Technical description

Application:
Central heating, cooling systems and in district heating substations, primary side.

Function:
Flow control. Closes at increasing flow.
Measuring (accessory)

Pressure class:
PN 25 or PN 16 (DN 100)

Max. differential pressure:
1600 kPa = 16 bar

Pressure drop on the throttle (Fc):
12, 20 or 40 kPa.

Temperature:
Max. working temperature: 140°C
Min. working temperature: -10°C

Media:
Water and neutral fluids, water-glycol mixtures.

Material:
Valve body: Ductile iron EN-GJS-400-18LT
Diaphragms and gaskets: EPDM

Surface treatment:
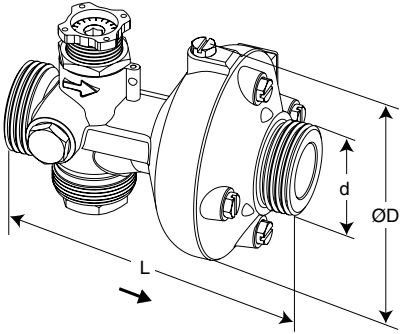Electrophoretic painting.

Marking:
TA, DN, PN, Fc, Kvs, GGG-40.3 and flow direction arrow.

Flanges:
DN 15-50 (optional): According to EN-1092-2:1997, type 16.
DN 65-125: According to EN-1092-2:1997, type 21.

we knowhow

DN 15-50

TA No	DN	d	D	L	Kvs	q_{max} (m³/h)	Kg
Fc = 12 kPa							
52 756-720	15/20	R1	90	110	4,1	0,9	1,3
52 756-725	25/32	R1 1/4	105	150	16	2,8	2,9
52 756-740	40/50	R2	138	190	35	7,0	4,5
Fc = 20 kPa							
52 756-820	15/20	R1	90	110	4,1	1,1	1,3
52 756-825	25/32	R1 1/4	105	150	16	4,0	2,9
52 756-840	40/50	R2	138	190	35	10	4,5
Fc = 40 kPa							
52 756-920	15/20	R1	90	110	4,1	1,5	1,3
52 756-925	25/32	R1 1/4	105	150	16	6,5	2,9
52 756-940	40/50	R2	138	190	35	14	4,5

DN 65-100
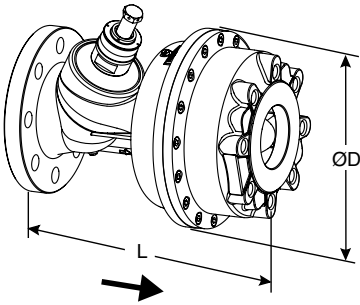
TA No	DN	D	L	Kvs	q_{max} (m³/h)	Kg
Fc = 12 kPa (PN 25)						
52 756-765	65	220	290	70	15	20
52 756-780	80	220	310	70	18	22
52 756-790	100	320	350	100	32	54
Fc = 20 kPa (PN 25)						
52 756-865	65	220	290	70	20	20
52 756-880	80	220	310	70	24	22
52 756-890	100	320	350	100	40	54
Fc = 40 kPa (PN 25)						
52 756-965	65	220	290	70	30	20
52 756-980	80	220	310	70	34	22
52 756-990	100	320	350	100	55	54
Fc = 12 kPa (PN 16)						
52 755-790	100	320	350	100	32	54
Fc = 20 kPa (PN 16)						
52 755-890	100	320	350	100	40	54
Fc = 40 kPa (PN 16)						
52 755-990	100	320	350	100	55	54

→ = Flow direction

Connections for DN 15-50

With female thread
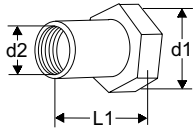
TA No	d1	d2	L1
52 759-015	G1	G1/2	26
52 759-020	G1	G3/4	32
52 759-025	G1 1/4	G1	47
52 759-032	G1 1/4	G1 1/4	52
52 759-040	G2	G1 1/2	52
52 759-050	G2	G2	64,5

With male thread
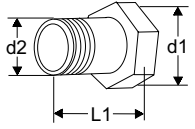
TA No	d1	d2	L1
52 759-115	G1	G1/2	34
52 759-120	G1	G3/4	40
52 759-125	G1 1/4	G1	40
52 759-132	G1 1/4	G1 1/4	45
52 759-140	G2	G1 1/2	45
52 759-150	G2	G2	50

For welding
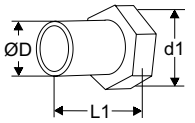
TA No	d1	D	L1
52 759-315	G1	20,8	37
52 759-320	G1	26,3	42
52 759-325	G1 1/4	33,2	47
52 759-332	G1 1/4	40,9	47
52 759-340	G2	48,0	47
52 759-350	G2	60,0	52

With flange
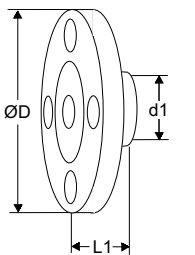
TA No	d1	D	L1
52 759-515	G1	95	10
52 759-520	G1	105	20
52 759-525	G1 1/4	115	5
52 759-532	G1 1/4	140	15
52 759-540	G2	150	5
52 759-550	G2	165	20

Operating function

DN 15-50

DN 65-100
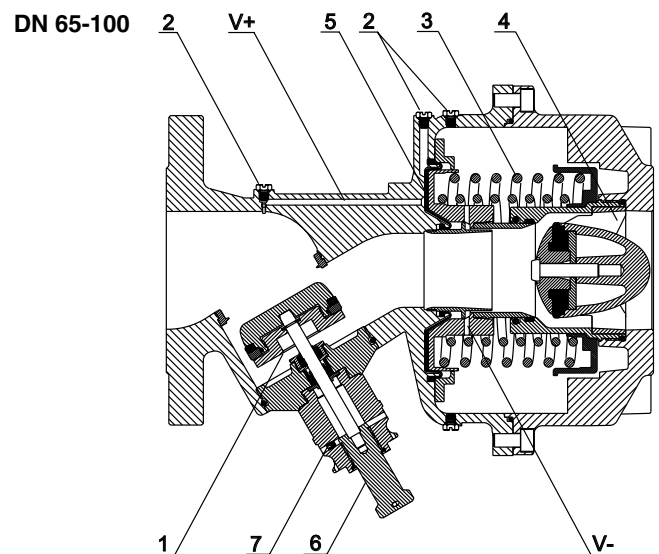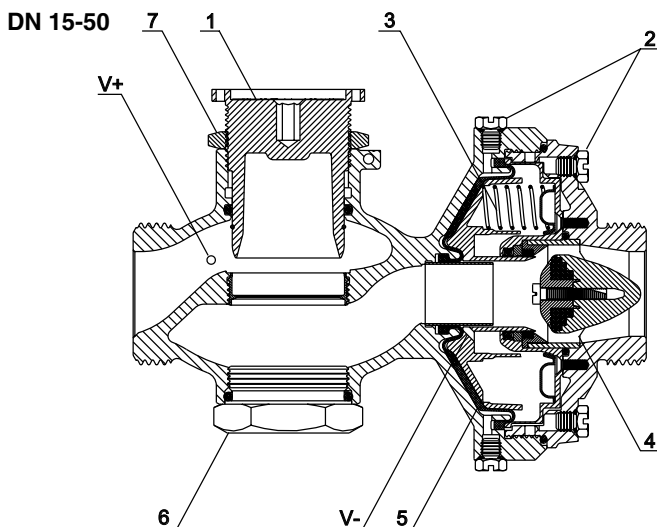
The throttle for flow adjustment (1) and inline flow regulating valve (4) are built in series in one common housing.
Pressure upstream of the throttle acts through internal impulse pipe (V+) to the inlet side of the diaphragm (5) in the flow controller and attempts to close it.
Pressure downstream the throttle acts through another internal impulse pipe (V-) to the outlet side of the diaphragm and together with the spring force (3) attempts to open the valve. The accuracy of flow regulation is independent on the pressures in front of and behind the controller.

Installation

Install the controller in the return pipe (downstream the consumer) or in the inlet pipe (upstream the consumer). It is recommended to install in the return pipe because of the lower temperature.
The flow direction is shown by the arrow (11) on valve body.
The best position is horizontal with vent screws on top and the flow adjustment scale should be visible.
Installation of a strainer in front of the valve is recommended. It is important to ensure that the working temperature and pressure do not exceed allowed values.
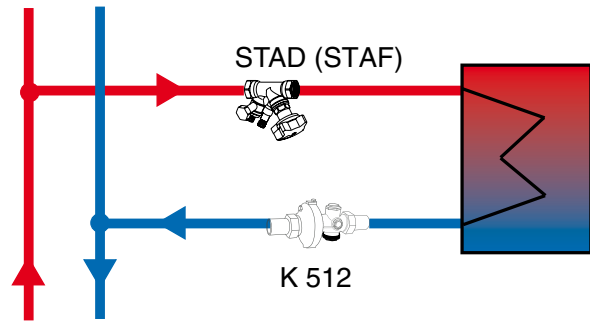
Before you mount the controller, check the fitting length of the controller and distance between connections on the pipeline.
Fit the connections (welding and threaded ends) to the pipeline first, then clean the remains of welding if needed. Then install the controller.
If you use flanged connections, check pitch diameter and the diameter of the holes for the screws.

When the pipeline and the controller are full of water and the pressure is stabilized, vent the controller by the vent screws (2).

Installation of balancing valve STAD (STAF) is recommended to enable flow measurement, commissioning and troubleshooting with balancing instrument TA-CBI or measuring instrument TA-CMI.

Setting

Flow adjustment DN 15-50
1. Unscrew the fixing nut (7) on a throttle up till the end.
2. Turn the throttle (1) clockwise down to the start position (the point 0,0 on the adjustment scale and the red pointer (8) on the body should be aligned).
3. Then adjust the corresponding number of scale turns according to the flow chart.
4. When the flow is adjusted, tighten a fixing nut clockwise down untill it stops.
5. It is possible to secure the position of a throttle with the leaden seal - use holes on the body (9) and the throttle (10).

The water flow has been measured on each individual valve in all positions of adjustment scale.

Flow adjustment of DN 65-100
1. Unscrew the fixing screw (7) with an Allen key 2 mm.
2. Screw the flow adjustment screw (1) clockwise until it stops (setting 0,0 on the adjustment scale).
3. Unscrew the flow adjustment screw for the necessary full number of turns.
4. Then unscrew the flow adjustment screw further until the corresponding decimal number is aligned with the pointer (8).
5. At the end tighten the fixing screw.

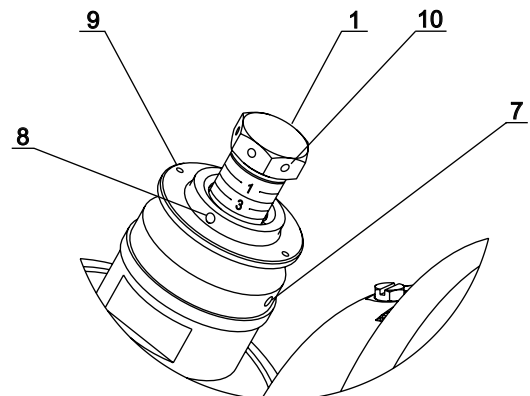The water flow has been measured on each individual valve in all positions of adjustment scale.

Each valve has its own identity number and individual flow chart included in the scope of supply. The flow chart corresponds to water only. A copy of the chart can be provided by supplier.
Provide next data: type, DN, Fc, serial number.
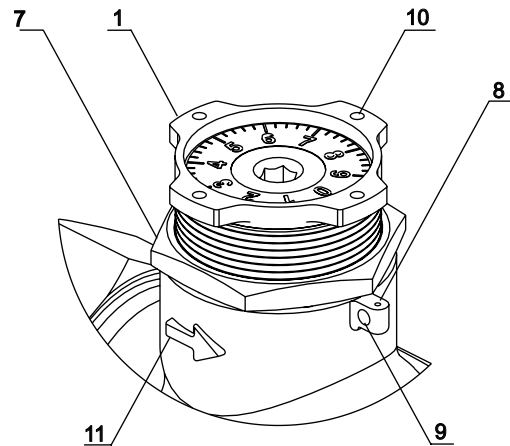
Sizing

Select the size according to maximal flow which depends on nominal size (DN) and pressure drop in the throttle (Fc). Maximal flow depends on nominal size (DN) and pressure drop in the throttle (Fc).
Total pressure drop is calulated by the formula:
$\Delta p = Fc + 100 \times q^2 / Kvs^2$ [kPa], where q is flow in m³/h and Fc is constant pressure drop in the throttle (12, 20 or 40 kPa).

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