

HVF

PRESSURE RELIEF VALVES



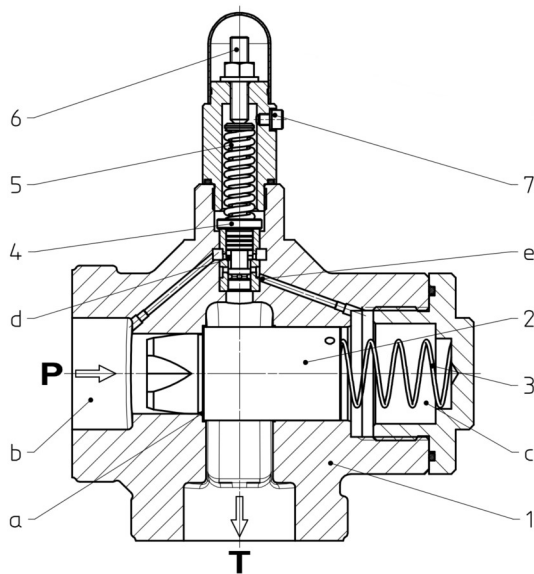
KRACHT®
FLUID TECHNOLOGY AND SYSTEMS

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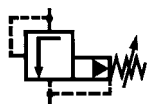
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General

Construction



- P Pressure connection
- T Tank connection
- a Ring surface
- b Valve chamber
- c Spring chamber
- d Ring surface
- e Bore
- 1 Housing
- 2 Valve piston
- 3 Compression spring
- 4 Pilot valve
- 5 Compression spring
- 6 Adjustment screw
- 7 Venting screw



Description

The HVF pressure relief valve is a pilot-operated slide valve for installation in pipelines and is used to protect medium-pressure hydraulic circuits up to 160 bar. The line connection can be made using an SAE flange or Whitworth pipe thread.

Function

Main control stage

The sleeve valve (2) is pressed through the compressed spring (3) against the ring surface (a), thus blocking the pressure port P from the tank connection (T). The valve chamber (b) upstream of the sleeve valve and the spring chamber (c) downstream of the sleeve valve are connected to the pilot stage.

Pilot stage

When the compression spring (5) is applied to the pilot valve (4), it is in equilibrium with the working pressure acting on the annular surface (d). If the spring force is exceeded by the working pressure, the connection behind the sleeve valve is shut off. The spring chamber is then connected to the tank connection via the bore (e) in the pilot valve. This ensures that the sleeve valve is released from the pressure connection to the tank connection when the operating pressure set by the adjusting screw (6) is reached. With vertical installation, i.e. with the adjusting screw at the top, the spring chamber can be freed from air accumulations by opening the vent screw (7). This is needed for vibration-free operation.

Technical data

General characteristics

Type of construction	Sliding piston relief valve – pilot operated
Mounting types	Pipe installation, panel installation
Hydraulic connections	Flange connection SAE (ISO 6162-1 / SAE J518) Pipe thread (ISO 228-1)
Mounting position	Any
Actuation types	Adjusting screw, rotary knob
Pressurised fluids	Hydraulic oils acc. to DIN 51 524/25 (other fluids on request)

Hydraulic characteristics

Nominal sizes	10 · 25 · 40
Maximum flow rates	Nominal size 10 50 l/min Nominal size 25 120 l/min Nominal size 40 350 l/min
Nominal pressure	160 bar
Adjustment ranges / Response pressures	0.5 ... 160 bar
Viscosities	13 ... 600 mm ² /s

Temperatures

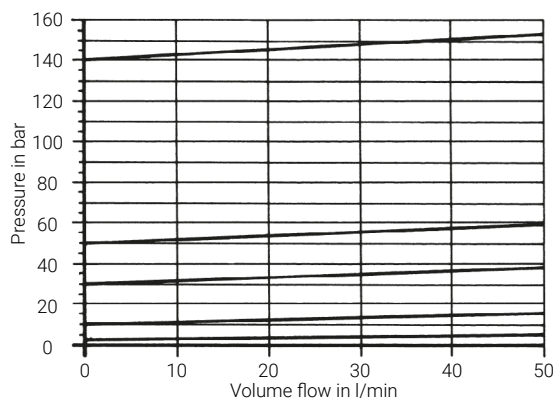
Ambient temperatures	-20 ... 60 °C
Media temperatures	-20 ... 80 °C

Materials

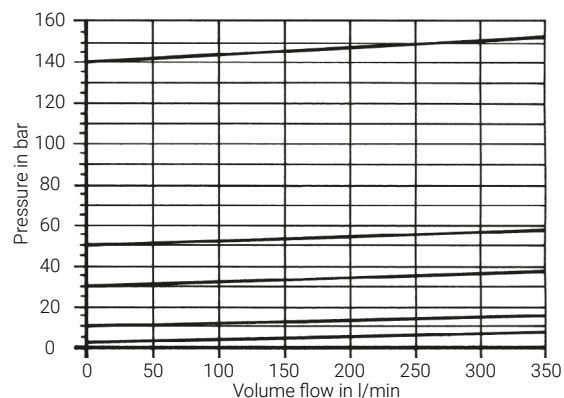
Housing materials	EN-GJL-300, EN-GJS-400-15
Sealing materials	FKM, NBR

Δp-Q characteristic curves (Viscosity = 34 mm²/s)

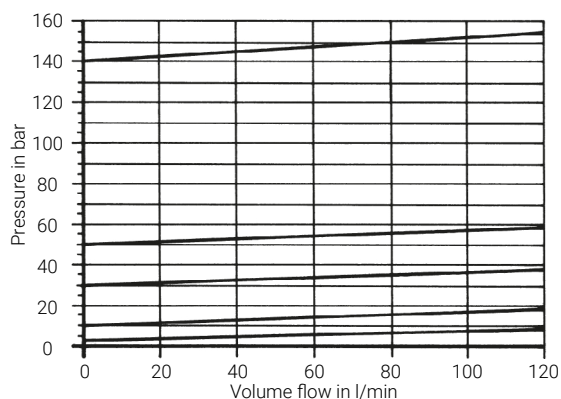
Nominal size 10



Nominal size 40



Nominal size 25



Type key

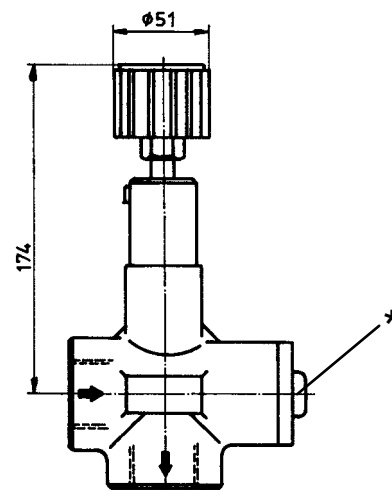
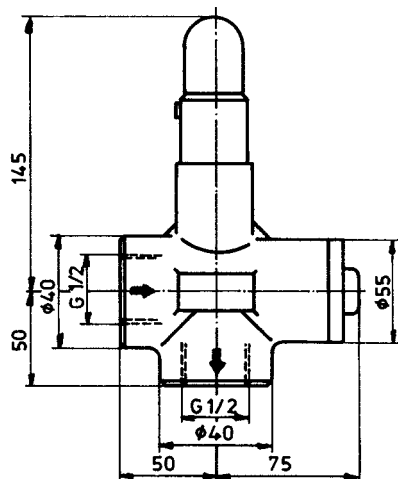
HVF	10	V	1	F	1	S	003	S	1	A
1	2	3	4	5	6	7	8	9	10	11

1 Product	
HVF	Pressure relief valve
2 Nominal sizes	
10 · 25 · 40	
3 Type of construction	
V	Sliding piston relief valve – pilot operated
4 Housing materials	
1	EN-GJL-300
2	EN-GJS-400-15
5 Sealing materials	
F	FKM
N	NBR
6 Pressure adjustment types	
1	Manual adjustment screw, pipe installation
2	Manual knob handle, pipe installation
3	Manual adjustment screw, panel installation
4	Manual knob handle, panel installation
7 Hydraulic connections	
S	Flange connection SAE (ISO 6162-1 / SAE J518) (only HVF 25 and 40)
R	Pipe thread (ISO 228-1)
8 Pressure stages (pressure setting ranges)	
003	0.5 ... 3 bar
012	1 ... 12 bar
040	1 ... 40 bar
080	10 ... 80 bar
160	10 ... 160 bar
9 Media temperatures	
S	-20 ... 80 °C
10 Viscosities / Damping	
1	13 ... 600 mm ² /s
11 Hydraulic controls	
A	Without hydraulic control
E	External spring chamber relief G ¹ / ₄

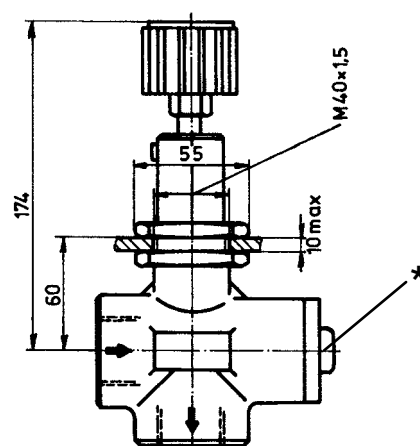
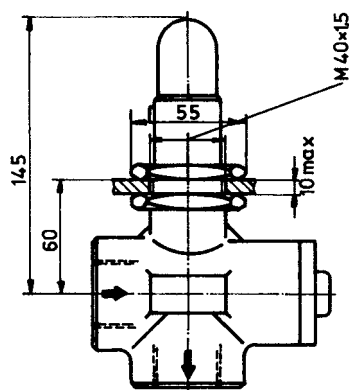
Dimensions / Weights

Nominal size 10

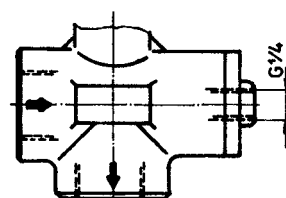
Actuation types	Adjusting screw	Rotary knob
Mounting types	Pipe installation	Pipe installation
Hydraulic connections	Pipe thread	Pipe thread



Actuation types	Adjusting screw	Rotary knob
Mounting types	Panel installation	Panel installation
Hydraulic connections	Pipe thread	Pipe thread



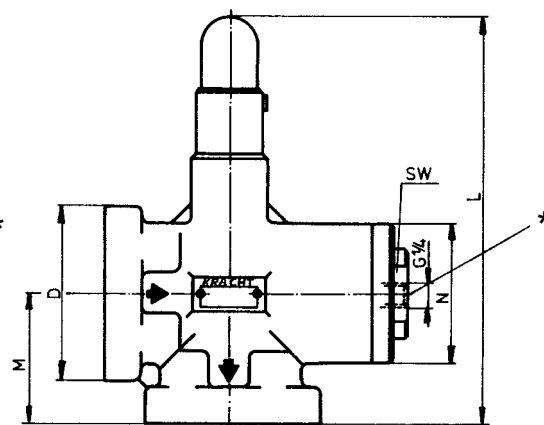
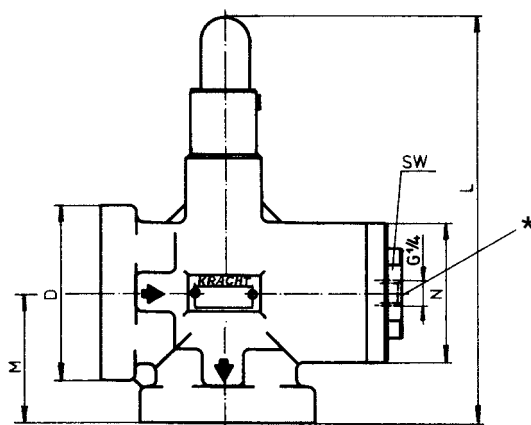
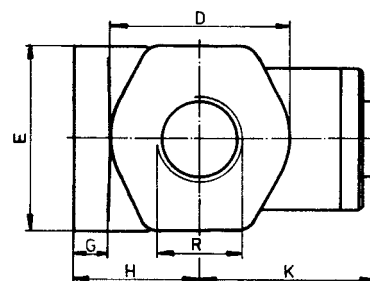
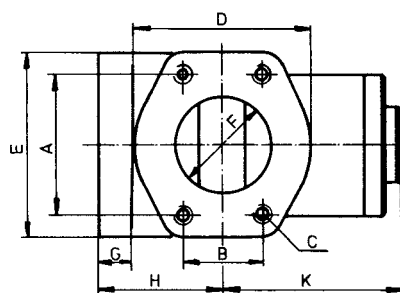
* External spring chamber relief G $\frac{1}{4}$ (Pipe thread)



Dimensions / Weights

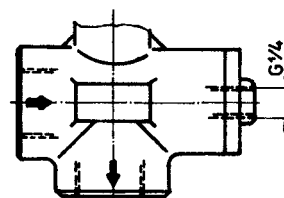
Nominal sizes 25 ... 40

Actuation types	Adjusting screw	Adjusting screw
Mounting types	Pipe installation	Pipe installation
Hydraulic connections	Flange connection SAE	Pipe thread



Nominal sizes	SAE flanges	R	A	B	C	D	E	F	G	H	K	L	M	N	SW	Weights
25	1"	G1	52.4	26.2	M10	59	70	26	20	50	75	200	55	55	24	3.4
40	1 1/2"	G1 1/2	69.9	35.7	M12	83	94	39	20	65	95	220	65	75	36	6.7

* External spring chamber relief G¹/₄ (Pipe thread)

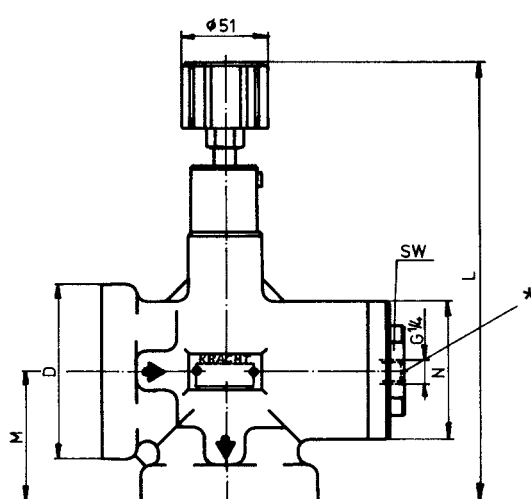
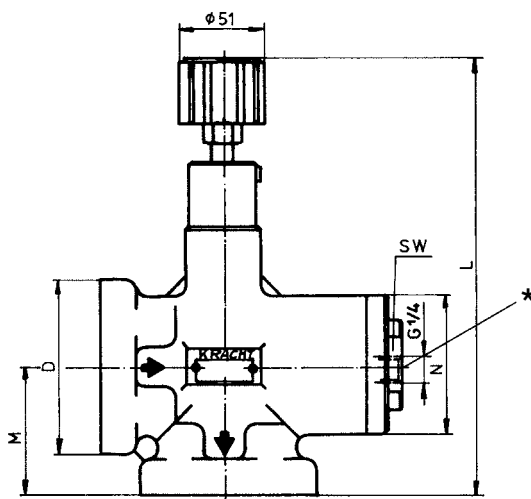
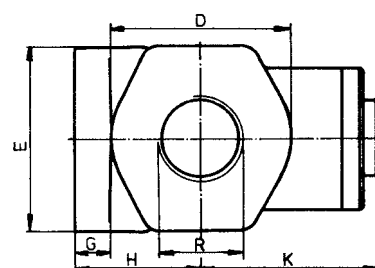
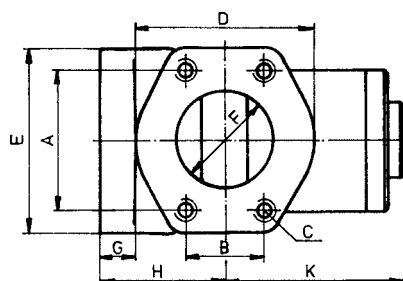


Dimensions in mm / Weights in kg

Dimensions / Weights

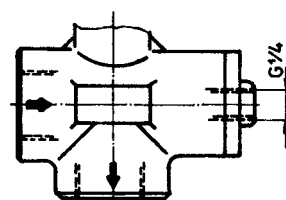
Nominal sizes 25 ... 40

Actuation types	Rotary knob	Rotary knob
Mounting types	Pipe installation	Pipe installation
Hydraulic connections	Flange connection SAE	Pipe thread



Nominal sizes	SAE flanges	R	A	B	C	D	E	F	G	H	K	L	M	N	SW	Weights
25	1"	G1	52.4	26.2	M10	59	70	26	20	50	75	229	55	55	24	3.4
40	1 1/2"	G1 1/2	69.9	35.7	M12	83	94	39	20	65	95	246	65	75	36	6.7

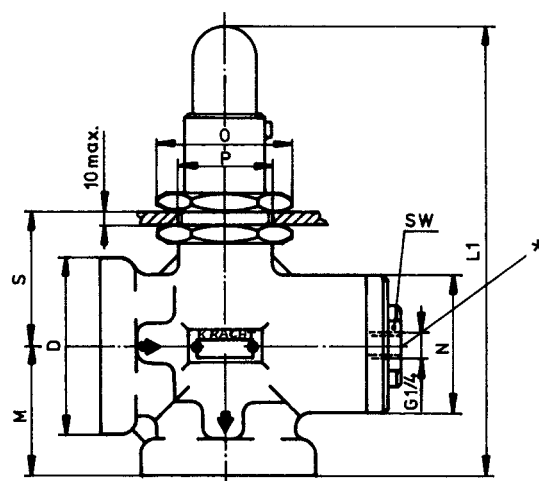
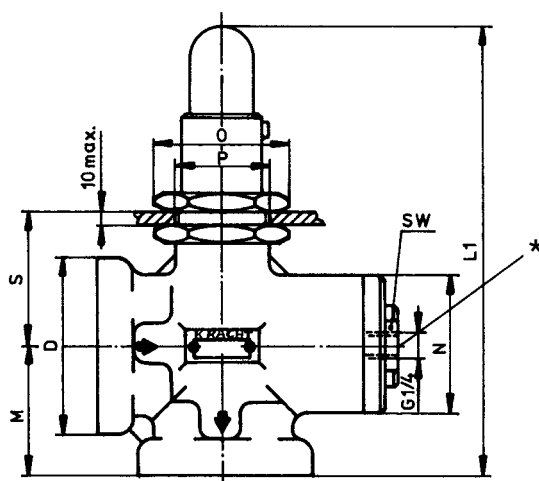
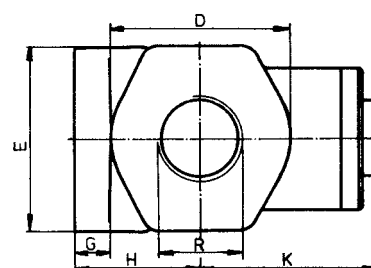
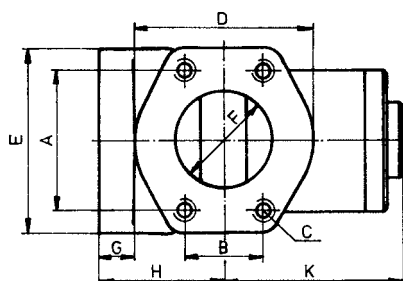
* External spring chamber relief G 1/4 (Pipe thread)



Dimensions / Weights

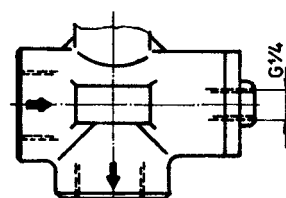
Nominal sizes 25 ... 40

Actuation types	Adjusting screw	Adjusting screw
Mounting types	Panel installation	Panel installation
Hydraulic connections	Flange connection SAE	Pipe thread



Nominal sizes	SAE flanges	R	A	B	C	D	E	F	G	H	K	L ₁	M	N	O	S	SW	P	Weights
25	1"	G1	52.4	26.2	M10	59	70	26	20	50	75	200	55	55	55	60	24	M40 x 1.5	3.4
40	1 1/2"	G1 1/2	69.9	35.7	M12	83	94	39	20	65	95	220	65	75	55	60	36	M40 x 1.5	6.7

* External spring chamber relief G¹/₄ (Pipe thread)

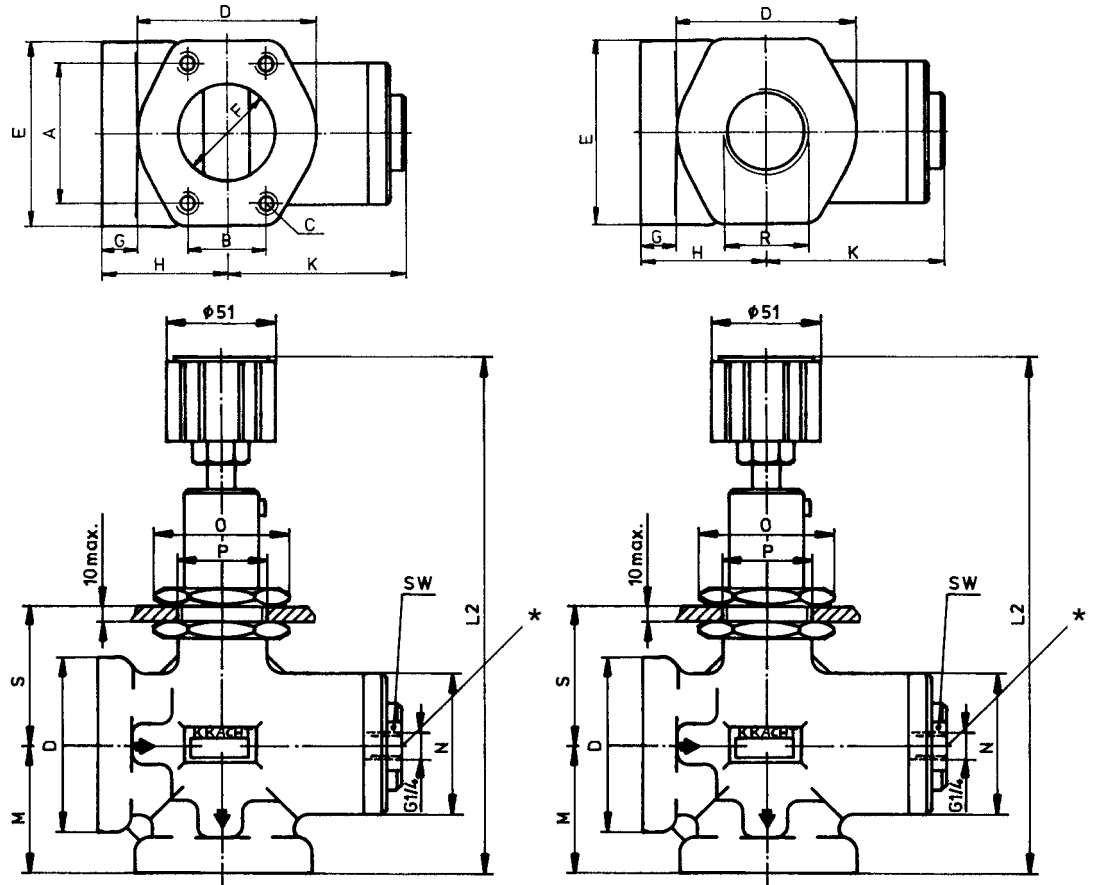


Dimensions in mm / Weights in kg

Dimensions / Weights

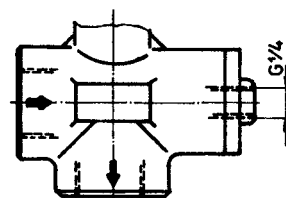
Nominal sizes 25 ... 40

Actuation types	Rotary knob	Rotary knob
Mounting types	Panel installation	Panel installation
Hydraulic connections	Flange connection SAE	Pipe thread



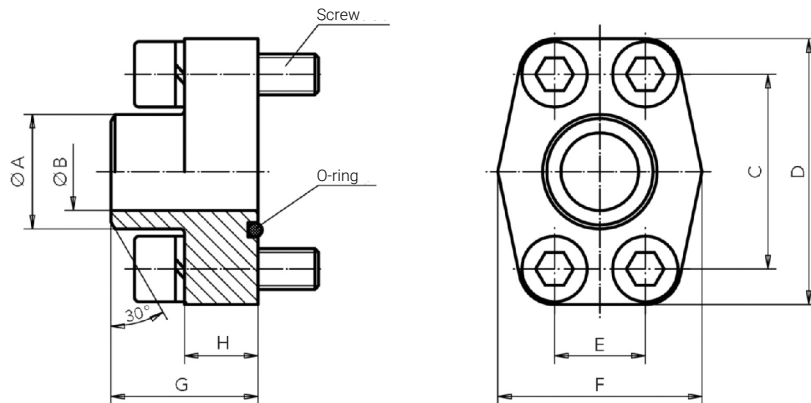
Nominal sizes	SAE flanges	R	A	B	C	D	E	F	G	H	K	L ₂	M	N	O	S	SW	P	Weights
25	1"	G1	52.4	26.2	M10	59	70	26	20	50	75	229	55	55	55	60	24	M40 x 1.5	3.4
40	1 1/2"	G1 1/2	69.9	35.7	M12	83	94	39	20	65	95	246	65	75	55	60	36	M40 x 1.5	6.7

* External spring chamber relief G^{1/4} (Pipe thread)



Dimensions / Weights

Weld-on flange SAE (ISO 6162-1)



SAE flanges	A	B	C	D	E	F	G	H	Screws 10.9	O-rings	Maximum pressures in bar	Weights
1"	34.0	25.0	52.37	70	26.19	55	38	18	M10x35	32.92 x 3.53	315	0.54
1 1/2"	48.6	38.0	69.85	93	35.71	78	78	25	M12x45	47.22 x 3.53	200	1.24

Notes

Notes

Notes

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