

# FlowControl

## FlowControl Dynamic E-JUST





## FlowControl E-Just Cartridge

The E-Just automatic flow rate cartridges ensure that the designated flow rate will not be exceeded regardless of pressure fluctuations in the system.

### Adjustment

By means of a special designed key each cartridge can be easily adjusted to one of 39 different flow rates.

Adjustment is managed externally without isolating the valve or removing the cartridge from the system, which means that the desired maximum flow rate can be set while the system is operating.

The adjustment key turns the display mechanism and the graduation on the "handle" of the cartridge shows the setting indicated by two scales; one black reflecting full turns numbered 1 to 5, and one red at the top reflecting tenths of full turn numbered 0 to 9. The number of turns reflects the flow rate selected.

The colour of the pawl show the selected control range e.g white = 17-210 kPaD for the 20 mm black and green cartridges.

The FlowControl E-Just cartridge is tamper-proof since the adjustment is operated by means of the mentioned special key. Further, the setting can be protected with a coloured top cover, The colour of the cover and o-ring on the spindle under the cover indicates the colour and flow range of the cartridge e.g red for flow rates between 0,113-0,352 l/sec ,  $\Delta p$  30-400 kPaD (grey pawl). E-Just cartridges size 40 mm and 50 mm will, as standard, always be with a black cover and and black o-ring, as only one type per size is available.



## Applications

The 20 mm E-Just cartridges can be used with the following dynamic valves:

- Dynamic A (DN 15/20/25)
- Dynamic AB (DN 15/20/25)

The 40 mm E-Just cartridge can be used with:

- Dynamic AB (DN 25/32)

and the 50 mm E-Just cartridge can be used with:

- Dynamic AB (DN 40/50)

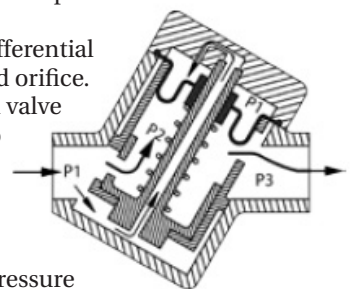
### Principle of cartridge operation

The principle of operation is shown below.

P1 and P3 are system pressures. P1 / P3 is the total pressure drop across the valve. P2 is set by the diaphragm chamber. interacting with the spring, P1 / P2 remains constant, keeping a constant  $\Delta p$  across the orifice areas. The result is a constant flow rate through the valve, independent of pressure fluctuations.

Below its pressure differential range it acts as a fixed orifice.

This allows a control valve in the same circuit to operate with valve authority up to the specified flow rate.



Within the defined pressure differential regulation range the pump supplies sufficient pressure to affect the spring and the diaphragm in the cartridge.

In case the differential pressure is higher than the defined max  $\Delta p$  for the cartridge, the diaphragm may be damaged.

# FlowControl

## FlowControl Dynamic - E-JUST

FlowControl Dynamic consists of two parts, one valve and one dynamic cartridge that operate independent of the differential pressure.

The new dynamic cartridge includes an innovative self-adjusting feature that can adjust the flow over every valve in the system continuously to the pre-determined setting.

This ensures that every unit in the system has the correct flow all the time even if the pressure changes in the system.

FlowControl Dynamic can be used in many different applications within heating and cooling, for example; fan-coil units, heat exchanger, display cabins, radiators and many other kinds of units where there is a demand for dynamic balancing and correct temperature is of great importance.

### Benefits and properties:

- Independent of the differential pressure. (see operating pressure range)
- Automatic balancing, the correct flow rate for each circuit is achieved automatically
- Dynamic balancing, the correct flow rate is maintained as each valve compensates for pressure fluctuations in the system.
- Up to 39 different flow rate settings in each cartridge
- Female connection, for ease of installation and a wide selection of fittings.
- PT measurement plugs (option), for verifying operating  $\Delta p$  or checking  $\Delta t$  across the valve.

### Valve

Art. no.	Dimension (Dn)	Connection	Flow rate (l/h)	Pressure (kPaD)	P/T plug	Weight (kg)
E-JUST.0	15 / 20	Rp 1/2" Rp 3/4"	157-609	17-210	Opt.	0,6
E-JUST.1	15 / 20	Rp 1/2" Rp 3/4"	276-825	17-200	Opt.	0,6
E-JUST.2	15 / 20	Rp 1/2" Rp 3/4"	406-1270	30-400	Opt.	0,6
E-JUST.3	25 / 32	Rp 1" Rp 1 1/4"	535-5830	17-400	Opt.	1,85
E-JUST.4	40 / 50	Rp 1 1/2" Rp 2"	3180-16100	20-400	Opt.	3,8

*For other dimensions, please contact FlowControl.*

Specification		Material	
Ambient temp.	0 °C...55°C	Valve body	Brass, ASTM CuZn39Pb2
Media temp.	-20°C...100°C	Cartridge	Body of PSU. Internal components of stainless steel. O-rings of EPDM-rubber.
Max op. pressure	400 kPaD, 58 psid		
Max. humidity	< 95% rF		

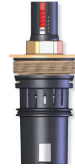
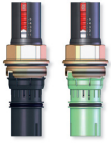
### Installation

Important!

To ensure that the valve is working properly a filter should be installed in the system (400 my).

# FlowControl

## Flow settings for E-Just cartridge.



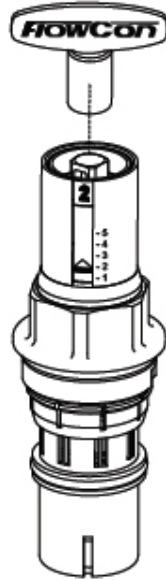
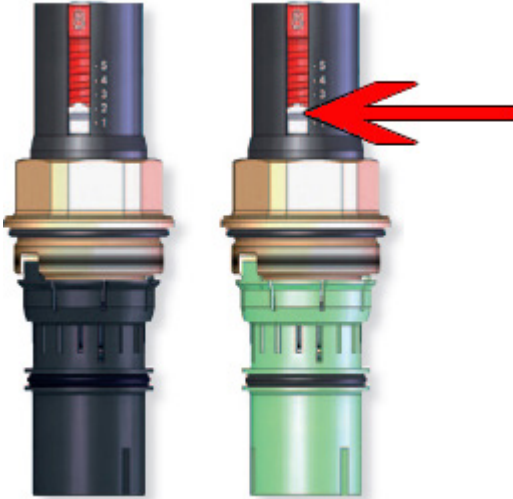
20mm - 3/4" - E-Just		20mm - 1 1/2" - E-Just		40mm - 1 1/2" - E-Just	50mm - 2" - E-Just	Setting
17-210 kPa		17-200 kPa	30-400 kPa	17-400 kPa	17-400 kPa	
E-Just.0.0 Black (White*)	E-Just.0 Green (White*)	E-Just.1 Red (Vit*)	E-Just.2 Red (Gray*)	E-Just.3 Black(White*)	E-Just.4 White(Gray*)	
l/hr		l/hr	l/hr	l/hr	l/hr	
100	157	276	406	535	3180	1,0
108	168	293	427	793	4100	1,1
116	180	310	449	1040	4940	1,2
123	191	326	470	1280	5710	1,3
131	202	343	792	1510	6420	1,4
139	214	360	513	1730	7070	1,5
147	225	377	535	1940	7660	1,6
155	236	393	556	2140	8200	1,7
162	247	410	578	2330	8700	1,8
170	259	426	599	2520	9150	1,9
178	270	443	621	2690	9570	2,0
186	281	459	642	2860	9960	2,1
194	293	475	664	3030	10300	2,2
201	304	491	685	3180	10600	2,3
209	315	507	707	3330	10900	2,4
217	327	523	728	3470	11200	2,5
225	338	539	750	3610	11500	2,6
233	349	554	771	3740	11700	2,7
240	360	569	793	3870	12000	2,8
248	372	584	814	3990	12200	2,9
256	383	599	836	4100	12400	3,0
264	394	614	857	4220	12600	3,1
272	406	628	879	4320	12800	3,2
279	417	642	900	4420	13000	3,3
287	428	655	922	4520	13200	3,4
295	440	669	943	4620	13400	3,5
303	451	682	965	4710	13600	3,6
311	462	695	987	4800	13800	3,7
318	473	707	1010	4890	14000	3,8
326	485	719	1030	4970	14200	3,9
334	496	731	1050	5050	14400	4,0
342	507	742	1070	5130	14600	4,1
350	519	753	1090	5210	14800	4,2
357	530	764	1120	5290	14900	4,3
365	541	774	1140	5370	15100	4,4
373	553	784	1160	5440	15300	4,5
381	564	793	1180	5520	15500	4,6
389	575	802	1200	5600	15700	4,7
396	586	810	1220	5670	15800	4,8
404	598	818	1240	5750	16000	4,9
412	609	825	1270	5830	16100	5,0

Accuracy: Greatest of either +/- 5% of controlled flow rate or +/- 2% of maximum flow rate.

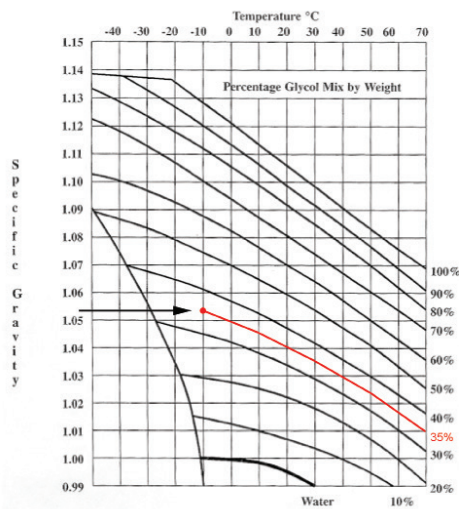
\* next page

# FlowControl

\*



Use the key to set the correct flow.



If you need to adjust your flow for brine you can use this chart. The value from the chart will be multiplied with your flow.

Accuracy: Greatest of either +/- 5% of controlled flow rate or +/- 2% of maximum flow rate.