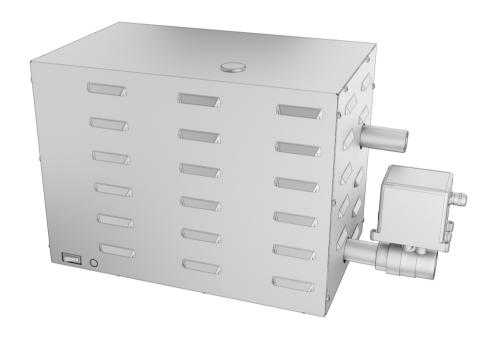


# **SteamAttrac**

Steam generator for steam rooms



Installation and Operating Instructions

# **Made in Germany**



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## **Documentation**

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#### Original installation and operating instructions EN

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#### Characters, symbols and illustrations

<b>①</b>	Additional information about an operating step
	Cross-reference to a page
	Read instructions
$\checkmark$	Result of a step
	Table title
	Title of figure

## **Revision history**

Date	Version	Description
1 Apr. 2020	2.10	New level probe, new circuit diagrams
1 Jan. 2020	2.00	Complete revision
1 Dec. 2018	1.00	Original version

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# 1 General safety instructions

#### 1.1 Safety levels

Safety instructions and important operating instructions are classified according to ANSI Z535.6. Please familiarise yourself with the following terms and symbols:

#### **A DANGER**

#### **Danger**

Indicates a hazardous situation which, if not avoided, will result in death.

#### **MARNING**

#### Warning

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **ACAUTION**

#### **Caution**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **NOTICE**

#### **Notice**

Indicates a hazardous situation which, if not avoided, will result in damage to the unit.

## 1.2 Mounting and electrical installation



These installation and operating instructions are intended for qualified personnel familiar with the laws and regulations applicable to electrical installations at the installation site. Observe the following general

safety instructions during mounting, configuration and commissioning of the product.

#### Risk to life and limb and risk of fire

Risk to life and limb from electric shock and fire in the event of improper or faulty electrical connection. This risk also applies following completion of the installation work.

- ► The electrical installation of the steam generator and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- ▶ Observe the stipulations in VDE 0100 part 701.
- ▶ Disconnect the system and all supply lines entirely from the mains supply when performing repair work.

#### Risk of burns

Touching hot pipelines can result in skin burns.

▶ Insulate hot pipelines; they must not remain exposed.

## **Risk of scalding**

Contact made with hot steam or hot water can result in scalding of the skin.

- ► The steam pipe must always have an unobstructed exit outlet in the cabin.
- ▶ When commissioning, take measurements to ensure that the set output does not heat the cabin to over 50°C.



#### Risk of chemical burns

Descaler consists of an acidic solution, which can burn eyes and skin.

- ▶ Wear eye and skin protection when working with descaler.
- ▶ Clean contaminated clothing thoroughly.

#### Damage to the unit due to high levels of lime

Lime deposits clog the heating elements and the vaporiser tank, slowing down the transfer of heat to the water. This can lead to malfunctions because of overheating and blockages in the drain.

- ▶ Check the hardness of the water before installing the unit.
- ► In locations where the water is high in calcium carbonate (above 5°dH), a water softening system is needed.
- ► A water softening system is required if the steam generator is used commercially.

Non-compliance with these guidelines resulting in damage to the unit renders the warranty void.

#### Damage to the unit

Corrosive or heavy saline atmospheres damage the contacts in the control unit, in the relay box and in the sensors.

► The control panel and sensors should not be installed in a non-corrosive, heavy saline or chlorinated atmosphere.

## 1.3 Operator instruction

The operator of the steam generator must be instructed in the general safety instructions during commissioning. The operator must be given a copy of the instructions for use.

#### Risk of electric shock

A risk to life and limb from electric shock and fire arises in the event of improper repair work. This risk also applies after work is completed.

- ▶ The housing cover must only be removed by a specialist.
- ► Repairs and installations must only be performed by a trained specialist.
- ▶ Disconnect the system and all supply lines entirely from the mains supply when performing repair work.
- ▶ Use only original spare parts from the manufacturer.

#### Risk of burns and chemical burns

Touching hot parts may lead to skin burns and chemical burns of the skin.

- ► The operator must be familiar with the unit's hot parts and be able to identify them.
- ► The operator must be familiar with the settings for the steam supply and understand how it is controlled.

#### **Health risks**

Spending time in a steam room can lead to serious health risks or even death for persons with health impairments.

► These persons must consult with a doctor before visiting a steam room.



#### **Equipment damage due to overuse**

In commercial steam rooms, excessive humidity in the spatial surroundings of the steam room(s) can lead to material damage.

- ▶ In a commercial steam room, the steam generator must be set so that it turns itself off after a specific period of time.
- ▶ If the steam generator does not switch itself off, usage must be supervised at all times.
- ▶ Inspect the steam room each time you start the system.

# Operation by children or persons with reduced mental capacity

Children and persons with reduced mental capacity can be a risk.

- ► Children must be supervised to ensure they do not play with the unit.
- ► Children under 8 years of age should not operate the steam generator.
- ► The settings for the steam generator may only be used by children over 8 if they are supervised by an adult.
- ➤ The steam generator must only be started by persons with reduced mental capacity, or limited physical or sensory abilities under supervision or if they have already been instructed in its use and understand the risks.
- ► Children and persons who have not received proper instruction must not clean or service the system.

# 1.4 Standards and regulations

The following standards, in their currently applicable versions, were observed when designing and constructing the steam generator. Local regulations also apply to the installation and operation of heating, sauna, and steam room systems.

Standard	Title		
DIN EN 60335-1	Household and similar electrical appliances – Part 1: General requirements		
DIN EN 60335-2-53	Household and similar electrical appliances – safety – Part 2-53: Particular requirements for sauna heating appliances and infrared cabins		
DIN EN 60335-2-98	Household and similar electrical appliances – Safety – Part 2-98: Particular requirements for air humidifiers		
DIN EN 60335-2-101	Household and similar electrical appliances – Safety – Part 2-101: Particular requirements for vaporizers		
DIN EN 1717	Protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow		
DIN 1988-100	Codes of practice for drinking water installations – Part 100: Protection of drinking water, drinking water qual- ity control		
DIN EN 55014-1	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission		
DIN EN 55014-2	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity		
DIN VDE 0100-703	Low voltage installations – Rooms and cabins containing sauna heaters		



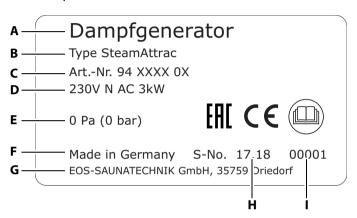
## 2 Identification

The SteamAttrac is available with an output power of 3 to 6 kW. This output capacity can operate steam rooms with a size of 3 m<sup>3</sup> to 12 m<sup>3</sup>.

#### 2.1 Unit specifications

#### **Nameplate**

The nameplate is attached to the underside of the base of the housing.



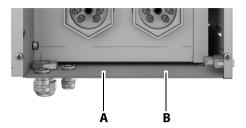
- A Name
- **B** Model
- **C** Item number
- **D** Operating voltage (depending on the model)
- **E** Operating pressure in pascals (bar)

- **F** Country of origin
- **G** Manufacturer
- **H** Manufacturing date
- I Serial number

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#### Warnings on the steam generator

The following warnings have been affixed to the steam generator (in German, English and Russian).



Warnings on the base plate

# A VORSICHT | CAUTION | Осторожно!



#### Gefahr der Beschädigung!

Beim Auslösen des Sicherheitstemperaturbegrenzers, 30 min. Abkühlzeit gemäß Gebrauchsanweisung einhalten! Reset/Betätigung des Sicherheitstemperaturbegrenzers nur durch autorisiertes Fachpersonal!

#### Risk of damage!

By released thermal fuse limiter observe 30 min. cooling time according to the operating manual! Reset of the thermal fuse limiter only by qualified authorized personnel!

#### Риск Повреждения!

В случае сраб. защиты от перегрева соблюсти паузу 30 мин. для охлаждения по инструкции.
Возврат предохранителя от перегрева в исходное положение только специалистом!

29345103/49.19

В



Burn Hazard!
Hot surfaces.
Do not touch.

#### Риск ожога!

Горячие поверхности. Избегать прикосновения.



#### Requirements for operation and storage

The steam generator must be installed outside of the steam room only. The installation location must meet the following requirements:

- Ambient temperature during operation 5°C to 40°C
- Air humidity during operation 30% to 75% rel. air humidity
- Storage temperature: 0°C to 60°C
- The water must be potable. The water pressure must be between 2 and 8 bar.

The installation wall must be able to support a total weight of max. 35 kg.

#### 2.2 Intended use

The SteamAttrac steam generator is used to generate steam for a steam room or as a supplemental humidifier in a sauna cabin. It must only be mounted on a wall. It is suitable for use with private or commercial steam rooms and sauna cabins.

The SteamAttrac is operated by an external control system, e.g. Econ S2. This control panel is not included in the scope of delivery. Use of a control panel other than the control panel specified must be approved by EOS Saunatechnik GmbH.

#### Foreseeable misuse

The following are considered instances of foreseeable misuse:

- The output of the steam generator cannot accommodate the cabin volume.
- The unit is operated without knowledge of or compliance with the safety instructions.
- Operating, service and maintenance requirements are not observed.
- The steam generator continues to be operated after mechanical or other types of modifications are made to it, which have not been approved by EOS Saunatechnik GmbH.
- The unit is operated by children or persons with reduced mental capacity or by persons who have not been thoroughly instructed in its use.
- The steam room is occupied by persons with health impairments. This applies, in particular, to persons with cardiovascular and circulatory dis-

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eases, for whom use of a steam room or sauna could pose to health hazards.

☐ 1 General safety instructions, ☐ 5

#### 2.3 Models (steam rooms)

Output	Steam production	Size of cabin	Item no.
3.0 kW	4 kg/h	2–3 m <sup>3</sup>	94 6838
4.0 kW	5 kg/h	2.5–4 m <sup>3</sup>	94 6839
6.0 kW	8 kg/h	3–7 m <sup>3</sup>	94 6840

#### 2.4 Water hardness

#### **NOTICE**

#### Damage to the unit

Lime deposits clog the heating elements and the vaporiser tank, slowing down the transfer of heat to the water. This can lead to malfunctions because of overheating and blockages in the drain.

- ▶ Check the hardness of the water before installing the unit.
- ► In locations where the water is high in calcium carbonate (above 5° dH), a water softening system is recommended.
- ▶ If the level on the hardness scale is 11° dH or above, connecting a water softening system to the steam generator is recommended.
- ► A water softening system is required if the steam generator is used commercially.

Non-compliance with these guidelines resulting in damage to the unit renders the warranty void.

## Water softening guidelines

Water hardness	Water softening system
1°-5° dH	No
6°-10° dH	Recommended



Water hardness	Water softening system
11°–15° dH	Required
16°-20° dH	Mandatory
> 20° dH	Mandatory

#### Conversion table for units of water hardness

		°dH	°e	°f	ppm	mMol/l
German degree	1° dH =	1	1.2522	1.7848	17.848	0.17832
British degree	1 °e =	0.79862	1	1.4254	14.254	0.14241
French degree	1 °f =	0.56029	0.70157	1	10	0.1
Russian degree	1 °rH =	0.140	0.176	0.251	0.146	0.025
CaCO <sub>3</sub> (USA)	1 ppm =	0.056	0.07	0.1	1	0.01
mMol/l	1 mMol/ I =	5.6077	7.0218	10.009	100.09	1

#### 2.5 Description of the SteamAttrac steam generator

The SteamAttrac steam generator is an electrical device used to generate steam for steam rooms and sauna cabins. The unit consists primarily of a water tank with integrated heating elements (vaporiser tank), control electronics and various pipelines enclosed in a housing. The unit is a pressure-free system. The vaporiser tank and housing are made of stainless steel. The electronics are integrated into the unit. An external control system is required to operate the unit. This can be purchased separately. The unit is operated using cold water and requires a fixed water connection.

#### **Generation of steam**

Electricity is used to generate the steam. The heating elements heat the water in the vaporiser tank and create steam. The steam is released into the cabin using almost no pressure. Excess pressure in the vaporiser tank builds up only if the steam pipe is blocked by condensation or objects in the cabin.

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## **Descaling**

The vaporiser tank must be descaled after 24 hours of operation. The steam generator signals that the vaporiser tank needs to be descaled with one flash of the control light. If the vaporiser tank is not descaled, the steam generator continues to operate for another (approx.) 24 hours and is then locked.

The tank must be filled with descaler in order to descale the unit. Once the descaler has had a chance to interact, the water with the descaler is automatically drained again. A rinsing process then automatically fills the tank, after which the tank is drained again. Once drained, the unit is ready for operation again.

#### **NOTICE**

## Damage to the unit due to improper descaling

The heating coils could be damaged if the steam generator is not descaled on a regular basis. An upstream water softening system does not replace regular descaling and regular maintenance. Damages to the unit due to improper descaling are not covered by the warranty.

- ▶ Use descaler suitable for water kettles and observe the manufacturer's dosage instructions. EOS Saunatechnik recommends its own descaler, EOS SteamCleaner.
- Descale the steam generator regularly.

#### Water supply line

The water supply is routed via a connector along the right side of the housing.

This supply line automatically refills the water once the water level in the vaporiser tank falls below a certain level. A level sensor (rod) in the vaporiser tank sends signals to a solenoid valve that opens the inlet when the water level in the tank is too low. It then closes the inlet once the required water level has been reached.



#### **Excess pressure**

The sealed relief valve has a factory setting of 0.8 bar (800 hPa). Any excess pressure in the vaporiser tank can escape through a drain pipe. This pipe must be connected to a drain.

#### 2.5.1 Scope of delivery

Check the unit upon delivery to ensure that all components were delivered and that it is in proper working order. Contact your distributor if components are missing or damaged. The unit must not be operated if components are missing or damaged.

The steam generator is delivered ex works with an output of 3.0 kW, 4.0 kW or 6.0 kW. The scope of delivery also includes the following parts for all steam generator models:



- A SteamAttrac steam generator
- **B** Installation and Operating Instructions
- C SW8 hexagon key
- **D** Ball valve and motor
- **B** Four 5x35 screws with four S6 anchors for installing the steam generator on the wall

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## **Accessories (optional)**

Accessories	Item no.
2-piece 1 1/4" brass union for connecting the steam pipe	94.7003
SW66 ring spanner for replacing the heating elements	94.7111
0.5 m connecting hose for 3/8"-3/4" water connection	94.7004
1 1/4" steam outlet, plastic with fragrance trough	94.7005
Plastic funnel for filling the descaling solution	94.7006
Recommended control panel Econ S2	94.6269
Recommended descaling solution: EOS Steam Cleaner (contains phosphoric acid), 5 L canister	2001.6065
Ventilator DN 100 12.5 – 5 W	2001.4402
Poppet valve for ventilator, plastic	2001.4404

#### Exterior view of the unit 2.5.2



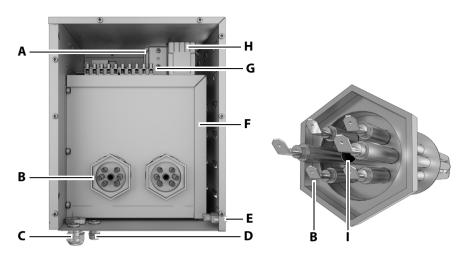
- **A** Housing cover
- **B** Cable feed opening for mains connection
- **C** Rocker switch (to confirm descaling) **G** Steam pipe

- Green indicator light for descaling
- **E** Valve for drain outlet
- Motor for water drain valve

All supply and return lines are fed through the housing and can be accessed from the outside.



#### 2.5.3 Side view with immersion heaters



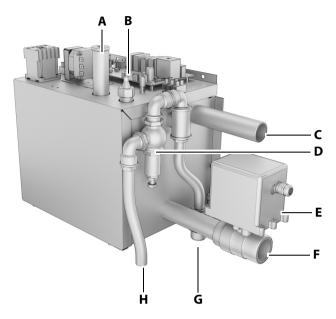
- A Safety temperature limiter
- **B** Screw-in immersion heater with intake pipe for the capillary tube sensor (safety temperature limiter)
- **C** Cable feed opening (mains connection)
- **D** Feed-throughs (for lines to control unit)
- **E** Button and indicator light (descaling)
- **F** Shielding for vaporiser tank
- **G** Clamps for terminal connection and control lines
- **H** Contactors
- I Intake pipe for the safety temperature limiter's capillary tube sensor

\* The 3 kW version is equipped with an immersion heater in the middle of the tank side shown.

The vaporiser tank is insulated by a mineral wool matting and a protective plate to shield the housing from the heat.

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## 2.5.4 Side view with supply and return lines



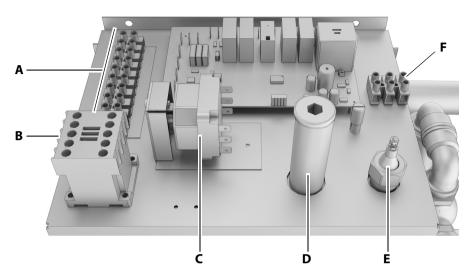
- A Filler spout for descaler
- **B** Level sensor
- C 1" steam emission outlet
- **D** Relief valve (800 hPa)

- **E** Motor for 2-way motorised ball valve
- **F** Drain outlet (descaling)
- **G** Water supply line
- **H** Drain outlet relief valve

The supply and drain connections are permanently mounted and can be accessed from the outside. The ball valve for the drain outlet is controlled by a motor. It is used to open the ball valve so that the water and the descaler can be drained. It is closed again when the tank is filled.



#### **Top view** 2.5.5



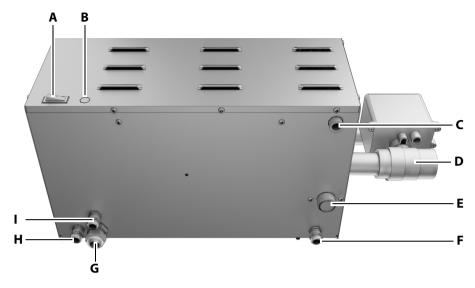
- A Clamps for terminal connection and control **D** Filler spout for descaler lines
- **B** Contactors
- **C** Safety temperature limiter

- **E** Level sensor
- **F** Connection terminal for motorised ball valve

All connections and fuses are pre-mounted.

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## 2.5.6 Connections on the base of the housing



- **A** Rocker switch (to confirm descaling) **E**
- **B** Indicator light for descaling
- **C** Drain outlet relief valve
- **D** Drain outlet, 2-way motorised ball valve
- **E** Water supply line
- **F** Cable feed opening for motorised ball valve
- **G** Cable feed opening (mains connection)
- **H, I** Feed-throughs (for control panel connection)

View from below



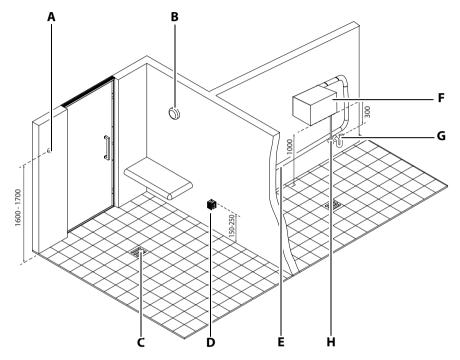
#### 2.6 Technical data

450 x 330 x 270 mm		
Approx. 18 kg		
2–8 bar		
Pressure-free system with relief valve		
Stainless steel		
Safety temperature limiter with capillary tube sensor, switches off and locks for all poles		
Internal screw-in immersion heaters		
Semi-automatic descaling with liquid descaler. <b>Caution:</b> The descaler must not foam.		
1" pipe with 1" 2-way motorised ball valve		
Automatic by the integrated water level control panel, automatic refilling of water		
No control system, external control panel required (Econ S2 recommended)		
3/4" external thread		
External thread, 1"		
Mains connection, external control panel connection		
Protection class I (protective conductor connection)		
3.0 kW/4.0 kW/6.0 kW		
For 3.0 kW: 230 V N AC, 50/60 Hz For 4.0 kW: 400 V 3N AC, 50/60 Hz For 6.0 kW: 400 V 3N AC, 50/60 Hz		
For 3.0 kW: 3 x 1.5 mm <sup>2</sup> For 4.0 kW: 5 x 1.5 mm <sup>2</sup> For 6.0 kW: 5 x 1.5 mm <sup>2</sup>		
For 3.0 kW: 1 x 16 A For 4.0 kW: 3 x 16 A For 6.0 kW: 3 x 16 A		

# 3 Mounting

#### Installation example for steam room

The following example shows where the SteamAttrac steam generator can be installed in relation to the steam room.



- A Temperature sensor
- **B** Lighting
- **C** Floor drain
- **D** Steam outlet

- **E** Steam pipe with insulation
- **F** Steam generator
- **G** Siphon for drain outlet and relief valve outlet
- **H** Cold water supply
- Installation example: Cabin and maintenance room

An air extractor should be installed on the cabin's ceiling near the temperature sensor so that temperature control works properly. An exhaust fan is recommended to support air extraction (can be purchased as an accessory; see the chapter Accessories (optional), 18).

#### **Installation location requirements**

- Ambient temperature during operation 5°C to 40°C
- Air humidity during operation 30% to 75% rel. air humidity
- Storage temperature: 0°C to 60°C
- Stable wall for installation as the total weight can equal approx. 35 kg.
- Near the unit: Mains connection of 230 V N AC for 3 kW and 400 V 3N AC for 4–6 kW (fixed connection).
- Drain outlet below the unit or in close proximity
- Water supply line in close proximity Cold water, max. 25°C
- Length of insulated steam pipe, max. 5 m to 7 m
- All pipelines and connections must be accessible for service.

The room in which the steam generator is installed should be as near to the steam room as possible so that the pipeline distances are as short as possible.

#### Steam room requirements

- Floor drain
- Air extractor so that temperature control works properly

#### 3.1 Steam generator

The following tasks must be completed in order to mount the steam generator and connect the lines:

- Preparing for installation, 

  27
- Removing the housing cover, 🗅 28
- Mounting the steam generator, 🗅 29
- Connecting control lines and the mains cable, 

  48
- Connecting the cold water supply line, 

  35
- Mounting the motorised ball valve, 🗅 36
- Connecting the drain outlet, 🗅 37
- Connecting the steam pipe, 🗅 38

#### 3.1.1 Installation site

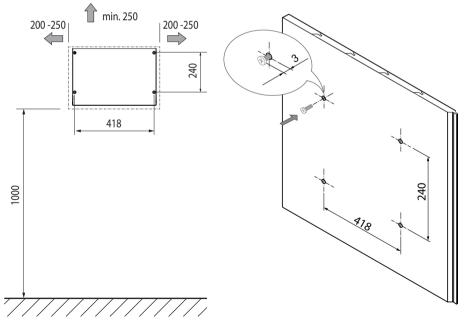
#### **NOTICE**

#### Damage due to inadequate installation site

The steam generator may vibrate slightly when the water boils. If the wall bearing capacity is insufficient or the wall is of poor quality, the steam generator cannot be securely installed and may fall off.

- ▶ Before installation, check the quality and bearing capacity of the wall intended for installation. The wall must be able to support a total weight of max. 35 kg.
- ▶ Before installation, check how the steam pipe is to be laid. Standard routing leads the line out from the steam generator laterally and then downwards.

#### Measurements for installation



Mounting distances



The following distances must be observed:

Distance between drill holes	Horizontal: 418 mm
	Vertical: 240 mm
Distance (side) left and right to the walls	250 mm
Тор	Min. 250 mm
Bottom	Approx. 1000 mm

#### 3.1.2 Mounting the steam generator

The steam generator is mounted on the wall with four (4) retaining screws and suitable anchors. Note that the steam generator may vibrate slightly when the water boils. Ensure that you have sufficient hardware for securing it if you do not use the supplied screws and anchors.

#### **Necessary steps:**

- ► Preparing for installation, 🗅 27
- ▶ Mounting the steam generator, 🗅 29

#### Hardware + tools:

- 0.5 m tube with screw, 3/4" female thread
- Four 5 x 40 screws; four F6 anchors (included in scope of delivery)
- 6 mm drill
- Phillips screwdriver
- Recommendation: 2 persons to mount the steam generator

#### **▶** Preparing for installation

1 NOTICE Ensure that the holes are aligned vertically and horizontally. Use a spirit level.

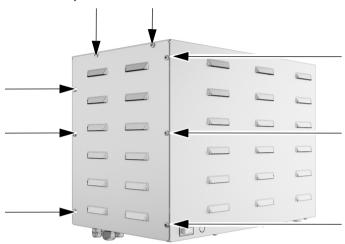
Drill two (2) holes above and below.

See Mounting distances, 🗅 26

- 2 Insert the anchors and screw in the top two screws.
  - (i) Allow the screws to protrude approx. 3 mm so you can hang the steam generator on them.

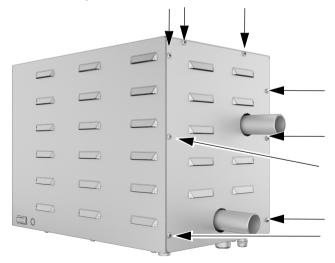
#### ► Removing the housing cover

1 Unscrew the eight (8) retaining screws in the left side panel of the housing and remove the panel.



■ Removing the left side panel

2 Unscrew the eight (8) retaining screws in the right side panel of the housing and remove the panel.



■ Removing the right side panel

① The motorised ball valve is not mounted by the factory.



3 Unscrew the three (3) screws on the bottom of the housing.

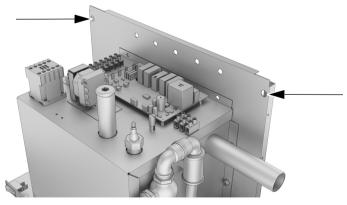


4 Lift off the housing cover.

#### ► Mounting the steam generator

1 CAUTION! Without the panels, the unit weighs approx. 20 kg. Two people are needed to mount the unit.

Hang the steam generator on the pre-mounted screws by inserting the screws that are on the top of the rear of the unit into the keyholes and then allow the steam generator to drop down gently until it catches in place.



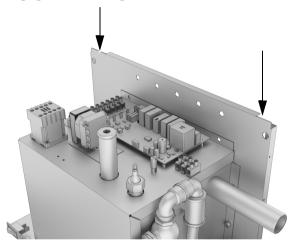
**™** Mounting

- 2 Ensure that the unit is perpendicular to the floor.
  - (i) Drill new holes if needed.
- **3** Screw in the bottom two screws and tighten them.
- 4 Tighten the top two screws so that the unit is mounted securely on the wall.
  - ① Do not put the housing in place until the electrical lines and the cables that connect to the control panel have been connected. See
    - ► Connecting control lines and the mains cable, 

      48

#### ► Mounting the housing cover

1 Engage the housing cover in the slot on the back panel of the housing.



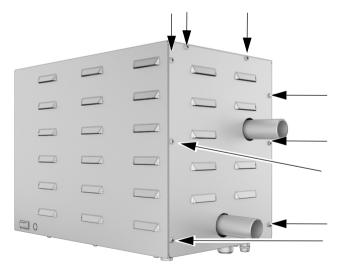


2 Insert three (3) screws into the bottom and tighten them.



☑ Screwing in the housing cover

- 3 Mount the right side panel.
- 4 Insert eight (8) retaining screws into the right side panel and tighten them.

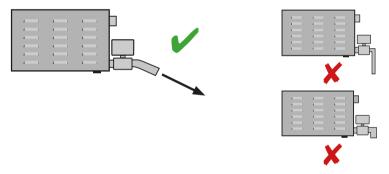


#### 3.2 Water and steam pipes

#### 3.2.1 Guidelines

- The connection for the water supply line and drain outlet must comply with the European Union's current applicable standards DIN 1988/EN 1717 and DIN 1986/EN 12056. It may be necessary to install a check valve. Local regulations must also be observed.
- Lime deposits resulting from hard water have a considerable negative impact on the service life of the steam generator. Systems that are used commercially must always be equipped with a water softening system to prevent the build-up of lime in the vaporiser tank. For privately used systems, a water softening system is required when the water hardness level equals 14° dH (approx. 2.5 mmol/L) or higher. See the chapter on 2.4 Water hardness, □ 14.
- The water must be potable. The water pressure must be between 2 and 8 bar.

## Connecting the drain outlet correctly

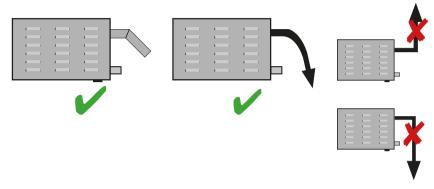


- Correctly and incorrectly installed drain outlets
- The diameter of the extending pipe must not be smaller than the drain outlet on the unit.
- The drain pipe must not have any sharp angles or kinks.
- The drain outlet and escaping water are very hot. The outlet for draining the vaporiser tank and the hose for excess pressure must be arranged in



- such a way that, if hot water escapes unexpectedly, it does not pose a risk to persons nearby.
- The connection for the drain must be capable of withstanding a water temperature up to 110°C.

#### Positioning the steam pipe correctly



- The pipeline for steam emission must be capable of withstanding temperatures up to 110°C. A copper pipe with a diameter of 35 mm is preferable.
- The copper pipe must be insulated with material capable of withstanding temperatures up to 110°C, e.g. mineral wool.
- Plastic pipes or flexible hoses with a metal sheath must be capable of withstanding temperatures up to 110°C and be resistant to corrosion and deformation.
- The steam pipe must have a diameter of at least 35 mm. The diameter of the steam pipe must not be smaller than the corresponding connection on the unit. Steam can enter the cabin quickly and with minimum loss when the pipe has a diameter of 35 mm, making the unit is almost silent when operating.
- The steam pipe may not have any sharp angles or kinks.
- The steam pipe must gradually descend toward the steam outlet at a 1–2° incline so that no condensate can collect in the pipeline. A siphon may be installed to remove condensate as needed.

## 3.2.2 Connecting the water supply line and drain outlet

#### **Necessary steps**

- ► Connecting the cold water supply line, □ 35
- ► Connecting the drain outlet, 🗅 37

#### Hardware + tools:

- 0.5 m tube with screw, 3/4" female thread
- SW46 spanner
- Hardware + tools to mount to the water supply
- Hardware + tools to mount to the drain pipe

#### **NOTICE**

#### Contamination of and damage to the vaporiser tank

Traditional PVC garden hoses contain plasticisers that can cause a thick layer of foam to form above the water line in the vaporiser tank.

The water level sensor cannot differentiate foam from water, and the actual water level lies significantly below the layer of foam. This could cause overheating and an emergency shutdown, which can lead to various types of damage, e.g. failure of the temperature limiter.

▶ Use hoses that are PVC-free for the cold water supply.



#### ► Connecting the cold water supply line

- 1 Connect the cold water supply to the 3/4" water supply line on the base plate of the housing with a commercially available hose.
  - Permissible hoses can be purchased in a plumbing supply store or from EOS as an accessory. See the chapter on Accessories (optional),
     18.

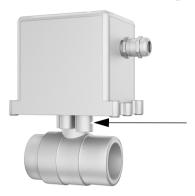


- 2 Open the water supply.
- **3** Check to ensure pipelines are sealed.
  - ① Water must not leak from the water supply line. Tighten the connection as needed.

#### ► Mounting the motorised ball valve

1 Set the housing cover in place; see ▶ Mounting the housing cover, □ 30

- ① Before setting the housing cover in place, connect the cables to the control unit.
- 2 Loosen the motor's retaining screw.

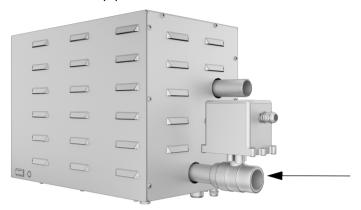


- 3 Remove the motor from the ball valve.
- 4 Seal the 1" threaded fitting on the drain outlet with sealing tape.
- 5 Mount the ball valve.
  - Align the ball valve in such a way that there is sufficient room to set the motor in place.
- **6** Set the motor in place again and tighten the motor's retaining screw.
  - ① You can then mount the drain outlet.



## Connecting the drain outlet

1 Connect the 1" pipe or hose to the drain outlet.



□ Drain outlet connection for descaling

- ① See 
  ☐ Correctly and incorrectly installed drain outlets, ☐ 32
- 2 Guide the pipe or hose to the drain or connect it to the wastewater pipe.
  - (i) After a connection to the power supply is established, the unit performs a self-test; see 3.6 Running a self-test after establishing a connection to the power supply,  $\Box$  50.
- **3** Check to ensure pipelines are sealed.
  - Water must not escape from the water supply line or the drain outlet. Tighten the connections as needed.

## 3.2.3 Mounting the steam pipe

The steam pipe is mounted on the steam emission outlet outside of the housing. Before it can be mounted, the housing cover must be in place and the right side panel must be mounted.

#### Necessary steps

- ► Mounting the housing cover, 

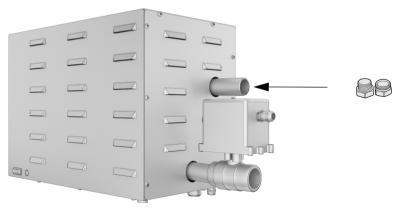
  30
- ► Connecting the steam pipe, 🗅 38

#### Hardware + tools:

- Ø 35 mm pipe, heat-resistant up to 110°C
- SW38, SW48 and SW54 spanners
- Commercial fitting hardware used in pipe installation

## ► Connecting the steam pipe

- 1 Connect the steam pipe to the steam emission outlet.
  - ① A two-piece 1" brass union with 1"-1 1/4" reducer can be used (special accessory, item no. 94.7003) to simplify the connection or subsequent disconnection of the steam pipe.



■ Steam pipe connection

Position the steam pipe so it slopes toward the steam outlet without kinks.

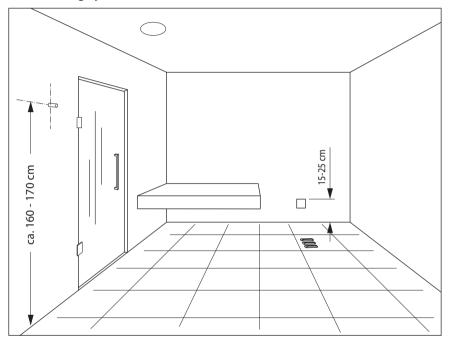
① See 
☐ Positioning the steam pipe correctly, ☐ 33



## 3.3 Installation tasks in the steam room

At minimum, the steam emission outlet, temperature sensor, and the lighting must be mounted inside the cabin.

Additional connections are possible, depending on the sauna's features, e.g. supply and exhaust air fans, temperature sensors for the bench and floor heating system.



The position of the sensors may vary, e.g. the height at which they are mounted, depending on the layout of the cabin and its relevant components. The measurements in the figure are therefore intended as guidelines only.

## **Steam room requirements**

- Floor drain
- Air extractor so that temperature control works properly

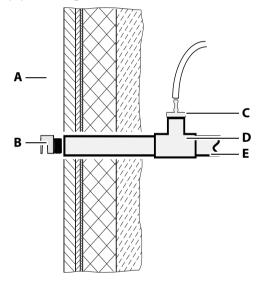
# 3.3.1 Inserting the steam pipe into the cabin and installing the steam outlet

Hardware + tools:

- Steam outlet, 1 1/4" external thread
- Drill and hole saw
- Fasteners

## Inserting the steam pipe into the wall of the cabin

- 1 Drill a hole for the steam pipe 15–25 cm above the cabin floor.
- 2 Feed the steam pipe through the cabin wall.

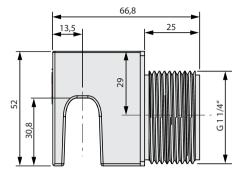


- A Cabin inside wall
- **B** Steam outlet

- C Injection nozzle for essence
- **D** T-piece
- E Steam pipe
- Steam pipe in the cabin
- The T-piece and the injection nozzle for essence are optional parts needed for the separate essence injector. The T-piece must be installed as close to the cabin as possible.
- **3** Fix the steam pipe to the wall.



- 4 Put the steam outlet in place and tighten by hand. The steam emission outlet must face downward.
  - ① The steam outlet can be purchased separately as an accessory. See the chapter on Accessories (optional),  $\Box$  18.



■ Steam outlet, item no. 2001.5575

① If you choose to install a different steam outlet, observe the relevant installation instructions.

#### 3.4 Electrical installation

## **A DANGER**



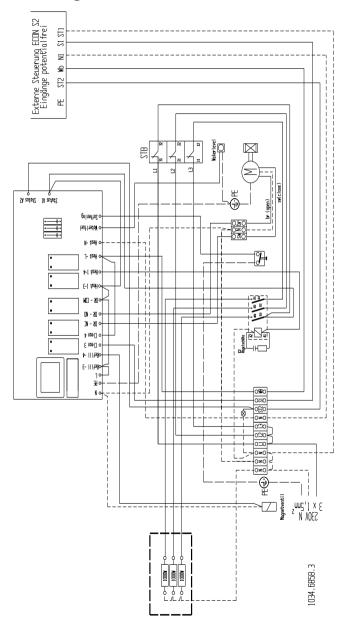
#### Risk of electric shock

A faulty electrical connection poses the risk of an electric shock. This risk also applies following completion of the installation work.

- ▶ If retrofitting is required, the steam generator's housing must only be opened by trained personnel.
- ▶ Before working on the clamps for the connection terminal, all current supply circuits must be switched off.
- ► Electrical installation must only be carried out by a qualified and licensed electrician.
- ► The unit must be connected to the power supply according to the circuit diagram and the terminal scheme.

# 3.4.1 Circuit diagrams

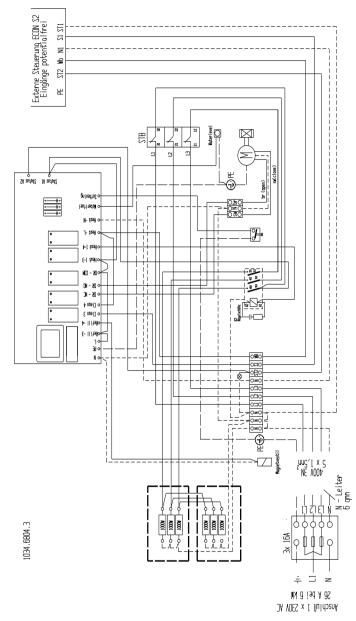
# Circuit diagram for 3 kW to 230 V



■ SteamAttrac Circuit diagram 3 kW

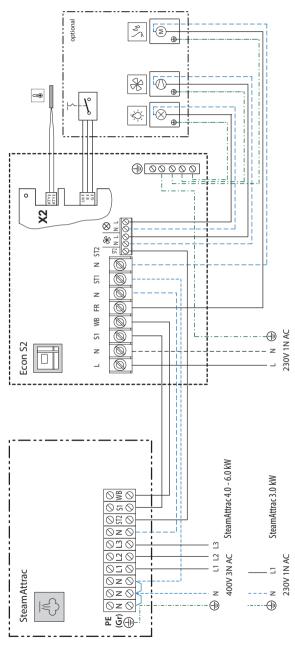


## Circuit diagram for 4/6 kW - 400 V



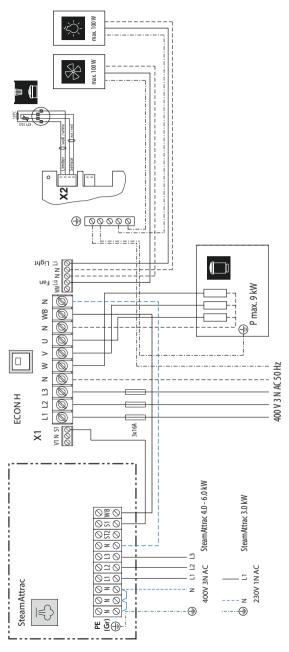
The circuit diagram is located on the inside of the housing.

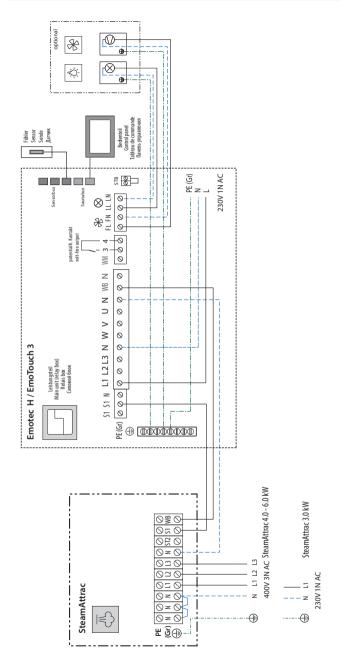
# **Connection examples**





# SteamAttrac as a supplementary vaporiser in the sauna







#### 3.4.2 Mains connection

The applicable international (VDE), national and local (EVU) legal norms and requirements in their currently valid versions should be observed. All installation and verification work in Germany should be carried out by a licensed and appropriately qualified electrician in compliance with VDE 0100 part 701.

## Leakage current

The electricity supply must be protected by a residual-current-operated protective device (RCD) with a rated fault current of <30 mA. Please ensure that no other electrical appliances are protected by this RCD device. The leakage current must not exceed the following values in accordance with DIN EN 60335-1:2012-10:

 For stationary class I heating appliances: 0.75 mA or 0.75 mA per kW rated power input of the heating unit, whichever is higher, up to a maximum of 5 mA.

# 3.5 Commissioning

## **A DANGER**



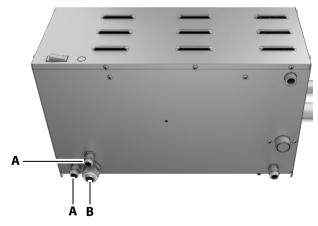
## Risk of electric shock

A faulty electrical connection poses the risk of an electric shock. This risk also applies following completion of the installation work.

- ► Electrical installation must only be carried out by a qualified and licensed electrician.
- ▶ Before working on the clamps for the connection terminal, all current supply circuits must be switched off.
- ▶ Work on the steam generator may be performed only if the power supply has been disconnected.
- ▶ The unit must be connected to the power supply according to the circuit diagram and the terminal scheme.

## ► Connecting control lines and the mains cable

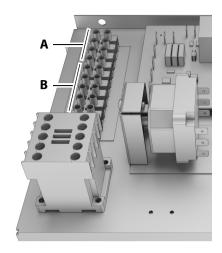
1 Run the cable through cable feed opening in the base of the housing.

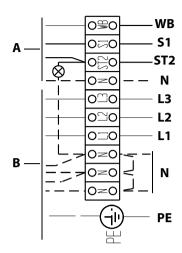


A Control lines

**B** Mains cable

**2** Connect the cable to the connection terminal.





- A Control panel connection
- **B** Mains connection
- (i) 3 kW generator: Mains connection to L1, N and PE
- ① 4/6 kW generator: Mains connection to L1, L2, L3, N and PE
- ① Control panel Econ S2: WB, S1, ST2 and N. For detailed information, consult the instructions for the control panel.
- 3 Close the housing.
  - ③ See ► Mounting the housing cover, □ 30
  - You can start the unit once the water and steam pipes have been connected.
- 4 Connect the mains supply line to the power supply.
- **5** Switch on the system at the control panel.
  - The water level is checked by a sensor. If the required water level has been reached, the valve in the water supply line closes automatically. It takes a few minutes to refill an empty vaporiser tank (flow regulator in the water inlet valve).

# 3.6 Running a self-test after establishing a connection to the power supply

After a connection to the power supply is established, the unit performs a self-test. This test is also performed if the unit has been disconnected from the mains supply and then reconnected, e.g. if the unit was switched off.

- If there is still water in the tank when the self-test begins, the water is drained and the drain outlet is closed again.
- If the tank is empty, the water supply line is opened and water is filled until the maximum water level is reached. The water supply is then closed and the vaporiser is ready for operation again.



# 4 Operation

The SteamAttrac steam generator is switched on and off by means of an external control system. The control system, e.g. Econ S2, can be purchased from EOS Saunatechnik GmbH.

## Flashing codes signalled by green status light

The SteamAttrac is equipped with a status light that signals operating statuses and malfunctions. The status light is located on the front of the steam generator. See 2.5.2 Exterior view of the unit,  $\Box$  18.

Flashing code	Meaning
Light off	Steam generator is switched off or is currently in the switch-on phase
Light on	Steam generator is continuously on (normal operation)
Once	Waiting for descaling
Twice	Descaling in progress
Three times	Pour in descaler
Four times	Water filling fault
Five times	Error when draining

## 4.1 Normal operation

## Switching the system on

After switching the system on at the control unit, the unit performs a selftest.

- If the self-test indicates that descaling is required, steam production can begin only once descaling is complete; see 4.2 Descaling, □ 52.
- If descaling is not yet required, steam production can be switched on via the control unit.

The unit produces steam until a temperature of 50°C has been reached in the sauna cabin. After this, steam will continue to be produced until this temperature is reached again.

## Switching the system off

After switching the system off at the control unit, the hot water in the vaporiser tank is automatically drained.

## 4.2 Descaling

The vaporiser tank must be descaled after 24 hours of operation. The steam generator signals that the vaporiser tank needs to be descaled with a flashing control light located on the front of the unit.

If the vaporiser tank is not descaled, the steam generator continues to operate for another (approx.) 24 hours and is then locked. The steam generator will heat again only after the vaporiser tank is descaled and completion of the descaling process is confirmed by pressing the rocker switch.

#### **<b>△ WARNING**

## Risk of poisoning and chemical burns

The descaler consists of an acidic solution. Eyes and skin could be burned.

Toxic fumes could result if the descaler comes in contact with other chemicals.

- Do not place or store containers with descaler close to other chemicals.
- Wear eye and skin protection when descaling the vaporiser tank.
- Avoid contact with contaminated clothing.
- ▶ Observe the manufacturer's data sheet.

## **NOTICE**

# Damage to the steam generator due to insufficient or improper descaling

The heating elements could be damaged if the vaporiser tank is not descaled on a regular basis.

Damages to the unit due to improper descaling are not covered by the warranty.

- ▶ Use descaler suitable for water kettles and observe the manufacturer's dosage instructions. EOS-Saunatechnik recommends its own descaler, EOS SteamCleaner.
- ▶ Descale the vaporiser tank regularly.
- ▶ If the water is particularly hard, a water softening system must be installed.

#### Tools + hardware

- SW8 hexagon key (included in scope of delivery)
- Descaler
- Acid-resistant hose to drain the water

## **ACAUTION**

## Risk of scalding

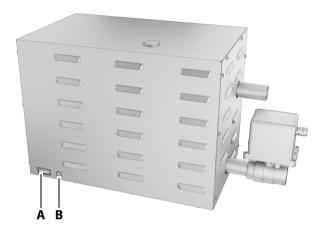
The water in the vaporiser tank can be very hot. This can lead to scalding when draining the water.

▶ Allow the water inside to cool for at least 30 minutes before descaling the vaporiser tank.

It is not necessary to remove the unit's cover before descaling the tank.

## ► Preparing for descaling

- 1 Switch off the steam request at the control unit.
- 2 Press the rocker switch A to start the descaling program.



A Rocker switch

**B** Green indicator light for descaling

- Steam generator
- (i) The water in the tank is drained.
- ① The *Pour in descaler* flashing code indicates that descaler liquid can be added.
- **3** CAUTION! Risk of chemical burns from descaler. Mix approx. 7 litres of descaler with water in a bucket.
  - ① Ensure that the mixture of water and descaler for your water's level of hardness corresponds to the specifications on the descaler container.

**4** Remove the cover plug on the descaler filler spout and unscrew the sealing plug using the SW8 hexagon key.



- SW8 hexagon key (included in scope of delivery)
- **5** CAUTION! Risk of chemical burns from descaler. Use a funnel to pour in the descaler; see Accessories (optional), □ 18. Pour in the descaler.
- **6** Screw the cover plug into the descaler filler spout and tighten.
- **7** Press the rocker switch to start descaling.
  - ① The *Descaling in progress* flashing code indicates that descaling is in progress.
  - (i) After approx. 30 minutes the water is drained. The tank is then filled with clean water for a rinse cycle and drained again.

8 Press the rocker switch briefly to confirm that descaling is complete.



- ① The control light stops flashing and remains illuminated. The steam generator is ready for use. The vaporiser tank is filled with water from the water supply line.
- **9** Switch on the steam request at the control unit again.



## 4.3 Cleaning and servicing

The SteamAttrac steam generator must be serviced and cleaned regularly. The frequency depends on how often it is used. This increases the service life of the steam generator.

## 4.3.1 Regular maintenance

The SteamAttrac must be serviced and cleaned regularly. The frequency depends on how often it is used.

#### **Recommended service intervals**

Use	Interval
Private use	At least once per year
Commercial use	At least twice per year More often, depending on how often it is used and the water quality

#### **A DANGER**



# Danger to life and limb

Electrical currents pose a danger to life and limb.

▶ Before opening the housing, disconnect the steam generator from all power supplies.

#### **ACAUTION**

## Risk of scalding

The drain outlet and escaping water can be very hot.

- ▶ Begin service work only once the unit has been switched off and is cool.
- ► Allow the vaporiser tank and pipelines to cool for approx. 30–45 minutes.

## Servicing

- Check and clean all pipes as needed
- Check and clean the drain (ball valve) as needed
- Check the filter at the water inlet valve for deposits and clean if necessary.
- In the event of heavy limescale, unscrew and remove the immersion heaters and clean them manually.

# 4.3.2 Replacing the immersion heater

Hardware + tools:

- SW66 spanner
- Sealing tape or sealing thread

## **A DANGER**



## Danger to life and limb

Improper installation poses a danger to life and limb from electrical currents. This risk exists also after installation work has been completed.

▶ Before servicing, disconnect from all power supplies.

## **ACAUTION**

## Risk of scalding

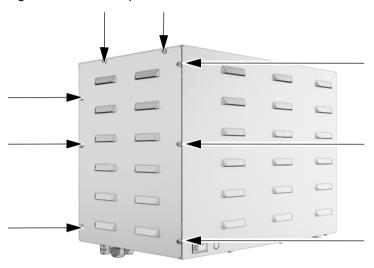
The drain outlet and escaping water can be very hot.

- ► Allow the vaporiser tank and pipelines to cool for approx. 30–45 minutes.
- Begin service work only once the steam generator has been switched off and is cool.



## Opening the housing cover

- 1 Switch off the steam request at the control unit.
- 2 Disconnect the mains connection and switch off the water supply.
- 3 Unscrew the eight (8) retaining screws in the left side panel of the housing and remove the panel.



⊞ Removing the left side panel

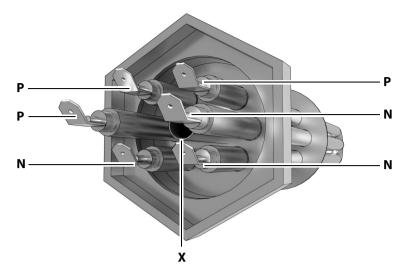
## Unscrewing and removing the immersion heaters

- 1 DANGER! Check that the power supply has been disconnected. Remove the wiring from the immersion heaters.
- 2 Remove the wiring's flat plug from the heaters.
  - ① Tip: To simplify reinstallation, mark the plug before removing it.
- **3** Unscrew the heaters at the metal bushes.
  - ① Use the SW66 hexagon key.
- 4 Clean or replace the heaters.
  - ① Replace defective heaters with original spare parts only.
- **5** Check the vaporiser tank for limescale and clean manually, as needed.

## ► Replacing the immersion heaters

- 1 Place the 2" gaskets on the threaded fittings of the heaters.
  - Ensure that there are no other objects between the threaded fittings and the flange.
- 2 Clean the bushes and screw in the heaters.
- **3** Fill the tank with water by pouring it into the filler spout and ensure that the immersion heaters are fitted tightly so there are no leaks.
  - Tighten the heaters, as needed, and check for leaks. If water can leak, the 2" threaded fitting can also be sealed with a commercial Teflon sealing tape or sealing thread.
- 4 NOTICE Ensure that the polarity is correct when plugging in the flat plug. Incorrect polarity can lead to severe overload and damage to the tubular heating element.
  - Plug the flat plug into the heaters again.





- P Connect switched phases L1, L2, L3
- **N** Neutral conductor
- X Intake pipe for the safety temperature limiter's capillary tube sensor

**₩** Wiring

- ① The switched phases L1, L2 and L3 are connected on one side of the ends of the tubular heating elements.
  The neutral conductor is connected to the three (3) opposing ends of the tubular heating elements.
- 5 Fix the left side panel in place again and tighten the screws.
- **6** Re-establish the mains connection and open the water supply.
  - ① Check for leaking water. Water must not leak from the vaporiser tank.
  - ① The unit first performs a self-test; see 3.6 Running a self-test after establishing a connection to the power supply,  $\Box$  50
- **7** Switch on the steam request at the control unit again.

## 4.3.3 Resetting the safety temperature limiter

The safety temperature limiter switches off the heater if the vaporiser tank overheats. To restart the heater, you must press the Reset button.

#### **ACAUTION**

## Risk of burns from hot parts

The steam pipe on the base plate is very hot.

- ▶ Do not touch the steam pipe.
- ▶ Allow the steam generator to cool for approx. 30 minutes.
- ► Wear protective clothing (gloves).

## **NOTICE**

## Damage to the safety temperature limiter

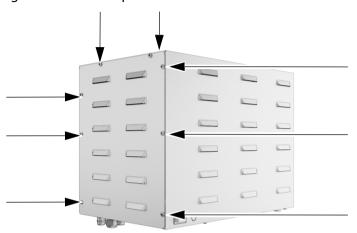
The safety temperature limiter can become damaged if you press the Reset button without troubleshooting the cause of overheating. Pressing the Reset button without troubleshooting the cause can damage the safety temperature limiter and can lead to overheating and indirect damages to the steam generator.

- ► Troubleshooting and Reset/operation of the safety temperature limiter must be performed only by qualified personnel.
- ► Rectify the reason for overheating.
- ▶ Allow the steam generator to cool for approx. 30 minutes.
- ► The Reset button should be operated only by qualified personnel.

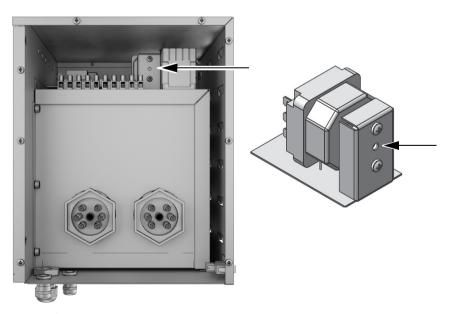


## Resetting the steam generator

- 1 Rectify the reason for overheating.
  - ① To troubleshoot, see 4.3.4 Troubleshooting, □ 65.
- 2 Unscrew the eight (8) retaining screws in the left side panel of the housing and remove the panel.



■ Removing the left side panel



■ Reset button

3 Use a suitable tool to lightly press the Reset button on the safety temperature limiter.

- 4 Fix the left side panel in place again and tighten the screws.
- **5** Restart the unit.
  - ① See 4.1 Normal operation, 🗅 51



# 4.3.4 Troubleshooting

The SteamAttrac steam generator uses the flashing status light on the front of the housing to communicate various operating statuses and malfunctions. The corresponding fault messages or symbols are shown on the control panel display.

Error	Reason	Solution
Safety temperature limiter triggered repeatedly	Water level too low, capillary tube sensor mounted incorrectly. Water supply blocked or pressure is too low.	Check that the capillary tube sensor is positioned correctly. Inspect vaporiser tank for limescale and clean if necessary. Check the water supply line. Clean the water filling valve and check the water pressure.
	Water foaming due to contamination by oils, plasticisers and similar substances. Incorrect water level detection which leads to overheating.	Check the water supply for possible contamination e.g. from plasticisers in PVC hoses and pipes. Clean the vaporiser tank thoroughly as needed. Remove oils with alcohol.
Steam outlet spits hot water. Risk of scalding!	Formation of foam	Check the water for contamination from foam-forming substances.
	Steam pipe installed incorrectly, steam pipe blocked by condensed water.	Make sure the steam pipe is positioned in such a way that it is not blocked by condensed water. If necessary, install a siphon.
	Water level probe fault.	Check the water level probe. Clean as needed. Check for malfunctions.

Error	Reason	Solution
Water filling fault	Water supply blocked.	Check water supply. Clean the filter at the valve's water supply connector if neces- sary.
	Water inlet valve blocked or clogged.	Clean the valve and make sure it is operational.
Steam generator does not produce steam (no heating)	Safety temperature limiter triggered.	The safety temperature limiter may have been triggered by overheating in the vaporiser tank. Rectify the reason for overheating.  Caution: Allow the steam generator to cool for 10–15 minutes before resetting the safety temperature limiter. Press the Reset button.
Safety temperature limiter triggered (Display error mes- sage)	Overheating in the water tank	Rectify the reason for overheating.  Caution: Allow the steam generator to cool for 10–15 minutes before resetting the safety temperature limiter. Press the Reset button.



# 5 Disposal



Electrical devices that are no longer needed must be recycled at a recycling station as per EU guideline 2012/19/EU or as per the Electrical and Electronic Equipment Act (ElektroG).

Observe local provisions, laws, regulations, standards and directives when disposing of the unit.



Do not dispose of the unit with household waste.

# **Packaging**

The packaging of the SteamAttrac can be completely separated for disposal and recycled. The following materials are used in the packaging:

- Used paper
- Plastic film and protective film for the housing cover

#### **Electronic waste**

Electronic waste must be disposed of at the designated local collection point for electronic waste.

# 6 General terms and conditions of service

(T&C, Dated 08-2018)

## I. Scope

Unless otherwise agreed in writing for specific instances, these terms and conditions of service shall apply to service operations, including reviewing and remedying complaints. All our existing or future legal relationships shall be governed solely by the following terms and conditions of service. We do not recognise any of the customer's conflicting terms and conditions unless we have given our express written consent to their applicability.

We hereby expressly object to any of the customer's terms and conditions included in the customer's General Terms and Conditions of Business or order confirmation. Unconditional acceptance of order acknowledgments or deliveries shall not be construed as any form of acknowledgment of such terms and conditions. Ancillary agreements or amendments must be confirmed in writing.

#### II. Costs

The customer shall bear the following costs in connection with services rendered:

- Mounting/dismantling and electrical (de-)installation
- Transportation, postage and packaging
- Function testing and troubleshooting, including inspection and repair costs

There shall be no third-party billing.

## III. Performance and cooperation obligations

The customer shall provide assistance free of charge to the manufacturer in rendering services.

In the case of a warranty claim, the manufacturer shall provide replacement parts necessary for servicing free of charge.



## IV. Service visit by the manufacturer

Services rendered on site by an employee of the manufacturer must be agreed in advance.

If the main reason for the service visit is not the fault of the manufacturer, any costs incurred shall be charged to the customer after the service visit and must be paid by the customer in full within the agreed payment term.

## V. Liability

The manufacturer shall assume liability in accordance with the currently applicable statutory regulations. All our products are packaged in such a way that the individually packed goods (pallets) can be shipped. We wish to point out that our packaging is not suitable for individual shipments via parcel post. The manufacturer shall accept no liability for damages incurred as a result of improper packaging in an individual shipment.

## VI. Manufacturer's warranty

The manufacturer's warranty shall apply only if installation, operation and maintenance have been carried out in full accordance with the manufacturer's specifications in the installation and operating instructions.

- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.
- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications are made to the equipment without the manufacturer's express consent.
- Any warranty claim shall likewise become void in the case of defects that arise due to repairs or interventions made by unauthorised persons or due to improper use.
- In the case of warranty claims, the serial and article numbers must be provided, together with the unit designation and a meaningful description of the error.
- This warranty shall cover defective equipment parts, with the exception of normal wear parts. Wear parts shall include, for example, light sources, glass elements, tubular heating elements and sauna heater stones.

- Only original replacement parts may be used within the warranty period.
- Service visits made by third parties shall require a written order issued by our service department.
- The equipment in question shall be sent to our service department by the customer at the customer's own expense.
- Electrical assembly and installation work, including service visits and parts replacements, shall be carried out at the customer's expense; costs shall not be borne by the manufacturer.

Complaints in respect of our products shall be reported to the responsible distributer and shall be handled exclusively by said distributer.

The manufacturer's General Terms and Conditions of Business, in the version available at www.eos-sauna.com/agb, shall apply in addition to the foregoing terms and conditions of service.



## **Service address**

EOS Saunatechnik GmbH Schneiderstriesch 1 35759 Driedorf, Germany

Tel. +49 2775 82-0

Fax +49 2775 82-431

Web www.eos-sauna.com

Store this address with the Installation and Operating Instructions in a safe place.

Please always provide us with nameplate data, such as model, item number and serial number so we can provide fast and efficient support.

#### Date of sale

# Stamp/retailer signature: