DATA SHEET TY005.029

Rotary Plug Valve - VETEC Type 62.7

Valve Size	NPS 1 to 8
ANSI Pressure Class	CL 150 and 300
Temperature Range of Medium	-76°F to +428°F (-60°C to +220°C)

Valve Body Material

- Cast carbon steel
- Low temperature carbon steel
- Cast stainless steel

Seat Version

- Metal sealing
- Soft sealing

Standard Version

For ambient air temperatures from:
-4°F to 158°F (-20°C to +70°C)

Low Temperature Version

For ambient air temperatures from:
-67°F to 176°F (-55°C to 80°C)

Flanged Version

- NPS 1 to 8, Class 150/300, face to face dimensions acc. to ANSI / ISA 75.08.02
- Version acc. to DIN Standards also available

The valves can be equipped with different accessories, such as positioners, solenoid valves and other accessories.

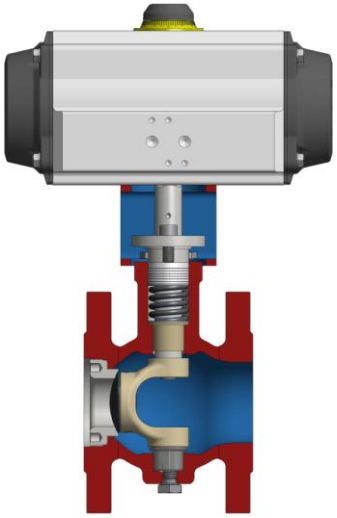


Fig.1 VETEC Type 62.7 with Type AT Actuator

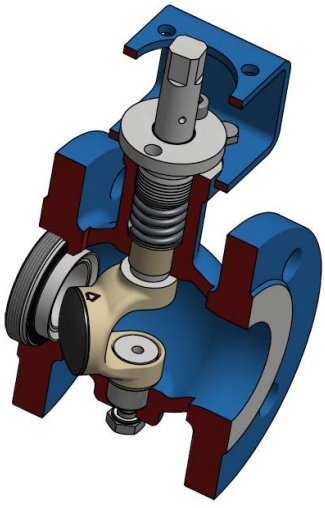


Fig.2 VETEC Type 62.7 Sectional Drawing

Rotary Plug Valve - VETEC Type 62.7

Principle of Operation

Rotating the plug of the valve in and out of the path of the flow determines the flow coefficient (Cv) of the valve, which is a function of the flow rate and pressure loss through the valve. This principle is used to control either flow rate or differential pressure, as desired.

The offset between the plug face and shaft center and the offset between the shaft center and valve centerline give the rotary plug valve its double eccentric (double offset) design (fig.3/4). When opening and closing the valve, this double eccentric design allows the plug to lift smoothly off the seat without any friction, eliminating any breakaway torque. This smooth opening also allows for stable control, even at small opening angles.

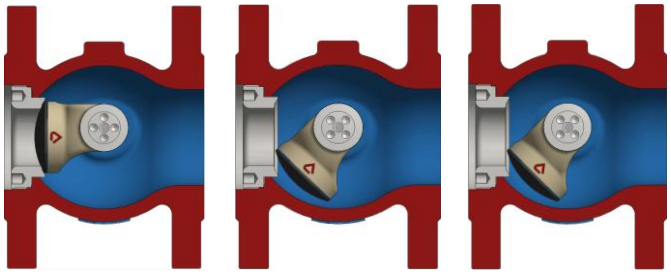


Fig.3 Double-Eccentric Principle

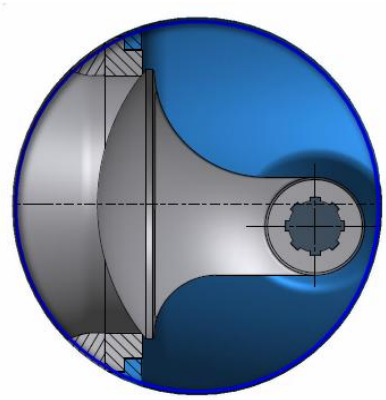


Fig.4 Double-Eccentric Principle

Fail-safe Action

When combined with a Type AT actuator, the control valve may exhibit one of two fail-safe functions upon failure of supply air pressure.

Fail Close - the rotary plug valve will close upon loss of supply air

Fail Open - the rotary plug valve will open upon loss of supply air

Flow Direction

The rotary plug valve may be used for following flow direction (fig.5):

FTC **=** flow to close

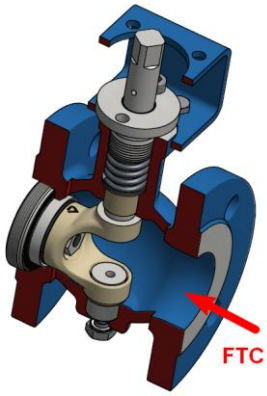


Fig.5 Flow Direction

An arrow on the valve will indicate the direction of flow the valve has been configured for (fig.6)

For installing the valve into the pipeline we recommend a minimal distance of 6 nominal valve size (6 x NPS) in front of the valve and 6 nominal valve size (6 x NPS) behind the valve.

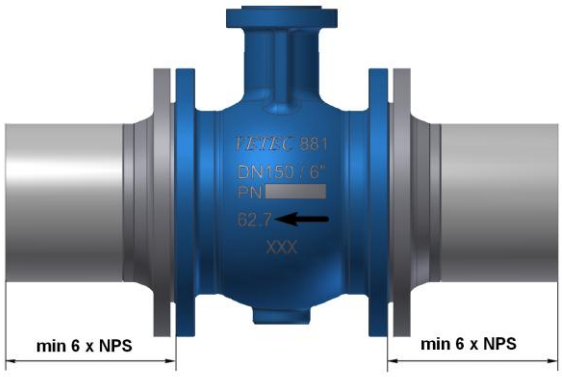


Fig.6 Installation into the pipeline

Flow Characteristic

The rotary plug valve has an inherent characteristic (fig. 7); however, a cam disc or positioner may be used to achieve an equal percentage or linear characteristic (fig. 8)

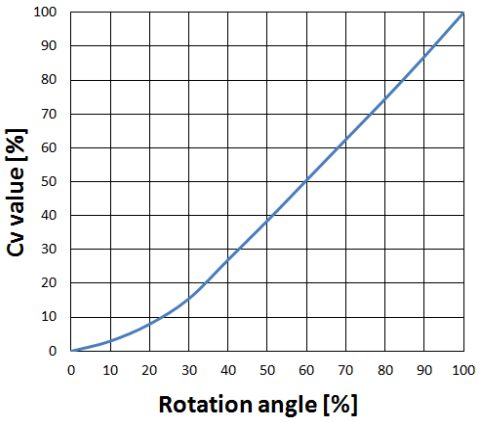


Fig. 7 Inherent Characteristic

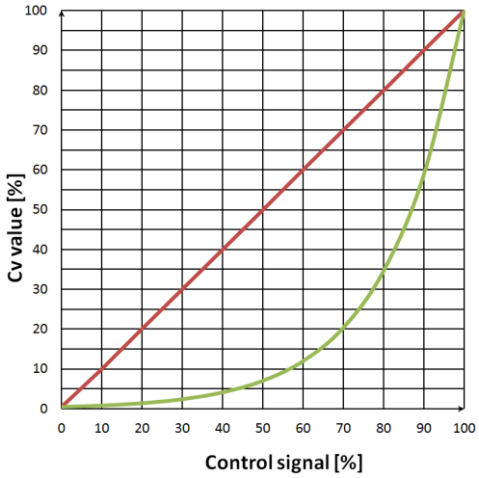


Table 1 - Technical Data

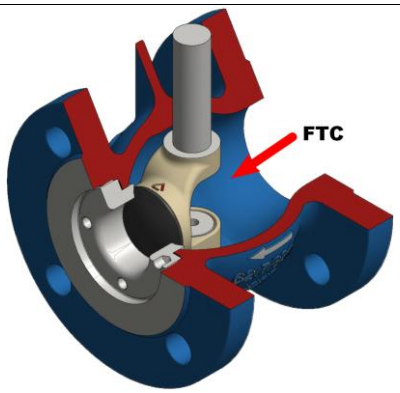
VETEC Type	**62.7**	
Valve size	NPS 1 to 8	
End connection	Flanged	
Flange pressure rating	CL 150 / 300	
Overall length	ANSI / ISA 75.08.02 (formerly 75.04) / IEC 60534-3-2	
Flange bore / form	ASME B16.5	
Flow direction	 Flow direction – flow to close	
Characteristic	Equal percentage or linear / positioned characteristic / on / off valve	
Rangeability	up to 200 : 1	
Temperature range of medium	-76 °F to 428 °F (-60°C to +220°C)	
Opening angle	90°	
Leakage class acc. to ANSI/FCI 70-2	Standard - metal seat	Optional - soft seat
	IV	VI

Table 2 - Materials

Part	Material		
Body	A216WCC	A351CF8M	A352LC3
Shaft	316 L		
Plug	316 L		
Disc back bar	Plasma Nitride 316 SS		
Seat ring	Full 316 SS or 316 SS with PTFE soft sealing surface		
Bushing	Polymer / Iglidur „X“		
Bonnet	316 L		
Spring- loaded packing	PTFE		

Table 3 - Face-to-Face Dimensions ANSI (Class 150 / 300)

NPS		1	1½	2	3	4	6	8
Length	[in]	4.02	4.49	4.88	6.50	7.64	9.02	9.57
	[mm]	102	114	124	165	194	229	243

Table 4 - Flow Coefficients Cv

4a. Seat with Metal Sealing / Flow Direction - Flow to Close (FTC)

Seat Factor	NPS		1	1½	2	3	4	6	8
1	**Cv**		**16**	**38**	**67**	**224**	**319**	**548**	**834**
	Seat Ø	[in]	0.71	1.02	1.42	2.36	2.99	4.13	5.31
		[mm]	18	26	36	60	76	105	135
0,4	**Cv**		**9.2**	**14**	**24**	**75**	**106**	**191**	**262**
	Seat Ø	[in]	0.55	0.73	1.00	1.73	2.09	2.87	3.46
		[mm]	14	18.5	25.5	44	53	73	88

4b. Seat with Soft Sealing / Flow Direction - Flow to Close (FTC)

Seat Factor	NPS		1	1½	2	3	4	6	8
1	**Cv**		**13**	**33**	**80**	**207**	**372**	**545**	**793**
	Seat Ø	[in]	0.55	0.91	1.38	2.17	2.76	3.74	4.92
		[mm]	14	23	35	55	70	95	125
0,4	**Cv**		**9.2**	**14**	**24**	**75**	**106**	**191**	**262**
	Seat Ø	[in]	0.55	0.73	1.00	1.73	2.09	2.87	3.46
		[mm]	14	18.5	25.5	44	53	73	88

Table 5 – Maximum Differential Pressures

Table 5a – Maximum Differential Pressures [psi]

AT	60-4	100-4	150-4	220-4	300-4	450-4	600-4	900-4	1200-4	2000-4
NPS	**Maximum Differential Pressures [psi]**									
1	232									
1½		232								
2			232							
3				167	232					
4					116	203	232			
6						72	101	145	232	
8							51	72	116	232

Valid for supply air = 58 psi

Table 5b – Maximum Differential Pressures [bar]

AT	60-4	100-4	150-4	220-4	300-4	450-4	600-4	900-4	1200-4	2000-4
NPS	**Maximum Differential Pressures [bar]**									
1	16									
1½		16								
2			16							
3				11.5	16					
4					8	14	16			
6						5	7	10	16	
8							3.5	5	8	16

Valid for supply air = 4bar

Table 6 - Dimensions

Table 6a - Valve and Actuator Bracket Dimensions

NPS	CL	A		B		C		D		K	
[in]	[lbs]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]
1	150	4.02	102	2.13	54.00	5.20	132	4.25	108	0.16	4
	300			2.44	62.00			4.88	124		
1½	150	4.49	114	2.50	63.50	6.14	156	5.00	127	0.20	5
	300			3.07	78.00			6.14	156		
2	150	4.88	124	3.01	76.50	6.38	162	6.02	153	0.24	6
	300			3.25	82.50			6.50	165		
3	150	6.50	165	3.76	95.50	8.70	221	7.52	191	0.31	8
	300			4.13	105.00			8.27	210		
4	150	7.64	194	4.51	114.50	9.02	229	9.02	229	0.39	10
	300			5.00	127.00			10.00	254		
6	150	9.02	229	5.51	140.00	11.22	285	11.02	280	0.47	12
	300			6.26	159.00			12.52	318		
8	150	9.57	243	6.75	171.50	11.81	300	13.50	343	0.55	14
	300			7.50	190.50			15.00	381		

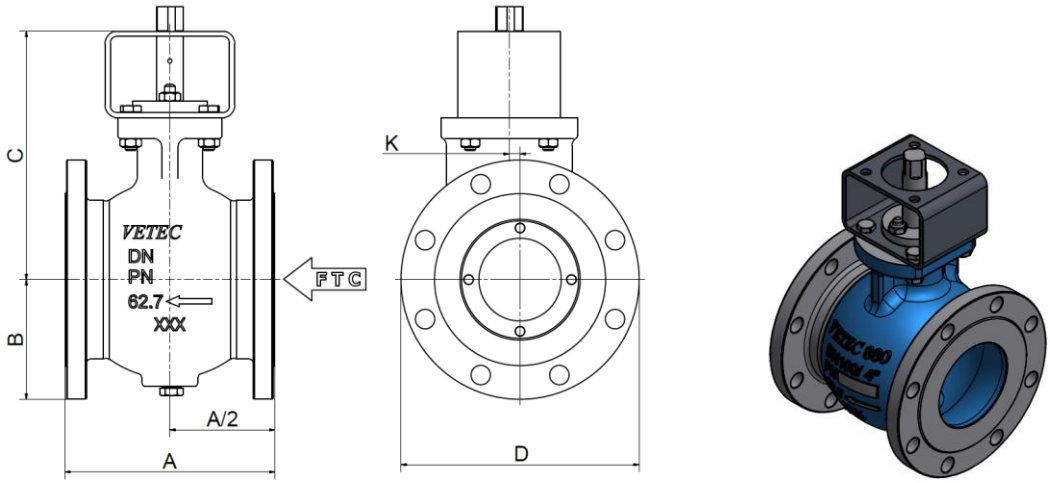
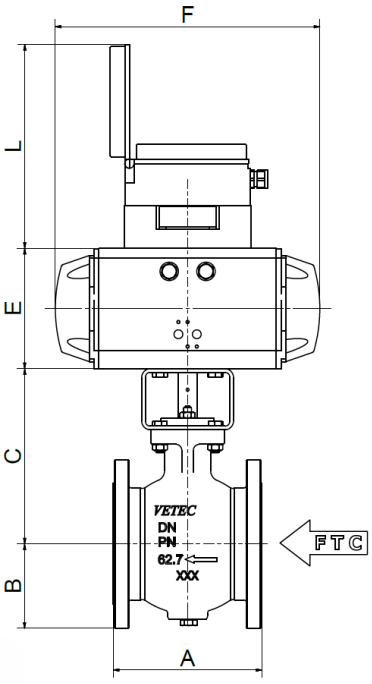
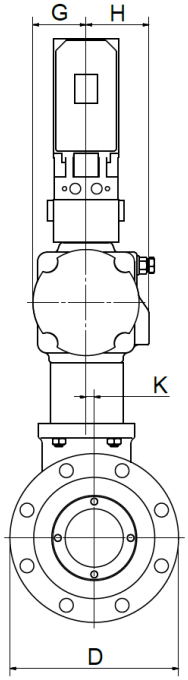


Table 6b - Type AT Actuator Dimensions

Actuator	E		F		G		H	
Type AT	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]
60	4.02	102	8.03	204	1.69	43	2.01	51
100	4.53	115	9.49	241	1.97	50	2.24	57
150	5.00	127	10.20	259	2.20	56	2.48	63
220	5.71	145	11.97	304	2.52	64	2.83	72
300	6.18	157	13.11	333	2.76	70	3.03	77
450	6.97	177	15.55	395	3.15	80	3.39	86
600	7.72	196	16.65	423	3.46	88	3.66	93
900	8.66	220	18.66	474	3.90	99	3.98	101
1200	9.65	245	20.79	528	4.33	110	4.41	112
2000	11.77	299	23.82	605	5.16	131	5.16	131





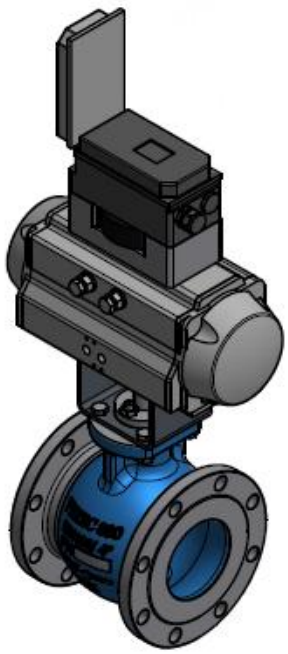


Table 6c - Positioner Dimensions

Positioner	SAMSON 3725		SAMSON 3730	
Actuator AT	L		L	
	[in]	[mm]	[in]	[mm]
60	8.07	205	10.43	265
100	8.07	205	10.43	265
150	8.07	205	10.43	265
220	8.07	205	10.43	265
300	8.07	205	10.43	265
450	8.07	205	10.43	265
600	8.07	205	10.43	265
900	9.25	235	11.61	295
1200	9.25	235	11.61	295
2000	9.25	235	11.61	295

Table 7 - Weights

Table 7a - Valve + Actuator Weight [lbs]

Actuator AT		60	100	150	220	300	450	600	900	1200	2000
Weight		9	11	14	20	27	38	49	73	93	148
Valve		Valve + Actuator									
NPS	Weight	Weight [lbs]									
1	11	20									
1½	16		27								
2	20			34							
3	42				62	69					
4	58					85	96	107			
6	102						140	151	175	195	
8	148							197	221	241	296

Table 7b - Valve + Actuator Weight [kg]

Actuator AT		60	100	150	220	300	450	600	900	1200	2000
Weight		4	5	6	9	12	17	22	33	42	67
Valve		**Valve + Actuator**									
NPS	Weight	**Weight [kg]**									
1	5	9									
1½	7		12								
2	9			15							
3	19				28	31					
4	26					38	43	48			
6	46						63	68	79	88	
8	67							89	100	109	134

Table 8 - Possible Valve Actuator Combinations

Actuator AT		60	100	150	220	300	450	600	900	1200	2000
Flange Connection		F07	F07	F07-F10	F07-F10	F07-F10	F10-12	F10-12	F10-12	F10-12	F12
Valve		**Possible Combinations**									
NPS	F. C										
1	VF80	✓									
1½	VF80		✓								
2	VF80			✓							
3	VF85				✓	✓					
4	F10					✓	✓	✓			
6	F12						✓	✓	✓	✓	
8	F12							✓	✓	✓	✓

Rotary Plug Valve - VETEC Type 62.7

Order Specification

Type	According to table
Valve size	NPS
Nominal pressure	CL
Body material	According to table
Seat version	Metal or soft sealing
Characteristic	Equal percentage or linear
Flow Coefficient (Cv)	According to table
Direction of flow	Flow to Close (FTC)
Actuator	Type
Type of mounting	Mounting location of the actuator
Fail-safe action	Fail-Close (FC) or Fail-Open (FO)
Max. differential pressure for actuator	... psi (or bar)
Supply air	... psi (or bar)
Bench range	... psi (or bar)
Accessories	e.g. positioner, limit switch, solenoid valve etc.
Others	e.g. special version, certificates, approvals etc.