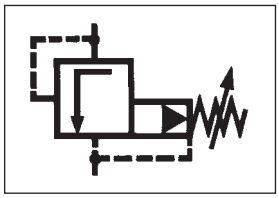
KRACHT

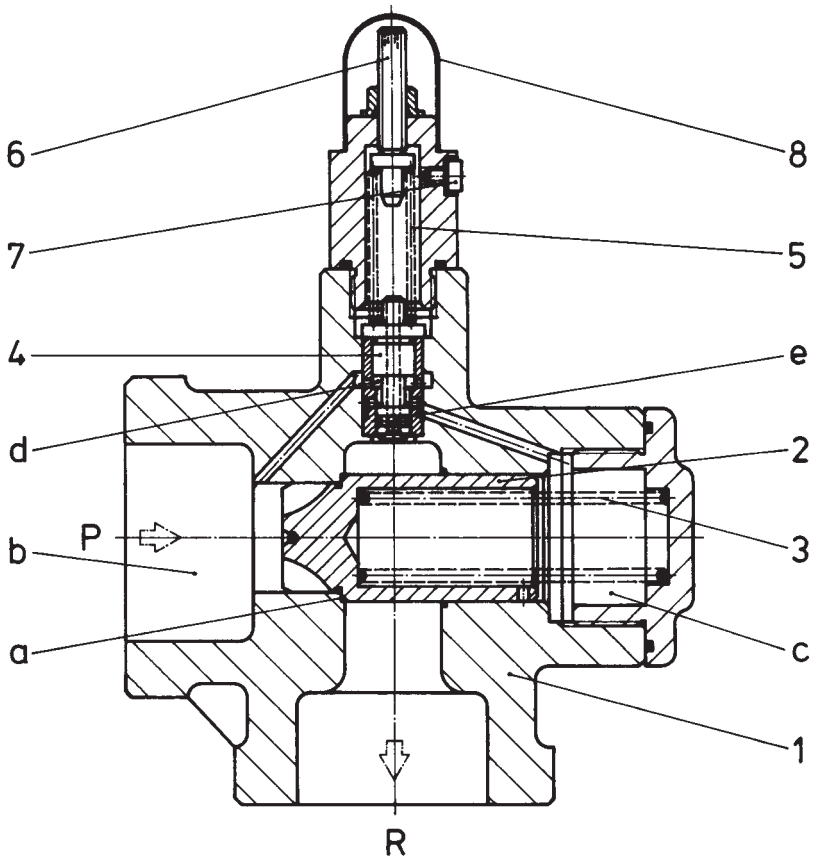
Pressure Relief Valves HV, HVF

pilot operated

Construction of the Pressure Relief Valves HV, HVF

Symbol





1 Housing
2 Main Sliding Piston
3 Compression Spring
4 Pilot Sliding Piston
5 Compression Spring
6 Set Screw
7 Bleeding Screw
8 Protective Cap

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Description

The pilot operated, sliding piston Pressure Relief Valve HV/HVF is intended for inline mounting and is suitable to safeguard mean pressure hydraulic circuits up to 160 bars. The pipe connection is to be effected either by SAE-Mounting Surfaces (3000 psi) or by Whitworth Pipe Threads “G”. Due to the design principle of sliding piston piloting the valve is also suitable for higher viscosities.

Valve Construction:

Main Valve Stage

The Main Sliding Piston **2** is pressed against the Annulated Area **a** by the Compression Spring **3**. The Valve Chamber **b** located before the Main Sliding Piston **2** as well as the Valve Chamber **c** to be found behind the Main Sliding Piston **2** are directly connected with the pilot valve.

Pilot Valve

The Pilot Sliding Piston **4** is loaded by the Compression Spring **5** and is balanced by the operating pressure p acting on the Annulated Area **d**. As soon as the spring force is exceeded by the operating pressure p the connection behind the Main Sliding Piston **2** is blocked and the Valve Chamber **c** is then connected with the reservoir via the Bore **e** within the Pilot Sliding Piston **4**. In this way it is guaranteed that, as soon as the set pressure is reached, the Main Sliding Piston **2** releases the oil flow to the reservoir without any vibrations maintaining the operating pressure as adjusted by the Set Screw **6**. The Spring chamber of the pilot valve can be bleeded by the Bleeding Screw **7** provided the valve is installed in vertical fitting position i.e. with the pressure setting arrangement up.

Characteristics

Characteristics acc. to VDI 3267

Pressure Relief Valve
pilot operated

Nom. Size:	10	25	40	50	80
Max. Flow Capacity:	50	120	350	500	750 l/min
Nom. Operating Pressure:	160	160	160	80	80 bars

General Characteristics

Construction:	Sliding Piston Relief Valve
Mounting:	Inline
Pipe Connection:	SAE-Flange (3000 psi) Whitworth Pipe Thread “G”
Dimensions:	Pages 7, 9, 10 and 11
Weight:	Pages 7, 9, 10 and 11
Fitting Position:	Set Screw up
Perm. Ambient Temp.:	$\vartheta_{u\,min} = -20$ °C $\vartheta_{u\,max} = +60$ °C

Hydraulic Characteristics

Nominal Size:		10	25	40	50	80
Press. Setting Ranges:	$p_{v\,min}$	1	1	1	1	1 bar
	$p_{v\,max}$	160	160	160	80	80 bars
Fluid Temp. Range:	$\vartheta_{m\,min} = -20$ °C					
	$\vartheta_{m\,max} = +80$ °C					
Viscosity Range:	ν_{min} = 13 mm²/s					
	ν_{max} = 600 mm²/s					
Δp-Q-Characteristics:	Page 5					
Hydraulic Fluids:	Hydraulic Oils acc. to DIN 51524/25 other fluids on request					

Type of Pressure Setting

mechanical	Set Screw Knob

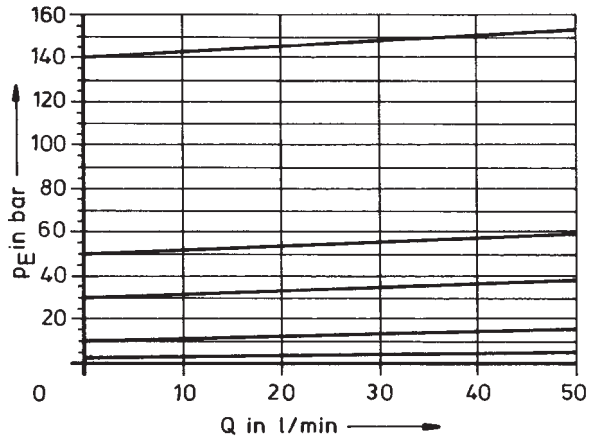
Accessories

Welding Flange SAE (3000 psi)	Page 11

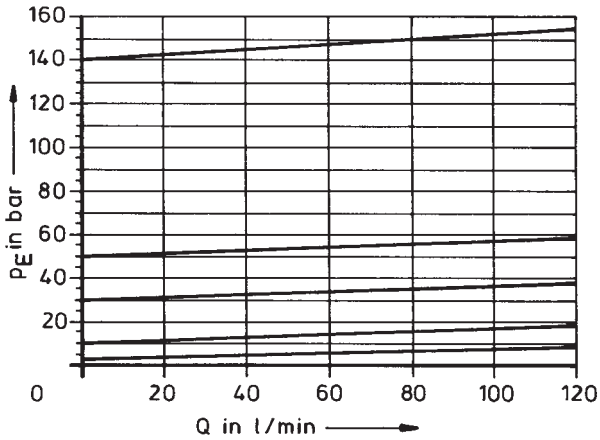
Characteristic Curves

$\Delta p = f(Q)$
Viscosity = 34 mm^2/s

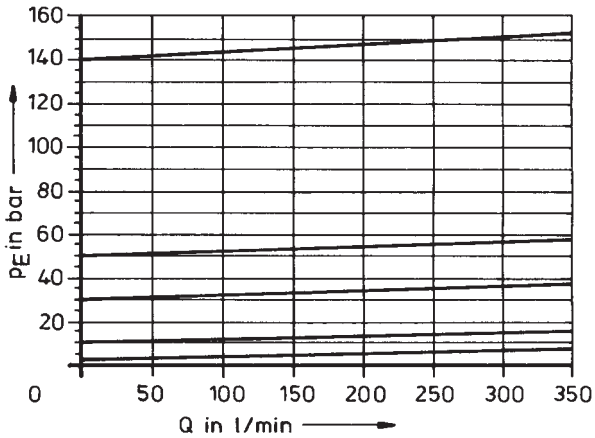
HV 10



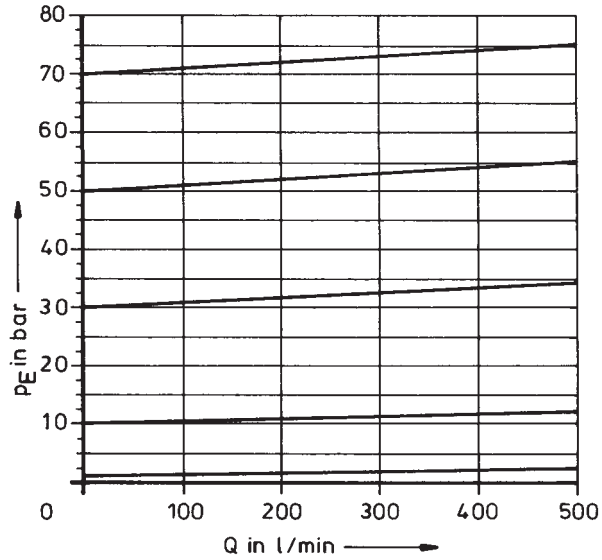
HVF 25



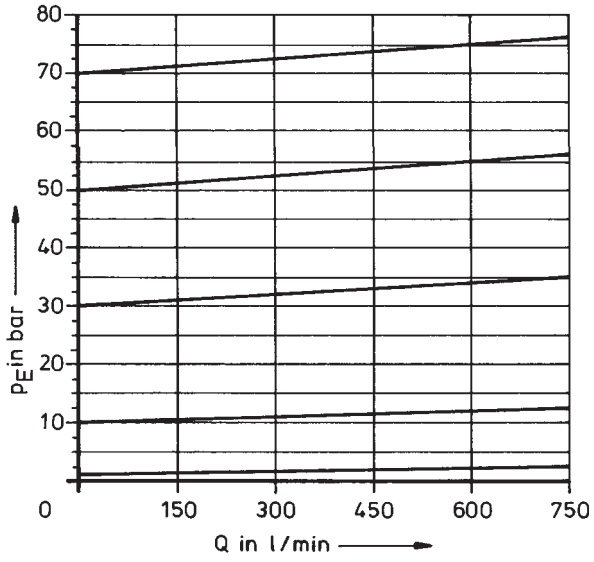
HVF 40



HVF 50



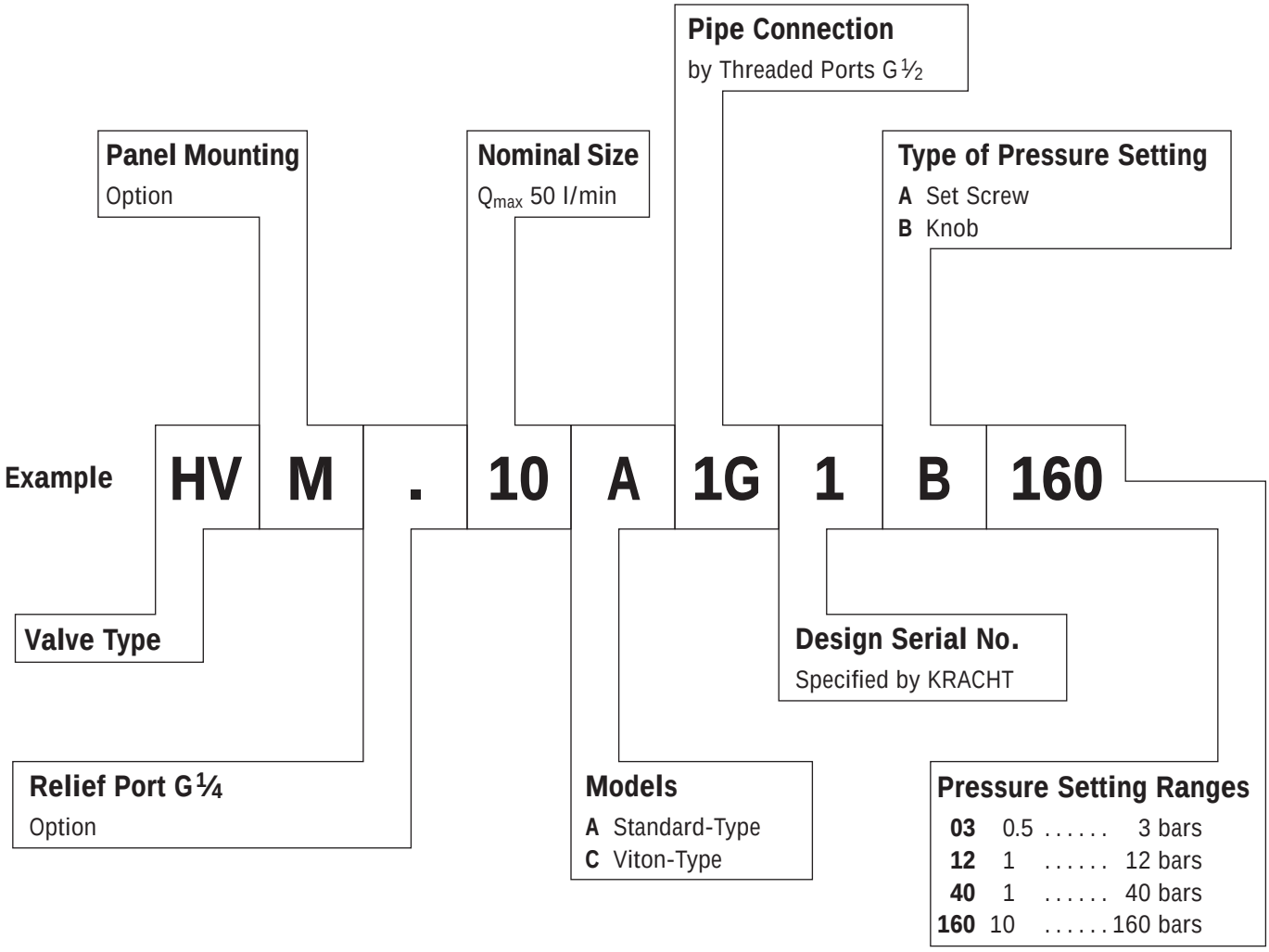
HVF 80



Type Key

Nominal Size 10

Pressure Relief Valve
pilot operated

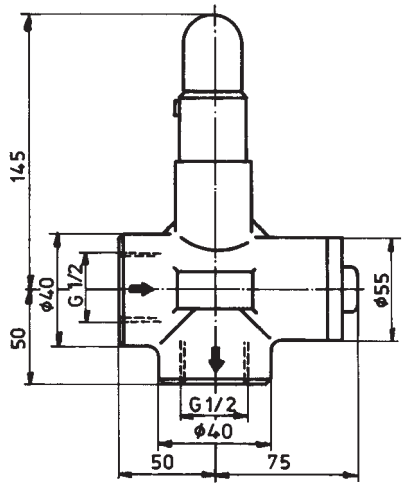


means:

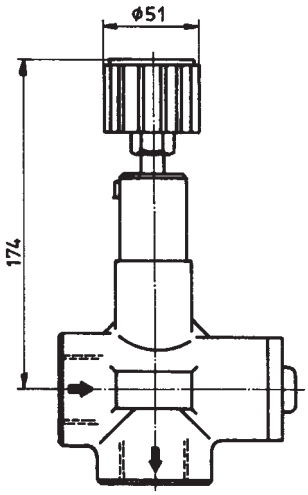
Pressure Relief Valve, Pilot Operated. For Panel Mounting, Nominal Size 10 (Q_{max} 50 l/min), Standard Type, with Threaded Ports G½, Pressure Setting by Knob, Pressure Setting Range: 10 up to 160 bars

Dimensions

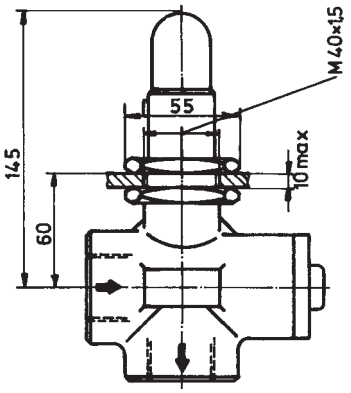
Ordering Code HV 10 A 1G 1 A .



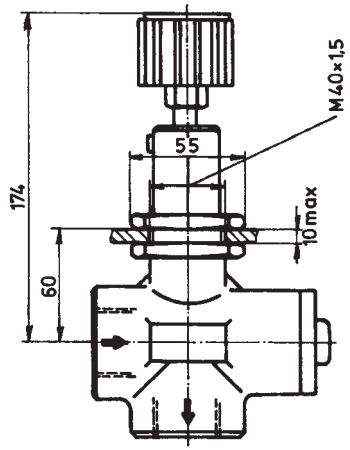
Ordering Code HV 10 A 1G 1 B .



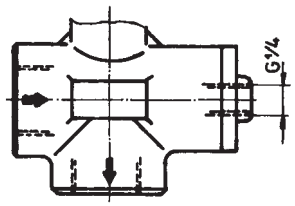
Ordering Code HVM 10 A 1G 1 A .



Ordering Code HVM 10 A 1G 1 B .



Ordering Code HVE 10 A 1G 1 . .
HVME 10 A 1G 1 . .

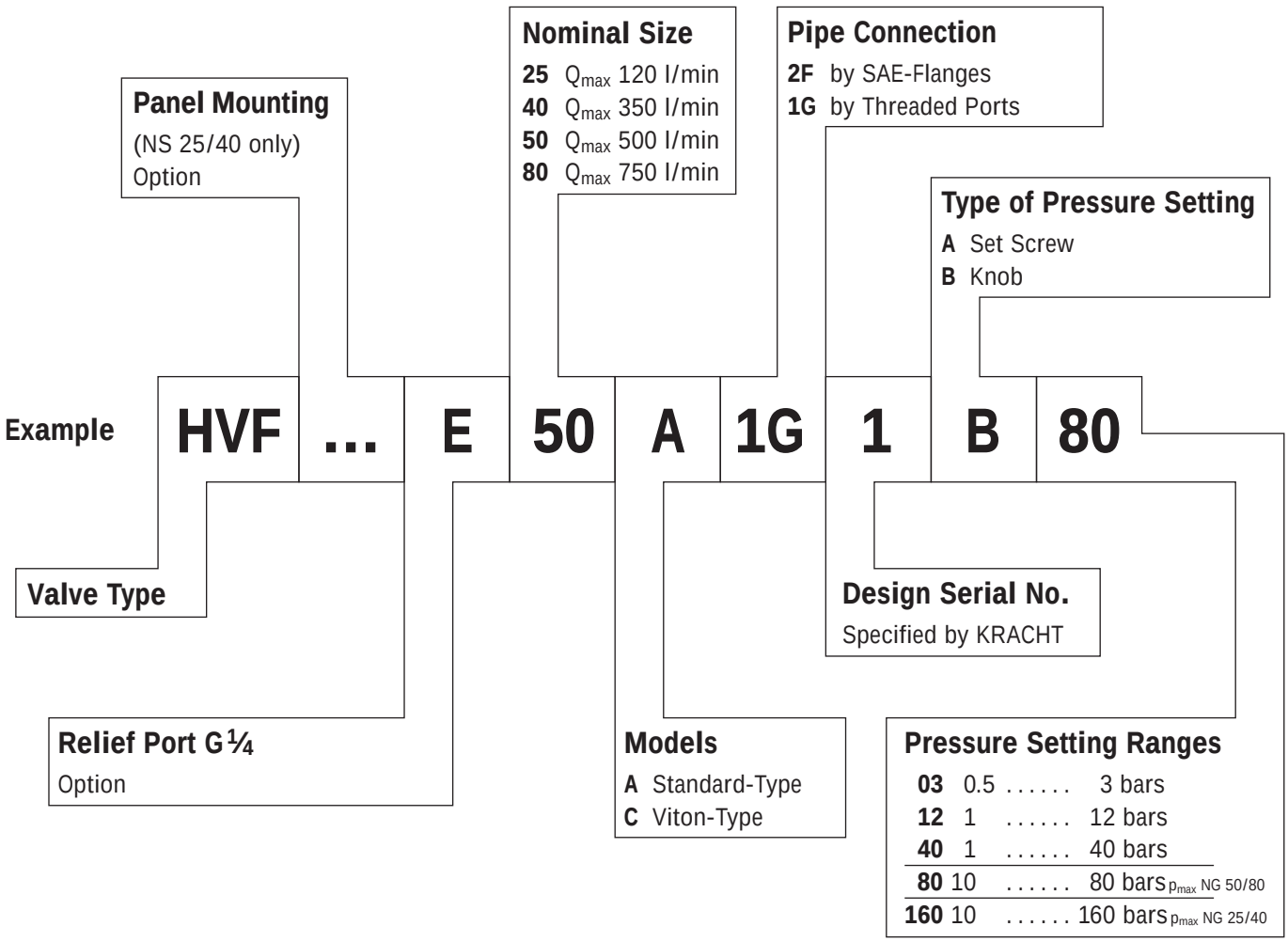


Weight 2.5 kg

Type Key

Nominal Size 25…80

Pressure Relief Valve
pilot operated, flange type

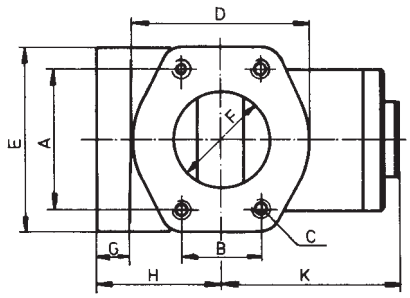


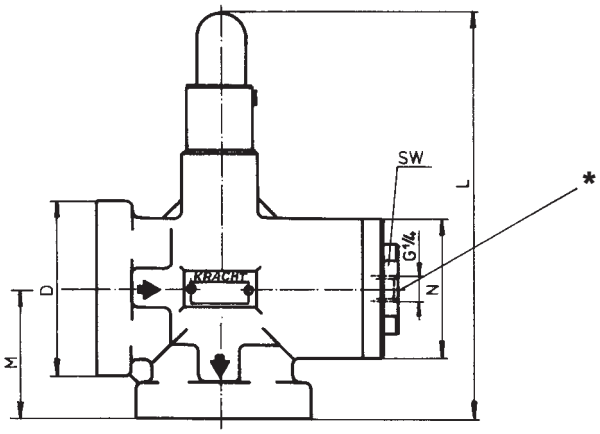
means:

Pressure Relief Valve, Pilot Operated. Flange Type with Relief Port $G^1/_4$. Nominal Size 50 (Q_{max} 500 l/min), Standard Type, with Threaded Ports, Pressure Setting by Knob, Pressure Setting Range: 10 up to 80 bars

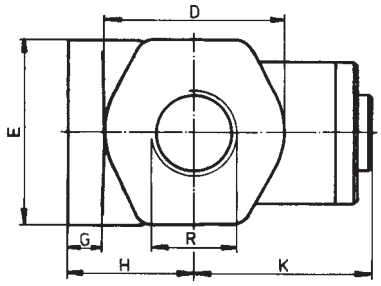
Dimensions

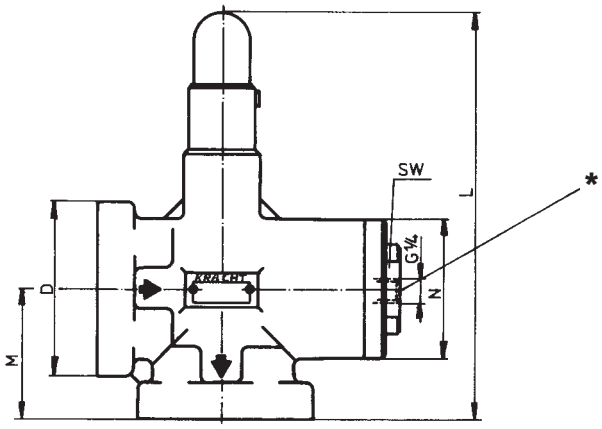
Ordering Code HVF . . 2F 1 A .





Ordering Code HVF . . 1G 1 A .



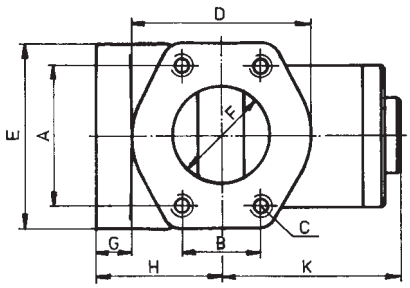


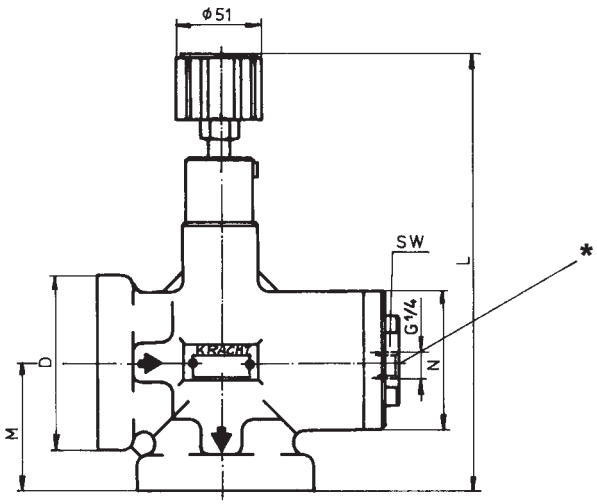
***** Relief Port for Type HVFE

Nom. size	SAE Flange	Thread R	A	B	C	D	E	F	G	H	K	L	M	N	Wrench Size	Weight kg
25	1″	G 1	52.4	26.2	M 10	59	70	26	20	50	75	200	55	Ø 55	24	3.4
40	1½″	G 1½	69.9	35.7	M 12	83	94	39	20	65	95	220	65	Ø 75	36	6.7
50	2″	G 2	77.8	42.9	M 12	97	102	50	20	75	105	240	75	Ø 90	30	10.9
80	3″	G 3	106.4	61.9	M 16	131	135	78	25	110	125	280	110	Ø 105	40	18.1

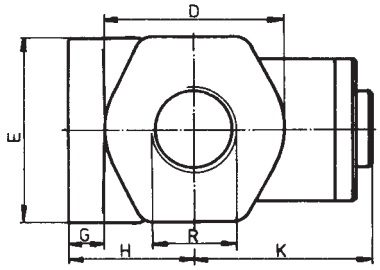
Dimensions

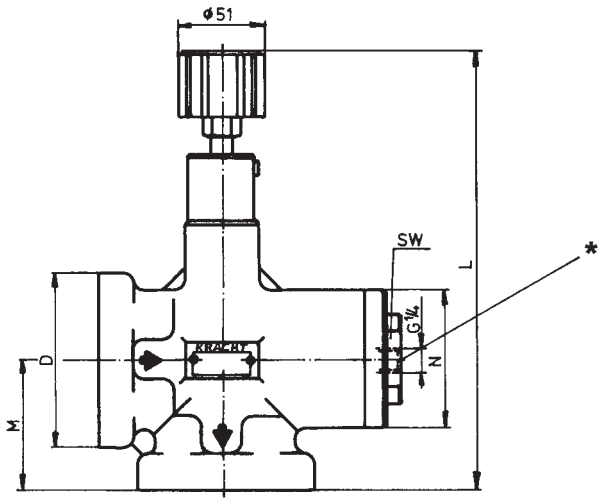
Ordering Code HVF . . 2F 1 B .





Ordering Code HVF . . 1G 1 B .



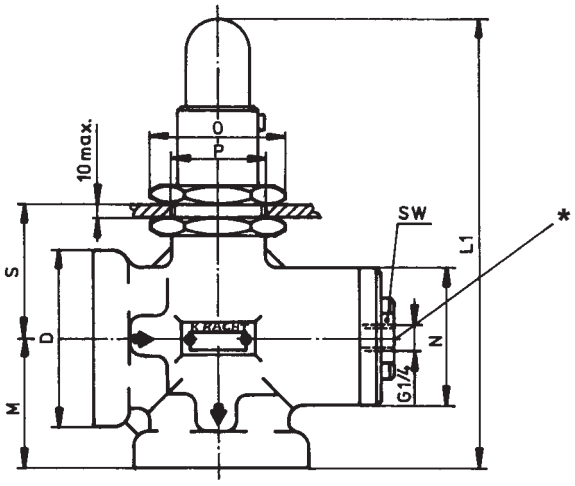


***** Relief Port for Type HVFE

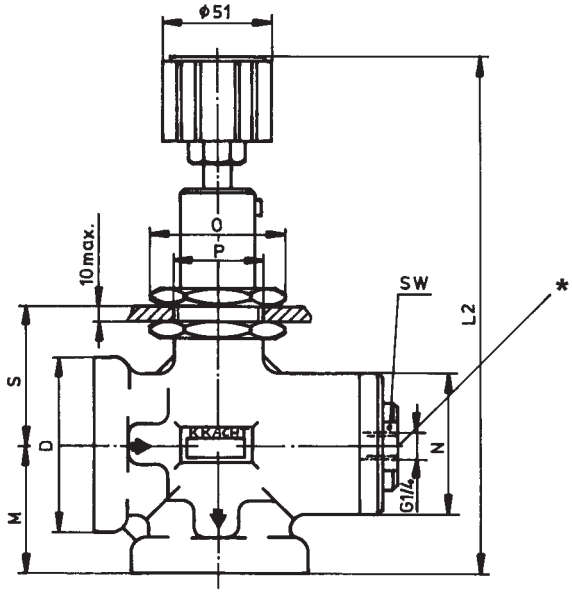
Nom. Size	SAE Flange	Thread R	A	B	C	D	E	F	G	H	K	L	M	N	Wrench Size	Weight kg
25	1″	G 1	52.4	26.2	M 10	59	70	26	20	50	75	229	55	Ø 55	24	3.4
40	1½″	G 1½	69.9	35.7	M 12	83	94	39	20	65	95	246	65	Ø 75	36	6.7
50	2″	G 2	77.8	42.9	M 12	97	102	50	20	75	105	266	75	Ø 90	30	10.9
80	3″	G 3	106.4	61.9	M 16	131	135	78	25	110	125	306	110	Ø 105	40	18.1

Dimensions

Ordering Code HVFM . . 2F 1 A . / HVFM . . 1G 1 A .



Ordering Code HVFM . . 2F 1 B . / HVFM . . 1G 1 B .



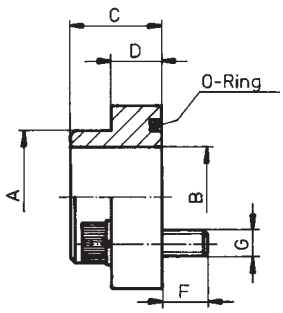
* Relief Port for Type HVFE

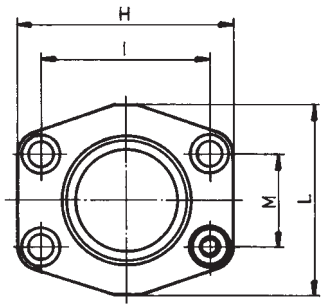
Nom. Size	SAE Flange	Thread R	A	B	C	D	E	F	G	H	K	L_1	L_2	M	N	O	S	Wrench Size	P	Weight kg
25	1″	G 1	52.4	26.2	M 10	59	70	26	20	50	75	200	229	55	Ø 55	55	60	24	M 40 x 1.5	3.4
40	1½″	G 1½	69.9	35.7	M 12	83	94	39	20	65	95	220	246	65	Ø 75	55	60	36	M 40 x 1.5	6.7

Drawing for Dimensions **A, B, C, E, F, G, H, K** see Page 10

Accessories / Ordering Code HVFM 40 A 2F 1 A 60 + 2 x CFS 106-ST

Welding Flange SAE (3000 psi)





Ordering Code	SAE Flange	A	B	C	D	F	G	H	I	L	M	O-Ring	Weight kg
CFS 102-ST	1″	34.5	25	38	18	14	M 10	71	52.4	53	26.2	4131	0.6
CFS 106-ST	1½″	48.6	38	44	25	18	M 12	94	70	77	35.7	4187	1.2
CFS 108-ST	2″	61	50	45	25	18	M 12	103	77.8	89	42.9	4225	1.5
CFS 112-ST	3″	89	73	50	27	23	M 16	135	106.4	124	62	4337	2.7

KRACHT

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HV/HVF.e.8.99

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