Balancing valves

series 131 - 135

cert. n° 0003 ISO 9001

01006/05 GB

Function

Balancing valves are hydraulic devices that can precisely regulate the flow rate of the fluid that supplies a system's emitters. Hydraulic circuits must be correctly balanced to ensure that the system operates at the design conditions and provides a high level of heat comfort with low energy consumption.

In the 131 series threaded valves, the flow rate is measured by a Venturi device that is incorporated into the body of the valve. This device guarantees accurate setting as well as ease of use during calibration.

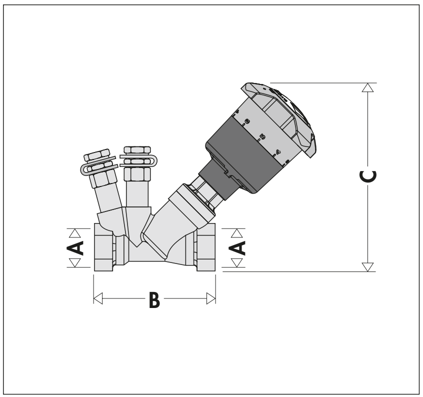
Product range

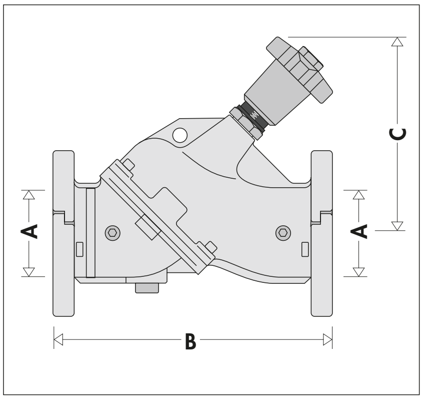
Series 131 Balancing valve with Venturi device. Threaded version .... Sizes 1/2", 3/4", 1", 1 1/4", 1 1/2" and 2"
Series 135 Balancing valve. Flanged version .... Sizes DN 65, DN 80, DN 100, DN 125, DN 150, DN 200, DN 250 and DN 300

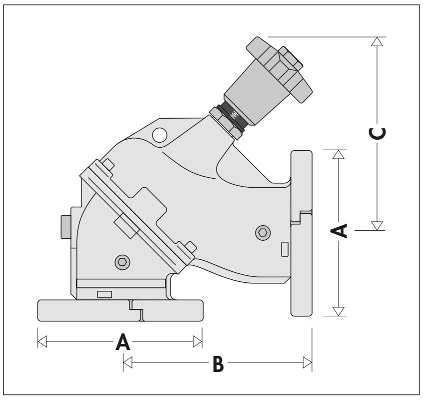
Technical specifications

series ⇨	131 threaded	135 flanged
Materials:		
- Body:	brass EN 12165 CW617N	cast iron ASTM A536 GR65-45-12
- Bonnet:	brass EN 12165 CW617N	brass ASTM B-16
- Control stem:	brass EN 12164 CW614N	brass ASTM B-16 (DN 65 to DN 150) stainless steel (DN 200 to DN 300)
- Regulating disc:	brass EN 12164 CW614N	bronze ASTM B584 C-84400
- Seal seat:	brass EN 12165 CW617N	high-strength resin (DN 65 to DN 150) EPDM (DN 200 to DN 300)
- Hydraulic seals:	EPDM	Buna·N
- Flange seals:		EPDM
- Knob:	reinforced nylon, ABS	high-strength resin
- Pressure tappings:	brass body with EPDM seals	brass body with EPDM seals
Performance:		
- Medium:	water, glycol solution non hazardous, therefore excluded from the guidelines of 67/548/EC Directive	Water, glycol solution non hazardous, therefore excluded from the guidelines of 67/548/EC Directive
- Max. percentage of glycol:	50%	50%
- Max. working pressure:	16 bar	16 bar
- Temperature range:	-10 – 110°C	-5 –110°C
- Accuracy:	±5%	±5% (open 50 to 100%)
- Number of setting turns:	5	5 (DN 65, DN 80); 6 (DN 100 to DN 150) 12 (DN 200, DN 250); 14 (DN 300)
Connections:		
- Connections:	1/2" – 2" F	DN 65 – DN 300, PN 16 (to be coupled with EN 1092-1 counterflanges)
- Valve body pressure tapping connections:	1/4" F	1/4" F

Dimensions







Code	A	B	C	Weight (kg)
131400	1/2"	76	117	0,49
131500	3/4"	83	125	0,55
131600	1"	97	135	0,84
131700	1 1/4"	110	143	1,06
131800	1 1/2"	129	150	1,59
135900	2"	153	170	2,46

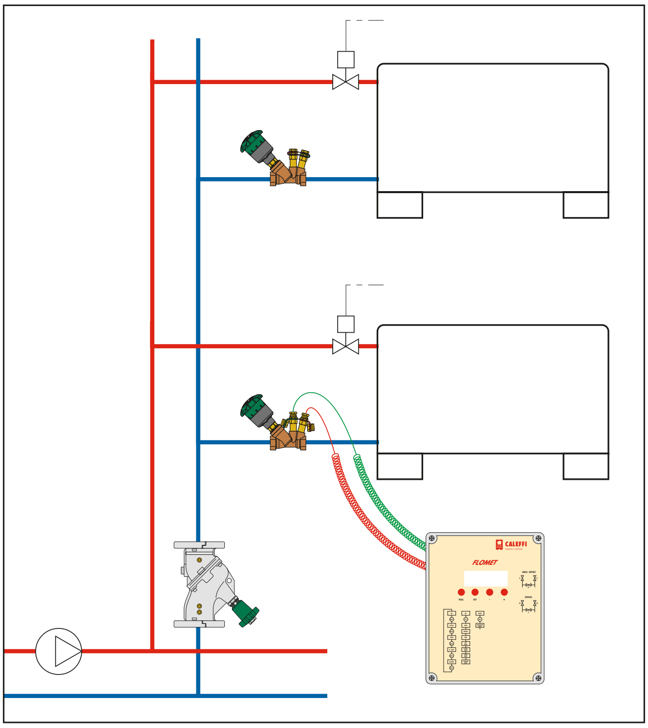
Code	A	B	C	Weight (kg)
135060	DN 65	305	244	9
135080	DN 80	305	267	11
135100	DN 100	356	268	19
135120	DN 125	445	332	37
135150	DN 150	525	349	54
135200	DN 200	716	625	141
135250	DN 250	762	673	209
135300	DN 300	967	722	395

Code	A	B	C	Weight (kg)
135060	DN 65	187	244	9
135080	DN 80	213	267	11
135100	DN 100	244	268	19
135120	DN 125	305	332	37
135150	DN 150	359	349	54
135200	DN 200	481	625	141
135250	DN 250	516	673	209
135300	DN 300	611	722	395

Advantages of balanced systems

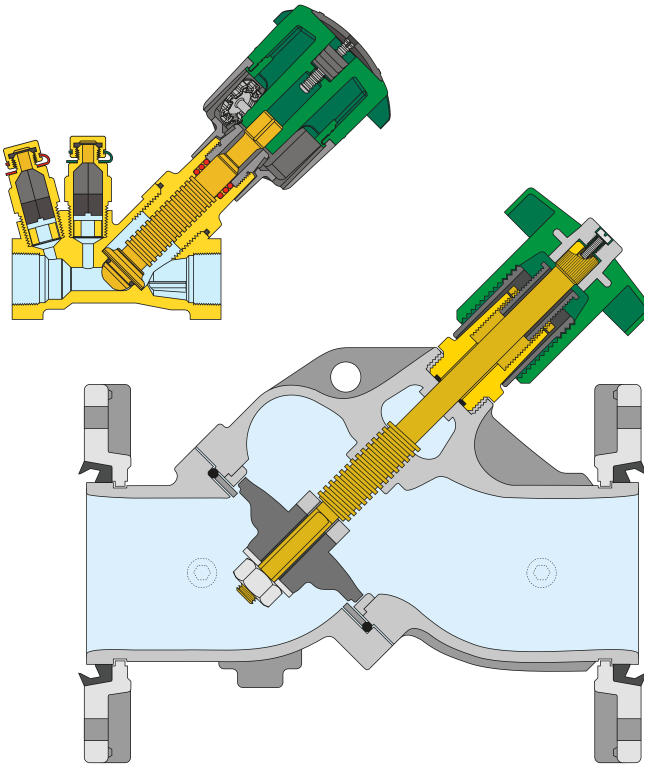
A balanced system provides the following main benefits:

1. Allows the system emitters to perform correctly to heat, cool and dehumidify without wasting energy and ensuring greater comfort.
2. Permits the electropumps to work in the best efficiency zone with less risk of overheating and premature wear.
3. Reduces fluid velocities that may lead to noise and abrasion.
4. Limits the value of the differential pressures acting on the regulating valves, thus preventing malfunctions.



Operating principle

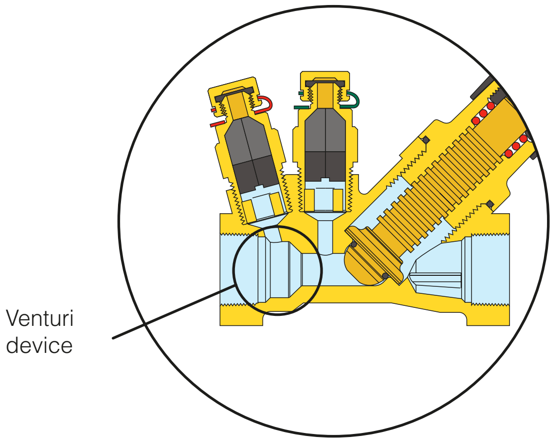
A balancing valve is a hydraulic device that regulates the flow rate rate of the fluid passing through it. The flow rate is regulated by means of a knob that controls the movement of a disc that allows the passage of the fluid. The flow rate is controlled according to the Δp value measured by two pressure connectors located on the valve.



131 series construction details

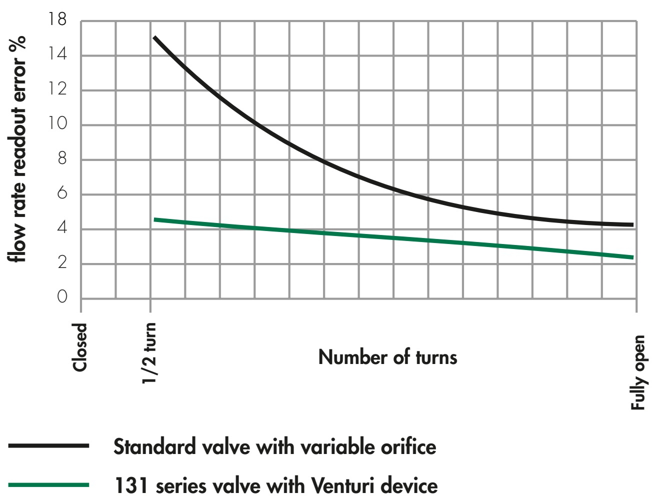
Venturi flow rate measurement device

The 131 series 1/2" - 2" valves are equipped with a flow rate measurement device based on the Venturi effect. The device is incorporated in the body of the valve upstream of the valve disc, as shown in the figure below.



This system provides the following benefits:

1. Allows greater precision in measuring and regulating the flow rate. Balancing valve pressure tappings are traditionally located upstream and downstream of the valve disc. This means that when the valve is closed at less than 50% of the total opening, the turbulence created downstream of the disc causes the pressure signal to become unstable, which in turn leads to significant measurement errors. This phenomenon is more apparent in medium- to small-sized 1/2" - 2" valves.

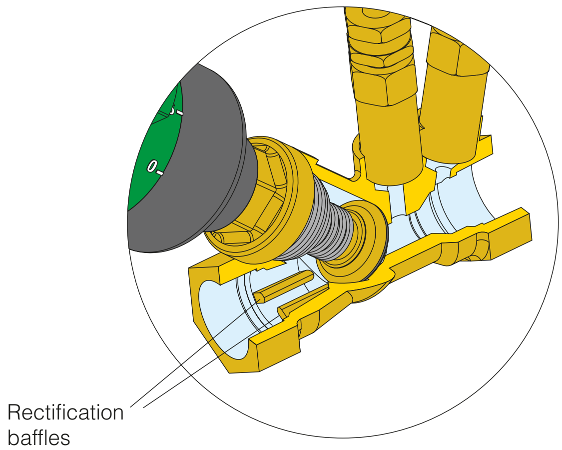


2. Permits the measurement process and manual balancing of the circuit to be performed more quickly. In fact, the flow rate is now a function of the Δp only, which is measured upstream and downstream of the fixed orifice of the Venturi device located upstream of the disc and no longer across the entire valve. In practical terms, this means that the only information required for measuring the flow rate in the valves is now simply the Δp, and no longer the Δp plus the position of the knob.

Rectification baffles

The 131 series valves are equipped with special rectification baffles located immediately downstream of the disc. These devices reduce the turbulence of the fluid caused by the restriction of the disc and rectify the fluid flow characteristics more quickly.

As a result, the Venturi device can make more accurate measurements and the noise caused by the turbulence of the flow is reduced. In addition, because the fluid flow is rectified more quickly, the valves can be installed with a minimum amount of straight sections of piping downstream of the valves.

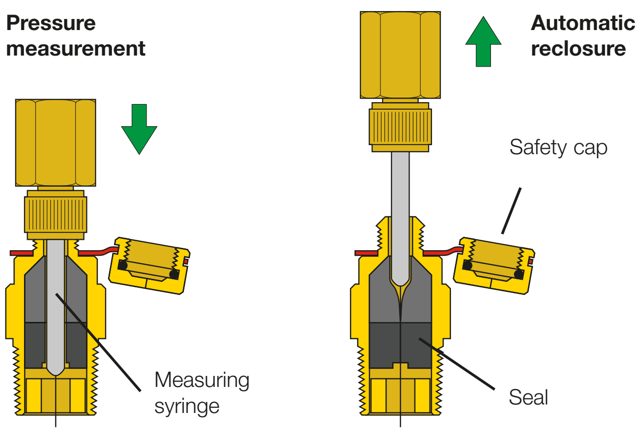


Adapting the valve size to the piping dimensions

Balancing valves are often selected based on the diameter of the line piping in which they are to be installed rather than on the design flow rates that need to pass through them. This means that the valves are often oversized with respect to the flow rates, which in turn means that they need to be very restricted during balancing to ensure the design flow rate. To avoid this problem, the 131 series valves have been designed so that their hydraulic properties correspond to those of a valve with smaller connections than the piping (for example, the hydraulic properties of a 1" valve correspond to those of a valve with a 3/4" internal diameter).

Fast-coupling pressure tappings

The valves are equipped with fast-coupling pressure tappings that allow for quick, precise measurements. When the measuring syringe is withdrawn, the tapping automatically closes and thus prevents water from leaking.



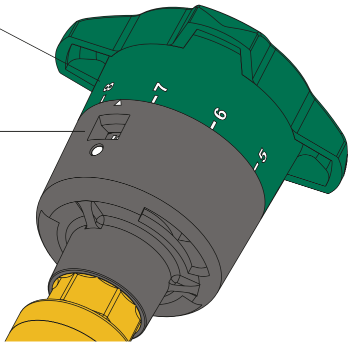
Adjustment knob

The ergonomic shape of the adjustment knob has been designed for maximum operator comfort and accurate adjustment.

- The adjustment range of 5 complete turns provides a high level of precision in balancing the hydraulic circuits.
- The micrometric scale indicator graduations are large and clear for very easy fine adjustment of the flow rate.
- The knob is made of high strength, corrosion-free reinforced polymer.

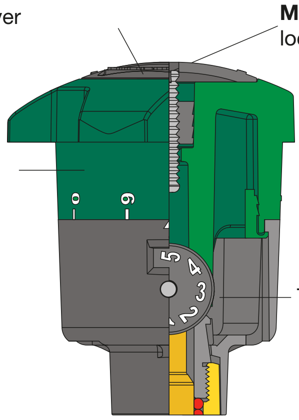
Adjustment reference scale

Each 360° rotation of the knob moves the turn indicator by one position, within a range of 0 (valve closed) to 5 (valve fully open). The decimal graduations of the micrometric scale situated around the knob itself allow the flow rate to be even more finely adjusted.



Memory stop

The valves are equipped with a system that memorises the setting, allowing the valve to be reopened in the initial position if it has been closed for any reason.
Locking the position to be memorised requires the use of a 2,5 mm hex key.



USING AND SETTING THE BALANCING VALVE

The balancing valve is used by taking into consideration the fluidodynamic characteristics that links the pressure drop, flow rate and setting position of the knob that controls the disc.

Presetting

The position number that the knob should be set to (presetting) can be derived by knowing the value of the pressure drop Δp that must be created by the valve when a certain flow rate G passes through. The characteristic curve for each valve size can be used to determine the setting position, or the corresponding Kv can be calculated using the following formula:

$$Kv = \frac{G}{\sqrt{\Delta p}} \quad (1.1)$$

where: G = flow rate in m^3/h
Δp = pressure drop in bar (1 bar = 100 kPa, 10.000 mm c.a.)
Kv = flow rate in m^3/h through the valve corresponding to a pressure drop of 1 bar

The value obtained is then compared to the characteristic curve values that correspond to each valve size. It is best to choose a valve size so that it can be preset to a half-open position and still provide a certain margin both in opening and closing.

Measuring the flow rate

Connect a differential pressure gauge to the pressure tappings of the Venturi device of the valve. Read the Δp value on the gauge, then determine the flow rate value G by consulting the characteristic Venturi curve for the valve size being used. Alternatively, calculate it using the following formula:

$$G = Kv_{Venturi} \times \sqrt{\Delta p_{Venturi}} \quad (1.2)$$

Note: The curve used in this step differs from the curve used for the presetting step because it refers to the $\Delta p_{Venturi}$-flow rate characteristics of the Venturi device located upstream of the valve and not those across the entire valve (including the disc), which are shown in the curves used for presetting.

Setting the flow rate manually

To manually calibrate the flow rate through the valve, adjust the position of the knob until the differential pressure indicated by the measuring device corresponds to the desired flow rate value on the characteristic Venturi curve for the valve being used. Alternatively, calculate the pressure drop of the Venturi device using the following formula:

$$\Delta p_{Venturi} = \frac{G^2}{Kv_{Venturi}^2} \quad (1.3)$$

Next, turn the adjustment knob until the theoretical Δp value calculated using the formula (1.3) above is reached.

Nota: The curve used in this step differs from the curve used for the presetting step because it refers to the $\Delta p_{Venturi}$-flow rate characteristics of the Venturi device located inside the valve and not those across the entire valve (including the disc), which are shown in the curves used for presetting.

Correcting for liquids with a different density

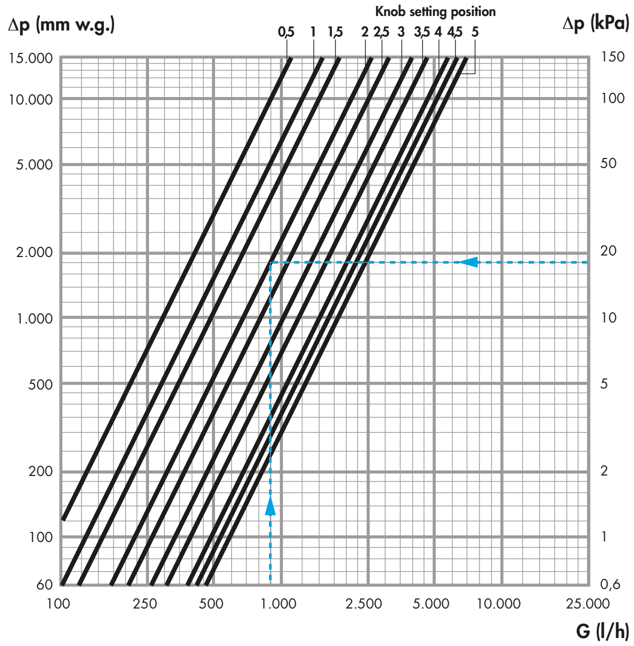
The following comments apply to liquids with a viscosity ≤3°E (for example, water and glycol mixtures).
If using liquids with a density different from water at 20°C (ρ = 1 kg/dm^3), correct the value of the pressure drop Δp measured using the following formula:

$$\Delta p' = \Delta p / \rho'$$

where: Δp' = reference pressure drop
Δp = pressure drop measured
ρ' = liquid density in kg/ dm^3

Use the Δp' value to perform the presetting or flow rate measurement steps using the curves or the formulas.

Code 131600 1"



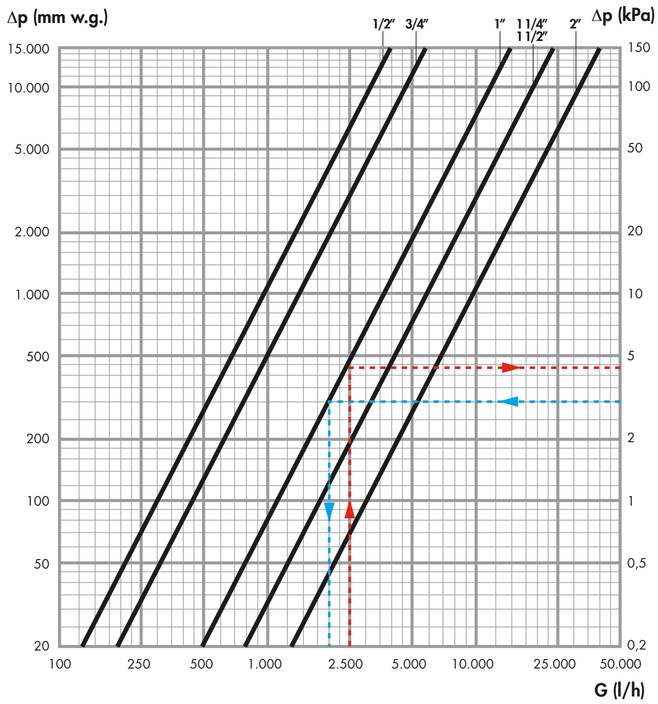
	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	0,94	1,26	1,61	2,10	2,64	3,28	3,92	4,64	5,29	5,94

Example: presetting
A flow rate G = 900 l/h must create a pressure drop of Δp = 18 kPa. Use the curve for the 131600 1" valve to obtain a setting position of 2 (blue line).

Alternatively, use the formula (1.1) to obtain the value $Kv = 0{,}9/\sqrt{0{,}18} = 2{,}14$. Consult the table for the 131600 1" valve to obtain the corresponding setting position of 2 (the value closest to the one required).

Example: correcting for liquids with a different density
Liquid density ρ' = 1,1 Kg/dm^3
Pressure drop measured (or desired) Δp = 18 kPa.
Reference pressure drop Δp' = 18/1,1 = 16,36 kPa.
Use this value when consulting the curve or using the formula (1.1) to obtain the setting position that corresponds to flow rate G (new position ~ 2,15).

Venturi curve



	Connection					
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Kv Venturi	3,10	4,74	11,96	18,41	18,56	31,85

Example: measuring the flow rate
For a $\Delta p_{Venturi}$ measurement of 3 kPa on a 1" valve, consult the Venturi curve for the valve in question where the x-axis will indicate a flow rate value of 2000 l/h (blue line).

Alternatively, use the formula (1.2), where a $\Delta p_{Venturi}$ measurement of 3 kPa, bearing in mind that the $Kv_{Venturi}$ of the 1" 131600 valve is equal to 11,96, will result in a flow rate $G = 11{,}96 \times \sqrt{0{,}03} = 2{,}07$ m^3/h.

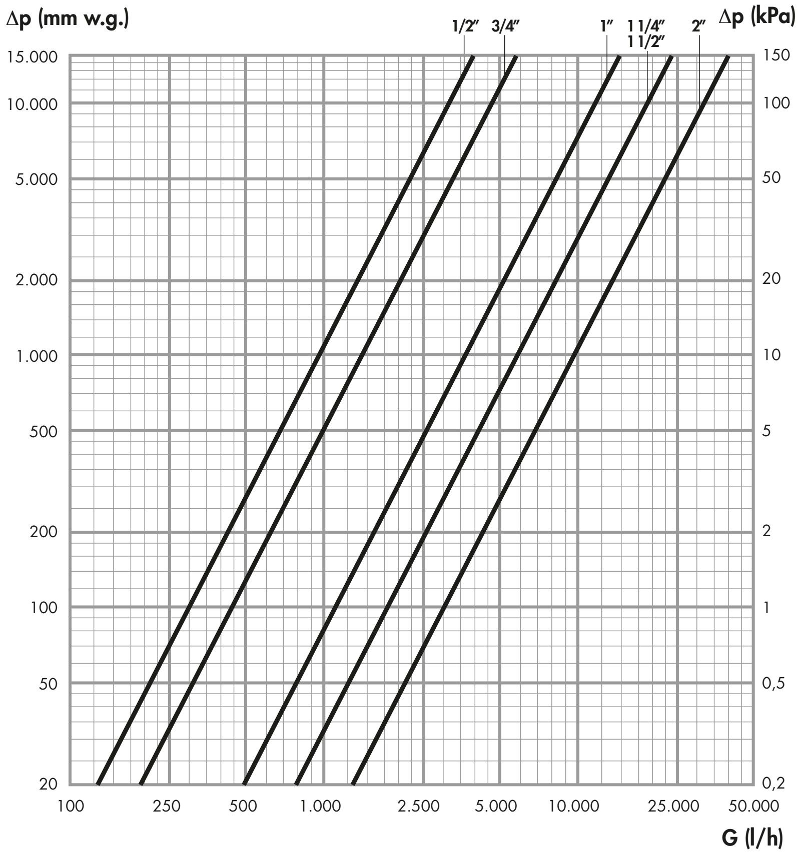
Example: correcting for liquids with a different density
Liquid density ρ' = 1,1 Kg/dm^3
Pressure drop measured $\Delta p_{Venturi}$ = 3 kPa
Reference pressure drop Δp' = 3/1,1 = 2,72 kPa
Use this value when consulting the Venturi curve for the valve used or using the formula (1.2) to obtain the corresponding flow rate G (= 1,97 m^3/h).

Example: setting the flow rate manually
Proceed as follows to adjust the flow rate for a 1" value to 2500 l/h. Turn the valve knob into the fully open position and then gradually close the valve controlling the $\Delta p_{Venturi}$ value indicated by the measuring device. As shown in the curve at left, once the differential value of 4,3 kPa (red line), has been reached, the flow of the fluid passing through the valve will be at the desired rate of 2500 l/h.

Alternatively, with a flow rate rate of G = 2500 l/h and $Kv_{Venturi}$ = 11,96 for the 131600 1" valve in question, use the formula (1.3) to derive a $\Delta p_{Venturi} = 2{,}5^2 / 11{,}96^2 = 4{,}3$ kPa. Set the valve to the $\Delta p_{Venturi}$ value calculated.

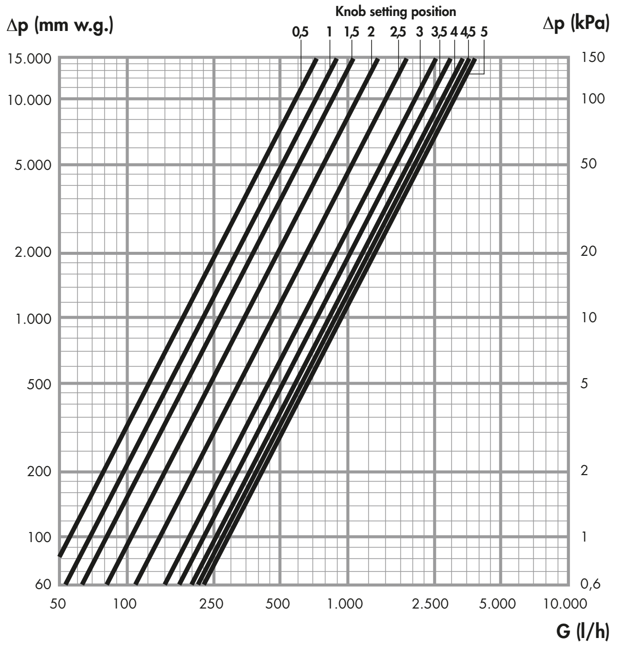
Example: correcting for liquids with a different density
Desired liquid flow rate G = 2.500 l/h.
Use the formula (1.3) or the Venturi curve to determine the reference pressure drop $\Delta p' = 2{,}5^2 / 11{,}96^2 = 4{,}3$ kPa.
If the density of the liquid used is ρ' = 1,1 kg/dm^3 the formula below will provide the pressure drop $\Delta p_{Venturi}$ value, which should be indicated on the measuring device for the flow rate desired:
$\Delta p_{Venturi} = \rho' \times \Delta p' = 1{,}1 \times 4{,}3 = 4{,}73$ kPa.

Venturi curve



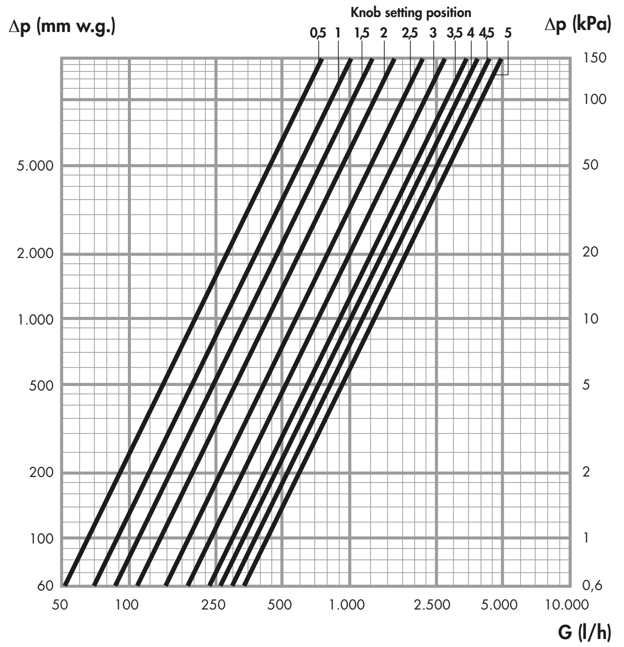
Connection	Kv Venturi
1/2"	3,10
3/4"	4,74
1"	11,96
1 1/4"	18,41
1 1/2"	18,56
2"	31,85

Code 131400 1/2"



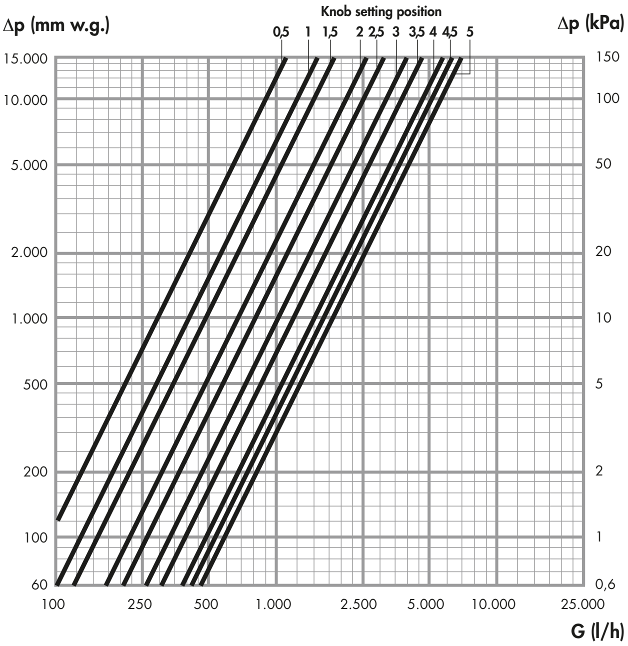
	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	0,57	0,76	0,85	1,09	1,49	1,94	2,39	2,72	2,89	3,06

Code 131500 3/4"



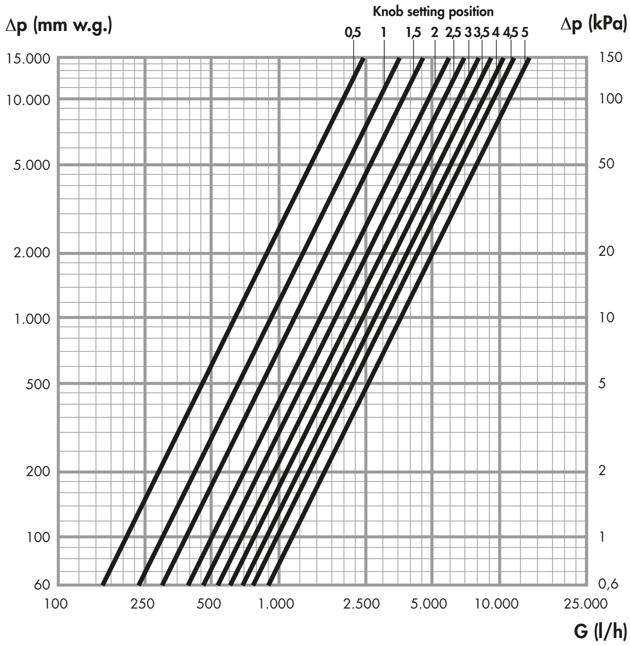
	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	0,62	0,86	1,02	1,32	1,72	2,17	2,70	3,22	3,60	3,97

Code 131600 1"



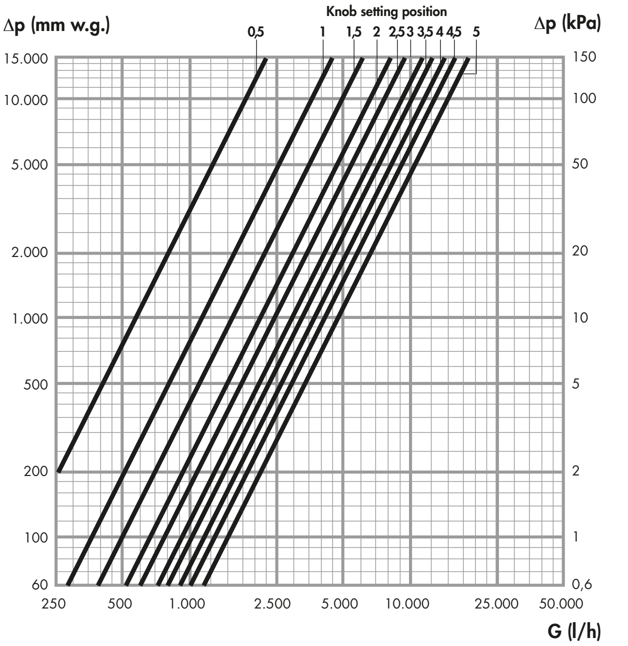
	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	0,94	1,26	1,61	2,10	2,64	3,28	3,92	4,64	5,29	5,94

Code 131700 1 1/4"



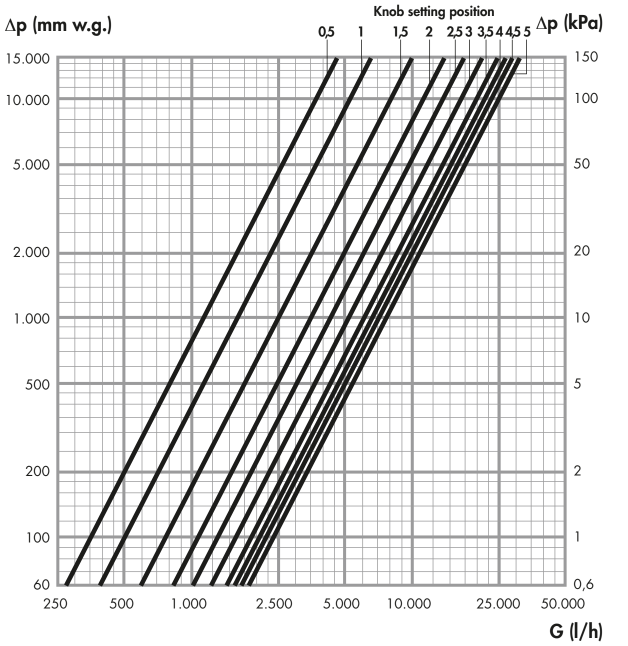
	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	1,90	2,95	4,00	4,74	5,69	6,58	7,47	8,41	9,42	10,43

Code 131800 1 1/2"



	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	1,88	3,66	5,12	6,54	7,67	8,99	10,11	11,47	12,92	14,77

Code 131900 2"



	Knob setting position									
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5
Kv	3,73	5,24	7,98	11,19	14,35	16,99	19,17	21,74	22,86	24,48

135 series construction details

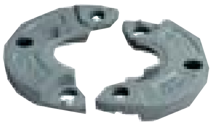
Convertibility of the connections

The 135 series valve bodies can be converted from "straight" connections to "angled" connections and vice versa at the installation site without using special tools or additional parts. These connections are able to be converted because the bodies have been constructed with a 45° seal. Rotating one half of the body will change the direction of the connections by 90°, making it very easy to convert the connections at the installation site without jeopardising the precision of their operations. This is the first time that a balancing valve, for this type of product, can be used conventionally or by replacing the elbows or bends in a hydraulic circuit.
This adaptability allows it to be situated in the ideal location.

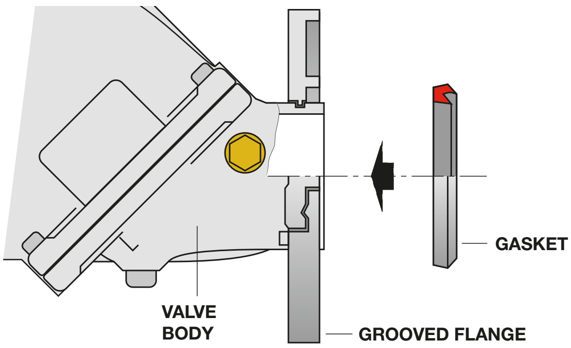
Coupling with flanges

The 135 series valves are equipped with a special coupling system of flanges composed of the following parts:

- Adapters for two-part flanges with an anti-rotation lock system.



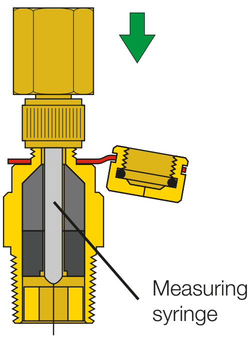
- A lip gasket for the hydraulic seal.



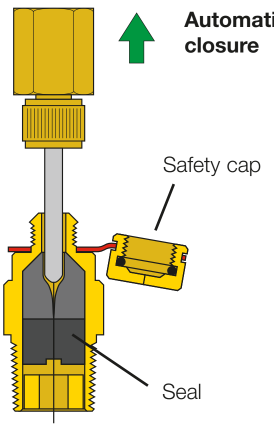
Fast-coupling pressure tappings

The valves are equipped with quick-couple pressure tappings that allow for quick, precise measurements. When the measuring syringe is removed, the tapping automatically closes and thus prevents water from leaking.

Pressure measurement



Automatic closure

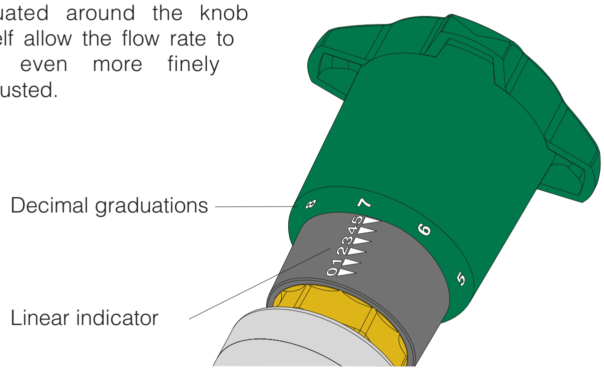


Adjustment knob

The ergonomic shape of the adjustment knob has been designed for maximum operator comfort and accurate adjustment.
- The adjustment range of several complete turns provides a high level of precision in balancing the hydraulic circuits.
- The micrometric scale indicator graduations are large and clear for very easy fine adjustment of the flow rate.
- The indicator can be quickly repositioned to facilitate reading.
- The knob is made of high strength, corrosion-free reinforced resin.

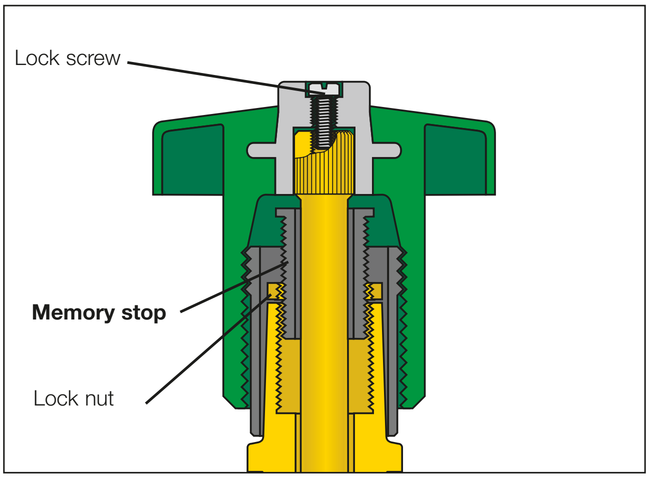
Adjustment reference scale

Each 360° rotation of the knob moves the linear indicator by one position, within a range of 0 (valve closed) to the maximum value depending upon the size of the valve. The decimal graduations situated around the knob itself allow the flow rate to be even more finely adjusted.



Memory stop

The valves are equipped with a system that memorises the setting, allowing the valve to be reopened in the initial position if it has been closed for any reason.
Locking the position to be memorised does not require the use of any special tools.



USING AND SETTING THE BALANCING VALVE

The balancing valve is used by taking into consideration the fluidodynamic characteristics that links the pressure drop measured at the pressure connections, flow rate and setting position of the knob.

Presetting

The position number that the knob should be set to (presetting) can be derived by knowing the value of the pressure drop Δp that must be created by the valve when a certain flow rate G passes through. The characteristic curve for each valve size can be used to determine the setting position, or the corresponding Kv can be calculated using the following formula:

$$Kv = \frac{G}{\sqrt{\Delta p}} \quad (1.1)$$

where: G = flow rate in m^3/h
Δp = pressure drop in bar
(1 bar = 100 kPa = 10.000 mm c.a.)
Kv = flow rate in m^3/h through the valve, corresponding to a pressure drop of 1 bar

The value obtained is then compared to the characteristic curve values that correspond to each valve size.
It is best to choose a valve size so that it can be preset to a half-open position and still provide a certain margin both in opening and closing.

Measuring the flow rate

The flow rate value G that is passing through the valve can be derived by measuring the Δp value on the valve for a specific setting position and consulting the curve or calculating it using the following formula:

$$G = Kv \cdot \sqrt{\Delta p} \quad (1.2)$$

Correcting for liquids with a different density

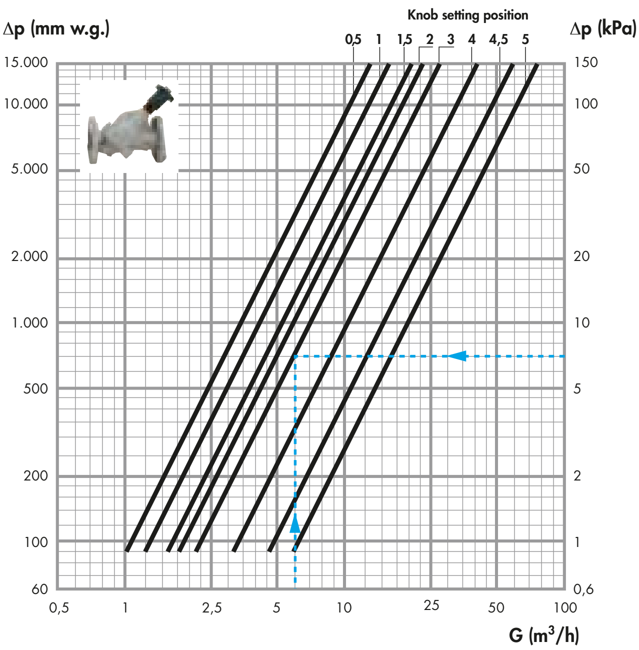
The following comments apply to liquids with a viscosity ≤ 3°E (for example, water and glycol mixtures).
If using liquids with a density different from water at 20°C (ρ = 1 kg/dm^3), correct the value of the pressure drop Δp measured using the following formula:

$$\Delta p' = \frac{\Delta p}{\rho'}$$

where: Δp'= reference pressure drop
Δp = pressure drop measured
ρ'= liquid density in kg/dm^3

Use the Δp' value to perform the presetting or flow rate measurement steps using the curves or the formulas.

Code 135060 DN 65 straight



	Knob setting position							
	0,5	1	1,5	2	3	4	4,5	5
Kv	11	12,8	16	18	22,3	33	47	61

Example: presetting

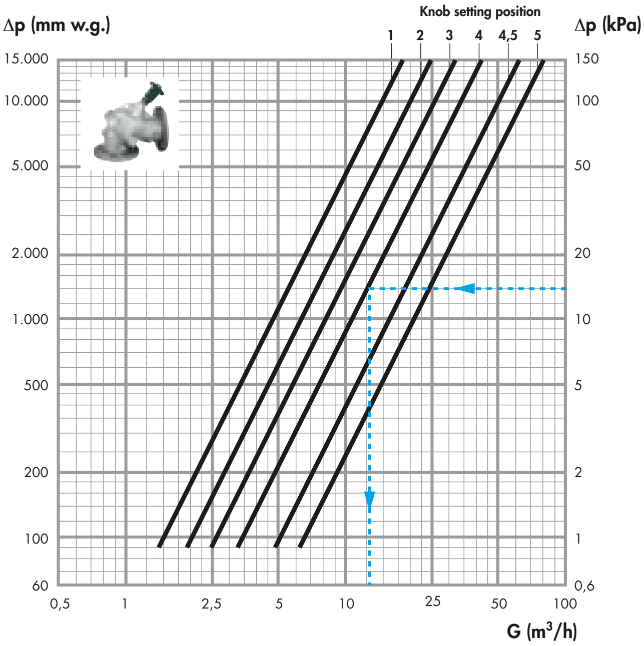
A flow rate G = 6000 l/h must create a pressure drop of Δp = 7 kPa.
Use the curve for the 135060 DN 65 straight valve to obtain a setting position of 3 (blue line).

Alternatively, use the formula (1.1) to obtain the value Kv = 6 / $\sqrt{0,07}$ = 22,72.
Consult the table for the 135060 DN 65 straight valve to obtain the corresponding setting position of 3 (the value closest to the one required).

Example: correcting for liquids with a different density

Liquid density ρ' = 1,1 Kg/dm^3
Pressure drop measured (or desired) Δp = 7 kPa.
Reference pressure drop Δp' = 7/1,1 = 6,36 kPa
Use this value when consulting the curve or using the formula (1.1) to obtain the setting position that corresponds to flow rate G (new position ~ 3.15).

Code 135060 DN 65 angled



	Knob setting position					
	1	2	3	4	4,5	5
Kv	15,5	21	27	35	52	66

Example: measuring the flow rate

For a 135060 DN 65 square valve with the knob set in position 4 (corresponding to a Kv = 35 in the table), and a pressure drop Δp measurement = 14 kPa.

Consult the curve to obtain a flow rate value G of approximately 13 m³/h (blue line).

Alternatively, use the formula (1.2) to obtain:

$G = 35 \times \sqrt{0{,}14} = 13\ m^3/h$

Example: correcting for liquids with a different density

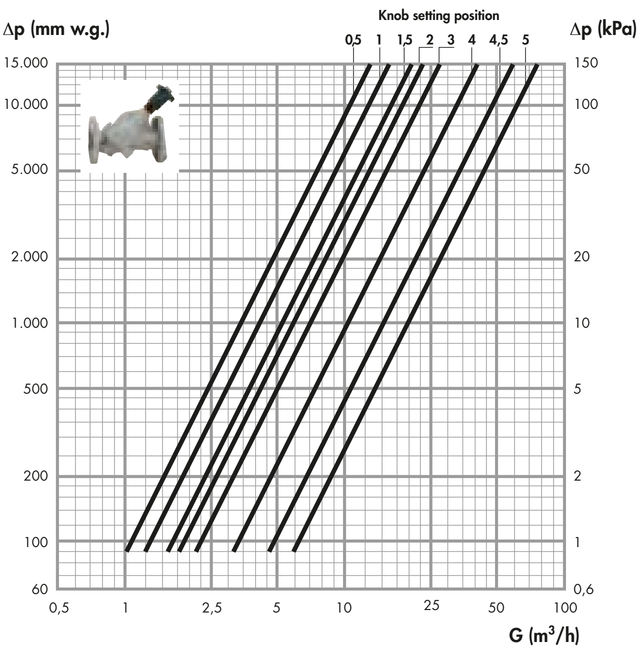
Liquid density ρ' = 1,1 Kg/dm³

Pressure drop measured Δp = 14 kPa

Reference pressure drop Δp' = 14/1,1 = 12,7 kPa

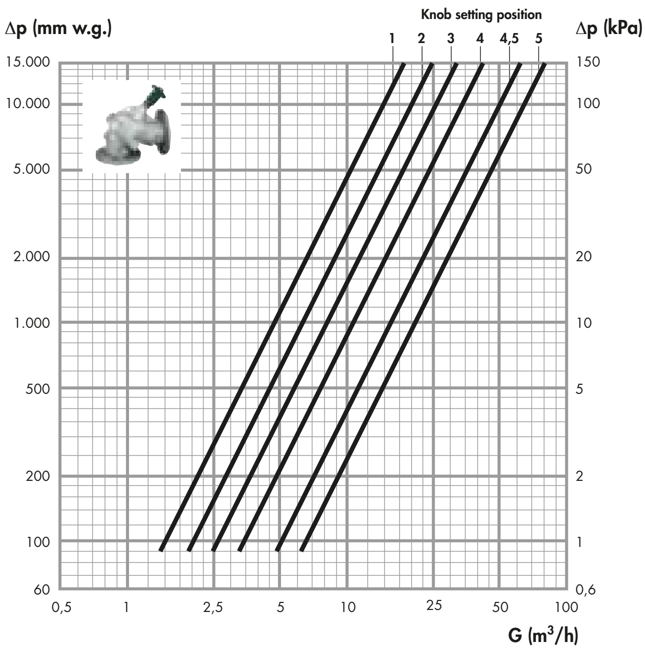
Use this value when consulting the curve for the valve used or using the formula (1.2) to obtain the corresponding flow rate G (= 12,47 m³/h).

Code 135060 DN 65 straight



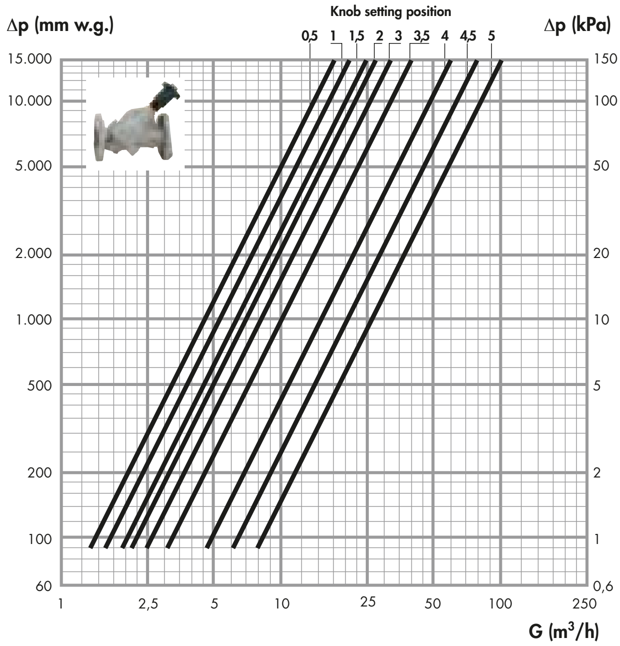
	Knob setting position							
	0,5	1	1,5	2	3	4	4,5	5
Kv	11	12,8	16	18	22,3	33	47	61

Code 135060 DN 65 angled



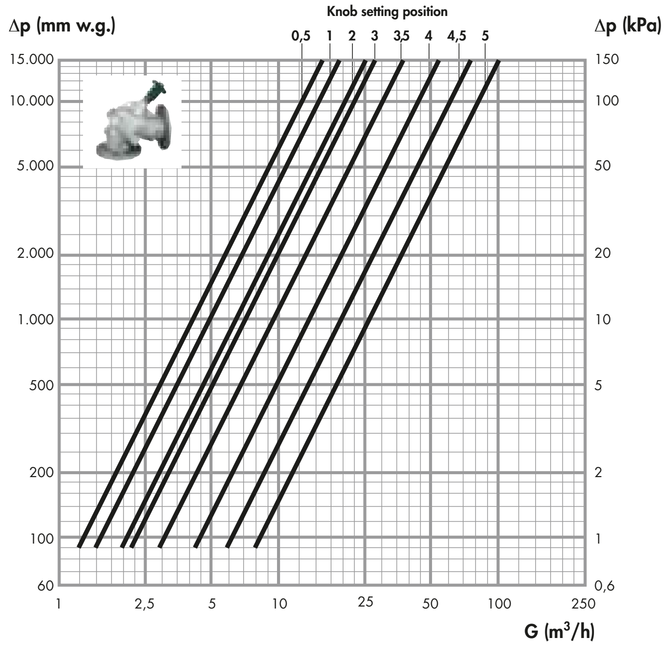
	Knob setting position					
	1	2	3	4	4,5	5
Kv	15,5	21	27	35	52	66

Code 135080 DN 80 straight



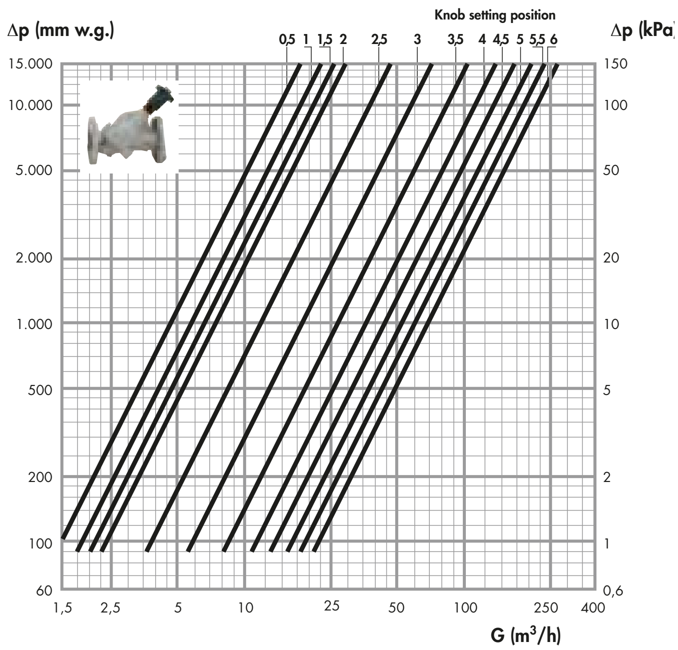
	Knob setting position								
	0,5	1	1,5	2	3	3,5	4	4,5	5
Kv	14,5	17	20	22	26	32	49	63	82

Code 135080 DN 80 angled



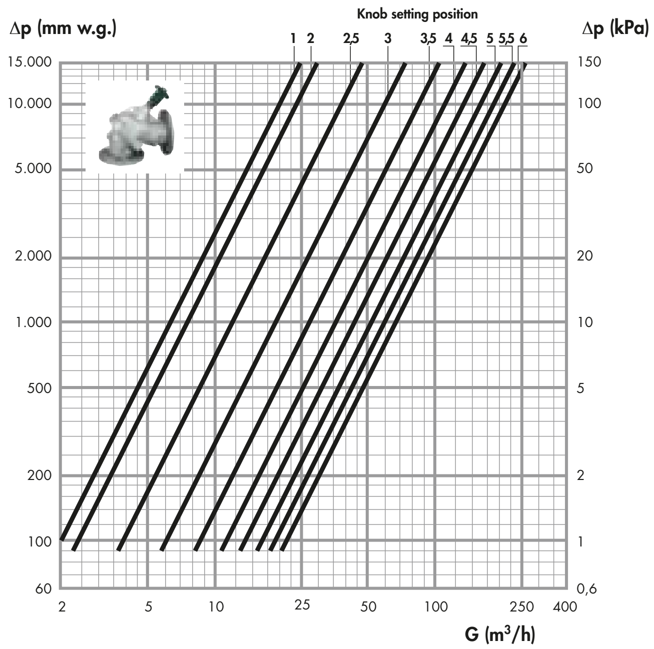
	Knob setting position							
	0,5	1	2	3	3,5	4	4,5	5
Kv	13	16	21	23	31	45	63	82

Code 135100 DN 100 straight



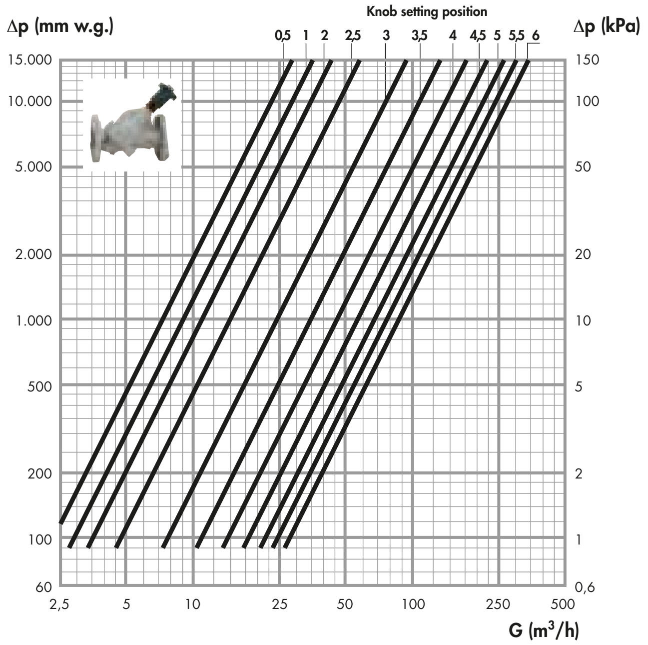
	Knob setting position											
	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	14	18	21	23	38	58	83	110	140	165	180	220

Code 135100 DN 100 angled



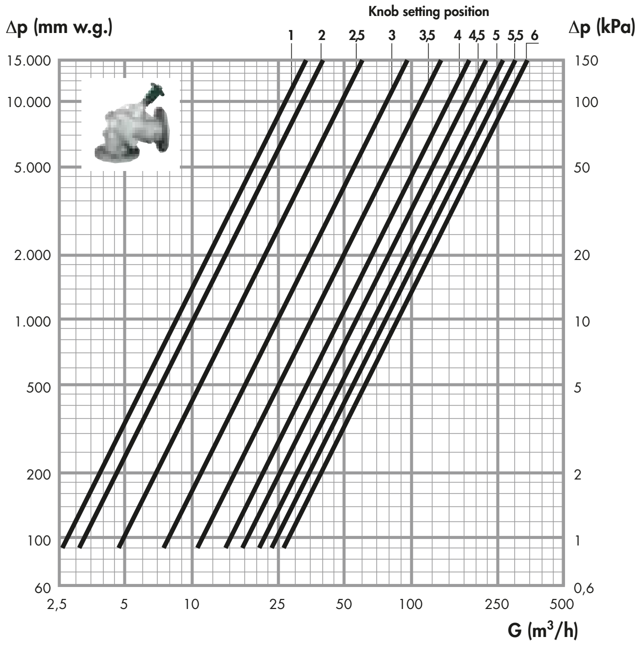
	Knob setting position									
	1	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	21	25	39	61	86	112	132	168	190	217

Code 135120 DN 125 straight



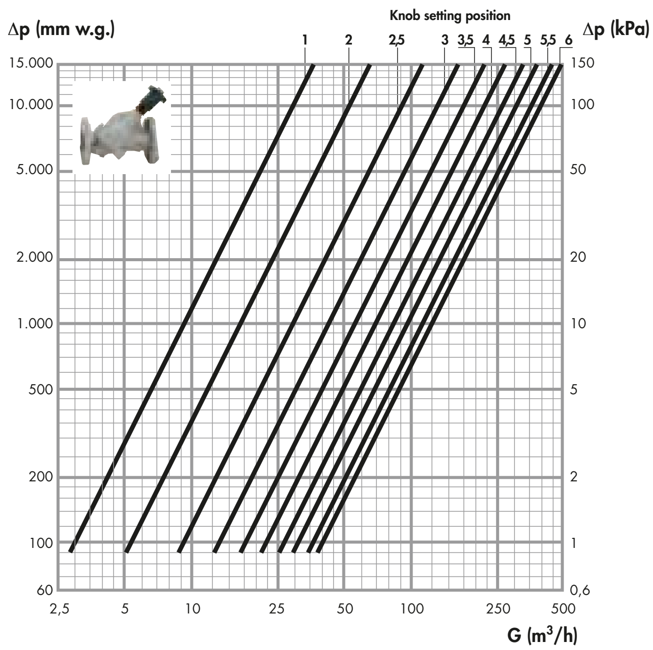
	Knob setting position										
	0,5	1	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	23	28	35	46	78	120	145	178	220	248	275

Code 135120 DN 125 angled



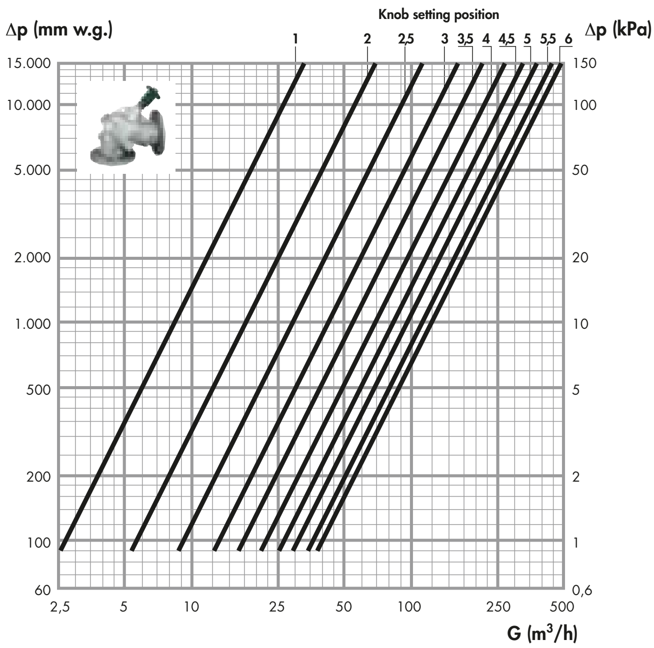
	Knob setting position									
	1	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	27	33	49	80	116	151	180	220	247	275

Code 135150 DN 150 straight



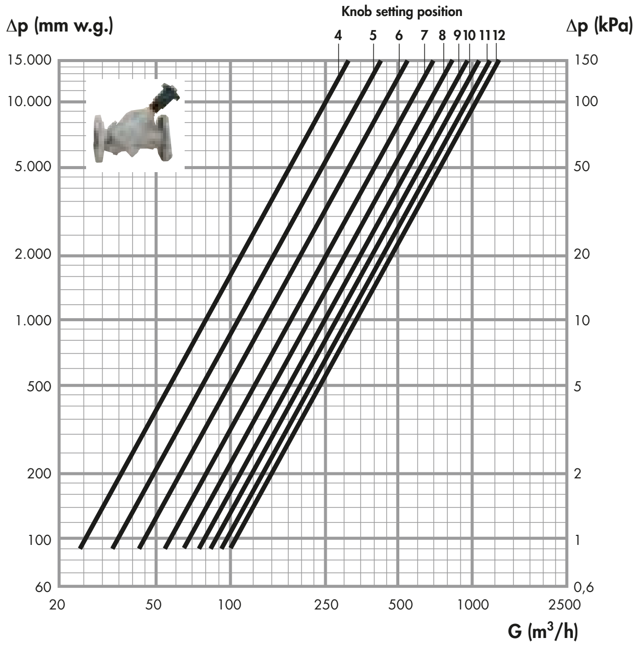
	Knob setting position									
	1	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	29	52	91	130	175	220	260	310	360	395

Code 135150 DN 150 angled



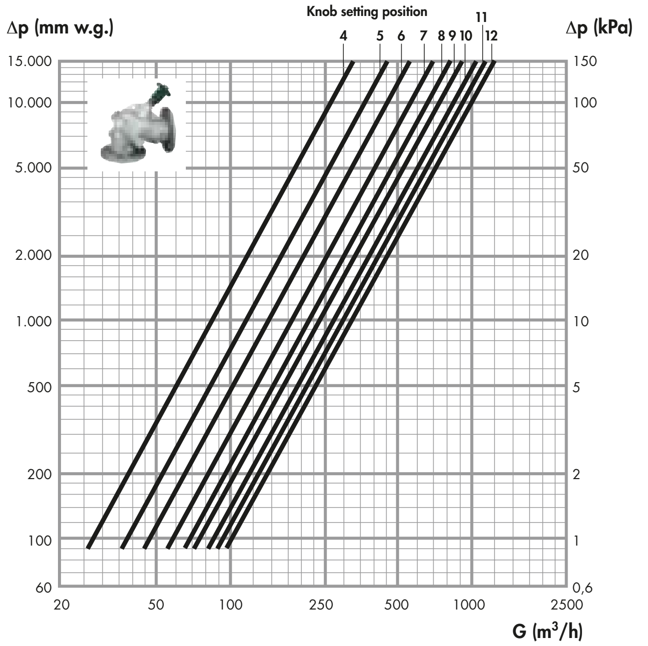
	Knob setting position									
	1	2	2,5	3	3,5	4	4,5	5	5,5	6
Kv	27	56	92	135	173	230	270	315	370	400

Code 135200 DN 200 straight



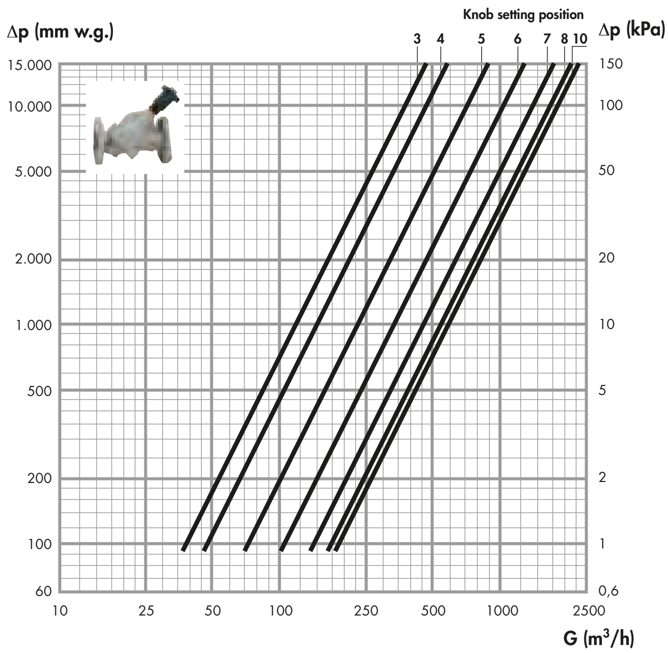
	Knob setting position								
	4	5	6	7	8	9	10	11	12
Kv	244	332	424	538	645	753	863	920	1005

Code 135200 DN 200 angled



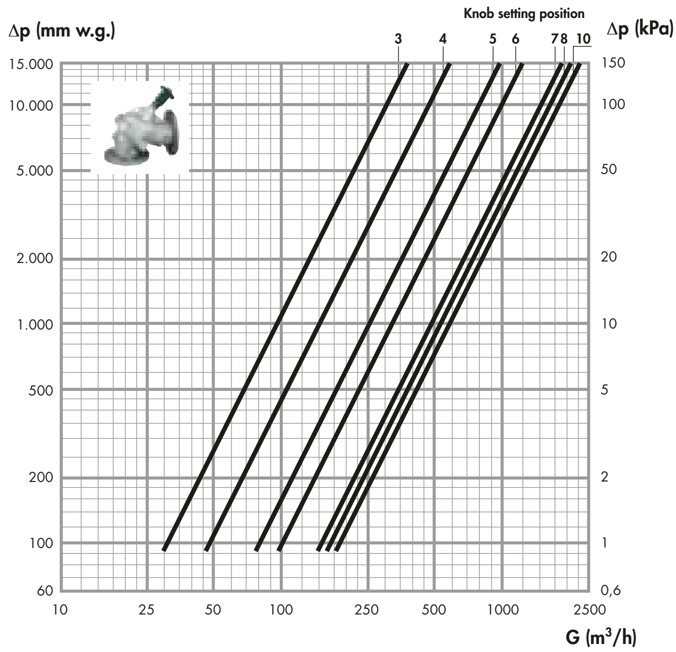
	Knob setting position								
	4	5	6	7	8	9	10	11	12
Kv	240	318	410	545	611	725	832	908	980

Code 135250 DN 250 straight



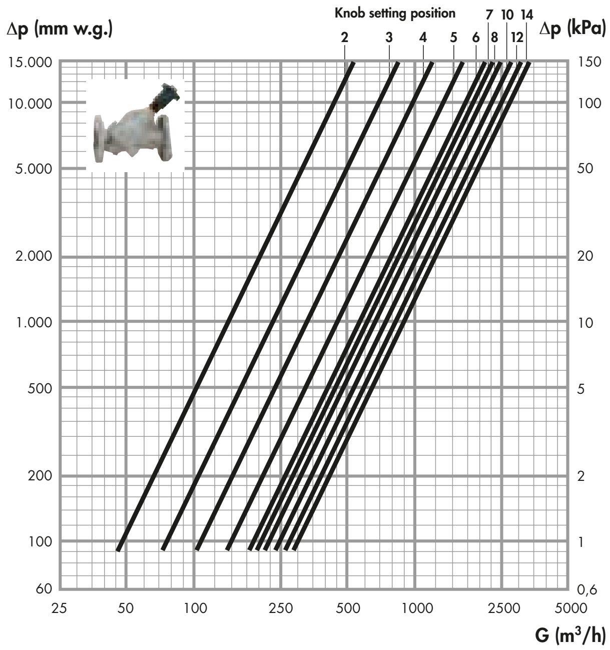
	Knob setting position						
	3	4	5	6	7	8	10
Kv	374	480	718	1044	1440	1690	1796

Code 135250 DN 250 angled



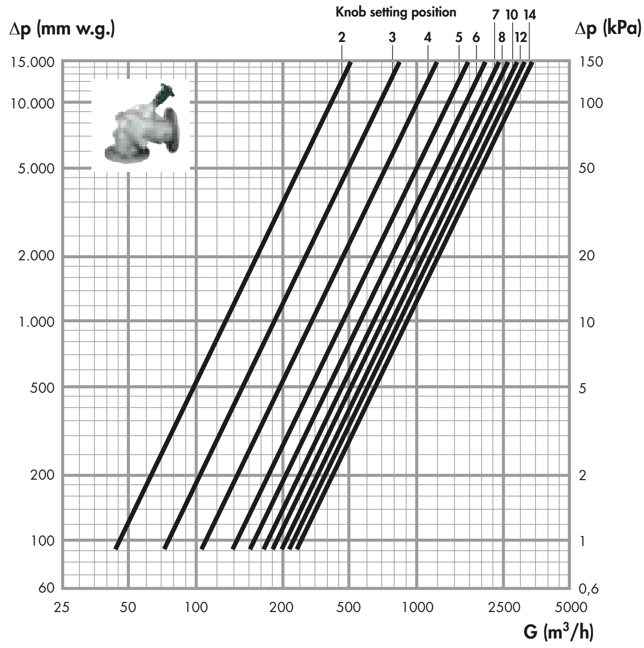
	Knob setting position						
	3	4	5	6	7	8	10
Kv	307	465	752	980	1435	1676	1720

Code 135300 DN 300 straight



	Knob setting position									
	2	3	4	5	6	7	8	10	12	14
Kv	430	712	1005	1366	1723	1976	2160	2440	2585	2836

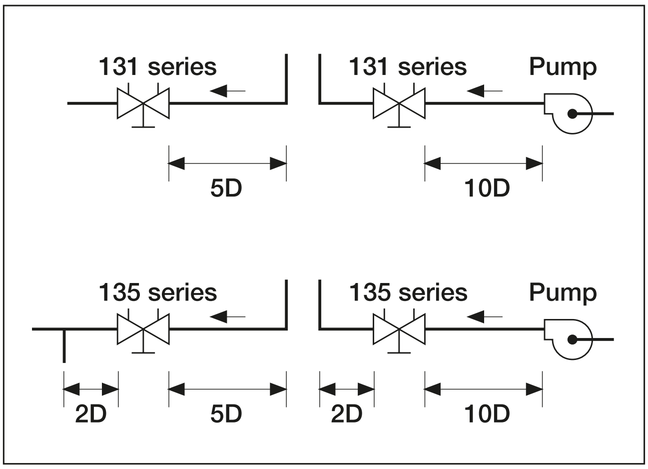
Code 135300 DN 300 angled



	Knob setting position									
	2	3	4	5	6	7	8	10	12	14
Kv	417	711	1006	1306	1692	1967	2340	2371	2546	2719

Installation

The balancing valves should be installed so that the pressure tappings, drain cocks and adjustment knob can all be accessed. The valves can be mounted on both horizontal and vertical pipes. It is best to keep the piping sections upstream and downstream of the valves straight for greater measurement precision, as shown in the diagram below. The direction of flow rate indicated on the valve body must be observed.



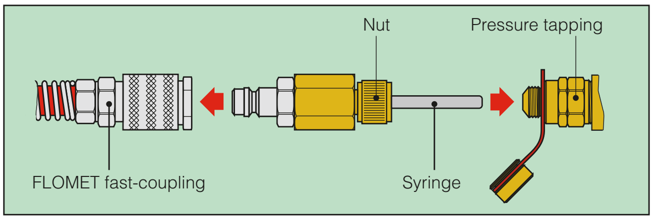
Sizing a system with balancing valves

Please see the 2nd volume of the Caleffi Handbooks for further information about sizing a system with balancing valves, which provides calculation examples and notes about the use of devices in circuits.

Accessories

130 series Flomet

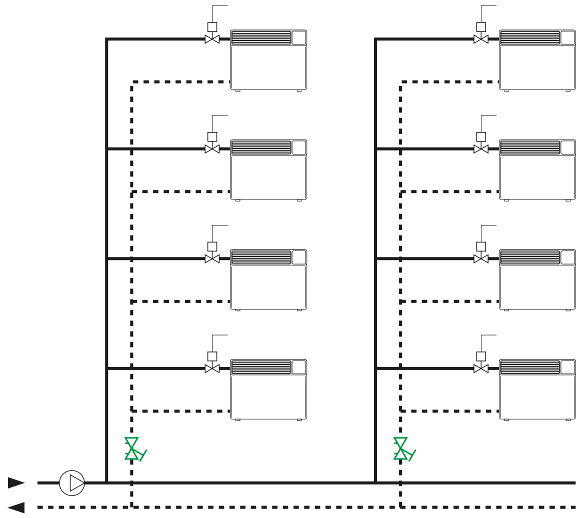
Electronic device to measure differential pressures and flow rates. Calibration range 0.05 – 200 kPa.
Unit of measure and fluidodynamic data can be selected and memorised. Measures the temperature of the fluid (0 – 90°C).
Supplied complete with isolating valves and connectors.



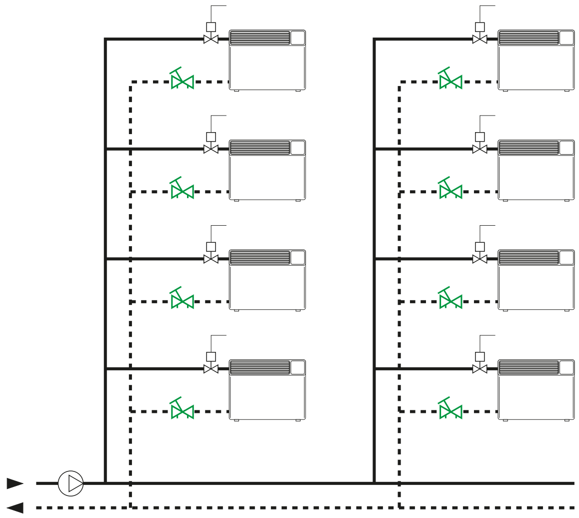
100 series

Pair of connectors with fast-coupling syringe to connect the pressure tappings to measuring instruments.
Female 1/4” threaded connection.

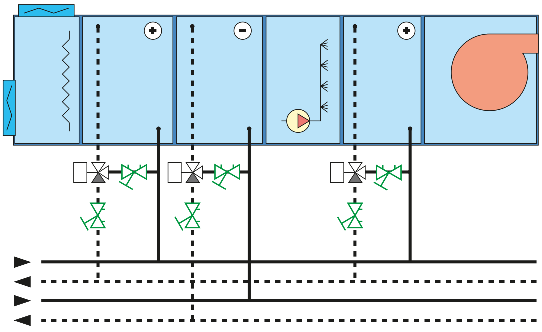
Application diagrams



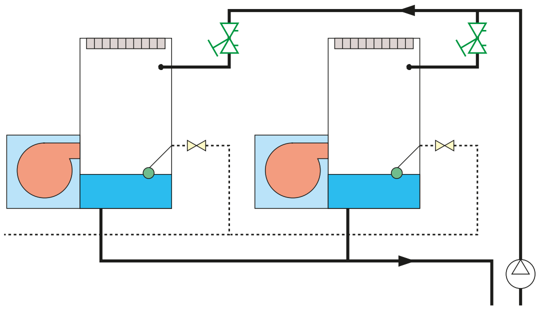
To regulate the flow rate that flows to each column



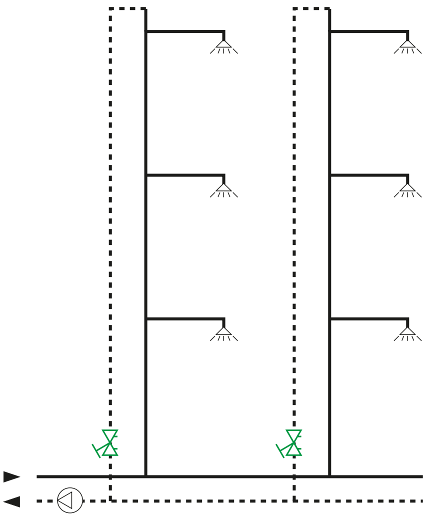
To regulate the flow rate that supplies each emitter



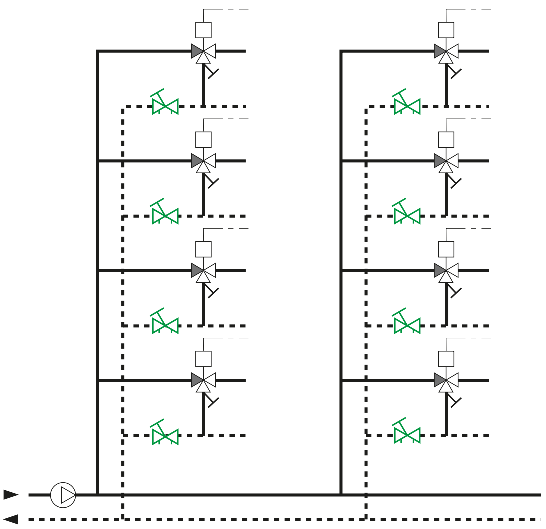
To balance circuits that serve the coils of air treatment units



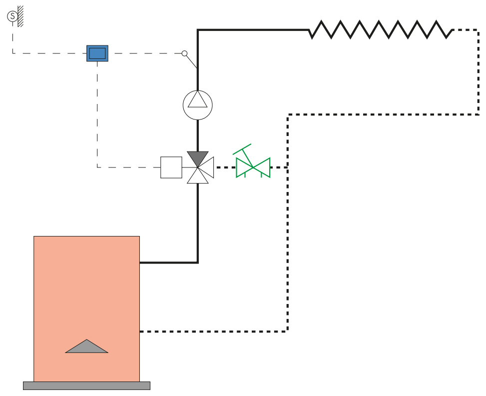
To balance circuits that serve cooling towers



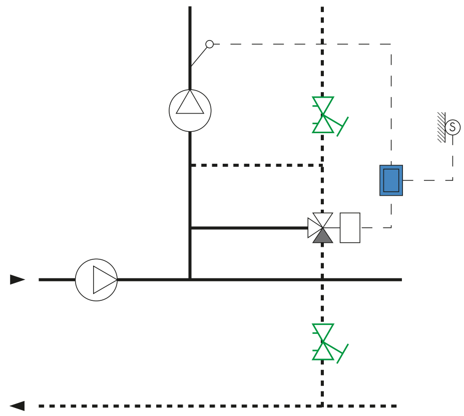
To balance sanitary distribution circuits



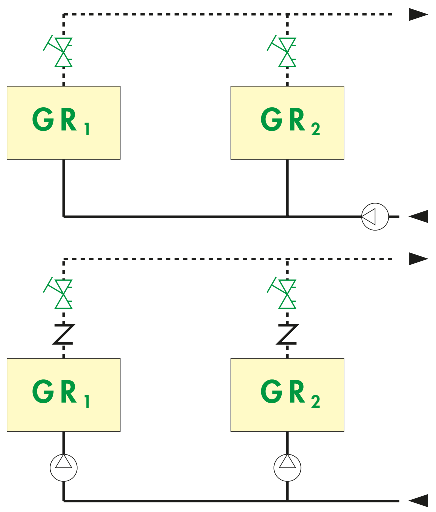
To balance zone branches in circuits with three-way valves



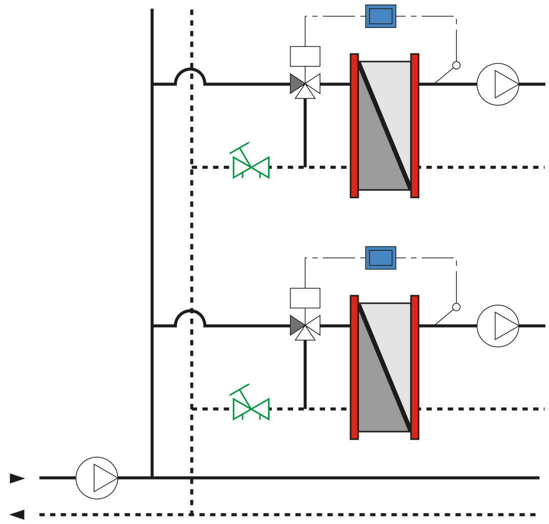
To balance the by-pass way in circuits for temperature control



To balance primary/secondary coupled circuits



To balance circuits that serve cooling unit evaporators or condensers



To balance the various substations in district heating systems

SPECIFICATION SUMMARIES

Series 131
Balancing valve with Venturi device. Threaded 1/2" connections (from 1/2" to 2") F x F. Brass body, control stem and disc. EPDM hydraulic seals. Temperature range: -10 – 110 °C. Maximum operating pressure: 16 bar. Accuracy: ±5%. Knob with micrometric indicator. Five adjustment turns. Adjustment position lock and memory. Complete with fast-coupling pressure tappings.

Series 135
Balancing valve. Flanged DN 65 connections (from DN 65 to DN 300), PN 16 convertible from straight to elbow and viceversa with lip gaskets in EPDM. Cast iron body. Brass or stainless steel control stem. Bronze disc. Buna-N seals. Temperature range: -5 – 110°C. Maximum operating pressure: 16 bar. Accuracy: ±5%. Knob with micrometric indicator. Adjustment position lock and memory. Complete with fast-coupling pressure tappings.

CALEFFI

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