

Climate
Control

IMI TA

STAD-R



Balancing valves
DN 15-25 with reduced Kv

STAD-R

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

Functions:

Balancing
Pre-setting
Measuring
Shut-off
Draining

Dimensions:

DN 15-25

Pressure class:

PN 25

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:

Valve body and bonnet: AMETAL®
Sealing (body/bonnet): EPDM O-ring
Valve plug: AMETAL®
Seat seal: EPDM O-ring
Spindle: AMETAL®
Slip washer: PTFE
Spindle seal: EPDM O-ring
Spring: Stainless steel
Handwheel: Polyamide and TPE

Measuring points: AMETAL®
Sealings: EPDM
Caps: Polyamide and TPE

Draining: AMETAL®
Sealing: EPDM
Gaskets: Fiber-based aramid

AMETAL® is the dezincification resistant alloy of IMI.

Marking:

Body: IMI, TA, PN 25/400 WWP, DN and inch size.
Handwheel: TA, STAD-R* and DN.

Connection:

Internal thread according to ISO 228.
Thread length according to ISO 7/1.

Measuring points

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

Draining

Valves with draining for G3/4 hose connection.

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

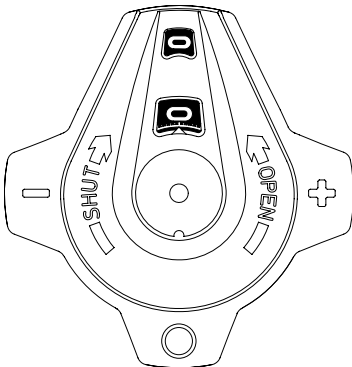


Fig. 2
The valve is set at 2.3

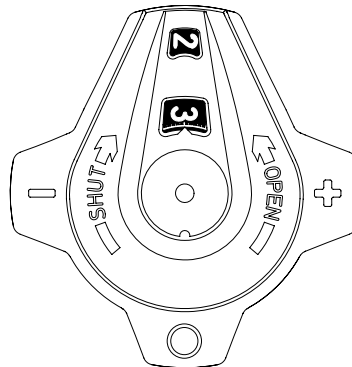
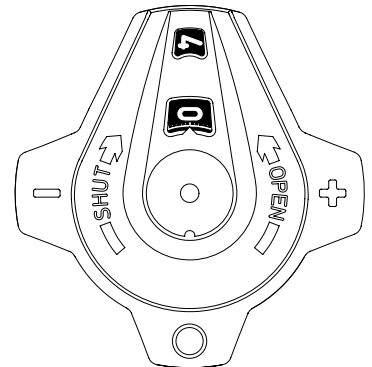


Fig. 3
Fully open valve



Measuring accuracy

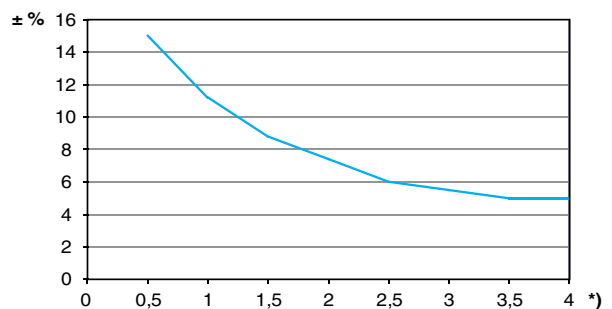
The zero position is calibrated and must not be changed.

Deviation of flow at different settings

The curve (Fig. 1) is valid for valves with normal pipe fittings (Fig. 2). Try also to avoid mounting taps and pumps, immediately before the valve.

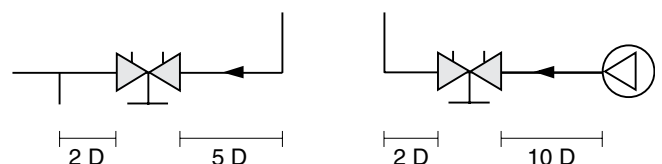
The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction although tolerances can be greater (maximum 5% more).

Fig. 1



*) Setting, No. of turns.

Fig. 2



D = Valve DN

Correction factors

The flow calculations are valid for water (+20°C). For other liquids with approximately the same viscosity as water (≤ 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.

Kv values

Turns	DN 15	DN 20	DN 25
0.5	-	0,118	0,521
1	0,099	0,248	0,728
1.5	0,155	0,447	1,00
2	0,277	0,709	1,26
2.5	0,452	1,03	1,81
3	0,678	1,34	2,65
3.5	0,962	1,93	3,85
4	1,27	2,63	4,91

Sizing

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

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

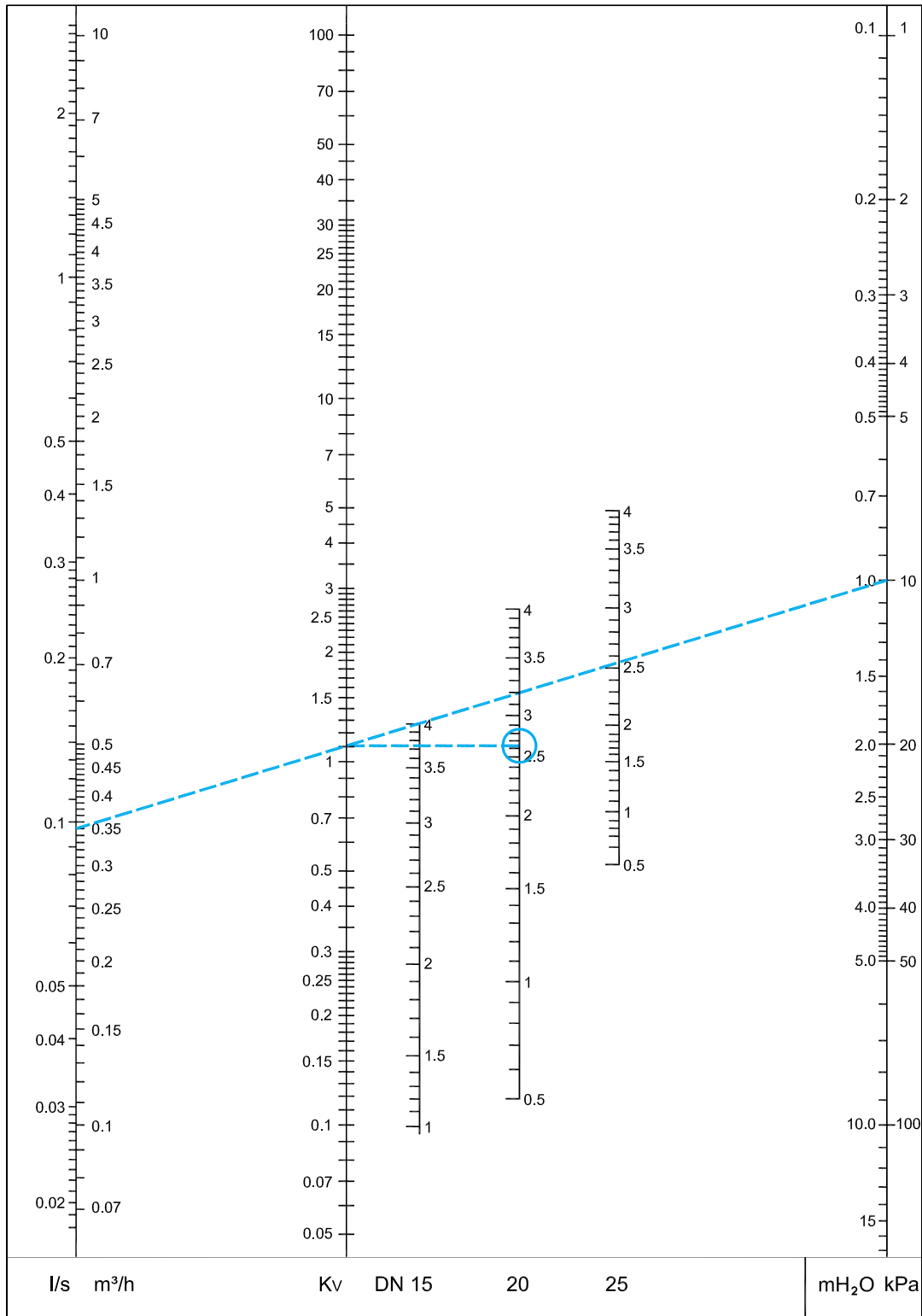
$$Kv = 36 \frac{q}{\sqrt{\Delta p}} \quad q \text{ l/s, } \Delta p \text{ kPa}$$

Example

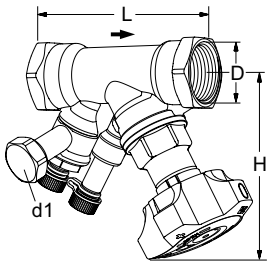
Flow is $0,35 \text{ m}^3/\text{h}$, Δp is 10 kPa.

1. Go to sizing diagram (When calculating the Kv by the formula go directly to step 4).
2. Draw a straight line between $0,35 \text{ m}^3/\text{h}$ and 10 kPa.
3. Read the needed Kv value where the line crosses the Kv-axis. In this case $Kv = 1,1$
4. Draw a horizontal line from Kv 1,1, which will cross the setting bars for all valves which fit the application. In this case DN 15 setting 3,7, DN 20 setting 2,6 and DN 25 setting 1,7.
5. Choose the smallest option (with some safety margin). In this case DN 20 is preferable.

Sizing diagram



Articles



With drain

Internal threads.

Thread according to ISO 228. Thread length according to ISO 7/1.

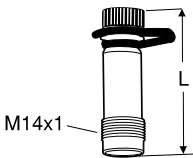
DN	D	L	H	Kvs	Kg	EAN	Article No
d1 = G3/4							
15*	G1/2	84	100	1,27	0,56	5902276836428	52 873-615
20*	G3/4	94	100	2,63	0,64	5902276836435	52 873-620
25	G1	105	105	4,91	0,77	5902276836442	52 873-625

→ = Flow direction

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

*) Can be connected to smooth pipes by KOMBI compression coupling.

Accessories

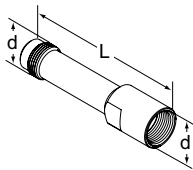


Measuring point

Max 120°C (intermittent 150°C)

AMETAL®/EPDM

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

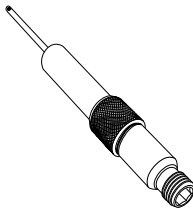


Extension for measuring point M14x1

Suitable when insulation is used.

AMETAL®

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



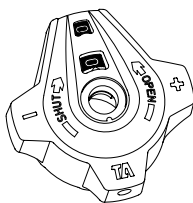
Measuring point, extension 60 mm

(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

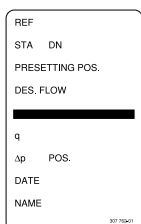


Handwheel

Complete

EAN Article No

7318794043503 52 186-007



Identification tag

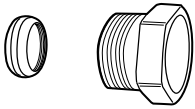
EAN Article No

7318792779206 52 161-990



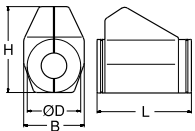
Allen key

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



KOMBI compression coupling
 Max.: 100°C
 (For more information see catalogue leaflet KOMBI.)

Male pipe threads on thrust screw	For pipes, diameter	EAN	Article No
G1/2	10	7318792874901	53 235-109
G1/2	12	7318792875007	53 235-111
G1/2	14	7318792875106	53 235-112
G1/2	15	7318792875205	53 235-113
G1/2	16	7318792875304	53 235-114
G3/4	15	7318792875403	53 235-117
G3/4	18	7318792875601	53 235-121
G3/4	22	7318792875700	53 235-123



Insulation
 For heating/cooling
 Material: EPP
 Fire class: B2 (DIN 4102)
 Max working temperature: 120°C
 (intermittent 140°C)
 Min working temperature: 12°C,
 -8°C at sealed joints.

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



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