





arredovalvola[®]

The arredovalvola radiator valves is the design line specifically developed for radiators and towel rails. High quality of products, sophisticated style, variety of models and different types of finishing allow to perfectly and elegantly harmonize with any style of interior decoration with the precise intention to emphasise the beauty of the technology within the everyday use of our products.

Valves are available in straight or angle form with male thread. Pipe threads are according EN-ISO 228/1.

Technical features	Symbol	Values
Medium		Water/water with glycol
Max. glycol percentage	%	30%
Dimensions	DN	15
Max. static pressure	PN	10 bar
Max. differential pressure	dP	0,8 bar [80 kPa]
Max. temperature	t max	110 °C

Element	Material
Body valves	Brass EN12165-CW 617N-M
Rubber components to seal:	EPDM peroxide
Steel components	INOX AISI302
Plastic components:	ABS
Other brass components	Brass EN12164-CW 617N-M

All technical characteristics are provided according the European standard EN 215 "Thermostatic radiator valves. Requirements and test methods".

Technical characteristics:

Standard:



Models:



SB = for bitube systems (without by-pass).



SB = for bitube systems (without by-pass)



SB = for bitube systems (without by-pass).



SB = for bitube systems (without by-pass).

TWIN-THERMO SERIES

V421

Thermostatic mono/bitube angle H valve with manual handle for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	62	50	36	44	30	0.647	2.05	V42100_*
15	1/2"	3/4" EK	62	50	36	44	30	0.647	2.05	V42110_*
15	1/2"	24-19	62	50	36	44	30	0.647	2.05	V42100_SB*
15	1/2"	3/4" EK	62	50	36	44	30	0.647	2.05	V42110_SB*

V425

Thermostatic mono/bitube straight H valve with manual handle for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5.

						,				
Code	Kvs	Weight	G	F	С	В	Α	E	D	DN
	m³/h	kg	mm	mm	mm	mm	mm			
V42500_*	2.10	0.684	30	44	36	50	62	24-19	1/2"	15
V42510_*	2.10	0.684	30	44	36	50	62	3/4" EK	1/2"	15
V42500_SB*	2.10	0.684	30	44	36	50	62	24-19	1/2"	15
V42510_SB*	2.10	0.684	30	44	36	50	62	3/4" EK	1/2"	15

V371

Thermostatic mono/bitube angle H valve with protection cap for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5.

				,						
DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	۷	
15	1/2"	24-19	40	50	36	44	30	0.634	2.05	V37100_*
15	1/2"	3/4" EK	40	50	36	44	30	0.634	2.05	V37110_*
15	1/2"	24-19	40	50	36	44	30	0.634	2.05	V37100_SB*
15	1/2"	3/4" EK	40	50	36	44	30	0.634	2.05	V37110_SB*

V375

Thermostatic mono/bitube straight H valve with protection cap for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	40	50	36	44	30	0.671	2.10	V37500_*
15	1/2"	3/4" EK	40	50	36	44	30	0.671	2.10	V37510_*
15	1/2"	24-19	40	50	36	44	30	0.671	2.10	V37500_SB*
15	1/2"	3/4" EK	40	50	36	44	30	0.671	2.10	V37510_SB*

* It is necessary to specify the type of finishing at the end of code. For example for chrome: V37110B.





Models:



V423 Therr

Thermostatic mono/bitube angle H valve with manual handle for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Flat seat connection. Connection for thermostatic head M30x1,5.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	62	50	36	44	30	0.647	2.05	V42300_*
15	3/4" F	3/4" EK	62	50	36	44	30	0.647	2.05	V42310_*

V427

Thermostatic mono/bitube straight H valve with manual handle for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Flat seat connection. Connection for thermostatic head M30x1,5.

DN	D	E	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	62	50	36	44	30	0.684	2.10	V42700_*
15	3/4" F	3/4" EK	62	50	36	44	30	0.684	2.10	V42710_*

V373

Thermostatic mono/bitube angle H valve with protection cap for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Flat seat connection. Connection for thermostatic head M30x1,5.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	40	50	36	44	30	0.634	2.05	V37300_*
15	3/4" F	3/4" EK	40	50	36	44	30	0.634	2.05	V37310_*

V377

Thermostatic mono/bitube straight H valve with protection cap for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Flat seat connection. Connection for thermostatic head M30x1,5.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	40	50	36	44	30	0.671	2.10	V37700_*
15	3/4" F	3/4" EK	40	50	36	44	30	0.671	2.10	V37710_*

* It is necessary to specify the type of finishing at the end of code. For example for chrome: V37310B.





Models:



SB = for bitube systems (without by-pass).



SB = for bitube systems (without by-pass).

TWIN SERIES

V481

Manual mono/bitube angle H valve brass cap for copper or plastic pipe. Body contains double lockshield. Color finishing brass body. Distance between connections 50 mm.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	36	50	36	44	30	0.646	2.36	V48100_*
15	1/2"	3/4" EK	36	50	36	44	30	0.646	2.36	V48110_*
15	1/2"	24-19	36	50	36	44	30	0.646	2.36	V48100_SB*
15	1/2"	3/4" EK	36	50	36	44	30	0.646	2.36	V48110_SB*

V485

Manual mono/bitube straight H valve with brass cap for copper or plastic pipe. Body contains double lockshield. Color finishing brass body. Distance between connections 50 mm.

DN	D	E	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	36	50	36	44	30	0.683	2.10	V48500_*
15	1/2"	3/4" EK	36	50	36	44	30	0.683	2.10	V48510_*
15	1/2"	24-19	36	50	36	44	30	0.683	2.10	V48500_SB*
15	1/2"	3/4" EK	36	50	36	44	30	0.683	2.10	V48510_SB*

TWIN_F SERIES

V483

Manual mono/bitube angle H valve with brass cap for copper or plastic pipe. Body contains double lockshield. Color finishing brass body. Distance between connections 50 mm. Flat seat connection.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	36	50	36	44	30	0.646	2.36	V48300_*
15	3/4" F	3/4" EK	36	50	36	44	30	0.646	2.36	V48310_*

V487

Manual mono/bitube straight H valve with brass cap for copper or plastic pipe. Body contains double lockshield. Color finishing brass body. Distance between connections 50 mm. Flat seat connection.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	3/4" F	24-19	36	50	36	44	30	0.683	2.10	V48700_*
15	3/4" F	3/4" EK	36	50	36	44	30	0.683	2.10	V48710_*

* It is necessary to specify the type of finishing at the end of code. For example for chrome: V48510B.





Models:

-F



SB = for bitube systems (without by-pass).

SB = for bitube systems (without by-pass).

TWIN-06 SERIES

V42106

Thermostatic mono/bitube angle H valve with brass handle for copper or plastic pipe. Body contains thermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5 with adapter art. A400.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	50	50	36	44	30	0.647	2.05	V4210611_*
15	1/2"	3/4" EK	50	50	36	44	30	0.647	2.05	V4210612_*
15	1/2"	24-19	50	50	36	44	30	0.647	2.05	V4210611_SB*
15	1/2"	3/4" EK	50	50	36	44	30	0.647	2.05	V4210612_SB*

V42506

Thermostatic mono/bitube straight H valve with brass handle for copper or plastic pipe. Body contains Ithermostatic valve and lockshield valve. Color finishing brass body. Distance between connections 50 mm. Connection for thermostatic head M30x1,5 with adapter art. A400.

DN	D	Е	Α	В	С	F	G	Weight	Kvs	Code
			mm	mm	mm	mm	mm	kg	m³/h	
15	1/2"	24-19	50	50	36	44	30	0.684	2.10	V4250611_*
15	1/2"	3/4" EK	50	50	36	44	30	0.684	2.10	V4250612_*
15	1/2"	24-19	50	50	36	44	30	0.684	2.10	V4250611_SB*
15	1/2"	3/4" EK	50	50	36	44	30	0.684	2.10	V4250612_SB*

* It is necessary to specify the type of finishing at the end of code. For example for chrome: V48510B.





Valve application:

Cross section:



The thermostatic mono/bitube H radiator valves are designed to equipped with presetting thermostatic spindle which allowed to regulate the flow rate to radiator achieving balance of circuit. The single valve body contains both elements: thermostatic valve and lockshield. The valves are predisposed for mounting the thermostatic head in order to maintaine a constant set temperature value, resulting in a considerable energy saving. The lockshield radiator valves are used for shut off the radiator in case of

I he lockshield radiator valves are used for shut off the radiator in case of maintanance and regulating the flow rate in the case of thermostatic valves without presetting or manual valves.

Thermostatic TWIN valves

Ν	Details							
1	Valve body							
2	Valve disc							
3	By-pass							
4	Union nut							
5	Tailpiece							
6	Valve stem							
7	O-Ring							
8	Plastic cap							
9	Lockshield headwork							
10	Lockshield cap							



Manual TWIN valves

Ν	Details						
1	Valve body						
2	Shut off spindle						
3	By-pass						
4	Union nut						
5	Tailpiece						
6	O-Ring						
7	O-Ring						
8	Brass cap						
9	Lockshield headwork						







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Manual TWIN_F valves

N	Details
1	Valve body
2	Shut off spindle
3	By-pass
4	O-Ring
5	Union nut
6	O-Ring
7	Lockshield cap







Configurations of the valve:

Thermostatic TWIN valves

The mono/bitube H radiator valve can work as in one pipe systems and in two pipe systems (excluding models without by-pass **SB** which are working only in two pipe sysytems).



The by-pass of the valve allowed flow to pass in order of radiator maintenance allowing the system to work in the moment of disconnection of one of the consumers.

The by-pass constuction of the valve allowed to include bath radiators in the loop of underfloor heating systems.

In order to change configuration of the valve from monotube to bitube close the by-pass using 6 mm Allen key rotating it in vertical direction as shown in the picture. Open the by-pass in order to make monotube configuration.





Configurations of the valve:

Thermostatic TWIN_F-THERMO valves

The mono/bitube H radiator valve can work as in one pipe systems and in two pipe systems.





Operating principle of the valve:

Thermostatic models with presetting

The thermostatic valves are equipped with pre-setting headwork that allows to balance the flow of the circuit. The flow regulation consists of a calibrated limitation of the valve passage obtained by rotating the selector on the valve. The hydraulic characteristics connected to each preset are shown at the end of this technical data sheet.



In order to install preset position on the valve follow instructions below: - remove the cap / handwheel (1);

- close completely the presetting ring nut, using the key (2); then reopen to the position of pre-setting expected by the project or selected on the specific diagram, matching the number to the reference sign (*); for the maximum (full open) position take another full turn of the ring setting the reference mark on the number 7;

- reassemble the cap / handwheel (3) so as to obtain the valve with presetting (4).

Manual valves:

Manual valves regulate the flow rate through manual shutter adjustment, rotating manualy the handwheel on the body of the valve.

Rotating the handwheel clockwise, you close the valve, while turning the handwheel in the counterclockwise direction, you open the valve.



CLOSE

OPEN

Lockshields:

To shut off the valve in case of maintanance:

- remove the cap;
- close the valve using 6 mm Allen key rotating it in clockwise direction;
- install the cap.

The balancing with lockshield can be made starting from a completely closed valve and opening it proportionally up to desired flow rate. The complete opening is obtained with about 4 turns.



Installation of the valve:



Nut and tail piece with self sealing





The thermostatic/manual valve should be installed in the bottom part of the radiator according flow direction instructions. Valves are available in straight or angled version with Eurocone (EK) connection. The radiator connection is made through the tail piece connection for TWIN series or valve nut and different types of adapters (Art. A554-A553) for TWIN_F series .

- close the riser and drain the water from the radiator;

-For TWIN_F series install the adapters (A554 or A553) in the radiator connections if necessary. Screw the valve body to the radiator;

- For TWIN series remove the nut with the tail piece from the valve, screw the union onto the radiator after having threaded it with hemp or PTFE tapes (2). This last step is not necessary if the tail piece is equipped with a seal;

- perform a precise and perpendicular cut of the tube, free from burrs, using a special pipe cutter;

- give the tube its original cylindrical shape to facilitate the insertion of the hose holder;

- check that there are no traces of burr and dirt inside the tube;

- assemble the elements that make up the joint according to the order shown in the picture on the left, paying attention to the type of pipe and therefore the connection that is being used (1);

- insert the pipe with its hose connector into the valve seat, avoiding to pinch the sealing o-ring. Fit the nut and screw it by hand as far as possible, then use the appropriate key to screw it all the way in (3);

- screw the valve body to the radiator (4).



Thermostatic heads:

Operating principle:

Attention: The thermostatic head does not use for shutoff the valve. In case of disassembling of heat emitter take off the thermostatic head and use the protection cap or handle.

The thermostatic heads are used with thermostatically controlled valves to regulate the room temperature automatically.

The following models are compatible with the thermostatic valves:

Model	Sensor type	Control type	Connection size	Setting range	Max. response time	Color	Code
A409	liquid	built- in	M30x1,5	6.5 to 28 °C	13 min	vary	A40900_*
A499	liquid	built- in	M30x1,5	7 to 30 °C	40 min	chrome	A49900B
A498	liquid	built- in	M30x1,5	6.5 to 28 °C	23 min	vary	A49800_*
A497	liquid	biult- in	M30x1,5	6 to 28 °C	16 min	chrome	A49700B
A425	liquid	built- in	M30x1,5	7 to 30 °C	25 min	chrome	A42500B

* In order to specify finishing instead of _ add at the end of code desired finishing (accordind available colors, see the list of model). Example for chrome: **A40900B**.

Note: For TWIN_06 series use the adaptor A400 (see accessories).

The thermostatic head contains a temperature sensitive element (liquid). Together with the thermostatic valve it provides proportional temperature regulation in room where it is install. When the ambient temperature is higher than was preset with scale settings, the volume of liquid in thermostatic head expands and push the stem of the valve on order to close the flow rate and thereby reducing its heat transfer. As the temperature decrease it is starts the opposite process.

Note: In the case of long periods of absence specially during winter, set the thermostatic head to the antifreeze position ***** (which corresponds to the minimum temperature from setting range).During the summer season homever it is advisable to set the thermostatic to set the n°5 setting or with the valve fully open.

Regulation of temperature with thermostatic head:



It is essential that the thermostat is placed in the correct way: HORIZONTALLY as shown in the picture below.



Note: It is not permitted to mount the thermostatic head vertically, in niches, and should not be covered by curtains. The sensitive element should not be placed in direct sunlight exposure.



DESIGN RADIATOR VALVES TWIN SERIES

Installation of the thermostatic head:

TWIN-THERMO series

The thermostatic head should be installed in a horizontal position.

take off the protection cap/handle.
select PRESETTING 5 on the thermostatic head.

- install the thermostatic head by screwing the ring nut manualy.

Note: Cap can be used for manual control during the installation and it should be used as isolation device.



TWIN-06 series

In order to install thermostatic head follow instructions below:

- take off the brass handle of the valve;

- take off the threaded element using CH 20 rotating it in the counterclockwise direction;

- install adaptor **A400** (see in the accesoreies) screwing the ring nut manualy;

- fix the adaptor with screw using 2 mm Allen key rotating it in clockwise direction;

- select PRESETTING "5" on the thermostatic head;

- install the thermostatic head by * *ADAPTOR* screwing the ring nut manualy.





Adaptors:

* Adaptors are used with V421, V425, V371, V375, V481 V485, V42106, V42506, V423, V427, V373, V377, V483 and V487 valve models.

Attention: To install the Arredovalvola series adapters it is necessary to pay attention in order not to damage the surface finish, use suitable keys. Use the tightening torque specified in the data sheet of the chosen adapter.

Type of connections:

18.2 +0

024X19Fi] 30°

COPPER PIPES

		Model	Description	Max. pressure	Size	Connection	Code
					10	24-19	A33106_*
					12	24-19	A33107_*
		1004	Adaptor for	10 hor	14	24-19	A33108_*
		A331	copper pipe,	10 041	15	24-19	A33109_*
			exagonal nut.		16	24-19	A33110_*
					18	24-19	A33111_*
					10	24-19	A58406_*
					12	24-19	A58407_*
	~ ~ ^ ()	A 50 A	Adaptor for	10 bar	14	24-19	A58408_*
ы.		A584	copper pipe,		15	24-19	A58409_*
112			cylindrical nut.		16	24-19	A58410_*
	\sim				18	24-19	A58411_*
Π.					10	24-19	A33306A
			0 1111		12	24-19	A33307A
	- i i i i i i i i i i i i i i i i i i i	A333	copper pipe.	-	14	24-19	A33308A
					15	24-19	A33309A
					16	24-19	A33310A
	🖉 🥹 🏹	A593	Adaptor for copper pipe, brass ogive.	10 bar	15	24-19	A59300_*
					10	3/4"EK	A43301_*
			Adaptor for		12	3/4"EK	A43302_*
		A433B	copper pipe.	10 bar	14	3/4"EK	A43303_*
					15	3/4"EK	A43304_*
					10	3/4 EK 3/4"⊑k	A45505_"
	🕡 🖓 🖏				10	3/4 EK 3/4"EK	A33100_ EK
		A331EK	Adaptor for		14	3/4"EK	A33108 *EK
			copper pipe.	10 bar	15	3/4"EK	A33109 *EK
	-		11 [1]		16	3/4"EK	A33110_*EK
					18	3/4"EK	A33111_*EK

018.1⁺⁰ 3/4"EK

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* It is necessary to specify the type of finishing at the end of code. For example for chrome: A33107B.





DESIGN RADIATOR VALVES TWIN SERIES

Adaptors:

* Adaptors are used with V421, V425, V371, V375, V481 V485, V42106, V42506, V423, V427, V373, V377, V483 and V487 valve models.

Attention: To install the Arredovalvola series adapters it is necessary to pay attention in order not to damage the surface finish, use suitable keys. Use the tightening torque specified in the data sheet of the chosen adapter.

MULTILAYE	ER PIPI	ES				
	Model	Description	Max.	Size	Connection	Code
			pressure			
				14x2	24-19	A55501_*
				16x2	24-19	A55502_*
		A denten fen		16x2.25	24-19	A55503_*
		Adaptor for	101	16.2x2.6	24-19	A55513_*
(m) (50 mm)	A555	multilayer pipe,	10 bar	1/x2	24-19	A55504_*
0		exagonal nut.		18x2	24-19	A55506_*
				20x2	24-19	A55510_*
				20x2.25	24-19	A55511_*
				20x2.5	24-19	A55512_*
				14x2	24-19	A58501_*
				16X2	24-19	A58502_*
		Advertise		16X2.25	24-19	A58503_*
a e 0 👊	A.C.O.C	Adaptor for multilayer pipe, cylindrical nut.	10 bar	10.2X2.0	24-19	A58513_"
017	A585			17X2	24-19	A58504_"
				10XZ	24-19	A303U0_"
				2082	24-19	A3031U_ A59511 *
				20x2.20	24-19	A50511_ A59512 *
		_		2072.0	24-19	AJUJIZ_
01	A332	Exagonal nut for copper, PEX, multilayer pipe.	10 bar	16.8	24-19	A33200_*
OÜ	A33210	Cylindrical nut for copper, PEX, multilayer pipe.	10 bar	16.8	24-19	A33210_*
				14x2	3/4"EK	A58701_*
				16x2	3/4"EK	A58702_*
				16x2.25	3/4"EK	A58703_*
() () () () () () () () () () () () () (A587	Adaptor for	10 har	17x2	3/4"EK	A58704_*
		multilayer pipe.	i u bai	18x2	3/4"EK	A58706_*
				20x2	3/4"EK	A58708_*
				20x2.25	3/4"EK	A58709_*
				20x2.5	3/4"EK	A58707_*
						_

* It is necessary to specify the type of finishing at the end of code. For example for chrome: A55502B.





Adaptors:

* Adaptors are used with V421, V425, V371, V375, V481 V485, V42106, V42506, V423, V427, V373, V377, V483 and V487 valve models.

Attention: To install the Arredovalvola series adapters it is necessary to pay attention in order not to damage the surface finish, use suitable keys. Use the tightening torque specified in the data sheet of the chosen adapter.

PLASTIC PIPES

	Model	Description	Max. pressure	Size	Connection	Code
				12x2	24-19	A55601_*
				14x2	24-19	A55602_*
				15x2.5	24-19	A55604_*
				16x1.5	24-19	A55605_*
		Adaptor for		16x2	24-19	A55606_*
in 😳 💭	A556	plastic pipe,	10 bar	16x2.2	24-19	A55607_*
		exagonal nut.		17x2	24-19	A55608_*
				18x2	24-19	A55610_*
				18x2.5	24-19	A55611_*
				20x2	24-19	A55613_*
				20x2.5	24-19	A55614_*
				12X2	24-19	A58601_*
		Adaptor for plastic pipe, cylindrical nut.	10 bar	14XZ	24-19	A58602_"
				10X2.0	24-19	AJ0004_ A59606 *
				1072 16v2 25	24-19	A50600_
r 💭 🦾	A586			17v2	24-19	A58608 *
				18x2	24-19	A58610 *
				18x2.5	24-10	A58611 *
				20x2	24-19	A58613 *
				20x2.5	24-19	A58615 *
				12x1.1	3/4"EK	A58810_*
				12x2	3/4"EK	A58800_*
				14x2	3/4"EK	A58801_*
				15x2.5	3/4"EK	A58802_*
				16x1.5	3/4"EK	A58811_*
	1500	Adaptor for	10 hor	16x2	3/4"EK	A58803_*
	ADOO	PEX pipe.	TU Dar	16x2.2	3/4"EK	A58804_*
				17x2	3/4"EK	A58805_*
				18x2	3/4"EK	A58806_*
				18x2.5	3/4"EK	A58807_*
				20x2	3/4"EK	A58808_*
				20x2.5	3/4"EK	A58809_*

* It is necessary to specify the type of finishing at the end of code. For example for chrome: A55606B.





Accessories and spare parts:

Attention: The tightening torque of the screws must be less than 25 Nm.

		Model	Description	Size	Connection	Code
ie	<u></u>	∆353	Thermostatic spindle with	1/2"	M 30x1.5	A35317TPS
ו.	T.	7,000	presetting.	172	M 24x1.5	A35325T
	÷	A357	Headwork for manual valves.	1/2"		A35711T
	-	A3570	Headwork for lockshield valves.	1/2"	M 24x1.5	A35703T
		A343	Adaptor for iron pipe.	3/8"F 1/2"F 3/8"F 1/2"F 1/2"F NPT 1/2"F NPT	24-19 24-19 3/4"EK 3/4"EK 24-19 3/4"EK	A34301_* A34302_* A34305_* A34306_* A34302_NPT A34306_NPT
	00000	A547	Sleeving kit (pair).	18-L70 18-L160 18-L70 18-L160	int. 50 mm int. 50 mm int. 40 mm int. 40 mm	A54703_* A54700_* A54605_* A54604_*
		A54750	Sleeving kit (pair).	16-L120 16-L120	int. 50 mm int. 40 mm	A54650_* A54653_*
	0	A56950	Plastic sleeve with sliding drawer dn 45 mm.	45-10 45-12 45-14 45-15 45-16 45-18	- - - - -	A56950_ A56952_ A56954_ A56955_ A56956_ A56958_
	-	A344	Nut and tail piece with O-RING	3/8" 1/2" 3/8" 1/2"	3/4" 3/4" 24-19 24-19	A34400_* A34410_* A34494_* A34492_*
		A354	Protection cap for thermostatic valve	-	M 30x1.5	A35402A

* It is necessary to specify the type of finishing at the end of code. For example for chrome: V37110B.





Model Description Size Connection Code Cap for lockshield NV27201 M 30x1.5 NV27201_* valve. Chrome plated. Handwheel for A574 M 30x1.5 A57400A thermostatic valve. Handwheel for "06" NV32106 M 24x1.5 NV32106T model. TRV head adaptor for A400 M 30x1.5 M 24x1.5 A40001T 6 06" models. 1/2" 3/4" A55400T Reduction with A554 O-Ring. A55401T 1/2" 3/4" Conical adaptor with A553 A55300T O-Ring. A630 Pre-setting key. M 30x1.5 A63000A

Theoretical references:

Koefficient of flow [Kv]

The Kv value expresses the amount of flow rate in m³/h that pass through the regulating valve **at a given preset position** in one hour with a differential pressure across the valve 1 bar.

In order to determine valve size, calculate the flow rate with the following formula:

$$Q = Kv * \sqrt{\Delta p \, \frac{1000}{\rho}}$$

Where:

Q - is the flow rate in m^{3}/h ;

 Δp - is the differential pressure across the valve in bar

 ρ - is the density of passing liquid in kg/m³.

The Kvs is the Kv value of fully open valve.



Proportional band [Xp]

A proportional band of a valve is defined as the change in the required room temperature so that the closed valve is operated to allow reaching the design flow rate.



DESIGN RADIATOR VALVES TWIN SERIES





DESIGN RADIATOR VALVES

TWIN SERIES



Hydraulic The diagrams show the values of the valve head losses in the different preset positions. For each of them is shown the corresponding Kv values. characteristics: TWIN PRESET MONOTUBE V421 ANGLE DN 15 1/2" V423 V371 P,mbar V373 V42106 800 700 Angle valve 600 500 DN15 1/2" 400 300 200 **Pre-setting** Κv Ν m³/h 100 90 1 1.60 80 70 60 50 2 1.80 40 30 3 1.95 20 4 2.05 10 9. 8 7 (\mathbf{F}) 5 2.10 6 5 4 6 2.12 3 2 7 2.14 m³/h Kvs 2.16 4 60 800 500 002 006 20 300 2000 4000 3000 -0 30 50 02 200 400 000 800 000 Qm = kg/h5.5 -6.5 7.5 17.5 dt=10°C 0.15 -0.25 -0.35 -0.5 0.45 0.75 -1.5 2.5 3.5 4.5 12.5 22.5 -30 0.2 . 0.3 0.2 N 0 1 0 2 52 35 ŝ dt=20°C °.0 ດ 0.7 5 Ň ò ~ 25 35 45 09 0.5 113 Ś ف 0.2 0.4 0.6 0.8 ø 0 4 4 20 30 40 50 70 Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp

values of more than 0,2 - 0,25 bar [20-25 kPa].

kPa

100 90

80

60 50

40 - 30

20

9

7

70

10

8

6 5

4 3

2

0.9 0.8

0.7 0.6

0.5 0.4

- 0.3

- 0.1

0.2

k₩

kW



DESIGN RADIATOR VALVES TWIN SERIES





DESIGN RADIATOR VALVES



TWIN SERIES Hydraulic each of them is shown the corresponding Kv values. characteristics: TWIN PRESET MONOTUBE V425 STRAIGHT DN 15 1/2" V427 V375 P,mbar V377 V42506 800 700 Straight valve 600 500 DN15 1/2" 400 300 200 **Pre-setting** Κv Ν m³/h 100 90 B 1 1.45 80 70 60 50 2 1.70 40 30 3 1.80 20 4 1.90 10 9 Я 7 5 1.92 6 5 Δ 6 1.94 3 2 7 1.96

m³/h Kvs 2.00 The diagrams show the values of the valve head losses in the different preset positions. For



Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].

TWIN THERMO BITUBE

ANGLE DN 15 1/2"



DESIGN RADIATOR VALVES TWIN SERIES

Hydraulic characteristics:

Pressure loss diagrams are made with position 3 of the thermostatic head and the difference between ambient and preset temperature of 1K (diagram S-1K), 2K (diagram S-2K) and with fully open valve.

V421 V423 V371 V373 V42106 Angle valve DN15 1/2"

Technical data			
Kv	1K	0.44	
	2K	0.89	
	Kvs	2.05	
q _{m N}	kg/h	281.32	



Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].



DESIGN RADIATOR VALVES TWIN SERIES

Hydraulic characteristics:

Pressure loss diagrams are made with position 3 of the thermostatic head and the difference between ambient and preset temperature of 1K (diagram S-1K), 2K (diagram S-2K) and with fully open valve.

TWIN THERMO BITUBE STRAIGHT DN 15 1/2"



Technical data			
Kv	1K	0.52	
	2K	0.91	
	Kvs	2.00	
q _{m N}	kg/h	287.05	



Note: To avoid excessive noisiness in the circuit, avoid using thermostatic valves with Δp values of more than 0,2 - 0,25 bar [20-25 kPa].



DESIGN RADIATOR VALVES TWIN SERIES





DESIGN RADIATOR VALVES TWIN SERIES Hydraulic The positions are determined with the number of opening turns of the valve from the fully closed position. characteristics: TWIN LOCKSHIELD MONOTUBE V421 V423 ANGLE DN 15 1/2" V371 V373 V42106 kPa P,mbar Angle valve 1<u>00</u> 90 DN15 1/2" 800 80 70 700 600 60 50 500 400 40 Number of turns Κv 300 - 30 Ν m³/h 200 20 1 1.46 1.5 1.55 100 10 90 9 80 8 2 1.62 70-7 60 6 2.5 1.76 50-5 40 4 3 1.90 3 30 3.5 1.98 20 2 4 2.03 Kvs 2.10 10 1 9. 0.9 8 0.8 7 0.7 0.6 6 5 0.5 0.4 3 - 0.3 2 0.2 - 0.1 8 8 8 500 002 20 40 2000 4000 300 ė 90 000 3000 30 50 200 ₿ 0 0 0 0 "00 300 Qm = kg/hkW ⁺0.5 [−] 17.5 -22.5 dt=10°C 0.15 -0.25 -0.35 -0.75 ŗ. 2.5 3.5 4.5 -5.5 -7.5 -7.5 -12.5 -30 22' 0.2 . No.3 Ň ம் 0 h ġ 'n Ś 35. 0.2 kW 11-13-13 dt=20°C -6.0 'n ம் 0.3 0.5 0.7 5 Ň ந 25. 35 . 45 60 0.2 0.4 9.0 0.8 ف ò 0104 20 20 50 20



DESIGN RADIATOR VALVES TWIN SERIES

Hydraulic The positions are determined with the number of opening turns of the valve from the fully closed position. characteristics: TWIN LOCKSHIELD BITUBE V425 V427 STRAIGHT DN 15 1/2" V375 V377 kPa P,mbar <u>4</u> <u>MA</u>X V42506 <u>1.5</u> 100 Straight valve 90 800 700 80 DN15 1/2" 70 600 60 500 50 400 40 300 30 Number of turns Κv 200 20 Ν m³/h 1 0.28 100 10 1.5 0.58 90 9 80 8 70 7 2 1.00 60 6 50 5 2.5 1.62 40 4 3 1.75 3 30 3.5 1.95 20 2 4 2.00 Kvs 2.10 10 9. 0.9 0.8 8 7-0.7 0.6 6 5 0.5 4 0.4 3 - 0.3 2 0.2 - 0.1 1 80 20 40 60 4000 300 500 700 900 2000 ė - 02 Ś 50 3000 200 400 600 000 ŝ Qm = kg/hkW 17.5 -22.5 dt=10°C 0.15 -0.25 -0.35 -0.75 -5.5-6.5-7.5 1.5 2.5 3.5 4.5 12.5 30 0.3 0.2 0.2 2 0 5 2 25 35 kW dt=20°C 0.3 ň - 7.0 1.5 -ທ່ Ļ ່ 0.5 25 35 45 . 09 10 0.6 0.8 0.2 0.4 2 œ 0 0 4 20 30 50 50 2



DESIGN RADIATOR VALVES TWIN SERIES

Hydraulic The positions are determined with the number of opening turns of the valve from the fully closed position. characteristics: TWIN LOCKSHIELD MONOTUBE V425 V427 STRAIGHT DN 15 1/2" V375 V377 3.5 3 4 2.5 MAX kPa V42506 P,mbar <u>1.5</u> 2 1 Straight valve 1000 900-100 90 DN15 1/2" 80 700 70 600 60 500 50 400 40 Number of turns 300 - 30 Κv Ν m³/h 200 20 1 0.32 1.5 0.57 100 10 90 9 80 8 2 0.95 70 7 60 6 50 5 2.5 1.40 40 4 3 1.52 30 3 1.61 3.5 20 2 4 1.70 Kvs 1.75 10 1 9 0.9 0.8 8 7 0.7 0.6 6 5 0.5 0.4 4 3 0.3 2 0.2 - 0.1 0 8 0 4 700 006 20 500 2000 4000 300 3000 5 30 50 70 90 200 400 600 300 000 Qm = kg/hkW 4.5 -5.5 -6.5 -7.5 -0.15 -0.3 ----0.35 -0.4 ------0.5 ------0.75 -3.5 -17.5 -22.5 dt=10°C 0.25 -2.5 5 12.5 30 0.2 0.2 N ю 10 Q 0 5 20 25 35 kW dt=20°C 6.0 m 0.3 0.7 -5.1 15-13-15-0.5 ŵ $\dot{}$ ் 25. 35 45 60 0.2 0.6 0.8 œ 0 2 4 20 30 50 20 0.4



Example:

Determination of preset of the valve:

Given data		
Type of valve	V371PS DN15 1/2"	
Heat flow of radiator	2150 W	
Temperature difference	20 °C	
Differential pressure across the radiator	3 4 kPa	

The mass flow is calculated using the following relation:

$$Q_m = \frac{Q}{c * \Delta t} = \frac{2150}{1,163 * 20} = 92 \ kg/h$$

Alternatively, it is possible to use the graduated scale of the selected valve diagram that provides the flow rate according to the design dT. It is possible to determine the required pre-setting as shown in the example alongside where it is equal to 1.5.



Determination of valve pressure loss:

Given data			
Type of valve	V375 DN15 1/2"		
Heat flow of radiator	2150 W		
Temperature difference	20 °C		
Desired proportional band	2K		

The mass flow is calculated using the following relation:

$$Q_m = \frac{Q}{c * \Delta t} = \frac{2150}{1,163 * 20} = 92 \ kg/h$$

Alternatively, it is possible to use the graduated scale of the selected valve diagram that provides the flow rate according to the design dT.

It is possible to determine the head losses value for the proportional band chosen as shown in the example alongside where it is equal to 1.1 kPa.



SPECIFICATION SUMMARIES

V421 MODEL

Thermostatic mono/bitube angle H valve with manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V425 MODEL

Thermostatic mono/bitube straight H valve with manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V371 MODEL

Thermostatic mono/bitube angle H valve with plastic protecton cap for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V375 MODEL

Thermostatic mono/bitube straight H valve with plastic protecton cap for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V481 MODEL

Lockshield mono/bitube angle H valve with brass cap for copper or plastic pipe. The single valve body contains double lockshield elements. Distance between connections 50 mm. Valve body made of color finishing brass. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V485 MODEL

Lockshield mono/bitube straight H valve with brass cap for copper or plastic pipe. The single valve body contains double lockshield elements. Distance between connections 50 mm. Valve body made of color finishing brass. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

SPECIFICATION SUMMARIES

V423 MODEL

Thermostatic mono/bitube angle H valve with manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V427 MODEL

Thermostatic mono/bitube straight H valve with manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V373 MODEL

Thermostatic mono/bitube angle H valve with plastic protecton cap for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V377 MODEL

Thermostatic mono/bitube straight H valve with plastic protecton cap for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V483 MODEL

Lockshield mono/bitube angle H valve with brass cap for copper or plastic pipe. The single valve body contains double lockshield elements. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V487 MODEL

Lockshield mono/bitube straight H valve with brass cap for copper or plastic pipe. The single valve body contains double lockshield. Distance between connections 50 mm. Connection for thermostatic head M30x1,5. Valve body made of brass with color finishing. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 3/4"F. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.



V42106 MODEL

Thermostatic mono/bitube angle H valve with brass manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M24x1.5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

V42506 MODEL

Thermostatic mono/bitube straight H valve with brass manual handle for copper or plastic pipe. The single valve body contains both elements: thermostatic valve and lockshield valve. Distance between connections 50 mm. Connection for thermostatic head M24x1,5. Valve body made of color finishing brass. Control stem made of stainless steel with EPDM peroxide O-Ring. Manual control of lockshield valve with shutter under the cap. Connection to radiator with tailpeace 1/2"M. Maximum working pressure 10 bar. Temperature range of liquid medium from 5 to 110 °C.

OKOMFOR

Company Carlo Poletti S.r.I. reserves the right to change the product line and corresponding technical data at any time and without any notification.

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