Installation instructions

Spare Parts KTS Water Heater
Figure 915 | 925

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Safety Instructions for Assembly

Installation and use
Read the manual carefully before installation or use and follow the instructions. Pass these instructions on to the operator and retain for later reference!

Warning! Assembly and maintenance is to be carried out only by competent and qualified plumbers. Electrical installation is to be carried out only be electricians with the appropriate qualifications.

Warning! Priority must be given to the national standards and provisions on plumbing and health and safety.

Warning! Non-compliance with these instructions in the course of assembly, use and maintenance can endanger proper operation and lead to substantial damage to health through mixing drinking water with non-potable water.

Damage to property due to improper use and/or unsuitable tools
Improper use and/or unsuitable tools can result in damage to property (e.g. due to water leakage)! When tightening or loosening screw connections, always use suitable open-ended wrench or pliers wrench. To avoid leaks, make sure that no mechanical stress arises in the pipes and components.

Labelling for important warning information:

Danger! Electricity!
Indicates hazards that can result in serious or fatal injuries.

Warning!
Indicates hazards that may result in injury, material damage or contamination of the drinking water.

Note!
Indicates hazards that may result in system damage or malfunctions.

Liability
No warranty or liability can be accepted in case of:
- Non-compliance with the instructions
- Incorrect installation and/or operation.
- unauthorised modification of the product
- other incorrect operation.

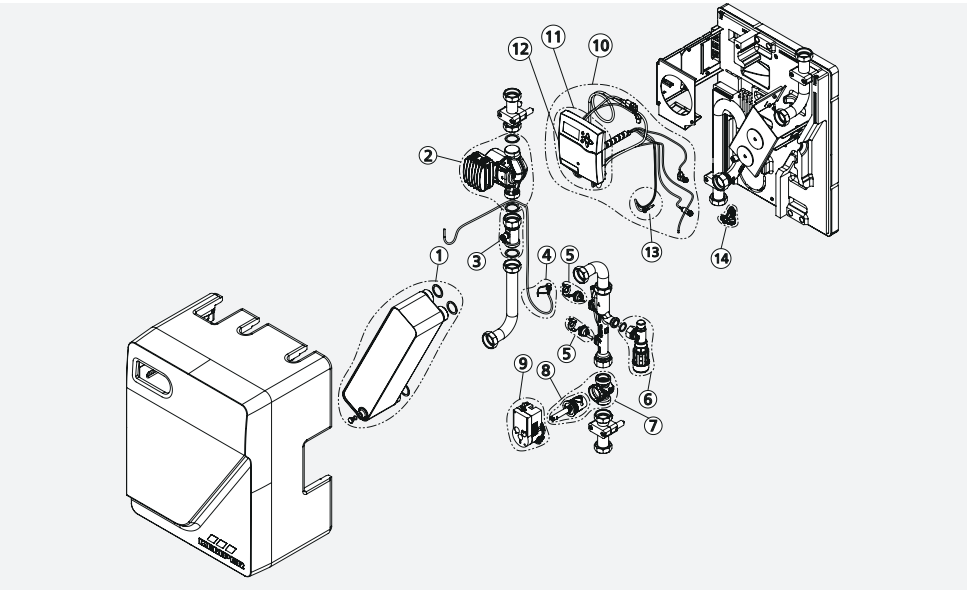
Disposal
Local regulations on waste recycling and disposal must be followed. The product must not be disposed of with household waste but must be disposed of properly

Risk of scalding and burns!
The plant can reach temperatures of up to 80°C and be under high pressure. If water were to escape without control , this could result in severe scalding. There is also a risk of hot burns on pipes.

The plant must therefore be depressurised before repair works and should have cooled down.

Danger! Electricity!
Work on electrical components may be carried out one by qualified electrician. There is a risk to life from electric shocks.

Before starting the work, switch off the power supply and protect it against being switched on again. Before working, you should once again check that there is no power supply to the plant.



Overview of Spare Parts for KTS Water Heater

No.	Part No.	Designation
1	9159900100 9159900200 9259900100 9259900200	Plate heat exchanger, copper-soldered for KTS Water Heater M Plate heat exchanger, stainless steel for KTS Water Heater M Plate heat exchanger, copper-soldered for KTS Water Heater L Plate heat exchanger, stainless steel for KTS Water Heater L
2	9160200100 9160200200	Pump for KTS Water Heater M Pump for KTS Water Heater L
3	9160201300	Gravity break for Water Heater
4	9160200700	Heating supply temperature sensor
5	9160201500 9160201600	Flow sensor small (1.6 - 32 l/min) Flow sensor large (9 - 150 l/min)
6	9160201700	Pressure-relief valve with add-on parts
7	9160201300	Gravity brake
8	E012068600032KP	Inner top part for KHS quarter turn stop valves with actuator
9	6860000600	Actuator with flange adapter
10 (incl. 4+13)	9160200300 9160200400	Controller for KTS Water Heater single unit and master Controller for KTS Water Heater slave
12	9160200900	SD card for controller
13	9160200800	PWH temperature sensor
14	J71091730000600	Drain valve made of gunmetal/plastic
Not illus-trated	9160201400	Temperature sensor set for buffer tank

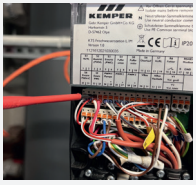
2 PWH temperature sensor

PWH temperature sensor for Figure 915 and 925
Part No.: 9160200800

1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Open the controller housing.

3 Loosen the relevant sensor terminal with a screwdriver and pull the wire from the terminal.



4 Undo the strain relief.

5 Close the maintenance valves and release the pressure from the KTS module.

6 To replace the hot water sensor (S2), dismantle the locking ring using snap ring pliers.

7 Remove the old sensor and replace it with a new one. Pay attention to the correct seat of the O-ring.

Info! For assembly, carry out these steps in reverse order.

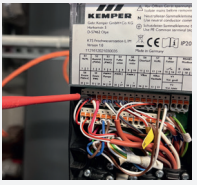
3 Heating Supply Temperature Sensor

Heating supply temperature sensor for Figure 915 and 925
Part No.: 9160200700

1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Open the controller housing.

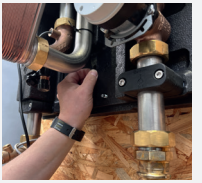
3 Loosen the relevant sensor terminal with a screwdriver and pull the wire from the terminal.



4 Undo the strain relief.

5 Remove the cable tie on the flow sensor.

6 Pull the flow temperature sensor from the EPP hood from below.



7 Press the new flow sensor into the correct position from below and fasten it with cable ties.

Info! For assembly, carry our these steps in reverse order.

4 Controller for KTS Water Heater Single Unit and Master

Controller for KTS Water Heater single unit and master
Part No.: 9160200300

Controller for KTS Water Heater, Station 2-8
Part No.: 9160200400

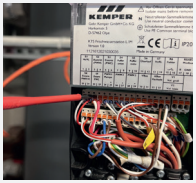
1 Save all settings for the heater on the SD card before replacing the controller on water heater 1 (or the single unit).
Proceed as follows:
> Main menu
> Settings
> Data logger
> Save settings

2 Then remove the SD card from the controller. This step can be skipped for controllers of water heaters 2-8.

4 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

5 Open the controller housing.

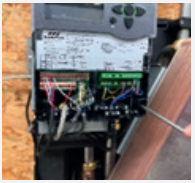
6 Loosen all sensor terminals with a screwdriver and pull the wires from the terminals.
Enter the user code "1864" using the keypad.



Note! When pulling out, label and mark the relevant wire with the appropriate designation according to the controller sticker.

7 Undo all of the strain reliefs.

8 Dismantle the controller from the retaining plate using a 4mm Allen key.



9 Fit the labelled wire to the newly installed controller and secure it with the strain reliefs intended for this purpose.

10 During recommissioning of the controller of water heater 1, carry out commissioning according to the instructions on the display.

11 Insert the SD card in the controller again. To load previously saved settings, proceed as follows:
> Main menu
> Settings
> Data logger
> Load settings

12 Enter the user code "1864" using the keypad.

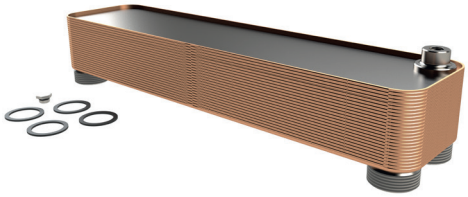
During recommissioning of the controller of water heaters 2 -8, carry out normal commissioning.

Info! After successful commissioning, it is optimal to conduct an actuator test.

5 Plate Heat Exchanger

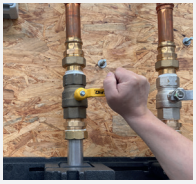
Plate heat exchanger, copper-soldered
for KTS Water Heater M
Part No.: 9159900100

Plate heat exchanger, stainless steel
for KTS Water Heater M
Part No..: 9159900200



1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Close the maintenance valves on the heating and drinking water side.



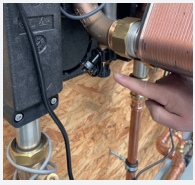
Heating side

Drinking water side

3 If the temperatures are high, allow the heat exchanger to cool down.

4 **Danger!** Risk of scalding when draining the plate heat exchanger.

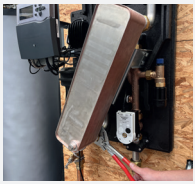
Heating side: Open the plugged drain port using a 17 mm open-ended wrench.



Drinking water side: Open the drain valve below the plate heat exchanger.

Drain the drinking water and heating side and let the plate heat exchanger drain.

5 Loosen the screw connections of the plate heat exchanger using fitting pliers or a 50 mm open-ended wrench. Remove the old gaskets.

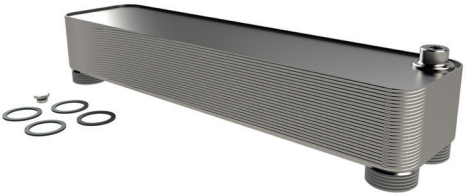


6 Loosen the two 13 mm fixing screws of the plate heat exchanger.

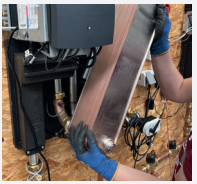
Note! The screws should just be loosened but not completely removed.

Plate heat exchanger, copper-soldered for KTS Water Heater L
Part No.: 9259900100

Plate heat exchanger, stainless steel for KTS Water Heater L
Part No.: 9259900200



7 Lift the plate heat exchanger up from the retaining plate.

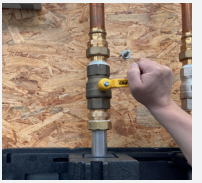


8 Fit the new fixing screws on the new plate heat exchanger and lift it into the appropriate lugs in the retaining plate.

9 Fit the gaskets and tighten the screws using a 50 mm open-ended wrench or fitting pliers.

10 When recommissioning, open the drinking water-side maintenance valves first and rinse the downstream installation.

11 When opening the heating-side maintenance valves, make sure that you open vale for heatin flow first.

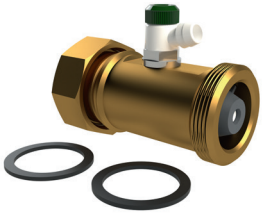


12 After opening the heating supply valve, open the heating return valve and vent the system via the return pipe.

Note! Then check the work that has been done for leaks.

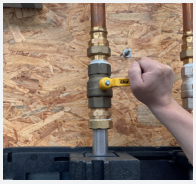
6 Gravity Brake

Gravity brake
Part No.: 9160201300



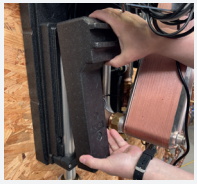
1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Close the maintenance valves on the heating side.



3 **Danger!**
Risk of burns! If the temperatures are high, allow the water heater to cool down.

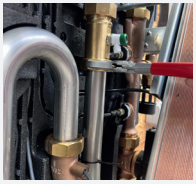
4 Remove the pictured EPP pipe insulation on the left-hand side in the heater.



5 Drain the heating side using plugged drain ports.

Note!
Water leak!

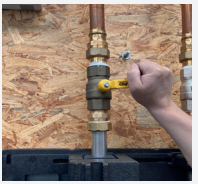
6 Loosen the screw connections of the gravity brake using fitting pliers or a 50 mm open-ended wrench.



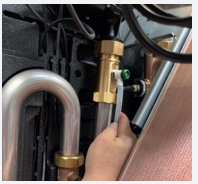
7 Catch any residual water from draining the gravity brake with a cloth.

8 Fit the gaskets, fit the new gravity brake. Tighten the screws using a 50 mm open-ended wrench or fitting pliers.

9 When opening the heating-side maintenance valves, make sure that you open vale for heatin flow first.



10 Vent the heating supply using the drain valve on the gravity brake.



11 Vent the heating supply using the drain valve on the gravity brake.

Info! or assembly, carry out these steps in reverse order.

Note! Then check the work that has been done for leaks.

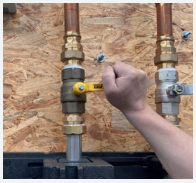
7 Heating Pump

Primary pump for M
Part No.: 9160200100

Primary pump for L
Part No.: 9160200200

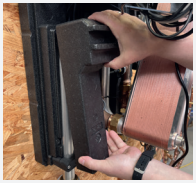
1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Close maintenance valves on the heating side.

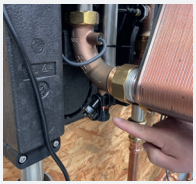


3 **Danger!** isk of burns! If the temperatures are high, allow the water heater to cool down.

4 Remove the pictured EPP pipe insulation on the left-hand side in the heater.



5 Drain the heating side using drain valve.



6 Pull the PWM cable out of the pump.

7 Disconnect the power supply from the pump at the plug.

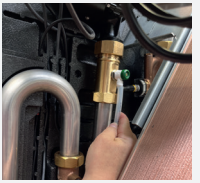
8 Loosen the screw connections of the pump using fitting pliers or a 50 mm open-ended wrench.

9 Catch any residual water from draining the pump with a cloth.

10 Fit the gaskets, insert the new heating medium pump and tighten the screws using a 50 mm open-ended wrench or fitting pliers.

11 When opening the heating-side maintenance valves, make sure that you open vale for heatin flow first.

12 Vent the heating supply using the drain valve on the gravity brake.



13 Then open the heating return valve.

14 Reconnect to the power supply.

Info! Optionally, for better accessibility to the pump, the entire controller can be unhooked via the long holes and fitted turned towards the top.

Info! For assembly, carry out these steps in reverse order.

Note! Then check the work that has been done for leaks.

8 Volume flow sensor

Volume flow sensor small (1.6 - 32 l/min)
Part No.: 9160201500

Volume flow sensor large (9 - 150 l/min)
Part No.: 9160201600

1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Close the maintenance valves on the domestic water side and relief the pressure of the module via the drain valve.

3 Loosen the relevant sensor wire using the sensor screw connection.

4 Open the sensor's bayonet catch to the left and loosen the sensor screw connection.

5 Pull the sensor out of the measuring track to the front.

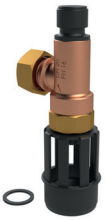
Info! For assembly, carry out these steps in reverse order.

Note! Pay attention to the correct seat of the bayonet.

Note! Then check the work that has been done for leaks.

9 Pressure-Relief Valve

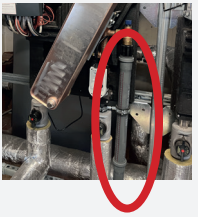
Pressure-relief valve
Part No.: 9160201700



1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Close the maintenance valves on the domestic water side and relief the pressure of the module via the drain valve..

3 Remove the drain pipe on the pressure-relief valve.



4 Loosen the screw connections of the pressure-relief valve using fitting pliers or a 32 mm open-ended wrench.

5 Fit the gaskets, insert the new pressure-relief valve and tighten the screws using a 32 mm open-ended wrench or fitting pliers.

Info! For assembly, carry out these steps in reverse order.

Note! Make sure that the pressure-relief valve has a neat spray pattern.

Note! Then check the work that has been done for leaks.

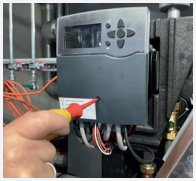
10 Actuator with Flange Adapter (Only for Cascade Units)

Actuator with flange adapter
Part No.: 6860000600

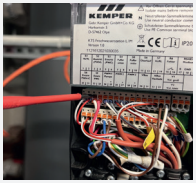
1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 In cascade mode, dismantle the actuator using a 4 mm Allen key and pull the motor forwards and down from the spindle.

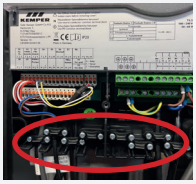
3 Open the controller housing.



4 Loosen the relevant sensor terminal with a screwdriver and pull the wire from the terminal.



5 Undo the strain relief and remove the cable.



Info! For assembly, carry out these steps in reverse order.

Note! During installation, pay attention to the motor position in relation to the valve position.
At 0 %, the valve is closed, at 100 % the valve is open. The position of the valve can be seen from the notch in the spindle.

If the notch in the spindle is horizontal, the valve is closed and the motor must be mounted at 0% position.

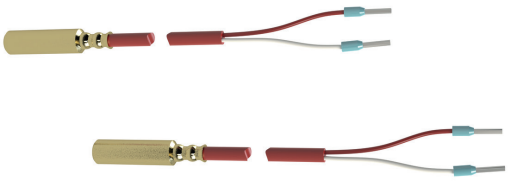
If the notch in the spindle is vertical, the valve is closed and the motor must be mounted at 100% position.

Then, fix the valve to the spindle.

Note! Then check the work that has been done for leaks.

11 Dismantling the Temperature Sensor

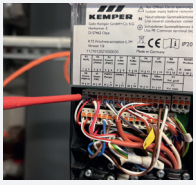
Temperature sensor
for KTS ThermoTank
for Figure 960, 965 and 970
Part No.: 9160201400



1 **Danger!**
Disconnect the system from electric supply. Check for connected voltage and that it can't be switched on again.

2 Open the controller housing.

3 Loosen all sensor terminals with a screwdriver and pull the wires from the terminals.



4 Undo all of the strain reliefs.

5 Remove the temperature sensor from the buffer tank.

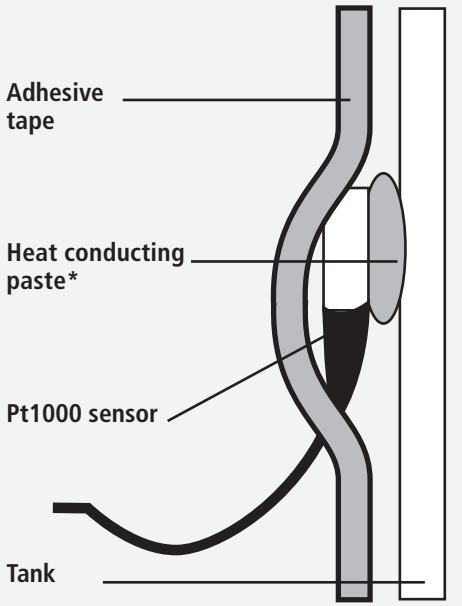
Info! For assembly, carry out these steps in reverse order.

11.1 Positioning the Sensors on the Tank

Attach the temperature sensor to the tank with the help of heat conducting paste* and the adhesive tape supplied. The temperature sensor of the heating supply is in the water heater and does not have to be connected to the buffer tank.
As a starting point for assembly of sensors S04 and S05, take the height of the welded seam to the upper torispherical head. From there, measure the heights from the calculation results down. The calculation is made by the specialist planner or tradesman using Dendrit. The calculation results are provided during the design of the system and have to be passed on to those carry out the implementation. Sensor TF04 and sensor TF05 are only on the cascade unit 1 water heater and on single units.
If the system is designed without a buffer tank, you don't need any more sensors.

The consequences of incorrect sensor heights are listed below:

- Heat capacities are not right, which can result in a lack of supply
- The temperature stratification is disrupted.
- Late or early re-loading of the buffer tank
- The cycling time of the heat sources is to high
- Difference between switch-on and switch-off temperature (hysteresis)
- Too high return temperatures



*Heat conducting paste not included in the scope of delivery

KEMPER

DRIVING PROGRESS

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