

## Ball Valve & Actuator

# VG1000 Series Flanged Control Ball Valves & Actuators

## Overview

DN65...150, PN16

The VG12F5 series ball valves are designed for water control in HVAC systems. The valve can be used together with Johnson Controls rotary actuator to accurately regulate the flow in response to the requirements of the controller. These ball valves can be directly mounted with Johnson Controls VA9300 series actuators for fast field installation and easy valve insulation.



## Features

- Integral flow characterizing disc achieves high control performance
- Fixed ball design ensures consistent torque
- Double o-rings reinforce stem sealing
- Low leakage rate prevents energy loss
- Integrated flanged valve body makes installation efficient
- Dirty resistance allows long life characteristic

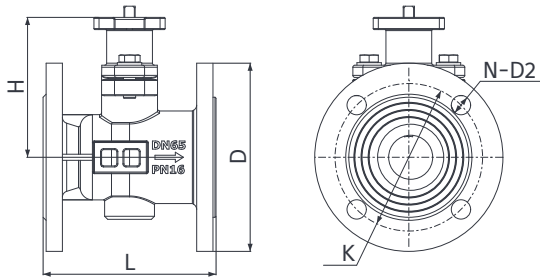
## Ordering Information

| VG | 1     | X                  | X         | X                                   | XX                                     | -                      | C                                  |  |
|----|-------|--------------------|-----------|-------------------------------------|----------------------------------------|------------------------|------------------------------------|--|
| VG | Valve |                    |           |                                     |                                        |                        |                                    |  |
|    | 1     | Control Ball Valve |           |                                     |                                        |                        |                                    |  |
|    |       | 2                  | Two - way |                                     |                                        |                        |                                    |  |
|    |       |                    | F         | Integrated flanged body (ISO7005-2) |                                        |                        |                                    |  |
|    |       |                    |           | 5                                   | Stainless steel ball and stem assembly |                        |                                    |  |
|    |       |                    |           |                                     | GT                                     | DN65 (2-1/2"), Kvs =75 |                                    |  |
|    |       |                    |           |                                     | HU                                     | DN80 (3"), Kvs =120    |                                    |  |
|    |       |                    |           |                                     | JV                                     | DN100 (4"), Kvs =160   |                                    |  |
|    |       |                    |           |                                     | KW                                     | DN125 (5"), Kvs =270   |                                    |  |
|    |       |                    |           |                                     | LX                                     | DN150 (6"), Kvs =390   |                                    |  |
|    |       |                    |           |                                     | -                                      | C                      | Place of origin: C = Made in China |  |

## Selection Table

| Two-way Ball Valve  |       |     | Close-off Pressure max. (kPa) |               |               |
|---------------------|-------|-----|-------------------------------|---------------|---------------|
| Product Number      | Size  | Kvs |                               |               |               |
| VG12F5GT-C          | DN65  | 75  | 800                           |               | 500           |
| VG12F5HU-C          | DN80  | 120 | 800                           |               | 500           |
| VG12F5JV-C          | DN100 | 160 | 800                           |               | 500           |
| VG12F5KW-C          | DN125 | 270 |                               | 800           |               |
| VG12F5LX-C          | DN150 | 390 |                               | 500           |               |
| Actuator Type       |       |     | Non-spring return             |               | Spring return |
| Actuator Series     |       |     | VA9320 Series                 | VA9335 Series | M9220 Series  |
| Actuator Torque     |       |     | 20 Nm                         | 35 Nm         | 20 Nm         |
| Linkage to Actuator |       |     | -                             |               | M9000-52F-C   |

## Dimensions



| DN    | L(mm) | D(mm) | K(mm) | N-D2(mm) | H(mm) | Weight(Kg) |
|-------|-------|-------|-------|----------|-------|------------|
| DN65  | 170   | 185   | 145   | 4-19     | 137.5 | 11         |
| DN80  | 180   | 200   | 160   | 8-19     | 145   | 14         |
| DN100 | 190   | 220   | 180   | 8-19     | 155   | 17         |
| DN125 | 200   | 250   | 210   | 8-19     | 175   | 23         |
| DN150 | 210   | 285   | 240   | 8-23     | 192.5 | 31         |

## Technical Specifications

- Pressure Rating: PN16
- Fluid Type: Regulation of hot / chilled water with glycol up to max. 50% vol. in HVAC system
- Fluid Temperature: -10 °C to 120 °C
- Flow Characteristic: Equal percentage
- Leakage: ≤0.01% Kvs (ANSI Class IV IEC 60534-4)
- Pipe Connection: Flanged ISO7005-2
- Storage Temperature: -10 to 65 °C, No condensation
- Materials:
  - Valve body: Ductile Iron
  - Stem: Stainless steel
  - Ball: Stainless steel
  - Seat: Enhanced PTFE

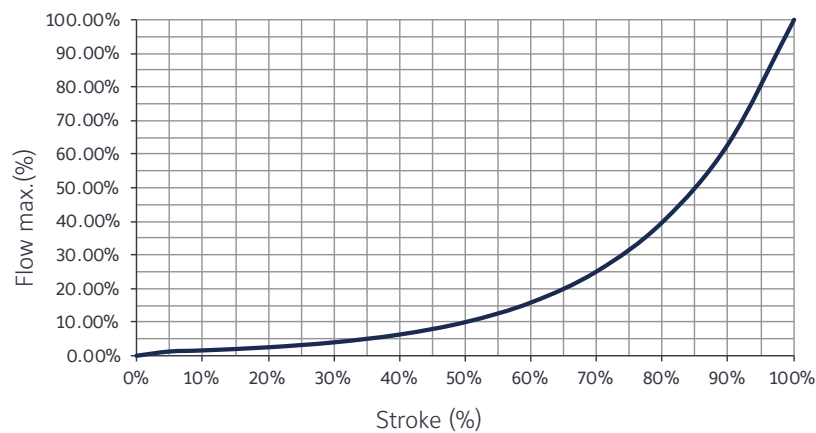


Fig1: Flow Characteristic

## Non Spring Return Actuators

| Product Number | Power Supply | Control Signal                 | Feedback                | Running time (S) | Auxiliary Switch                |
|----------------|--------------|--------------------------------|-------------------------|------------------|---------------------------------|
| VA9320-AUA-3   | 100~ 240 VAC | Floating / On-off              | -                       | 90               | M9300-2 or M9300-1 <sup>②</sup> |
| VA9320-HGA-3   | 24 VAC/VDC   | Floating / On-off / 0(2)-10VDC | 0(2)-10VDC <sup>①</sup> | 90               |                                 |
| VA9335-AUA-3   | 100~ 240 VAC | Floating / On-off              | -                       | 150              |                                 |
| VA9335-HGA-3   | 24 VAC/VDC   | Floating / On-off / 0(2)-10VDC | 0(2)-10VDC <sup>①</sup> | 150              |                                 |

Note: See "VA9320/9335" Product Bulletin for more information of actuators.

① : Only available when control signal is 0(2)-10VDC.

② : The auxiliary switch has to be ordered separately, M9300-2 = 2 SPDT, M9300-1 = 1 SPDT.

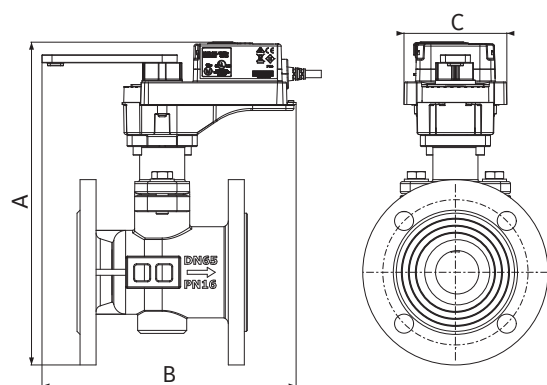
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## Spring Return Actuators

| Product Number | Power Supply | Control Signal | Feedback | Running time (S) | Spring-return time (S) | Auxiliary Switch |
|----------------|--------------|----------------|----------|------------------|------------------------|------------------|
| M9220-AGA-3    | 24 VAC/VDC   | Floating       | -        | 150              | 20                     | -                |
| M9220-AGC-3    | 24 VAC/VDC   | Floating       | -        | 150              | 20                     | 2 SPDT           |
| M9220-BDA-3    | 230 VAC      | On-off         | -        | 24~57            | 11~15                  | -                |
| M9220-BDC-3    | 230 VAC      | On-off         | -        | 24~57            | 11~15                  | 2 SPDT           |
| M9220-BGA-3    | 24 VAC/VDC   | On-off         | -        | 24~57            | 11~15                  | -                |
| M9220-BGC-3    | 24 VAC/VDC   | On-off         | -        | 24~57            | 11~15                  | 2 SPDT           |
| M9220-HGA-3    | 24 VAC/VDC   | 0(2)~10VDC     | 0~10VDC  | 150              | 20                     | -                |
| M9220-HGC-3    | 24 VAC/VDC   | 0(2)~10VDC     | 0~10VDC  | 150              | 20                     | 2 SPDT           |

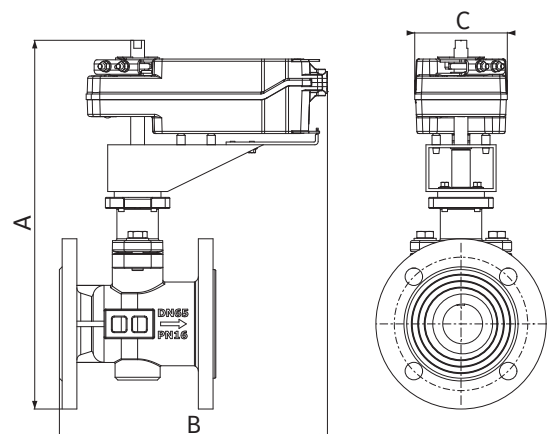
Note: See "M9220" Product Bulletin for more information of actuators.

## Assembly Dimensions (Valve with Va9320/9335 Actuator)



| Size  | A(mm) | B(mm) | C(mm) |
|-------|-------|-------|-------|
| DN65  | 322.3 | 250   | 103   |
| DN80  | 337.3 | 250   | 103   |
| DN100 | 357.3 | 250   | 103   |
| DN125 | 392.3 | 250   | 103   |
| DN150 | 427.3 | 250   | 103   |

## Assembly Dimensions (Valve with M9220 actuator)



| Size  | A(mm) | B(mm) | C(mm) |
|-------|-------|-------|-------|
| DN65  | 400   | 291   | 100   |
| DN80  | 415   | 296   | 100   |
| DN100 | 435   | 301   | 100   |