V292

Two-way Pressure Balanced Plug Valve, Flanged, PN25

The V292 valve is primarily intended to be used in heating, air conditioning and district heating installations with large pressure drops.

For other types of applications, please contact your nearest Schneider Electric sales office.

- A Balanced Plug is used for high close off pressures with a low actuator force.

The V292 valve can be used with the following types of fluids:

- Hot water, or deaerated cooling water.
- Water with additives such as phosphate or hydrazine.
- Deaerated water with glycol-type antifreeze agent (max. 50%).
- With cooling medias at temperatures below 0 °C a stem heater must be fitted, to protect from stem seizure due to freezing.

SPECIFICATIONS

Type

Design . . .Two-way pressure balanced plug valve
. . . . Stem down closed
Pressure class . . . . PN 25
Connection . . . . . . Flange according ISO 7005-2
Flow Characteristics . . . . .EQ%
ΔP_m . . . . See sizing table, page 2
ΔP_C . . . . See sizing table, page 2

Stroke

DN 65 - 100 . . . . 30 mm
DN 125 - 150 . . . . 50 mm

Rangeability

K_{vs} /K_{vmin} (IEC 534-1) . . . .>50

Leakage . . . . <0.05% of K_{vs}

Stem

DN 65 - 100 . . . . M8
DN 125 - 150 . . . . M16
(fitted with Hex Bush for M22/M50 actuators)

Medium Temperature

Maximum temperature of medium . . . . . . 150 °C
Minimum temperature of medium . . . . -10 °C

Materials

Body . . . . Nodular iron GGG40.3
Stem . . . . .Stainless steel SS 1.4021
Plug . . . . .Stainless steel SS 1.4021
Seat . . . . .Stainless steel SS 1.4021
Packing box. . . . . . . .Spring-loaded PTFE-V-ring

ORDERING TABLE

Size		K_{vs}	Part Number	Actuator Configuration
DN	In.	m³/h		
65	2½"	63	721-9254-000	Forta
80	3"	85	721-9258-000	Forta
100	4"	130	721-9262-000	Forta
125	5"	250	721-9266-000	M22 / M50
150	6"	350	721-9270-000	M22 / M50

Key to Technical Specification

- The rangeability is the ratio of K_v and K_{vmin}.
- K_{vs} is the flow through a fully open valve in m³/h at a pressure drop of 100 kPa.
- K_{Vmin} is the minimum controllable flow at a pressure drop of 100 kPa, within the flow range where the characteristic meets the requirements on characteristic slope according to IEC534-1.
- ΔP_m is max. pressure differential across a closed valve.

VALVE AND ACTUATOR SIZING TABLE

Size		K_{vs}	ΔP_m	Max Close Pressure, ΔP_C (kPa)					
DN	In.	m³/h	(kPa)	Forta M800	Forta M1500 / MV15B	Forta M3000	M700	M22*	M50*
65	2 1/2"	63	800	1500	2500	2500	1200	-	-
80	3"	85	400	1500	2500	2500	1200	-	-
100	4"	130	150	1100	1600	2500	800	-	-
125	5"	250	100	-	-	-		1800	2500
150	6"	350	100	-	-	-		1400	2500

100 kPa = 1 bar

ΔP_C = Maximum allowed pressure differential across a closed valve (a function of actuator performance)
ΔP_m = Maximum allowed pressure across a fully 'open' valve (a function of hydronic valve performance)
*M22 and M50 actuators will not fit to valves DN65-100

FLOW CAPACITY / PRESSURE DROP CHARTS FULLY OPEN VALVE
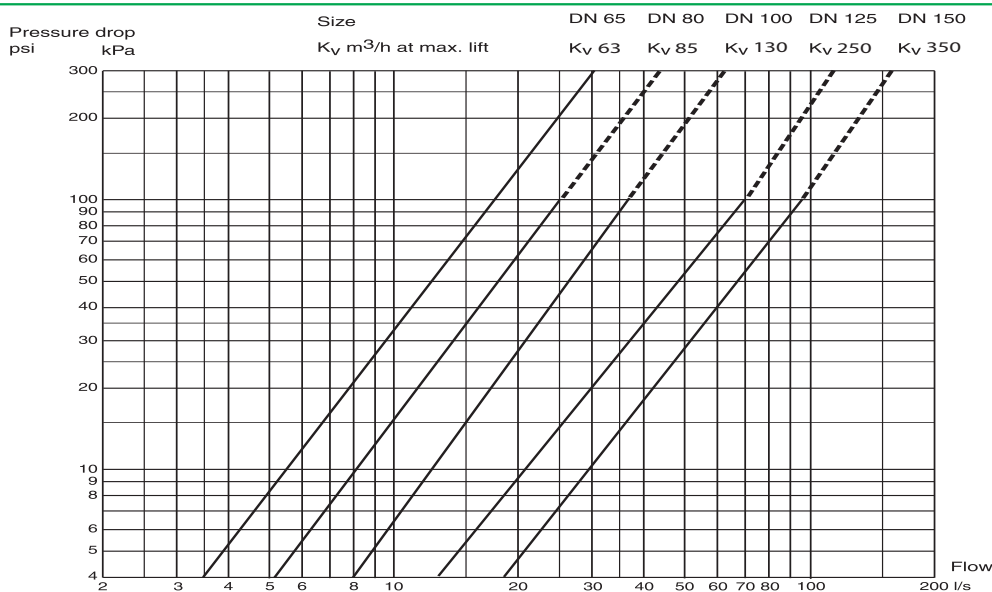
CAVITATION

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.

When, after the plug and seat, the velocity decreases, the gas bubbles collapse (implode), generating significant audible noise and causing considerable wear to the seat and plug.

By means of the cavitation diagram shown can be checked if risk of cavitation exists with the working conditions in the application.

Chart Explanation: Using the static pressure before the valve (e.g. 1000 kPa), plot a 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. permissable pressure drop across the valve.

If the computed pressure drop exceeds the value read from the diagram, there is risk of cavitation.

To avoid risk of cavitation the fluid velocity should never exceed 5 m/s.
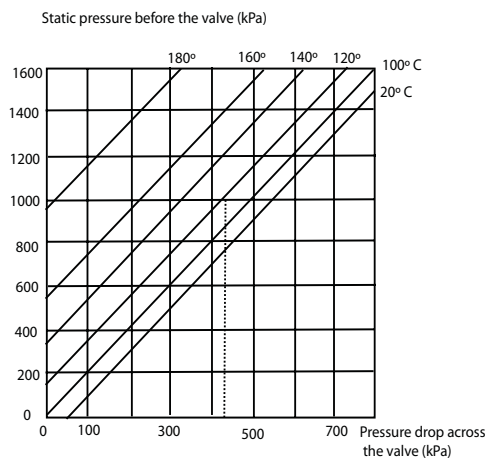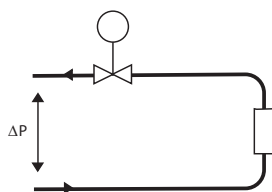
INSTALLATION

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.

SYSTEM SCHEMATICS

A. Typical installation without local circulation 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%.
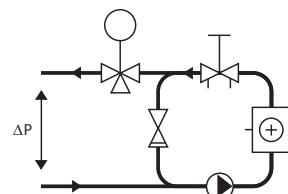
B. Typical installation with local circulation pump.

The K_{vs} value of the valve to be selected so that the entire available pressure drop (ΔP) falls across the control valve.
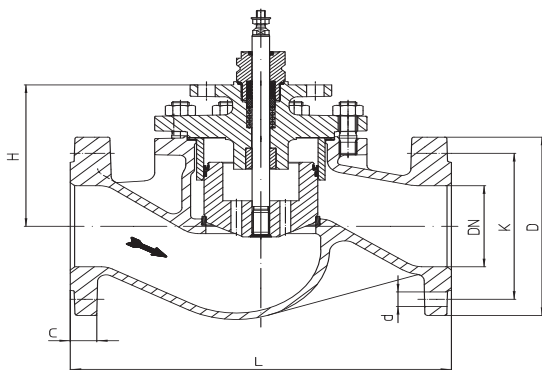
EQ % IN PRINCIPLE

The flow characteristic of the V292 is equal percentage (EQ%, also called logarithmic), giving an equal-percentage change in flow.

This is necessary to give good linear heat transfer control in systems with large load variations.
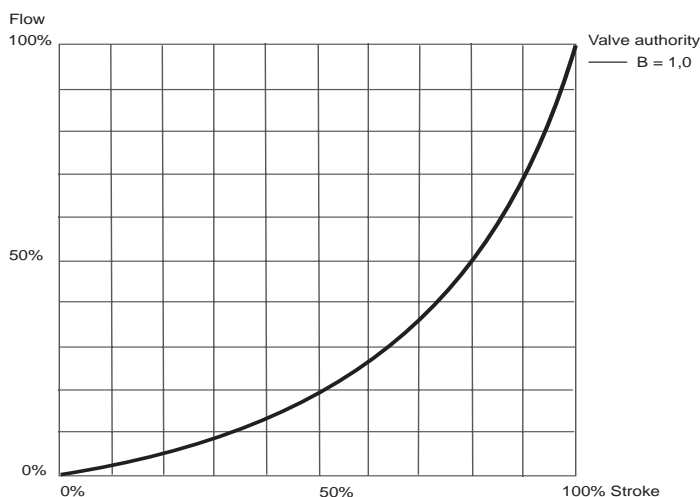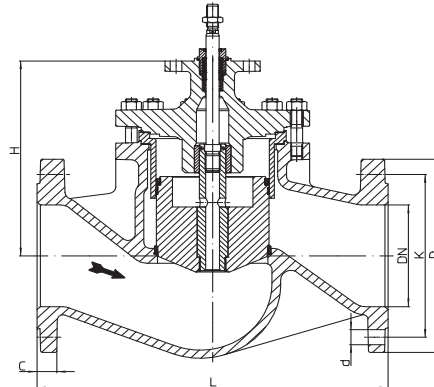
DIMENSIONS AND WEIGHT

DN 65-100
(Forta actuator configuration)

DN 125-150
(M22 / M50 Actuator configuration)

Part No.	Size	Stroke	Dimensions						Weight
			L	H	d	D	K	C	
	DN	mm	mm	mm	mm	mm	mm	mm	kg
721-9225-000	65	30	290	137	8x18	185	145	22	16.7
721-9258-000	80	30	310	152	8x18	200	160	24	22.4
721-9262-000	100	30	350	171	8x22	235	190	24	32.5
721-9266-000	125	50	400	228	8x26	270	220	26	67
721-9270-000	150	50	480	288	8x26	300	250	28	97

Accessories and Spare Parts

Gland Service Kit (Packing Box)
DN65-100 . . . . 1 001 0820-0
DN125-150 . . . . 1 001 0821-0

Hex Bush Valve to actuator stem coupling, DN125-150 . . . . 880 0134 000

Stem Heater
V292, DN65-100 . . . . 880 0112 000
V292, DN125-150 . . . . 880 0113 000