

V222



Two-way Pressure Balanced Plug Valve, Flanged, PN16

The V222 is a flanged plug valve, designed for control of large flows in heating and air conditioning installations. The plug is balanced for high close off pressures from a low actuating force.

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

The V222 valve can be used with the following types of fluids:

- Hot water, or de aerated cooling water.
- De aerated 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 16
 Connection Flange according ISO 7005-2
 Flow Characteristics EQ%
 Max Fluid Velocity 5 m/s

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 Grey cast iron GG25
 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} m ³ /h	Part Number	Actuator Configuration
DN	In.			
65	2½"	63	721-2254-000	Forta
80	3"	85	721-2258-000	Forta
100	4"	130	721-2262-000	Forta
125	5"	250	721-2266-000	M22 / M50
150	6"	350	721-2270-000	M22 / M50

Key to Technical Specification

- The rangeability is the ratio of K_{vs} and K_{vmin} .
- K_{vs} is the flow through a fully open valve and 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.

VALVE AND ACTUATOR SIZING TABLE

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

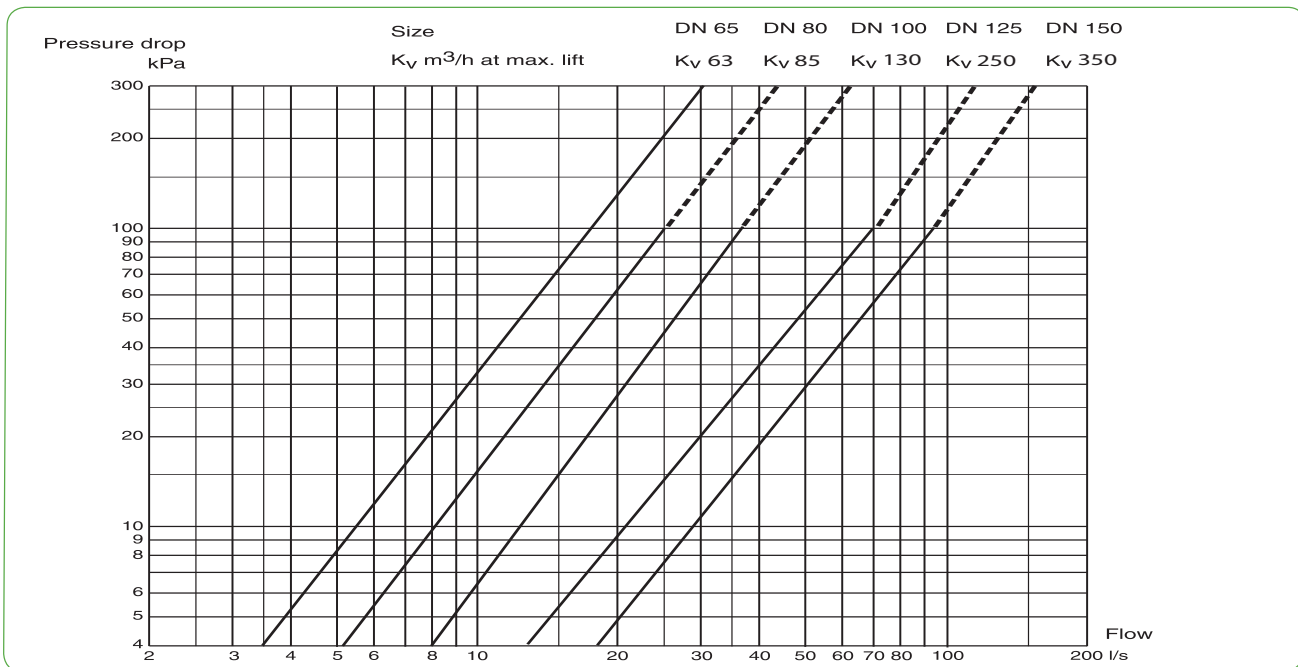
100 kPa = 1 bar

ΔP_c - Maximum allowed pressure drop 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

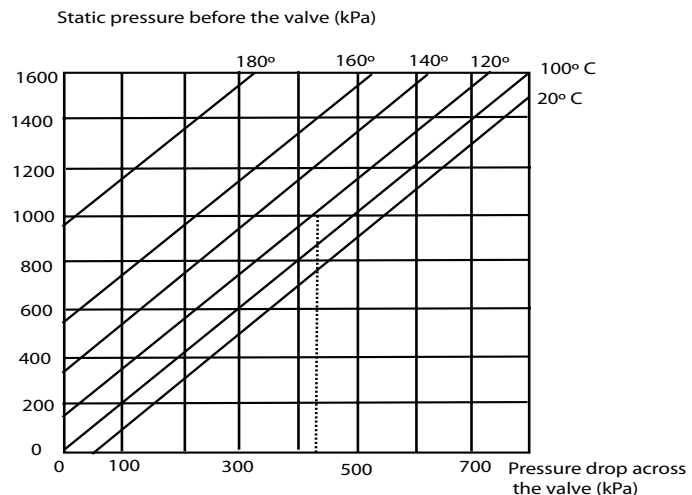
Cavitation takes place in a valve when the velocity of the flow between the plug and seat increases to the extent that gas bubbles are created in the water.

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. permissible 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

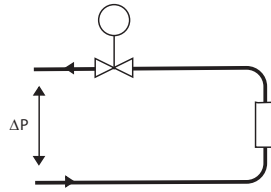
The valve should be mounted with flow direction in accordance with the valve marking.

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.

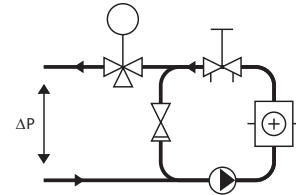
To ensure that suspended solids will not become jammed between the valve plug and seat, a filter should be installed upstream of the valve, and the pipe system should be flushed before the valve is installed.

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%.



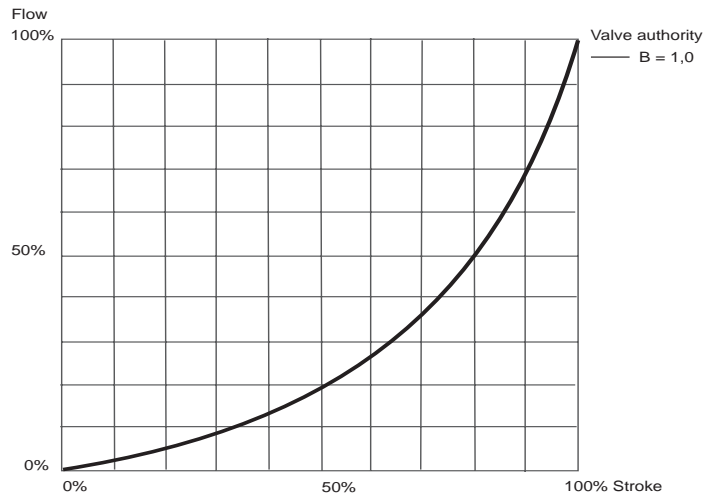
B. Typical installation with local circulation pump.

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

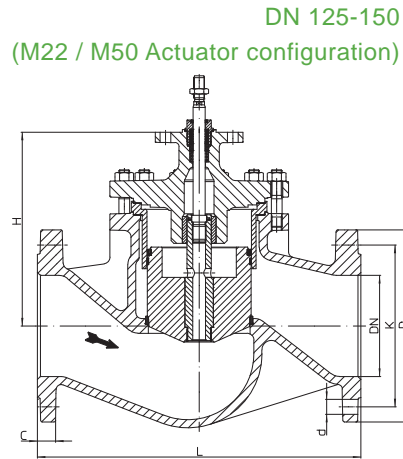
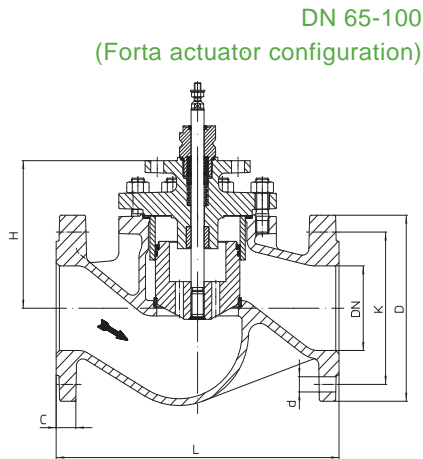
EQ % IN PRINCIPLE

The flow characteristic of the V222 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



Part No.	Size	Stroke	Dimensions						Weight
			L	H	d	D	K	C	
	DN	mm	mm	mm	mm	mm	mm	mm	kg
721-2254-000	65	30	290	137	4x18	185	145	20	16.8
721-2258-000	80	30	310	152	8x18	200	160	22	22.9
721-2262-000	100	30	350	171	8x22	235	190	24	36.9
721-2266-000	125	50	400	228	8x26	270	220	26	63
721-2270-000	150	50	480	288	8x26	300	250	28	93

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

- V222, DN65-100 880 0112 000
- V222, DN125-150 880 0113 000