

# PRCV11

## ECCENTRIC ROTARY PLUG VALVE



### DESCRIPTION:

Pennant Eccentric Rotary Plug Valve is a high-performance rotary valve designed for a wide range of industrial applications including high pressure and low-pressure steam, clean liquids, fine particle slurry media, sandy media and corrosive liquids gasses and erosive and abrasive slurries. This valve has an eccentric plug that can rotate up to 60° to fit on the self-centering seat to achieve a perfect Class-V tight shut-off over extended service life. These valves can be easily installed between a wide variety of flange types.

### FEATURES :

- This valve can be used for a wide range of applications which promotes standardization and helps in minimizing stock. Additionally, the straight flow design helps in reducing the cost per Kv than the conventional type of control valve
- Available in wafer, separable flanged and integral flanged body style.
- Eccentric positioning of the plug allows itself to break free from the seat of the valve with a small rotation of the shaft. Due to this the life of the seat ring increases and the shut-off capability is enhanced.
- Self-aligning seat design of plug ensures proper locking of the plug onto the seat thus enabling Class V shut-off.
- Wide selection of body and trim materials are available for providing compatibility with highly corrosive fluid media.
- This valve can be offered in full trim and reduced trim for all body sizes. This can be achieved by replacing only the valve seat.

- Range-ability of Pennant Rotary Control Valve is 100:1, which allows accurate throttling for a wide range of flows.
- The fundamental characteristic of Pennant Rotary Control Valve is linear, but can also be modified to equal percentage type of flow by using a simple cam adjustment.
- This valve is designed for bidirectional flow. Normal flow to open direction is normally used for clean, liquids, gasses and steam applications. Flow to close is recommended for erosive and abrasive slurry applications.
- Stellite trims provide longer operational life and erosion resistance at higher temperatures. Stellite trims are available for all valve sizes.

### INDUSTRIAL APPLICATIONS :

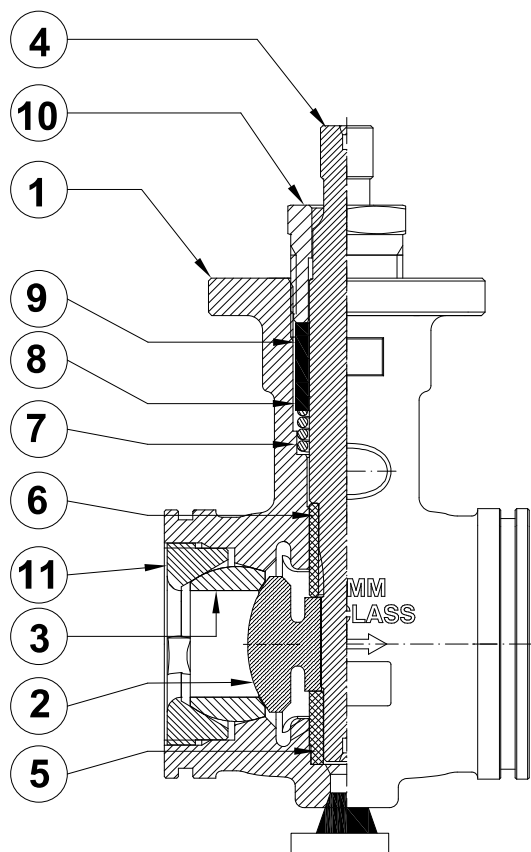
- |                       |                    |
|-----------------------|--------------------|
| 1. Mining             | 5. Food & Beverage |
| 2. Petroleum Refining | 6. HVAC            |
| 3. Power              | 7. Chemical        |
| 4. Ethanol            | 8. Pulp and Paper  |

### TECHNICAL SPECIFICATIONS :

#### SIZES :

DN 25, 40, 50, 80, 100

On Request : DN 150, 200, 250, 300



## END CONNECTION :

Wafer type, separable flanged & integral flanged #150, #300 & #600

SR. NO.	PART NAME	MOC
1	Body	WCB
2	Plug	SS+STELLITE
3	Seat	SS+STELLITE
4	Shaft	SS17-4PH
5	Lower Guide Bush	440C
6	Upper Guide Bush	440C
7	Spring	SS
8	Backup Ring	SS316
9	Packing	PTFE/GRAPHITE
10	Gland Nut	SS304
11	Seat Retainer	SS316/CF8M

## TRIM OPTIONS :

- Partial Stellite (Standard)
- 316 Stainless Steel
- Full Stellite
- PTFE soft seat: -38°C to 232°C

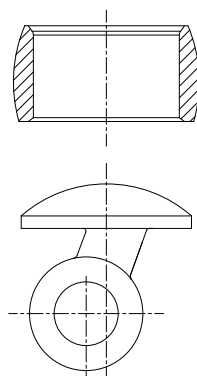
## ON SPECIAL REQUEST :

SS316 ASTM A 351 Gr.CF8  
SS316L ASTM A 351 Gr.CF8M

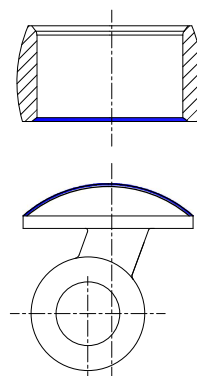
## PACKING:

PTFE soft seat: -38°C to 232°C  
GRAPHITE: -128°C to 425°C

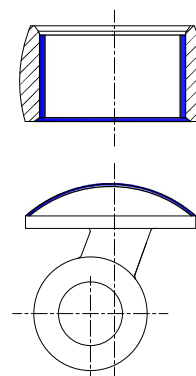
## TRIM OPTIONS :



**Without Stellite 6**  
No stellite on seat ring or plug

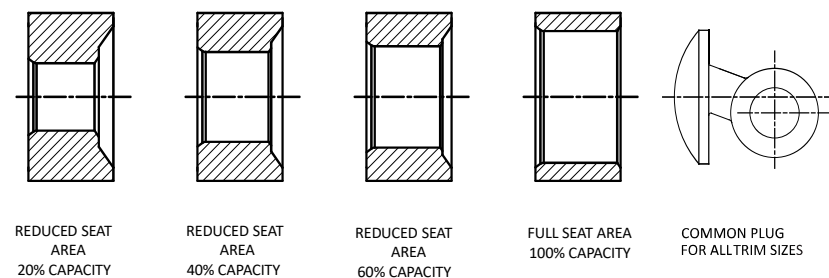


**Partial Stellite 6**  
Stellite 6 on seat ring and plug seating surfaces.



**Full Stellite 6**  
Full Stellite 6 on seat ring bore in addition to seat ring and plug seating surfaces.

## TRIM SIZES :



## TRIM SIZES :

- 1) Full Size trim – 100% capacity
- 2) 60% Reduced trim – 60% of full capacity
- 3) 40% Reduced trim – 40% of full capacity
- 4) 20% Reduced trim – 20% of full capacity

## FLOW COEFFICIENTS (KV) LINEAR CHARACTERISTICS

(m³/hr with pressure drop across the valve 1bar for water)

### A) STANDARD FLOW (FLOW FOR OPEN)

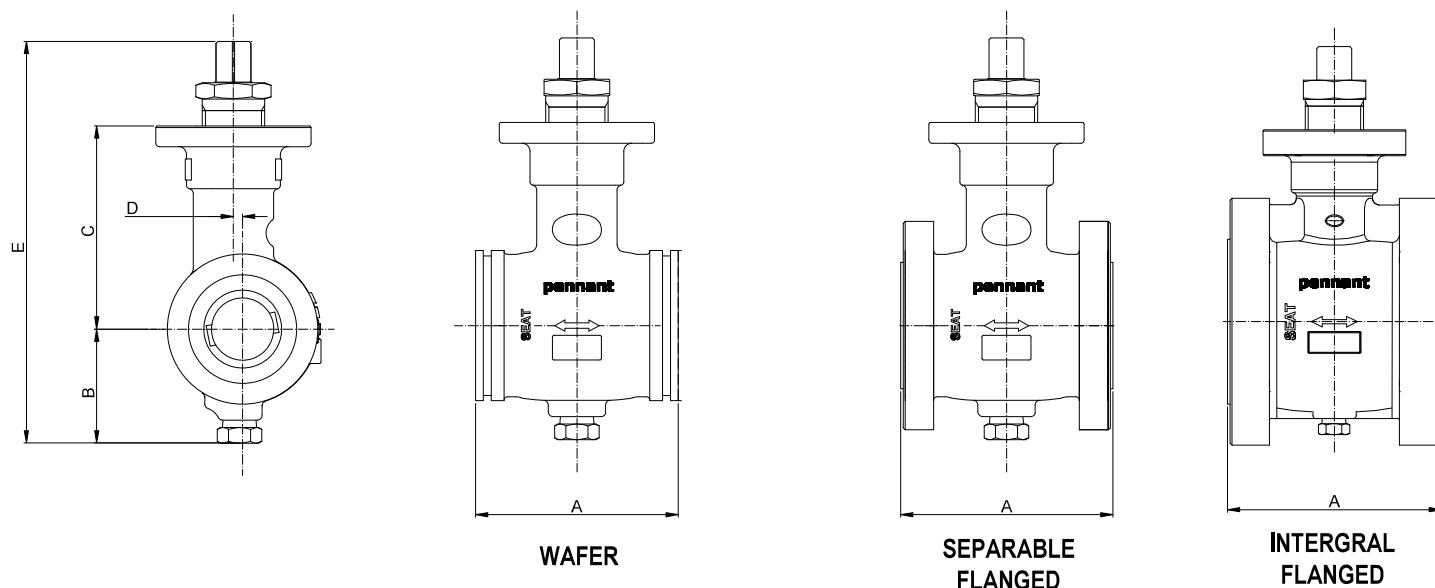
Percent Travel for (60°) Rotation											
Valve Size	Trim size	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN25	Full Port	1.21	2.59	3.63	5.10	6.83	7.95	9.50	10.37	11.23	12.10
	60% reduced	0.65	1.38	2.33	3.02	4.23	4.84	5.53	6.48	6.83	7.26
	40% reduced	0.43	1.04	1.56	2.07	2.85	3.20	3.80	4.23	4.75	4.84
	20% reduced	0.22	0.46	0.73	1.04	1.38	1.56	1.81	2.16	2.25	2.42
DN40	Full Port	2.59	5.44	8.38	12.10	15.55	19.01	20.74	25.06	25.92	27.65
	60% reduced	2.42	4.92	7.78	9.50	10.37	11.23	12.96	14.69	15.55	17.28
	40% reduced	1.21	2.16	3.46	4.75	6.48	7.43	8.64	9.50	10.37	11.23
	20% reduced	0.52	1.04	1.73	2.51	3.20	3.80	4.23	5.10	5.27	5.62
DN50	Full Port	3.97	8.38	13.82	19.01	25.92	29.38	33.70	38.88	41.47	44.06
	60% reduced	2.42	4.92	7.78	12.10	15.55	17.28	19.87	22.46	24.19	25.92
	40% reduced	1.64	3.37	5.18	7.34	9.50	11.23	12.96	15.55	16.42	17.28
	20% reduced	0.78	1.64	2.59	3.72	5.10	5.70	6.57	7.60	8.12	8.64
DN80	Full Port	12.96	25.06	39.74	54.43	75.17	85.54	98.50	114.05	120.96	129.60
	60% reduced	7.08	14.69	23.33	32.83	44.06	51.84	58.75	68.26	73.44	77.76
	40% reduced	4.75	9.50	15.55	21.60	30.24	34.56	39.74	45.79	48.38	51.84
	20% reduced	2.25	5.10	7.78	11.23	14.69	17.28	19.87	22.46	24.19	25.92
DN100	Full Port	19.01	40.61	63.94	89.86	121.82	140.83	161.57	187.49	200.45	213.41
	60% reduced	11.23	24.19	38.88	54.43	72.58	84.67	96.77	112.32	119.23	127.87
	40% reduced	7.60	16.42	25.06	35.42	48.38	56.16	64.80	74.30	79.49	84.67
	20% reduced	3.89	8.12	12.96	18.14	24.19	27.65	32.83	37.15	39.74	42.34
DN150	Full Port	40.61	85.54	134.78	188.35	255.74	296.35	341.28	395.71	422.50	449.28
	60% reduced	24.19	50.98	76.90	108.00	146.88	177.98	194.40	237.60	254.02	269.57
	40% reduced	16.42	34.56	50.98	71.71	97.63	118.37	129.60	158.11	169.34	179.71
	20% reduced	8.21	17.28	25.92	36.29	49.25	59.62	64.80	79.49	84.67	89.86
DN200	Full Port	68.26	142.56	225.50	314.50	428.54	495.94	571.97	661.82	707.62	751.68
	60% reduced	42.34	85.54	134.78	189.22	256.61	298.94	342.14	396.58	424.22	451.01
	40% reduced	26.78	57.02	89.86	126.14	171.07	198.72	228.10	264.38	282.53	300.67
	20% reduced	12.96	28.51	44.06	63.07	85.54	98.50	114.05	132.19	141.70	150.34

## B) REVERSE FLOW (FLOW FOR CLOSING)

Percent Travel for (60°) Rotation											
Valve Size	Trim Size	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
DN25	Full Port	1.30	2.59	3.97	5.53	7.43	8.55	9.50	11.23	12.10	12.96
	60% reduced	0.78	1.56	2.38	3.32	4.41	5.10	5.88	6.83	7.34	7.78
	40% reduced	0.52	1.04	1.59	2.21	3.02	3.46	3.97	4.67	4.84	5.18
	20% reduced	0.26	0.52	0.79	1.11	1.47	1.73	1.99	2.25	2.42	2.59
DN40	Full Port	2.59	5.53	8.64	11.23	15.55	19.01	22.46	25.92	27.65	29.38
	60% reduced	1.56	3.28	5.44	6.74	9.33	12.10	13.82	16.42	17.28	18.14
	40% reduced	1.04	2.16	3.63	4.49	6.22	7.95	9.50	10.37	11.23	12.10
	20% reduced	0.52	1.04	1.81	2.25	3.11	3.97	4.58	5.36	5.70	6.05
DN50	Full Port	4.32	9.50	14.69	19.87	26.78	30.24	36.29	41.47	44.93	47.52
	60% reduced	2.42	4.92	8.64	11.23	14.69	18.14	20.74	25.06	25.92	28.51
	40% reduced	1.64	3.28	5.88	7.26	9.50	12.10	13.82	16.42	17.28	19.01
	20% reduced	0.86	1.64	2.94	3.63	4.92	6.05	6.91	7.78	8.64	9.50
DN80	Full Port	12.10	25.92	40.61	56.16	76.03	88.13	101.95	117.50	126.14	133.92
	60% reduced	7.26	15.55	24.19	33.70	45.79	52.70	61.34	69.98	75.17	80.35
	40% reduced	4.84	10.37	16.42	22.46	30.24	35.42	40.61	46.66	50.11	53.57
	20% reduced	2.42	5.10	8.04	11.23	12.96	18.14	20.74	23.33	25.06	26.78
DN100	Full Port	20.74	44.06	69.12	96.77	131.33	152.06	174.53	202.18	216.00	229.82
	60% reduced	12.18	25.92	41.47	57.89	77.76	82.08	104.54	120.96	128.74	137.38
	40% reduced	8.12	17.28	27.65	38.88	51.84	54.43	69.12	80.35	85.54	91.58
	20% reduced	4.15	8.64	13.82	19.01	25.92	27.65	34.56	39.74	43.20	45.79
DN150	Full Port	37.15	78.62	124.42	174.53	233.28	273.02	314.50	364.61	389.66	414.72
	60% reduced	22.46	47.52	74.30	103.68	139.97	163.30	189.22	219.46	233.28	248.83
	40% reduced	14.69	31.97	50.11	69.12	93.31	108.86	126.14	146.02	155.52	165.89
	20% reduced	7.43	15.55	25.06	34.56	46.66	54.43	63.07	73.44	77.76	82.94
DN200	Full Port	62.21	131.33	207.36	290.30	390.53	457.92	525.31	607.39	649.73	691.20
	60% reduced	37.15	77.76	124.42	173.66	234.14	274.75	315.36	363.74	388.80	414.72
	40% reduced	25.06	51.84	82.94	115.78	155.52	183.17	209.95	242.78	259.20	276.48
	20% reduced	12.10	25.92	41.47	57.89	77.76	91.58	105.41	120.96	129.60	138.24

## DIMENSIONS :

Nominal in mm



DIMENSION (mm)						WEIGHT APPROX. (kg)			
SIZE	A	B	C	D	E	Wafer	FL #150	FL #300	FL #600
DN25	102	65	113	4	228	4	5	6	8
DN40	114	73	130	6	253	6	8	10	12
DN50	124	74	124	6	248	6	10	11	14
DN80	165	90	146	8	313	14	20	24	26
DN100	194	100	178	11	353	19	27	34	45
DN150	229	122	244	17	436	44	54	69	94
DN200	243	137	280	22	492	N.A	82	101	138