



General

Draining optional

Valves with draining for 3/4" NPS hose connection.
Valves without draining have a sleeve. This sleeve can temporarily be removed and a draining kit be fitted, which is available as an accessory.

Measuring points

The measuring points are self-sealed. Remove the cap and insert the probe through the seal.

Technical description

Application:

Heating and cooling systems.
Tapwater systems.

Functions:

Balancing
Pre-setting
Measuring
Shut-off
Draining (optional)

Pressure class:

PN 20

Temperature:

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

Material:

The valves are made of AMETAL®.
Seat seal: EPDM O-ring
Spindle seal: EPDM O-ring
Handwheel: Polyamide

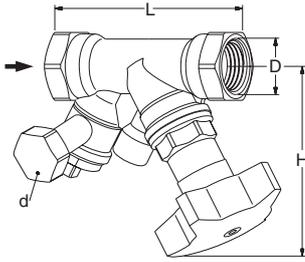
AMETAL® is the dezincification resistant alloy of TA.

Marking:

Body: PN 20/150, DN and inch size.
Handwheel: Valve type and size.

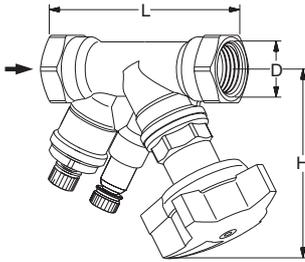
STAD: NPT threads

With draining



TA No	DN	(Size)	D	L	H	Kvs
d=3/4" NPS						
52 151-814	15/14	1/2" N	1/2 NPT	90	100	2.52
52 151-820	20	3/4"	3/4 NPT	97	100	5.70
52 151-825	25	1"	1 NPT	110	105	8.70
52 151-832	32	1 1/4"	1 1/4 NPT	124	110	14.2
52 151-840	40	1 1/2"	1 1/2 NPT	130	120	19.2
52 151-850	50	2"	2 NPT	155	120	33.0

Excl. draining



TA No	DN	(Size)	D	L	H	Kvs
52 151-514	15/14	1/2" N	1/2 NPT	90	100	2.52
52 151-520	20	3/4"	3/4 NPT	97	100	5.70
52 151-525	25	1"	1 NPT	110	105	8.70
52 151-532	32	1 1/4"	1 1/4 NPT	124	110	14.2
52 151-540	40	1 1/2"	1 1/2 NPT	130	120	19.2
52 151-550	50	2"	2 NPT	155	120	33.0

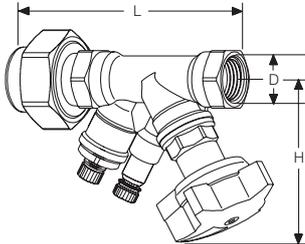
Draining can be installed during operation.

➔ = Flow direction

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

STAD: NPT threads with union end

Excl. draining



TA No	DN	(Size)	D	L	H	Kvs
52 167-414	15/14	1/2" N	1/2 NPT	122	100	2.52
52 167-420	20	3/4"	3/4 NPT	132	100	5.70
52 167-425	25	1"	1 NPT	153	105	8.70

Draining can be installed during operation.

➔ = Flow direction

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

Setting

Setting of a valve for a particular pressure drop, e.g. corresponding to 2.3 turns on the graph, is carried out as follows:

1. Close the valve fully (Fig. 1).
2. Open the valve 2.3 turns (Fig. 2).
3. Using a 3 mm Allen key, turn the inner spindle clockwise until stop.
4. The valve is set.

To check the setting: Close the valve, the indicator shows 0.0. Open it to the stop position. The indicator then shows the set value, in this case 2.3 (Fig. 2).

Diagrams showing the pressure drop for each valve size at different settings and flow rates are available to help determine the correct valve size and pre-setting (pressure drop). Four turns corresponds to fully opened valve (see Fig. 3). Opening it further will not increase the capacity.

Fig. 1.
Valve closed



Fig. 2.
The valve is set at 2.3



Fig. 3.
Fully open valve



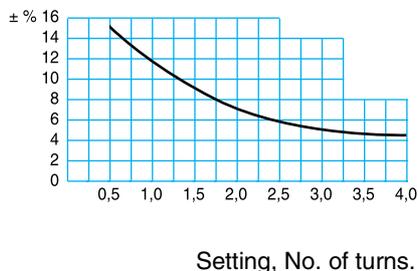
Measuring accuracy

The zero position is calibrated and must not be changed.

Deviation of flow at different settings

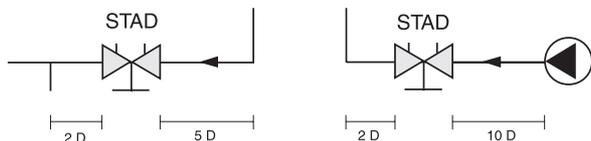
The curve (Fig. 4) is valid for valves with normal pipe fittings* (Fig. 5). Try also to avoid mounting taps and pumps, immediately before the valve.

Fig 4



Setting, No. of turns.

Fig 5



*) The valve can be installed with the opposite flow direction. The specified flow details also are valid for this direction although tolerances can be greater (maximum 5% more).

Correction factors

The flow calculations are valid for water (+20°C). For other liquids with approx. the same viscosity as water (≤ 20 cSt = $3^\circ\text{E} = 100$ S.U.), it is only necessary to compensate for the specific density. However, at low temperatures, the viscosity increases and laminar flow may occur in the valves. This causes a flow deviation that increases with small valves, low settings and low differential pressures. Correction for this deviation can be made with the software TA Select or direct in TA-CBI.

Sizing

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

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

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

Support material

Software

TA Select: Makes it easy to choose the right balancing valves by taking into account the desired flow, pressure drop and flow rate.

Measuring instruments

Use the balancing instrument TA-CBI. It is programmed with valve characteristics for TA valves, enabling measured differential pressure to be read off directly as a flow rate. For further information on TA-CBI, see catalogue leaflet TA-CBI.

Conversion disc

By using the conversion disc it is easy to calculate the relationship between flow, pressure and setting values for all valve sizes.

Manuals

See the following manuals for descriptions of various balancing methods:

Total hydronic balancing

Manual no. 1: Balancing control circuits

Manual no. 2: Balancing distribution systems

Manual no. 3: Balancing of radiator systems

Manual no. 4: Hydronic balancing with differential pressure controllers

Kv values

STAD

No of turns	DN 15/14	DN 20	DN 25	DN 32	DN 40	DN 50
0.5	0.127	0.511	0.60	1.14	1.75	2.56
1	0.212	0.757	1.03	1.90	3.30	4.20
1.5	0.314	1.19	2.10	3.10	4.60	7.20
2	0.571	1.90	3.62	4.66	6.10	11.7
2.5	0.877	2.80	5.30	7.10	8.80	16.2
3	1.38	3.87	6.90	9.50	12.6	21.5
3.5	1.98	4.75	8.00	11.8	16.0	26.5
4	2.52	5.70	8.70	14.2	19.2	33.0

Example

Wanted:

Presetting for DN 25 at a desired flow rate of 1,6 m³/h and a pressure drop of 10 kPa.

Solution:

Draw a straight line joining 1,6 m³/h and 10 kPa. This gives Kv=5. Now draw a horizontal line from Kv=5. This intersects the bar for DN 25 which gives 2,35 turns.

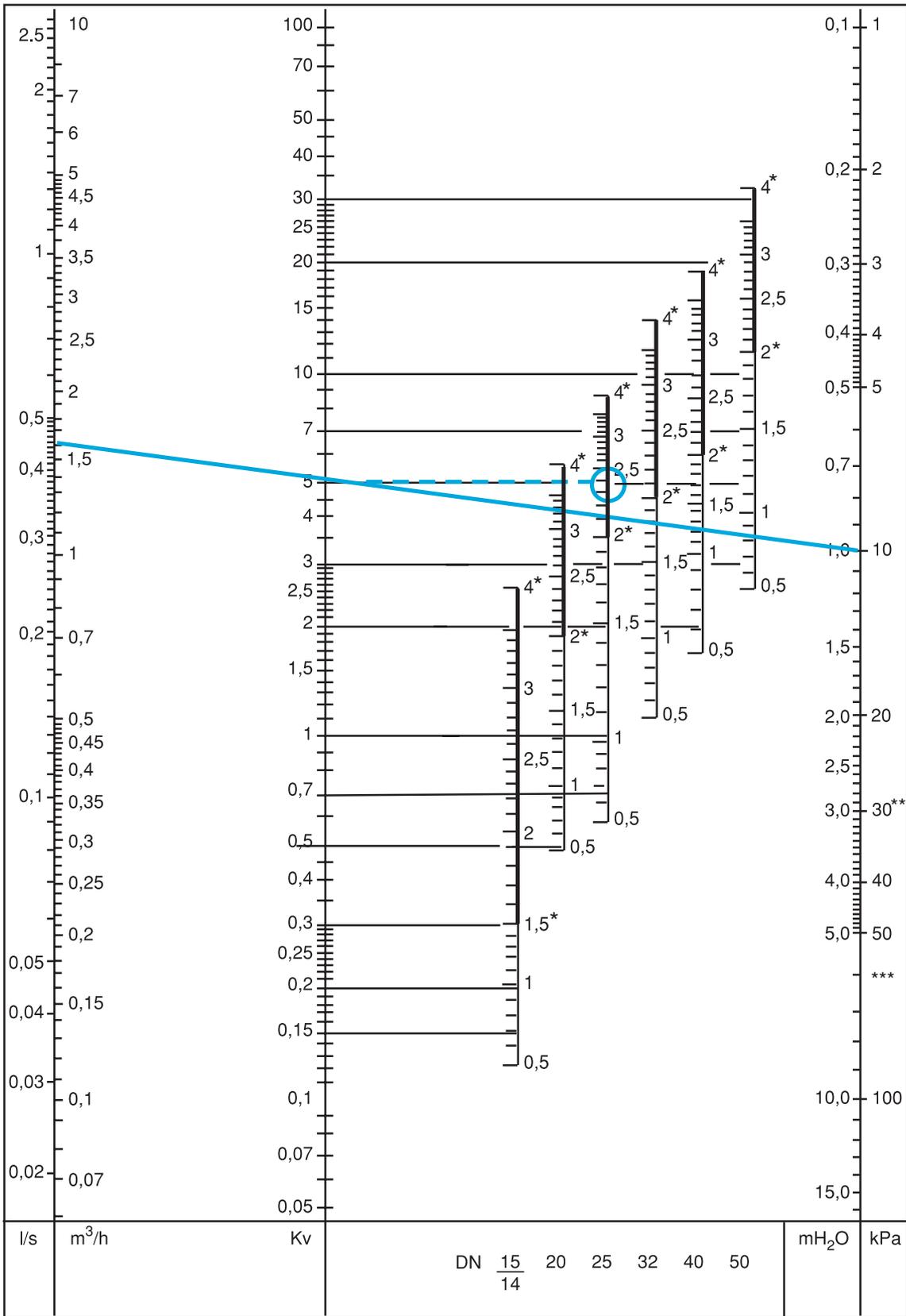
NOTE:

If the flow rate is out of the scale in the diagram, the reading can be made as follows:

Starting with the example above, we get 10 kPa, Kv=5 and flow-rate 1.6 m³/h.

At 10 kPa and Kv=0,5 we get the flow-rate 0,16 m³/h, and at Kv=50, we get 16 m³/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram



*) Recommended area

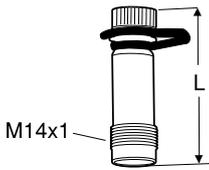
***) 25 db (A)

****) 35 db (A)

Accessories

Measuring point

Max 120°C



TA No	L
52 179-014	44
52 179-015	103

Measuring point, extension 60 mm

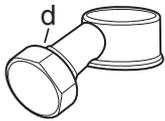
Can be installed without draining of the system.



TA No
52 179-006

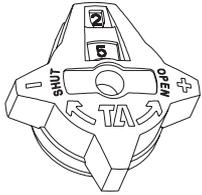
Draining kit

Can be installed during operation



TA No	d
52 179-997	3/4" NPS

Handwheel, complete



TA No
52 186-003

Size plate, handwheel



TA No	Size
308 812-01	1/2N
308 812-02	3/4
308 812-03	1
308 812-04	1 1/4
308 812-05	1 1/2
308 812-06	2

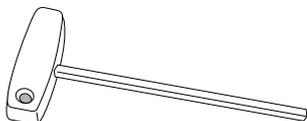
Identification tag

(incl 1 pc per valve)



TA No
52 161-990

Allen key



TA No		
52 187-103	3 mm	Pre-setting
52 187-105	5 mm	Draining

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