

Technical description

Application:

Heating and cooling systems.

Functions:

TBV:

Balancing
Pre-setting
Measuring

Shut-off

TBV-C:

Control
Balancing
Pre-setting
Measuring
Shut-off

Pressure class:

PN 16

Temperature:

Max. working temperature: 120°C

Min. working temperature: -20°C

Material:

Valve body: AMETAL®

Bonnet: AMETAL®

Spindle seal: EPDM O-ring

TBV:

Seat seal: Metal seated

Handwheel: Polyamide

TBV-C:

Seat seal: Valve disc of EPDM

Valve insert: AMETAL® and brass

Return spring: Stainless steel

Spindle: Stainless steel

AMETAL® is the dezincification resistant alloy of TA.

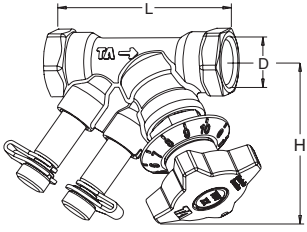
Marking:

Body: TA, PN 16/150, DN, inch size and flow direction arrow

Handwheel TBV: Valve type and DN

TBV-C: Plastic ring on measuring point.

TBV

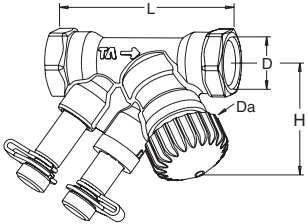


TA No	DN	D	L	H	Kvs
52 130-015	15	G1/2	78	72	1.8
52 130-020	20	G3/4	91	78	3.6

$Kvs = m^3/h$ at a pressure drop of 1 bar and fully open valve.

TBV can be connected to smooth pipes with KOMBI compression coupling. See catalogue leaflet KOMBI.

TBV-C



TA No	DN	D	Da*	L	H	Kvs
52 132-015	15	G1/2	M30x1,5	78	70	1.8
52 132-020	20	G3/4	M30x1,5	91	73	3.6

*) Connection to actuator or thermostatic head.

$Kvs = m^3/h$ at a pressure drop of 1 bar and fully open valve.

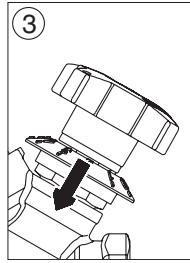
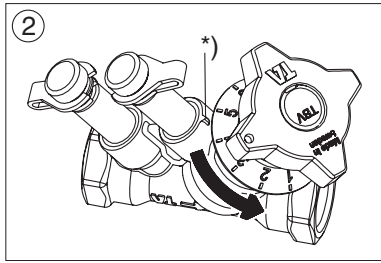
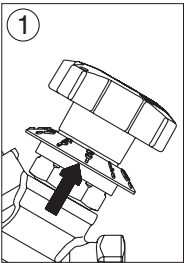
TBV-C can be connected to smooth pipes with KOMBI compression coupling. See catalogue leaflet KOMBI.

Setting TBV

Setting of a valve for a given pressure drop, eg corresponding to position 5 is done as follows:

1. Check that the scale is in upper position towards the handwheel before setting (fig 1).
2. Turn the handwheel so that position 5 is pointing at the index* of the valve body (fig 2).
3. Push the scale downwards over the bonnet (fig 3). The valve is now set.

There is a diagram for every valve size that shows the flow for different pressure drops and settings.



Setting TBV-C

TBV-C is delivered with the pre-set of 10, i.e. fully open valve. Before setting, close the valve completely and then open to desired position with adjustment tool TA No 52 132-100.

Setting of a valve for a given pressure drop, eg corresponding to position 5 is done as follows:

1. Place the adjustment tool at the valve and close the valve completely.
2. Turn the adjustment tool so that position 5 is pointing at the index* of the valve body (see fig. 2).
3. Remove the adjustment tool. The valve is now set.

There is a diagram for every valve size that shows the flow for different pressure drops and settings.

Noise

The following conditions must be fulfilled in order to avoid noise in the heating system:

- Flows correctly balanced
- The water in the system must have been de-aerated
- Circulation pumps which do not give too high differential pressure (alternative use a differential pressure controller, e.g. STAP).

The maximum recommended pressure drop in order to avoid noise: 30 kPa = 0,3 bar.

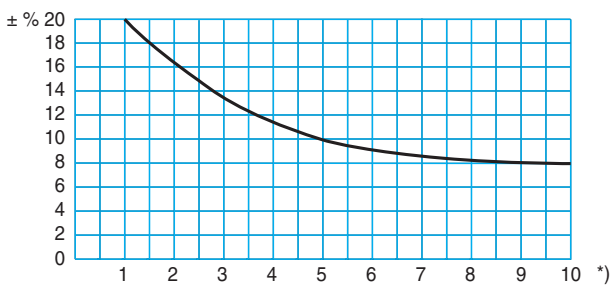
Support material

Measuring instruments

Use the balancing instrument TA-CBI. See catalogue leaflet for further information on TA-CBI.

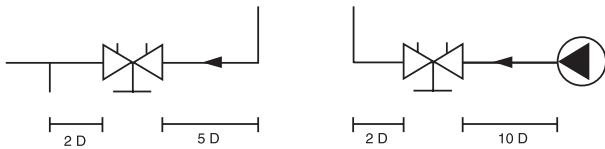
Measuring accuracy

Flow deviation at different settings



*) Position

Try to avoid mounting taps and pumps, immediately before the valve.



Sizing

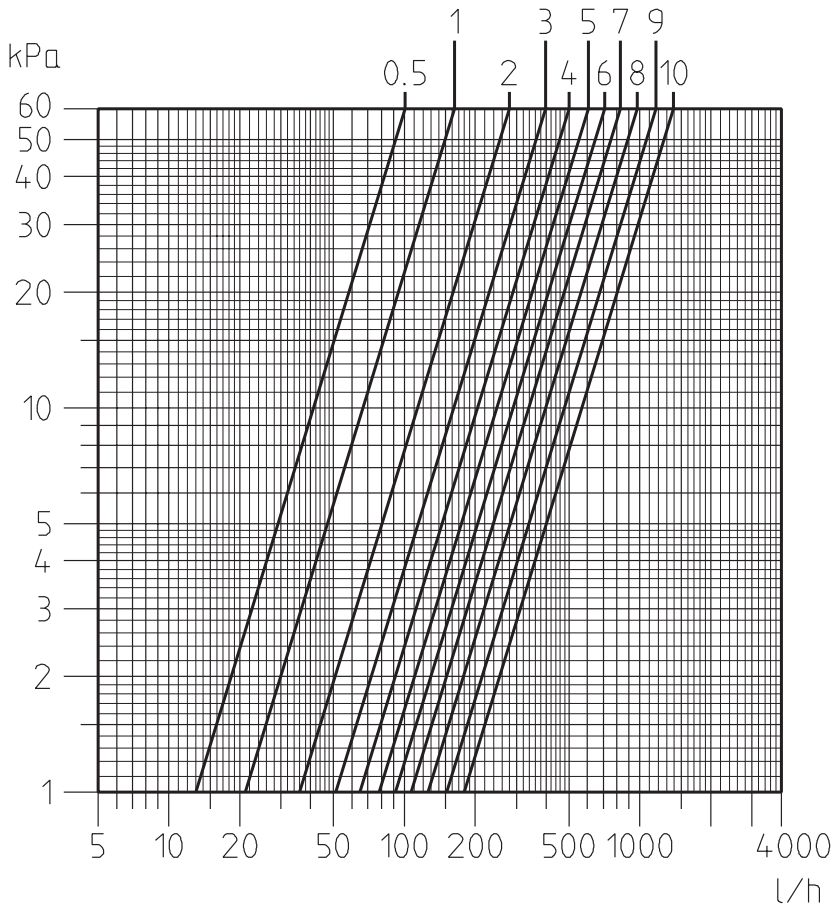
When Δp and the design flow are known, use the formula to calculate the Kv-value.

$$Kv = 0,01 \frac{q}{\sqrt{\Delta p}} \quad q \text{ l/h, } \Delta p \text{ kPa}$$

$$Kv = 36 \frac{q}{\sqrt{\Delta p}} \quad q \text{ l/s, } \Delta p \text{ kPa}$$

Diagram TBV

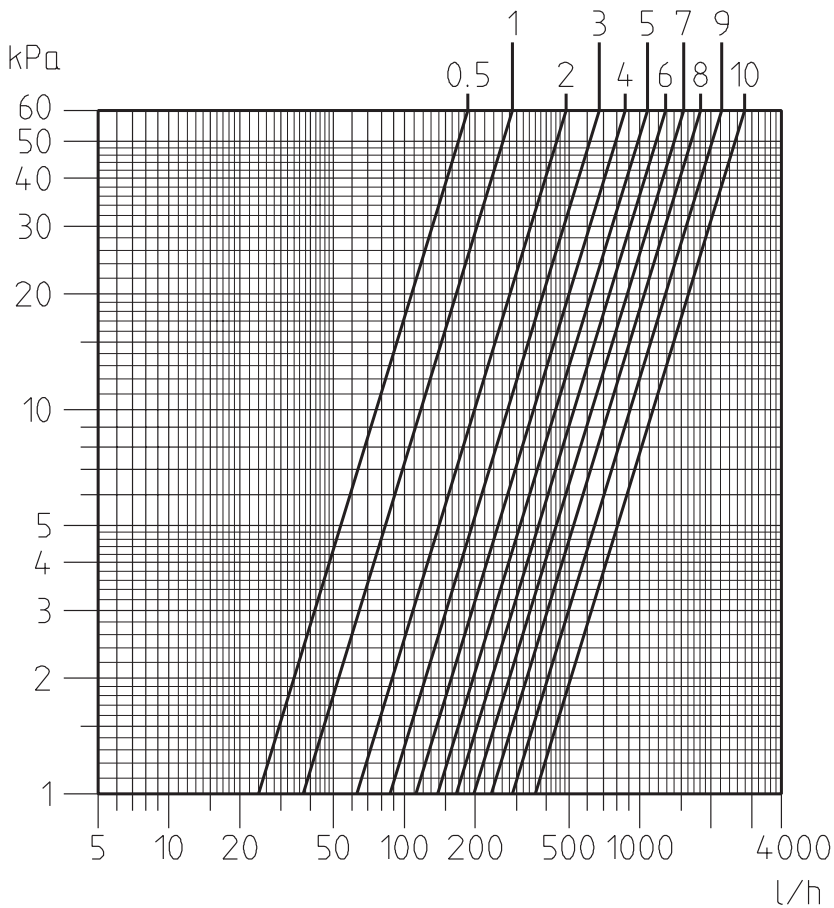
DN 15



Position	Kv
0,5	0,13
1	0,21
2	0,36
3	0,51
4	0,65
5	0,78
6	0,92
7	1,07
8	1,26
9	1,51
10	1,80

Recommended area: Pos. 3-10

DN 20

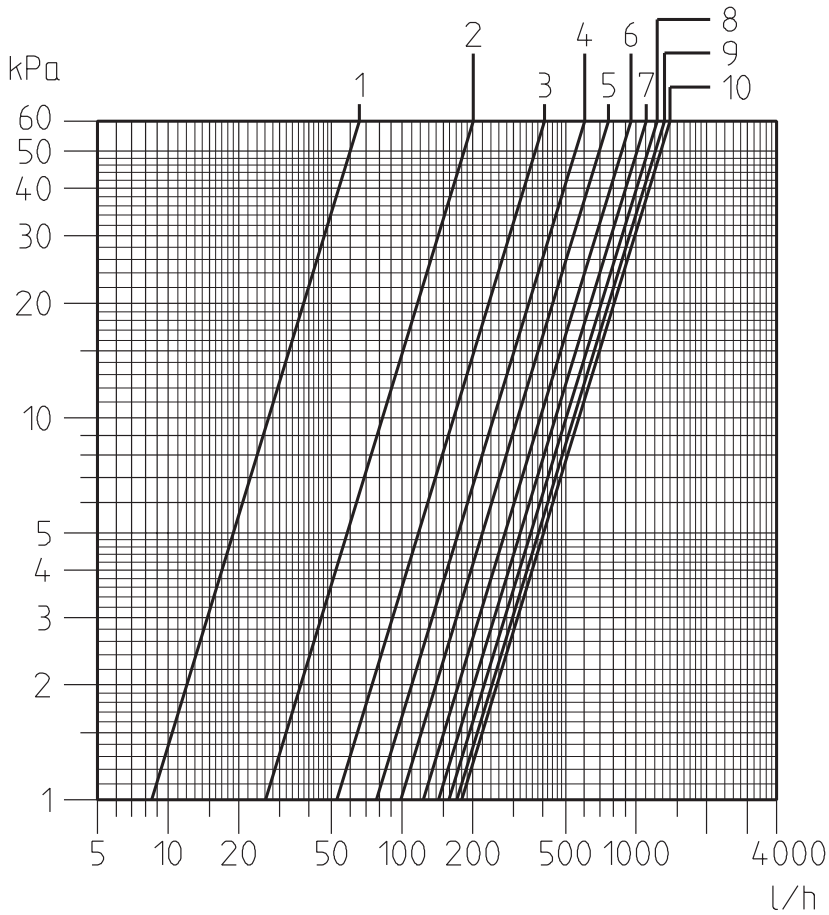


Position	Kv
0,5	0,24
1	0,37
2	0,63
3	0,87
4	1,12
5	1,39
6	1,66
7	1,98
8	2,34
9	2,88
10	3,60

Recommended area: Pos. 3-10

Diagram TBV-C

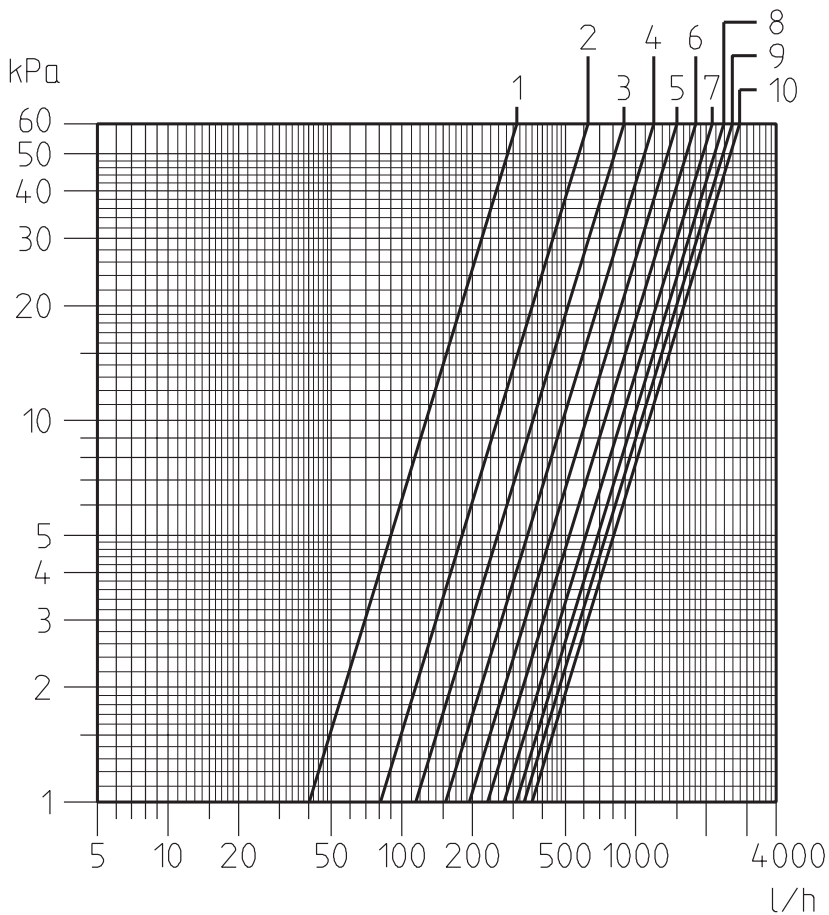
DN 15



Position	Kv
1	0,09
2	0,26
3	0,53
4	0,78
5	0,99
6	1,23
7	1,43
8	1,59
9	1,71
10	1,80

Recommended area: Pos. 3-10

DN 20

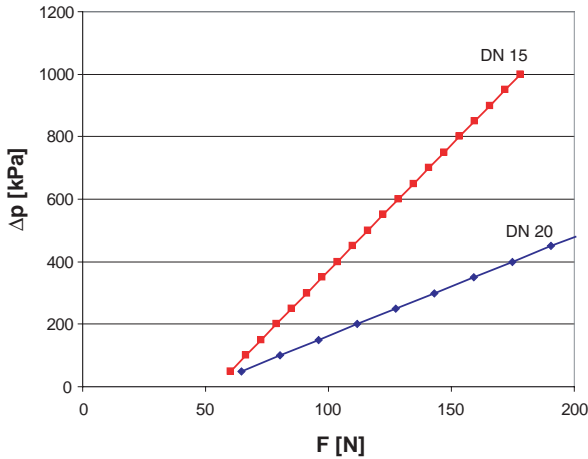


Position	Kv
1	0,40
2	0,81
3	1,15
4	1,54
5	1,94
6	2,33
7	2,74
8	3,08
9	3,34
10	3,60

Recommended area: Pos. 3-10

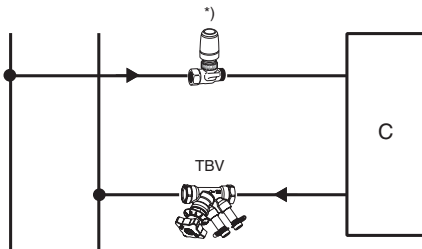
Closing force TBV-C

Necessary force (F) to close the valve vs the differential pressure (Δp).



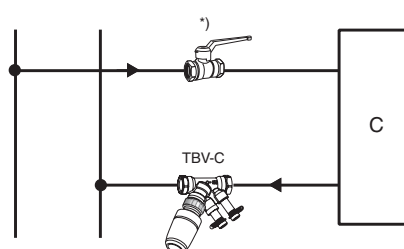
Installation

TBV



*) Control valve

TBV-C

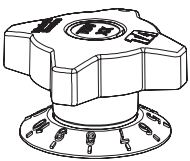


*) Shut-off valve

TBV-C: When the valve is mounted with the actuator downwards, and there is a risk of condensation, an actuator with protection class IP 34, or higher, is needed.

Accessories

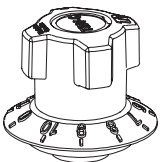
Handwheel TBV, complete



TA No

52 130-100

Adjustment tool TBV-C



TA No

52 132-100

Handwheel

For manual shut-off of TBV-C



TA No

50 399-003

Tour & Andersson retains the right to make changes to its products and specifications without prior notice.