

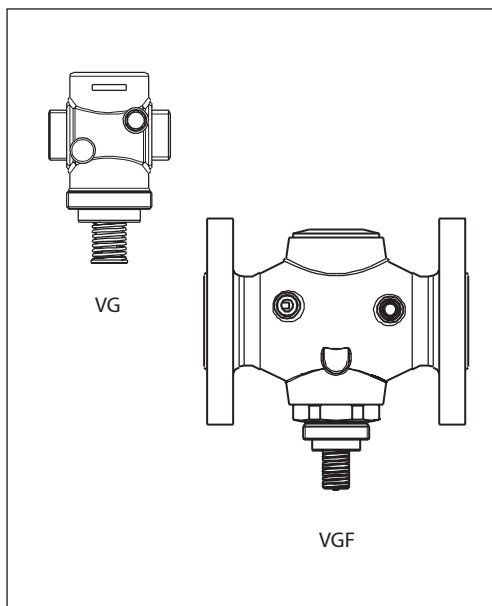
Data sheet

2- way valve, pressure relieved (PN 25)

VG - external thread

VGF - flange

Description



2-way valves VG and VG F 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, VG F 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	G 3/4 A	065B0770
		1.0					065B0771
		1.6					065B0772
		2.5					065B0773
		4.0					065B0774
	20	6.3				G 1 A	065B0775
	25	8.0				G 1 1/4 A	065B0776
	32	12.5				G 1 3/4 A	065B0777
	40	16				G 2 A	065B0778
	50	20				G 2 1/2 A	065B0779
	15	4.0	25	150	Flanges PN 25, acc. to EN 1092-2		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} (m³/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

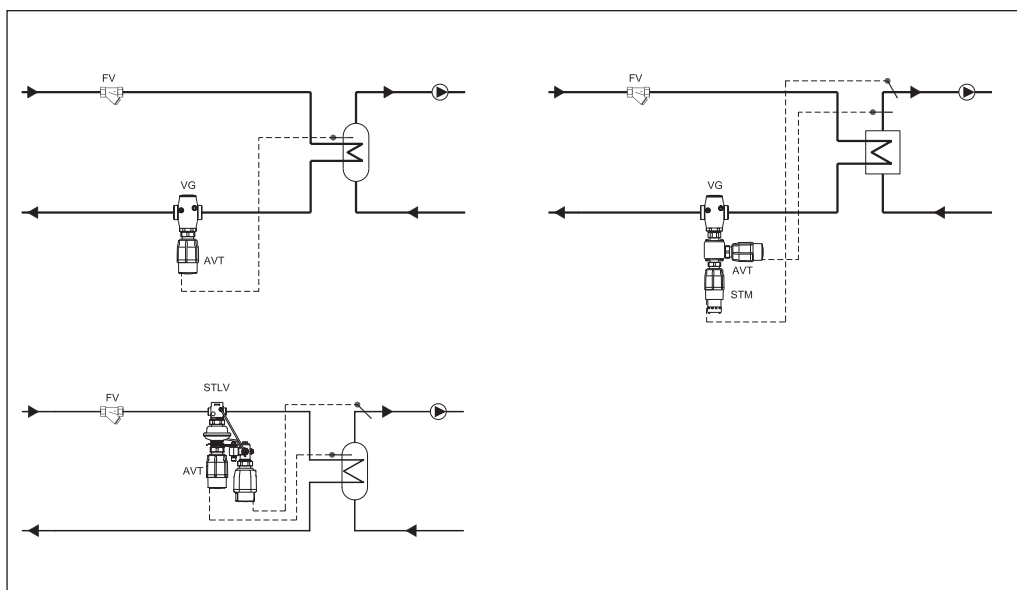
Technical data

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

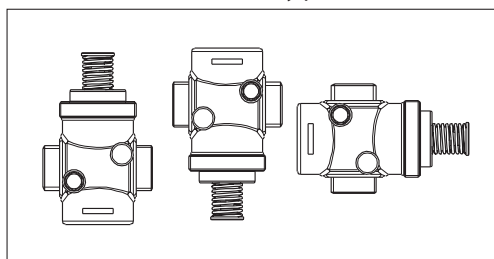
¹⁾ Flange valve body

Application principles

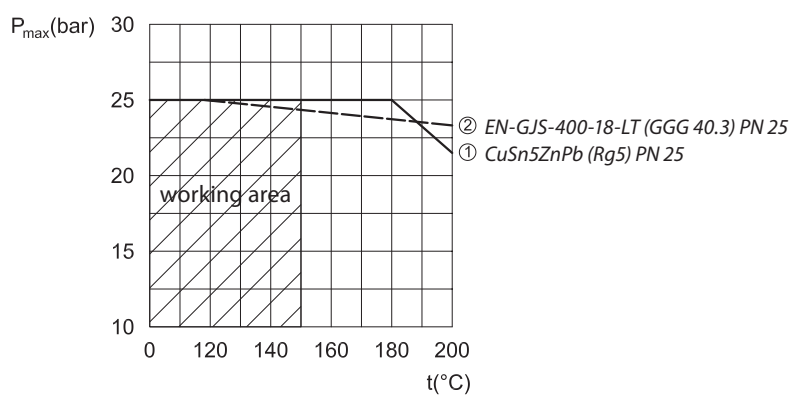


Installation positions

Valves can be installed in any position.

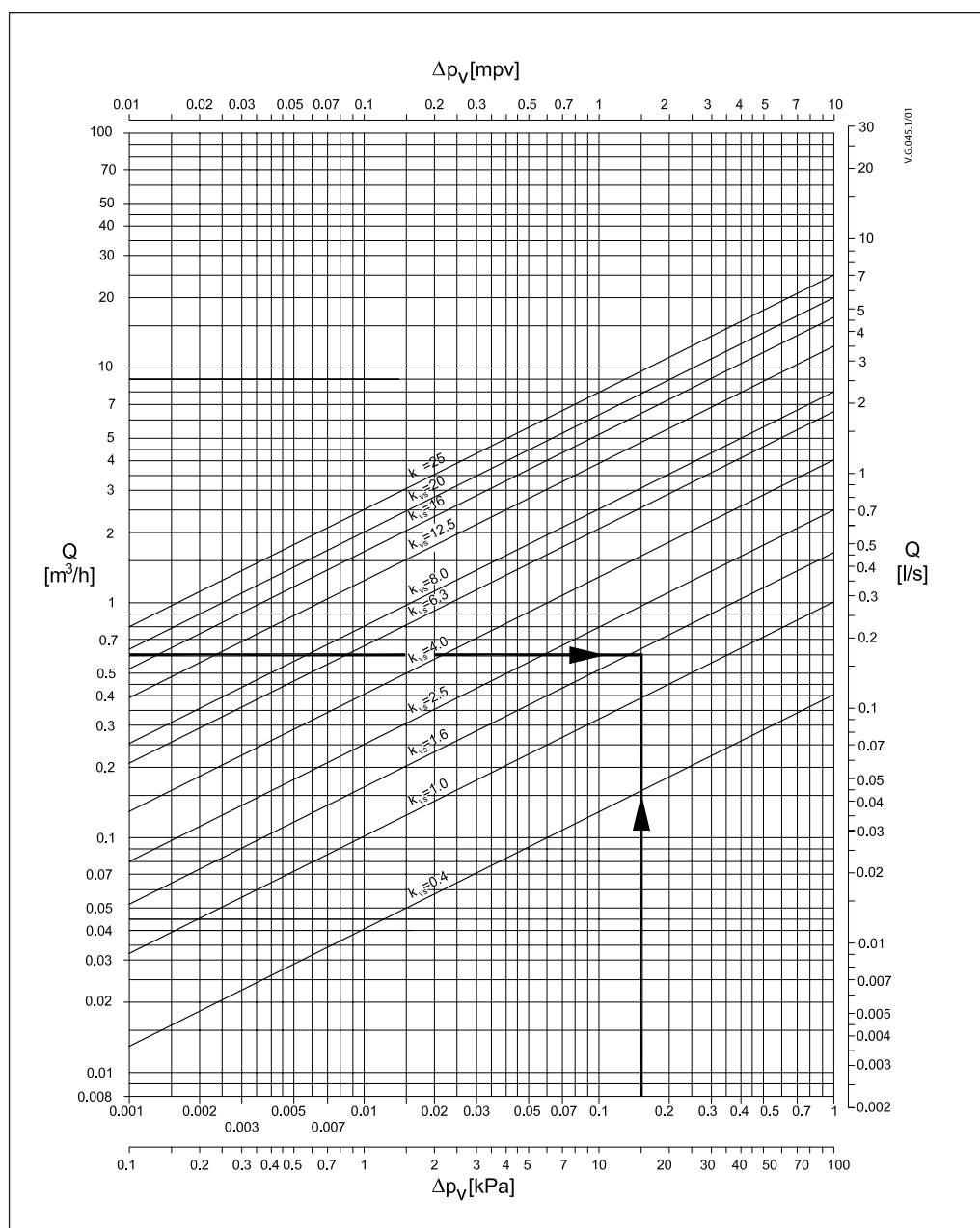


Pressure temperature diagram



Maximum allowed operating pressure as a function of medium temperature (according to EN 1092-2 and EN 1092-3).

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

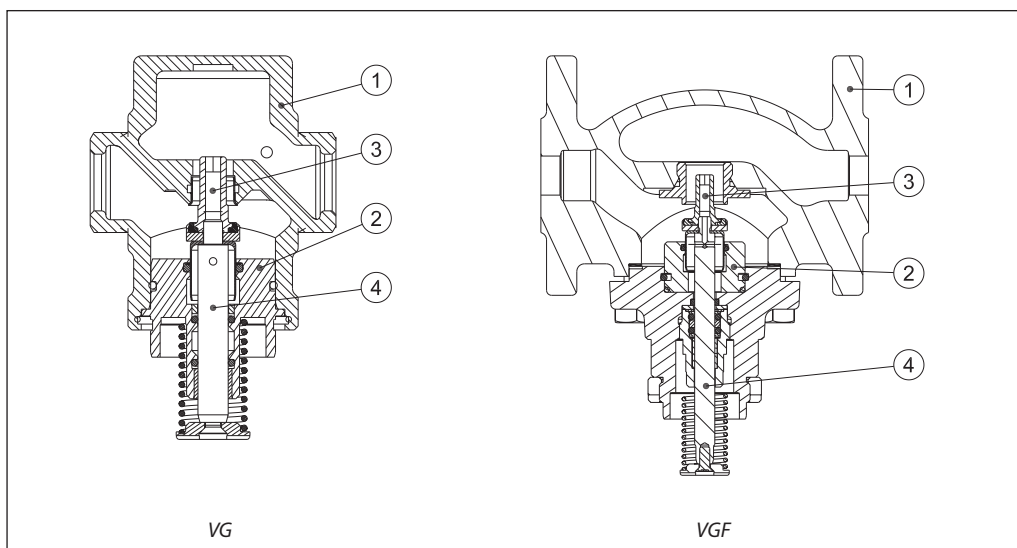
Solution:

The example selects

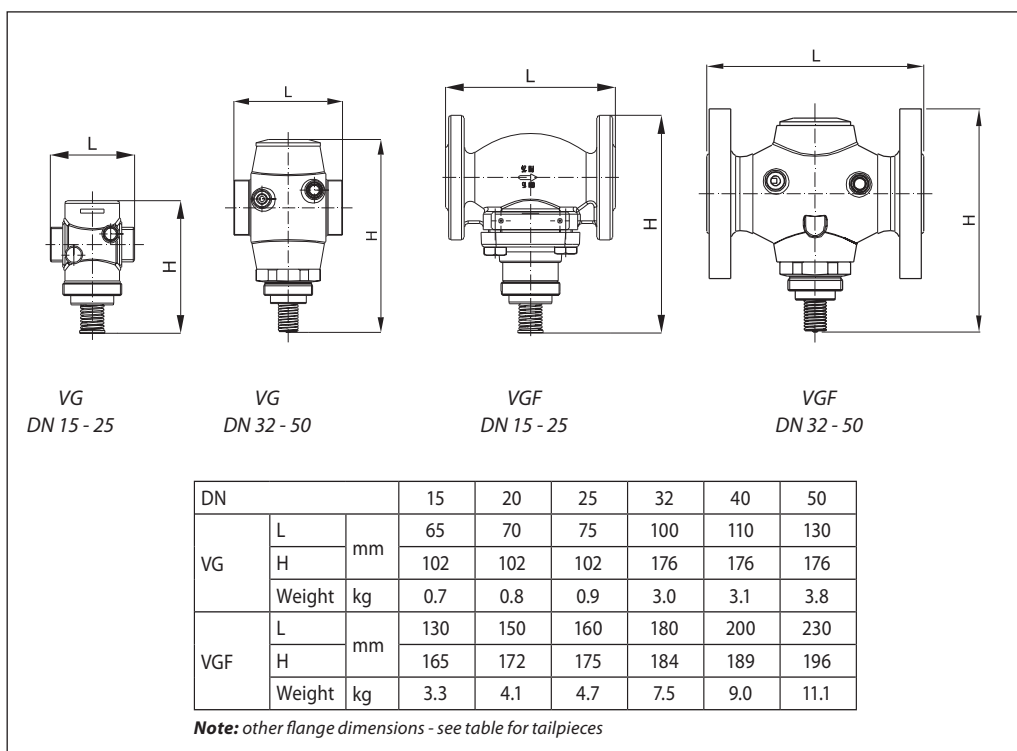
- 1) ext. thread valve VG DN 15, k_{vs} value 1.6 or
- 2) flange valve VGF DN 15, k_{vs} value 1.6

Design

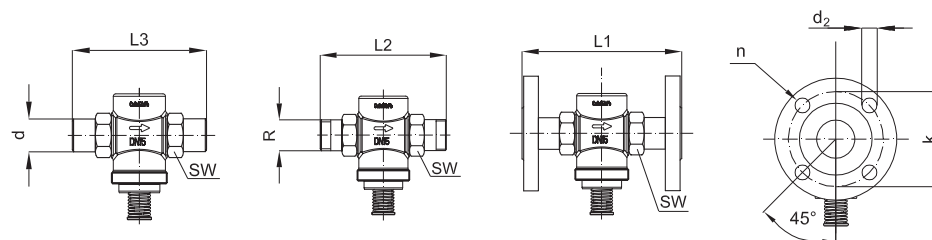
1. Valve body
2. Valve insert
3. Pressure relieved valve cone
4. Valve stem



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

