Maxifluss Rotary Plug Valve

VETEC Type 72.4

Double eccentric control valve for process engineering and industrial applications

Valve size	**DN 25 to DN 300**	**NPS 1 to NPS 12**
Nominal pressure	**PN 10 to PN 40**	**ANSI Class 150 and 300**
Temperature	**–100 to 400 °C**	**–148 to 752 °F**

Valve body made of

- Cast/carbon steel or
- Stainless cast/carbon steel

Seat version

- Metal sealing, armored or unarmored
- Soft sealing

The valves can be equipped with different accessories, such as positioners, solenoid valves and other accessories according to VDI/VDE 3845.

Standard version

For temperatures from –100 to 400 °C (–148 to 752 °F)

Version

Sandwich-style body (no flanges)

- DN 25 to DN 300, PN 10/PN 16/PN 25/PN 40, face-to-face dimensions acc. to EN 558-1, Table 16, Series 36
- NPS 1 to NPS 12, Class 150/Class 300, face-to-face dimensions acc. to EN 558-2, Table 16, Series 36

Further versions

- TA-Luft packing/double packing
- Special materials for body and trim
- Noise-reducing features
- Flange version with tongue/groove according to EN 1092-1
- RF according to ANSI
- Versions for higher and lower temperatures on request

Image 1: VETEC Type 72.4 Maxifluss Rotary Plug Valve (example with mounted Type AT Actuator)

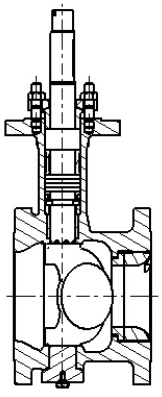


Image 2: Sectional drawing

Principle of operation

The shaft/plug arrangement is eccentric (Figs. 3 and 4). The double-eccentric design of the Maxifluss rotary plug valve is achieved in combination with the offset of the plug's pivot. When turning the plug shaft from closed position in opening direction, the double-eccentric design allows the plug to lift off the seat smoothly without initial breakaway torque. The valve is not opened suddenly and shows a stable control response even with small opening angles. The rotary plug valve can be used for both directions of flow.

Image 3: Double-eccentric principle

For gases and vapors, the direction of flow is FTC (medium closes).
The flow coefficient depends on the opening angle of the valve.
Using positioners or cam disks, the natural characteristic of the Maxifluss rotary plug valve can be modified to achieve a linear or equal-percentage characteristic (Figs. 5 and 6).

Fail-safe action

In combination with the Type R/M/AT/S Rotary Actuators, the control valve has two fail-safe actions, which become effective when the piston is relieved of pressure or when the supply air fails.

Valve CLOSED without supply air: Maxifluss rotary plug valve is closed when the supply air fails.
Valve OPEN without supply air: Maxifluss rotary plug valve is opened when the supply air fails.

Installation

Observe the direction of flow indicated by the arrow on the valve body.

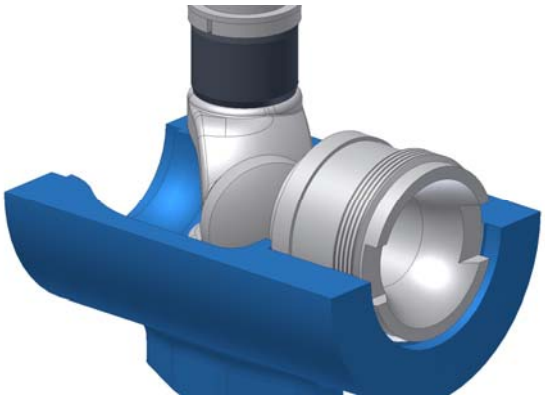


Image 4: Plug movement with double-eccentric arrangement

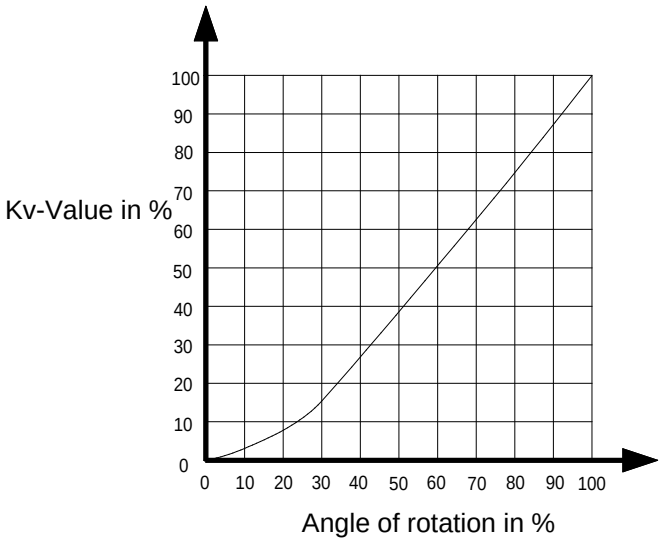


Image 5: Natural characteristic

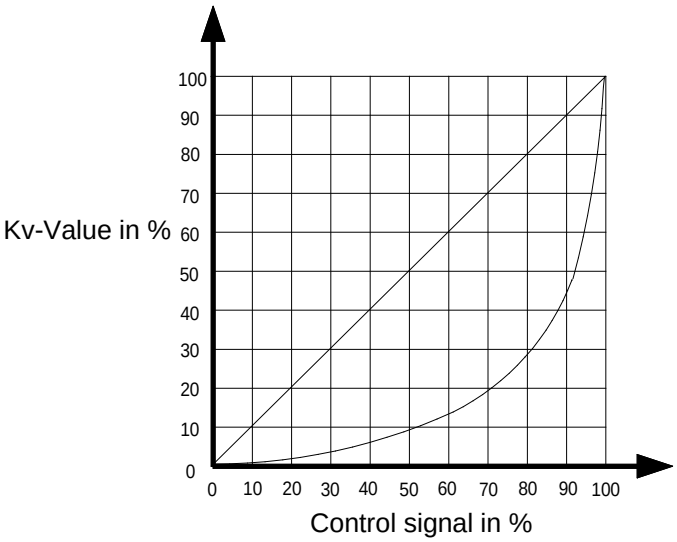


Image 6: Equal-percentage and linear characteristic

Table 1: Technical data

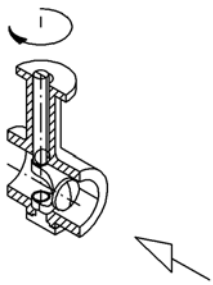
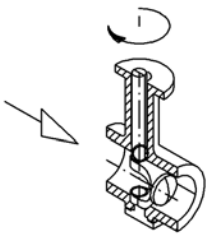
Maxifluss Type	72.4	
Valve size	DN 25 to DN 300	NPS 1 to NPS 12
Style	Flange	Flange
Flange pressure rating	PN 10/16/25/40	ANSI Class 150/Class 300
Max. operating pressure	40 bar	50 bar
Overall length	EN 558-1, Series 36	EN 558-2, Series 36
Flange bore/form	DIN EN 1591-1/DIN 2500	ASME B16.5
Seat ring	 Direction of flow from the front: FTO	 Direction of flow from behind: FTC
Characteristic	Equal percentage or linear (using cam disk or positioner characteristic) On/off valve	
Rangeability	200:1	
Temperature range	Medium: –100 to +400 °C	
Opening angle	75°	

Table 2: Materials

Body	**1.0619/A216 WCC**	**1.4408/A351 CF8M**
Shaft	1.4404	
Plug	1.4404/Stellite 6	
Trunnion bearing	1.4404	
Seat ring	1.4404 armored with carbide metal/seat with soft sealing	
Seat holder	1.4404	
PTFE ring on seat	PTFE	
O-ring on seat	FPM 80 VR1	
Bearing bushing	1.4404/plastic	
Packing	1.4404	
O-ring	FPM 80 VR1	
Screw plug	1.4404	
Screw plug seal	1.4404	
Trunnion bearing seal	Graphite/stainless steel/PTFE	
Packing	PTFE/graphite	

Table 3: Kvs and Cv coefficients

3a: Seat with metal sealing

DN		25	40	50	80	100	150	200	250	300
NPS		1	1½	2	3	4	6	8	10	12
Flow rate										
100 %	Kvs	16	40	80	245	370	685	950	1925	2680
	Cv	19	47	94	286	430	800	1110	2238	3116
	Seat Ø (mm)	18	26	36	60	76	105	135	170	210
60 %	Kvs	10	24	48	147	220	410	570	1230	1640
	Cv	12	28	56	171	256	477	663	1430	1907
	Seat Ø (mm)	16	21.5	29.5	50	60	86	106	146	163
40 %	Kvs	6	16	33	105	150	275	380	770	1070
	Cv	7	19	38	122	174	320	442	895	1244
	Seat Ø (mm)	14	18.5	25.5	44	53	73	88	126	133
25 %	Kvs	4	12	20	63	93	179	240	480	670
	Cv	5	14	23	73	108	207	277	555	775
	Seat Ø (mm)	10	16	21	37	45	62	73	102	116

3b: Seat with soft sealing

DN		25	40	50	80	100	150	200	250	300
NPS		1	1½	2	3	4	6	8	10	12
Flow rate										
100 %	Kvs	10	40	68	162	252	510	726	1450	2010
	Cv	12	47	79	189	295	593	849	1686	2337
	Seat Ø (mm)	16	26	35	54	70	98	128	160	204
60 %	Kvs	6	21	41	135	164	270	460	990	1320
	Cv	7	24	50	158	191	314	535	1151	1535
	Seat Ø (mm)	15	21.5	29.5	50	60	86	106	146	163
40 %	Kvs	4	15	28	105	121	182	300	620	860
	Cv	5	17	33	123	141	212	349	721	1000
	Seat Ø (mm)	14	18.5	25.5	46	53	73	88	126	133
25 %	Kvs	2	11	20	56	72	132	200	410	560
	Cv	2	13	23	65	83	153	231	474	647
	Seat Ø (mm)	10	16	21	37	45	62	73	102	116

Table 4: Weight in kg (without actuator)

DN	25	40	50	80	100	150	200	250	300
NPS	1	1½	2	3	4	6	8	10	12
Weight (kg)	6	10	12	22	33	65	90	136	168

Table 5: DIN face-to-face dimensions

	DN	25	40	50	80	100	150	200	250	300
PN 10	Length (mm)	102	114	124	165	194	229	243	297	338
PN 16										
PN 25										
PN 40										

Table 6: ANSI face-to-face dimensions

	NPS	1	1½	2	3	4	6	8	10	12
Class 150	Length (mm)	102	114	124	165	194	229	243	297	338
Class 300										

Order specifications:

Type	According to table
Valve size	DN ...
Nominal pressure	PN ...
Body material	According to table
Seat version	Metal or soft sealing
Characteristic	Equal percentage or linear
Kvs/Cv	According to table
Direction of flow	Standard: FTO (medium opens) Reverse: FTC (medium closes)
Actuator	Type
Type of mounting	Mounting location of actuator
Fail-safe action	when supply air fails Fail-close Fail-open
Max. differential pressure for actuator	... bar
Supply air	... bar
Bench range	... bar
Accessories	e.g. positioners, limit switches, solenoid valve etc.
Others	e.g. special version, certificates, approvals etc.