

FCV - Self Regulating Flow Control Valve

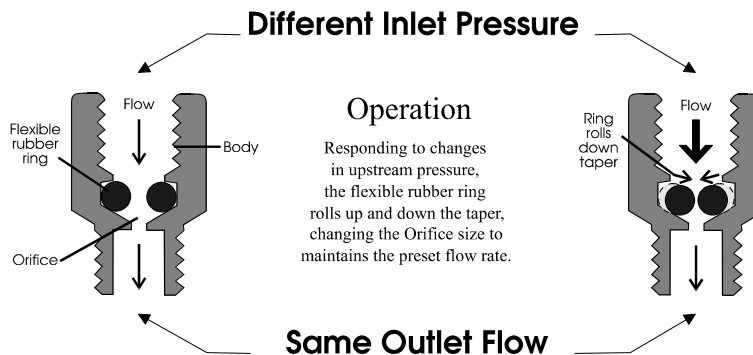
Introduction

The FCV pioneered by MARIC Australia and marketed in New Zealand by *Homersham's* is a unique and simple Flow Control Valve for water and other fluids. A common problem such as inadequate water in the shower is often seen as a lack of pressure, when in fact, the problem is a lack of flow.





The self-regulating nature of the FCV provides a predetermined flow rate and constant delivery, even when upstream demand and pressure vary.

Features

- The FCV operates with as low as 1 bar (14.7 psi) differential pressure across the valve.
- Pre-set & Tamperproof
- Easily installed
- Self cleaning, non-clog
- Simplifies pipe sizing
- Conserves energy by reducing waste
- Ultra Quiet models available for noise sensitive applications



Configuration of the FCV Valve

<p>Control Rubber:</p> 	<p>Manufactured from Nitrile Rubber to suit most applications. A situation involving High Fluid Temperature or Chemical content may require the use of a Flow-Smart® FCV Valve available from Aquacare Ltd</p>	<p>Insert Type:</p> 	<p>The OEM Insert can be manufactured with a custom housing to suit a design specification. Used in Water meters and devices that requires integral flow regulation.</p>
<p>Wafer Type:</p> 	<p>Wafer FCV Valves are used as when high flow rates are required. These are produced to mount in pipe work from 40mm (1½") dia to 300mm (12") dia, between standard pipe flanges.</p>	<p>Threaded Body:</p> 	<p>This is the most popular configuration of FCV Valve. Generally manufactured in FM configuration for 15mm (½") and over 20mm (¾") being FF. These valves are available from 15mm (½" BSP) to 40mm (1½" BSP). Special configurations available on request</p>

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 Section 5



Temperature
Pressure

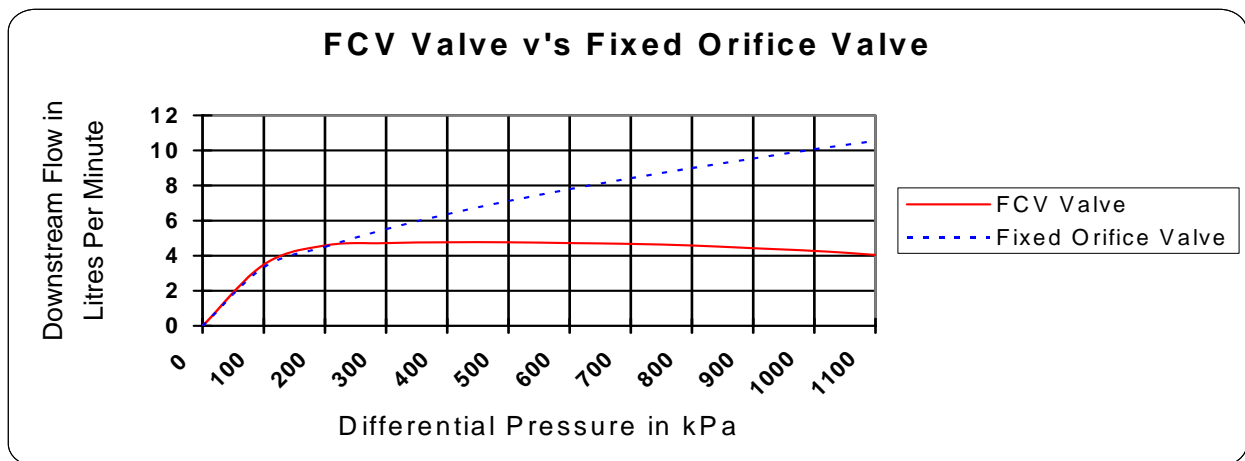
Applications

- Air Conditioning - To maintain constant flow to water cooled Air Conditioning units
- Chemical Pump Constant Delivery Distilleries & Breweries
- Fertiliser & Dosing Systems and Equipment
- Fire Fighting - Flow Control
- Fire Fighting - Foam Mixture Control
- Gland water control
- Hydromix Chilled & Hot Water Balance Valves
- Local Council - supply metering
- Mains Reticulation - Equal distribution for both Town Supply and Rural Schemes
- Metered Flow To Heated Water Users
- Mining
- Multi-storey buildings
- Petrochemicals
- Pump & Bore Protection
- Safety Washing Equipment

- Shower, Toilet, Laundry Blocks - To provide equal distribution of water to Shower Heads & Toilets in Camping Grounds, Schools and Sports Clubs
- Sink Taps, Drinking Fountains & Drink Vending Machines - To provide equal distribution of water
- Sprinklers - Used on Golf Courses, Horticulture
- Water Cooled Machinery - Used to lessen the waste of water
- Water Heaters
- Water Softeners, Treatment & Sterilisation

Flow Comparisons

The graph below shows the flow rate of a Fixed Orifice (Ball Valve, Needle Valve or similar,) compared with a FCV Valve. While numerous sizes of FCV Valve are available, the sample graph shown above is sized at 4.5 litres per minute. The trace for the Fixed Orifice clearly shows an increase in flow rate as Differential Pressure Increases. The FCV Valve shows a stable flow rate, regardless of Differential Pressure variations.



Pressure Differential Ranges

Type	Accuracy	Pressure Drop	Application
Precision	± 10%	140 to 1000 kPa	Precision flow control requirements within 140 - 1000 kPa range
Spotcheck	± 20%	140 to 1000 kPa	For economy.
Low Pressure	± 20%	40 to 200 kPa	Where low "head-loss" is required. Made to order.
High Pressure	± 20%	200 to 1500 kPa	Where pressures over 1000 kPa are encountered. Made to order.

- Pressure Drop (PD) or "headloss" refers to pressure drop or differential across the valve.
- Maximum operating temperature for valves fitted with standard nitrile control rubbers is 75 degrees Celsius intermittent.
- EPDM, Silicon & Viton control rubbers are also available for higher temperature applications and / or corrosion resistance.

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 Section 2



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Headloss or Pressure Drop

QUESTION; What will be the head loss across the Maric valve?

ANSWER; The headloss will be at least 140 kPa, or, between 140 and 1000 kPa if the system is designed and operating correctly. This is because the function of our "PRECISION" range of valves is to control the flow when PD across the valve is within this range. Therefore, to achieve full rated flow (accurate to within +/-10%), the installation must provide for inlet to be at least 140 kPa above outlet pressure.

To Calculate Headloss

Assume valve is controlling flow as required. Determine what pressure will be at inlet, and what pressure will be at outlet. The PD will then simply be the difference between inlet and outlet above. Should this work out to be less than 140 or greater than 1000kPa, then this PRECISION valve will not provide full flow and the installation will either require altering, or the use of Low Pressure valves (40 - 200 kPa) or High Pressure valves (200 to 1500 kPa, 250 to 2000 kPa or as required).

Note: All high and low pressure valves are made to order to suit customer's specific requirements. Ranges shown are an indication only of what is available.

Selection Guide for FCV Valves

Flow Rate Litres / min	FM 15 ½ BSP	FF 20 ¾ BSP	FF 25 1 BSP	FF32 1 ¼ BSP	FF 40 1½ BSP	Wafer Type
0.40	*					*
0.45	*					*
0.50	*					*
0.55	*					*
0.63	*					*
0.70	*					*
0.80	*					*
0.90	*					*
1.00	*					*
1.10	*					*
1.20	*					*
1.30	*					*
1.50	*					*
1.60	*					*
1.80	*					*
2.00	*					*
2.30	*					*
2.50	*					*
2.80	*					*
3.20	*					*
3.50	*					*
4.00	*					*
4.50	*					*
5.00	*					*
5.50	*					*
6.30	*					*
7	*					*
8	*	*				*

Flow rates stated are nominal
 FM = Female to Male Connection
 FF = Female to Female Connection
 First letter indicates upstream connection
 e.g.FM=Female to Male
 Female Male Direction of Flow

Connections
 All Male connections are BSPT – Taper
 All Female connections are BSPP – Parallel

Note:
 Other Configurations and body materials are available, however minimum quantities may apply.

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Temperature
 Pressure

Flow Rate Litres / min	FM 15 1/2 BSP	FF 20 3/4 BSP	FF 25 1 BSP	FF32 1 1/4 BSP	FF 40 1 1/2 BSP	Wafer Type
9	*	*				*
10	*	*				*
11	*	*				*
12	*	*				*
13	*	*				*
15	*	*				*
16	*	*				*
18	*	*				*
20	*	*				*
23	*	*	*	*		*
25		*	*	*		*
28		*	*	*		*
32		*	*	*		*
36		*	*	*		*
41		*	*	*		*
45		*	*	*		*
49		*	*	*		*
54		*	*	*		*
59			*	*		*
66			*	*		*
73			*	*		*
82			*	*		*
91			*	*		*
102			*	*		*
114			*	*		*
125				*	*	*
138				*	*	*
150				*	*	*
162				*	*	*
180				*	*	*
199				*	*	*
216				*	*	To
233				*	*	8854/m

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