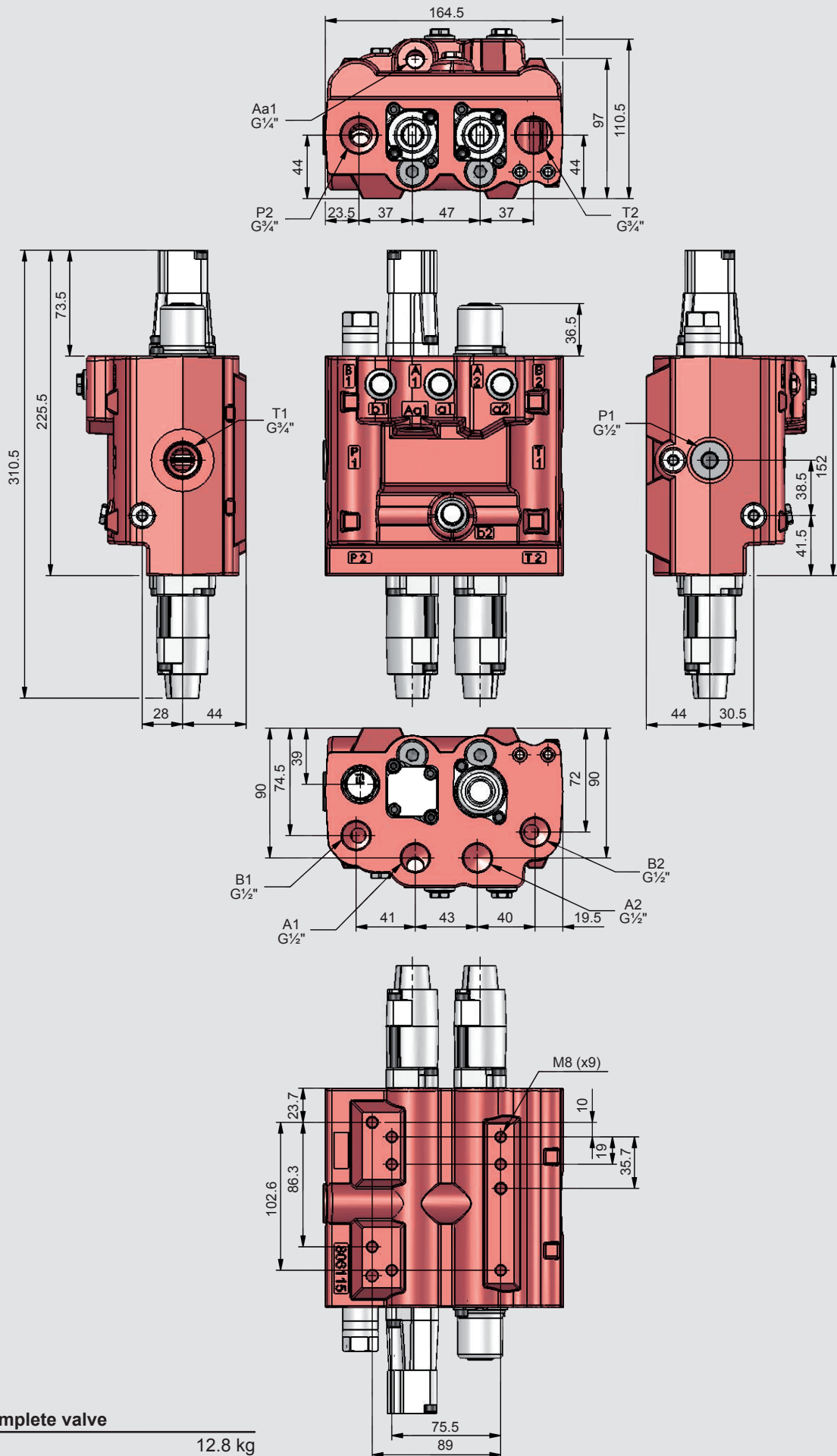


A/B - T



A/B - T Float position

Dimensions and weight



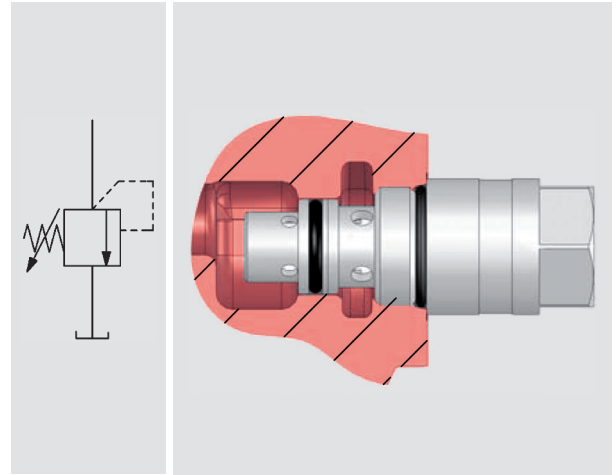
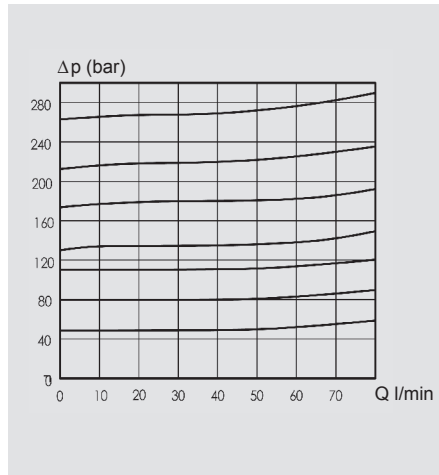
Weights, complete valve	
RMB 202	12.8 kg

Main relief and service port valves

Main relief valve TBD160

The TBD160 is a differential area, direct acting relief valve for the main circuit. It is fixed and sealed.

- Setting range: 35 – 300 bar (3.5 – 30.0 MPa)
- Setting range step: 5 bar



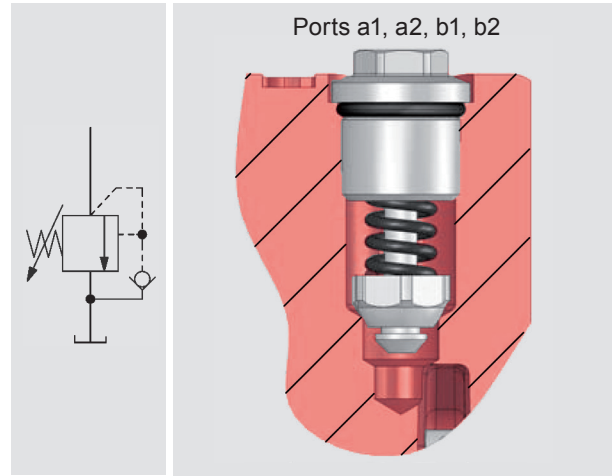
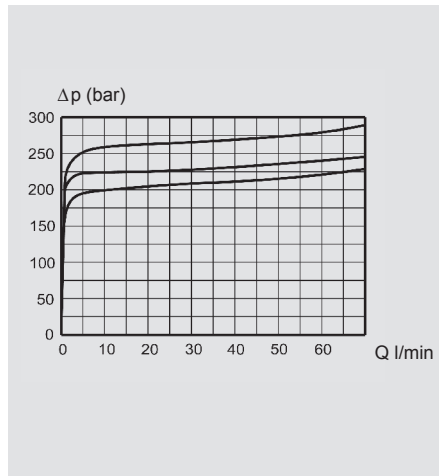
Plug P400

Replaces TBD160 when main relief valve is not used.

Service port valve TBS110

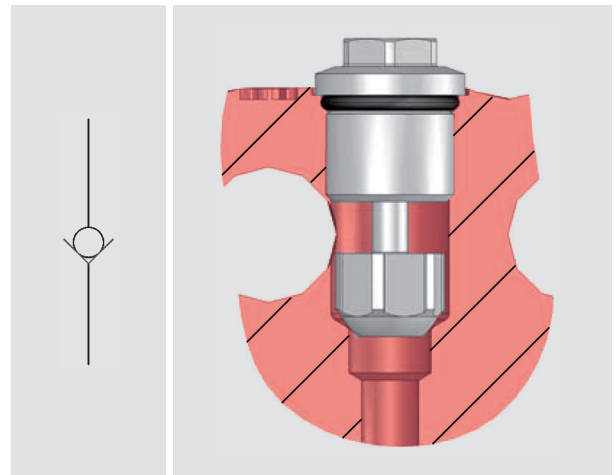
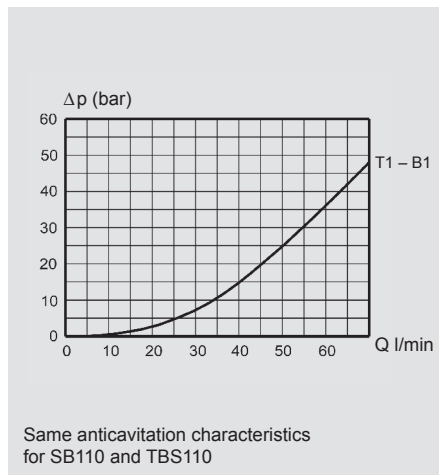
TBS110 is a direct acting relief and anticavitation valve, for the secondary circuit. It is fixed and sealed.

- Setting range: 40 – 300 bar (3.5 – 30.0 MPa)
- Setting range step: 10 bar



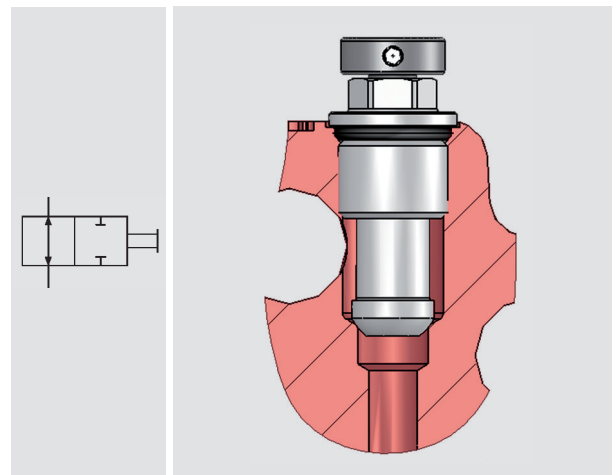
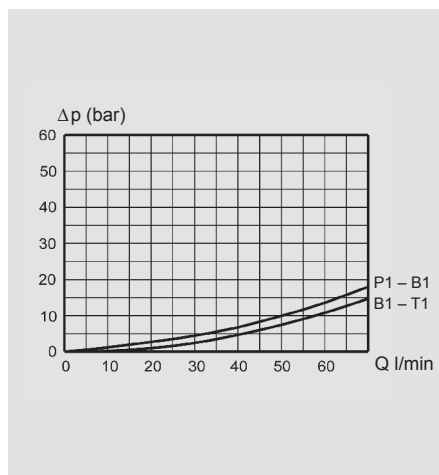
Anticavitation valve SB110

The anticavitation valve service to ensure that, in the event of a lower pressure in the cylinder port than in the tank, oil can be drawn from the system oil tank to the consumer.



Selector valve SBM 110

SBM110 is a selector valve. Select between single or double acting function. In open position the cylinder port is connected direct to tank.



Plug P110

Plug P110, for service port cavity. Replaces TBS110, SB110 and SBM110.

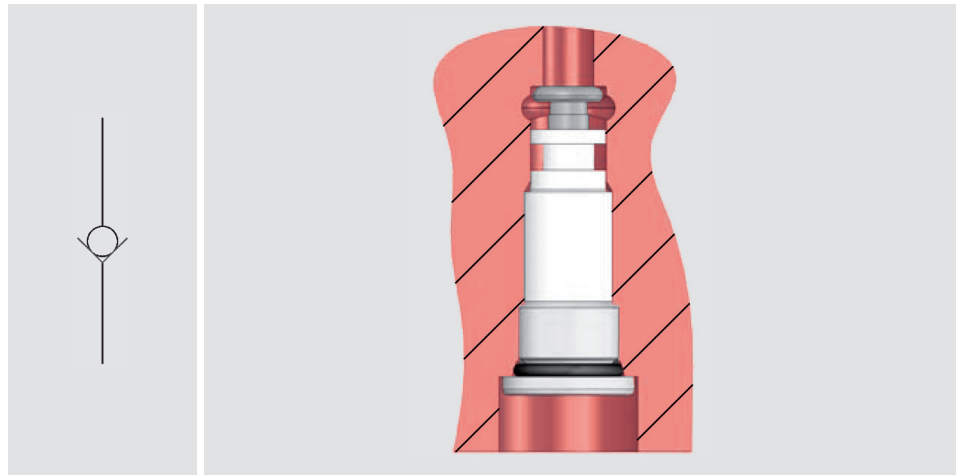
Load check valve

Load check valve MB01

Separate load check valves for A and B port in both sections.

Plug MBP

Replaces MB01 when a single acting spool is used.



Spool Controls – A-Side

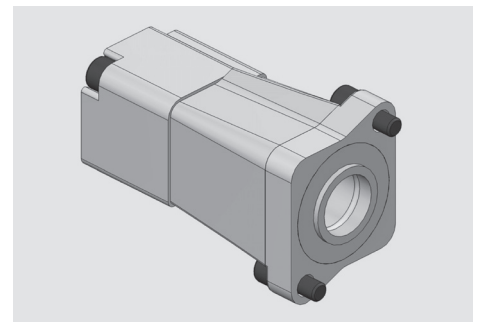
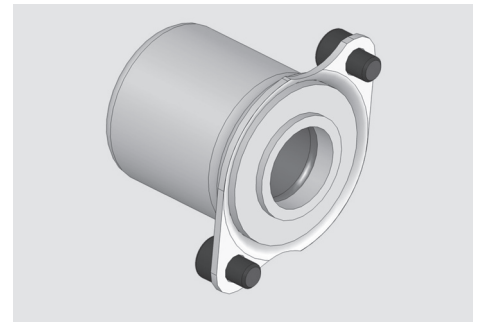
Spool control 9

Spring centering



Spool control 11

Spring centering with detent at position 4



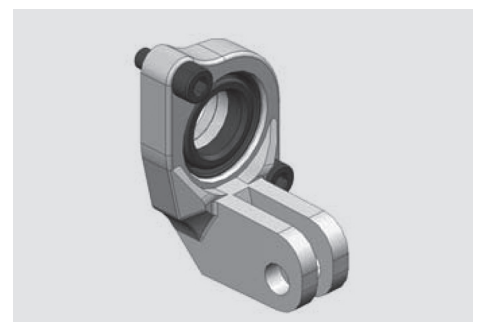
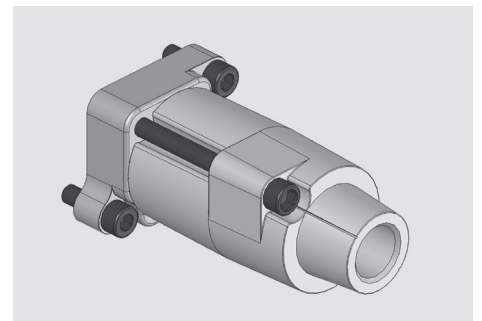
Spool Controls – B-Side

3W

Cap for 3 and 4 position spool controlled by cable

M19

Bracket for 3 or 4 position spool



Spools

Spools are available in a variety of flows both for open center and semi load-sensing-systems. The development of new spools is a continuous process and all available spools are not described.

Type	Symbol
*	
*	

Open center (OC) systems

* The same spool is used for double acting cylinder as for double acting cylinder and float. The selection of spool control on A-side will determine the function.

Spool control 9 for 3 - position spring centering.

Spool control 11 spring centering with detent in 4th position.

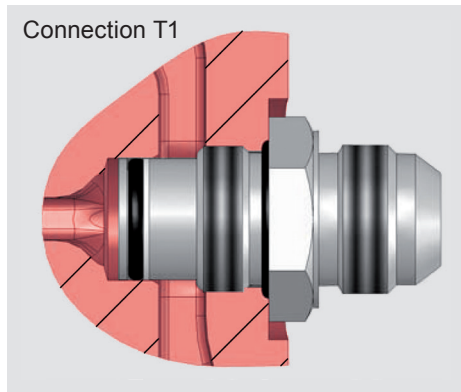
There are three different spool sizes available depending on the pump flow.

Spool code and size

34AA – 50 l/min pump flow

36AA – 75 l/min pump flow

38AA – 90 l/min pump flow



High pressure carry-over

High pressure carry-over nipple for open center flow.

Type SJU21 converts G 3/4" to UNF 1 1/16".

Type	Symbol
3	
1	

Semi load-sensing (SLS) system (variable pump with LS control)

The spools are closed in the neutral position. No pump flow will be wasted. During spool stroke the system consumes a small flow (drainage).

Spool in section 1, double acting cylinder spool with float.

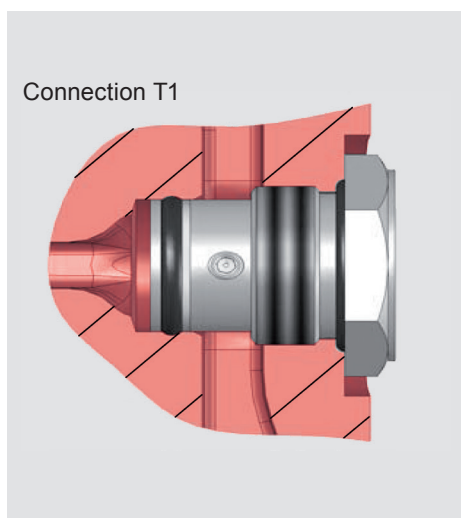
36SA – 75 l/min pump flow

38SA – 90 l/min pump flow

Spool in section 2 is a double acting cylinder spool.

16SA – 75 l/min pump flow

18SA – 90 l/min pump flow



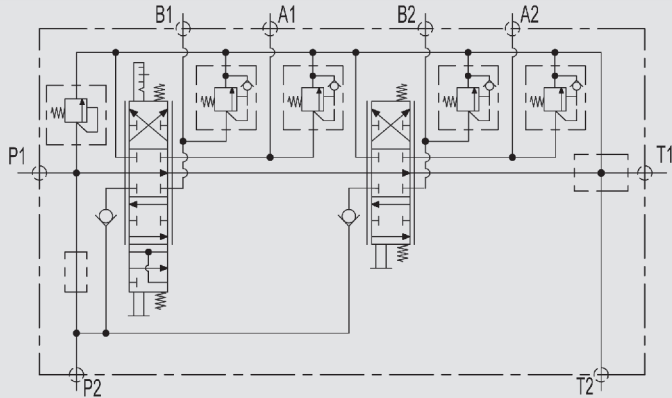
Adapter for load-sensing

The adapter for the load-sensing signal includes a signal draining orifice.

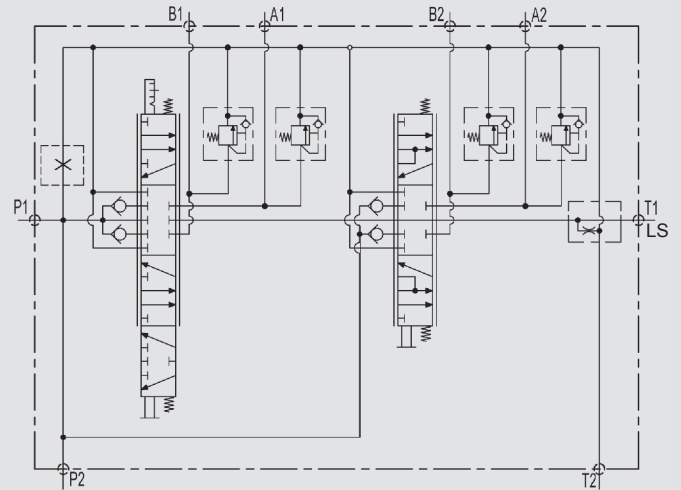
This orifice is selectable to optimize the valve for different stand-by pressures.

The draining flow is small and in most cases not even noticeable as a flow loss.

Typical hydraulic diagrams

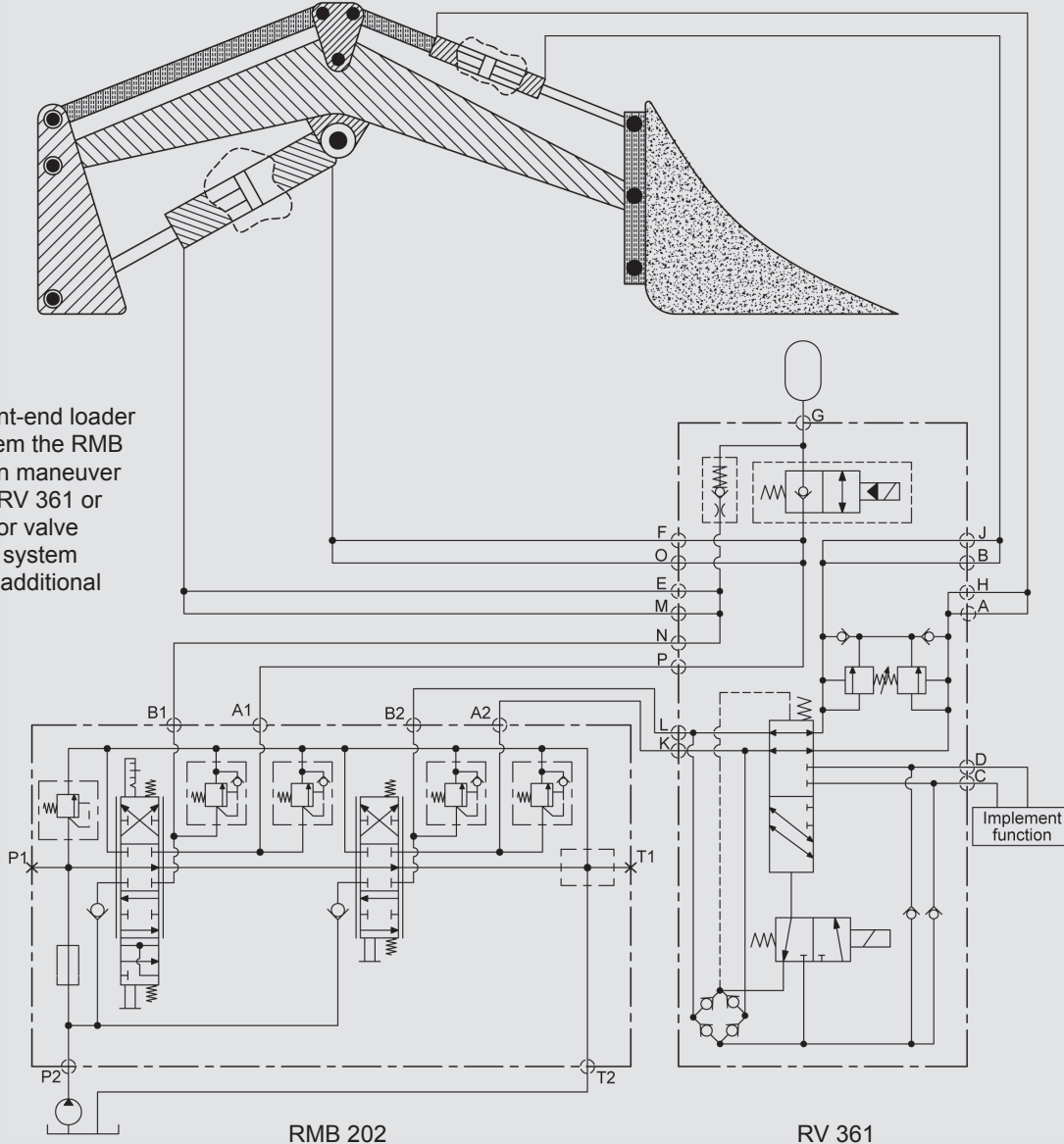


RMB 202 – Open center system



RMB 202 – Semi load-sensing-system

In a typical front-end loader hydraulic system the RMB 202 is the main maneuver valve and the RV 361 or RV 362 selector valve completes the system for one or two additional functions.



RMB 202

RV 361

HYDAC offers you the complete concept for front-end loaders.

The concept includes the valves for the hydraulic system as well as our great experience of the front-end loader application.

Contact us for more information!

Note

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.



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