Two-port seat valves with male thread, PN16

VVG44...

Two-port seat valves with male thread, PN16

- **Bronze Rg5**
- **DN15 ... DN40 mm (½ ...1½")**
- **k_{vs} 0.25 ... 25 m^3/h**
- **Stroke 5.5 mm**
- **Manual adjustment by means of mounted knob**
- **Can be equipped with SQS35... or SQS65... actuators**
- **Fittings can be delivered separately**

Application

In small or medium-sized heating, ventilating and air conditioning plants as a **control or safety shutoff valve. For closed circuits only.**

Media

Medium	Temperature
Cooling water **Chilled water** **Low temperature hot water** **Water with anti-freeze** up to max. 50 % vol.	+2 ... +120 °C

Type summary

Type	**DN** [mm]	[inch]	**k_{vs}** [m^3/h]	**S_v**	**$\Delta p_{vmax.}$** [kPa]
VVG44.15-0.25	15	½"	0.25	> 50	400
VVG44.15-0.4			0.4		
VVG44.15-0.63			0.63		
VVG44.15-1			1		
VVG44.15-1.6			1.6	> 100	
VVG44.15-2.5			2.5		
VVG44.15-4			4		
VVG44.20-6.3	20	¾"	6.3		
VVG44.25-10	25	1"	10		300
VVG44.32-16	32	1 ¼"	16		200
VVG44.40-25	40	1 ½"	25		100

DN = Nominal diameter
k_{vs} = Nominal flow value as per VDI 2173
S_v = Rangeability as per VDI 2173

$\Delta p_{vmax.}$ = Max. permissible differential pressure across the valve's control path, valid for the entire stroke range

Ordering

Indicate type.
Example: **VVG44.25-10**
The fittings must be ordered separately.

Delivery

The valve, actuator and possible fittings are packed and supplied separately.

Equipment combinations

Valves		Actuators [1] SQS35..., SQS65...		Fittings
	H_{100} [mm]	Δp_{max} [kPa]	Δp_s [kPa]	Type
VVG44.15-0.25	5.5	400	1600	**ALG15**
VVG44.15-0.4				
VVG44.15-0.63				
VVG44.15-1			850	
VVG44.15-1.6				
VVG44.15-2.5			400	
VVG44.15-4				
VVG44.20-6.3			800	**ALG20**
VVG44.25-10		300	400	**ALG25**
VVG44.32-16		200	225	**ALG32**
VVG44.40-25		100	100	**ALG40**
Data sheet		**4573**		

1) Actuators available for delivery:
- AC 230 V with 3-position signal
- AC 24 V with DC 0...10 V or DC 2...10 V proportional pos. signal

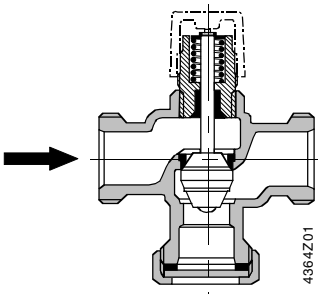
H_{100} = 100 % stroke of the valve and the actuator

Δp_{max} = Max. permissible differential pressure across the valve's control path across the entire actuating range of the motorised valve

Δp_s = Maximum permissible differential pressure (closing pressure) at which the motorised valve will close securely against pressure.

Mechanical design

Valve cross-section



Guided parabolic plug which is integrated in the valve stem.

The seat is attached to the valve body or directly integrated in the valve body.

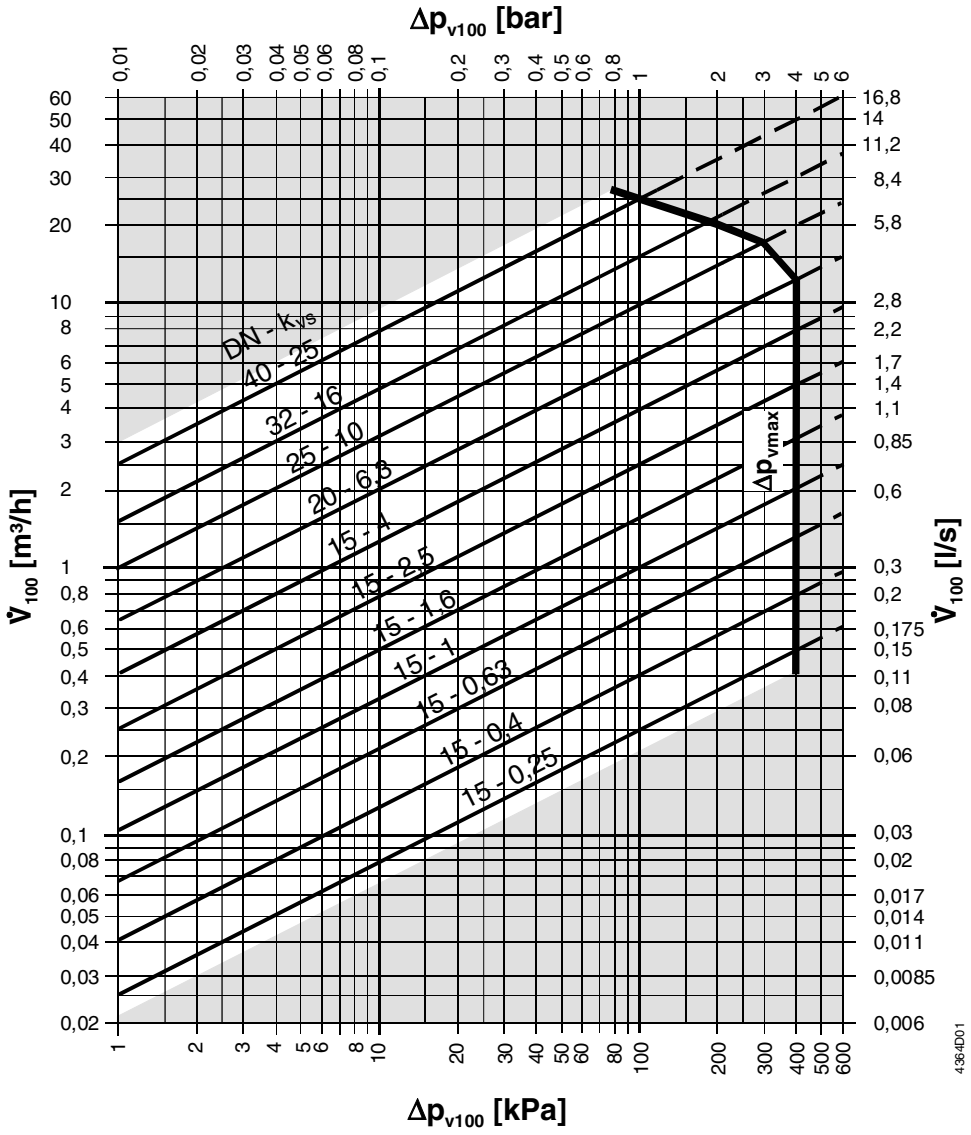
⚠ **The two-port seat valve does not become a three-port valve by removing the blocking nut on the bypass port.**

Disposal

The various material types used require that you disassemble the unit and sort the components prior to disposal.

Sizing

Flow diagram



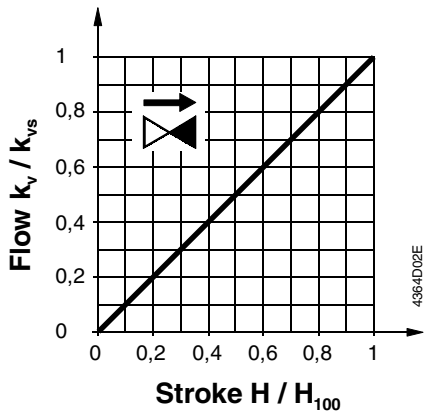
100 kPa = 1 bar ≈ 10 mWG
1 m^3/h = 0.278 kg/s water at 20 °C

$\Delta p_{vmax.}$ = Max. permissible differential pressure across the valve's control path, valid for the entire stroke range.

Δp_{v100} = Pressure difference across the fully opened valve across the control path at $\dot{V}_{100}$ flow in kPa or in bar

$\dot{V}_{100}$ = Flow in m^3/h or l/s

Valve flow characteristic



Valve flow characteristic linear as per VDI / VDE 2173

Notes

Engineering

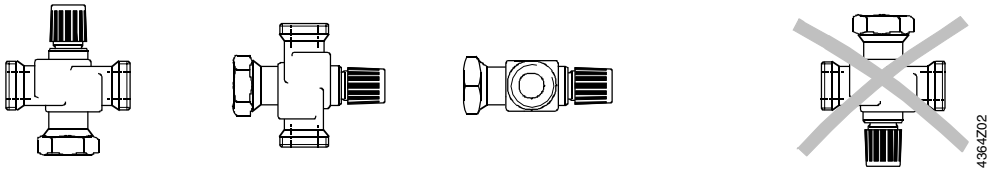
We recommend installation in the return pipe, as the temperatures in this pipe are lower for applications in heating systems, which in turn, extends the stem sealing gland's life.
Water quality requirements as per VDI 2035.

⚠ **We recommend installing a strainer upstream of the valve to ensure long-term functional safety.**

Mounting

Mounting positions

Both valve and actuator can easily be assembled at the mounting location. Neither special tools nor adjustments are required.
The valve is supplied with mounting instructions.



Permissible Not permissible

Direction of flow

When mounting, pay attention to the **valve's flow direction symbol** ➔.

Commissioning

Commission the valve using the mounted manual adjustment button or a correctly mounted actuator.
Stem retracts: Increasing flow
Stem extends: Decreasing flow

Service

⚠ **For actuator service work: Turn off the pump and the operating voltage, close the shutoff valves, depressurize the pipes and allow them to cool down. Disconnect the electrical connections, where required, from the terminals. Recommission the valve using the mounted manual adjustment button or a correctly mounted actuator.**

Stem sealing gland

The stem sealing gland cannot be exchanged. In the case of leakage, the entire valve must be replaced, whereby the information provided in "Service" must be observed. Contact your local office or branch.

Warranty

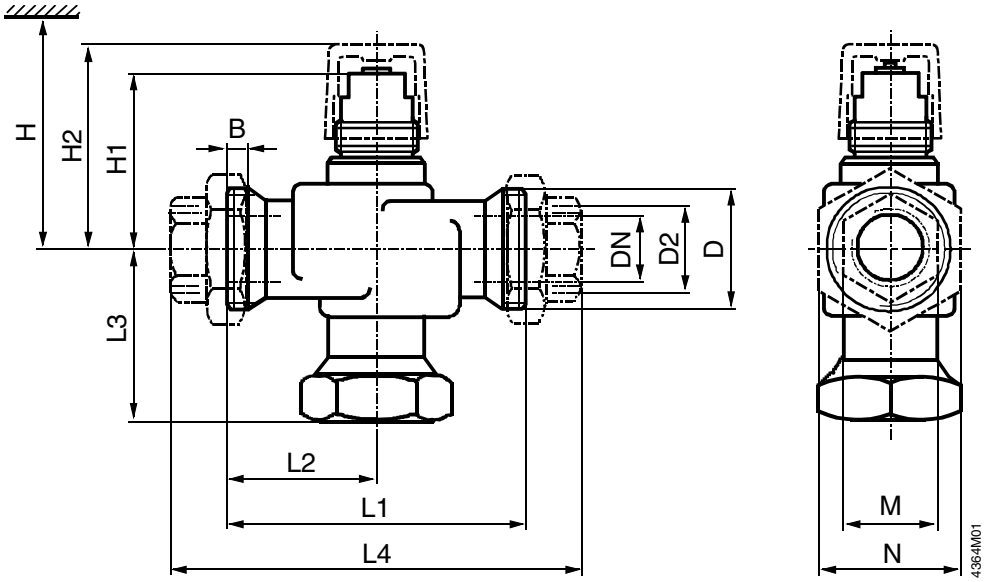
The use of third-party actuators expressly voids any warranty claims.
The technical data Δp_{max}, Δp_s, leakage rate, noise level and life apply only when used together with the Landis & Staefa actuators as listed in "Type summary".

Technical data

Function data	PN class	PN16
	Valve flow characteristic 0 ... 100 %	 linear as per VDI / VDE 2173
	Leakage rate	0 ... 0.02 % of k_{vs} value, VDE / VDI 2173
	Permissible pressure	1600 kPa (16 bar), ISO 7268 / EN 1333
	Working pressure	DIN 4747 / DIN 3158 in the range of +2 ... +120 °C
	Threaded connection Valve Fittings	 G...B as per ISO 228/1 Rp... as per ISO 7/1
	Stroke	5.5 mm
	Weight	see "Dimensions" (table)
Materials	Valve body	bronze G-CuSn5ZnPb (Rg5) as per DIN 1705
	Seat	stainless steel, bronze Rg5 and brass
	Stem	stainless steel
	Plug	stainless steel or brass
	Sealing gland	brass
	Gland materials	EPDM-O rings
	Fittings ALG…	black malleable cast iron

Dimensions

All dimensions in mm



DN	B	D	D2	H1	H2	L1	L2	L3	L4	M	N	Weight
												without fittings
[mm]												[kg]
15	8.5	G1B	Rp½	53	63	100	50	58	148	25	41	0.6
20	9	G1¼B	Rp¾	68	78			59	150	32	50	1.0
25		G1½B	Rp1	71	81	105	52.5	62.5	160	38	55	1.4
32	11	G2B	Rp1¼	77.5	87.5			63.5	170	47	70	1.95
40		G2¼B	Rp1½	80.5	90.5	130	65	76	198	53	75	2.75

DN [mm]	H SQS35..., SQS65...
15	> 364
20	> 379
25	> 382
32	> 389
40	> 392

DN = Nominal diameter

H = Total actuator height plus minimum distance to the wall or the ceiling for mounting, connection, operation, service, etc.

H1 = Dimension from the pipe centre to install Structure of the actuator

H2 = Pipe centre to upper edge of manual adjustment button