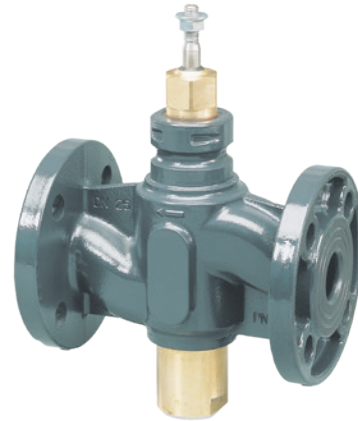


V311

Three-way Plug Valve, Flanged PN 16



Product Description

V311 can be used in a wide range of applications, such as heating, cooling, air handling and domestic hot water systems.

The valve can handle the following types of media:

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

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.

Specifications

Design	Three-way plug valve
Pressure class	PN 16)
Flow characteristic A - AB	EQM
Flow characteristic B - AB	Complementary
Stroke	20 mm
Rangeability Kv/Kvmin	>50
Leakage A - AB and B - AB	Tight sealing
ΔP_m (mixing)	400 kPa, water
ΔP_m (diverting)	60 kPa, water
Max. temperature of medium:	120 °C
Min. temperature of medium:	-20 °C
Connection	Flange according to ISO 7005-2
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
Pressure Equipment Directive	PED 2014/68/EU Module A

Size DN	Kv m ³ /h	Part number
15	1.6	731 1117 000
15	2.5	731 1121 000
15	4.0	731 1125 000
20	6.3	731 1129 000
25	10	731 1133 000
32	16	731 1137 000
40	25	731 1141 000
50	38	731 1145 000

Key to Technical Specification

- The rangeability is the ratio of Kvs 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.

Design and Characteristics

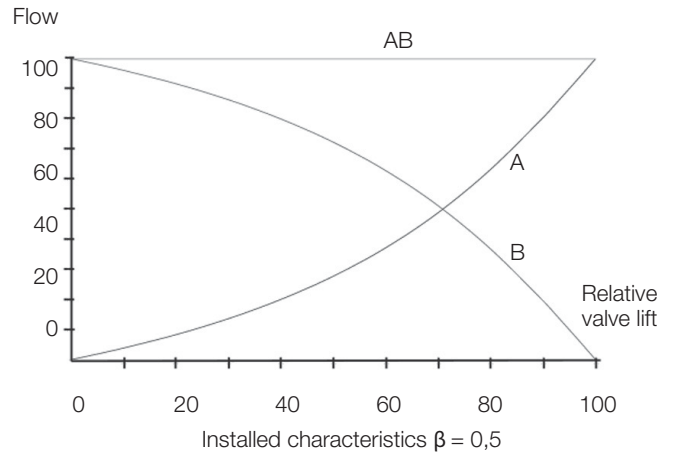
The design of the V311 gives good resistance against solid particles in the fluid. The plug is guided throughout the lift, which reduces the risk for vibrations.

The V311 is designed to be used as a mixing valve.

The valve closes port A with the stem up.

The flow characteristics A - AB of the V311 is equal percentage modified.

The flow characteristics B - AB is complement to A - AB for constant



Cavitation

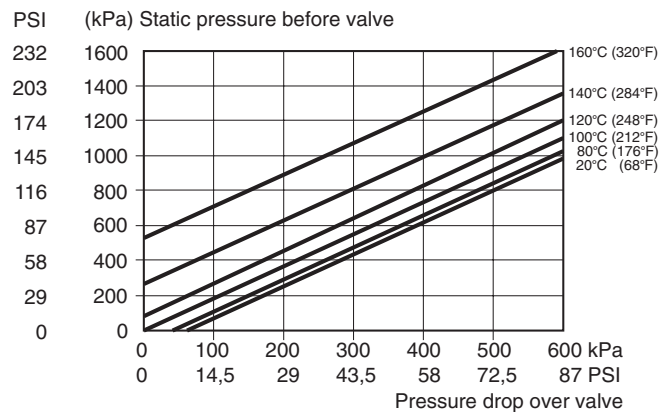
Cavitation takes place in a valve when the velocity of the fluid media over the plug and seat increases to such an extent that gas bubbles are created. As the fluid passes over the seat and the velocity decreases, these gas bubbles collapse (implode), generating considerable noise and erosion to the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

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

Chart usage:

- 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).
- From the intersection point, plot a vertical line downwards and read off the max. permissible pressure drop across the valve.
- If the computed pressure drop exceeds the value from the diagram, there is risk for cavitation.
- As a rule of thumb, to ensure the cavitation zone is not reached, the fluid velocity must be below 2 m/s.

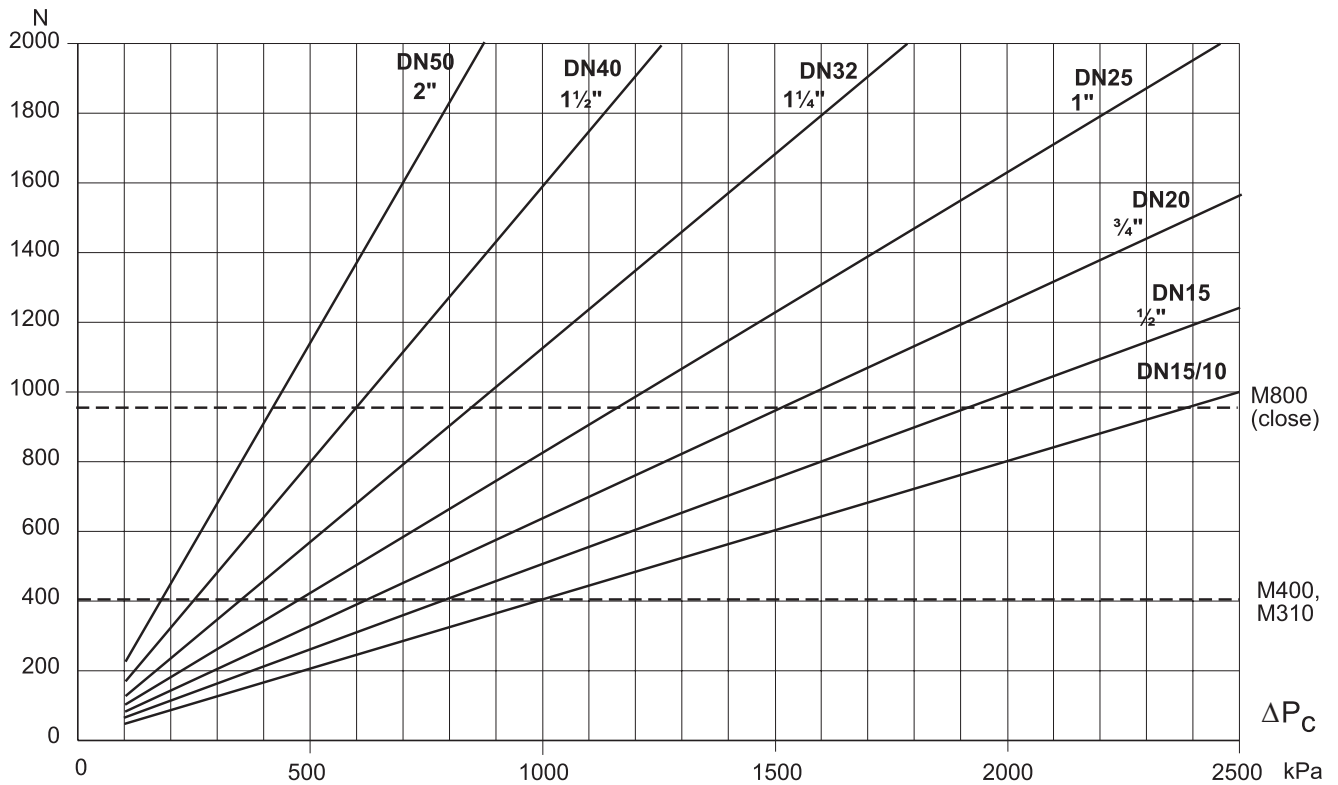
Pressure drop chart at the beginning of cavitation



Actuator

Use the diagram below to select actuator motor for the V311 to close required ΔP_c .

Actuator Power



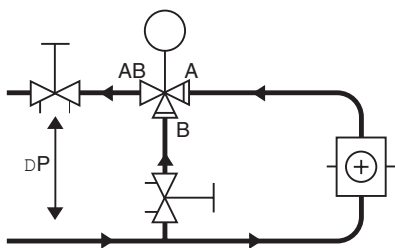
Installation

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

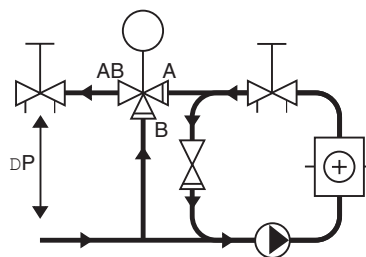
It is recommended to install the valve in the return pipe, in order to avoid exposing the actuator to high temperatures.

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

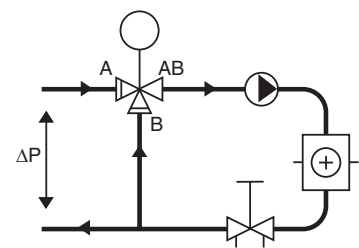
To ensure that suspended solids will not become jammed between the valve plug and seat, a filter should be installed upstream of the valve, and the pipe system should be flushed before the valve is installed.



A. Circuit without local circulating pump. To obtain good function the pressure drop across the valve should be no less than half of the available pressure drop (ΔP). This will give a valve authority of 50%.

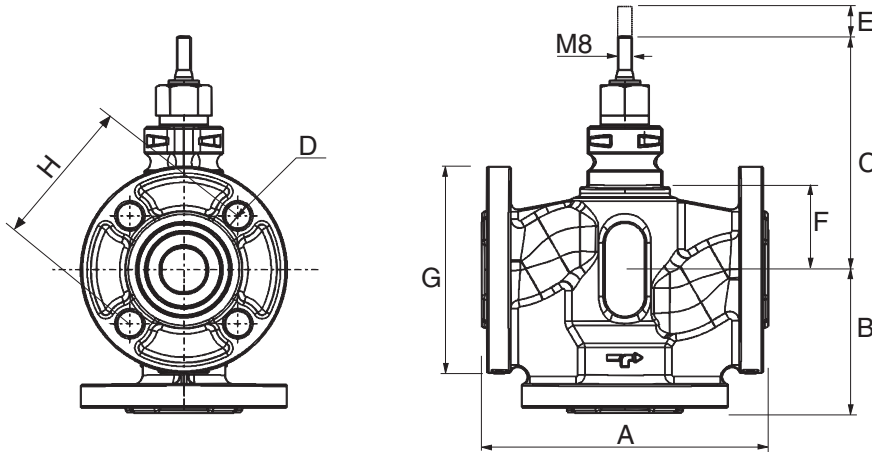


B. Circuit with local circulating pump. The Kv value of the valve is to be selected so that the entire available pressure drop, ΔP , falls across the control valve.



C. Circuit with local circulating pump. The Kv value of the valve is to be selected so that the pressure drop across the control valve becomes equal to or greater than ΔP .

Dimensions and Weight



Part No	Conn. (DN)	Dimensions (mm)								Weight (kg)
		A	B	C	D	E	F	G	H	
731 1117	15	130	65	123	4x14	20	38	95	65	2.5
731 1121	15	130	65	123	4x14	20	38	95	65	2.5
731 1125	15	130	65	123	4x14	20	38	95	65	2.5
731 1129	20	150	75	126	4x14	20	41	105	75	3.2
731 1133	25	160	80	131	4x14	20	46	115	85	3.8
731 1137	32	180	90	144.5	4x19	20	59.5	140	100	6.6
731 1141	40	200	100	146	4x19	20	61	150	110	7.5
731 1145	50	230	115	161	4x19	20	76	165	125	10.0

Spare Parts

Stuffing box

Standard type S
max 150 °C (302 °F)

Item number

1 001 0800 0

Pressure Drop Chart

