

KRACHT

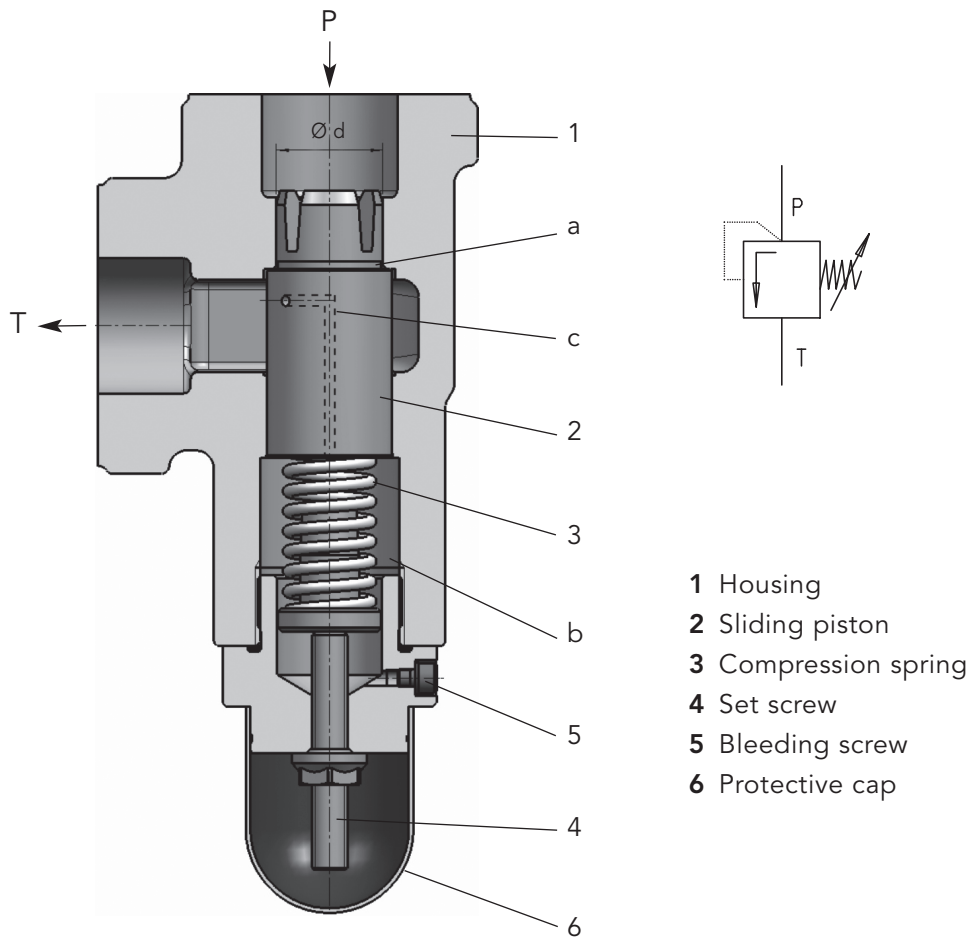


Pressure Relief Valves

SPV, SPVF

directly-operated

Construction



Description

The pressure relief valve SPV/SPVF is a direct spring sliding piston valve. It is intended for mounting in pipelines and is suitable to safeguard low pressure hydraulic circuits.

The pipe connection is to be effected either by SAE-mounting surfaces (3000 psi) or by Whitworth pipe threads "G".

Valve Construction

The sliding piston **2** is pressed against the annulated area **a** by the compression spring **3**. Thus the pump connection **P** is separated from the reservoir connection **T** by sealing the diameter **d**. As soon as the operating pressure **p** is achieved, adjusted by the set screw **4**, the sliding piston **2** releases the oil flow to the reservoir. The spring chamber **b** is pressure compensated by the bore **c**. When starting-up the valve the spring chamber **b** must be bled by the bleeding screw **5**, (hex. socket width: 4). The pressure relief valves are available in four different pressure setting ranges because, due to their springrates, each of the compression springs can only cover a limited pressure setting range.

Note

When using strongly aerated media, the valve should preferably be mounted vertical with the setscrew facing down.

ATEX

Explosion protection –

Field of application for the pressure relief valves.

The valve is used to secure low pressure hydraulic circuits with various flammable and non-flammable fluids.

They can be used:

- a In Zone 2 (Gas-Ex, Category 3 G)
in the explosion groups IIA, IIB and IIC
- b In Zone 22 (Dust-Ex, Category 3 D)
in dusts with a minimum ignition energy > 1 mJ
- c In Zone 1 (Gas-Ex, Category 2 G)
in explosion groups IIA, IIB and IIC
- d In Zone 21 (Dust-Ex, Category 2 D)
in dusts with a minimum ignition energy > 1 mJ

The qualification for the surface temperature is T4; for all gases, vapours, mists with an ignition temperature > 135 °C, the operating materials are not an ignition source.

In the Dust-Ex area, 135 °C is the reference temperature for further considerations regarding the safety margin to the glow temperature, etc. (can only be decided by the operating company).

The permissible ambient temperature ranges from
– 20 °C ≤ Ta ≤ 60 °C - NBR
– 15 °C ≤ Ta ≤ 60 °C - FKM

- Flashpoint, minimum ignition temperature and media-specific attributes must be complied with by the operating organisation.

- No not allow any explosive mixture to be present inside the unit.

Marking according to the EU Machine Directive RL 94/9/EU

Manufacturer	KRACHT GmbH D-58791 Werdohl
Type designation	SPV...
Consignment no.,	
Year of manufacture	xxxxxx/xx-xxx xx.xx
Tech. File Ref.	TRR: 04.02X
Protection type marking	⊕ II 2 GD EEx c IIC (T4) or ⊕ II 2 GD EEx c (T4)

Characteristics

Product name / Nominal size	SPV = NG 10 SPVF = NG 20 ... 80
Construction	Sliding piston relief valve – directly-operated (Seat on request)
Mounting	In pipeline
Pipe connection	SAE-flange (3000 psi) Whitworth pipe thread G
Dimensions	Pages 7, 9, 10, 11
Weight	Pages 7, 9, 10, 11
Fitting position	any, pressure setting screw below preferred (see page 2)
Housing material	EN-GJL-300 (EN-GJS-400-15)
Type setting	Mechanical Set screw Knob
Accessories	Welding flange SAE (3000 psi) Page 11
Δp -Q-Characteristics	Page 5
Hydraulic fluids	Hydraulic oils acc. to DIN 51 524/25 (other fluids on request)

Hydraulic Characteristics

Nominal size		10	20/25	32/40	50	80
Max. flow capacity	l/min	40	90	450	550	800
Max. working pressure	bar	120	120	120	100	80
Pressure setting ranges	$p_{v \min}$	bar	0.5	0.5	0.5	0.5
	$p_{v \max}$	bar	30	40	25	25
Fluid temperature range	NBR	$\vartheta_m = -20\text{ °C} \dots 90\text{ °C}$ (Design A + E)				
	FKM	$\vartheta_m = -15\text{ °C} \dots 150\text{ °C}$ (Design C + K)				
	Copper	$\vartheta_m = -20\text{ °C} \dots 220\text{ °C}$ (Design B + F)				
	Soft iron	$\vartheta_m = -20\text{ °C} \dots 350\text{ °C}$ (Design D)				
Ambient temperature		$\vartheta_u = -20\text{ °C} \dots 60\text{ °C}$				

Viscosity range	v_{\min}	mm ² /s	1.2
	v_{\max}	mm ² /s	1000 (standard) higher viscosities on request

Explosion proof design (ATEX)

The devices comply with these protective classes:

⊕ II 2 GD EEx c IIC (T4) or

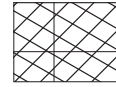
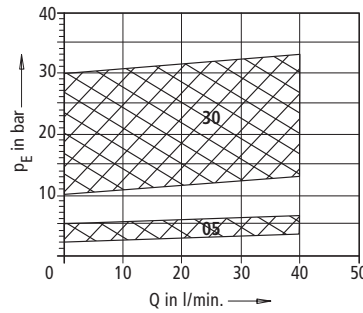
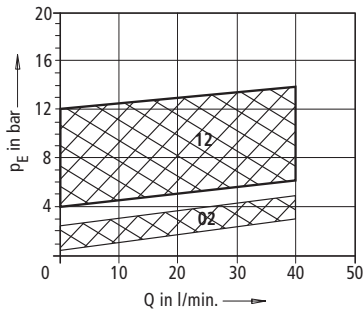
⊕ II 2 GD EEx C (T4)

Note:

Metallic protective cap (cap nut) in ATEX version

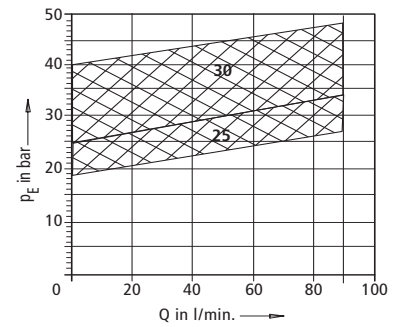
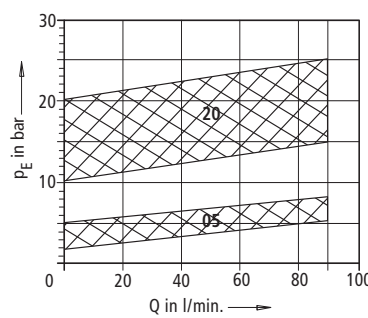
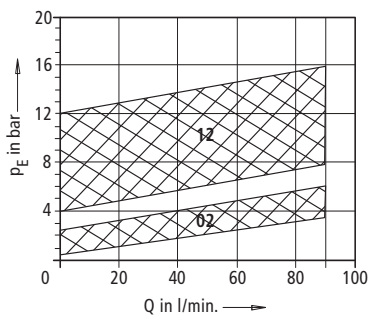
Characteristic Curves $p_E - Q$ Viscosity = 34 mm²/s

SPV 10

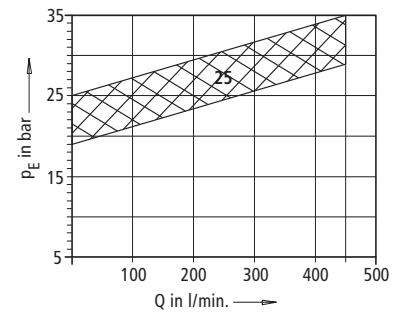
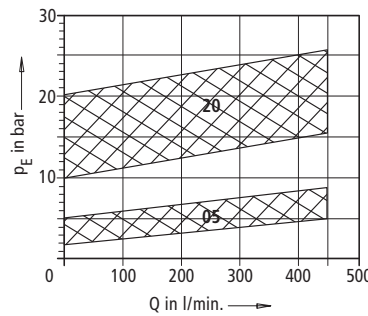
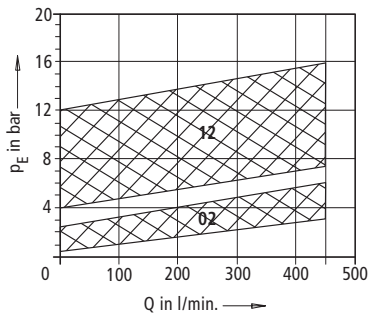


= possible setting range of the respective pressure stage

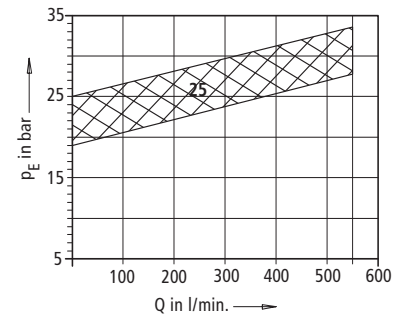
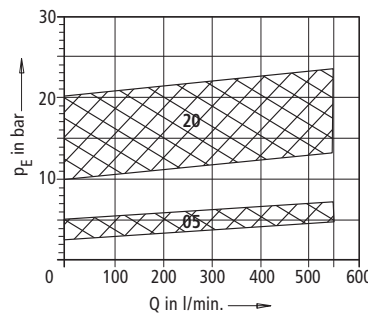
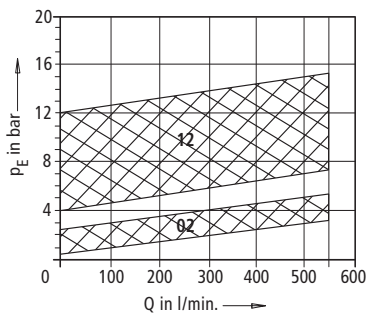
SPVF 20/25



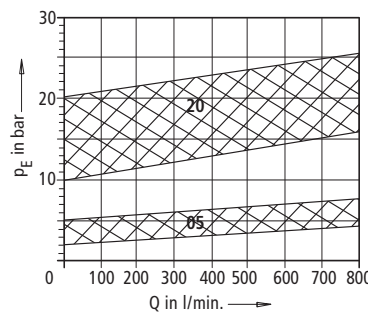
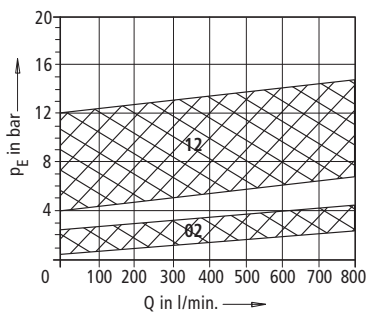
SPVF 32/40



SPVF 50

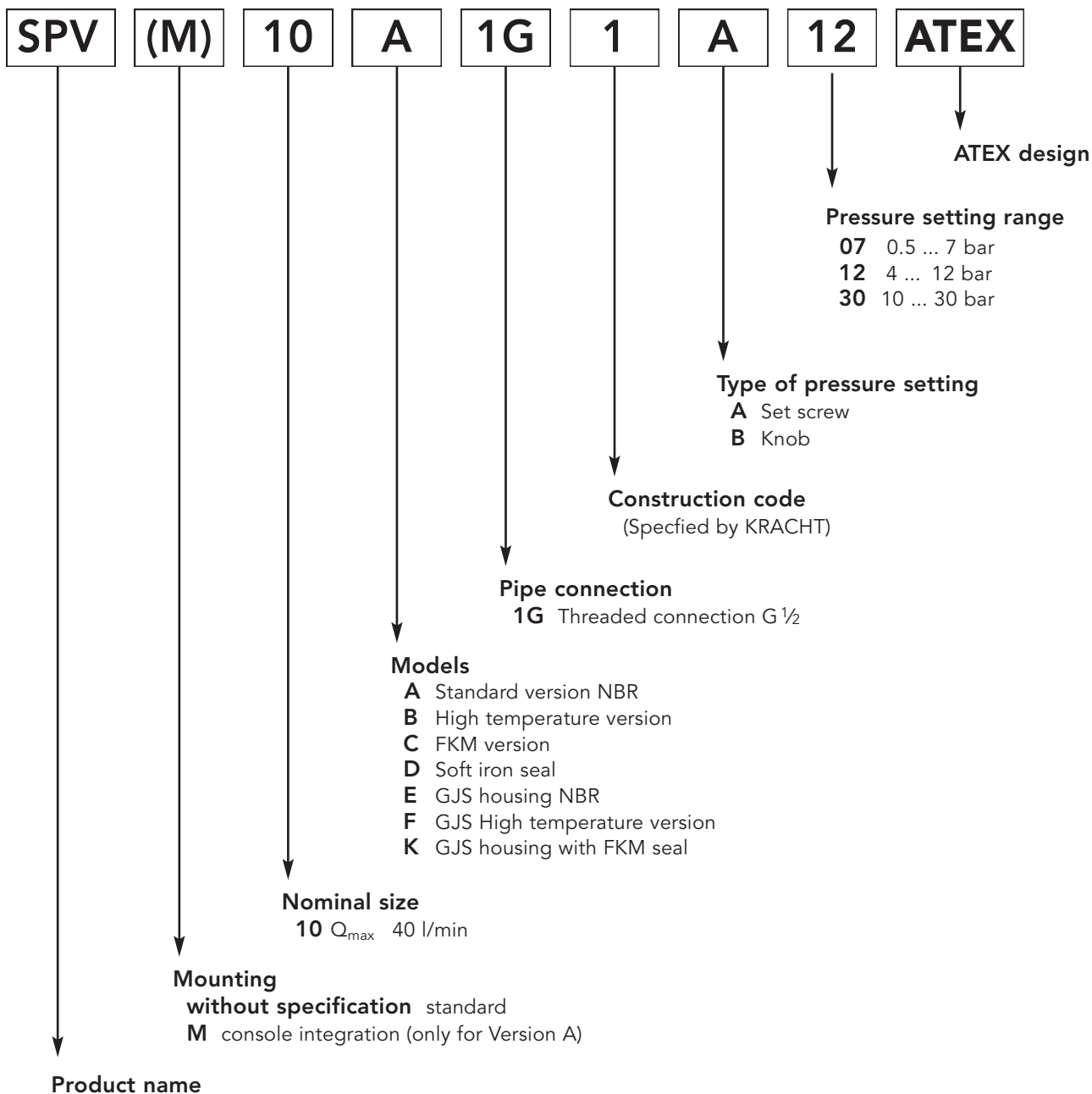


SPVF 80



Type Key

Ordering example NG 10



Ordering example: SPV 10 B1G 1 A 12

Pressure relief valve, directly spring operated, nominal size 10 (Q_{max} 40 l/min), high temperature version (up to +220 °C) with threaded connection G 1/2, pressure setting by set screw, pressure setting range 4 up to 12 bars

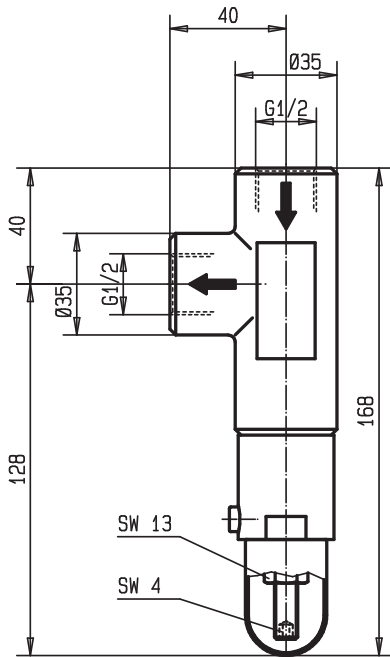
Ordering example: SPVM 10 A1G 1 B 30

Pressure relief valve, directly spring operated for panel mounting, nominal size 10 (Q_{max} 40 l/min), standard version with threaded connection G 1/2, pressure setting by knob, pressure setting range 10 up to 30 bars

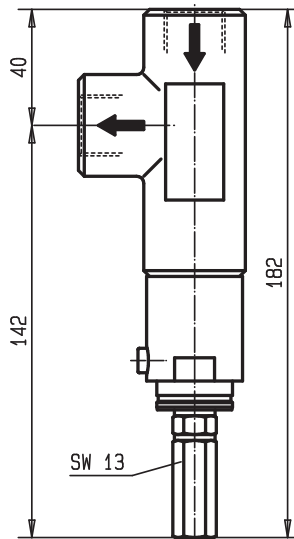
Dimensions (in mm)

Ordering codes

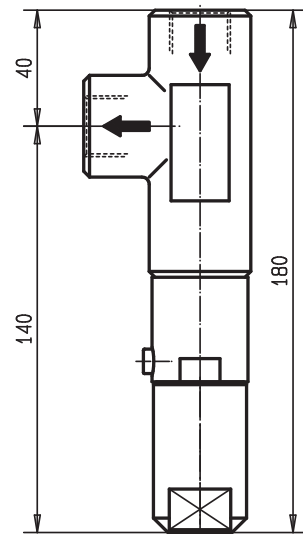
SPV 10
A
C
E
K 1G 1 A .



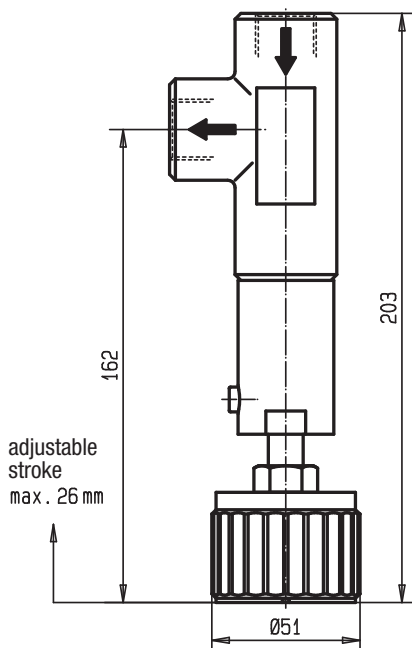
SPV 10
B
D 1G 1 A .



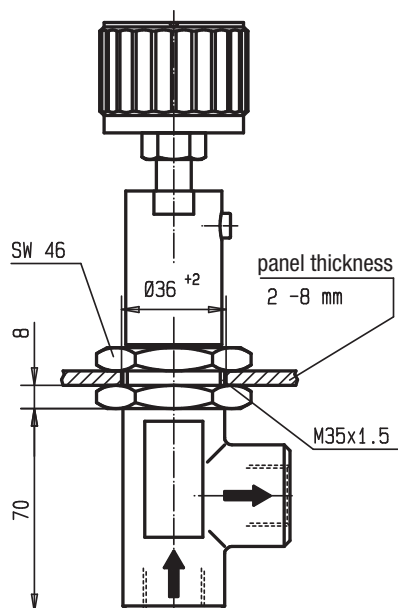
SPV 10
C
E
K A 1G 1 A . - ATEX



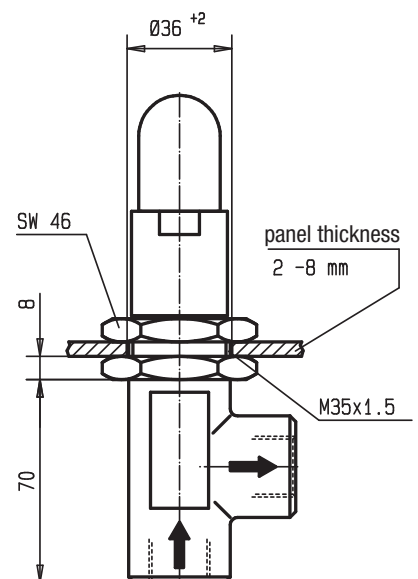
SPV 10
A
C
E
K 1G 1 B .



SPVFM
M
C
E
K A 1G 1 B .

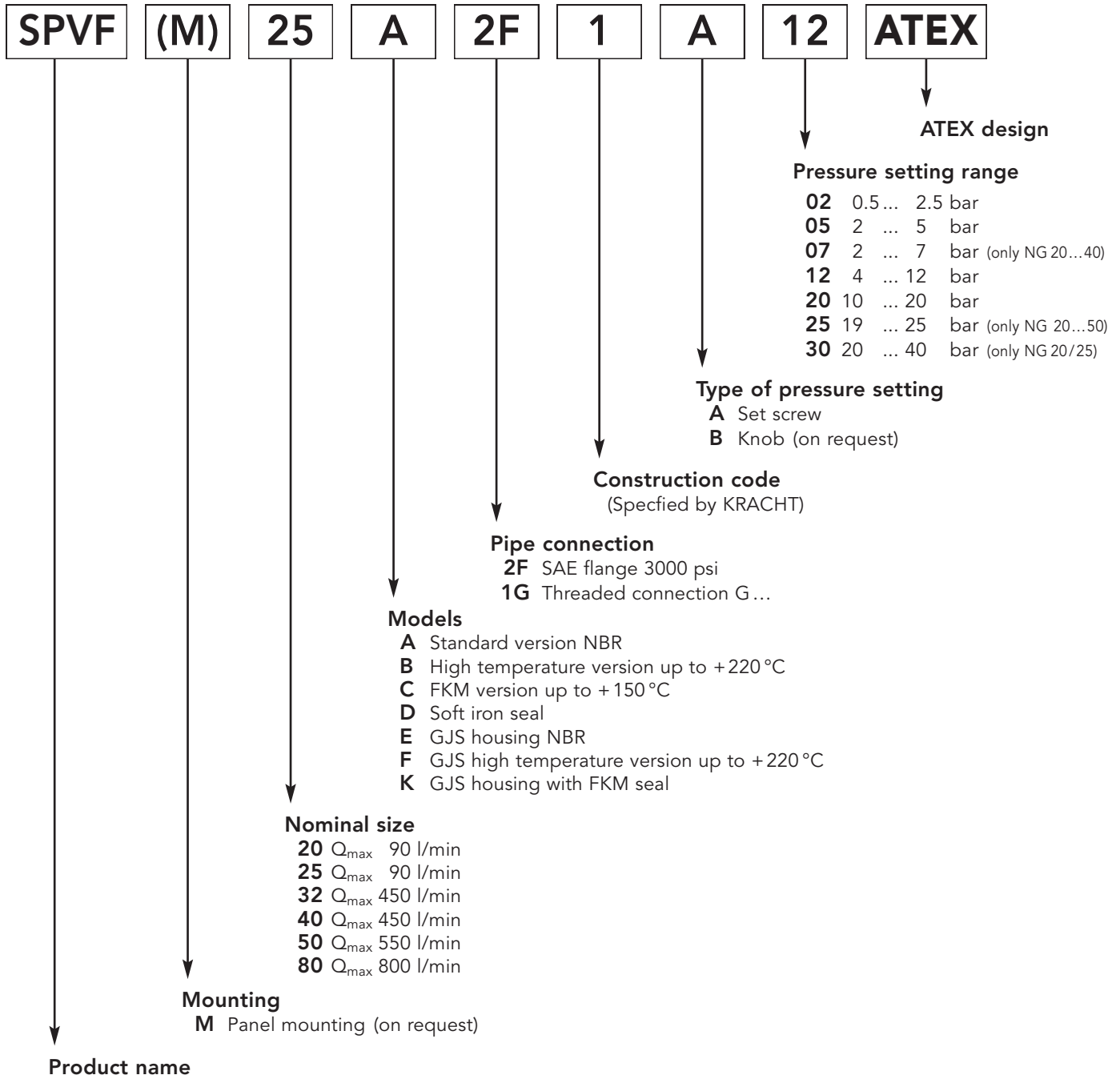


SPVFM 10
C
E
K A 1G 1 A .



Type Key

Ordering example NG 20... 80



Ordering example: SPVF 80 A1G 1 A 12

Pressure relief valve, directly spring operated, flange version, nominal size 80 (Q_{max} 800 l/min), standard version with threaded connection G3, pressure setting by set screw, pressure setting range 4 up to 12 bars

Ordering example: SPVF 40 B2F 1 A 20

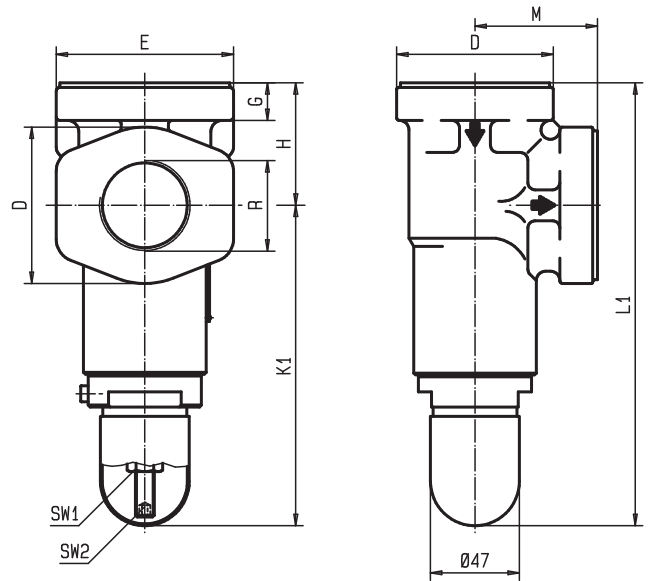
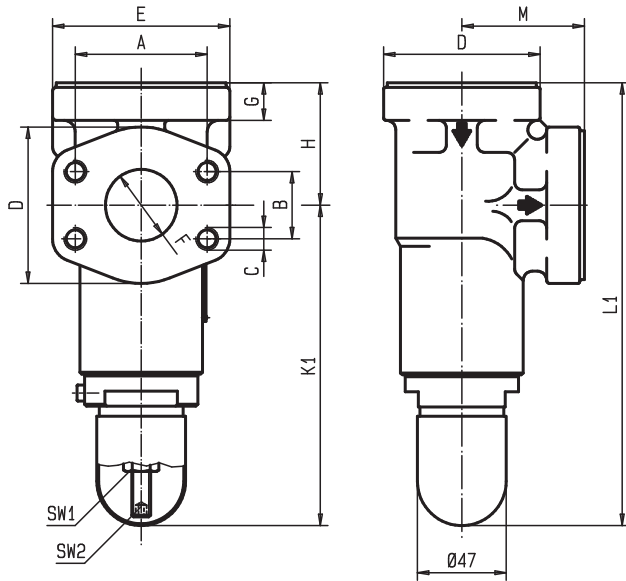
Pressure relief valve, directly spring operated, flange version, nominal size 40 (Q_{max} 450 l/min), high temperature version up to +220 °C with SAE mounting surfaces (3000 psi), pressure setting by set screw, pressure setting range 10 up to 20 bars

Dimensions (in mm)

Ordering codes

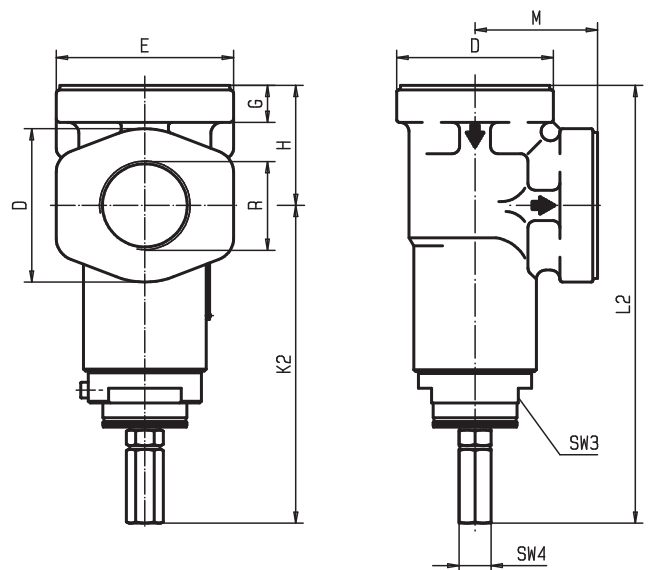
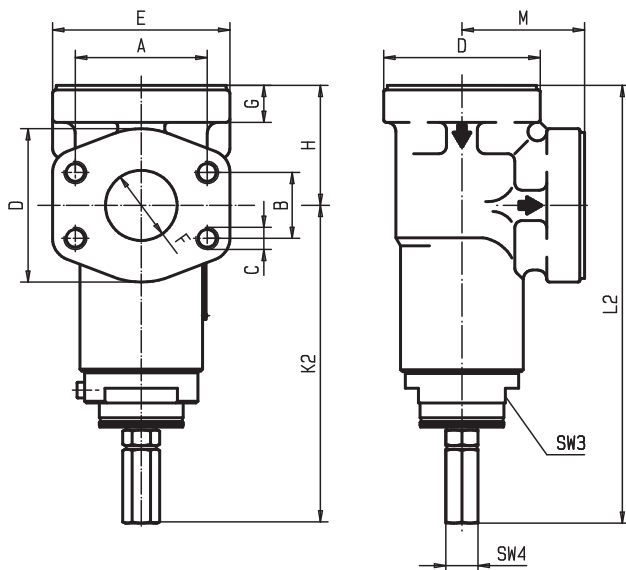
SPVF. $\begin{matrix} A \\ C \\ E \\ K \end{matrix}$ 2F 1 A.

SPVF. $\begin{matrix} A \\ C \\ E \\ K \end{matrix}$ 1G 1 A.



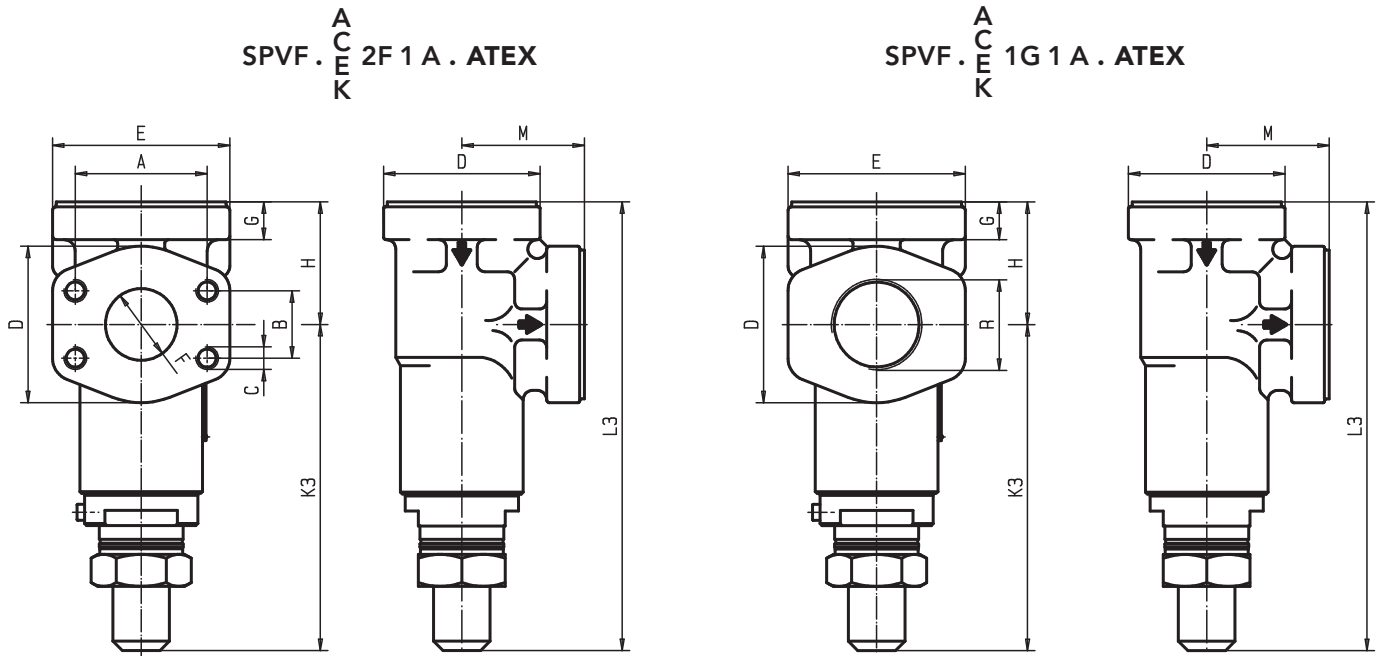
SPVF. $\begin{matrix} B \\ D \\ F \end{matrix}$ 2F 1 A.

SPVF. $\begin{matrix} B \\ D \\ F \end{matrix}$ 1G 1 A.



Dimensions (in mm)

Ordering codes



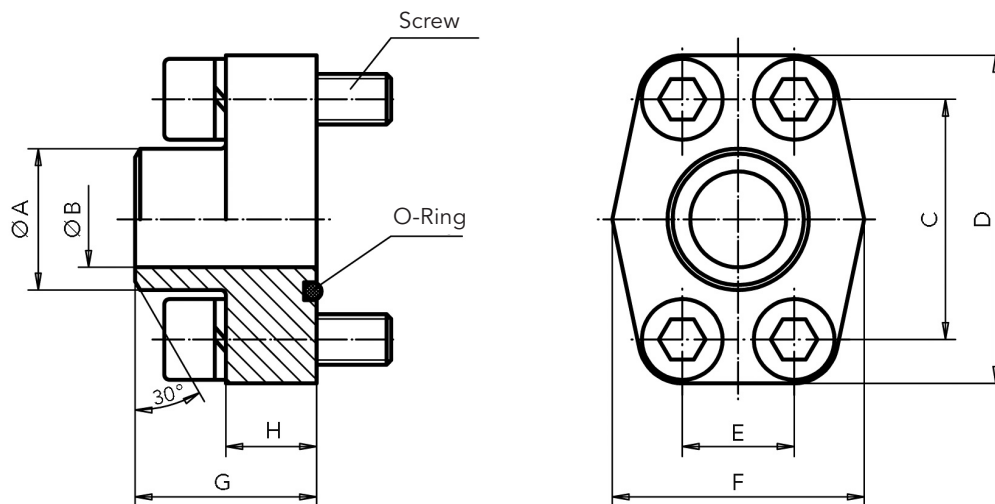
Nom. size	SAE flange	Thread R															Weight					
			A	B	C	D	E	F	G	H	K ₁	K ₂	K ₃	L ₁	L ₂	L ₃	M	SW1	SW2	SW3	SW4	kg
20	3/4"	G 3/4	47.6	22.2	M10	59	70	24	20	50	160	167	169	210	217	219	50	17	5	46	17	3.0
25	1"	G 1	52.4	26.2	M10	59	70	24	20	50	160	167	169	210	217	219	55	17	5	46	17	3.0
32	1 1/4"	G 1 1/4	58.7	30.2	M10	72	79	32	20	65	170	172	174	235	237	239	65	17	5	46	17	5.5
40	1 1/2"	G 1 1/2	69.9	35.7	M12	83	94	38	20	65	170	172	174	235	237	239	65	17	5	46	17	6.0
50*	2"	G 2	77.8	42.9	M12	97	102	50.5	20	75	192	209	212	267	284	287	75	19	6	46	19	8.2
80*	3"	G 3	106.4	61.9	M16	131	135	79	25	110	190	207	208	300	317	318	110	19	6	-	19	18.5

* Housing material spheroidal cast iron

Nom. size	SAE flange	Thread R															Weight				
			A	B	C	D	E	F	H	K ₁	K ₂	K ₃	L ₁	L ₃	L ₃	M	SW1	SW2	SW3	SW4	kg
50**	2"	G 2	77,8	42,9	M12	124	102	50,5	75	192	209	212	267	274	287	75	19	6	46	19	8,2
80**	3"	G 3	106,4	61,9	M16	176	135	79	110	190	207	208	300	307	318	110	19	6	-	19	18,5

** Design E and K

Accessoires Welding Flange SAE (3000 psi)



SAE flange									Screws 10.9	O-Ring	max. working pressure bar	Weight kg
	A	B	C	D	E	F	G	H				
3/4"	28.0	19.0	47.63	65	22.23	50	36	18	M10 x 35	24.99 x 3.53 NBR-90	350	0.46
1"	34.0	25.0	52.37	70	26.19	55	38	18	M10 x 35	32.92 x 3.53 NBR-90	315	0.54
1 1/4"	42.8	32.0	58.72	79	30.18	68	41	21	M10 x 40	37.69 x 3.53 NBR-90	250	0.78
1 1/2"	48.6	38.0	69.85	93	35.71	78	44	25	M12 x 45	47.22 x 3.53 NBR-90	200	1.24
2"	61.0	51.0	77.77	102	42.88	90	45	25	M12 x 45	56.74 x 3.53 NBR-90	200	1.40
3"	92.0	73.0	106.38	134	61.93	124	50	27	M16 x 50	85.32 x 3.53 NBR-90	138	2.54

(Dimensions in mm)

Product Portfolio

Transfer Pumps

Transfer 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 and turbine 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.



SPV, SPVF directly-operated / GB / 08.14

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