

SpaceLogic Venta V212T

Two-way Pressure Balanced Valve, Internal pipe thread
PN 16 (232 psi)



The Venta V212T can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems.

The balanced plug allows for a lower force actuator to be fitted.

The valve can handle the following types of media:

- Hot and chilled water.
- Water with antifreeze additives such as glycol.

Specifications

| | |
|-----------------------------------|-----------------------------|
| Design | Two-way pressure plug valve |
| Pressure class | PN 16 |
| Flow characteristic | EQM |
| Stroke | 20 mm |
| Rangeability Kv/Kv _{min} | >50 |
| Leakage | Tight sealing |
| ΔPm | 400 kPa, water |
| Environment | |
| Max. temperature of medium | 120 °C |
| Min. temperature of medium | -20 °C |
| Connections | Internal pipe thread Rp |
| Main Construction Materials | |
| Body | Nodular iron EN-JS 1030 |
| Stem | Stainless steel SS 2346 |
| Plug | Brass CW602N |
| Sealing | EPDM |
| Seat | Nodular iron EN-JS 1030 |
| Standard packing box | Venta |
| Standards/Directives | |
| Pressure Equipment Directive | PED 97/23/EC 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 DN | Kv (m ³ /h) | Part number |
|------------|---------------------------|--------------|
| 25 | 10 | 721 1832 000 |
| 32 | 16 | 721 1836 000 |
| 40 | 25 | 721 1840 000 |
| 50 | 38 | 721 1844 000 |

- The rangeability is the ratio of Kv and Kv_{min}.
- Kv 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.
- Kv_{min} 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

- It is recommended to fit a strainer upstream if the valve to increase reliability and to follow waste treatment guidelines as detailed in VDI 2035.
- Valves should be installed in the return pipe to reduce exposure to media temperature extremes.
- 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

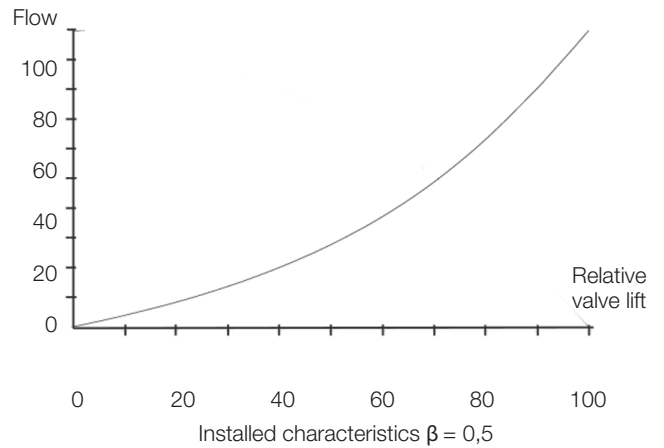
| Description | Part number |
|---------------------------|--------------|
| Stuffing box (max 150 °C) | 1 001 0800 0 |

Design and Characteristics

The V212T uses a patented design to balance the pressure. This means that only a moderate force is required to operate the valve. The design will also handle solid particles in the fluid in an efficient way.

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 V212T is equal percentage modified.



Cavitation

Cavitation takes place in a valve when the velocity of the flow between the plug and seat increases to the extent that gas bubbles are created in the water.

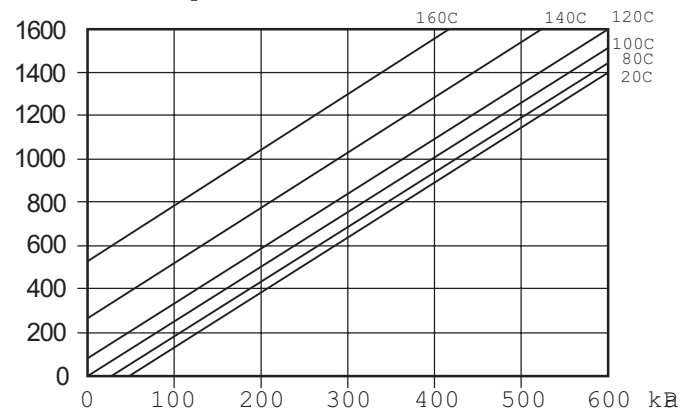
After the plug and seat the velocity decreases, thus the gas bubbles collapse (implode), generating considerable noise and causing considerable wear on the valve.

Use the Cavitation diagram to see if the risk of cavitation exists with the working conditions in the pertinent installation.

Proceed as follows:

1. Using the 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 read from the diagram there is risk for cavitation.

Pressure drop that the beginning of cavitation (kPa) Static pressure before



Pressure drop limit where cavitation might occur is dependent on valve inlet pressure and temperature of water.

Actuator Selection

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

ΔP_c = Permissible pressure differential when the valve is closed.

| Valve Size | M800 ΔP_c | M400 ΔP_c |
|------------|----------------------|----------------------|
| DN | kPa | |
| 25 | 1600 | 800 |
| 32 | 1600 | 750 |
| 40 | 1600 | 700 |
| 50 | 1600 | 600 |

Installation

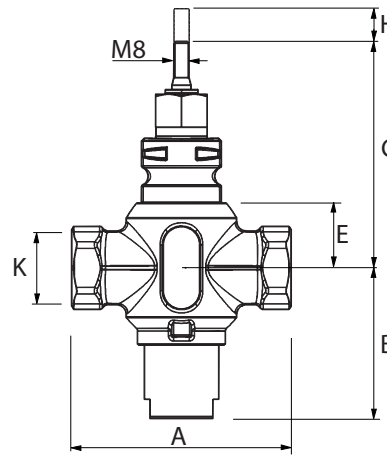
The valve should be mounted with flow direction in accordance with the valve marking.

It is recommended to install the valve in the return pipe, in order to avoid exposing the actuator to high temperatures.

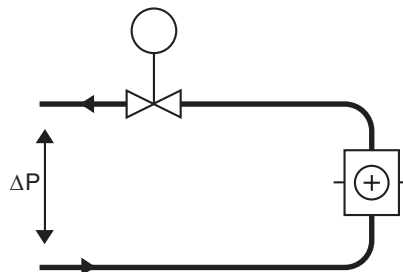
The valve must not be installed with the actuator mounted below the valve.

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.

Dimensions and Weight

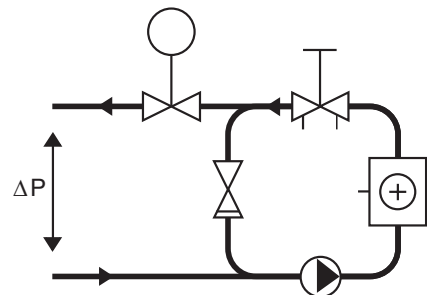


| Part No | Valve Size (DN) | Dimensions (mm) | | | | | K | Weight (kg) |
|--------------|-----------------|-----------------|----|-------|------|----|-------|-------------|
| | | A | B | C | E | H | | |
| 721 1832 000 | 25 | 115 | 79 | 119 | 34 | 20 | Rp 1 | 1.7 |
| 721 1836 000 | 32 | 130 | 70 | 120 | 35 | | Rp 1¼ | 2.2 |
| 721 1840 000 | 40 | 150 | 74 | 127.5 | 42.5 | | Rp 1½ | 3.1 |
| 721 1844 000 | 50 | 180 | 84 | 138 | 53 | | Rp 2 | 4.5 |



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 (ΔP). 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 (ΔP) falls across the control valve.

Flow and Pressure Drop Chart

