

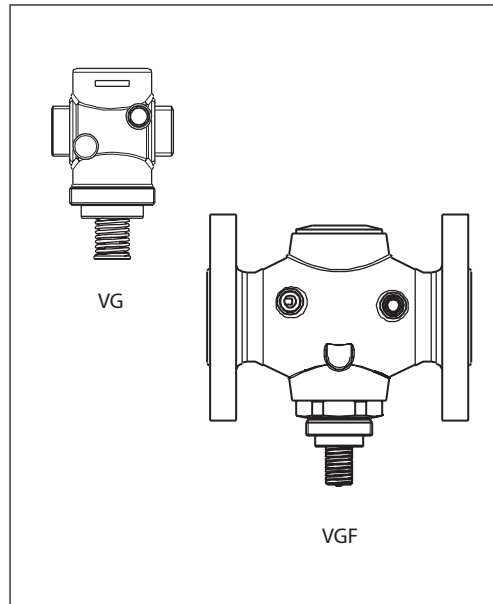
Data sheet

2- way valve, pressure relieved (PN 25)

VG - external thread

VGF - flange

Description



2-way valves VG and VGF are pressure relieved valves designed to be combined with:

- AVT Temperature actuators
- STM Safety temperature monitors
- STL Safety temperature limiters

In combination with AVT temperature actuators, valves can be used primarily for domestic hot water (DHW) production:

- Hot water tanks
- Storage charge systems
- Instantaneous domestic hot water production

Main data:

- DN 15 - 50
- k_{vs} 0.4 - 25 m³/h
- PN 25
- Temperature:
 - Circ. water / glycolic water up to 30%: 2 ... 150 °C
- Connections:
 - Ext. thread (weld-on, thread and flange tailpieces)
 - Flange

Ordering

Example:
Valve, DN 15, k_{vs} 1.6, PN 25,
 t_{max} 150 °C, ext. thread

- 1x VG DN 15 valve
Code No: **065B0772**

Option:
- 1x Weld-on tailpieces
Code No: **003H6908**

VG, VGF valve

Picture	DN (mm)	k_{vs} (m ³ /h)	PN	$t_{max.}$ (°C)	Connection	Code No.
	15	0.4	25	150	Cylindrical external thread acc. to ISO 228/1	065B0770
		1.0				065B0771
		1.6				065B0772
		2.5				065B0773
		4.0				065B0774
	20	6.3				065B0775
	25	8.0				065B0776
	32	12.5				065B0777
	40	16	065B0778			
	50	20	065B0779			
	15	4.0	065B0780			
	20	6.3	065B0781			
	25	8.0	065B0782			
	32	12.5	065B0783			
	40	20	065B0784			
50	25	065B0785				

Ordering (continuous)
Accessories

Picture	Type designation	DN	Connection	Code No.
	Weld-on tailpieces	15	-	003H6908
		20		003H6909
		25		003H6910
		32		003H6911
		40		003H6912
		50		003H6913
	External thread tailpieces	15	Conical ext. thread acc. to EN 10226-1	R 1/2" 003H6902
		20		R 3/4" 003H6903
		25		R 1" 003H6904
		32		R 1 1/4" 003H6905
	Flange tailpieces	15	Flanges PN 25, acc. to EN 1092-2	003H6915
		20		003H6916
		25		003H6917

Service kits

Picture	Type designation	DN (mm)	k _{vs} (m ³ /h)	Code No.
	Valve insert	15	0.4	003H6869
			1.0	003H6870
			1.6	003H6871
			2.5	003H6872
			4.0	003H6873
		20	6.3	003H6874
		25	8.0	003H6875
		32 / 40 / 50	12.5 / 16 / 20 / 25	003H6876

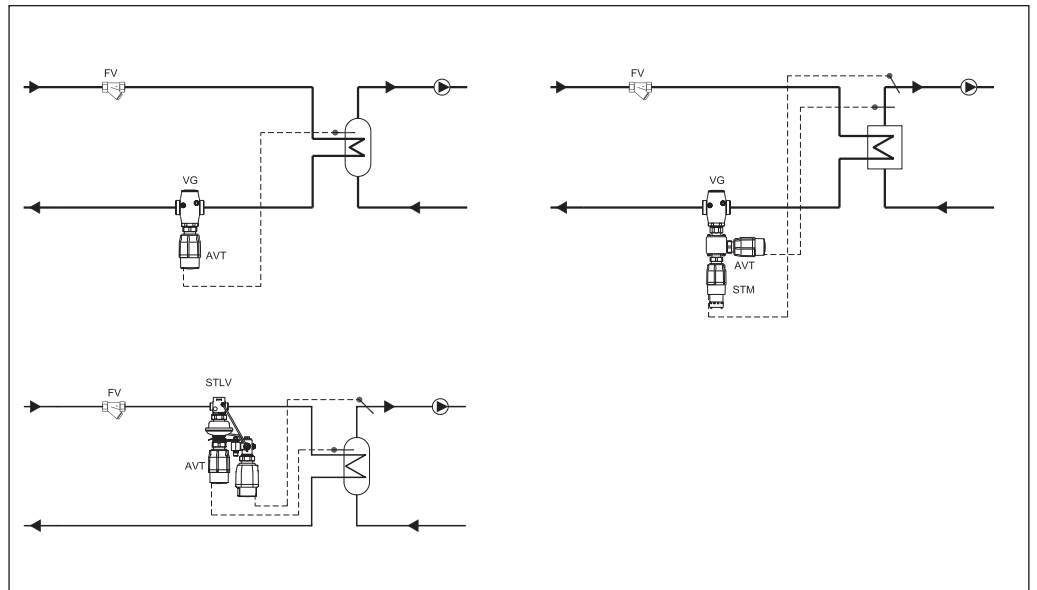
Technical data

Nominal diameter		DN	15					20	25	32	40	50
k _{vs} value		m ³ /h	0.4	1.0	1.6	2.5	4.0	6.3	8	12.5	16/20 ¹⁾	20/25 ¹⁾
Cavitation factor z *			≥ 0.6									
Leakage acc. to standard IEC 534			0.02					0.05				
Nominal pressure		PN	25									
Max. differential pressure		bar	20					16				
Medium			Circulation water / glycolic water up to 30%									
Medium pH			Min. 7, max. 10									
Medium temperature			2 ... 150 °C									
Connections	valve		Thread and flange									
	tailpieces		Weld-on and flange					Weld-on				
			External thread					-				
Materials												
Valve body	thread		Red bronze CuSn5ZnPb (Rg5)					Ductile iron EN-GJS-400-18-LT (GGG 40.3)				
	flange		Ductile iron EN-GJS-400-18-LT (GGG 40.3)									
Valve seat			Stainless steel, mat. No. 1.4571									
Valve cone			Dezincing free brass CuZn36Pb2As									
Sealing			EPDM									

* k_v/k_{vs} ≤ 0.5 at DN 25 and higher

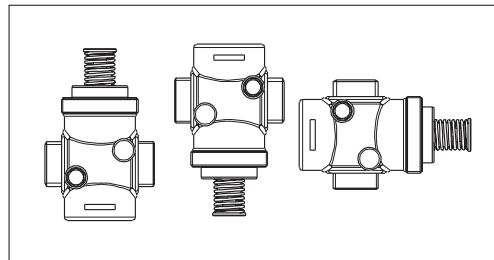
¹⁾ Flange valve body

Application principles

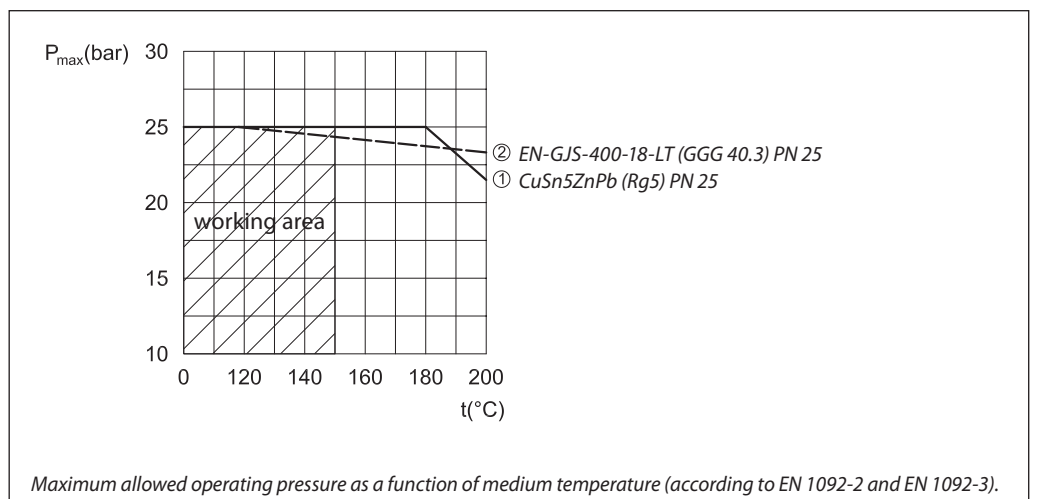


Installation positions

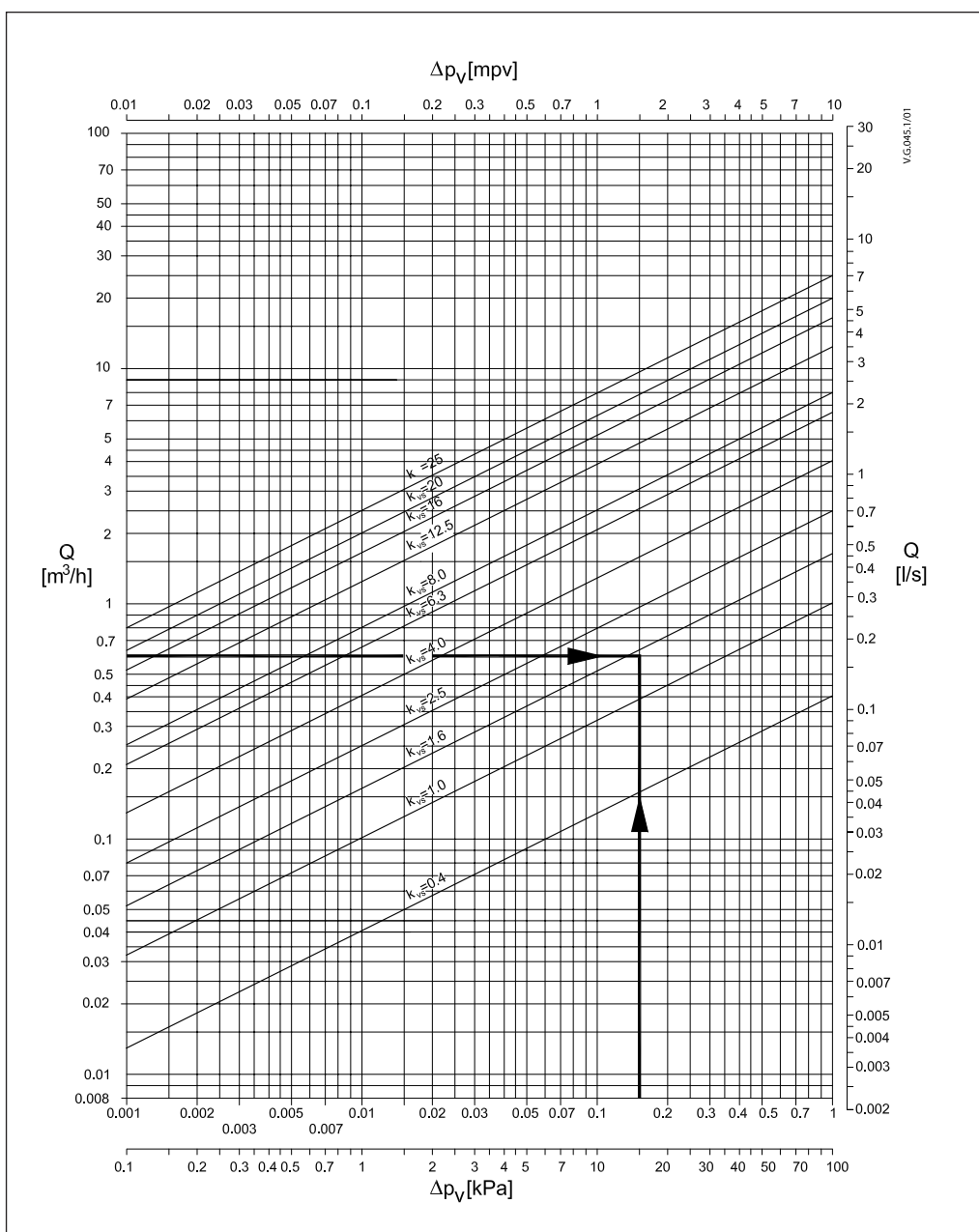
Valves can be installed in any position.



Pressure temperature diagram



Sizing



Given data:

$P_{max} = 14 \text{ kW}$

$\Delta t = 20 \text{ K}$

$\Delta p_v = 0.15 \text{ bar}$

P_{max} - heating power (kW)

Δt - temperature difference (K)

Δp_v - differential pressure across the valve

Maximum flow Q_{max} (m³/h) through the valve is calculated according to formula:

$$Q_{max} = \frac{P_{max} \times 0.86}{\Delta t} = \frac{14 \times 0.86}{20}$$

$$Q_{max} = 0.6 \text{ m}^3/\text{h}$$

k_v value is calculated according to formula:

$$k_v = \frac{Q_{max}}{\sqrt{\Delta p_v}} = \frac{0.6}{\sqrt{0.15}}$$

$$k_v = 1.5 \text{ m}^3/\text{h}$$

Chosen $k_{vs} = 1.6 \text{ m}^3/\text{h}$

or read from the sizing diagram by taking a line through Q scale (0.6 m³/h) and Δp_v scale (0.15 bar) to intersect k_v -scale at 1.5 m³/h

Chosen $k_{vs} = 1.6 \text{ m}^3/\text{h}$

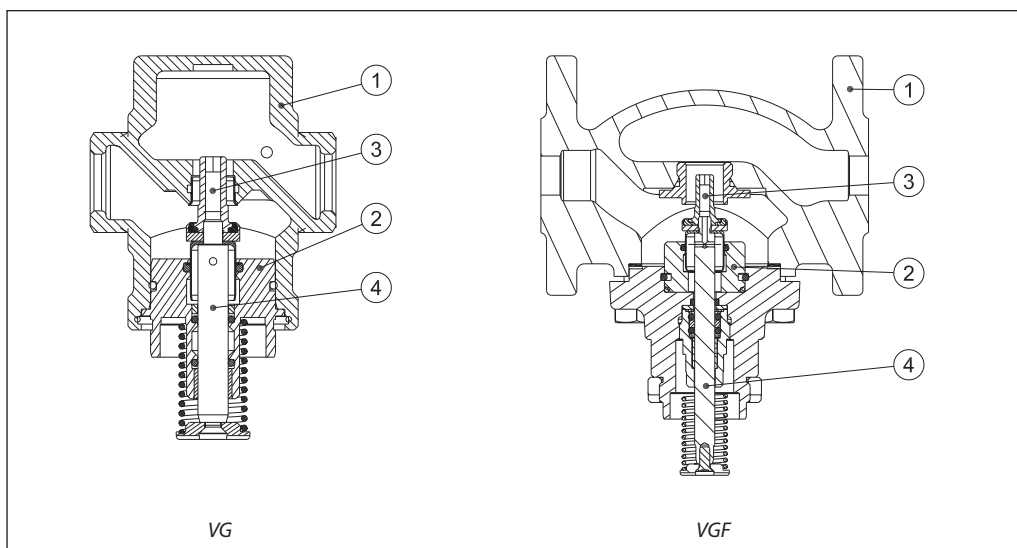
Solution:

The example selects

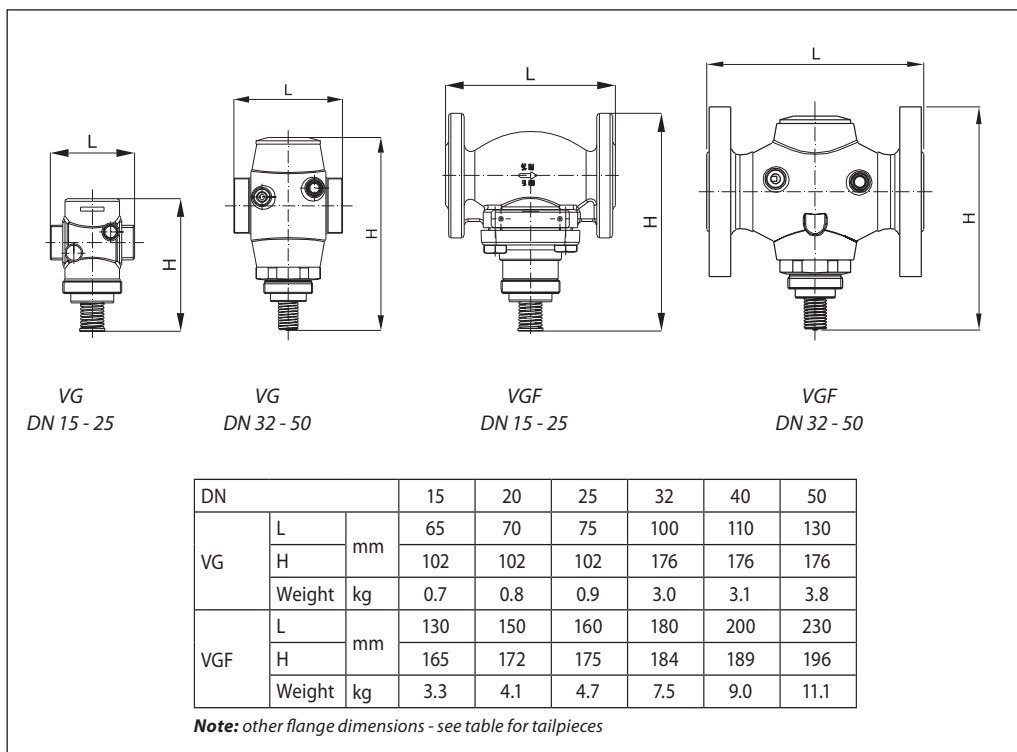
- 1) ext. thread valve VG DN 15, k_{vs} value 1.6 or
- 2) flange valve VGF DN 15, k_{vs} value 1.6

Design

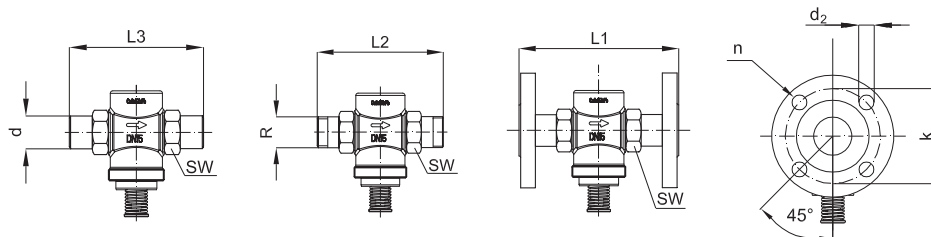
- 1. Valve body
- 2. Valve insert
- 3. Pressure relieved valve cone
- 4. Valve stem



Dimensions



Dimensions (continuous)



DN		15	20	25	32	40	50
SW		32 (G ¾A)	41 (G 1A)	50 (G 1¼A)	63 (G 1¾A)	70 (G 2A)	82 (G 2½A)
d		21	26	33	42	47	60
R ¹⁾		½	¾	1	1 ¼	-	-
L1 ²⁾		130	150	160	-	-	-
L2	mm	131	144	160	177	-	-
L3		139	154	159	184	204	234
k		65	75	85	100	110	125
d ₂		14	14	14	18	18	18
n		4	4	4	4	4	4

¹⁾ Conical ext. thread acc. to EN 10226-1

²⁾ Flanges PN 25, acc. to EN 1092-2

