

Product description

Aqua-Mex is a heat exchanger available in two versions: AM – a heat exchanger in standard configuration, and AM-FE - a heat exchanger equipped with an electronic control unit and circulation pump for the primary circuit.

All Aqua-Mex variants can be ordered with an interior coil of either titanium or stainless acid-resistant steel.

The titanium version (T) is intended for use in aggressive water conditions, salt water and in pools with a chlorinator.

The Aqua-Mex heat exchanger features straight-through flow and 2" connections, contributing to high flow and lower energy consumption.

Technical specifications

Fully equipped Aqua-Mex FE	
	
<p>A complete heat exchanger with electronic control of temperature and flow. It features an electronic flow switch that shuts off the heat exchanger if water flow stops. A high-quality circulation pump drives the primary circuit. Capacity: 40 or 70kW. The Aqua-Mex FE is protected from dust and water as per protection class IP44, for installation either indoors or outdoors. Aqua-Mex FE is CE-approved.</p>	
Dimensions	L770xB140xH346 mm
Weight	AM-FE 40T 8,4 kg AM-FE 40 9,1 kg AM-FE 70T 8,8 kg AM-FE 70 9,7 kg
Max primary circuit temperature	90°C
Max secondary circuit temperature	45°C
Minimum flow, secondary circuit	90 litres/min
Pressure, primary circuit	0,3 - 6 bar
Pressure, secondary circuit	max 4 bar
Connection, primary circuit	G1"
Connection, secondary circuit	2" (63 mm)
Ambient temp. during operation	+5 to +40 °C
Protection class	IP44
Voltage	220-240V 1~N 50/60 Hz
Current rating	0,5 A
Power consumption	96 W

Standard Aqua-Mex	
	
<p>A complete heat exchanger with connections to the primary and secondary water circuits. Capacity: 40, 70 or 100kW.</p>	
Dimensions AM 40 & AM 70	L770xB137xH178 mm
Dimensions AM 100	L942xB137xH178 mm
Weight	AM 40T 4,4 kg AM 40 5,1 kg AM 70T 4,8 kg AM 70 5,7 kg AM 100T 5,3 kg AM 100 7,4 kg
Max primary circuit temp.	90°C
Max secondary circuit temp.	45°C
Minimum flow, secondary circuit	90 litres/min
Pressure, primary circuit	max 6 bar
Pressure, secondary circuit	max 4 bar
Connection, primary circuit	G1"
Connection, secondary circuit	2" (63 mm)

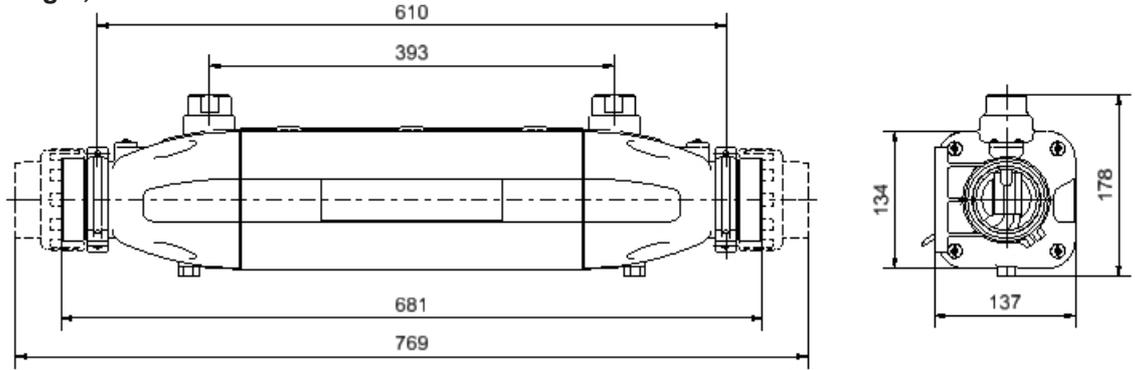
Performance, heat exchanger	Primary			Secondary			ΔT 60°C *
	l/min	m ³ /h	H(m)	l/min	m ³ /h	H(m)	
Typ (T = with titanium coil)							kW
AM 40, AM-FE 40	20	1,2	0,6	250	15	0,4	40
AM 40T, AM-FE 40T	20	1,2	0,4	250	15	0,4	40
AM 70, AM-FE 70	30	1,8	1,6	300	18	0,6	70
AM 70T, AM-FE 70T	30	1,8	1,4	300	18	0,6	70
AM 100	40	2,4	2,6	333	20	0,8	100
AM 100T	40	2,4	2,3	333	20	0,8	100

* The nominal heating output based on the temperature difference between incoming warm and cold medium (here 80-20=60°C).

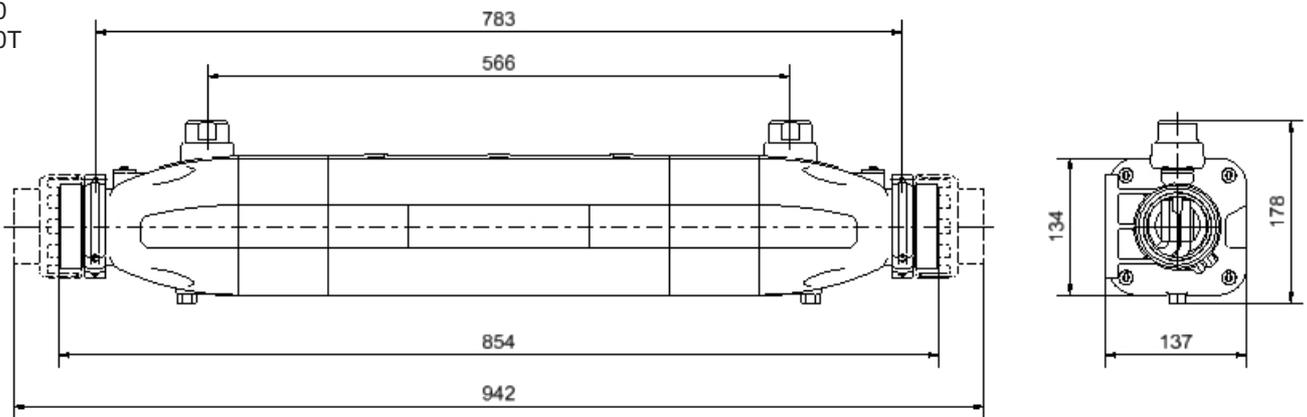
Dimension diagrams

Aqua-Mex heat exchanger, standard

AM 40, AM 40T
AM 70, AM 70T

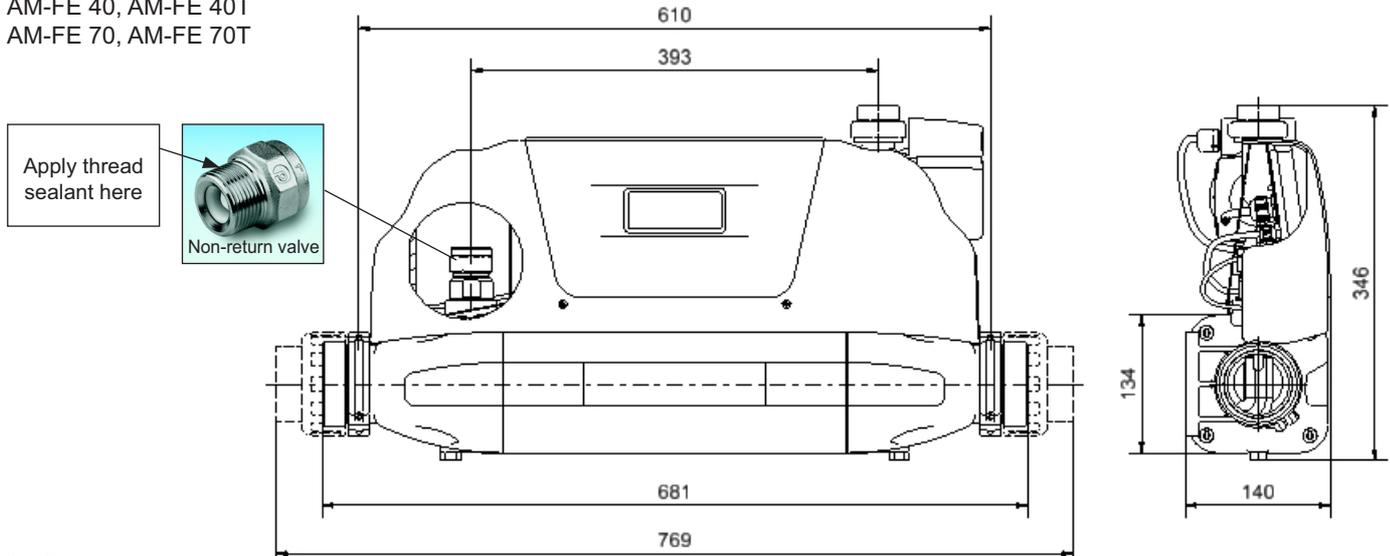


AM 100
AM 100T



Aqua-Mex FE heat exchanger, fully equipped

AM-FE 40, AM-FE 40T
AM-FE 70, AM-FE 70T



Safety

Before service and repair work is started, the unit must be disconnected from the power supply and secured against unauthorized re-connection.

“People with limited physical or mental capacity (including children) may not use the unit without instructions on how it is to be used in a safe manner” as per IEC 60335-1.

Installation, general

Aqua-Mex and Aqua-Mex FE can be installed together with a heat pump, solar panels or other heatsource, either with built-in temperature control or solely as a heat exchanger.

Pipe installation shall be performed first and must be completed before work starts on the electrical installation by an authorized electrician. The primary circuit (hot water) should be connected by a plumber.

- The heat exchanger should be fitted within 10 metres of the pool and within 5 metres of the heat source, in order to minimize pressure drop and heat loss.
- The pipes leading to and from the heat source should be insulated.
- The heater is equipped with 2" couplings (diameter 63 mm) for bonding.
- We recommend to fit an air bleed valve at the highest point in the primary circuit. After completion of installation, the primary circuit should be bled (see the section entitled "Maintenance").
- The circulation pump's motor, openings and condensation holes must be left free from any supplementary insulation material.
- If there is a risk of sub-zero temperatures, and also if the pool is closed for longer than one month, the heat exchanger should be drained of all water.

Installation, pipe-work

For fitting above the pool's water surface, the pipes should be installed in a loop to prevent the heat exchanger from draining itself. Injection of chlorine, acid or other substances shall take place after the heat exchanger to avoid the risk of corrosion. The Aqua-Mex FE shall be fitted horizontally on a wall or similar surface, see the diagram below.

Fully equipped Aqua-Mex FE:

The circulation pump may not be connected until all welding or soldering work has been completed and the pipes have been flushed clean.

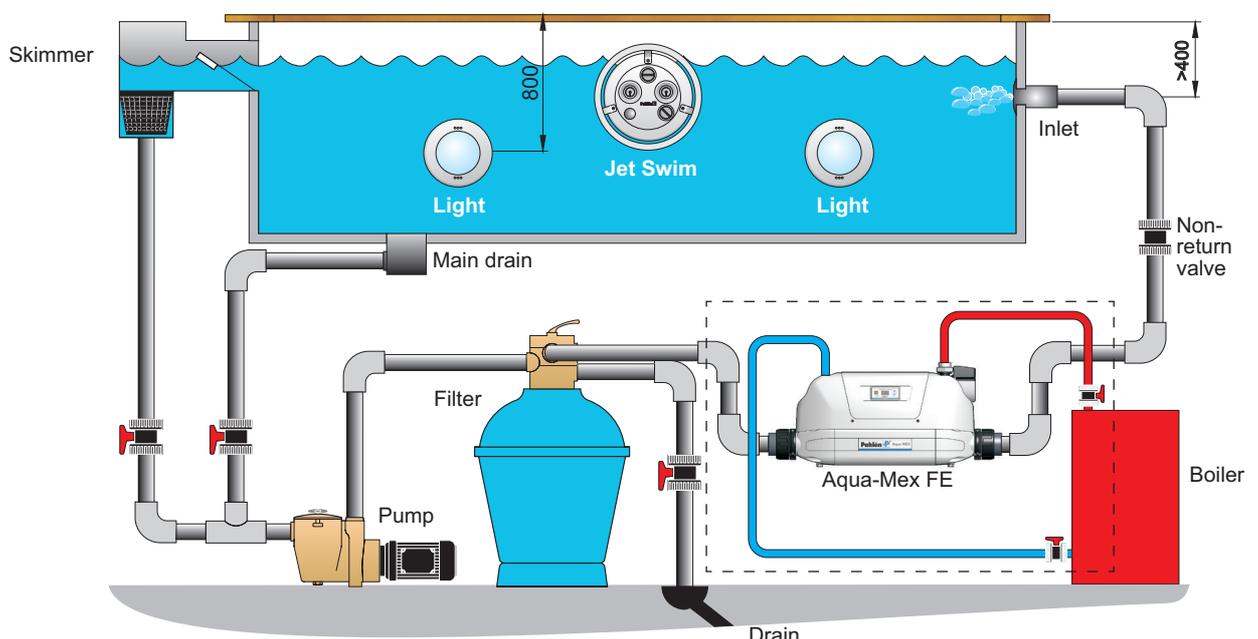
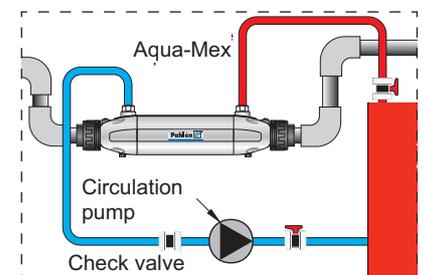
1. Check the direction of flow prior to installation:
The secondary circuit's flow (the pool water) is marked on the heat exchanger's flow switch housing. NB! The primary and secondary circuits' flow shall be in opposite directions for maximum effect, see the diagram below and the section entitled "Alternative direction of flow".
2. Seal the thread on the non-return valve using thread sealing tape or similar.
3. Fit the two wall mounting brackets.
Each bracket has two holes $\varnothing 6$, c/c 91 mm. Between the brackets the c/c distance is 610 mm.
4. Place the heat exchanger in the brackets.
5. Connect the secondary circuit (the pool water).
6. Screw the brackets together.
7. Check that the connections do not leak.

After this, the pool's circulation system can be started up.

8. Connect the primary circuit.
9. Check that the connections do not leak.
10. Bleed the primary circuit.
11. The electrician can now connect the circulation pump, see the section entitled "Electrical installation".

Standard Aqua-Mex:

1. Fit the two wall mounting brackets.
Each bracket has 2 holes $\varnothing 6$, c/c 91 mm. Note the c/c distance between the brackets for each model, see the dimension diagram.
 2. Place the heat exchanger in the brackets.
 3. Connect the secondary circuit (the pool water).
 4. Screw the brackets together.
- After this, the pool's circulation system can be started up.*
5. Connect the primary circuit. NB! The primary and secondary circuits' flow shall be in opposite directions for maximum effect.
 6. Check that the connections do not leak.
 7. Bleed the primary circuit.



Electrical installation (only for Aqua-Mex FE)

Electrical installation shall always be carried out by an authorized electrician.

The Aqua-Mex FE shall be installed with a protective ground and an earth fault relay. However, the pump in the Aqua-Mex FE does not require any external automatic circuit breaker for the motor protection.

The electrical cable must be installed such that it under no circumstances gets into contact with the piping and/or the pump and motor housing.

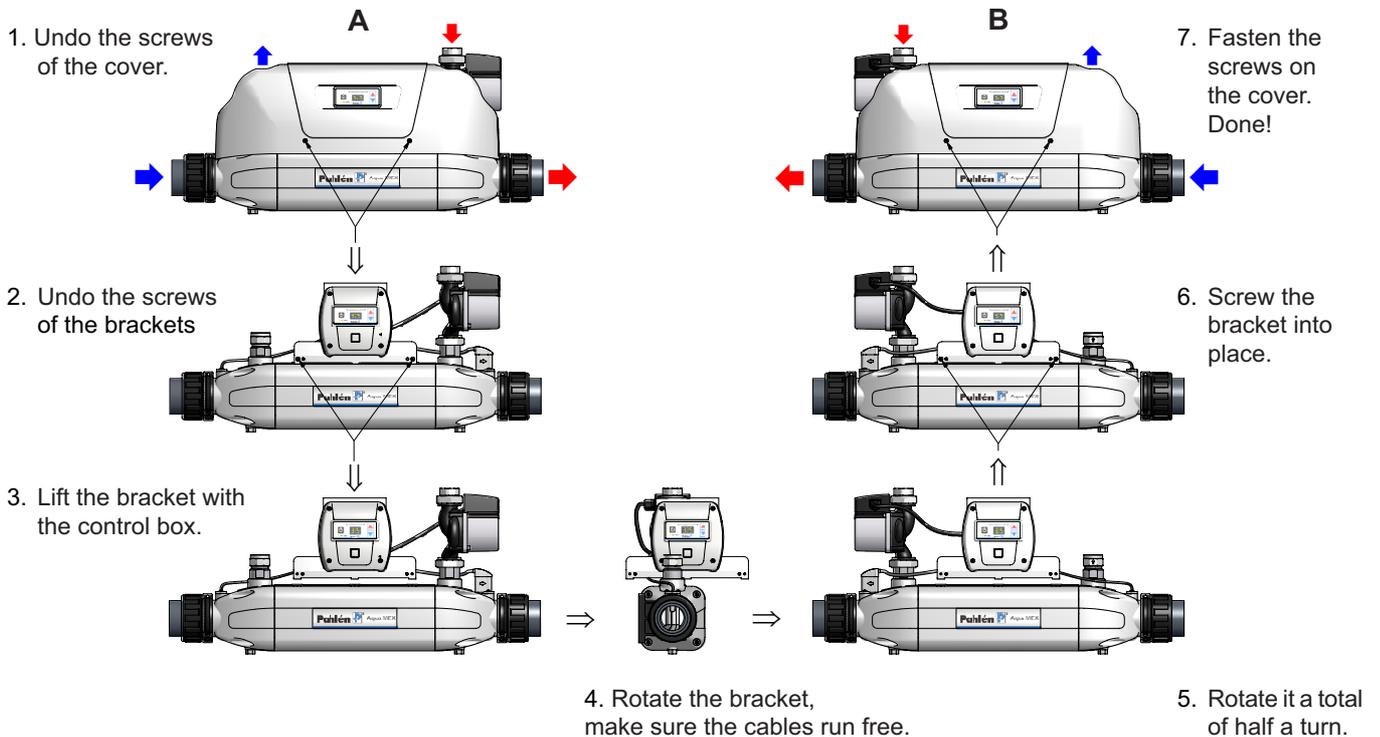
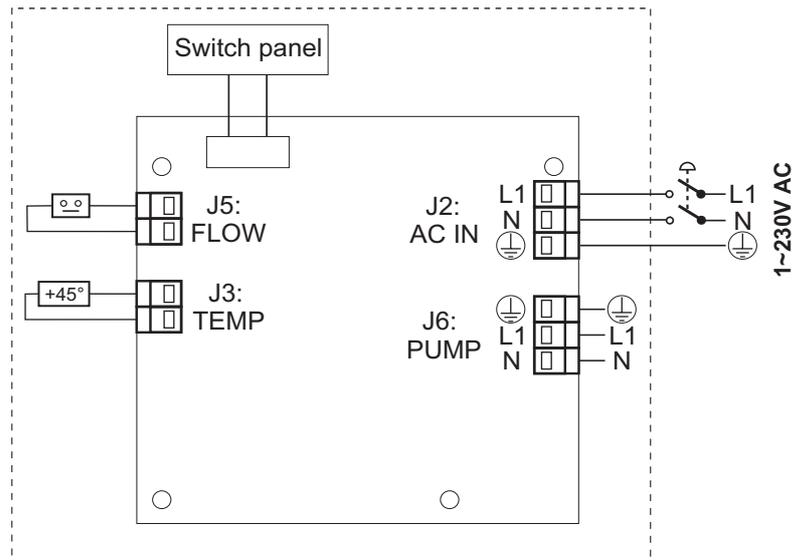
Alternative flow direction

(only for Aqua-Mex FE)

The fully equipped Aqua-Mex FE can easily adjust the heat exchanger's flowdirection to suit the existing installation.

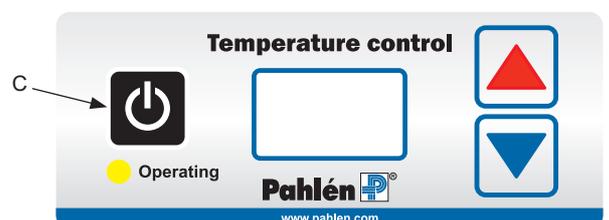
Aqua-Mex FE is supplied in version A.

If version B is required, follow steps 1-7 below:



Starting up the first time (only for Aqua-Mex FE)

1. Check that all connections are properly tightened.
2. Check that the direction of flow matches the arrow on the Aqua-Mex FE pump housing.
3. Set the highest power output on the Aqua-Mex FE circulation pump (by turning the handle to position III), see figure 9.
4. Start the secondary pump (pool water circulation pump).
5. Start the unit by pressing the on/off button (C).
6. Set the required pool temperature, see "Temperature setting" below.
7. Circulation starts after 15 seconds.
8. Bleed the primary circuit, see "Maintenance, bleeding".
9. Select the power setting on the circulation pump to suit heating requirements, see "Operation".
(Setting I is the lowest and III is the highest output.)



Temperature setting (only for Aqua-Mex FE)

1. Press once (on the blue or red arrow key) – the set temperature now flashes in the display.
2. Change the temperature up or down using the arrow keys until you get the required setting for pool temperature.
Five seconds after you have finished pressing the keys, the display will once again show the current pool temperature.

Operation (only for Aqua-Mex FE)

In order for the heater to work, the pool water must circulate.
The yellow diode marked “Operating” lights up when the heater is working.

The display shows the current pool water temperature.
The set temperature can be changed at any time (see “Temperature setting”).
In the event of a power failure, the set temperature will be retained in memory.
In order to achieve the highest power output, the circulation pump is set at its highest power setting.

In order to minimize energy consumption at times of lower heating requirement, for instance for minimal heat maintenance, follow these recommendations: Aqua-Mex FE 40kW - setting I
Aqua-Mex FE 70kW - setting II

Operation

If pool circulation ceases or is switched off, the circulation pump on the primary circuit must also be switched off.

If there is a risk of sub-zero temperatures or if the pool is shut for the winter or for longer than one month, the heat exchanger must be drained of all water.

On the underside of the heat exchanger there are two drainage plugs for the secondary water circuit.

Note that during storage, the pump for the Aqua-Mex FE should not be exposed to temperatures beyond -10°C to +50 °C.

If there is any air in the pump housing, the pump will not function optimally.

The unit must be filled with water.

Follow the recommendations below for pool water:

Chlorine content:	max 3 mg/l (ppm)
pH rating:	7.2-7.8
Alkalinity:	60-120 mg/l (ppm)
Chloride (salt) content:	max 150 mg/l (0.015%) g stainless acid-proof steel version above 150 mg/l (0.015%) g for the titanium version
Calcium hardness:	200-1000 mg/l (ppm)

Bleeding of the system via the valve in the primary circuit.

1. Make sure the circulation pump is operating (power setting III).
2. Open the bleed valve slowly (watch out for hot water).

Bleeding of the circulation pump (only for Aqua-Mex FE)

1. Switch off the pump. Do not touch it – risk of burn injuries.
2. Shut off the pipe in the pressure circuit.
3. Slowly open the air screw with a screwdriver (watch out for hot water).
Remove the air screw entirely. See figure 10.
4. Carefully press back the pump shaft several times with the screwdriver.
5. Protect all electrical components from any water that emerges.
6. Start the pump. WARNING – owing to operating pressure the pump may be blocked when the air screw is open.
7. After 15-30 seconds, tighten the air screw.
8. Open the shut-off valve in the pressure circuit.

Shutting off (only for Aqua-Mex FE)

When the Aqua-Mex FE is shut off via the on/off button, “OFF” will first flash in the display for about 5 seconds, after which a small dot will light up to indicate that the unit still has a current supply.

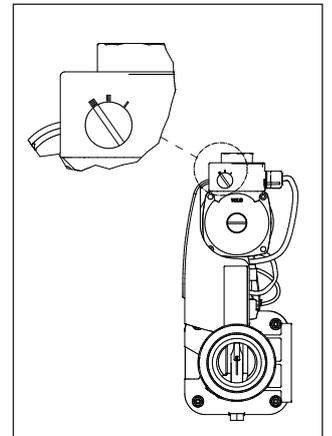


Figure 9. Power setting selector

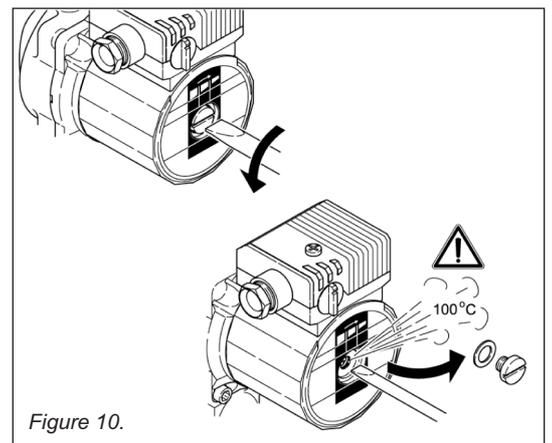


Figure 10.

Troubleshooting

Fault	Cause - action
Heat exchanger pump does not start (only for Aqua-Mex FE)	Check the fuses in the electrical control box. Check the voltage (see data on the rating plate). Check that the Aqua-Mex FE is being supplied with current (a dot is showing in the display). Check that the Aqua-Mex FE is switched on (on/off button). Check the secondary circuit's flow. The flow switch cuts out when secondary circuit flow is less than 90 litres/min. Set a higher temperature. Check that the motor is not blocked by built-up deposits. Undo the air screw entirely and check the rotor's free movement with a screwdriver.
Noise in the pump	Cavitation noise owing to low static inflow pressure. Increase the pressure if possible, otherwise select a higher power output setting on the circulation pump (only for Aqua-Mex FE).
Insufficient heating	Air in the system – the system/circulation pump needs to be bled. Select a higher power output setting on the circulation pump (only for Aqua-Mex FE). Insufficient secondary circuit flow, see the table entitled "Performance". Temperature of the primary circuit's water not high enough – check the heating source, insulate the primary piping more effectively. Check that the heat exchanger is installed such that the primary and secondary circuits operate in opposite directions.
Flow noise	Lower the speed by turning down the circulation pump to a lower gear (only for Aqua-Mex FE).

Error codes

- E1 = flow switch, circulation pump
- E2 = pool temperature sensor
- HI = pool temperature above +45°C

