PROVIDES SAFETY.
ARE RELIABLE AND ROBUST.
PLENTY OF POSSIBILITIES.

Our series of thermostatic mixing valves has made heroes of installation engineers throughout Europe. The basic requirement for ensuring a tap water system is safe to use involves the prevention of two significant factors: legionella bacteria and scalding.

Hot water needs to be heated to 60°C to prevent the proliferation of legionella bacteria. But a temperature this high will scald people. With an ESBE thermostatic mixing valve fitted after the water heater, the temperature is restricted to a maximum 55°C throughout the system. In this way the water can be heated up to legionella-safe temperatures without the risk of anyone getting scalded.

In addition to the aforementioned heroic efforts, we also have other application possibilities in mind for thermostatic mixing valves. Which benefits and features we are thinking about you will find on nextcoming pages.

CONTENTS THERMOSTATIC CONTROL UNITS

FEATURES AND BENEFITS

An already wide assortment of thermostatic mixing valves last year got even wider. The very well-known ESBE thermostatic mixing valves series VTA300 then got their long awaited big sisters – VTA500 and VTS500. With the introduction of these series and including the new Solar Kit series VMC300 and VMC500 the possibilities nowadays are practically endless. All have this in common: easily installed temperature regulation for solar heating, floor heating or tap water applications.

At ESBE we always try to be one step ahead in our product development. As new heating options emerge and energy usage patterns change we respond to that demand. That's why we proudly introduce several new series of thermostatic mixing valves. The new products radically improve and expand an already extensive range of valves for use in universal domestic hot water and under floor heating applications.

Higher flow capacity, more connections.
The new series are mainly characterized by generally higher flow capacity, more connection solutions and more temperature ranges to choose from. This means a greater freedom of choice for you – without making your job harder. There is no longer any need to mix products from different suppliers. We have it all. And at the right price.

The right valve, for the right job,
All in all, you get the right valve for the right job. The right temperature, pressure, material and connection. No compromises. In the end, your application will satisfy your customer with regards to comfort, safety and energy savings. And that's what makes you a hero.

- **VTS520/550**
- **VMC300/500**

OPTIMIZE THE HARVEST OF SOLAR ENERGY WITH GREAT RESILIENCE AGAINST HIGH TEMPERATURES.

The VTS500 series of thermostatic valves for solar applications are built to last. And they are built to last in tough conditions. For example, the max temperature could be as high as 110–120°C without causing damage to the valve. Even during longer periods of time.

Add exceptionally high flow capacity, great regulating accuracy and pressure variation capabilities and you have a high-performing thermostatic mixing valve perfect for solar applications.

Solar Kits

Our Solar Kit series offers dual functionality for tap water applications, such as a solar collector/gas boiler system combination.

If the incoming water from the solar collector is not hot enough, it is diverted to the gas boiler. And once it is heated it is mixed to a suitable, anti-scald safe temperature for domestic hot water use. If, on the other hand, the incoming water from the solar collector is already hot enough, it will be mixed directly for the domestic hot water use. The result is efficient utilisation of the solar energy.

- **VTA320 & VTA520/550**
- **VTA330/360 & VTA530/560**

ANTI-SCALD AND ANTI-LEGIONELLA SOLUTIONS IN TAP WATER SYSTEMS. WITH THE BEST POSSIBLE REGULATING CAPACITY.

Our VTA series for tap water makes any installation easier, faster and safer – in smaller as well as in larger systems. It strengthen ESBE's position as the natural choice for fast and accurate regulation, especially were working conditions are tough with varying flow and supply temperatures.

Anti-scald and anti-legionella.

The basic requirements for a safe tap water system involves the prevention of legionella bacteria and scalding. Hot water needs to be heated to 60°C to prevent the proliferation of legionella bacteria. But a temperature this high will scald people. With an ESBE valve fitted the temperature is restricted in the system. The water can be heated up to legionella-safe temperatures without the risk of anyone getting scalded.

The anti-scalding capabilities comes with the valve. It means: in the case of a cold water failure, the hot water supply shuts off automatically. Add crucial DZR, Dezincification resistant brass, for both valves and connections. The result is a wide product series of high performance which will make both you and your customer happy.

FEATURES AND BENEFITS

• **VTA370/570**

UNDER FLOOR HEATING AND COOLING REQUIRES HIGH FLOW CAPACITY. BUT STILL YOU WILL HAVE MANY VERSIONS TO CHOOSE FROM.

The VTA370 and 570 series have higher flow capacity in comparison with the normal VTA-series, which make them perfect for under floor systems.

In fact, a TMV solution for under floor heating applications offers a number of advantages: there's no need for electricity installation, capillary pipes, external thermostats or extra T-connections. All you need is in the valve which simplifies your installation a great deal.

Easy temperature adjustment

Instead of a scale, all new valves now have a temperature grading right on the valve. One quick turn and you'll be ready to fine-tune the system.

ESBE's broad assortment of under floor heating valves, with several different temperature ranges make them the perfect fit for any under floor application. Big or small. Simple or complicated. Again, no need to make compromises.

Cooling applications

Valve series VTA570 can in fact also be used in cooling applications. As an example: in several European countries there is an upgoing trend to use floor- or wallheating systems for cooling distribution during the warmer season.

ESBE GUIDE
THERMOSTATIC MIXING VALVES, OVERVIEW

SELECTION GUIDE
FIND THE RIGHT VALVE FOR YOU

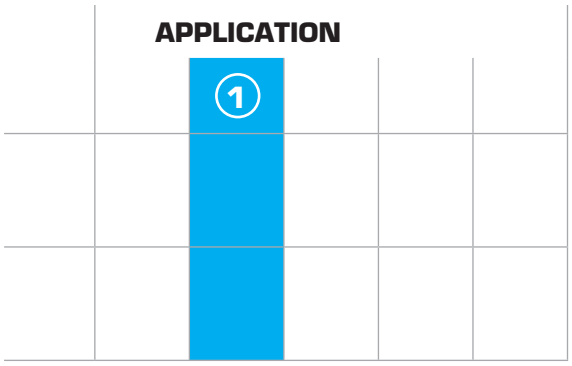
The table below and the following pages is a toolbox for finding the best valve for your system and application. You will also find smaller selection tables in the product pages.

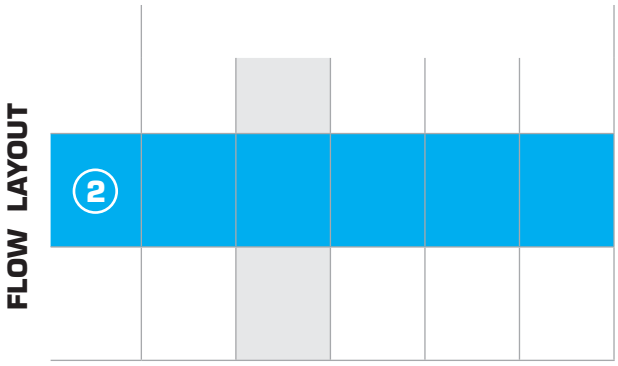
		APPLICATION									
		Potable water, in line		Potable water, point of use		Solar heating		Cooling		Floor heating	
Flow direction	Temp. range	Kvs <2	Kvs >2	Kvs <2	Kvs >2	Kvs <2	Kvs >2	Kvs <2	Kvs >2	Kvs <2	Kvs >2
	10 - 30°C								VTA570		
	20 - 43°C	VTA320	VTA520							VTA320	VTA570 VTA520
	30 - 70°C	VTA320 VTA310				VTA320				VTA320	
	32 - 49°C	VTA330		VTA330							
	35 - 50°C		VTA530				VTA530				
	35 - 60°C	VTA330 VTA320 VTA310		VTA330		VTA320				VTA320	VTA370
	45 - 65°C		VTS520 VTA530 VTA520 VTA570				VTS520 VTA530 VTA520				VTA570 VTS520 VTA520
	50 - 75°C		VTS520 VTA520				VTS520 VTA520				
	10 - 30°C										
	20 - 43°C		VTA550								VTA550
	30 - 70°C										
	32 - 49°C	VTA360		VTA360							
	35 - 50°C		VTA560				VTA560				
	35 - 60°C	VTA360		VTA360							
	45 - 65°C		VTS550 VTA560 VTA550				VTS550 VTA560 VTA550				VTS550 VTA550
	50 - 75°C		VTS550 VTA550				VTS550 VTA550				

Recommended alternative

Secondary alternative

ESBE GUIDE
SELECTING THE OPTIMAL THERMOSTATIC MIXING VALVE





STEP 1: APPLICATION
Thermostatic mixing valves are highly versatile and can be used in many different applications, the most common being:

POTABLE WATER, IN-LINE
Application requiring basic regulation of temperature for domestic hot water, providing scalding protection for the whole system or a part of it. Further temperature regulating equipment is installed at water taps, showers etc to increase safety and comfort.

POTABLE WATER, POINT-OF-USE
Application requiring high level of regulation accuracy for domestic hot water systems, providing scalding protection and a high level of comfort for showers, baths etc. If installed correctly, no further temperature regulating equipment is required at water taps, showers etc.

SOLAR HEATING
Application requiring basic regulation of temperature for domestic hot water in system connected to solar heating, where high temperatures might occur. Providing scalding protection for the whole system or a part of it. Further temperature regulating equipment is installed at water taps, showers etc to increase safety and comfort.

COOLING
Applications such as wall or floor cooling, where the mixed temperature needs to be set to temperatures under normal room temperature.

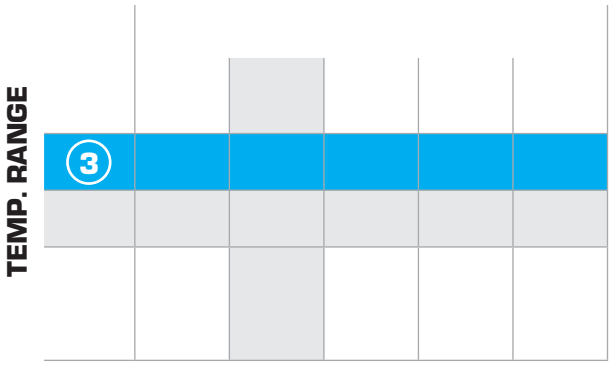
FLOOR HEATING
Applications such as under floor heating or wall heating, requiring high flow rates and scalding protection to prevent damaged floors and piping.

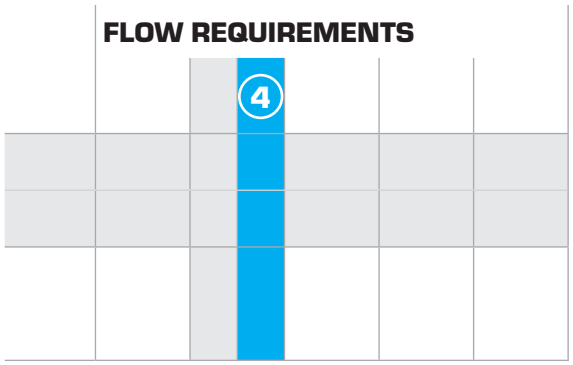
STEP 2: FLOW LAYOUT
Depending on the installation, different flow layouts can be suitable. Picking the right one makes the installation easier and may improve system efficiency.

SYMMETRICAL 
Hot and cold water connections located opposite of each other, mixed water connection in the middle. Most common solution on in many countries, providing more compact valve dimensions for some products versions.

ASYMMETRICAL 
Hot water connection located on the side of the valve, opposite the mixed water connection, cold water connection located in the bottom. Often provides the easiest installation, saving bends and T-pieces in the piping.

ESBE GUIDE
SELECTING THE OPTIMAL THERMOSTATIC MIXING VALVE





STEP 3: TEMPERATURE RANGE
Each thermostatic mixing valve has a range within which the outgoing mixed water temperature may be set. The choice of temperature range depends on the application:

POTABLE WATER, IN-LINE
Accuracy according to EN1111 and NF079 → 35-50°C
Accuracy according to EN15092 → 45-65°C
Low mixing temperature → 20-43°C
Mid-range mixing temperature → 35-60°C
High mixing temperature → 50-75°C
Wide temperature range → 30-70°C

POTABLE WATER, POINT-OF-USE
High accuracy → 35-60°C
Very high accuracy according to D08 → 32-49°C

SOLAR HEATING
High mixing temperature → 50-75°C
Accuracy according to EN15092 → 45-65°C

COOLING
Cooling or other special applications (e.g. potable water for cattle) → 10-30°C

UNDER FLOOR HEATING OR WALL HEATING
Low mixing temperature → 20-43°C
Mid-range mixing temperature → 35-60°C
High mixing temperature → 45-65°C

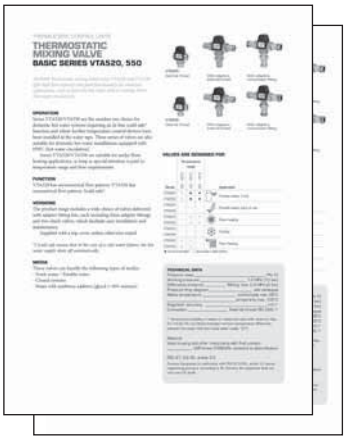
STEP 4: FLOW REQUIREMENTS
Depending on the intended application and its size, flow requirements for the valve will vary – will it be used for a sports center or an apartment? See the table and diagram on page 127 for more dimensioning assistance.

< Kvs 2
Valves for smaller applications, or subsystems of larger applications.

> Kvs 2
Larger applications.

STEP 5: PICK THE VALVE
Now that the correct valve series is chosen, go to the catalogue page describing the recommended valve series to pick out the valve you need. Choose among the different connections, with or without adapters and non-return valves, and then the journey from application to valve is complete!

5



ESBE GUIDE
ADVICE & DIRECTIONS FOR DOMESTIC WATER SYSTEMS

FACTS ABOUT THE RISK OF SCALD BURNS AND LEGIONELLA

HWC (hot-water circulation) should be installed whenever you must wait more than 20 seconds for hot water at a flow of 0.2 l/s in a block of flats. In one- and two-family houses a waiting time of 30 seconds can be accepted.

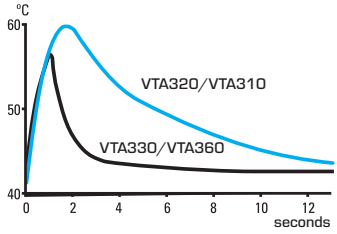
ESBE recommends that the hot-water temperature at taps shall not be below min. +50°C and not exceed max. +65°C. Considering a certain temperature reduction in the water system, the heater should give min. +60° C (owing the risk of Legionella).

The time it takes to suffer third-degree burns by 60-degrees hot-water	2–3 s
The time it takes for a scald safe ESBE mixing valve to close the hot-water in case of cold water failure	1–2 s
Suitable temperature for shower and bath tub	40°C
Recommended min. temperature at taps and in HWC pipes	50°C
Recommended min. temperature in flowing water-heaters	55°C
Recommended min. temperature in water-heaters (storage type)	60°C

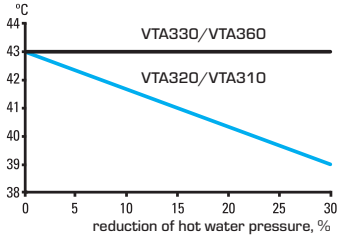
The Legionnaires' Disease is a pneumonia-like bacterial infection, caused by the Legionella germ. This germ has an optimal growth in water temperatures of 20–45°C.
It spreads disease by inhalation of small water drops containing Legionella and can be transferred to the lungs when you take a shower. At a temperature exceeding 50°C, the germ is destroyed; the higher the temperature the sooner the germs are destroyed. By keeping the temperature in the water-heater above 60°C and the temperature in the pipes at 55°C, the risk of Legionnaires' disease will be eliminated.

In the diagrams below, you can find the difference in technical performance between the different series of thermostatic mixing valves.

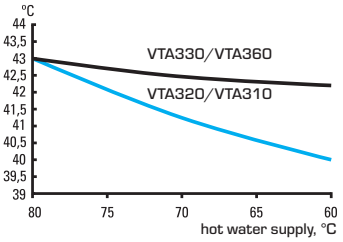
The valve is cold and "suddenly" hot water is needed – how fast will the valve reach the desired temperature? (In the diagram 43°C)



Incoming hot water pressure reduces by 30% (In the diagram -2 bar). What temperature change will it be in the valve?



If the hot water supply is being reduced by 20°C – what temperature change will it be in the valve?



CE

VALVES, RE. PED 97/23/EC
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice).
According to the directive the equipment shall not carry any CE-mark.

DISPOSAL
The products must not be disposed of together with domestic waste, but should be treated as metal scrap.
Local and currently valid legislation must be observed.

ESBE GUIDE
DIMENSIONING

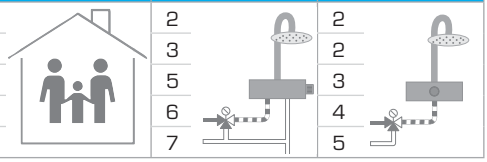
The ESBE thermostatic mixing valves are available with Kvs-values from 1.2 up to 4.8 and is to be dimensioned as below.

DIMENSIONING OF DOMESTIC WATER APPLICATIONS

The thermostatic mixing valves for domestic hot water applications can be dimensioned according to the number of households in the house or the number of showers in, for example sports centers.

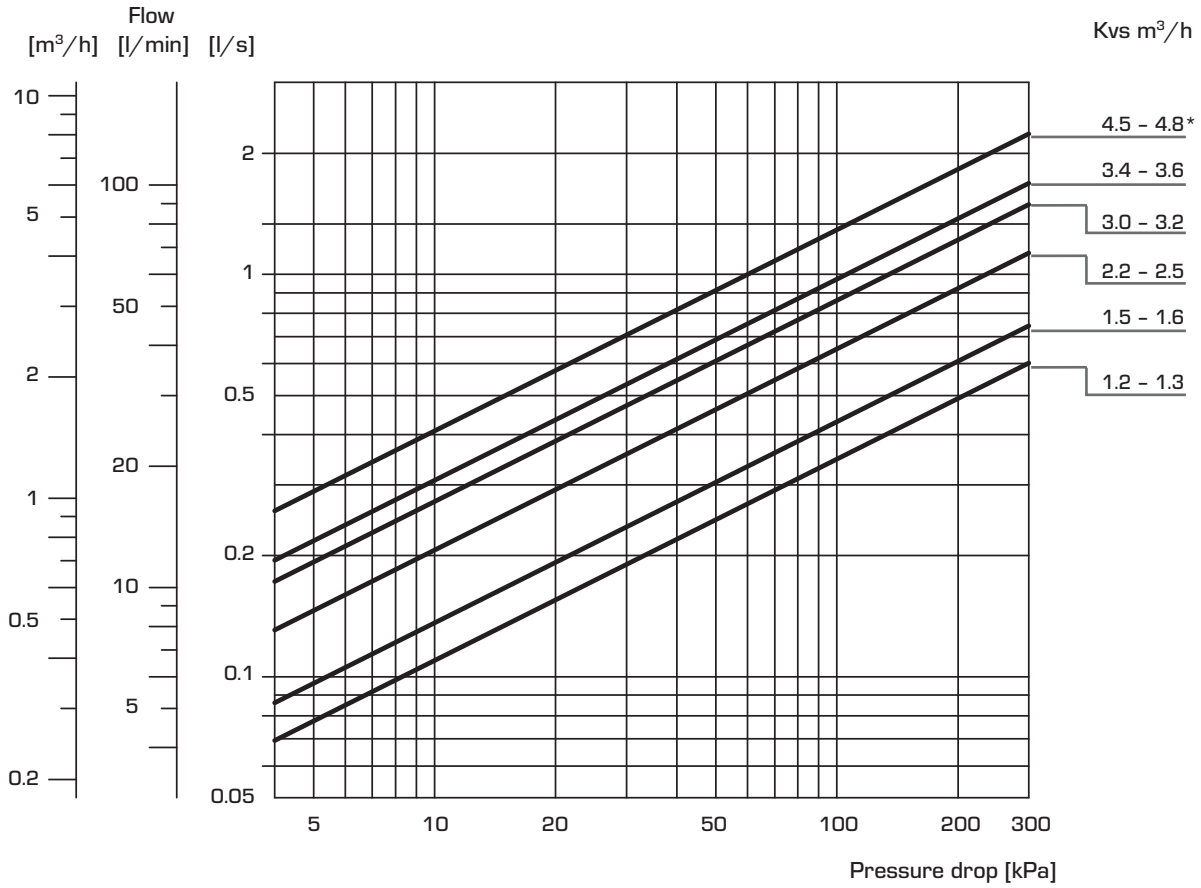
RECOMMENDED KVS-VALUES

Kvs	Typical households[1]	Showers[2]	Shower heads[3]
1.2 - 1.3	1	2	2
1.5 - 1.6	2	3	2
2.2 - 2.5	4	5	3
3.0 - 3.2	5	6	4
3.4 - 3.6	6	7	5



1) A typical household consist of bath, shower, kitchen sink and washbasin with a design flow evaluated from probability curve with a supply pressure >300kPa (3 bar).
2) Showers in for example sport centers meaning supply of scald safe hot water to shower mixer with supply pressure >300kPa (3 bar).
3) Showers in for example sport centers meaning supply of scald safe mixed water to shower head with supply pressure >300kPa (3 bar).

CAPACITY DIAGRAM



* Only underfloor heating applications

ESBE GUIDE
HOW TO CHOOSE THE CORRECT INSTALLATION/POSITION

FACTORS BEHIND HIGH OPERATING SAFETY

To achieve a good and safe function it is important to follow the installation instructions. This applies to all products, including the ESBE thermostatic mixing valves!

PERIODIC FUNCTION CONTROL – CAUSE OF FAILURE

The function of the mixing valve is especially important at scald safe installations. We recommend performing a periodic check of the function at least once a year. Adjust the mixing temperature if required. If the required temperature cannot be achieved, a valve insert exchange may be required.

SERVICE AND MAINTENANCE

Under normal conditions maintenance will not be required for ESBE thermostatic mixing valves. If, however, it should prove necessary, the seals (O-rings), the sensing element and the valve plug are easily replaced.

NOTE! Before dismantling the valve the water supply should be shut off. Where the valve is fitted below the storage tank this should be drained first.

INSTALLATION

The thermostatic mixing valve should not be under constant thermal load. We therefore recommend heat traps in the piping arrangement. This should be taken into account during installation.

The mixing valve function regardless of mounting position.

APPLICATION EXAMPLES – DOMESTIC HOT WATER

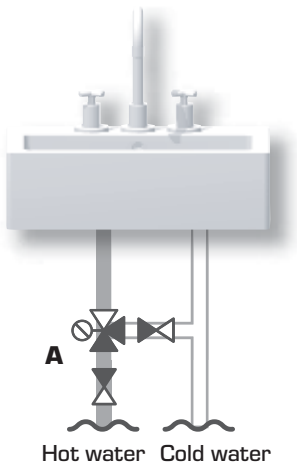
The ESBE thermostatic mixing valves can be used in a great number of applications. Please see the illustrations below for examples of how to install the thermostatic mixing valves in a domestic hot water system.

CONNECTION OF THE SERIES VTA330/VTA360 AT A WASHBASIN

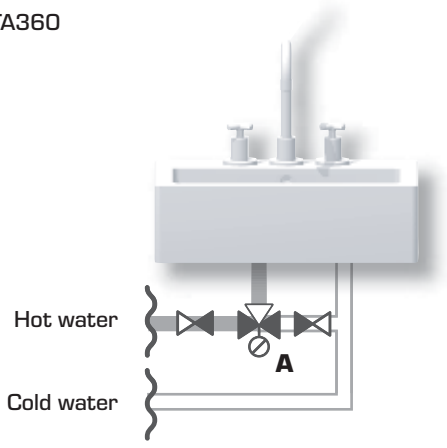
In applications with high requirements for scald safety (hospitals, child care centers etc.) and/or quick and exact regulation accuracy, the series VTA330/VTA360 is the recommended choice.

Please see below for two illustrations of connections at a washbasin. The two mixing valve inlets shall be equipped with check valves.

(A) VTA330



(A) VTA360



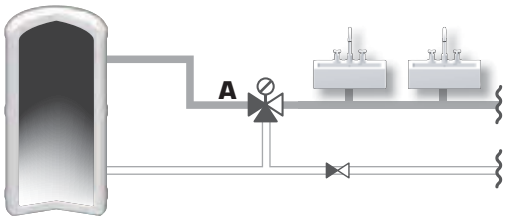
ESBE GUIDE
HOW TO CHOOSE THE CORRECT INSTALLATION/POSITION

DOMESTIC HOT WATER WITHOUT HWC*

If no hot-water circulation exists, the valve should be equipped with hot-water blocking devices (heat traps) in the hot-water and the cold-water feed line.

* HWC = Hot-water circulation

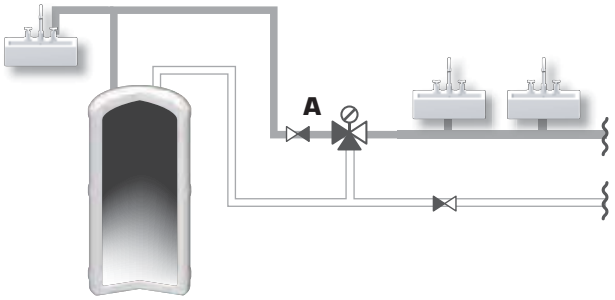
(A) VTA320/VTA310/VTA520/VTA530/VTS520



HOT-WATER OUTLET BEFORE THE VALVE

Whenever a hot-water outlet is installed before the valve, a check valve must be installed before the hot-water connection to the mixing valve.

(A) VTA320/VTA310/VTA520/VTA530/VTS520

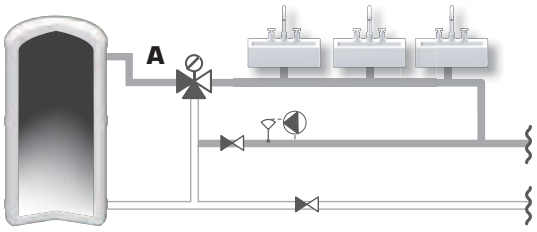


TAP WATER WITH HWC*

To get access to hot-water at a tap without waiting, an HWC-pipe with circulation pump should be installed. Connect each tap to the HWC-pipe. N.B! series VTA310 is not suitable for HWC.

* HWC = Hot-water circulation

(A) VTA320/VTA520/VTA530/VTS520



ESBE GUIDE
HOW TO CHOOSE THE CORRECT INSTALLATION/POSITION

When refurbishing your home you may wish to install an underfloor heating in the bathroom, in the entrance or in any other room. ESBE thermostatic mixing valves series VTA300 alt. series VTA500 offer a simple and economical solution for underfloor heating regulation. The advantage of choosing a thermostatic mixing valve for underfloor heating applications is that it limits the supply line temperature without any needs for an automatic control device/bypass.

APPLICATION EXAMPLES – UNDERFLOOR HEATING

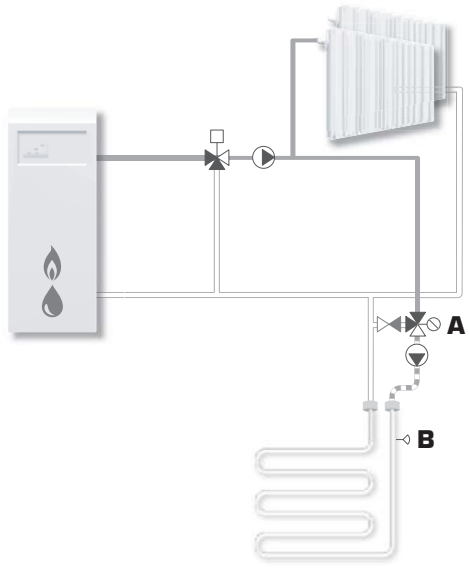
There are some differences in regulating underfloor heating compared to radiator systems, such as;

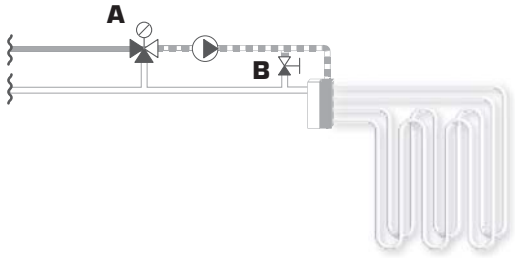
1) The supply line temperature should not exceed 55°C.
For concrete beams normally 40°C is enough, timber joist floor, however, can require up to 55°C.
2) The difference between the supply line temperature and the return temperature Δt is lower, normally 5°C

DIMENSIONING OF UNDERFLOOR HEATING

Normal power requirement = 50 W/m². Δt = 5°C requires a flow of approx. 0.25 l/s per 100 m².
Ex.: A valve of type VTA320 DN20 manages approx. 50 m² with a pressure drop of 8 kPa and VTA520 DN25 approx. 150 m² with a pressure drop of 10 kPa. For more details on dimensioning in heating applications, see diagrams in chapter "Rotary motorized valves".

ONE UNDERFLOOR HEATING LOOP	SEVERAL UNDERFLOOR HEATING LOOPS
The mixing valve has a constant temperature regulation at the set value. Please note that the underfloor heating circuit requires a separate circulation pump and that it can be equipped with a sensor.	The mixing valve has a constant temperature regulation at the set value. This type of application requires valves to balance the flow between the different underfloor heating circuits. For room control facilities, valves with separate sensors can be installed.
(A) VTA320/VTA370/VTA520/VTA570 **(B)** Separate room sensor which starts and stops the required pump, if room control is required.	**(A)** VTA320/VTA370/VTA520/VTA570 **(B)** Differential pressure valve on by-pass piping





ESBE GUIDE
HOW TO CHOOSE THE CORRECT INSTALLATION/POSITION

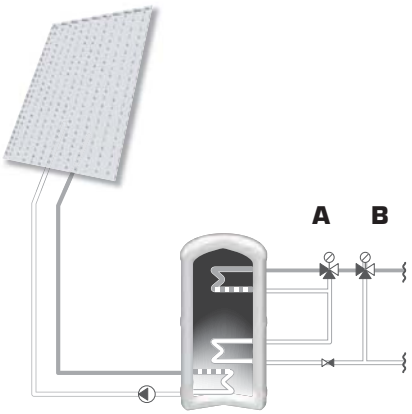
To connect two thermostatic mixing valves in series can be beneficial whenever you have an storage tank with a two level domestic hot water outlet or when the hot water is processed in two different heaters. Preference can then be given to the most effective option.
ESBE thermostatic mixing valves can also be suitable for obtaining the highest possible level of energy from the most beneficial heat source of the system.

APPLICATION EXAMPLES – SOLAR HEATING AND OTHERS

IN SERIES WITH DOUBLE LOOPS

Series connection in hot-water heaters with double loops. Should the temperature in the bottom loop be insufficient, the top one will provide the peak heat.

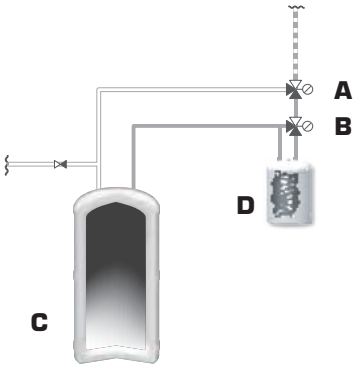
(A) VTS520/VTA520/(VTA320)
(B) VTA520/VTA 320



TWO HEATERS IN SERIES

Series connection of two heaters. Should the temperature in the first heater be insufficient, the second heater will provide the peak heat. N.B.! Heater No. 2 must constantly be kept hot to avoid cold water addition.

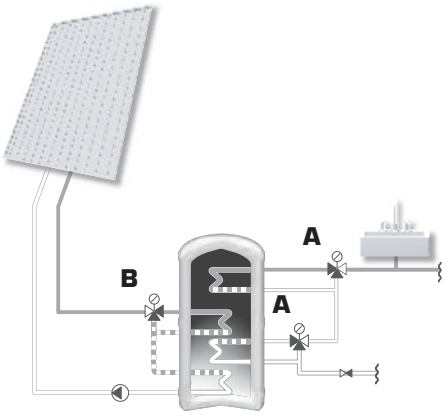
(A) VTS520/VTA520/(VTA320)
(B) VTA520/VTA 320
(C) Heater 1, Storage tank or heat pump
(D) Heater 2, Electrical backup heating



STRATIFICATION IN A SOLAR HEATING SYSTEM

The connection showed below provide good stratification in the storage tank. The best diverting functionality with a thermostatic valve is obtained when using a load valve VTC300.

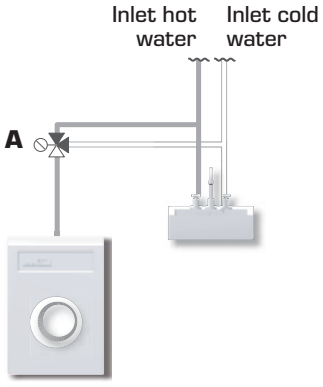
(A) VTS520/VTA520/(VTA320)
(B) VTC300



HOT WATER TO A WASHING MACHINE

A mixing valve can be used to temper the hot water for a washing machine. This can be cost-effective if you have access to hot water from a solar collector, heatpump or a solid fuel system. In this case, the mixing valve is equipped with an adjusting knob to easily adjust to the desired washing temperature. Maximum recommended mixed water temperature setting: 40°C.

(A) VTA320



THERMOSTATIC MIXING VALVE
SOLAR SERIES VTS520, 550

The ESBE thermostatic mixing valves series VTS520 and VTS550 offer high flow capacity and high functionality for domestic hot water distribution connected to solar heating systems with high water temperatures.

VTS520
External thread | With adapters, external thread | With adapters, compression fitting

VTS550
External thread | With adapters, external thread | With adapters, compression fitting

OPERATION

Series VTS520/VTS550 are the number one choice for domestic hot water distribution connected to solar heating systems, where the high water temperatures require extra durable components. The VTS520/VTS550 offers an in-line scald safe* function and are suitable for use where further temperature control devices have been installed at the water taps. These series of valves are also suitable for domestic hot water installations equipped with HWC (hot water circulation).

FUNCTION

VTS520 has asymmetrical flow pattern, VTS550 has symmetrical flow pattern. Scald safe*.

VERSIONS

The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

Supplied with a top cover, unless otherwise stated.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA

These valves can handle the following types of media:
- Fresh water / Potable water
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

Series	Temperature range 45 – 65°C	Temperature range 50 – 75°C	Application
VTS520	●	●	Potable water, in line
VTS550	●	●	
VTS520			Potable water, point of use
VTS550			
VTS520	●	●	Solar heating
VTS550	●	●	
VTS520			Cooling
VTS550			
VTS520	○		Floor heating
VTS550	○		

● recommended ○ secondary alternative

TECHNICAL DATA

Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see catalogue page 127
Media temperature: continuously max. 110°C
temporarily max. 120°C
Temperature stability: ±4°C*
Connection: External thread, ISO 228/1
Compression fitting, EN 1254-2

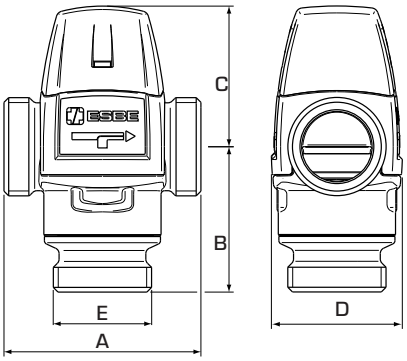
* Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

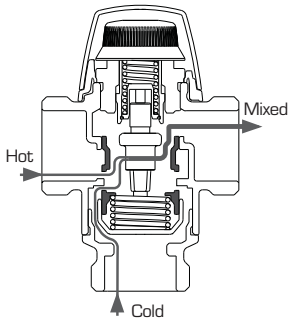
Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

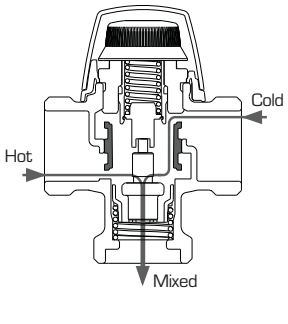
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
SOLAR SERIES VTS520, 550





VTS520



VTS550

SERIES VTS522, EXTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3172 01 00	VTS522	45 - 65°C	3.2	G 1"	84	62	60	56		0.86
3172 03 00			3.5	G 1¼"						0.95
3172 02 00	VTS522	50 - 75°C	3.2	G 1"	84	62	60	56		0.86
3172 04 00			3.5	G 1¼"						0.95

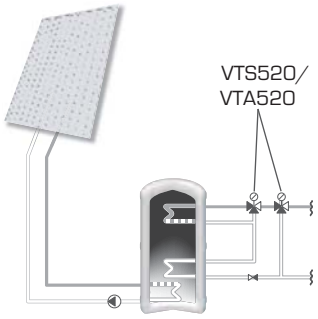
SERIES VTS552, EXTERNAL THREAD

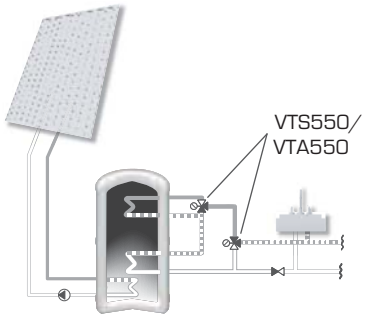
Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3174 01 00	VTS552	45 - 65°C	3.2	G 1"	84	50	60	56		0.78
3174 03 00			3.5	G 1¼"						0.87
3174 02 00	VTS552	50 - 75°C	3.2	G 1"	84	50	60	56		0.78
3174 04 00			3.5	G 1¼"						0.87

* Kvs-value in m^3/h at a pressure drop of 1 bar.

INSTALLATION EXAMPLES

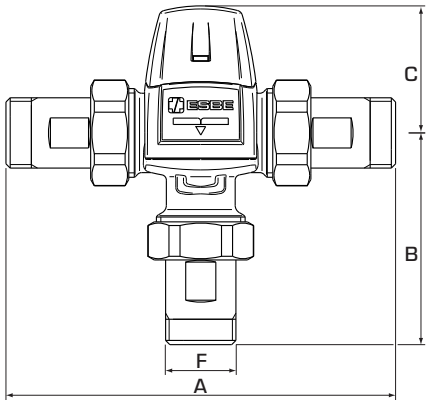
See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.

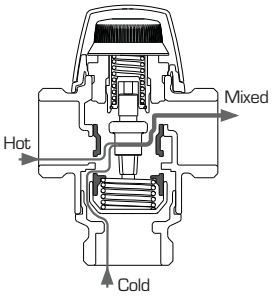




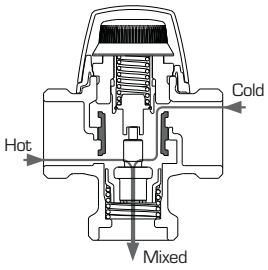
For more variants, please see next page

THERMOSTATIC MIXING VALVE
SOLAR SERIES VTS520, 550





VTS520



VTS550

SERIES VTS522/VTS523, WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Note	Weight [kg]
3172 05 00	VTS522	45 - 65°C	3.0	G ¾"	124	102	60	56	1)	1.30
3172 09 00	VTS523			CPF 22mm	132	110				1.42
3172 07 00	VTS522		3.4	G 1"	134	112				1.73
3172 11 00	VTS523			CPF 28mm	144	122				1.90
3172 06 00	VTS522	50 - 75°C	3.0	G ¾"	124	102	60	56	1)	1.30
3172 10 00	VTS523			CPF 22mm	132	110				1.42
3172 08 00	VTS522		3.4	G 1"	134	112				1.73
3172 12 00	VTS523			CPF 28mm	144	122				1.90

SERIES VTS552/VTS553,WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Note	Weight [kg]
3174 05 00	VTS552	45 - 65°C	3.0	G ¾"	124	90	60	56		1.22
3174 09 00	VTS553			CPF 22mm	132	98				1.34
3174 07 00	VTS552		3.4	G 1"	134	100				1.65
3174 06 00	VTS552	50 - 75°C	3.0	G ¾"	124	90	60	56		1.22
3174 10 00	VTS553			CPF 22mm	132	98				1.34
3174 08 00	VTS552		3.4	G 1"	134	100				1.65

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) Two check valves for both hot and cold water are included

THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA330, 530

The ESBE thermostatic mixing valves series VTA330 and VTA530 are designed to satisfy the highest possible market requirements when it comes to accuracy of regulation, quick reaction and safe function with high flow capacity, regardless of varying pressure conditions.

VTA330
External thread

Compression fitting

VTA530
External thread

With adapters, external thread

With adapters, compression fitting

OPERATION

Series VTA330 is primarily designed to provide a highly accurate temperature regulation in point-of-use positions for domestic hot water, at taps or showers where no further temperature-control fittings have been installed.

Series VTA530 is primarily designed to provide an accurate in-line temperature regulation of the domestic hot water in high flow applications, according to standards EN15092 or EN1111/NF079, where further temperature-control fittings have been installed at taps or showers.

FUNCTION

The quick reaction thermostat and the pressure balanced control valve regulator allow the VTA330/VTA530 to provide minimal changes of temperature regardless of varying pressure conditions. Asymmetrical flow pattern. Scald safe*.

VERSIONS

The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

Supplied with a top cover, unless otherwise stated.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA

These valves can handle the following types of media:
- Fresh water / Potable water
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

	Temperature range				
Series	32 – 49°C	35 – 50°C	35 – 60°C	45 – 65°C	Application
VTA330	○		●		Potable water, in line
VTA530		●		●	
VTA330	●		○		Potable water, point of use
VTA530					
VTA330					Solar heating
VTA530		○		○	
VTA330					Cooling
VTA530					
VTA330	○		○		Floor heating
VTA530		○		○	

● recommended ○ secondary alternative

TECHNICAL DATA

Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see catalogue page 127
Media temperature: VTA330, VTA530 max. 95°C
VTA530 temporarily max. 100°C
Temperature stability: VTA330 ±1°C*
VTA530 ±2°C**
Connection: External thread, ISO 228/1
Compression fitting, EN 1254-2

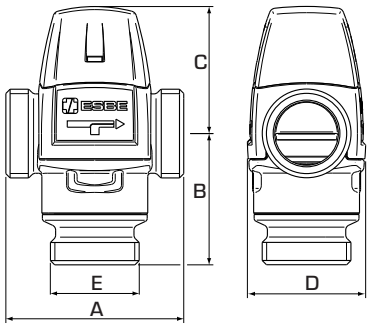
* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.
** Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

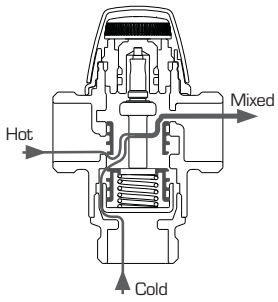
Material
Valve housing and other metal parts with fluid contact: DZR brass CW602N, resistant to dezincification
Surface treatment: Nickel-plated

PED 97/23/EC, article 3.3

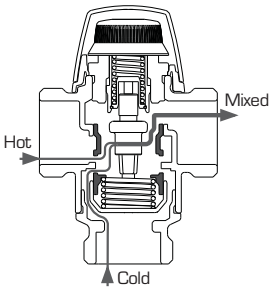
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA330, 530





VTA330



VTA530

SERIES VTA332/VTA532, EXTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3115 02 00	VTA332	32 - 49°C	1.2	G ¾"	70	54	52	46		0.52
3164 10 00	VTA532	35 - 50°C	2.3	G 1"	84	62	60	56	2)	0.86
3164 11 00			2.5	G 1¼"						0.95
3115 07 00	VTA332	35 - 60°C	1.2	G ¾"	70	54	52	46		0.52
3115 09 00			1.3	G 1"						0.55
3164 01 00	VTA532	45 - 65°C	2.3	G 1"	84	62	60	56	1)	0.86
3164 02 00			2.5	G 1¼"						0.95

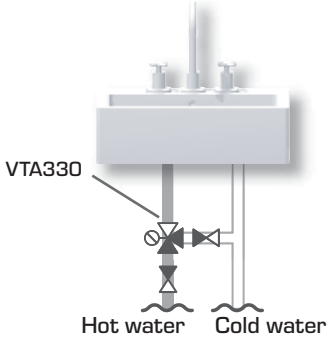
SERIES VTA333, COMPRESSION FITTING

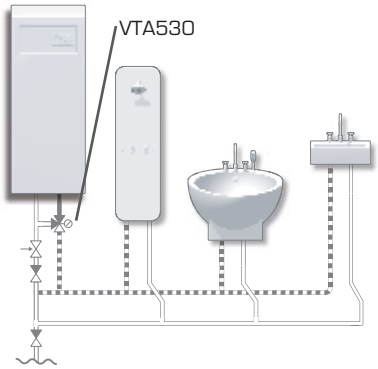
Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3115 03 00	VTA333	35 - 60°C	1.2	CPF 22 mm	86	62	52	46	3)	0.64
3115 21 00				CPF 15/22 mm						0.69

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) According to standard EN 15092, 2) According to standard EN 1111 + NF079 (France), 3) A non-return valve for the cold water is included.

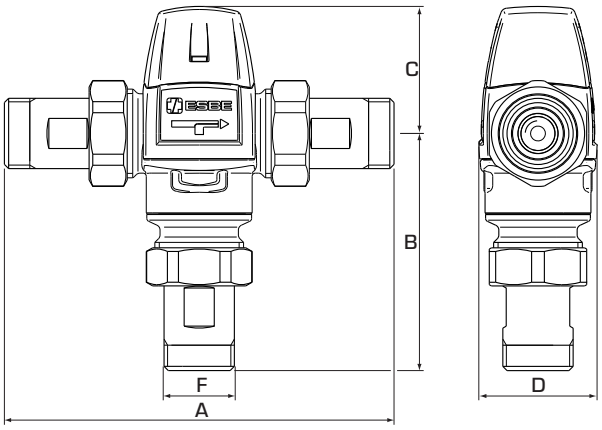
INSTALLATION EXAMPLES

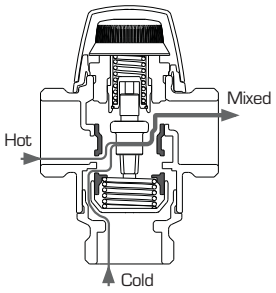
See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.





THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA330, 530





VTA530

SERIES VTA532/VTA533, WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Note	Weight [kg]
3164 12 00	VTA532	35 - 50°C	2.2	G ¾"	164	102	60	56	2), 3)	1.30
3164 14 00	VTA533			CPF 22mm	180	110				1.42
3164 13 00	VTA532		2.5	G 1"	184	112				1.73
3164 15 00	VTA533			CPF 28mm	204	122				1.90
3164 03 00	VTA532	45 - 65°C	2.2	G ¾"	164	102	60	56	1), 3)	1.30
3164 05 00	VTA533			CPF 22mm	180	110				1.42
3164 04 00	VTA532		2.5	G 1"	184	112				1.73
3164 06 00	VTA533			CPF 28mm	204	122				1.90

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) According to standard EN 15092, 2) According to standard EN 1111 + NF079 (France), 3) Two check valves for both hot and cold water are included.

THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA360, 560

The ESBE thermostatic mixing valves series VTA360 and VTA560 are designed to satisfy the highest possible market requirements when it comes to accuracy of regulation, quick reaction and safe function with high flow capacity, regardless of varying pressure conditions.

VTA360
External thread

Compression fitting

VTA560
External thread

With adapters, external thread

With adapters, compression fitting

OPERATION

Series VTA360 is primarily designed to provide a highly accurate temperature regulation in point-of-use positions for domestic hot water, at taps or showers where no further temperature-control fittings have been installed.

Series VTA560 is primarily designed to provide an accurate in-line temperature regulation of the domestic hot water in high flow applications, according to standards EN15092 or EN1111/NF079, where further temperature-control fittings have been installed at taps or showers.

FUNCTION

The quick reaction thermostat and the pressure balanced control valve regulator allow the VTA530/VTA560 to provide minimal changes of temperature regardless of varying pressure conditions. Symmetrical flow pattern. Scald safe*.

VERSIONS

The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

Supplied with a top cover, unless otherwise stated.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA

These valves can handle the following types of media:
- Fresh water / Potable water
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

	Temperature range				
Series	32 – 49°C	35 – 50°C	35 – 60°C	45 – 65°C	Application
VTA360	○		●		Potable water, in line
VTA560		●		●	
VTA360	●		○		Potable water, point of use
VTA560					
VTA360					Solar heating
VTA560		○		○	
VTA360					Cooling
VTA560					
VTA360	○		○		Floor heating
VTA560		○		○	

● recommended ○ secondary alternative

TECHNICAL DATA

Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see catalogue page 127
Media temperature: VTA360, VTA560 max. 95°C
VTA560 temporarily max. 100°C
Temperature stability: VTA360 ±1°C*
VTA560 ±2°C**
Connection: External thread, ISO 228/1
Compression fitting, EN 1254-2

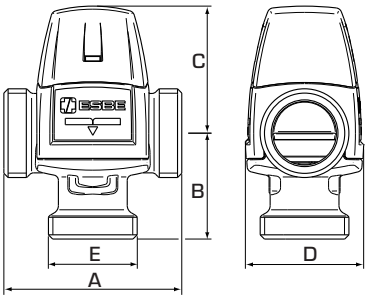
* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.
** Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

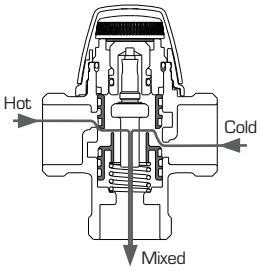
Material
Valve housing and other metal parts with fluid contact: DZR brass CW602N, resistant to dezincification
Surface treatment: Nickel-plated

PED 97/23/EC, article 3.3

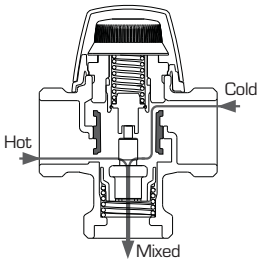
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA360, 560





VTA360



VTA560

SERIES VTA362/VTA562, EXTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3115 14 00	VTA362	32–49°C	1.2	G ¾"	70	42	52	46		0.45
3168 10 00	VTA562	35 - 50°C	2.3	G 1"	84	50	60	56	2)	0.78
3168 11 00			2.5	G 1¼"						0.87
3115 11 00	VTA362	35–60°C	1.2	G ¾"	70	42	52	46		0.45
3115 12 00			1.3	G 1"						0.48
3168 01 00	VTA562	45 - 65°C	2.3	G 1"	84	50	60	56	1)	0.78
3168 02 00			2.5	G 1¼"						0.87

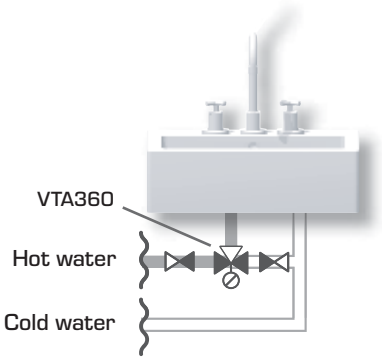
SERIES VTA363, COMPRESSION FITTING

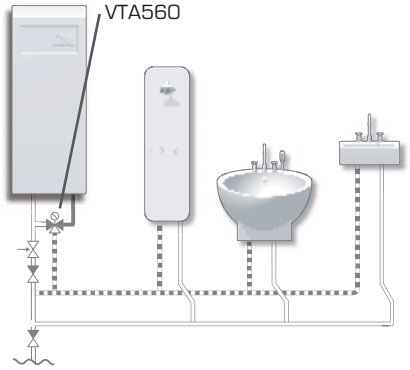
Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3115 10 00	VTA363	35–60°C	1.2	CPF 22 mm	86	50	52	46	3)	0.57

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) According to standard EN 15092, 2) According to standard EN 1111 + NF079 (France), 3) A non-return valve for the cold water is included.

INSTALLATION EXAMPLES

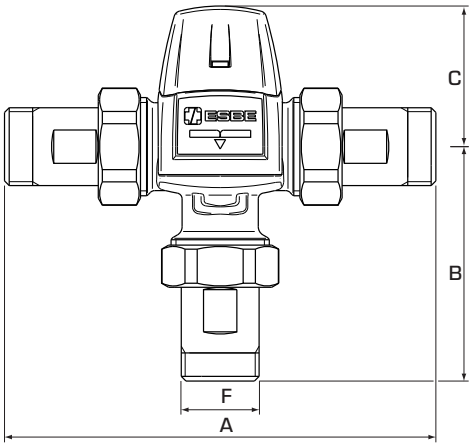
See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.

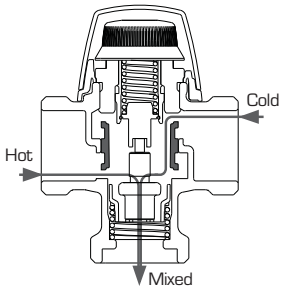




For more variants, please see next page

THERMOSTATIC MIXING VALVE
PREMIUM SERIES VTA360, 560





VTA560

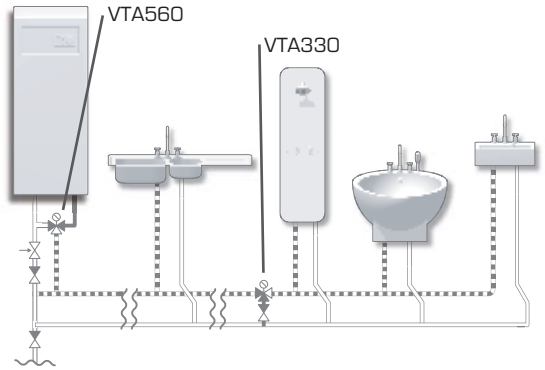
SERIES VTA562/VTA563, WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Surface treatment	Note	Weight [kg]
3168 12 00	VTA562	35 - 50°C	2.2	G ¾"	164	90	60	56	Plated	2), 3)	1.22
3168 14 00	VTA563			CPF 22mm	180	98					1.34
3168 13 00	VTA562		2.5	G 1"	184	100					1.65
3168 15 00	VTA563			CPF 28mm	204	110					1.82
3168 03 00	VTA562	45 - 65°C	2.2	G ¾"	164	90	60	56	Plated	1), 3)	1.22
3168 05 00	VTA563			CPF 22mm	180	98					1.34
3168 04 00	VTA562		2.5	G 1"	184	100					1.65
3168 06 00	VTA563			CPF 28mm	204	110					1.82

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) According to standard EN 15092, 2) According to standard EN 1111 + NF079 (France), 3) Two check valves for both hot and cold water are included

INSTALLATION EXAMPLES

See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.



THERMOSTATIC MIXING VALVE
BASIC SERIES VTA320, 520

The ESBE thermostatic mixing valves series VTA320/VTA520 offer high flow capacity and good functionality for universal applications, such as domestic hot water with or without HWC (hot water circulation) and smaller underfloor heating circuits.

VTA320
Internal thread

External thread

Compression fitting

VTA520
External thread

With adapters, external thread

With adapters, compression fitting

OPERATION
Series VTA320/VTA520 are the number one choice for domestic hot water systems requiring an in-line scald safe* function and where further temperature control devices have been installed at the water taps. These series of valves are also suitable for domestic hot water installations equipped with HWC (hot water circulation).

Series VTA320/VTA520 are suitable for under floor heating applications, as long as special attention is paid to temperature range and flow requirements.

FUNCTION
Asymmetrical flow pattern. Scald safe*.

VERSIONS
The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

Supplied with a top cover, unless otherwise stated.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA
These valves can handle the following types of media:
- Fresh water / Potable water
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

	Temperature range					
Series	20 – 43°C	30 – 70°C	35 – 60°C	45 – 65°C	50 – 75°C	Application
VTA320	○	●	●			Potable water, in line
VTA520	○			●	●	
VTA320						Potable water, point of use
VTA520						
VTA320		○	○			Solar heating
VTA520				○	○	
VTA320						Cooling
VTA520						
VTA320	○	○	○			Floor heating
VTA520	○			○		

● recommended ○ secondary alternative

TECHNICAL DATA
Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see catalogue page 127
Media temperature: VTA320, VTA520 max. 95°C
VTA520 temporarily max. 100°C
Temperature stability: VTA320 ±2°C*
VTA520 ±4°C**
Connection: Internal thread, EN 10226-1
External thread, ISO 228/1
Compression fitting, EN 1254-2

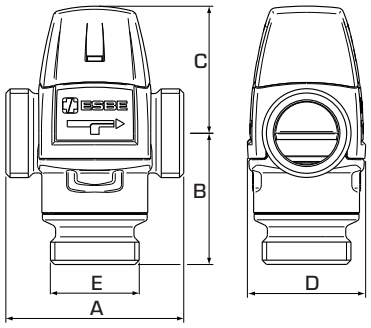
* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.
** Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

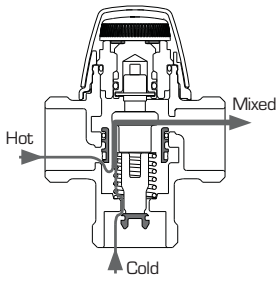
Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

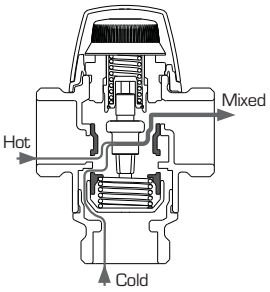
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA320, 520





VTA320



VTA520

SERIES VTA321, INTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3110 03 00	VTA321	20 - 43°C	1.5	Rp ½"	70	42	52	46		0.45
3110 07 00			1.6	Rp ¾"						0.48
3110 04 00	VTA321	35 - 60°C	1.5	Rp ½"	70	42	52	46		0.45
3110 08 00			1.6	Rp ¾"						0.48

SERIES VTA322/VTA522, EXTERNAL THREAD

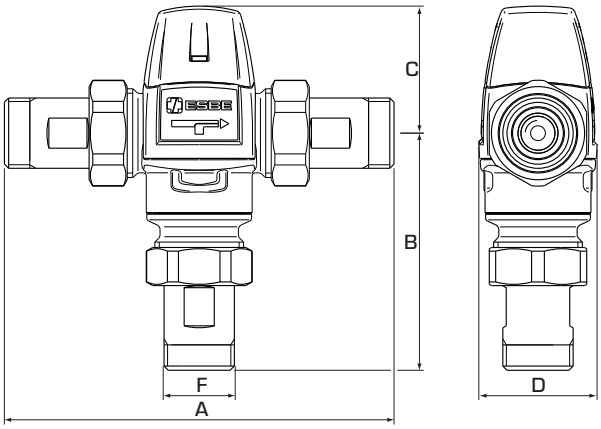
Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3110 28 00	VTA322	20 - 43°C	1.2	G ½"	70	42	52	46		0.41
3110 05 00			1.5	G ¾"						0.45
3110 09 00			1.6	G 1"						0.48
3162 01 00	VTA522		3.2	G 1"	84	62	60	56		0.86
3162 04 00			3.5	G 1¼"						0.95
3110 32 00	VTA322	30 - 70°C	1.6	G 1"	70	42	52	46		0.53
3110 29 00	VTA322	35 - 60°C	1.2	G ½"	70	42	52	46		0.41
3110 06 00			1.5	G ¾"						0.45
3110 10 00			1.6	G 1"						0.48
3110 47 00	VTA322	45 - 65°C	1.6	G 1"	70	42	52	46		0.55
3162 02 00	VTA522		3.2	G 1"	84	62	60	56		0.86
3162 05 00			3.5	G 1¼"						0.95
3162 03 00	VTA522	50 - 75°C	3.2	G 1"	84	62	60	56		0.86
3162 06 00			3.5	G 1¼"						0.95

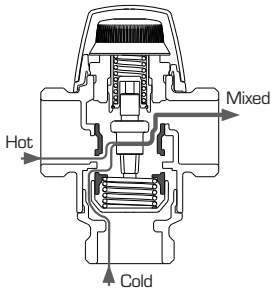
SERIES VTA323, COMPRESSION FITTINGS

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3110 26 00	VTA323	20 - 43°C	1.2	CPF 15 mm	86	50	52	46	1)	0.49
3110 01 00			1.5	CPF 22 mm						0.57
3110 27 00	VTA323	35 - 60°C	1.2	CPF 15 mm	86	50	52	46	1)	0.49
3110 39 00			1.5	CPF 18 mm						0.66
3110 02 00			1.5	CPF 22 mm					1)	0.57

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) A non-return valve for the cold water is included.

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA320, 520





VTA520

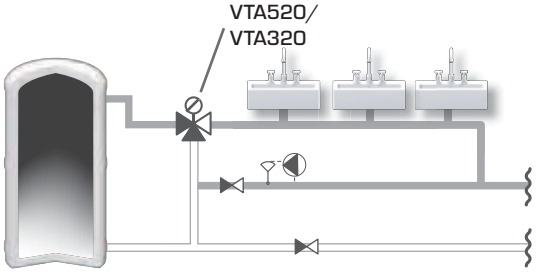
SERIES VTA522/VTA523, WITH ADAPTERS

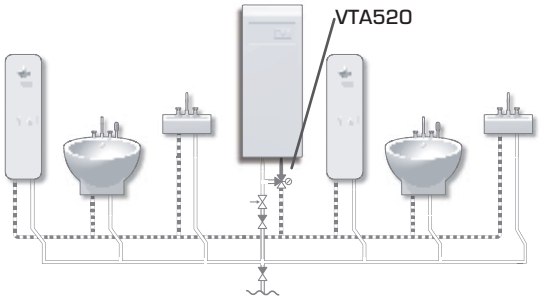
Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Note	Weight [kg]
3162 07 00	VTA522	20 - 43°C	3.0	G ¾"	164	102	60	56	2)	1.30
3162 13 00	VTA523			CPF 22mm	180	110				1.42
3162 10 00	VTA522		3.4	G 1"	184	112				1.73
3162 16 00	VTA523			CPF 28mm	204	122				1.90
3162 08 00	VTA522	45 - 65°C	3.0	G ¾"	164	102	60	56	2)	1.30
3162 14 00	VTA523			CPF 22mm	180	110				1.42
3162 11 00	VTA522		3.4	G 1"	184	112				1.73
3162 17 00	VTA523			CPF 28mm	204	122				1.90
3162 09 00	VTA522	50 - 75°C	3.0	G ¾"	164	102	60	56	2)	1.30
3162 15 00	VTA523			CPF 22mm	180	110				1.42
3162 12 00	VTA522		3.4	G 1"	184	112				1.73
3162 18 00	VTA523			CPF 28mm	204	122				1.90

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 2) Two check valves for both hot and cold water are included

INSTALLATION EXAMPLES

See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.





THERMOSTATIC MIXING VALVE
BASIC SERIES VTA550

The ESBE thermostatic mixing valves series VTA550 offer high flow capacity and good functionality for universal applications, such as domestic hot water with or without HWC (hot water circulation).

External thread

With adapters, external thread

With adapters, compression fitting

OPERATION
The series VTA550 is the number one choice for domestic hot water systems requiring an in-line scald safe* function and where further temperature control devices have been installed at the water taps. These series of valves are also suitable for domestic hot water installations equipped with HWC (hot water circulation). Series VTA550 is suitable for under floor heating applications, as long as special attention is paid to temperature range and flow requirements.

FUNCTION
Symmetrical flow pattern. Scald safe*.

VERSIONS
The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA
These valves can handle the following types of media:
- Fresh water / Potable water
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

Series	Temperature range 20 - 43°C	45 - 65°C	50 - 75°C	Application
VTA550	○	●	●	Potable water, in line
VTA550				Potable water, point of use
VTA550		○	○	Solar heating
VTA550				Cooling
VTA550	○	○		Floor heating

● recommended ○ secondary alternative

TECHNICAL DATA
Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see catalogue page 127
Media temperature: max. 95°C
temporarily max. 100°C
Temperature stability: ±4°C*
Connection: External thread, ISO 228/1
Compression fitting, EN 1254-2

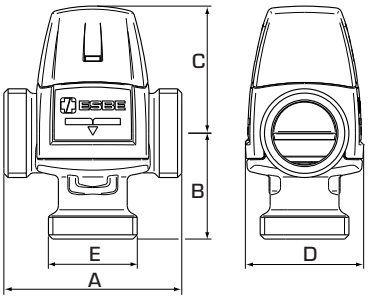
* Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

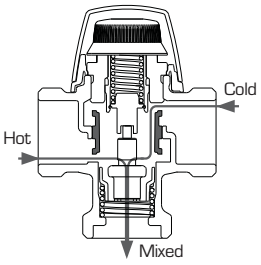
Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA550





VTA550

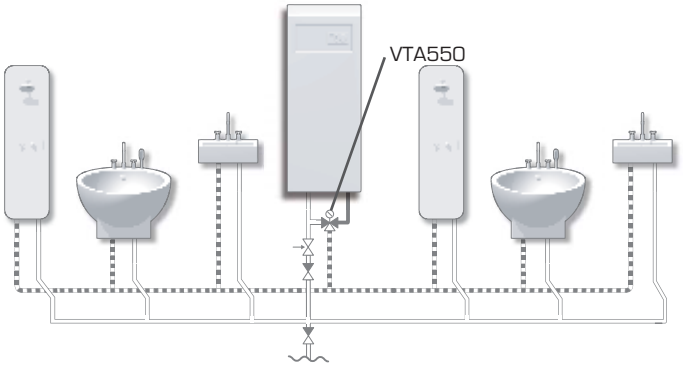
SERIES VTA552, EXTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3166 01 00	VTA552	20 - 43°C	3.2	G 1"	84	50	60	56		0.78
3166 04 00			3.5	G 1¼"						0.87
3166 02 00	VTA552	45 - 65°C	3.2	G 1"	84	50	60	56		0.78
3166 05 00			3.5	G 1¼"						0.87
3166 03 00	VTA552	50 - 75°C	3.2	G 1"	84	50	60	56		0.78
3166 06 00			3.5	G 1¼"						0.87

* Kvs-value in m^3/h at a pressure drop of 1 bar.

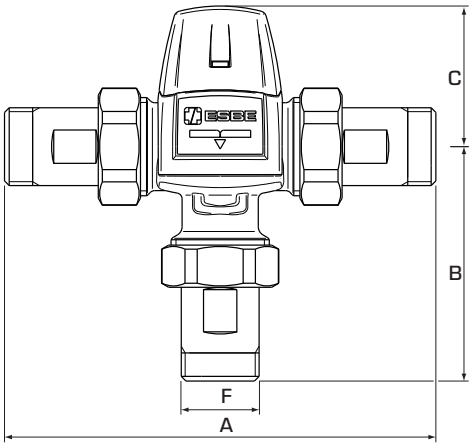
INSTALLATION EXAMPLES

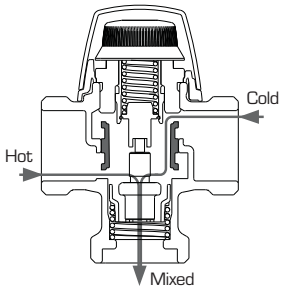
See the catalogue section “How to choose the correct installation/ position” for further information and connection examples.



For more variants, please see next page

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA550





VTA550

SERIES VTA552/VTA553, WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection F	Dimension A	B	C	D	Note	Weight [kg]
3166 07 00	VTA552	20 - 43°C	3.0	G ¾"	164	90	60	56	1)	1.22
3166 13 00	VTA553			CPF 22mm	180	98				1.34
3166 10 00	VTA552		3.4	G 1"	184	100				1.65
3166 08 00	VTA552	45 - 65°C	3.0	G ¾"	164	90	60	56	1)	1.22
3166 14 00	VTA553			CPF 22mm	180	98				1.34
3166 11 00	VTA552		3.4	G 1"	184	100				1.65
3166 09 00	VTA552	50 - 75°C	3.0	G ¾"	164	90	60	56	1)	1.22
3166 15 00	VTA553			CPF 22mm	180	98				1.34
3166 12 00	VTA552		3.4	G 1"	184	100				1.65

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) Two check valves for both hot and cold water are included

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA370, 570

The ESBE thermostatic mixing valves series VTA370 and VTA570 offer high flow capacity and high functionality for under floor heating circuits.

VTA370
External thread

VTA570
External thread

With adapters, pump flange

With adapters, rotating nut

OPERATION

The series VTA370/VTA570 is the number one choice for under floor heating systems requiring a scald safe* function, which is important in order to protect under floor heating pipes and also the floor itself. These valves are also suitable as pre-mixing devices for domestic hot water installations where very high flow rates are required, in which case further mandatory temperature control devices has to be installed at the water taps to provide point of use protection.

Series VTA570 is also suitable for cooling applications.

FUNCTION

Asymmetrical flow pattern. Scald safe*.

VERSIONS

The product range includes a wide choice of valves delivered with adapter fitting kits, each including three adapter fittings and two check valves, which facilitate easy installation and maintenance.

Supplied with large temperature setting knob instead of top cover, unless otherwise stated.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

MEDIA

These valves can handle the following types of media:
- Closed systems
- Water with antifreeze additive (glycol ≤ 50% mixture)

VALVES ARE DESIGNED FOR

Series	Temperature range 10 – 30°C	20 – 43°C	35 – 60°C	45 – 65°C	Application
VTA370					Potable water, in line
VTA570	○			○	
VTA370					Potable water, point of use
VTA570					
VTA370					Solar heating
VTA570					
VTA370					Cooling
VTA570	●				
VTA370			●		Floor heating
VTA570		●		●	

● recommended ○ secondary alternative

TECHNICAL DATA

Pressure class: PN 10
Working pressure: 1.0 MPa (10 bar)
Differential pressure, mixing: VTA370 max. 0.3 MPa (3 bar)
VTA570 max. 0.1 MPa (1 bar)
Pressure drop diagram: see catalogue page 127
Max. media temperature:
VTA370 95°C
VTA570, Temp. range 10–30°C 65°C
Temp. range 20–43, 45–65°C continuously 95°C
temporarily 100°C
Min. media temperature: 0°C
Temperature stability:
VTA570 - Temp. range 10–30°C ±2°C*
VTA370, VTA570 - Temp. range 20–43, 45–65°C ±3°C**
Connection: External thread, ISO 228/1

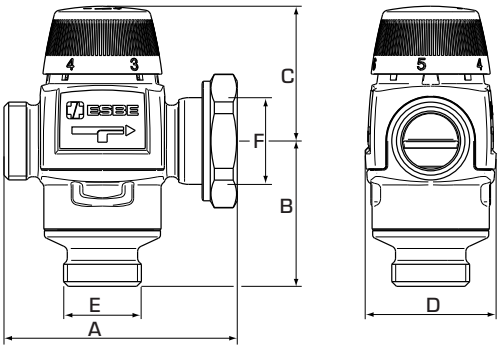
* Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between cold water inlet and mixed water outlet 3°C and recommended maximum temperature difference between return water /cold water inlet and mixed water outlet: 10°C.
** Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C and recommended maximum temperature difference between return water /cold water inlet and mixed water outlet: 10°C.

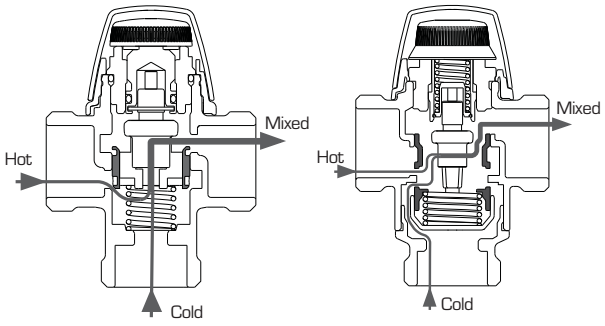
Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
BASIC SERIES VTA370, 570





VTA370 VTA570

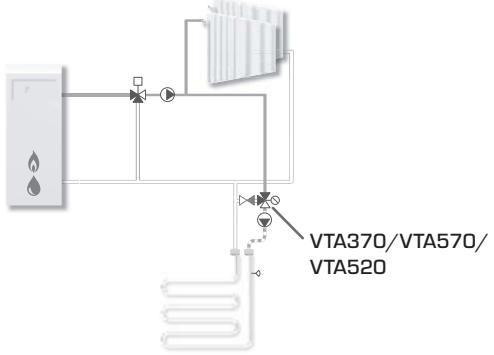
SERIES VTA372/VTA572, EXTERNAL THREAD

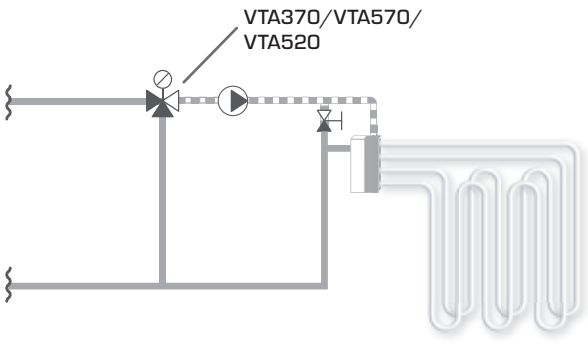
Art. No.	Reference	Temp. range	Kvs*	Connection E	Dimension A	B	C	D	Note	Weight [kg]
3170 01 00	VTA572	10 -30°C	4.5	G 1"	84	62	60	56		0.86
3170 04 00			4.8	G 1¼"						0.95
3110 44 00	VTA372	20 - 43°C	3.4	G 1"	70	42	52	46		0.51
3170 02 00	VTA572	20 - 43°C	4.5	G 1"	84	62	60	56		0.86
3170 05 00			4.8	G 1¼"						0.95
3110 45 00	VTA372	35 - 60°C	3.4	G 1"	70	42	52	46		0.51
3170 03 00	VTA572	45 - 65°C	4.5	G 1"	84	62	60	56		0.86
3170 06 00			4.8	G 1¼"						0.95

* Kvs-value in m^3/h at a pressure drop of 1 bar.

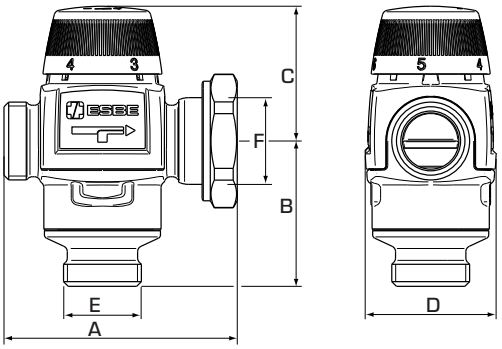
INSTALLATION EXAMPLES

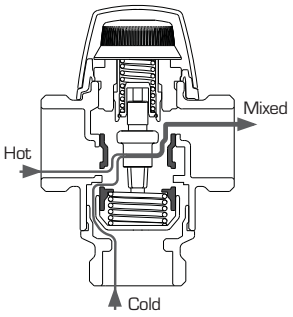
See the catalogue section “How to choose the correct installation/ position” for further information and connection examples.





THERMOSTATIC MIXING VALVE
BASIC SERIES VTA370, 570





VTA570

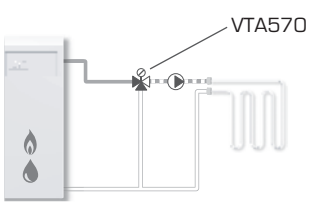
SERIES VTA577/VTA578, WITH ADAPTERS

Art. No.	Reference	Temp. range	Kvs*	Connection		Dimension				Note	Weight [kg]
				E	F	A	B	C	D		
3170 10 00	VTA577	10 -30°C	4.5	G 1"	PF 1½"	100	62	60	57		0.99
3170 16 00	VTA578			G 1¼"	RN 1"	93			56		0.91
3170 11 00	VTA577	20 - 43°C	4.5	G 1"	PF 1½"	100	62	60	57		0.99
3170 17 00	VTA578			G 1¼"	RN 1"	93			56		0.91
3170 12 00	VTA577	45 - 65°C	4.5	G 1"	PF 1½"	100	62	60	57		0.99
3170 18 00	VTA578			G 1¼"	RN 1"	93			56		0.91

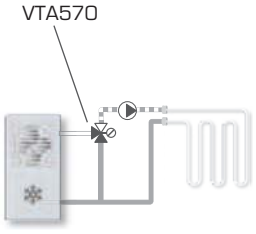
* Kvs-value in m^3/h at a pressure drop of 1 bar. PF = Pump Flange, RN = Rotating Nut

INSTALLATION EXAMPLES

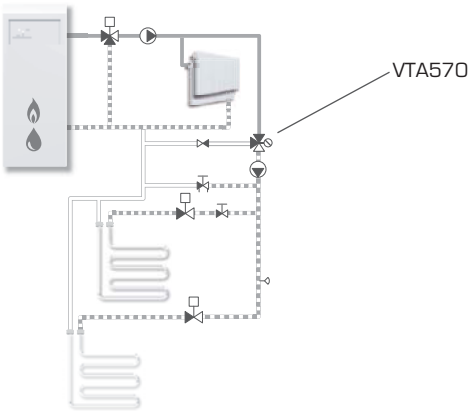
See the catalogue section "How to choose the correct installation/ position" for further information and connection examples.



Heating



Cooling



THERMOSTATIC MIXING VALVE SERIES VTA310

The ESBE thermostatic mixing valves series VTA310 is primarily designed for domestic hot water regulation at heaters without any requirement for a scald safe function.

VTA310
External thread

Compression fitting

OPERATION

The series VTA310 is designed for temperature control in domestic hot water installations without any requirements for a scald safe function. This series of valves is not suitable for domestic hot water installations equipped with HWC.

FUNCTION

Asymmetrical flow pattern.

VERSIONS

Supplied with a knob unless otherwise stated.

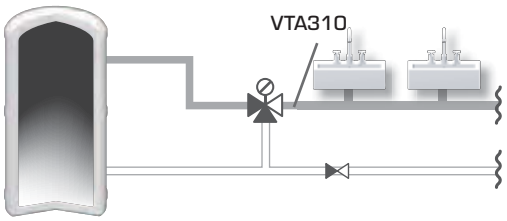
INSTALLATION EXAMPLES

See the catalogue section "How to choose the correct installation/position" for further information and connection examples.

VALVES ARE DESIGNED FOR

Series	Temperature range 30 – 70°C	Temperature range 35 – 60°C	Application
VTA310	●	●	Potable water, in line
VTA310			Potable water, point of use
VTA310			Solar heating
VTA310			Cooling
VTA310			Floor heating

● recommended ○ secondary alternative



TECHNICAL DATA

Pressure class: PN 10
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Pressure drop diagram: see page 127
Media temperature: max. 95°C
Temperature stability: ±2°C*
Connection: External thread, ISO 228/1
Compression fitting, EN 1254-2

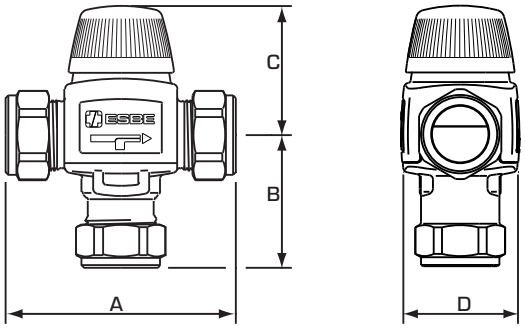
* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

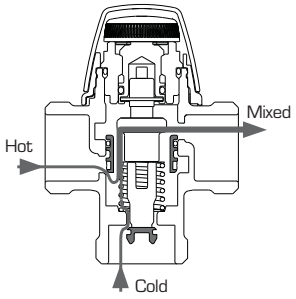
Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

THERMOSTATIC MIXING VALVE
SERIES VTA310





VTA310

SERIES VTA312, EXTERNAL THREAD

Art. No.	Reference	Temp. range	Kvs*	Connection	Dimension A	B	C	D	Note	Weight [kg]
3105 02 00	VTA312	35 - 60°C	1.2	G ½"	70	42	52	46		0.41

SERIES VTA313, COMPRESSION FITTING

Art. No.	Reference	Temp. range	Kvs*	Connection	Dimension A	B	C	D	Note	Weight [kg]
3105 01 00	VTA313	35 - 60°C	1.2	CPF 15 mm	86	50	52	46	1)	0.49
3105 03 00			1.5	CPF 18 mm						0.62
3105 04 00				CPF 22 mm					1)	0.57
3105 05 00	VTA313	30 - 70°C	1.5	CPF 22 mm	86	50	52	46	1)	0.62

* Kvs-value in m^3/h at a pressure drop of 1 bar. CPF = compression fitting
Note 1) A non-return valve for the cold water is included.

NEW

SOLAR KIT
SERIES VMC300, VMC500

The ESBE thermic solar kit series VMC300/VMC500 offers dual functionality for tap water applications: It diverts incoming water when additional heating is needed and makes outgoing water scald safe, all in an easy-to-install solar kit.*

VMC300
External thread

With adapters, external thread

VMC500
External thread

With adapters, external thread

OPERATION

ESBE solar kit VMC300/VMC500 offers optimized energy usage, scald protection and comfort in a compact and efficient way. Using only thermostatic components (non-electrical) the unit is completely independent and provides very easy installation.

Series VMC300 is intended for smaller solar heating systems (Kvs 1.5) and series VMC500 is intended for larger systems (Kvs 2.5).

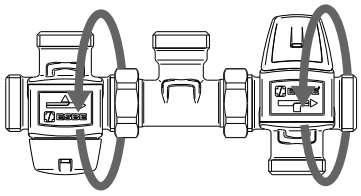
FUNCTION

If the incoming water from the solar collector is not hot enough, it is diverted to an additional heat source, such as a gas boiler, and once it is heated it is mixed to a suitable temperature for domestic hot water applications. If the incoming water from the solar collector is already hot enough, it will be mixed directly for domestic hot water use, efficiently utilizing the solar energy.

**) Scald safe means that in the case of a cold water failure, the hot water supply shuts off automatically.*

VALVE VMC300/VMC500 DESIGNED FOR

- ○ Heating
- ○ Comfort Cooling
- ● Potable water
- ○ Floor heating
- ● Solar heating
- ○ Ventilation
- ○ Zone
- ○ District Hot Water
- ○ District Heating
- ○ District Cooling



All parts can be rotated 360° for maximum flexibility of connection.

TECHNICAL DATA

Pressure class: PN 10
Max. flow from collector- VMC300: 0.7 l/s (42 l/min)
VMC500: 1.0 l/s (60 l/min)
Temperature of water from collector: max 95°C
min 0°C
Temperature from additional heat source: max. 95°C
Change-over point, accuracy: ±1°C
Diverting range shut off: 45°C ±2°C
50°C, 60°C ±3°C
Temperature range, mixing valve - VMC300: 35 - 60°C
VMC500: 45 - 65°C
Temperature stability of outgoing water - VMC300: ±2°C*
VMC500: ±4°C**
Connection: External thread, ISO 228/1

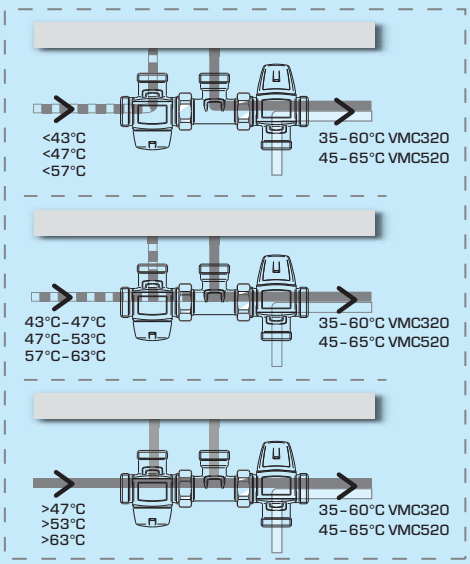
* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.
** Valid at unchanged hot/cold water pressure, minimum flow rate 9 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

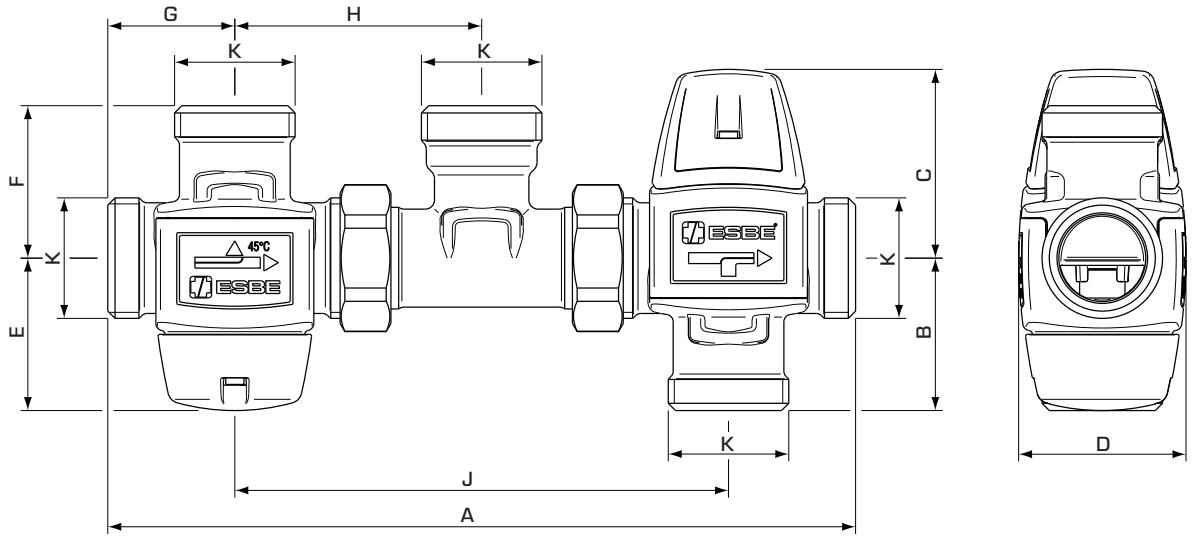
Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

FLOW PATTERN



SOLAR KIT
SERIES VMC300, VMC500

NEW



SERIES VMC322, EXTERNAL THREAD

Art. No.	Reference	Change-over point	Kvs*	Connection K	Dimension									Note	Weight [kg]
					A	B	C	D	E	F	G	H	J		
3152 10 00	VMC322	45°C	1.5	G 1"	206	42	52	46	42	42	35	68	136		1.22
3152 11 00		50°C													
3152 12 00		60°C													

SERIES VMC522, EXTERNAL THREAD

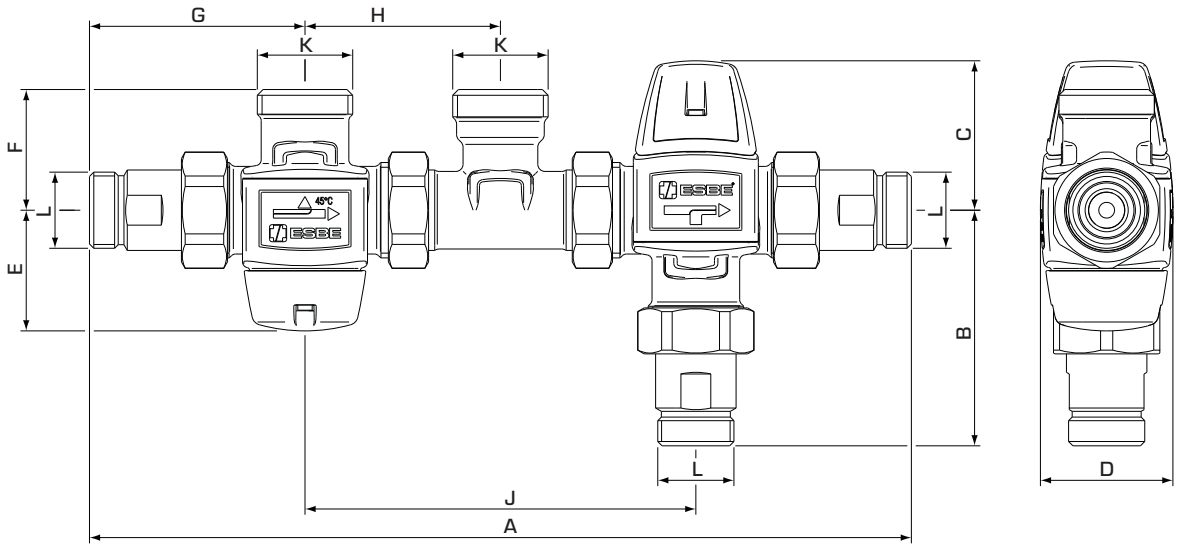
Art. No.	Reference	Change-over point	Kvs*	Connection K	Dimension									Note	Weight [kg]
					A	B	C	D	E	F	G	H	J		
3152 30 00	VMC522	45°C	2.5	G 1"	220	62	60	56	42	42	35	68	143		1.50
3152 31 00		50°C													
3152 32 00		60°C													

* Kvs-value in m^3/h at a pressure drop of 1 bar.

For more variants, please see next page

NEW

SOLAR KIT
SERIES VMC300, VMC500



SERIES VMC322, WITH ADAPTERS

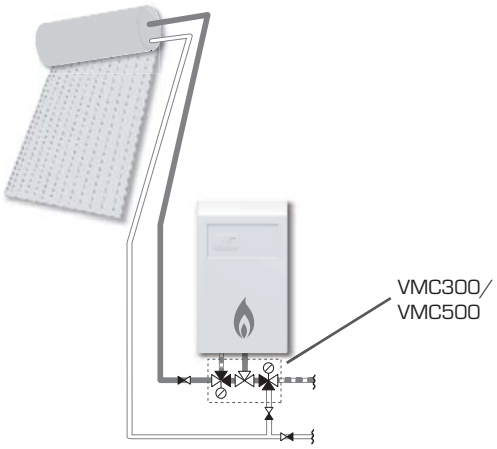
Art. No.	Reference	Change-over point	Kvs*	Connection		Dimension									Note	Weight [kg]
				K	L	A	B	C	D	E	F	G	H	J		
3152 13 00	VMC322	45°C	1.4	G 1"	G ¾"	286	82	52	46	42	42	75	68	136	1)	1.62
3152 14 00		50°C														
3152 15 00		60°C														

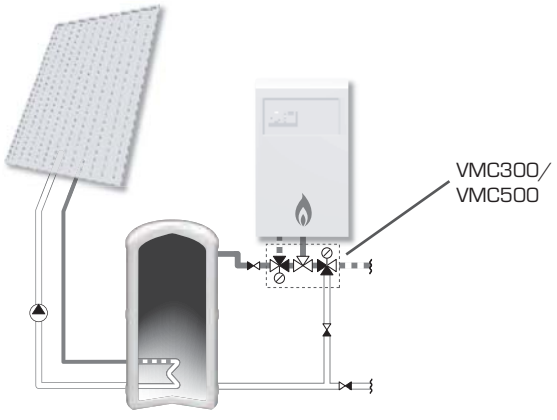
SERIES VMC522, WITH ADAPTERS

Art. No.	Reference	Change-over point	Kvs*	Connection		Dimension									Note	Weight [kg]
				K	L	A	B	C	D	E	F	G	H	J		
3152 33 00	VMC522	45°C	2.3	G 1"	G ¾"	300	102	60	56	42	42	75	68	143	1)	1.90
3152 34 00		50°C														
3152 35 00		60°C														

* Kvs-value in m^3/h at a pressure drop of 1 bar. Note 1) Two check valves for both hot and cold water are included

INSTALLATION EXAMPLES





VALVE MANIFOLD
BASIC SERIES VMB400

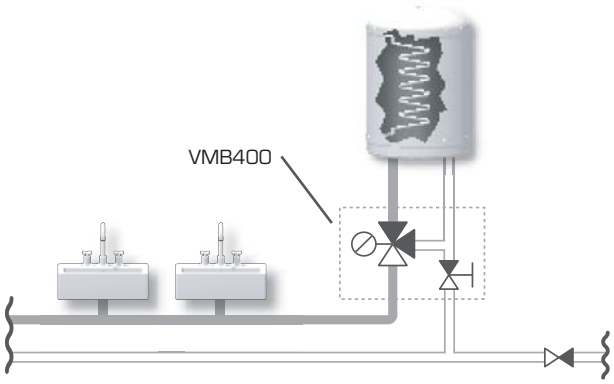
The ESBE series VMB is a compact valve combination for hot water storage. Incoming cold water has the following incorporated components; non return and shut-down device and connections for safety valve, vacuum valve etc. The incoming hot-water is regulated within a temperature range of 35 to 60°C by thermostatic mixing valves series VTA320.

VMB400
Compression fitting

HOW TO USE THE VALVES

The manifold has 2 connections with internal threads DN 15 to connect safety valve (VSB), vacuum valve (VVA), filling valve (VFA), HWC-pipe etc. The manifold also has shut off functionality and backflow protection type EB complying with EN1717.

INSTALLATION EXAMPLES



VALVE MANIFOLD VMB400 DESIGNED FOR

- ○ Heating
- ○ Comfort Cooling
- ● Potable water
- ○ Floor heating
- ○ Solar heating
- ○ Ventilation
- ○ Zone
- ○ District Hot Water
- ○ District Heating
- ○ District Cooling

TECHNICAL DATA

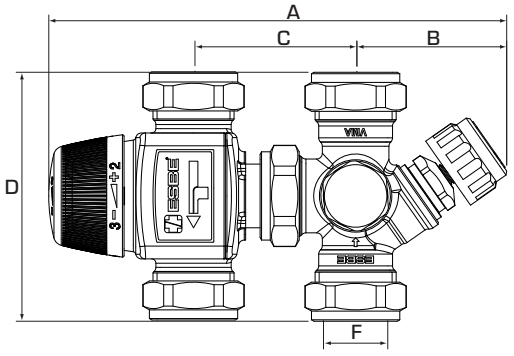
Pressure class: PN 10
Differential pressure: Mixing, max. 0.3 MPa (3 bar)
Media temperature: max. 95°C
Temperature stability: ±2°C*
Temperature range: 35-60°C
Connection: Internal thread, EN 10226-1
Compression fitting, EN 1254-2

* Valid at unchanged hot/cold water pressure, minimum flow rate 4 l/min. Minimum temperature difference between hot water inlet and mixed water outlet 10°C.

Material
Valve housing and other metal parts with fluid contact:
DZR brass CW602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.



SERIES VMB400, COMPRESSION FITTING

Art. No.	Reference	DN	Kvs	Connection	Safety valve [MPa]	Safety valve [bar]	A	B	C	D	F	Weight [kg]
3150 20 00	VMB423	15	1.1	CPF 15 mm	–	–	165	53	ca 55	86	15	0.78
3150 21 00	VMB423	20	1.6	CPF 22 mm	–	–	165	53	52-60	86	22	0.86
3150 22 00					0.6	6						1.01
3150 23 00					0.7	7						1.01
3150 24 00					0.9	9						1.01

CPF = compression fitting

NEW

THERMOSTATIC CONTROL UNITS

DIVERTING VALVE
SERIES VTD300

The thermic valve series ESBE VTD300 is used for diverting applications. The valve diverts the incoming flow to the A or B port depending on fluid temperature.

External thread

OPERATION

The ESBE series VTD300 is a thermic 3-way valve designed for diverting applications. When the incoming fluid temperature is below the nominal diverting temperature it is diverted to the B port, when the incoming fluid temperature is above the nominal diverting temperature it is diverted to the A port.

FUNCTION

The valve contains a thermostat with a certain diverting temperature, which reacts on the incoming fluid temperature and changes the outgoing flow direction accordingly. The change-over from one port to the other is within a range of approximately ±2°C to ±3°C, depending on temperature range, from the nominal diverting temperature. This means that a valve with a nominal diverting temperature of 45°C at an incoming fluid temperature of <43°C will divert the flow to port B, at an incoming fluid temperature of 43-47°C will divert it to both A and B, and at an incoming fluid temperature of >47°C will divert the flow to port A.

Four different nominal diverting temperatures are available; 45°C, 50°C, 60°C and 70°C.

The function of the valve is independent of assembly position.

MEDIA

Maximum 50% glycol for freezing protection and oxygen absorbing compounds are allowed as additives. As both the viscosity and the thermal conduction are affected when glycol is added to the system water, this fact has to be considered when dimensioning the valve. When 30 - 50 % glycol is added, the maximum output effect of the valve is decreased by 30 - 40 %. A lower concentration of glycol may be disregarded.

SERVICE AND MAINTENANCE

We recommend equipping the valve connections with shut-down devices to facilitate future service.

The valve does not need any maintenance under normal conditions. However thermostats are available and are easy to replace if necessary.

DIVERTING VALVE VTD300 DESIGNED FOR

- ● Heating
- ○ Comfort Cooling
- ● Potable water
- ○ Floor heating
- ● Solar heating
- ○ Ventilation
- ● Zone
- ○ District Hot Water
- ○ District Heating
- ○ District Cooling

TECHNICAL DATA

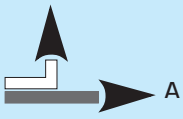
Pressure class: PN 10
Change-over point accuracy: ±1°C
Diverting range shut off: 45°C ±2°C
50°C, 60°C, 70°C ±3°C
Media temperature: continuously max. 100°C
temporarily max. 110°C
min 0°C
Max. differential pressure: 100 kPa (1.0 bar)
Leakrate AB - A, AB - B: Tight sealing
Connections: External thread, ISO 228/1

Material
Valve housing and other metal parts with fluid contact:
Brass DZR, CW 602N, resistant to dezincification

PED 97/23/EC, article 3.3

Pressure Equipment in conformity with PED 97/23/EC, article 3.3 (sound engineering practice). According to the directive the equipment shall not carry any CE-mark.

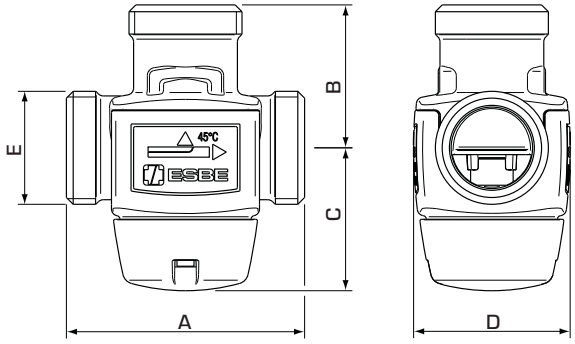
FLOW PATTERN



Diverting

DIVERTING VALVE
SERIES VTD300

NEW



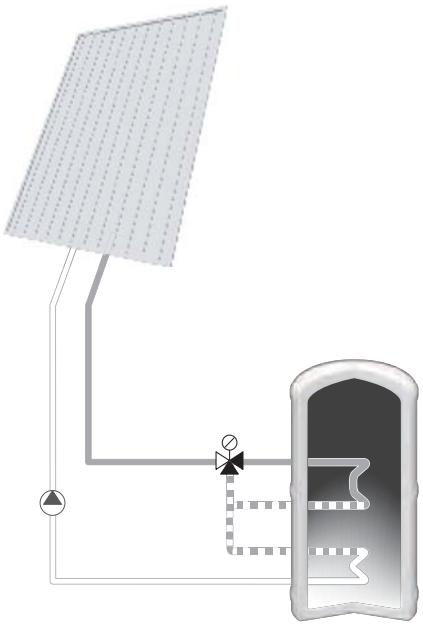
VTD322

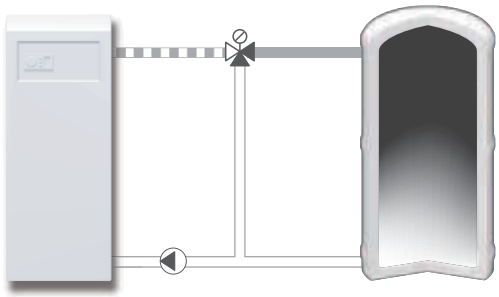
SERIES VTD322, EXTERNAL THREAD

Art. No.	Reference	DN	Kvs*	Connection E	Change-over point	A	B	C	D	Weight [kg]
3160 01 00	VTD322	20	3.6	G 1“	45°C	70	42	42	46	0.45
3160 02 00					50°C					
3160 03 00					60°C					
3160 04 00					70°C					

* Kvs-value in m^3/h at a pressure drop of 1 bar.

INSTALLATION EXAMPLES





NEW

CONNECTION KIT
SERIES KCD300

Connection kit with compression fittings for use on externaly threaded valves.

KCD300
Compression fitting

Compression fitting, plated

VERSIONS

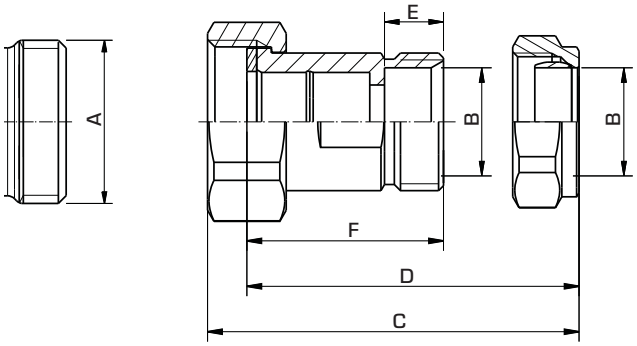
Each package contains three of each of connection pieces, nuts, gaskets compression rings and compression nuts.

Check valves and surface plating available according to table.

SUITABLE VALVES

The connection kit series KCD300 may most easily be fitted with ESBE thermostatic control units:

- Series VTS522, 552
- Series VTA332, 532
- Series VTA362, 562
- Series VTA322, 522
- Series VTA552
- Series VTA372, 572
- Series VMC312



TECHNICAL DATA

Pressure class: PN10
Media temperature: max. +120°C
min. -20°C
Connection - nipple design: acc. to EN 1254-2
External thread, ISO 228/1
Compression fitting, EN 1254-2
Internal thread, EN 10226-1

Material
Nut: Brass CW 614N
Connection piece: Brass DZR, CW 602N
Gasket: Klingersil C-4400
Compression fitting nut: Brass CW 614N
Compression ring: Brass DZR, CW 602N
Surface treatment: Nickel-plated

SERIES KCD300, COMPRESSION FITTING (3 CONNECTIONS/PACKAGE)

Art. No.	Reference	Valve thread A	Connection B	Dimension C	D	E	F	Note	Weight [kg]
3655 28 00	KCD313	G ¾"	CPF 15 mm	44.5	38	10	30	1)	0.31
3655 31 00	KCD313							1) Plated	0.31
3655 29 00	KCD313	G 1"	CPF 22 mm	54	48	12	40	1)	0.56
3655 32 00	KCD313							1) Plated	0.56
3655 30 00	KCD313	G 1¼"	CPF 28 mm	66.5	60	16	50	1)	0.95
3655 33 00	KCD313							1) Plated	0.95

Note 1) Two check valves included CPF = Compression fitting

CONNECTION KIT
SERIES KSD300

Connection kit with solder connection for use on externaly threaded valves.

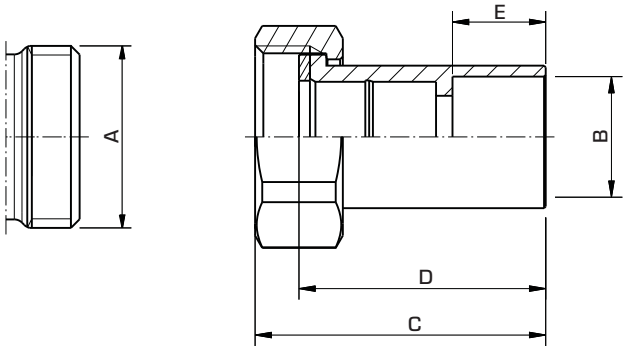
KSD300
Soldering type

NEW

VERSIONS

Each package contains three of each of connection pieces, nuts and gaskets.

Check valves available according to table.



SUITABLE VALVES

The connection kit series KSD300 may most easily be fitted with ESBE thermostatic control units:

- Series VTS522, 552
- Series VTA332, 532
- Series VTA362, 562
- Series VTA322, 522
- Series VTA552
- Series VTA372, 572
- Series VMC312

TECHNICAL DATA

Pressure class: PN10
Media temperature: max. +120°C
min. -20°C
Connection - nipple design: acc. to EN 1254-1
External thread, ISO 228/1
Internal thread, EN 10226-1

Material
Nut: Brass CW 614N
Connection piece: Brass DZR, CW 602N
Gasket: Klingersil C-4400

SERIES KSD300, FITTINGS SOLDERING TYPE (3 CONNECTIONS/PACKAGE)

Art. No.	Reference	Valve thread A	Connection B	Dimension C	D	E	Note	Weight [kg]
3655 34 00	KSD314	G 1"	22 mm	53	45	17	1)	0.42

Note 1) Two check valves included

NEW

THERMOSTATIC CONTROL UNITS

CONNECTION KIT
SERIES KTD200, 300

Connection kit with external thread for use on externaly threaded valves.

KTD200
External thread

KTD300
External thread

External thread, plated

VERSIONS

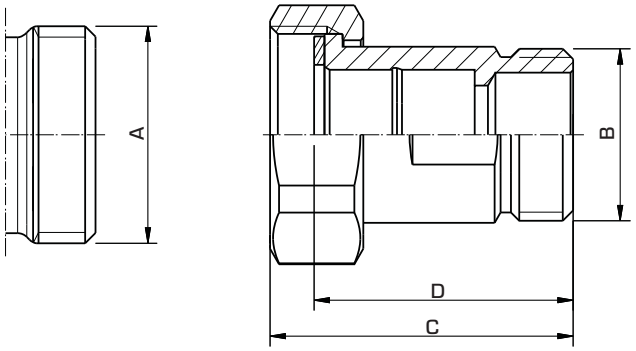
Each package contains three of each of connection pieces, nuts and gaskets.

Check valves and surface plating available according to table.

SUITABLE VALVES

The connection kit series KTD200 and KTD300 may most easily be fitted with ESBE thermostatic control units:

- Series VTS522, 552
- Series VTA332, 532
- Series VTA362, 562
- Series VTA322, 522
- Series VTA552
- Series VTA372, 572
- Series VMC312



TECHNICAL DATA

Pressure class: PN10
Media temperature: max. +120°C
min. -20°C
Connection - nipple design: acc. to EN 1254-4
External thread, ISO 228/1
Internal thread, EN 10226-1

Material
Nut: Brass CW 614N
Connection piece: Brass DZR, CW 602N
Gasket: Klingersil C-4400
Surface treatment: Nickel-plated

SERIES KTD212, 312 EXTERNAL THREAD (3 CONNECTIONS/PACKAGE)

Art. No.	Reference	Valve thread A	Connection thread B	Dimension C	Dimension D	Note	Weight [kg]
3655 22 00	KTD212	G 1"	G ¾"	48	40	1)	0.44
3655 24 00	KTD312					2)	0.44
3655 26 00						2), Plated	0.44
3655 23 00	KTD212	G 1¼"	G 1"	58.5	50	1)	0.78
3655 25 00	KTD312					2)	0.79
3655 27 00						2), Plated	0.79

Note 1) One check valve included 2) Two check valves included