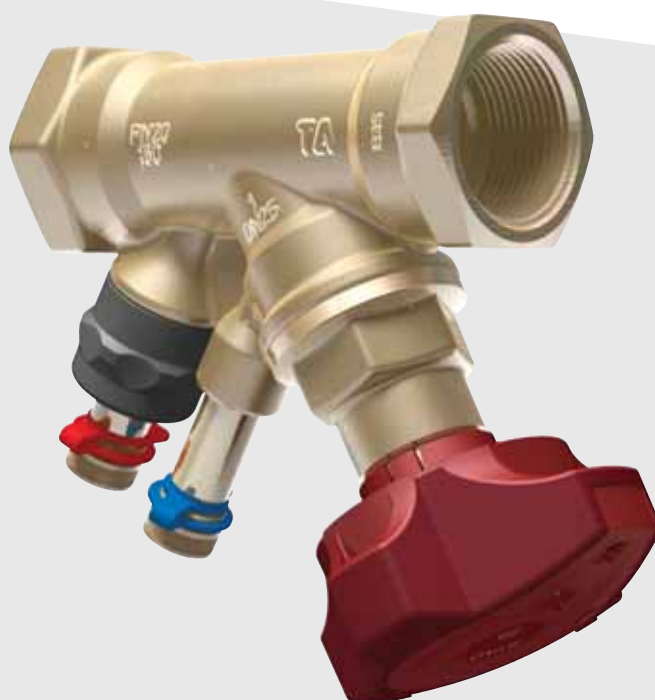


# STAD – NPT threads



**Balancing valves**  
DN 15-50

Engineering  
*GREAT* Solutions

# STAD – NPT threads

The STAD balancing valve delivers accurate hydronic performance in an impressive range of applications. Ideally suited for use on the secondary side in heating and cooling systems, and tap water systems.

## Key features

- > **Handwheel**  
Equipped with a digital read-out, the handwheel ensures accurate and straightforward balancing. Positive shut-off function for easy maintenance.
- > **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

### Application:

Heating (not steam) and cooling systems.  
Tapwater systems.

### Functions:

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

### Dimensions:

DN 15-50

### Pressure class:

PN 20

### Temperature:

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

### Material:

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

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

### Marking:

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

## Measuring points

Measuring point are self-sealed. Remove the cap and insert the probe through the seal.

## Draining

Valves without draining have a sleeve. This sleeve can temporarily be removed and a draining kit for UNS 1 1/16"x11.5 hose connection is fitted, which is available as an accessory.

## Sizing

When  $\Delta p$  and the design flow are known, use the formula to calculate the Kv-value or use the diagram.

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

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

## Kv values

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

## Measuring accuracy

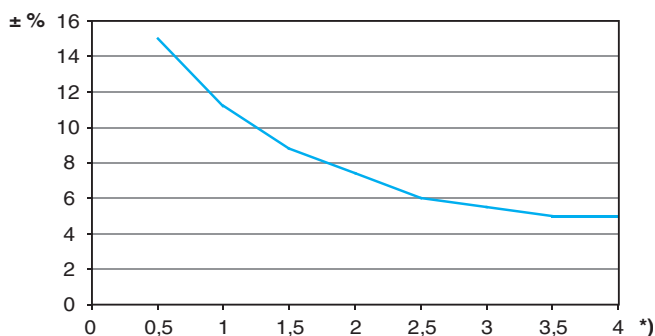
The zero position is calibrated and must not be changed.

### 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.

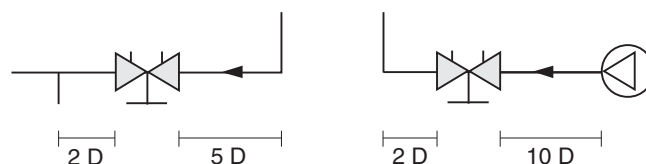
The valve can be installed with the opposite flow direction. The specified flow details also are valid for this direction although tolerances can be greater (maximum 5% more).

Fig 4



\*) Setting, No. of turns.

Fig 5



## Correction factors

The flow calculations are valid for water (+20°C). For other liquids with approximately the same viscosity as water ( $\leq 20$  cSt =  $3^\circ\text{E}=100\text{S.U.}$ ), 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 HySelect or directly in our balancing instruments.

## 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 now 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 (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



## Diagram 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 2,42 turns.

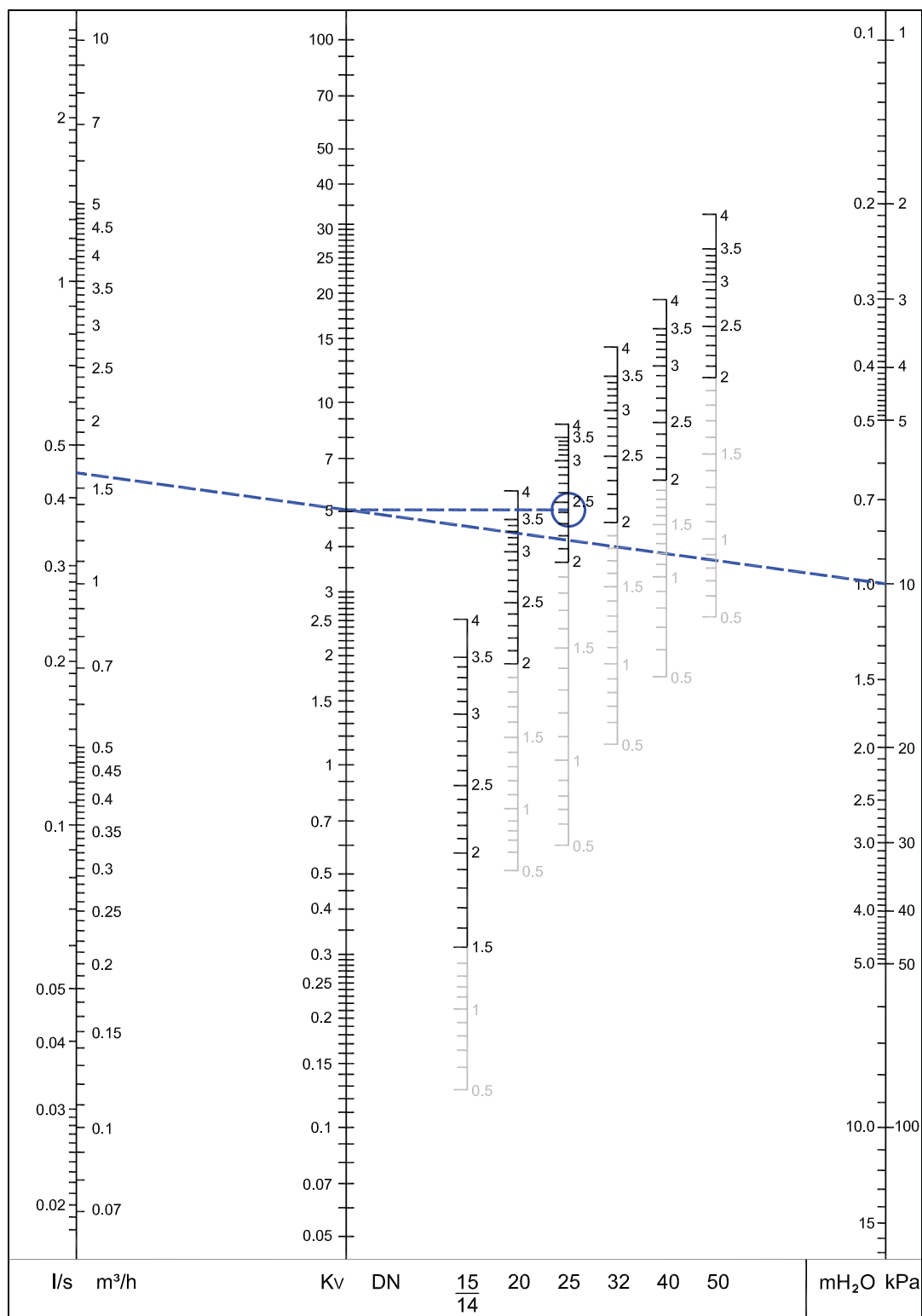
### NOTE:

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

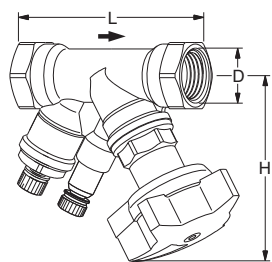
Starting with the example above, we get 10 kPa, Kv=5 and flow-rate 1.6 m³/h.

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



## Articles



### Without drain

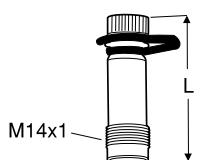
Drain can be installed during operation.

DN	(size)	D	L	H	Kvs	EAN	Article No
15/14	1/2" N	1/2 NPT	90	100	2.52	7318792759604	52 151-514
20	3/4"	3/4 NPT	97	100	5.70	7318792759703	52 151-520
25	1"	1 NPT	110	105	8.70	7318792759802	52 151-525
32	1 1/4"	1 1/4 NPT	124	110	14.2	7318792759901	52 151-532
40	1 1/2"	1 1/2 NPT	130	120	19.2	7318792760006	52 151-540
50	2"	2 NPT	155	120	33.0	7318792760105	52 151-550

→ = Flow direction

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

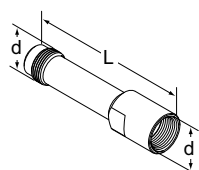
## Accessories



### Measuring point

Max 120°C (intermittent 150°C)

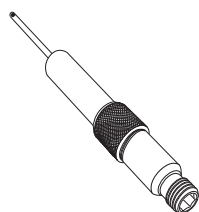
L	EAN	Article No
44	7318792813207	52 179-014
103	7318793858108	52 179-015



### Extension for measuring point M14x1

Suitable when insulation is used.

d	L	EAN	Article No
M14x1	71	7318793969507	52 179-016

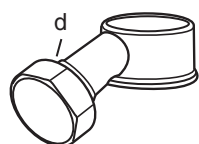


### Measuring point

Extensions 60 mm (not for 52 179-000/-601)

Can be installed without draining of the system.

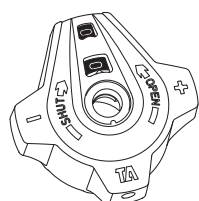
L	EAN	Article No
60	7318792812804	52 179-006



### Draining kit

Can be installed during operation

d	EAN	Article No
UNS 1 1/16" x 11.5	7318792815102	52 179-997



### Handwheel

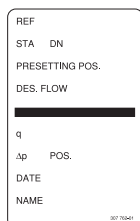
Complete

EAN	Article No
7318792834905	52 186-003



### Size plate, handwheel

Size	(DN)	EAN	Article No
1/2N	15/14		310 308-01
3/4	20		310 308-02
1	25		310 308-03
1 1/4	32		310 308-04
1 1/2	40		310 308-05
2	50		310 308-06



### Identification tag

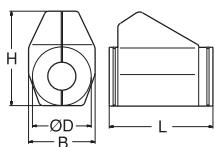
Incl 1 pc per valve

EAN	Article No
7318792779206	52 161-990



### Allen key

[mm]		EAN	Article No
3	Pre-setting	7318792836008	52 187-103
5	Draining	7318792836107	52 187-105



### Insulation

For heating/cooling

See catalogue leaflet Prefab insulations for complete details.

For DN	L	H	D	B	EAN	Article No
10-20	155	135	90	103	7318792839108	52 189-615
25	175	142	94	103	7318792839306	52 189-625
32	195	156	106	103	7318792839504	52 189-632
40	214	169	108	113	7318792839702	52 189-640
50	245	178	108	114	7318792839900	52 189-650

