Climate
Control

IMI TA

STA

Double regulating valves
DN 15-50

Breakthrough
engineering for
a better world

STA

The STA double regulating valve 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.

AMETAL®
Dezincification resistant alloy that guarantees a longer valve lifetime and lowers the risk of leakage.

Technical description

Application:
Heating and cooling systems
Tapwater systems

Functions:
Pre-setting
Shut-off
Draining

Dimensions:
DN 15-50

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

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

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. DN 50 also CE.
Handwheel: TA, STA* and DN.

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

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.

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

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

Kv values

Turns	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	0.226	0.781	1.03	2.09	3.40	4.10
1.5	0.347	1.22	2.13	3.36	4.74	6.76
2	0.618	1.95	3.64	5.22	6.25	11.4
2.5	0.931	2.71	5.26	7.77	9.16	15.8
3	1.46	3.71	6.65	9.82	12.8	21.5
3.5	2.07	4.51	7.79	11.9	16.2	27.0
4	2.56	5.39	8.59	14.2	19.3	32.3

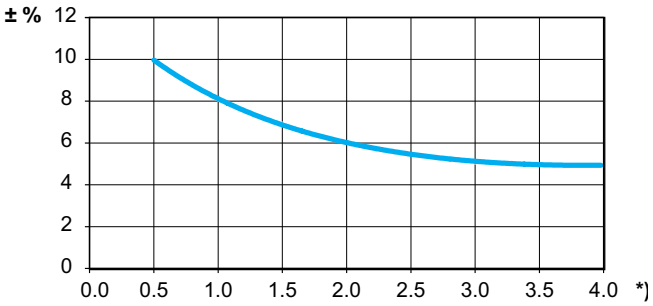
NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STA, PN 25 version, is named STA*.

Measuring accuracy

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

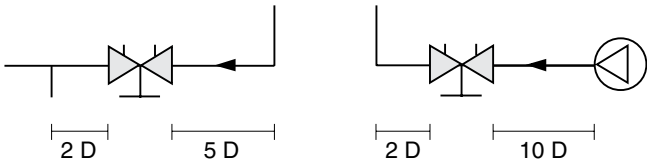
Deviation of flow at different settings
The curve (Fig. 1) is valid for valves with normal pipe fittings (Fig. 2). Try also to avoid mounting taps and pumps, immediately before the valve.
The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction 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°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

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

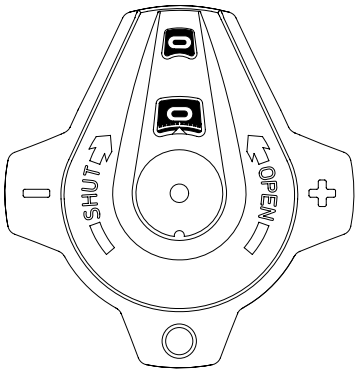


Fig. 2
The valve is set at 2.3

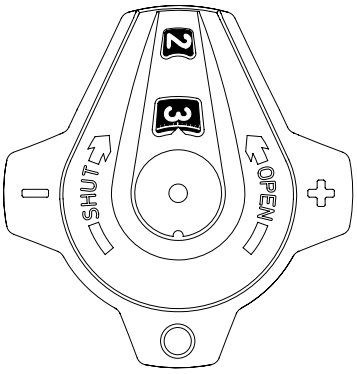


Fig. 3
Fully open valve

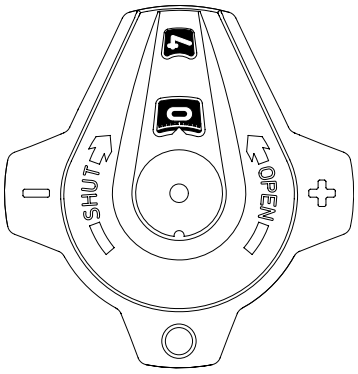


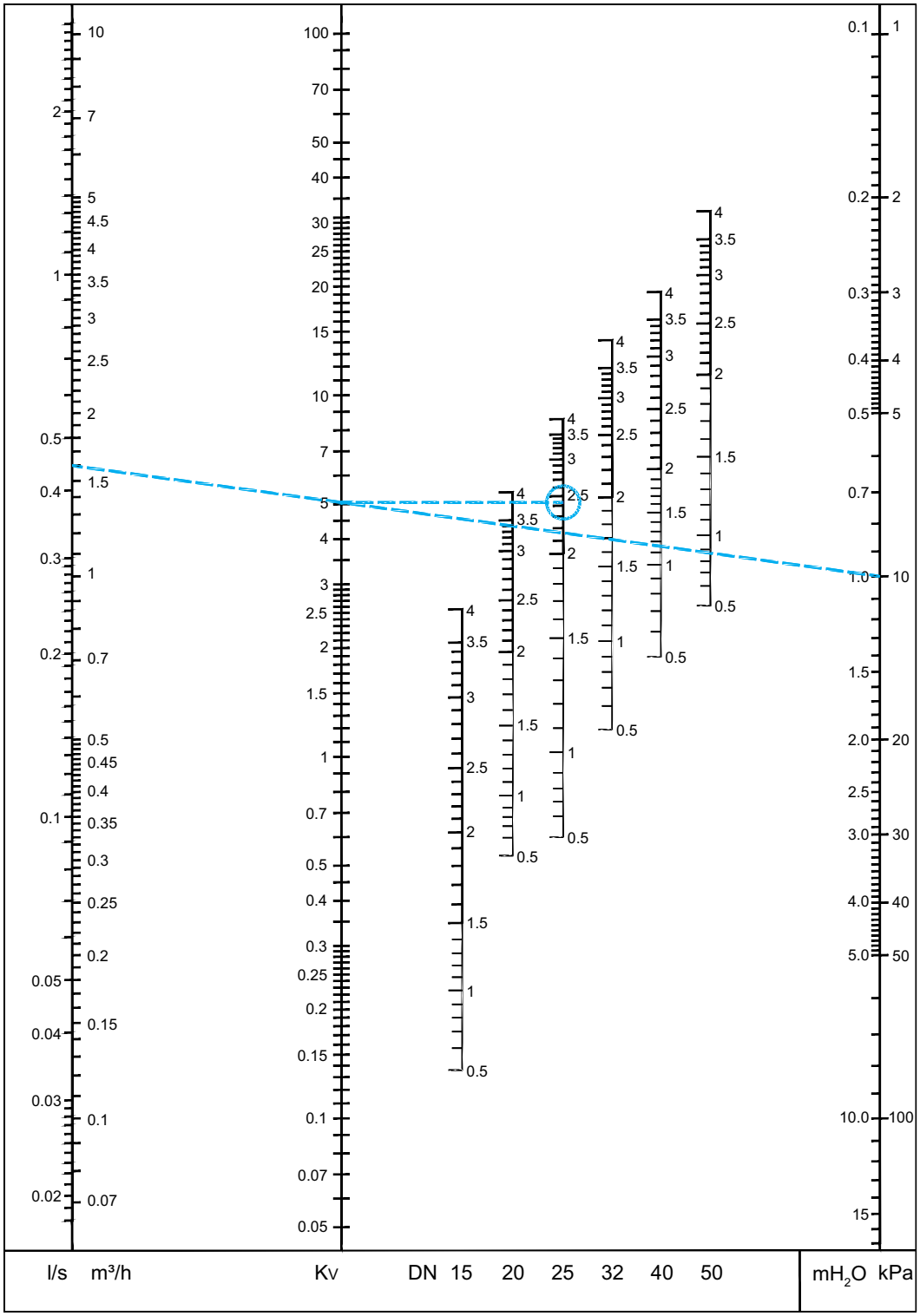
Diagram example

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

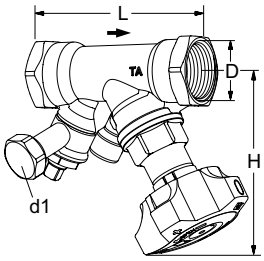
NOTE:
If the flow rate is out of the scale in the diagram, the reading can be made as follows:
Starting with the example above, we get 10 kPa, Kv=5.06 and flow-rate 1.6 m^3/h.
At 10 kPa and Kv=0.506 we get the flow-rate 0.16 m^3/h, and at Kv=50.6, we get 16 m^3/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram



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

Articles



With drain
Internal threads.
Thread according to ISO 228. Thread length according to ISO 7/1.

DN	D	L	H	Kvs	Kg	Article No
d1 = G3/4						
15*	G1/2	84	100	2,56	0,56	52 850-615
20*	G3/4	94	100	5,39	0,64	52 850-620
25	G1	105	105	8,59	0,77	52 850-625
32	G1 1/4	121	110	14,2	1,1	52 850-632
40	G1 1/2	126	120	19,3	1,5	52 850-640
50	G2	155	120	32,3	2,1	52 850-650

→ = Flow direction
Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.
*) Can be connected to smooth pipes by KOMBI compression coupling.

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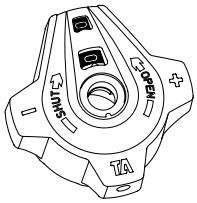
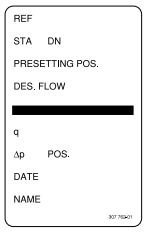
Accessories



Handwheel
Complete

Article No
52 186-007

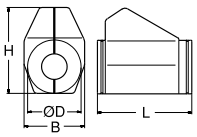


Identification tag

Article No
52 161-990

Allen key

[mm]		Article No
3	Pre-setting	52 187-103



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	Article No
10-20	155	135	90	103	52 189-615
25	175	142	94	103	52 189-625
32	195	156	106	103	52 189-632
40	214	169	108	113	52 189-640
50	245	178	108	114	52 189-650