STAD-C

Balancing valve

TA

Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

The STAD-C balancing valve has been specially developed for use in indirect cooling systems but performs just as effectively in refrigerated counters and cold-storage rooms. Whatever the application, the STAD-C delivers TA's unrivalled hydronic performance.

PNEUMATEX › TA › HEIMEIER ›

TA HYDRONICS

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
Doubly secured and self-sealing for total protection against leakage. Also enable more straightforward maintenance.

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

Dimensions:
DN 15-50

Pressure class:
PN 20

Temperature:
Max. working temperature: 150°C (At temperatures higher than 120°C, the handwheel should be removed.)
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

AMETAL® is the dezincification resistant alloy of TA.

Marking:
Body: TA, PN 20/150, DN and inch size.
Handwheel: Valve type and DN.

Measuring points

The measuring points on STAD-C are self-sealed and double-secured. Connect the measuring hoses directly on the measuring points, then open the measuring points by using a wrench. Close the measuring points before disconnecting the measuring hoses.

Sizing

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

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

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

Kv values

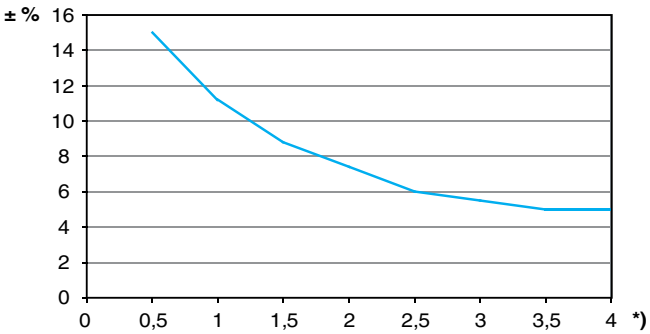
Turns	DN 15/14	DN 20	DN 25	DN 32	DN 40	DN 50
0.5	0.127	0.511	0.60	1.14	1.75	2.56
1	0.212	0.757	1.03	1.90	3.30	4.20
1.5	0.314	1.19	2.10	3.10	4.60	7.20
2	0.571	1.90	3.62	4.66	6.10	11.7
2.5	0.877	2.80	5.30	7.10	8.80	16.2
3	1.38	3.87	6.90	9.50	12.6	21.5
3.5	1.98	4.75	8.00	11.8	16.0	26.5
4	2.52	5.70	8.70	14.2	19.2	33.0

Measuring accuracy

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

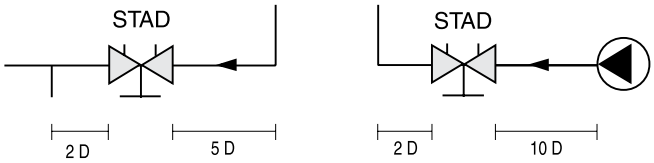
Deviation of flow at different settings
The curve (Fig. 4) is valid for valves with normal pipe fittings (Fig. 5). Try also to avoid mounting taps and pumps, immediately before the valve.
The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction although tolerances can be greater (maximum 5% more).

Fig. 4



*) Setting, No. of turns.

Fig. 5



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 TA Select or directly in TA's 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

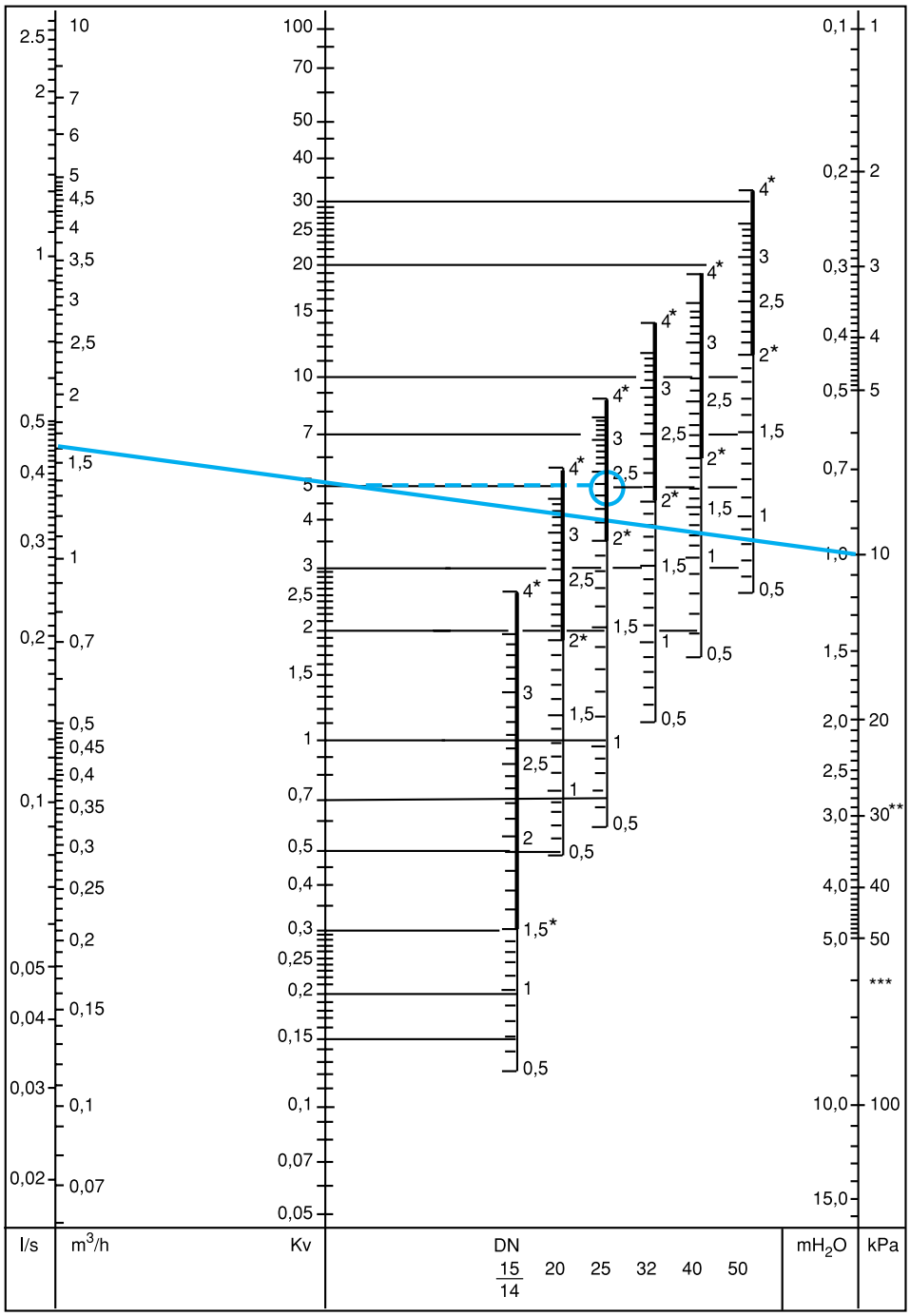
Diagram example

Wanted:
Presetting for DN 25 at a desired flow rate of 1,6 m^3/h and a pressure drop of 10 kPa.

Solution:
Draw a straight line joining 1,6 m^3/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 2,35 turns.

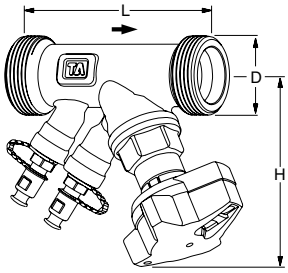
NOTE:
If the flow rate is out of the scale in the diagram, the reading can be made as follows:
Starting with the example above, we get 10 kPa, Kv=5 and flow-rate 1.6 m^3/h.
At 10 kPa and Kv=0,5 we get the flow-rate 0,16 m^3/h, and at Kv=50, we get 16 m^3/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram



*) Recommended area
**) 25 db (A)
***) 35 db (A)

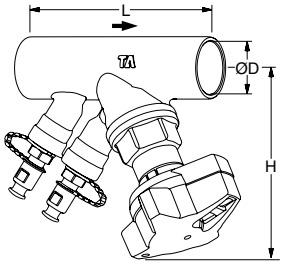
Articles



Male thread

Thread length according to DIN 3546

Article No	EAN	DN	D	L	H	Kvs	Kg
52 156-014	7318793780409	15/14	G3/4	97	100	2,52	0,62
52 156-020	7318793780508	20	G1	110	100	5,70	0,72
52 156-025	7318793780607	25	G1 1/4	115	105	8,70	0,88
52 156-032	7318793780706	32	G1 1/2	134	110	14,2	1,2
52 156-040	7318793780805	40	G2	150	120	19,2	1,6
52 156-050	7318793780904	50	G2 1/2	168	120	33,0	2,3



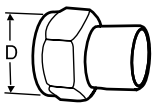
Soldering ends

Article No	EAN	DN	D	L	H	Kvs	Kg
52 153-014	7318793779809	15/14	15	90	100	2,52	0,62
52 153-020	7318793779908	20	22	97	100	5,70	0,68
52 153-025	7318793780003	25	28	110	105	8,70	0,80
52 153-032	7318793780102	32	35	124	110	14,2	1,2
52 153-040	7318793780201	40	42	130	120	19,2	1,5
52 153-050	7318793780300	50	54	155	120	33,0	2,3

→ = Flow direction

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

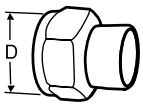
Accessories



Welding connection

Max 150°C

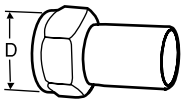
Article No	EAN	Valve DN	D	Pipe DN
52 009-010	7318792748400	10	G1/2	10
52 009-015	7318792748509	15	G3/4	15
52 009-020	7318792748608	20	G1	20
52 009-025	7318792748707	25	G1 1/4	25
52 009-032	7318792748806	32	G1 1/2	32
52 009-040	7318792748905	40	G2	40
52 009-050	7318792749001	50	G2 1/2	50



Soldering connection

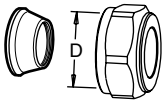
Max 150°C

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



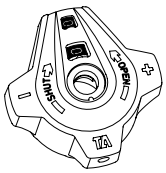
Connection with smooth end
For connection with press coupling
Max 150°C

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



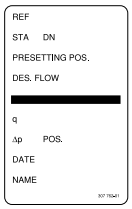
Compression connection
Max 100°C
Support bushes shall be used, for more information see catalogue leaflet FPL.

Article No	EAN	Valve DN	D	Pipe Ø
53 319-208	7318793620002	10	G1/2	8
53 319-210	7318793620101	10	G1/2	10
53 319-212	7318793620200	10	G1/2	12
53 319-215	7318793620309	10	G1/2	15
53 319-216	7318793620408	10	G1/2	16
53 319-615	7318793705006	15	G3/4	15
53 319-618	7318793705105	15	G3/4	18
53 319-622	7318793705204	15	G3/4	22
53 319-928	7318793705402	20	G1	28



Handwheel
Complete

Article No	EAN
52 186-003	7318792834905



Identification tag
Incl 1 pc per valve

Article No	EAN
52 161-990	7318792779206

Allen key

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

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For the most up to date information about our products and specifications, please visit www.tahydronics.com.

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