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### 1 Product Description

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 pro-portional versions.

With various junction boxes, different functions can be achieved.

#### 1.1 Verwendungszweck

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

#### 1.2 Einbauort (Empfehlung)

Pressure valves in cartridge design can be screwed into a block with a corresponding stepped bore.

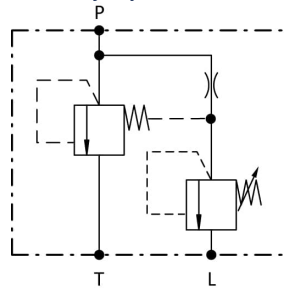
The circuit takes place in the bypass to the protected system or consumers.

### 2 Function

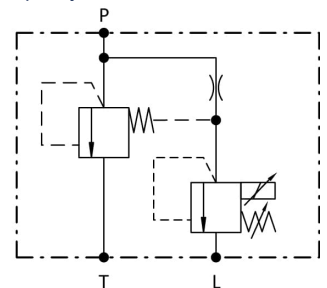
The Cartridge pressure relief valves PRV-PI are pilot operated valves

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



electr.-prop. adjustable



#### 2.1 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

### 3 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
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 <sup>2</sup> /s	2.8 - 500
Contamination grade		Filtering conforming with NAS 1638, class 9, with minimum retention rate β <sub>10</sub> ≥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

### 4 Ordering Informationen

PRV	1PI		400			051	N	
00	01	02	03	04	05	06	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 Qmax.	400 l/min						400
04	Max. permissible pressure Pmax.	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						
		24VDC proportional AMP Junior Timer Stecker						
06	Stepped bore	WESSEL-Hydraulik cartridge 8.00051 (stepped cavity)						051
07	Seal	NBR, temperatur range -25°C bis +100°C						N
		Viton, temperatur range -20°C bis +200°C						V

Available standard versions see chapter 4.2. Further versions in the range of the above mentioned features are available on request.

### 5 Description of Characteristics in Accordance with Type Code

#### 5.1 Variant

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

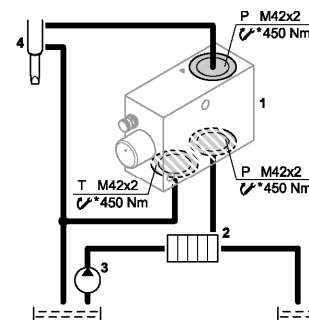
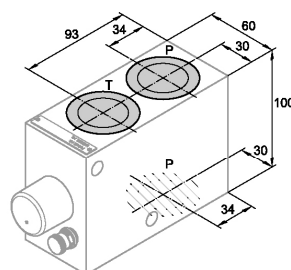
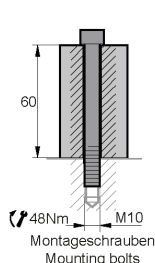
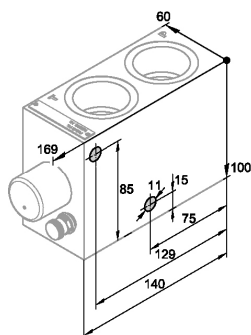
#### 5.2 Port / Case

##### 5.2.1 Variante 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.

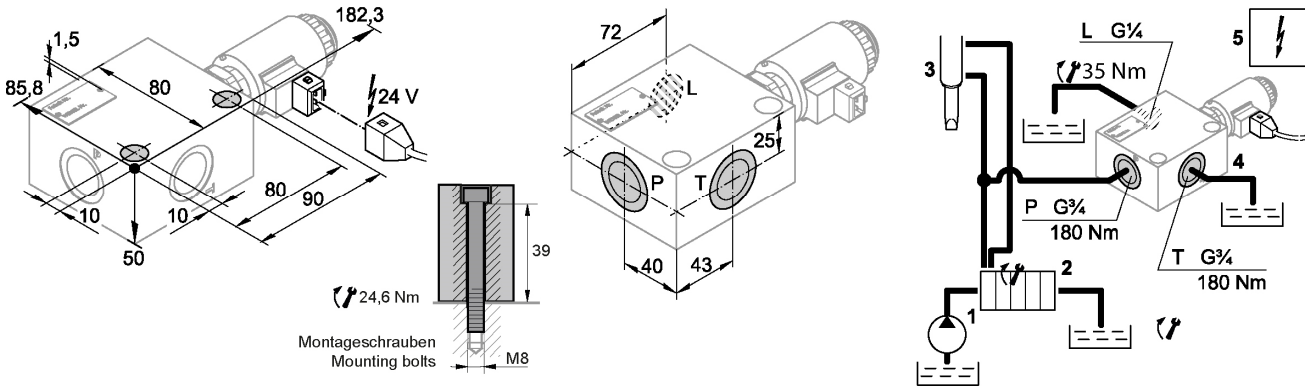
Designation	Type Code	Part No.
Pressure Cartridge valve, mechanically adjustable, preset 200 bar	PRV-1PI-CA-400-400-MAN200-051-N	416.082.479.9
Pressure Cartridge, mechanisch einstellbar, voreingestellt 200bar, Viton	PRV-1PI-CA-400-400-MAN200-051-V	416.082.481.9
Pressure Cartridge valve, mechanically adjustable, preset 15 bar	PRV-1PI-CA-400-100-MAN015-051-N	416.082.482.9
Pressure Cartridge, elektrisch proportional, 24V	PRV-1PI-CA-400-400-24P002-051-N	416.381.407.9

##### 5.2.2 Variante 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.		

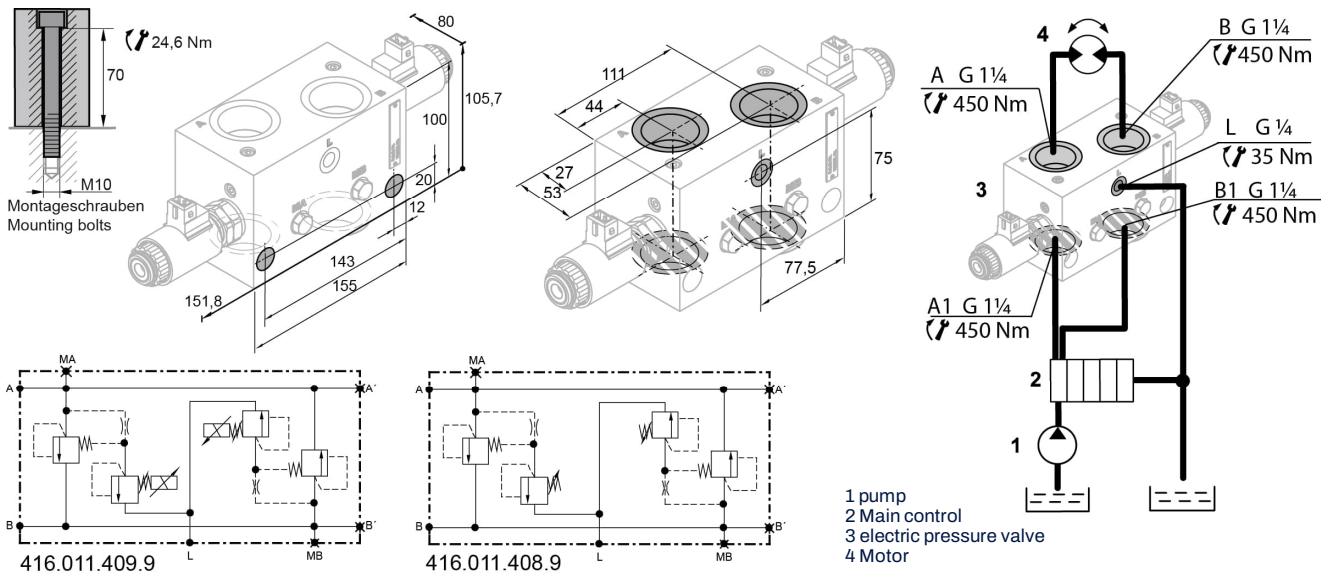
### 5.2.3 Variante GS2: Case with a pressure relief valve, T and Leakage Disconnected:



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

### 5.2.4 Variante 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



## 6 Installation

### 6.1 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.

### 6.2 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.

### 6.3 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. mit Schrauben an Tragelement montieren.
- b. elektrischen Anschluss herstellen.
- c. Anschlussstecker sichern.



**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.

## 7 Notes, Standards and Safety Instructions

### 7.1 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



### 7.2 Standards

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

- EN 563, Temperaturen an berührbaren Oberflächen.
- EN 982, Sicherheitstechnische Anforderungen an fluidtechnische Anlagen und deren Bauteile.

## 8 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