

Product Description

- MCV-1SP is a proportional directional valve system in sectional design for mobile applications. The valve has a modular design as a single or multiple proportional directional valve system. The valve can be used as a main control valve or as an additional section for function extension in mobile machines. Electric or hydraulic pilot control options can be selected.

Merkmale

- flexible and economical solution due to modular design
- suitable for constant and variable displacement pump systems
- Sensitive control for a wide range of applications
- energy-saving load-sensing technology

Anwendungen

- Mobile Crane
- Excavator
- Turntable ladder
- Agricultural vehicles
- Aerial work platforms
- Concrete spreading machines

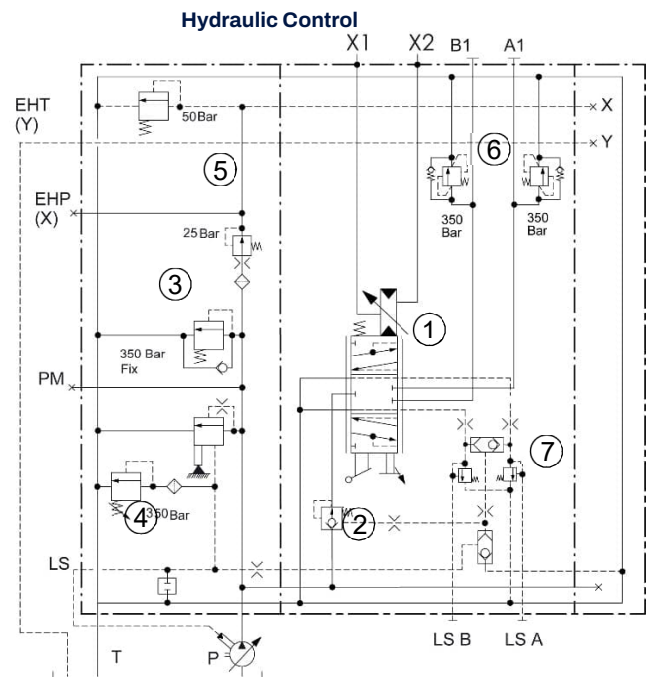
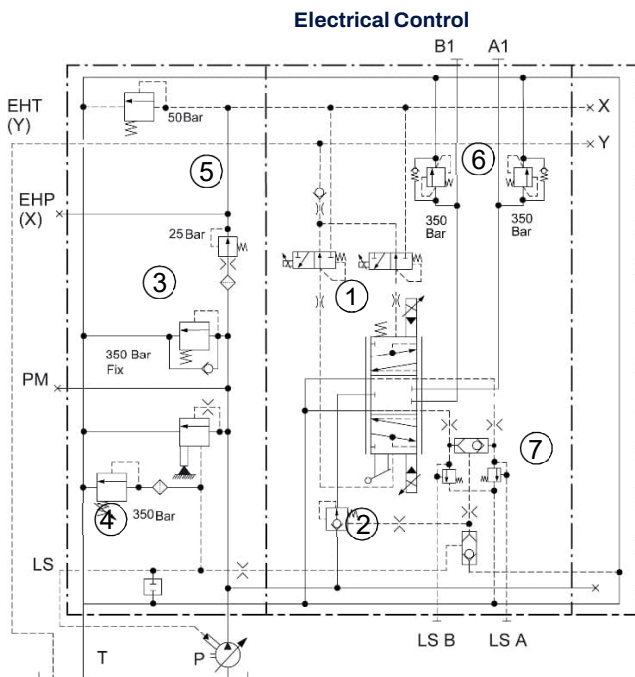
1 Function

MCV-1SP is a proportional directional valve system, which is suitable to control of a double-acting additional consumer proportionally in mobile machines with closed center systems (variable pump). In these systems, the load pressure is reported to the pump control and made available as required. Therefore the valve provides an LS signal for the pump.

If the main spool (1) in the working section is in its neutral position, the pump is swiveled in order to compensate only the leak-age in the system. If the main spool (1) is actuated, the corresponding load signal is reported to the pump and the consumer is supplied with the required volume flow. A 2-way pressure compensator (2) installed in the main section (P-channel) keeps the pressure difference constant via the main spool.

The inlet section has a fixed secondary pressure valve (3), which relieves excessive pressures in the pump line to the tank. A main pressure valve (4), to be set by the customer (30-380 bar) limits the maximum pressure. The presetting is 350 bar. The inte-grated pressure-reducing valve (5) provides the pressure for the pilot control circuit.

The working section has shock and suction valves (6), which protect outputs A and B and thus the consumer against excessive pressures. The pressure cut-off valves LSA and LSB (7) enable efficient pressure limitation by reducing the volume flow provided. This technology ensures an energetically optimized volume flow supply up to the maximum pressure. The available energy is optimally used and not converted into heat.

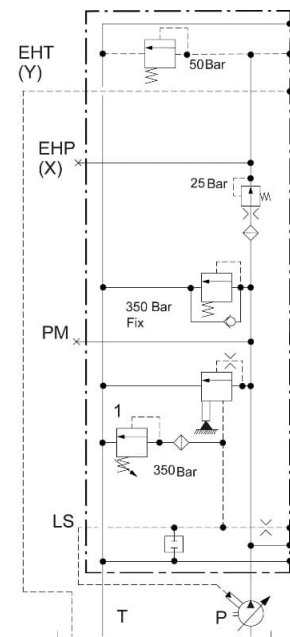
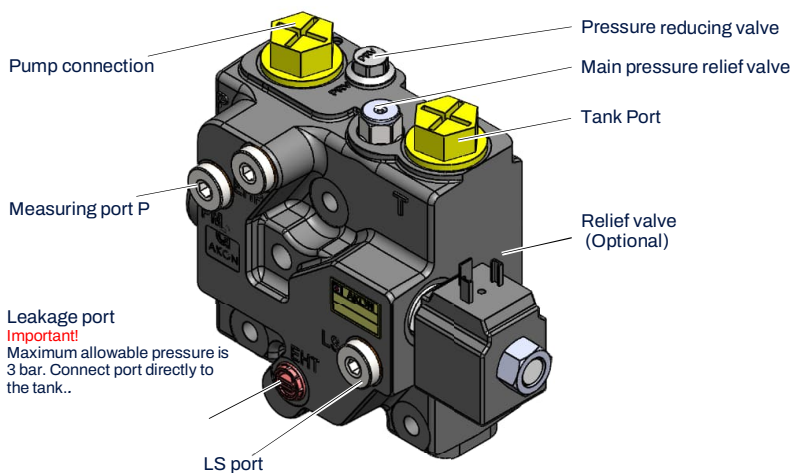


2 Technical Data

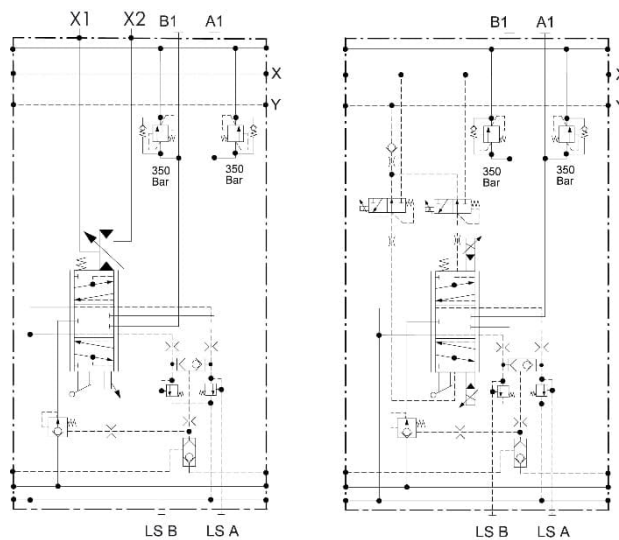
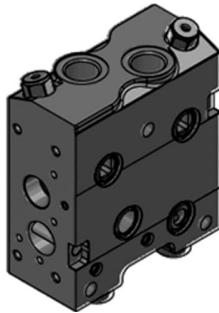
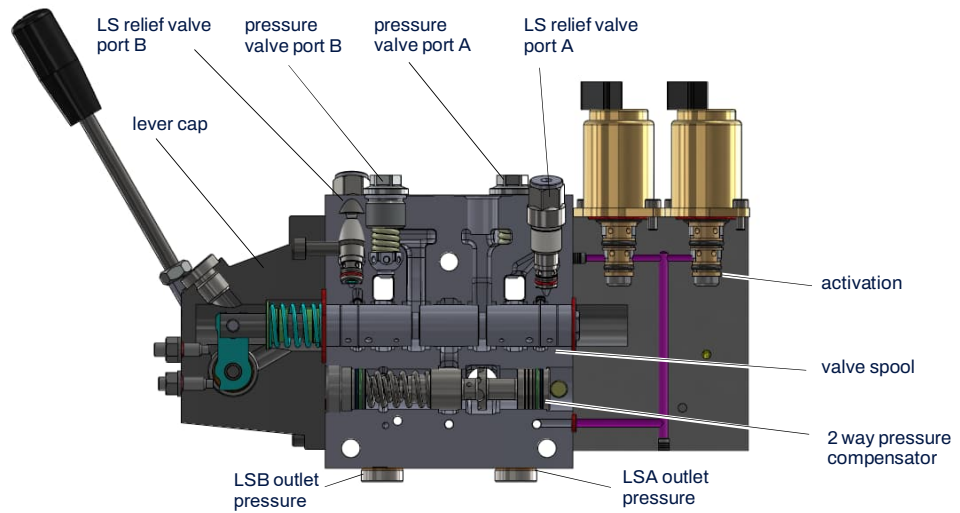
Criteria	Unit	Value
A,B		G1/2
P,T		G3/4
PM, LS, EHT (Y), EHP (X) X1, X2		G1/4 (ISO 228/1)
Betriebsdruck	bar	350
operating pressure	bar	350
Maximum operating pressure	bar	3
Maximum return pressure (leak oil EHT)	l/min	130
Maximum volume flow		
Main relief valve set to 350 bar at 15 l/min		
Recommended oil viscosity range	cST	10 to 75
Recommended oil filtering	β	$10 \geq 75$
Recommended fluid temperature	°C	-20 to + 80
Ambient temperature range	°C	-35 to + 60
Max. Degree of contamination		Class 10 (NAS 1638) 19/16 (ISO 4406)
Power supply		PWM (Pulse width modulation)
Nominal current range	mA	200 ÷ 1500 (12 V coil)
	mA	100 ÷ 750 (24 V coil)
PWM or Super-Imposed		
Dither frequency	Hz	100 - 200
Coil resistance	Ω	$5,4 \pm 5\%$ at 68 °F / 20 °C (12 VDC)
	Ω	$22 \pm 5\%$ at 68 °F / 20 °C (24 VDC)
Maximum power consumption		12 Watt (20 °C)
Degree of contamination		IP 67 according IEC 529
connector		Deutsch-Integral DT04-2P
		AMP Junior Timer 84-9419

3 Installation

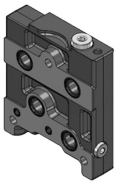
3.1 Inlet section



3.2 Working section



3.3 Endsection



3.4 General remarks

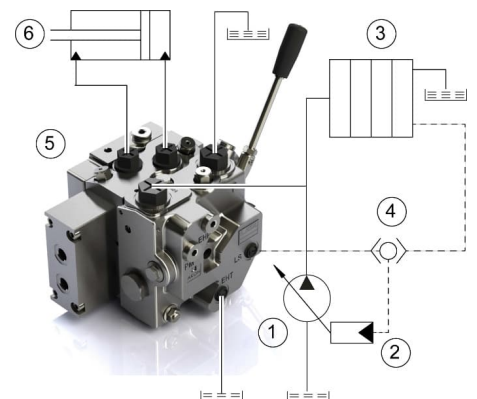
- Observe the installation and safety instructions of the construction machine manufacturer.
- Only technically permitted changes are to be made on the construction machine.
- The user has to ensure that the device is suitable for the respective application.
- Application exclusively for the range of application specified by the manufacturer.
- Before installation or dismantling, the hydraulic system is to be depressurized.
- Settings are to be made by qualified personnel only.
- May only be opened with the approval of the manufacturer, otherwise the warranty is invalidated.

3.5 Connection recommendation

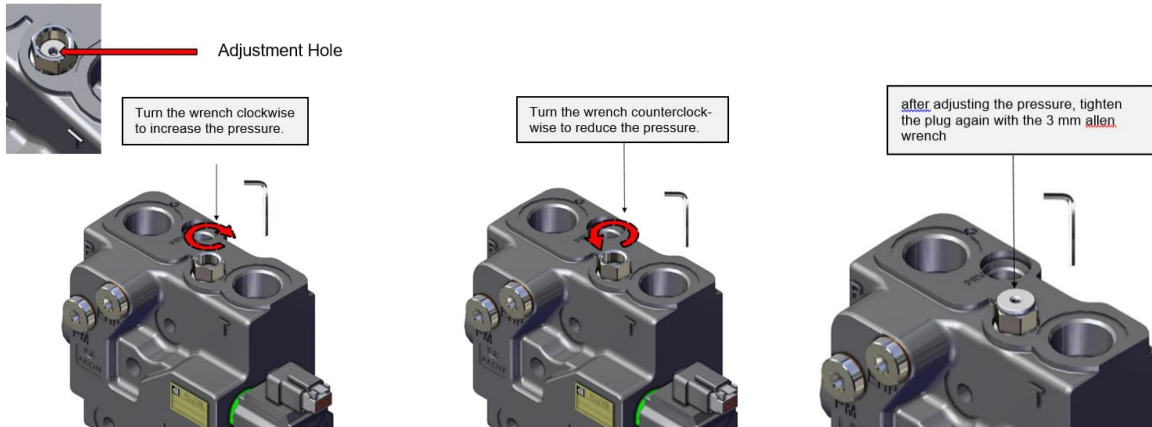
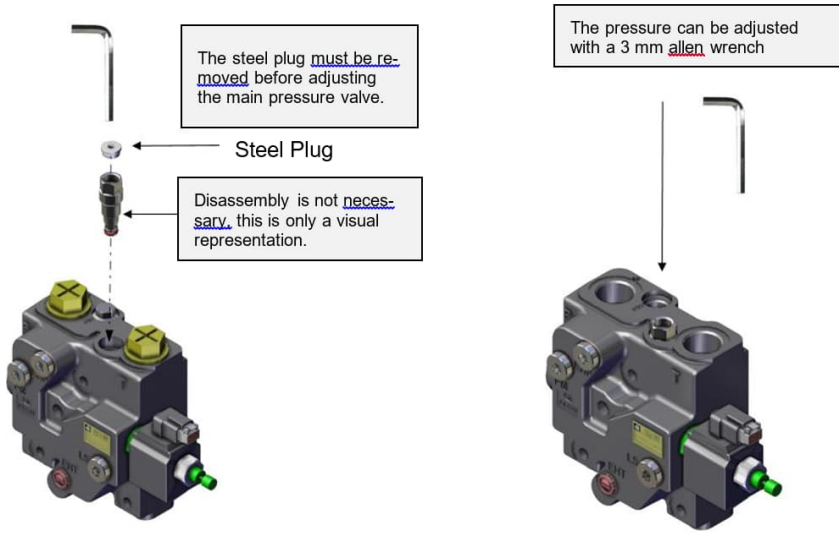


NOTE The included connection recommendations is without guarantee. The functionality and the technical specifications of the construction machine must be checked. It must be ensured that the construction machine is suitable in terms of technology and safety for the operation of the attachment.

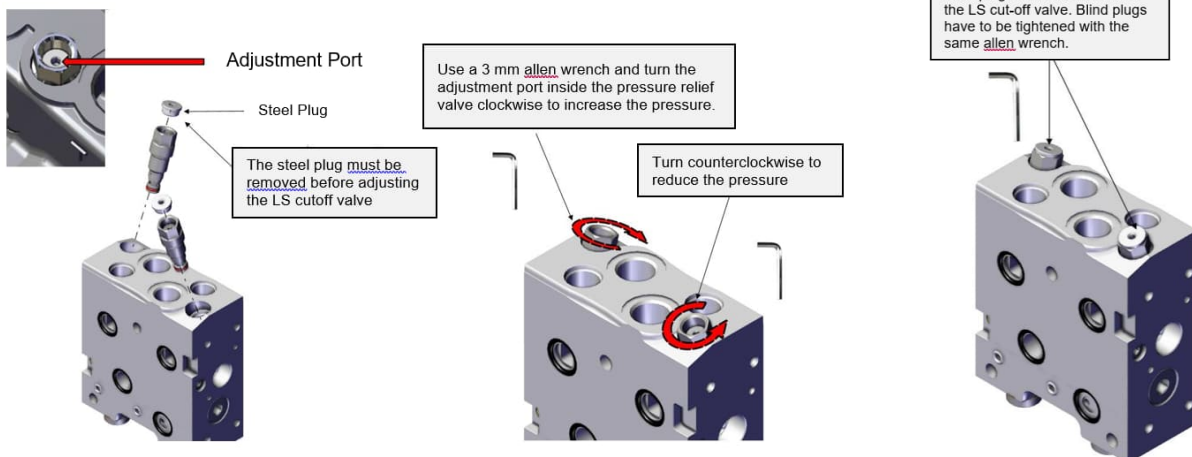
- 1 - pump
- 2 - LS controller
- 3 - main control valve
- 4 - shuttle valve
- 5 - MCV-1SP
- 6 - consumer



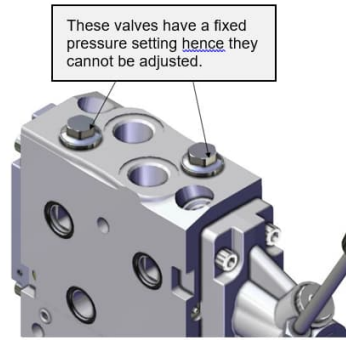
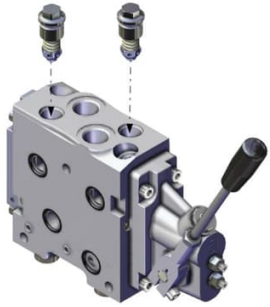
3.6 Settings of the Main Pressure Valve



3.7 Setting the LS cut-off valves

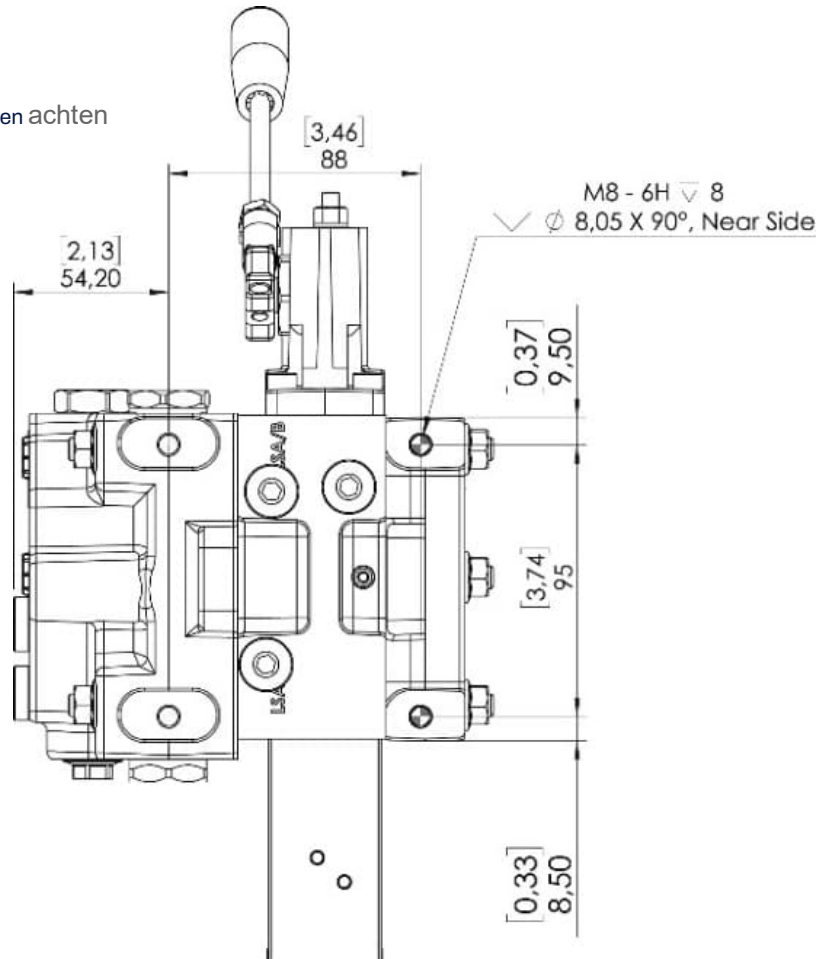


3.8 Setting anti-shock valves

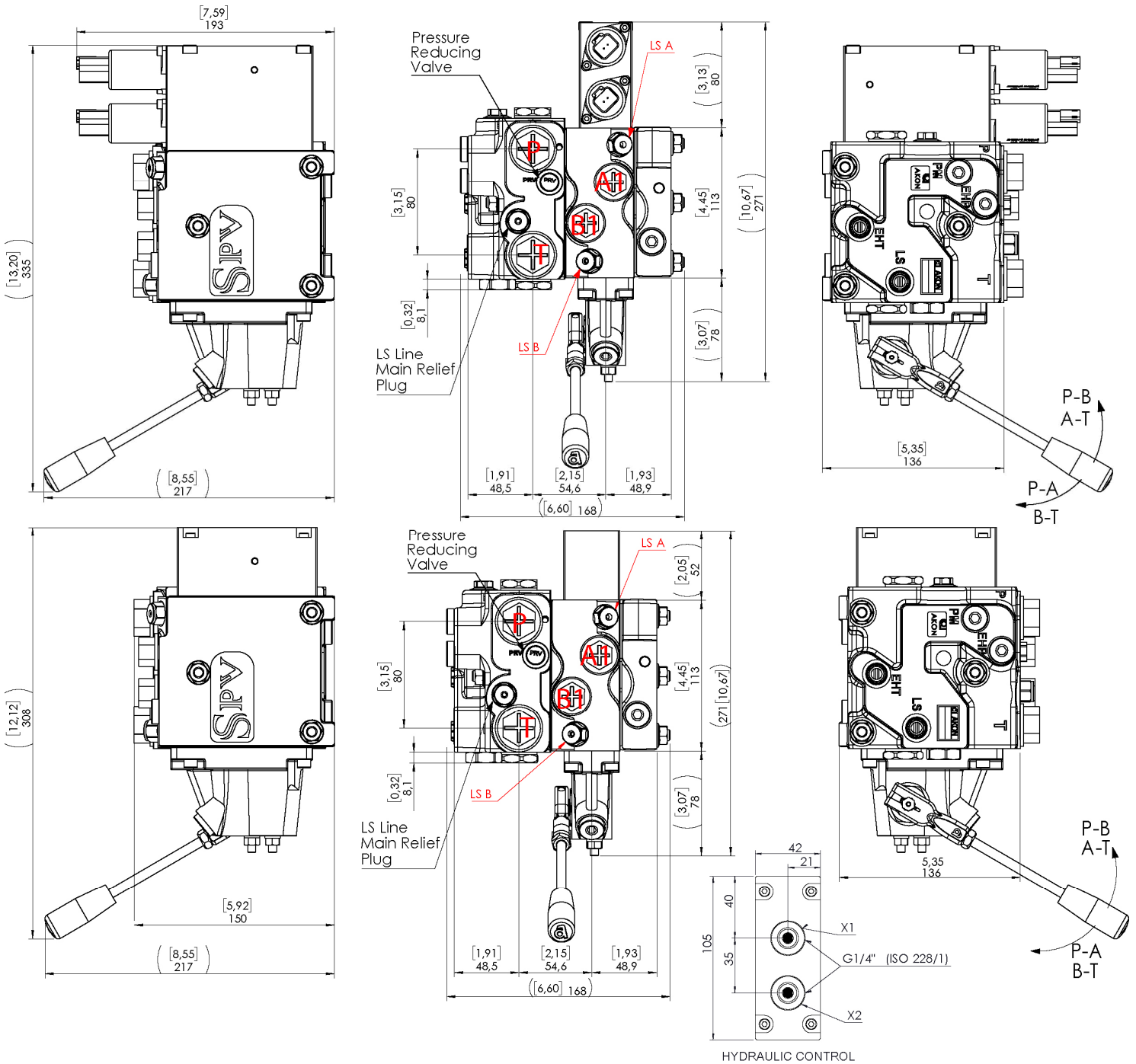


3.9 Mounting - Installation

- Anschlussbezeichnungen beachten.
- Festigkeitsklasse und Anzugsmoment der Befestigungsschrauben beachten.
- Dichtungen und Flanschfläche nicht beschädigen.
- Hydrauliksystem muss entlüftet sein
- Auf Ebenheit des Tragelements achten
- Auf eine verspannungsfreie Montage achten
- Auf ausreichenden Freiraum für Einstell- und Montagearbeiten achten



4 Dimensions



5 Notes, Standards and Safety Requirements

5.1 General remarks

- The views in drawings are shown in accordance with the European normal projection variant
- A comma (,) is used as a decimal point in drawings
- All dimensions are given in mm



5.2 Standards

The following standards must be observed when installing and operating the valve:

- DIN EN ISO 13732-1:2008-12, Temperatures on accessible surfaces

6 Accessories

- 12 Volt solenoid 283.802.000.6