

VG210R 15-50B

Bronze Globe Valves



Product Description

The Venta VG210R 15-50B is a new range of precision bronze globe valves, suitable for a wide range of fluid control applications, including heating, cooling, air handling and domestic hot water heating systems.

The VG210R 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. Soft seating also limits seepage of precious energy when valve is closed.

The VG210R 15-50B range of valves is designed to be used in conjunction with the short yoke Forta MG600C (SR) and SmartX MG350C, 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 | <0.005% (to EN60534-4 Class IV) |
| ΔP_m^a | 400 kPa, water |
| Media Compatibility | Chilled or hot water, 60% glycol concentration, low pressure conditioned steam. |
| Media Temperature | -7°...+150° C |
| Maximum Steam Pressure | 241 kPa |
| Connection | Rp to ISO 7-1/BS21 |
| a. ΔP_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 | MG600C SR, MG350C |
| With AV-823 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 Forta actuator.
- RoHS compliant.
- 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.
- Compact Space envelope.

| | |
|----------------------------|--|
| Materials | |
| Body | Bronze; ASTM B584; CDA 83450 Oshalloy® |
| Bonnet / Packing Cartridge | Brass; UNS C36000 and PTFE/EPDM chevrons |
| Stem | AISI 316 SS |
| Plug | Brass; UNS C36000 |
| Plug Seal | EPDM, DN 25-50 |
| Seat Seal | PTFE, DN 15-20 |
| Integral Seat | Bronze; ASTM B584; CDA 83450 Oshalloy® |
| Slotted Stem Adapter | RoHS compliant Zinc-plated steel |
| Net Weight (kg) | |
| 15B | 0.97 |
| 20B | 1.30 |
| 25B | 1.67 |
| 32B | 2.01 |
| 40B | 2.88 |
| 50B | 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

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Product Selection / Close-Off Pressure Ratings

ΔP_c Close-off performance with direct fit MG600C (-SR) and MG350C Actuator

| Size (DN) | Kvs | Connection (Rp) | Part Number | Type Designation | ΔP_c Close Off (kPa) to Leakage Class ^a | | | |
|-----------|------|-----------------|--------------|-----------------------|--|-------------------|----------------------------|-------------------------------------|
| | | | | | MG600C (-SR) | | MG350C | |
| | | | | | Class IV-S1 $\leq 0.005\%$ | IV1 $\leq 0.01\%$ | Class IV-S1 $\leq 0.005\%$ | Class IV ^a $\leq 0.01\%$ |
| 15 | 0.4 | 1/2 | VG210R-15B02 | VG210R-15B 0.4T SU00 | 1600 | 1600 | 1000 | 1500 |
| 15 | 0.63 | 1/2 | VG210R-15B03 | VG210R-15B 0.63T SU00 | | | | |
| 15 | 1.0 | 1/2 | VG210R-15B04 | VG210R-15B 1T SU00 | | | | |
| 15 | 1.6 | 1/2 | VG210R-15B05 | VG210R-15B 1.6T SU00 | | | | |
| 15 | 2.5 | 1/2 | VG210R-15B07 | VG210R-15B 2.5T SU00 | | | | |
| 15 | 4.0 | 1/2 | VG210R-15B08 | VG210R-15B 4T SU00 | | | | |
| 20 | 6.3 | 3/4 | VG210R-20B | VG210R-20B 6.3T SU00 | | | 800 | 930 |
| 25 | 10 | 1 | VG210R-25B | VG210R-25B 10E SU00 | 1100 | 1200 | 380 | 460 |
| 32 | 17 | 1-1/4 | VG210R-32B | VG210R-32B 17E SU00 | 600 | 700 | 250 | 290 |
| 40 | 24 | 1-1/2 | VG210R-40B | VG210R-40B 24E SU00 | 350 | 450 | 100 | 170 |
| 50 | 35 | 2 | VG210R-50B | VG210R-50B 35E SU00 | 90 | 240 | 55 | 69 |

^a Leakage class to as a percentage of a valves to Kvs, EN60534-4. Rangeability: 100:1

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

| | | Actuator ² : | | M400 | | M800 | | M1500 | | MG900 SR | |
|------------------------------|----|-------------------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | | Long stem adaptor: | | AV-823 | | AV-823 | | AV-823 | | AV-823 | |
| Leakage class ¹ : | | IV-S1 | | IV | | IV-S1 | | IV | | IV-S1 | |
| | | $\leq 0.005\%$ | $\leq 0.01\%$ | $\leq 0.005\%$ | $\leq 0.01\%$ | $\leq 0.005\%$ | $\leq 0.01\%$ | $\leq 0.005\%$ | $\leq 0.01\%$ | $\leq 0.005\%$ | $\leq 0.01\%$ |
| Part Number | DN | | | | | | | | | | |
| VG210R-15B | 15 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 | 1600 |
| VG210R-20B | 20 | | | | | 1600 | 1600 | | | | |
| VG210R-25B | 25 | 650 | 760 | 1550 | | | | | | | |
| VG210R-32B | 32 | 350 | 440 | 950 | 1000 | | | | 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 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

The VG210R valves mount directly to the MG600C (-SR) short yoke Forta Actuators and SmartX MG350C (non-spring return) actuators.



MG600C Non Spring Return

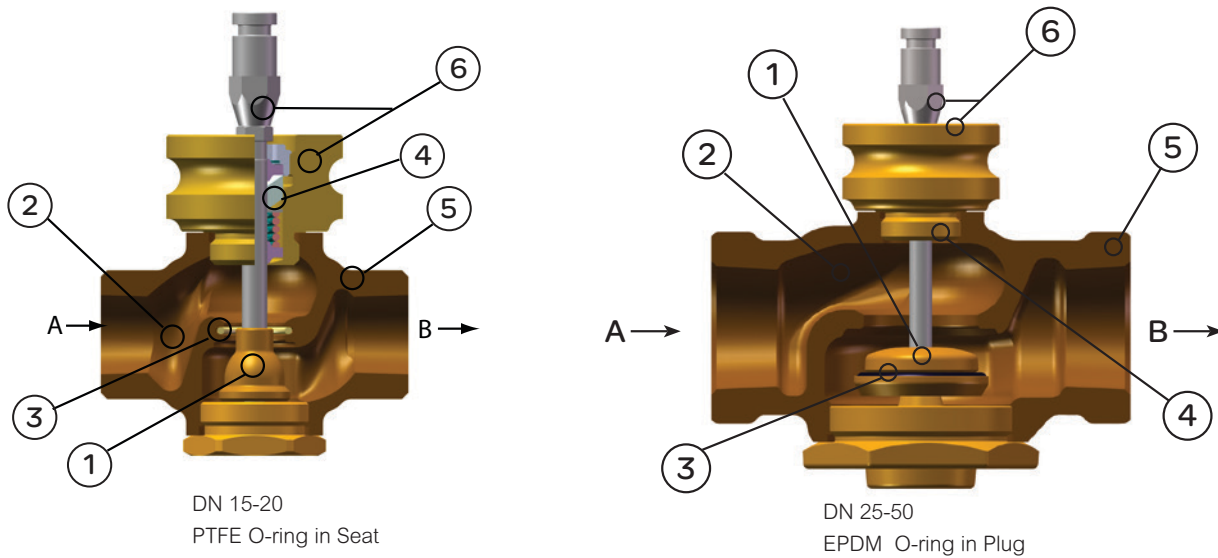


MG600C SR Spring Return



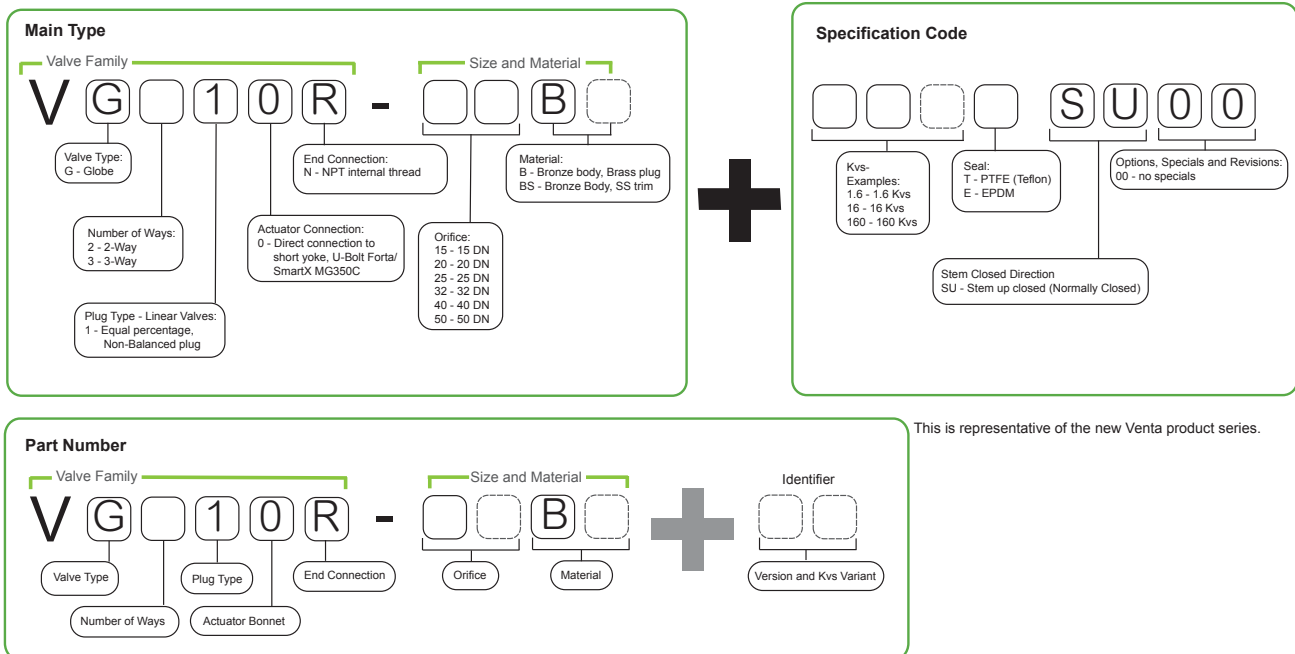
MG350C (Non-Spring Return)

Key Features



| # | Part | Description |
|---|---------------------------------|---|
| 1 | Precision Plug | Designed for high rangeability and accurate flow control. |
| 2 | Internal Cavity | Optimised fluid dynamics to ensure low pressure drop and high flow capacity. |
| 3 | Seal | Soft EPDM or PTFE seal provides a tight close-off for optimised energy conservation. |
| 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 Forta MG600C, MG600C SR Actuators and SmartX MG350C. |

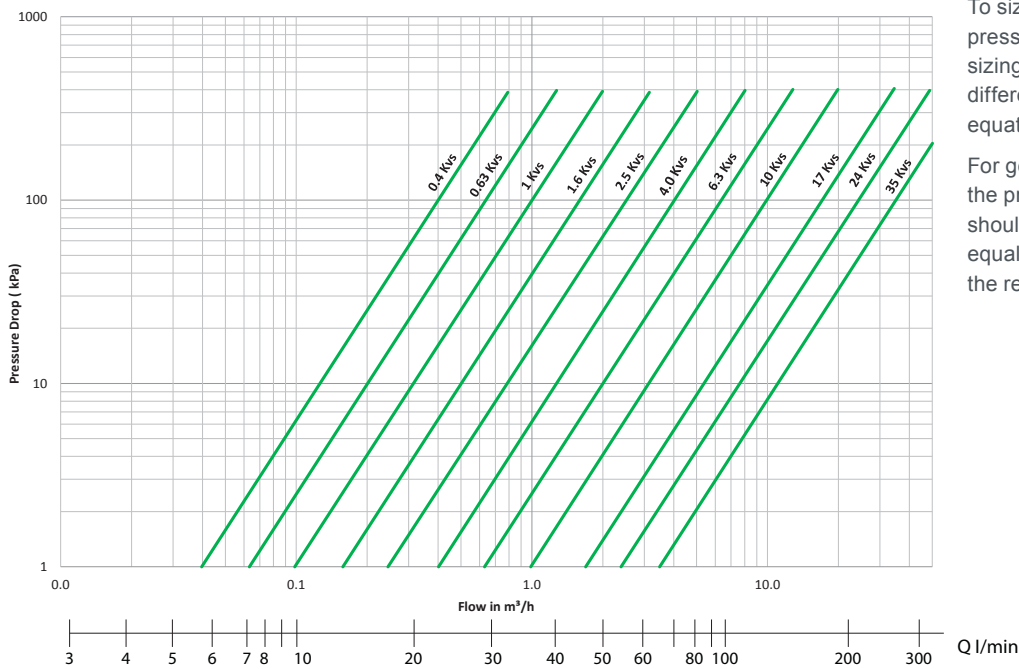
Type Designation



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.

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

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

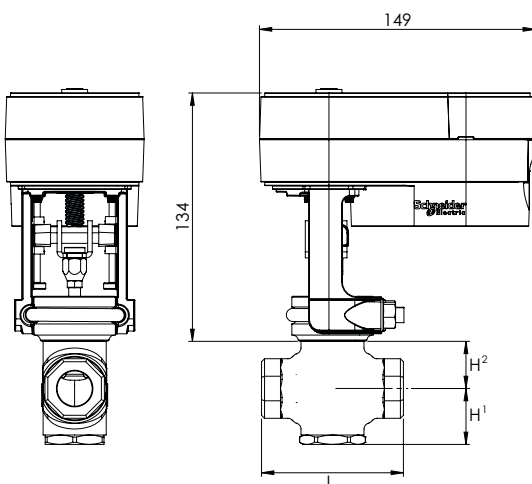
$$\Delta P = \rho \times (Q / Kv)^2$$

Kv = Valve Capacity (m³/h)
 Q = Volume flow (m³/h)
 ΔP = Pressure drop across valve (bar)
 ρ = Specific Gravity of fluid (kg/m³)

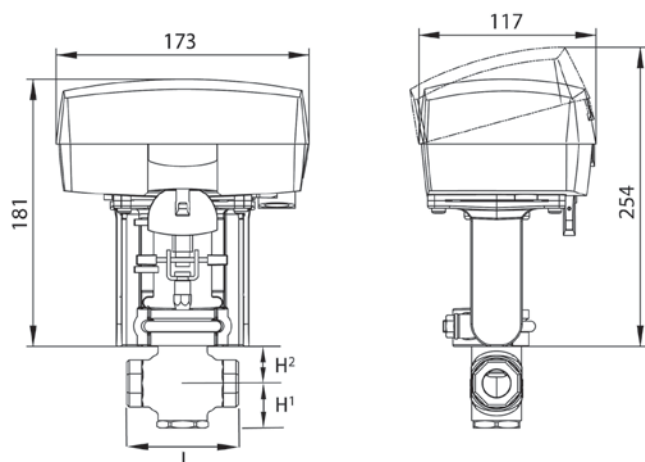
1 Bar = 100 kPa = 14.5 psi
 1m³/h = 0.278 l/s = 0.167 l/min = 4.403 gpm (US)

Dimensions (mm)

| Size | L | H 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