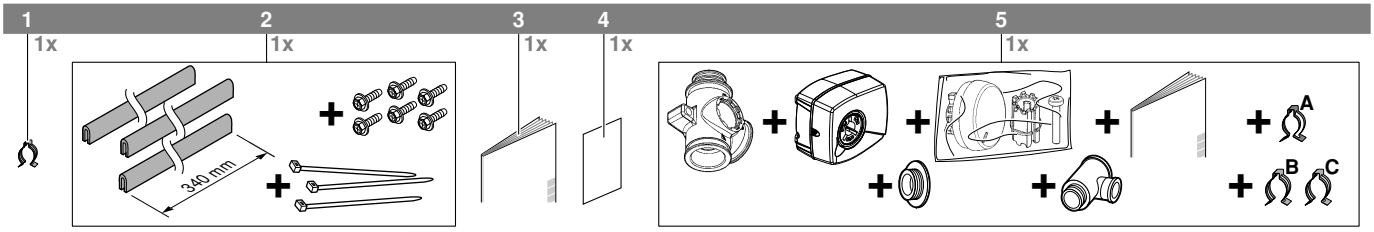
DAIKIN

INSTALLATION MANUAL

Domestic hot water tank for air to water heat pump system

EKHTS260AC6W1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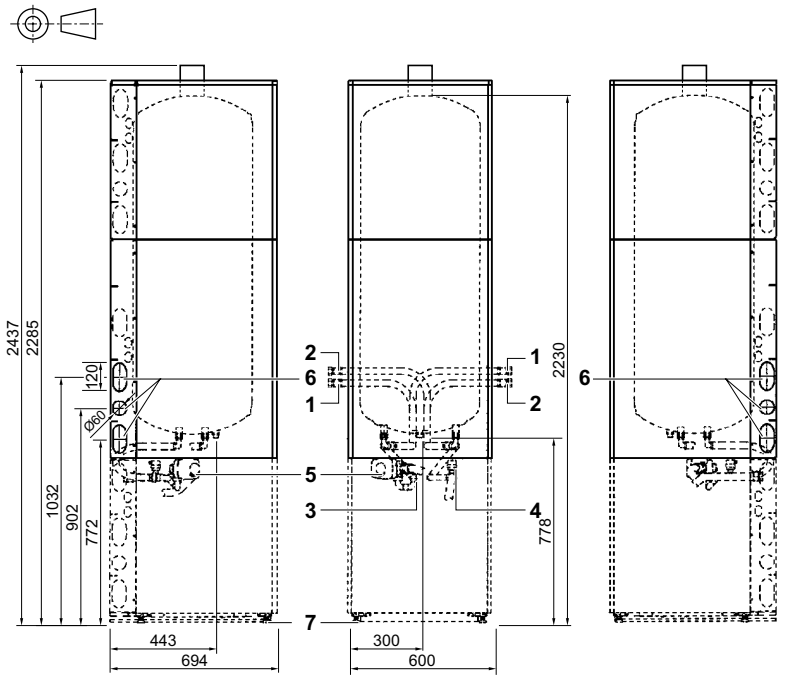
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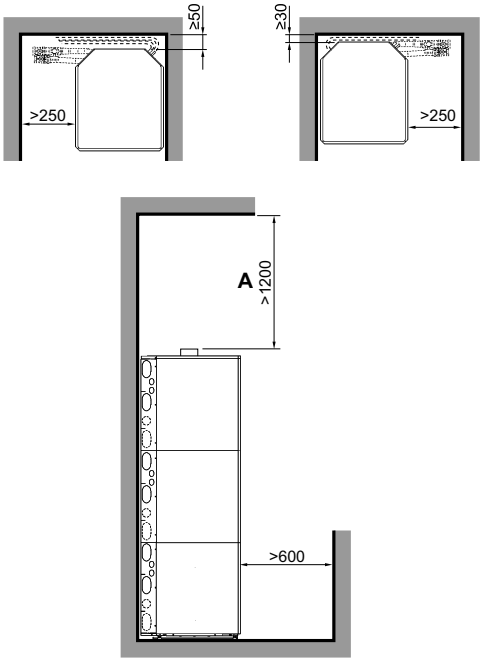
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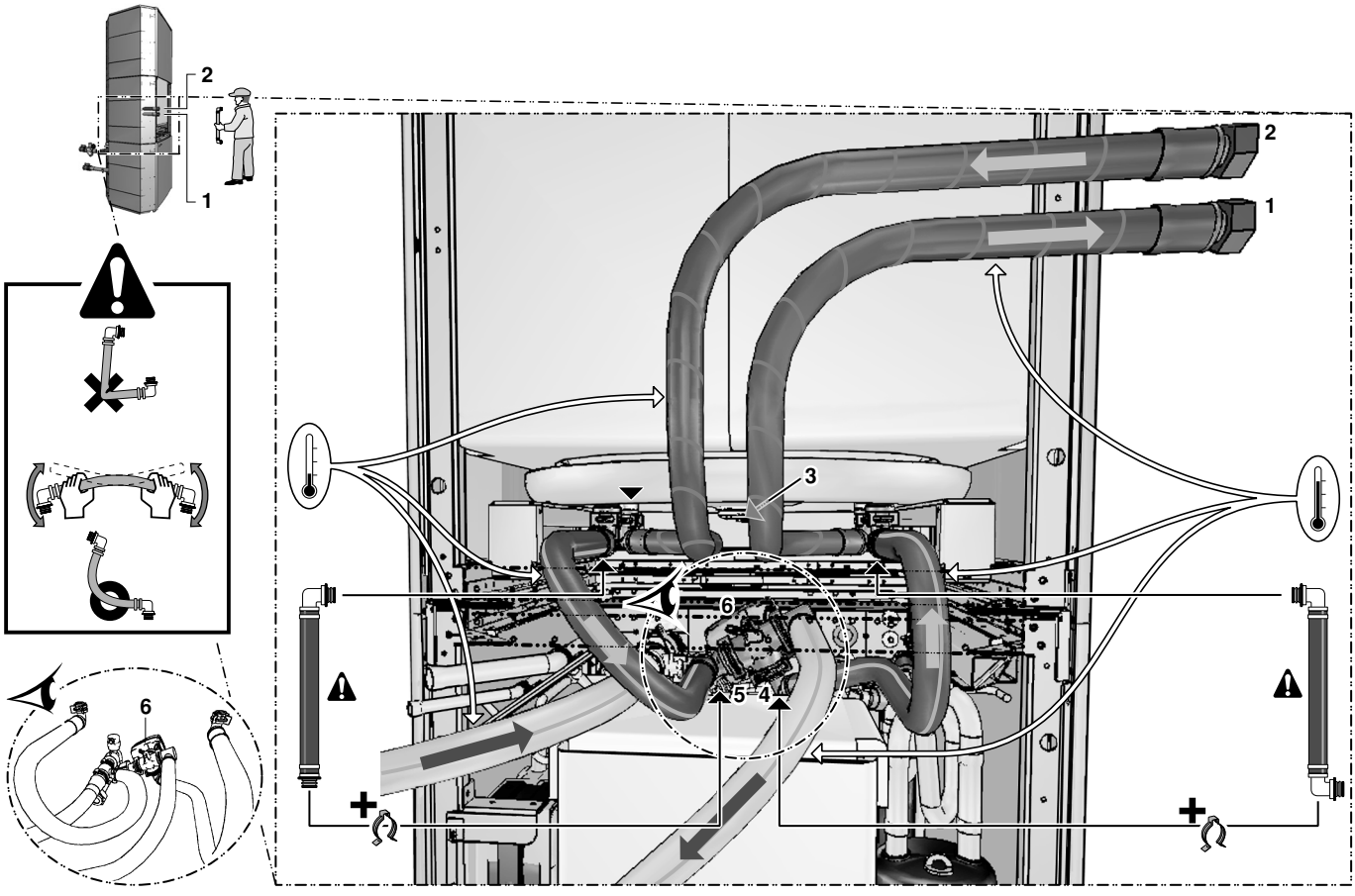
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READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION. KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

PLEASE LEAVE THIS MANUAL WITH THE EKHTS DOMESTIC HOT WATER TANK AFTER INSTALLATION.

IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY DAIKIN WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR DAIKIN DEALER FOR ADVICE AND INFORMATION.

THE UNIT DESCRIBED IN THIS MANUAL IS DESIGNED FOR INDOOR INSTALLATION ONLY AND FOR AMBIENT TEMPERATURES RANGING 5°C~30°C.

The English text is the original instruction. Other languages are translations of the original instructions.

INTRODUCTION

General information

Thank you for purchasing this domestic hot water tank.

The domestic hot water tank must be installed by a licensed technician and be installed in compliance with instructions as of subject in this manual, all current legislation, codes of practice and regulations governing the installation of unvented hot water cylinders in force at the date of installation.

The EKHTS domestic hot water tank can be connected to EKHBRD* units. The domestic hot water tank is available in one size: approximately 260 litre. The domestic hot water tank can be mounted on top of the indoor unit. For installation of the domestic hot water tank on the floor next to the indoor unit, the dedicated EKFMAHTB connection kit is required.

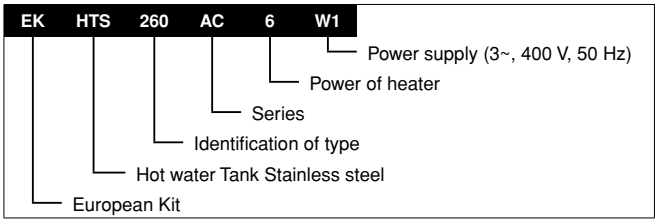
In case of EKHBRD*AA* units, the kit EKMKHT1 is required.

Scope of this manual

This installation manual describes the procedures for installing and connecting the EKHTS domestic hot water tank.

Model identification

Domestic hot water tank



ACCESSORIES

Accessories supplied with the domestic hot water tank

See figure 1.

1	Clamp
2	Knock-out hole assembly (grommet + tie-wraps + screws)
3	Installation manual
4	Unpacking instruction sheet
5	3-way valve assembly (body + motor + clamps) + T-piece

Optional equipment

- EKFMAHTB

  Connection kit for installation of the domestic hot water tank on the floor next to the indoor unit.

  Refer to the installation manual of the kit for more details.

- EKMKHT1

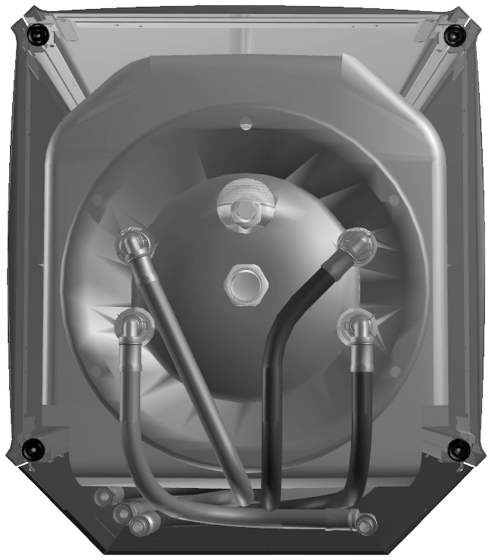
  In case the EKHTS*AC domestic hot water tank is to be installed on top of an EKHBRD*AA* series indoor unit, the additional EKMKHT1 kit is required.

  Refer to the instruction sheet of the kit for more details.

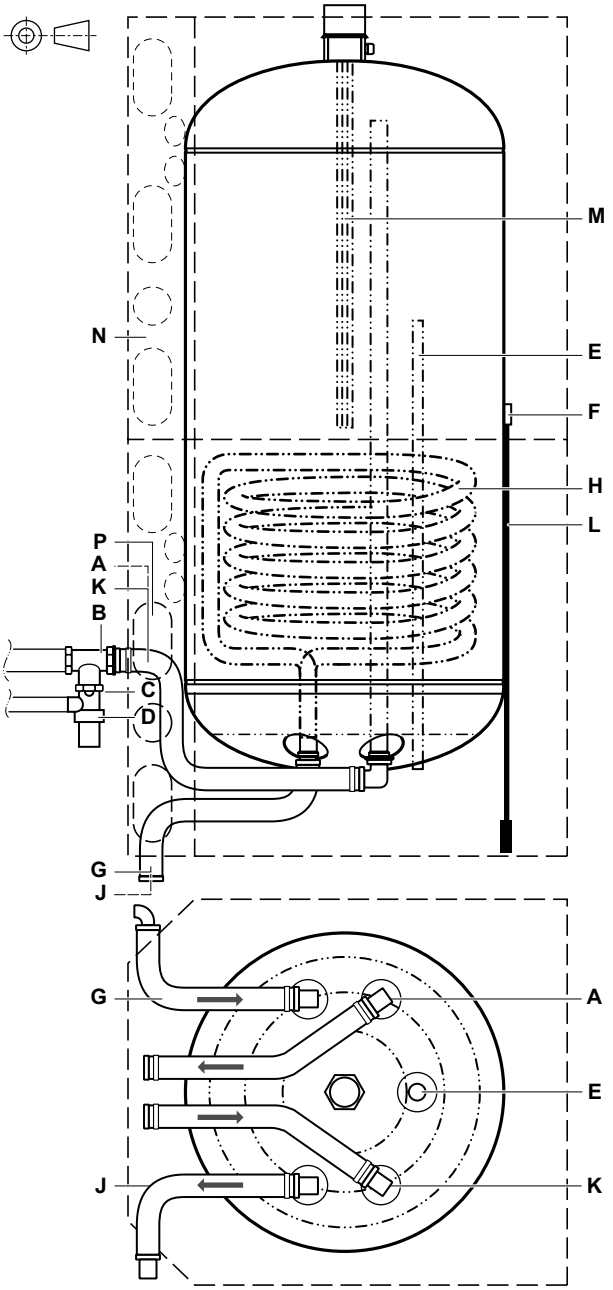
OVERVIEW OF THE UNIT

The total system (indoor unit and outdoor unit) is designed for combination with a Daikin domestic hot water tank. In case another tank is being used in combination with the Daikin indoor unit, Daikin cannot guarantee neither good operation nor reliability of the system. For those reasons Daikin cannot give warranty of the system in such case.

Position of flexibles (Factory mounted)



Main components



A	Hot water from the tank (G 3/4" Female)
B	T-piece (field supply)
C	Pressure relief valve connection (field supply)
D	Pressure relief valve (field supply)
E	Anode
F	Thermistor socket
G	Hot water from the indoor unit to the tank coil (quick coupling 90°)
H	Heat exchanger coil
J	Return water from the tank coil to the indoor unit (quick coupling)
K	Cold water to the tank (G 3/4" Female)
L	Thermistor
M	electric heater
N	Casing
P	Knock-out holes for water piping
⟶	Water flow direction

Safety devices

- The domestic hot water tank relief valve connections may not be used for other purpose.
- This domestic hot water tank can only be used with an EKHBRD* unit.

- Thermal protector — The heat pump unit is equipped with a thermal protector. The thermal protector is activated when the temperature becomes too high. When activated, the protector has to be reset on the heat pump unit by pressing it (for access, remove the decoration panels like indicated in the manual of the heat pump unit).

  Switch off the power supply before opening the decoration panels of the indoor unit.

- Thermal protector electric heater — The electric heater is equipped with a thermal protector. The thermal protector is activated when the temperature becomes too high. When activated, the protector has to be reset on the electric heater by pressing it (for access, remove the cover of the electric heater).

  Switch off the power supply before opening the cover of the electric heater.

- Pressure relief valve — A pressure relief valve (field supply) in accordance with relevant local and national regulations, and with an opening pressure of maximum 10 bar must be connected to the pressure relief valve connection.
- If a discharge pipe is connected to the pressure relief device it must be installed in a continuously downward direction and in a frost-free environment. It must be left open to the atmosphere.

Outlook diagram (See figure 2 and figure 3)

1 Hot water from the tank (G 3/4" Female)

2 Cold water to the tank (G 3/4" Female)

3 Hot water from the indoor unit to the tank coil (quick coupling 90°)

4 Return water from the tank coil to the indoor unit (quick coupling)

5 3-way valve

6 Knock-out holes for water piping

7 Levelling feet

A Adviced service height above the tank to allow the replacement of the electric heater element without having to empty and turning the tank.

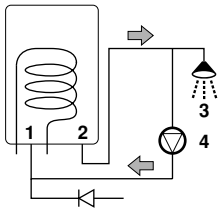
INSTALLATION OF THE EKHTS DOMESTIC HOT WATER TANK

- Installation shall be done by a licensed technician, the choice of materials and installation shall comply with local and national regulations.
- The equipment is not intended for use in a potentially explosive atmosphere.
- Domestic hot water quality must be according to EU directive 98/83 EC.
- A drain device should be installed on the cold water connection on the domestic hot water tank.
- For safety reasons, it is not allowed to add any kind of glycol to the water circuit.
- To avoid stagnation of water, it is important that the storage capacity of the domestic hot water tank meets the daily consumption of domestic hot water.

  In cases where during longer periods of time there is no consumption of hot water, the equipment must be flushed with fresh water before usage.

  The disinfection function provided on the equipment is specified in the operation manual of the indoor unit.
- It is advised to avoid long runs of piping between the domestic hot water tank and the hot water end point (shower, bath, ...) and to avoid dead ends.
- The installation must be in compliance with local and national regulations and may require additional hygienic installation measures.
- In accordance with local and national regulations it may be necessary to install thermostatic mixing valves.
- Immediately after installation, the domestic hot water tank must be flushed with fresh water. This procedure must be repeated at least once a day the first 5 consecutive days after installation.

If required by relevant local and national regulations, connect a recirculation pump in between the hot water end point and the cold water connection of the domestic hot water tank.



1 Cold water connection

2 Hot water connection

3 Shower

4 Recirculation pump

Installation guidelines

Keep in mind the following guidelines when installing the domestic hot water tank:

- The installation location is frost-free.
- Standard installation location of the domestic hot water tank is on top of the indoor unit.

  If available service space to left and/or right side is limited, carefully consider all indoor module installation steps first.

- The domestic hot water tank can be floor mounted as well. In that case, the dedicated EKFMAHTB connection kit for installation of the domestic hot water tank next to the indoor unit is required and to be ordered separately.
- Locate the domestic hot water tank in a suitable position to facilitate ease of maintenance. Refer to the grey-coloured zones indicated in the outlook diagram figure and to the installation manual of the indoor unit.

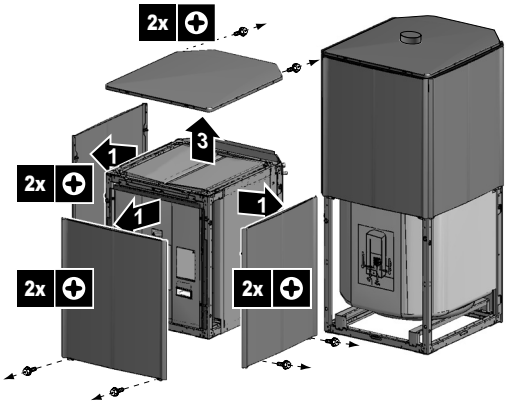
- To avoid back siphonage it is advised to install a non-return valve on the water inlet of the domestic hot water tank in accordance with local and national regulations.
- Take care that in the event of a leak, water can not cause any damage to the installation space and surroundings.
- Provide a connection for the pressure relief valve and drain on the cold water inlet.
- It is advised to install a pressure reducing valve on the cold water inlet in accordance with local and national regulations.
- An expansion vessel should be installed on the cold water inlet in accordance with local and national regulations.

Installing and commissioning the domestic hot water tank

- Unpack the domestic hot water tank according to the instructions mentioned on the unpacking instruction sheet.
- Check if all domestic hot water tank accessories are enclosed (see "Accessories" on page 1).

Remove the indoor unit casing.

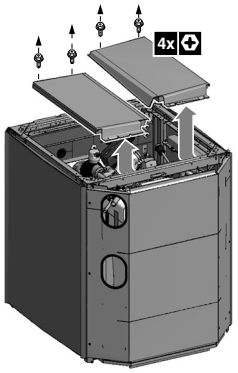
Take away the decoration panels by removing the 2 bottom screws and then unhitching the panel. Remove the top panel.



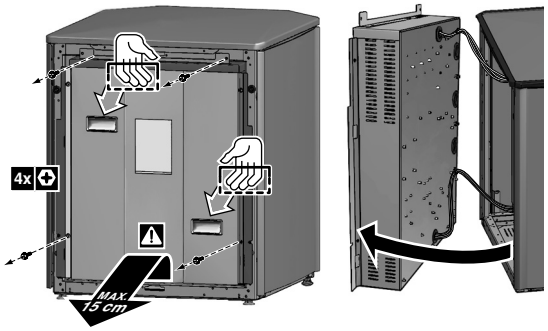
Connect the 3-way valve to the indoor unit

Refer to the instruction sheet delivered with the 3-way valve.

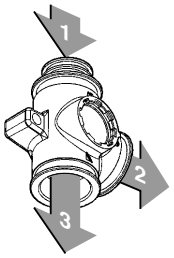
1 Remove both parts of the drain plate on top of the indoor unit before installing the 3-way valve.



Remove the indoor unit switch box by unscrewing fixations and by then sliding the switch box aside without disconnecting any wiring connections.

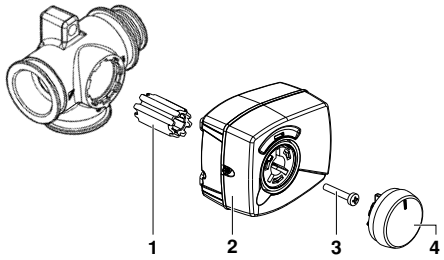


2 Installation position.
This 3-way valve must be installed in the indoor unit.



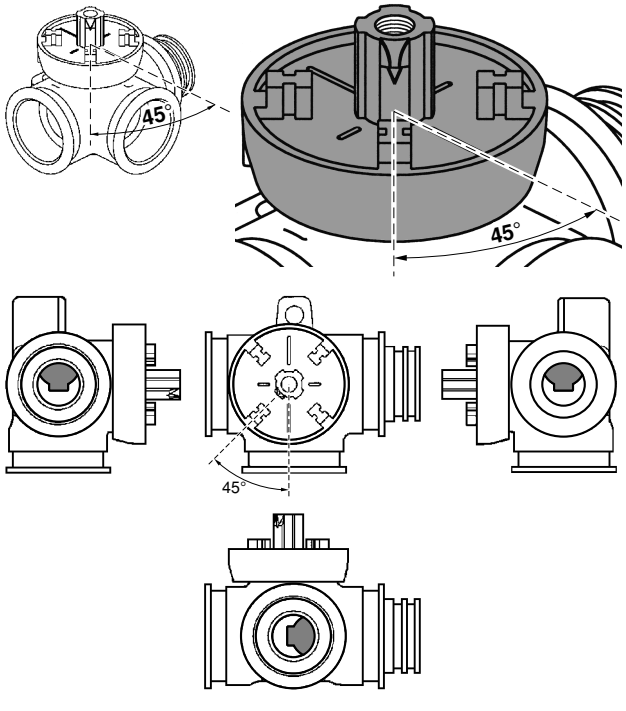
1	From unit
2	To domestic hot water tank
3	To room heating

3 Unpack the 3-way valve body and 3-way valve motor.
Verify that following accessories are provided with the motor.



1	Sleeve	**3**	Screw
2	Valve motor cover	**4**	Turn knob

4 Put the sleeve on the valve and turn the valve so that the sleeve is positioned according to the figure below.

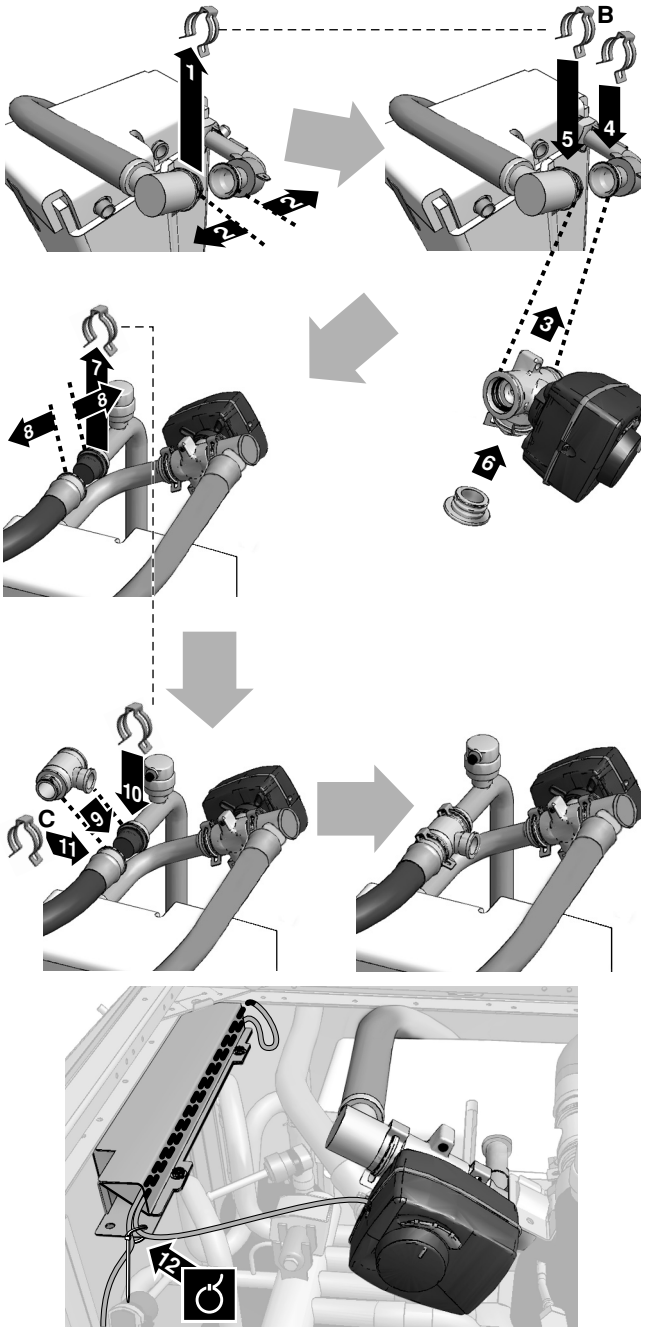


If the valve is not positioned in this way before mounting the motor, the valve will give way to both domestic water and room heating during operation.

5 Install the 3-way valve body in the pipework.

Avoid contact between hot piping and electrical wiring at all time.

Refer to the figure below before making the connection.

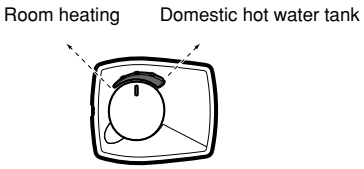


The 3-way valve needs to be installed indoors.

6 Push the motor on the sleeve.

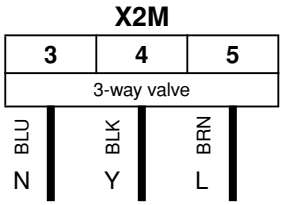
Make sure not to rotate the sleeve during this action, so as to maintain the valve position as set during step 4.

7 Put the turn knob on the valve motor cover as shown below.



Make sure that the turn knob is completely pushed in to allow the turn knob being operated automatically by the unit. If the turn knob is lifted slightly, manual operation is possible.

8 Perform the wiring in the (indoor) unit switch box in accordance with the following figure: (make sure power supply is switched off)

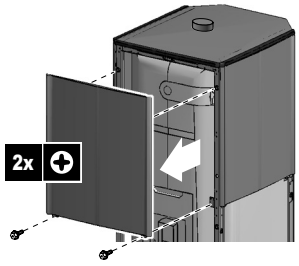


Make sure to follow the appropriate wiring routing inside of the unit (this wiring routing can be found in the installation manual of the indoor unit).

Refer also to the wiring diagram delivered with the indoor unit.

Installing the hot water tank on top of the indoor unit

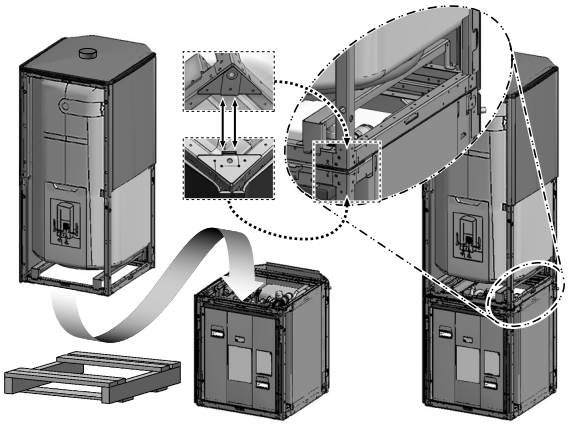
1 Remove the top front decoration panel of the tank module as indicated in the figure.



2 Routing of the flexible hoses with threaded connection coupling (G 3/4" female). Depending on the installation location (left or right side installation), punch the required right or left knock-out holes out of the rear plate. Apply the grommet to the edges of the knocked out holes to protect the flexible hoses.

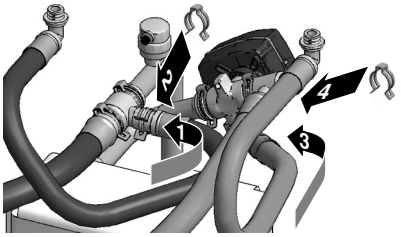
3 Mount the tank module on top of the indoor unit.

- Because of the weight of the domestic hot water tank, it is advised to handle and lift it with two persons.
- Refer to the figure below and make sure that the positioning guides on all four corners of the domestic hot water tank bottom perfectly match on the positioning guides of the indoor unit top when mounting the tank module.



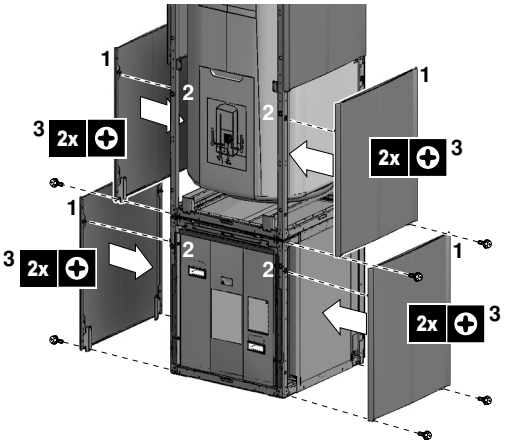
4 Connect the flexible hoses as indicated below and in figure 4.

1	Hot water from the tank (G 3/4" Female)
2	Cold water to the tank (G 3/4" Female)
3	Anode
4	Hot water from the indoor unit to the tank coil (quick coupling 90°)
5	Return water from the tank coil to the indoor unit (quick coupling)
6	3-way valve
⟶	Water flow direction



It is recommended to install a shut off valve to the cold water inlet. Close this shut off valve during periods of absence to avoid damage to the surroundings in case water should leak.

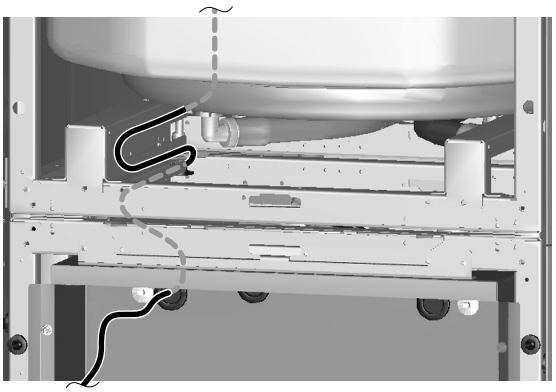
5 Fix the side bottom decoration panels of the domestic hot water tank to the indoor unit.



1	Decoration panel
2	Quick fixation hole
3	Fasten with 2 screws

6 Connect the pressure relief valve (field supply, opening pressure maximum 10 bar) and the drain.

7 Connect the thermistor wire to the indoor unit switch box. Make sure power supply is switched off. Refer to the wiring diagram delivered with the indoor unit.



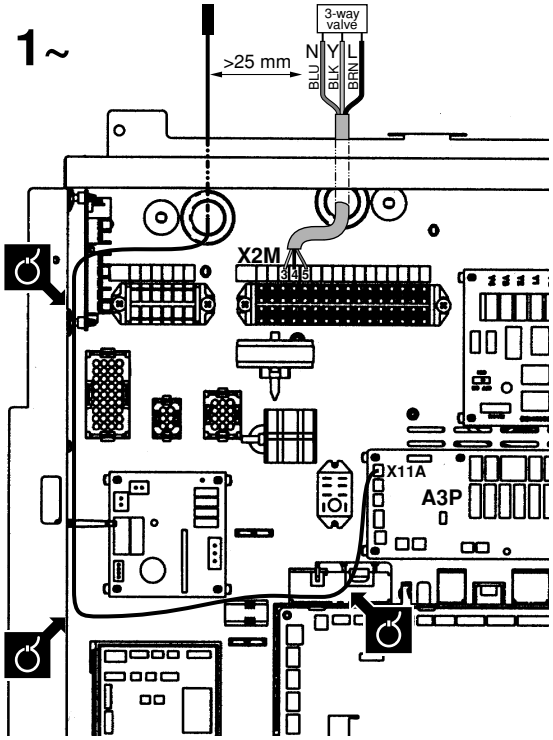
The distance between the thermistor cable and power supply cable must always be at least 25 mm to prevent electromagnetic interference on the thermistor cable.

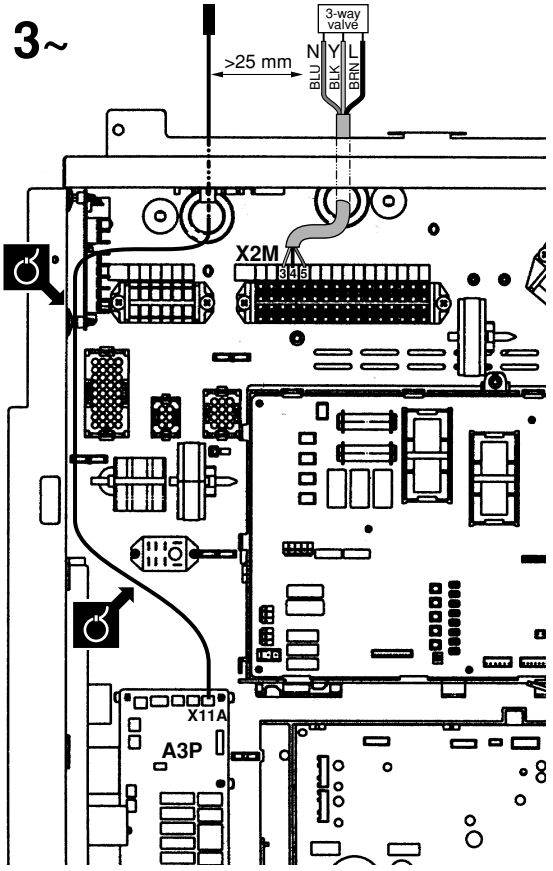
1 Plug the thermistor cable connector in the socket X11A (A3P) on the PCB.

2 Fix the cables to the cable tie mountings with cable ties to ensure strain relief.

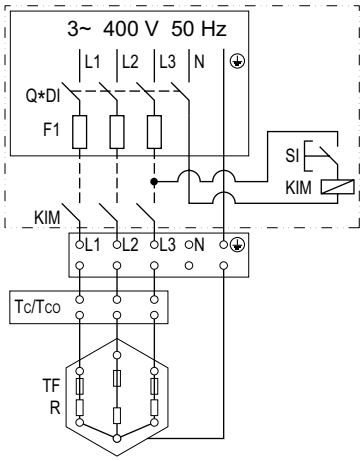
3 When routing out cables, make sure that these do not obstruct mounting of the indoor unit cover.

Note: only relevant field wiring is shown.





8 Connection of electric heater



Q*DI	Earth leakage protector (field supply)
F1	Fuse (field supply)
SI	Emergency switch (field supply)
KIM	Contactor (field supply)
Tc	Thermostat (78°C)
Tco	Thermal cut out (92~99°C)
TF	Thermal fuse
R	Resistor

9 Reattach the drain plate on the indoor unit.

10 Commissioning

The domestic hot water tank coil must be filled with water at the indoor unit water inlet. This to avoid that dirt enters the system.

Follow the next steps to fill up the tank:

1 Open each hot water tap in turn to expel air from the system pipe work.

2 Open the cold water supply valve. Make sure the decoration panels of both the domestic hot water tank and the indoor unit are aligned.

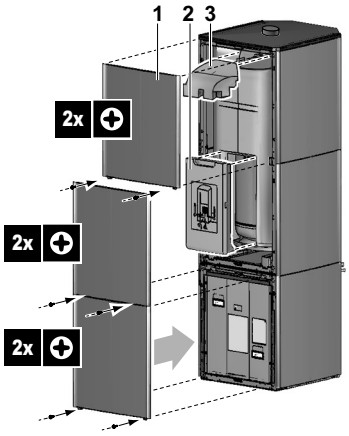
3 Close all water taps after all air is expelled.

4 Check for leaks.

5 Manually operate the temperature and pressure relief valve to ensure free water flow through the discharge pipe (turn knob counterclockwise). Refer to "Main components" on page 2 for location of the temperature and pressure relief valve.

11 Reattach the front decoration panels of the domestic hot water tank.

12 Reattach the front decoration panel of the indoor unit.



1	Decoration panel
2	Insulation piece
3	Temperature and pressure relief valve insulation piece

Installing the hot water tank by the side of the indoor unit

Refer to the manual delivered with the kit EKFMAHTB.

MAINTENANCE

In order to ensure optimal availability of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals.

- Each inspection has to be carried out by a licensed technician and **not by the user**.
- Before carrying out any maintenance or repair activity, always switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Make sure that before starting any maintenance or repair activity, also the power supply to the outdoor unit is switched off.

NOTE The flexible hoses are designed for a 13 year lifetime. It is adviced to replace them after this period.

The described checks must be executed at least **once a year** by a licensed technician.

1 Domestic hot water tank pressure relief valve (field supply)

Check for correct operation of the pressure relief valve on the domestic hot water tank.

2 Remove the bottom front panel of the water tank to check for water leaks (first remove the front panel of the indoor unit when the water tank is mounted on top of the unit).

Descaling

Depending on the water quality and set temperature, scale can deposit on the heat exchanger inside the domestic hot water tank and can restrict heat transfer. For this reason, descaling of the heat exchanger may be required at certain intervals.

When using means for descaling, it must be ensured that the water quality remains compliant with the requirements of EU directive 98/83/EC.

Draining

Follow the next steps to drain the tank:

1 Switch off the power supply.

2 Turn off the cold water supply valve.

3 Open the hot water taps.

4 Open the drain valve.

TROUBLESHOOTING

This section provides useful information for diagnosing and correcting certain troubles which may occur in the unit.

General guidelines

Before starting the trouble shooting procedure, carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

When carrying out an inspection on the supply panel or on the switch box of the unit, always make sure that the circuit breaker of the unit is switched off.

When a safety device was activated, stop the unit and find out why the safety device was activated before resetting it. Under no circumstances safety devices may be bridged or changed to a value other than the factory setting. If the cause of the problem cannot be found, call your local dealer.

General symptoms

Symptom 1: No water flow from hot taps

POSSIBLE CAUSES	CORRECTIVE ACTION
The main water supply is off.	Check that all shut off valves of the water circuit are completely open.

Symptom 2: Water from hot taps is cold

POSSIBLE CAUSES	CORRECTIVE ACTION
The thermal cut-out located in the indoor unit has operated	• Check and find the cause of tripping and then reset button. • Check if thermistor is correctly installed in thermistor socket. Procedure: remove front panel and insulation, replace or fix the sensor.
The indoor unit is not operating.	Check the indoor unit operation. Refer to the manual delivered with the unit. If any faults are suspected, contact your local dealer.

Symptom 3: Intermittent water discharge

POSSIBLE CAUSES	CORRECTIVE ACTION
Thermal control failure (water will be hot).	Contact your local dealer.

Symptom 4: Dirty water

POSSIBLE CAUSES	CORRECTIVE ACTION
Dirty water	Flush or clean the domestic hot water tank after periods of standstill. It could occur that particles in the water deposit on the bottom of the tank. If this deposit layer becomes thick enough it could enter the hot water outlet and contaminate the hot water.
The water has a smell of rotten eggs.	Check if this phenomena also occurs with the cold water. If it does, this indicates that there is a problem with the water supply or with the water in the piping, but not with the domestic hot water tank itself. Contact your water supplier. If the problem is not solved, increase the domestic hot water tank temperature above 65°C. If this action solves the problem, the smell is most probably caused by bacterial contamination. Contact your water supplier. If the problem is not solved, contact your local dealer.

Symptom 5: electric heater is not operating

POSSIBLE CAUSES	CORRECTIVE ACTION
The thermal cut out operated.	Open the cover of the electric heater and reset the thermal cut out by pressing the button.
The thermal fuses are blown.	Replace the electric heater.

DISPOSAL REQUIREMENTS

Dismantling of the unit and treatment of parts must be done in accordance with relevant local and national legislation.

TECHNICAL SPECIFICATIONS

Domestic hot water tank specifications

Storage capacity	(l)	260
Internal heat exchanger volume	(l)	7.5
Material		Stainless steel
Overall dimensions (h x l x w)	(mm)	1610 x 600 x 695
Maximum primary working pressure (heating side)	(bar)	3
Connections		Quick coupling G 3/4" F
Type of inspection hole		G 1/2" Electric heater element connection
Weight		
- empty	(kg)	78
- when full	(kg)	330
Mounting		On top of unit or floor mounted
Maximum water supply pressure	(bar)	10
Maximum temperature domestic hot water	(°C)	75
Maximum temperature heat exchanger	(°C)	85

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