VG221F 65-150C

Two-way Pressure Balanced Globe Valve, Flanged, PN 16

The 221F 65-150C valve is primarily intended to be used in heating, cooling and air conditioning application.

The 221F 65-150C valve can be used with the following types of fluids:

- hot water, or deaerated cooling water.
- deaerated water with glycol-type antifreeze agent (max.50%)

With cooling medias at temperatures below 0°C a stem heater must be fitted, to protect from stem seizure due to freezing.

Size		Kv	Part number	Type Designation	Stroke
in.	DN	m^3/h			
2½"	65	63	VG221F-65C	VG221F-65C 63M SU00	25
3"	80	100	VG221F-80C	VG221F-80C 100M SU00	45
4"	100	130	VG221F-100C	VG221F-100C 130M SU00	
5"	125	200	VG221F-125C	VG221F-125C 200M SU00	
6"	150	300	VG221F-150C	VG221F-150C 300M SU00	

SPECIFICATIONS

Design..... two-way pressure balanced plug valve
Valve closed position..... stem up closed
Pressure class ..... PN 16
Flow characteristics ..... EQ%
Rangeability Kv/Kv min..... >50
Stroke
DN 65 ..... 25 mm
DN 80 – DN 150 ..... 45 mm
Leakage ..... <0.03% of Kv
ΔPm ..... 200 kPa (29 psi), water
Max. temperature of medium .....150 °C
Min. temperature of medium..... -10 °C
Connection .....Flange according ISO 7005-2

Materials

Body .....Grey cast iron
Stem ..... stainless steel
Plug .....Brass
Seat .....Grey cast iron (EN JL1040)
Packing box ..... Viton OR

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.

Key to Technical specification

- The rangability is the ratio of Kvs and Kv_{min}
- Kv is the flow through the valve in m^3/h at the specified valve lift and at a pressure drop of 100 kPa across the valve.
- Kv_{min} is the minimum controllable flow (m^3/h) at a pressure drop of 100 kPa
- ΔPm is the maximum allowable pressure drop across the fully open valve.
  ΔPc is the maximum close off pressure the actuator will deliver

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FUNCTION AND FLOW CHARACTERISTIC

The design of the VG221F plug is pressure balanced to ensure high close off pressure with lower actuator force.

The valve closes with the stem up.

The flow characteristic of the VG221F is equal percentage (EQ%, also called logarithmic), giving an equal-percentage change in flow.

The latter is necessary to give good control in systems with large load variations.

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, in order to avoid exposing the actuator to high temperatures.

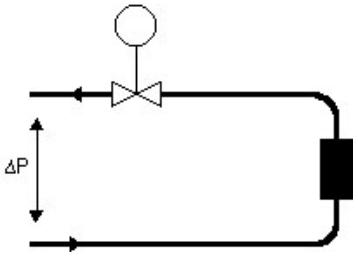
The valve must not be mounted with the actuator under the valve.

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.

Size	M700 Δpc	MG900 SR Δpc	M800 Δpc	M1500/ MV15B Δpc
DN	kPa			
65	1300	1600	1600	1600
80	1000	..	1450	
100	700		1000	
125	470		750	
150	300		550	1450

ΔP_c = Max. close-off pressure drop across the valve.

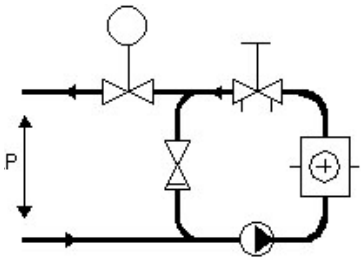
INSTALLATION



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 (ΔP). This corresponds to a valve authority of 50%.

Fig 1



B. Typical installation with local circulating pump.

The K_V (C_V) value of the valve to be selected so that the entire available pressure drop (ΔP) falls across the control valve.

Fig 2

PRESSURE DROP CHART

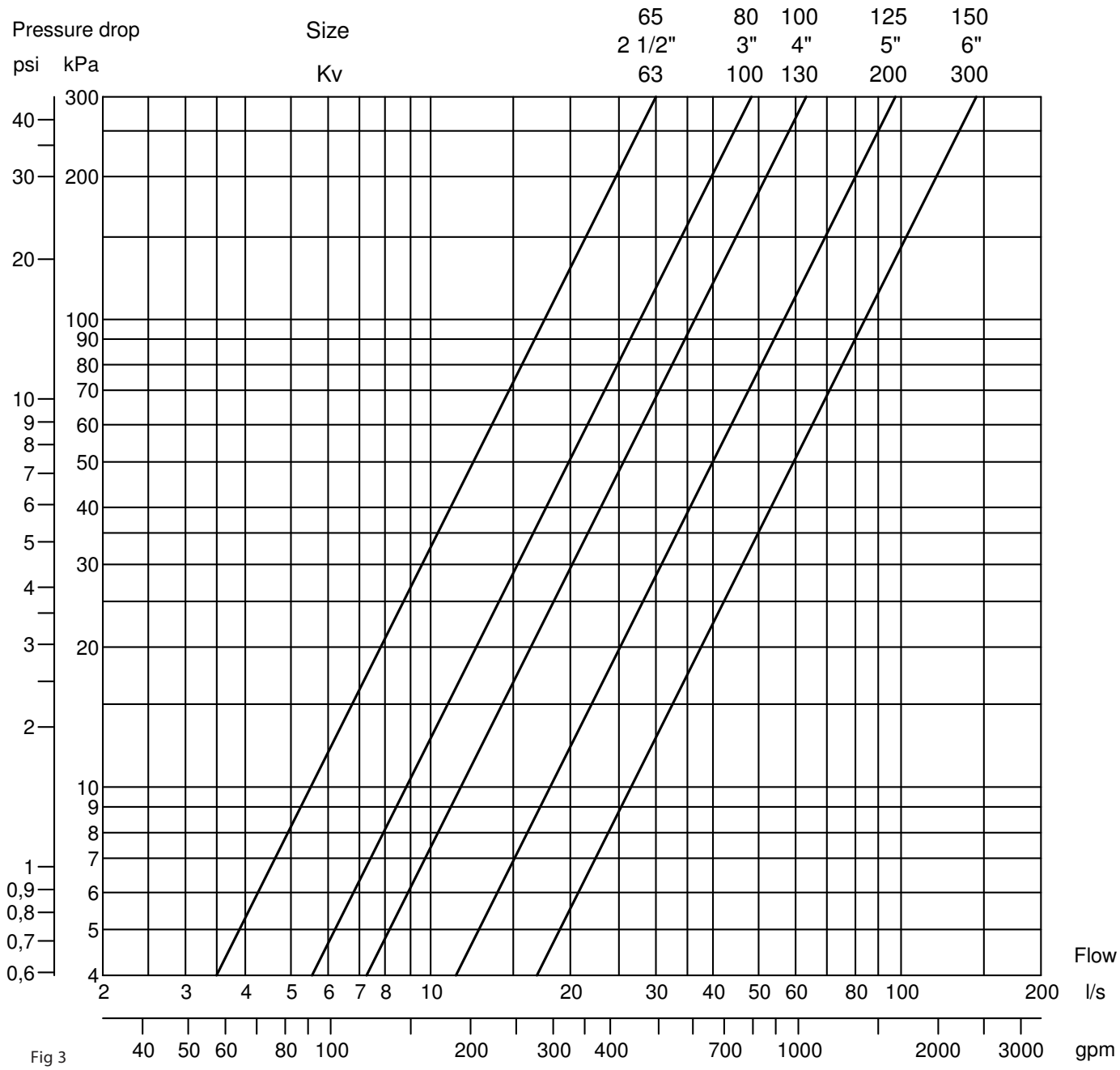


Fig 3

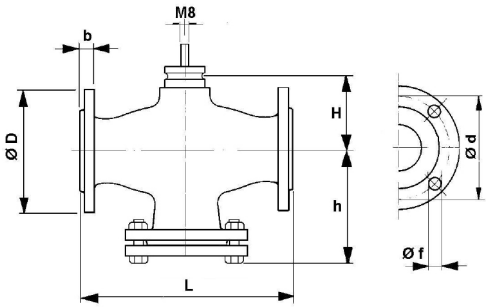
SPARE PARTS

Replacement Stem Packing kit

VG221F 65-150C (all sizes)..... max 150 °C (302 °F)

Item number 1-001-0810-0

DIMENSIONS AND WEIGHT



Size	Stroke	Dimensions							Weight
		L	H	h	f	D	d	b	
DN	mm	mm							Kg
65	25	290	115	175	18	185	145	20	18
80	45	310	125	186		200	160	22	28
100		350	137	206		220	180	24	32
125		400	159	255		250	210	26	45
150		480	177	275	22	285	240	26	60

Type Designation & Part Numbering System

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
- Actuator Connection-Linear Valves: 0 - U-Bolt Forta; 2 - DuraDrive, Threaded Yoke; 3 - M30 x 1.5, short stroke; 4 - M30 x 1.5, long stroke
- Actuator Connection - Rotary Valves: 0 - Poptop; 1 - Duradrive Damper; 8 - MF Butterfly Actuators
- End Connection: E - G external thread (G.B); R - Rp /Rs internal thread; F- Flanged DIN; N - NPT; C - Compression; W - Flanged (Wafer)
- Orifice - Examples: 15 - 15 DN; 200 - 200 DN
- 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

Specification Code

□ □ □ □ □ □ □ □

- Kv- 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

Construction Guide:

The new bronze, Forta-ready globe valves would look as follows:

Full Type Designation:
VG310R 15B 1.6T SU00

Family:
VG310R...B

Part Number:
VG310R-15B05

Part Number

V □ □ □ □ □ - □ □ □ □ + □ □

- Valve Type
- Plug Type
- End Connection
- Number of Ways
- Actuator Bonnet
- Orifice
- Material
- Identifier
- Version and Kv Variant

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