

# VG210R 15-50BS

## Bronze Globe Valves



### Product Description

The Venta VG210R 15-50BS 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 VG210R 15-50BS 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. Soft seating also ensures no seepage of precious energy when not required.

The VG210R 15-50BS range of valves is designed to be used in conjunction with the short yoke **SpaceLogic** 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

### Specifications

Design	Two Way Plug Valve, Stem up closed.
Pressure Class	PN 16
Flow Characteristic	Equal percentage, modified (for finer opening control)
Stroke	11 mm
Rangeability	> 100:1
Leakage	Tight (EN-1349, VL2)
$\Delta P_m^a$	600 kPa, water
Media Compatibility	Chilled or hot water, 60% glycol concentration, low pressure conditioned steam
Temperature	-7°...+170° C
Maximum Steam Pressure	400 kPa
Connection	Rp to ISO 7-1/BS21 Rg to ISO228-1

a.  $\Delta P_m$ : Maximum allowable pressure drop across a fully open valve. (To minimize noise, ensure the flow rate in the piping is less than 3m/sec.)

Suitable Actuators	
Direct fit for actuators	MG350C *, MG600C, MG600C SR
NYBA-234-10 adaptor	M400, M800, M1500, MG900 SR, MV15B and M700

### Key Features

- U-bolt bonnet and slotted stem adaptor provides quick and simple mounting with the short yoke **SpaceLogic** actuator.
- RoHS compliant product is environmentally friendly and meet standard before the requirement.
- High rangeability provides fine accurate fluid control for more efficient, responsive and **comfortable** regulation.
- Tight sealing with zero energy leakage on shutoff for improved system efficiency.
- Optimized space envelope from a compact construction and a direct fit to the short yoke actuator range.

Materials	
Body	Bronze; ASTM B584; CDA 83450 Oshalloy
Bonnet/Packing Cartridge	Brass; UNS C36000 and PTFE / EPDM chevrons
Stem	AISI 316 SS
Plug	AISI 316 SS (25-50mm with PTFE O-ring)
Seat	AISI 316 SS
Seat Seal	PTFE, DN 15-20 EPDM, DN 25-50
Slotted Stem Adapter	RoHS compliant Zinc-plated Steel
Pressure Equipment Directive	PED 2014/68/EU, Article 4 (3)
Weight (kg)	
15BS	0.97
20BS	1.30
25BS	1.67
32BS	2.01
40BS	2.88
50BS	4.21

### 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.

## Product Selection/Close-Off Pressure Ratings

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

Size (DN)	Kvs	Connection (RP)	Part Number <sup>a</sup> (VG210R-)	Type Designation (VG210R-)	ΔPc Close Off (kPa) to Leakage Class IV or IV-S1 <sup>a</sup>			
					MG600C (-SR)		MG350C	
					Class IV-S11 ≤0.005%	Class IV1 ≤0.01%	Class IV-S11 ≤0.005%	Class IV1 ≤0.01%
15	0.4	1/2	15BS02	1600				
15	0.63	1/2	15BS03	1600				
15	1.0	1/2	15BS04	1600				
15	1.6	1/2	15BS05	1600				
15	2.5	1/2	15BS07	1600				
15	4.0	1/2	15BS08	1600				
20	6.3	3/4	20BS	1100		1200		
25	10	1	25BS	600		700		
32	17	1-1/4	32BS	350		450		
40	24	1-1/2	40BS	90		240		
50	35	2	50BS	800		930		
				380		460		
				250		290		
				100		170		
				55		69		

a - Leakage class to as a percentage of a valves to Kvs, EN60534-4 with MG600C (-SR) actuator only. Rangeability: 100:1

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

		M400		M800		M1500		MG900 SR	
Actuator <sup>2</sup> :		AV-823							
Long stem adaptor:									
Leakage class <sup>1</sup> :		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								
VG210R-15B	15	1600				1600		1600	
VG210R-20B	20	1600				1600		1600	
VG210R-25B	25	650	760	1550	1600		1600		
VG210R-32B	32	350	440	950	1000	1600		1000	1120
VG210R-40B	40	180	280	550	660	1170	1280	640	750
VG210R-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

The VG210R valves will provide tight shut from factory delivery, meeting EN60534-4 / VDI2173 to Class IV and Class IV-S1 depending on system pressure drops. Application usage and system water quality can degrade O-ring performance against seat leakage over time.

## Recommended Actuators

This series of valves mount directly to the **SpaceLogic** short yoke actuator, type MG600C(-SR) and also to the SmartX Actuators with U-bolt connection and the MG350C SmartX actuators.



MG600C Non Spring Return

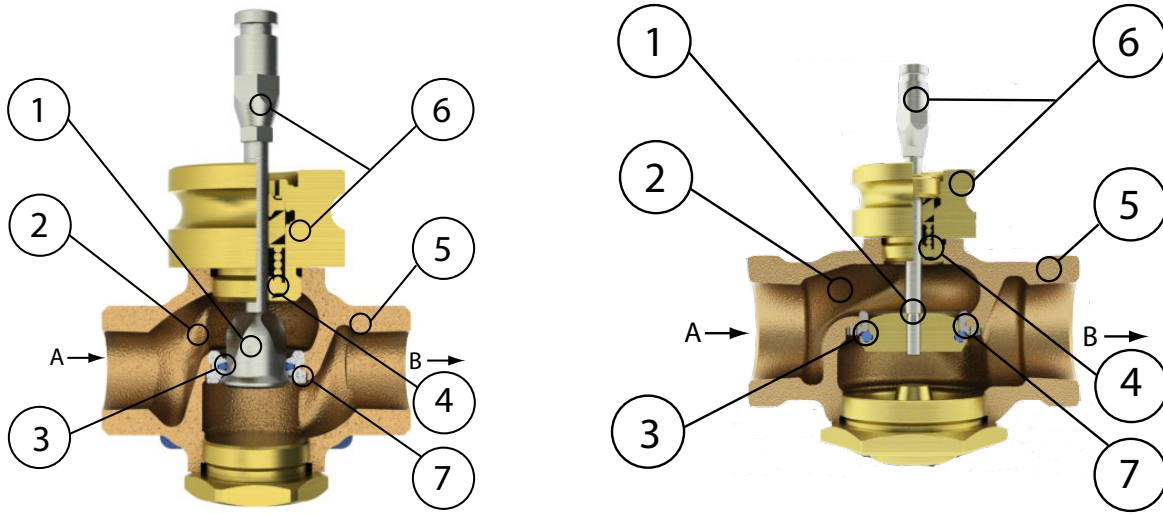


MG600C SR Spring Return



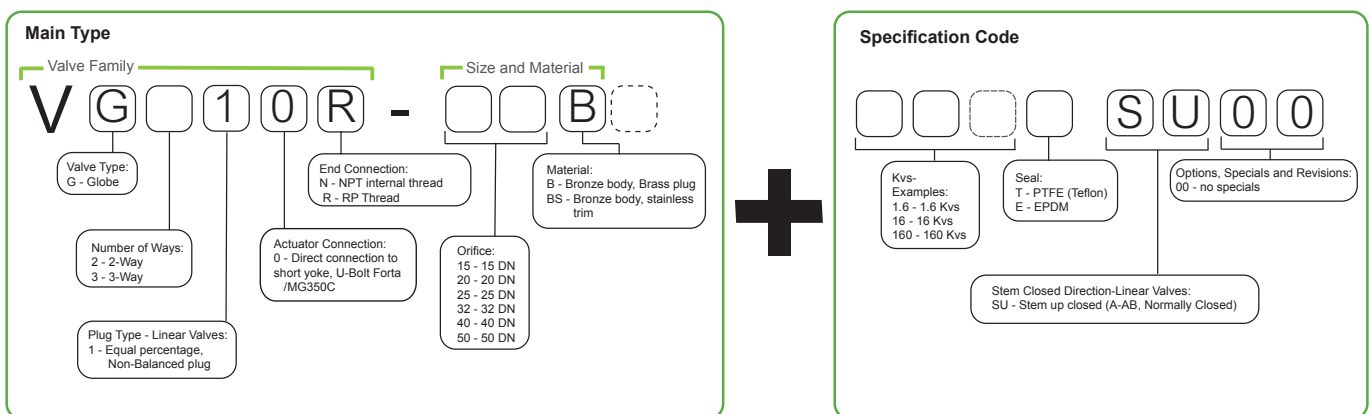
MG350C (Non-Spring Return)

## Key Features

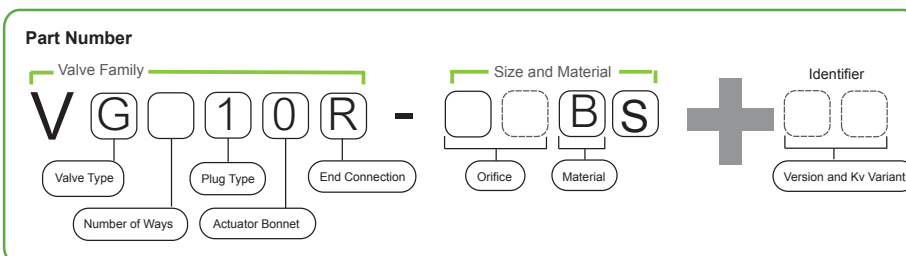


#	Part	Description
1	Precision Plug	Patented design for high rangeability and accurate flow control.
2	Internal Cavity	Carefully charted fluid dynamics to ensure low pressure drop and high flow capacity.
3	Seal	Soft EPDM or PTFE seal for tight close off and zero loss of energy.
4	Packing	Triple-temp packing for use in cold water, hot water, and steam applications.
5	Body	Made from RoHS compliant materials.
6	Bonnet and Slotted Stem Adapter	Quick and simple mounting with the <b>SpaceLogic</b> MG600C, MG600C SR Actuators and SmartX MG350C.
7	Stainless Steel Seat	Stainless seat for resistance against cavitation on large pressure drops and wick suitability against many media solutions.

## Type Designation



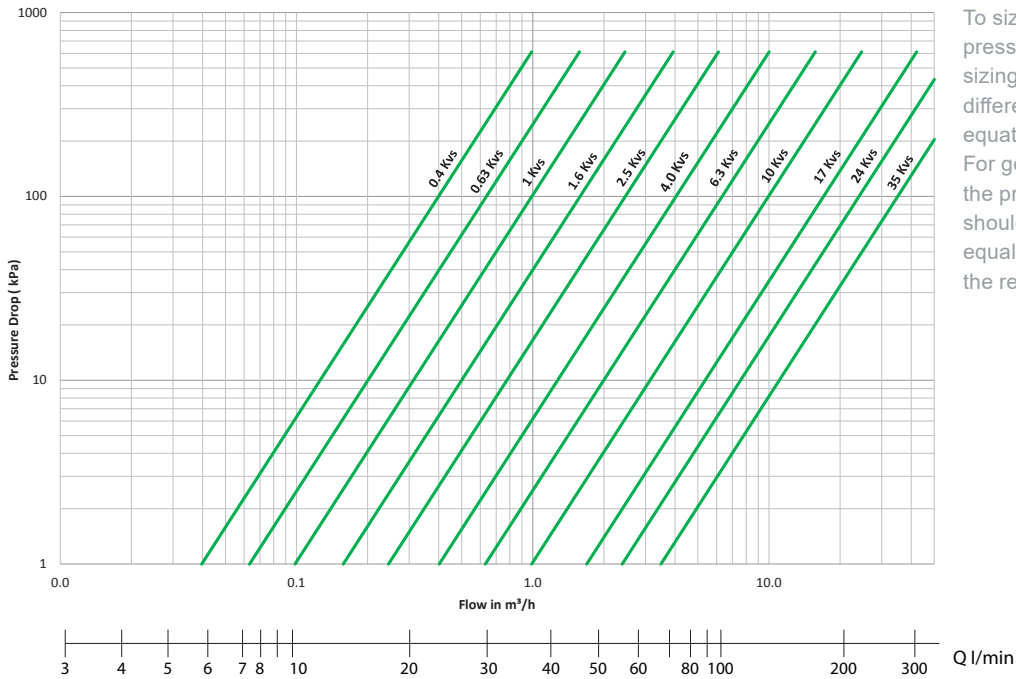
This is representative of the Venta product series.



# Valve Sizing

## Capacity Chart, Kvs

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



To size the ideal K<sub>v</sub>, 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.

$$K_v = Q \times \sqrt{\rho / \Delta P}$$

$$Q = K_v \times \sqrt{\Delta P / \rho}$$

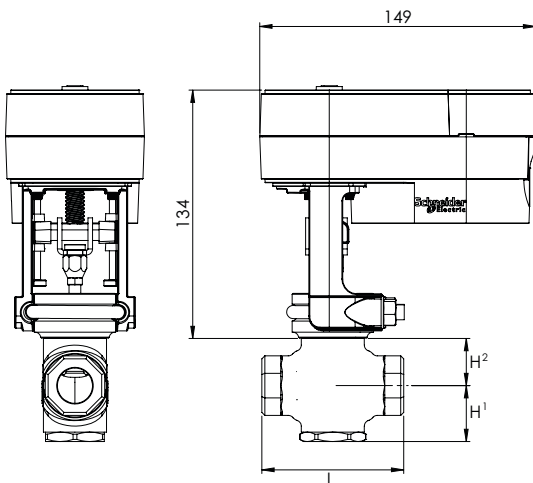
$$\Delta P = \rho \times (Q / K_v)^2$$

K<sub>v</sub> = Valve Capacity (m³/h)  
 Q = Volume flow (m³/h)  
 ΔP = Pressure drop across valve (bar)  
 ρ = Specific Gravity of fluid (kg/m³)

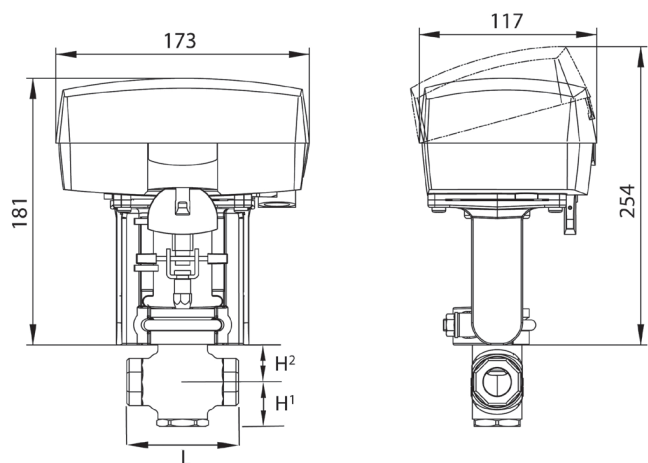
1 Bar = 100 kPa = 14.5 psi  
 1m³/h = 0.278 l/s = 0.167 l/min = 4.403 gpm (US)

## Dimensions (mm)

Size	L	H <sup>1</sup>	H <sup>2</sup>
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