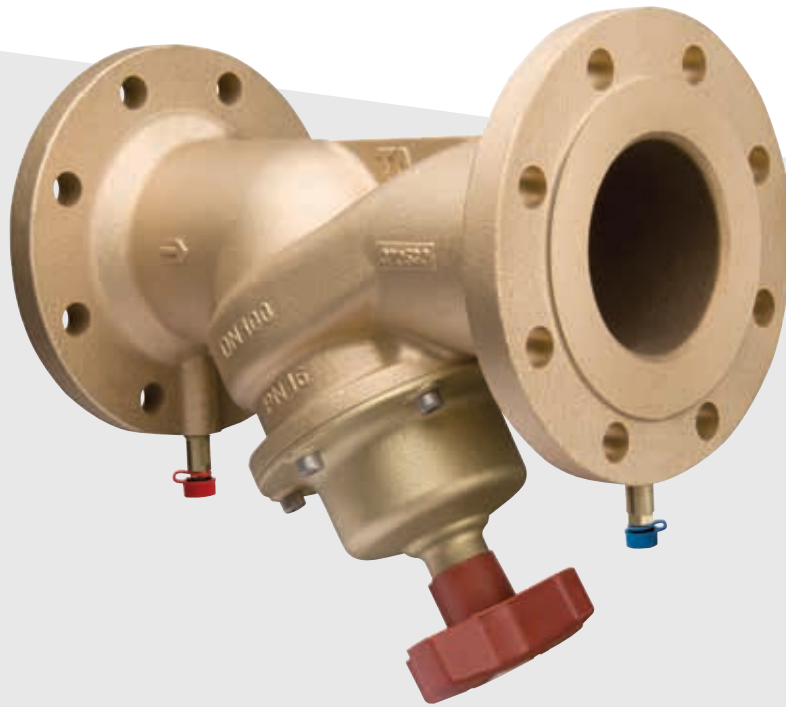


# STAF-R



## Balancing valves

PN 16 (DN 65-150) – Gunmetal

Engineering  
*GREAT* Solutions

# STAF-R

A flanged balancing valve in gunmetal, that delivers accurate hydronic performance in an impressive range of applications. STAF-R is ideal for use mainly on the secondary side in tap water, heating and cooling systems.

## Key features

- > **Handwheel**  
Equipped with a digital read-out, the handwheel ensures accurate and straightforward balancing.
- > **Self-sealing measuring points**  
For simple, accurate balancing.
- > **Positive shut-off function**  
For easy maintenance.



## Technical description

### Application:

Heating and cooling systems  
Tap water systems

### Functions:

Balancing  
Pre-setting  
Measuring  
Shut-off (The balancing cone is pressure released).

### Dimensions:

DN 65-150

### Pressure class:

PN 16

### Temperature:

Max. working temperature: 120°C  
For higher temperatures (max. 150°C), please contact the nearest sales office.  
Min. working temperature: -20°C

### Media:

Water or neutral fluids, water-glycol mixtures (0-57%).

### Material:

Body: Gunmetal CuSn5Zn5Pb5 (EN 1982).  
Bonnet, restriction cone and spindle: AMETAL®.  
Seals: EPDM.  
Bonnet bolts: Stainless steel.  
Measuring points: AMETAL® and EPDM.  
Handwheel: Polyamide.

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

### Marking:

Body: TA, PN, DN, CE, flow direction arrow, material and casting date (year, month, day).

### Face to face length:

ISO 5752 series 1, BS 2080 and EN 558-1 series 1.

## Measuring points

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

## Sizing

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

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

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

## Kv values

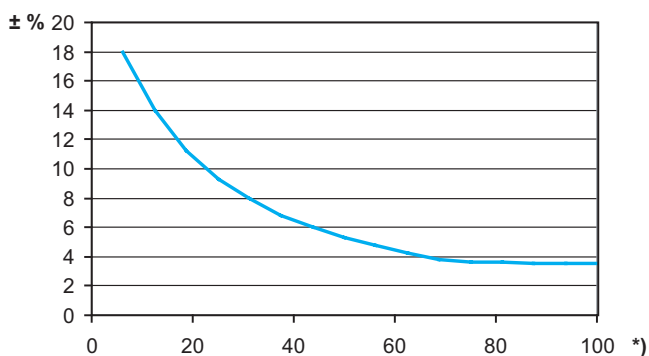
Turns	DN 65-2	DN 80	DN 100	DN 125	DN 150
0.5	1,8	2	2,5	5,5	6,5
1	3,4	4	6	10,5	12
1.5	4,9	6	9	15,5	22
2	6,5	8	11,5	21,5	40
2.5	9,3	11	16	27	65
3	16,3	14	26	36	100
3.5	25,6	19,5	44	55	135
4	35,3	29	63	83	169
4.5	44,5	41	80	114	207
5	52	55	98	141	242
5.5	60,5	68	115	167	279
6	68	80	132	197	312
6.5	73	92	145	220	340
7	77	103	159	249	367
7.5	80,5	113	175	276	391
8	85	120	190	300	420

## Measuring accuracy

The handwheel zero position is calibrated and must not be changed.

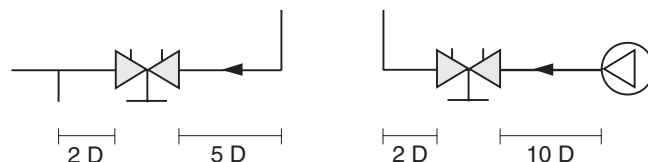
### Deviation of flow at different settings

The curve holds for valves with the correct flow direction, straight pipe distances (Fig. 1) and normal pipe fittings.



\*) Setting (%) of fully open valve.

Fig. 1



## 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

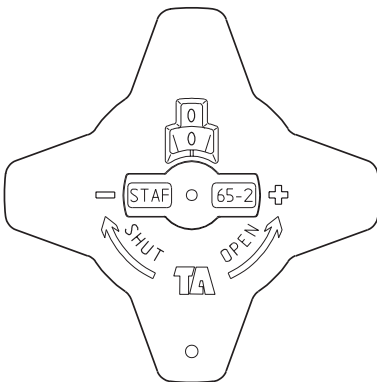
It is possible to read the set value on the handwheel. The number of turns between the fully open and closed positions is: 8 turns.

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

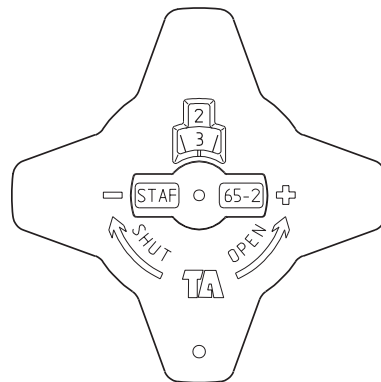
1. Close the valve fully (Fig. 1)
2. Open the valve to 2.3 turns (Fig. 2).
3. Using a 5 mm Allen key, turn the inner spindle clockwise until stop.
4. The valve is now set.

To check the setting of a valve, first close the valve, then open it to the stop position; the indicator then shows the presetting number, in this case 2.3 (Fig. 2).

**Fig. 1** Valve closed



**Fig. 2** The valve is set at 2.3



## Diagram example

### Wanted:

Presetting for DN 65 at a desired flow rate of 26 m<sup>3</sup>/h and a pressure drop of 25 kPa.

### Solution:

Draw a straight line joining 26 m<sup>3</sup>/h and 25 kPa. This gives Kv=52.

Now draw a horizontal line from Kv=52.

This intersects the bar for DN 65 at the desired presetting of 5 turns.

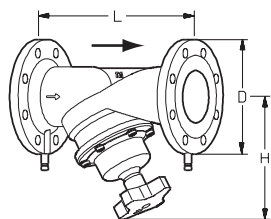
### NOTE:

If the flow rate falls outside the scale in the diagram, the reading can be made as follows:

Starting with the example above, we get 25 kPa, Kv = 52 and flowrate 26 m<sup>3</sup>/h. At 25 kPa and Kv = 5.2 we get the flow-rate 2,6 m<sup>3</sup>/h, and at Kv = 520, we get 260 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.



## Articles



### Bolted bonnet

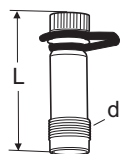
PN 16, ISO 7005-3, EN 1092-3

DN	Number of bolt holes	D	L	H	Kvs	Kg	EAN	Article No
65-2	4	185	290	205	85	14.3	7318792824906	52 181-765
80	8	200	310	220	120	18.7	7318792825002	52 181-780
100	8	220	350	240	190	24.6	7318792825101	52 181-790
125	8	250	400	275	300	36.8	7318792825200	52 181-791
150	8	285	480	285	420	52	7318792825309	52 181-792

→ = Flow direction

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

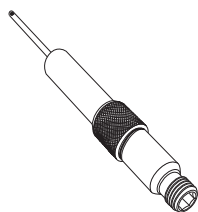
## Accessories



### Measuring point

AMETAL®/EPDM

d	L	EAN	Article No
<b>DN 65 – 300</b>			
R3/8	45	7318792813009	52 179-008
R3/8	101	7318792814501	52 179-608



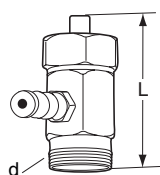
### Measuring point

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

Can be installed without draining of the system.

AMETAL®/Stainless steel/EPDM

L	EAN	Article No
60	7318792812804	52 179-006



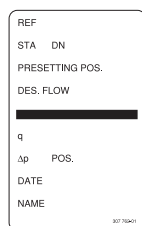
### Measuring point

For older STAD and STAF

Max 150°C

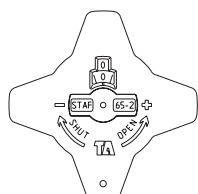
AMETAL®/EPDM

d	L	EAN	Article No
<b>DN 65-150</b>			
R3/8	30	7318792812903	52 179-007
R3/8	90	7318792814402	52 179-607



### Identification tag

EAN	Article No
7318792779206	52 161-990



### Handwheel

Complete

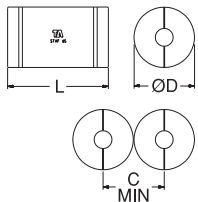
DN	EAN	Article No
65 - 150	7318792834806	52 186-002



### Allen key

For locking of setting.

[mm]	For DN	EAN	Article No
3	65 - 150	7318792836008	52 187-103



### Insulation

For heating/cooling  
CFC-free polyurethane. Covered with grey PVC.

See catalogue leaflet "Prefab insulations" for complete details.

For DN	L	D	C	EAN	Article No
50	390	250	252	7318792840708	52 189-850
65	450	270	272	7318792840807	52 189-865
80	480	290	292	7318792840906	52 189-880
100	520	320	322	7318792841002	52 189-890
125	570	350	352	7318792841101	52 189-891
150	660	380	382	7318792841200	52 189-892

