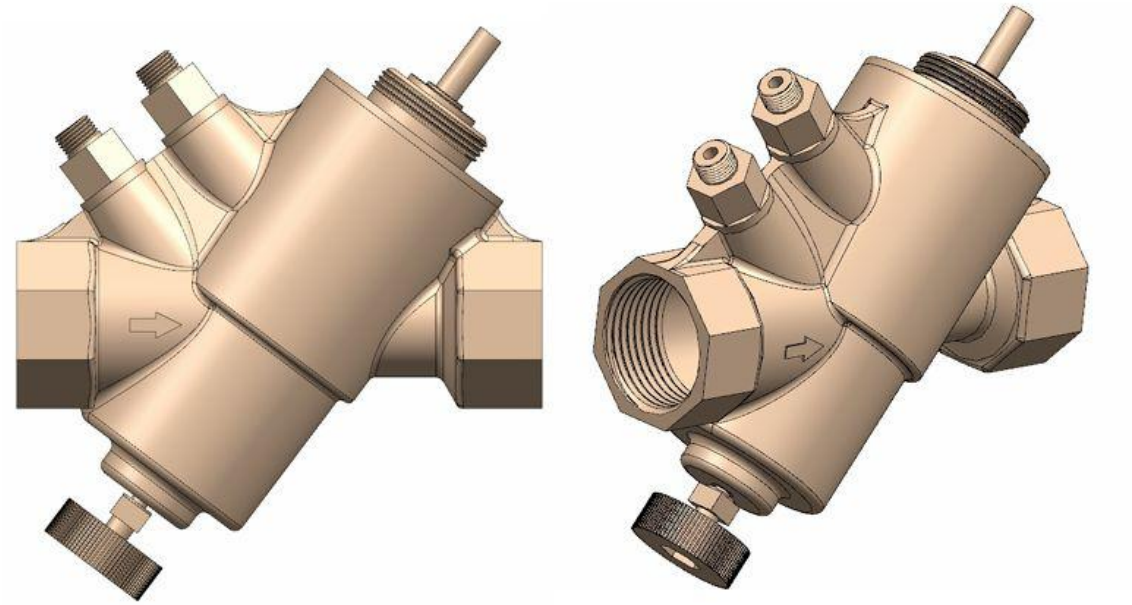
PIBCV

RAPID CONTROLS



"RC " make pressure independent balancing control valve is designed, tested and manufactured in-house with features and uses mentioned below.

USE

Mostly used in Air conditioning systems such as F.C.U.,A.H.U. and zones for controlling the right amount of flow required for heating and cooling application the pressure differential can be checked by inlet outlet test point.

FEATURES

- Dynamic self balancing design
- Upto 1800 LPH flow design
- Pressure differential range 20
- 600 kPa-Snap acting and modulating control type
- Test points for measuring pressure differential

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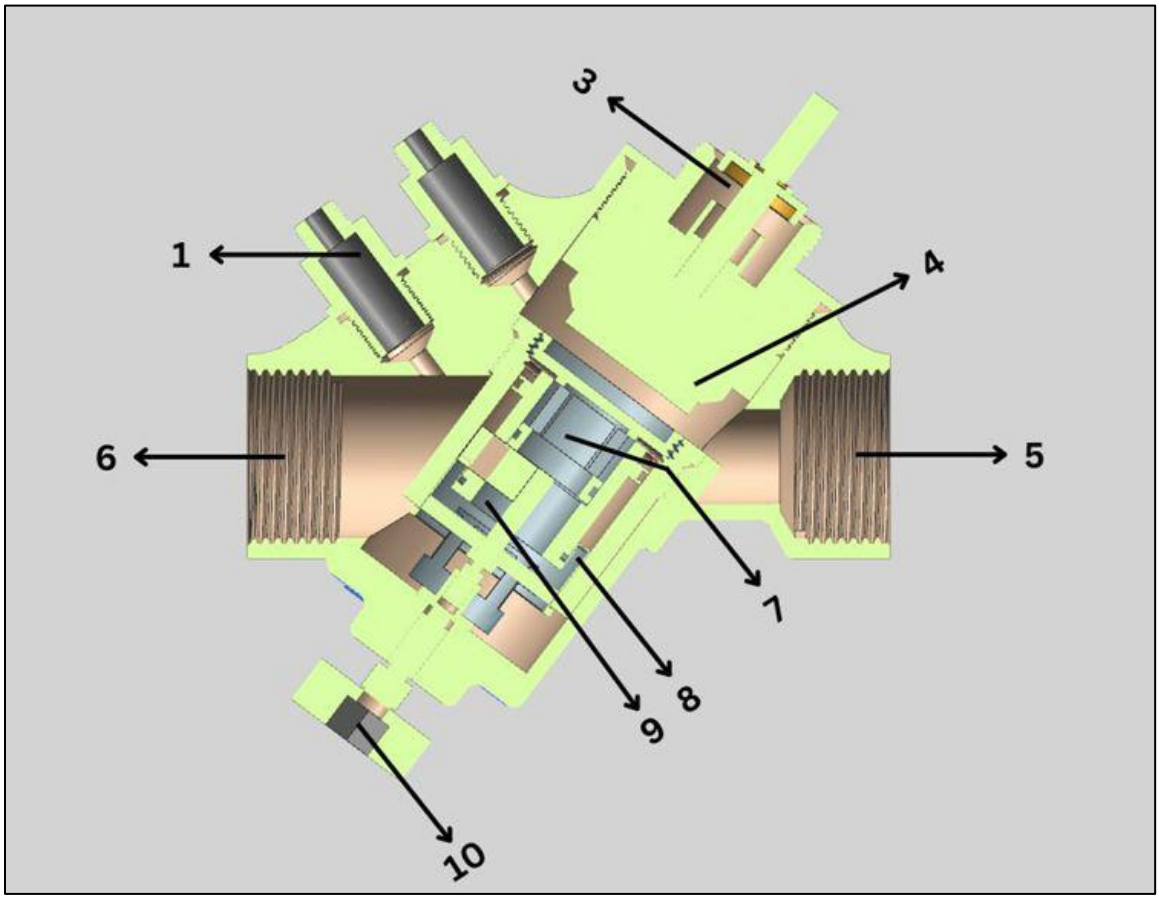
DESIGN



S.No	PART DETAILS
1	Test points inlet (+ve)
2	Test points outlet (-ve)
3	Valve stem
4	ON/OFF seat
5	Flow outlet port
6	Flow inlet port
7	Dynamic balancing seat
8	Pressure differential diaphragm
9	Variable pre-setting opening
10	Dial for pre-setting

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PRINCIPAL

1. The media enters from inlet port(6) then it flow through variable presetting opening(9) which is connected to dial for presetting(10) then it flow through dynamic balancing seat(7) then it flow through ON/OFF seat(4) which is connected to valve stem(3).

2. In case of change in pressure differential the diaphragm(8) expands or contracts, which open or close dynamic balancing seat (7), thus automatically/dynamically balancing the change in pressure differential.

3. In case, of pre-setting, the measurement of the differential pressure across can be checked by electronic manometer and adjustment can be made by dial for pre-setting(10).

4. The actuator would be installed for ON/OFF operation, the actuator is connected with valve stem(3),which is connected to valve ON/OFF seat (3) and actuator open or close the valve seat.

5. In case, operation W/o actuator. manual knob can be used to control valve stem(3) which is connected to valve ON/OFF seat(4)

CALCULATION

- Formula for calculating volume of flow.

$$V_{(LPH)} = \frac{Q(kw)x1000}{1.163x\triangle T(k)}$$

Where as, Q=Energy demand in (KW)

$\triangle T$= Temperatures differential (k)

Example, if - Demand of energy, which is Q=2.3kw

- Diffrence in tempurature,which is $\triangle T$=8k
- Then the volumetric flow would be

$$V_{(LPH)} = \frac{2.3kWx1000}{1.163x8k} = 247.2056 \text{ LPH}$$

Suggestion:- add 10% extra, while selecting valve size
(valve performance best at 90% output)

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TABLES

-Valve size volumetric flow chart with dial for pre-setting(10) valves

DIAL	15MM (LPH)	15MM (Kpa)	20MM (LPH)	20MM (Kpa)	25MM (LPH)	25MM (Kpa)
1.0	500	27	500	35	850	30
1.2	573	27	586	35	971	30
1.4	636	27	669	35	1089	30
1.6	692	27	749	35	1198	30
1.8	746	27	826	35	1296	30
2.0	800	27	900	35	1380	30
2.2	855	27	971	35	1450	30
2.4	913	27	1040	35	1505	30
2.6	974	27	1106	35	1546	30
2.8	1037	27	1169	35	1577	30
3.0	1100	27	1230	35	1600	30
3.2	1161	27	1288	35	1640	30
3.4	1216	27	1344	35	1680	30
3.6	1261	28	1398	35	1720	31
3.8	1291	28	1450	35	1760	31
4.0	1300	28	1500	35	1800	31

NOTE:- Estimated data based on volumetric flow

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TECHNICAL DETAILS

Working pressure – 25 kg/cm²

Shell leakage test – 32 kg/cm²

Valve type – ON/OFF type

Working type – NO type (push to close)

Valve body – Brass as per IS:8737

Valve stem – S.S.304

Valve seat – Brass as per IS:319 grade DCB-I

All springs – S.S.304

Diaphragm – N.B.R.

Piston – Brass as per IS:319 grade DCB-I

Pre-setting knob (MOC) – ABS plastic

Variable pre-setting – Brass as per IS:319 grade DCB-I

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