



**Description:**

Automatic balancing valve (flow controller) in ductile iron with stainless steel cartridges and test ports across the valve. Wafer type, max.  $\Delta P$  600 kPa, DN50-800.

**Application:**

For use in heating/aircon piping systems to control water (glycol) flows, to preset but changeable levels, to prevent overflows in pumps and terminal units. Automatic balancing valves should be installed adjacent to pumps and at the outlet side of large air handling units.

**Operation:**

Within certain broad  $\Delta P$  levels, the spring adjusts the flow of fluid through the valve exit. The flow is predetermined by the size of the orifice in the entry side and the force of the spring. The cartridges operate in parallel in larger DN sizes.

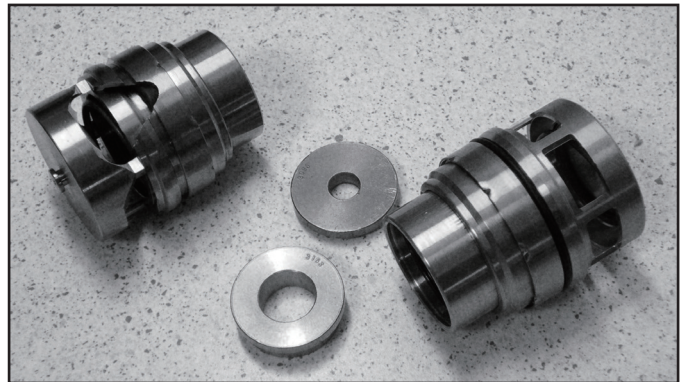
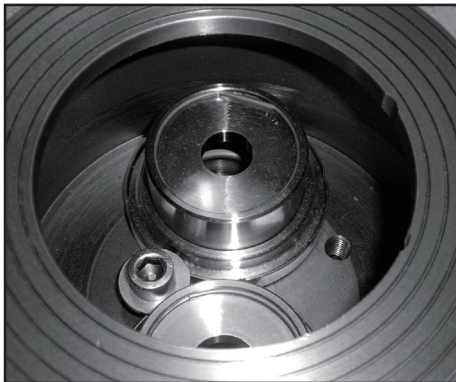
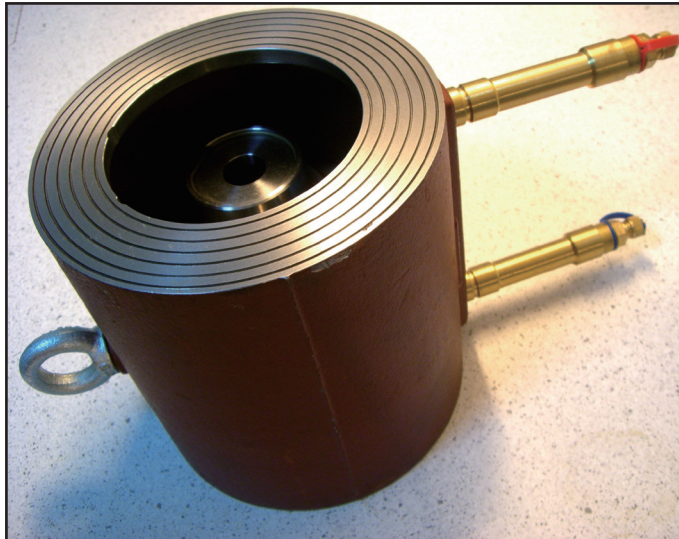
**Materials and spec.:**

Body	Ductile iron GGG40
Cartridge and spring	Stainless steel AISI 304/316
O rings	EPDM
Diaphragm	Reinforced HNBR
Max. diif. presure	600 kPa
Medium temperature	-20°C to 120°C

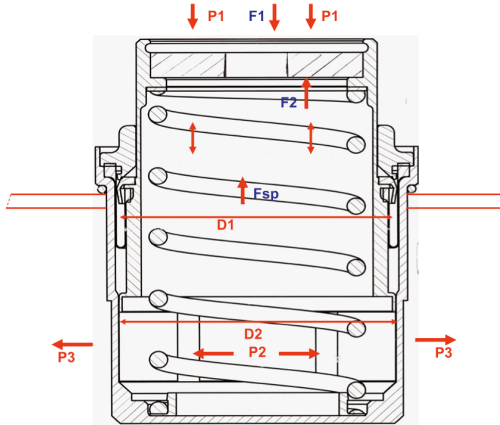
**Specification text assistance**

**High pressure cartridges for DN50-800**

"The cartridge for automatic balancing valve ('wafer between flanges' type housing) should be made of stainless steel. There should be only one differential pressure control range up to 600 kPa. The flow rate should be defined by replaceable orifice plate. There shall be a rolling diaphragm in the cartridge, made of reinforced HNBR. The 'o' rings should be made of EPDM".



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Q = flow; ΔP = differential pressure; Kv is a constant for the orifice

$Q = K_v \cdot \sqrt{\Delta P}$  Kv is a constant. To keep Q constant, ΔP must be constant;  $\Delta P = P_1 - P_2$ ;

$F_1 = F_2 + F_{sp}$  (spring)

$P_1 \cdot A_1 = P_2 \cdot A_2 + F_{sp}$

Construction is made so that  $D_1 = D_2$ ;

thus  $A_1 = A_2 (= A')$

Therefore  $P_1 \cdot A' = P_2 \cdot A' + F_{sp}$

$(P_1 - P_2) \cdot A' = F_{sp}$  i.e.  $\Delta P \cdot A' = F_{sp}$

$\Delta P = F_{sp} / A'$

In this product, A' and Fsp are both constants, therefore ΔP must be constant too.

Q remains constant.

**SERIES 953**

**ICV Automatic Balancing Valve DN50-800, Deltamatic Wafer type**

St St 304 Article no	Flow (l/s)	Min ΔP (kPa)
953-50 1 5179	1.061	13
953-50 1 5184	1.092	13
953-50 1 5189	1.125	13
953-50 1 5194	1.167	13
953-50 1 5200	1.222	13
953-50 1 5206	1.289	14
953-50 1 5213	1.375	14
953-50 1 5220	1.475	14
953-50 1 5227	1.583	14
953-50 1 5235	1.725	14
953-50 1 5243	1.808	14
953-50 1 5251	1.967	14
953-50 1 5260	2.194	15
953-50 1 5269	2.472	16
953-50 1 5279	2.889	19
953-50 1 5287	3.154	22
953-50 1 5292	3.470	23
953-50 1 5298	3.722	24
953-50 1 5303	4.100	27
953-50 1 5308	4.444	29

St St 304 Article no	Flow (l/s)	Min ΔP (kPa)
953-60 1 6285	4.733	34
953-60 1 6292	5.041	34
953-60 1 6301	5.221	35
953-60 1 6305	5.408	35
953-60 1 6312	5.684	35
953-60 1 6319	5.980	36
953-60 1 6326	6.236	36
953-60 1 6332	6.523	36
953-60 1 6338	6.815	37
953-60 1 6344	7.117	38
953-60 1 6349	7.369	38
953-60 1 6356	7.690	38
953-60 1 6362	8.099	38
953-60 1 6367	8.320	39
953-60 1 6373	8.605	39
953-60 1 6379	8.961	40
953-60 1 6385	9.324	40
953-60 1 6391	9.709	40
953-60 1 6393	10.093	42
953-60 1 6398	10.468	43
953-60 1 6400	10.724	44
953-60 1 6407	11.381	46
953-60 1 6408	12.5	49

