

PPR

PRESSURE CONTROL VALVE

- PPs Airtight Valve to DIN 1946 Part 4
- External Air Tight to DIN 24194 Part 4
- Max. speed 0..60° rotation is 1s
- 12 mm Ø Stainless drive shaft PPs Coated
- Heavy duty Damper Blade Seal
- Shaft bearings for low rotation torque
- Spigot Connection for welded installation
- Standard Flanges can be welded on site
- Can be installed vertical and horizontal
- All CMR fast actuators can be factory fitted
- Custom mounting brackets are optional
- 24 month warranty
- 30 Years field application experience



PPR Valve with VMSM 4s Actuator

Valve Body Construction

The PVR Venturi Valve is manufactured to the highest engineering precision with CNC machines. The valve is formed from PPs Plastic and machined to provide very close tolerances.

The valve is supplied with spigots on either side but flanges can be factory welded as an optional. Normally, the contractor welds the flanges on on site depending on the installation. The 400mm Valve is supplied with two re-informant rings welded around the body of the valve to provide an airtight solution. The damper blade consists of two PPs plates which sandwiches a silicone disc seal.

A 12mmØ stainless steel axle (PPs coated) is embedded between the two plates to provide a heavy duty functionality. Air tight bearings on both sides of the valve provide smooth action with relatively low torque. The blade and axle are designed for very fast motor rotation i.e. 1 second from open to closed position.

With such high speeds, the axle will withstand the enormous torque which develops on the shaft when turning from open to close in small steps to provide high accuracy control without a fluctuating Hysteresis.

PPR Pressure Control Valve with fast Actuator 0-60°



PPR CONTROL VALVE SPECIFICATIONS

Selection of Volume Control Damper

It is essential to determine the air volume during the design stage. Normally there is a minimum and a maximum volume which has to be controlled.

The duct area should be calculated so that the velocity is approximately 2.5m/s at the minimum volume and preferably 5m/s at the operating point if possible. If the velocity is more than 5m/s at the maximum volume then the noise level criteria needs to be considered. The maximum velocity should not exceed 9m/s as the duct resistance shall increase and the overall energy consumption shall go up. Use selection Table 1 on page 3.

The PPR Valve is equipped with a bracket to fit the actuator. It has a damper blade with an embedded seal. The heavy duty stainless steel shaft is PPs coated and molded into the valve damper blade, It is designed to withstand the very high momentary torque developed by the fast actuator. The shaft is guided by sealed bearings on either side of the valve body.

Installation

The PPR Valve works in any position. It can be installed vertically or horizontally with the actuator being on the side rather than having the actuator hanging down. This way, the weight is reduced on the seals and provides a long term efficient operation. It is also easier for the maintenance engineers to replace an actuator. When the damper is installed, Care must be taken to leave sufficient space for the engineers to inspect the motor - a 500mm space would be perfect.

Hysteresis

The PPR Venturi Valves have a very low hysteresis due to the sturdy single blade construction and therefore the damper can be moved very accurately to a control position.

Maintenance

The PPR Venturi Valve is maintenance free.

Materials

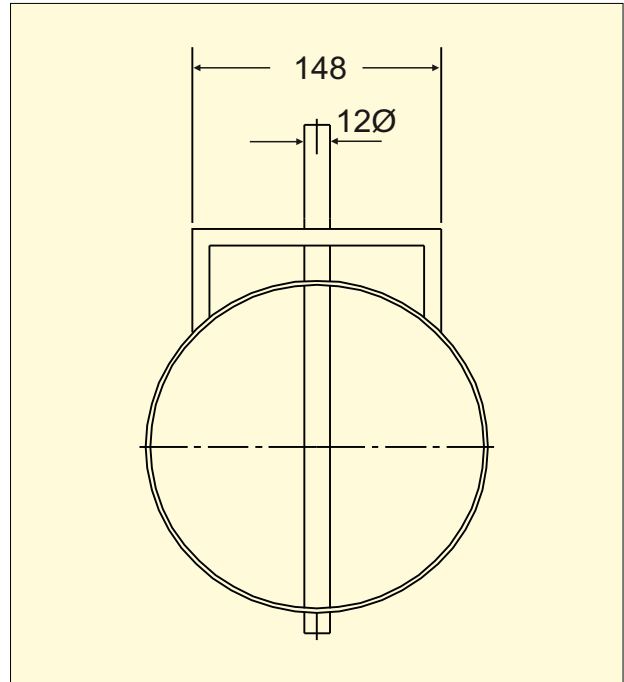
- PPR valve Body - PPSI
- Blade - PPs with Nylon Rivots
- Drive Shaft - Stainless Steel coated in PPs
- Drive Shaft Seal - 'O'Ringsl
- Bearing - PPs
- Outer Duct Seals - Formed
- Actuator Brackets - PPs

Valve sizes see table on right.
Valve diameters are sized to fit standard round PPs duct.
Alternative Brackets on request.

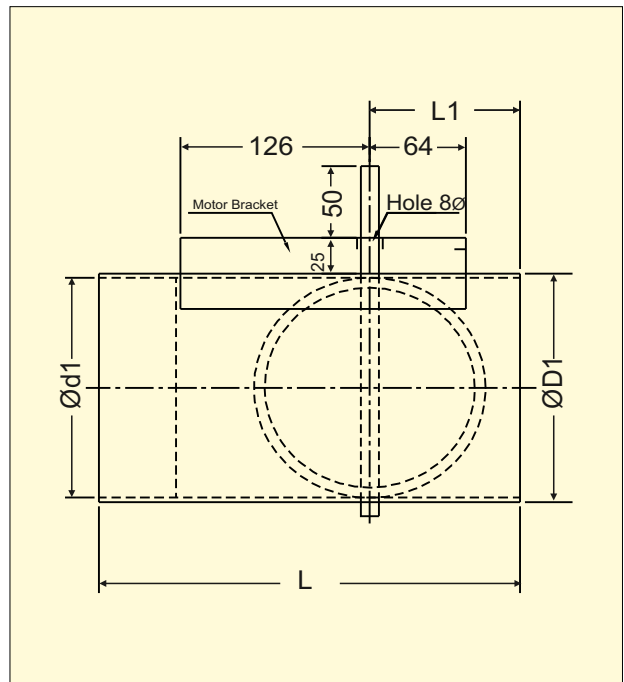
Specifications

Recommended minimum air velocity is	2.5 m/s
Recommended operating air velocity is	5 m/s
Maximum recommended air velocity is	9 m/s

Humidity 10% to 90% preferably non condensing.
Operating Temperature (dry condition) -20 to 70°C



PPR Valve in PPs with Spigot and Motor Bracket



PPR Valve with Spigot and Motor Bracket Dimensions

PPR Venturi Valve dimensions					
Size Ø	Stock Code	L	ØD1	Ød1	L1
160 mm	PPR-160-310	310	160	156	100
200 mm	PPR-200-330	330	200	196	110
250 mm	PPR-250-370	370	250	246	140
315 mm	PPR-315-440	440	315	309	185
400 mm	PPR-400-560	560	400	394	240

PPR SELECTIONS AND NOISE LEVELS

Part Number Selection Table 1

Part Number	Description	Size	Length	Area	Volume	Volume	Volume	Volume	Volume	Volume
		DN	L		at 3m/s	at 5m/s	at 9 m/s	at 3m/s	at 5m/s	at 9 m/s
		mm	mm	m2	m3/s	m3/s	m3/s	m3/h	m3/h	m3/h
PPR-160-310	160mm PPs Control Valve with Bracket	160	310	0.02011	0.060	0.101	0.181	217	362	652
PPR-200-330	200mm PPs Control Valve with Bracket	200	330	0.03142	0.094	0.157	0.283	339	566	1018
PPR-250-370	250mm PPs Control Valve with Bracket	250	370	0.04909	0.147	0.245	0.442	530	884	1591
PPR-315-440	315mm PPs Control Valve with Bracket	315	440	0.07794	0.234	0.390	0.701	842	1403	2525
PPR-400-560	400mm PPs Control Valve with Bracket	400	560	0.12568	0.377	0.628	1.131	1357	2262	4072

The Part Number is made of the Type i.e. PPR- 160 is the diameter and 310 is the length L

Noise Levels

Valve Size Ø	Velocity m/s	Volume m3/h	Static Pressure at Venturi in Pa									Static Pressure at Venturi in Pa									Static Pressure at Venturi in Pa								
			100 Pa									250 Pa									500 Pa								
			LW (dB/Octave) Power level								Sum	LW (dB/Octave) Power level								Sum	LW (dB/Octave) Power level								Sum
63	125	250	500	1k	2k	4k	8k	dB(A)	63	125	250	500	1k	2k	4k	8k	dB(A)	63	125	250	500	1k	2k	4k	8k	dB(A)			
160	2	145	62	56	50	44	38	32	25	20	46	67	61	56	50	44	38	30	25	52	71	66	60	54	48	42	34	29	56
	5	362	71	65	59	53	48	42	36	29	56	77	71	65	59	53	47	41	35	61	81	75	69	63	57	51	46	39	65
	7.5	543	75	69	63	58	52	46	40	33	60	81	75	69	63	57	51	46	39	65	85	79	73	67	62	56	50	43	70
	10	724	78	72	66	61	55	49	43	36	63	84	78	72	66	60	54	49	42	68	88	82	76	70	64	59	53	46	73
200	2	226	63	57	51	46	40	34	26	21	48	69	63	57	51	45	39	32	27	53	73	67	61	55	49	44	36	31	58
	5	565	73	67	61	55	49	43	37	30	57	78	72	66	61	55	49	43	36	63	82	76	71	65	59	53	47	40	67
	7.5	848	77	71	65	59	53	47	42	35	61	82	76	71	65	59	53	47	40	67	87	81	75	69	63	57	51	44	71
	10	1131	80	74	68	62	58	50	44	38	64	85	79	74	68	62	56	50	43	70	89	84	78	72	66	60	54	47	74
250	2	353	65	59	53	47	41	35	27	23	49	70	64	59	53	47	41	33	28	55	74	69	63	57	51	45	37	32	59
	5	884	74	68	62	56	51	45	39	32	59	80	74	68	62	56	50	44	38	64	84	78	72	66	60	54	49	42	68
	7.5	1325	78	72	68	61	58	49	43	36	63	84	78	72	66	60	54	49	42	68	88	82	76	70	65	59	53	46	73
	10	1767	81	75	69	64	58	52	46	39	66	87	81	75	69	63	57	52	45	71	91	85	79	73	67	62	56	49	76
315	2	561	66	60	55	49	43	37	29	24	51	72	66	60	54	48	42	35	30	56	76	70	64	58	53	47	39	34	61
	5	1403	76	70	64	58	52	46	40	34	60	81	75	69	64	58	52	46	39	66	85	80	74	68	62	56	50	43	70
	7.5	2104	80	74	68	62	56	50	45	38	64	85	79	74	68	62	56	50	43	70	90	84	78	72	66	60	54	47	74
	10	2806	83	77	71	65	59	53	47	41	67	88	82	77	71	65	59	53	46	73	93	87	81	75	69	63	57	50	77
400	2	905	68	62	56	50	44	38	31	26	52	73	68	62	56	50	44	36	31	58	78	72	66	60	54	48	40	36	62
	5	2262	77	71	65	60	54	48	42	35	62	83	77	71	65	59	53	48	41	67	87	81	75	69	63	58	52	45	72
	7.5	3393	81	75	70	64	58	52	46	39	66	87	81	75	69	63	58	52	45	72	91	85	79	74	68	62	56	49	76
	10	4524	84	78	73	67	61	55	49	42	69	90	84	78	72	66	60	55	48	74	94	88	82	76	71	65	59	52	79