R206B

Static balancing valve

Energy Management

Datasheet
0521EN 08/2022

Balancing is essential to saving the energy used in hydronic systems.
The R206B static balancing valves allow a gradual and precise regulation of the flow rate.
The R206B valves have a flowmeter with calibrated orifice (Venturi principle), that is with fixed Kv.
Through the pressure outlets (depending on the versions they are provided with or they are optional accessory) and a differential manometer, it allows to carefully measure the flow rate actually circulating.

Versions and product codes

PRODUCT CODE		DN VALVE BODY SIZE	CONNECTIONS
WITH PROBE HOLDER	WITHOUT PROBE HOLDER		
R206BY003	R206BY013	15	G 1/2"F
R206BY004	R206BY014	20	G 3/4"F
R206BY005	R206BY015	25	G 1"F
R206BY006	R206BY016	32	G 1-1/4"F
R206BY007	R206BY017	40	G 1-1/2"F
R206BY008	R206BY018	50	G 2"F

Accessories
- **P206Y001**: pair of pressure outlets
- **P206Y011**: pair of adjustable fittings for pressure outlets
- **R225EY001**: differential pressure gauge with probe

GIACOMINI WATER E-MOTION

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Technical data

- Fluids: water, glycol solutions (max. 50 % glycol)
- Temperature range: 5÷110 °C
- Max. working pressure: 25 bar (2,5 MPa)
- Connections for pressure outlets: G 1/4"F
- Connection for drain: G 1/4"F
- Probe holder for needle Ø 3 mm and lenght 30÷40 mm
- Closing function
- Presetting possibility
- Venturi flow meter for flow rate measurement throught pressure outlets

Materials

- Body: dezincification resistant brass DZR (EN 12165 - CW602N)
- Handwheel: ABS, white color

Valves Kv

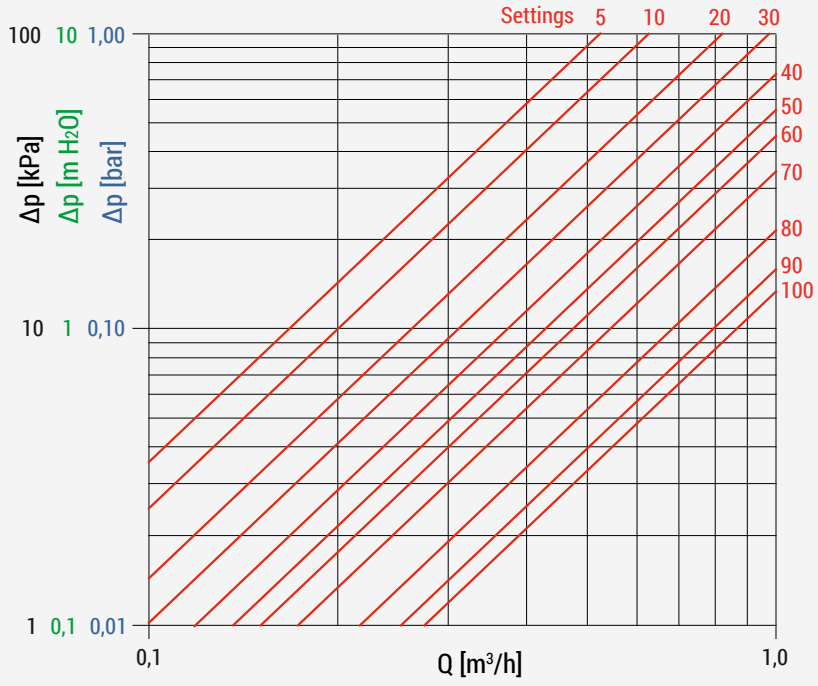
CONNECTIONS	Kv (VENTURI FLOW METER)	Kv (COMPLETE VALVE)
G 1/2"F	4	2,7
G 3/4"F	7,5	5,5
G 1"F	11	7
G 1-1/4"F	13,5	9,5
G 1-1/2"F	24	18,5
G 2"F	31	25,5

Flow rate values related to differential pressure on Venturi flowmeter (*) or for the complete valve (**)

	FLOW RATE [l/h]		
CONNECTIONS	0,5 kPa (*)	3 kPa (*)	10 kPa (**)
G 1/2"F	280	690	860
G 3/4"F	530	1300	1740
G 1"F	780	1900	2220
G 1-1/4"F	950	2340	3000
G 1-1/2"F	1700	4160	5850
G 2"F	2190	5370	8065

Loss of pressure

R206BY003, R206BY013 (1/2")



SETTING	Kv
100	2,7
95	2,54
90	2,48
85	2,34
80	2,18
75	1,99
70	1,71
65	1,59
60	1,48
55	1,41
50	1,33
45	1,28
40	1,19
35	1,09
30	0,98
25	0,92
20	0,83
15	0,73
10	0,63
5	0,53

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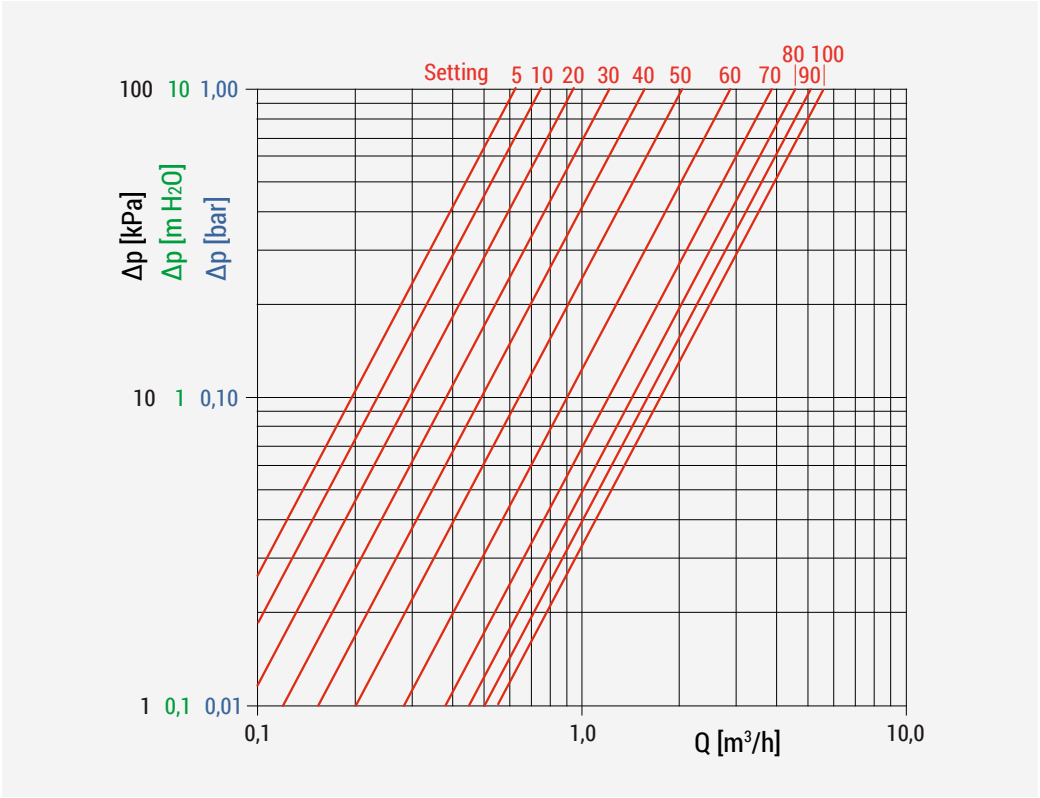
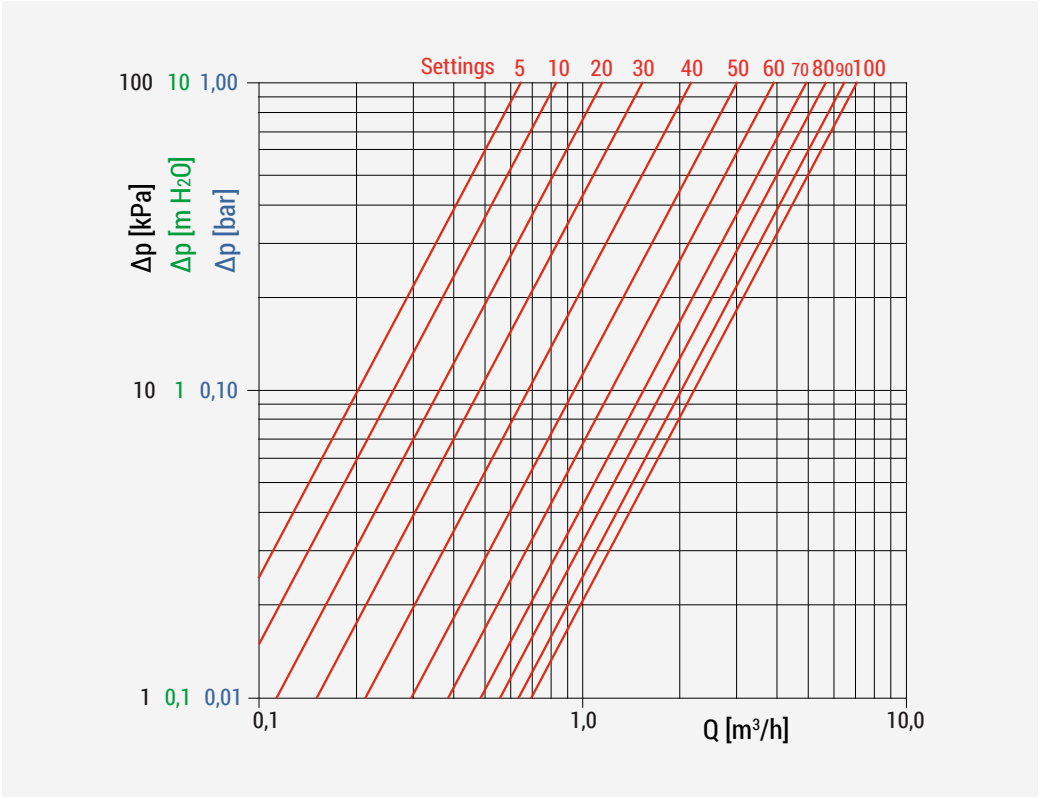
R206BY004, R206BY014 (3/4")



SETTING	Kv
100	5,5
95	5,2
90	5
85	4,8
80	4,57
75	4,35
70	3,95
65	3,5
60	2,88
55	2,37
50	2
45	1,81
40	1,58
35	1,39
30	1,24
25	1,1
20	0,96
15	0,85
10	0,75
5	0,62

R206BY005, R206BY015 (1")



SETTING	Kv
100	7
95	6,59
90	6,25
85	5,95
80	5,49
75	5,03
70	4,86
65	4,29
60	3,89
55	3,32
50	2,92
45	2,5
40	2,14
35	1,81
30	1,47
25	1,37
20	1,14
15	0,98
10	0,83
5	0,64

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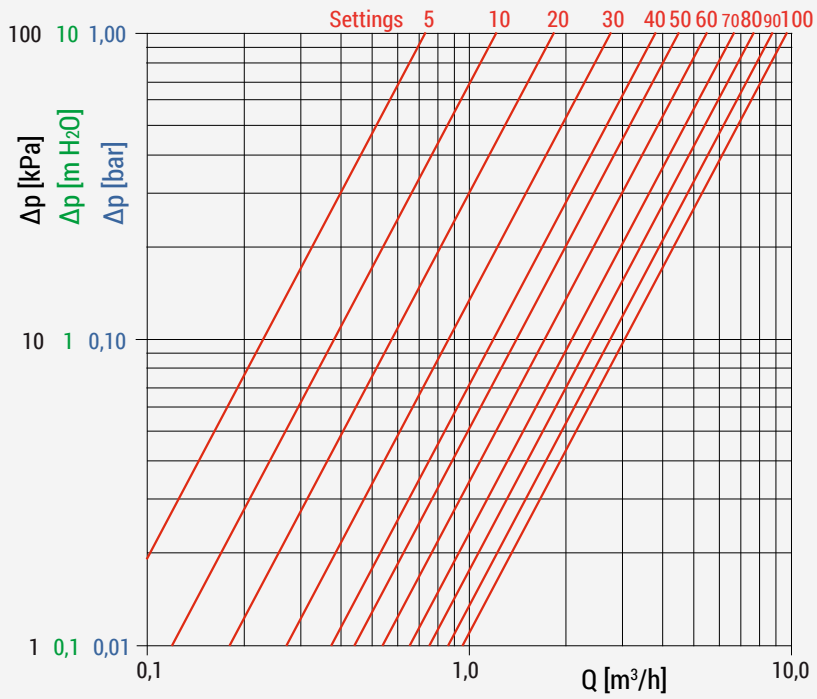
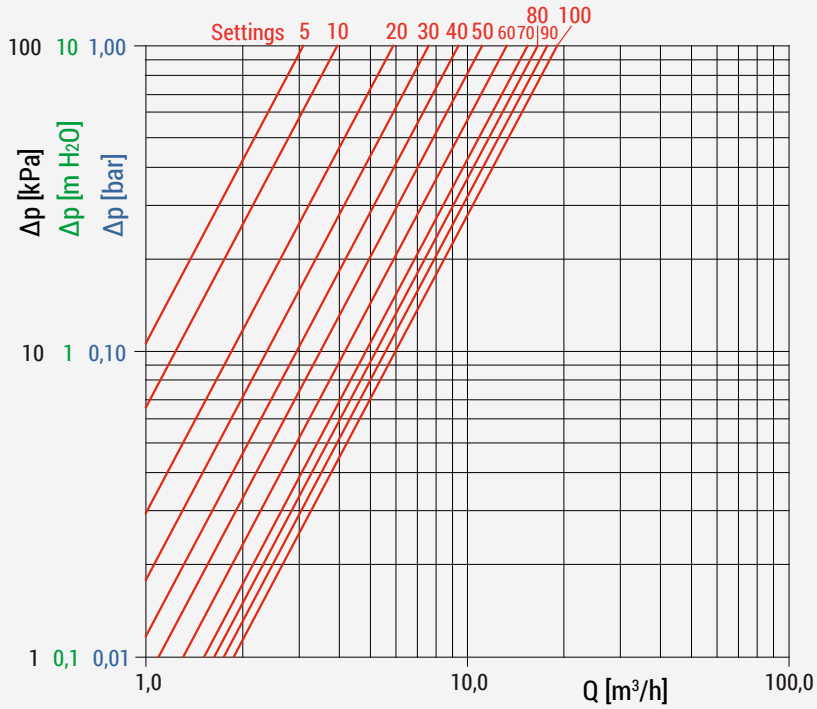
R206BY006, R206BY016 (1-1/4")



SETTING	Kv
100	9,5
95	8,98
90	8,55
85	7,97
80	7,6
75	7,05
70	6,46
65	5,86
60	5,5
55	4,89
50	4,39
45	4,04
40	3,69
35	3,25
30	2,66
25	2,21
20	1,79
15	1,53
10	1,21
5	0,73

R206BY007, R206BY017 (1-1/2")



SETTING	Kv
100	18,5
95	17,8
90	17,35
85	16,98
80	16,4
75	15,84
70	15,23
65	14,29
60	13,19
55	12,28
50	11,21
45	10,13
40	9,18
35	8,41
30	7,56
25	6,74
20	5,8
15	4,67
10	3,84
5	3,02

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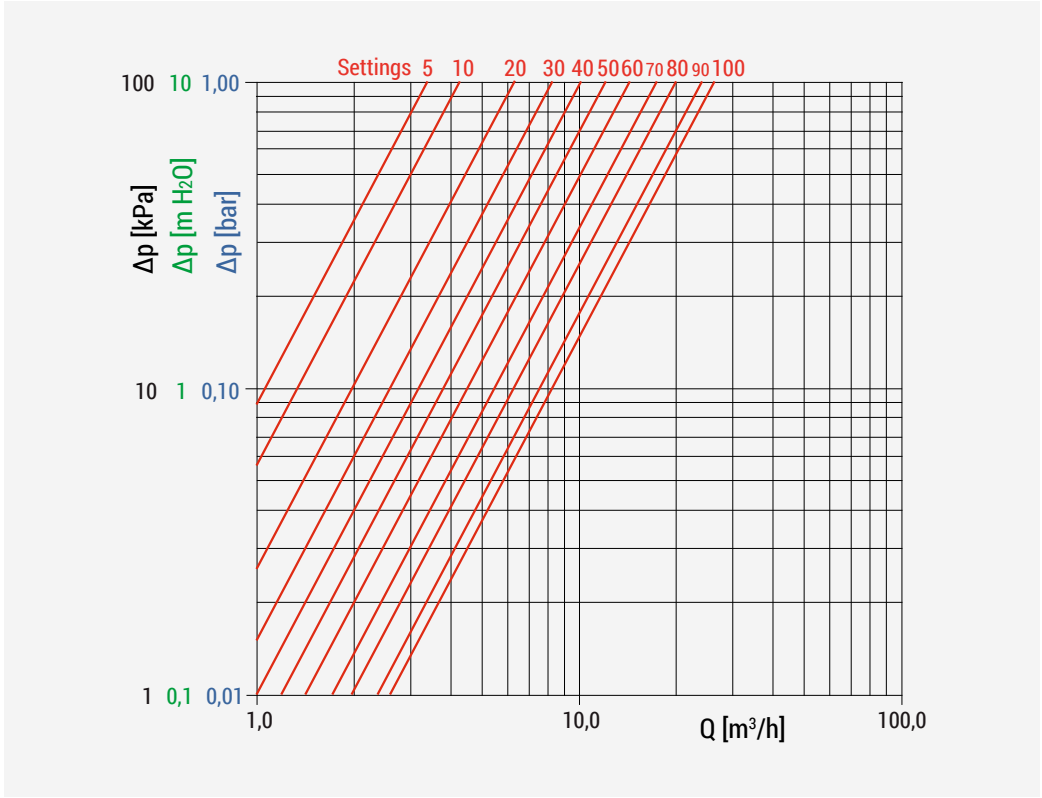
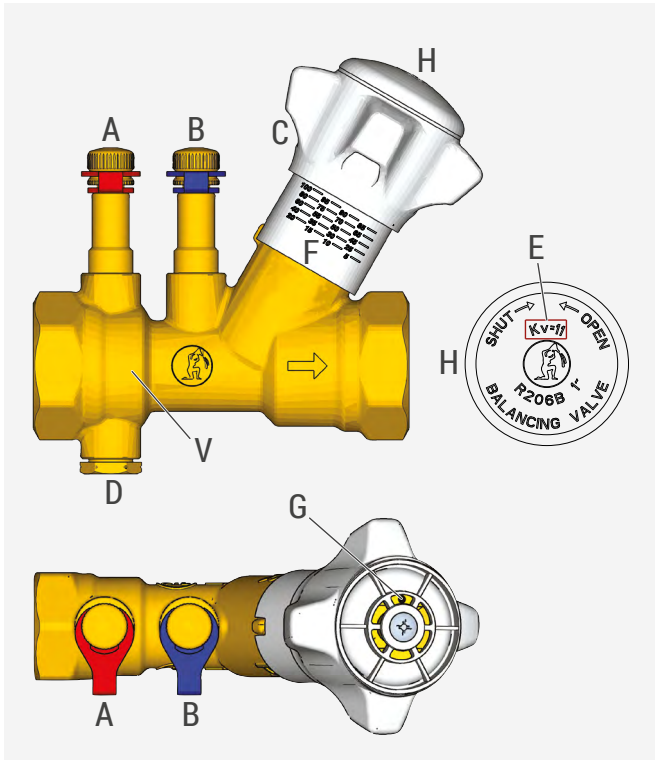
R206BY008, R206BY018 (2")



SETTING	Kv
100	25,5
95	24,08
90	23,21
85	21,64
80	19,98
75	18,95
70	17,64
65	16,53
60	14,72
55	13,33
50	12,06
45	11,08
40	9,98
35	8,99
30	8,02
25	7,26
20	6,24
15	5,13
10	4,18
5	3,36

Components



A	Probe holder for high pressure probe
B	Probe holder for low pressure probe
C	Handwheel
D	Drain G 1/4"F
E	Kv of the Venturi flow meter
F	Scale for 0÷100 % setting (20 positions)
G	Presetting screw (limiting the stroke)
H	Removable head (for presetting) with imprinted the Venturi Kv
V	Venturi flow meter

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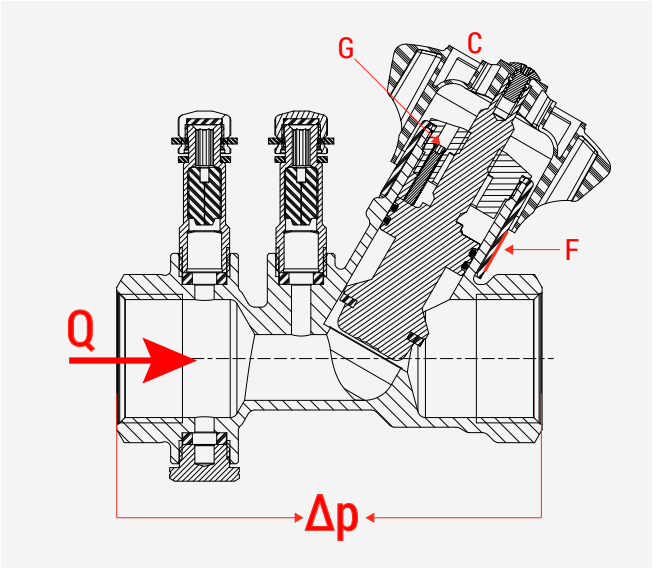
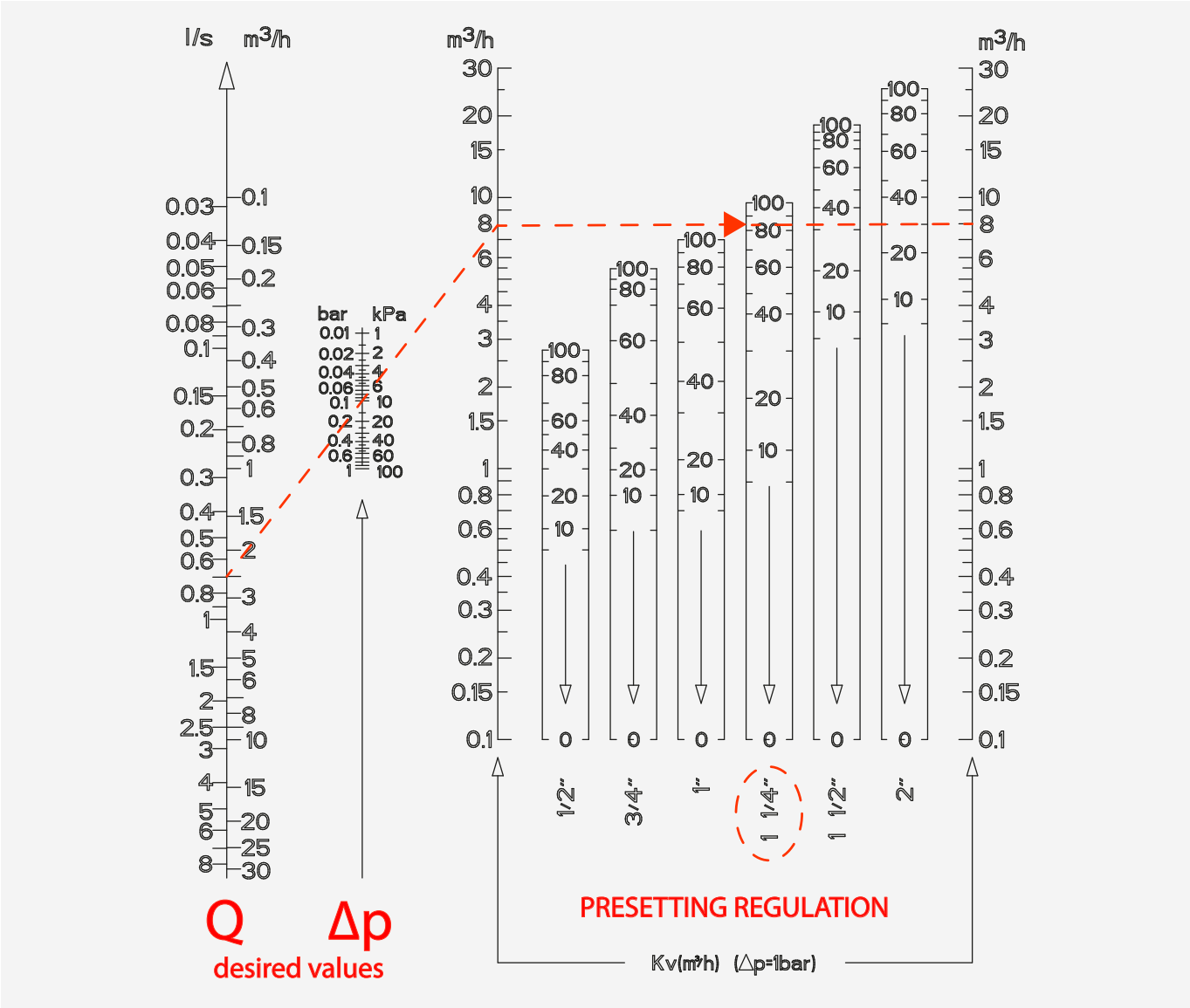
Operation

Presetting



R206B static balancing valves are equipped with a mechanism of mechanical memory of the opening (presetting).
This mechanism works by limiting the handle stroke (ref. C) through a locking screw (ref.G).
The presetting is carried out as follows:

- Select the desired flow rate Q depending on the differential pressure Δp;
- Through the below diagram, determine the regulation to be carried out to obtain the desired flow rate Q depending on the differential pressure Δp according to the valve size.
- Make the presetting of the R206B valve throught the handle (ref.C), on the regulation scale (ref. F);
- Screw clockwise until it stops the locking screw of the presetting (ref.G) by using an Allen key of 1,5 mm for versions 1/2", 3/4", 1", 1-1/4" or 2 mm for versions 1-1/2", 2".



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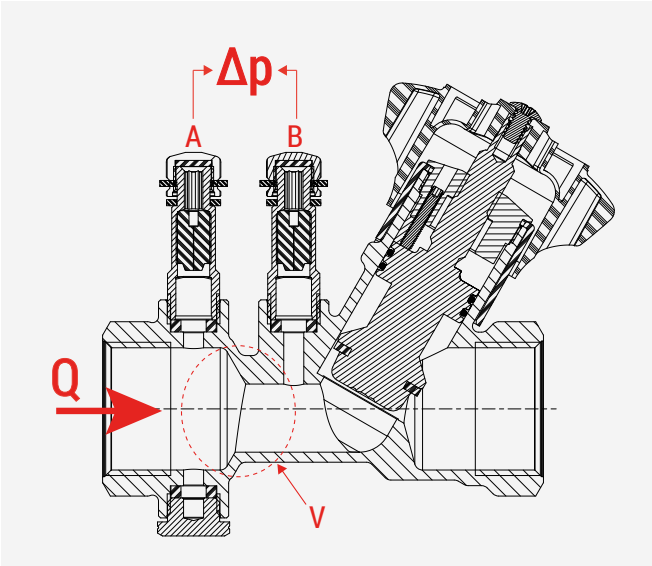
Flow rate calculation



R206B static balancing valves are equipped with a flowmeter having calibrated orifice (Venturi principle), that is with fixed Kv, that through the pressure outlets (ref.A) and a differential pressure gaguge, permits to calculate the really circulating flow rate.
The flow rate Q can be determined with the following formula:

$$Q = Kv_{venturi} \cdot \sqrt{\Delta p}$$

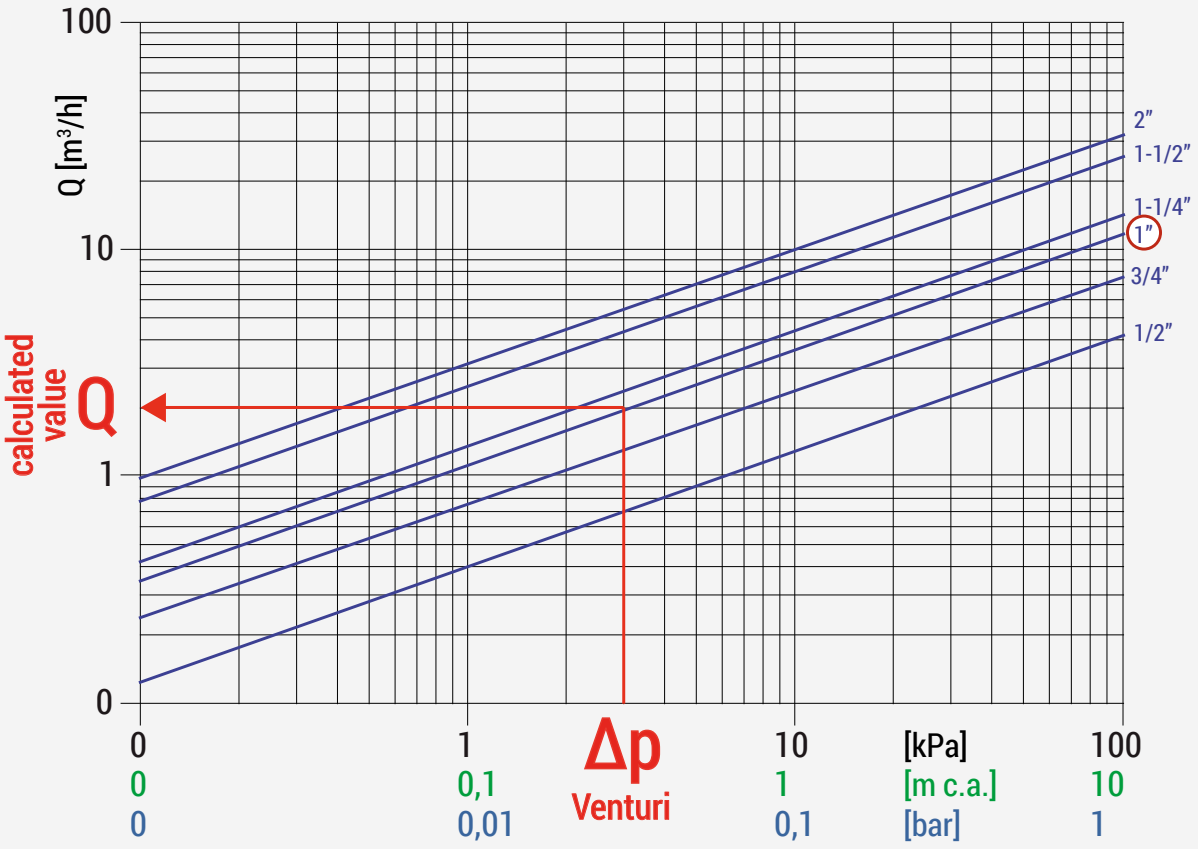
Refer to the table "Valves Kv" for the Kvventuri values.
Δp has to be measured through the pressure outlets.

Use the following formula for the liquids having density ρ different from water:

$$Q = Kv_{venturi} \cdot \sqrt{\Delta p / \rho}$$

As alternative to the formula, you can use the below diagram: with the measured Δp value, the flow rate Q can be determined according to the valve size.

⚠ WARNINGS. Water leakage may occur through the pressure outlets during the insertion of the probes. Wear protective clothing and goggles to prevent personal injury during pressure measurement.
Do not use lubricants on the probes to facilitate insertion into the outlets. If necessary, wet the probes with clean water.
Do not leave the probes in the pressure outlet longer than necessary, as this could cause leakage.



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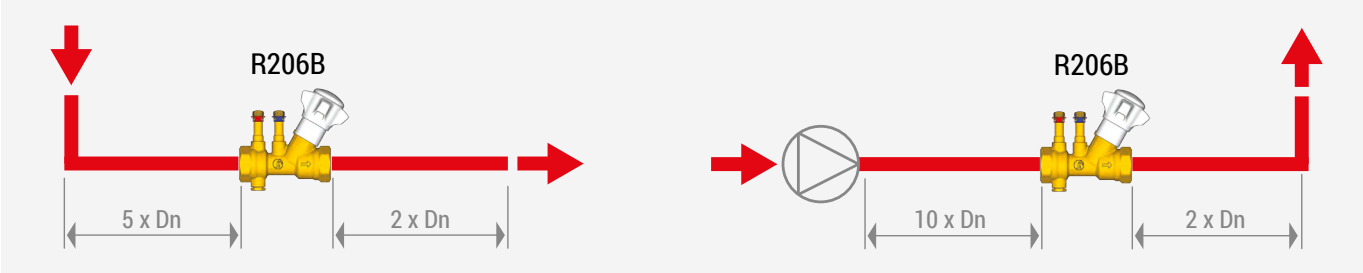
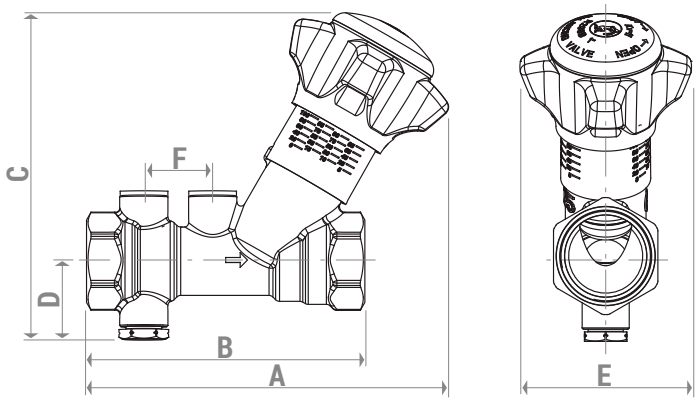
Installation

- The valve must be installed maintaining free access to the pressure probes, drain and handwheel.
- The valve and the pipe on which it is installed must have the same nominal diameter.
- Wash the system before installing the valve.
- To protect the valve from possible impurities, insert a filter upstream the valve.
- Respect the flow direction indicate on the valve's body.
- The valve can be mounted on horizontal or vertical pipes.
- If the valve is installed after a curved pipe portion is recommended to maintain a straight pipe before the valve to a minimum length equal to 5 times the nominal diameter (Dn) of the valve itself.
- If there is a circulator immediately before the valve, the minimum recommended length of the straight pipe is 10 times the nominal diameter (Dn) of the valve itself.



Dimensions



PRODUCT CODE		DN	CONNECTIONS	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
WITH PROBE HOLDER	WITHOUT PROBE HOLDER								
R206BY003	R206BY013	15	G 1/2"F	131	95	119	25	64	25
R206BY004	R206BY014	20	G 3/4"F	131	101	118	28	64	25
R206BY005	R206BY015	25	G 1"F	131	110	122	32	64	25
R206BY006	R206BY016	32	G 1-1/4"F	137	120	129	35	64	25
R206BY007	R206BY017	40	G 1-1/2"F	163	140	166	39	64	25
R206BY008	R206BY018	50	G 2"F	169	154	172	45	70	25

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Product specifications

R206B – With probe holder

Static balancing valve with threaded connections from G 1/2"F to G 2"F. Temperature range: 5÷110 °C. Maximum working pressure: 25 bar. Handwheel in ABS, white color. Body in dezincification resistant brass DZR (EN 12165 - CW602N). Pressure probes to determine the flow rate through fixed orifice (Venturi principle). G 1/4"F drain connection.

R206B – Without probe holder

Static balancing valve with threaded connections from G 1/2"F to G 2"F. Temperature range: 5÷110 °C. Maximum working pressure: 25 bar. Handwheel in ABS, white color. Body in dezincification resistant brass DZR (EN 12165 - CW602N). G 1/4"F drain connection.

UNIT OF MEASUREMENT.

1 bar = 100 kPa

1 m^3/h = 1000 l/h = 16,7 l/min = 0,28 l/s

Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

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Product Disposal. Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.

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