VGS211F 15-100CS

Two-way Flanged Globe valve, 200 °C steam, PN16

The VGS211F 15-100CS range of valves are primary designed for steam applications although they may be used for other HVAC applications within heating, cooling and air handling applications.

The valve will handle the following types of media:

- Steam up to 200°C
- Hot and chilled water.
- Water with antifreeze additives such as glycol (50%)

If the valve is used for media at temperatures below 0 °C, it should be equipped with a stem heater in order to prevent ice formation on the valve stem.

SPECIFICATIONS

Design . . . . . Two-way plug valve
Valve closed position . . . . . Stem Down closed
Pressure class . . . . . PN 16
Flow characteristic . . . . . Equal percentage
Rangeability Kv/Kv_{min}:
DN15-20 . . . . . >50
DN25-100 . . . . . >35
Leakage . . . . . .0,02% of Kvs
Δ Pm . . . . . 6 bar
Max. temperature of medium: . . . . . .200 °C
Min. temperature of medium: . . . . . .–10 °C
Connections . . . . . Flanged ISO 7005-2

Materials

Body . . . . . Cast iron (EN JL1040)
Stem . . . . . Stainless steel (AISI 303)
Plug . . . . . Stainless steel (AISI 304)
Seat . . . . . Stainless steel (AISI 304)
Stem Packing . . . . . PTFE

NOTE:

It is the responsibility of the end user/ installer to check valve material compatibility against any media containing anti-freeze or anti-rust additives or water conditioners with the manufacturer or supplier of such solutions.

ORDERING TABLE

Size		Kvs	Part number	Type Designation	Stroke
in.	DN	(m^3/h)			(mm)
½”	15	0.6	VGS211F-15CS03	VGS211F-15CS 0.63M SD00	16.5
½”	15	1	VGS211F-15CS04	VGS211F-15CS 1M SD00	
½”	15	1.6	VGS211F-15CS05	VGS211F-15CS 1.6M SD00	
½”	15	2.5	VGS211F-15CS07	VGS211F-15CS 2.5M SD00	
½”	15	4.0	VGS211F-15CS08	VGS211F-15CS 4M SD00	
¾”	20	6.3	VGS211F-20CS	VGS211F-20CS 6.3 M SD00	
1”	25	10	VGS211F-25CS	VGS211F-25CS 10M SD00	
1¼”	32	16	VGS211F-32CS	VGS211F-32CS 16M SD00	25
1½”	40	24	VGS211F-40CS	VGS211F-40CS 25M SD00	
2”	50	40	VGS211F-50CS	VGS211F-50CS 35M SD00	
2½”	65	63	VGS211F-65CS	VGS211F-65CS 63M SD00	45
3”	80	110	VGS211F-80CS	VGS211F-80CS 110M SD00	
4”	100	140	VGS211F-100CS	VGS211F-100CS 140M SD00	

Key to technical specification

- The rangability is the ratio of Kvs and Kv_{min}
- Kvs is the maximum flow capacity (m3/h) of a fully open valve at a pressure drop of 100 kPa across the seat.
- Kv_{min} is the minimum controllable flow (m^3/h) at a pressure drop of 100 kPa
- Δ Pm is the maximum pressure drop across a fully open valve.

Schneider Electric

FUNCTION

The valve opens with the stem up.
When the stem is down, the valve is closed.

INSTALLATION

The valve should be mounted with flow direction in accordance with the valve marking.

It is recommended to install the valve in the return pipe, to reduce the influence from heat transfer into the actuator to prolong the service life of the valve and actuator.

The valve must not be installed with the actuator mounted below the valve.

Where reasonably possible, it is recommend to install the actuator at 45' to the vertical so the actuator is less influenced from the radiant heat of the pipework

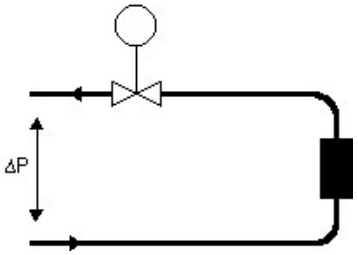
To ensure that suspended solids will not become jammed between the valve plug and seat, a filter should be installed upstream of the valve, and the pipe system should be flushed before the valve is installed.

PRESSURE DROP PERFORMANCE vs ACTUATOR

Size	Kvs	M700	MG900 SR	M800	M1500/ MV15B	M3000
DN	(m^3/h)	Δpc (kPa)				
15	0.6	1600	1600	1600	1600	--
15	1	1600	1600	1600	1600	
15	1.6	1600	1600	1600	1600	
15	2.5	1600	1600	1600	1600	
15	4.0	1600	1600	1600	1600	
20	6.3	1450	1600	1600	1600	
25	10	900	1250	1000	1600	
32	16	900	1250	1000	1600	
40	24	600	840	680	1350	
50	40	380	550	430	900	
65	63	150	220	170	350	855
80	110	100	--	110	200	550
100	140	60	--	70	150	350

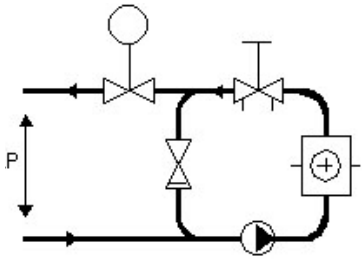
ΔP_c = Maximum allowed pressure drop across a closed valve (that the nominal force of the actuator will open or close against).

SCHEMATICS and PRESSURE DROP



A. Typical installation without local circulating pump.

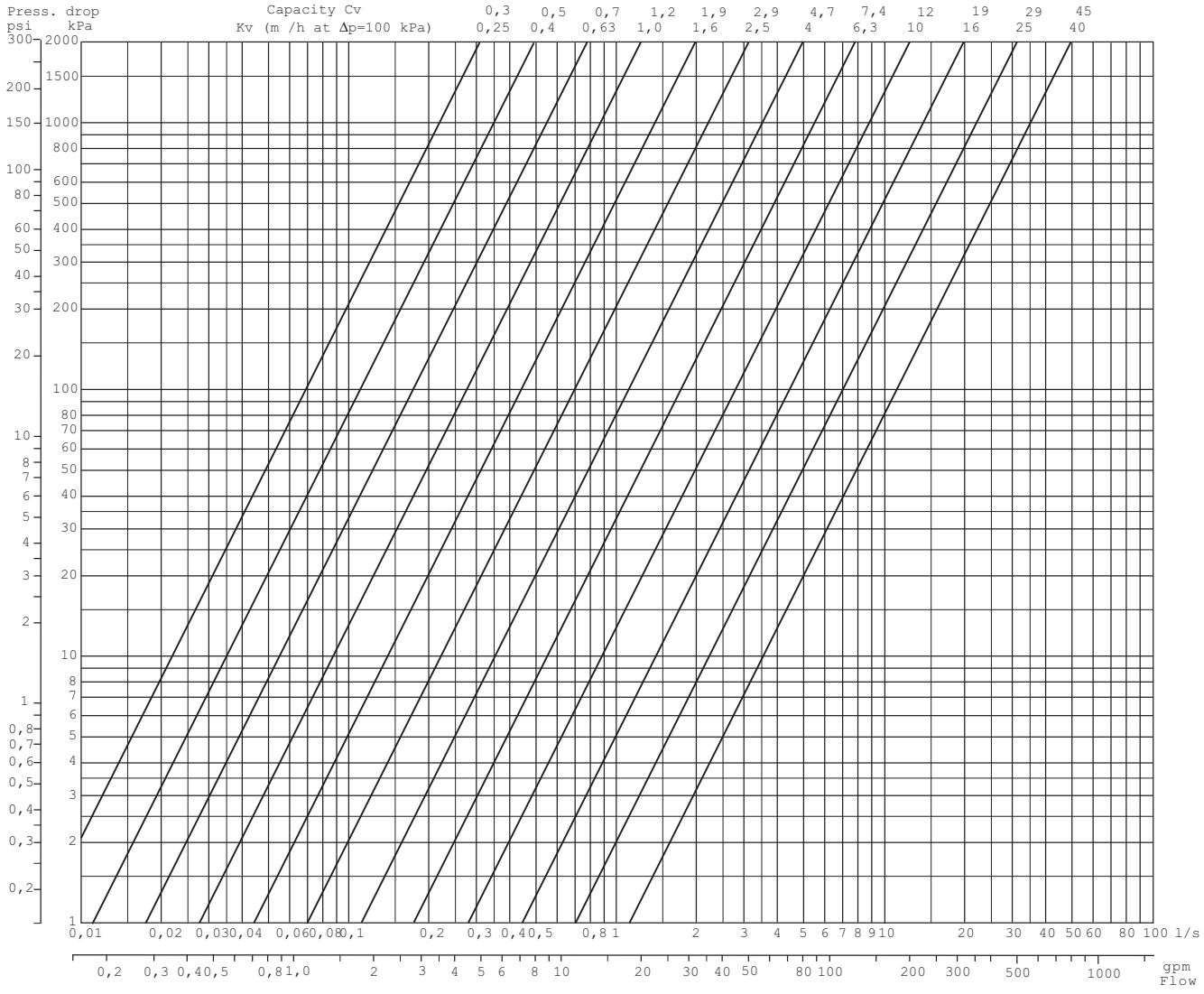
To provide a good function, the pressure drop across the valve should be no less than half of the available pressure (Delta P). This corresponds to a valve authority of 50%.



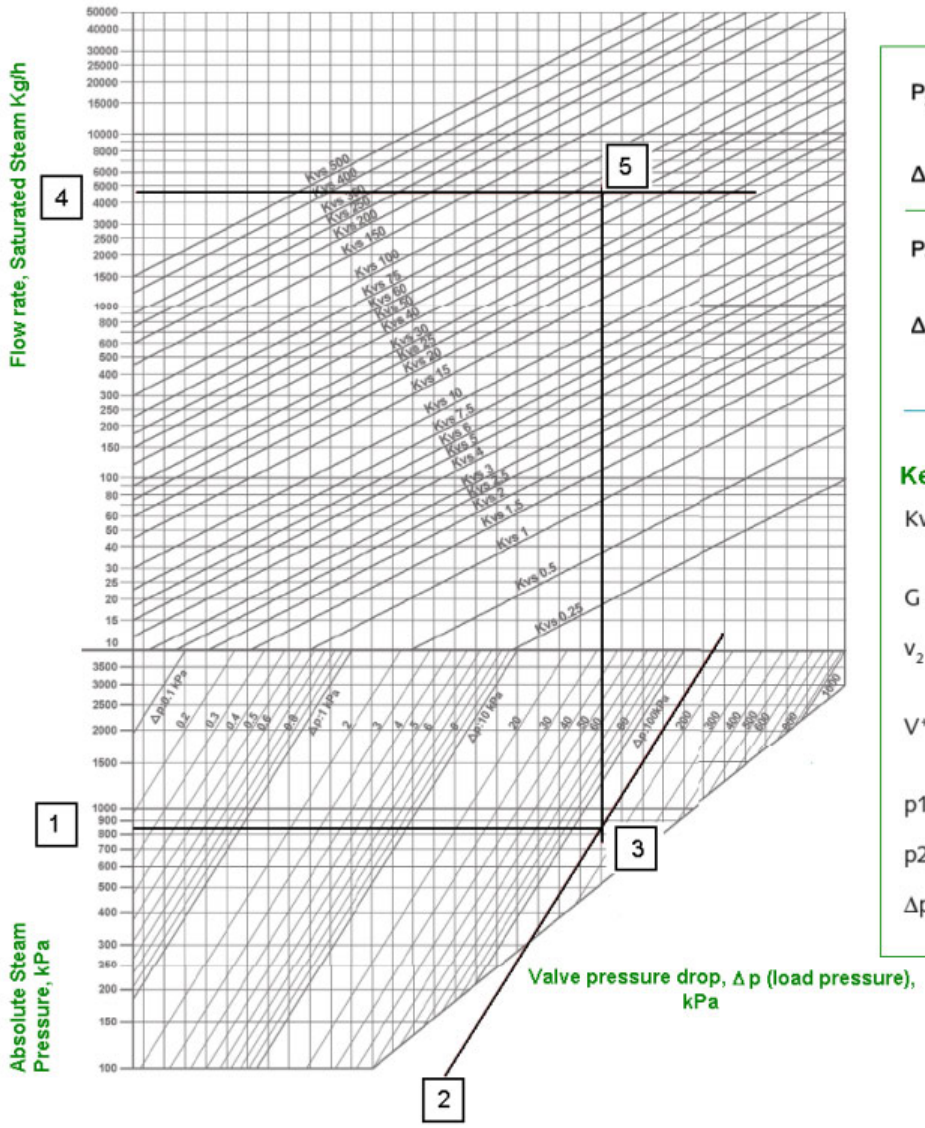
B. Typical installation with local circulating pump.

The KV (CV) value of the valve to be selected so that the entire available pressure drop (Delta P) falls across the control valve.

PRESSURE DROP CHART - Water



PRESSURE DROP CHART - Steam



$P_2 > \frac{P_1}{2}$

$\Delta P > \frac{P_1}{2}$

$K_{vs} = \frac{G}{31.6} \times \sqrt{\frac{v_2}{\Delta p}}$

$P2 < \frac{P_1}{2}$

$\Delta P > \frac{P_1}{2}$

$K_{vs} = \frac{G}{31.6} \times \sqrt{\frac{2 \times V^*}{p_1}}$

Key

Kvs = Valve flow co-efficient, (Control valve fully open).

G = Mass flow rate (Kg/h)

v_2 = Specific volume (from steam table) for p_2 and t_1 condition

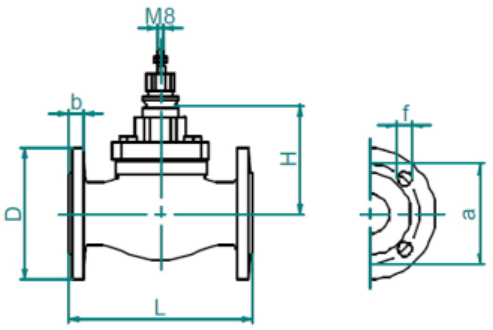
V* = Specific volume (from steam table) for $\frac{P_1}{2}$ and t_1 condition

p1 = pressure before valve

p2 = pressure after valve

Δp = Valve Pressure drop (bar)

DIMENSIONS AND WEIGHT



DN	L	H	Ø D	b	Øa	Øf	Flanged Bolt holes	Weight Kg
15	130	107	95	16	65	14	4	3.5
20	150	109	105	16	75	14		4.5
25	160	112	112	16	85	14		5.5
32	180	121	121	18	100	18		8.7
40	200	129	129	18	110	18		10.3
50	230	137	165	20	125	18		13.7
65	270	175	185	20	145	18		19.6
80	310	190	200	22	160	18	8	31.7
100	350	215	220	24	180	18		43.5

Note: all dimensions are in mm

SPARES and ACCESSORIES

Stem packing gland (all sizes).....1-001-0811-0

Type Designation and Part number construction

Main Type

Valve Family — Size and Material

V □ □ □ □ □ - □ □ □ □

Valve Type:
G - Globe
GS - Globe (Steam Service)
B - Ball
F - Butterfly
S - Shoe
Z - Zone-Linear

Number of Ways:
2 - 2-Way
3 - 3-Way
4 - 3-way, 4-port

Plug Type - Linear Valves:
1 - Equal percentage, Non-Balanced plug
2 - Equal percentage, Balanced plug
5 - Standard linear
6 - 3-way diverting

Plug Type - Rotary Valves:
0 - Uncharacterised
1. Equal percentage, Characterised flow
2. Linear flow

End Connection:
E - G external thread (G.B)
R - Rp /Rs internal thread
F- Flanged DIN
N - NPT
C - Compression
W - Flanged (Wafer)

Actuator Connection- Linear Valves:
0 - Short-Yoke U-Bolt Forta
1 - Standard Yoke U-Bolt Forta

Actuator Connection - Rotary Valves:
0 - Poptop
1 - Duradrive Damper
8 - MF Butterfly Actuators

Material:
C - Cast Iron body
CS - Cast Iron body, SS Seat
B - Bronze body, Brass plug
BP - Bronze body, PPS plastic trim
BS - Bronze body, SS trim
N - Nodular Iron
NS - Nodular Iron, SS seat
NZ - Nodular Iron, Zinc coated stem

Orifice - Examples:
15 - 15 DN
200 - 200 DN

Specification Code

□ □ □ □ □ □ □ □

Examples:
0.25 - 0.25 Kv
16 - 16 Kv
160 - 160 Kv

Seal:
T - PTFE (Teflon)
E - EPDM
V - FKM (Viton)
M - Metal to Metal

Options, Specials and Revisions:
00 - no specials

Stem Closed Direction-Linear Valves:
SU - Stem up closed (Normally Closed)
SD - Stem down closed (Normally Open)

Handwheel-Rotary valves:
H - Handwheel
B - Bare
G - Gearbox

Part Number

V □ □ □ □ □ - □ □ □ □ □ + □ □

Identifier

Valve Type — Plug Type — End Connection — Orifice — Material — Version and Kv Variant

Number of Ways — Actuator Bonnet

Construction Guide:

The updated designation covering the changes in one of the large 2 way cast iron valves are:

Full Type Designation:
VGS211F-15CS 0.63M SD00

Family:
VGS211F 15-100CS

Part Number:
VGS211F-15CS03