

Technical description

Application:

Heating and cooling systems with variable flow.

Functions:

Differential pressure control over the load.

Pressure class:

DN 15 - 125: PN 25
(DN 65 - 125: PN 16 on request)

Max. differential pressure:

1600 kPa = 16 bar

Temperature:

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

Setting range:

Δp over the load is adjustable within 5-30 kPa, 10-60 kPa,
10-100 kPa or 60-150 kPa.
Delivery setting: Maximum value (30, 60, 100 resp 150 kPa).

Media:

Water and neutral fluids, water-glycol mixtures.

Material:

Valve body: Ductile iron EN-GJS-400-18LT
Diaphragms and gaskets: EPDM
Adjustment ring: DN 15-50 Ryton plastic, DN 65-125 R St 37-2 steel.

Surface treatment:

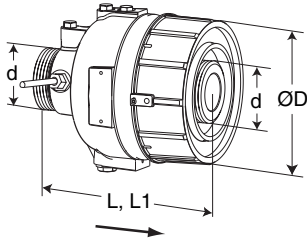
Electrophoretic painting.

Marking:

TA, DN, PN, GGG 40.3, Kvs, Δp and flow direction arrow.

Flanges:

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

DA 516**DN 15-50****5-30 kPa**

TA No	DN	d	D	L	L1*	Kvs	q _{max} m ³ /h	Kg
52 763-015	15/20	G1	78	106	116	4	2,5	1,5
52 763-025	25/32	G1 1/4	98	125	150	12	7,2	2,6
52 763-040	40/50	G2	130	162	190	30	15	5,8

10-60 kPa

TA No	DN	d	D	L	L1*	Kvs	q _{max} m ³ /h	Kg
52 761-015	15/20	G1	78	106	116	4	2,5	1,5
52 761-025	25/32	G1 1/4	98	125	150	12	7,2	2,6
52 761-040	40/50	G2	130	162	190	30	15	5,8

10-100 kPa

TA No	DN	d	D	L	L1*	Kvs	q _{max} m ³ /h	Kg
52 760-015	15/20	G1	78	106	116	4	2,5	1,5
52 760-025	25/32	G1 1/4	98	125	150	12	7,2	2,6
52 760-040	40/50	G2	130	162	190	30	15	5,8

60-150 kPa

TA No	DN	d	D	L	L1*	Kvs	q _{max} m ³ /h	Kg
52 762-015	15/20	G1	78	106	116	4	2,5	1,5
52 762-025	25/32	G1 1/4	98	125	150	12	7,2	2,6
52 762-040	40/50	G2	130	162	190	30	15	5,8

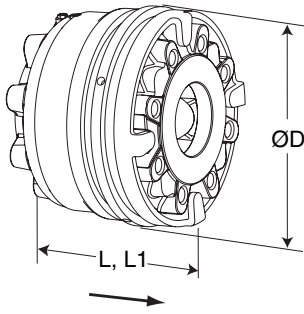
Capillary pipe (Ø6) included:
DN 15-50: 1 200 mm

➔ = Flow direction

*) Length incl adjustment ring.

DN 65-125

DN 65-125 are flanged and do not need any separate connections.
 PN 16 on request.

**5-30 kPa**

TA No	DN	D	L	L1*	Kvs	Q _{max} m ³ /h	Kg
52 763-065	65	210	160	160	60	38	18
52 763-080	80	210	160	160	60	38	18
52 763-090	100	320	254	254	150	88	58
52 763-091	125	320	254	254	150	88	58

10-60 kPa

TA No	DN	D	L	L1*	Kvs	Q _{max} m ³ /h	Kg
52 761-065	65	210	160	160	60	38	18
52 761-080	80	210	160	160	60	38	18
52 761-090	100	320	254	254	150	88	58
52 761-091	125	320	254	254	150	88	58

10-100 kPa


TA No	DN	D	L	L1*	Kvs	Q _{max} m ³ /h	Kg
52 760-065	65	210	160	160	60	38	18
52 760-080	80	210	160	160	60	38	18
52 760-090	100	320	254	254	150	88	57
52 760-091	125	320	254	254	150	88	57

60-150 kPa

TA No	DN	D	L	L1*	Kvs	Q _{max} m ³ /h	Kg
52 762-065	65	210	160	160	60	38	18
52 762-080	80	210	160	160	60	38	18
52 762-090	100	320	254	254	150	88	58
52 762-091	125	320	254	254	150	88	58

Capillary pipe (Ø6) included:

DN 65-125: 1 500 mm

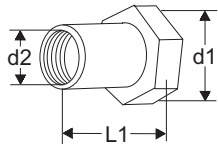
 = Flow direction

*) Length incl adjustment ring.

Connections

Connection with female thread

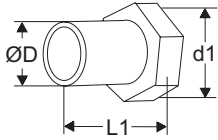
For DN 15-50



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

Connection for welding

For DN 15-50

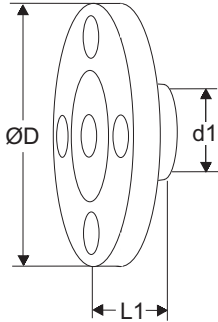


TA No	d1	D	L1
52 759-315	G1	20,8	37
52 759-320	G1	26,3	42
52 759-325	G1 1/4	33,2	47
52 759-332	G1 1/4	40,9	47
52 759-340	G2	48,0	47
52 759-350	G2	60,0	52

Connection with flange

For DN 15-50

Attention! Can be used on the inlet side only.

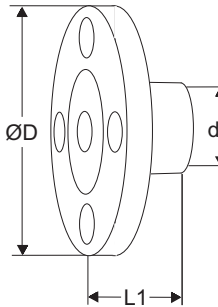


TA No	d1	D	L1
52 759-515	G1	95	10
52 759-520	G1	105	20
52 759-525	G1 1/4	115	5
52 759-532	G1 1/4	140	15
52 759-540	G2	150	5
52 759-550	G2	165	20

Connection with flange

For DN 15-50

Attention! Must be used on the outlet side.



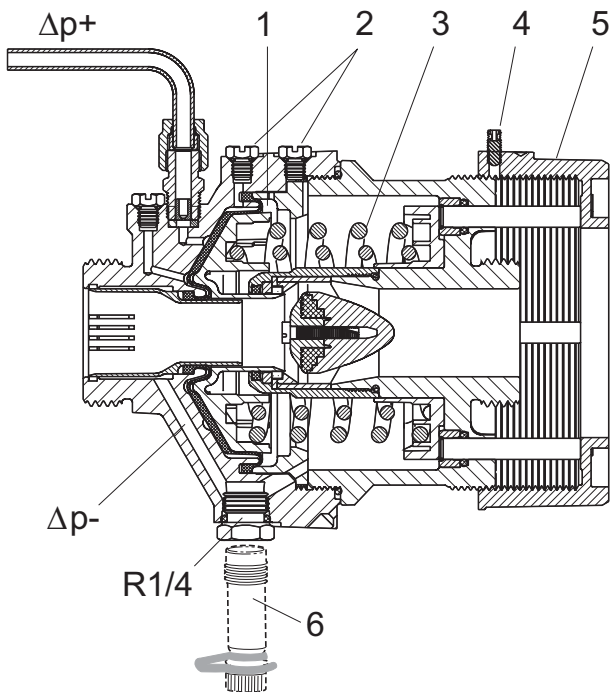
TA No	d1	D	L1
52 759-615	G1	95	47
52 759-620	G1	105	47
52 759-625	G1 1/4	115	62
52 759-632	G1 1/4	140	62
52 759-640	G2	150	72
52 759-650	G2	165	72

Operating function

The pressure before the load acts through an external capillary pipe ($\Delta p+$) on the plus side of the diaphragm (1) and attempts to close the valve.

The pressure after the load acts via an internal capillary pipe in the valve body and attempts, together with the spring (3) force, to open the valve. In this way, the differential pressure over the load is kept constant on the set value.

The spring force can be adjusted by turning the adjustment ring (5). Adjustment can be fixed by tightening the fixing screw (4).



1. Diaphragm
2. Venting screws
3. Spring
4. Fixing screw
5. Adjustment ring
6. Measuring point (accessory)

Installation

Note! It is not allowed to dismount the valve body.

By incorrect handling, the controller may not work properly and safety problems may occur.

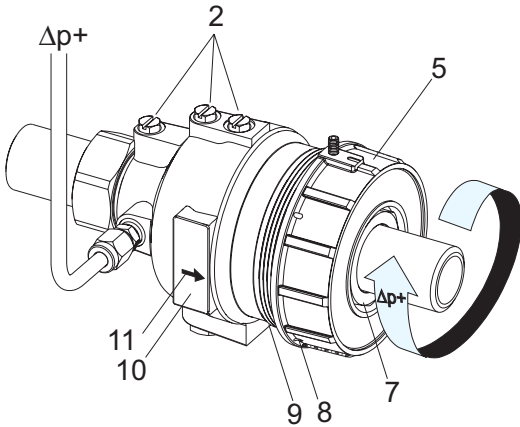
The DA 516 must be installed in the return pipe. Flow direction is shown by arrow (11) on the valve's identification plate (10). The best position is horizontal with the venting screws (2) pointing upwards. Installation of a strainer upstream of the valve is recommended.

Connect capillary pipe ($\Delta p+$, copper $\text{Ø}6 \times 1$), to the pipeline upstream of the load. In case of a horizontal pipeline connect the capillary pipe laterally to prevent air and dirt from entering. When filling, vent the body by using the venting screws (2).

When soldering the valve must be protected from too high temperature.

Turn the adjustment ring (5) clock-wise until stop and the nut (7) on the outlet side will be accessible.

If the measuring point is mounted on DA 516 the differential pressure over the load can be measured by using the balancing instrument TA-CBI or measuring instrument TA-CMI.



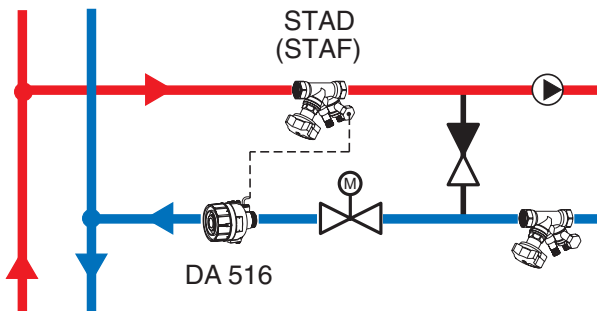
Capillary pipe

Before taking into operation, the capillary pipe must be installed. The connection ($\text{Ø}6 \times 1$) is marked with $\Delta p+$. The other end of the capillary pipe is connected to the balancing valve STAD.

Keeping the differential pressure over a control valve constant

Shunt group

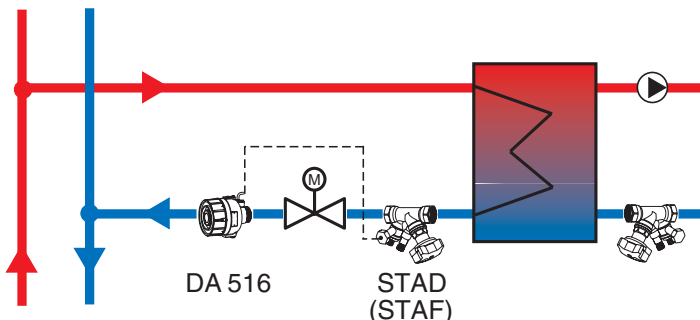
DA 516 should be mounted downstream the control valve and STAD (STAF) may preferably be mounted in the supply pipe.



Heat exchanger

DA 516 should be mounted downstream the control valve and STAD (STAF) upstream the control valve, but downstream the heat exchanger.

STAD (STAF) can be mounted in the supply pipe, but with a decreased valve authority as a consequence.



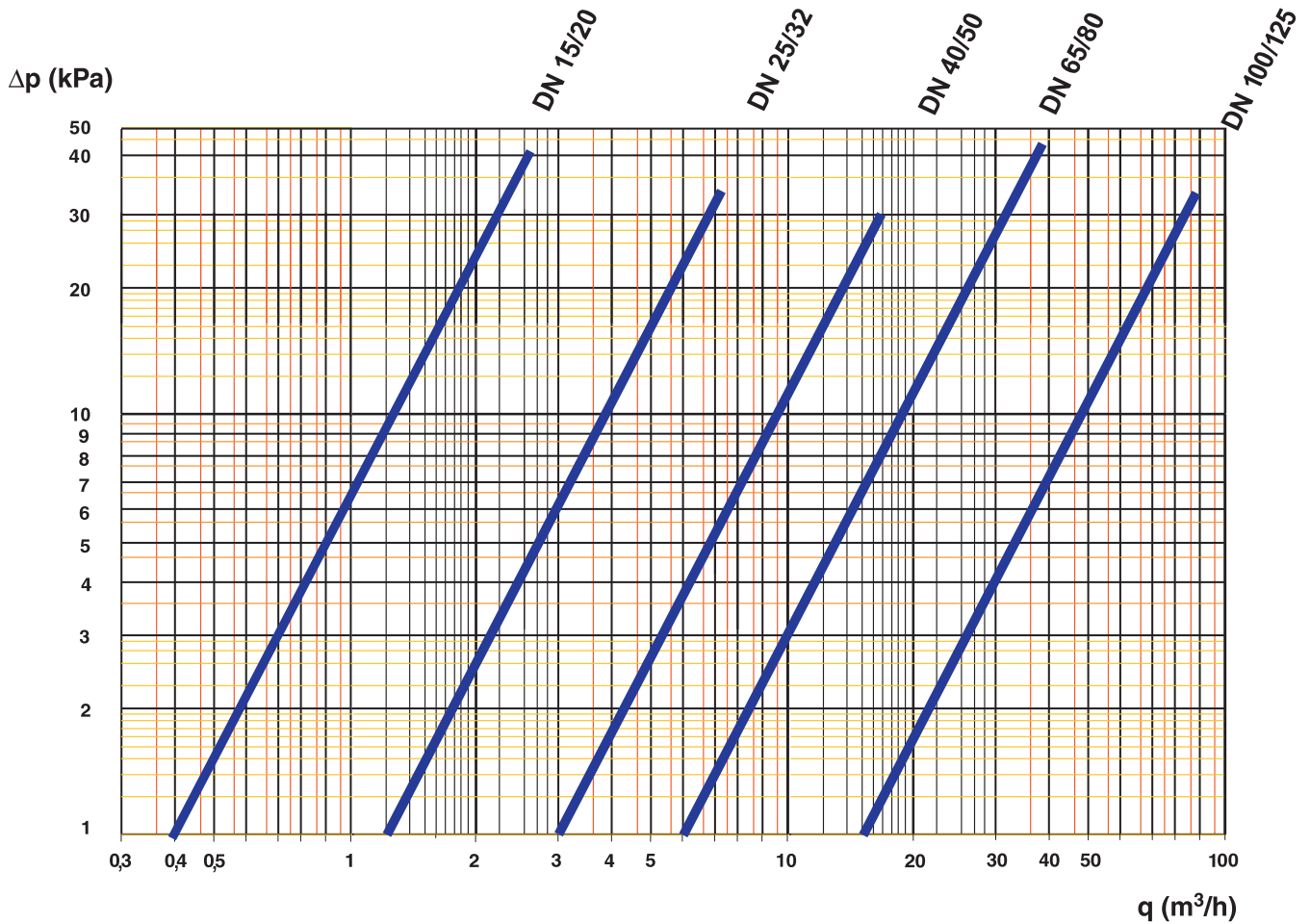
Setting

The differential pressure can be adjusted by turning the adjustment ring. The preset value can be sealed through the holes (see (8) and (9) under Installation).

Sizing

1. Select the smallest size for the designed flow according to the diagram.
2. Check that the available Δp is bigger than the pressure drop of the DA 516 at the designed flow. The pressure drop can be found in the diagram or calculated by the formula:

$$\Delta p = \left(\frac{q}{100 \times Kvs} \right)^2 \quad (\text{kPa, l/h})$$



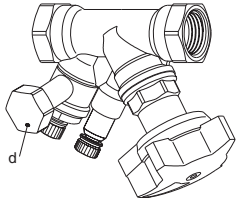
Accessories

Balancing valve STAD (PN 20)

For flow measuring

Max 120°C

See catalogue leaflet STAD, STADA,... for complete details.

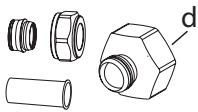


TA No	TA No
d = G1/2	d = G3/4
52 151-209*	52 151-609*
52 151-214*	52 151-614*
52 151-220*	52 151-620*
52 151-225	52 151-625
52 151-232	52 151-632
52 151-240	52 151-640
52 151-250	52 151-650

*) Can be connected to smooth pipes by KOMBI compression coupling. See catalogue leaflet KOMBI under section Couplings.

Connection set

Must be used on STAD when connection of 6 mm capillary pipe.



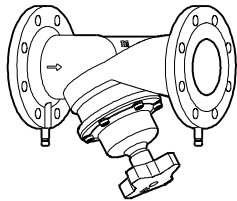
TA No	d
52 762-006	G1/2
52 762-106	G3/4

Balancing valve STAF-SG (PN 25)

For flow measuring

Max 120°C

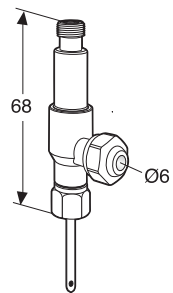
See catalogue leaflet STAF, STAF-SG,... for complete details.



TA No	DN
52 182-040	40
52 182-050	50
52 182-065	65
52 182-080	80
52 182-090	100
52 182-091	125

Measuring point, two-way

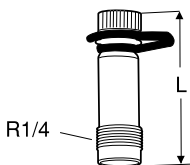
For connection of 6 mm copper pipe (STAF) while permitting simultaneous use of TA-CBI/TA-CMI.



TA No
52 179-206

Measuring point

Max 120°C (Intermittent 150°C)



TA No	L
52 179-009	39
52 179-609	103

Products for higher temperatures - contact TA.

Other products, see TA Product catalogue section "Balancing valves".

Tour & Andersson retains the right to make changes to its products and specifications without prior notice.