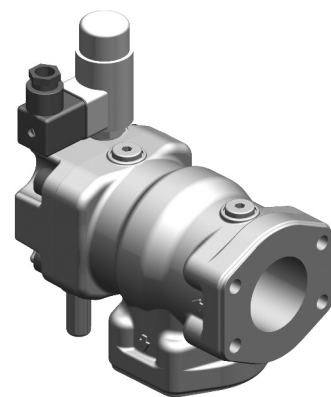


# KRACHT



Pressure Valves

**DV**

hydraulically pilot-operated

## Description

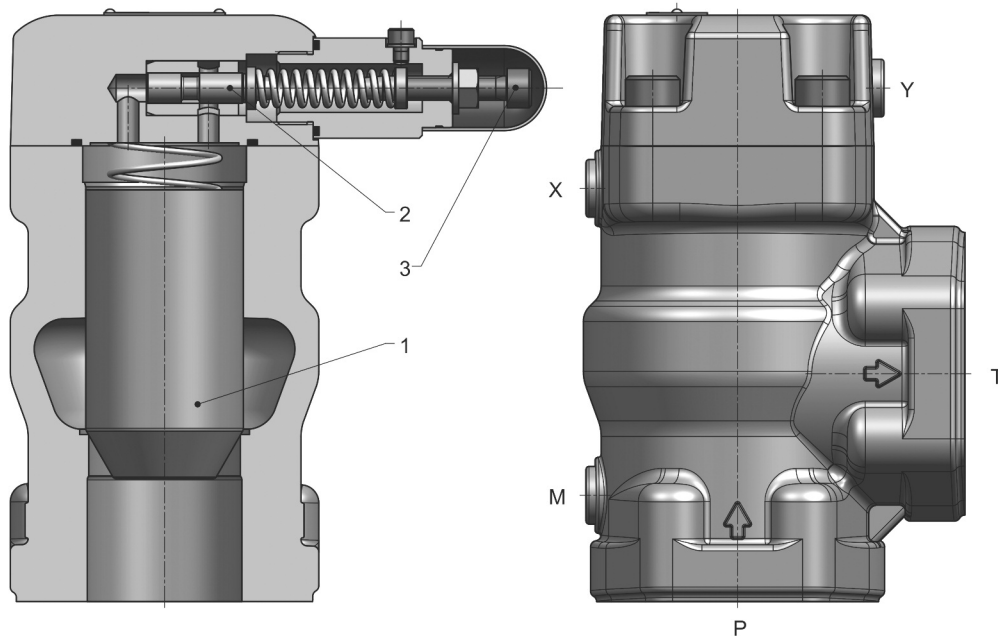
The DV pressure valves are hydraulically pilot-controlled valves. They comprise a main valve and one or several pilot-controlled valves. The modular design permits using different pilot control valves which means a multitude of functions can be implemented.

Along with pressure limiting and pressure control functions, this also includes special solutions such as pressure range switching valves and valves with electric relief. Typical application areas are oil hydraulics and lubrication technology.

## Product Characteristics

- Pilot-controlled pressure valves for large volume flows of up to 1800 l/min
- Wide functionality through modular construction
- Supplied standard with outlet port measurement connector M
- External control-oil regulation connector X (e.g. for hydraulic relief)
- Redundant pressure protection with maximum pressure limitation (optional)
- Dimensionally interchangeable with KRACHT type SPV(F) and HV(F) valves
- Marine acceptance by various classification companies on request

## Construction



## Function Pressure Relief Valve DV B

With the valve closed, both Main pilot valve cone **1** as well as Main pilot valve cone **2** are kept in the closed position by the spring force of the return spring.

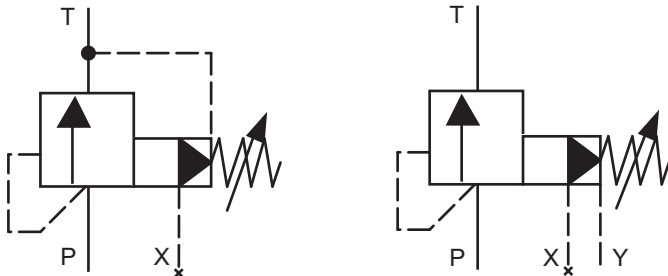
As soon as the pressure exceeds the pressure set with Setscrew **3**, the pilot valve opens and the spring chamber of the main valve is relieved to Tank **T**.

A pressure gradient arises between Pressure port **P** and the spring chamber and the main valve cone opens, keeping the system pressure constant. The control oil can be discharged **Y** internally or externally.

A measurement connector **M** and a port for external control oil regulation **X** are provided as standard.

Pressure Relief Valve DV B

Circuit Symbols



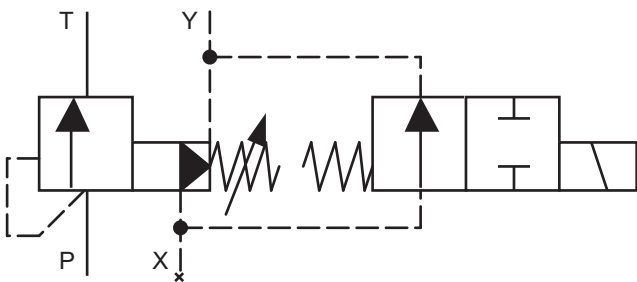
In addition, the valve is furnished with a permanently set maximum pressure relief (set-to-operate pressure = 12 bar).

Control oil: internal drainage    Control oil: external drainage (Y)

Option with directional valve

The DV B pressure relief valve is also available on request with an additional 2/2-directional valve (e.g. for depressurized circulation). The directional valve here is available as an open de-energised or closed de-energised version. The combination with a maximum pressure relief is not possible here.

Circuit symbol

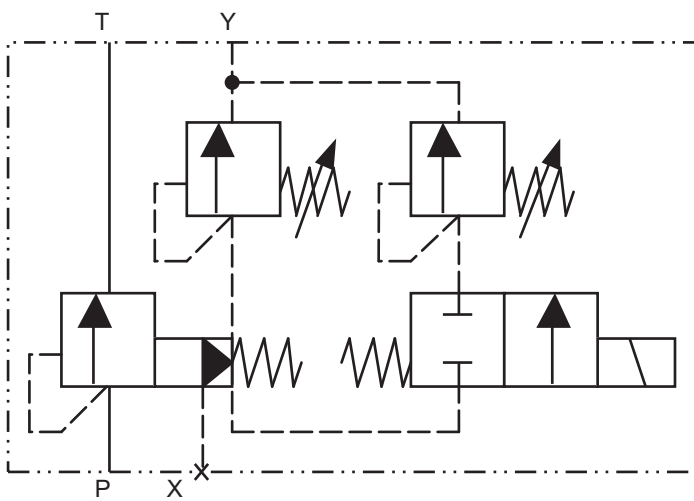


DV S Pressure Stage Control Valve

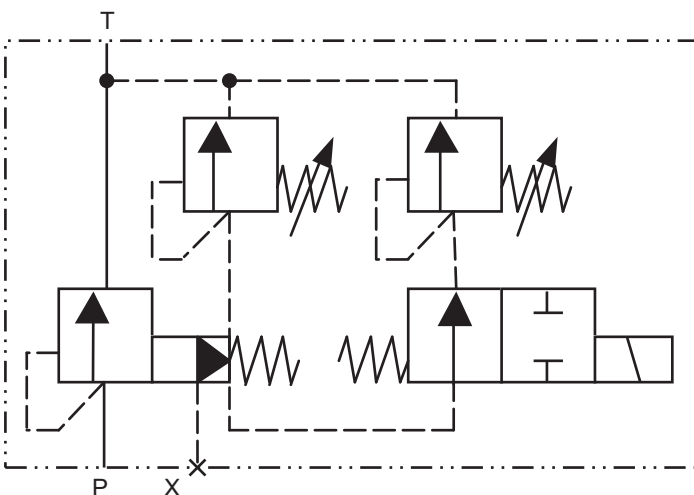
The pressure stage control valve is a pilot-controlled pressure relief valve with two parallel switched pilot-control valves which can be set to different pressures. The basic setup corresponds to the DV B pressure relief valve. The pressure stage control valve has an integrated 2/2 directional valve in addition.

It is used to switch the low pressure stage (upstream pressure) on and off. The magnetic valve here is available as an open de-energised or closed de-energised design. The control oil drainage here can also be implemented internally or externally. A typical application field is the coupling control of ship transmissions.

Circuit symbols



Control oil: external drainage (Y), magnetic valve closed de-energised



Control oil: internal drainage (Y), magnetic valve open de-energised

Option: Pressure stage control valve with 3 separately adjustable pressures.

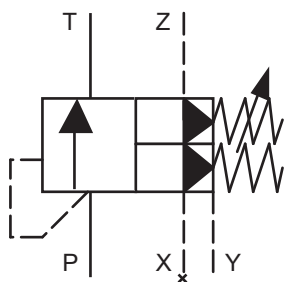
**DV R Pressure Control Valve**

The pressure control valve is a pilot-controlled pressure relief valve with external hydraulic triggering. It facilitates controlling a system pressure independent of the pressure losses between the valve and the point of the external control-oil tap. To accomplish that the pressure preset on the adjusting spindle on the connection (Z) is kept constant.

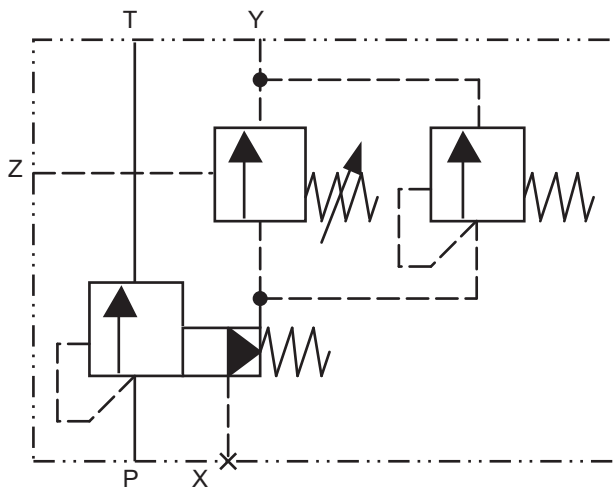
In addition, the valve is furnished with a permanently set maximum pressure relief (set-to-operate pressure = 12 bar).

A typical application field is the pressure control of lubrication oil circuits in diesel engines.

**Circuit symbol (simplified)**



**Circuit symbol (comprehensive)**



General note:

Hydraulic counter-pressures in Connection T with internal control-oil return or in Connection Y with external control-oil return add up 1:1 to the response pressure of the valve set on the pilot control.

**Technical Datas**

**General Characteristics**

|                   |  |
|-------------------|--|
| Design            | Seat valve, hydraulically pilot controlled   |
| Fixation type     | Pipeline   |
| Line connection   | SAE flange (SAE J518, code 61)   |
| Mounting position | optional   |
| Type of operation | Mechanical, setscrew   |
| Housing material  | EN-GJS-400-15  |
| Seal material     | FKM (others on request)  |
| Pressure fluids   | <ul style="list-style-type: none"> <li>- Hydraulic fluids as per DIN 51524/25</li> <li>- Marine fuels as per DIN ISO 8217</li> <li>- Motor and gearing oils</li> <li>- bio-oils of type "HEES"</li> <li>(Others on request)</li> </ul> |

**Hydraulic Characteristics**

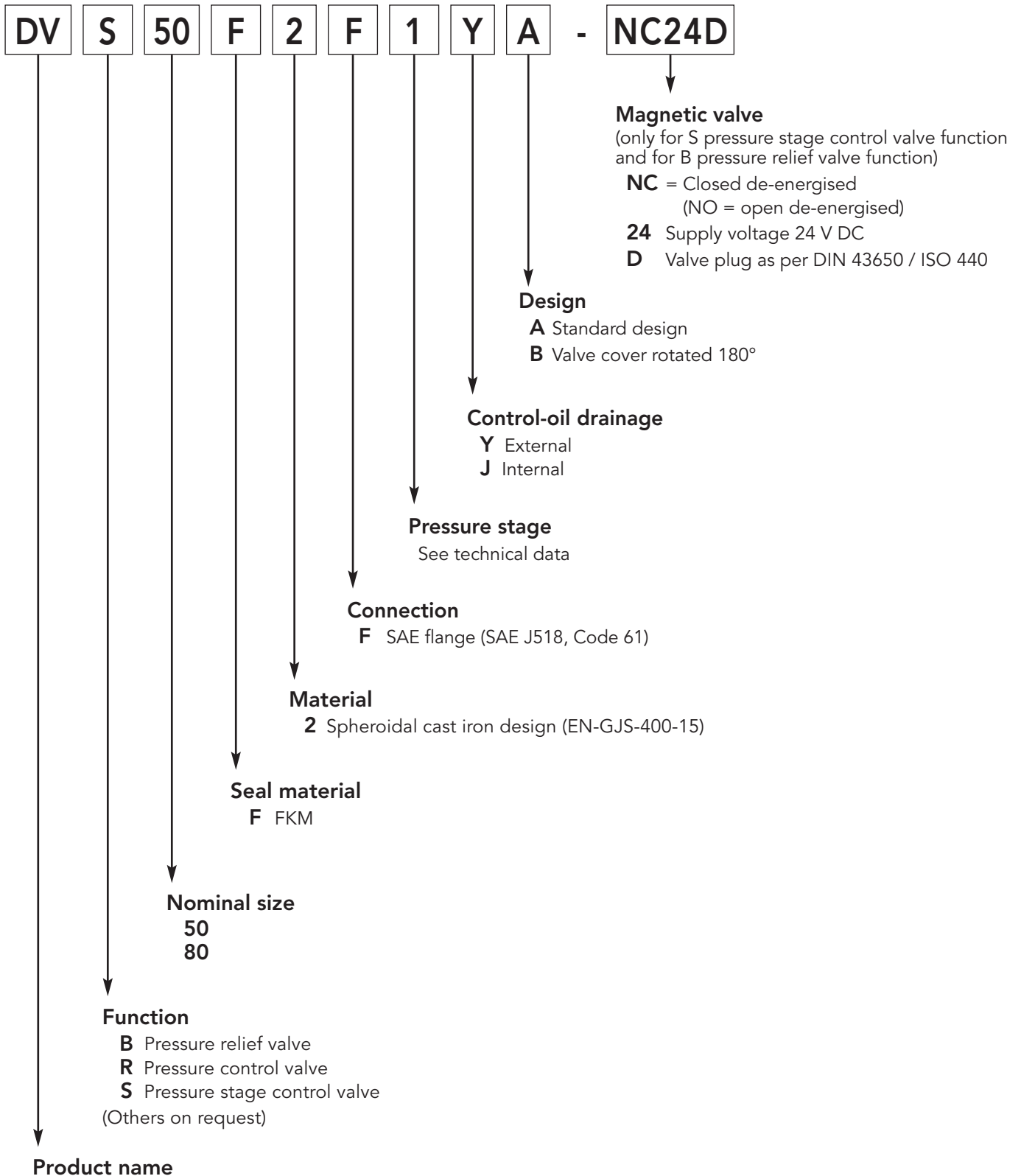
| Nominal size                     |           | 50                      | 80                      |
|----------------------------------|-----------|-------------------------|-------------------------|
| max. flow rate                   |           | 800 l/min               | 1800 l/min              |
| Nominal pressure                 |           | 210 bar                 | 140 bar                 |
| Viscosity<br>(Others on request) | $v_{min}$ | 4 mm <sup>2</sup> /s    | 4 mm <sup>2</sup> /s    |
|                                  | $v_{max}$ | 1000 mm <sup>2</sup> /s | 1000 mm <sup>2</sup> /s |
| Media temperature (FKM)          | ∅         | -15...150 °C            | -15...150 °C            |
| Ambient temperature              | ∅         | -20...60 °C             | -20...60 °C             |

**Set Pressure Range**

| Function | Pressure stage | Set pressure range [bar]                                |
|----------|----------------|---|
| DV B     | 1              | 3...25  |
|          | 2              | 8...70  |
|          | 3              | 15... 140 (... 210 bar at nominal size 50)              |
|          | 5              | 3... 12 (with maximum pressure relief 12 bar)           |
| DV R     | 1              | 3...25  |
|          | 2              | 8...70  |
|          | 3              | 15... 140 (... 210 bar at nominal size 50)              |
|          | 5              | 3... 12 (with maximum pressure relief 12 bar)           |
| DV S     | 1              | 3... 10 (p <sub>KV</sub> ) / 10... 35 (p <sub>K</sub> ) |

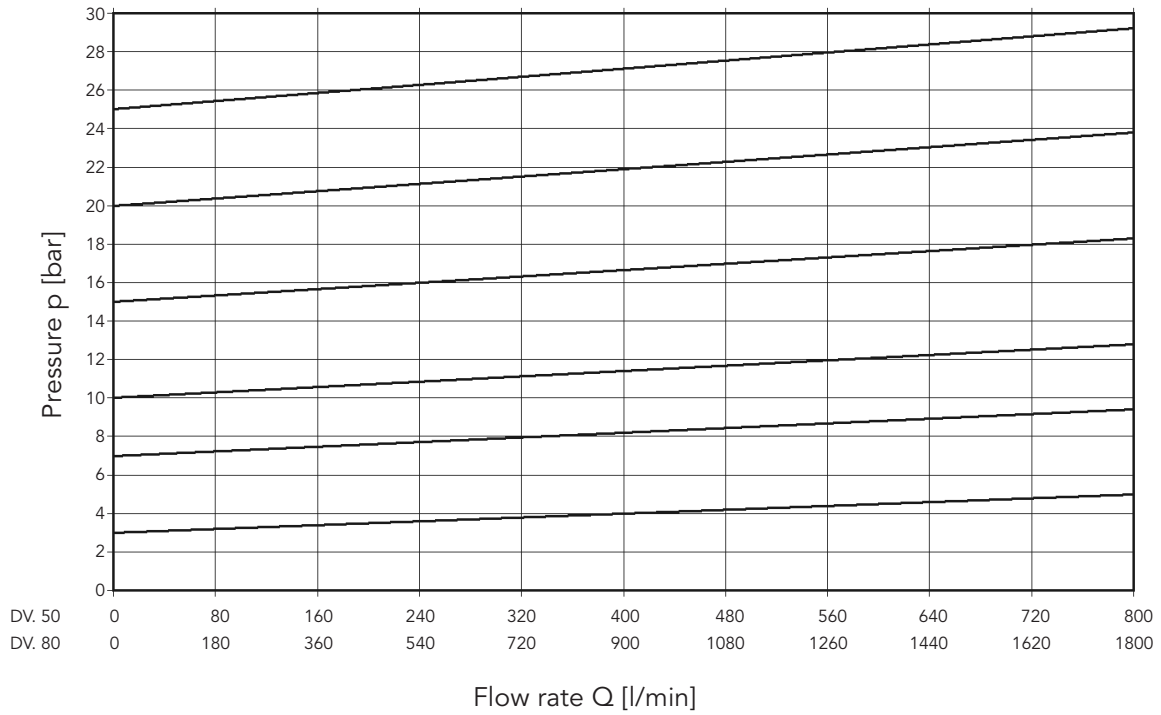
Type Key

Ordering example

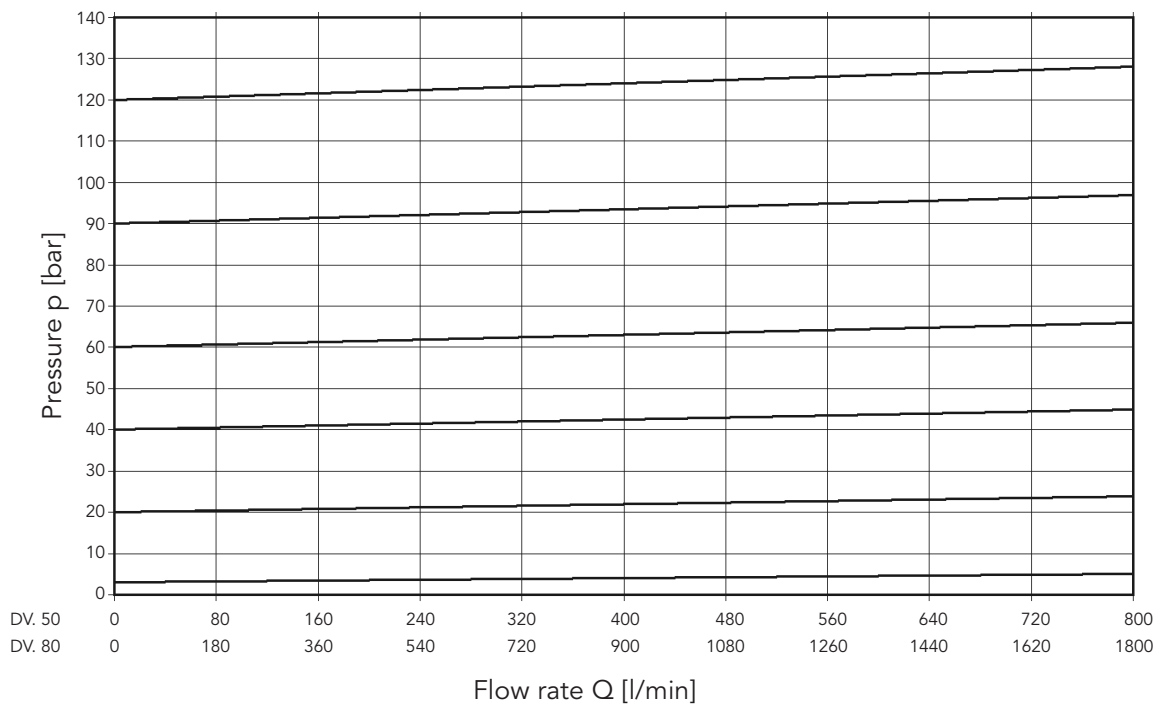


p-Q Characteristic Curves (Viscosity = 34 mm<sup>2</sup>/s)

Nominal size 50 and 80

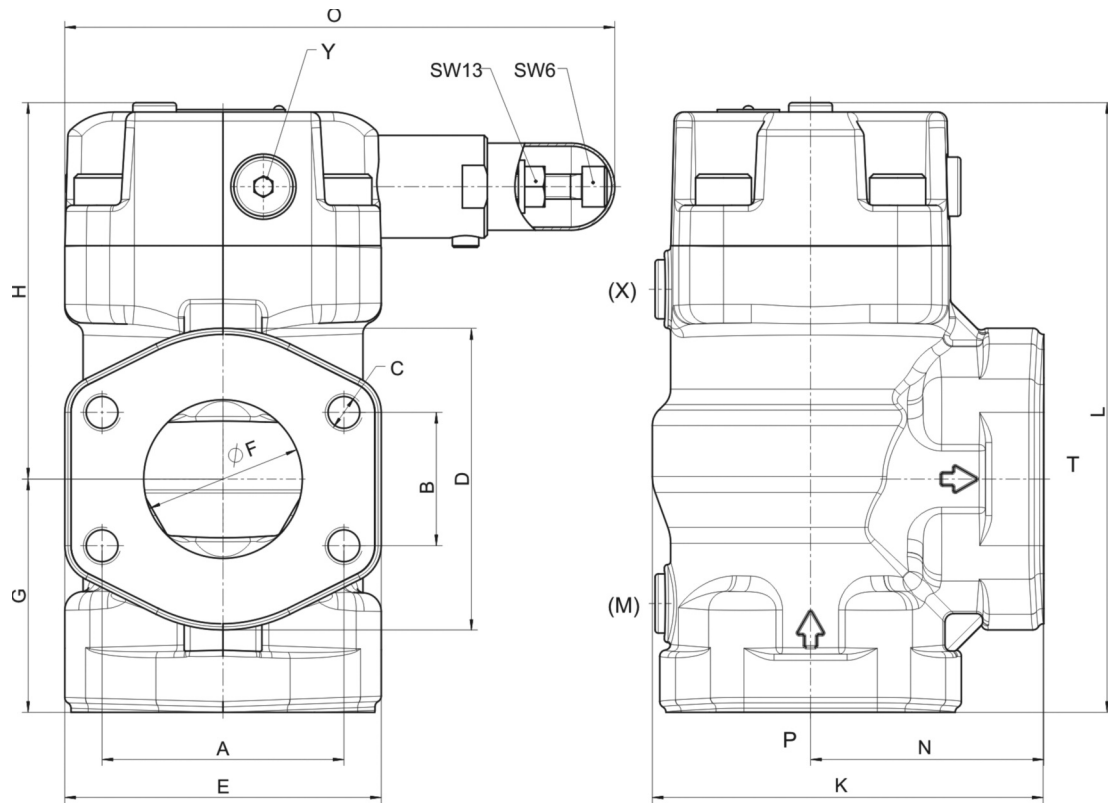


Nominal size 50 and 80





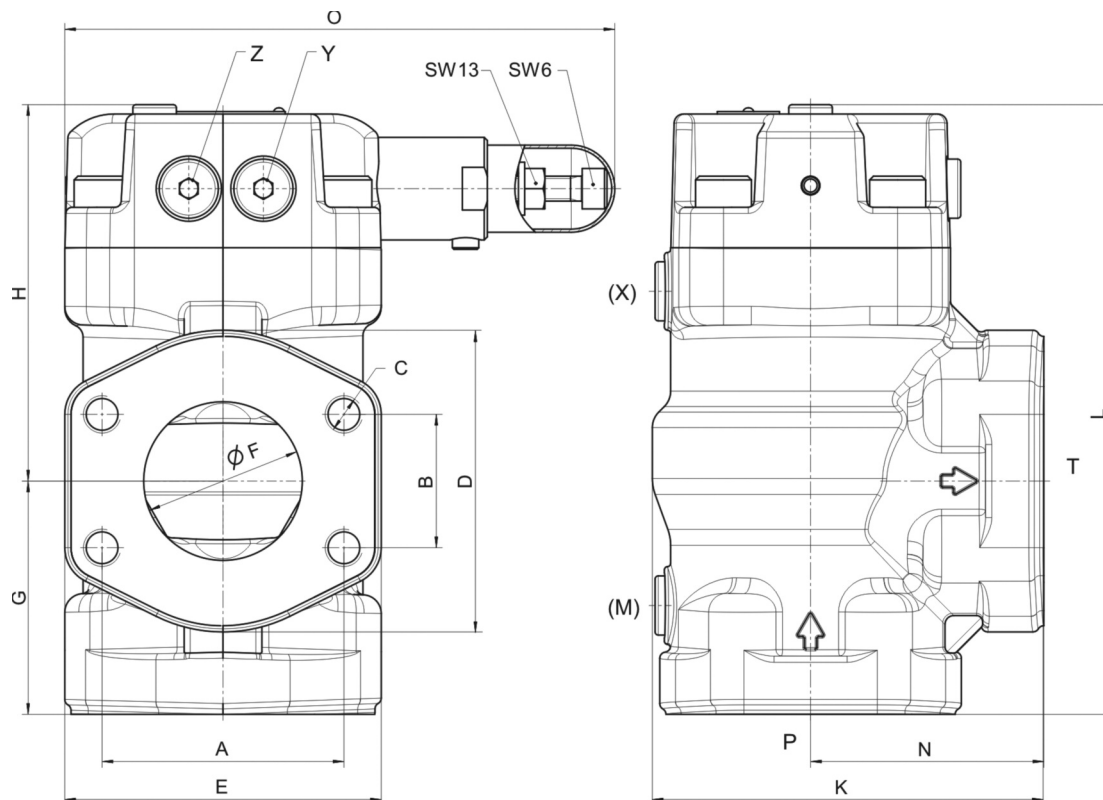
Dimensions DV . B Pressure Relief Valve (in mm)



| Nominal size | SAE | A     | B    | C   | D   | E   | F  | G   | H   | K   | L   | N   | O   | Weight in kg |
|--------------|-----|-------|------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|--------------|
| 50           | 2"  | 77.8  | 42.9 | M12 | 97  | 102 | 51 | 75  | 121 | 126 | 196 | 75  | 177 | 9.7          |
| 80           | 3"  | 106.4 | 61.9 | M16 | 131 | 135 | 76 | 110 | 151 | 177 | 261 | 110 | 209 | 21.2         |

Connections (M), (X), Y: G $\frac{1}{4}$   
 Connections P and T are dimensionally identical

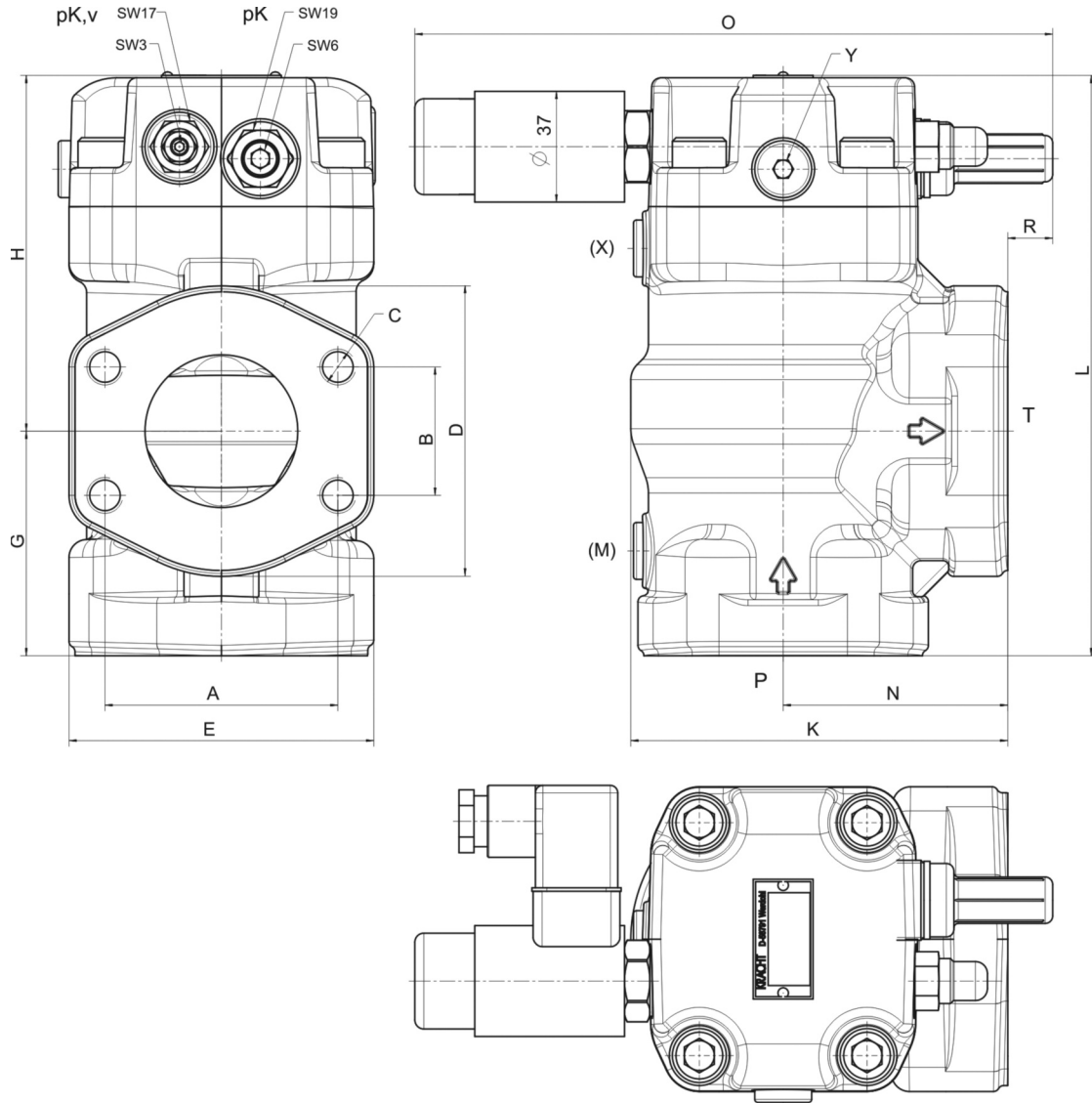
Dimensions DV . R Pressure Control Valve (in mm)



| Nominal size | SAE | A     | B    | C   | D   | E   | F  | G   | H   | K   | L   | N   | O   | Weight in kg |
|--------------|-----|-------|------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|--------------|
| 50           | 2"  | 77.8  | 42.9 | M12 | 97  | 102 | 51 | 75  | 121 | 126 | 196 | 75  | 177 | 9.7          |
| 80           | 3"  | 106.4 | 61.9 | M16 | 131 | 135 | 76 | 110 | 151 | 177 | 261 | 110 | 209 | 21.2         |

Connections (M), (X), Y: G $\frac{1}{4}$   
 Connections P and T are dimensionally identical

Dimensions DV . S Pressure Stage Control Valve (in mm)



| Nominal size | SAE | A     | B    | C   | D   | E   | F  | G   | H   | K   | L   | N   | O   | R    | Weight in kg |
|--------------|-----|-------|------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|------|--------------|
| 50           | 2"  | 77.8  | 42,9 | M12 | 97  | 102 | 51 | 75  | 119 | 126 | 194 | 75  | 213 | 15   | 9.8          |
| 80           | 3"  | 106.4 | 61.9 | M16 | 131 | 135 | 76 | 110 | 149 | 177 | 259 | 110 | 240 | -13* | 21.4         |

Connections (M), (X), Y: G $\frac{1}{4}$

Connections P and T are dimensionally identical

\* Dimension R: stands back 13 mm behind the edge of the object

pK = Coupling compression (high pressure setting)  
 pK,v = Coupling supply pressure (low pressure setting)

# Product Portfolio

## Gear Pumps

Gear pumps for lubricating oil supply equipment, low pressure filling and feed systems, dosing and mixing systems.

## Mobile Hydraulics

Single and multistage high pressure gear pumps, hydraulic motors and valves for construction machinery, vehicle-mounted machines.

## Flow Measurement

Gear, turbine and screw type flow meters and electronics for volume and flow metering technology in hydraulics, processing and laquering technology.

## Industrial Hydraulics / Test Bench Construction

Cetop directional control and proportional valves, hydraulic cylinders, pressure, quantity and stop valves for pipe and slab construction, hydraulic accessories for industrial hydraulics (mobile and stationary use).

Technology Test benches / Fluid Test benches.



*Pressure Valves DV/GB/07.16*

# KRACHT