

KTC 512

ROOM TEMPERATURE CONTROL

ZONE CONTROLE / 2-WAY



PRESSURE INDEPENDENT BALANCING AND CONTROL VALVE – ON/OFF

High-performing and compact, these pressure-independent temperature control valves for variable flow heating and cooling systems, are especially suitable for fan-coil applications. Also suitable for use on the secondary side in district heating and comfort cooling systems. Rust protection is assured thanks to the electrophoretically painted ductile iron body.



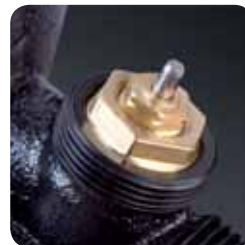
INLINE DESIGN

Allows big pressure drop without noise.



ADJUSTABLE FLOW

Ensures the design flow.



M30X1.5 CONNECTION

Most available small actuators can be used.

we knowhow

TA

TECHNICAL DESCRIPTION

Application:

Heating and cooling systems with variable flow.

Functions:

Temperature control, differential pressure control over the built-in control valve and flow control.

Dimensions:

DN 20

Pressure class:

PN 16

Max. differential pressure:

500 kPa = 5 bar

Pressure drop in the throttle (Fc):

20 kPa

Temperature:

Max. working temperature: 120°C

Min. working temperature: -10°C

Setting range:

Maximum flow is adjustable up to 900 l/h.

Delivery setting: Maximum value (900 l/h).

Media:

Water and neutral fluids, water-glycol mixtures.

Material:

Valve body: Ductile iron EN-GJS-400

Diaphragms and gaskets: EPDM

Surface treatment:

Electrophoretic painting.

Marking:

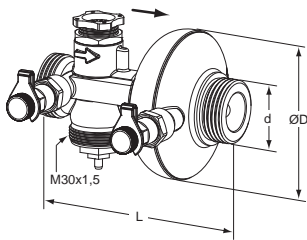
TA, DN, PN, Kvs, GGG-40.3 and flow direction arrow.

Max. lift of the control valve:

1,8 mm

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Fc = 20 kPa

TA No	DN	d	D	L	Kvd	Q _{max} [l/h]	Kg
With measuring points							
52 755-320	20	G1	78	110	4	900	0,9
Without measuring points							
52 755-420	20	G1	78	110	4	900	0,9

→ = Flow direction

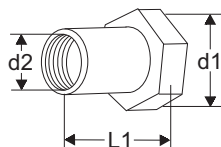
Kvd = Is the Kv value of fully open differential pressure control part of the valve.

It is used to calculate the minimum necessary pressure drop for the valve to operate according to the formula:

$$\Delta p_{\min} = F_c + (q / 100 \times Kvd)^2 \text{ [l/h, kPa]}$$

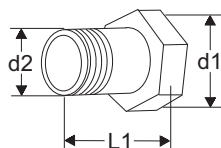
CONNECTIONS

With female thread



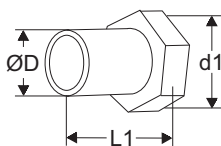
TA No	d1	d2	L1
52 759-015	G1	G1/2	26
52 759-020	G1	G3/4	32

With male thread



TA No	d1	d2	L1
52 759-115	G1	G1/2	34
52 759-120	G1	G3/4	40

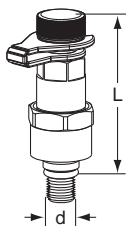
For welding



TA No	d1	D	L1
52 759-315	G1	20,8	37
52 759-320	G1	26,3	42

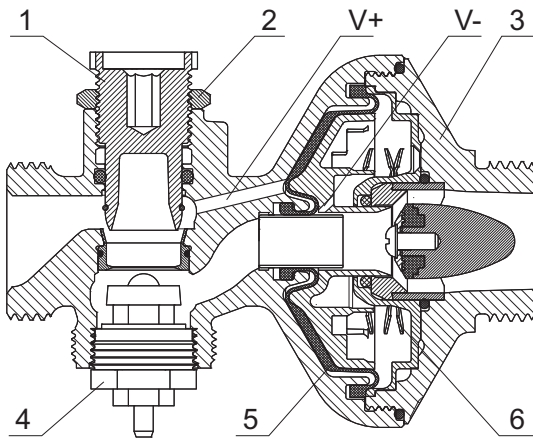
ACCESSORIES

Measuring point



TA No	d	L
52 759-001	M8	56

OPERATING FUNCTION



1. Throttle
2. Fixing nut
3. Differential pressure controller
4. Control bonnet
5. Diaphragm
6. Spring

Flow setting throttle (1), bonnet for temperature control (4) and diaphragm operated differential pressure controller (3) are built in series in one valve body.

Pressure upstream of the throttle acts through an internal impulse pipe (V+) to the inlet side of the diaphragm (5).

Pressure downstream of the temperature control bonnet (V-) acts to the outlet side of the diaphragm together with a spring (6) force.

The spring force corresponds to 20 kPa pressure difference on the diaphragm.

The differential pressure controller pressure relieves the control valve bonnet and at the same time limits the flow to the value preset via flow setting throttle.

INSTALLATION

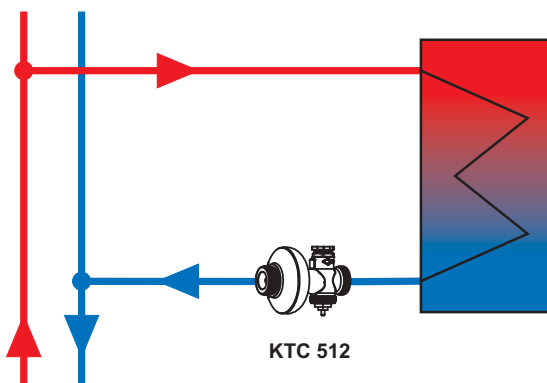
Install in supply or return pipe. Flow direction is shown by the arrow on the valve body.

Install the valve so that the flow adjustment scale is visible and the measurement points (if used) are accessible. Check allowed positions of the actuator.

Installation of a strainer upstream of the valve is recommended.

Install the actuator after performing a leakage test.

Application example:

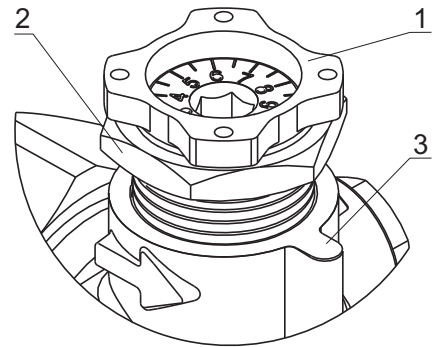


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SETTING

Release the fixing nut (2). Turn the throttle (1) clockwise down to the start position of 0,0 turns.
Adjust the corresponding number of scale turns according to the flow chart and pointer (3) on the valve body.
Tighten the fixing nut.



SIZING

The valve can handle a maximum flow of 900 l/h. Total pressure drop is calculated by formula:

$$\Delta p_{\min} = F_c + (q / 100 \times K_{vd})^2 \text{ [l/h, kPa]},$$

where q is flow in l/h and 20 kPa is a constant pressure drop in the throttle.

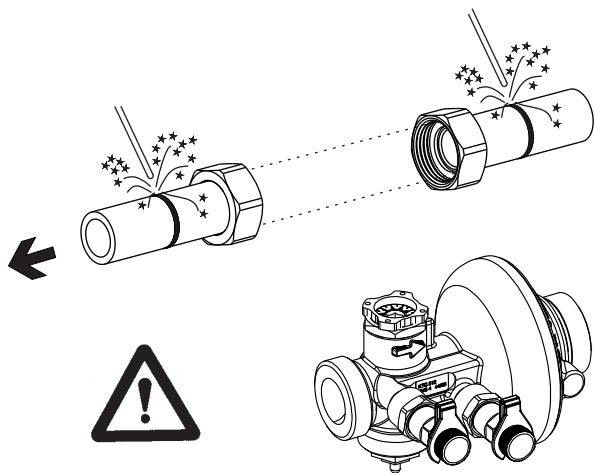
FLOW MEASURING

To measure the flow through the valve, use the TA-CBI balancing instrument or the TA-CMI measuring instrument. Actuator must be in fully open position or removed. The measuring points are self-sealing.
Remove the cap and insert the probe through the seal. After measuring replace the cap.

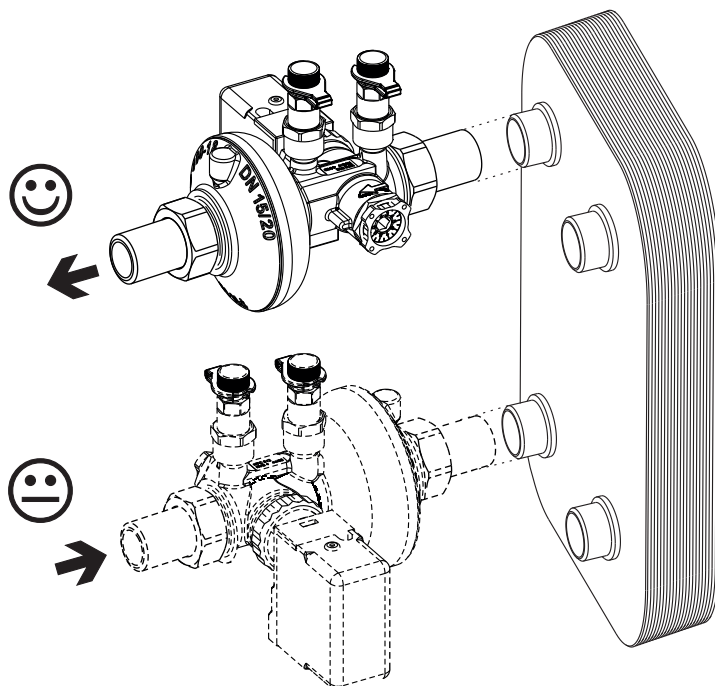
Turns of scale	Kv value
0	0,01
0,25	0,15
0,5	0,32
0,75	0,67
1	0,99
1,25	1,14
1,5	1,29
1,75	1,40
2	1,51
2,25	1,60
2,5	1,70
2,75	1,77
3	1,84
3,25	1,92
3,5	1,99
3,75	2,08
4	2,17
4,25	2,28
4,5	2,39
4,75	2,52
5	2,65

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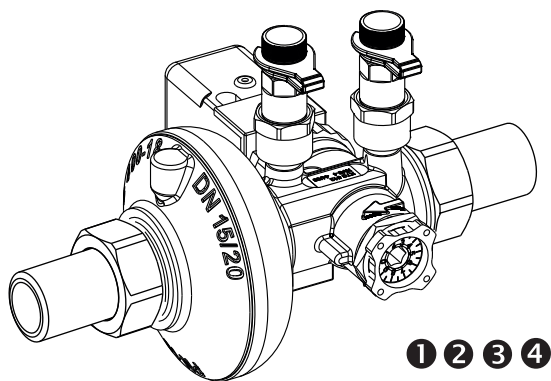
6-10-26 KTC 512 2008.05



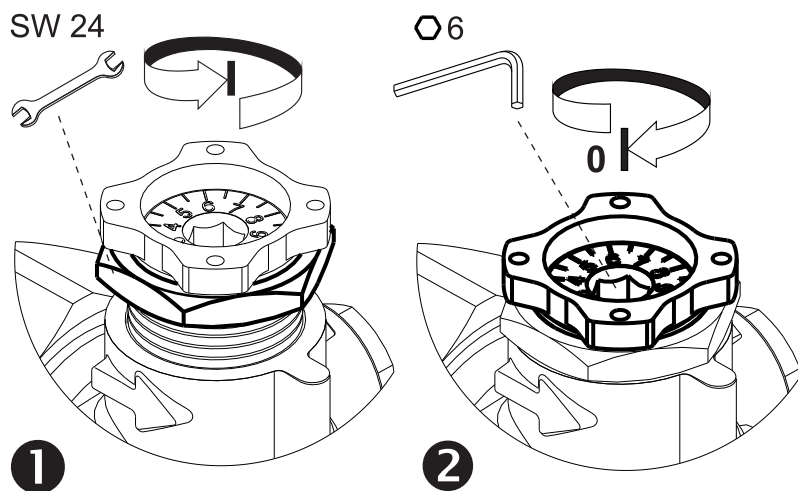
1



2



3



4

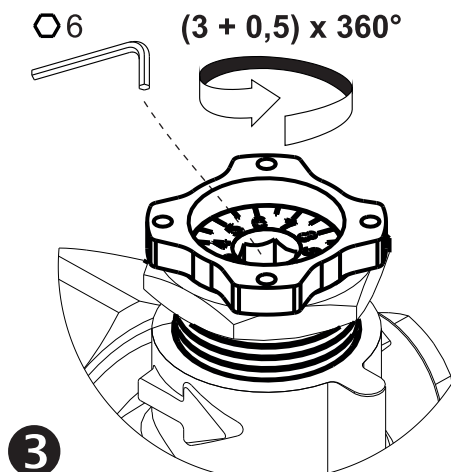
KTC 512 DN 15/20 ; Fc=20

Position - Einstellung

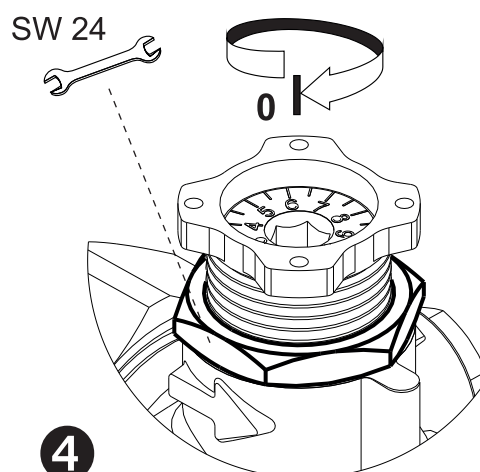
	0,0	1,0	2,0	3,0	4,0
,0	86	425	620	730	844
,1	120	445	631	741	855
,2	154	464	642	753	866
,3	188	484	653	764	878
,4	222	503	664	776	889
,5	256	523	675	787	900
,6	289	542	686	798	911
,7	323	562	697	810	922
,8	357	581	708	821	934
,9	391	601	719	833	945

Flow - Volumenstrom (l/h)

5



3



4

6

Approved by:

9712 - Navodilo (smeško) KTC 512 DN15/20 by Alen Jerman 19.06.2012 - Rev. A