

TBV



Balancing valves

Terminal valve

TBV

The TBV terminal valve delivers accurate hydronic balancing.

Key features

- > **Handwheel**
User-friendly handwheel for easy balancing and shut-off.
- > **Self-sealing measuring points**
For simple, accurate balancing.
- > **AMETAL®**
Dezincification resistant alloy that guarantees a longer valve lifetime, and lowers the risk of leakage.



Technical description

Applications:

Heating and cooling systems.

Functions:

Balancing
Pre-setting
Measuring
Shut-off

Dimensions:

DN 15-20

Pressure class:

PN 16

Temperature:

Max. working temperature: 120°C
Min. working temperature: -20°C

Material:

Valve body: AMETAL®
Seat seal: Valve plug of EPDM
Spindle seal: EPDM O-ring
Valve insert: PPS (polyphenylsulphide)
Return spring: Stainless steel
Spindle: AMETAL®
Handwheel: Polyamide
Nipple: AMETAL®

AMETAL® is the dezincification resistant alloy of IMI Hydronic Engineering.

Marking:

Body: TA, PN 16/150, DN, inch size and flow direction arrow.
Identification ring on measuring point.

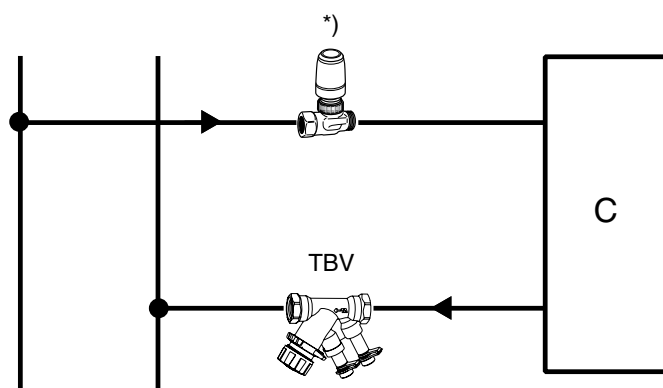
Sizing

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

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

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

Installation



*) Control valve

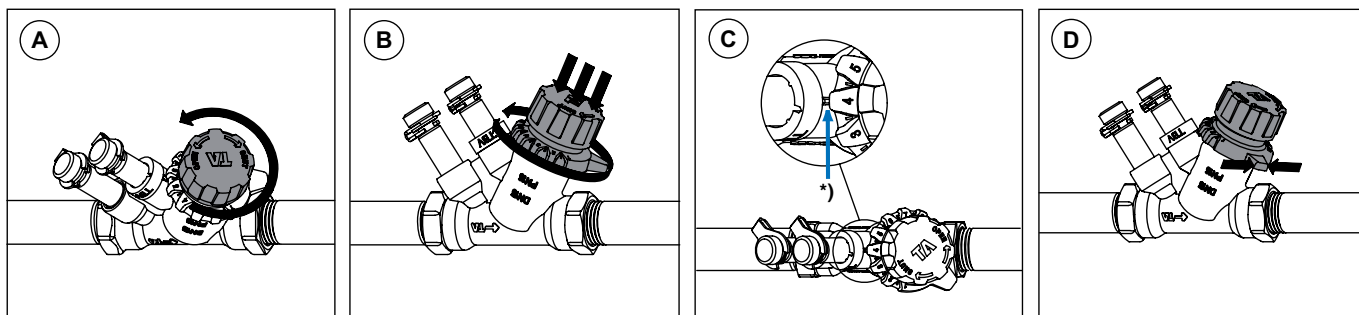
Setting

Setting of a valve for a given pressure drop, eg corresponding to position 4 is done as follows:

1. Check that the handwheel is fully opened (fig A).
2. Push the handwheel downwards and turn the scale (fig B) so that position 4 is pointing at the index* of the valve body (fig C).
3. Release the handwheel.
(Press the side of the grip (fig D) to make sure that the scale is in locked position.)

The valve is now set.

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

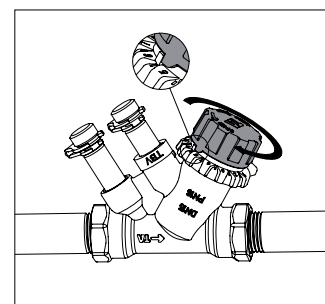


Closing / Opening

Close: Turn the handwheel clockwise until stop.

Open: Turn the handwheel unclockwise until stop

Note: The handwheel must only be either fully opened or fully closed.



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.

Measuring accuracy

Flow deviation at different settings



*) Position

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

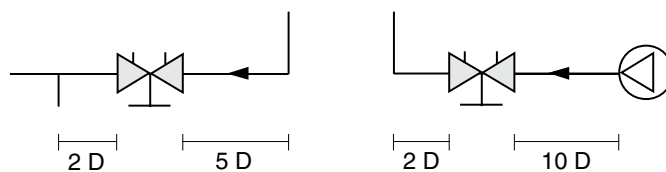
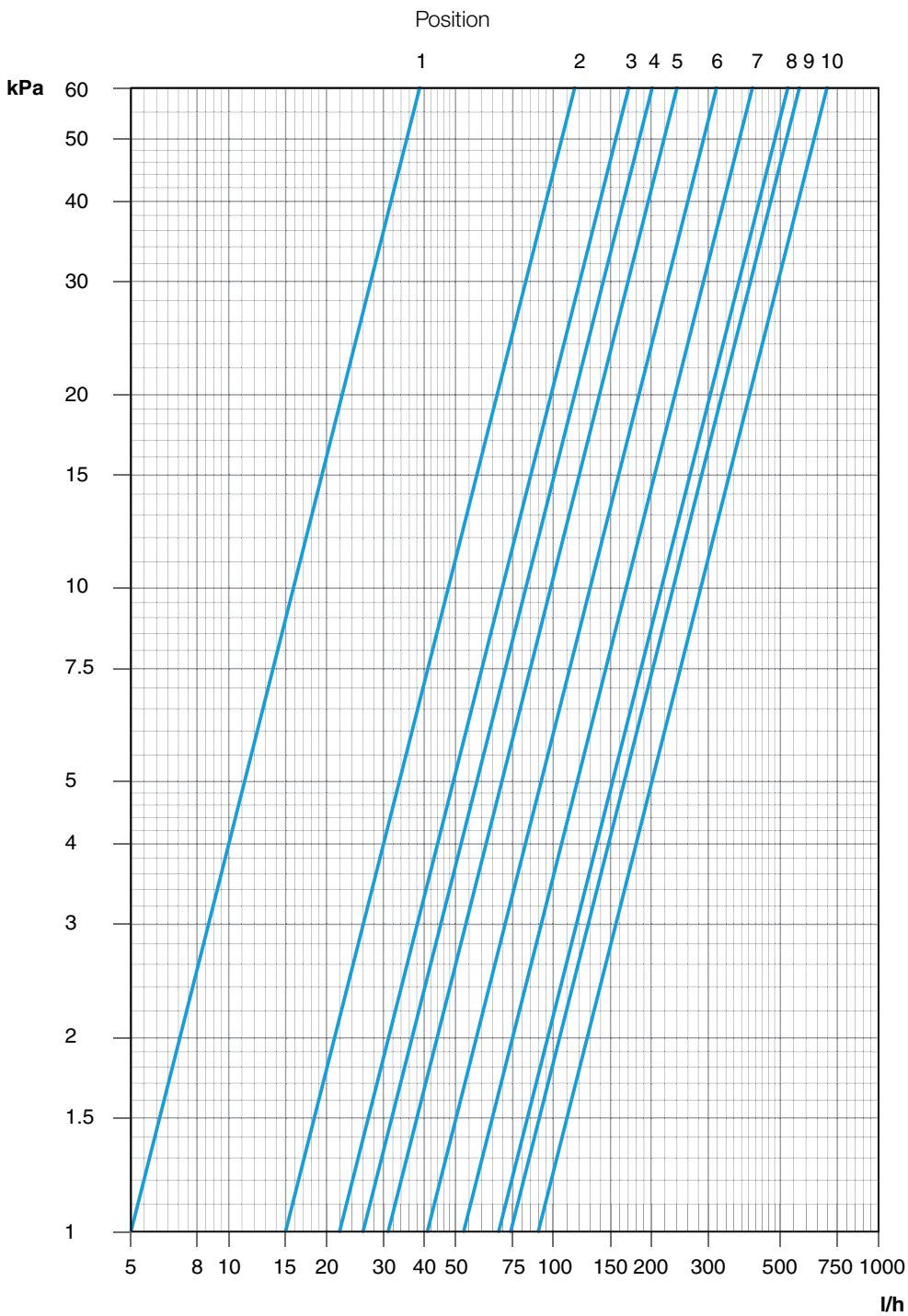


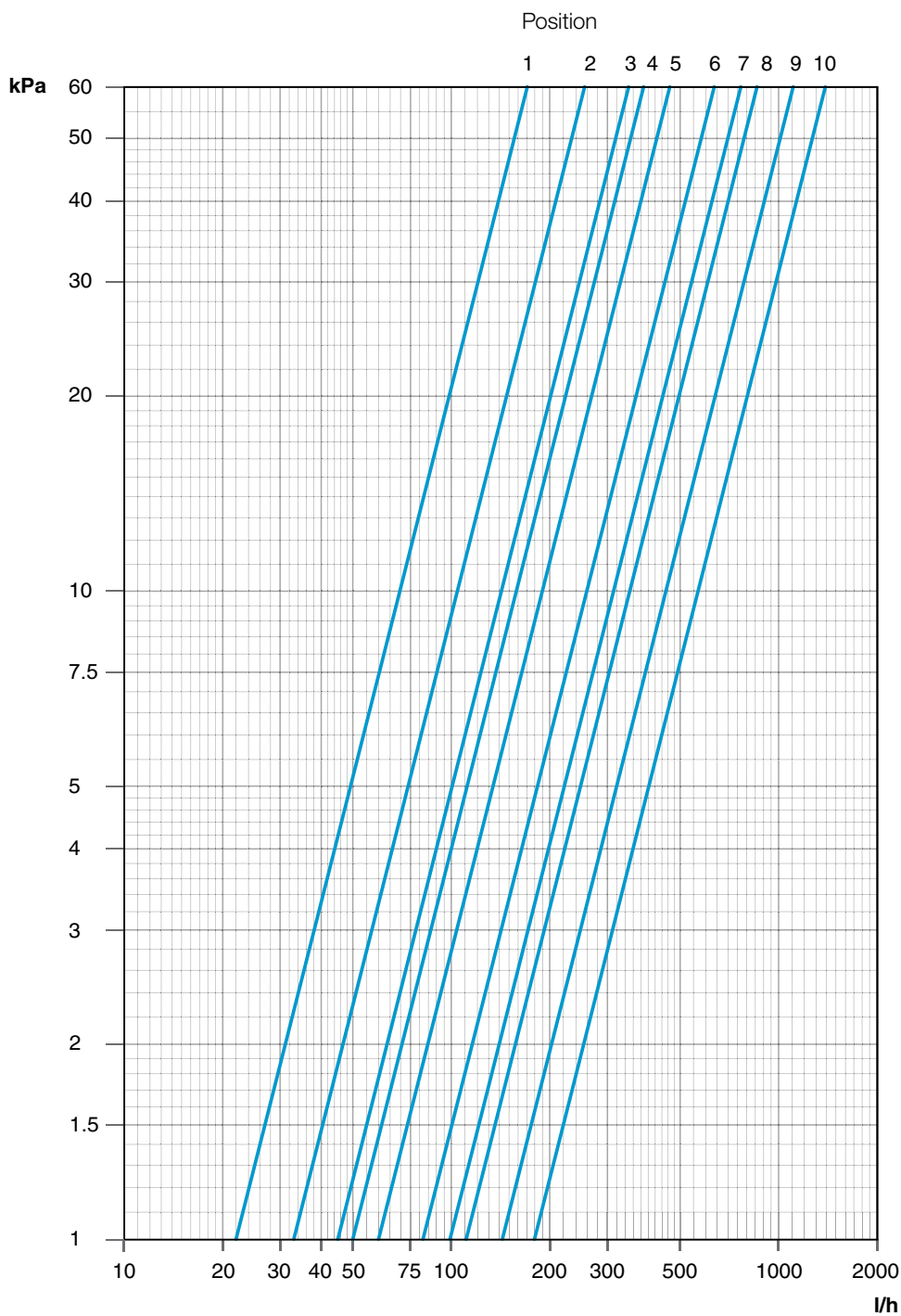
Diagram TBV LF, DN 15



| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------|------|------|------|------|------|------|------|------|------|------|
| Kv | 0,05 | 0,15 | 0,22 | 0,26 | 0,31 | 0,41 | 0,53 | 0,68 | 0,74 | 0,90 |

Recommended setting: Position 3-10

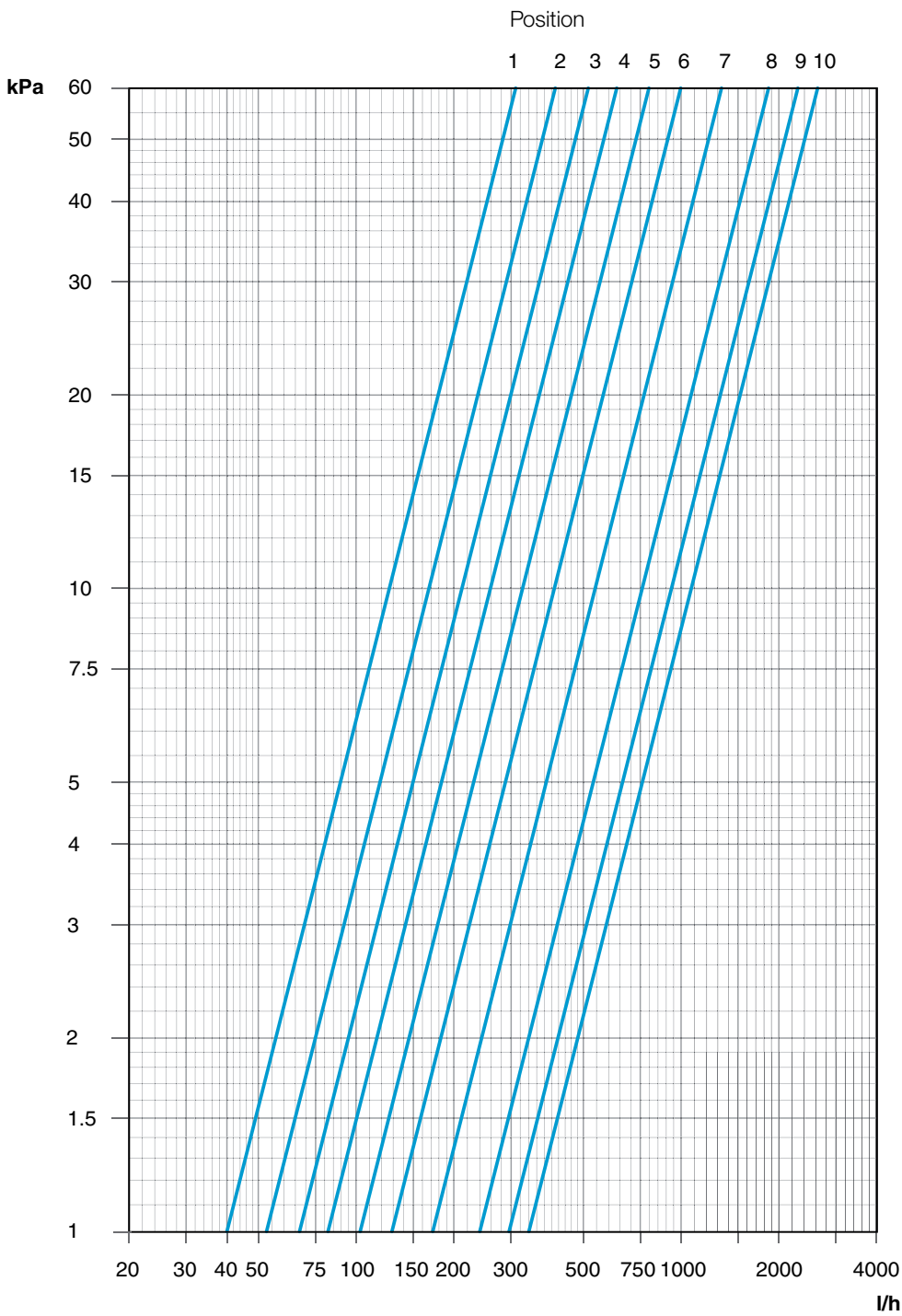
Diagram TBV NF, DN 15



| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------|------|------|------|------|------|------|------|-----|-----|-----|
| Kv | 0,22 | 0,33 | 0,45 | 0,50 | 0,60 | 0,82 | 0,99 | 1,1 | 1,4 | 1,8 |

Recommended setting: Position 3-10

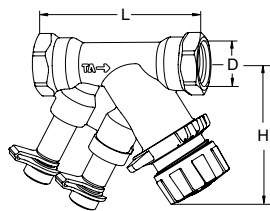
Diagram TBV NF, DN 20



| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| Kv | 0,40 | 0,53 | 0,67 | 0,82 | 1,0 | 1,3 | 1,7 | 2,4 | 3,0 | 3,4 |

Recommended setting: Position 3-10

Articles



Female threads

| DN | D | L | H | Kvs | Kg | EAN | Article No |
|----------------------------|------|----|----|------|------|---------------|------------|
| TBV LF, low flow | | | | | | | |
| 15 | G1/2 | 81 | 66 | 0,90 | 0,34 | 7318793961303 | 52 137-115 |
| TBV NF, normal flow | | | | | | | |
| 15 | G1/2 | 81 | 66 | 1,8 | 0,34 | 7318793961709 | 52 138-115 |
| 20 | G3/4 | 91 | 62 | 3,4 | 0,40 | 7318793962102 | 52 138-120 |

Kvs = m³/h at a pressure drop of 1 bar and fully open valve.

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