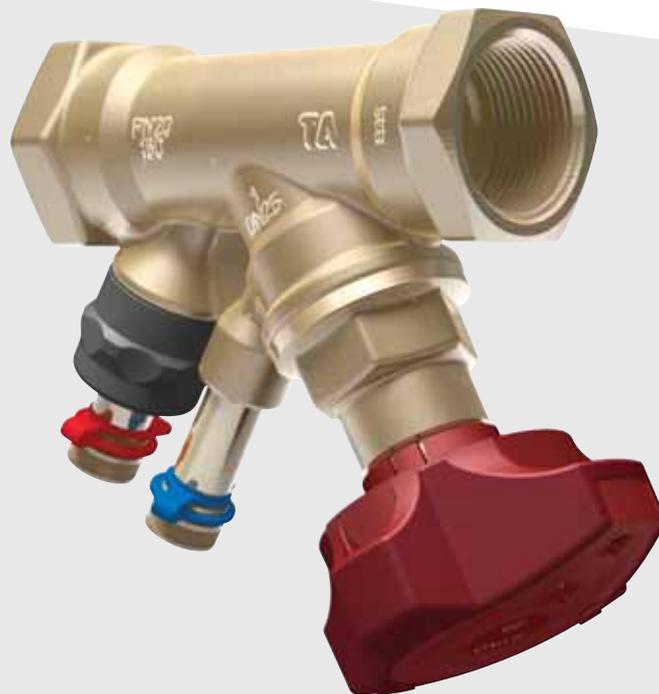


# STAD – NPT threads



**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 points 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" x 11.5 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 5

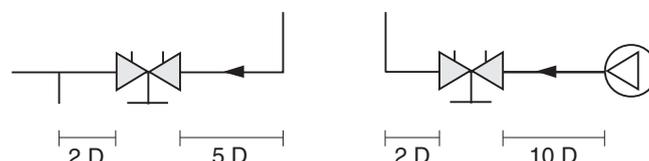
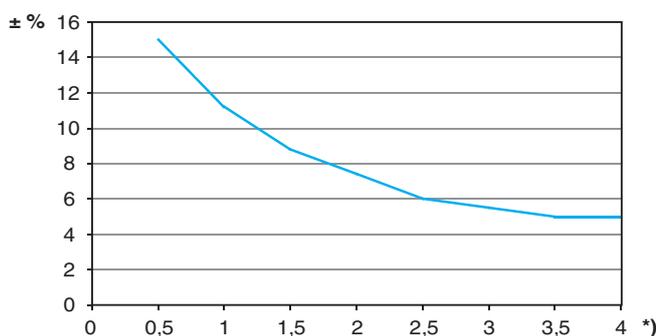


Fig 4



\*) Setting, No. of turns.

## 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 m<sup>3</sup>/h and a pressure drop of 10 kPa.

### Solution:

Draw a straight line joining 1,6 m<sup>3</sup>/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.

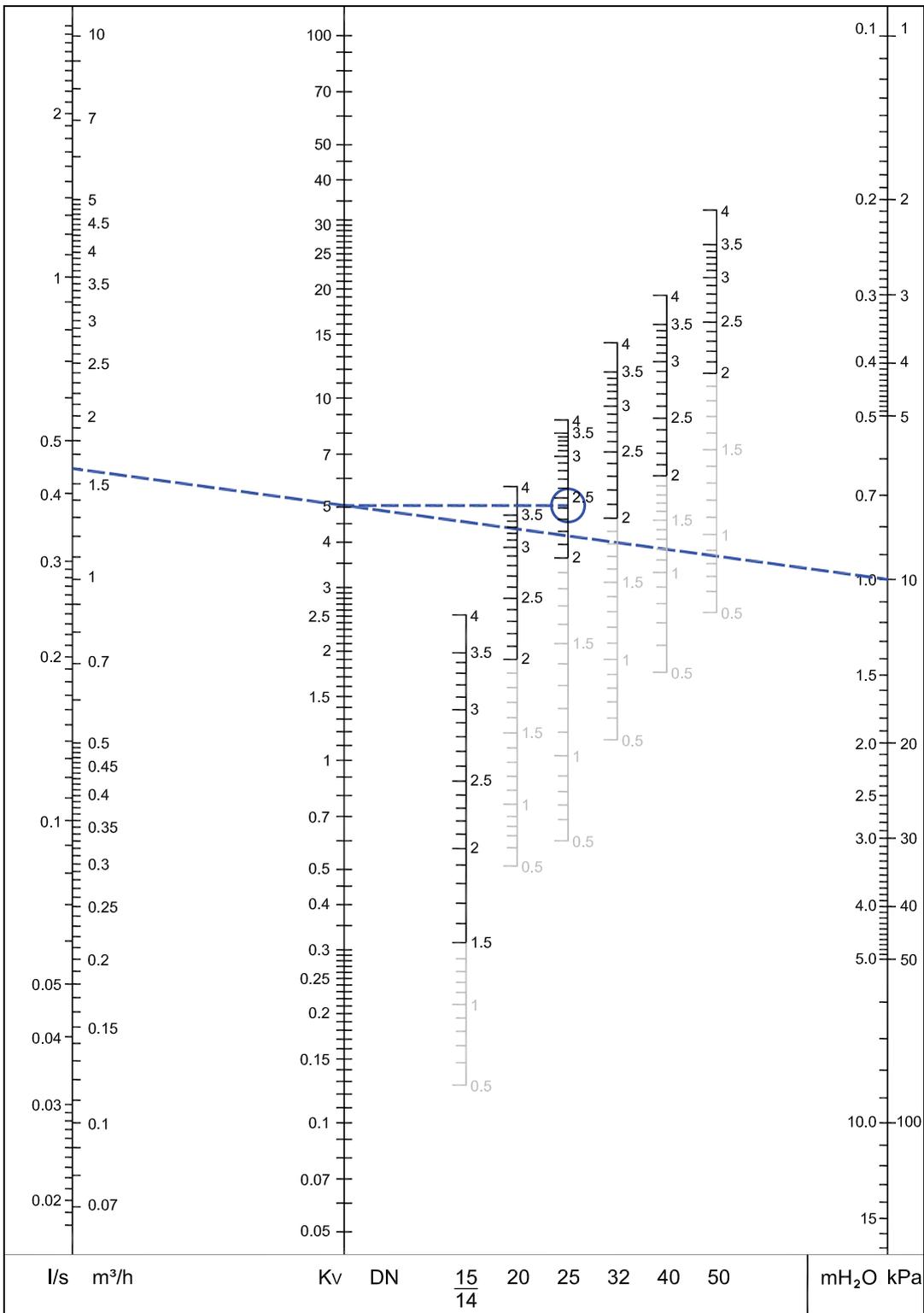
### NOTE:

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

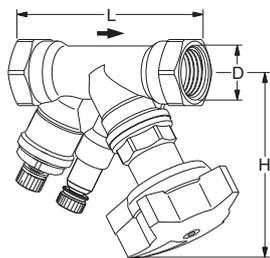
Starting with the example above, we get 10 kPa, Kv=5 and flow-rate 1.6 m<sup>3</sup>/h.

At 10 kPa and Kv=0,5 we get the flow-rate 0,16 m<sup>3</sup>/h, and at Kv=50, we get 16 m<sup>3</sup>/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

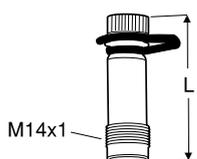
Drain can be installed during operation.

| 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 = m<sup>3</sup>/h at a pressure drop of 1 bar and fully open valve.

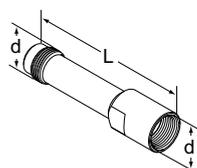
## Accessories



### 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 |

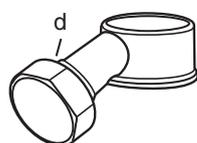


### Measuring point

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

Can be installed without draining of the system.

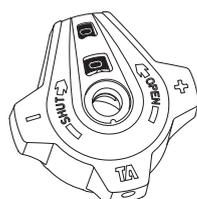
| L  | EAN           | Article No |
|----|---------------|------------|
| 60 | 7318792812804 | 52 179-006 |



### Draining kit

Can be installed during operation

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



### Handwheel

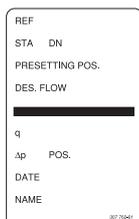
Complete

| 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

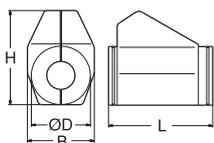
Incl 1 pc per valve

| 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 |

