VG310N 15-50B

Bronze Globe Valve

Product Description

The Venta VG310N 15-50B is a range of precision bronze globe valves, suitable for a wide range of fluid control applications, including heating, cooling, air handling and domestic hot water systems. The VG310N 15-50B series works reliably under a wide variety of conditions, including fluids with high glycol concentrations and very high temperature bands.

The valve utilises precision plugs for improved rangeability and fine fluid control on small opening degrees.

The VG310N 15-50B range of valves is designed to be used in conjunction with the short yoke Forta MG600C and SmartX MG350C actuators, providing one of the most compact plant room globe valves on the market. This enables the product to be fitted within conventional ceiling voids.

Key Features

- U-bolt bonnet and slotted stem adaptor provides quick and simple mounting with the short yoke Forta actuator
- RoHS compliant
- High rangeability provides fine accurate fluid control for more efficient, responsive and comfortable regulation
- Compact Space envelope

Specifications

Design	Three Way Plug Valve, Stem up closed. A-AB, (B-AB open)
Pressure Class	PN 16
Flow Characteristic	Equal percentage, modified (for finer opening control)
Stroke	11 mm
Rangeability	> 100:1
Leakage A-AB B-AB	 <0.005% Kvs (EN60534-4 Class IV-S1) <0.1% Kvs (EN60534-4 Class III)
ΔPma	400 kPa, water
Media Compatibility	Chilled or hot water, 60% glycol concentration, low pressure conditioned steam
Temperature	-7°…+150° C
Maximum Steam Pressure	241 kPa
Connection	NPT Internal Thread
Suitable Actuator Direct fit With AV-823 Long Stem adaptor	 MG350C *, MG600C, MG600C SR M400, M800, M1500 and MG900 SR

Materials	
Body	Bronze; ASTM B584; CDA 83450 Oshalloy
Bonnet / Packing	Brass; UNS C36000 and
Cartridge	PTFE/EPDM chevrons
Stem	AISI 316 SS
Plug	Brass; UNS C36000
Slotted Stem	RoHS compliant Zinc-plated steel
Adaptor	Plug Seal, A-AB....PTFE: DN15-20,
Seat	EPDM: DN25-50, B-AB....Brass

* short stem adapter supplied with actuator is required.

a. ΔPm: Maximum allowable pressure drop across a fully open valve.

NOTES

- The installer/product specifier must verify media compatibility of the valves construction materials with the water treatment/heat transfer solution supplier.
- A strainer should be fitted upstream of the valve to increase valve reliability and protection of gland and seat seals.
- Adherence to water treatment guidelines as detailed in VDI 2035 must be followed. Valves should be installed in the return pipe to reduce exposure to media temperature extremes.

a. ΔPm: Maximum allowable pressure drop across a fully open valve.

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Product Selection/Close-Off Pressure Ratings

ΔPc Close-off performance (kPa) with MG350C and MG600c (-SR) Actuator

Size (DN)	Kvs	Connection (NPT)	Part Number [a]	Type Designation	ΔPc Close Off (kPa) to Leakage Class IV or IV-S1[a]			
					MG600C (-SR)		MG(F)350C	
					Class IV-S11 ≤0.005%	Class IV1 ≤0.01%	Class IV-S11 ≤0.005%	Class IV1 ≤0.01%
15	1.6	1/2”	VG310N15B05	VG310N15B 1.6T SU00	1600	1600	1000	1500
15	2.5	1/2”	VG310N15B07	VG310N15B 2.5T SU00				
15	4.0	1/2”	VG310N15B08	VG310N15B 4T SU00				
20	6.3	3/4”	VG310N20B	VG310N20B 6.3T SU00			800	930
25	10	1”	VG310N25B	VG310N25B 10E SU00	1100	1200	380	460
32	17	1-1/4”	VG310N32B	VG310N32B 17E SU00	600	700	250	290
40	24	1-1/2”	VG310N40B	VG310N40B 24E SU00	350	450	100	170
50	35	2”	VG310N50B	VG310N50B 35E SU00	90	240	55	69

[a] Leakage class to as a percentage of a valves to Kvs, EN60534-4 with MG600C (-SR) actuator only

ΔPc Close-off performance (kPa) with other Forta actuators (Long Stem adaptor required)

Actuator [2]:		M400		M800		M1500		MG900 SR	
Long stem adaptor:		AV-823							
Leakage class [1]:		IV-S1 ≤0.005%	IV ≤0.01%	IV-S1 ≤0.005%	IV ≤0.01%	IV-S1 ≤0.005%	IV ≤0.01%	IV-S1 ≤0.005%	IV ≤0.01%
Part Number	DN								
VG310R-15B	15	1600			1600	1600		1600	
VG310R-20B	20								
VG310R-25B	25	650	760	1550					
VG310R-32B	32	350	440	950	1000			1000	1120
VG310R-40B	40	180	280	550	660	1170	1280	640	750
VG310R-50B	50	30	140	230	350	530	700	230	400

[1] Leakage Class to EN60534-4 as a percentage of the valves Kvs. [2] M700, MV15B and M3000 will not connect to the VG210R venta valve

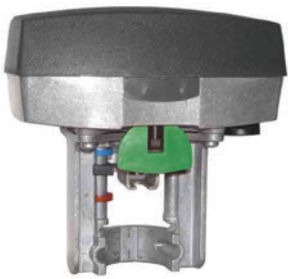
Leakage Notes

Close off performance in the tables above are to leakage rate Class IV on port A and Class III on port B. Close off performance on port A to Class IV-S1 is reduced from published figures above, significantly on sizes DN40 and DN50.

The VG310 valves will provide tight shut from factory delivery, meeting EN60534-4 / VDI2173 to Class IV-S1 or Class III depending on applicable port and system pressure. Application usage and system water quality can degrade O-ring performance against seat leakage over time.

Recommended Actuators

This series of valves mounts directly to the MG600C (-SR) short yoke Forta Actuators with U-Bolt Connection and MG350C SmartX actuators.



MG600C Non Spring Return

MG600C SR Spring Return

MG350C (Non-Spring Return)

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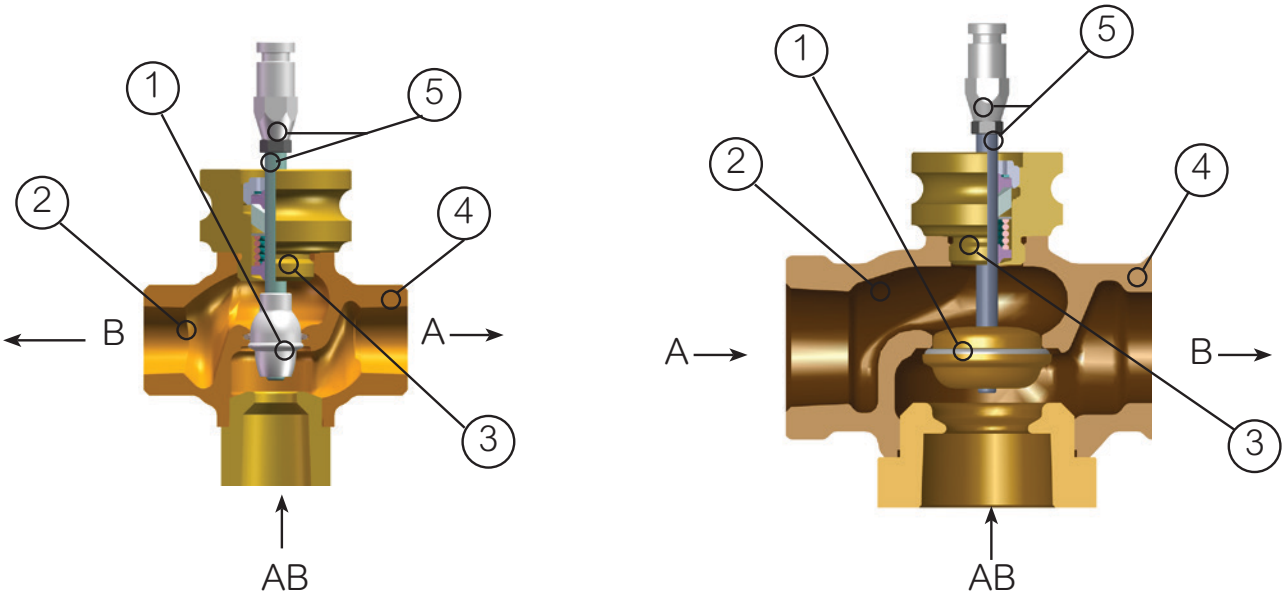
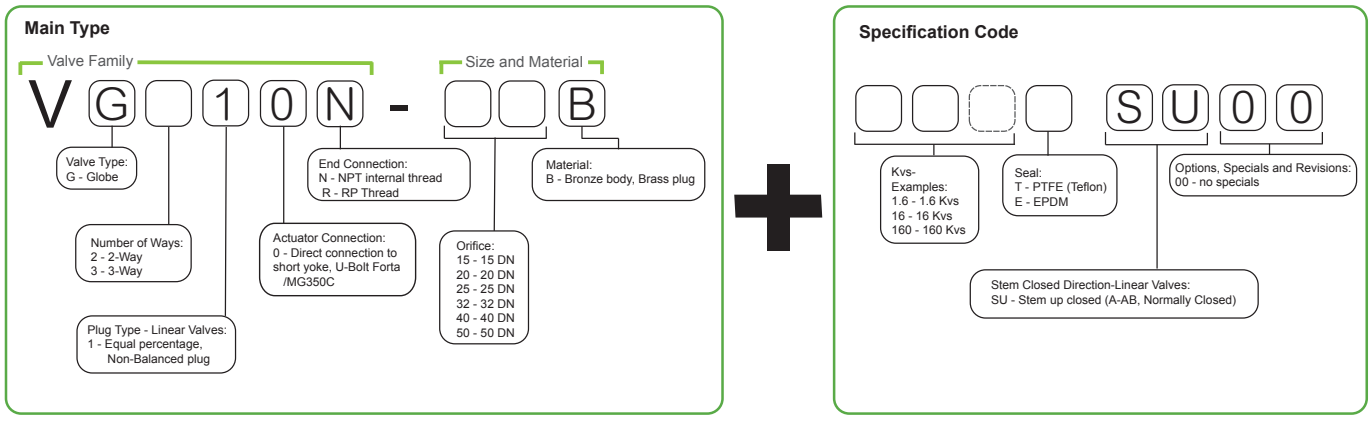
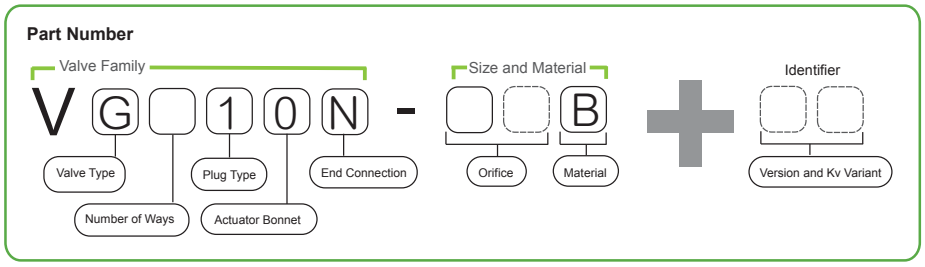
Key Features



#	Part	Description
1	Precision Plug	Designed for high rangeability and accurate flow control.
2	Internal Cavity	Carefully charted fluid dynamics to ensure low pressure drop and high flow capacity.
3	Packing	Triple-temp packing for use in cold water, hot water, and steam applications.
4	Body	Made from RoHS compliant materials.
5	Bonnet and Slotted Stem Adaptor	Quick and simple mounting with the Forta MG600C, MG600C SR Actuators and SmartX MG350C.

Type Designation





This is representative of the new Venta product series.

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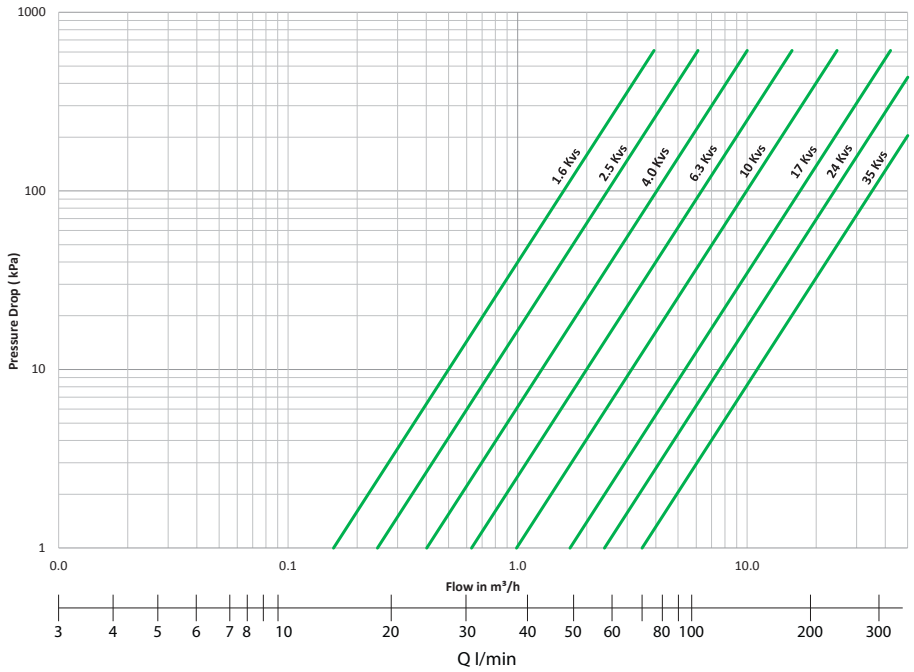
Valve Sizing

Capacity Chart, Kvs

NOTE: Capacity chart based on water with a Specific Gravity of 1.0



To size the ideal Kv, calculate pressure drops or refine selection sizing based on a glycol of density different to water, the following equations can be used.

For good fluid control and authority, the pressure drop through the valve should be as near as practicable equal to the pressure drop through the rest of the circuit which it controls.

$Kv = Q \times \sqrt{(\rho / \Delta P)}$

$Q = Kv \times \sqrt{(\Delta P / \rho)}$

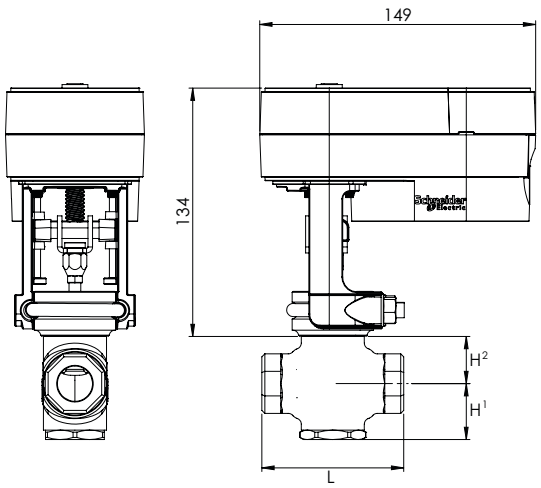
$\Delta P = \rho \times (Q/Kv)^2$

Kv = Valve Capacity (m^3/h)
Q = Volume flow (m^3/h)
ΔP = Pressure drop across valve (bar)
ρ = Specific Gravity of fluid (kg/m^3)

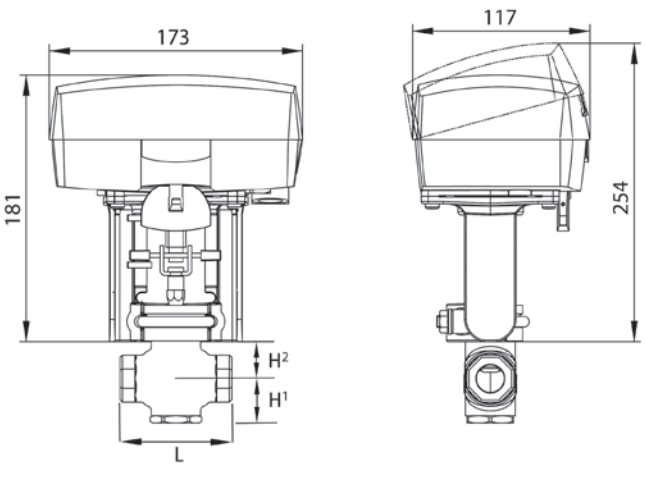
1 Bar = 100 kPa = 14.5 psi
$1 m^3/h$ = 0.278 l/s = 0.167 l/min = 4.403 gpm (US)

Dimensions (mm)

Size	L	H^1	H^2
DN15	78	30	29
DN20	92	30	29
DN25	118	44	30
DN32	118	44	37
DN40	137	46	40
DN50	156	57	57



Valve assembled onto SmartX MG350C actuator



Valve assembled onto MG600C actuator

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