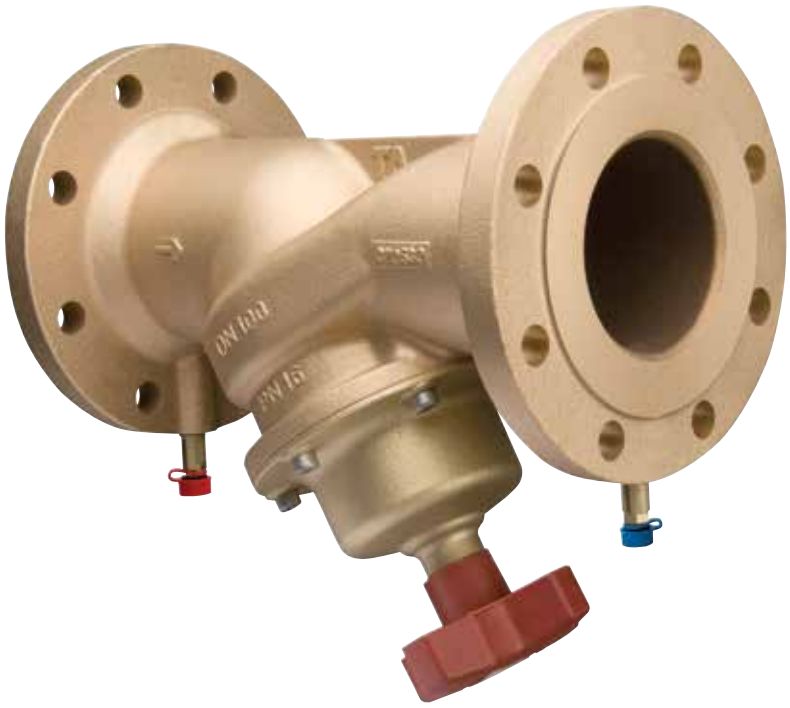
IMI TA

STAF-R



Balancing valves

PN 16 (DN 65-150) – Gunmetal

IMI Hydronic Engineering

Breakthrough Engineering

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 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

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
Min. working temperature: -10°C

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

Material:
Body: Gunmetal CuSn5Zn5Pb5 (EN 1982).
Bonnet, cone (PTFE coated) and spindle: AMETAL®.
Seals: EPDM.
Slip washer: PTFE.
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 Δp and the design flow are known, use the formula to calculate the Kv value or use the diagram.

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

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

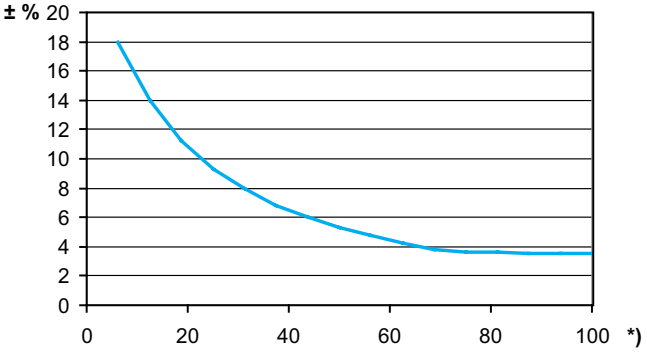
Kv values

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

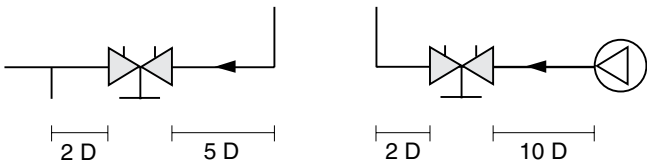
The handwheel zero position is calibrated and must not be changed.

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 (≤20 cSt = 3°E=100S.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

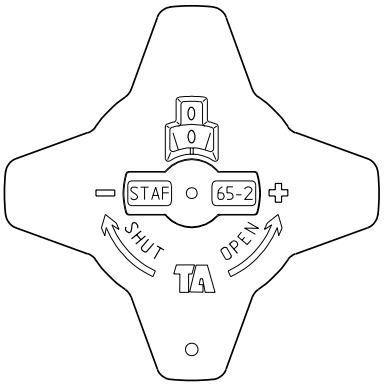


Fig. 2 The valve is set at 2.3

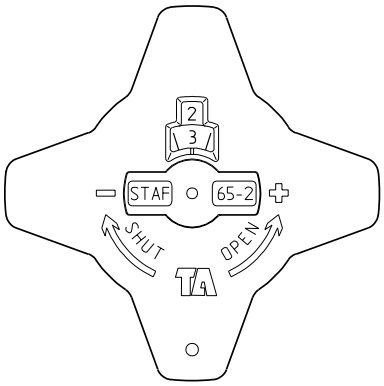


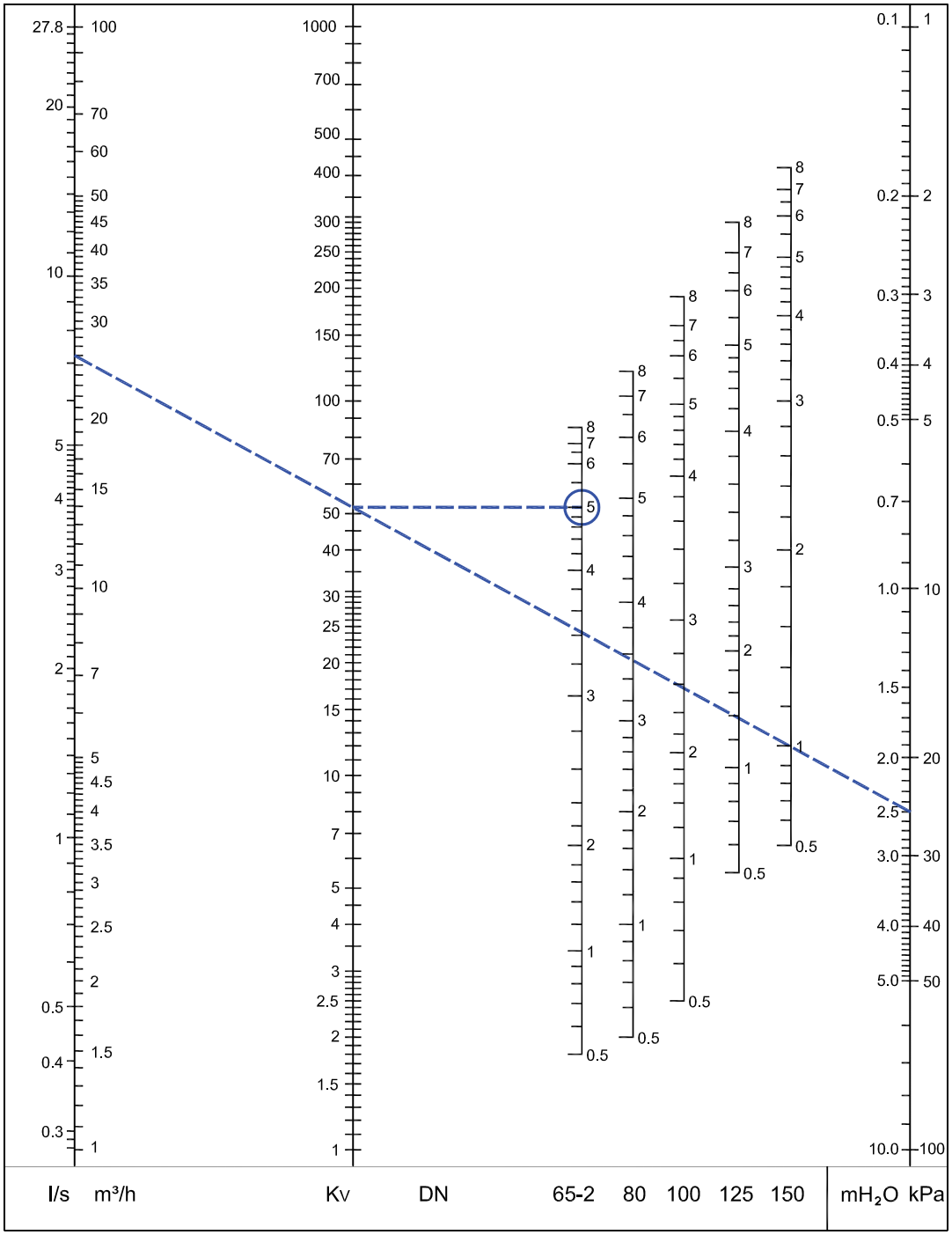
Diagram example

Wanted:
Presetting for DN 65 at a desired flow rate of 26 m^3/h and a pressure drop of 25 kPa.

Solution:
Draw a straight line joining 26 m^3/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.

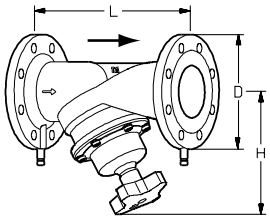
NOTE:
If the flow rate falls outside the scale in the diagram, the reading can be made as follows:
Starting with the example above, we get 25 kPa, Kv = 52 and flowrate 26 m^3/h. At 25 kPa and Kv = 5.2 we get the flow-rate 2,6 m^3/h, and at Kv = 520, we get 260 m^3/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram DN 65-150



Recommended area: See Fig. 3 under “Measuring accuracy”.

Articles



Bolted bonnet

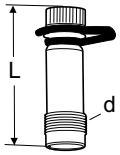
PN 16, ISO 7005-3, EN 1092-3

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^3/h at a pressure drop of 1 bar and fully open valve.

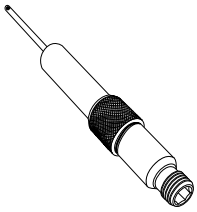
Accessories



Measuring point

AMETAL®/EPDM

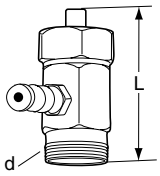
d	L	EAN	Article No
DN 65 – 300			
R3/8	45	7318792813009	52 179-008
R3/8	101	7318792814501	52 179-608



Measuring point

Extensions 60 mm (not for 52 179-000/ -601).
Can be installed without draining of the system.
AMETAL®/Stainless steel/EPDM

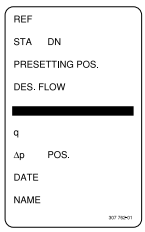
L	EAN	Article No
60	7318792812804	52 179-006



Measuring point

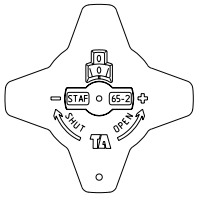
For older STAD and STAF
Max 150°C
AMETAL®/EPDM

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



Identification tag

EAN	Article No
7318792779206	52 161-990



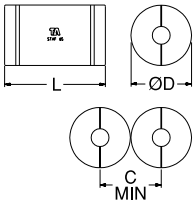
Handwheel

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

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