Maxifluss Rotary Plug Valve

VETEC Type 82.7

Double eccentric control valve for process engineering and industrial applications

Valve size	**DN 25 to DN 250**	**NPS 1 to NPS 10**
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

Flanged version

- DN 25 to DN 250, 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 10, 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, male face/female face according to EN 1092-1
- RF and RTJ according to ANSI
- Versions for higher and lower temperatures on request

Image 1: VETEC Type 82.7 Maxifluss Rotary Plug Valve (example with mounted Type R Actuator)

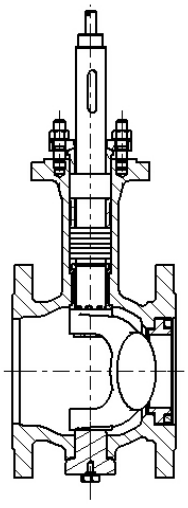


Image 2: Sectional drawing

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.

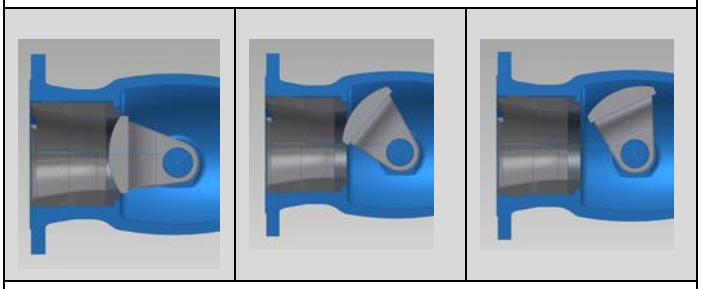


Image 3: Double-eccentric principle

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.

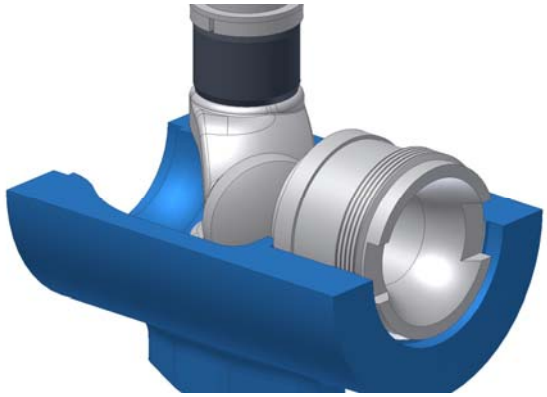


Image 4: Plug movement with double-eccentric arrangement

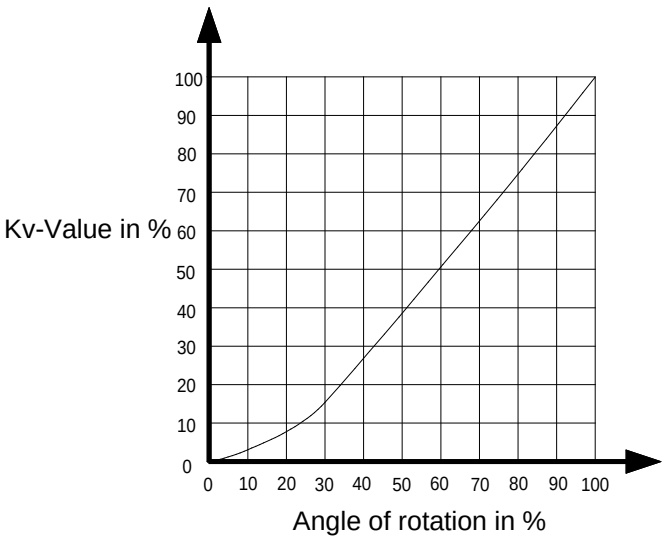


Image 5: Natural characteristic

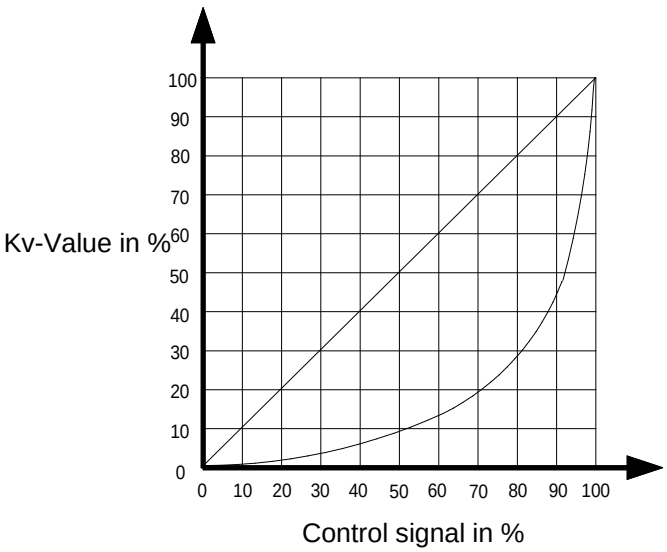


Image 6: Equal-percentage and linear characteristic

Table 1: Technical data

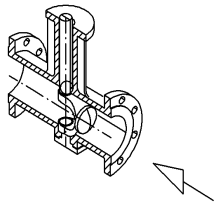
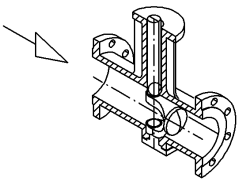
Maxifluss Type	82.7	
Valve size	DN 25 to DN 250	NPS 1 to NPS 10
Style	Flange	Flange
Flange pressure rating	PN 10/16/25/40	Class 150/300
Max. operating pressure	40 bar	50 bar
Overall length	EN 558-1, Series 36	EN 558-2, Series 36
Flange bore/form	DIN EN 1591-1/ASME B16.5/DIN 2500	
Seat ring	 Direction 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
NPS		1	1½	2	3	4	6	8	10
Flow rate									
100 %	Kvs	16	40	80	245	370	685	950	1925
	Cv	19	47	94	286	430	800	1110	2238
	Seat diameter (mm)	18	26	36	60	76	105	135	170
60 %	Kvs	10	24	48	147	220	410	570	1230
	Cv	12	28	56	171	256	477	663	1430
	Seat diameter (mm)	16	21.5	29.5	50	60	86	106	146
40 %	Kvs	6	16	33	105	150	275	380	770
	Cv	7	19	38	122	174	320	442	895
	Seat diameter (mm)	14	18.5	25.5	44	53	73	88	126
25 %	Kvs	4	12	20	63	93	179	240	480
	Cv	5	14	23	73	108	207	277	555
	Seat diameter (mm)	10	16	21	37	45	62	73	102

3b: Seat with soft sealing

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

Table 4: Weight in kg (without actuator)

DN	25	40	50	80	100	150	200	250
NPS	1	1½	2	3	4	6	8	10
Weight (kg)	8	13	16	35	43	85	140	190

Table 5: DIN face-to-face dimensions

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

Table 6: ANSI face-to-face dimensions

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