

# V232

## Two-way Plug Valve, Pressure Balanced PN 25

The V232 is a pressure balanced flanged PN25 valve with high rangeability and a high differential pressure capability. The balanced plug enables a low actuating force to control the valve.

The valve is suitable for primary and secondary district energy circuits as well as other hot and chilled water applications where high pressure or very fine resolution of controllable flow is required.

The valve can handle the following types of media:

- Hot and chilled water.
- Water containing phosphate or hydrazine additives.
- Water with antifreeze additives such as glycol.

### Specifications

Design	2-way plug valve
Pressure class	PN 25
Flow characteristic	EQM
Stroke	20 mm
Rangeability $K_v/K_{vmin}$	see table
Leakage	up to 0.02% of $K_v$ s
$\Delta P_m$	max. 800 kPa, water
Max. temperature of medium	150 °C
Min. temperature of medium	-20 °C
Flange connection	According to SS 335 and ISO 2084
Main Construction Materials	
Body	nodular iron SS 0727 (GGG40.3)
Plug and seat	stainless steel SS 2346
Stem	stainless steel SS 2346
Pressure Equipment Directive	PED 2014/68/EU, Article 4 (3)

Note: It is the responsibility of the installer or product specifier to verify media compatibility of the valves construction materials with the supplier of water treatment/heat transfer solution.



### Available Part Numbers

Size	$K_v$ s (m³/h)	Part number	Rangeability
DN			
25	10	7213238000	>200
32	16	7213242000	
40	25	7213246000	
50	38	7213250000	

- The rangeability is the ratio of  $K_v$ s and  $K_{vmin}$ .
- $K_v$  is the flow through the valve in m³/h at the specified valve lift and at a pressure drop of 100 kPa across the valve.
- $K_{vmin}$  is the minimum controllable flow (m³/h) at a pressure drop of 100 kPa within the range in which the valve characteristics conform to the slope requirements of IEC 60534-1.

### Recommendations

- If the valve is used for media at temperatures below 0 °C, it should be equipped with a stem heater in order to prevent ice formation on the valve stem.

### Spare Parts

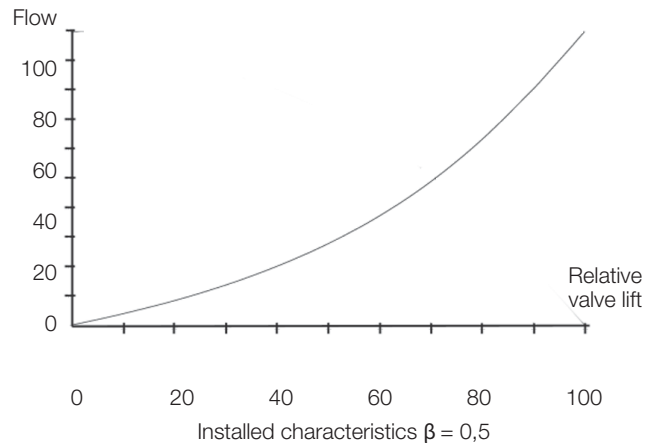
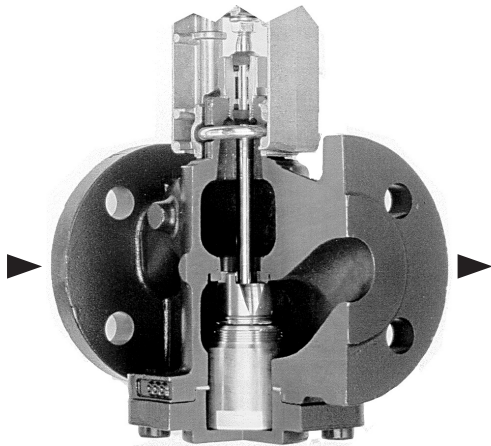
Description	Part Number
Stuffing box, Standard type S max 150 °C	100108000

## Design and Characteristics

The design of the V232 gives good resistance against solid particles in the fluid.

The plug is guided throughout the lift, which reduces the risk for vibrations. The valve closes with the stem up.

The flow characteristics of the V232 is equal percentage modified. This characteristic makes it possible to control low flow rates down to almost closed position. This is particularly important for achieving good control performance in systems with wide load variations.



## Cavitation

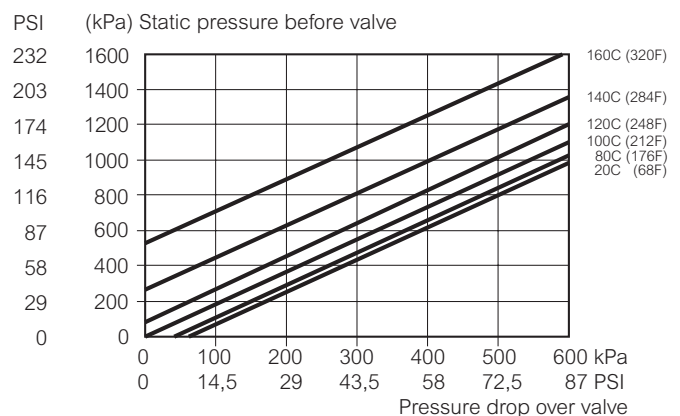
Cavitation takes place in a valve when the velocity of the fluid media over the plug and seat increases to such an extent that gas bubbles are created. As the fluid passes over the seat and the velocity decreases, these gas bubbles collapse (implode), generating considerable noise and erosion to the valve trim.

The cavitation chart provides guidance as to the cavitation zone where this phenomena will exist.

Chart usage:

1. Using the y-axis, static pressure before the valve (e.g. 1000 kPa), plot the horizontal line to the line for the temperature of the liquid (e.g. 120 °C).
2. From the intersection point, plot a vertical line downwards and read off the max. permissible pressure drop across the valve.
3. If the computed pressure drop exceeds the value from the diagram, there is risk for cavitation.
4. As a rule of thumb, to ensure the cavitation zone is not reached, the fluid velocity must be below 2 m/s.

Pressure drop chart at the beginning of cavitation



## Actuator Selection

The ability to close at various differential pressures depends on valve size and available stem force. The latter is determined by the selected actuator. The table shows performances for different actuator/valve combinations.

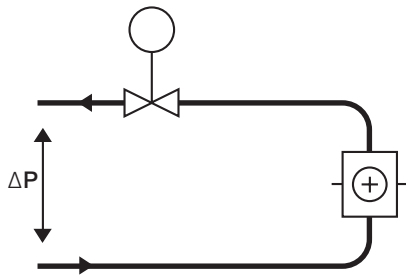
V232				Max Close-off Pressure (kPa)				
				Non-spring Return Actuators				Spring Return
Part Number	DN	Kvs	Rangeability	M400	M800	M1500	MV15B (1500N)	MG900 SR
7213238000	25	10	>200	800	1600	1600	1600	1600
7213242000	32	16		750				
7213246000	40	25		700				
7213250000	50	38		600				

Service kit:

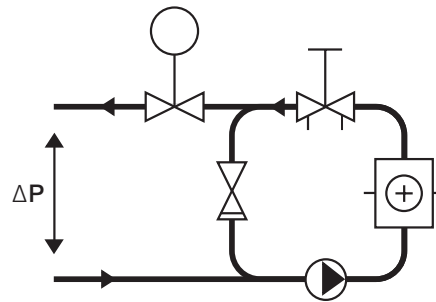
Replacement stem packing box: 100108000

## 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 installed with the actuator mounted below 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.

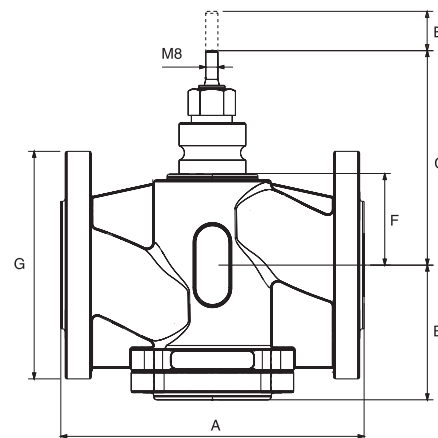
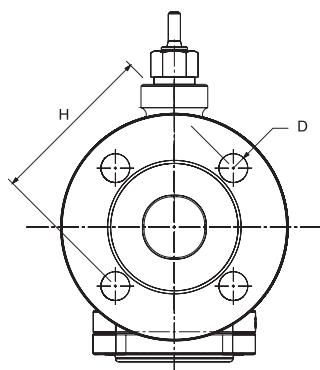


A. Typical installation without local circulating pump. To provide a good function, the pressure drop across the valve should be no less than half of the available pressure ( $\Delta P$ ). This corresponds to a valve authority of 50%.



B. Typical installation with local circulating pump. The Kvs value of the valve is to be selected so that the entire available pressure drop ( $\Delta P$ ) falls across the control valve.

## Dimensions and Weight



Part No	Conn. (DN)	Dimensions (mm)								Weight (kg)
		A	B	C	D	E	F	G	H	
7213238000	25	160	96	130	4x14	20	45	115	85	5.9
7213242000	32	180	100	143			59	140	100	8.1
7213246000	40	200	99	145			60	150	110	9.3
7213250000	50	230	111	160			75	165	125	13.5

# Flow and Pressure Drop Chart

Use the diagram below to select the actuator to close against the required  $\Delta P_c$ .

