

**R206B**

Description

Balancing is essential to saving the energy used in hydronic systems. The R206B are static balancing valves, that 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		Connections
With probes	Without probes	
R206BY003	R206BY013	1/2"
R206BY004	R206BY014	3/4"
R206BY005	R206BY015	1"
R206BY006	R206BY016	1 1/4"
R206BY007	R206BY017	1 1/2"
R206BY008	R206BY018	2"

Accessories

- P206Y001: sensors holder (no. 2) kit for the flow rate determination through measurement of the differential pressure, 1/4" M connections.
- R225EY001: differential manometer.

Main features

- Drain connection 1/4" F - ISO 228
- Sensor holder for needle Ø 3 mm and lenght 30÷40 mm
- Closing function
- Presetting possibility
- Venturi flowmeter for flow rate measurement by means of pressure probes

Technical data

- Temperature range: 5÷110 °C
- Maximum working pressure: 25 bar (2500 kPa)

Materials

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

Valves Kv

Connections	Kv (Venturi flow meter)	Kv (complete valve)
1/2"	4,0	2,7
3/4"	7,5	5,5
1"	11,0	7,0
1 1/4"	13,5	9,5
1 1/2"	24	18,5
2"	31	25,5

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

Connections	Flow rate (l/h)		
	0,5 kPa (*)	3 kPa (*)	10 kPa (**)
1/2"	280	690	860
3/4"	530	1300	1740
1"	780	1900	2220
1 1/4"	950	2340	3000
1 1/2"	1700	4160	5850
2"	2190	5370	8065

Components

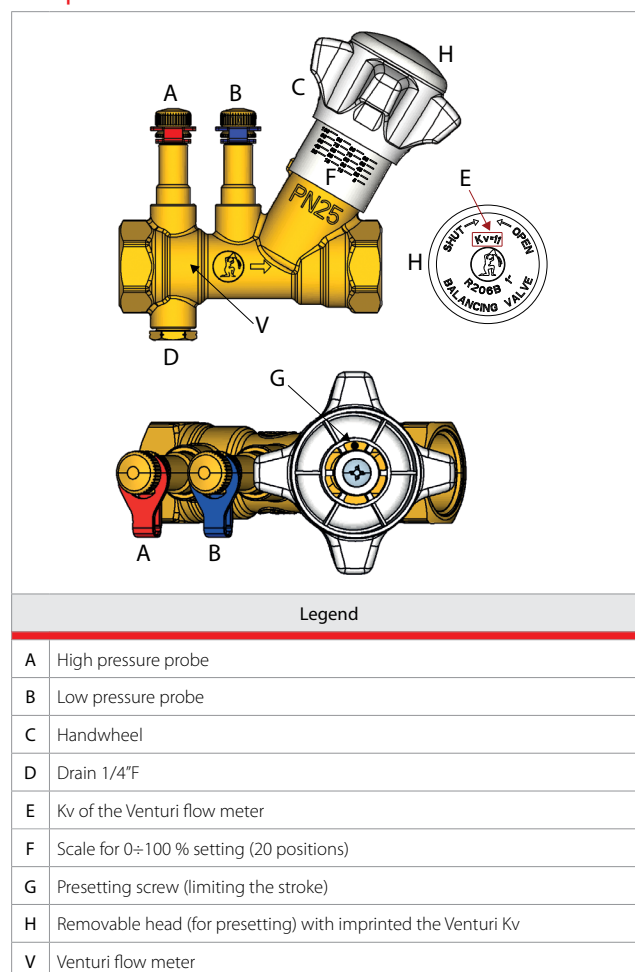


Fig. 1



Operation

Presetting

R206B valves are equipped with a mechanism of mechanical memory of the opening (pre-regulation). This mechanism works by limiting the handle stroke (ref. C – fig.2) through a locking screw (ref.G – fig.2).

Operationally the preregulation shall be effected as follows:

- Select the desired flow rate Q depending on the differential pressure Δp ;
- Through the diagram of figure 3, 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 regulation of the R206B valve by means of the handle (ref.C-fig.2), on the regulation scale (ref. F – fig.1);
- Screw clockwise until it stops the locking screw of the pre-regulation (ref.G-fig.2) 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".

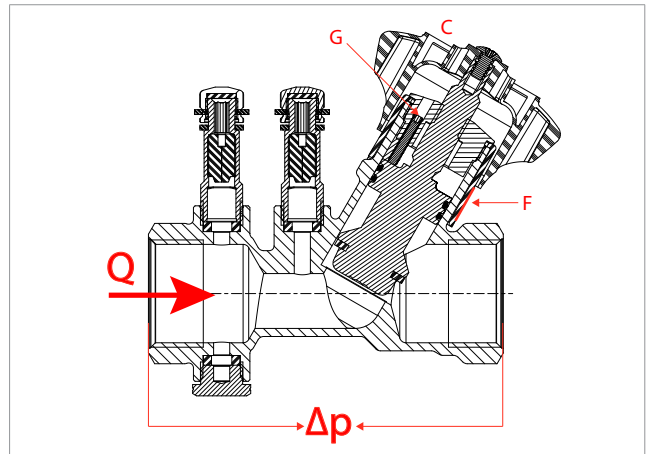


Fig. 2

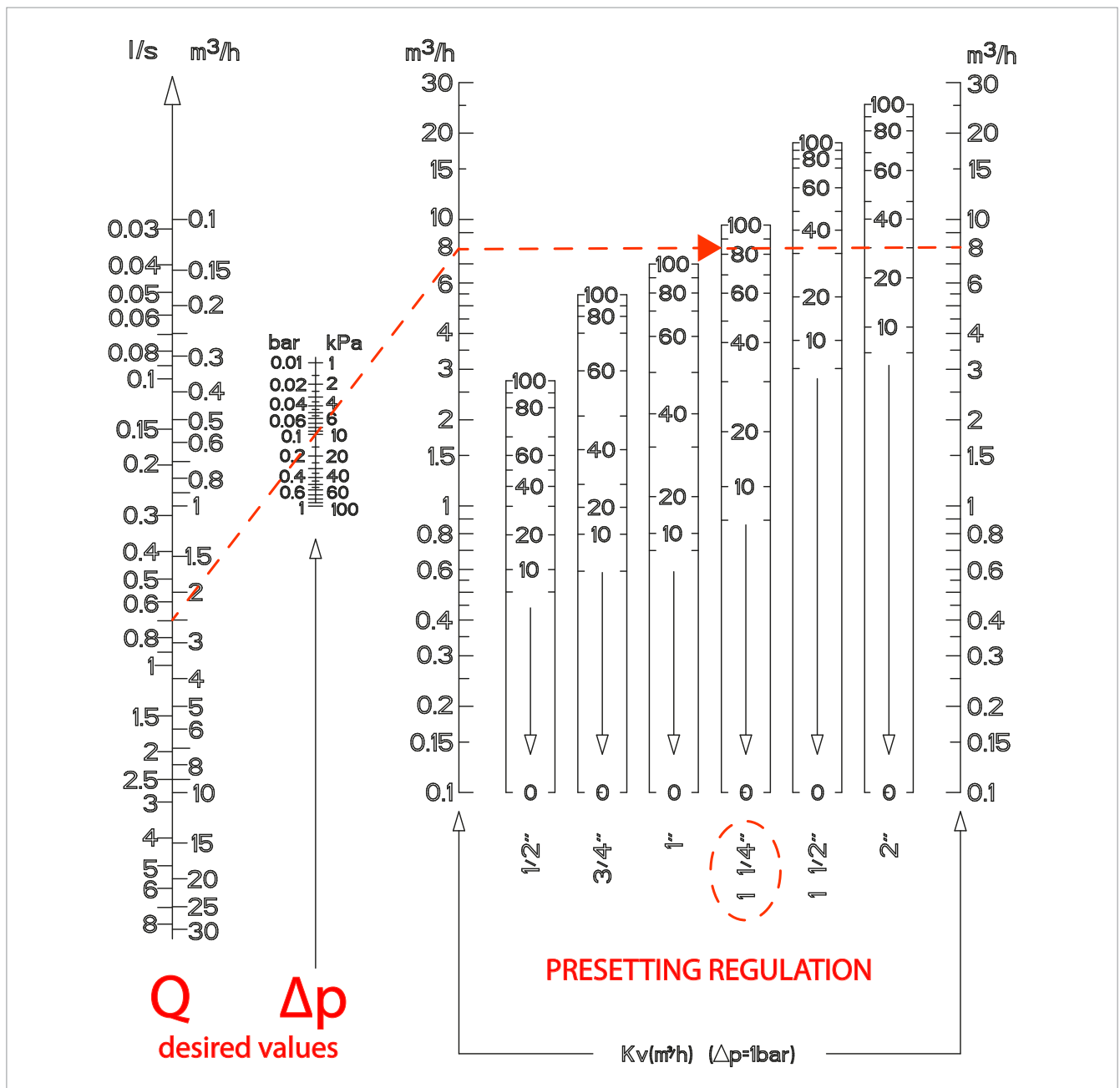


Fig. 3



Flow rate calculation

R206B balancing valves are equipped with a flowmeter having calibrated orifice (Venturi principle), that is with fixed K_v , that through the pressure outlets (ref.A-fig.4) and a common differential manometer, permits to calculate the really circulating flow rate.

The flow rate Q can be determined with the following formula:

$$Q = K_{v_{\text{venturi}}} \cdot \sqrt{\Delta p}$$

Refer to the table "Valves K_v " for the $K_{v_{\text{venturi}}}$ values.

Δp has to be measured through the pressure outlets.

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

$$Q = K_{v_{\text{venturi}}} \cdot \sqrt{\Delta p / \rho}$$

As alternative to the formula, you can use the diagram in figure 5: with the measured Δp value, the flow rate Q can be determined according to the valve size.

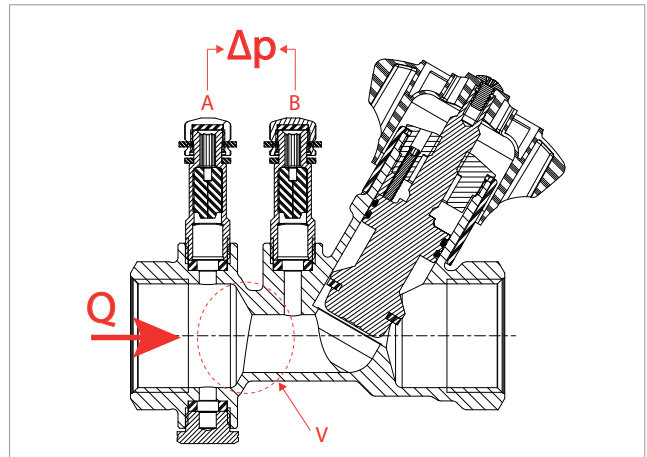


Fig. 4



Warning.

Leakage of hot water can occur through the pressure outlets during the sensor introduction of the sensors. Wear protective clothes and glasses in order to prevent personal physical damages during the pressure measure.

Do not use lubricants on the sensors to ease the outlet insertion. If needed simply wet the sensors with clean water.

Do not leave the measure needle too much time in the pressure outlet, as it could cause leakages.

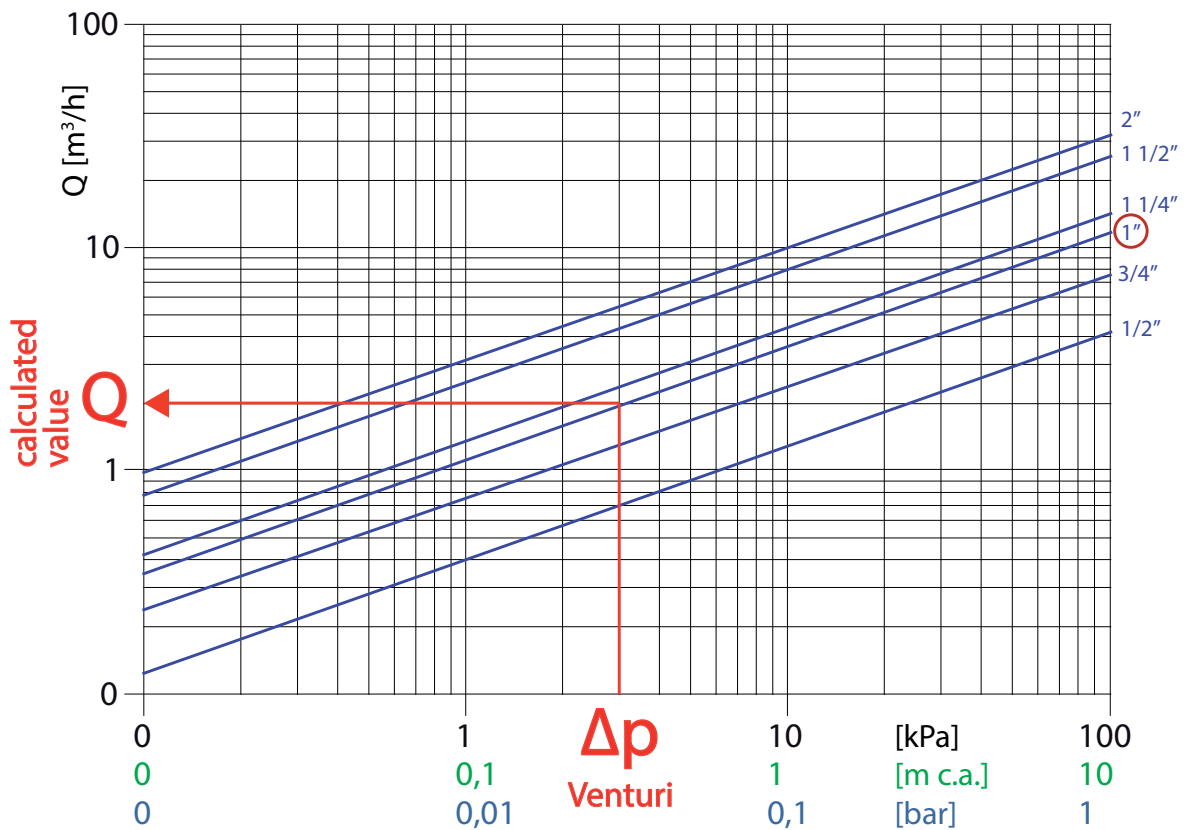
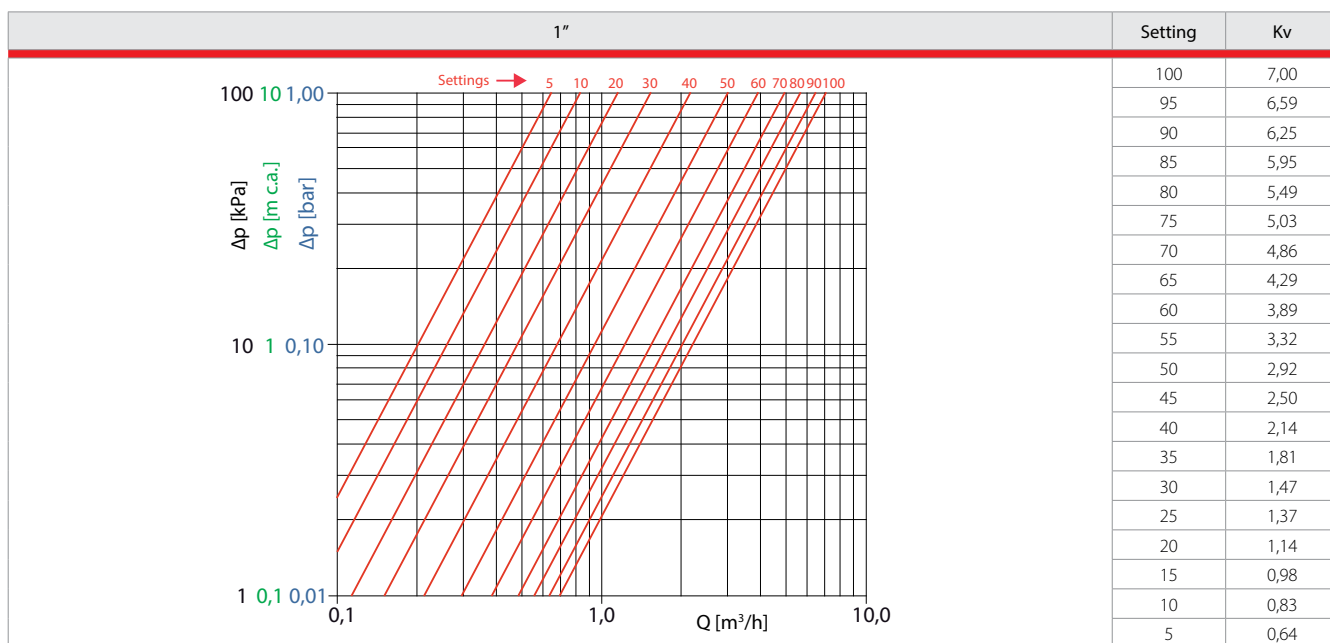
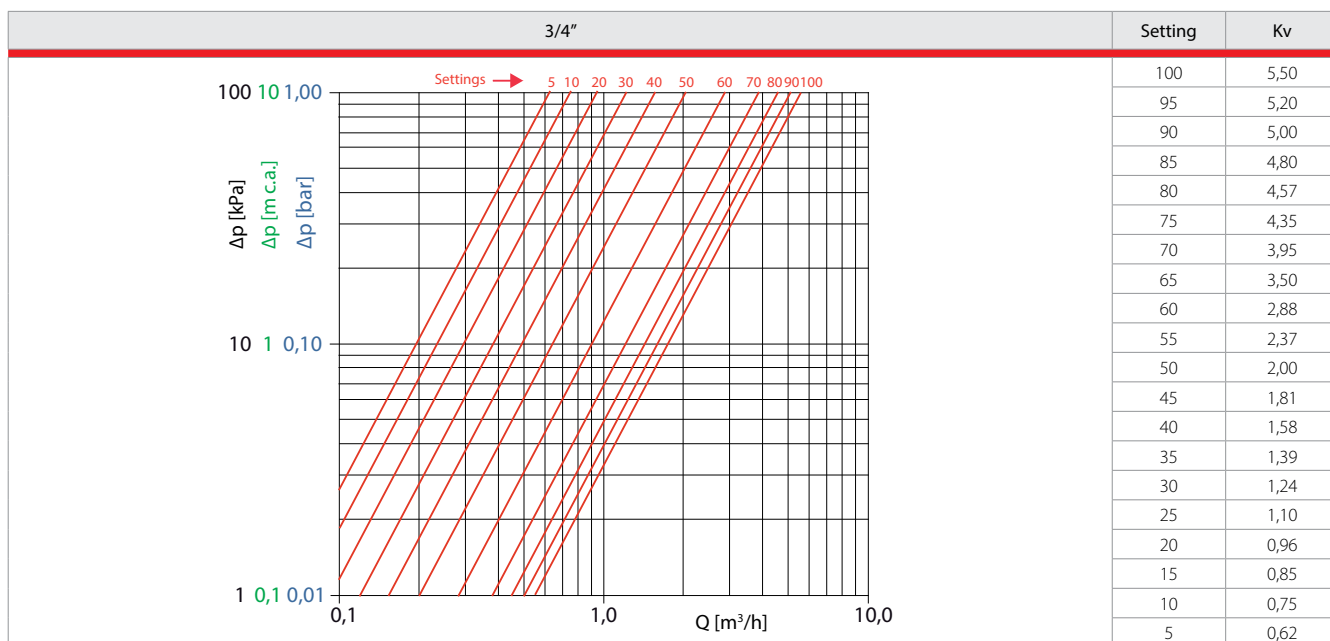
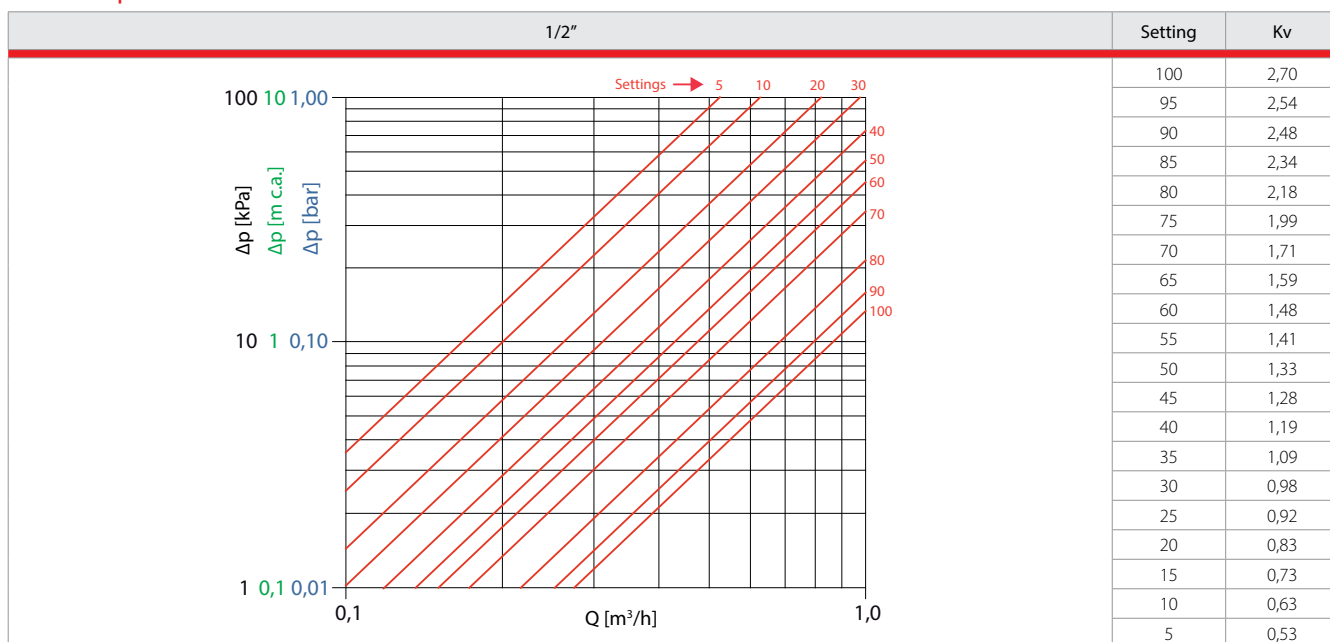
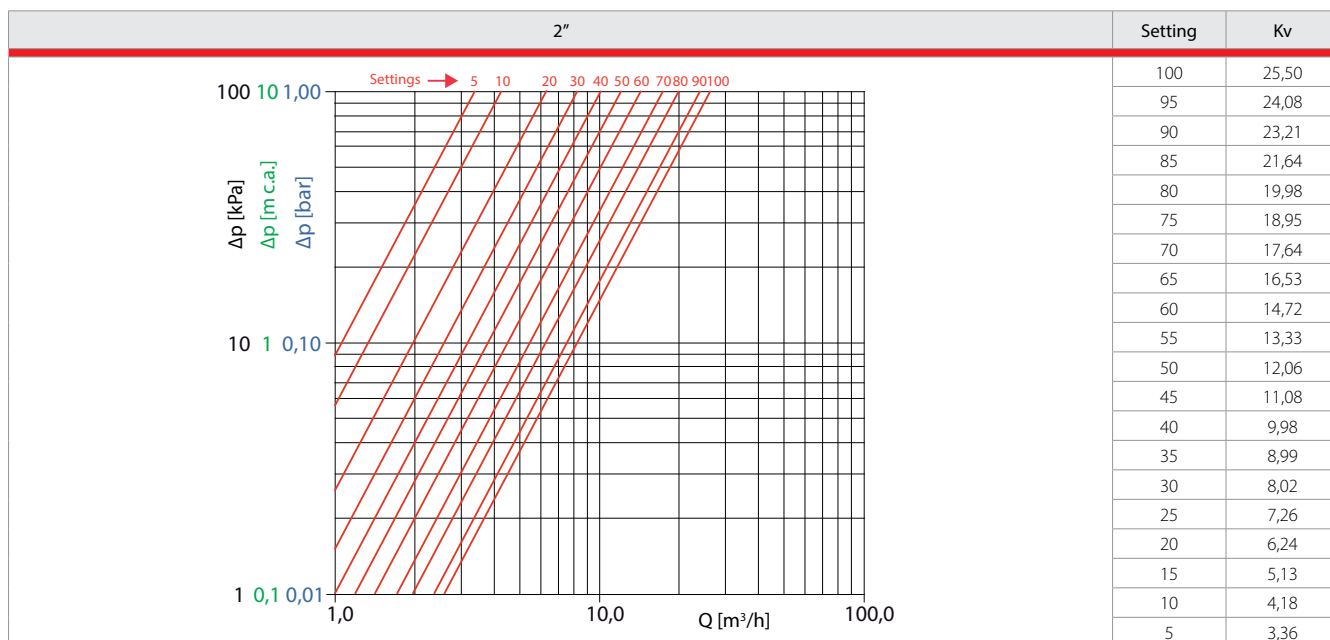
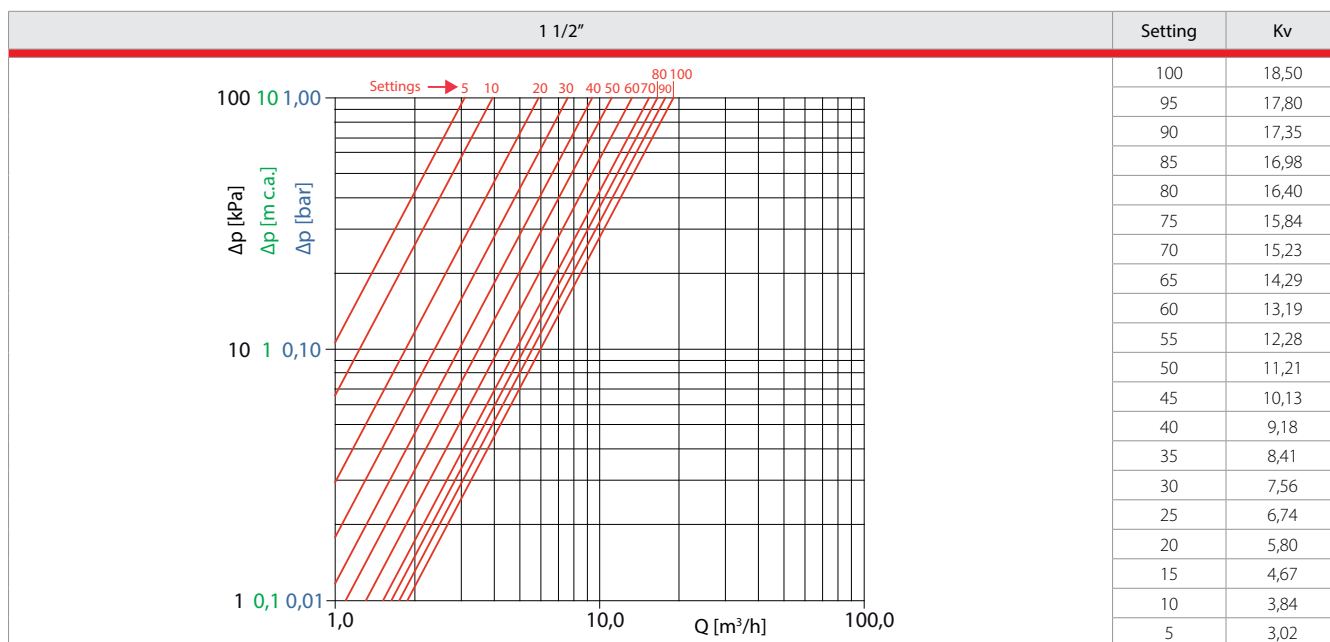
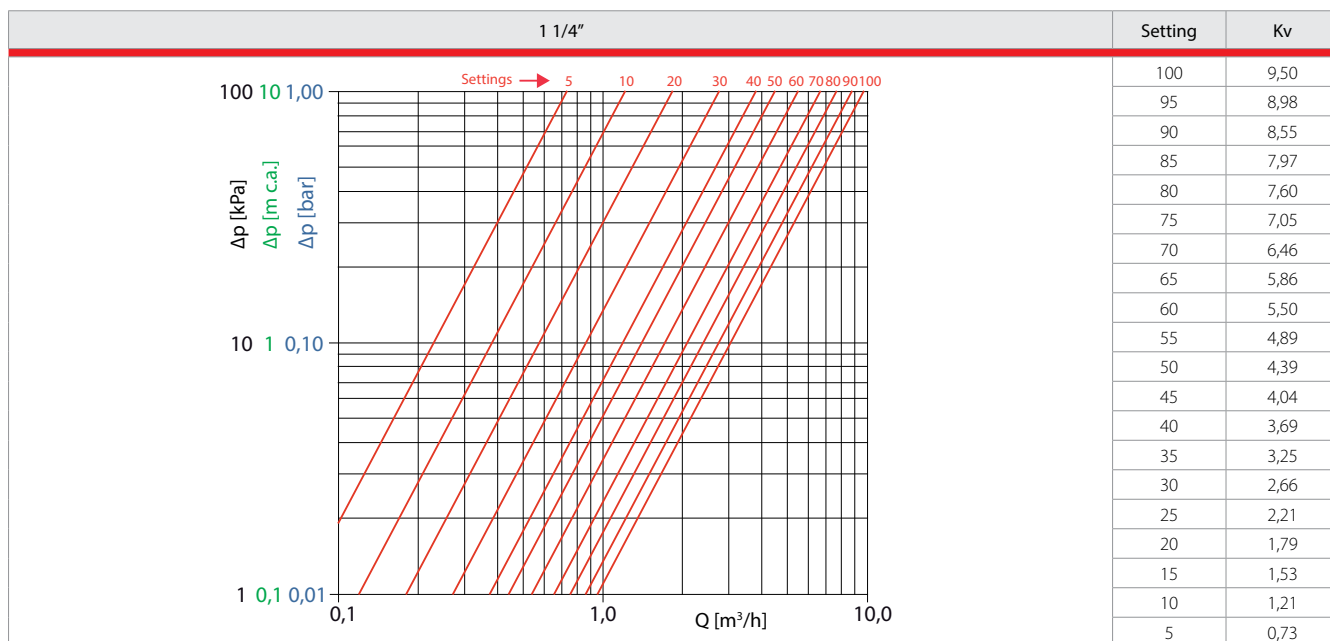


Fig. 5



Losses of pressure



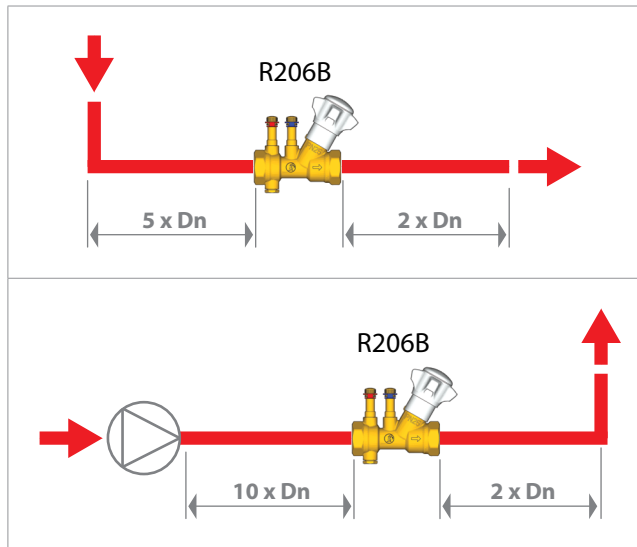




Installation

- 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 R206B 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.



Product specifications

R206B – with pressure probes

Static balancing valve with ISO 228 threaded connections female-female from 1/2" to 2". Temperature range: 5÷110 °C. Maximum working pressure: 25 bar (2500 kPa). 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). 1/4"F drain connection.

R206B – without pressure probes

Static balancing valve with ISO 228 threaded connections female-female from 1/2" to 2". Temperature range: 5÷110 °C. Maximum working pressure: 25 bar (2500 kPa). Handwheel in ABS, white color. Body in dezincification resistant brass DZR (EN 12165 - CW602N). 1/4"F drain connection.

Dimensions

Technical drawings of the R206B valve. The left drawing is a side view showing dimensions A (total width), B (width of the main body), C (total height), D (height of the main body), and F (width of the handle). The right drawing is a front view showing dimension E (height of the handle).

Connections	DN	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
1/2"	15	131	95	119	25	64	25
3/4"	20	131	101	118	28	64	25
1"	25	131	110	122	32	64	25
1 1/4"	32	137	120	129	35	64	25
1 1/2"	40	163	140	166	39	64	25
2"	50	169	154	172	45	70	25

Additional information

For additional information please check the website www.giacomini.com or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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