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	Re:	Boiler and Heat exchanger with Capillary tube control	
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Replacing thermostats

1 Introduction

These installation instructions put you in the position to replace the thermostats safely as intended.

- > Please read these installation instructions carefully before replace the thermostats.
- > Keep these installation instructions ready and available at all times.
- > Comply with all safety instructions in these installation instructions at all times.
- > Please also observe the original operating manual for the automatic feeder.




2 For your safety

2.1 Target group

2.1.1 Necessary qualifications of the service technician

Only trained service technicians are authorized to replace the thermostats.


Service technicians are electricians with appropriate qualifications, i.e. they are able to assess the work assigned to them and detect potential risks on the basis of their technical training as well as their knowledge of the relevant standards. This also includes knowledge of relevant accident prevention


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regulations, generally accepted safety regulations, EC guidelines and country-specific standards and provisions.

2.2 Indication of hazards

Hazards are indicated by a key word and a corresponding symbol, depending on the severity and probability:

	<p>Danger!</p> <p>For an imminent danger, resulting in serious injuries or death.</p>
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	<p>Warning!</p> <p>For a potentially dangerous situation which may cause serious injuries or even death.</p>
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	<p>Caution!</p> <p>For a potentially dangerous situation which may cause minor injuries or material damage.</p>
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Attention	For a potentially harmful situation in which the product or an item can become damaged within its environment.
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Note	For application notes and other useful information.
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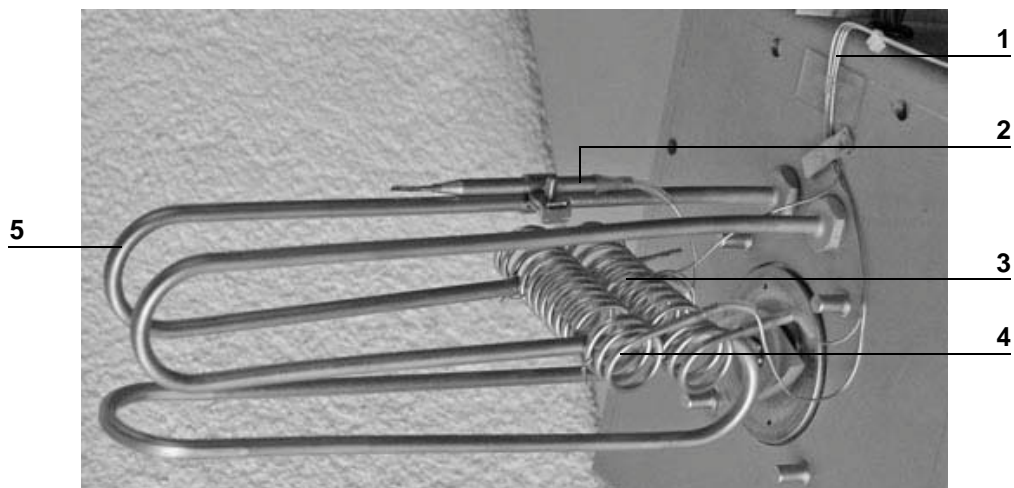
However, it is just as important to comply with any other notes and information which are not highlighted, so as to avoid failures which in turn may cause direct or indirect injuries or material damage.

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3 Components

3.1 Heat exchanger with capillary tube control

Note	Depending on the automatic feeder model, the position of thermostats may differ from the positions shown in the following images.
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1	Capillary tubes
2	Sensor for safety temperature limiter
3	Sensor for regulator thermostat
4	Sensor for minimum operating temperature thermostat
5	Heating element

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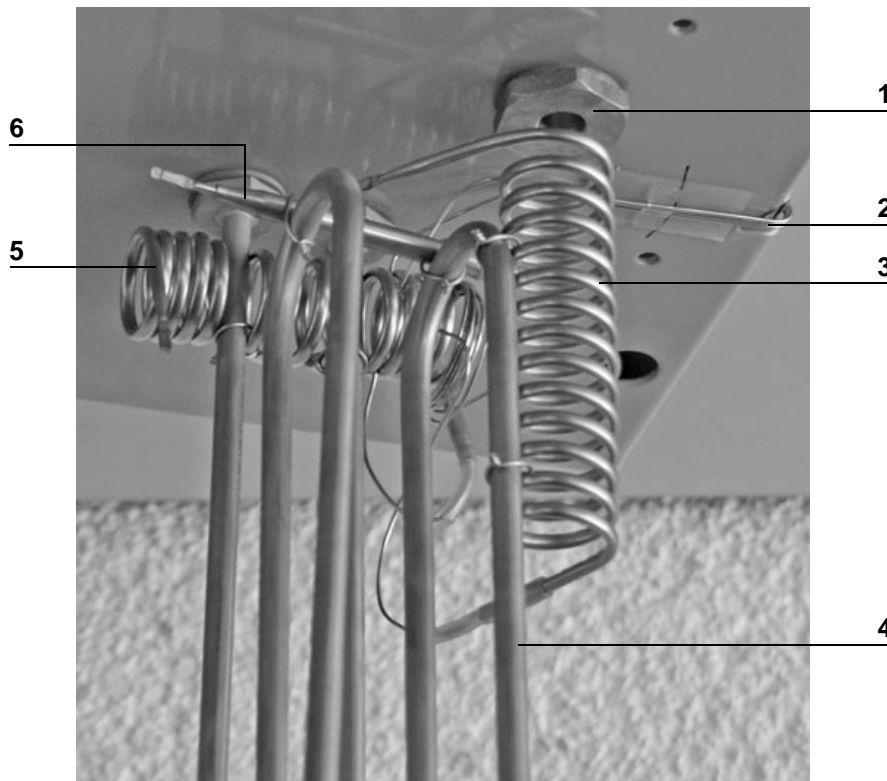
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3.2 Boiler with capillary tube control




1	Boiler outlet
2	Capillary tubes
3	Sensor for regulator thermostat
4	Heating element
5	Sensor for minimum operating temperature thermostat
6	Sensor for safety temperature limiter

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4 Replacing thermostats

4.1 Thermostat for regulator and minimum temperature


Proceed as follows to replace the thermostats on the heat exchange or boiler of your automatic feeder:

	<p>Danger due to live electrical components. Risk of fatal injury from electric shock.</p> <ul style="list-style-type: none"> • Always disconnect the power plug of the automatic feeder before replacing the thermostats.
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1. Drain the heat exchanger/boiler by disconnecting the water hose between the water solenoid valve and the heat exchanger/boiler.
2. Disconnect the power plug of the heat exchanger/boiler.
3. Remove the heat exchanger/boiler.
4. Undo the four screws on the heat exchanger/boiler tank and carefully remove it.

Attention	<p>Make sure that the capillary tubes of the thermostats are not damaged. The capillary tubes are filled with fluid and connect the sensor to the switching element.</p>
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5. Label the connecting cables or note the connections of the thermostats.
6. Mark the path of the capillary tubes from the sensor to the switching element or take a photo of it. The temperature sensor will not work properly unless you position the repla-

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cement part in the same exact location on the heating element where the defective part was originally located.

7. Remove the defective thermostat.

Note	The thermostats can only be replaced as a complete unit (switching element with capillary tube and sensor).
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8. Install the switching element using the appropriate screws.

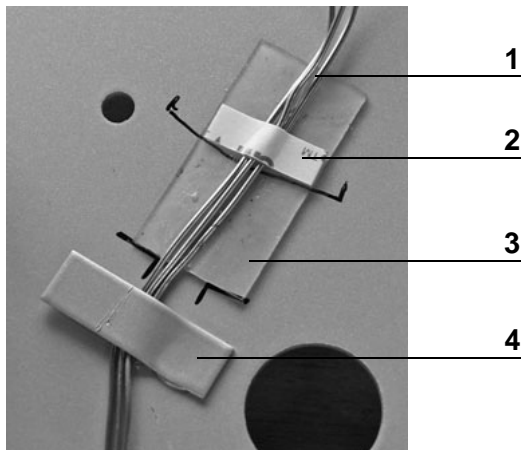
9. Attach the new sensor to the heating unit of the heat exchanger/boiler using the supplied V2A wires (see illustration in Section “Components” auf Seite 3).

Attention	Make sure not to crush or deform the sensor of the thermostat and the capillary tube connection. The capillary tube connection may not touch the heat exchanger coil.
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Note	For boilers: The regulator thermostat should always be installed below the outlet of the heating element (see “Components” auf Seite 3ff).
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10. Remove the large adhesive tape on the heat exchanger plate/boiler plate and install the new adhesive tape in the exact same location.

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1	Capillary tubes
2	Small adhesive tape
3	Large adhesive tape
4	Guide

11. Install the capillary tubes. The capillary tubes must

- Not be bent
- Not be installed in a crosswise fashion near the housing seal
- Be installed with sufficient distance from each other
- Be installed with sufficient distance from the electrical connections (risk of short circuit)
- Not touch the heat exchanger coil

12. Lead the capillary tubes over the large adhesive tape and under the existing guide. Adhere the small adhesive tape over the capillary tubes.

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- 13.Reconnect the electrical connections of the regulator or minimum temperature thermostats.
- 14.Place the new seal in the slot of the heat exchanger tank/boiler tank.
- 15.Reinstall the heat exchanger tank/boiler tank on the heat exchanger/boiler. Make sure that the existing slot is located over the capillary tubes (see illustration).






- 16.Install the heat exchanger/boiler in the automatic feeder and set the control knobs of the thermostats to position 0 (all the way to the left) to switch on the heating unit.

Attention

The thermostats must always be switched off before switching on the automatic feeder to avoid damaging the heating unit and thermostats.



- 17.Switch the automatic feeder on again and fill up the heat exchanger/boiler with water. For instructions, see the original operating manual of your automatic feeder.

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18. Once you have completely filled the heat exchanger/boiler with water, set the required temperature and minimum temperature of the water. To do this, follow the instructions in the original operating manual of your automatic feeder.

19. Finally, check whether the heat exchanger/boiler is sealed (visual inspection).

4.2 Replacing the safety temperature limiter

 	<p>Danger due to live electrical components.</p> <p>Risk of fatal injury from electric shock.</p> <ul style="list-style-type: none"> • Always disconnect the power plug of the automatic feeder before replacing the thermostats.
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1. Drain the heat exchanger/boiler by disconnecting the water hose between the water solenoid valve and the heat exchanger/boiler.
2. Disconnect the power plug of the heat exchanger/boiler.
3. Remove the heat exchanger/boiler.
4. Undo the four screws on the heat exchanger/boiler tank and carefully remove it.

Attention	Make sure that the capillary tubes of the thermostats are not damaged. The capillary tubes are filled with fluid and connect the sensor to the switching element.
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5. Label the connecting cables or note the connection of the safety temperature limiter.

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6. Mark the path of the capillary tube from the sensor to the switching element or take a photo of it.

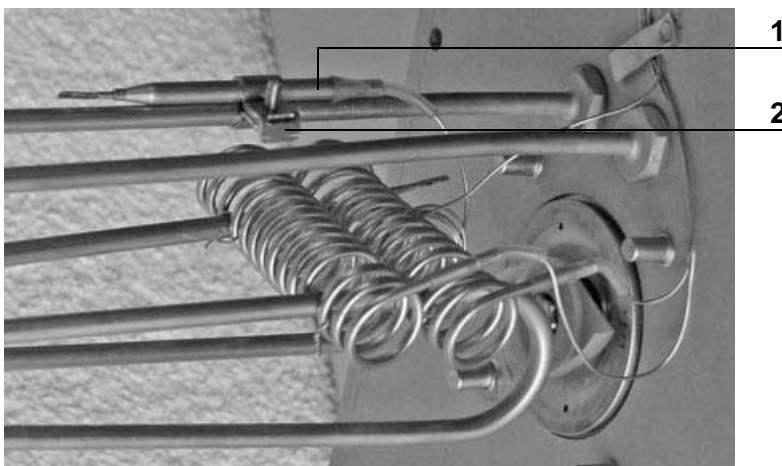
7. Remove the defective safety temperature limiter.

Note	The safety temperature limiter can only be replaced as a complete unit (switching element with capillary tube and sensor).
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8. Install the switching element using the appropriate screws.

9. Attach the sensor of the new safety temperature limiter to the heating unit of the heat exchanger/boiler using the supplied clamp (for heat exchangers) or the V2A wires (for boilers).

The following illustration shows the attachment of the sensor to the heating element of the heat exchanger.



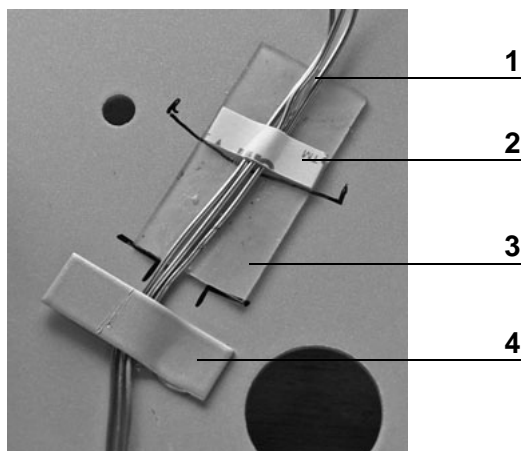
1	Safety temperature limiter
2	Clamp

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Attention	The safety temperature limiter of a heat exchanger may not be attached diagonally to the heating element.
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Attention	Make sure not to kink or bend the tip of sensor and the capillary tube connection. The capillary tube connection may not touch the heat exchanger coil.
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10. Remove the large adhesive tape on the heat exchanger plate/boiler plate and install the new adhesive tape in the exact same location.



1	Capillary tubes
2	Small adhesive tape
3	Large adhesive tape
4	Guide

11. Install the capillary tubes. The capillary tubes must

- Not be bent
- Not be installed in a crosswise fashion near the housing seal

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- Be installed with sufficient distance from each other
- Be installed with sufficient distance from the electrical connections (risk of short circuit)
- Not touch the heat exchanger coil

12. Lead the capillary tubes over the large adhesive tape and under the existing guide. Adhere the small adhesive tape over the capillary tubes.



13. Reconnect the electrical connections of the safety temperature limiter.

14. Place the new seal in the slot of the heat exchanger tank/boiler tank.

15. Reinstall the heat exchanger tank/boiler tank on the heat exchanger/boiler. Make sure that the existing slot is located over the capillary tubes (see illustration below).



16. Install the heat exchanger/boiler in the automatic feeder and set the control knobs of the thermostats to position 0 (all the way to the left) to switch on the heating unit.

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Attention	The thermostats must always be switched off before switching on the automatic feeder to avoid damaging the heating unit and thermostats.
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17. Switch the automatic feeder on again and fill up the heat exchanger/boiler with water. For instructions, see the original operating manual of your automatic feeder.
18. Once you have completely filled the heat exchanger/boiler with water, set the required temperature and minimum temperature. To do this, follow the instructions in the original operating manual of your automatic feeder.
19. Finally, check whether the heat exchanger/boiler is sealed (visual inspection).

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