

STAD



Balancing valves
DN 10-50, PN 25

STAD

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

- > **High accuracy for all settings**
Ensure accurate balancing and flow reading.
- > **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 (depending on valve type)

Dimensions:

DN 10-50

Pressure class:

PN 25

Temperature:

Max. working temperature: 120°C
(intermittent 150°C)
For higher temperatures (max. 150°C),
see STAD-C.
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 Hydronic Engineering.

Marking:

Body: IMI, TA, PN 25/400 WWP, DN and
inch size. DN 50 also CE.
Handwheel: TA, STAD* and DN.

Connection:

- Female thread according to ISO 228.
Thread length according to ISO 7/1.
- Male thread according to ISO 228.
Thread length according to DIN 3546.

Approvals:

WRAS

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.

Sizing

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

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

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

Kv values

Turns	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
0.5	-	0.136	0.533	0.599	1.19	1.89	2.62
1	0.091	0.226	0.781	1.03	2.09	3.40	4.10
1.5	0.134	0.347	1.22	2.13	3.36	4.74	6.76
2	0.264	0.618	1.95	3.64	5.22	6.25	11.4
2.5	0.461	0.931	2.71	5.26	7.77	9.16	15.8
3	0.799	1.46	3.71	6.65	9.82	12.8	21.5
3.5	1.22	2.07	4.51	7.79	11.9	16.2	27.0
4	1.36	2.56	5.39	8.59	14.2	19.3	32.3

NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAD, PN 25 version, is named STAD*.

Measuring accuracy

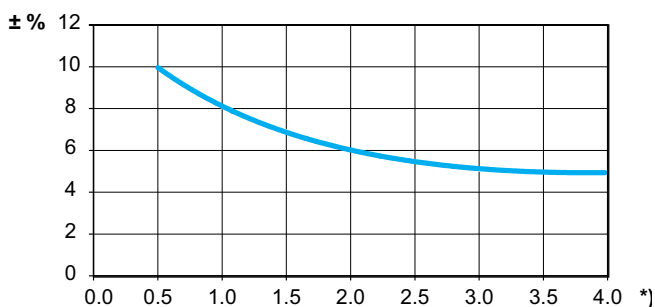
The zero position is calibrated and must not be changed.

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.

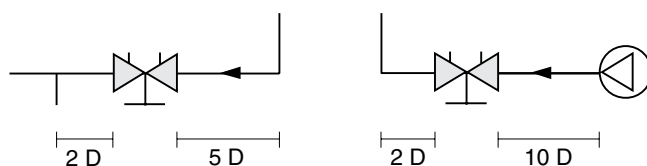
The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction although tolerances can be greater (maximum 5% more).

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.

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=5,06. Now draw a horizontal line from Kv=5,06. This intersects the bar for DN 25 which gives 2,44 turns.

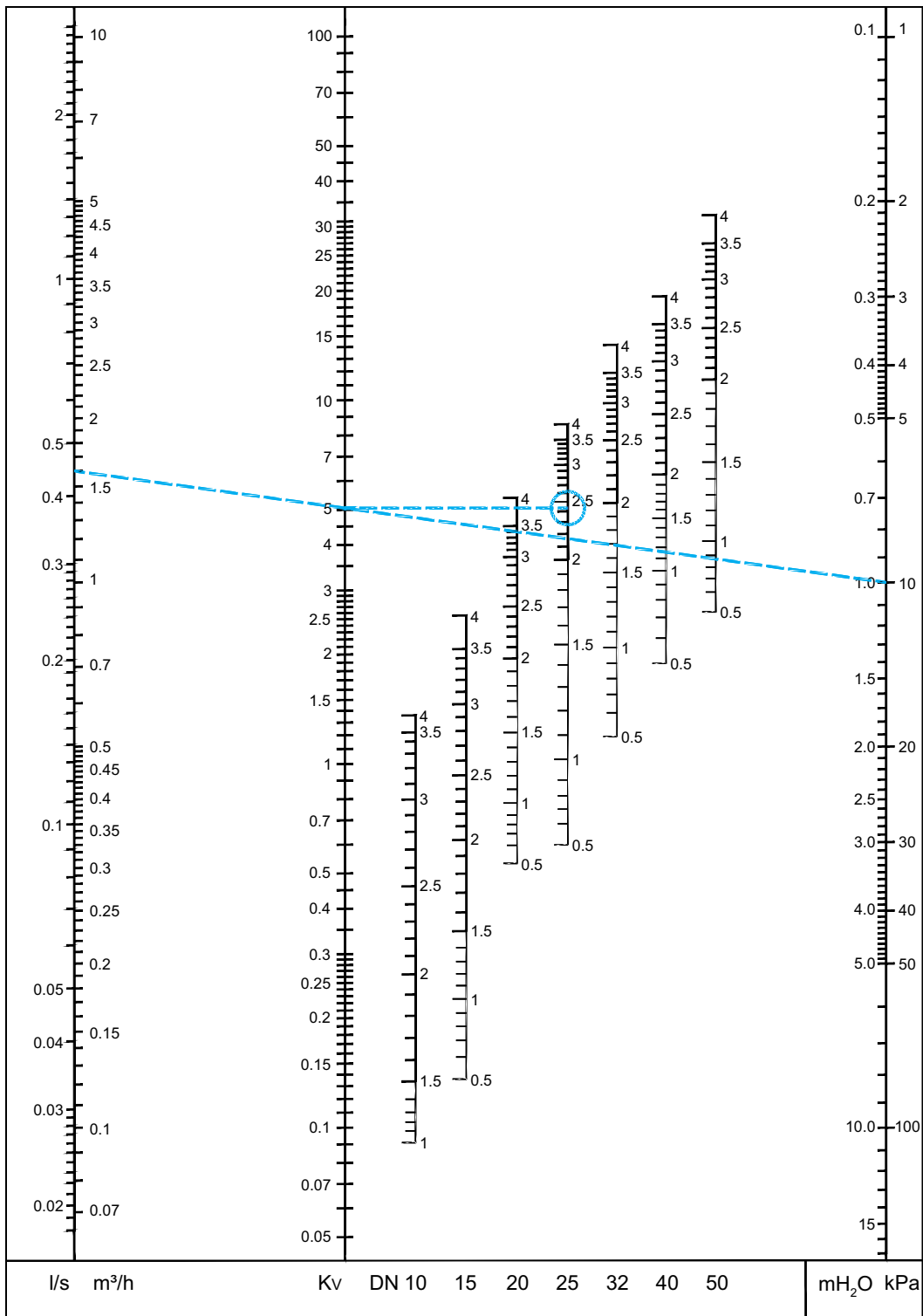
NOTE:

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=5.06 and flow-rate 1.6 m³/h.

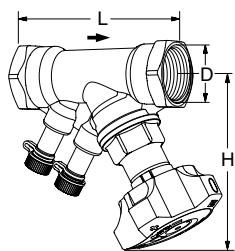
At 10 kPa and Kv=0.506 we get the flow-rate 0.16 m³/h, and at Kv=50.6, we get 16 m³/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram



NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAD, PN 25 version, is named STAD*.

With female threads

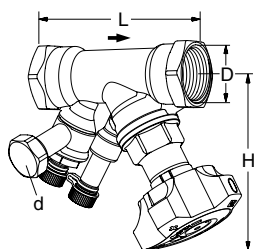


Without drain

Female threads.

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

DN	D	L	H	Kvs	Kg	EAN	Article No
10*	G3/8	73	100	1,36	0,44	5902276835278	52 851-010
15*	G1/2	84	100	2,56	0,47	5902276835285	52 851-015
20*	G3/4	94	100	5,39	0,55	5902276835292	52 851-020
25	G1	105	105	8,59	0,68	5902276835308	52 851-025
32	G1 1/4	121	110	14,2	1,0	5902276835315	52 851-032
40	G1 1/2	126	120	19,3	1,4	5902276835322	52 851-040
50	G2	155	120	32,3	2,0	5902276835339	52 851-050



With drain

Female threads.

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

DN	D	L	H	Kvs	Kg	EAN	Article No
d = G3/4							
10*	G3/8	73	100	1,36	0,53	5902276835414	52 851-610
15*	G1/2	84	100	2,56	0,56	5902276835421	52 851-615
20*	G3/4	94	100	5,39	0,64	5902276835438	52 851-620
25	G1	105	105	8,59	0,77	5902276835445	52 851-625
32	G1 1/4	121	110	14,2	1,1	5902276835452	52 851-632
40	G1 1/2	126	120	19,3	1,5	5902276835469	52 851-640
50	G2	155	120	32,3	2,1	5902276835476	52 851-650

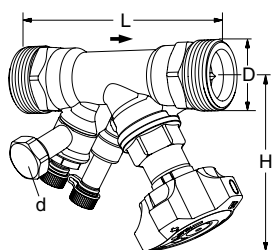
→ = Flow direction

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

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

NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAD, PN 25 version, is named STAD*.

With male threads (STADA)



With drain

Male threads.

Thread according to ISO 228. Thread length according to DIN 3546.

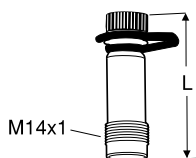
DN	D	L	H	Kvs	Kg	EAN	Article No
d = G3/4							
10*	G1/2	95	100	1,36	0,56	5902276836329	52 852-610
15*	G3/4	108	100	2,56	0,61	5902276836336	52 852-615
20*	G1	122	100	5,39	0,74	5902276836343	52 852-620
25	G1 1/4	137	105	8,59	1,0	5902276836350	52 852-625
32	G1 1/2	157	110	14,2	1,4	5902276836367	52 852-632
40	G2	166	120	19,3	2,1	5902276836374	52 852-640
50	G2 1/2	200	120	32,3	3,0	5902276836381	52 852-650

→ = Flow direction

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

NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAD, PN 25 version, is named STAD*.

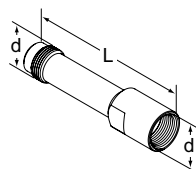
Accessories



Measuring point

Max 120°C (intermittent 150°C)
AMETAL®/EPDM

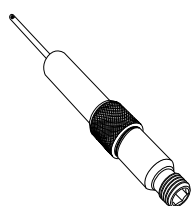
L	EAN	Article No
44	7318792813207	52 179-014
103	7318793858108	52 179-015



Extension for measuring point M14x1

Suitable when insulation is used.
AMETAL®

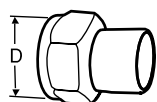
d	L	EAN	Article No
M14x1	71	7318793969507	52 179-016



Measuring point, extension 60 mm

Can be installed without draining of the system.
AMETAL®/Stainless steel/EPDM

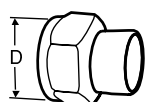
L	EAN	Article No
60	7318792812804	52 179-006



Welding connection

Swivelling nut
Max 120°C
Brass/Steel 1.0045 (EN 10025-2)

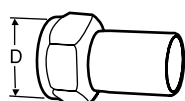
Valve DN	D	Pipe DN	EAN	Article No
10	G1/2	10	7318792748400	52 009-010
15	G3/4	15	7318792748509	52 009-015
20	G1	20	7318792748608	52 009-020
25	G1 1/4	25	7318792748707	52 009-025
32	G1 1/2	32	7318792748806	52 009-032
40	G2	40	7318792748905	52 009-040
50	G2 1/2	50	7318792749001	52 009-050



Soldering connection

Swivelling nut
Max 120°C
Brass/gunmetal CC491K (EN 1982)

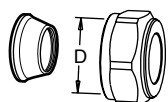
Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	10	7318792749100	52 009-510
10	G1/2	12	7318792749209	52 009-512
15	G3/4	15	7318792749308	52 009-515
15	G3/4	16	7318792749407	52 009-516
20	G1	18	7318792749506	52 009-518
20	G1	22	7318792749605	52 009-522
25	G1 1/4	28	7318792749704	52 009-528
32	G1 1/2	35	7318792749803	52 009-535
40	G2	42	7318792749902	52 009-542
50	G2 1/2	54	7318792750007	52 009-554



Connection with smooth end

For connection with press coupling
Swivelling nut
Max 120°C
Brass/AMETAL®

Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	12	7318793810502	52 009-312
15	G3/4	15	7318793810601	52 009-315
20	G1	18	7318793810700	52 009-318
20	G1	22	7318793810809	52 009-322
25	G1 1/4	28	7318793810908	52 009-328
32	G1 1/2	35	7318793811004	52 009-335
40	G2	42	7318793811103	52 009-342
50	G2 1/2	54	7318793811202	52 009-354



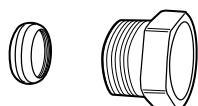
Compression connection

Max 100°C

Brass/AMETAL®

Support bushes shall be used, for more information see catalogue leaflet FPL.

Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	8	7318793620002	53 319-208
10	G1/2	10	7318793620101	53 319-210
10	G1/2	12	7318793620200	53 319-212
10	G1/2	15	7318793620309	53 319-215
10	G1/2	16	7318793620408	53 319-216
15	G3/4	15	7318793705006	53 319-615
15	G3/4	18	7318793705105	53 319-618
15	G3/4	22	7318793705204	53 319-622

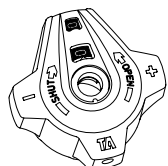


KOMBI compression coupling

Max.: 100°C

(For more information see catalogue leaflet KOMBI.)

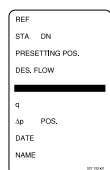
Male pipe threads on thrust screw	For pipes, diameter	EAN	Article No
G3/8	10	7318792874604	53 235-104
G3/8	12	7318792874703	53 235-107
G1/2	10	7318792874901	53 235-109
G1/2	12	7318792875007	53 235-111
G1/2	14	7318792875106	53 235-112
G1/2	15	7318792875205	53 235-113
G1/2	16	7318792875304	53 235-114
G3/4	15	7318792875403	53 235-117
G3/4	18	7318792875601	53 235-121
G3/4	22	7318792875700	53 235-123



Handwheel

Complete

EAN	Article No
7318794043503	52 186-007



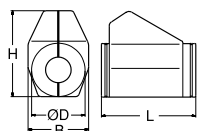
Identification tag

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



Insulation

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

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

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