

1638 37.5kW steam generator
1645 45kW steam generator
1672 60kW steam generator

Use and Maintenance



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1. Introduction

1.1. Content and purpose of this manual

This manual contains instructions concerning the installation, use and maintenance of equipment in conformity to the present European Community Directive and contains information on the following subjects:

- Information on appliance technical features;
- Instructions on installation and operating of the appliance.
- Instructions on maintenance and servicing.
- Technical diagrams
- Exploded views of spare parts

This manual is for the installer's, user's and technician's use; they will have to read and understand it carefully before installing, using or servicing the appliance.

This manual should be kept with the appliance and read before operation; in case of loss or damage please ask the manufacturer for a new copy.

The manufacturer is not responsible for any consequences arising from the neglect of instructions contained in this manual.










The content of this manual is property of the manufacturer. Duplication of this manual is forbidden.

1.2. Safety precautions

Ignoring the following safety precautions can cause damage either to people, linen, animals and to the appliance.

The following symbols, on the appliance and in this manual, advise about possible risks.

Legend of the safety symbols found on the appliance and in this book:

	Warning: live electricity
	General warning: follow instructions to avoid damage to the appliance or to people.
	Warning: hot surface / burn hazard
	Warning: high temperature
	Risk of injury to hands of feet
	Wear gloves
	Wear protective shoes
	Wear a helmet
	Information, notice, advice

Carefully read the entire manual before installing, operating or servicing the appliance.

Installation and maintenance of the product described in this manual must be performed by authorised and qualified technicians who know the products and are acquainted with standards for installation of industrial pressing equipment.

The builder is not responsible for external connections not duly performed.

The product described in this manual must be used only to generate steam for industrial applications. Any other use is forbidden unless builder authorizes it in writing.

To prevent fire hazard or explosions do not stand near the appliance with explosive or inflammable products.

Use of the appliance is allowed only to professional operators who have been trained on how to operate the appliance. In any case the use of the appliance is forbidden to children under 14 years of age.

Do not remove safety protection devices.

Do not leave appliance unattended while in operation.

Do not remove safety symbols from the appliance

1.3. Manufacturer's liability

This manual instructions are not intended to substitute, but only to combine obligations of current legislation on safety standards.

With reference to information included in this manual, the manufacturer is not responsible in case of:

- neglect of local safety standards during appliance utilisation;
- incorrect installation of the appliance;
- neglect or incorrect observance of instructions included in this manual;
- faults of voltage or of the feeding systems;
- connection to electrical plant non compliant with local safety requirement, in particular if the plant lacks grounding, thermal magnetic protection and differential protection;
- unauthorized changes on the appliance;
- utilisation of the appliance by unauthorized, untrained or non-professional operators;
- neglect of maintenance operations;
- use of non original spare parts.

2. Appliance description

The unit described in this manual is an electrically operated steam boiler, designed to provide steam for industrial usage.

The unit must be used by qualified and experienced personnel, adequately trained on its specific operations. The manufacturer will not be responsible for damages caused to people or things through the improper, erroneous or unreasonable use of the unit.

2.1. Appliance identification

The appliance is identified with the technical data tag.

The tag is located at the rear of the appliance body, as shown in picture 2.1.

Do not alter or modify in any way the data recorded on the tag.

Do not remove the tag.

Description of data recorded on the technical data tag.

Serial N	Appliance serial number made up by 5 digits.
Type	Code number that identifies the product model
V	Nominal voltage
Hz	Nominal frequency
kW	Nominal power
Date	Registration date

i This manual describes all of the appliance's versions. Before reading the manual, identify the version of your appliance by reading the code situated in the "Type" box of the technical data tag. While reading the manual, take in consideration only the information relative to the version owned.

2.2. Technical data

For dimensions see Figure 2.2.

	Type		
	1638	1645	1672
Power supply	400V 3N AC 50Hz		
Water inlet	Ø 16mm 1,5 - 5 bar	Ø 16mm 1,5 - 5 bar	Ø 16mm 1,5 - 5 bar
Steam outlet	G 1/2"	G 1/2"	G 1/2"
Condensate inlet (only models with tank)	G 1/2"	G 1/2"	G 1/2"
Boiler drain	G 1/2"	G 1/2"	G 1/2"
Overflow	Ø 32mm	Ø 32mm	Ø 32mm
Heating elements	5 x 7,5 kW	6 x 7,5 kW	8 x 7,5 kW
Working pressure	500 kPa	500 kPa	500 kPa
Pump	0,55 kW	0,55 kW	0,55 kW
Boiler volume	58 l	58 l	58 l
Tank volume (if present)			
LS19	140 l	140 l	140 l
Net/ gross weight			
Ambient temperature	15 - 40 °C	15 - 40 °C	15 - 40 °C

Figure 2.1 – Data tag position

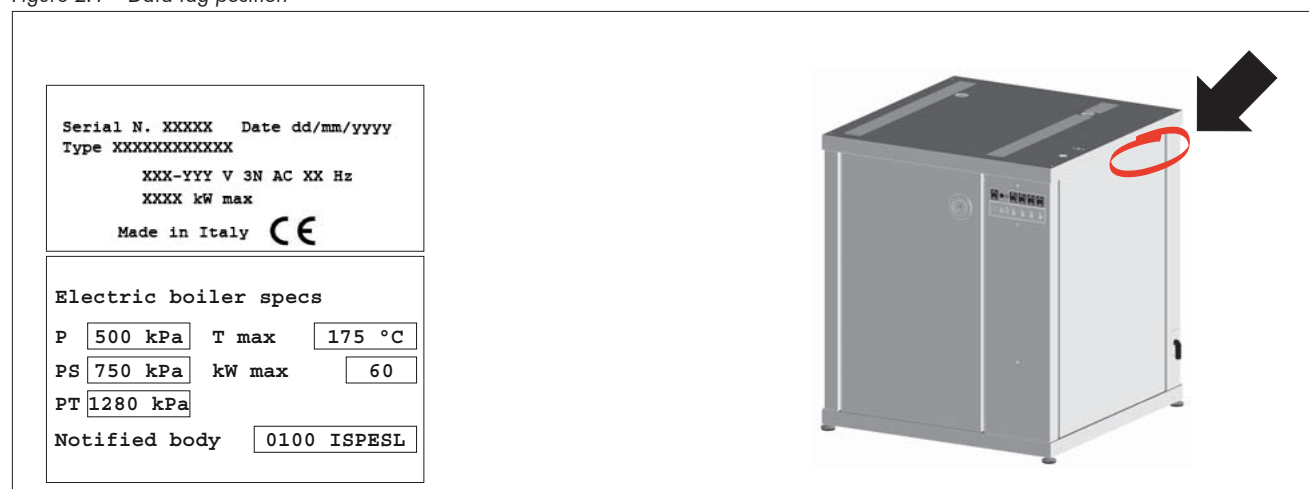
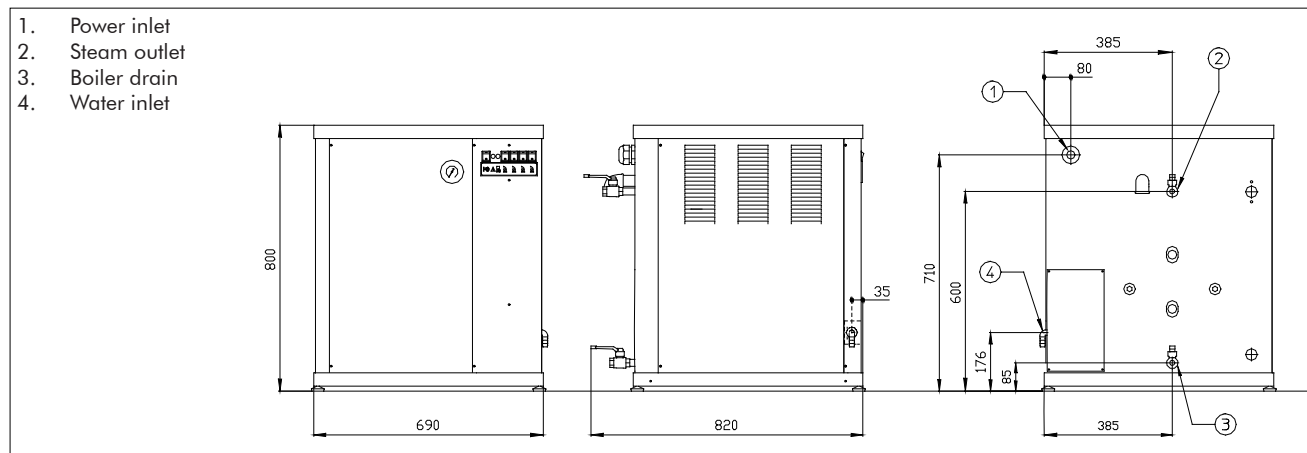
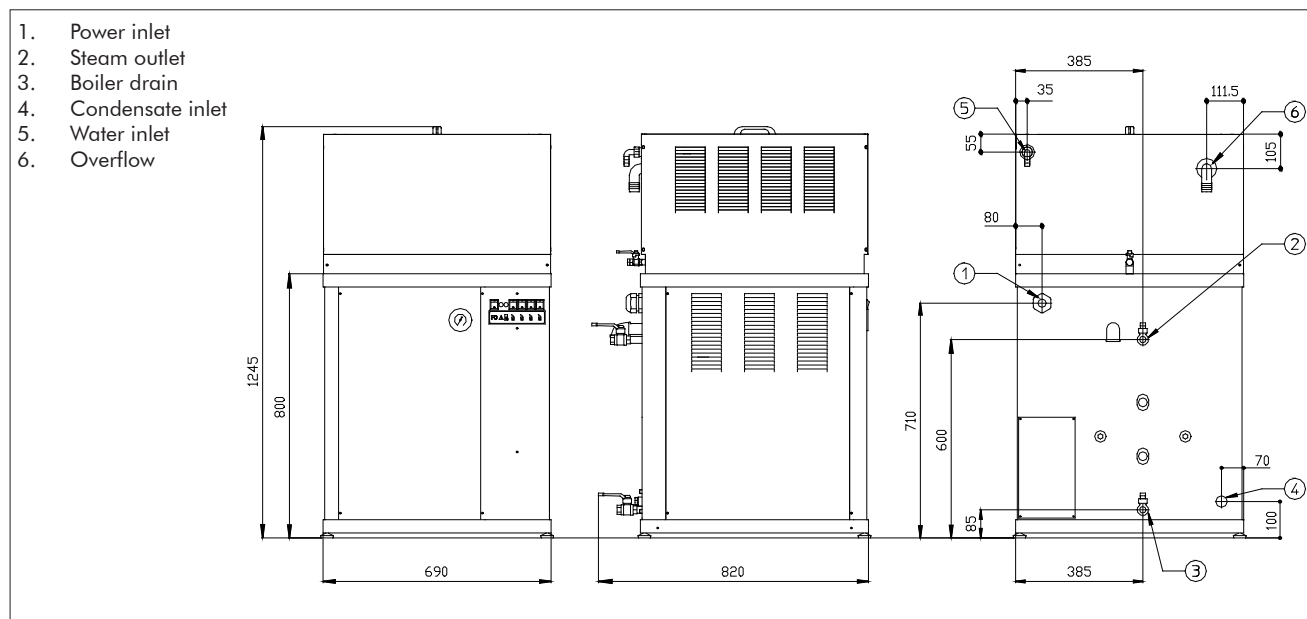


Figure 2.2 - Appliance dimensions

Models without tank. Types 1638, 1645, 1672**Models with top tank. Types 1638, 1645, 1672**

3. Installation

3.1. Goods receiving

The appliance is delivered assembled on a pallet and protected by a plastic film and/or a cardboard box.

1. Position the pallet with the appliance close to the installation final destination. Move the pallet only with suitable means, such as a fork-lift.
2. Remove the packaging material and separate the cardboard from the plastic. Dispose or recycle the cardboard and plastic according to local norms.
3. Unscrew the bolts that secure the appliance to the pallet
4. Move the appliance from the pallet to its final position.



WARNING – The appliance can be moved by hand only by experienced personnel. Wear gloves, safety hat and safety shoes to move the appliance.

3.2. What's inside the packing

The packing contains:

1. The appliance equipped with all its components.
2. User manual.

When receiving the goods, make sure that the packing contains all the above listed items.

3.3. Electrical connections



WARNING - The electrical connection is to be made by a licensed electrician only and according to local safety regulations.

The manufacturer is not responsible for damage or injury caused by improper installation.

1. Install a multi-pole switch (circuit breaker) to facilitate installation and service operations. See table 3.5 for rating and type of connection.
2. In most countries the circuit breaker should include a protection against overcurrents (e.g. thermal-magnetic circuit breaker or fuse). If using a fuse, see power absorption on the identification plate of the appliance (see figure 2.1). In some countries the circuit breaker must include a ground fault interrupt protection.
3. If the appliance is not provided with power cord, mount a cord of suitable length. For the choice of the cord type refer to table 3.5.
4. Mount a plug on the power cord, see table 3.5 for rating.
5. Connect the plug to the circuit breaker. The cable should hang in a gentle curve.



WARNING -The electrical line must be properly grounded to insure the safety of the operator.



INDICATION - If a Ground Fault Interrupt protection is installed: every month test the safety of the circuit by pressing the Test button of the circuit breaker. The protection ought to trip. If it does not, call a technician immediately, as the safety of the equipment is impaired.

Table 3.5 - Data for electric connection

Type	Plug	Power cord
1638	IEC 60309 plug 3P+N+T 400V 3N 100 A	Type H05VV-F 5 x 25mm ²
1645		
1672		Type H05VV-F 5 x 35mm ²



WARNING - The power cord can be replaced only by an authorised service center.

3.4. Water and steam connections



CAUTION – The connections must be performed by a qualified technician according to the local regulations in force.

Please refer to Pictures 3.1 and 3.2.

1. Connect the boiler discharge outlet C to a safe and permanent connection, that can stand heat.



WARNING - The connection must ensure that no leakage of steam or hot water occurs during the boiler discharge operation

2. Connect the water inlet E to the water supply line.
 - install a non-return valve* and a faucet or ball valve on the water mains
 - for the connection use a 16mm diameter tube rated for the pressure of the water mains in your area*.

*For EU countries: these items must be approved according to standard EN 61770.



WARNING - Use tap water. Do not add softening products.

3. If the appliance is equipped with the top tank for condensate recovery: connect the overflow of the tank F to a drain line.



WARNING - Water that overflows from the tank may reach 80°C: choose a suitable pipe.

4. Connect the steam outlet B to the steam distribution plant.



WARNING – The steam distribution line must be rated to stand a working pressure of 800 kPa.

5. If the appliance is equipped with the top tank for condensate recovery: connect the condensate return line to the condensate inlet D on the tank. For convenience we suggest to install a valve able to interrupt the flow of condensate.
6. Thermally insulate all the pipes that carry hot water or steam (i.e. all the pipes except for the tube that feeds water).
7. If necessary, install tanks or devices that allow hot water to cool before reaching the drainage system.

3.5. Training of the operator

The technician must instruct the operator on how to drain the boiler. The operator must be advised that:

- during the operation, the boiler expels hot water mixed to steam;
- the operation can be carried out only if the pressure in the boiler is below 1 bar;
- the connection to the drainage system must be kept in good order and must be verified every time before performing the procedures.

Figure 3.1 - List of inlets and outlets for connection

- A. Safety valve exhaust
- B. Steam outlet (female thread G 1/2")
- C. Boiler discharge outlet (female thread G 1/2")
- D. Condensate return inlet (female thread G 1/2")
- E. Water inlet (fitting for hose Ø16mm)
- F. Overflow (fitting for hose Ø32mm)
- G. Water tank discharge (female thread G 1/4")

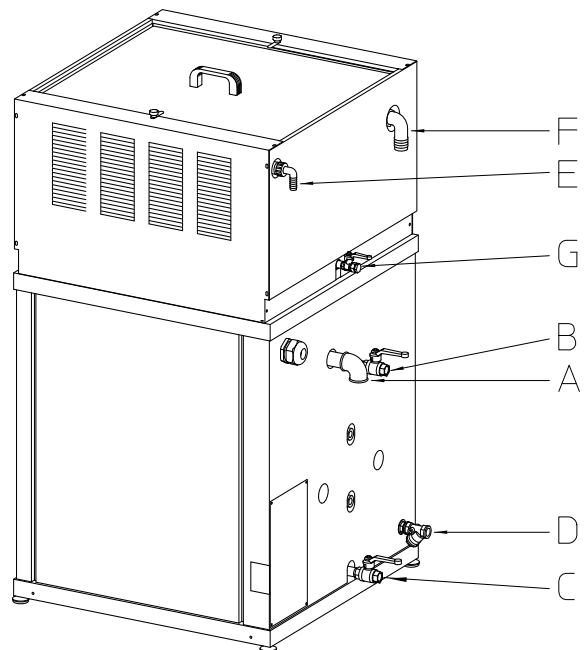
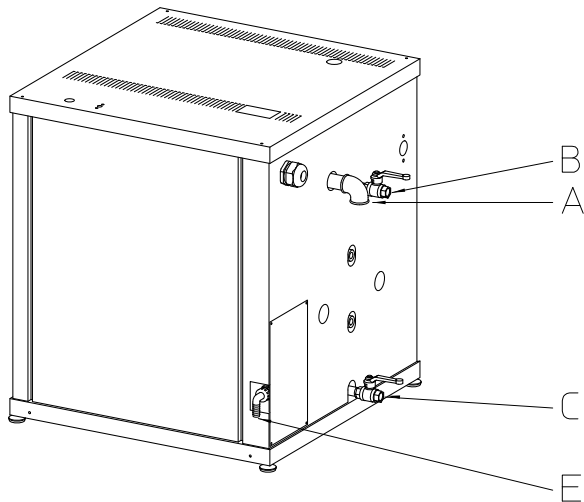
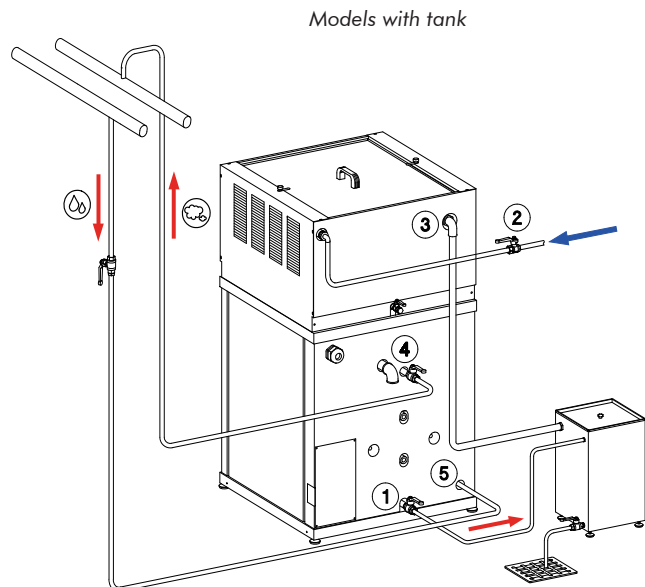
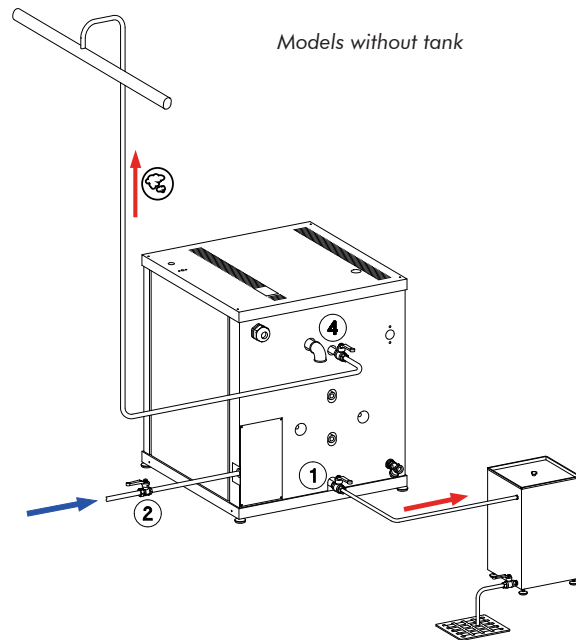


Figure 3.2 - Water and steam connection



4. Use

The unit described in this manual is an electrically operated steam boiler, designed to provide steam for industrial usage.

The unit must be used by qualified and experienced personnel, adequately trained on its specific operations. The manufacturer will not be responsible for damages caused to people or things through the improper, erroneous or unreasonable use of the unit.

4.1. Safety measures



During operation, the appliance is under live voltage:

- Do not use if worn out electrical cables or exposed wires are detected.
- Do not pour water on the appliance's body: danger of electrical shock, short circuit and damages to equipment
- Do not open the appliance's body



The appliance is composed of various parts that may reach high temperatures:

- Do not leave the appliance running without supervision.
- Do not place any flammable substances close to the appliance's body: this could cause a fire.
- Do not open the appliance's body

4.2. Turning on the unit

Refer to figure 4.1.

1. Open the water delivery valve (if installed on the water delivery line);
2. Make sure that the boiler discharge valve (C-Figure 3.1) is closed. To reach working pressure in a shorter time, keep closed

the steam outlet valve (B-Figure 3.1);

3. Turn on the main switch (1). If the pressure vessel is empty, the pump will start to fill it with water. When the water reaches working level, light (3) turns on.
4. Turn on as many heating elements as needed (4). For faster heating turn on all the elements. The unnecessary elements can be turned off when the unit is ready to operate.
5. Wait for the boiler to reach working pressure (5 bar). The pressure is shown by gauge (5);
6. Open the steam outlet valve (B-Figure 3.1).

4.3. Usage

The steam generator is completely automatic. No intervention is needed during normal function.

To increase or reduce the power, simply turn on or off the heating elements switches (4).

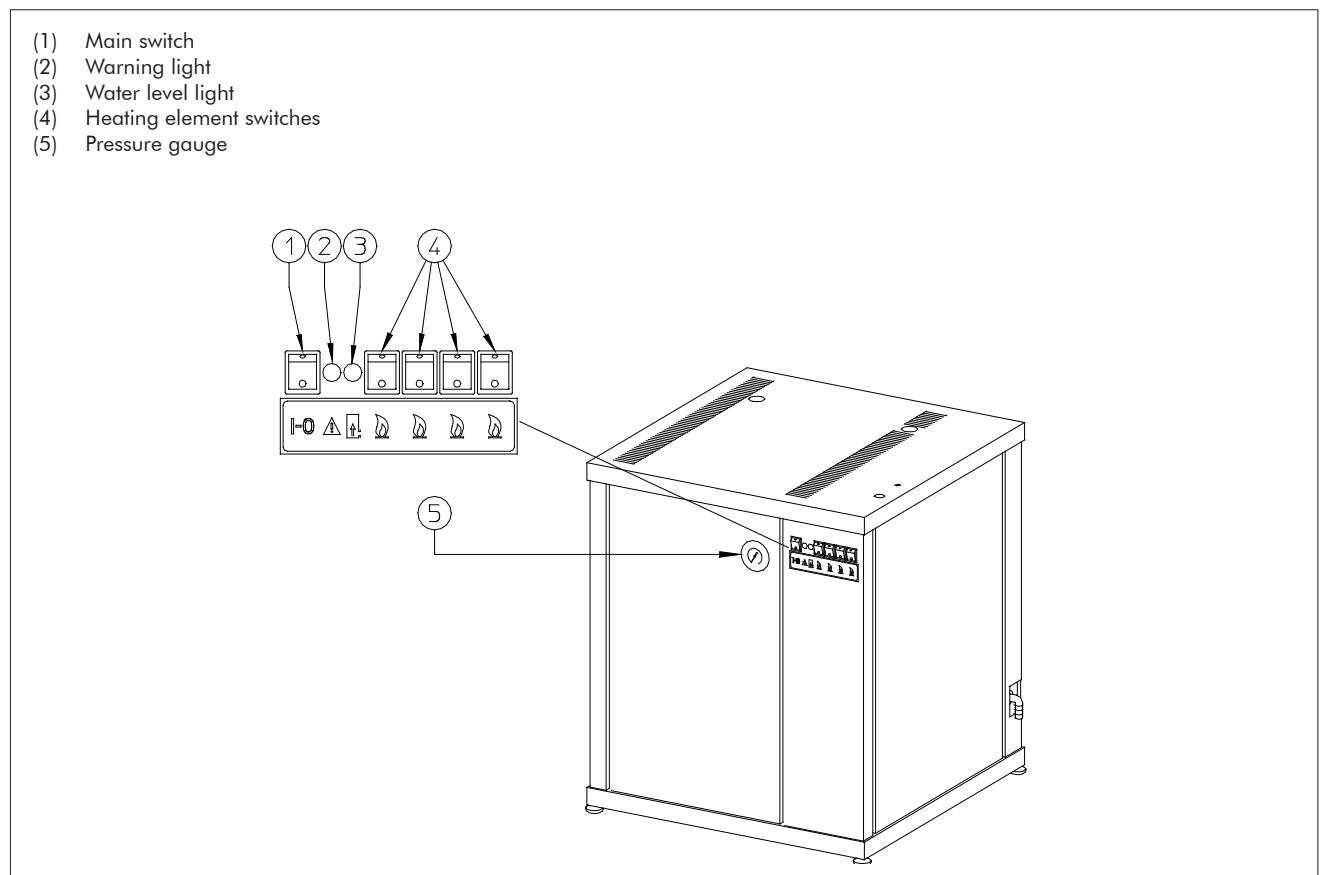


WARNING - If the red warning light (2) turns on during usage, turn off the appliance immediately and call service.

4.4. Turning off the unit

1. Turn off the heating elements (4);
2. Turn off the main switch (1);
3. Close the steam outlet valve (B-Figure 3.1)
4. Close the water delivery valve.

Figure 4.1 – Parts of the appliance



5. Maintenance

5.1. Maintenance allowed to the user

5.1.1. Every week

- Clean appliance body with a soft non abrasive cloth.

WARNING: Do not use aggressive detergents or solvents that may ruin appliance parts

- Verify visually that steam, condensate and water connections do not leak
- Verify that visible electrical cabling and steam connection tubing are in perfect working order
- Verify that insulating covers are in good condition.
- Clean the water tank

Refer to Figure 5.1

- Close the connections to the water source.
- Empty the water tank opening the discharge valve (H).
- Remove the water tank lid (N).
- Clean the water tank and remove the filter (P) from the bottom of the tank and clean it.

- Clean the water inlet filter

Refer to Figure 5.1

- Close the connections to the water source.
- Remove the elbow fitting (R).
- Clean the fitting and the filter (S).

WARNING: Do not run a appliance that does not look in proper order

INDICATION: Always ask for original spare parts. Non original parts may damage to the appliance or decrease its safety

5.1.2. Boiler discharge procedure

Draining the boiler is a delicate procedure, that may be dangerous if carried out in improper way.

WARNING - Only properly trained operators can discharge the boiler.

If you have doubts about the boiler discharge procedure, ask the technician to explain it again.

If you feel that the connection of the boiler exhaust to the drainage is not in good order, do not discharge the boiler and call the technician.

Boiler discharge procedure (Figure 5.2):

1. Verify that the connection to the drainage system is firm and intact;
2. Wait for the pressure in the boiler to be under 1 bar;
3. Lift the metal frame and slowly open the boiler discharge valve;
4. When the discharge is finished, close the discharge valve and block it with the metal frame.

WARNING - The boiler discharge procedure is safe only if the following conditions are verified:

- the boiler discharge valve is safely and firmly connected to the permanent drainage system
- the pressure displayed by the gauge is lower than 1 bar

5.1.3. Every year

Call the authorised technician to perform the maintenance operations described in the following chapter.

Figure 5.1 - Cleaning the water tank and filter

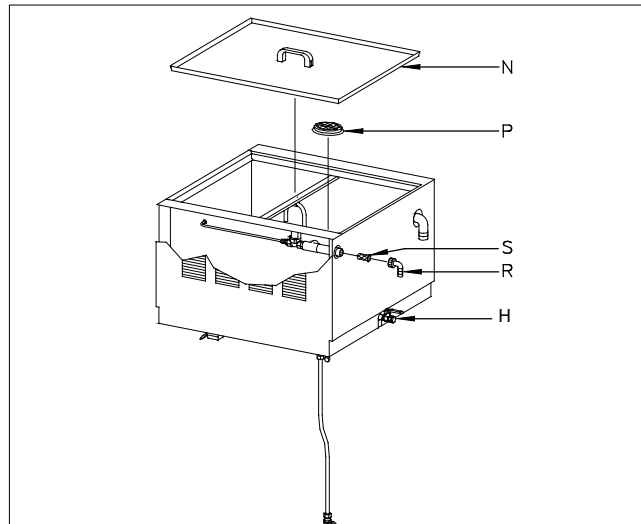
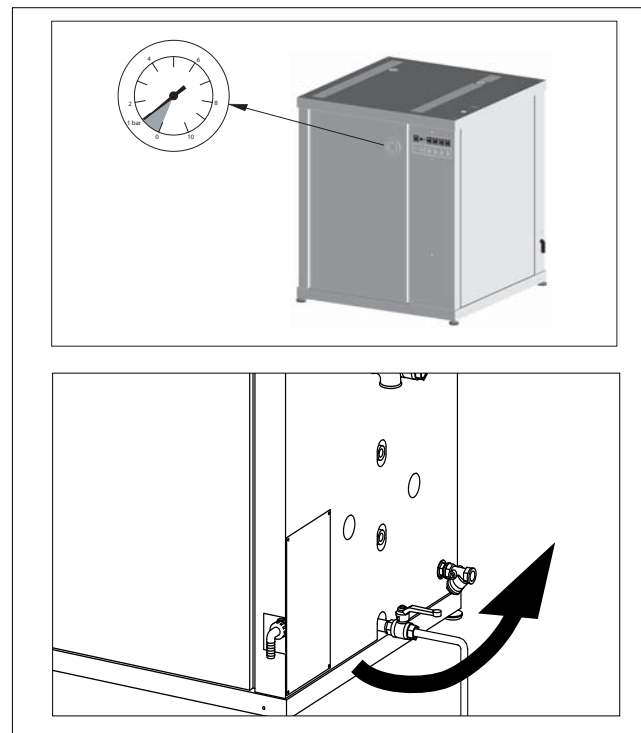


Figure 5.2 - Boiler discharge



5.2. Maintenance to be carried out by the technician every year

WARNING: The maintenance operations described in this chapter must only be carried out by qualified personnel.

Use only Original spare parts.

The pump is equipped with a thermal protection that is self-restoring. Never service the pump with the power connected: it may restart abruptly.

5.2.1. General controls

- Verify that electrical connections are properly tightened and do not show oxidation;
- Verify state of cable and electrical wiring conditions;
- Verify that steam and condensate return connections are properly tightened and do not leak;
- Verify that the connection of the boiler drain is in good working order and does not present leakage;
- Verify that insulating covers are still effective, not worn out;
- Drain the boiler.

5.2.2. Cleaning the components

Refer to Figure 5.3.

WARNING for the technician:

- Before any kind of maintenance or control intervention:
- Disconnect the appliance from electricity, air and steam
 - Make sure that all the parts of the appliance have cooled down

Open the appliance body and clean the following components:

1. Heating elements

- Unscrew the 8 nuts that hold the flange in place
- Remove the flange with the elements
- Clean the heating elements and the pressure vessel from scale

2. Pressure switch

- Clean tube (A)
- Clean fitting (B)

3. Safety valve

- Remove the safety valve (C)

When handling the safety valve be very careful: do not alter its setting.

- Clean the hole from scale

4. Level probes

- Unscrew the level probe (D) and the reference probe (E)
- Clean from scale

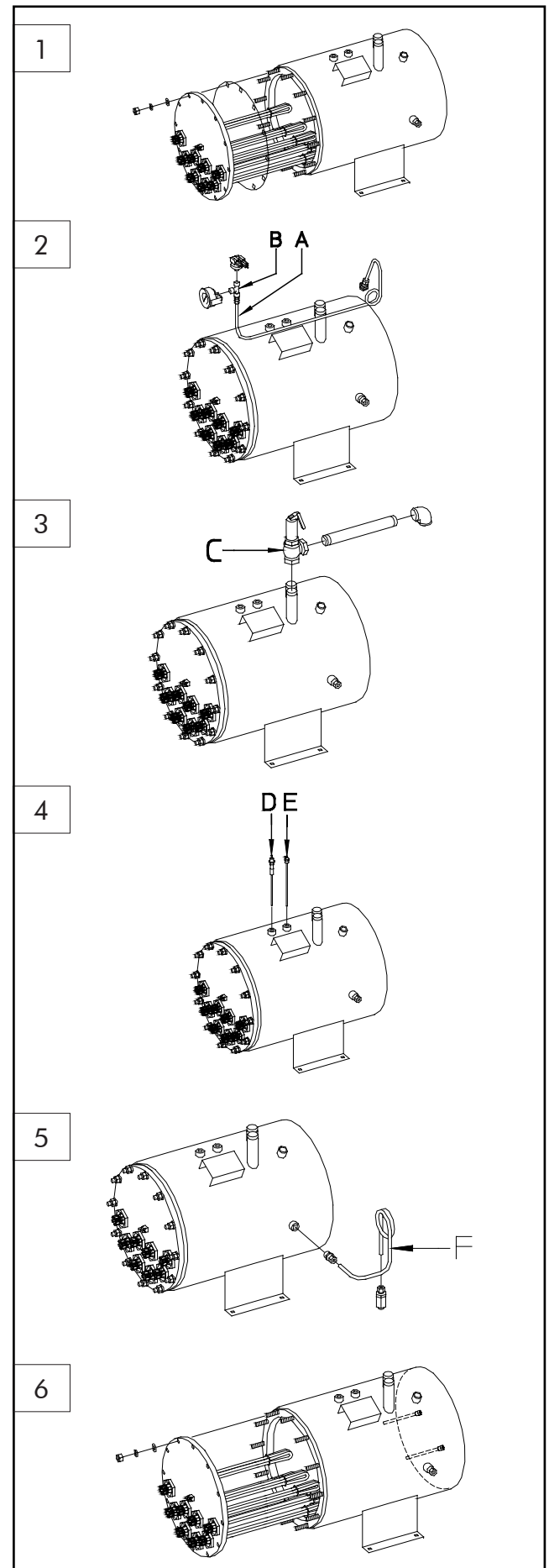
5. Water inlet

- Remove the water inlet tube (F)
- Clean the tube

6. Probe thermostat housing

- Clean the outer part of the tubes that house the probes of the probe thermostats. The thermostat is not able to read the exact temperature if the tube is covered in scale.

Figure 5.4 - Cleaning of the components to be carried out by the technician



6. Troubleshooting

6.1. Solution to common problems, allowed to the user

Please refer to Table 6.1 for the solutions to most common problems.



CAUTION – DO NOT ATTEMPT TO REPAIR THE APPLIANCE WITHOUT PROPER ADVICE

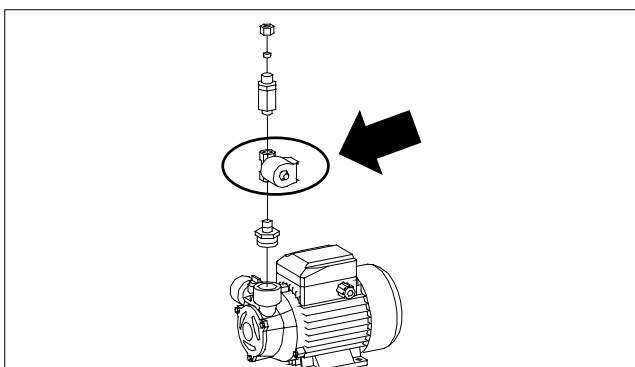
Call the service centre in the following cases:

- if the problem is not described in table 6.1
- if none of the solutions proposed is able to identify the cause of the fault or to solve it.

Table 6.1 - Solutions to common problems

Problem	Possible cause	What the user should do
The appliance does not turn on	No power to the unit	Check that there is electrical power Verify the connection to the electric line Turn on the main switch (1 - Figure 4.1)
The boiler does not reach working pressure	The heating elements are off	Turn on all the heating elements. When working pressure has been reached, unnecessary power can be turned off
The boiler reaches working pressure too slowly	The steam outlet valve is open	Close the steam outlet valve to speed up the initial phase of pressure building into the vessel
	Turn on all heating elements	To reach faster working pressure, turn on all heating element switches
The pump is working but no water gets into the vessel	There is no water / the water delivery valve is closed	Turn off the appliance Make sure that the water is reaching the appliance When the problem is removed, turn on the appliance
	The filter is dirty	Clean the filter
	The water inlet system is dirty	It is time to call the technician for periodic maintenance
Too much water into the boiler	The level probe of the boiler is dirty	It is time to call the technician for periodic maintenance
	The boiler is fed upon softened water	If possible, use non softened water to feed the boiler. Call a technician if this requires modifications to the plant.
Water flows constantly out of the water tank	The level probe of the tank is dirty	It is time to call the technician for periodic maintenance
	The temperature of the water in the tank is too high, due to a faulty steam trap in the steam plant	Check that the steam traps of the appliances fed by the boiler are working properly
The unit is turned on but it does not work	The appliance has turned into safety standby mode because water is not reaching the pressure vessel	Check that the water delivery valve(s) are open Check that there is water into the line When the cause has been removed, turn off and then on again the unit to remove the protection
The red light on the front panel is on	The safety protections have tripped because of an excess of pressure or temperature	Turn off the appliance immediately and call service for a check-up of the appliance. Do not use the appliance until it has been repaired.

Figure 6.3 - Solenoid valve of the pump



6.2. Solution to failures, allowed only to the authorised service center



WARNING - This chapter is for the exclusive use of an authorised technician. For maintenance and replacement of components always refer to a service center.

Table 6.2 - Solution of failures

Symptom	Cause	Components likely to be involved	Controls to be carried out
1 Water is drawn from the boiler to the steam plant	Abnormally high water level	The level probe is dirty, therefore the water level is sensed higher than usual	Clean the probes
	The boiler is fed upon softened water	Softened water generates foam in the steam vessel thus pushing water into the steam pipes	Feed the boiler with regular, non softened, water or install a bypass that mixes softened and hard water. The best performance is found with water having hardness between 8.4-12.6°e (UK), i.e. 7 and 10.5 gr/gal (US)
2 The pump works but water does not reach the boiler. After 4 minutes the unit turns into protection mode	There is no water or the water flow is too low	Problems of the water line (no service, closed valves, interruptions or leaks, ...)	Verify that water reaches the unit in proper quantity.
		Filters or connections are dirty	Clean water intake connections and filters as per instructions in chapter 5
		The pump solenoid valve has failed (D- Figure 6.3)	Replace the solenoid valve
3 The pump does not work	The pump does not receive the signal to start	Electric circuit between control board and pump is interrupted	Check connections and wires
		The level control board of the boiler has failed	Replace the board
	The pump has failed		Replace the pump
4 Water is constantly overflowing from the tank overflow (only models with top tank)	The thermostat does not receive the signal that the desired temperature has been reached	The water into the tank is too hot because a faulty steam trap is letting steam into the condensate return circuit	Check the steam traps of the appliances fed by the generator
		The thermostat of the tank is faulty	Replace the thermostat
5 There is water in the boiler but heating elements do not turn on	The heating elements do not receive the signal to heat	Pressure switch or relative circuit have failed	Check the circuit and/or replace the pressure switch
		Safety thermostat or relative circuit have failed	Check the circuit and/or replace the safety thermostat
		The level control board of the boiler has failed	Replace the board
		The coil of the contactor has failed	Replace the contactor
		The circuit that drives the heating elements has failed	Check the electric connections of the contactor coils
	No electricity to the heating elements	The electric circuit that carries electricity to the heating elements is interrupted	Check that the fuses are intact
		Faulty element	Replace the element
6 The red warning light is on	The safety pressure switch has tripped	Faulty contactor	Replace the contactor
		The working pressure switch has failed	<ul style="list-style-type: none"> Replace the working pressure switch Restore the safety pressure switch
		One of the contactors that commands the heating elements has failed in "closed" position	<ul style="list-style-type: none"> Replace the contactor Restore the safety pressure switch
		The pump does not receive the order to stop: <ul style="list-style-type: none"> level probes dirty or interrupted circuit between probes and board is interrupted failure to the electronic board 	<ul style="list-style-type: none"> Check the pump control circuit (electronic board, level probes) and remove the failure Restore the safety pressure switch
	The safety thermostat has tripped	The level control board is faulty	<ul style="list-style-type: none"> Replace the board Look for the reasons why water does not reach the vessel (perform controls at points 2 and 3 of this chart) Restore the safety thermostat

7. Appliance stop

7.1. Protracted stoppage

Should the appliance have to remain out of action for a lengthy period:

1. Discharge the boiler
2. Close all connections with water, steam and condensate circuits
3. Disconnect the electrical power
4. Clean dust and fluff from the cabinet

7.2. Transport

Should the appliance have to be moved:

1. Discharge the boiler
2. Close and disconnect all connections with water, steam and condensate circuits
3. Disconnect the electrical power
4. Set the appliance on a pallet of appropriate dimension
5. Secure the appliance to the pallet with the specific metal brackets (Figure 7.1)
6. Wrap the appliance in plastic film
7. If necessary, cover the whole appliance with a cardboard box and secure it to the pallet

7.3. Dismantling

At the end of its operative life, the appliance must be dismantled and its parts disposed of according to the ruling regulations.

1. Discharge the boiler
2. Close and disconnect all connections with water, steam and condensate circuits
3. Disconnect the electrical power
4. Set the appliance on a pallet of appropriate dimension
5. Secure the appliance to the pallet with the specific metal brackets (Figure 7.1)
6. If necessary, cover the whole appliance with a cardboard box and secure it to the pallet
7. Call in a company specialized in disposals to be assured that the parts of the appliance will be separated and disposed or recycled in compliance with the regulations in force (painted steel plate, stainless steel, copper, plastic, glass fibre, fabric)

Figure 7.1. – How to secure the appliance to the pallet



Figure 7.2. – How to pack the appliance for transportation



Disposal of Waste Electric and Electronic Equipment (WEEE) in the European Union

This symbol on the product or on its packaging indicates that this product is subject to separate collection and recycling.

It is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact the dealer where you purchased the product.

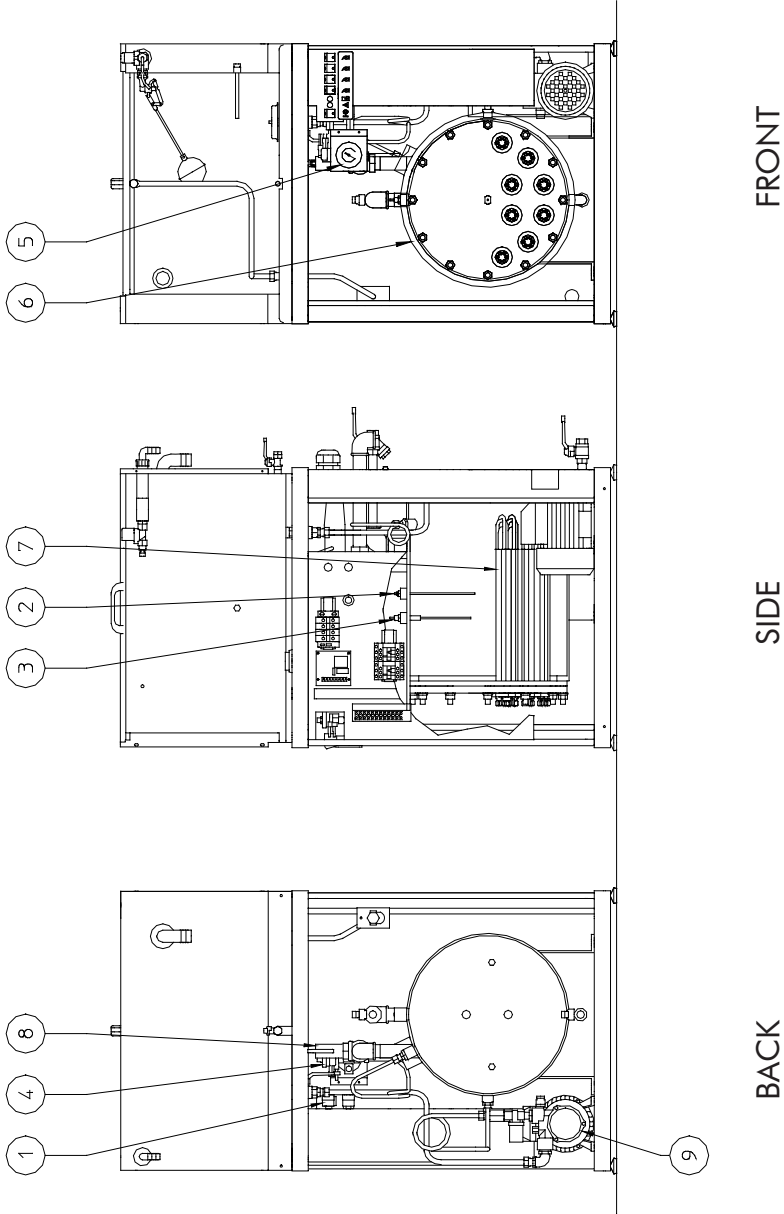
8. Technical drawings

The drawings in this chapter can be used only by the support service.



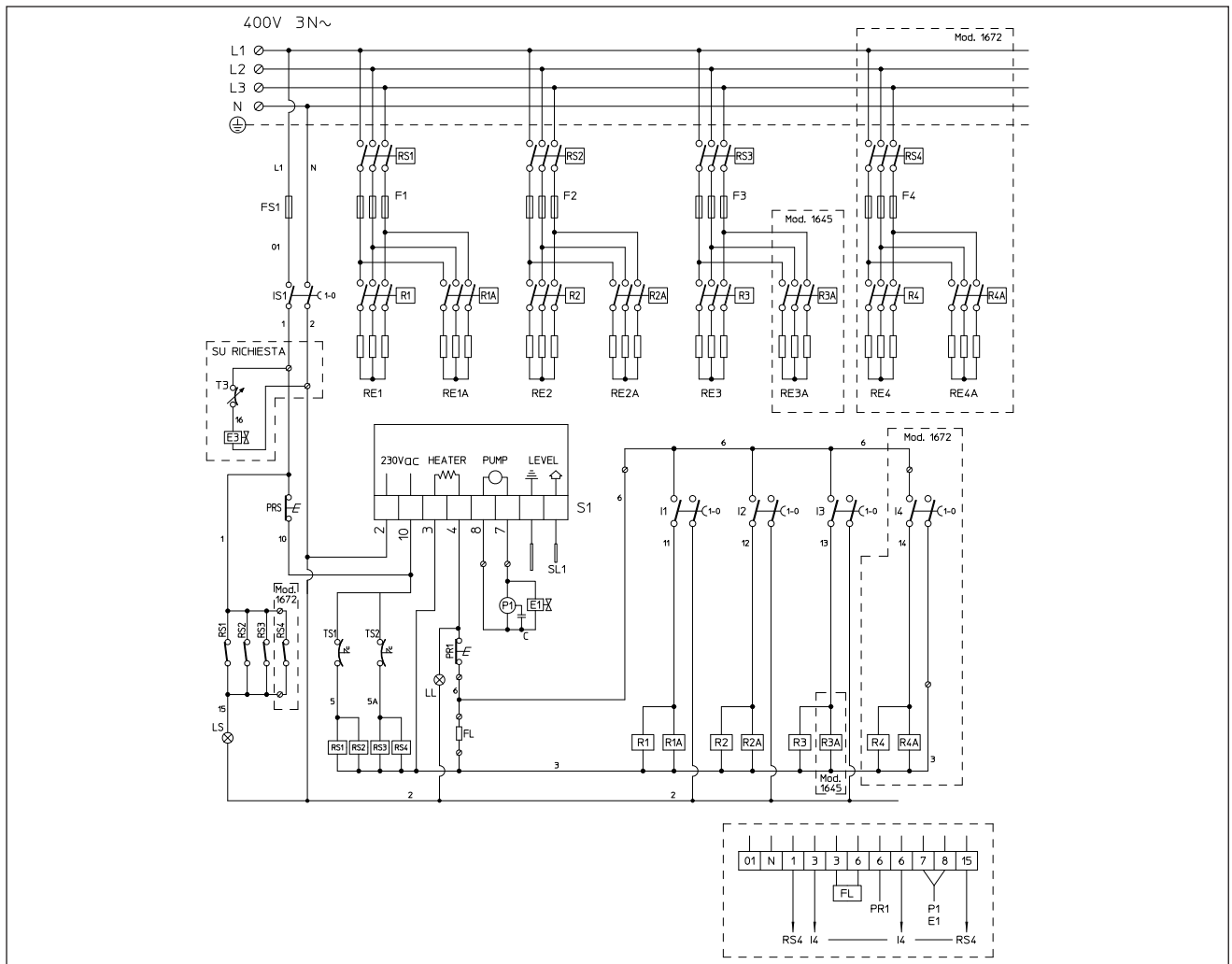
Do not perform any activity on the appliance without written authorization by the manufacturer.

Internal parts of the generator with 58 litres vessel (Types 1638, 1645, 1672)



- 1. Safety thermostat
- 2. Reference probe
- 3. Level probe
- 4. Double pressure switch
- 5. Pressure gauge

- 6. Pressure vessel
- 7. Heating elements
- 8. Safety valve
- 9. Pump



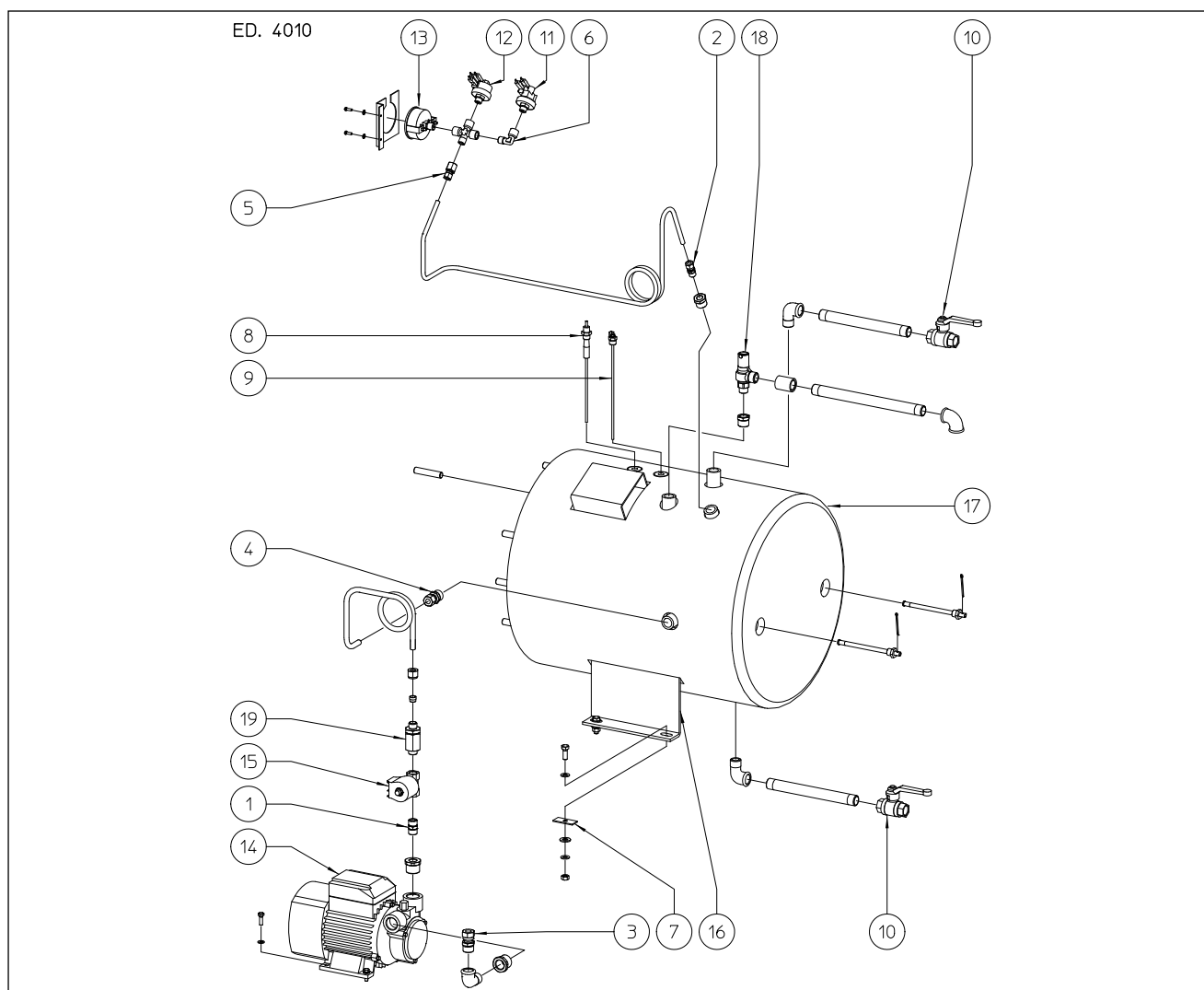
C	CONDENSATORE	CAPACITOR	KONDENSATOR	CONDENSATEUR	CONDENSADOR
E1	ELETTROV. CARICO ACQUA	WATER LOAD IN BOILER SOLENOID VALVE	MAGNETVENTIL DER WASSERZUFUHR IM KESSEL	ÉLECTROVANNE DE REMPLISSAGE DE LA CHAUDIÈRE	ELECTROVÁLVULA DE TOMA DE AGUA EN CALDERA
E3	ELETTROV. ACQUA SERBATOIO	WATER LOAD IN TANK SOLENOID VALVE	MAGNETVENTIL DER WASSERZUFUHR IN DEN BEHÄLTER	ÉLECTROVANNE DE REMPLISSAGE EAU DANS LE RÉSERVOIR	ELECTROVÁLVULA TOMA DE AGUA EN EL TANQUE
FL	FILTRO ANTIDISTURBO	SUPPRESSOR	STÖRFILTER	FILTRE ANTI-PARASITES	FILTRO ANTI-INTERFERENCIA
FS1	FUSIBILE PROTEZ. IMPIANTO	CIRCUIT PROTECTION FUSE	SCHUTZSCHMELZSICHERUNG DER ANLAGE	FUSIBLE DE PROTECTION DE L'INSTALLATION	FUSIBLE DE PROTECCIÓN DEL EQUIPO
F1-2-3-4	FUSIBILI PROTEZ. RESISTENZE	HEATING ELEMENTS PROTECTION FUSE	SCHUTZSCHMELZSICHERUNG DER WIDERSTÄNDE	FUSIBLE DE PROTECTION DES RÉSISTANCES	FUSIBLE DE PROTECCIÓN DE LAS RESISTENCIAS
I1-2-3-4	INTERRUTTORI ACCENSIONE RESISTENZE	HEATING ELEMENTS SWITCHES	EINSCHALTER DER WIDERSTÄNDE	INTERRUPTEUR D'ALLUMAGE RÉSISTANCES	INTERRUPTORES DE ENCENDIDO RESISTENCIAS
IS1	INTERRUTTORE GENERALE	MAIN SWITCH	HAUPTSCHALTER	INTERRUPTEUR GÉNÉRAL	INTERRUPTOR GENERAL
LL	LAMPADA LIVELLO ACQUA	WATER LEVEL LAMP	WASSERSTANDSANZEIGE	VOYANT DE NIVEAU D'EAU	LUZ DE NIVEL DE AGUA
LS	SPIA D'ALARME	WARNING LIGHT	WARNANZEIGE	VOYANT D'ALARME	LUZ DE ALARMA
PRS	PRESSOSTATO SICUREZZA	SAFETY PRESSURE SWITCH	SICHERHEITSDRUCKWÄCHTER	PRESSOSTAT DE SÉCURITÉ	PRESOSTATO DE SEGURIDAD
PR1	PRESSOSTATO	PRESSURE SWITCH	BETRIEBSDRUCKWÄCHTER	PRESSOSTAT DE TRAVAIL	PRESOSTATO DE TRABAJO
P1	POMPA	PUMP	PUMPE	POMPE	BOMBA
R1-2-3-4	CONTATTORI RESISTENZE	CONTACTOR HEATING ELEMENTS	KONTAKTGEBER DER WIDERSTÄNDE	CONTACTEUR DES RÉSISTANCES	CONTADOR DE LAS RESISTENCIAS
RE1-2-3-4	RESISTENZE CALDAIA	BOILER HEATING ELEMENTS	KESSELWIDERSTÄNDE	RÉSISTANCES CHAUDIÈRE	RESISTENCIA CALDERA
RS1/2-3/4	CONTATTORI SICUREZZA	SAFETY CONTACTOR	SIESCHERUNGSSCHUTZ DER HEIZUNGWIDERSTAND	CONTACTEUR DE SÉCURITÉ DES RÉSISTANCES	CONTADOR DE SEGURIDAD DE LAS RESISTENCIAS
S1	SCHEDA CONTR. LIVELLO	LEVEL CONTROL BOARD	ELEKTRONISCHE STEUERPLATINE DES KESSELSTANDES	CARTE ÉLECTRONIQUE DE CONTRÔLE DU NIVEAU	TARJETA ELECTRÓNICA DE CONTROL NIVEL
SL1	SONDA LIVELLO CALDAIA	LEVEL CONTROL PROBE BOILER	WASSERFÜLLSTANDSENSOR IM KESSEL	SONDE DE NIVEAU DE L'EAU DANS LA CHAUDIÈRE	SONDA DE NIVEL DEL AGUA EN LA CALDERA
T3	TERMOSTATO SERBATOIO	TANK THERMOSTAT	THERMOSTAT	THERMOSTAT	TERMOSTATO
TS1 - TS2	TERMOSTATO SICUREZZA	SAFETY THERMOSTAT	SICHERHEITSTHERMOSTAT	THERMOSTAT DE SÉCURITÉ	TERMOSTATO DE SEGURIDAD
Part	Descrizione	Description	Beschreibung	Designation	Descripción
Mod. 1638-1645-1672		ELECTRIC DIAGRAM - SCHEMA ELETTRICO			ed 0807

9. Spare parts diagrams

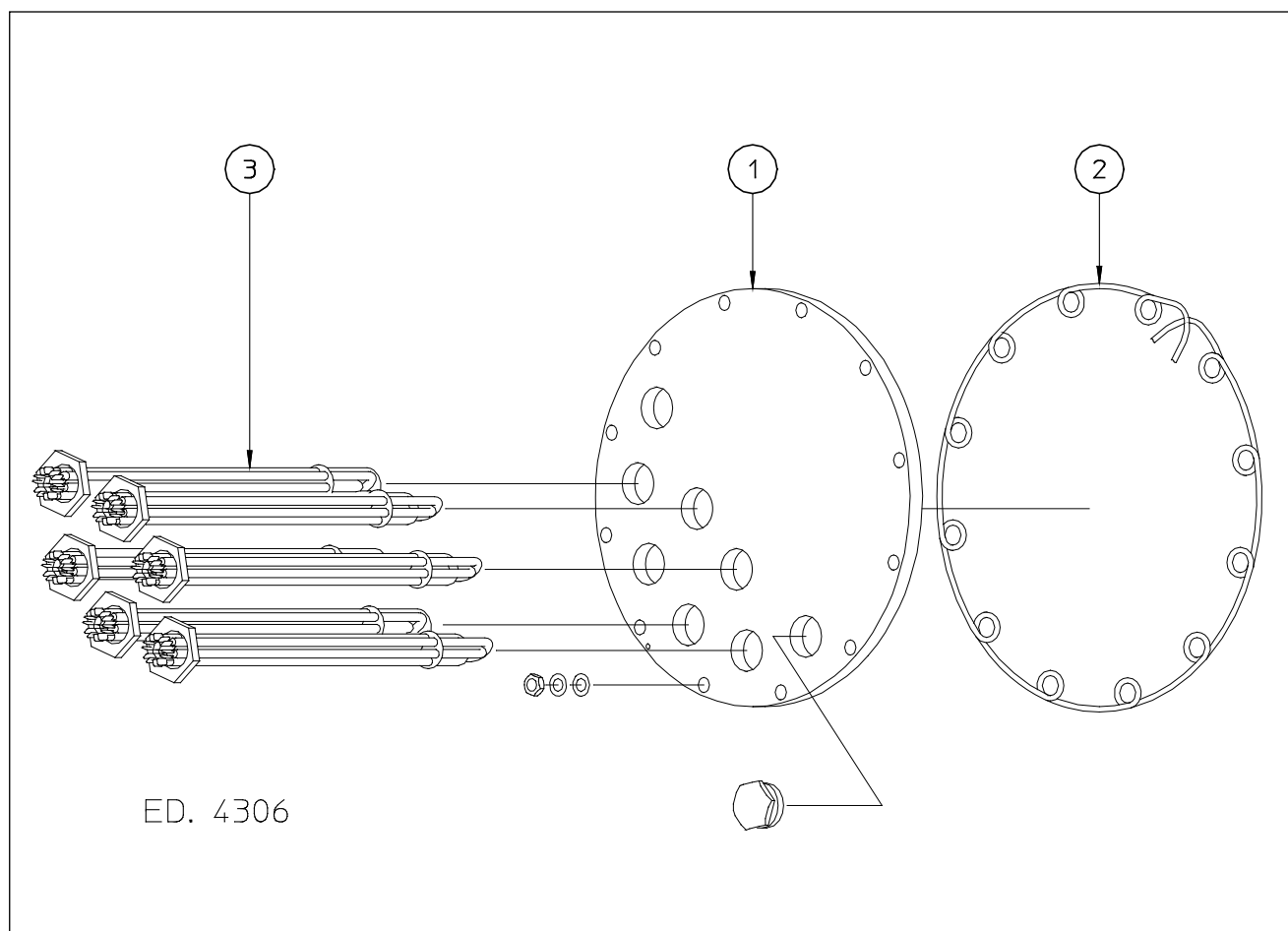
Please refer to the following diagrams when ordering spare parts.
To avoid mistakes, always provide code and description of the required spare part.



Always use original spare parts.



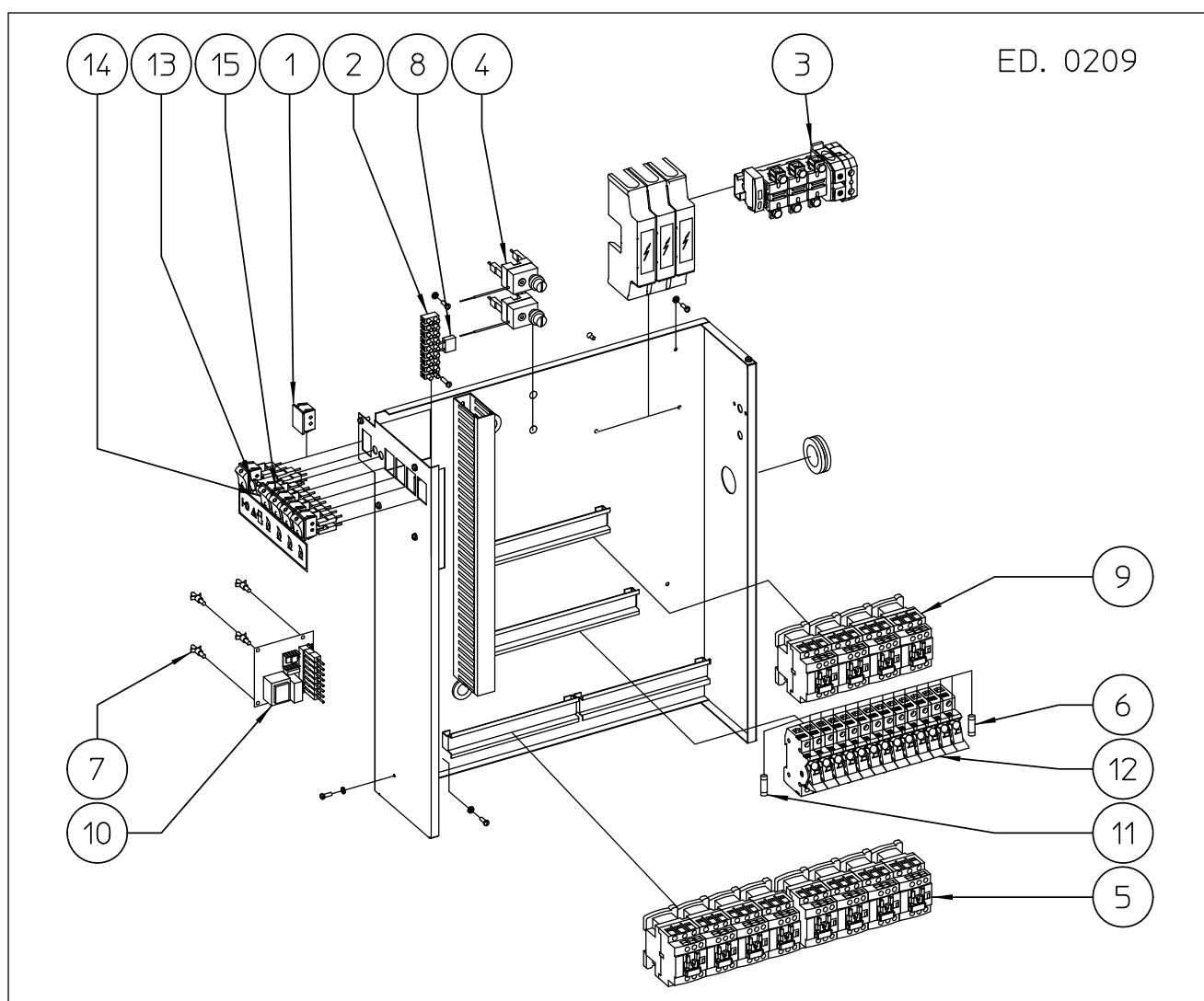
19	W03	1	VALVOLA RITEGNO	CHECK VALVE	RÜCKSCHLAGVENTIL	VANNE A GRAVITE	VALV. FLUJO SIMPLE
18	V19	1	VALV. SICUREZZA	SAFETY VALVE	SICHERHEITSVENTIL	VANNE SECURITE	VALV. SEGURIDAD
17	G1419001	1	ISOLAMENTO	INSULATION	ISOLIERUNG	ISOLEMENT	AISLAMIENTO
16	G1411001	1	CORPO CALDAIA	PRESSURE VESSEL	KESSEL	GENERATEUR	CALDERA
15	E033225	1	ELETTROVALVOLA	SOLENOID VALVE	MAGNETVENTIL	ELECTROVANNE	ELECTROVAL.
14	D12225	1	ELETTROPOMPA	PUMP	PUMPE	POMPE	BOMBA
13	25142003	1	MANOMETRO	PRESSURE GAUGE	MANOMETER	MANOMETRE	MANÓMETRO
12	0280504	1	PRESSOSTATO	PRESSURE SWITCH	DRÜCKWACHER	PRESSOSTAT	PRESÓSTATO
11	0280503	1	PRESSOSTATO	PRESSURE SWITCH	DRÜCKWACHER	PRESSOSTAT	PRESÓSTATO
10	0280103	2	VALVOLA A SFERA	VALVE	RÜCKSCHLAGVENTIL	VANNE A BILLE	VALVULA ESFERA
9	0220857	1	SONDA DI TERRA	EARTH PROBE/LEVEL PROBE	ERDUNGSSONDE	SONDE DE TERRE	SONDA TOMA TIERRA
8	0220842	1	SONDA DI LIVELLO	LEVEL PROBE	NIVEAUSONDE	SONDE DE NIVEAU	SONDA DE NIVEL
7	0220402	4	DISTANZIALE ISOL.	SPACER	ABSTÄNDER	ENTRETOISE	RIOSTRA
6	0160404	1	RACCORDO	FITTING	ANSCHLUSSSTÜCK	RACCORD	RACOR
5	0160302	1	RACCORDO	CONNECTION	ANSCHLUSSSTÜCK	RACCORD	RACOR
4	0160110	1	RACCORDO	CONNECTION	ANSCHLUSSSTÜCK	RACCORD	RACOR
3	0160109	1	RACCORDO	CONNECTION	ANSCHLUSSSTÜCK	RACCORD	RACOR
2	0160102	1	RACCORDO	CONNECTION	ANSCHLUSSSTÜCK	RACCORD	RACOR
1	0090201	1	NIPPLO	NIPPLE	NIPPEL	NIPPLE	NIPLE
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
1638A40			58 litres BOILER GROUP - GRUPPO CALDAIA 58 litri				ed 4010



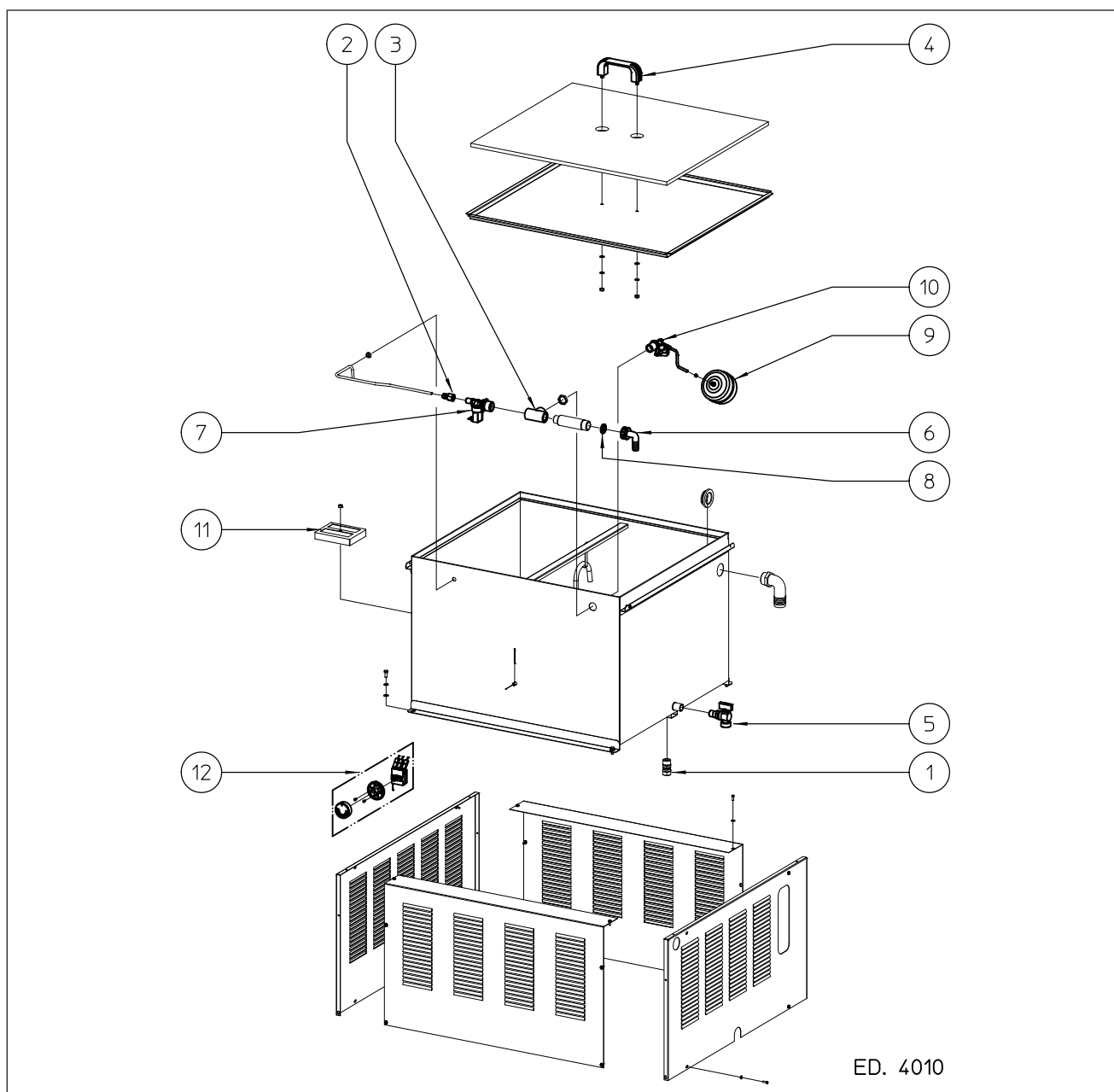
3	0230529	8	RESISTENZA 7,5kW	HEATING ELEMENT	HEIZSTAB	RESISTANCE	RESIST.
2	0250328	1	GAURNIZIONE	GASKET	DICHTUNG	JOINT	EMPAQUETADURA
1	0270213	1	FLANGIA	FLANGE	FLANSCH	FLASQUE	ARANDELA
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
G14612		60kW HEATING ELEMENTS - GRUPPO RESISTENZE 60kW					ed 4306
Part of:		1672 Geyser 60kW					

3	0230529	6	RESISTENZA 7,5kW	HEATING ELEMENT	HEIZSTAB	RESISTANCE	RESIST.
2	0250328	1	GAURNIZIONE	GASKET	DICHTUNG	JOINT	EMPAQUETADURA
1	0270213	1	FLANGIA	FLANGE	FLANSCH	FLASQUE	ARANDELA
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
G14613		45kW HEATING ELEMENTS - GRUPPO RESISTENZE 45kW					ed 3507
Part of:		1645 Geyser 45kW					

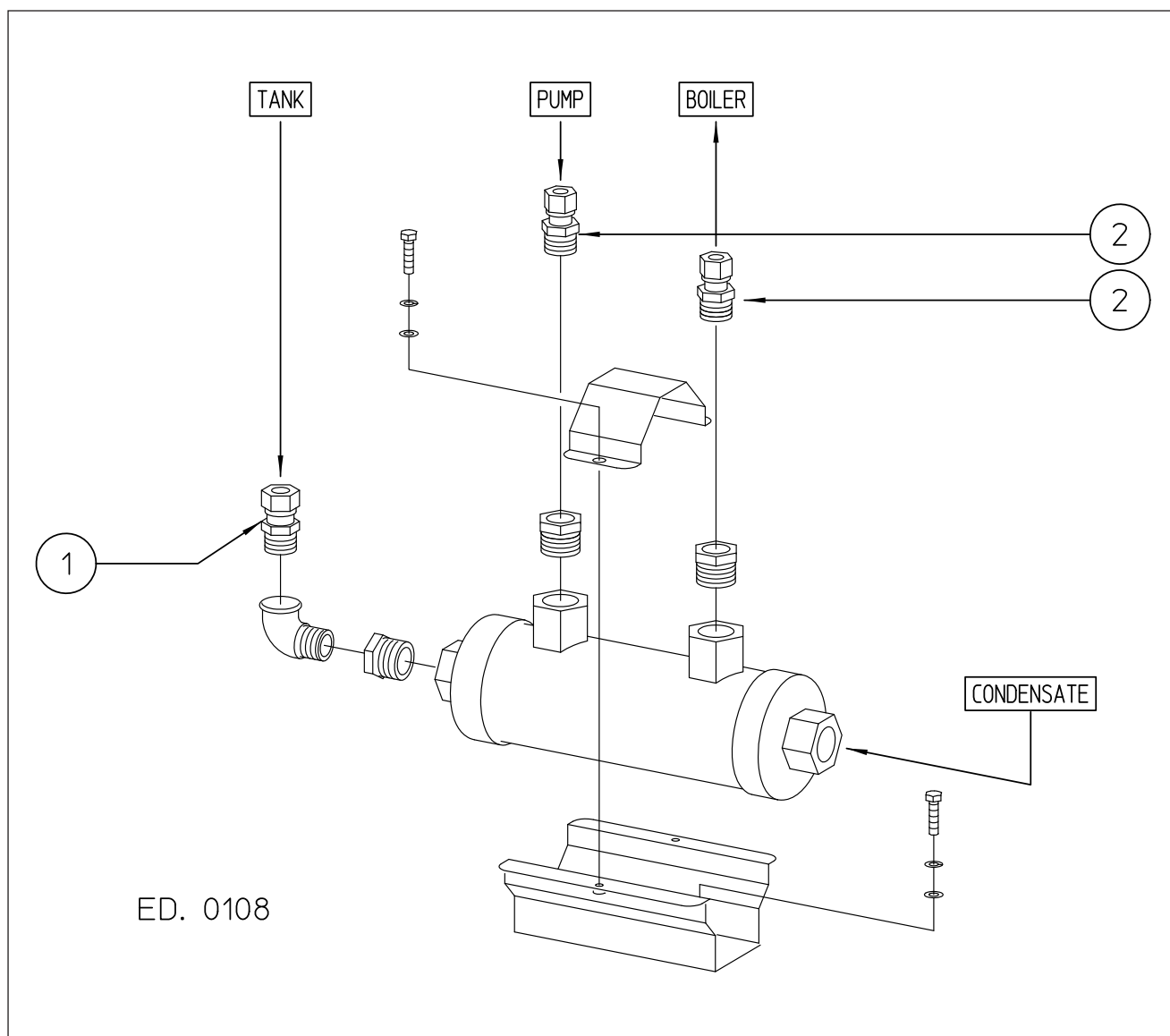
3	0230529	5	RESISTENZA 7,5kW	HEATING ELEMENT	HEIZSTAB	RESISTANCE	RESIST.
2	0250328	1	GAURNIZIONE	GASKET	DICHTUNG	JOINT	EMPAQUETADURA
1	0270213	1	FLANGIA	FLANGE	FLANSCH	FLASQUE	ARANDELA
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
G14614		37.5kW HEATING ELEMENTS - GRUPPO RESISTENZE 37,5kW					ed 3507
Part of:		1638 Geyser 37,5kW					



15	F0334008	4	5	INTERRUTTORE	SWITCH	SCHALTER	INTERRUPTEUR	INTERRUPTOR
14	10069004	1	1	SPIA ROSSA	RED LIGHT	ROTE ANZEIGER	VOYANT ROUGE	BOMBILLA ROJA
13	10069003	1	1	SPIA VERDE	GREEN LIGHT	GRÜNE ANZEIGER	VOYANT VERT	BOMBILLA VERDE
12	0220817	10	13	PORTAFUSIBILE	FUSE HOLDER	SICHERUNGSHALTER	PORTE FUSIBLE	PORTAFUSIBILE
11	0220801	1	1	FUSIBILE 10A	10A FUSE	SICHERUNG 10A	FUSIBLE 10 A	FUSIBLE 10A
10	0220564	1	1	SCHEDA CONTR. LIVELLO	LEVEL CONTROL	NIVEAUPLATINE	CARTE DE NIVEAU	TARJETA NIVEL
9	0220538	3	4	CONTATTORE	CONTACTOR	SCHUTZ	CONTACTEUR	CONTACTOR
8	0220527	1	1	FILTRO	FILTER	FILTER	FILTRE	FILTRO
7	0220522	4	4	REGGISCHEDE	BOARD SUPPORT	SCHALTPLATTE-HARDWARE	SUPPORT DE CARTE	SOPORTE DE SUJECCIÓN TARJETA
6	0220509	9	12	FUSIBILE 25A	25A FUSE	SICHERUNG 25A	FUSIBLE 25A	FUSIBLE 25A
5	0220501	5-6	8	CONTATTORE	CONTACTOR	SCHUTZ	CONTACTEUR	CONTACTOR
4	0220500	2	2	TERMOSTATO	THERMOSTAT	THERMOSTAT	THERMOSTAT	TERMOSTATO
3	0220314	1	1	MORSETTO 35mmq	TERMINAL BOARD	KLEMME	BORNE	BORNE
2	0220305	1	1	MORSETTO	TERMINAL BOARD	KLEMME	BORNE	BORNE
1	0220202	1	--	TAPPO	COVER	SKAPPE	COUVERTURE	TAPON
pos	Code	37,5kW 45kW	60kW	Descrizione	Description	Beschreibung	Designation	Descripción
		Q.ty		ELECTRIC PANEL - QUADRO ELETTRICO				
Part of:		1638-1645-1672		ed 0209				



12	Z504	1	KIT TERMOREGOLAT.	KIT THERMOREGULAT.	WÄRMERREGLER	THERMOREGULAT	TERMORREGUL.
11	S1511002	1	FILTRO SEBATOIO	FILTER	FILTER	FILTRE	FILTRO
10	S0221001	1	RUBINETTO	ROBINET	HAHN	ROBINET	GRIFO
9	G0342001	1	SFERA GALLEGG.	FLOATING BALL	KÜGEL SCHWIMMER	SPHERE FLOTTEUR	BOLA FLOTANTE
8	E0411002	1	GUARNIZIONE	GASKET	DICHTUNG	JOINT	EMPAQUETADURA
7	E040225	1	ELETTROVALVOLA	SOLENOID VALVE	ELEKTROVENTIL	ELECTROVANNE	ELECTROVÁLV.
6	16022002	1	PORTAGOMMA CURVO	CABLE HOLDER	GUMMISHALTER	EMBOUT	PORTACABLE
5	0280108	1	VALVOLA A SFERA	VALVE	KÜGELVENTIL	VANNE A BILLE 1/4"	VÁLVULA
4	0180302	1	MANIGLIA	HANDLE	GRIFF	POIGNEE	MANIJA
3	0170208	1	RACCORDO	FITTING	VERBINDUNG	RACCORD	RACOR
2	0160303	1	RACCORDO	FITTING	VERBINDUNG	RACCORD	RACOR
1	0160109	1	RACCORDO	FITTING	VERBINDUNG	RACCORD	RACOR
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
LS19			140 litres WATER TANK (option) - SERBATOIO 140l (opzionale)				ed 4010



2	0160110	2	RACCORDO	FITTING	ANSCHLUSSTÜCK	RACCORD	RACOR
1	0160109	1	RACCORDO	FITTING	ANSCHLUSSTÜCK	RACCORD	RACOR
pos	Code	Q.ty	Descrizione	Description	Beschreibung	Designation	Descripción
LS20		ECONOMIZER GROUP (option) GRUPPO ECONOMIZZATORE (opzionale)					ed 0108

Dealer

Manufacturer

Document identification

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