

ESBE VTC 511

ESBE VTC 511 1-inch Anti-Condensation Valve Instruction Manual

Brand: ESBE | Model: VTC 511

1. INTRODUCTION

This manual provides essential information for the installation, operation, and maintenance of the ESBE VTC 511 anti-condensation valve. The VTC 511 is designed to protect solid fuel boilers up to 150 kW by ensuring a consistently high return temperature, thereby preventing condensation and extending the boiler's operational life. Proper installation and adherence to these instructions are crucial for optimal performance and safety.

2. PRODUCT FEATURES

- **Model:** ESBE VTC 511 (ESBE Code: 51021100)
- **Nominal Size:** 1-inch female threaded connection
- **Operating Temperature:** Calibrated at 70°C
- **Maximum Fluid Temperature:** 110°C
- **Maximum Boiler Output:** Up to 150 kW
- **Material:** Spheroidal cast iron valve body
- Designed to protect solid fuel boilers from low return temperatures.
- Ensures efficient charging of accumulation tanks.

3. SPECIFICATIONS

Specification	Value
Manufacturer	ESBE
Model	VTC 511

ESBE Code	51021100
Thread Connection	1-inch Female
Calibration Temperature	70°C
Max Fluid Temperature	110°C
Max Boiler Power	150 kW
Valve Body Material	Spheroidal Cast Iron (EN-JS 1050)
Product Dimensions (L x W x H)	12.7 x 11.2 x 7.7 cm
Product Weight	886 grams

4. SETUP & INSTALLATION

The ESBE VTC 511 valve is designed for installation in the return pipe to the boiler. Its primary function is to ensure that the water returning to the boiler maintains a minimum temperature of 70°C.

Key Installation Points:

- Install the valve in the return line to the solid fuel boiler.
- Ensure the flow direction indicated on the valve body is followed.
- The recommended installation method provides a simpler piping arrangement for potential system expansion.
- It is highly recommended that installation be performed by a qualified heating technician to ensure proper function and safety.



Figure 1: The ESBE VTC 511 anti-condensation valve. This image shows the robust cast iron construction, threaded connections, and the ESBE model label with flow direction indicators.

5. OPERATING PRINCIPLES

The ESBE VTC 511 is a 3-way thermostatic mixing valve. Its operation is based on maintaining a high and stable return temperature to the solid fuel boiler. When the boiler starts, the valve ensures that the water circulating back to the boiler quickly reaches and maintains the calibrated temperature of 70°C.

This mechanism prevents the formation of tar and other corrosive residues inside the boiler, which typically occur when cold water returns to a hot boiler. By preventing these residues, the valve significantly increases the boiler's efficiency and extends its lifespan.

The valve also plays a role in efficiently charging accumulation tanks by directing the flow appropriately to ensure optimal heat transfer and storage.

6. MAINTENANCE

The ESBE VTC 511 valve is designed for reliable, long-term operation with minimal maintenance. However, regular system checks are recommended to ensure continued optimal performance.

- Periodically inspect the valve and surrounding pipework for any signs of leaks or damage.
- Ensure that the system pressure is within the manufacturer's recommended limits.
- For any concerns regarding valve operation or system performance, consult a qualified heating system technician.

7. TROUBLESHOOTING

Should you experience issues with your heating system that you suspect are related to the anti-condensation valve, consider the following general points:

- **Low Boiler Return Temperature:** If the boiler return temperature is consistently below 70°C, the valve may not be functioning correctly, or there might be an issue with system circulation.
- **Excessive Residue Formation:** Increased tar or residue in the boiler could indicate that the valve is not effectively preventing condensation.
- **Unusual Noises:** Any unusual sounds from the valve or piping should be investigated.

For complex issues or if the problem persists, it is strongly advised to contact a certified heating system professional for diagnosis and repair.

8. WARRANTY INFORMATION

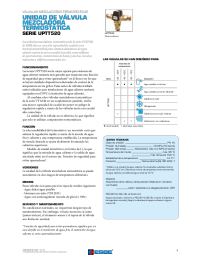
The ESBE VTC 511 anti-condensation valve comes with a **2-year warranty** from the date of purchase. This warranty covers manufacturing defects and material faults under normal operating conditions. Please retain your proof of purchase for any warranty claims. For detailed warranty terms and conditions, please refer to the official ESBE documentation or contact your supplier.

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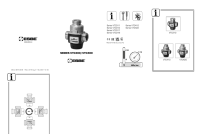
[Термостатические смесительные клапаны ESBE: Комфорт, Надежность и Безопасность](#)

Термостатические смесительные клапаны ESBE обеспечивают комфорт, надежность и безопасность в системах горячего водоснабжения, напольного отопления и солнечных системах. Узнайте о защите от легионеллы и ожогов.



[ESBE UPTT520 Thermostatic Mixing Valve Series - Technical Data and Application Guide](#)

Detailed information on the ESBE UPTT520 series thermostatic mixing valves, designed for high-demand domestic hot water systems. Covers operation, features, technical specifications, materials, and installation examples for residential, commercial, and industrial applications. Includes flow capacity diagrams and safety features.



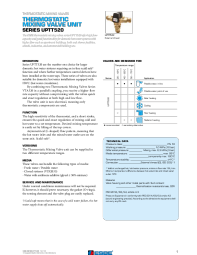
[ESBE VTC300/VTC400 Series Thermostatic Mixing Valves: Installation and Technical Guide](#)

This guide provides essential information on ESBE VTC300 and VTC400 series thermostatic mixing valves, including installation procedures, system configurations, performance data, and component details. Covers models VTC310, VTC410, VTC420 and related parts.



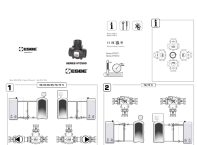
[ESBE VTF320 Thermostatic Mixing Valve Installation and Service Guide](#)

Comprehensive guide for installing, adjusting temperature, and maintaining the ESBE VTF320 thermostatic mixing valve. Includes safety instructions and troubleshooting for hard water conditions.



[ESBE UPTT520 Thermostatic Mixing Valve Unit for High Flow Domestic Hot Water Systems](#)

Discover the ESBE UPTT520 series thermostatic mixing valve unit, offering high flow capacity and precise temperature control for domestic hot water systems in apartment buildings, schools, and commercial facilities. Learn about its operation, function, technical specifications, and applications.



[ESBE VTC500 Series Thermostatic Mixing Valves - Technical Overview and Installation Guide](#)

Detailed information on ESBE VTC500 series thermostatic mixing valves, including VTC511 and VTC512 models. Covers technical specifications, performance graphs, and installation configurations for heating systems.