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1 Product Details

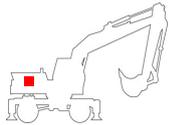
The pressure relief valves cartridges can be infinitely adjusted within its adjustment range and therefore limited to specific values. In type PI is pilot-operated valves, which can be used up to 400 bar and 400 l / min. It is a me-mechanically and an electrically proportional versions.

With various junction boxes, different functions can be achieved.

1.1 Application

The pressure relief valves ensure hydraulic systems and / or protect consumers against overload.

1.2 Recommended Installation



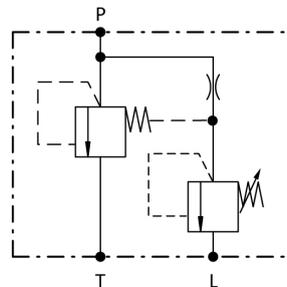
Pressure valves in cartridge design can be screwed into a block with a corresponding stepped bore. The circuit takes place in the bypass to the protected system or consumers.

1.3 Function

The Cartridge pressure relief valves PRV-PI are pilot operated valves

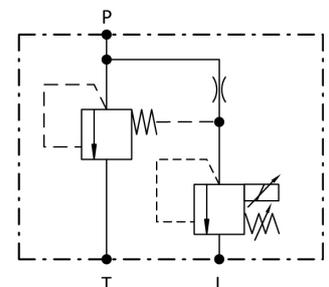
The terminals T and L can be merged mechanically adjustable elektro.-prop adjustable become. However, then it must be considered that in this case the return pressure accretive to the opening pressure.

mechanically adjustable



P Pump
T Tank
L Leakage

electr.-prop. adjustable



1.4 Features

- Cartridge cartridge screwed into the stepped bore of different housings
- straight
- Hardened valve seats and cones
- large adjustment
- High flow capacity with largely constant confining pressure up to 400 l/min

2 Technical Data

Criteria	Unit	Value
Installation position		Any
Weight (without case)	kg	Depending on the size
Maximum input pressure (P, A)	bar	400
Adjustable pressure	bar	Mechanical: 10-100, 150-400 Elect.-prop.: 120 – 370
Maximum Tankpressure (T)	bar	400 (added to the set opening pressure)
Maximal Leakage oil pressure (L)	bar	400 (added to the set opening pressure)
Maximum input flow rate (P)	l/min	400 with pilot-operated version
Hydraulic fluid		Mineral oil (HL, HLP) conforming with DIN 51524, other fluids upon request
Hydraulic fluid pressure range	°C	-20 to +80
Ambient temperature	°C	< +50
Viscosity range	mm ² /s	2.8 - 500
Contamination grade		Filtering conforming with NAS 1638, class 9, with minimum retention rate $\beta_{10} \geq 75$
Electr.-prop. Version:		
Supply voltage	VDC	12 or 24
Voltage tolerance	%	± 10
Power consumption solenoid	W	33
Current consumption solenoid	A	2.9 at 12VDC, 1,4 at 24VDC
Duty solenoid	%	100
Protection according to DIN 40050		IP 65
Power supply plug		AMP Junior Timer plug

3 Ordering Information

3.1 Type Code

PRV 00	1PI 01	 02	400 03	 04	 05	051 06	N 07
00	Product group	Pressure relief valves					PRV
01	Variant	Piloted					1PI
02	Port / Case	Without (only Cartridge)					CA
		Simply T and Leakage connected (no separate Leakage port)					GS1
		Simply T and Leakage disconnected					GS2
		Twice					GD
		On/Off					GO
03	Input flow rate Q _{max.}	400 l/min					400
04	Max. permissible pressure P _{max.}	100bar (adjustable range 10-100bar)					100
		400bar (adjustable range 150-400bar)					400
05	Activation	manually adjustable	for example, preset 200bar (consider adjustable range)			MAN200	
		12VDC proportional AMP Junior Timer Stecker					12P002
		24VDC proportional AMP Junior Timer Stecker					24P002
06	Stepped bore	WESSEL-HYDRAULIK cartridge 8.000 51 (stepped cavity)					051
07	Seal	NBR, temperatur range -25°C bis +80°C					N

XXX – fixed features XXX – customer selectable features ■ available ○ not available

Available standard versions see chapter 4.2.

Further versions in the range of the above mentioned features are available on request.

4 Description of Characteristics in Accordance with Type Code

4.1 Characteristic 1: Variant 1P1

The pressure relief valve is pilot operated, ie, when the pilot valve reaches the set pressure, a spring-loaded piston is opened.

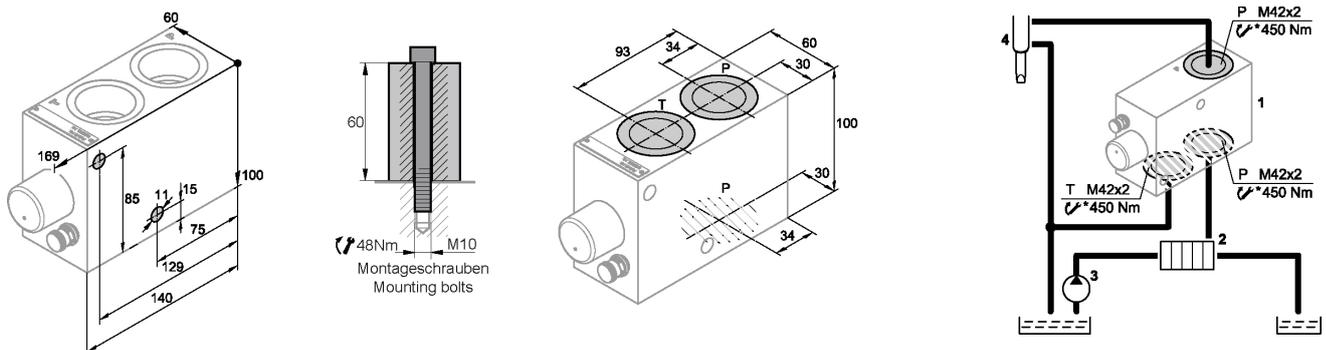
4.2 Characteristic 5: Port / Case

4.2.1 Variant CA: Without (only Cartridge)

In the variant CA, the valve is delivered as a cartridge valve. The Cavity is watching before-according to Feature 1 (stepped hole). The terminals L and T can be combined when the terminal T is not pressure-loaded. Caution: Possible return pressures add up to the opening point of the pressure relief valve. Pressure fluctuations in the return line can lead to oscillations of the pressure relief valve.

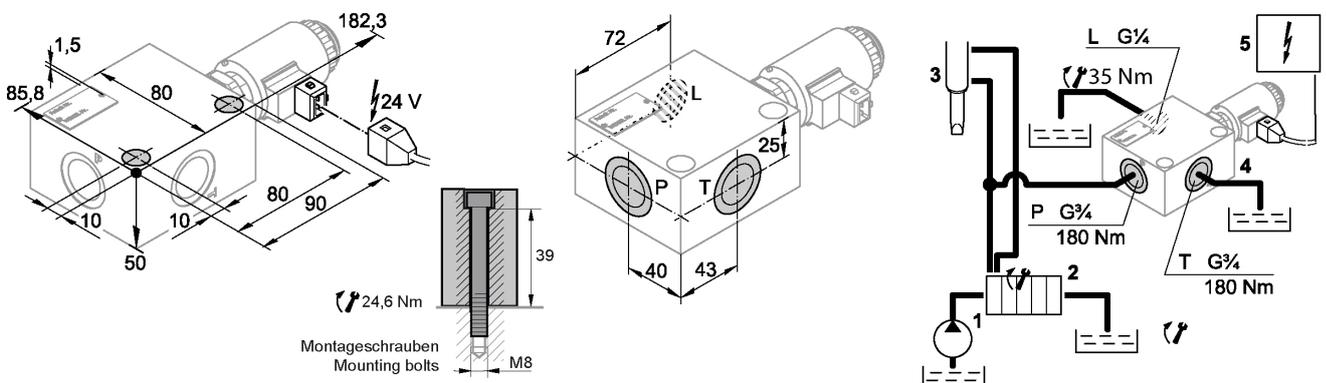
Designation	Type Code	Part No.
Print Cartridge valve, mechanically adjustable, preset 200 bar	PRV-1PI-CA-400-400-MAN200-051-N	416.082.402.9
Print Cartridge valve, mechanically adjustable, preset 15 bar	PRV-1PI-CA-400-100-MAN015-051-N	416.082.406.9
Print Cartridge valve, electrically proportional	PRV-1PI-CA-400-400-24P002-051-N	416.381.401.9

4.2.2 Variant GS1: Simply T and drain connected (no separate drain port)



Designation	Type Code	Part No.
Pressure relief valve, mechanically adjustable, preset 200 bar	PRV-1PI-GS1-400-400-MAN200-051-N	418.012.404.9
Electr.-prop. adjustable pressure relief valve: Not recommended as terminals T and L are summarized internally.		

4.2.3 Variant GS2: Case with a pressure relief valve, T and Leakage Disconnected:

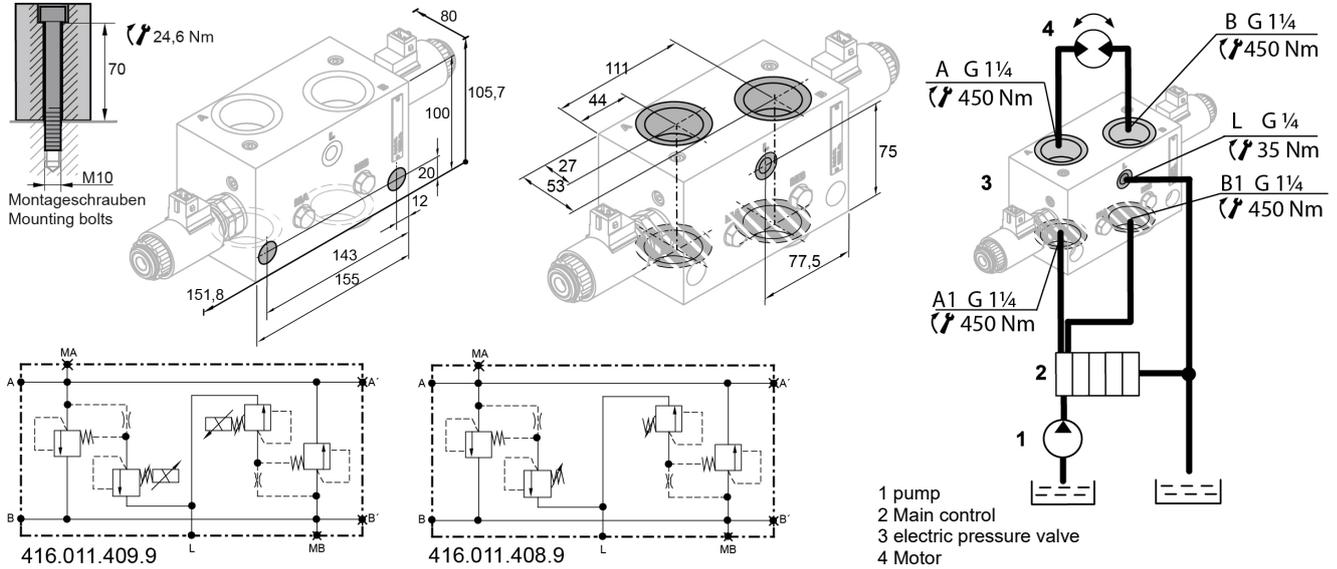


Designation	Type Code	Part No.
Pressure relief valve, mechanically adjustable	PRV-1PI-GS2-400-400-MAN200-051-N	on request
Pressure relief valve, electrically adjustable proportional	PRV-1PI-GS2-400-400-24P002-051-N	416.381.402.9
Pressure relief valve, mechanically adjustable	PRV-1PI-GS2-400-100-MAN025-051-N	418.012.414.9

4.2.4 Variant GD: Two pressure relief valves and 2 P-connections, Disconnected T and Leakage

For double-acting consumers, eg motors in which both sides are to be protected and the volume flow is to be discharged into the opposite side.

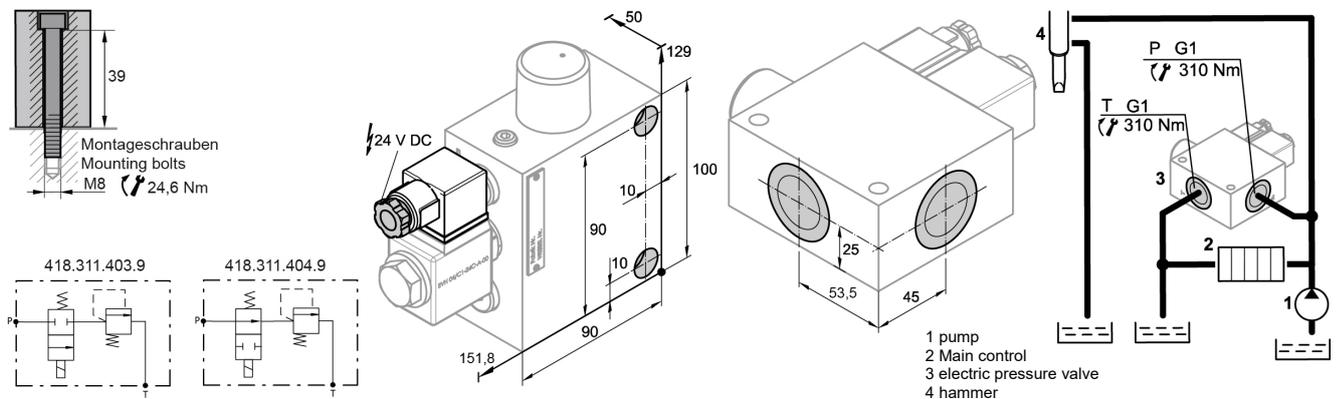
Figure: electric version. Connections: A, B, A1, B1: G1 1/4 "L G1 / 4, MA and MB: M8 x 1



Designation	Type Code	Part No.
Pressure relief valve, mechanically adjustable	PRV-1PI-GD-400-400-MAN200-051-N	416.011.408.9
Pressure relief valve, electrically adjustable	PRV-1PI-GD-400-400-24P002-051-N	416.011.409.9

4.2.5 Variante GO: On/Off, mechanical pressure relief valve, electrically connectable

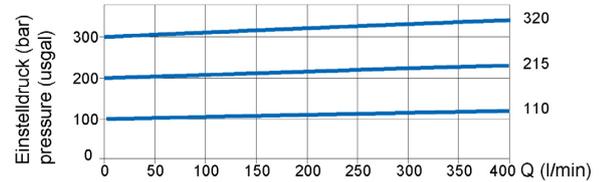
This pressure relief valve allows the maximum pressure by switching a valve to a lower level lower (no current proportional output necessary). For example, this may be useful in the operation of a subsequently installed attachment tool when the factory setting on the machine is not to be changed, for the cultivation tool but pressure must be lowered.



Designation	Type Code	Part No.
Pressure relief valve, mechanically adjustable (engaged position = pressure limited)	PRV-1PI-GO-400-400-MAN180-051-N	418.311.403.9
Pressure relief valve, mechanically adjustable (idle position = pressure limited)	PRV-1PI-GO-400-400-MAN180-051-N	418.311.404.9

4.3 Characteristic 2: Input flow rate

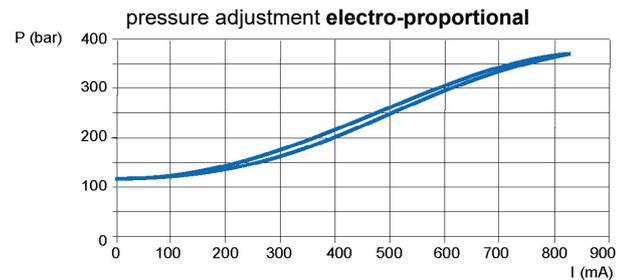
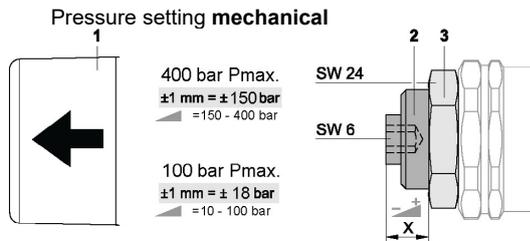
Valve characteristic: flow behavior $p \rightarrow T$ at L to Leakage (< 1 bar).



4.4 Characteristic 3: Max. permissible pressure

The maximum allowable pressure results from the spring.
 Spring 1 has a range of 150 - 400 bar.
 Spring 2 has a range of 10 - 100 bar.

4.5 Characteristic 4: Activation



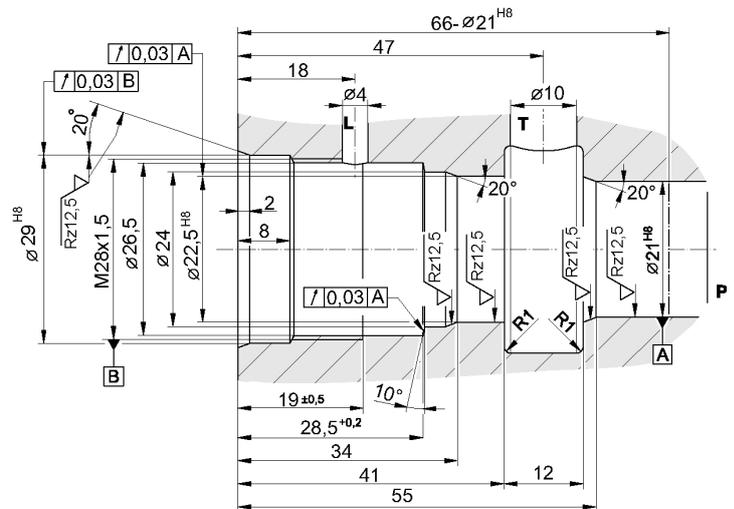
CAUTION: No further than 11mm Unscrew
 When adjusting from the housing.

About the current can be the pressure 120-370 bar to adjust infinitely.

4.6 Characteristic 6: Stepped bore Ø51

The pilot-operated pressure relief valve is a cartridge device and is screwed into a stepped bore. For the mechanically adjustable version and the electrically proportional version this hole is identical.

WESSEL-HYDRAULIK cartridge 8.00051



4.7 Characteristic 7: Seal

NBR, temperature range -25°C bis $+80^{\circ}\text{C}$

Subject to Changes

Versions: PRV-1PI_00_04E.doc

5 Installation

5.1 General Information

- 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 invalid.

5.2 Connection suggestion



NOTE: Enclosed proposed resolution is not always guaranteed. The functionality and the technical details of the construction machine must be checked. It must be ensured that the machinery for the operation of the attachment can be technically and safely suitable. See notes under Characteristic Case.

5.3 Installation - Space

- Observe connection names.
 - Note strength class and tightening the mounting screws.
 - Do not damage seals and flange surface.
 - Its hydraulic system must be vented
 - Pay attention to the flatness of the support member
 - Ensure a tension-free assembly
 - Ensure sufficient free space for setting and installation work
- a. assemble with screws to the supporting element.
 - b. make electrical connection.
 - c. Connector secure.



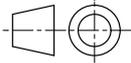
CAUTION: Hydraulic hoses must not touch the pressure relief valve, otherwise they are subject to thermal damaging.

Attention: Tightening torques must be observed. Torque wrench needed. In counterpart the sufficient screw depth must be ensured.

6 Notes, Standards and Safety Instructions

6.1 General Instructions

- 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

7 Accessories

Junior Timer connector (for 1 magnetic) Order number: 340.305.900.6

Mounting screws:

Cap screws DIN912-8,8 - M10x70: 113.227.006.6

Cap screws DIN912-8,8 - M10x80: 113.229.006.6

Cap screws DIN912-8,8 - M8x50: 113.175.006.6

Cap screws DIN912-8,8 - M8x60: 113.180.006.6