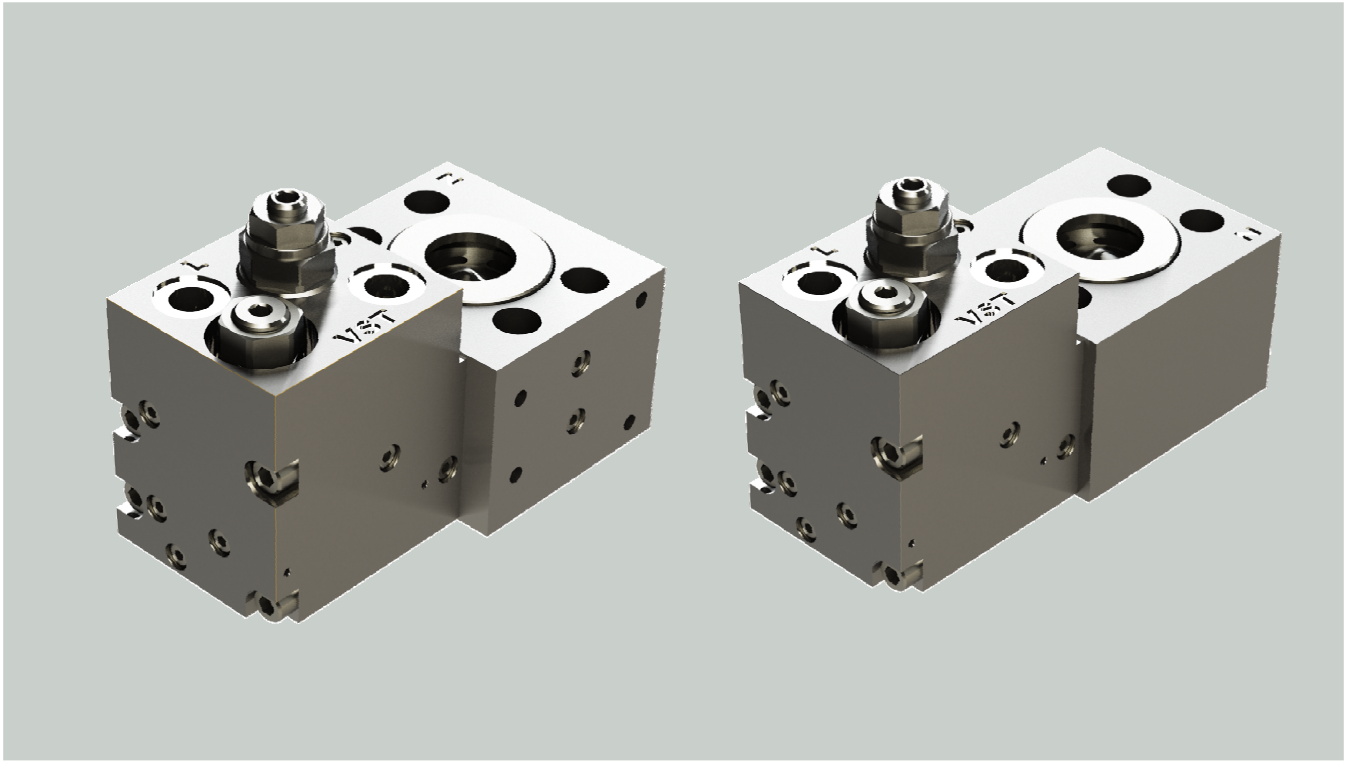

Inhaltsverzeichnis

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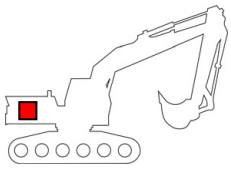
1 General Description

The valves are designed as seat valves with hardened components. An integrated pressure relief valve protects the consumer in the locked state against excessive pressures. The check valve can be unlocked hydraulically via pilot pressure. The valve is intended for direct manifold mounting on the main control valve of a construction machine. The orientation of the SAE-connection can be rotated by 90 degrees.

1.1 Applications

Since leakage occurs in the neutral setting on directional control valves in slider construction and therefore leads to the load dropping, pilot operated check valves are used.
Valve operation must be absolute leakage free. The valve is made in seat construction with hardened components.
The check valve release is hydraulic controlled by pilot control pressure.

1.2 Mounting Location (Recommendation)



The pilot operated check valve is flanged directly on the control valve. The installation on the control block prevents the hoses from emptying through the play in the main slider.

1.3 Function

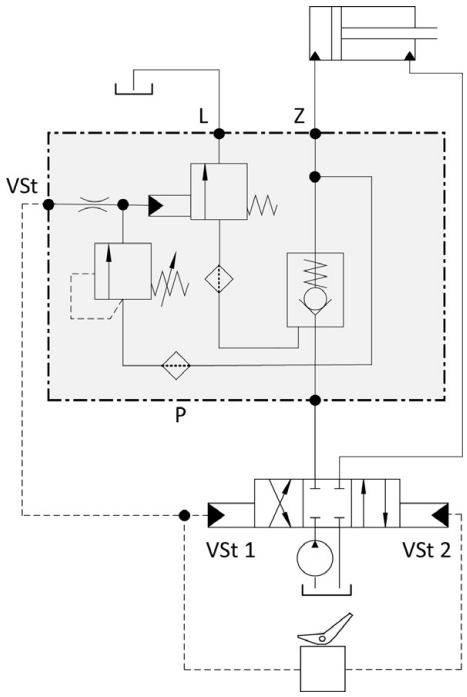
Flow is through the P connection into the cylinder through a check valve. When the flow is not moving through, the Z connection is blocked, leakage free.

The pilot operated check-valve is opened via the hydraulically actuated pilot control.

In order to prevent decompression shocks, the check-valve opens before the main control. The pilot valve opens to the leakage oil with hydraulic actuation allowing the volume flow from Z to P because of a pressure difference on the main ball.

The opening start of the check-valve is at approximately 6 bar and must be applied before opening start for the main control.

To protect the cylinder from external influences, a pilot pressure limiting valve is integrated. The pilot valve must be set approximately 10 bar lower than the pressure limiting valve of the main control.



1.4 Characteristics

- Can be flanged directly on the controller
- Compact construction
- With pressure limiting valve
- Good characteristics

2 Technical Data

Criteria	Unit	Value
Installation position:		Optional, fastened with SAE flange on control block
Weight: ¾“ 1“ 1 ¼“	kg	 3,3 3,7 4,5
Maximum input pressure:	bar	420
Adjustable attachment pressure:	bar	400
Piston ratio:		63:1
Maximum pressure port L:	bar	< 1
Maximum input flow rate:		see diagram in capter 5.3
Hydraulic fluid		Mineral oil (HL, HLP) conforming with DIN 51524, other fluids upon request
Hydraulic fluid pressure range	°C	-20 – +80
Ambient temperature	°C	< +50
Viscosity range	mm2/s	2,8 – 500
Contamination grade		Filtering conforming with NAS 1638, class 9, with minimum retention rate β10≥75
surface coating		2 components primer

3 Ordering Information

3.1 Type Code

LHV	3N			420	400	
00	01	02	03	04	05	06

00	Product group	Load Holding Valve		LHV
01	Design			3N
02	Connections	P, Z	SAE ¾“ 6000 psi	05C
			SAE 1“ 6000 psi	05E
			SAE 1 ¼“ 6000 psi	05G
03	Inlet Volumeflow	300 l/min	SAE ¾“ 6000 psi	300
		400 l/min	SAE 1“ 6000 psi	400
		600 l/min	SAE 1 ¼“ 6000 psi	600
04	Max. permissible pressure	420 bar		420
05	Adjusting pressure relief	400 bar		400
06	Position pilot control		lengthwise	L
			crosswise	Q

XXX – not changeable characteristics **XXX** – Characteristics selectable by customer
■ available ○ not available

3.2 Versions currently available

The versions listed below are available as standard. Further versions as part of the options given on the type code can be configured upon request.

Description	Type code	Part No.
LHV-3N SAE ¾“ 300LPM 420BAR lengthwise	LHV - 3N - 05C - 300 - 420 - 400 - L	426.063.282.9
LHV-3N SAE ¾“ 300LPM 420BAR crosswise	LHV - 3N - 05C - 300 - 420 - 400 - Q	426.063.283.9
LHV-3N SAE 1“ 400LPM 420BAR lengthwise	LHV - 3N - 05E - 400 - 420 - 400 - L	427.063.282.9
LHV-3N SAE 1 “ 400LPM 420BAR crosswise	LHV - 3N - 05E - 400 - 420 - 400 - Q	427.063.283.9
LHV-3N SAE 1 ¼ “ 600LPM 420BAR lengthwise	LHV - 3N - 05G - 600 - 420 - 400 - L	428.063.282.9
LHV-3N SAE 1 ¼ “ 600LPM 420BAR crosswise	LHV - 3N - 05G - 600 - 420 - 400 - Q	428.063.283.9

4 Description of Characteristics in Accordance with Type Code

4.1 Characteristic 1: Variant

The valve consists of a check valve and a pilot control unit with pressure relief. The pilot-operated check valve is opened hydraulically by the pilot pressure. The pilot unit can be rotated by 90 degrees.

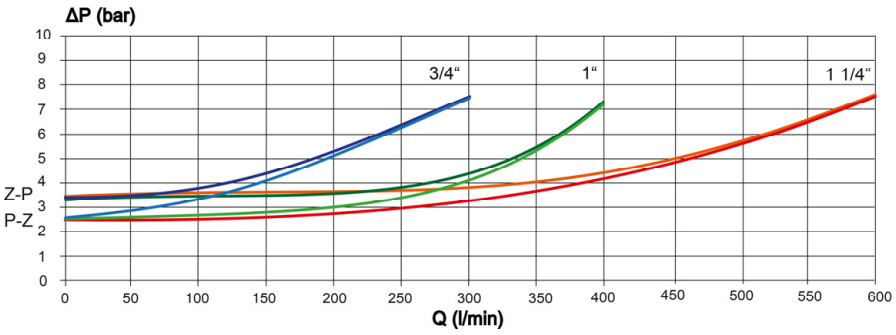
4.2 Characteristic 2: Connections

Connections	Connection sizes
P, Z	SAE ¾“ 6000 psi, SAE 1“ 6000 psi, SAE 1 ¼“ 6000 psi
L, VST	G 1/4

4.3 Characteristic 3: Inlet Volumeflow

Recommendation: SAE ¾“: 300 l/min, SAE 1“: 400 l/min, SAE 1 ¼“: 600 l/min

4.3.1 Druckverlust in Abhängigkeit vom Eingangsvolumen



4.4 Characteristic 4: Max. permissible pressure

The maximum inlet pressure is in all versions: 420 bar

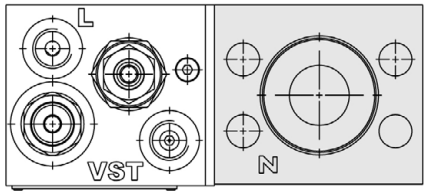
4.5 Characteristic 5: Adjusting pressure relief

To protect consumers against external influences, a pressure relief function is integrated. The pressure limiting valve must be set about 10 bar lower than the pressure limiting valve of the associated main control valve section.

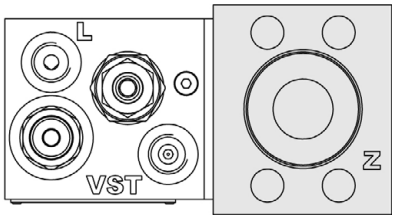
4.6 Characteristic 6: Postition pilot control

For optimum fitting to the main control valve section, the piloting section can be rotated by 90 degrees.

Position pilot control: **lengthwise**



Position pilot control: **crosswise**



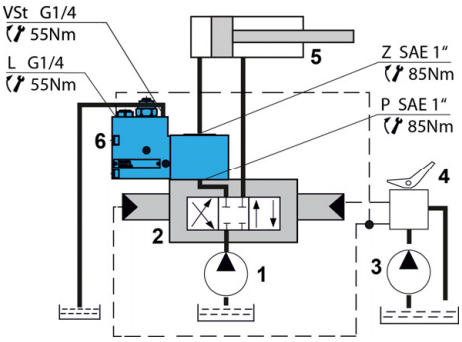
5 Installation

5.1 General Instructions

- All installation and safety information from the construction machine manufacturer are to be observed.
- 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 deinstallation, the hydraulic system is to be depressurized.
- Settings are to be made by qualified personnel only.
- Opening is only to be performed with the approval of the manufacturer, otherwise the warranty is invalidated.

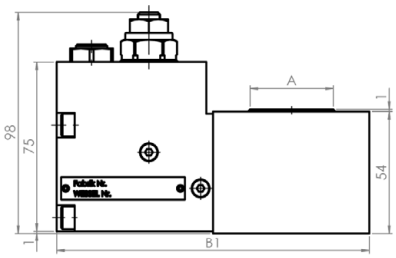
5.2 Connection Proposal

NOTE
No responsibility is taken for the correctness of these installation recommendations, the functionality and the technical details of theconstruction machine must be cecked.

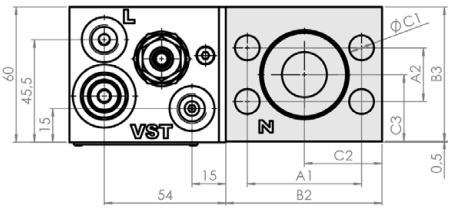


5.3 Mounting - Mounting Space

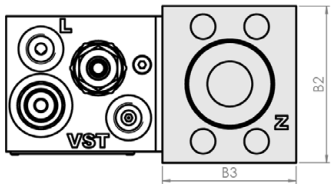
- Observe all installation and safety information of the construction machine manufacturer.
- Only technically permitted changes are to be made on the construction machine.
- The user has to ensure that the device is suitable for the respective application.
- Application exclusively for the range of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



426.063.282.9, 427.063.282.9, 428.063.282.9



426.063.283.9, 427.063.2839, 428.063.283.9



	A	B1	A1	A2	B2	B3	C1	C2	C3
426.063.282.9	37	139	50,8	23,8	69,5	59,5	11	34,5	29,5
426.063.283.9	37	129	50,8	23,8	69,5	59,5	11	34,5	29,5
427.063.282.9	44	149	57,2	27,8	79,5	69,5	13	39,5	34,5
427.063.283.9	44	139	57,2	27,8	79,5	69,5	13	39,5	34,5
428.063.282.9	51	169	66,6	31,8	99,5	79,5	15	49,5	39,5
428.063.283.9	51	149	66,6	31,8	99,5	79,5	15	49,5	39,5

5.4 Settings opening level

The opening start of the check valve is factory-set by means of pilot control pressure 6 bar.

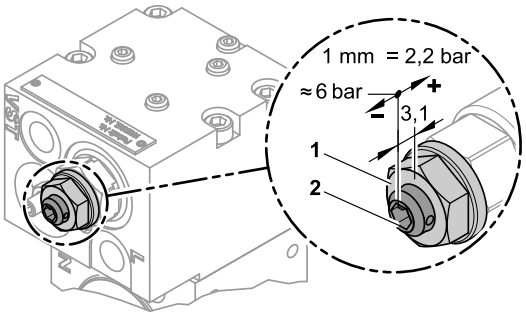
a. Undo the counter-nut (1).

b. Pilot control pressure

Increase: Turn the set-screw (2) to the right.

Decrease: Turn the set-screw (2) to the left.

c. Tighten the counter-nut (1) 1 mm corresponds to 2.2 bar. Setting below 5 bar is not allowed.



ACHTUNG
Valve can be heated to the oil temperature in operation.

5.5 Setting pressure valve

The opening start of the pressure valve is preset to 400 bar in the factory.

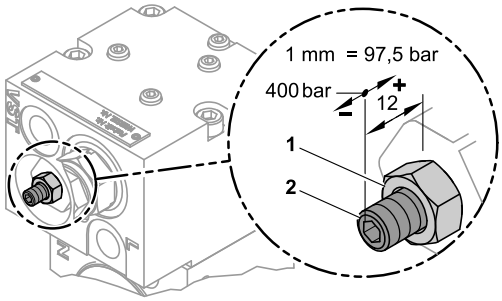
a. Undo the counter-nut (1).

b. Pressure

Increase: Turn the set-screw (2) to the right.

Decrease: Turn the set-screw (2) to the left.

Tighten the counter-nut (1). 1 mm corresponds to 97,5 bar. A setting of 400 bar is not allowed



ACHTUNG
Valve can be heated to the oil temperature in operation.

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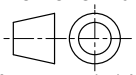
6 Hinweise, Normen und Sicherheitsanforderungen

6.1 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

6.2 Standards

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

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