TRUFROST & BUTLER

USER MANUAL

Black Eagle Maverick –
Gravimetric, Volumetric

EDITION	DATE	MODIFICATIONS
00	03/2022	First Edition
01	08/2023	First Review

GENERAL INDEX

1 SAFETY INDICATIONS

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1.1 SAFETY REGULATIONS

Carefully read all warnings in the manual as they provide important information required to install, use and maintain the coffee machine safely. Keep this manual in a safe place for further consultation.

This unit must only be used for the purposes described in the present manual. The manufacturer cannot be held responsible for any damages caused by improper, mistaken and unreasonable use.

Before using the machine, read this manual in its entirety or, at the very least, read the safety and set up instructions.

This coffee machine can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the coffee machine in a safe way and understand the hazards involved. Children must not play with the coffee machine. Cleaning and maintenance must not be carried out by children unless supervised.

After having removed the packaging, make certain that the coffee machine is not damaged in any way. If you have any doubts, do not use the coffee machine and contact a professionally qualified person. Always keep all packaging (plastic bags, polystyrene foam, nails, etc..) out of the reach of children as they are a potential source of danger and never loiter the environment with such materials.

The machine can be used with ground coffee only.

The coffee machine can be installed only in places where the use and maintenance is limited to trained personnel. The access to the service area is restricted to persons having knowledge and practical experience of the coffee machine, in particular as far as safety and hygiene are concerned.

The machine must be installed on a horizontal surface at appropriate height so that the top of the machine is higher than 1.2 m.

The coffee machine must not be installed where it may be used water jets.

The noise level of the machine is less than 70db(A).

To facilitate aeration of the coffee machine, position the aeration portion of the machine 15 cm from walls or other machinery.

Remember that to install, maintain, unload and regulate the coffee machine, the qualified operator must always wear work gloves and safety shoes.

Before turning on the coffee machine make certain that the rating indicated on the label matches the available power supply. The nameplate can be seen inside the machine when removing the water collection tray. The machine must be installed according to the applicable federal, state and local standards (codes) in force with regard to plumbing systems including back-flow prevention devices. For this reason, the plumbing connections must be carried out by a qualified technician. The warranty expires if the characteristics of the power supply do not correspond to the nameplate data.

When installing the coffee machine, it is necessary to use the parts and materials supplied with the coffee machine itself. Should it be necessary to use other parts, the installation engineer needs to check their suitability for use in contact with water for human consumption. The installer must make the hydraulic connections respecting the rules of hygiene and water safety to environmental protection in force in the place of installation. So for the hydraulic plant contact an authorized technician. Always utilise the new hose supplied for connection to the water supply. Old hoses must not be utilised.

On installation, the qualified electrician must fit a circuit breaker switch as foreseen by the safety norms in force that has a contact open distance that permits the complete disconnection under conditions of overload category III, which must be installed in the power supply system in accordance with the wiring regulations.

For the Australian and New Zealand markets, the disconnector must be installed in accordance with AS/NZS 3000.

In case of installation in kitchens, connect the equipotential conductor to the terminal on the machine indicated by the symbol ⏚.

It is advisable to install a mains earth leakage circuit breaker with a rated differential current not exceeding 30mA.

01

GROUND CONNECTION

The manufacturer cannot be held responsible for any damages incurred if the system is not grounded. For electrical safety, this machine requires a ground system. Contact a technically certified electrician who must check that the line electrical capacity is adequate for the maximum capacity indicated on the coffee machine label.

There are some basic rules for the use of any electrical coffee machine. In particular:

- **Never touch the coffee machine with wet hands or feet;**
- **Never use the coffee machine with bare feet;**
- **Never use extension cords in areas equipped with baths or showers;**
- **Never pull on the power supply cord to unplug the coffee machine;**
- **Never leave the coffee machine exposed to atmospheric agents (rain, direct sunlight, etc..);**
- **Never let children, unauthorized personnel or anyone who has not read this manual operate the coffee machine.**

The qualified electrician must also check that the section of the installation's cables is large enough for the absorbed power of the coffee machine.

Never use adapters, multiple jacks or extension cords. When such items prove absolutely necessary, call in a qualified electrician.

To prevent dangerous overheating, it is advisable to fully extend the power supply cord. Never block the intake and/or heat dissipation grills, in particular those for the cup warmer.

The user must never replace the coffee machine's power supply cord. If this cord is damaged, turn OFF the coffee machine and have it replaced by a professionally qualified technician.

Should it be necessary to replace the power cord, this replacement operation must only be performed by an authorized service centre or by the manufacturer.

The coffee machine needs to be supplied with water that is suitable for human consumption and compliant with the regulations in force in the place of installation. The installation engineer needs confirmation from the owner/manager of the system that the water complies with the requirements and standards stated above.

For machines connected to the mains water supply, the minimum pressure must be 0.2 MPa (2 bar) and the maximum pressure for correct machine operation must not exceed 0.65 MPa (6,5 bar).

The operating temperature must be within the range of [+5, +25]°C. In case of prolonged storage at a temperature below 2 °C, empty the machine hydraulic system to prevent it from freezing. In case of freezing, do not switch the machine on before having reconditioned it for at least 1 hour at a suitable room temperature.

At the end of installation, the coffee machine is switched on and taken to rated operating conditions, leaving it in a state in which it is "ready for operation". After reaching the "ready for operation" condition, the following dispensing operations are carried out:

- **Dispense water from each group for at least 10 seconds;**
- **Dispense water from the hot water wand for at least 10 seconds;**
- **Empty the steam boiler completely. Repeat the whole operation at least 3 times.**

At the end of installation, it is good practice to draw up a report of the operations.

It is forbidden to leave the machine switched on without the presence and surveillance of a qualified operator. Simonelli Group is not responsible for damages caused by failure to comply with this prohibition.

Be extremely careful when using the steam nozzle. Never place your hands under the nozzle and never touch it right after use.

Before cleaning the coffee machine follow the instructions given in this manual carefully.

Once started the washing machine, do not interrupt, the detergent residue may remain inside the delivery unit.

In case of breakdown or poor function, turn OFF the coffee machine. Never tamper with the coffee machine. Contact only professionally qualified personnel. Only the manufacturer or an authorized service center can make repairs and only using original spare parts. Non compliance with the above can compromise machine safety.

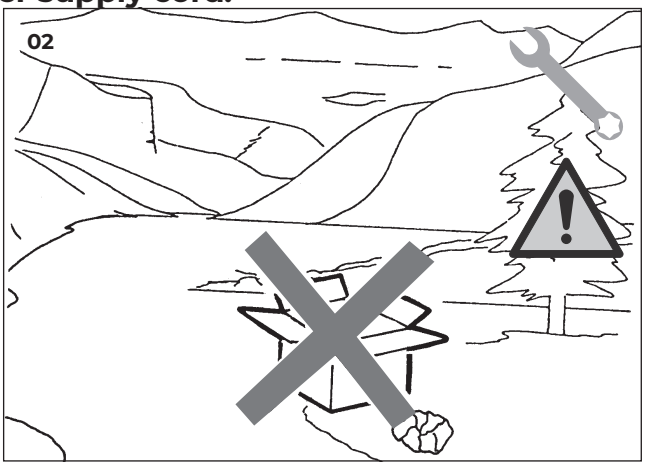
In case of fire, disconnect power to the machine by turning OFF the main switch. Its absolutely avoid to extinguish the fire with water while power to the machine is on.

When the machine is left unattended for a long period, close the water inlet tap.

Before performing any sort of maintenance, the authorized technician must turn OFF the coffee machine and disconnect the power cable.

Should you decide to stop using this type of unit, we suggest you render it inoperable by unplugging it and cutting the power supply cord.

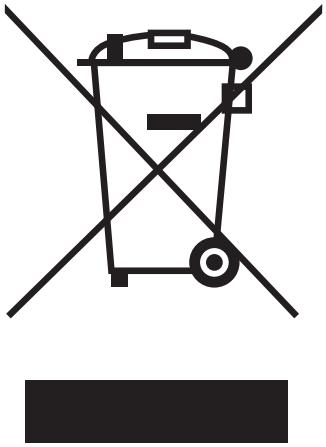
Never dispose of the machine in the environment: to dispose of the machine, contact an authorized center or contact the manufacturer for pertinent indications.



I.2 INFORMATION TO THE USERS

Under the senses of the Directives 2015/863/EU concerning the reduction of the use of dangerous substances in electric and electronic equipment, as well as the disposal of wastes.

03



The symbol of the crossed large rubbish container that is present on the machine points out that the product at the end of its life cycle must be collected separately from the other wastes. The user for this reason will have to give the equipment that got to its life cycle to the suitable separate waste collection centres of electronic and electro-technical wastes, or to give it back to the seller or dealer when buying a new equipment of equivalent type, in terms of one to one.

The suitable separate waste collection for the following sending of the disused equipment to recycling, the dealing or handling and compatible environment disposal contributes to avoid possible negative effects on the environment and on the people's health and helps the recycling of the materials the machine is composed of. The user's illegal disposal of the product implies the application of administrative fines as stated in Law Decree n.22/1997" (article 50 and followings of the Law Decree n.22/1997).

I.3 PREPARATION BY THE PURCHASER

PREPARATION OF THE INSTALLATION SITE

The purchaser must prepare the surface on which the machine will stand suitable to support the machine weight (see the installation chapter).

ELECTRICAL REQUIREMENTS

The mains power installation must comply with the safely regulations and standards in force in the country of installation and must include an efficient earth system. An omnipolar cut-off device must be installed on the power line upstream of the machine.
The power wires must be sized according to the maximum current required by the machine to ensure a total voltage loss under full load of less than 2%.

03

PLUMBING REQUIREMENTS

Prepare a suitable drain and a mains that supply water a maximum hardness of 5/6 French Degrees (50/60 ppm).

I.4 SYMBOLS

1 General hazard.
2 Electrical shock hazard.
3 Burns hazard.
4 Hazard of damage to the machine.
5 Operation reserved for the qualified technician, in compliance with current standards.
6 Operators must wear safety overalls with elasticized cuffs.
7 Operators must wear safety gloves.
8 Operators must wear safety shoes .

04

I.5 RESIDUAL RISKS

Although the manufacturer has provided mechanical and electrical safety systems, dangerous areas persist during the use of the machine:

- Coffee dispensing groups.
- Steam wand.
- Hot water wand.
- Cup warmer.

05

I.6 MACHINE RECEIVING

I.6.I TRANSPORT

The machine is transported on pallets containing several machines inside cartons strapped to the pallet.

Operators performing any shipping or handling operations must wear gloves, safety shoes and overalls with elasticized cuffs.

The machine must be moved by 2 or more operators.

Failure to respect current safety regulations and standards on lifting and handling materials absolves the Manufacturer from all liability for possible damage to person or things.

During the entire handling operation, the operator must make sure no one or nothing is inside the operating area.

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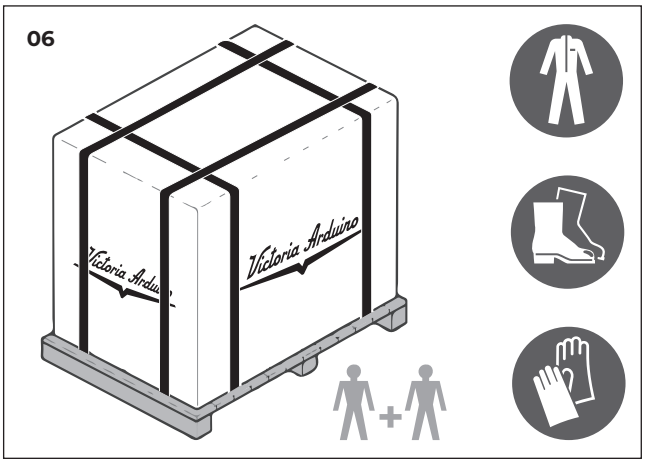
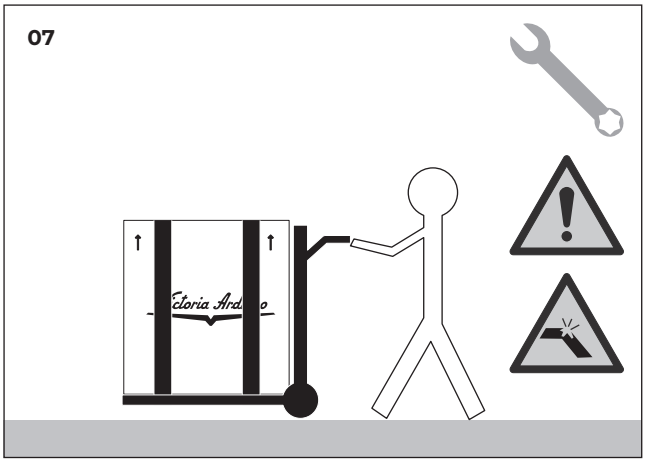


I.6.2 MOVEMENTS

- Slowly lift the pallet about 30 cm from the ground and reach the loading area.
- After checking that there are no obstacles, things or people, proceed with the loading.
- Once you arrive at your destination, always with a suitable lifting device (e.g. forklift), after making sure that there are no things or people in the unloading area, take the pallet to the ground and move it about 30 cm from the ground, until to the storage area.

07

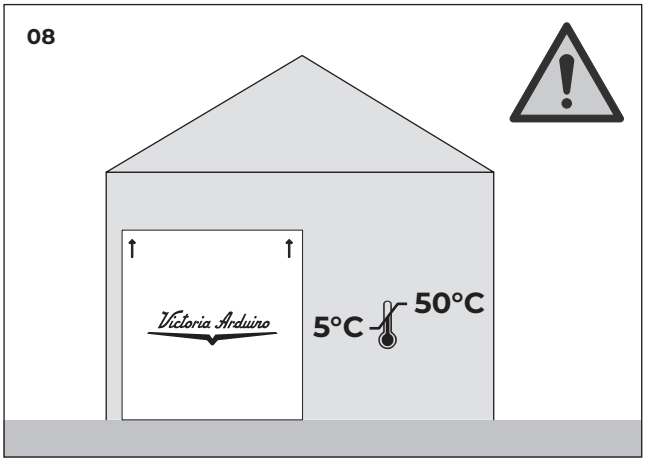


I.6.3 STORAGE

The package containing the machine must be stored away from atmospheric agents.
Before performing the following operations, make certain that the load is in stable and will not fall when the straps are cut.

Wearing gloves and safety shoes, the operator must cut the straps and store the product.
During this operation, see the product technical features for the weight of the machine being stored and proceed as necessary.

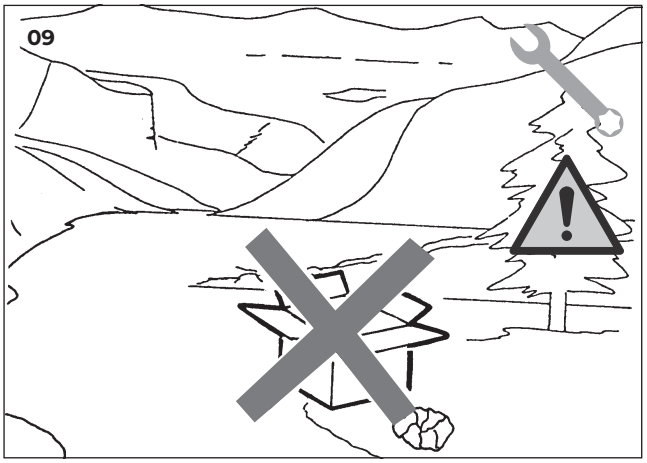
08



I.6.4 UNPACKING

Once the machine has been released from the pallet or container, do not pollute the environment with these items.

09



Technician performing any diagnosis or repairing must wear gloves, safety shoes and overalls with elasticized cuffs.

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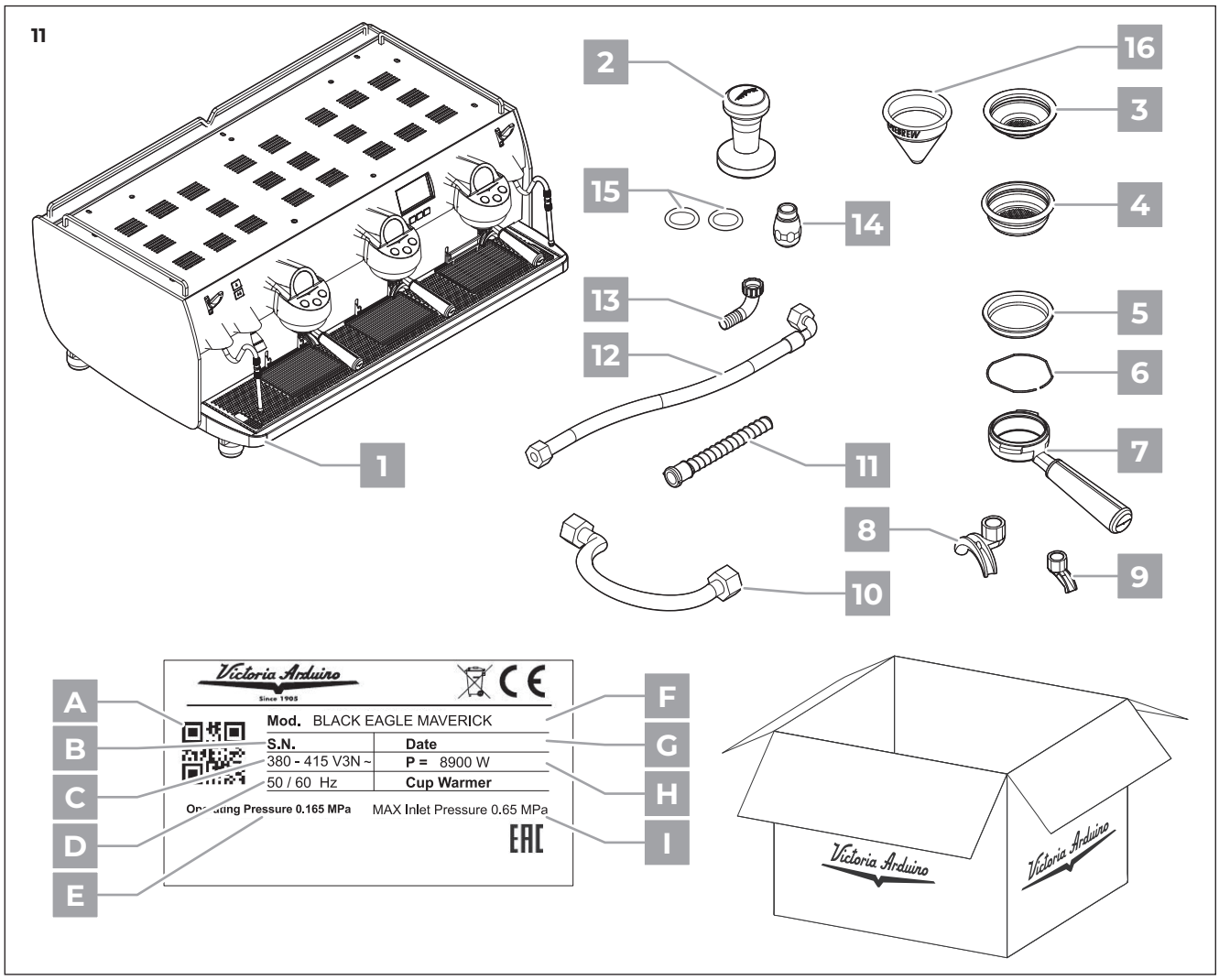
I.7 CONTENTS CHECK

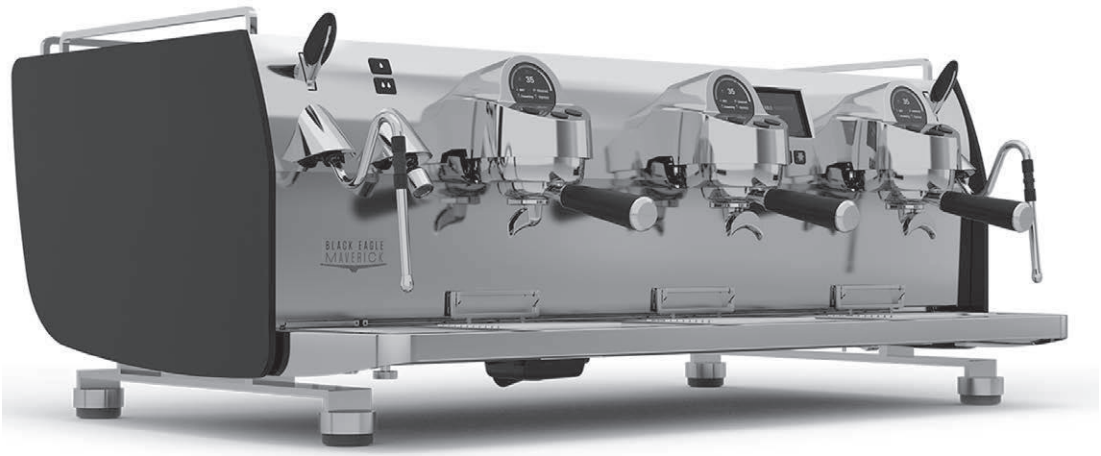
Upon receipt of the box, check that the packaging is intact and visually undamaged. Inside the packaging must be the instruction manual and the relative kit.
In case of damage or faults, contact your local dealer.
For any communication, always communicate the serial number.
The communication must be carried out within 8 days from the receipt of the machine.



1 Machine (example image)
2 Coffee tamper (1 unit)
3 Single filter (1 unit)
4 Double filter (1 for each group)
5 Blind filter (1 unit)
6 Spring (group number + 1)
7 Filter-holder (group number + 1)
8 Double delivery spout (1 for each group)
9 Single delivery spout (1 unit)
10 Filling tube L = 500 mm (1 unit)
11 Draining pipe (1 unit)
12 Filling tube L = 1500 mm (1 unit)
13 Draining pipe fitting
14 Steam nozzle
15 Steam nozzle gasket (1 for each wand)
16 Conical filter (PureBrew Coffee Filter)

A QR code
B Serial number
C Power supply
D Frequency
E Water main operating pressure
F Model and version
G Production date
H Power
I Water main max pressure

2 MACHINE DESCRIPTION



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2.I MACHINE DESCRIPTION

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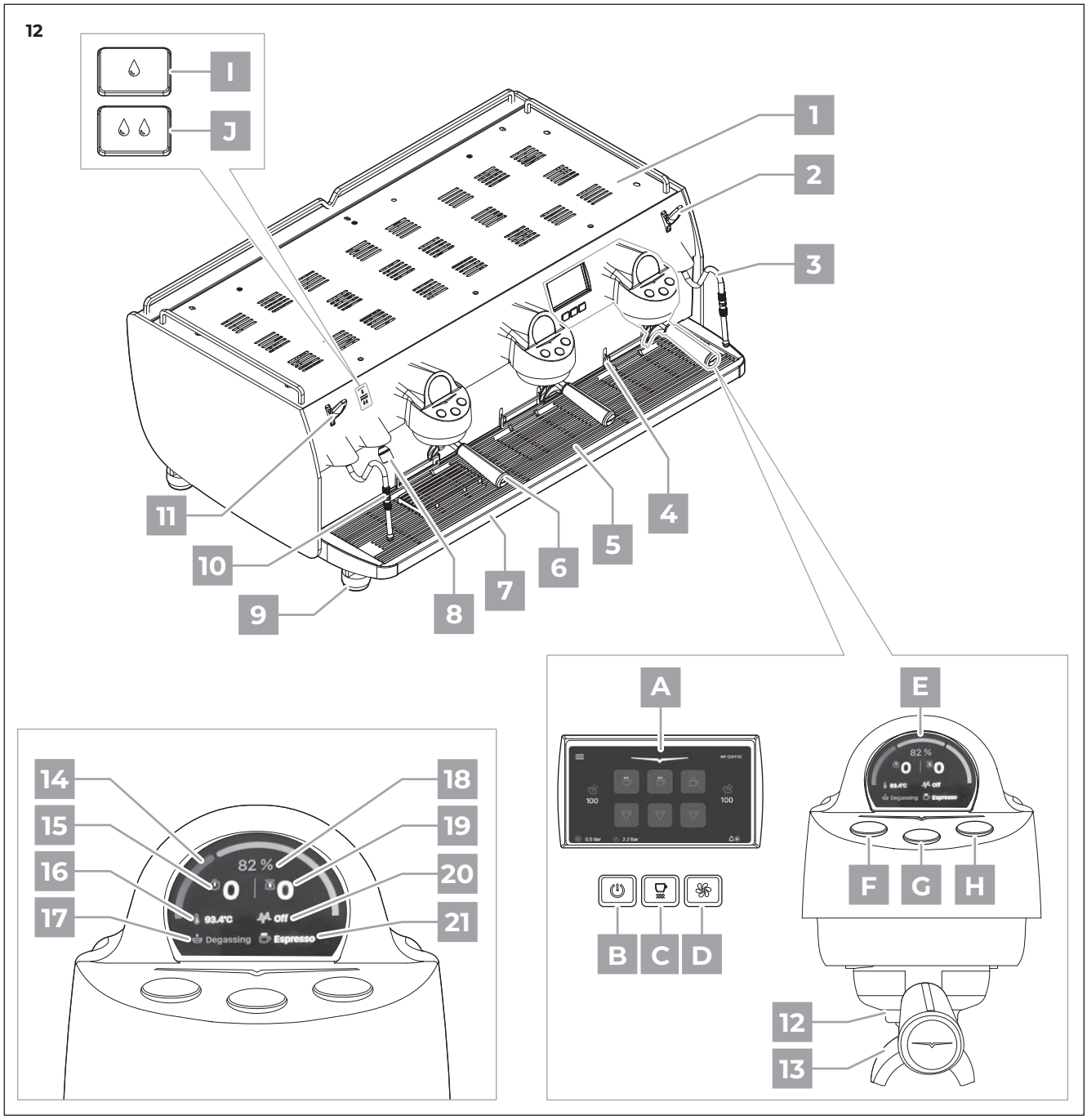


1 Cup warmer
2 Right steam knob
3 Right steam wand
4 Scales (Gravimetric version)
5 Cup grid
6 Filter holder
7 Water collecting dray
8 Hot water wand
9 Machine feet
10 Left steam wand
11 Left steam knob
12 Dispensing group
13 Dispensing nozzle

On the coffee group displays are shown:
14 Dispensing flow index (cc/s)
15 Dispensing time (s)
16 Group temperature (°C)
17 Pre-wetting (only for Espresso coffee)
18 Dispensing flow percentage
19 Dispensing weight (g) (only Gravimetric version)
20 Pulse Jet (if enable)
21 Espresso/Pure Brew coffee mode

A Main display
B Machine ON/OFF key
C Cup warmer ON/OFF key
D Washing key
E Group display
F Single coffee dose dispensing
G Continuous coffee dose dispensing
H Double coffee dose dispensing
I Dose 1 hot water dispensing
J Dose 2 hot water dispensing

BLACK EAGLE MAVERICK is a solid and compact intelligent professional coffee machine, suitable for all those who dedicate their lives to coffee.

The **T3 Genius** technology gives the barista absolute control over brewing temperatures, for meticulous precision with exceptional performance and efficiency.

The revolutionary **PURE BREW** extraction method uses pulsating frequencies of water pressure to release the purest, most refined flavour of the coffee bean.

Combined with the new patented 20 gram conical filter, it allows you to dispense **PureBrew Coffee Filter** coffee at the touch of a button.

All this is refined by a **VOLUMETRIC** (by time) or **GRAVIMETRIC** (by weight) programming system, allowing you to serve a repeatable product over time.

2.2 INTENDED USE

Machine designed and built respecting what is expressed in the declaration of conformity.

It must be used by professionals in the sector for the supply of coffee, water and steam.

The machine can only be used with ground coffee.

An area for the preheating of the cups has been provided.

Only for this use must be used, any other use is to be considered improper use and therefore dangerous.

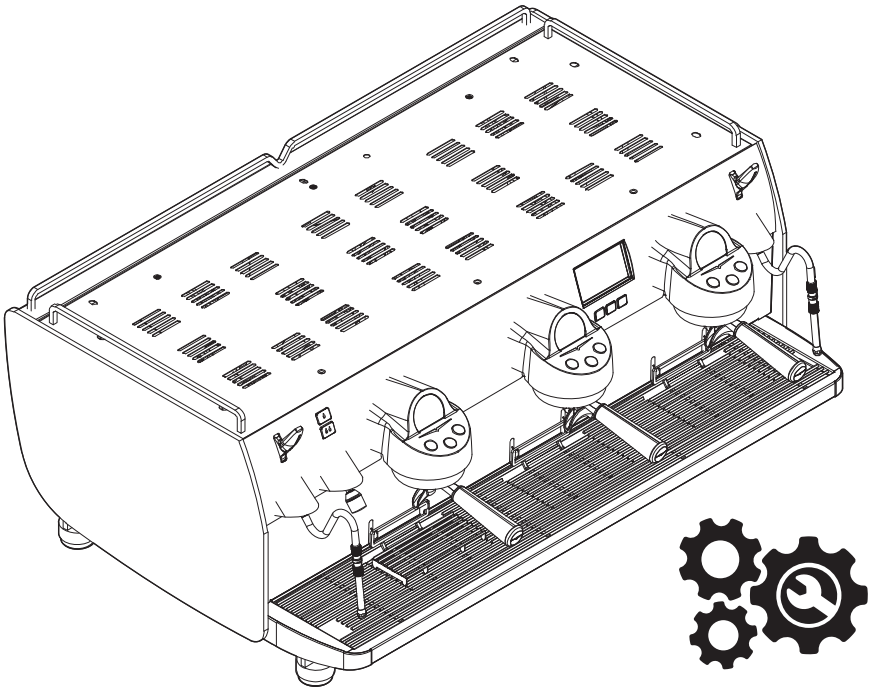
2.3 IMPROPER USE

This chapter lists a number of reasonably foreseeable improper uses.

The machine must, however, always be used in respect of the instructions given in this manual.

- Use by non-professional operators.
- Introduction of liquids other than softened drinking water with a maximum hardness of 5/6 French degrees (50/60 ppm).
- Touching the delivery areas with the hands.
- Introduction, into the filter holder, ground different than coffee.
- Placing objects other than cups on the cup warmer.
- Heating drinks or other non-food substances.
- Covering the cup warmer with cloths.
- Obstructing the vents with cloths or other items.
- Using the machine if wet.

3 INSTALLATION



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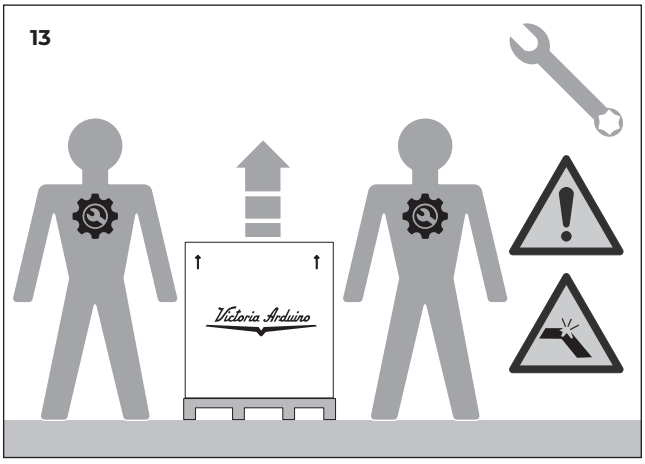
To lift the machine are necessary 2 or more operators.

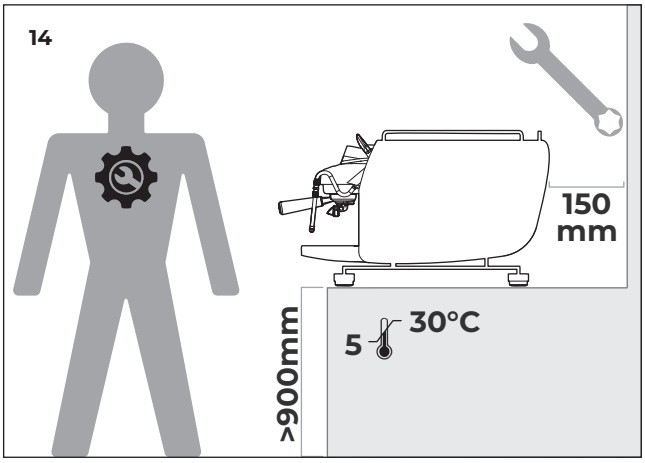


3.1 POSITIONING

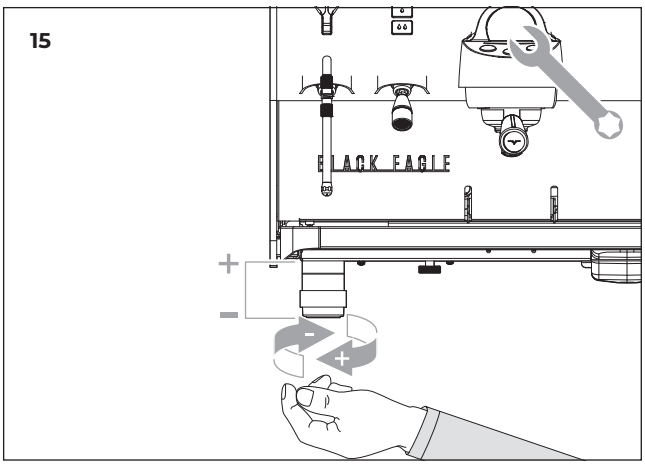
Before installing the machine, make sure the area where it will be installed is compatible for the size and weight of the machine.

Position the machine on a horizontal plane at least 900 mm high from the ground.

Keep at least 150 mm around the machine for proper ventilation



Adjust the machine by acting on the feet.

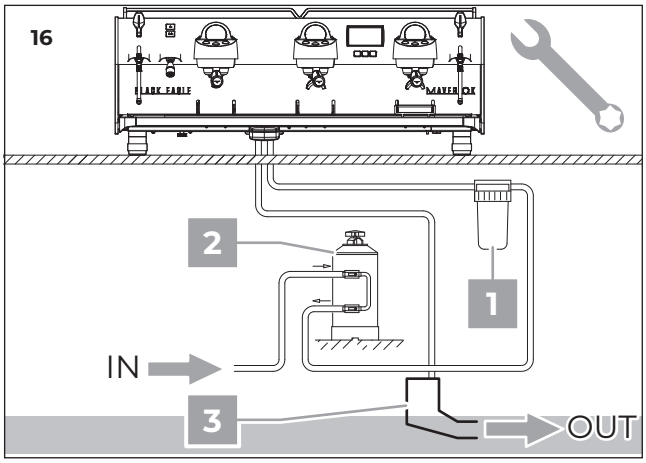


3.2 WATER CONNECTION

Avoid throttling in the connecting tubes. Assess that the drain pipe is able to eliminate waste. It is forbidden to use connecting pipes already used in the past. Filter maintenance is the responsibility of the purchaser.

1 Mesh filter
2 Softener
3 Drain Ø 50 mm

Failing to maintain water into the correct levels will void the warranty.



3.3 WATER SPECIFICATION

Monitoring of water recipe to keep it within required levels and maintenance of filtration system is the user's responsibility. Failing to meet and maintain water at the following levels will void the entire warranty.

Total hardness	ppm	50 - 60
Waterline pressure	bar	2-5 (cold water)
Minimum flow	l/hr	200
Chloride	micron	Less than 1.0
Alkalinity	ppm	10-150
Total dissolved salts (TDS)	ppm	50 -250
Chloride	mg/L	<0.5
pH		6.0- 8.0

3.4 CONNECTION TO WATER SUPPLY

The machine comes with a loading tube with a 3/8 inch connection for the water main.

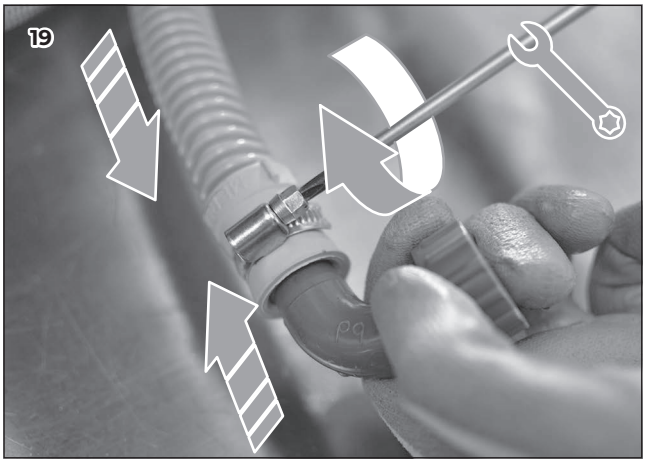
The cable is already installed in the machine, simply connect it to the water supply.

NOTE

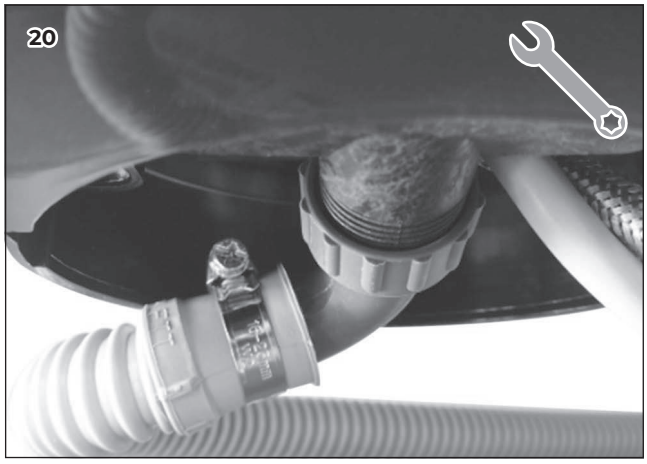
Verify that the water inlet pressure is **between 2 and 5 bars**. If the pressure is higher, insert a pressure reducer upstream to ensure a pressure reading within the values indicated.

To connect the wastewater system, proceed as it follows.

1 Connect the supplied wastewater pipe to the supplied joint and use a Philips screwdriver to tighten.



2 Connect the wastewater pipe and the joint to the waste water system by manually screwing it to the union.



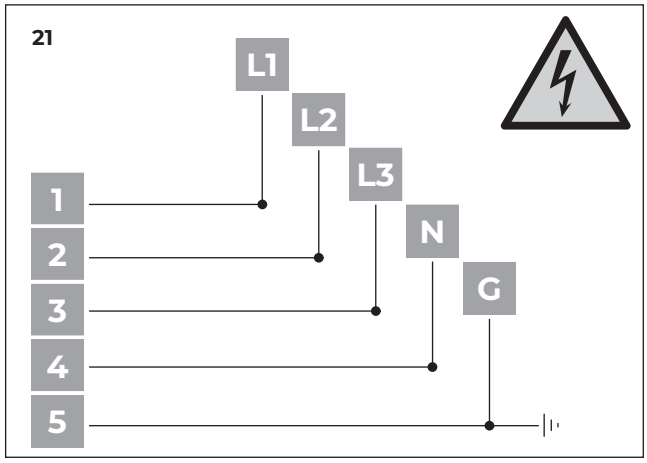
3.5 ELECTRICAL CONNECTION

Prior to connecting the machine to the electrical mains, assess that the voltage shown on the machine's data plate corresponds with that of the mains.

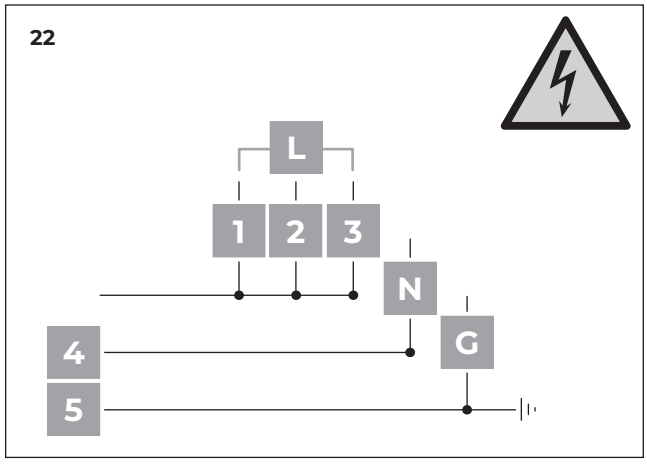
3.5.I ELECTRICAL SPECIFICATIONS

1 Black
2 Gray
3 Brown
4 Blue
5 Yellow - Green

A For voltage 380 V / 3 phases + Neutral:



B For voltage 230 V single-phase:



3.5.2 PRELIMINARY OPERATIONS

At the end of installation, the coffee machine is switched ON and taken to rated operating conditions, leaving it in a state in which it is "ready for operation".
After reaching the "ready for operation" condition, the following dispensing operations are carried out:

- Dispense water from each group for at least 10 seconds;
- Dispense water from the hot water wand for at least 10 seconds;
- Empty the steam boiler completely. Repeat the whole operation at least 3 times.

At the end of installation, it is good practice to draw up a report of the operations.

3.6 PROCEDURE OF FIRST INSTALLATION

When first installing the machine or after maintenance on one of the coffee boilers, switch ON the machine using the main switch **S** positioned to the bottom on the right and proceed as follows:

1 If the message “SWITCH OFF CLOCK ENABLED” appears on the display proceed as follows in step 3.
2 If the display on standby mode, keep pressed the washing key **D** until the display reads “SWITCH OFF CLOCK ENABLED “ and then proceed as described in step 3.

WARNING

Insert a water collection pan in order to avoid flooding the machine.

3 Turn ON the machine by pressing the ON/OFF key **B** and after it is turned ON you will automatically hear the pump filling the steam heater to a level and water will come out from the groups for about 45 seconds to ensure the that the coffee boiler is properly filled.

After 90 seconds, a LEVEL ERROR message will appear, because the motor protection will start operating. This system not only protects the motor but also serves to avoid that the pump accidentally works without water, if there are problems with the water supply (e.g. forgot to open the upstream tap). Just turn the machine OFF and ON again for the water to continue entering the boiler. Normally the 2-groups machine requires this operation only once, the three groups machine 2 times.

It is important that the cycle ends when the operator sees water gushing freely from all machine groups and the pump motor has stopped introducing water into the boiler. Only in this way you will ensure that all the coffee boilers are filled. This cycle cannot and must not be interrupted.

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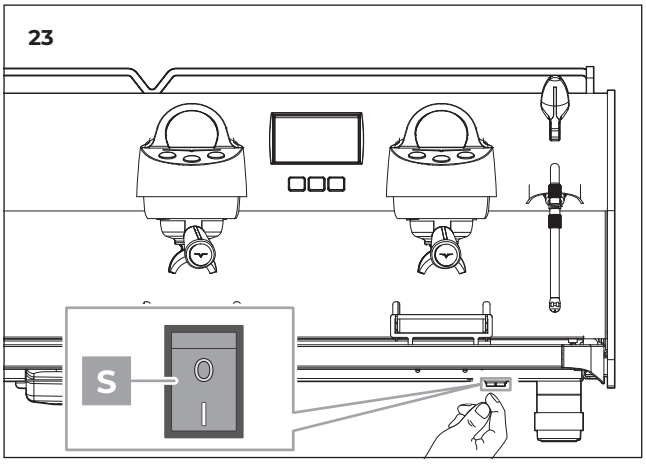

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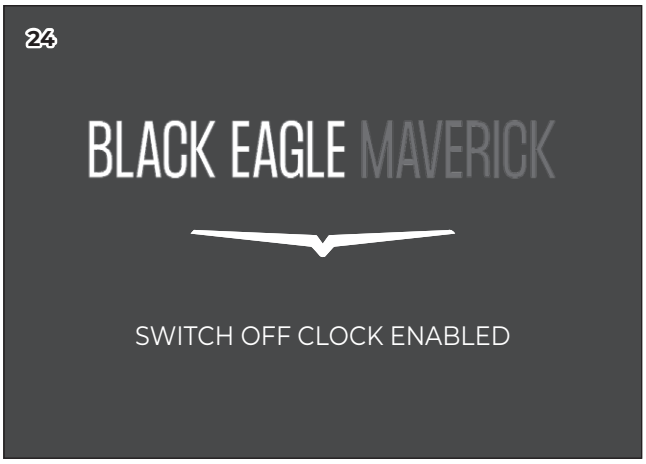

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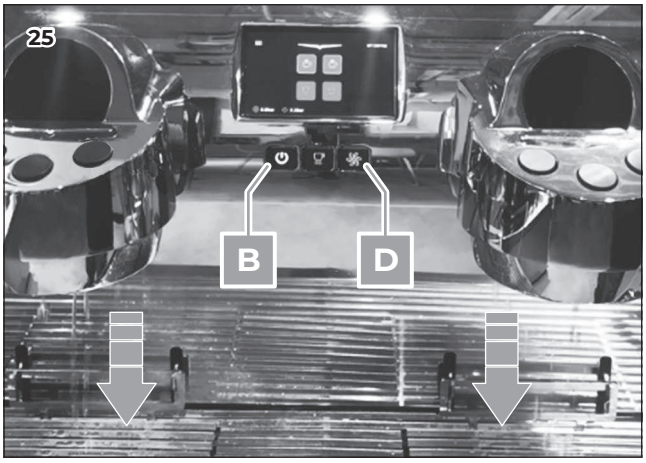

NOTE

If this cycle is interrupted due to a power outage or if the machine is accidentally switched OFF from the main switch, the next time the machine is switched on, the cycle will be started again for other 45 seconds. Similarly, if the cycle does not end with the outflow of water from all the coffee boilers, it is reasonable to turn OFF the machine immediately and restart the procedure to check whether there are problems filling the coffee boilers.

3.7 PUMP PRESSURE SETTING

To adjust the pump pressure, use the setting knob **K** underneath the machine:

- INCREASE (clockwise).
- DECREASE (counter-clockwise).

Recommended value: **9 bar**.

3.8 HOT WATER ECONOMISER ADJUSTMENT

This operation can be carried out while the machine is turned ON.

The hot water mixer serves to adjust the temperature of the water leaving the wand and to optimise system performance. To set the hot water economy device, use a screwdriver on the screw in the top part of the machine, as shown in the figure.

Turn it **CLOCKWISE / ANTICLOCKWISE** to **REDUCE / INCREASE** the temperature of hot water.

3.9 CABLE STRIP COVERING (OPTIONAL)

Once the machine has been levelled and connected to the power and water mains, use the cable strips (optional) to cover up the wiring, as shown in the figure.

WARNING

If the coffee boilers are not completely filled with water this could cause damage to the coffee boilers.

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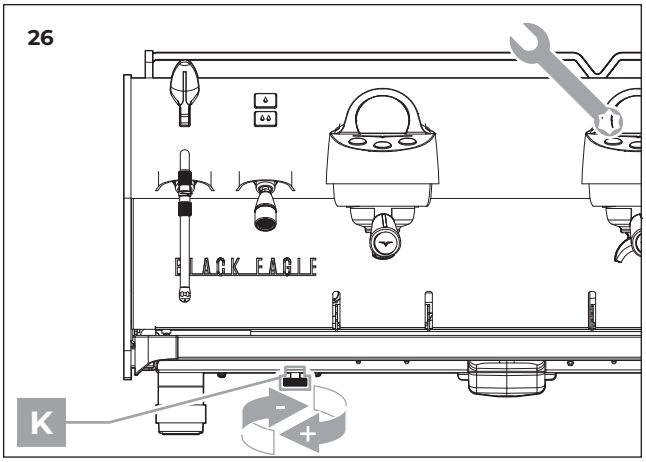
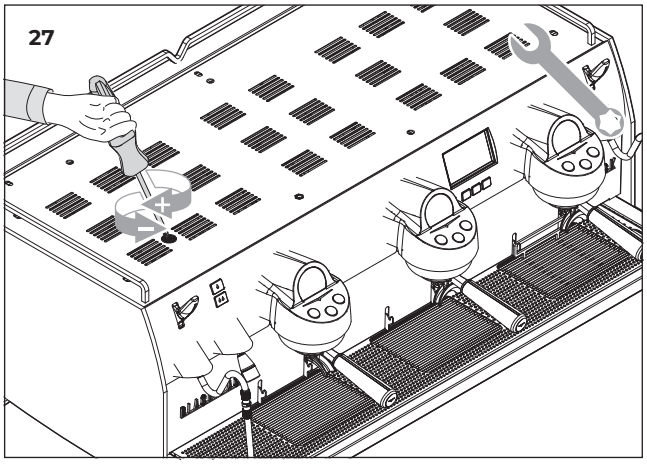


27



28

3.10 PROGRAMMING DURING INSTALLATION

Using the touch screen panel you can move inside the interface. Press to enable or select the proper function.
The preliminary operations to be carried out once the machine is installed and turned ON are as it follows.

3.10.1 LANGUAGE UPDATE

1 From the **Home page**, access the **Main Menu**.

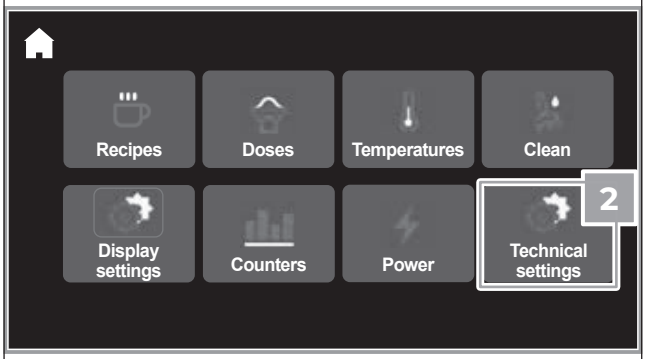
2 Enter into the **Technical settings** menu.

3 Select the **Settings** menu.

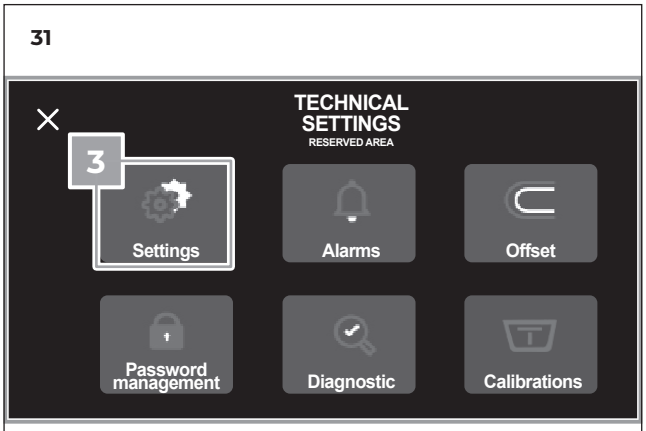
4 Access to the **Language** menu.

29

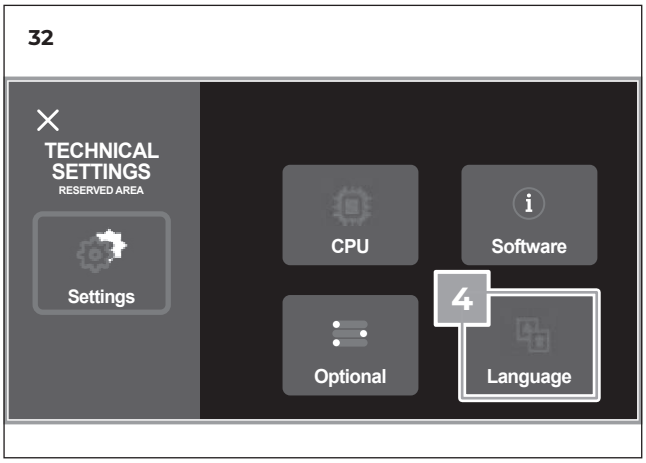
30



31

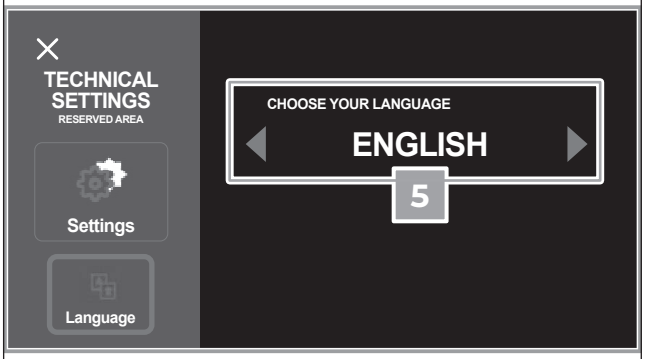


32



5 Set the display language:
- Italian;
- English;
- French;
- German;
- Spanish.

33



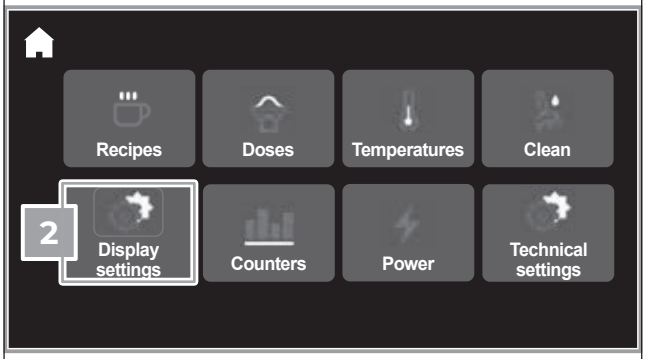
3.10.2 DATE AND TIME UPDATE

1 From the **Home page**, access the **Main Menu**.

34

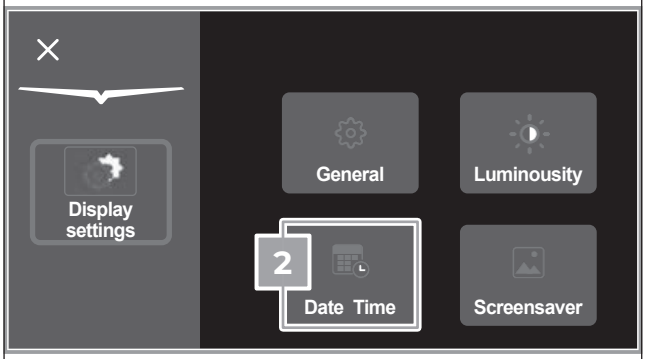
2 Access to the **Display Settings** menu.

35



3 Select **Date Time** menu.

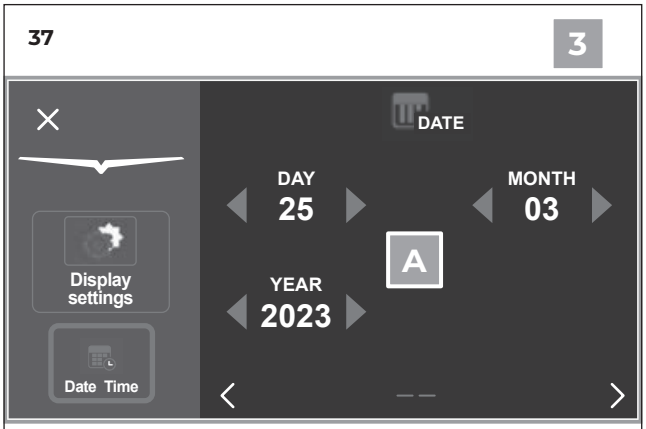
36



4 Set date and time visible on the display.

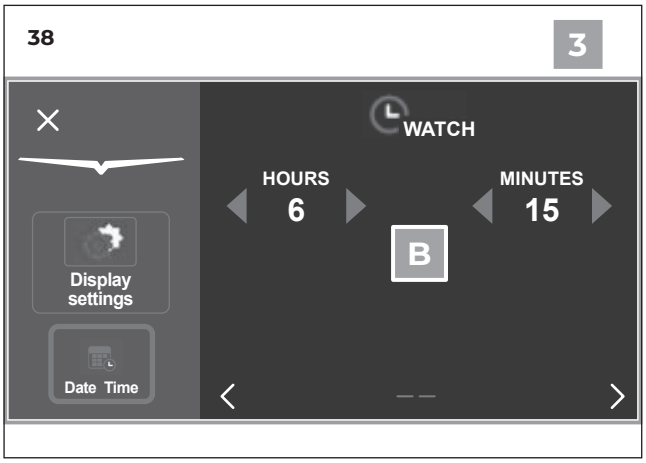
A Into the first page, is possible to set:
- Day;
- Month;
- Year.

37



B Into the second page instead is possible to set:
- Time;
- Minutes.

38



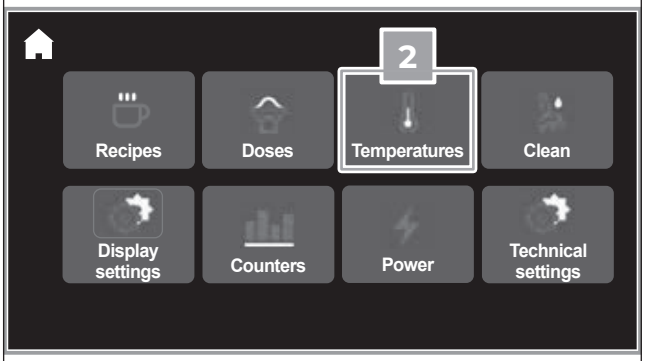
3.I0.3 STEAM BOILER PRESSURE UPDATE

1 From the **Home page**, access the **Main Menu**.

39

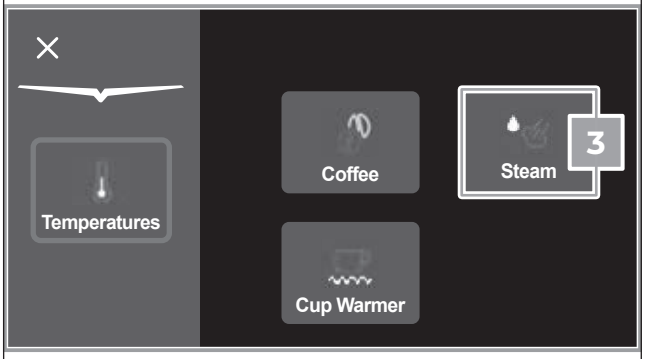
2 Access to the **Temperatures** menu.

40



3 Select **Steam** menu.

41



4 Set the steam boiler pressure.

NOTE

Recommended pressure: **2.1 bar**.

42

3.I0.4 COFFEE DOSES UPDATE

1 From the **Home page**, access the **MY COFFEE Menu** to set the coffee temperatures and doses (amount in CC).

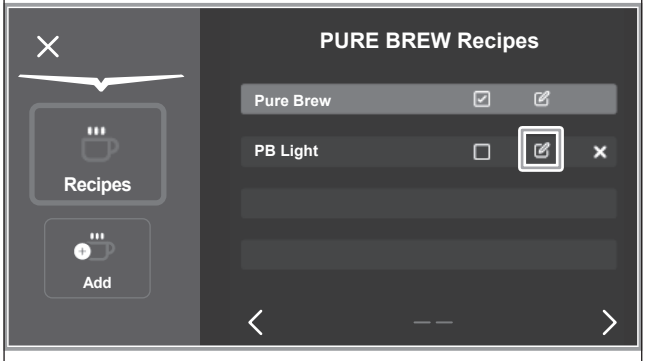
43

A Access to the **ESPRESSO Recipes** editing.

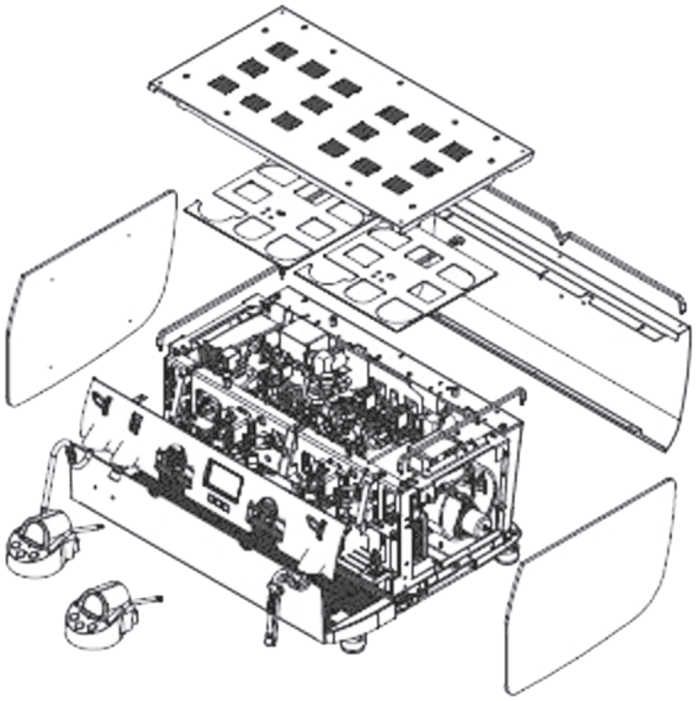
44 A

B Access to the **PURE BREW Recipes** editing.

45 B



4 REMOVAL OF EXTERNAL SURFACE



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DANGER

Before proceeding with the operations described in the Chapter make sure that the machine is turned OFF and unplugged from the mains.

NOTE

Use gloves to protect against sharp or hot surfaces that you can bump against involuntarily during operations.

NOTE

Before proceeding with the removal of the panels it is advisable to clean and free up enough space where the machine parts will rest so that they are not be unintentionally damaged.

4.1 REMOVAL OF THE FRONT LOWER PANEL

To remove the lower front panel, it is necessary to:

1 To lift up:
- A Left steam wand.
- B Hot water wand.
- C Right steam wand.

and removing the scales grills **D**.

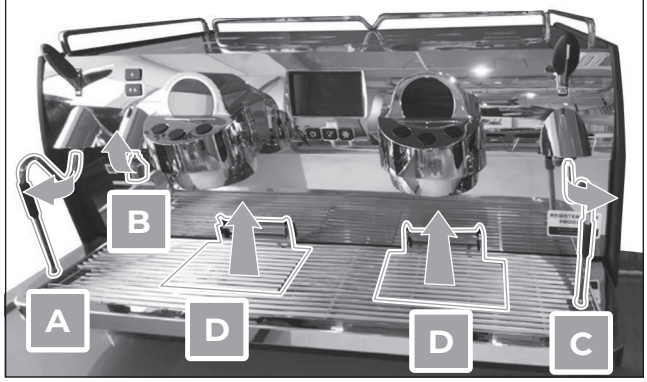
2 Remove the work surface raising and removing the water collection pan.

46

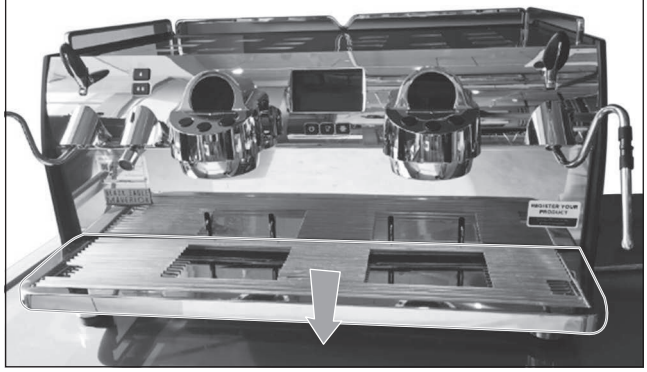
47

HOT AND CUTTINGS SURFACES

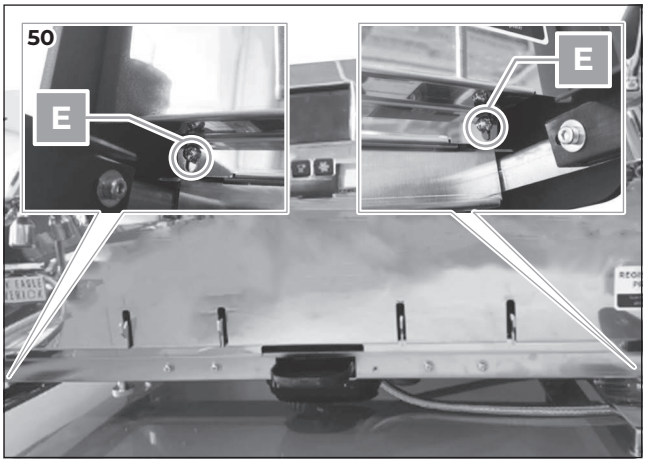
48



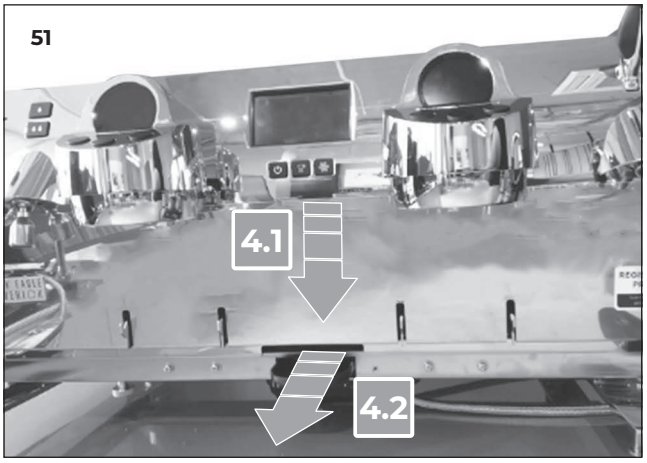
49



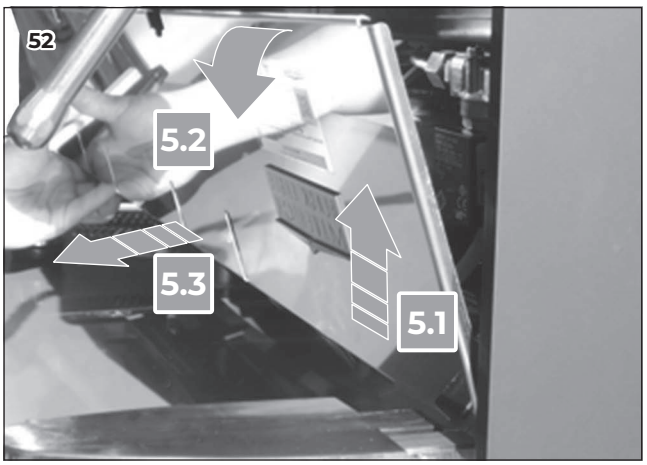
3 Partially unscrew the 2 side screws **E** that hold the front panel in place.



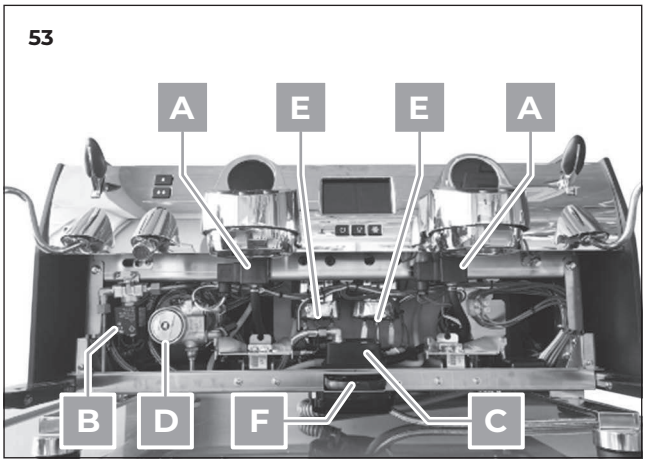
4 Lower the panel to free it from the fixing screws.



5 To remove the panel complete, lift it up, turn it and remove.



6 From the front could access to:
- A Brewing solenoid valve.
- B Auto Filling solenoid valve.
- C T.E.R.S. (Thermal Energy Recovery System).
- D Pump.
- E Coffee boiler thermal fuse.
- F Steam boiler drainage.

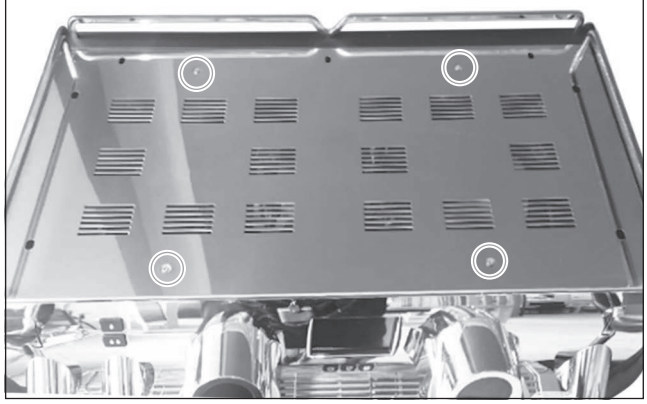


4.2 REMOVAL OF THE TOP COVER

To remove the cup warming tray:

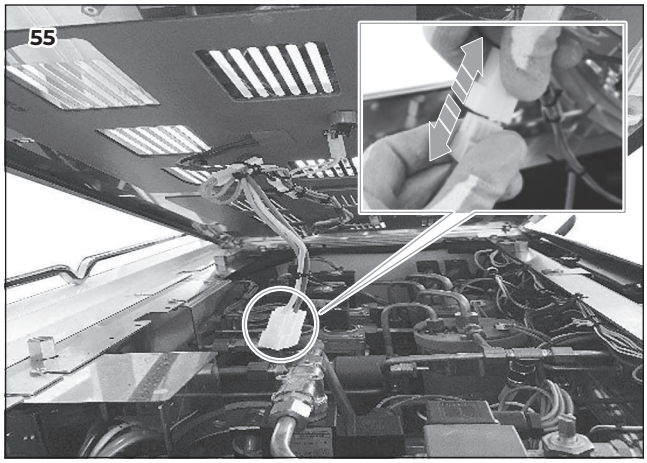
1 Unscrew the 4 screws with a Phillips screwdriver that is located on the cup warming tray.

54



2 Disconnect the temperature probe and power supply of the cup warmer (optional) and remove panel.

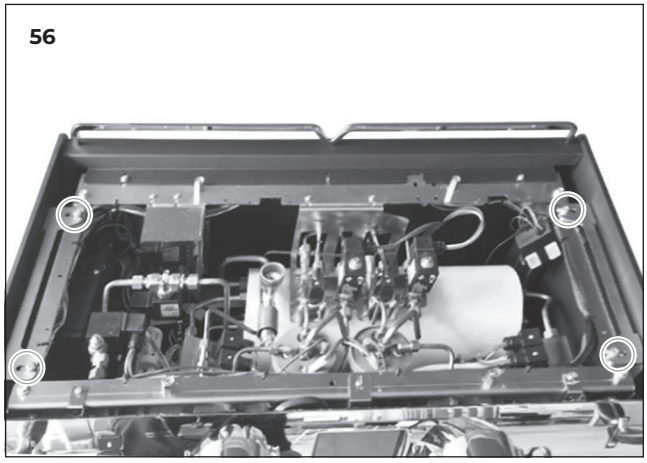
55



4.3 REMOVAL OF THE SIDE PANELS

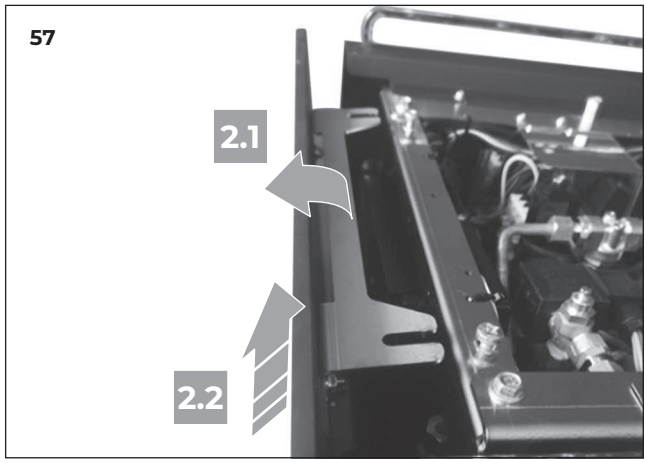
1 Use a Phillips screwdriver simply loosen the 2 screws on each side for two turns to remove the panel.

56



2 Gently remove the side panel of the machine and place it on a surface that does not compromise the integrity of the side panel.

57



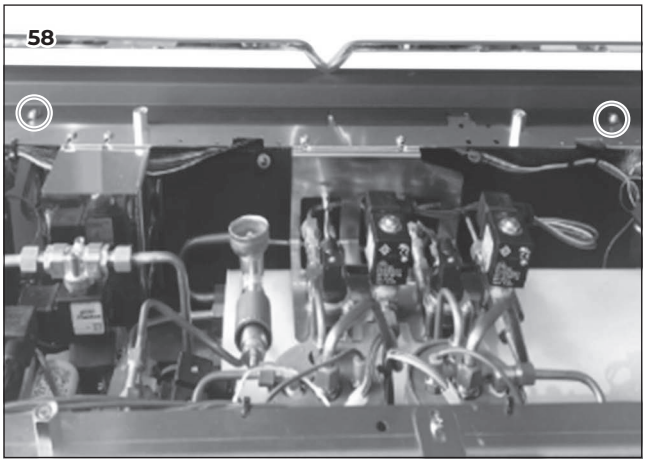
4.4 REMOVAL OF THE REAR PANEL

To remove the back panel:

1 Remove both side panels.

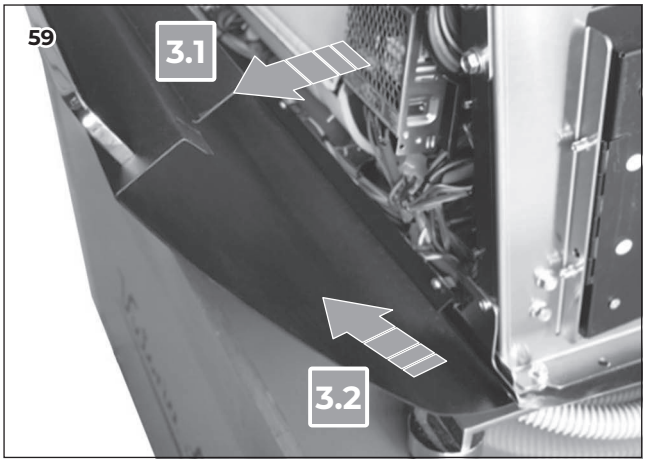
2 Loosen the 2 screws found on the top.

58



3 Carefully remove the panel.

59



NOTE

During reassembly, first insert the rear panel then the side panels to avoid damaging them.

4.5 REMOVAL OF THE GROUP HEAD COVER

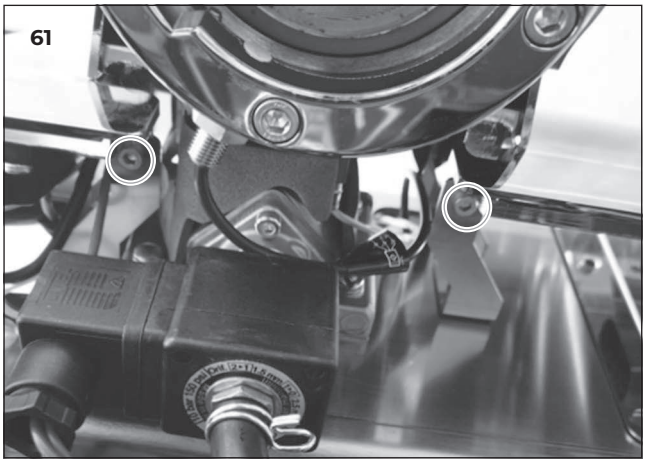
DANGER

If the machine has been turned OFF recently, wear protective gloves.

60

1 Use a 3 mm hex screwdriver to partially unscrew the two screws holding the group cover.

61

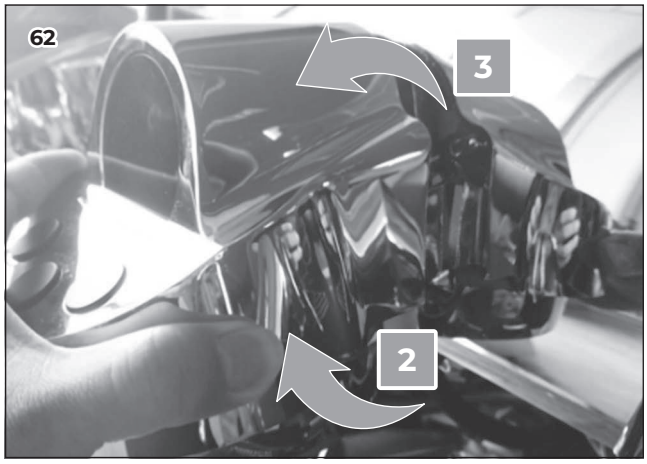


NOTE

The two screws are located on the sides of the coffee valve.

2 Rotate the group cover from the bottom upwards to free it from the lower support.

3 Rotate the group cover from the top downwards to remove it from the machine.



NOTE

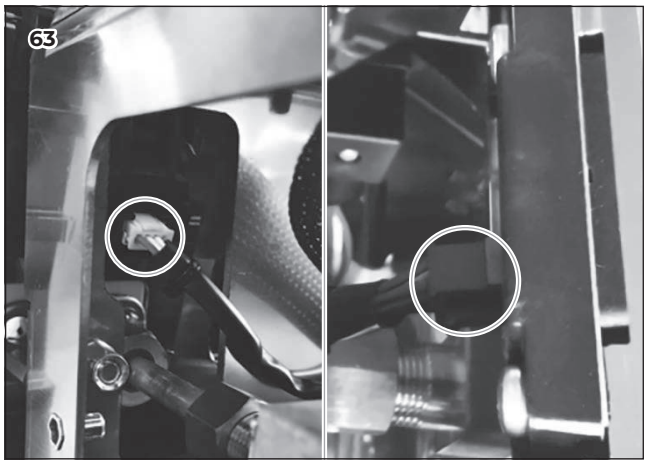
If necessary, disconnect any connections.
For further information about operations on the group covers and service boards, refer to Chapter ELECTRIC COMPONENTS.

4.6 REMOVAL OF THE TOUCH SCREEN

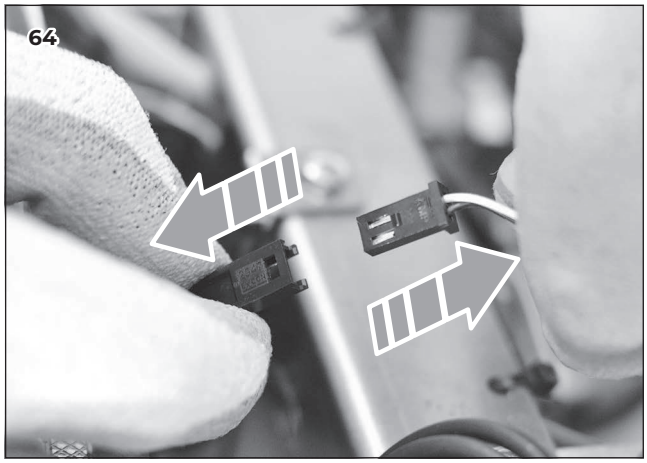
To remove the touch screen, it is necessary to:

1 Remove the side panels, the cup holder surface, the water collection pan, the low er front panel and the group covers.

2 Disconnect the wands electrical connection:
- Left steam wand or Easy-cream connection;
- Hot water wand connection;
- Right steam wand or Easy-cream connection.



3 If there are Easy cream, disconnect temperature probe connections.

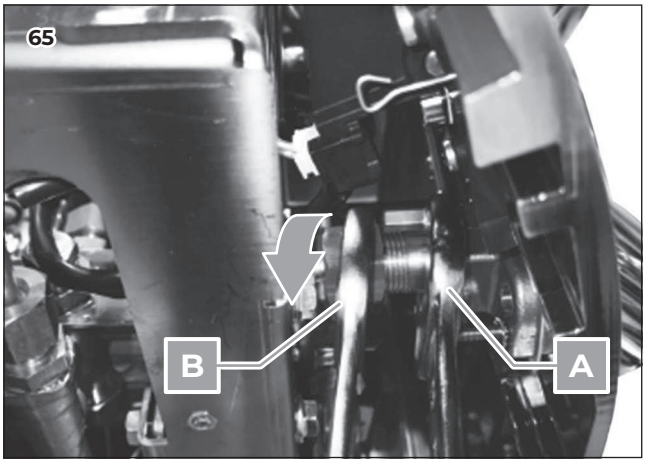


4 Use a 22 mm **A** wrench and a 20 mm one **B**, block the front fitting and unscrew the copper pipe.

NOTE

Proceed for all the wands:
- Left and right steam wand;
- Hot water wand.

65



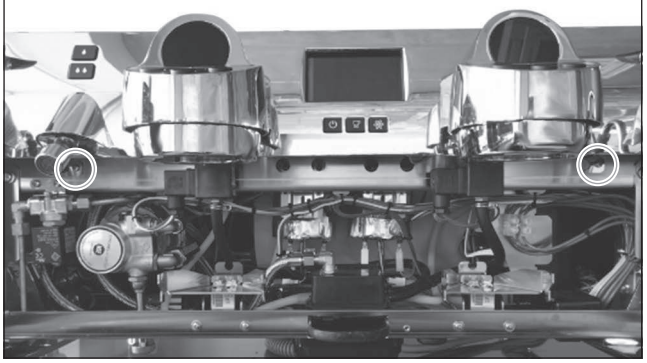
5 Use a Philips screwdriver, remove the screws fixing the front high panel, positioned above and in front of the machine.

66

NOTE

There are 4 screws for 2 groups machine, or the 6 screws for 3 groups machine.

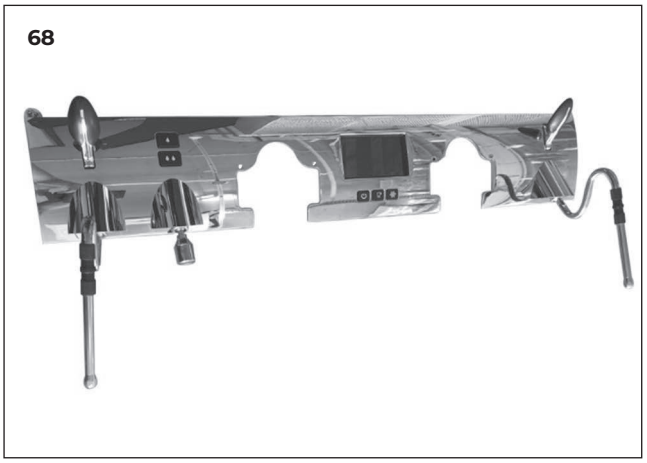
67



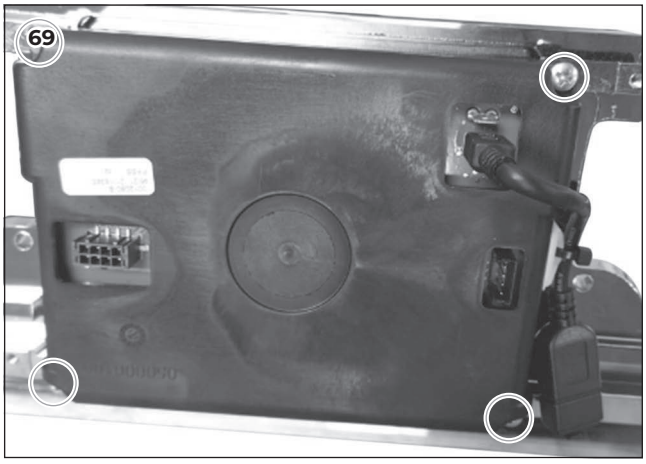
6 Disconnect the touch screen electrical connection.

7 Remove the front panel.

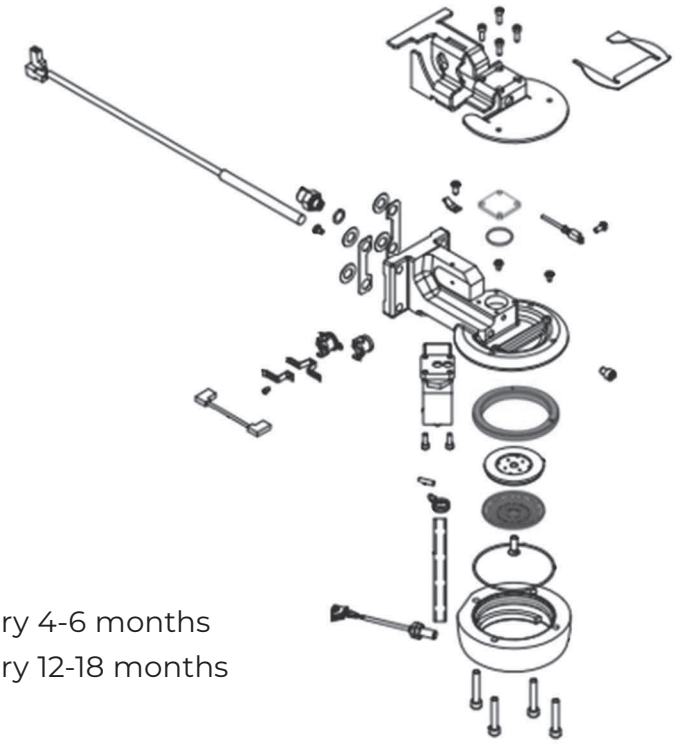
68



8 Use a Philips screwdriver, remove the four screws fixing the touch screen cover.



5 INFUSION UNIT












Replace every 4-6 months

Replace every 12-18 months

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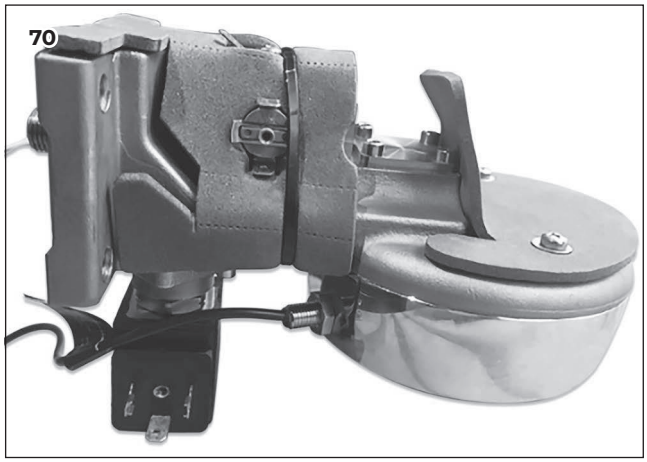
The Brewing Group unit of the **BLACK EAGLE MAVERICK** is have been redesign compare with T3 machine.
It's different shape and lighter weight allowed to achieve temperature stability and a great flexibility.
The temperature of the group is ensured by the presence of a 300 W heating elements cartridge and temperature probe located on the upper side.

70

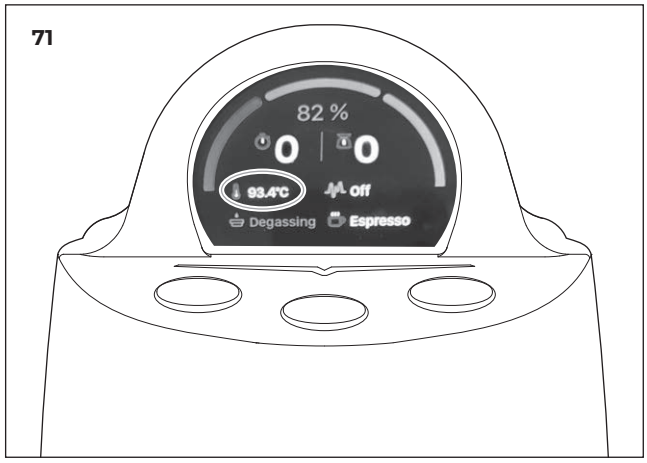


Once the machine is turned ON, the temperature of the group can be viewed on the individual Group Head screen.

NOTE

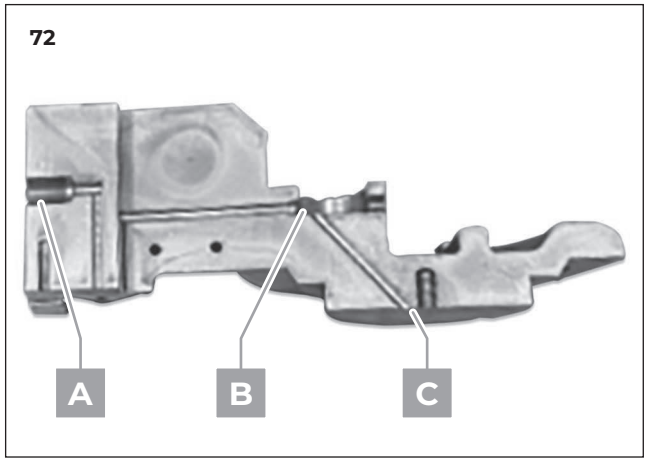
The screen can only display the temperature of the groups.

71



The brewing group unit section shows:
- A Water supply into the group.
- B Pre-infusion chamber.
- C Water outlet.

72



The brewing group is equipped with a stainless steel diffuser, a shower screen and underpan gasket.
The diffuser have different thickness to achieve the best contact between shower screen and coffee cake.

The standard machine comes with 3 mm stainless steel diffuser.
4mm or 5mm diffuser are also available.

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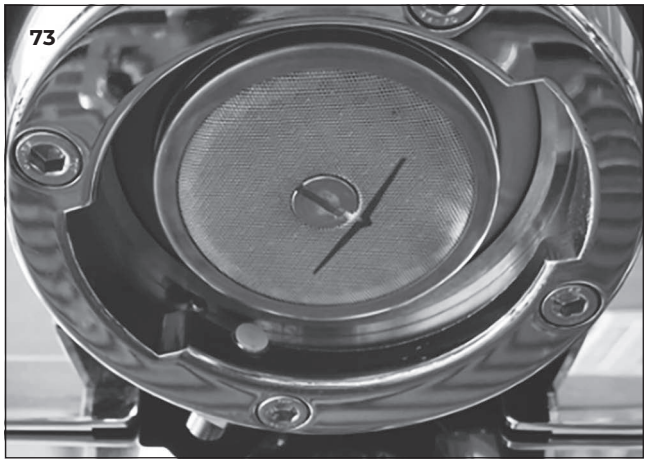


The shower screen is the interface between the coffee and the machine, preventing the coffee from rising inside the machine.

The Shower screen and diffuser to get dirty and must be removed and cleaned at least weekly and replaced periodically.

74

The brewing group gasket seal the filter holder to the group head.

BLACK EAGLE MAVERICK is using long life group gasket.

75

Since the group gasket is exposed to high temperatures, coffee and heavy usage, it tends to deform and lose elasticity then gasket must be replaced regularly.

76

5.1 REMOVAL OF SHOWER AND GASKET

DANGER

If the machine was turned OFF recently, protect yourself with thermal insulation gloves.

77

To remove the shower screen and diffuser it is enough to remove the central screw under the group unit.

78

To change the gasket use an awl or a slim flat-head screwdriver and at first remove one edge of the gasket and then remove it entirely.

NOTE

If the group is worn out just insert shims under the gasket to reduce the stroke of the filter holder.

79

5.2 REPLACING THE GASKET IN THE PRE-INFUSION CHAMBER

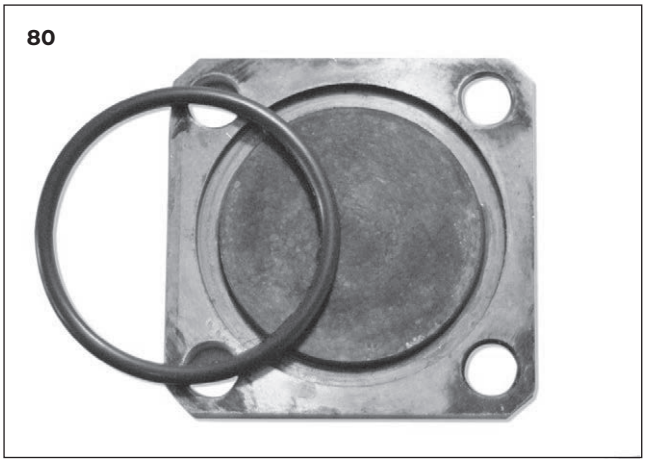
The pre-infusion chamber is sealed by a cover fixed with four hex screws.

Under the cover there is a gasket that should be changed annually, in fact like all seals, it may deteriorate in time and lose elasticity.

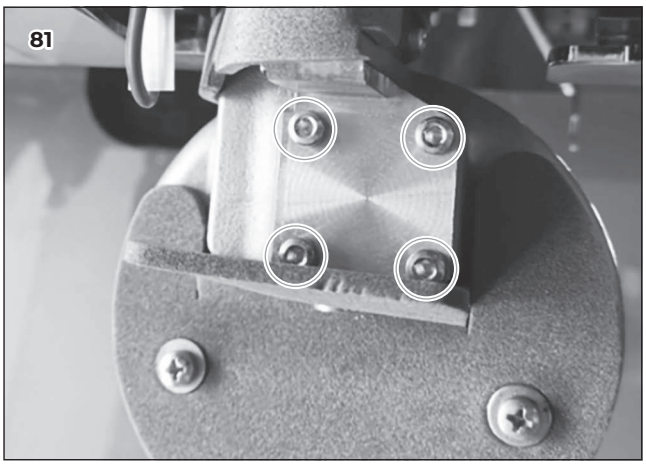
WHEN TO REPLACE IT
The gasket must be replaced annually or when there is a leak from the pre-infusion chamber.

HOW TO REPLACE IT
Remove the 4 hex screws with a 2,5 mm Allen key.

80



81



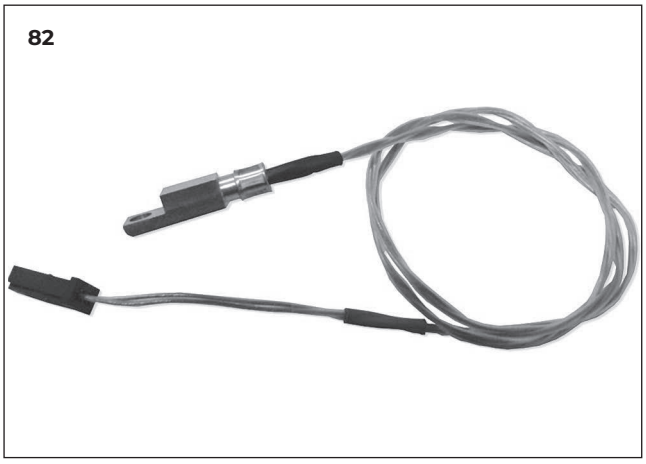
5.3 REMOVAL OF THE TEMPERATURE PROBE AND UNIT HEATING ELEMENTS

The group is heated with a 300 W heating elements cartridge that is controlled directly by the control unit according to the needs detected by the temperature probe.

WHEN TO REPLACE THE PROBE
In the case where the screen shows the message "Error probe unit X" it may be necessary to change the probe which detects the temperature of the group.
The likely reference values of the probe unit operating at room temperature (22°C) are 1.08 kOhm and 1.37 kOhm at 90°C.
If the values are extremely distant from these values it is necessary to replace the temperature probe.

HOW TO REPLACE
To remove the temperature probe simply disconnect the probe from the extension that connects to the sensor card and unscrew the screw that holds it in place using a Phillips screwdriver.

82



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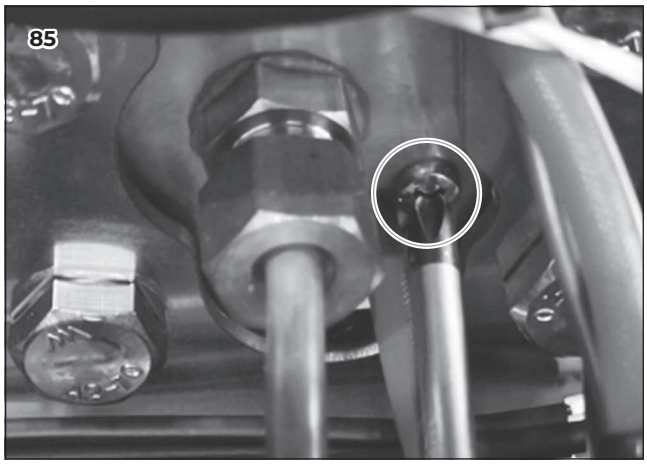
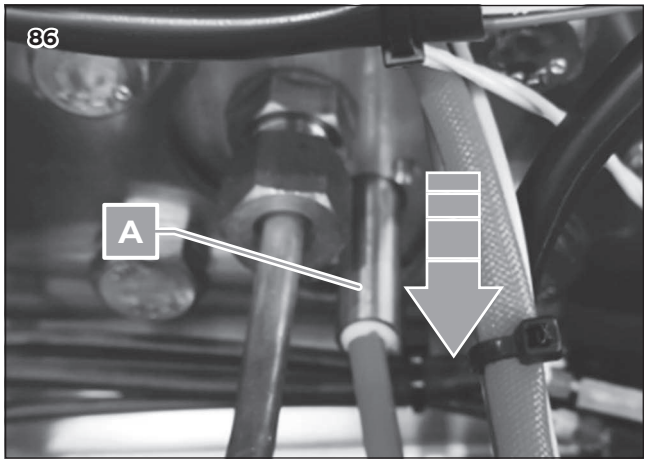
THE HEATING ELEMENTS PROTECTOR
Should an abnormality occur in the manual reset guard would interrupt the power to the heating elements once the temperature reaches 135°C. If the circuit is opened by the guard, test the heating elements.

Typical values of the heating elements at room temperature are approximately 1,5 Ohms.

HOW TO REPLACE THE HEATING ELEMENTS
To remove the heating elements cartridge initially remove the screw that holds it in place with a Phillips screwdriver. The screw is located in the rear wall of the wall that holds the group. It is then necessary to remove the corresponding cup warming modules beforehand.

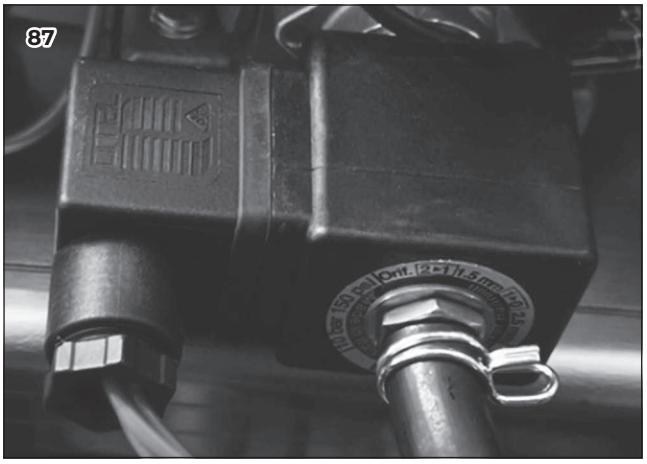


Pull out the cartridge **A** and replace it if necessary.



5.4 COFFEE VALVE

Each unit is provided with a three-way valve called coffee valve.
It is a solenoid valve that is **normally closed** and opens when it received a command to dispense coffee.
When this valve is closed the liquid that remains in the hydraulic circuit is pushed by pressure towards the third valve passage, connected to the wastewater collector.
In this way the water that was under pressure in the group and which is unable to pass through the coffee tablet, is pushed towards the third valve passage, drying the coffee tablet.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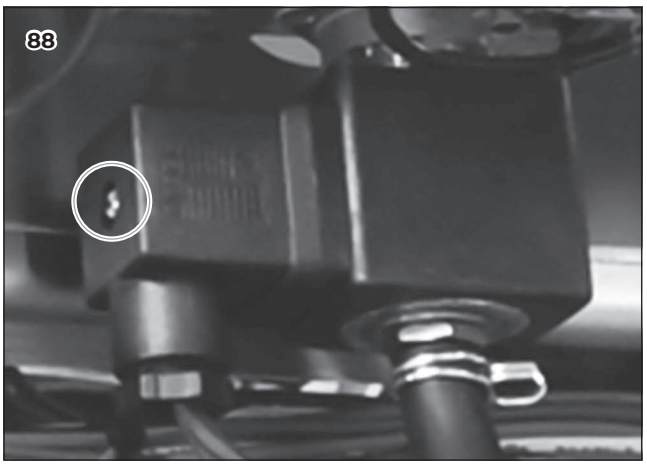
TYPICAL PROBLEMS
If there are problems related to a very wet coffee tablet, there are three possibilities to be examined:

- The third passage of the valve is obstructed, therefore the final suction is less than it should be.
- Shower screen and diffuser are blocked because of poor machine cleaning.
- The group is constantly dripping, thereby wetting the tablet.

HOW TO REPLACE THE COFFEE VALVE
To remove the coffee valve after having removed the front panel, it is necessary to:

1 Remove the screw of the head as shown in figure.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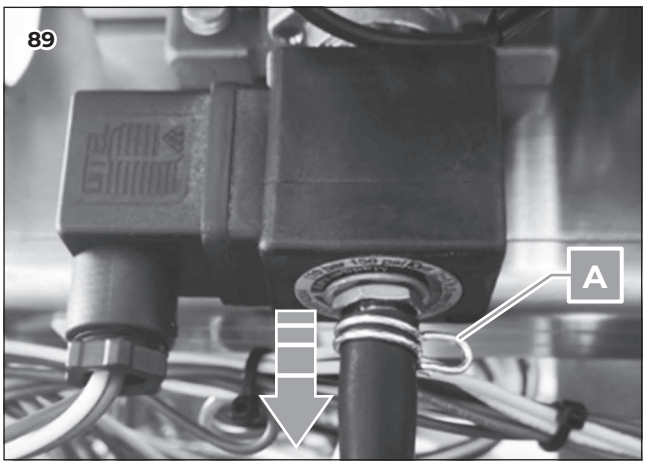
2 Remove the cable holder **A** using pliers.

3 Disconnect the Teflon tube.



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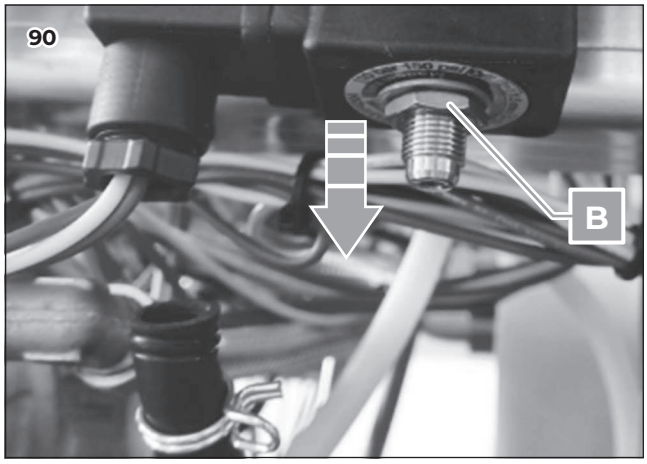
4 Remove the fixing nut **B** of the head with a 14 mm wrench.

5 Slide out the coffee valve head.

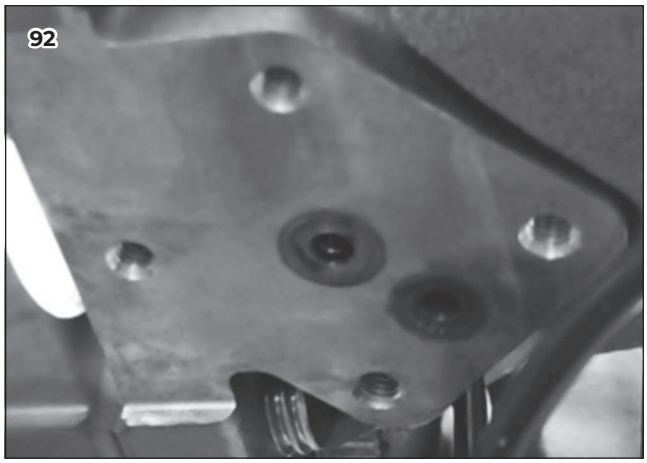


6 Use a 3 mm Allen key wrench to remove the two screws that fix the head to the group.

Place paper towels under the valve to remove the head of the coil.

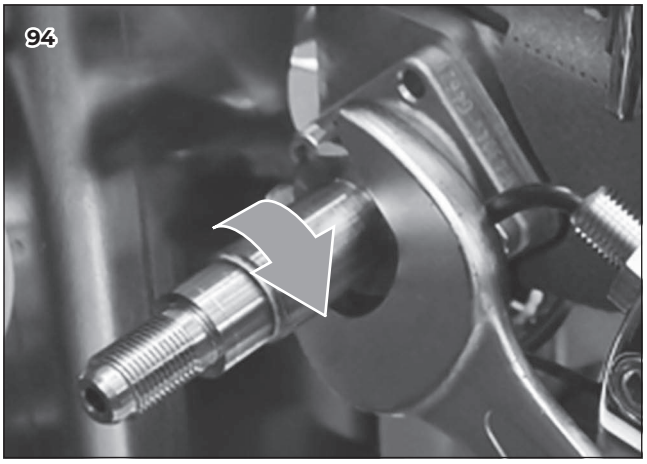
Inspect the contact points that can often be filled with limestone.

Clean using a suitable tool.



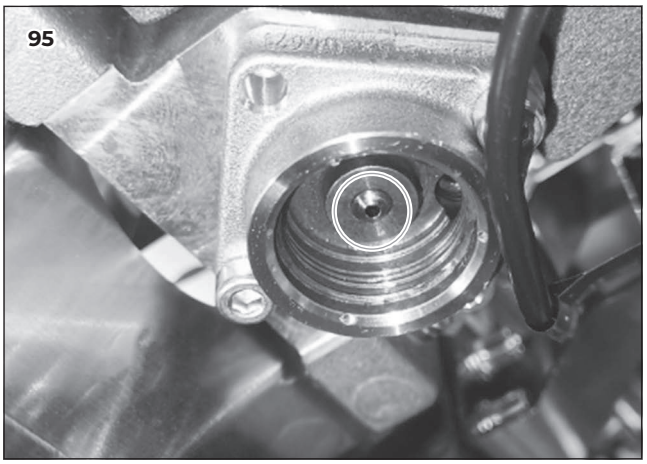
HOW TO INSPECT THE COFFEE VALVE PISTON COMPARTMENT

To remove the valve piston housing / solenoid tube with wrench 22 mm.



Check the orifice condition as indicated.

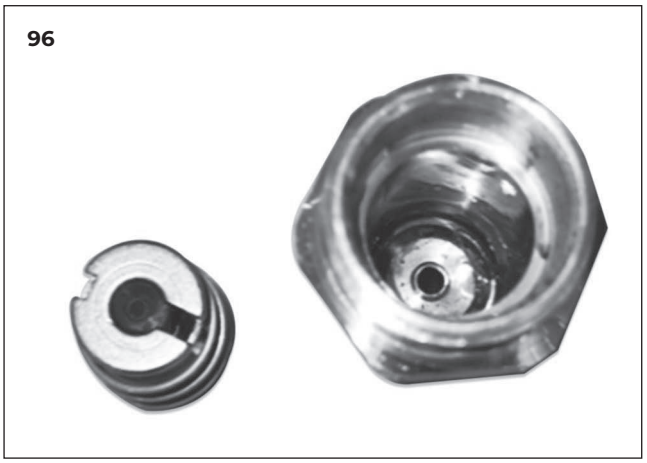
To clean the compartment, ensure no limescale presence.



To check the ruby condition.

To check the piston spring functionality.

Replace the valve when necessary.



NOTE

In the presence of oily residues properly instruct staff using the machine to perform regular deep cleaning.

5.5 FILTER HOLDER PRESENCE SENSOR

The filter holder presence sensor informs the control unit about the presence, or not, of the filter holder in the infusion group.
In this way it permits the auto-purge feature. It is visible in the back of the group head and comes out in the inner of the group head.

NOTE

When the filter holder sensor is functioning, an orange light means the presence of the filter holder, while no light means its absence.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PROBLEMS
The sensor could not work properly.
Example:

- The light is always orange, as the sensor detected the filter holder presence, also in absence of it: sensor in short circuit, needs to be replaced.
- The light is mostly OFF, and it is on only with some movement of the filter holder. It could mean that the sensor is not set properly: needs to be moved closer.

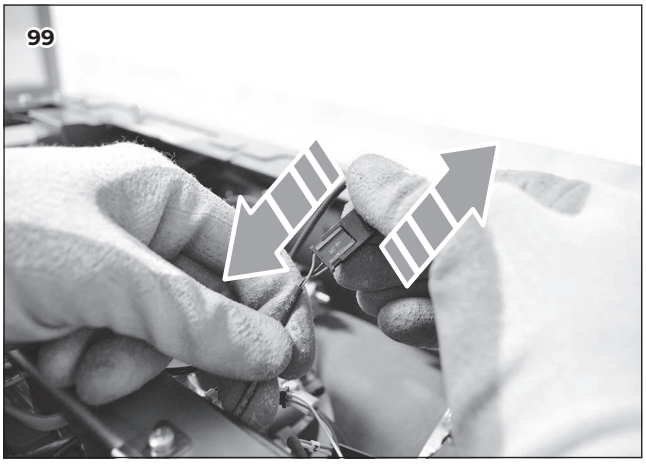
REMOVAL OF THE FILTER HOLDER PRESENCE SENSOR
To remove the sensor, it is necessary to:

1 Remove the side panels, the cup holder surface, the water collection pan, the lower front panel and the group cover.

NOTE

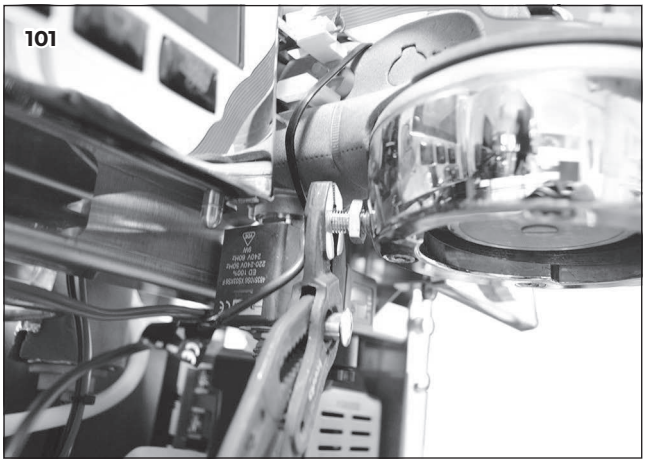
See chapter REMOVAL OF THE EXTERNAL SURFACE.

2 Unplug the sensor wire from its extension.



3 Use a 13 mm wrench, loosen the sensor fixing nut.

4 Use an adjustable wrench, slide out the sensor.



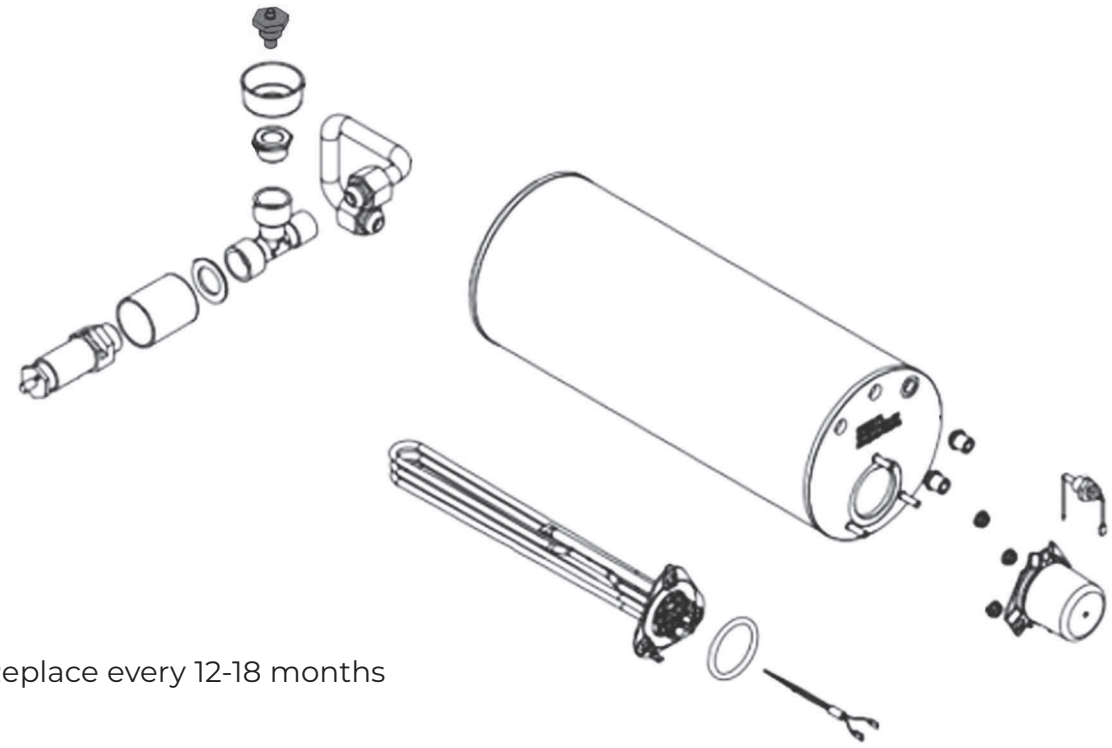
DANGER

When the filter holder sensor is reinserted, make sure it is aligned with the inner of the group head and verify the proper functioning.

NOTE

To move the sensor closer, in order to align with the inner of the group head, follow steps 3 and 4 of the removal procedure and, when the position is fine, tighten the sensor fixing nut.

6 STEAM BOILER








■ Replace every 12-18 months

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DANGER

Before proceeding with the operations described in the chapter make sure that the machine is turned OFF and unplugged from the mains. Discharge any residual pressure present in the steam circuit.

WARNING

Before emptying the boiler, disconnect the water inlets inside the water circuit by turning OFF the inlet tap and disconnecting the tube. These operations are necessary to avoid any water leakage inside the machine that may cause damage.

WARNING

Every time you work directly with the heater it is important to ensure that the internal pressure is zero. Completely remove the water inside for operations that require it.

6.1 TO RELEASE STEAM BOILER PRESSURE

1 Enter to the Menu.

2 Click Technical settings.

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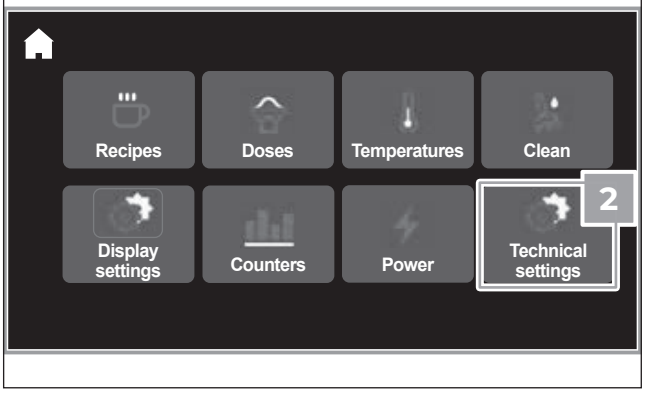

3 Click Diagnostic.

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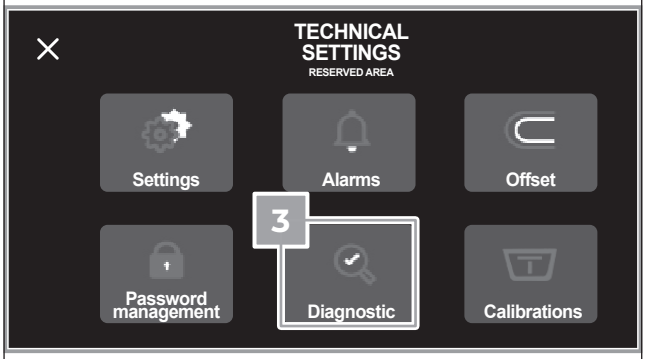

4 Click Boiler Filling Valve, the steam will release from the steam wand and auto stop when completed release steam boiler pressure.

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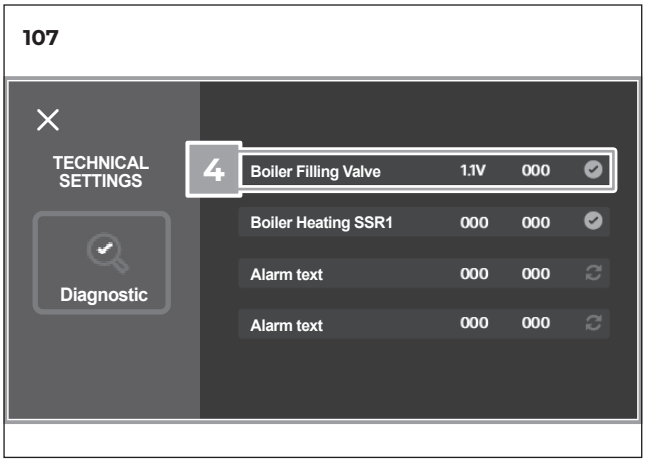

To empty the steam boiler, proceed as follows:

1 Remove the work surface and loosen the screws to remove the side panel.

2 Close the pump tap **A**.

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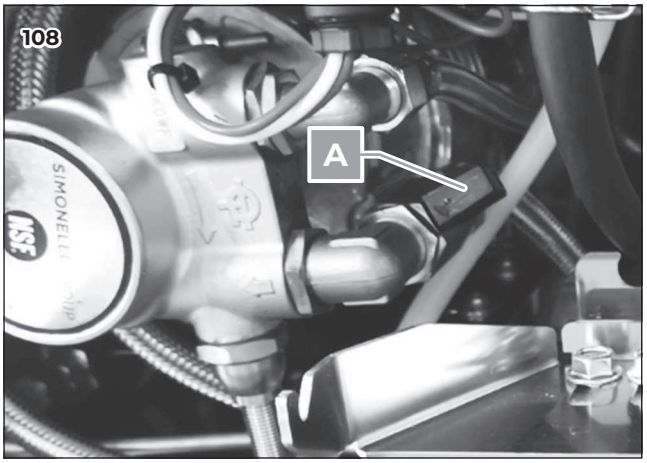

3 Close the manual valve **B**.

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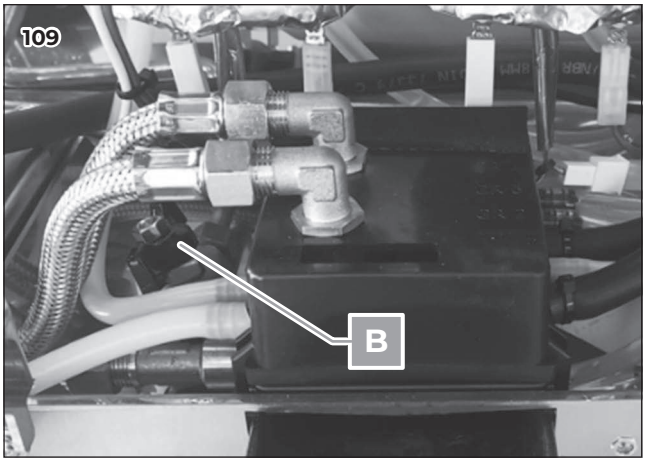
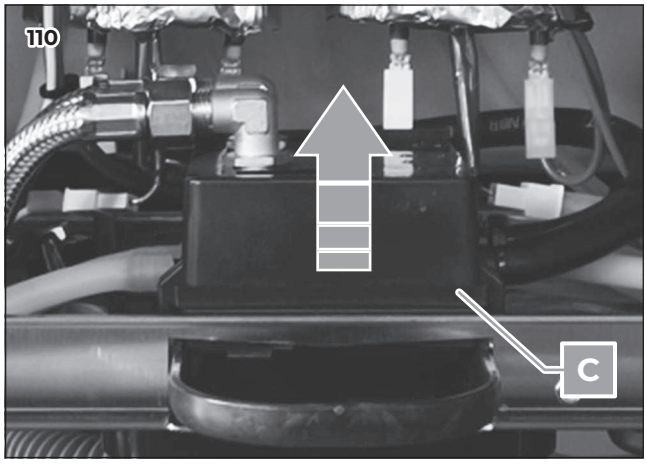
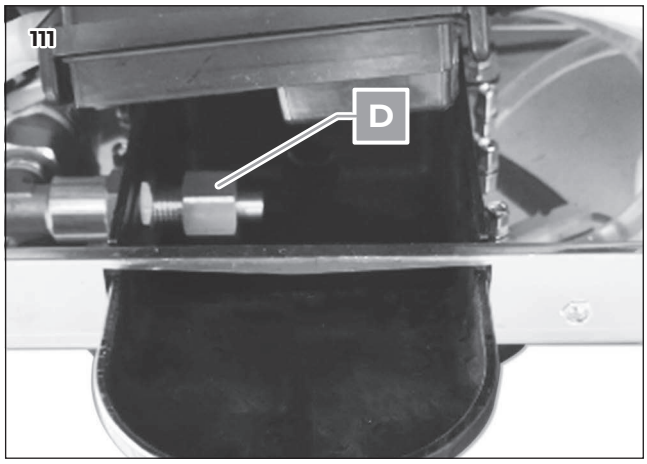


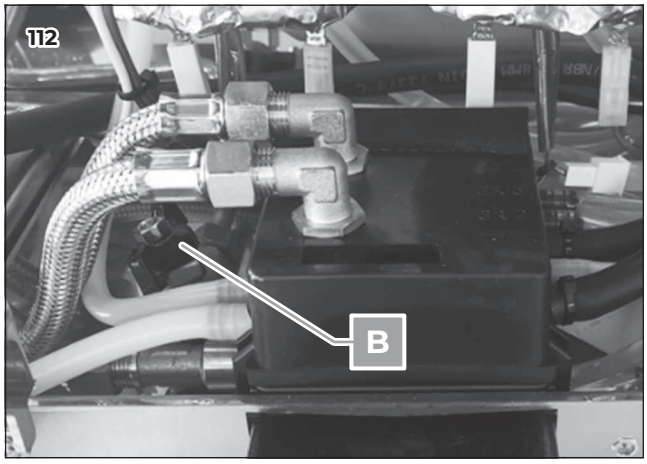
4 Once you see that there is no more steam and pressure in the boiler, lift the T.E.R.S **C** on the drain box.



5 With a 17 mm wrench, unscrew the bolt **D** inside the drain box.



6 Open the manual valve **B** let the water flow out completely.



WARNING

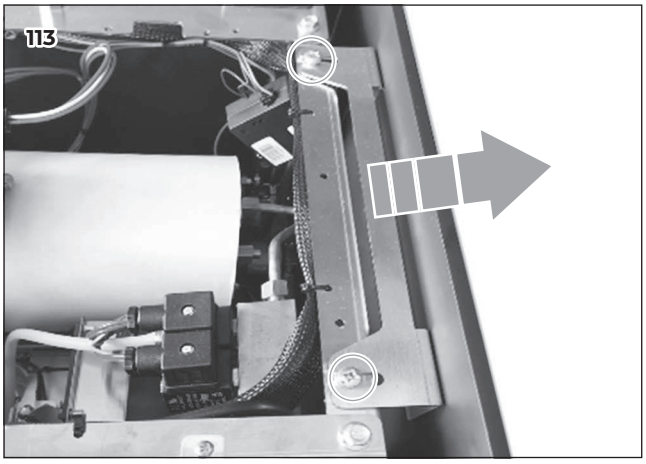
When completed empty boiler, REMEMBER to tighten the bolt inside the drain box and to open the pump tap.

6.2 ACCESS TO THE HEATING ELEMENT

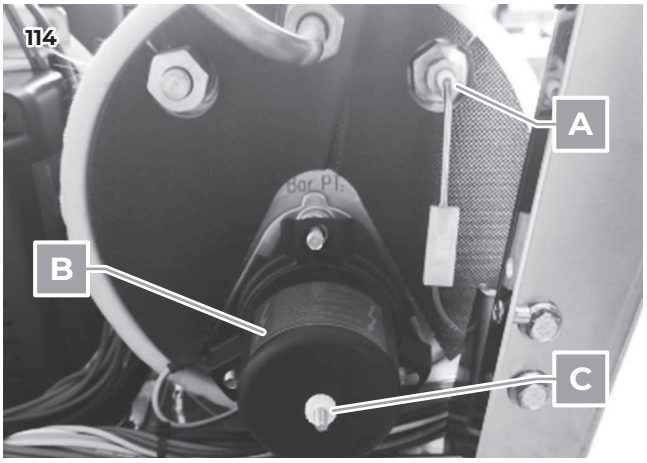
To access the heating elements:

1 Remove the cup warmer.

2 Loosen the two Phillips screws on the upper right side carefully remove the side.



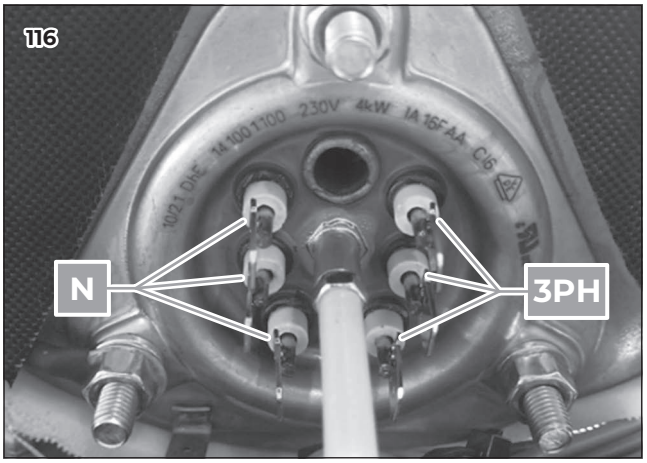
The visible parts are:
- A The level probe.
- B The cover of the resistor connection terminal.
- C Small white nut of the cover



To access the connection terminals, simply unscrew by hand the small white nut in the middle of the cover.

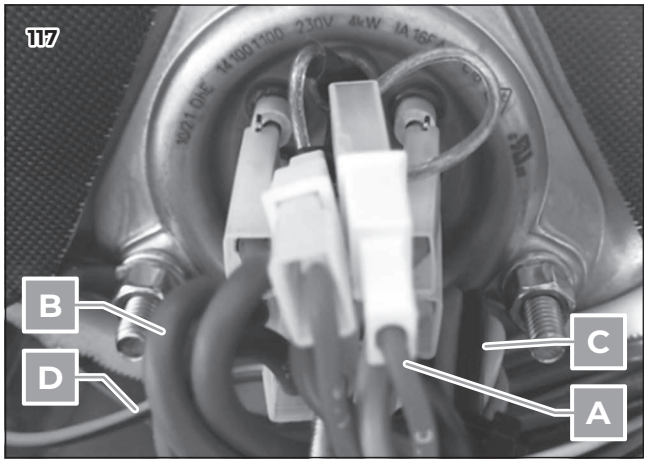
The visible parts after removed the cover are:
- D Thermal-fuse 216°C.
- E Three phase connected with heating element.

The heating element of the MAVERICK has the following powers:
- 4000 W for 2 groups machine;
- 4500 W for 3 groups machine.



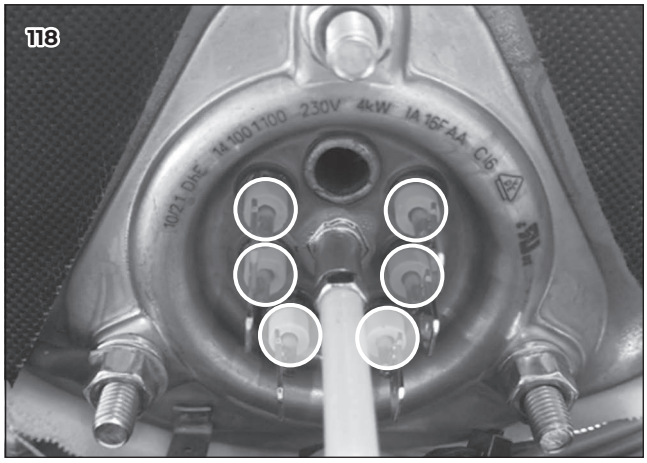
There are three heating elements, one for each phase **3PH**, therefore, in the terminal box we find the neutrals connected in parallel **N** and the three phases which arrive to each different element.
Since the steam boiler is equipped with a safety thermo-fuse.

A The red wires, connections of the thermo-fuse.
B The blue wires, connections of the neutrals.
C Grey, brown and black wires are connection of the phases.
D The green-yellow wire, connection of the ground.



The three heating elements give typical values:
- 2 groups: 42 ± 3 Ohm;
- 3 groups: 36 ± 3 Ohm.

To check the Ohms value place the tester probes on the elements of the same colour as shown in the figure.



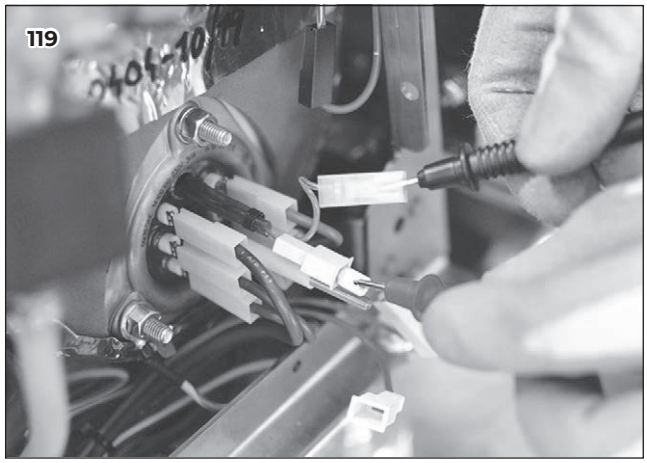
6.2.I REMOVAL OF THE SAFETY THERMO-FUSE

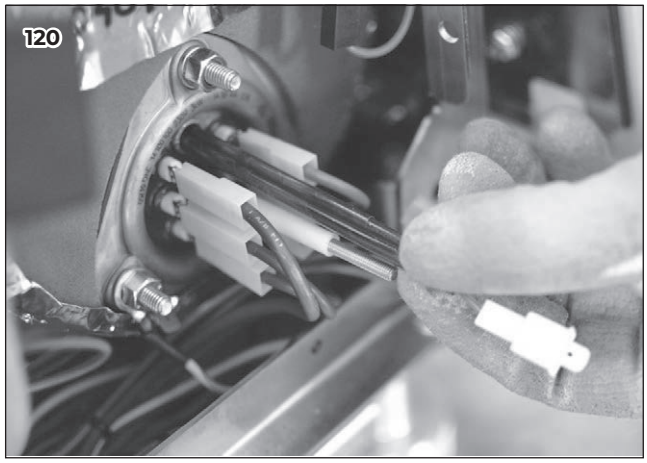
The safety thermo-fuse is connected in series with the control unit and opens the electrical circuit once the temperature limit of 216°C in the steam boiler has been exceeded it will cause machine OFF.

NOTE

If the machine does not turn ON, check the continuity of the safety thermo-fuse.

If there is not continuity, disconnect, pull out and replace the thermo-fuse.

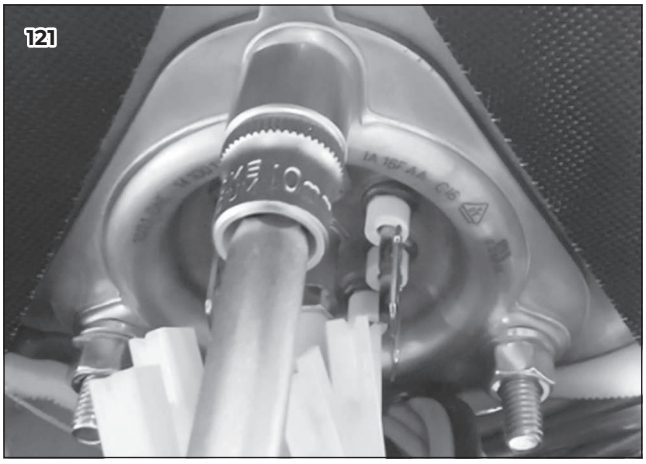




6.3 REMOVAL OF THE HEATING ELEMENT

If you need to remove the heating element to be cleaned from limestone or replace.
Proceed as it follows:

1 Disconnect all the wires and pull out the safety thermo-fuse.
2 Use a 10 mm wrench or a 10 mm socket wrench to remove the 3 nuts.
3 Remove the ground connection and the 3 washers.



4 Remove the heating element out of its slot.

NOTE

Each time you replace the heating element is also necessary to change the Viton O-ring that seal it with the boiler because it is a wear and tear part, therefore the component must be ordered together with the heating element.

6.4 REPLACEMENT OF THE LEVEL PROBE

The water inside the steam boiler is maintained at a constant level using a level probe inserted inside the boiler.
This probe is connected to the electronic control unit that continuously detect the water level through the probe.
Being always exposed to high temperatures and steam/water it is subject to encrustations which can inhibit operations.

WHEN TO INTERVENE

- In case it is verified that there are no problems on the probe you can easily access the component and perform careful cleaning with abrasive or descaling agents.
- Make sure that the Teflon coating of the probe is not damaged. If it is, there would be a loss of steam and electric insulation and the probe should be replaced.

To remove the probe simply disconnect the red wire **A** and unscrew the bolt **B** with a 17 mm wrench.

NOTE

When replacing the probe it is necessary to cover the threads with Teflon tape or liquid sealant and to tighten it not too much.

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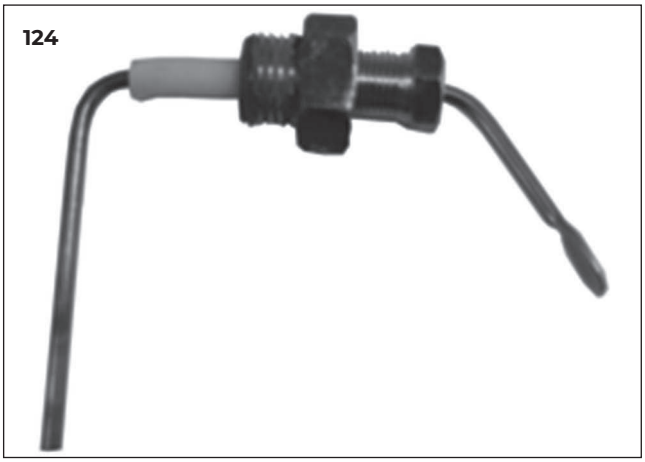

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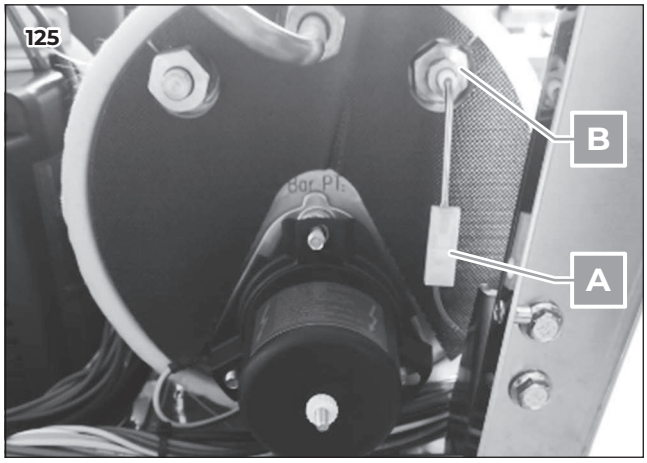

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6.5 VACUUM VALVE

The vacuum valve ensures that air enters into the steam boiler during the machine cooling phase to avoid negative pressure inside the steam boiler.

WHEN TO REPLACE
You can assume that there are problems with the vacuum valve when the moving piston **A** stucked.

In these cases, the valve is closed and is locked in this condition.

If the valve blocked open because of limestone the signs would be:
- Continuous slight whistling sound coming from the valve.
- Condensation drops near the valve.

NOTE

We recommend to replace the vacuum valve annually to ensure proper function and excellent sealing.

WARNING

Operation to be carried out with the pressure in the boiler at zero (0 bar).

HOW TO REPLACE
Using a 19 mm cup hex wrench unscrew the valve from its housing and 21 mm wrench hold on the fitting as picture shown.

When inserting the new one, coat the threads with Teflon tape or with a few drops of Loctite.

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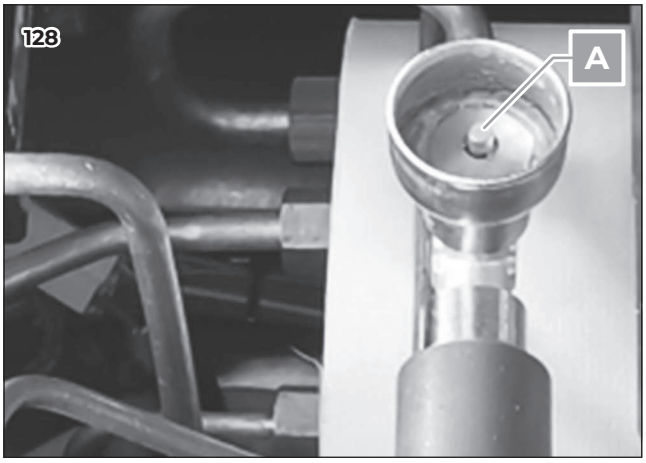

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6.6 SAFETY VALVE

The steam safety valve **A** is made to open at the pressure of 3 bar.

WHEN TO REPLACE
For safety reasons each time the valve comes into **operation it should be replaced** to ensure perfect operation.

WARNING

Operation to be carried out with the pressure in the boiler at zero (0 bar).

HOW TO REPLACE
To replace the safety valve, proceed as it follows.

1 Use a 17 mm wrench keep blocked the assembly comprising the safety valve and anti-suction valve and use a 20 mm wrench disconnect it from the copper pipe.

2 Use a 17 mm wrench keep blocked the assembly and use an adjustable clamp unscrew the valve.

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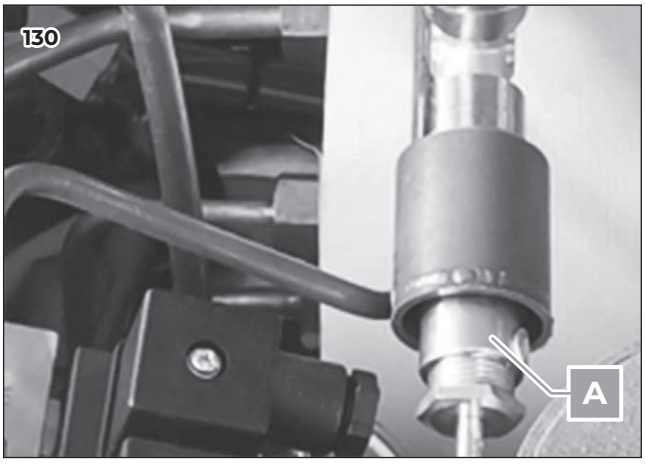

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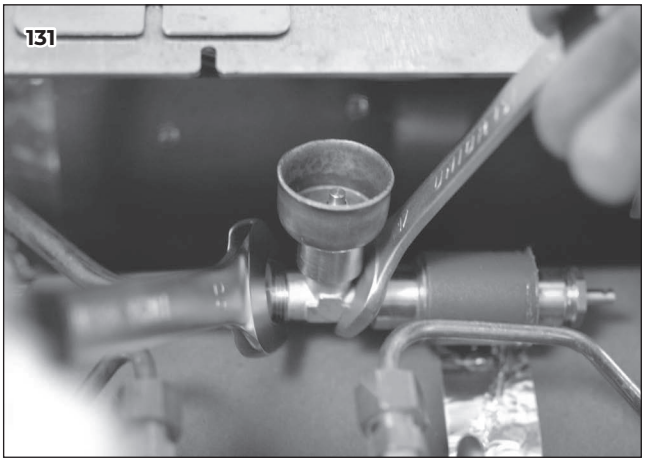

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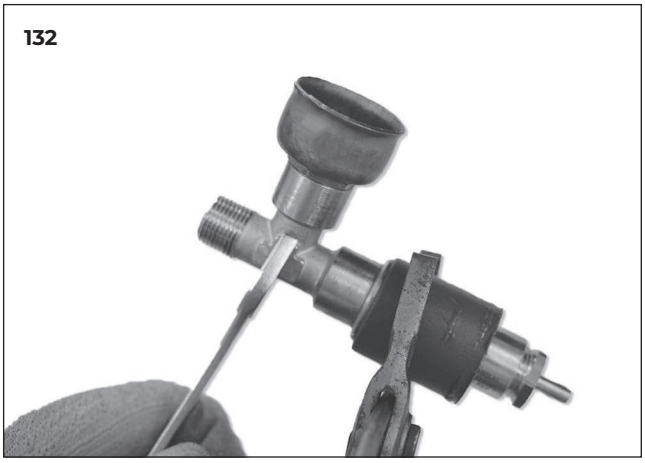
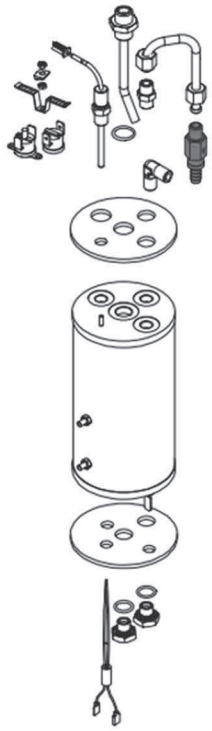


7 COFFEE BOILERS



■ Replace every 12-18 months

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DANGER

Before proceeding with the operations described in the chapter make sure that the machine is turn OFF and unplugged from the mains. Discharge any residual pressure present in the steam heater.

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7.1 ACCESS TO COFFEE BOILERS

7.1.1 ACCESS TO THE UPPER PART OF THE HEATER

To access the upper part of the coffee boilers, remove the screws of the cup warming modules.

NOTE

See chapter REMOVAL OF THE EXTERNAL SURFACE.

7.1.2 ACCESS TO THE BOTTOM OF THE COFFEE BOILER

To access the bottom of the coffee boiler it is necessary to remove the work surface and the panel placed on the groups.

NOTE

See chapter REMOVAL OF THE EXTERNAL SURFACE.

NOTE

To operate safely when replacing parts of the boiler, it may be necessary to empty the boiler completely. Before working on the machine insert the "SWITCH OFF CLOCK ENABLED" mode. Turn OFF the machine until the OFF message is displayed. Hold the cleaning button pressed until the words "SWITCH OFF CLOCK ENABLED" appear. At this point you can operate freely.

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7.2 COFFEE BOILERS

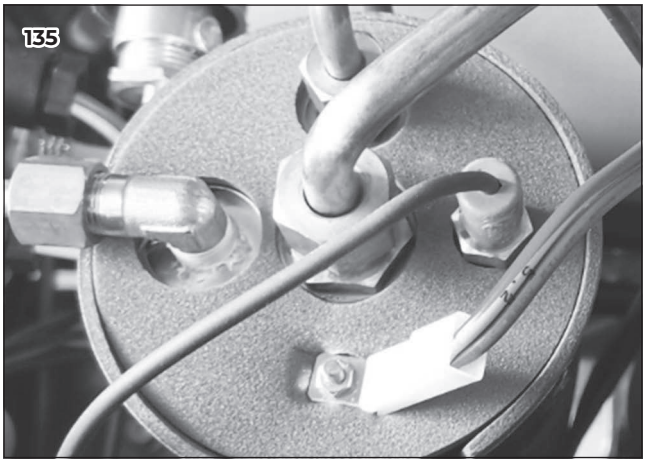
There is a 0.7 litre coffee boiler in each unit in the **T3 Genius** machines.

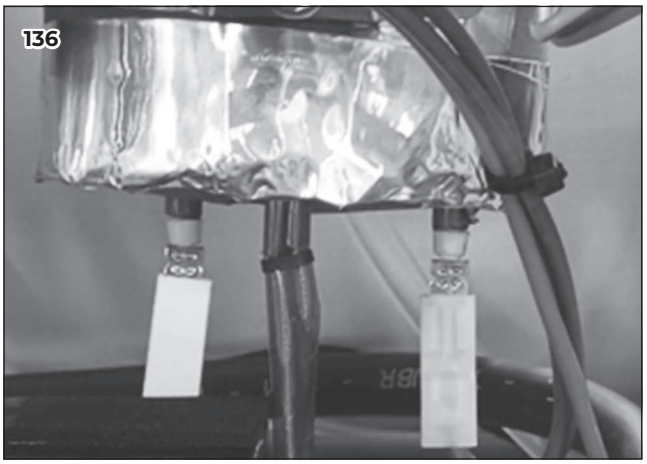
The consumption of each of these coffee boilers is 1000 W.

The coffee boilers are equipped with a temperature probe that communicates with the electronic board and an expansion valve (16.5 bar) to allow the release of excess water expansion formed during the heating phase.
A thermal fuse is connected in series to open the circuit if the safety of the machine is compromised by excessive overheating.
The thermal fuse opens the circuit once the temperature limit of 167°C is exceeded.

NOTE

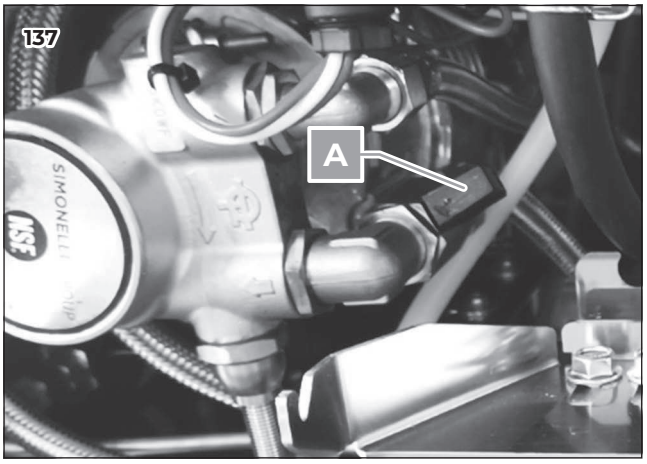
Thermal fuse is unable to reset, have to replace once open circuit.



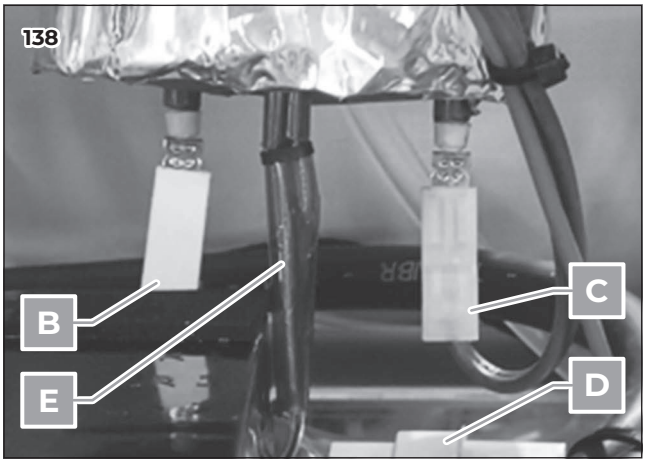


7.3 REPLACE THE COFFEE BOILER

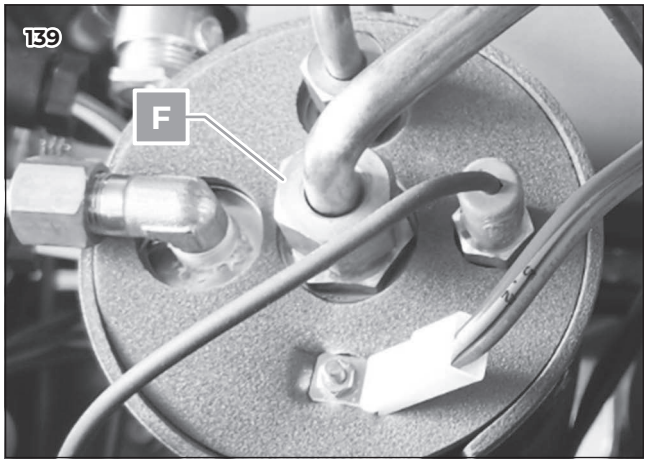
1 Turn OFF the water using the tap **A** on the pump.



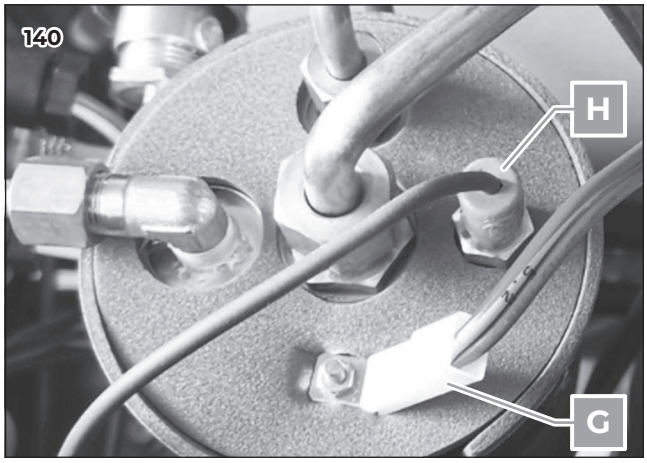
2 Disconnect cable **B**, **C** and **D** from heating element and thermal fuse **E**.



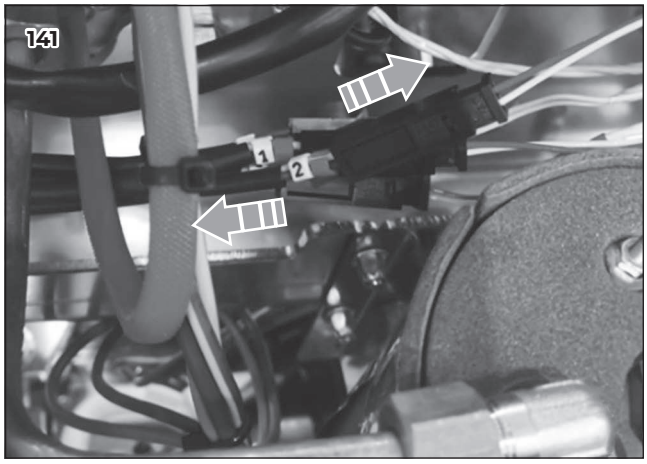
3 Use a 17 mm wrench to remove pipe from flow meter **F**.



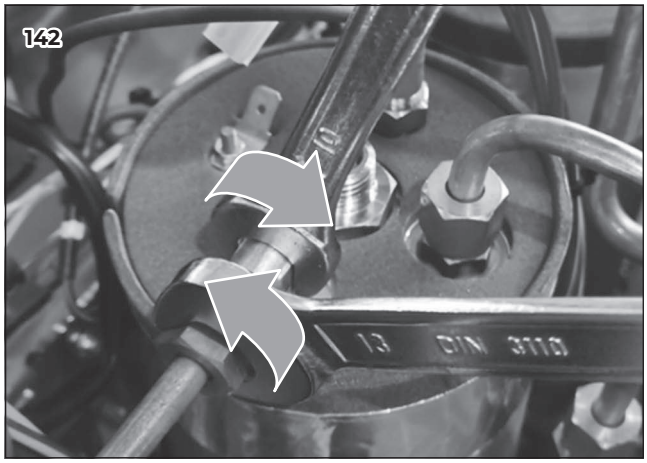
4 Disconnecting the ground **G**.
5 Use 12 mm wrench remove temperature probe **H**.



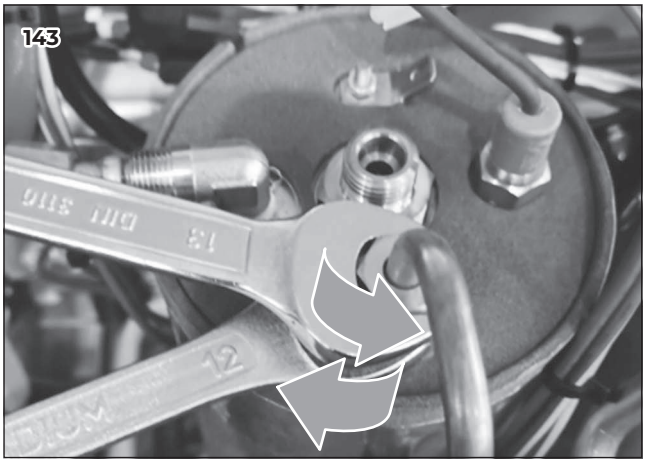
6 Disconnect the temperature probe connection accordingly when necessary.



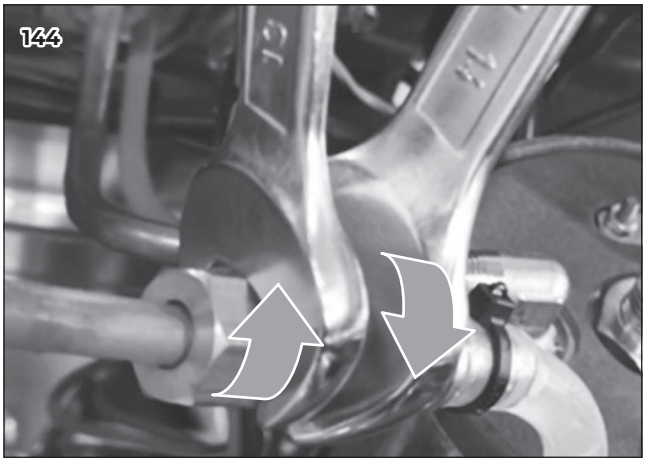
7 Use 13 mm and 10 mm wrench to remove the piping to group head.



8 Use 13 mm and 12 mm wrench to remove expansion valve piping.



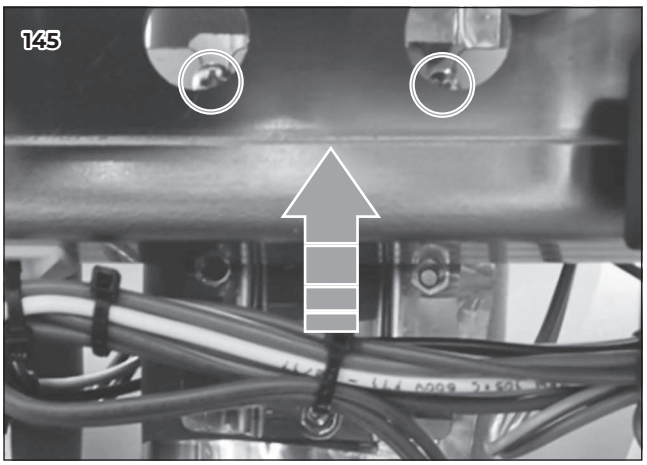
9 Use 13 mm and 14 mm wrench to remove expansion valve from the piping.



NOTE

Expansion valve is recommended replace annually.

10 Use a Philip screwdriver to loose the 2 screws and lift up the coffee boiler from top.



NOTE

After replacing the new coffee boiler proceed to refill the coffee boiler by activate filling boiler procedure: “SWITCH OFF CLOCK ENABLED”.

7.4 TEMPERATURE PROBE

The temperature probes of the coffee boilers are connected to T3 temperature control board located on the right side of the machine.

T3 temperature control board is connect to main control board via a 26 way flat cable.

In this way you can access the probes more quickly and independently.

Each probe is equipped with an extension, so you can replace the probe without accessing the T3 temperature control board.

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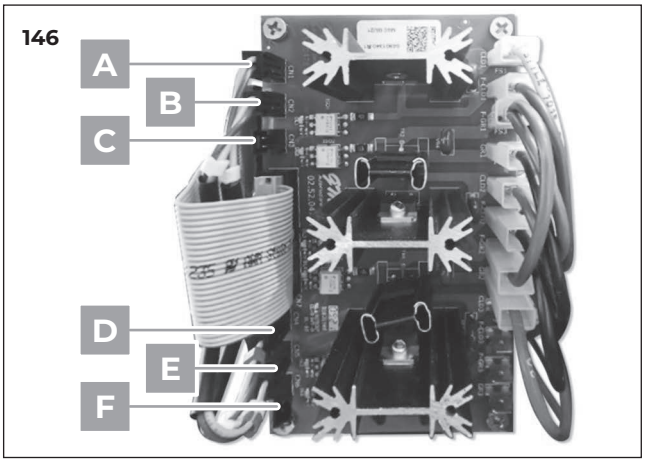

A G1 temp.
B G2 temp.
C G3 temp.
D CB1 temp.
E CB2 temp.
F CB3 temp.

The temperature probes of the coffee boilers have a value of 47-50 kOhm at room temperature (about 25°C) and 4.3 kOhm at about 88°C.

NOTE

The **MAVERICK** is provided with software to detect possible malfunctions.

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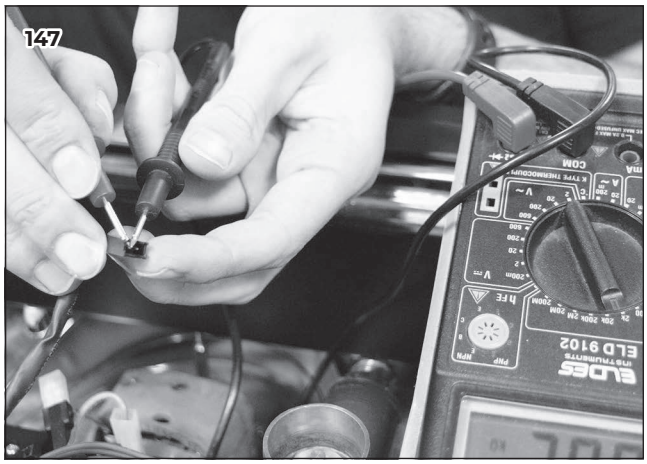

7.4.I TEMPERATURE PROBE ERRORS

"NTC BOILER GROUP X KO"
(Alarm A4.2, A4.3 or A4.4)
If this error is displayed:

1. Follow the entire route of the probe up to the T3 temperature board and check that the cable is intact.
2. Replace the probe when necessary.
3. Check for any damage to the flat cable between T3 temperature board with the main control unit.

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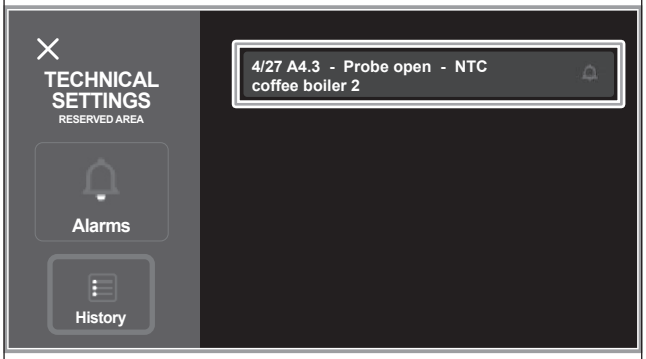

"NTC BOILER GROUP X KO"
(Alarm A5.2, A5.3 or A5.4)
If the probe is damaged it may short circuit and display show this message.

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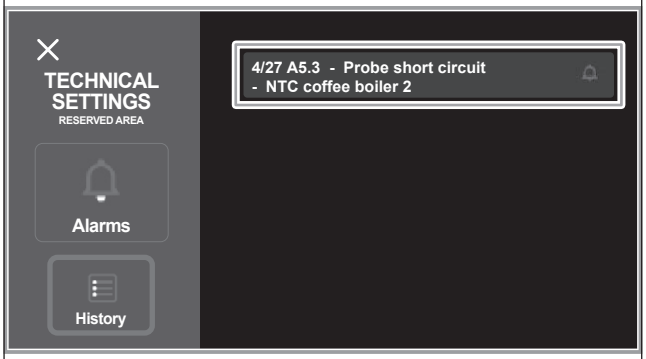

NOTE

For more informations about the errors, see the Chapter 10 "Alarms and control of the emergencies"

The solution is to replace the probe **H**.

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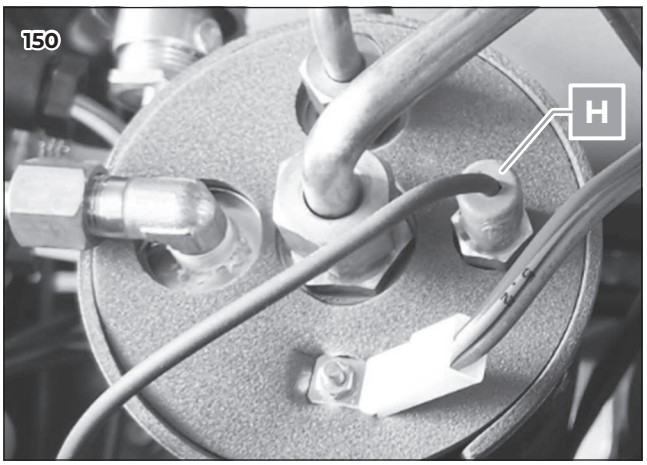

NOTE

The limestone unlikely will inhibit the operation of the temperature probe: a probe covered with limestone becomes less sensitive to temperature changes.

NOTE

When reinstalling the probe the threading must be wrapped with Teflon tape or use liquid Loctite to prevent leakage.

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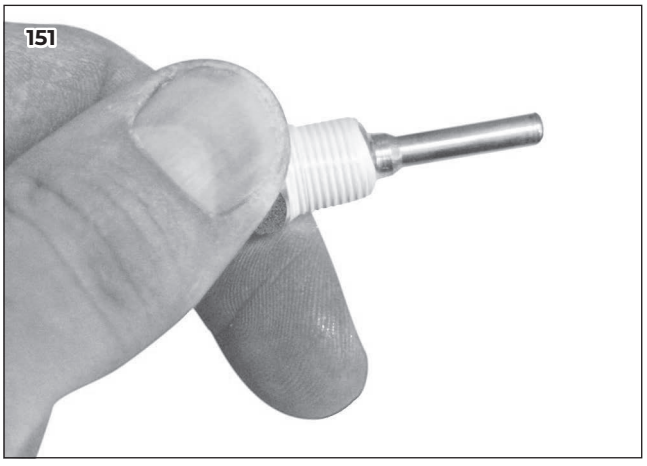
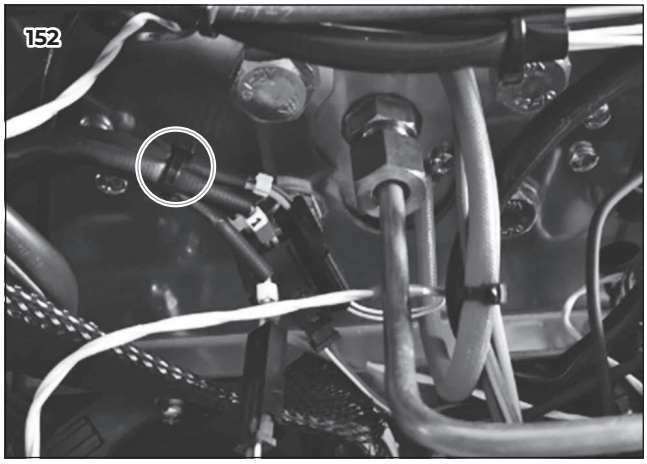
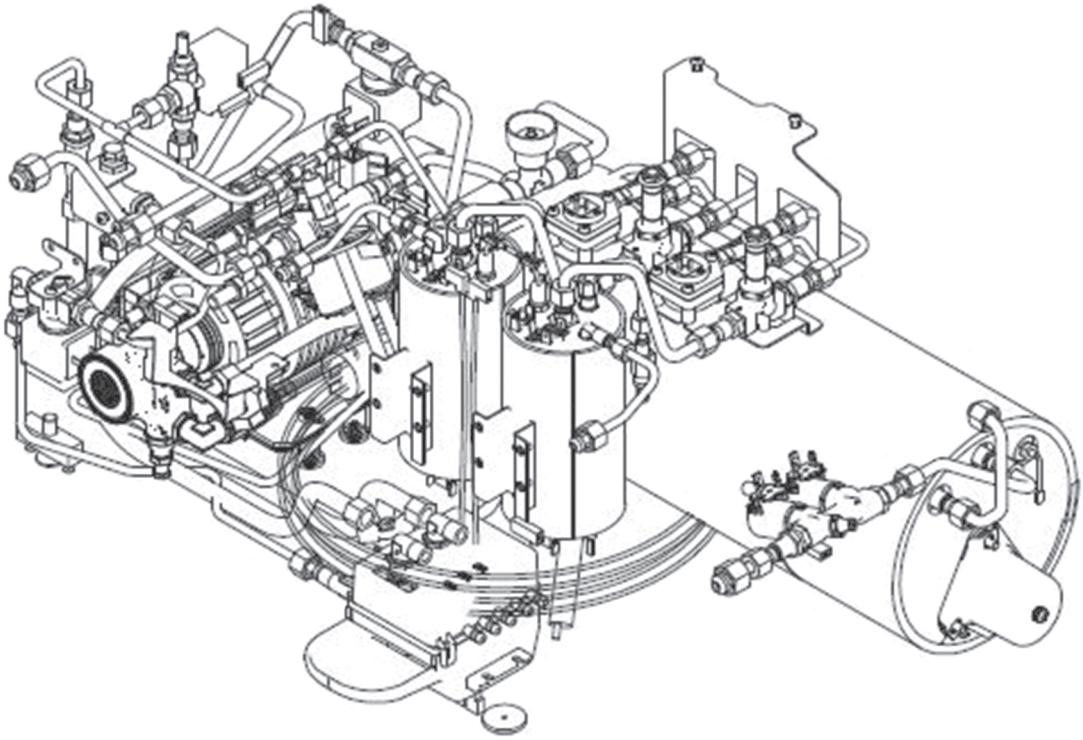


Secure all the lose cable together to make accessing easier and to avoid contact with high temperature surfaces.



8 HYDRAULIC CIRCUIT



7 MM
9 MM
13 MM
14 MM
17 MM
18 MM
19 MM
20 MM
22 MM

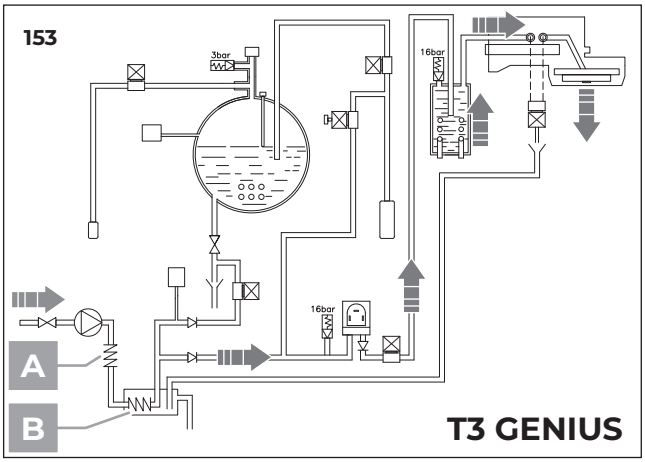
INDEX

T3 Genius system is an improvement of T3 Technology, it grants the same precision and accuracy using 37% less energy.

A **Motor Cooling System** keep the motor temperature low and at the same times pre-heat the incoming water.

B The **T.E.R.S.** gives second steps water temperature rising before injection into the coffee boiler.

Thanks for the Motor Cooling System and Thermal Energy Recovery System (T.E.R.S.).



8.1 DRAINING TUBS AND SERVICE TAPS

To access the hydraulic part at the base of the machine it is necessary to:

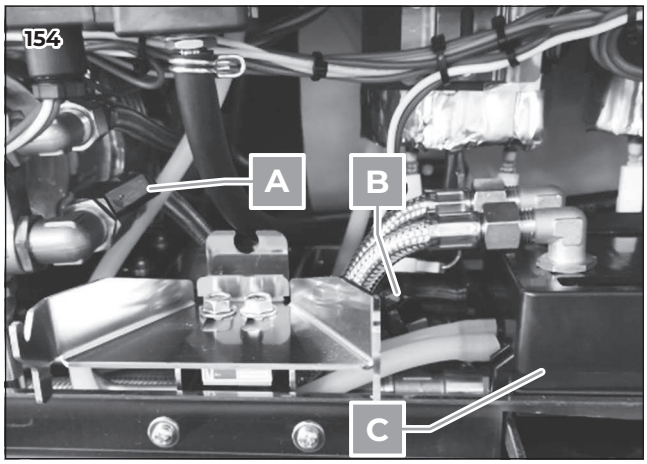
1 Remove the work surface.
2 Partially unscrew the 2 side screws that hold the front panel in place. Lower and rotate the panel to remove it.

NOTE

Refer to chapter 4 "Remove of the external panel".

Once the front panel is removed the following are visible:

A The pump valve to close incoming water.
B The manual valve to prevent boiler water from returning into the hydraulic circuit.
C The water drain box and **T.E.R.S.**



Lift the drain box, that has a lid to which are connected:

- Two or three silicon pipes from the third outlet of the coffee valves;
- Two silicon pipes from the third outlet of the steam or easy cream valves;
- One silicon pipe from the expansion valve;
- One silicon pipe from the safety valves of the coffee boilers, together in a unique pipe;
- Two stainless steel flexible pipes.

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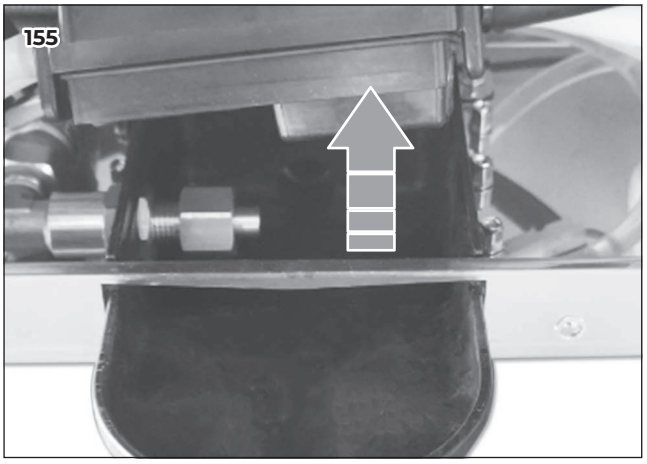

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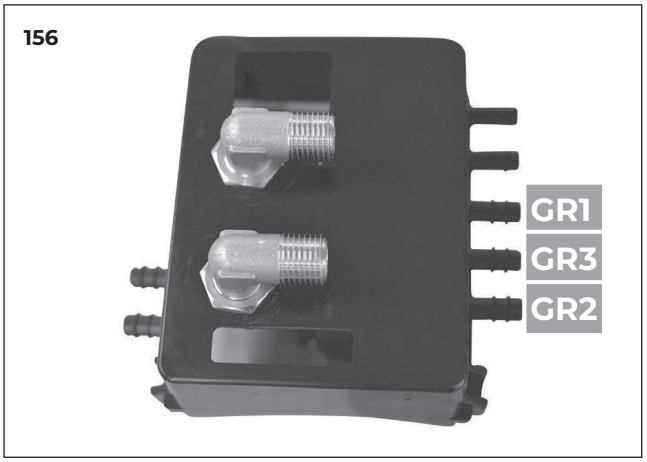

8.2 T.E.R.S.

The **T.E.R.S.** is under the lid.

To remove the **T.E.R.S.** cover use a Philips screwdriver, remove the two screws.

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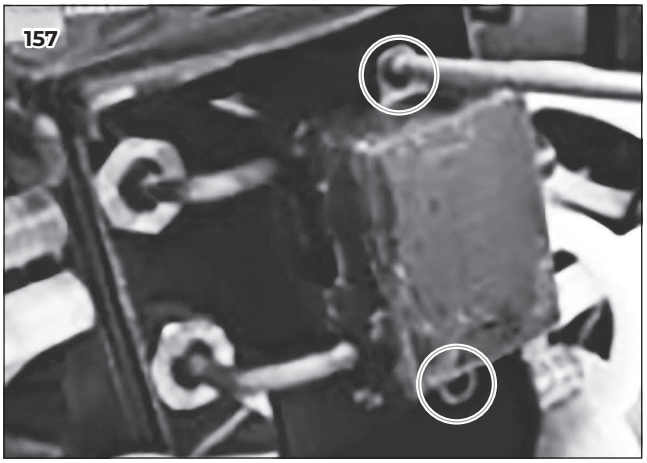

The nut **A**, used to empty the boiler is located immediately under the lid.

Use a 17 mm wrench to remove it.

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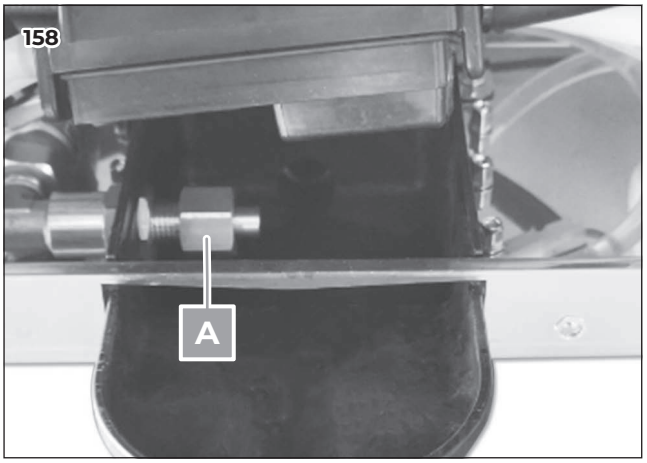

8.3 THE PUMP

The pump of the **BLACK EAGLE MAVERICK** is located on the left side of the machine.

The duration of the pump depends on the amount of daily work and the quality of the water.

The pressure at which the machine is set by the factory is ideal for extracting coffee: 9 bar.

WHEN TO REPLACE THE PUMP

- **It is noisy:** if the impurities enter inside the pump, the blades of the impeller may block, therefore making it impossible to load water.
- **Pressure not adjustable:** with time the impeller blades can worn out, therefore if it is not possible to adjust the pressure.
- **Pressure fluctuation during dispensing:** the bypass or the impeller are damaged.

8.4 REMOVAL OF THE PUMP

If the pump needs to be removed, it is necessary to:

1 Close the water inlet tap upstream of the machine.
2 Remove the left cover panel and the front.

NOTE

Refer to chapter 4 "Remove of the external surface".

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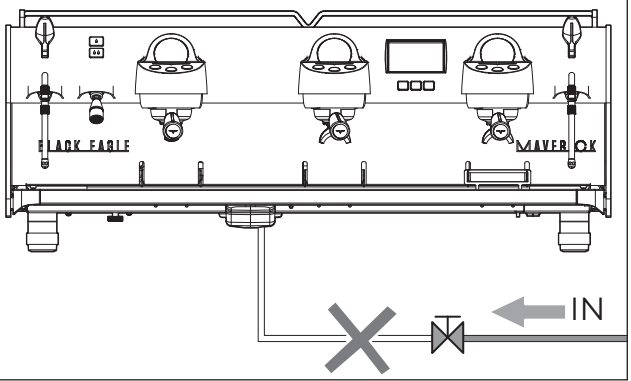

3 Use a Philips screwdriver, remove the screw and open the panel that blocks the control unit box.

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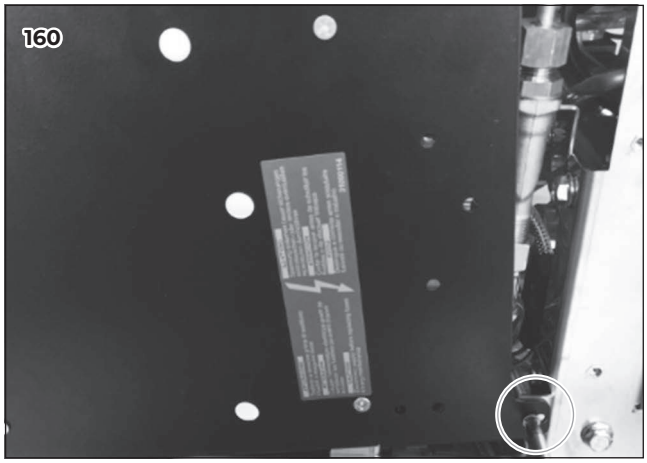
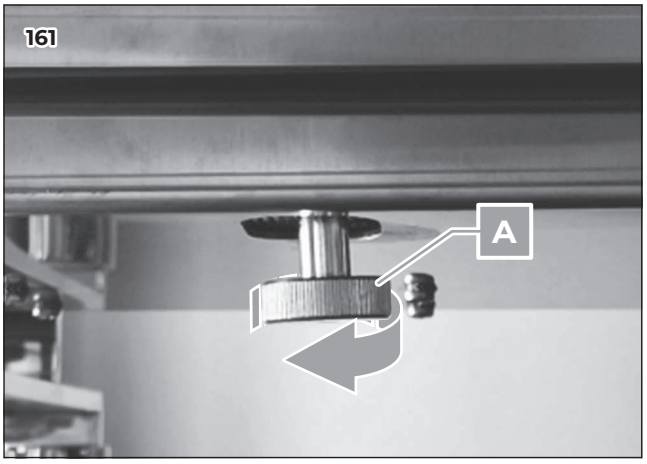


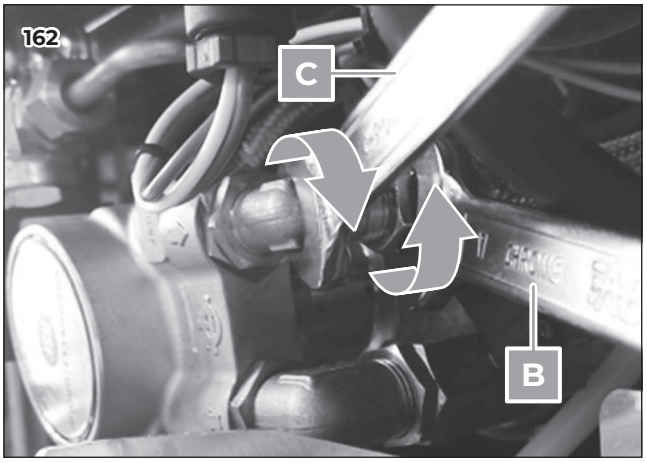
4 Completely loosen the pressure adjustment knob **A**.

NOTE

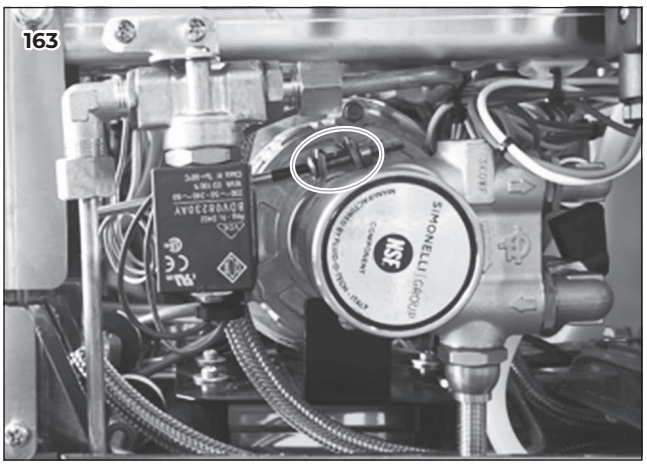
Notice that the pressure adjustment knob contains a spring.



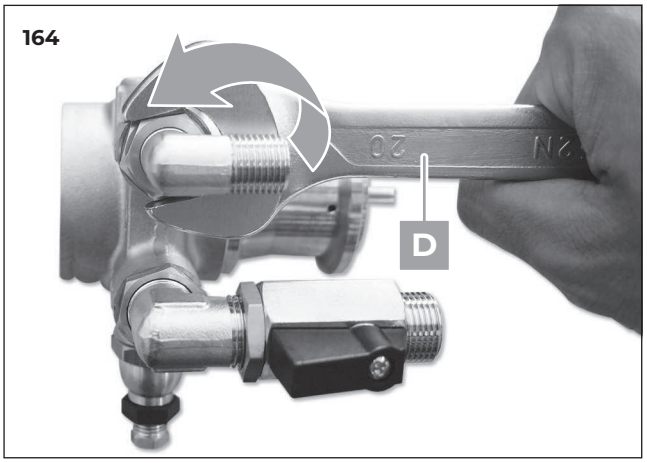
5 Use a 17 mm **B** and 13 mm **C** wrench, disconnect the outgoing flexible pipe from the pump.



6 Unscrew the metal hose clamp that keeps the pump attached to the motor and remove it.



7 Loosen the fittings with a 20 mm **D** wrench and adapt them to the new pump, using the Teflon tape to gasket the parts.



8.5 REMOVAL OF THE CAPACITOR

WARNING

Before proceeding with the operations described in the Chapter make sure that the machine is turned OFF and unplugged from the mains.

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To remove the capacitor, proceed as it follows.

1 Remove the left side panel, as described in Chapter 4 "Remove of the external surface".

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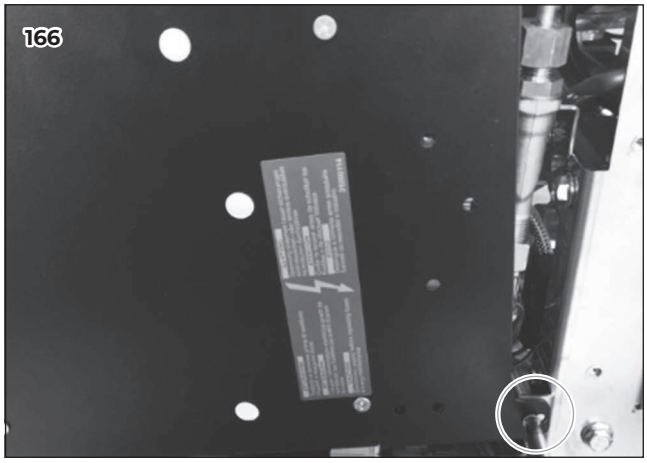

2 Use a Philips screwdriver, remove the screw and open the panel that blocks the control unit box.

3 Use a 13 mm wrench **A**, remove the bolt that holds it to the motor.

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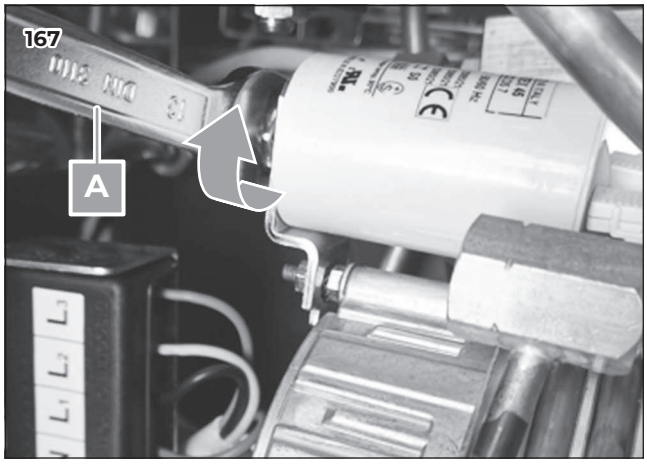

4 Disconnect the two connectors **B**.

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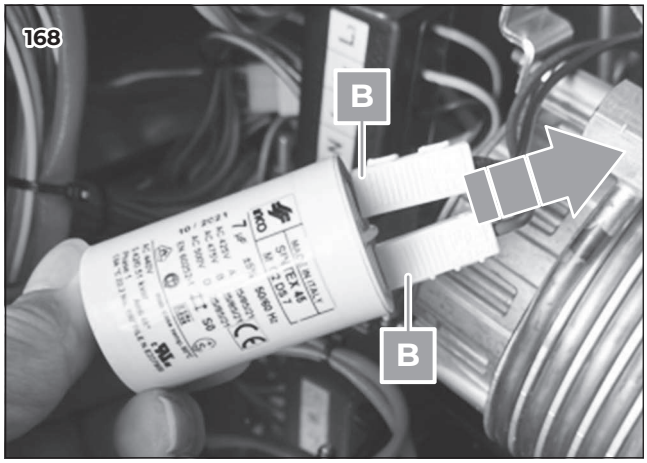

5 Discharge the capacitor by using a metal contact with two terminals before measuring it.

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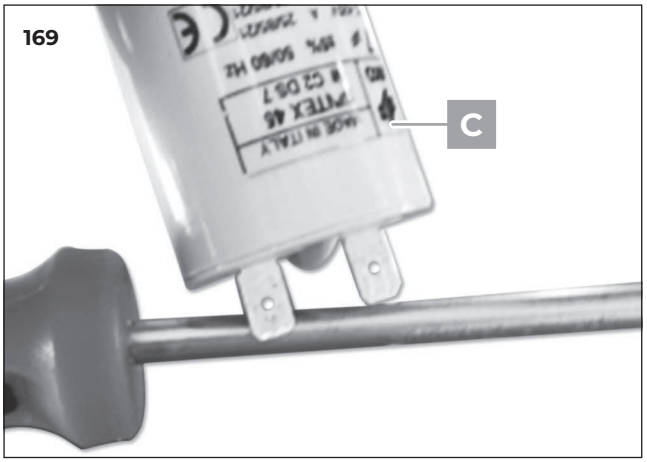

6 You should have the capacitor value around 7µF.

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8.6 REMOVAL OF THE MOTOR

To remove the motor, proceed as it follows:

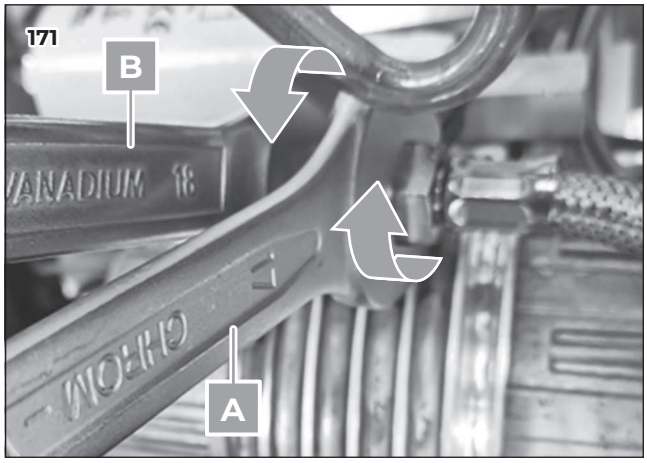
1 Remove the left side panel, the water collection pan and the lower front panel, as described in Chapter 4 "Remove of the external panel".

2 Use a Philips screwdriver, remove the screw and open the panel that blocks the control unit box.

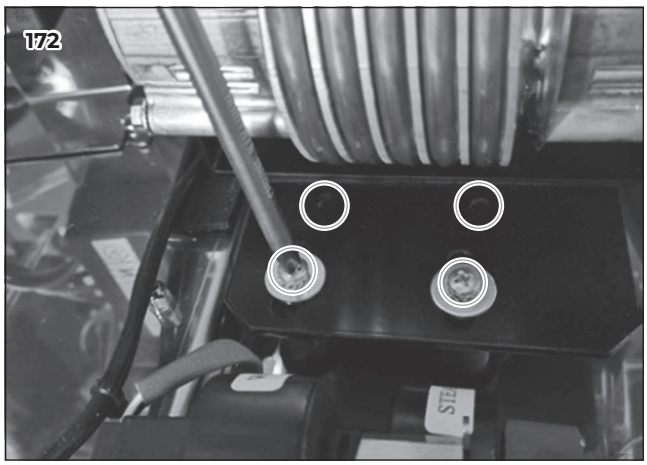
3 Remove the pump as illustrated in the Paragraph 8.4 "Removal of the pump".

4 Remove the capacitor as described in the Paragraph 8.5 "Removal of the capacitor".

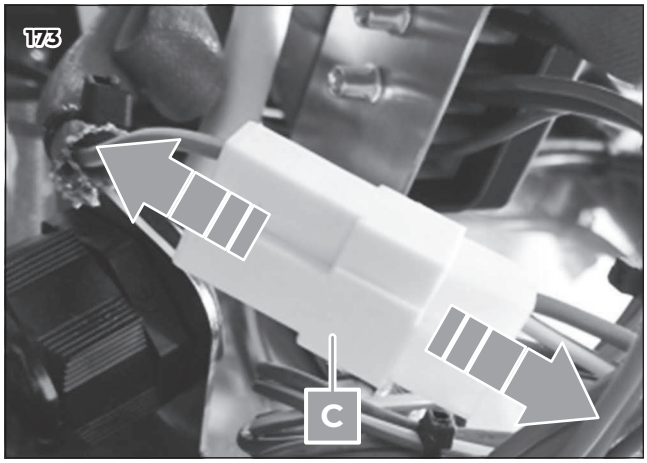
5 Use 17 mm **A** and 18 mm **B** wrench key to remove the flexible hose connection.



6 Unscrew the four screws that hold the motor.

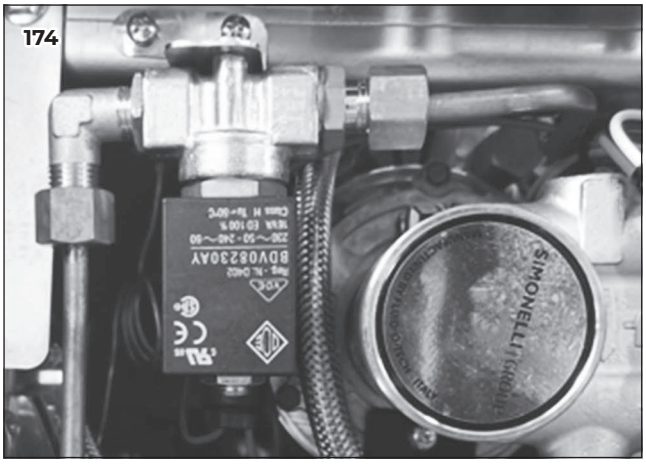


7 Carefully remove the motor from the left side and disconnect power connections **C**.



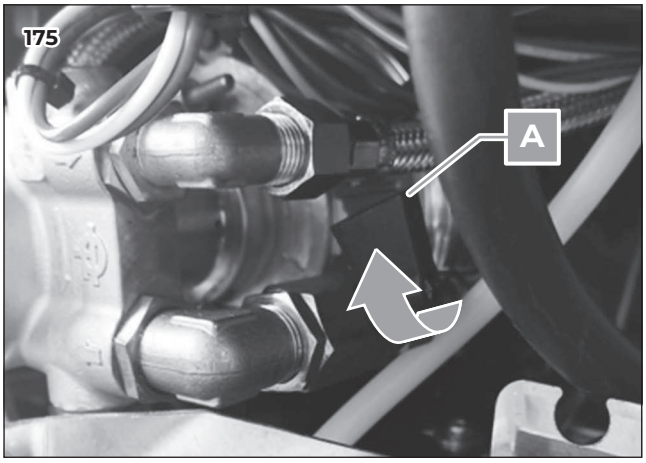
8.7 REPLACING THE FILLING VALVE

The auto-filling valve is located left front side of the machine.

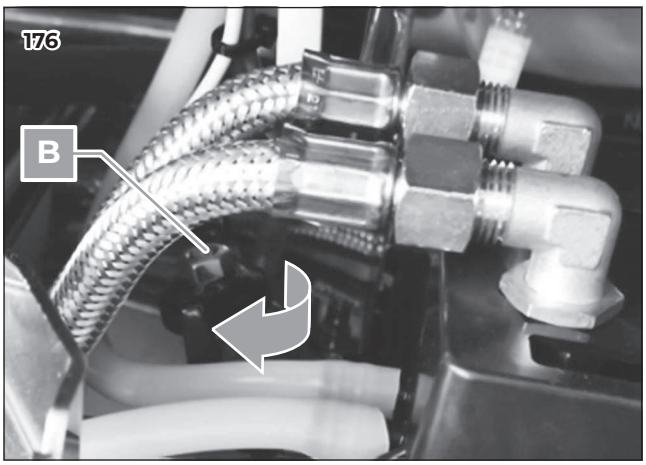


To remove the filling valve, it is necessary to:

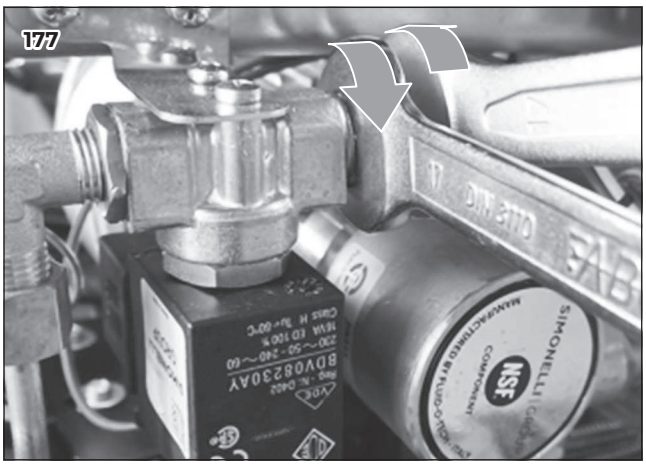
1 Close the water tap **A** located on the pump.



2 Close the drain manual valve **B**.



3 Use two 17 mm wrenches to disconnect the piping.



4 Use 13 mm **C** and 17 mm **D** wrench to disconnect the piping.

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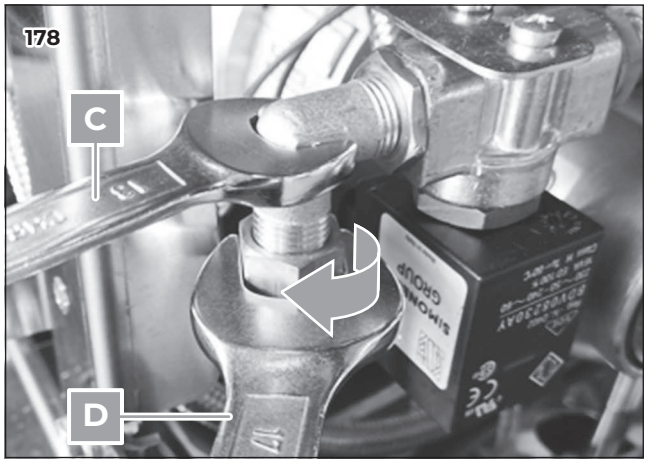

5 Use Philip screwdriver to unscrew the 2 screws.

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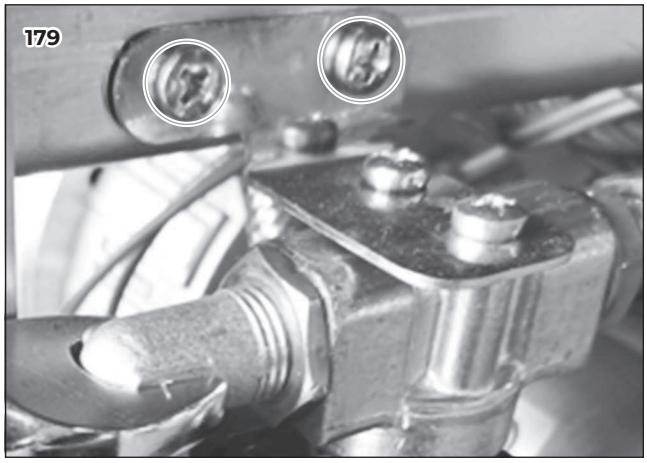

6 Disconnect the fitting **E** with 17 mm and fitting **F** with 13 mm wrench key.

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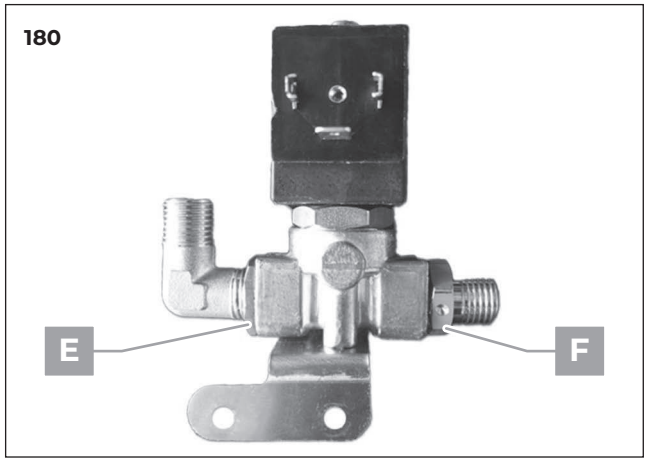

7 Use Teflon tape to ensure all the joints are perfectly sealed to the new valve.

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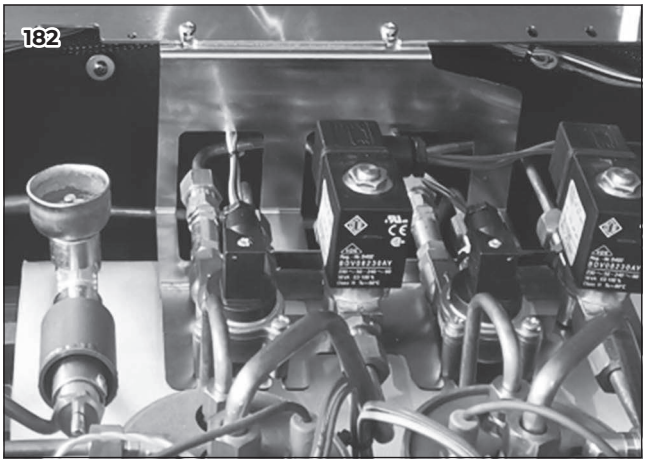
8.8 FLOWMETER AND NON-RETURN VALVE

For each group there is a flowmeter.

Flowmeter is related to pre-set dosage setting.



WHEN TO INTERVENE

The most common errors that you may encounter are:

1 Wires disconnected accidentally or unintentionally (e.g. after replacing a card).
2 The impeller cannot turn properly.
3 The coil of the magnetic sensor has deteriorated and no longer reads the pulses correctly.
4 The non-return valve is blocked.

If one of these cases occurs, it can happen that the delivery does not stop and the group keypad will light up or will not start as planned.

However, the manual buttons will still functioning.

To verify that the impeller in the flowmeter is effectively locked you can:

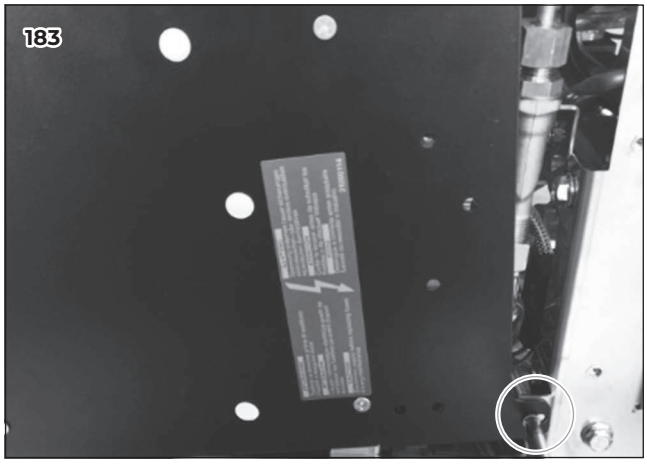
1 Check function by measuring the voltage supplied to the control unit during a delivery.
2 Directly inspect the part.

8.9 HOW TO VERIFY THE SIGNAL OF THE IMPELLER

To measure the signal, it is necessary to access to the electronic board located on the left side.

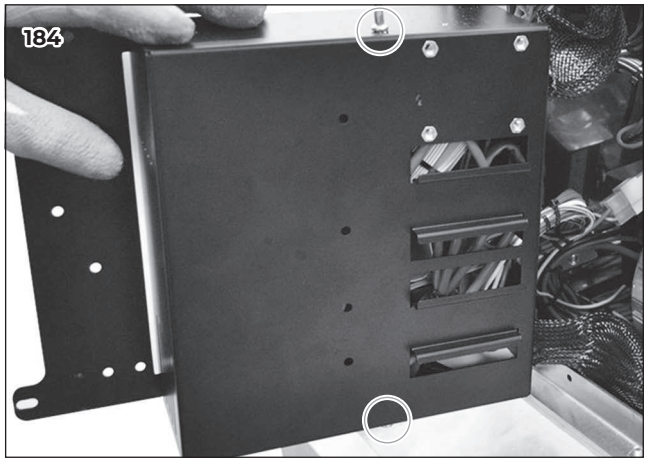
1 Remove the left side panel.
2 Unscrew the screw to open the flap.

183



Access the board by loosening the top and bottom screws with a Phillips screwdriver.

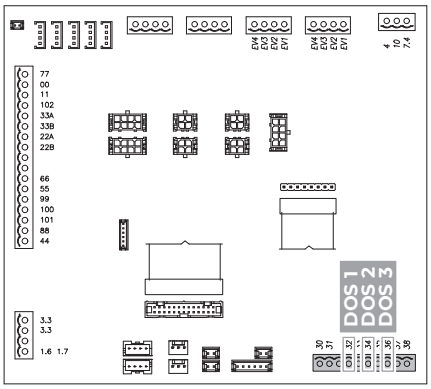
184



With a tester measure the voltage alternating between the ends of the faulty flowmeter (see figure).

Place the tester caps at the terminals of the doser using the references in the image.

185



NOTE

The signal generated by the impeller is a square wave of about 5 V:

- Group 1: Pin 32 and 38;
- Group 2: Pin 34 and 38;
- Group 3: Pin 36 and 38.

If the dispenser is damaged we cannot read anything.

8.10 HOW TO REMOVE THE FLOWMETER

If it is necessary to inspect or remove the flowmeter:

1 Remove the front panel and close the valve **A** on the pump.

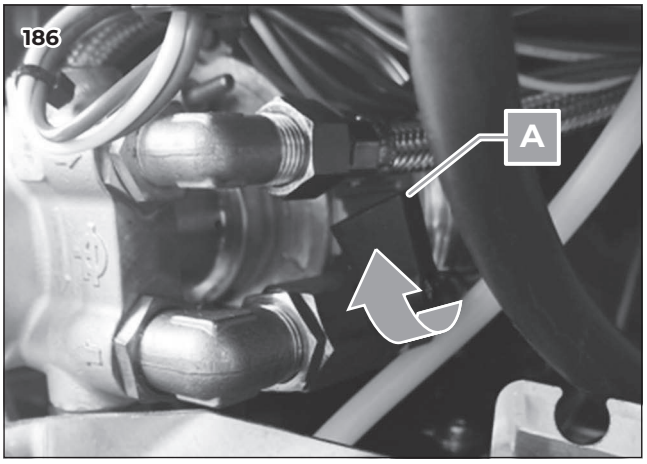
WARNING

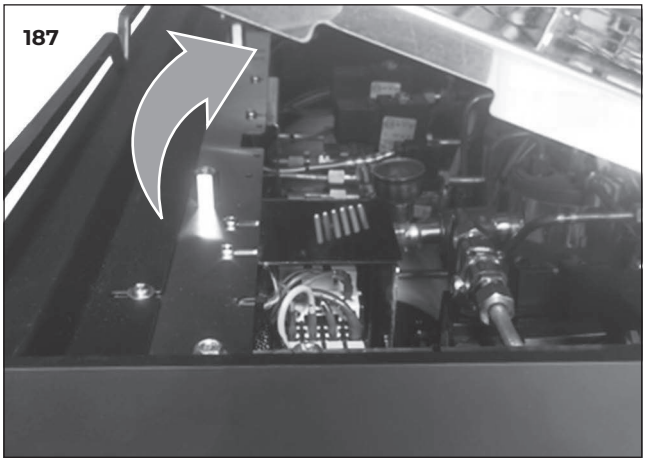
Discharge the 9 bar pipe line pressure before removing the flowmeter by activate the group deliver for at least 5 seconds.

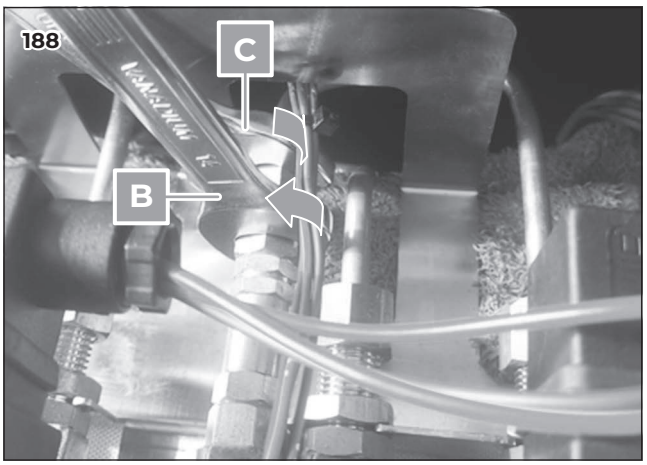
2 Remove the cup warmer panel.

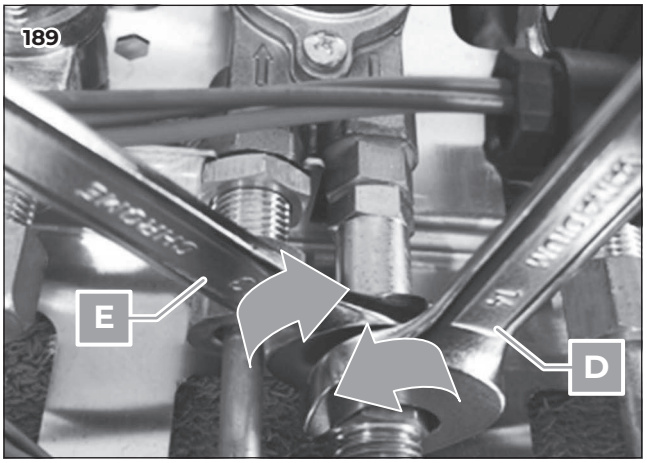
3 Place a cloth or paper towel under the flowmeter before disconnect the copper tube using a 14 mm **B** and 17 mm **C** wrench key.

4 Remove the restrictor 0.5 mm to clean the limescale or blockage using a 14 mm **D** and 13 mm **E** wrench key.









NOTE

The 0.5 mm restrictor is shown in the side picture.

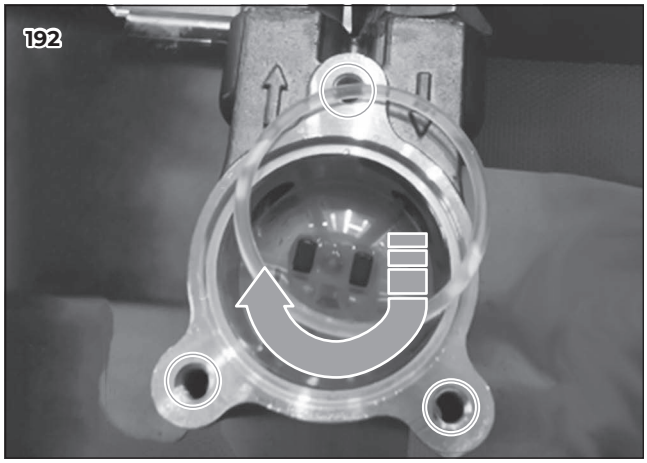
190

5 Unscrew and unplug the connector on to the flowmeter.

191

6 Remove the 3 screws that hold the cover and check that there is nothing to obstruct the flowmeter inlet and to ensure impeller smooth operation.

192



NOTE

If the filter screen is particularly clogged and is necessary to remove it, it's possible to use a simple piece of wire to push the filter out, as a common clip is sufficient.

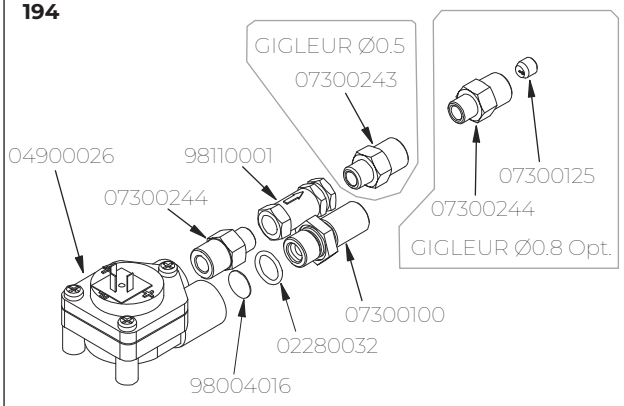
193

The flowmeter is made of various parts, as shown in the picture.

NOTE

It is good practice to substitute the gaskets each time it is completely inspected.

194



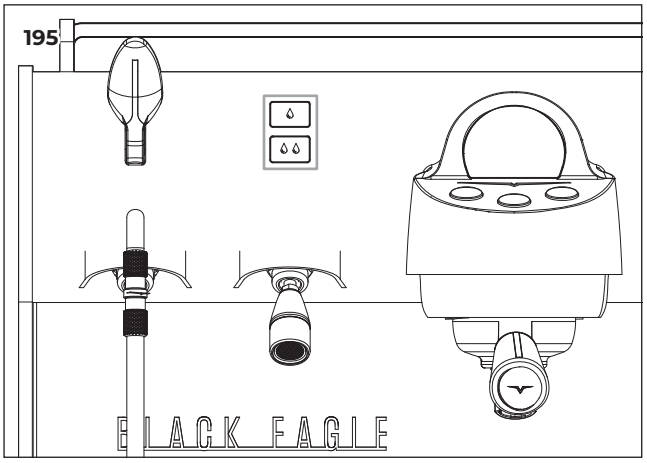
8.II HOT AND COLD WATER VALVE

BLACK EAGLE MAVERICK is provided with 2 doses button for hot water.

The hot water temperature can be adjusted by mixing cold water and hot water from steam boiler.

For this reason, it is commonly called hot water economizer.

195

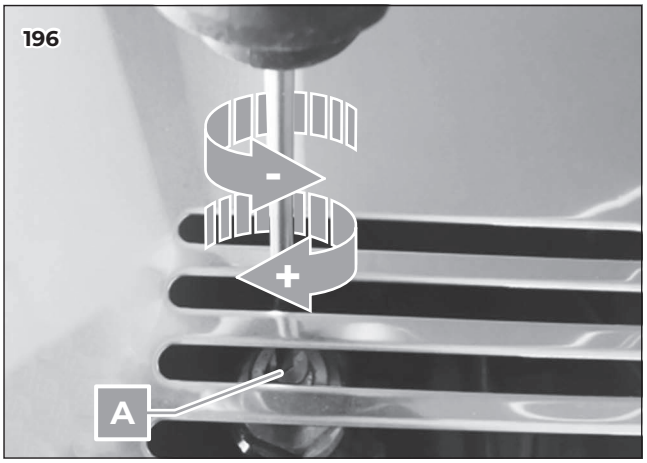


HOW TO ADJUST THE TEMPERATURE

To adjust the hot water temperature, simply use a flat screwdriver while the water is running.

Simply turn the screw **A** counter-clockwise to decrease the temperature or turn the screw clockwise to increase the temperature.

196



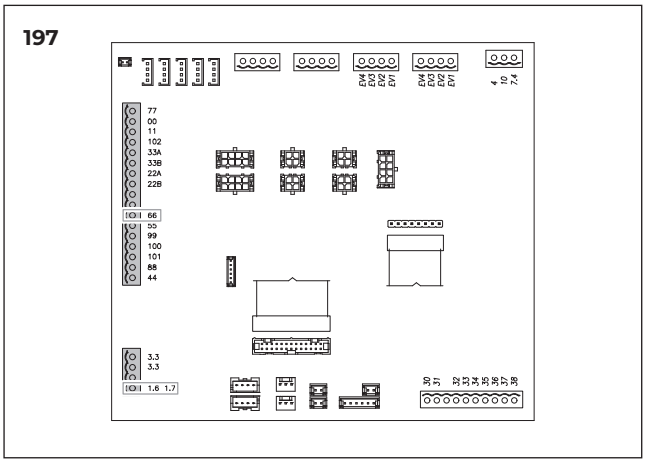
COMMON PROBLEM

Problems that can be encountered in the hot water economizer are:

1. Failure to deliver water.
2. Delivers only hot or only cold water.
3. Continuous dripping.

Cases 1, 2 and 3 are due to malfunction of the valves so you need to access to them and verify that they are working properly.

197



The valve may stop operating due to electrical problems or is not working properly due to obstructions for example caused by pieces of limestone that detach from the heater and clog the valve.

If both valves do not work, there could be a problem with the relay in the electronic board, therefore it is necessary to directly measure the voltage (pin 66 and 1.6) with a voltmeter while water is being dispensed.

HOW TO ACCESS THE VALVES

WARNING

Release all the steam is a MUST to safely access the valves.

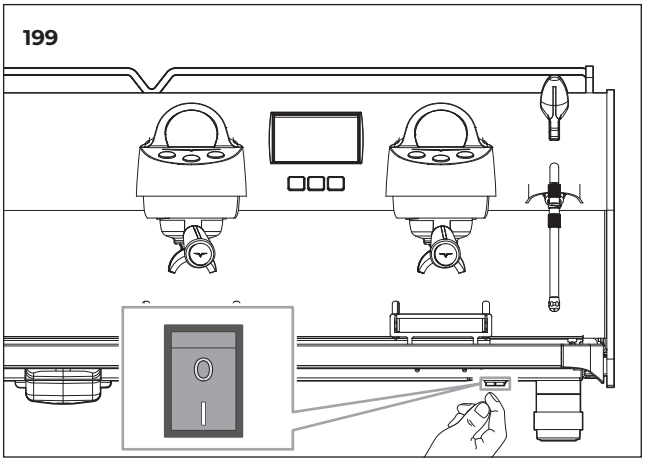
NOTE

It is not possible to operate with pressure in the steam boiler.

1 Turn OFF and disconnect the power to the machine.

198

199

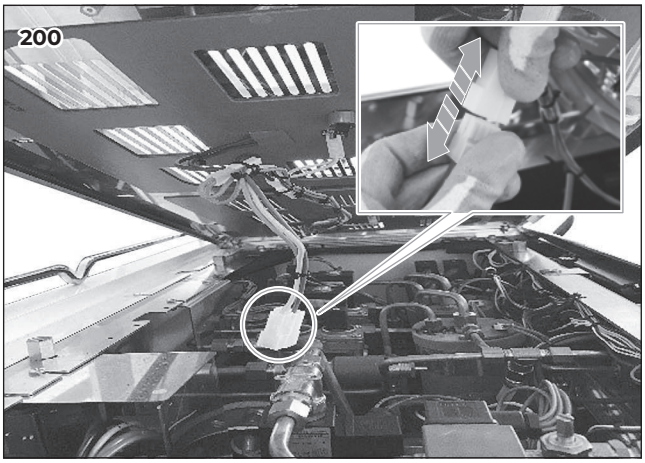


2 Remove the cup warmer disconnect the power supply to the cup warmer and remove the probe.

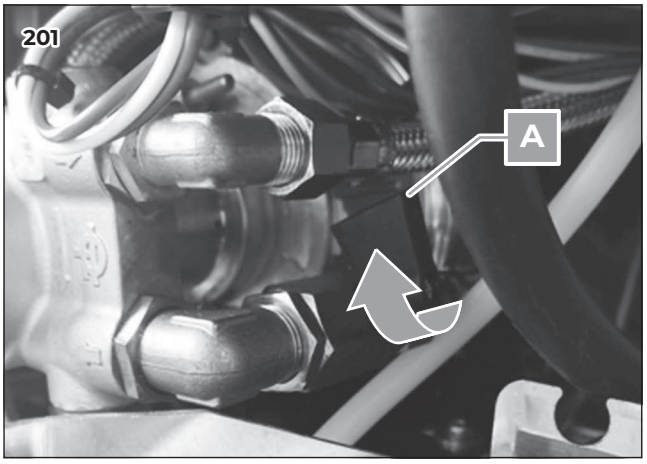
NOTE

See chapter REMOVAL OF THE EXTERNAL SURFACE.

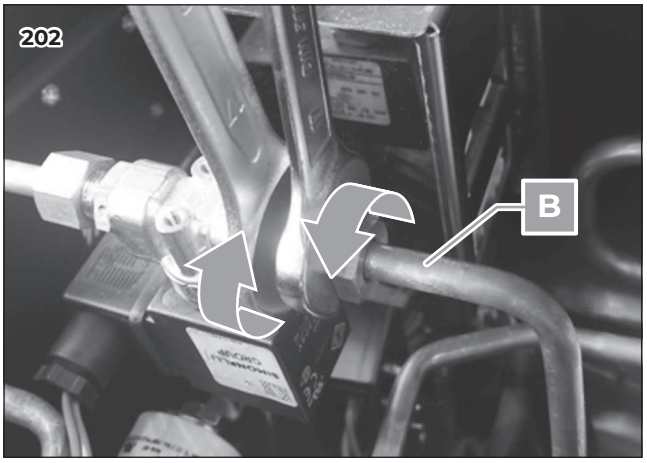
200



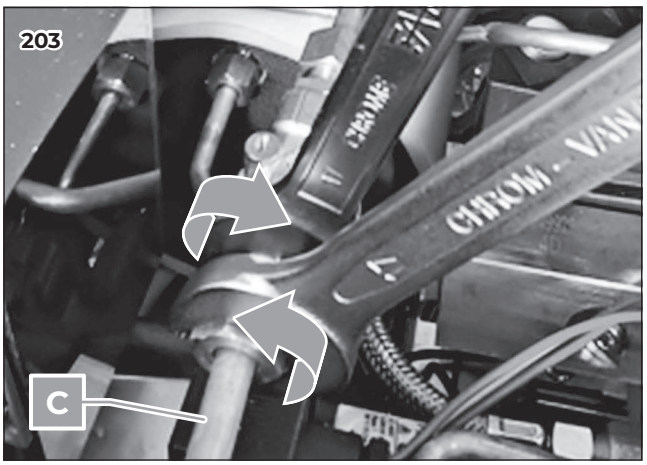
3 Remove the front panel and close the water tap **A** near the pump.



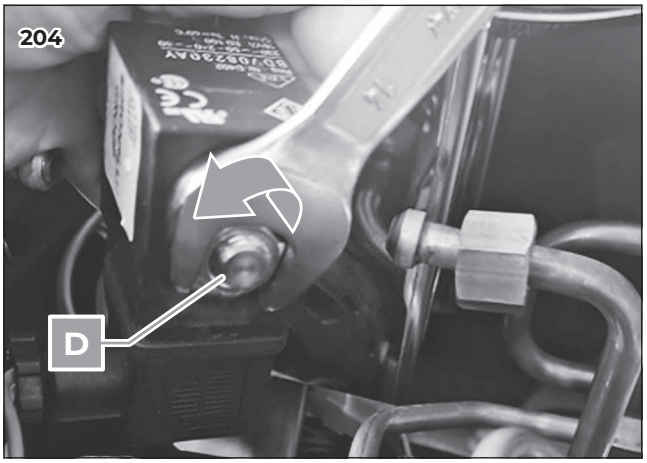
4 Disconnect the copper tube **B** using two 17 mm wrench keys.



5 Disconnect the other copper tube **C** using again the 17 mm wrench keys.

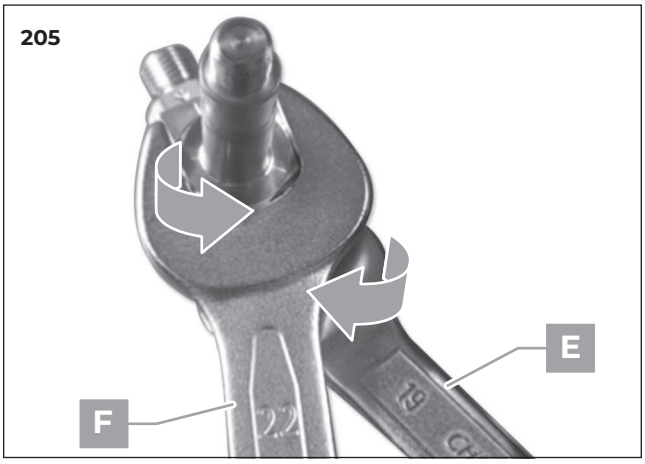


6 Remove the nut **D** that holds the head of the coil using a 14 mm wrench key.



7 Using 19 mm **E** and 22 mm **F** wrench keys to remove piston housing.

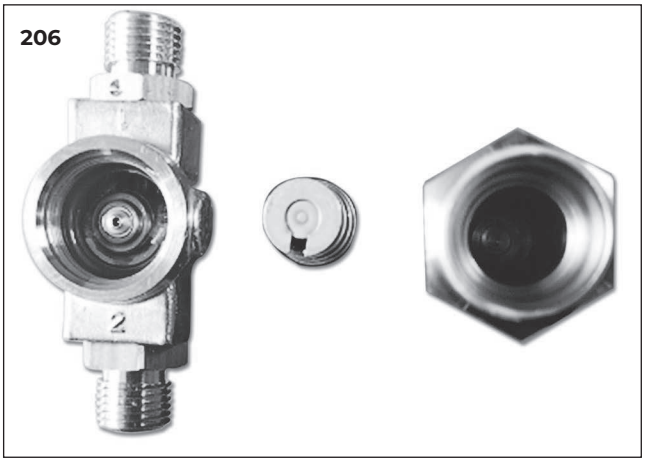
205



8 Check the spring is working properly, check the inner cylinder is clean and valve seat is not damaged.

9 Replace the valve completely when necessary.

206



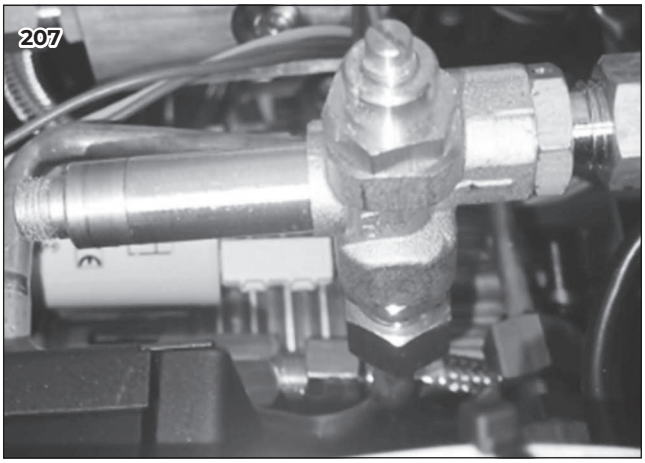
COLD WATER VALVE

NOTE

The same procedure also applies for the cold-water valve.

In this case, since it is connected with a tap it may be necessary to replace the whole part.

207



8.12 STEAM VALVES

BLACK EAGLE MAVERICK is equipped with **Steam By Wire** is using electronic magnetic board to activate steam solenoid valves.

BLACK EAGLE MAVERICK has two different level of steam flow so there are two solenoid valves in one steam block.

The correct position of the lever with respect to the piston is shown in the picture.

The steam knob has 4 positions:

- **A** **REST**: knob in central position and no steam output.
- **B** **CLEAN**: knob pushed back manually, with active delivery for the time the lever is held.
- **C** **MEDIUM POWER**: knob pulled forward by half its stroke, with active delivery at low pressure.
- **D** **MAXIMUM POWER**: knob pulled forward to the end of its stroke where it remains locked, with active delivery at high pressure.

POSSIBLE PROBLEM

Problems related to the steam by wire are:

- Continuous loss of steam.
- Water dripping from the steam nozzle.

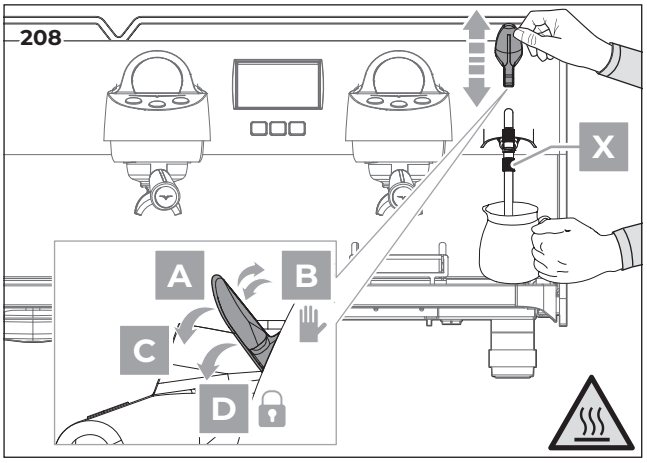
WARNING

Before proceeding with the operations described in the chapter make sure that the machine is turned OFF and unplugged from the mains. Discharge any residual pressure present in the steam boiler.

If there is a loss of steam, it is necessary to check the steam valve or the Teflon tube:

1. Replace the O-ring (**02600004**) when necessary.
2. Discharge all the steam until there is no pressure in the boiler.
3. Unscrew the pair of nuts **A** as shown in the figure using a 7 mm wrench key **B**, to remove the steam cover.

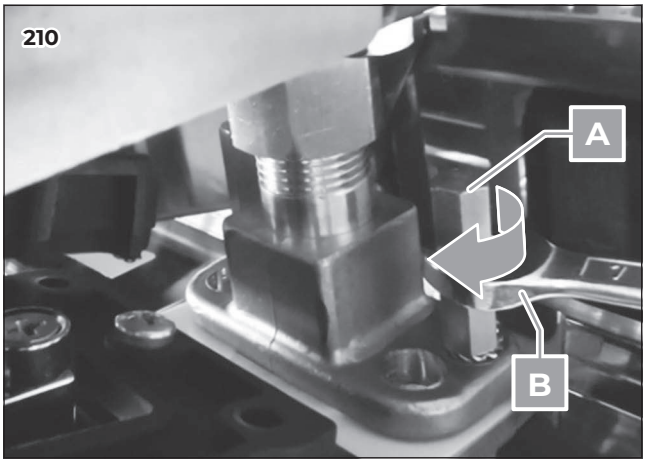
208



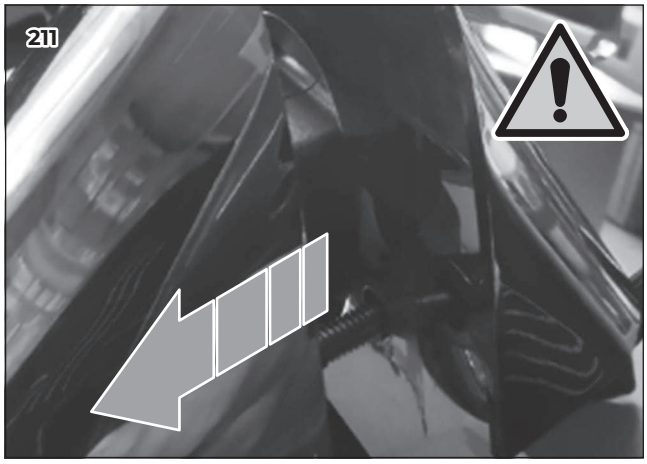
209

DANGER

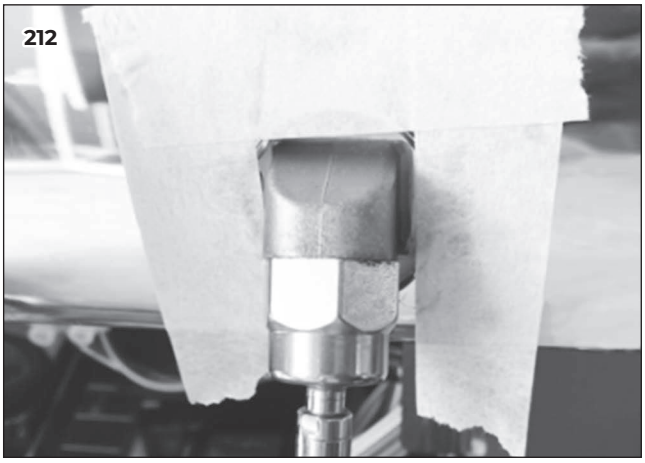
210



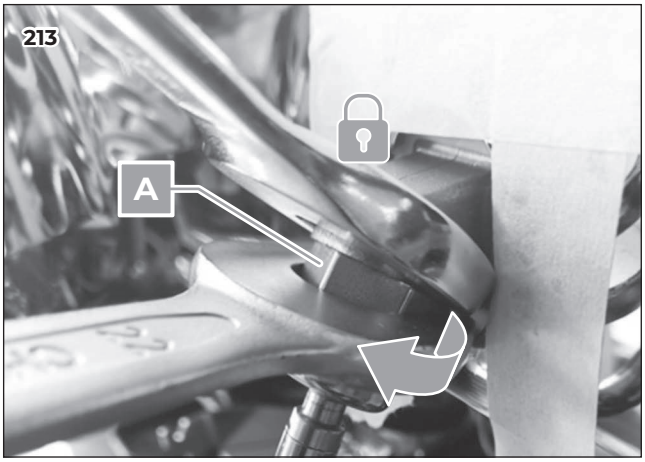
4 Carefully remove the front cover.



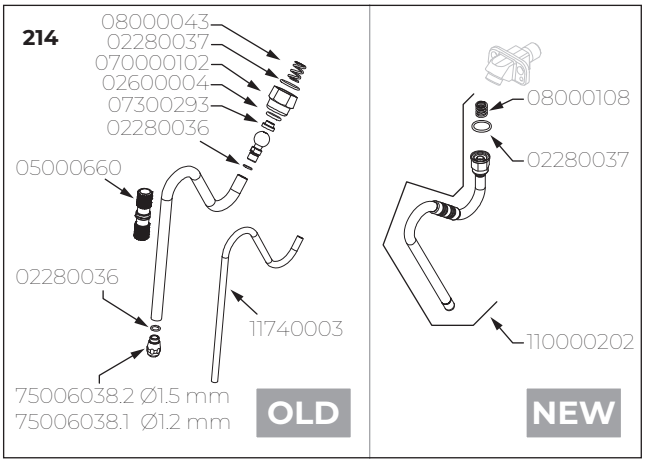
5 Stick some tape to protect the stainless steel panel from scratches.



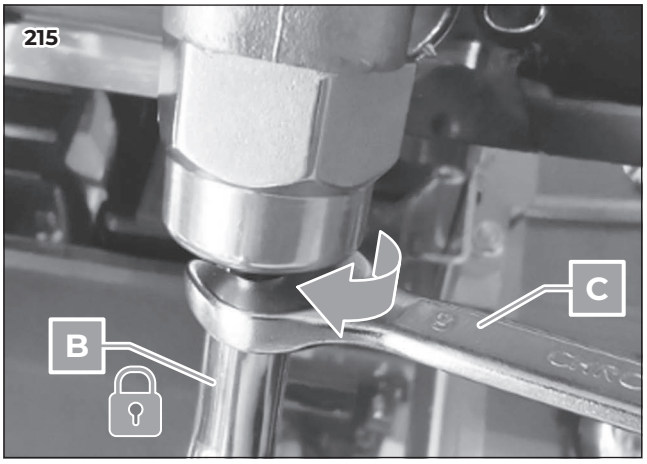
6 Using two 22 mm wrench keys to loosen the steam wand nut **C**.



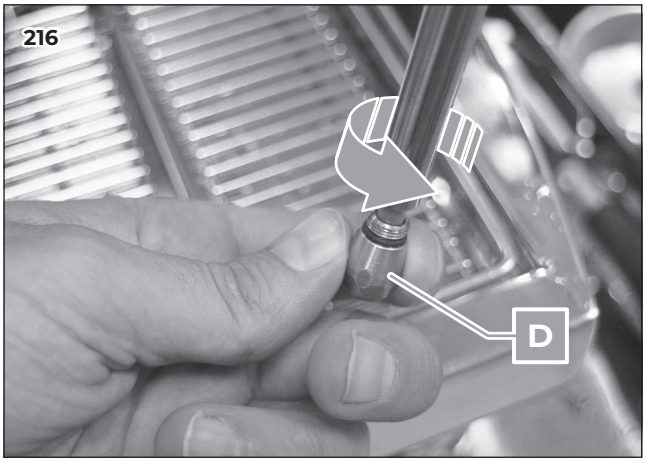
7 In the **OLD** version, replace the Teflon O-ring or Teflon tube, inside the steam wand when necessary.
In the **NEW** version, replace the steam wand.



8 To access the Teflon tube for replacement it is sufficient to hold the steam nozzle **B** and unscrew the top anticlockwise with a 9 mm wrench key **C**.



9 To remove the dispensing nozzle **D** it is sufficient to unscrew the lower part of the nozzle by hand. We suggest an annual replacement of the O-ring that holds the gasket.



HOW TO ACCESS THE STEAM VALVES

WARNING

Before proceeding with the operations described in the chapter make sure that the machine is turned OFF and unplugged from the mains. Discharge any residual pressure present in the steam boiler.

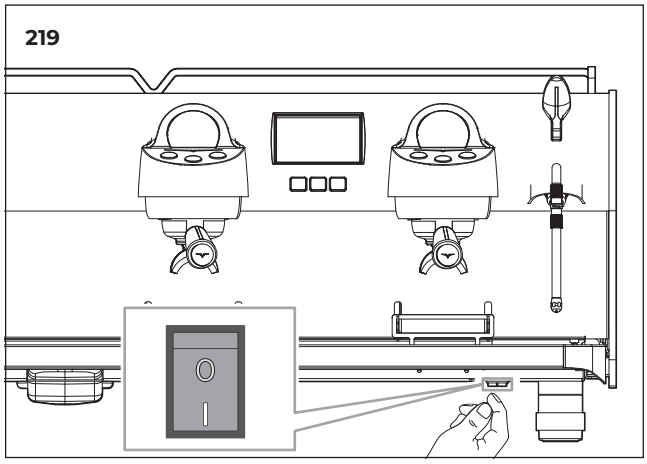
WARNING

Release all the steam is a MUST to safely access the valves.

NOTE

It is not possible to operate with pressure in the steam boiler.

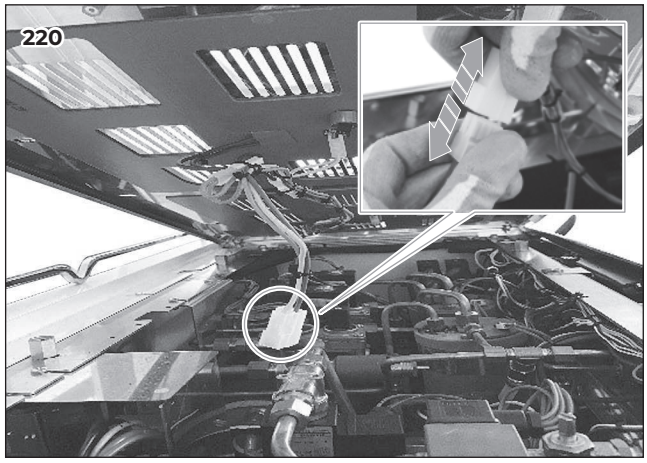
1 Turn OFF and disconnect the power to the machine.



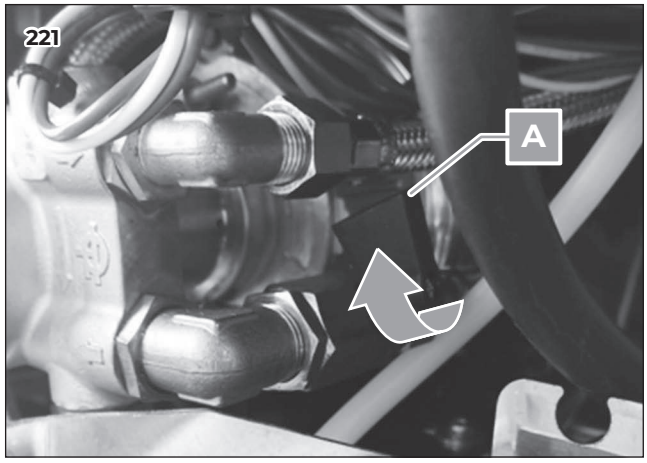
2 Remove the cup warmer, unscrew the Phillips screw, disconnect the power supply to the cup warmer and remove the probe.

NOTE

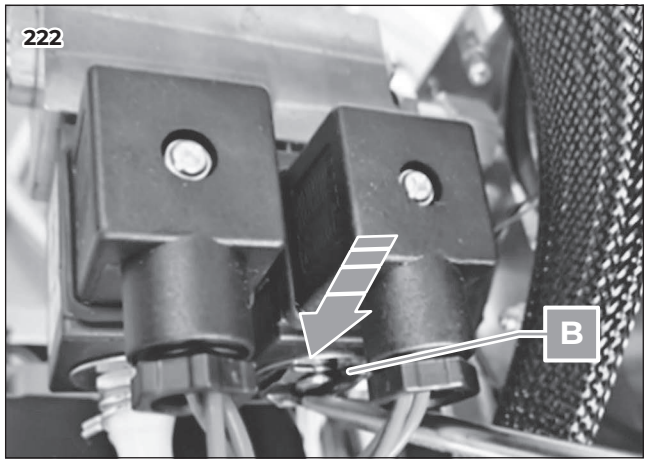
See chapter REMOVAL OF THE EXTERNAL SURFACE.



3 Remove the front panel and close the water tap **A** near the pump.

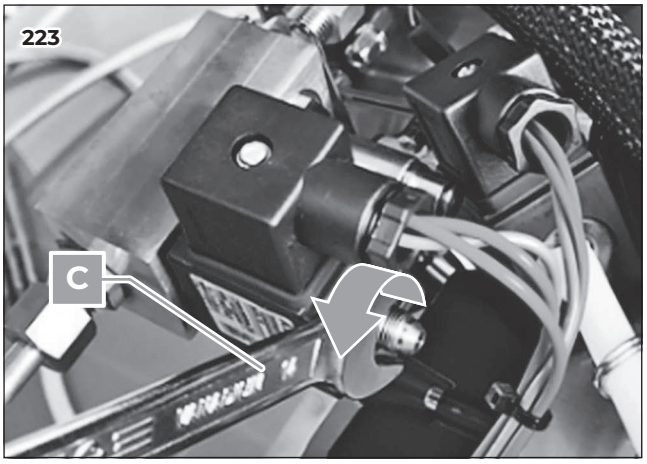


4 Press down to remove the clip **B**.

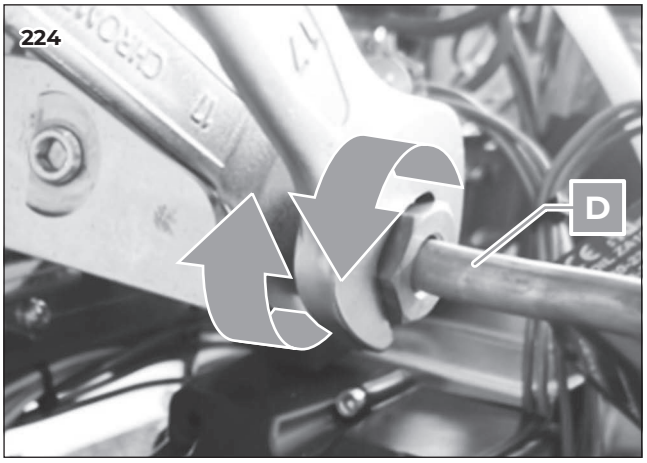


5 Remove the drain tube.

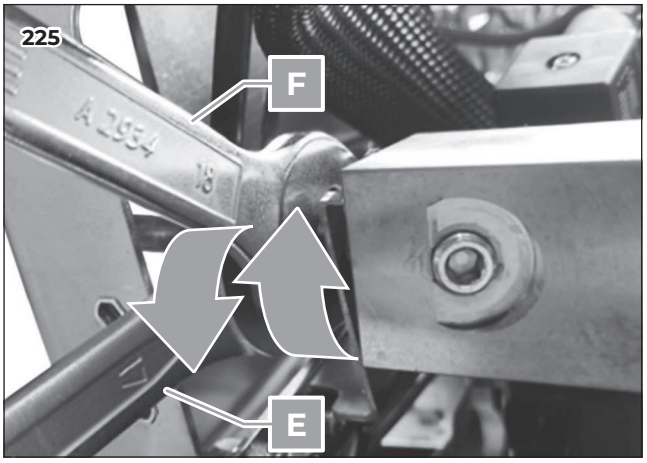
6 Remove the nut that holds the solenoid using a 14 mm wrench key **C**.



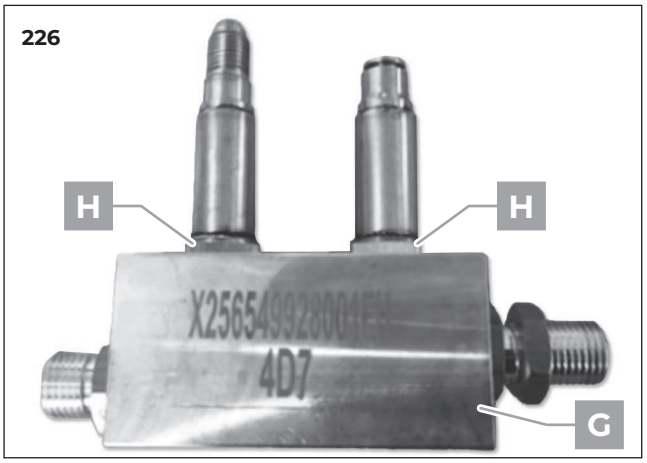
7 Disconnect the copper tube **D** using two 17 mm wrench keys.



8 Disconnect the copper tube using a 17 mm **E** and 18 mm **F** wrench keys.



9 Use bench vice to clamp the valve body **G** and using 22 mm wrench key to remove the piston housing **H**.



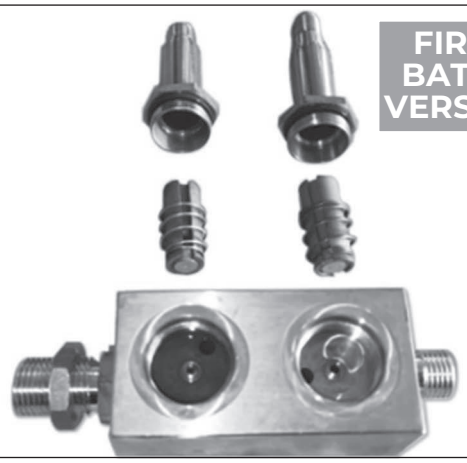
10 Check the spring is working properly, check the inner cylinder is clean and valve seat is not damaged.

11 Replace the valve completely when necessary.

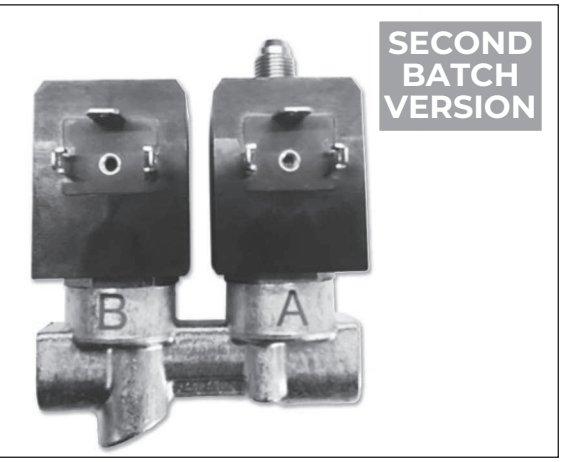
NOTE

In the picture, there is the second batch shape of steam valve.

227



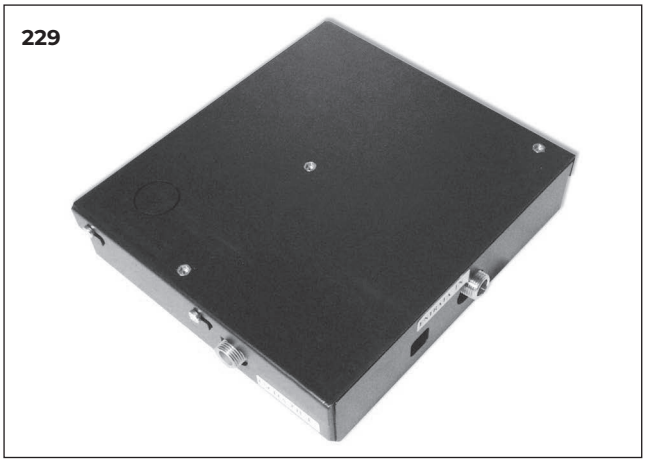
228



8.13 SMART WATER BOX (OPTIONAL)

The **Smart Water Box** allows to check the conductibility, the TDS and pH of the inlet water.

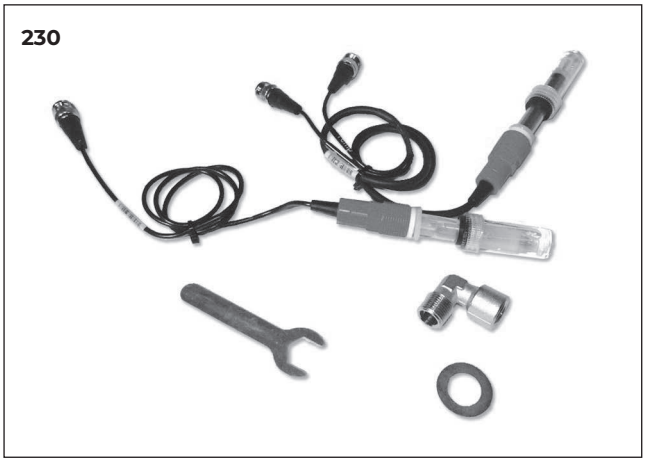
229



The kit is composed by:

- The box, with fittings and control unit.
- The conductibility probe.
- The pH probe.
- A washer.
- A 90° fitting.
- An hexagonal key.

230



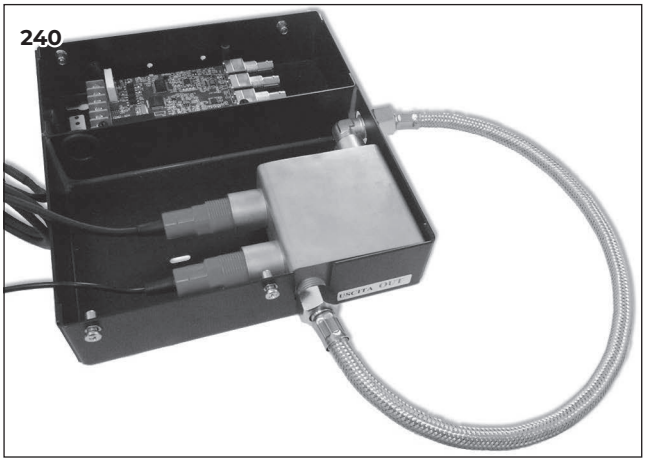
NOTE

The probes have 1 year of life, after that they need to be replaced to ensure the correct functioning.

WARNING

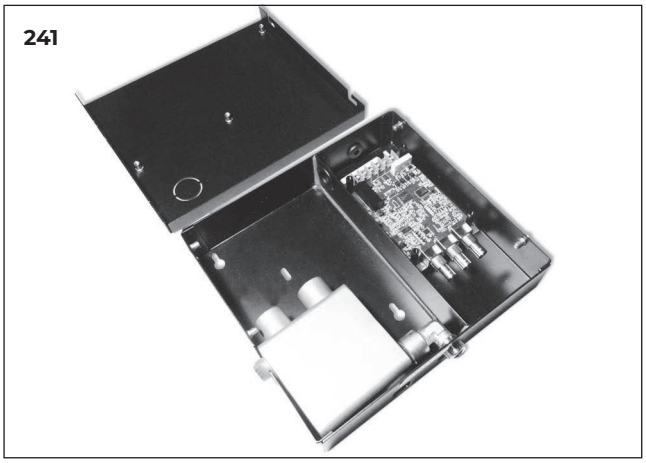
The probes must always stay in a wet place, otherwise they will be damaged.

240



In the machine has to be moved to another installation, a recirculation of liquid has to be insured.
Connect the inlet "**IN**" and outlet "**OUT**" fitting setting water in one of the pipes.

241

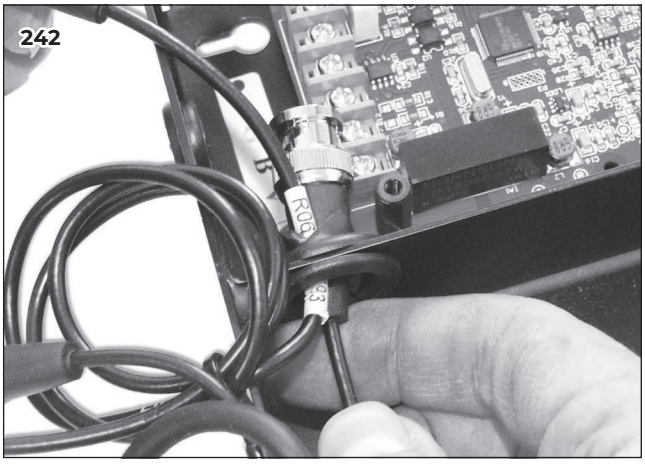


HOW TO INSTALL

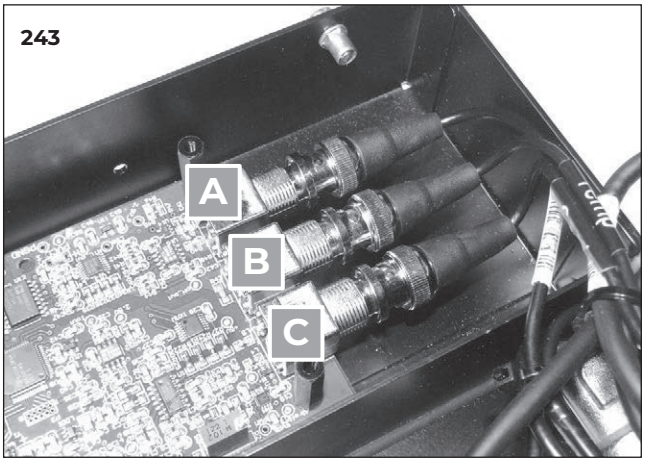
When the machine is new, the smart water box is not connected and it needs to be installed. Proceed as it follows.

1 Open the box.

2 Take the connection of the probes and pass then from the rubber hole in the box.



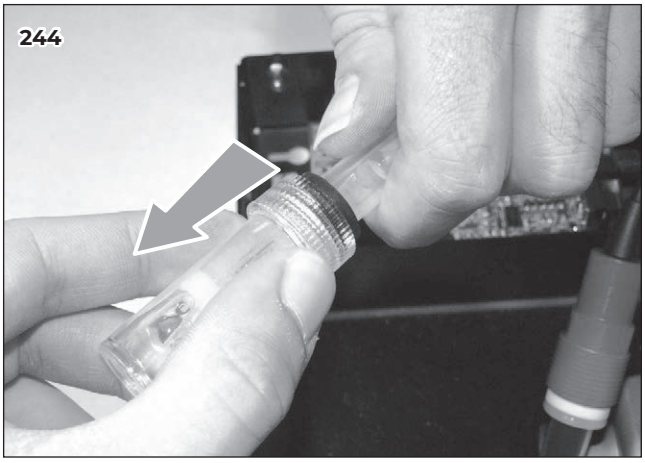
3 Connect the probe to the electric board:
- A **PH**
- B Temperature (**TEMP**)
- C Conductibility (**COND**)



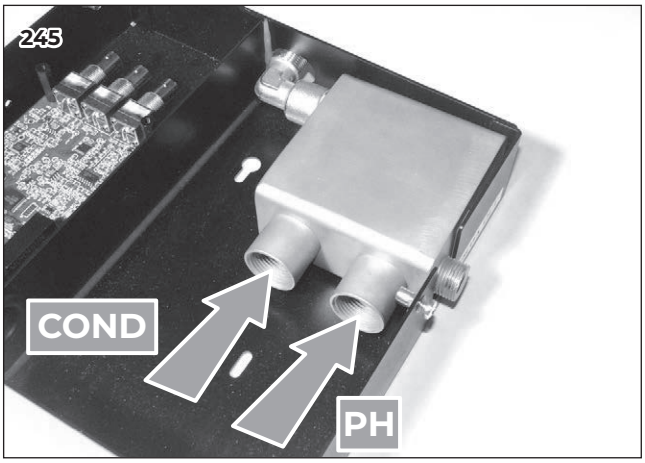
NOTE

On the probes cables there are labels to avoid connection errors.

4 Slide out the caps from the probes.



5 Connect the probes into the internal fitting, in the box.



NOTE

Follow the labels on the probes cables to avoid connection error.

6 Install the washer and the 90° fitting to the "**OUT**" connection.
7 Connect the water pipes:
- **IN**: from main to box.
- **OUT**: from box to the machine.

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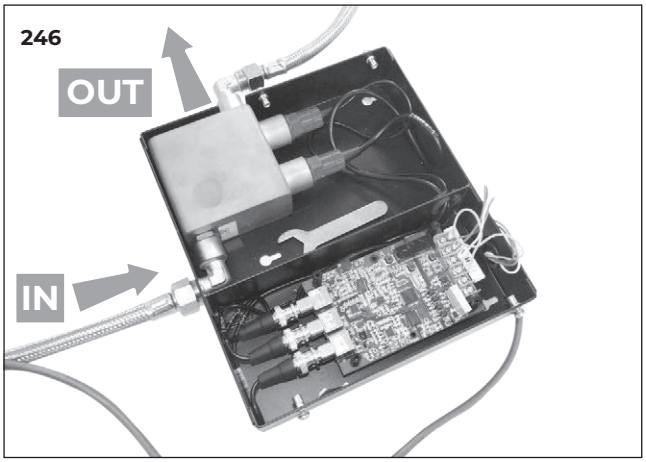
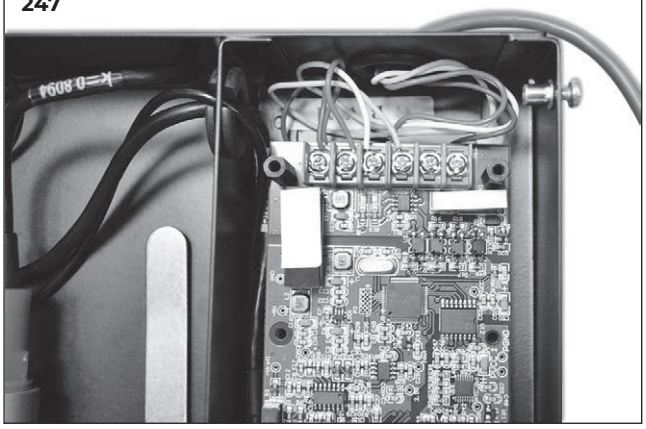


8 Insert the cabling from the machine into the box and connect it following the colours: **brown**, **green**, **white** and **yellow**.

247



9 Set the Smart Water parameters in the programming, following the path.

- From the **Home page**, access the **Main Menu**.

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- Enter into the **Technical settings** menu.

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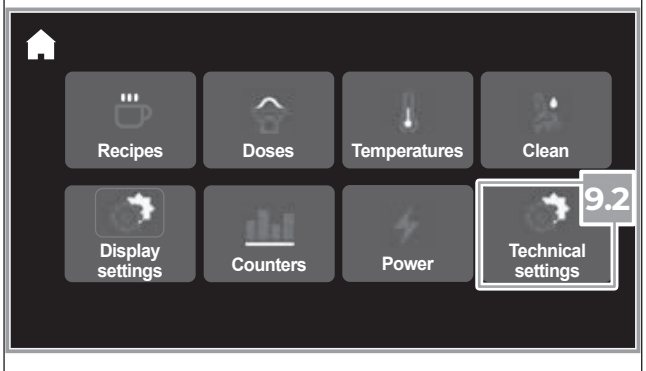
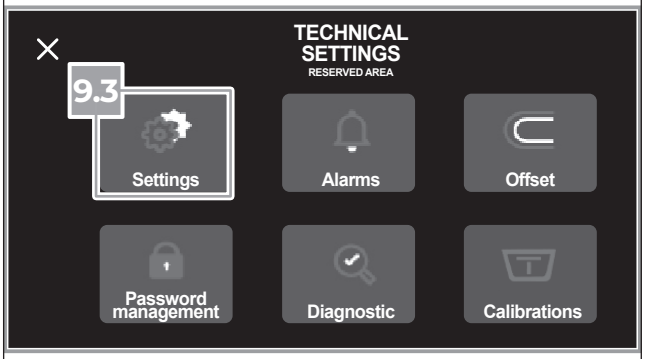


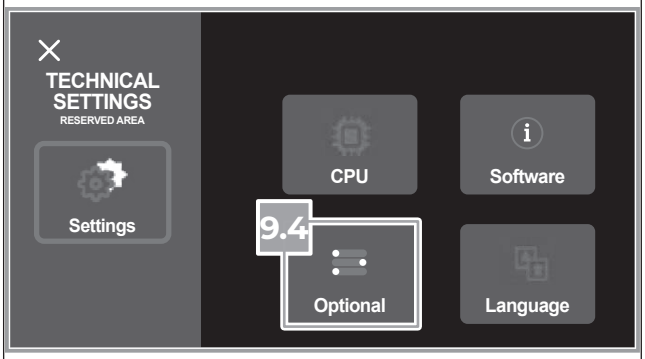
- Select the **Settings** menu.

250



- Access to the **Optional** menu.

251



- In the **second page**, enable the option **PH TDS**.

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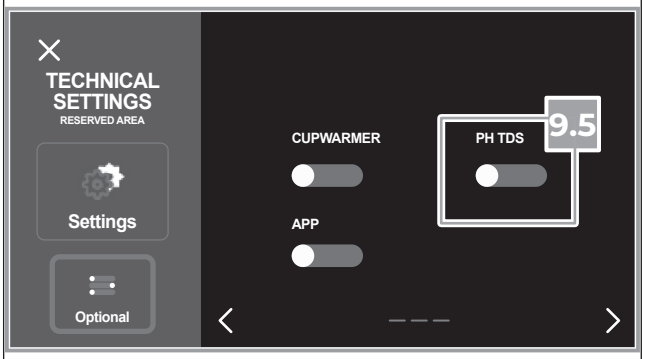
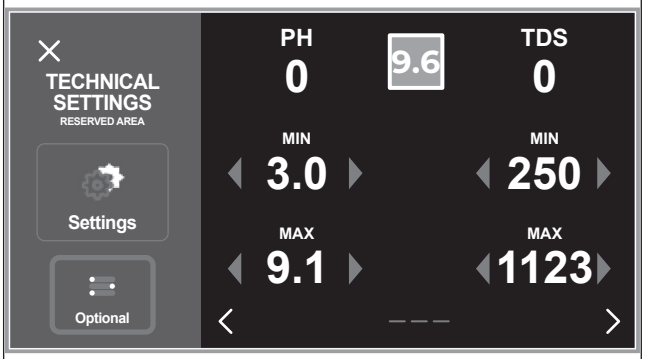


- In the **third page**, are available the Smart Water parameters **PH** and **TDS**, that can be adjusted as desired.

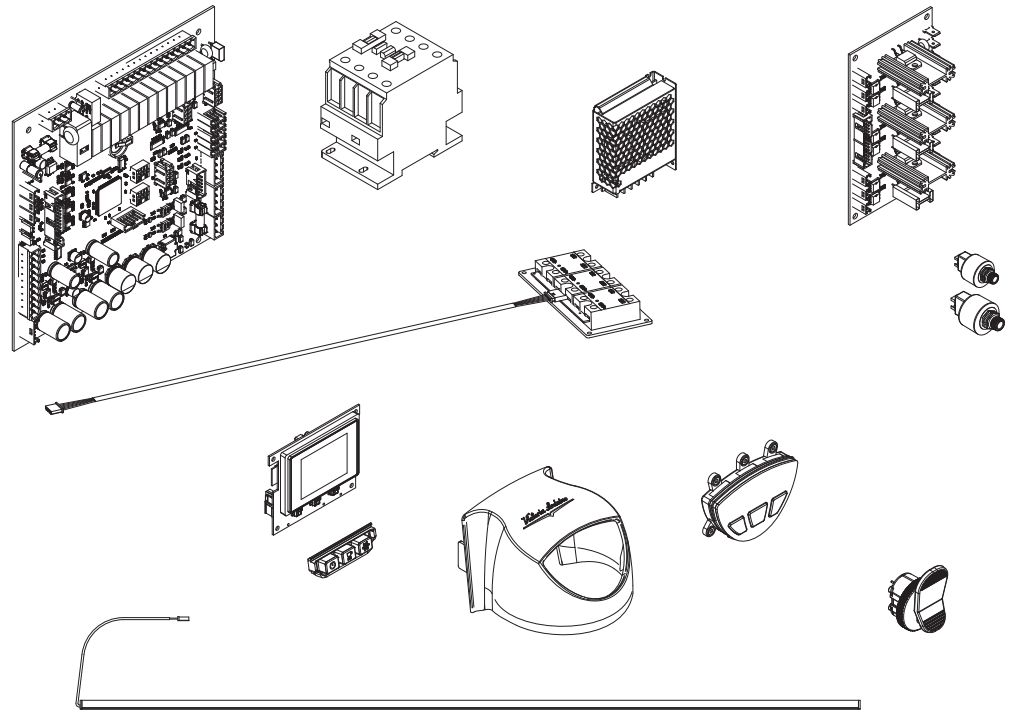
253



NOTE

Suggested parameters are:
- PH Min 6.0 - PH max 8.0.
- TDS Min 50 - TDS Max 250.

9 ELECTRIC COMPONENTS



INDEX

WARNING

Before proceeding with the operations described in this Chapter, make sure that the machine is turned OFF and unplugged from the mains.

9.1 CONTROL UNIT

To access the control unit it is necessary to:

1 Remove the left side panel, as described in chapter 4 "Remove of the external surface".

2 Use a Philips screwdriver, remove the screw and open the panel that blocks the control unit box.

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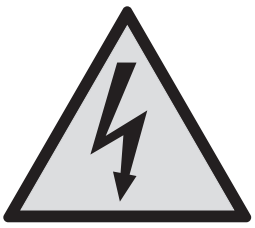
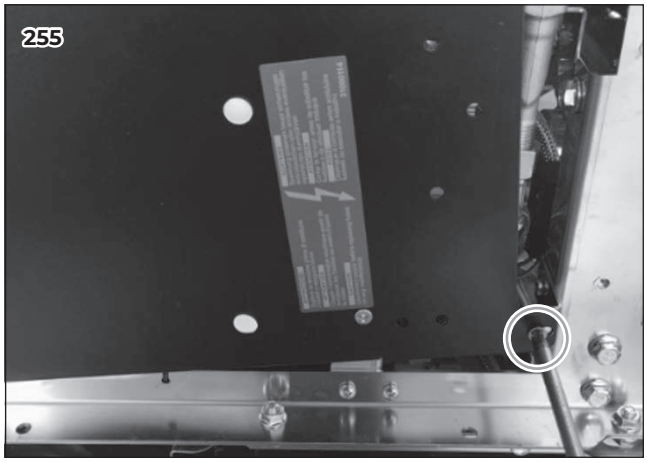


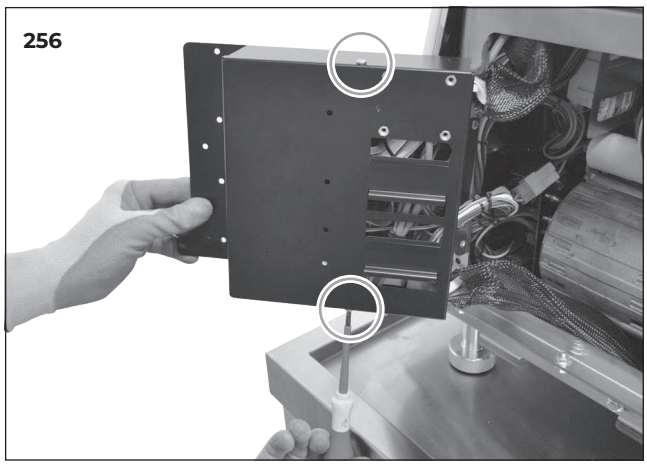
DANGER

255



3 Use a Phillips screwdriver, loosen the two top and bottom screws and remove the cover.

256



NOTE

There are two versions of control unit as described in the following points. For editorial reasons and to simplify the procedures described, the pictures will show the old version of control unit (until June 2022). Any substantial differences between the two versions will be specified.

4 The control unit without connections appears as shown in the figure.

- Main board until June 2022.

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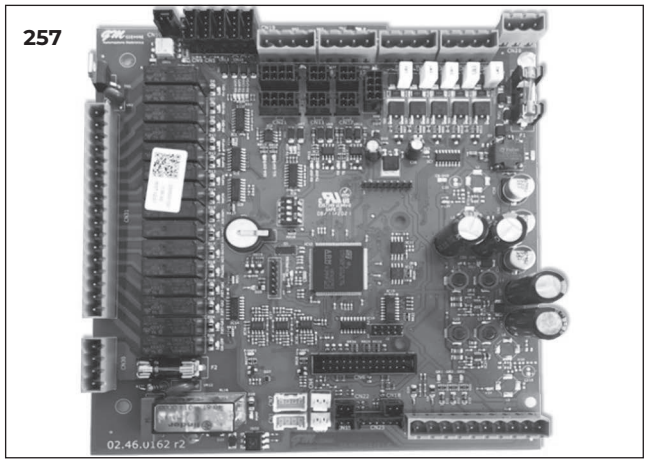

- Main board since July 2022.

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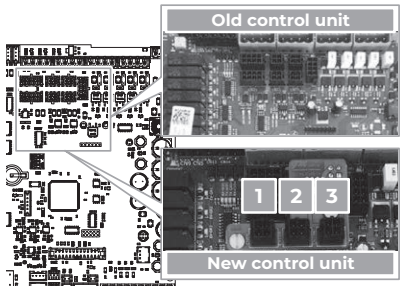

FOCUS ON THE VARIOUS PARTS

Battery and fuses:

- A CR1220 battery 3 Volt: to store date and time.
- B 6.3 Ampere fuse: power IN (+220V) fuse.
- C 2 Ampere fuse: low power IN (+24V) fuse.
- D In coming power AC supply 220V.
- E In coming power DC supply 24V.

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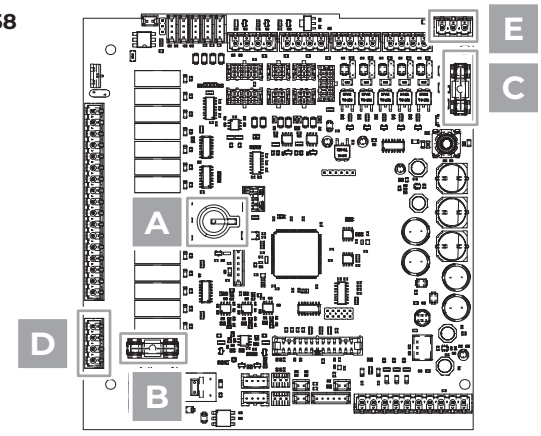

9.2 CONTROL UNIT RELAY CONNECTION

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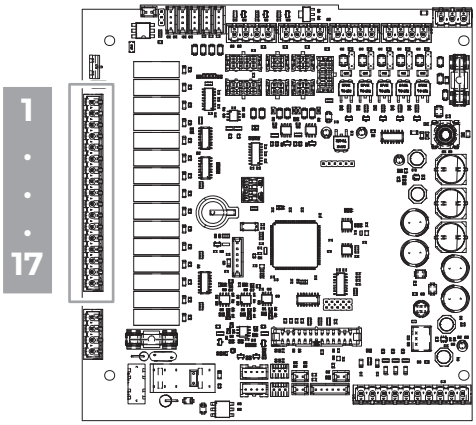
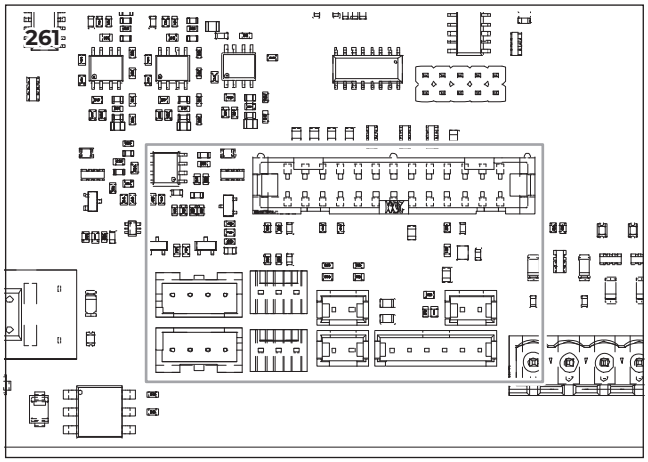


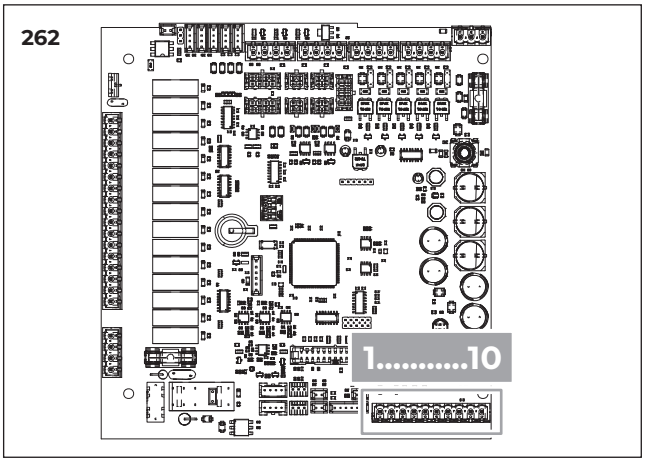
PIN	CABLE COLOUR	DESCRIPTION
1	RED	Cup warmer
2	WHITE	Gr 1 coffee valve
3	GREEN	Gr 2 coffee valve
4	RED	Gr 3 coffee valve
5	YELLOW	Left steam 1A valve
6	YELLOW	Left steam 1B valve
7	PURPLE	Right steam 2A valve
8	PURPLE	Right steam 2B valve
9	-	-
10	-	-
11	GREY	Hot water valve
12	BROWN	Auto level valve
13	RED	Purebrew 1
14	GREY	Purebrew 2
15	WHITE	Purebrew 3
16	RED	Flowmeter
17	ORANGE	Pump

PIN	DESCRIPTION
CN7	Steam 2
CN1	Steam 1
CN4	Steam pressure transducer
CN3	Water pressure transducer
CN22	E.C probe 2
CN15	E.C probe 1
CN18	Cup warmer probe
CN25	Solic state relay
CN6	Temperature control board



9.3 FLOW METER CONNECTION

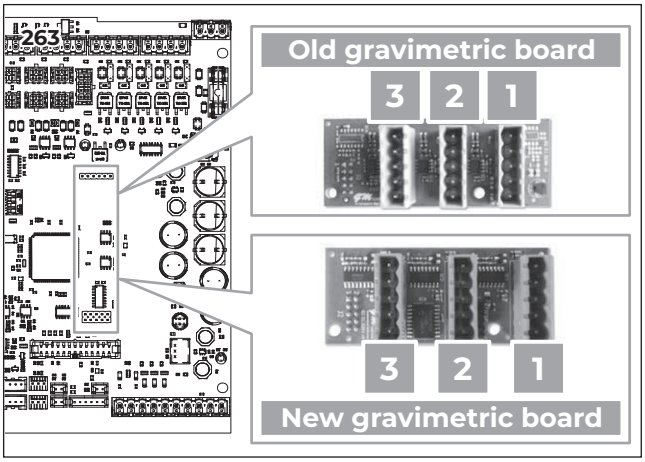
PIN	CABLE COLOUR	DESCRIPTION
1	RED	LEVEL PROBE
2	YELLOW / GREEN	Ground
3		
4	WHITE	Dispenser 1 impulses
5	BLUE	
6	GREY	Dispenser 2 impulses
7	BLUE	--
8	BLACK	Dispenser 3 impulses
9	BLUE	--
10	RED	+



9.4 GRAVIMETRIC BOARD

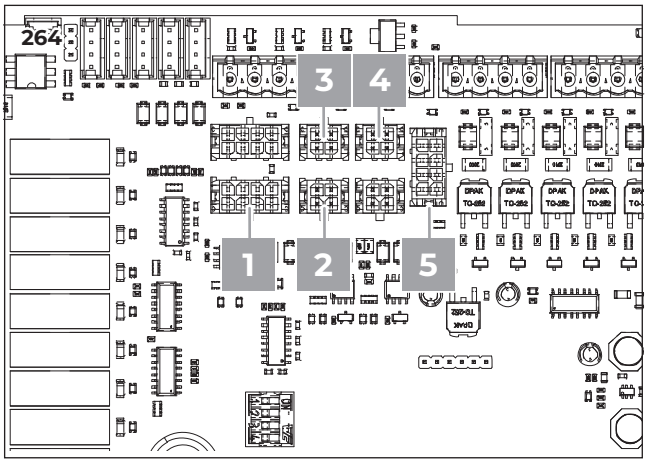
The gravimetric board located on the Main control board of the machine and calculates the weight measured by the load cells.

1 Group 1 load cell.
2 Group 2 load cell.
3 Group 3 load cell.



Touch screen, group display and hot water button details.

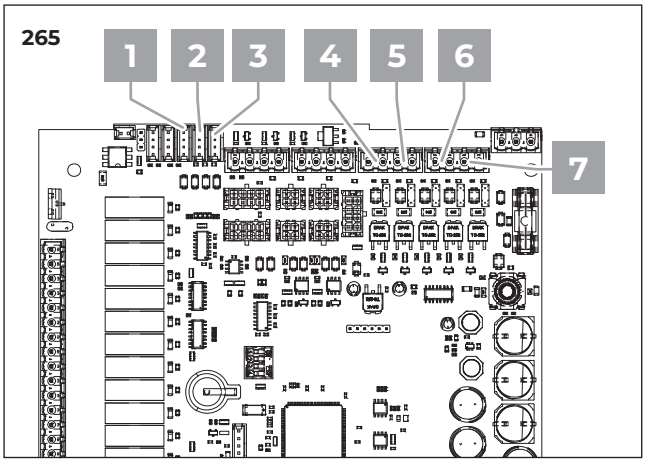
1 Touch Screen.
2 Group 1 display.
3 Group 2 display.
4 Group 3 display.
5 Hot water keypad.



9.5 FILTER HOLDER PRESENCE SENSORS

In details, regarding to filter holder presence sensors:

1 Group 1 filter holder presence sensor.
2 Group 2 filter holder presence sensor.
3 Group 3 filter holder presence sensor.



9.6 EASY CREAM

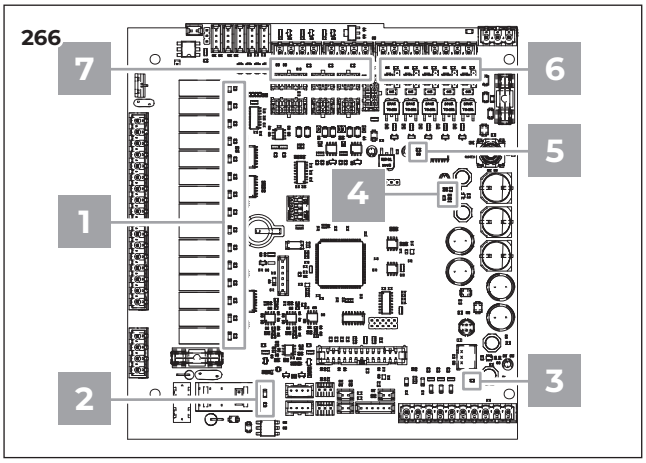
4 Easy cream 1 air valve.
5 Easy cream 1 air compressor.
6 Easy cream 2 air valve .
7 Easy cream 2 air compressor.

NOTE

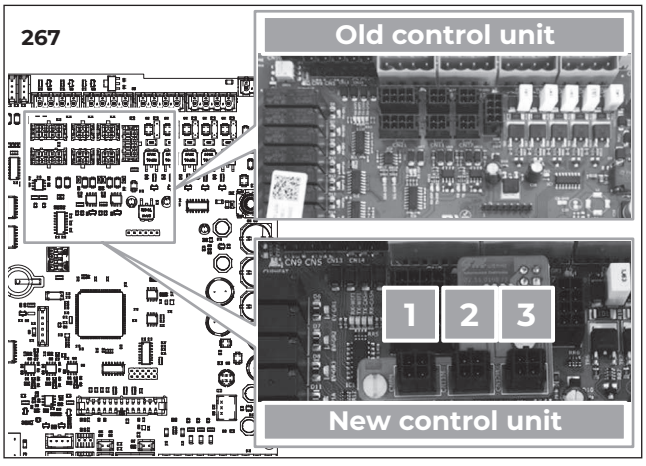
Easy cream is optional.

9.7 CONTROL UNIT LEDS

The control unit contains LEDs, useful to recognize the functioning of parts of the machine. There is a writing next to each LED to indicate what it refers to.
It can mean for example: that function is fine, or the control unit is turning ON that part, or the control unit is receiving signal from that part.



1 Group 1.
2 Group 2.
3 Group 3.



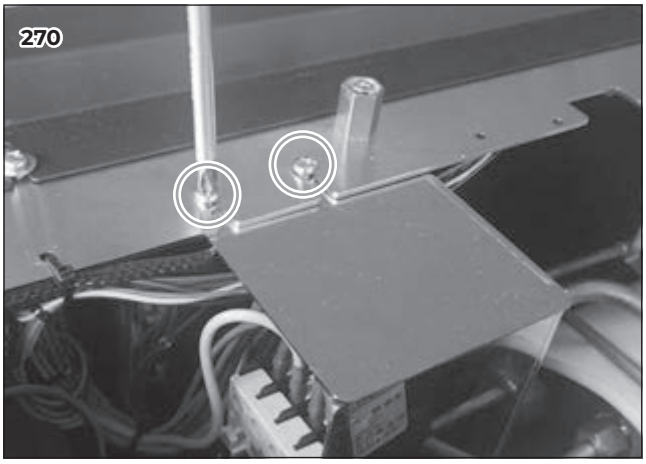
The most useful LEDs are:

POSITION ON THE IMAGE	WRITING NEXT TO LED	RELATIVE TO
1	EV-GR1	Group 1 delivery valve
	EV-GR2	Group 2 delivery valve
	EV-GR3	Group 3 delivery valve
	VAP1A	Left steam half strength
	VAP1B	Left steam full strength
	VAP2A	Right steam half strength
	VAP2B	Right steam full strength
	AIR-VAP1	
	AIR-VAP2	
	HOT-WATER	Hot-water valve
	FILLING	Auto Filling Valve
	PJET-GR1	Group 1 Pure Brew valve
	PJET-GR2	Group 2 Pure Brew valve
	PJET-GR3	Group 3 Pure Brew valve
	ON-OFF	Contactor activation
2	PUMP	Pump
3	+5V	Power supply +5V
4	+12V	Power supply +12V
5	+3V	Power supply +3V
6	CLSV2	Right Easycream compressor
	ELSV2	
	CLSV1	Left Easycream compressor
	ELSV1	
	EMLS	
7	PF-GR1	Group 1 filter holder presence sensor
	PF-GR2	Group 2 filter holder presence sensor
	PF-GR3	Group 3 filter holder presence sensor

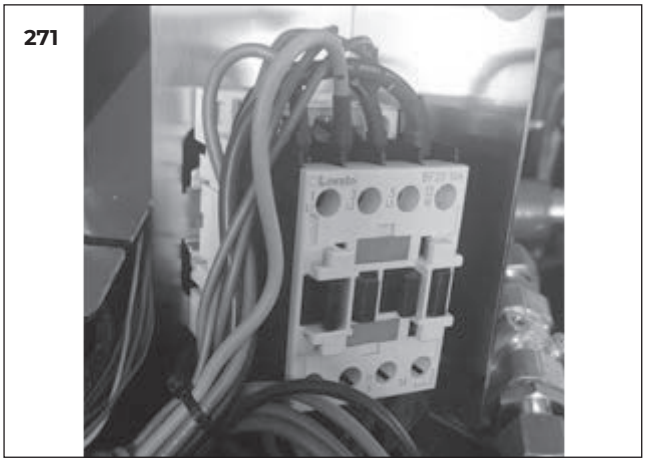
9.8 CONTACTOR

The contactor is placed on the rear side of the machine, so it possible to access it by removing the cup warmer plate, so it is possible to reach the contactor from the top side, as described below.

1 Utilizing a Phillips screwdriver, loosen the two screws holding the metal plate that keeps the contactor.


270

2 Remove the metal plate with the contactor.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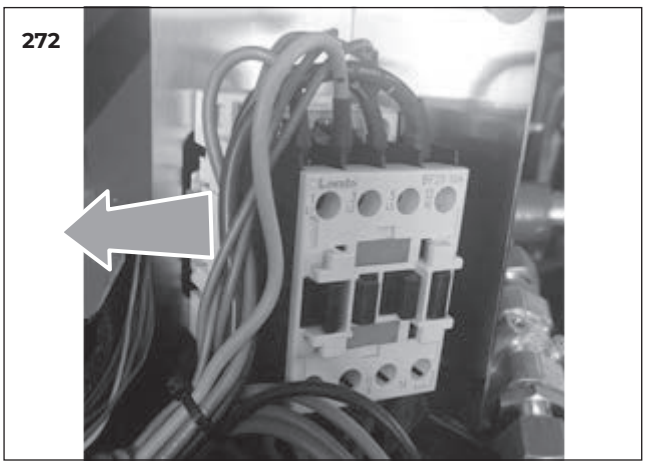
The contactor is a relay that supplies power to the heating elements of the machine. It interrupts the neutral and the three phases and the enabling is established by the control unit. In fact, when the machine is switched ON, the water level is controlled and, after the positive results, the contactor is enabled by the control unit.

PROBLEMS
Normally, the contactor makes a characteristic noise when it closes the circuit, so if you cannot hear the typical noise, it is possible that the problem is upstream (level probe) or with the contactor itself.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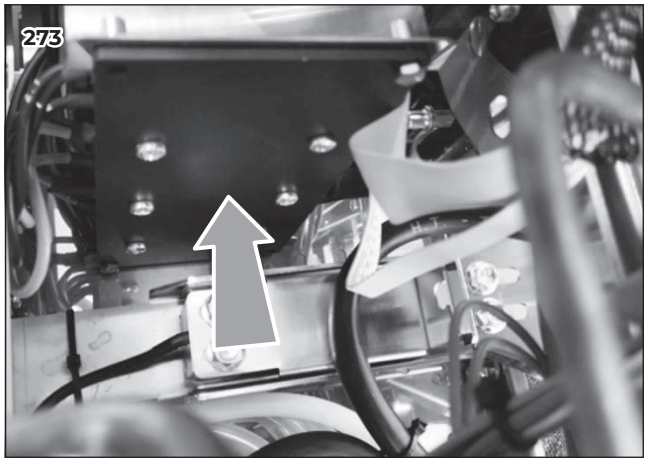
REPLACEMENT
To replace the contactor, simply remove the element from the side and unplug all the cables with the help of a Phillips screwdriver. Insert the new contactor in the upper guide, pressing it into the lower guide until a click is heard.

9.9 STATIC RELAYS

To access the three static relays, remove the top cup warmer plate, as described in Chapter 4 "Removal of the external surface". They are placed right side between the front panel and the steam boiler, next to the steam valve.

The static relays control the heating element of the steam boiler. They are activated when the pressure switch detects a pressure lower than that set. Each relay manages a different phase, and the voltage availability is enabled by the contactor. The switch ON/OFF command is piloted by the control unit. The right connections, LOAD, are those of the phases. The left ones, INPUT, are the commands of the relays, and are connected to the control unit by a single connector.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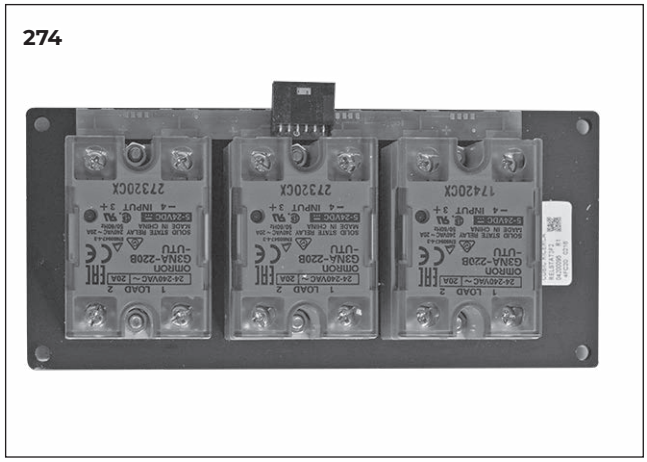
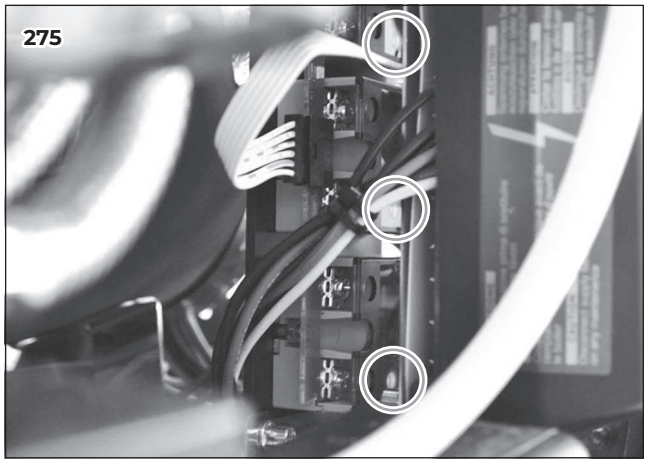
The operation is checked by means of LEDs that light up in the heating phase of the machine. To test, simply let out a lot of steam from a steam wand until the heating element starts again. Optimum operation will be when impulses are spaced at varying intervals.

PROBLEMS
The static relays can be damaged in ON or OFF status, thereby giving high or low pressure in the steam boiler.


274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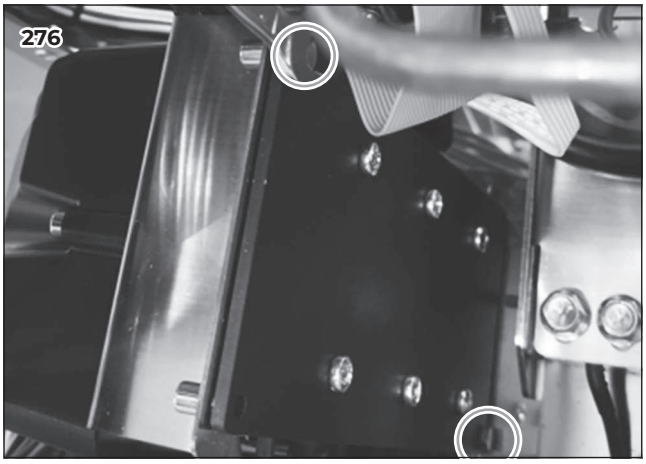
REPLACEMENT

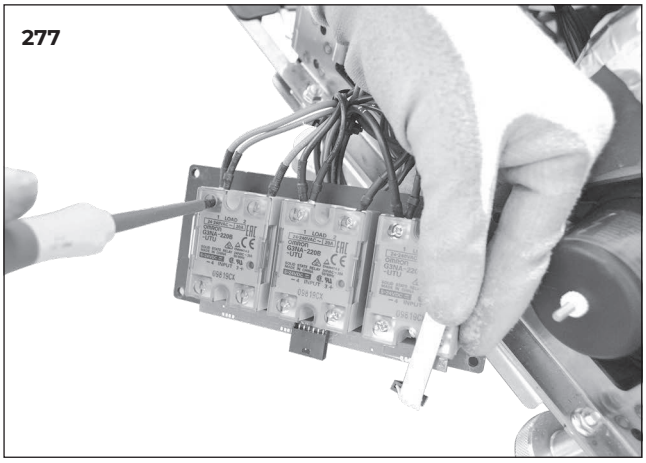
To replace the three static relays, proceed as it follows.

1 Remove the top cup warmer plate.

2 Utilizing a 7 mm wrench, remove the two screws holding the plate.


276

3 Unplug the connector by hand and all the cables with the help of a Phillips screwdriver.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9.10 TEMPERATURE CONTROL CARD

To access the Temperature control card (T3 Card):

1 Remove the cup warmer plate and right-side panels.

2 Utilizing a 3 mm Allen key, remove the screw and remove the T3 card cover.


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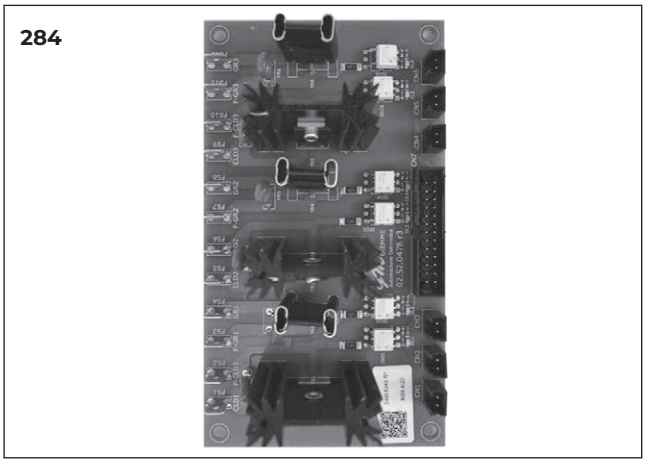
The Temperature control card is the interface between the coffee boilers, the groups, and the control unit.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Looking at it, the visible parts are:
1 The temperature probes to groups.
2 The LEDs, to show if the heating phase of each element is ON.
3 The flat cable to control unit
4 The temperature probes to coffee boiler.
5 The Triacs, to start and to stop the heating phase of each element.
6 The phases connections, incoming from the Static Relays, outgoing to heating elements of coffee boilers and groups.

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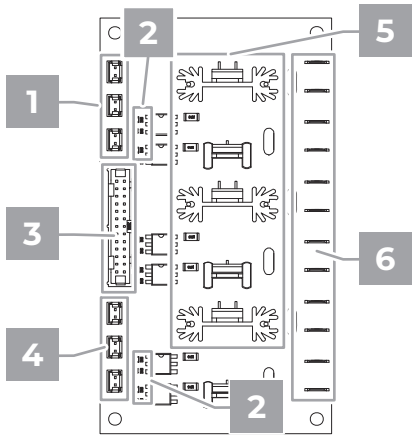

Using the T3 GENIUS algorithm, it elaborates the incoming data from the T3 Card and establishes if to turn ON each single element of the coffee boilers and of the groups. When a single element should be ON, the control unit enables the respective Triac on the Temperature control card, so that the phase reaches the heating element, and the respective LED on the T3 Card lights up.

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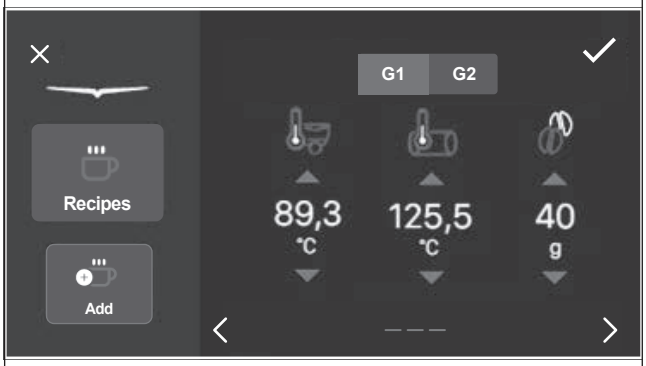

Each temperature probe has a label which identifies it. 1 or 2 or 3 identify coffee boiler and group number. Red or nothing identify respectively coffee boilers or groups.

For example, 2 and RED means coffee boiler 2.

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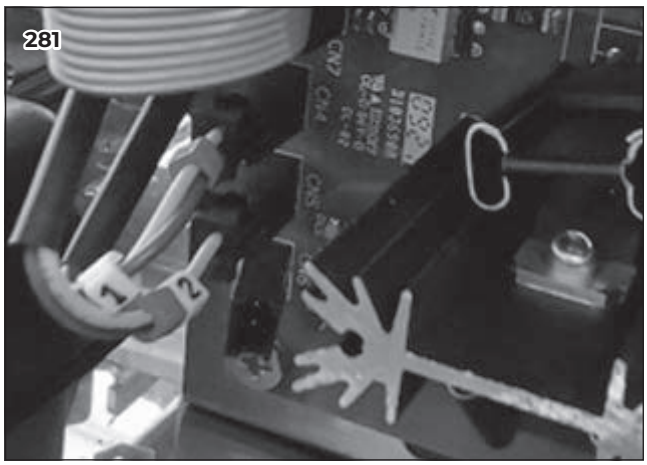

Moreover, writings on the T3 card next to temperature probes connectors identify respectively:
- CN1: group 1;
- CN2: group 2;
- CN2: group 3;
- CN4: coffee boiler 1;
- CN5: coffee boiler 2;
- CN6: coffee boiler 3.

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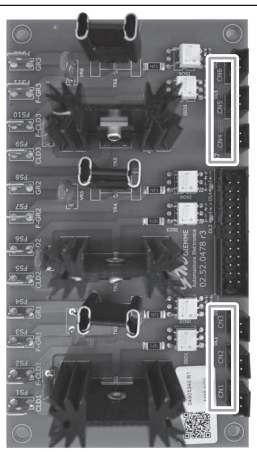

On the other side of the card, writings next to phases connections identify each phase. GRx means group x and CLDx means coffee boiler x. F means incoming phase.

NOTE

For further information on electrical connections, follow electrical diagrams on Chapter 14 "Diagrams and spare parts book".

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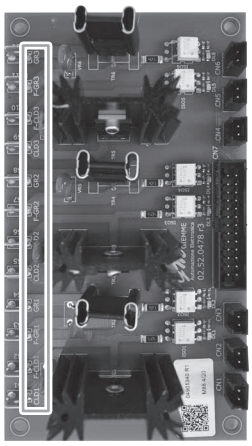

The LEDs are helpful to check the heating phase. Each LED corresponds with a heating element of the coffee boilers or of the groups.
Optimum operation will be when impulses are spaced at varying intervals. Writings near the LEDs identify respectively:

- DL1: coffee boiler 1;
- DL2: group 1;
- DL3: coffee boiler 2;
- DL4: group 2;
- DL5: coffee boiler 3;
- DL6: group 3.

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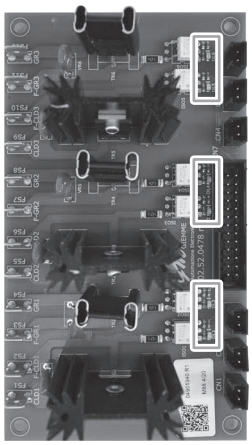

PROBLEMS

It is possible to check and understand if there are problems in the Triacs or in the temperature probes or in the heating elements.
Example:

1. The probe does not read values, but the boiler/group is functioning: the problem is in the probe.
2. The Triac is energised but the corresponding heating element does not heat up: problems with the heating element or with its high-limit thermostat.
3. It is needed to rearm the high-limit thermostat of a heating element: the relative Triac is stuck in the ON state.

To replace the T3 card, remove the four screws fixing it and unplug all the connectors by hand.

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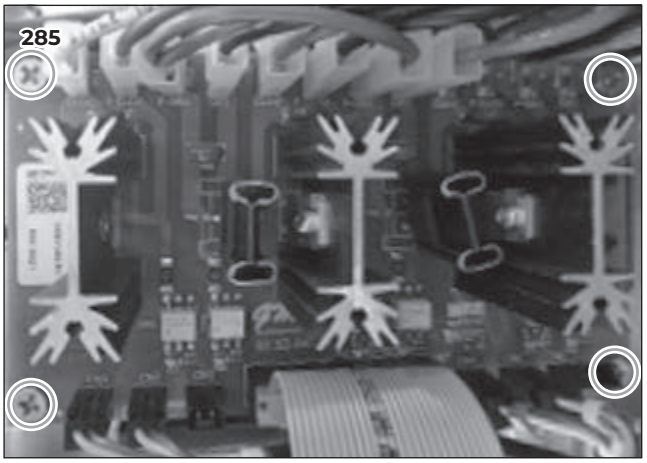
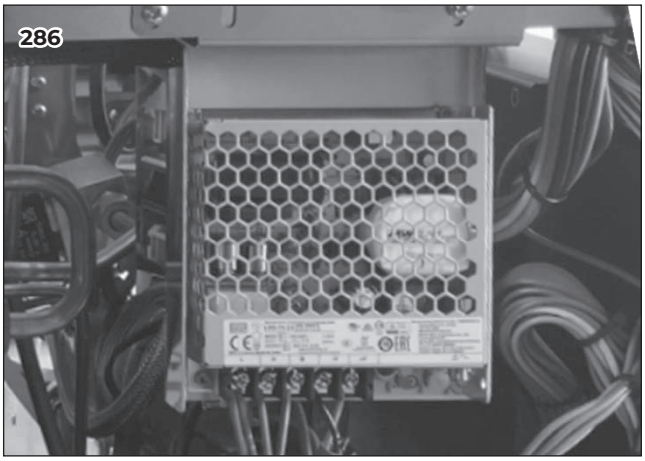


9.II TRANSFORMER

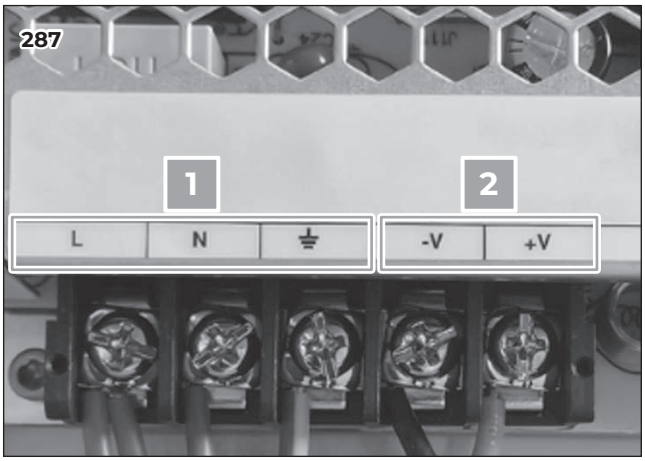
The machine provides VDC to the control unit and to some components thanks to a transformer, not included in the control unit, but separated.

From the rear side of the machine to access the transformer.



Looking at the connections the visible parts are:

1 Inputs.
2 Outputs.



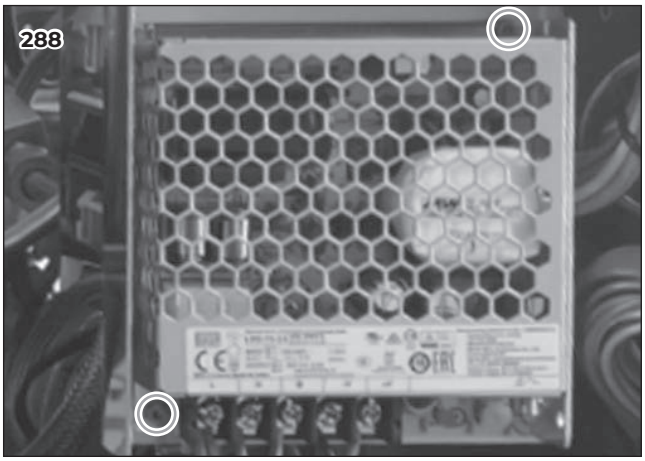
NOTE

The outputs are connected to the control unit, as explained in paragraph CONTROL UNIT.

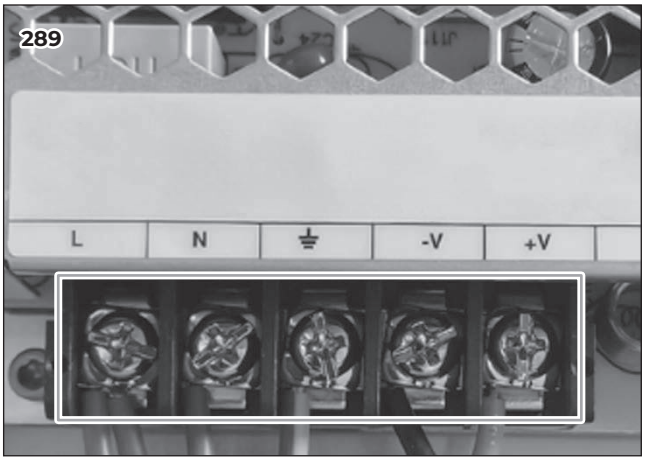
REPLACEMENT

If the outputs do not give +24V the transformer is broken. In this case the control unit and the machine will appear completely OFF. To replace the transformer, proceed as it follows:

1 Remove the rear panel.
2 Use a 2,5 mm Allen key, remove the two screws.



3 Use a Philips screwdriver, disconnect all cables.



9.12 PRESSURE TRANSDUCERS

BLACK EAGLE MAVERICK is equipped with two pressure transducers. To access them, remove the left side panels.

Use a Philips screwdriver, remove the screw and open the panel that blocks the control unit box.

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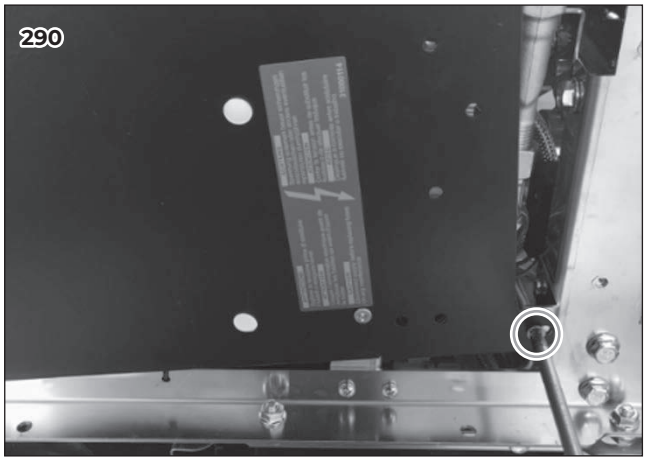
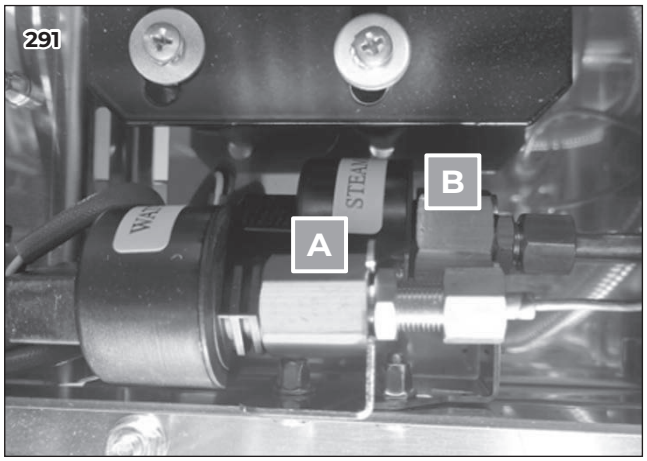


The pressure transducer reads the pressure of:

A Water mains pressure;
B Steam boiler pressure.

291



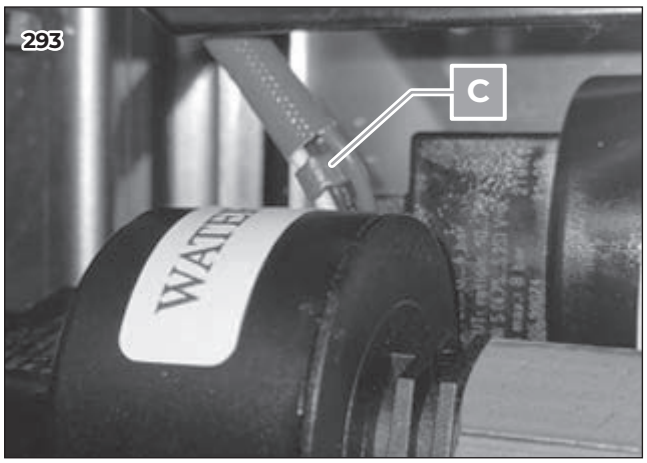
The touch screen display shows the relevant data as:

C Water mains pressure;
D Steam boiler pressure.

292

Two different cables connect the two pressure transducers to the control unit, as explained in paragraph 9.1 "Control unit". Notice that the cable of the steam boiler pressure transducer has a red label **C** to recognise it.

293



REPLACEMENT

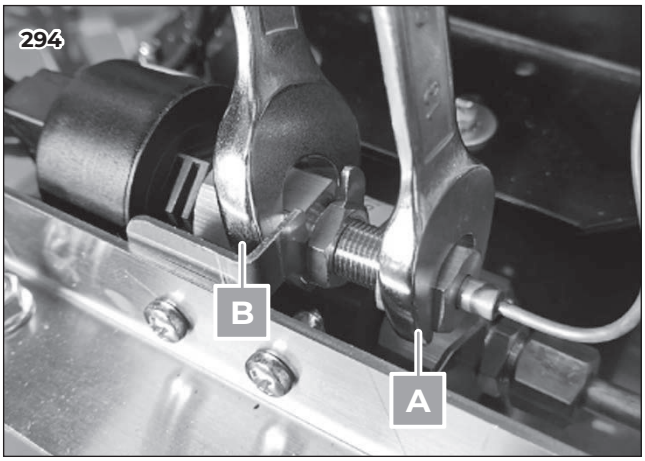
If the pressure is unshown or certainly wrong, check the cabling or replace the proper pressure transducer, as it follows.

1 For the water pressure transducer, close the pump tap.

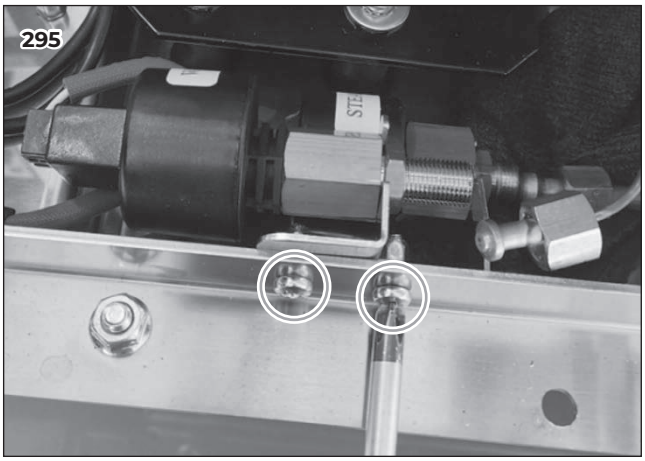
NOTE

For the steam boiler pressure transducer, lower the steam boiler pressure as described in paragraph 6.1 "Reducing steam boiler pressure.

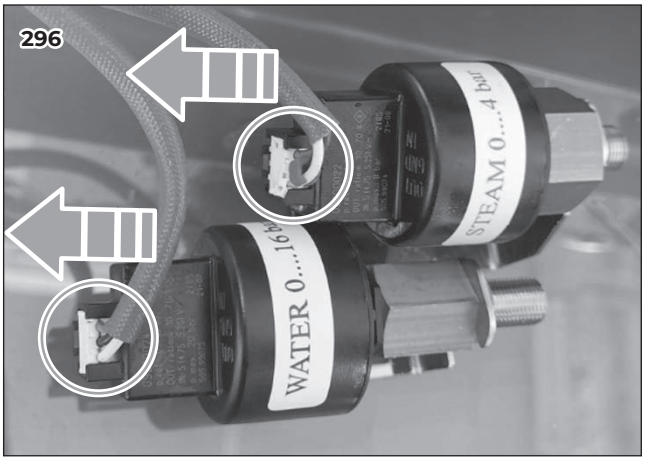
2 Use a 13 mm wrench **A** to open and 17 mm wrench **B** to hold the fitting.



3 Use a Philips screwdriver remove the two screws and remove the plate with the transducer.



4 Unplug the connector.
5 Unscrew and remove the pressure transducer by hand.



9.13 TOUCH SCREEN AND MAIN KEYPAD

Touch screen and main keypad are installed on a unique board. To replace it:

1 Follow the procedure described in paragraph REMOVAL OF THE TOUCH SCREEN to remove the board.
2 Use a Philips screwdriver to unscrew and remove the keys board.

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9.14 GROUP COVER AND SERVICE BOARD

Each group has its cover, where the service board is installed. To access it, remove the group cover as described in paragraph REMOVAL OF THE GROUP COVERS.
The service board includes:

A The dispensing group display board.
B The 3-buttons keypad.

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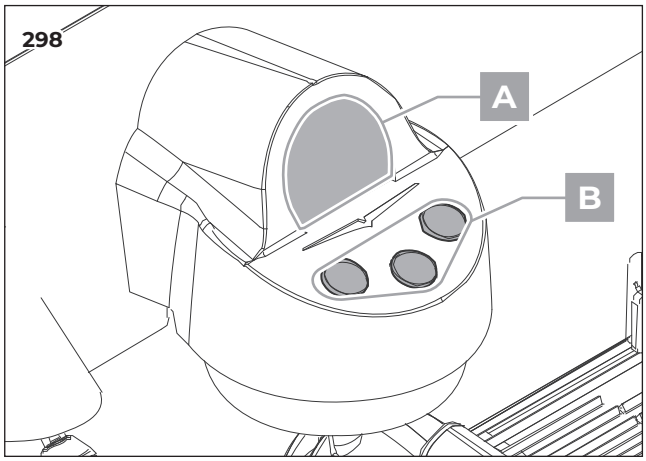

C The connection to the control board.
D Connect to F.
E USB port for update software.
F Connect to D.
G The Dip Switch (under the small cover).

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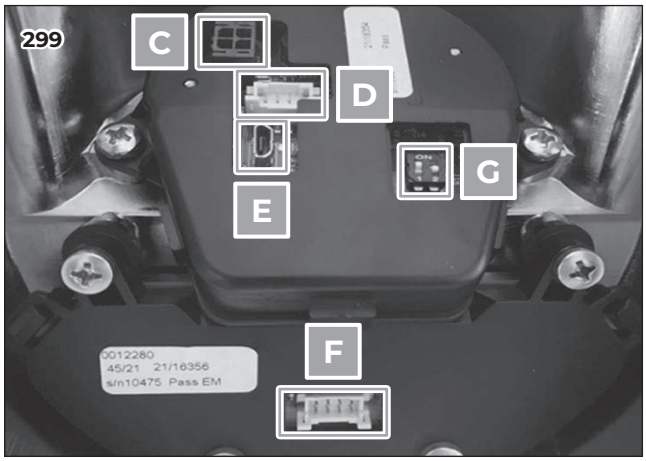
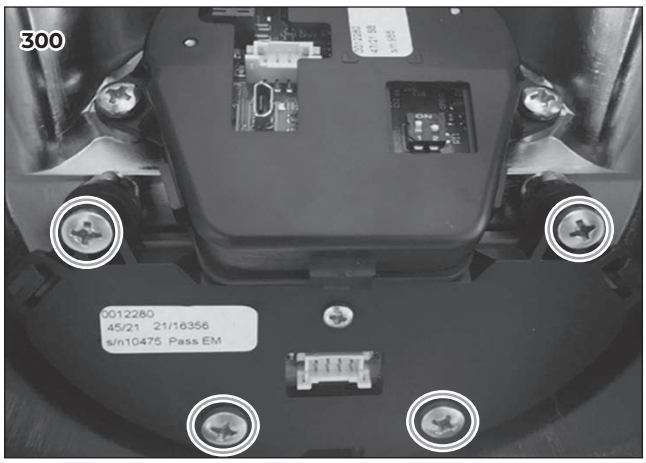


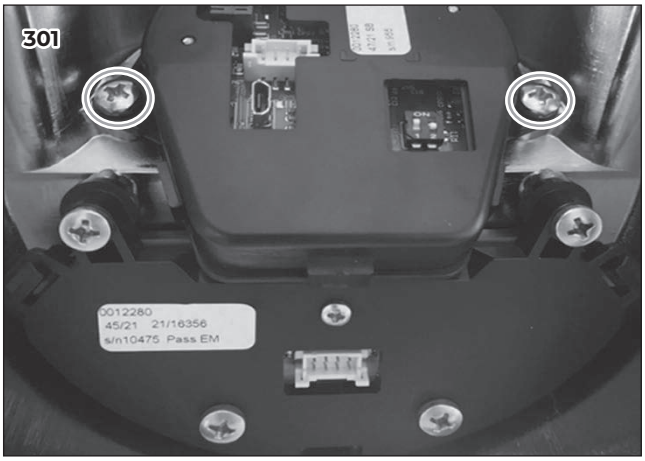
The service boards of all groups are connected to the control unit by a unique flat cable. Therefore, each group has a univocal address that is set by utilizing the DIP switch. The DIP switch is accessible by removing its small cover.

REPLACEMENT
Once the group cover has been removed, unscrew the four screws keeping the service board and take it away.

300



Once the group cover has been removed, unscrew the two screws keeping the screen board and take it away.

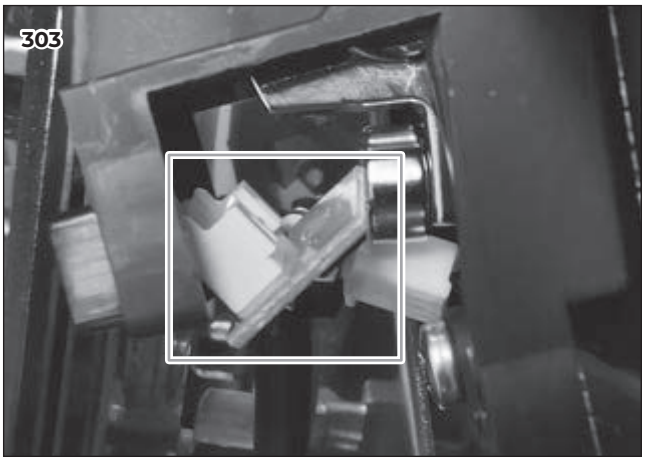


9.15 SERVICE KNOB

If any knob is not working, check the cabling or replace it, as it follows:

1 Unplug the cable.
2 Remove to cover.

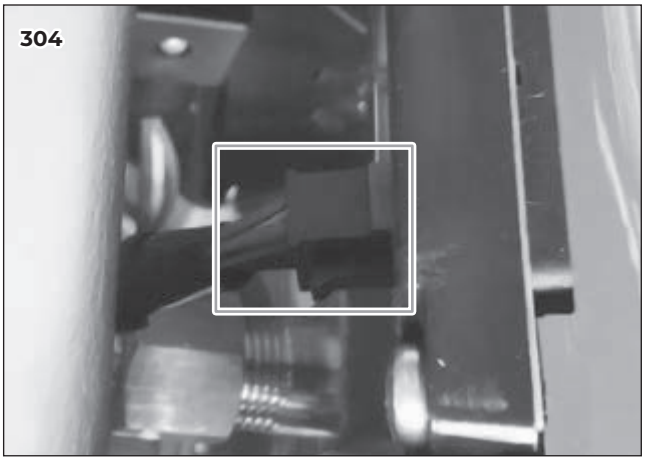
3 Remove the board.



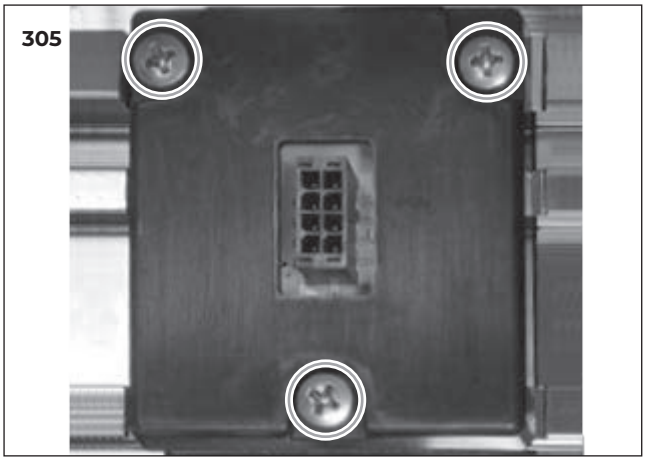
9.16 HOT WATER KEYPAD

If keypad is not working, check the cabling or replace it, as it follows:

1 Unplug the cable.



2 Unscrew the 3 screws to replace the keypad.



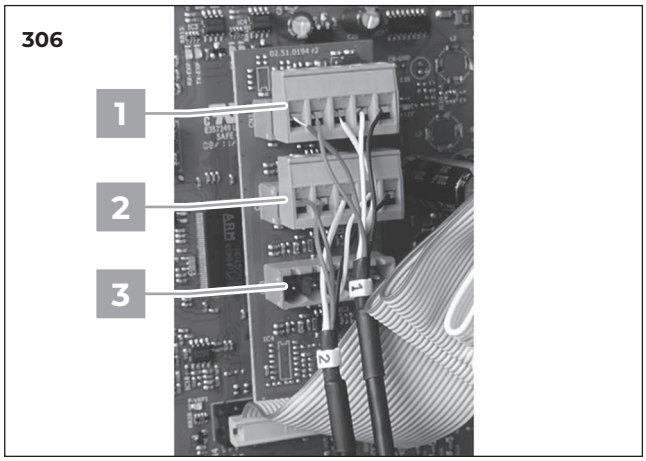
9.17 LOAD CELLS AND SENSORS

The load cells allow the calculation of the actual weight of the coffee dispensed from each group and are positioned in the front area of the machine.

To gain access the load cells:

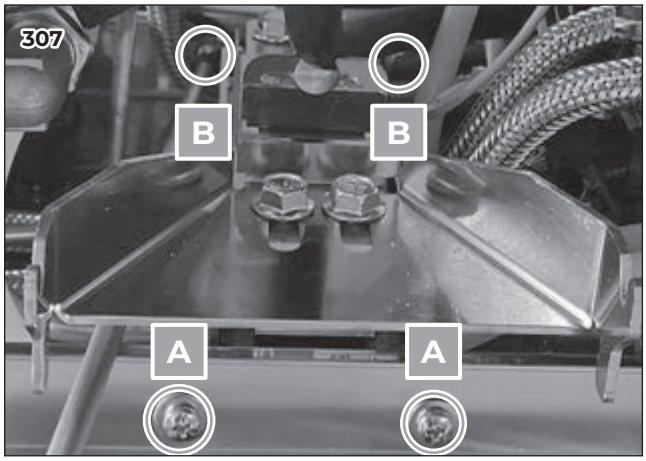
1 Remove the front panel and the upper panels.

2 Disconnect the electrical wiring of the group examined 1, 2 and 3 from the control unit.



3 With a Phillips screwdriver, unscrew the two front screws **A** and loosen the rear screws **B**.

4 At this point the load cell is free and can be pulled towards the front of the machine.



WARNING

The maximum weight supported by each sensor is 3 kg.

NOTE

During reassembly it is necessary to adjust the inclination of the sensor via the two front screws **A** and the rear screws **B**:

A The front screws must be secured in the rear upper part of the slot.

B The rear screws must be fixed at the bottom part of the slot.

Furthermore, it is necessary to adjust the longitudinal position **C** of the load cell with respect to the front panel.

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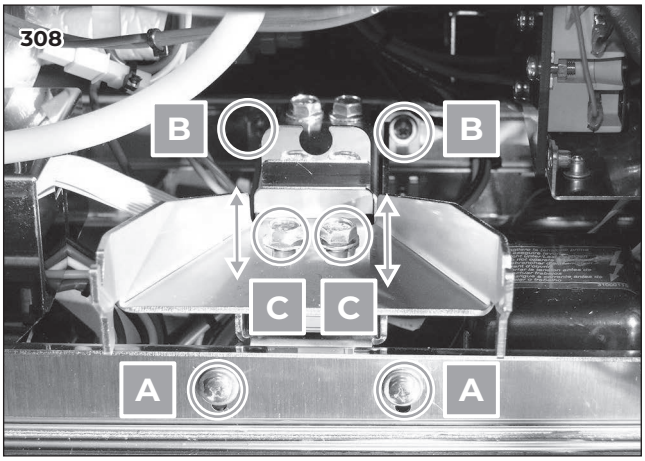

The correct position of the load cell is obtained by matching the front panel with the beginning of the descent of the hook of the cup holder grid.

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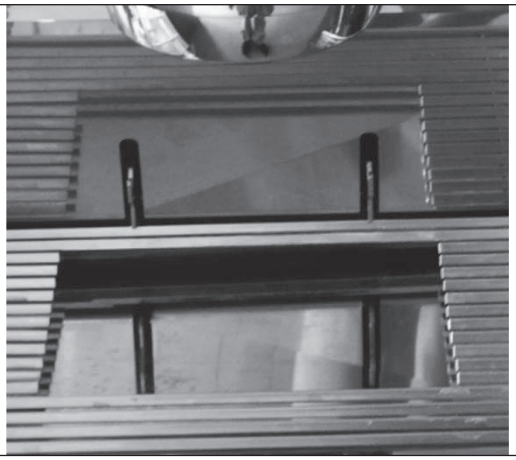

3KG connection 5 wires Ohms Values (Not Connection to the scales Board)	
Black - White	290 Ω
Black - Green	290 Ω
Black - Red	405 Ω
White - Green	350 Ω
White - Red	290 Ω
Green - Red	290 Ω

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10 ALARMS AND CONTROL OF THE EMERGENCIES

INDEX

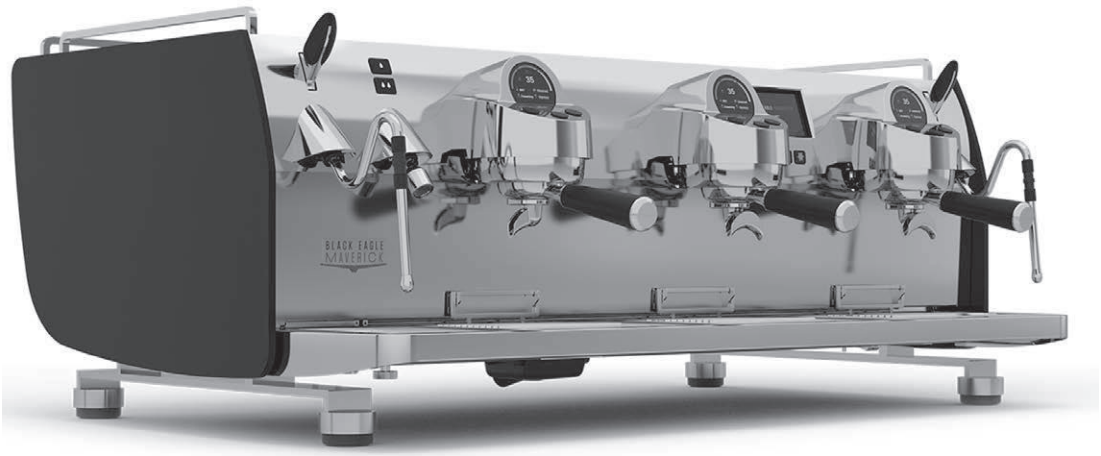
10.1 ALARMS AND SOLUTIONS

ALARM CODE	MAIN REASON	ALARM HISTORY	SOLUTIONS
A1.1	Flow meters malfunction alarm.	Flowmeter blocked - GR1	· Check the flowmeter of the specified group and its connection to the control unit. LEDs on the control unit can confirm if it is receiving signals from flowmeters. · Check any blockage on gigleur, clean it when necessary. · Check the filter on flowmeter, clean / replace it when necessary.
A1.2		Flowmeter blocked – GR2	
A1.3		Flowmeter blocked – GR3	
A2.0	Filling alarm, it was not possible to fill the service boiler within the pre-set timeout.	Filling time-out - steam boiler	Switch the machine OFF and ON to restart the autofill function. If not solved: · Check proper flow of inlet water from the mains or from the external tank. · Check the pump and the boiler filling valve manual Operations in the Diagnostic menu. · Check machine taps and potential leaks. · Check the level probe: the presence of limescale, the integrity of the plastic insulation and its sensitivity in the Configure CPU menu, can all effect the auto-fill function.
A3.1	Heating alarm, it was not possible to reach the service boiler settled temperature within the pre-established timeout time.	Time out Heating Boiler SER	In relation to the heating element of the steam boiler, or of the coffee boiler X, or of the group X: · Check the manual operation in the Diagnostic menu. · Check the thermo-fuse or high-limit thermostat continuity. · Check the heating element continuity and integrity. · Check the LEDs on the relative part: static relays and/or T3 card and/or control unit. · Check connections.
A3.2		Time out Heating Boiler GR1	
A3.3		Time out Heating Boiler GR2	
A3.4		Time out Heating Boiler GR3	
A3.5		Time out Heating GROUP1	
A3.6		Time out Heating GROUP2	
A3.7		Time out Heating GROUP3	
A4.1	NTC probe open alarm (broken or disconnected).	Error Services Pressure	Check the steam boiler pressure transducer and its connection to the control unit.
A4.2		NTC Boiler Group1 KO	Check the coffee boiler X temperature probe and its connection via the extension cord to the T3 card.
A4.3		NTC Boiler Group2 KO	
A4.4		NTC Boiler Group3 KO	
A4.5		PT1000 Group1 KO	Check the group X temperature probe and its connection via the extension cord to the T3 card.
A4.6		PT1000 Group2 KO	
A4.7		PT1000 Group3 KO	
A4.8		Cup Warmer probe KO	· Check the cupwarmer temperature probe and its connection to the control unit. · If the machine has not the cupwarmer, turn the cupwarmer OFF and disable it in the configure CPU menu (paragraph CPU CONFIGURATION).
A4.9		PT1000 EasyCream Block1 KO	Check the Left Easycream temperature probe and its connection via the extension cord to the control unit.
A4.10		PT1000 EasyCream Block2 KO	Check the Right Easycream temperature probe and its connection via the extension cord to the control unit.

ALARM CODE	MAIN REASON	ALARM HISTORY	SOLUTIONS
A5.1	NTC probe in short circuit alarm.	Error Services Pressure	Check the steam boiler pressure transducer and its connection to the control unit.
A5.2		NTC Boiler Group1 KO	Check the coffee boiler X temperature probe and its connection via the extension cord to the T3 card.
A5.3		NTC Boiler Group2 KO	
A5.4		NTC Boiler Group3 KO	
A5.5		PT1000 Group1 KO	Check the group X temperature probe and its connection via the extension cord to the T3 card.
A5.6		PT1000 Group2 KO	
A5.7		PT1000 Group3 KO	
A5.8		Cup Warmer probe KO	· Check the cupwarmer temperature probe and its connection to the control unit. · If the machine has not the cupwarmer, turn the cupwarmer OFF and disable it in the configure CPU menu (paragraph CPU CONFIGURATION).
A5.9		PT1000 EasyCream Block1 KO	Check the Left Easycream temperature probe and its connection via the extension cord to the control unit.
A5.10		PT1000 EasyCream Block2 KO	Check the Right Easycream temperature probe and its connection via the extension cord to the control unit
A6.0	Boiler level alarm, the water level is insufficient.	Level Probe KO	On the level probe: · Check the presence of limescale. · Check the integrity of the plastic insulation. · Change its sensitivity in the Configure CPU menu.
A7.1	Group first filling alarm, the filling of the group boilers has not been completed correctly.	Filling time-out - coffee boiler 1	The control unit does not receive the signal from a flowmeter during the “clock reset” procedure. · Check proper flow of inlet water from the mains or from the external tank. · Check machine taps and potential leaks. · Check the flowmeter LEDs on the control unit to understand which is the faulty flowmeter. · Check the flowmeter connection to the control unit. · Check the presence of a blockage: in the flowmeter, its metallic input filter, the restrictor and the not-return valve.
A7.2		Filling time-out - coffee boiler 2	
A7.3		Filling time-out - coffee boiler 3	
A8.1	Memory alarm, error found in the data relating to the parameters.	Parameters memory - reading busy	· Check if the error disappears by switching the machine OFF and ON. · Reset all machine parameters: open the control unit and, with machine ON, change the status of the dip switch SW23. Wait 5 seconds and return the dip switch to its original position. · Update the firmware or re-install the same firmware version. · Change the control unit.
A8.2		Parameters memory - reading timeout	
A8.3		Parameters memory - reading generic	
A8.4		Parameters memory - writing generic	
A9.1	Memory alarm, error found in the data relating to the counters.	Reading busy	· Check if the error disappears by switching the machine OFF and ON. · Reset all machine parameters: open the control unit and, with machine ON, change the status of the dip switch SW23. Wait 5 seconds and return the dip switch to its original position. · Update the firmware or re-install the same firmware version. · Change the control unit.
A9.2		Counters memory - reading timeout	
A9.3		Counters memory - reading generic	
A9.4		Counters memory - writing generic	

ALARM CODE	MAIN REASON	ALARM HISTORY	SOLUTIONS
A10.0	CPU not communicating alarm.	Control unit-display communication	This error may appear after another error has occurred, or if the control unit does not communicate correctly with the touch screen. · Check the presence of another error in the Alarm history menu. · Check if the error disappears by switching the machine OFF and ON. · Check the connections of the cable between the control unit and the touch screen.
A11.0	Low battery alarm, the battery on the CPU must be replaced.	Low battery	Change the CR1220 3 Volt battery on the control unit.
A12.0	Maintenance alarm, the total number of activations exceeds the expected value, maintenance is required.	Maintenance by cycles	To delete the warning, enter the Maintenance alarm menu, press and hold the  for about 5 seconds to reset the cycle counter.
A13.0	Mains water pressure alarm.	Low main pressure	Check the mains pressure. It is suggested to have this control enabled in case of mains water supply or disabled in case of water supply by tank. To disable the warning, enter the Maintenance alarm menu and set Mains Pressure to OFF.
A14.1	PH probe alarm.	Smart Water out of range - pH	Check the PH Probe, replace when necessary. Check the external water filter.
A14.2		Smart Water out of range - TDS	Check the TDS Probe, replace when necessary. Check the external water filter.
A15.0	Excessive pressure alarm, the pressure in the boiler exceeds 2.7 bar (alarm active only if NOT in diagnostics).	High steam boiler pressure	Check the pressure switch and,replace it if necessary, inspect the heating element.
A16.0	Maintenance alarm.	Maintenance by date	This is not an error, reset the maintenance alert.
A17.1	Group communication error	Group 1 communication	· Check the cable between group and main board condition, replace it when necessary. · Check the group head dip switch settings, to ensure set according each group. · To do a factory reset. · Replace the group board when necessary. · Replace main board when necessary.
A17.2		Group 2 communication	
A17.3		Group 3 communication	

11 MAINTENANCE CHECKING



INDEX

II.I 2-3 GROUPS AND 2 STEAM WAND VERSION

II.I.I SIX (6) MONTHS OR 50000 CYCLES MAINTENANCE

Approximate time for service is 1 hour uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

Check, adjust replace (if necessary):

- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____) (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check anti vacuum valve for leaks
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level

NOTE

The water hardness must be less than 6° fr (French degree). The chlorine content must not exceed 100 mg per litre (0.00000361 lb / cu in), otherwise the conditions of guarantee of the machine will expire.

2 GR	3GR
2 X 02280050	3 X 02280050
2 X 03000066.R	3 X 03000066.R

DATA

SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

DATE ----------

11.1.2 TWELVE (12) MONTHS OR 100000 CYCLES MAINTENANCE

Approximate time for service is 2 hours uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level
- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____ (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Replace anti vacuum Valve (01000023)
- ❒ Replace pre-infusion chamber gasket (02280012)
- ❒ Replace the Neplax Valve (98120001)
- ❒ Replace the check valves (98110001)
- ❒ Replace filter baskets (03000072, 03000461)
- ❒ Replace the Steam Wand (110000202)
- ❒ Replace hot water nut outer O-ring (02280037)

2 GR	3 GR
1 X 01000023	1 X 01000023
2 X 02280012	3 X 02280012
1 X 02280037	1 X 02280037
2 X 02280050	3 X 02280050
2 X 03000066.R	3 X 03000066.R
1 X 03000072	1 X 03000072
2 X 03000461	3 X 03000461
2 X 110000202	2 X 110000202
2 X 98110001	3 X 98110001
2 X 98120001	3 X 98120001

DATA

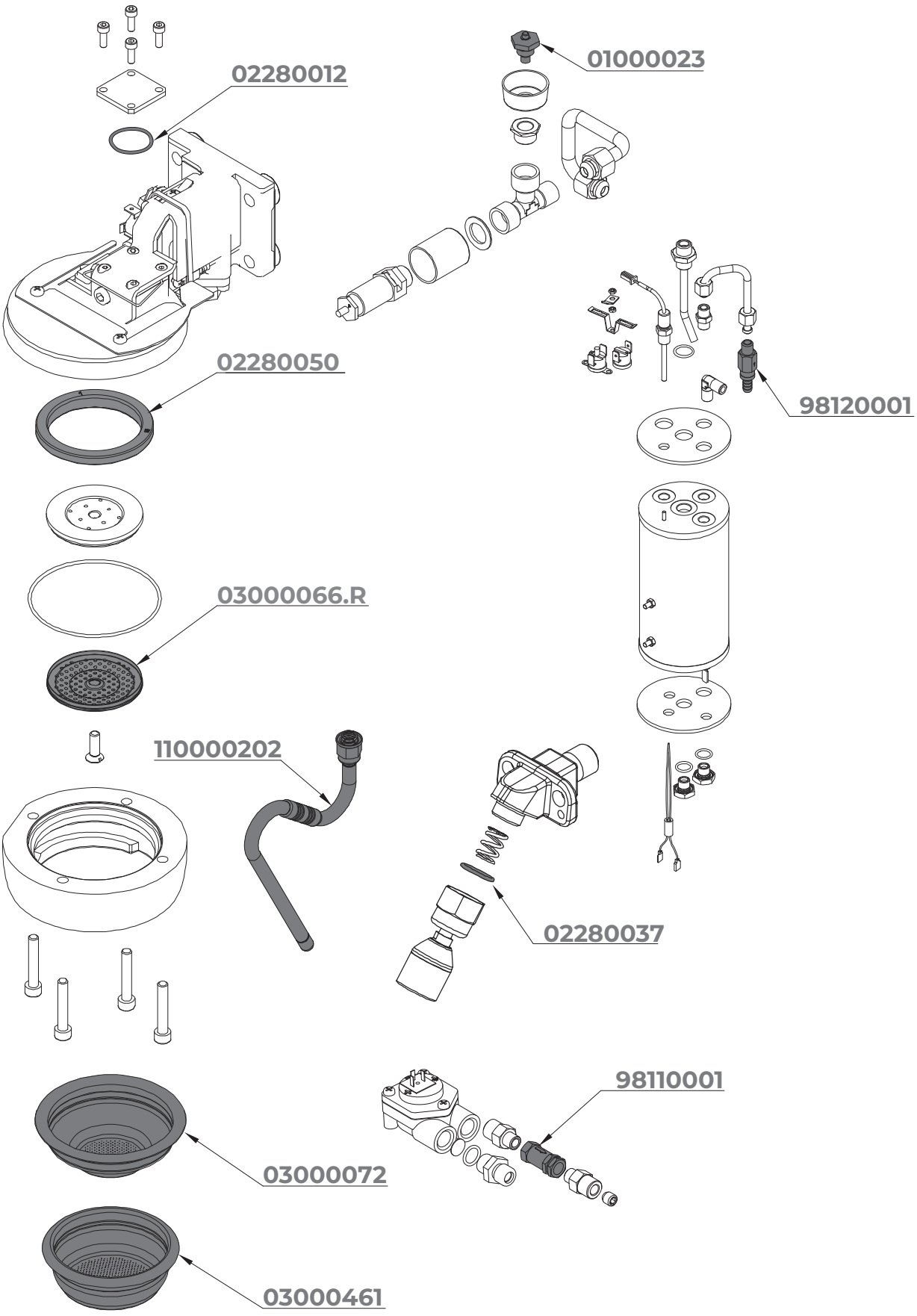
SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

DATE ----------

II.I.3 ONE YEAR MAINTENANCE KIT



- CHANGE EVERY 4-6 MONTHS
- CHANGE EVERY 12 MONTHS

II.2 2-3 GROUPS AND I EASY CREAM VERSION

II.2.I SIX (6) MONTHS OR 50000 CYCLES MAINTENANCE

Approximate time for service is 1 hour uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

Check, adjust replace (if necessary):

- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____) (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check anti vacuum valve for leaks
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level
- ❒ Replace the Teflon pipe (11740003)

NOTE

The water hardness must be less than 6° fr (French degree). The chlorine content must not exceed 100 mg per litre (0.00000361 lb / cu in), otherwise the conditions of guarantee of the machine will expire.

2 GR	3GR
2 X 02280050	3 X 02280050
2 X 03000066.R	3 X 03000066.R
0,5m X 11740003	0,5m X 11740003

DATA

SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

DATE ----------

II.2.2 TWELVE (12) MONTHS OR 100000 CYCLES MAINTENANCE

Approximate time for service is 2 hours uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level
- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____ (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Replace anti vacuum Valve (01000023)
- ❒ Replace pre-infusion chamber gasket (02280012)
- ❒ Replace the Neplax Valve (98120001)
- ❒ Replace the check valves (98110001)
- ❒ Replace filter baskets (03000072, 03000461)
- ❒ Replace the Steam Wand (110000202)
- ❒ Replace EC O-ring (02280036)
- ❒ Replace EC and hot water nut outer O-rings (02280037)
- ❒ Replace EC sphere O-ring (02600004)
- ❒ Replace EC temperature probe (092000300)
- ❒ Replace EC arm protector (05000660)
- ❒ Replace the Teflon pipe (11740003)

2 GR	**3 GR**
1 X 01000023	**1 X 01000023**
2 X 02280012	**3 X 02280012**
2 X 02280036	**2 X 02280036**
2 X 02280037	**2 X 02280037**
2 X 02280050	**3 X 02280050**
1 X 02600004	**1 X 02600004**
2 X 03000066.R	**3 X 03000066.R**
1 X 03000072	**1 X 03000072**
2 X 03000461	**3 X 03000461**
1 X 05000660	**1 X 05000660**
1 X 092000300	**1 X 092000300**
1 X 110000202	**1 X 110000202**
1mt X 11740003	**1mt X 11740003**
2 X 98120001	**3 X 98120001**
2 X 98110001	**3 X 98110001**

DATA

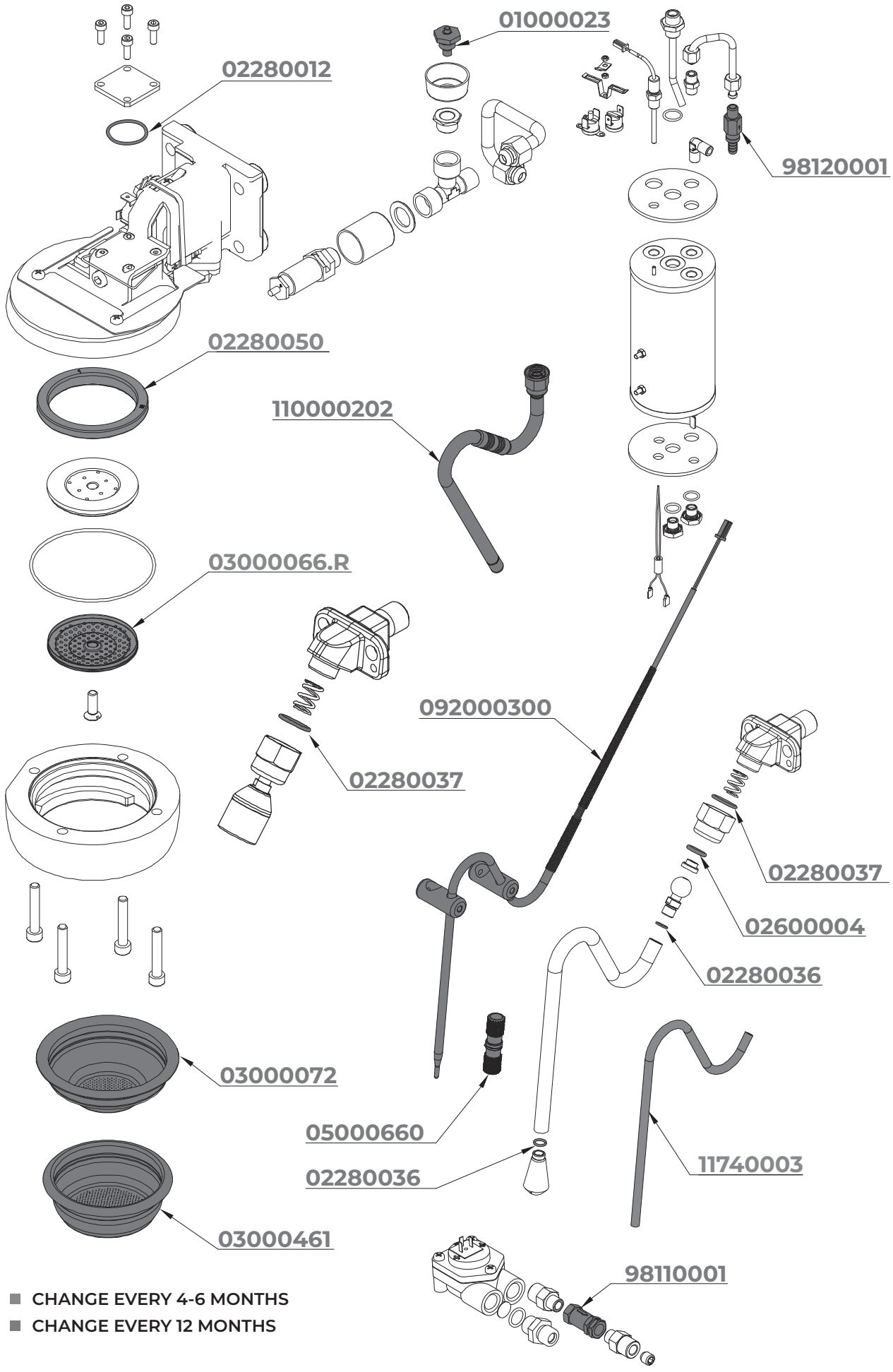
SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

DATE ----------

II.2.3 ONE YEAR MAINTENANCE KIT



- CHANGE EVERY 4-6 MONTHS
- CHANGE EVERY 12 MONTHS

II.3 2-3 GROUPS AND 2 EASY CREAM VERSION

II.3.I SIX (6) MONTHS OR 50000 CYCLES MAINTENANCE

Approximate time for service is 1 hour uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

Check, adjust replace (if necessary):

- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____) (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check anti vacuum valve for leaks
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level
- ❒ Replace the Teflon pipe (11740003)

NOTE

The water hardness must be less than 6° fr (French degree). The chlorine content must not exceed 100 mg per litre (0.00000361 lb / cu in), otherwise the conditions of guarantee of the machine will expire.

2 GR	3GR
2 X 02280050	3 X 02280050
2 X 03000066.R	3 X 03000066.R
0,5m X 11740003	0,5m X 11740003

DATA

SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

DATE ----------

II.3.2 TWELVE (12) MONTHS OR 100000 CYCLES MAINTENANCE

Approximate time for service is 2 hours uninterrupted. Consider that the technicians performing the service are aware of safety measures before commencing in regards to isolating power, pressure of steam and pressure of water.
Information should be sought from the site manager for any problems or concerns before commencing work, and to allow sufficient time to complete the task uninterrupted. Remove all covers before starting and check for damage / signs of leaks.

- ❒ Check for any signs of leaking in machine
- ❒ Check for any damaged wires or caballing
- ❒ Check for noisy pump motor
- ❒ Check for blockage in waste hose
- ❒ Check for leaking from hot water pipe
- ❒ Check Safety Valve
- ❒ Check auto fill function
- ❒ Check steam pressure (_____Bar)
- ❒ Check the static water pressure (_____Bar)
- ❒ Check pump pressure (_____Bar)
- ❒ Check for over all coffee product outcomes
- ❒ Check boiler level
- ❒ Check for any signs of valves leaking
- ❒ Check and inspect display, ensuring it is not faulty
- ❒ Check for boiler leaks
- ❒ Check the cleaning cycle counts. Total _____ (if present)
- ❒ Check the absolute counter (Total_____ (if present)
- ❒ Replace cup gaskets (02280050)
- ❒ Replace shower screens (03000066.R)
- ❒ Replace anti vacuum Valve (01000023)
- ❒ Replace pre-infusion chamber gasket (02280012)
- ❒ Replace the Neplax Valve (98120001)
- ❒ Replace the check valves (98110001)
- ❒ Replace filter baskets (03000072, 03000461)
- ❒ Replace EC O-ring (02280036)
- ❒ Replace EC and hot water nut outer O-rings (02280037)
- ❒ Replace EC sphere O-ring (02600004)
- ❒ Replace EC temperature probe (092000300)
- ❒ Replace EC arm protector (05000660)
- ❒ Replace the Teflon pipe (11740003)

2 GR	3 GR
1 X 01000023	1 X 01000023
2 X 02280012	3 X 02280012
4 X 02280036	4 X 02280036
2 X 02280037	2 X 02280037
2 X 02280050	3 X 02280050
2 X 02600004	2 X 02600004
2 X 03000066.R	3 X 03000066.R
1 X 03000072	1 X 03000072
2 X 03000461	3 X 03000461
2 X 05000660	2 X 05000660
2 X 092000300	2 X 092000300
1mt X 11740003	1mt X 11740003
2 X 98120001	3 X 98120001
2 X 98110001	3 X 98110001

DATA

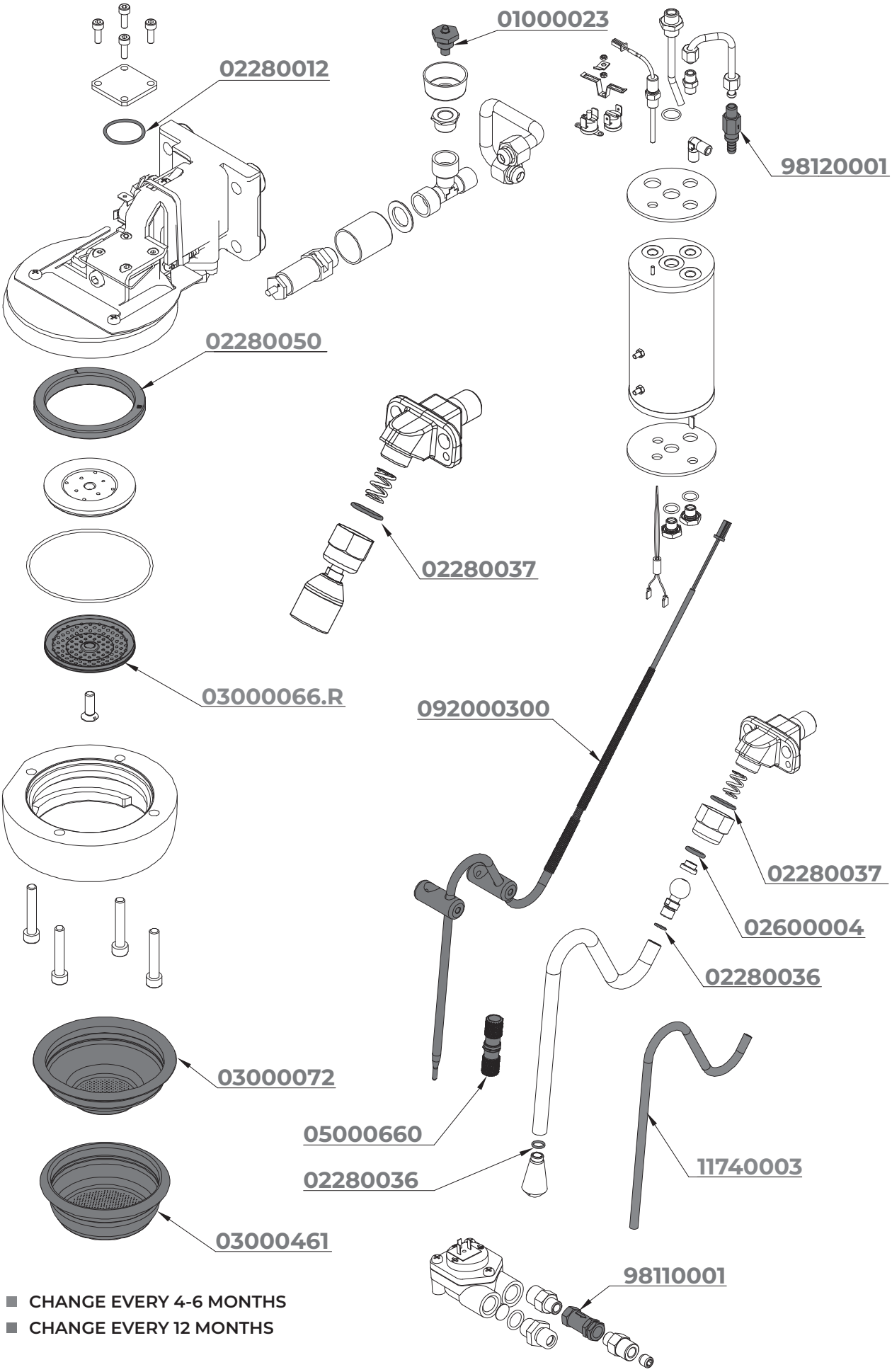
SITE NAME ----------

TECHNICIAN ----------

TECHNICIAN SIGNATURE ----------

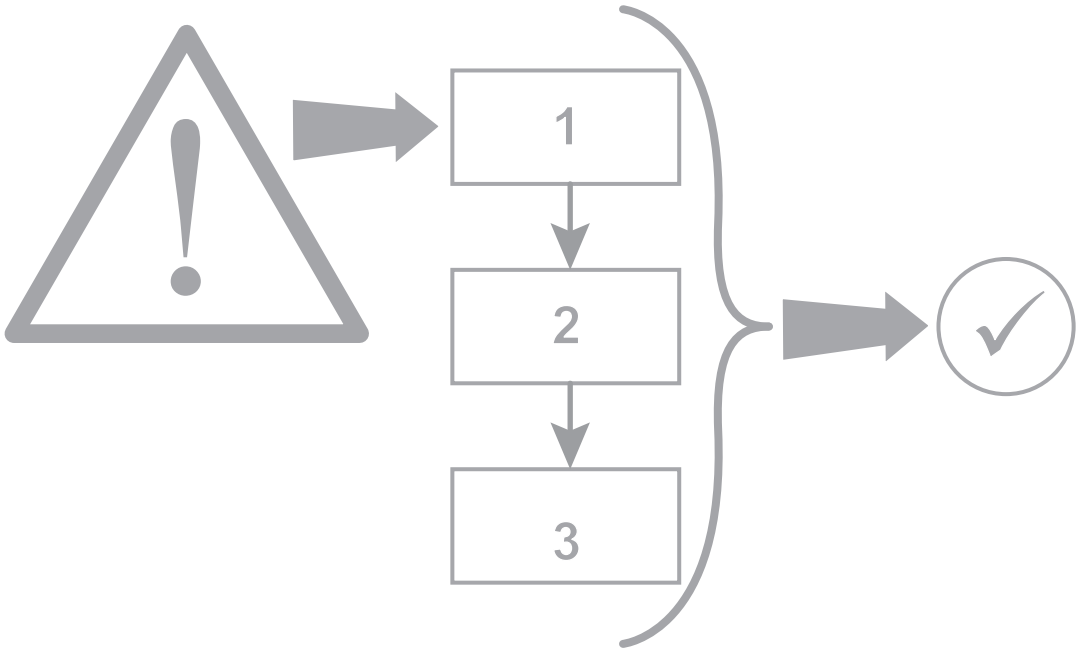
DATE ----------

II.3.3 ONE YEAR MAINTENANCE KIT



- CHANGE EVERY 4-6 MONTHS
- CHANGE EVERY 12 MONTHS

12 TROUBLESHOOTING DIAGRAMS



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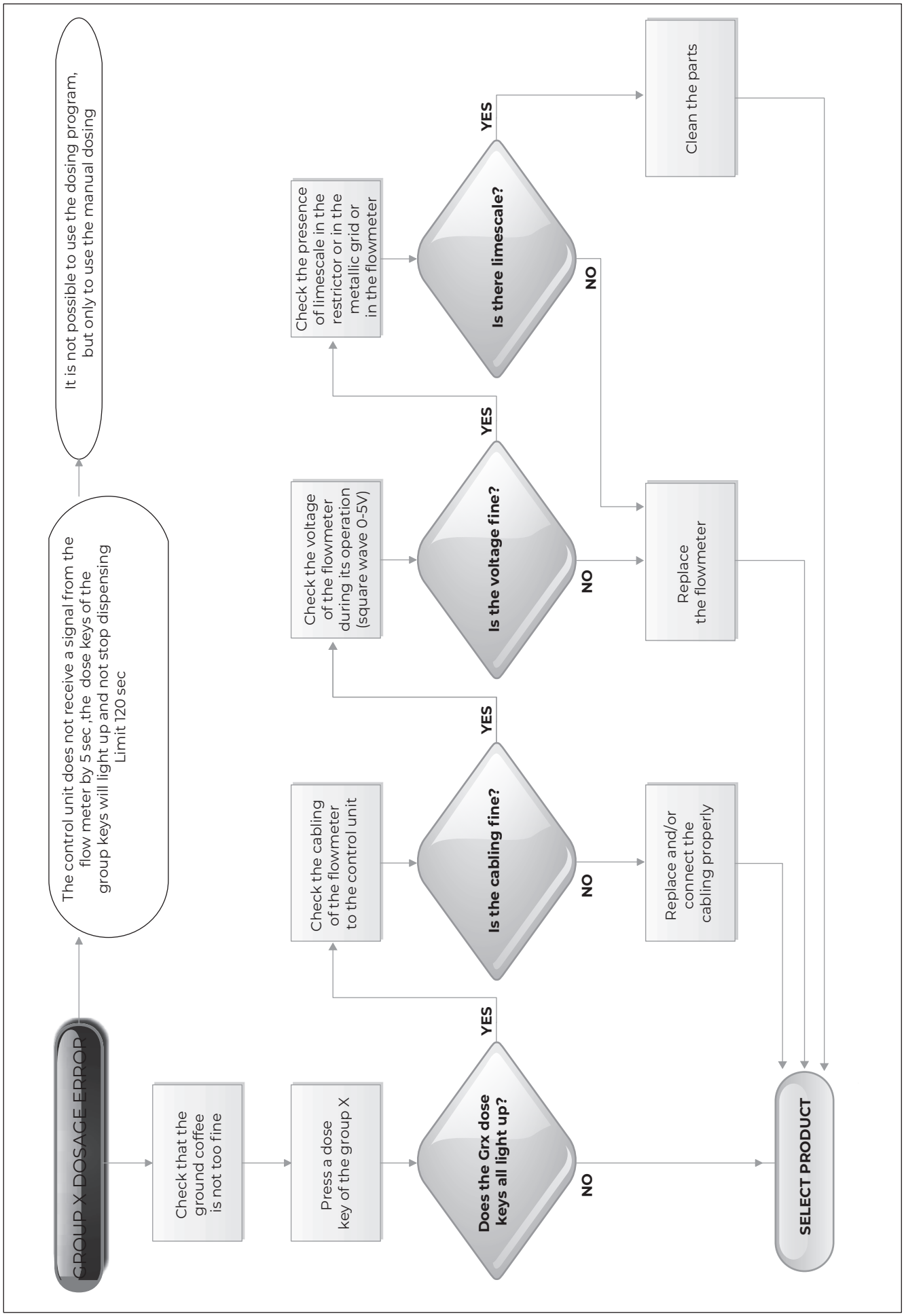
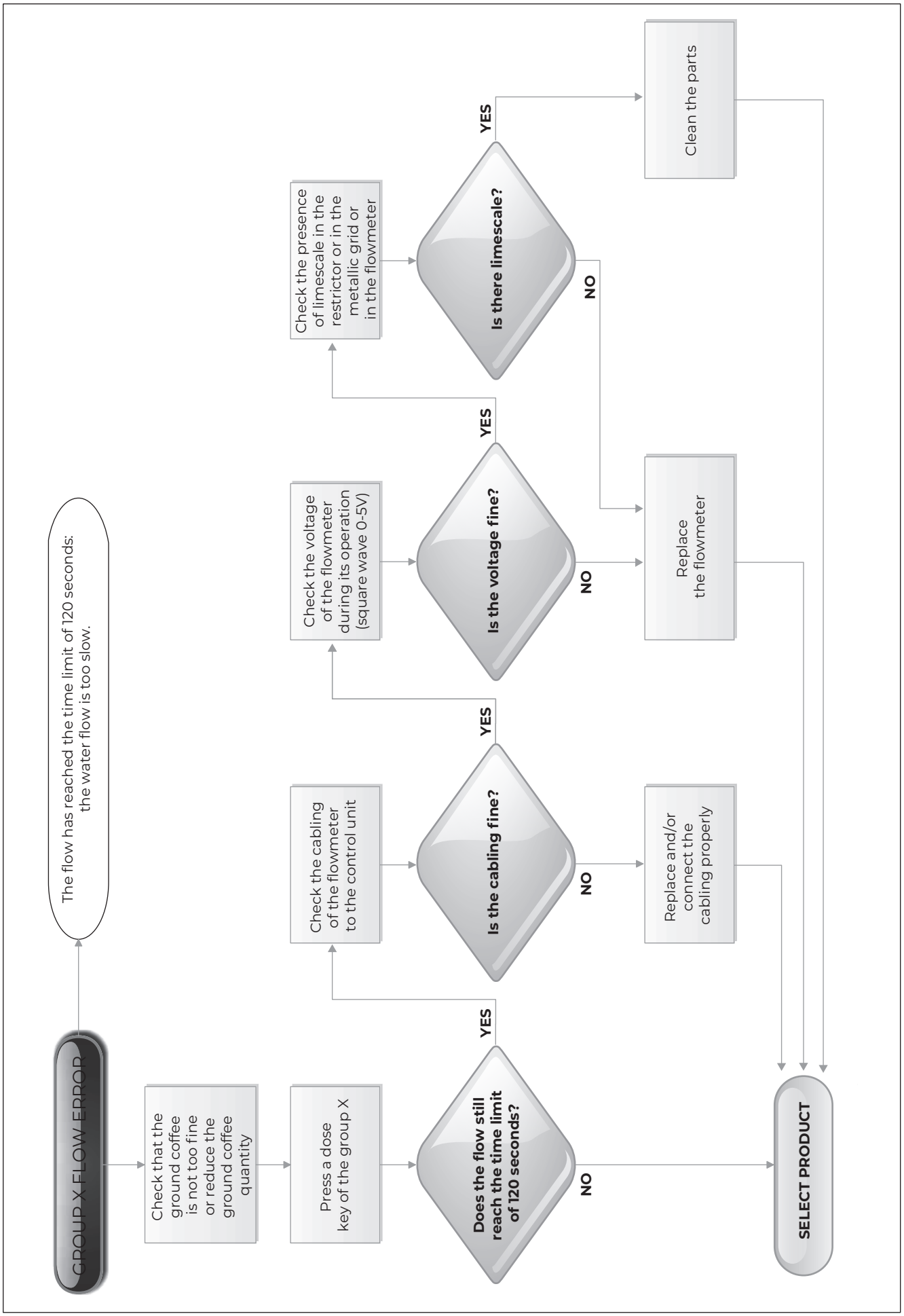
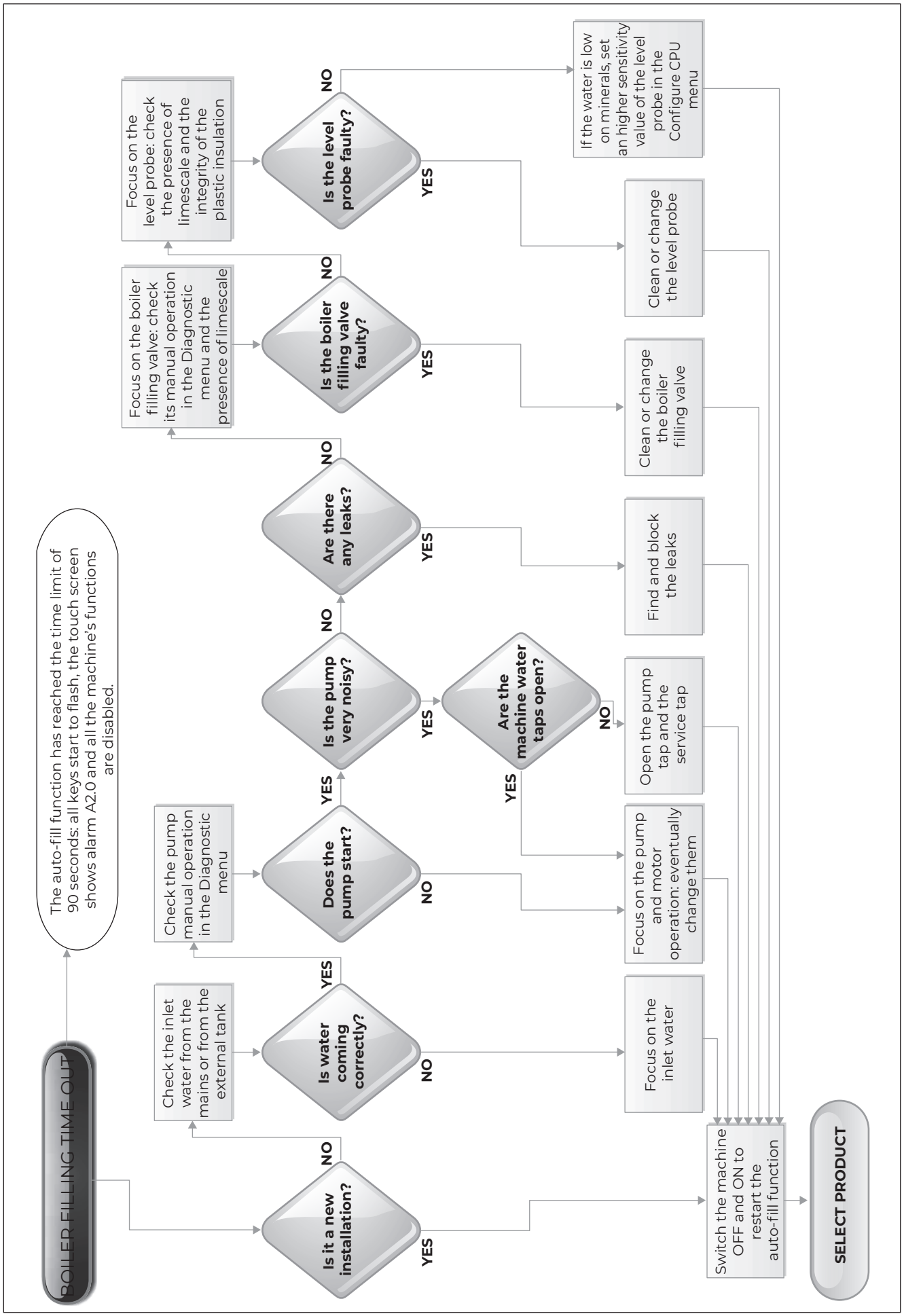
12.1 COFFEE DOSAGE ERROR



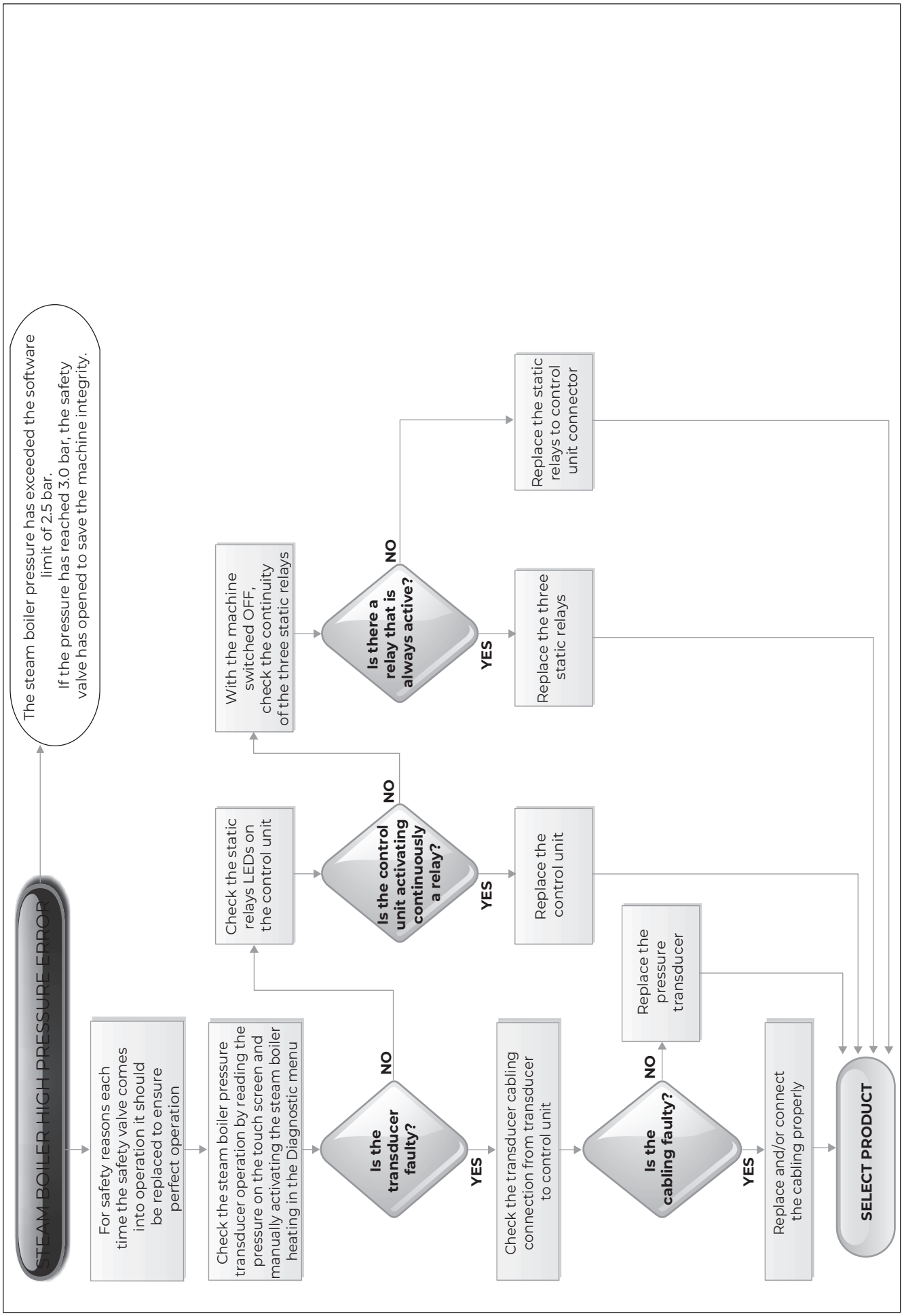
I2.2 COFFEE FLOW ERROR



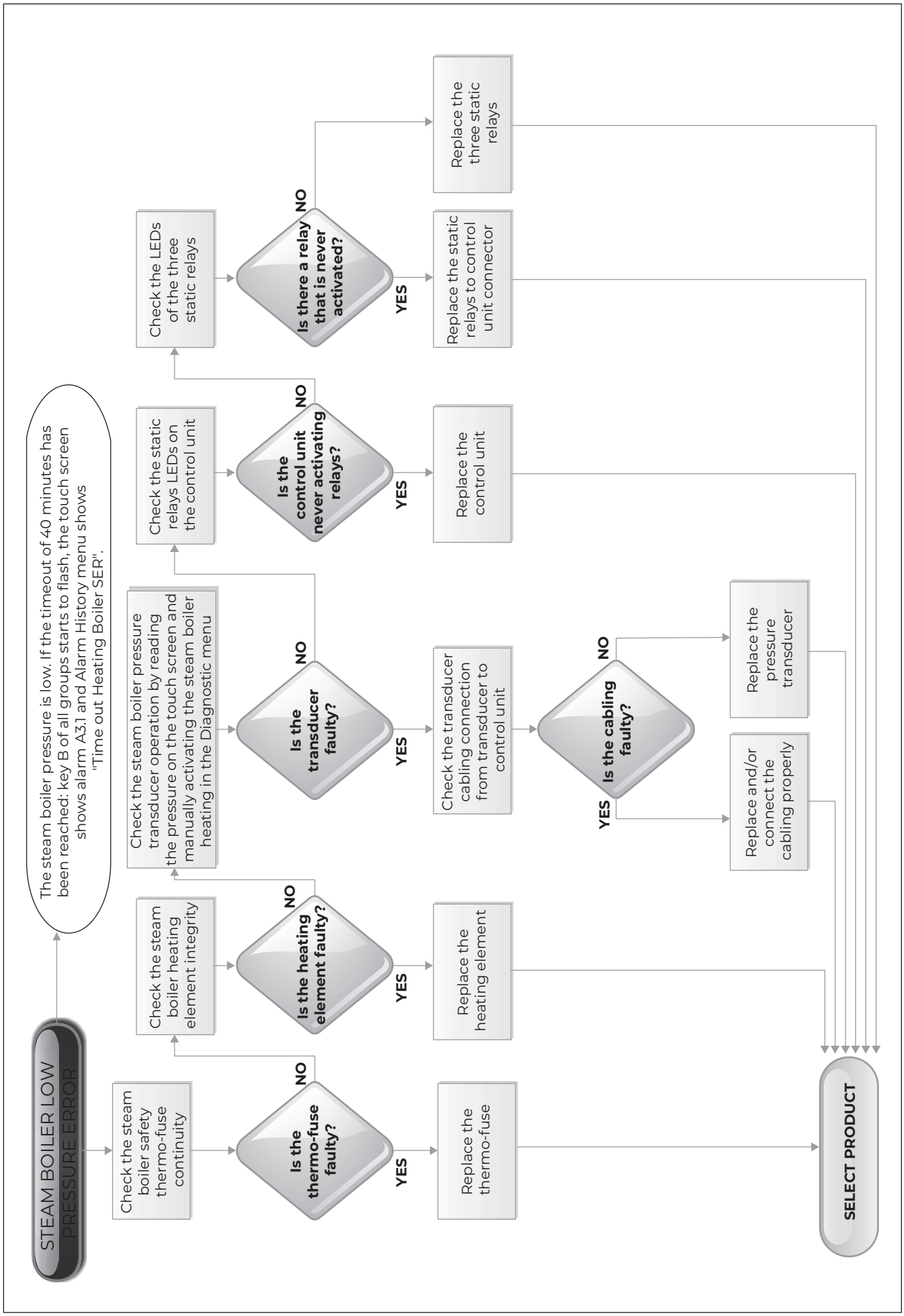
12.3 BOILER FILLING TIME OUT



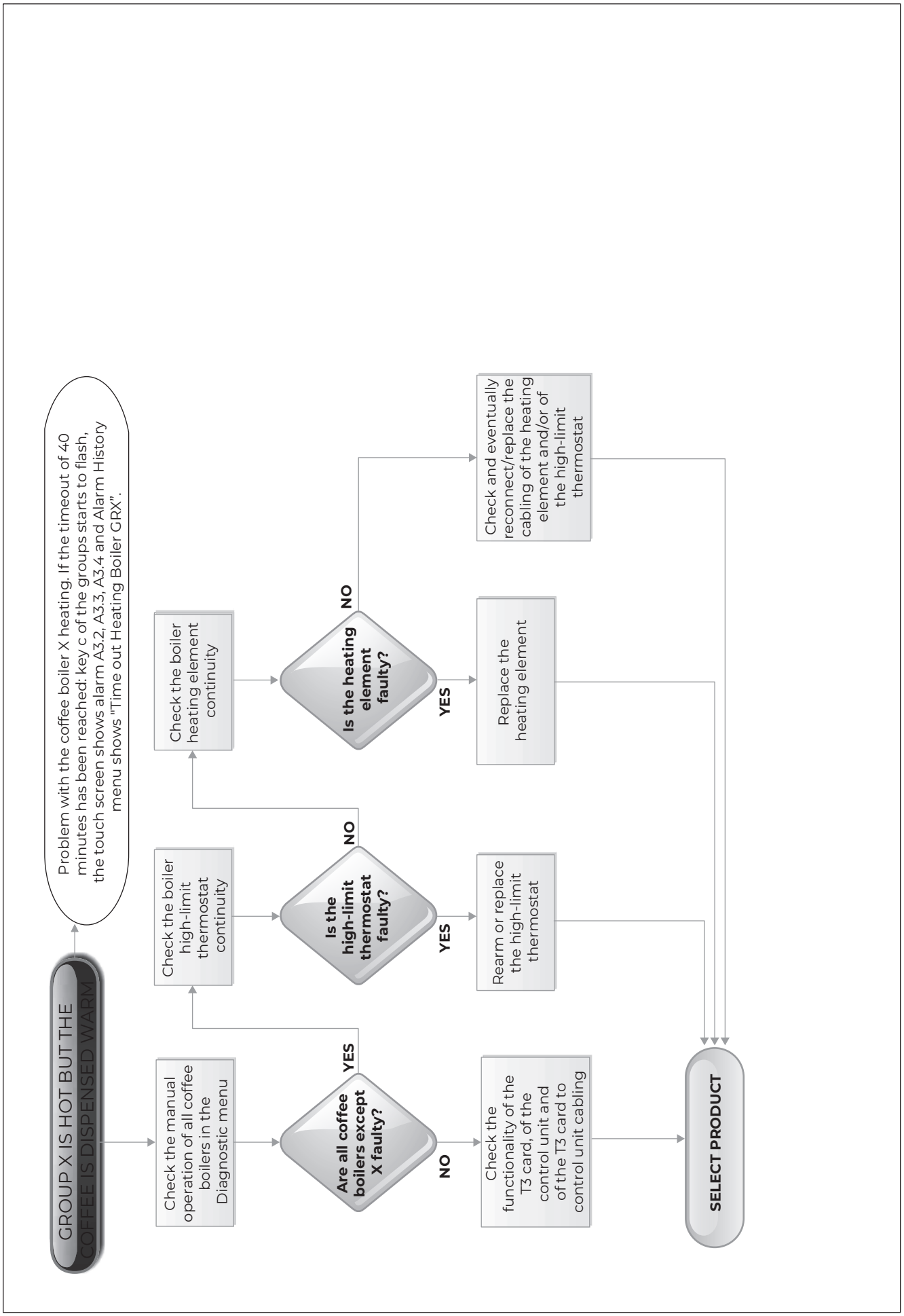
12.4 STEAM BOILER HIGH PRESSURE ERROR



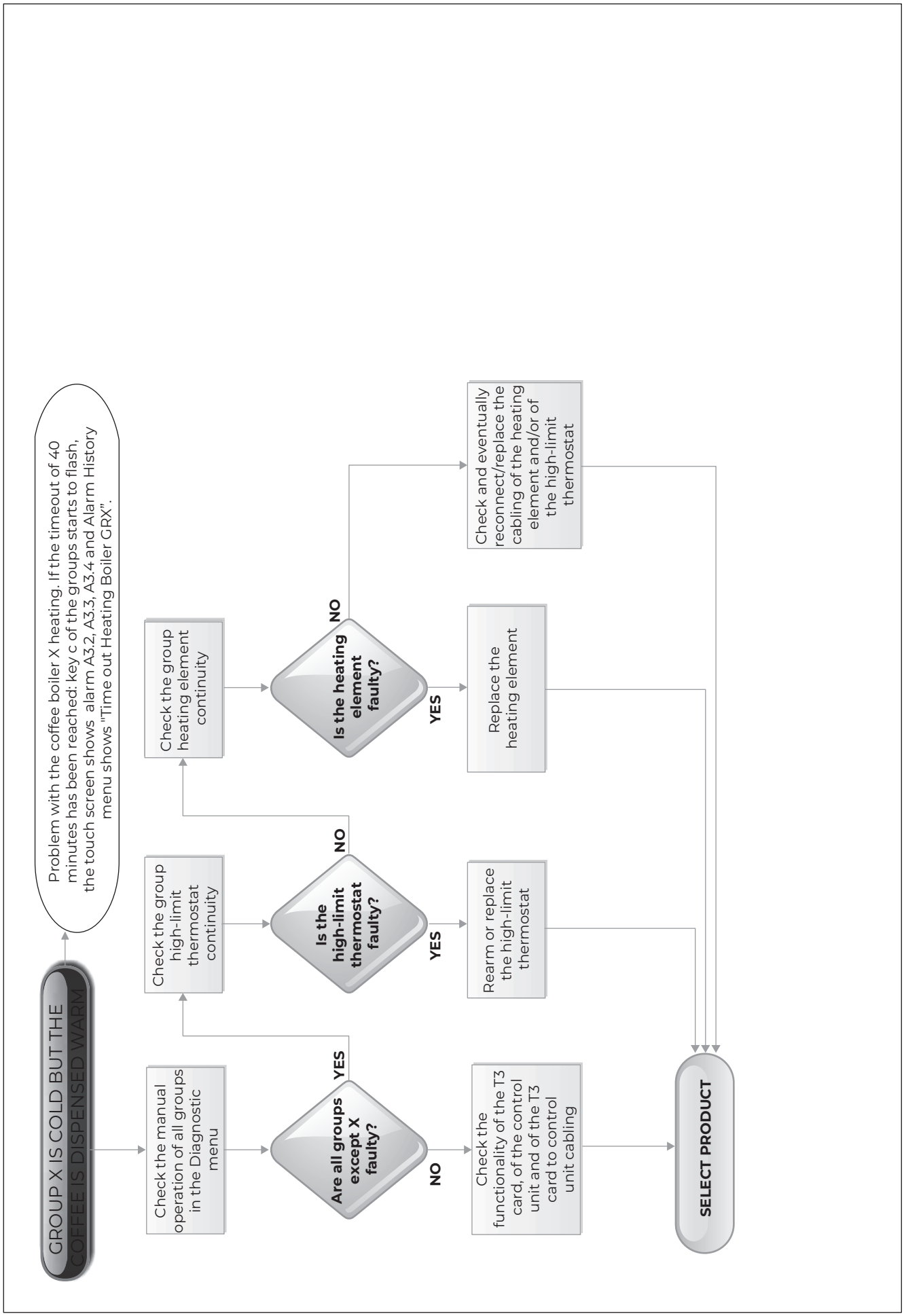
12.5 STEAM BOILER LOW PRESSURE ERROR



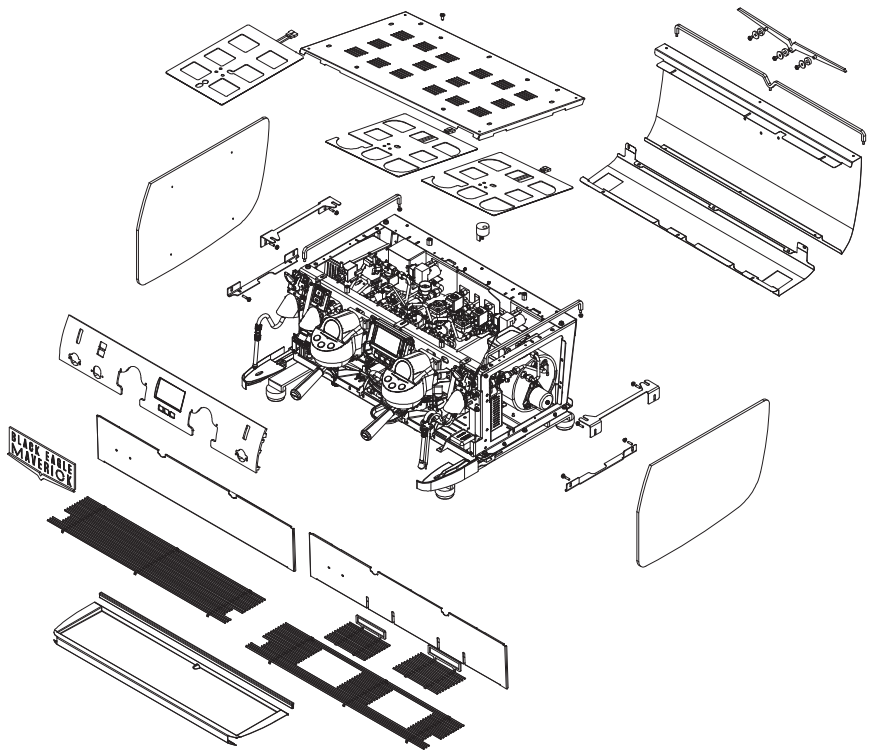
12.6 COFFEE GROUP HOT BUT COFFEE IS WARM



I2.7 COFFEE GROUP COLD BUT COFFEE IS WARM



13 SPARE PARTS BOOK



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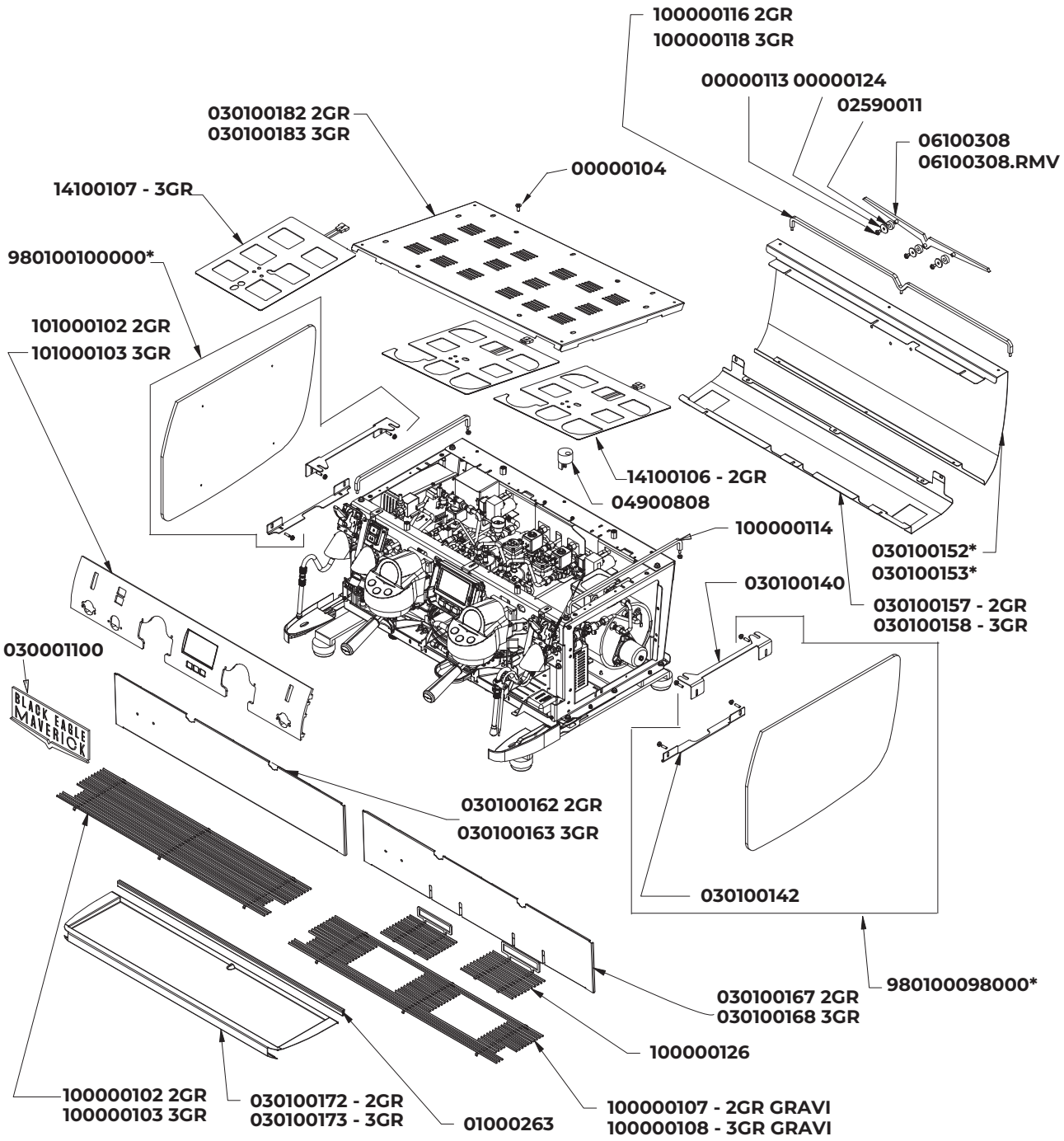
NOTE

Update to 04-2023.

13.1 CABINET PARTS

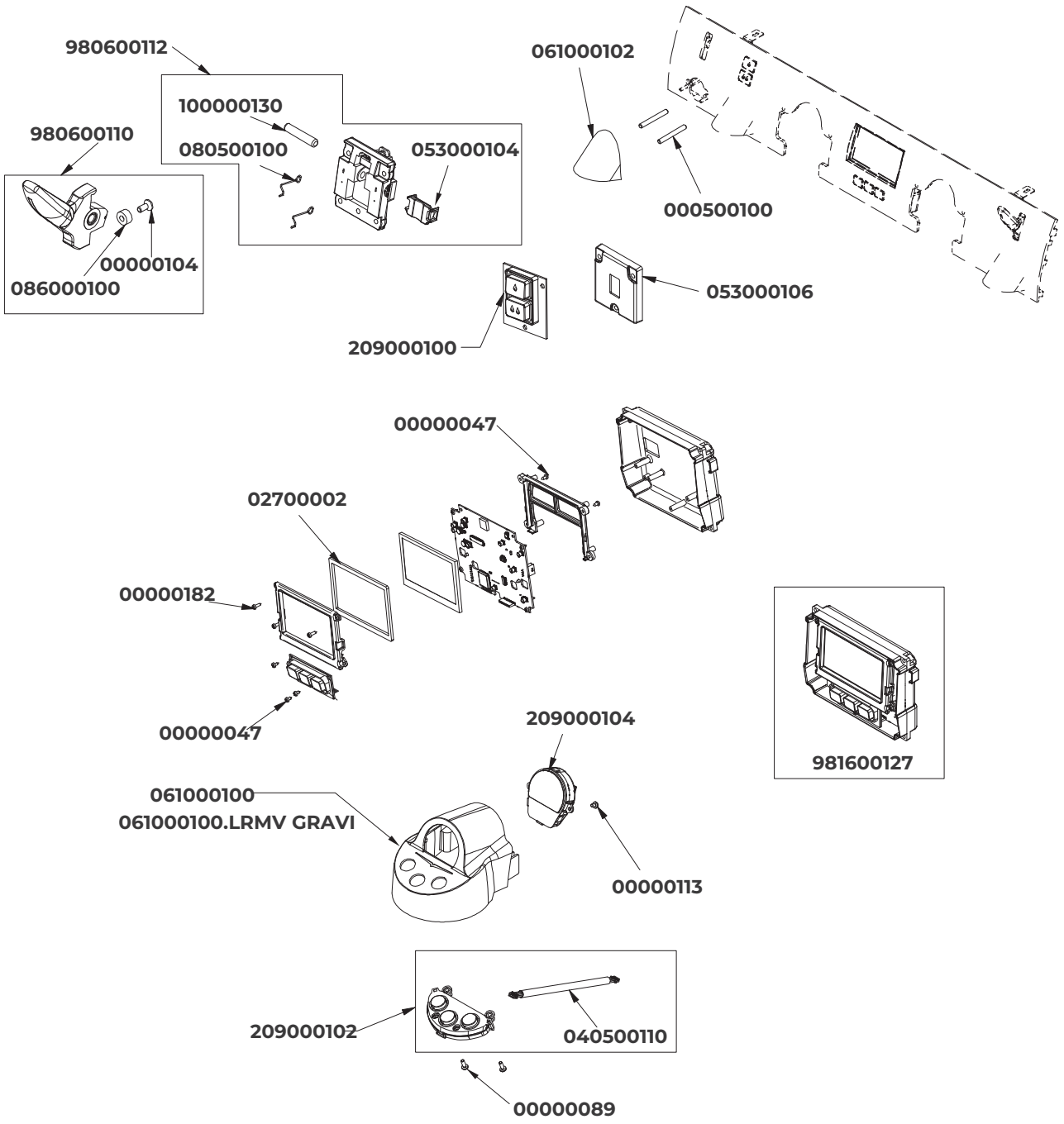


NOTE

*** Specify colour.**

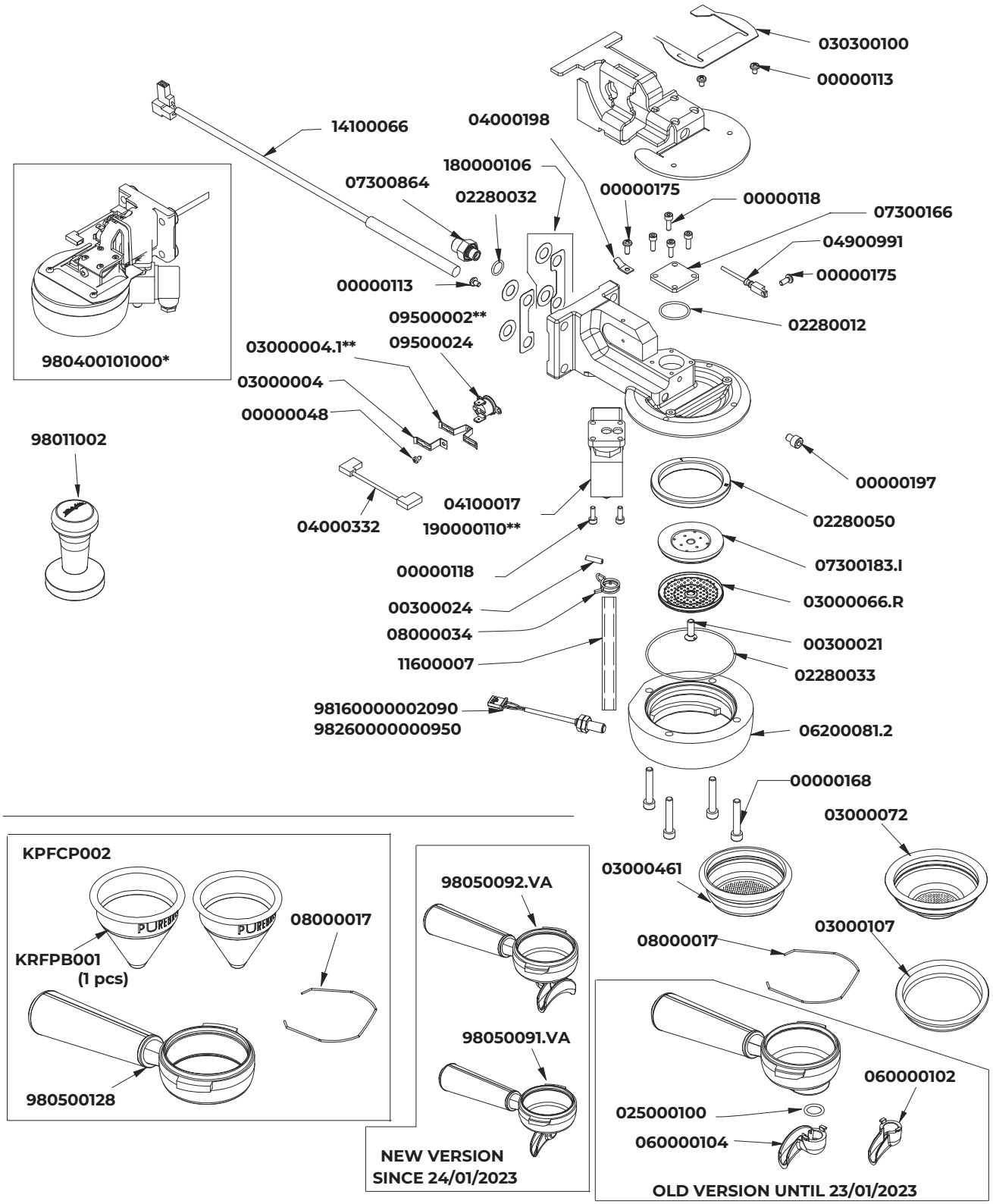
CODE	DESCRIPTION
00000104	S/S CROSS HEAD COUNTERSUNK SCREW M4x10 DIN965
00000113	S/S CROSS HEAD CAP SCREW M4x6 7985
00000124	GALVANIC WASHER D4 3x16x1.5
01000263	RUBBER PROFILE GASKET FOR PLATE
02590011	PISTON GASKET 14,4X6X4,5 SIL RED SR80
030001100	FRONT LOGO
030100140	UPPER SUPPORT FRAME
030100142	LOWER SUPPORT FRAME
030100152.BSV	BACK PANEL 2GR BLUE
030100152.BOV	BACK SUP PANEL 2GR WHITE
030100152.NOV	BACK PANEL 2GR MATT BLACK
030100153.BSV	BACK PANEL 3GR BLUE
030100153.BOV	BACK SUP PANEL 3GR WHITE
030100153.NOV	BACK PANEL 3GR MATT BLACK
030100157	LOWER BACKSIDE FRAME 2GR
030100158	LOWER BACKSIDE FRAME 3GR
030100162	LOWER FRONT PANEL 2GR
030100163	LOWER FRONT PANEL 3GR
030100167	LOWER FRONT PANEL 2GR FOR SCALES
030100168	LOWER FRONT PANEL 3GR FOR SCALES
030100172	DRAIN TRAY 2GR
030100173	DRAIN TRAY 3GR
030100182	UPPER CUP WARMER GRILL 2GR
030100183	UPPER CUP WARMER GRILL 3GR
04900808	CUP WARMER TEMPERATURE PROBE
R04900808	KIT CUP WARMER TEMPERATURE PROBE - 2Pcs
06100308	BACKSIDE LOGO SHINY ALUMINUM
100000102	WORKTOP GRID 2GR
100000103	WORKTOP GRID 3GR
100000107	WORKTOP GRID 2GR GRAVIMETRIC
100000108	WORKTOP GRID 3GR GRAVIMETRIC
100000114	BACKSIDE BAR CUP WARMER
100000116	BACK BAR CUP WARMER 2GR
100000118	BACK BAR CUP WARMER 3GR
100000126	SCALE GRILL
101000102	LOWER FRONT PANEL 2GR CROMO
101000103	LOWER FRONT PANEL 3GR CROMO
14100106	ADHESIVE SILICONE HEATING ELEMENT - SIDE CUP WARMER
14100107	ADHESIVE SILICONE HEATING ELEMENT - CENTRAL CUP
980100098001	RIGHT SIDE PANEL STEELUX
980100098002	RIGHT SIDE PANEL MATT BLACK
980100098003	RIGHT SIDE PANEL WHITE
980100098004	RIGHT SIDE PANEL BLUE
980100100001	LEFT SIDE PANEL STEELUX
980100100002	LEFT SIDE PANEL MATT BLACK
980100100003	LEFT SIDE PANEL WHITE
980100100004	LEFT SIDE PANEL BLUE
KSEVA204	ELECTRICAL CUP WARMER 2GR
KSEVA304	ELECTRICAL CUP WARMER 3GR

I3.2 CONTROL PANEL PARTS



CODE	DESCRIPTION
00000047	CROSS HEAD/CAP SELF-TAPPING SCREW 2,9x6,5
00000089	S/S CROSS HEAD CAP SCREW M4x12 DIN7985
00000104	S/S CROSS HEAD COUNTERSUNK SCREW M4x10 DIN965
00000113	S/S CROSS HEAD CAP SCREW M4x6 7985
00000182	GALVANIC CROSS HCS 3x10 DBL SPIRAL HILO TYPE UNI 9707
02700002	CARVED GASKET FOR DISPLAY BORDER
040500110	CONN. CABLE DISPENSING KEYPAD BOARD - DISPLAY BO
040500118	USB CABLE
053000104	STEAM LEVER SENSOR CAP
053000106	COVER BOARD HOT WATER
061000100	GROUP COVER
061000102	COVER SPACER HOT WATER - STEAM
086000100	MAGNET 3x05Ni-35SH
100000130	ROTATING PIN STEAM LEVER
209000100	KEYBOARD HOT WATER
209000102	KEY DISPENSING KEYPAD BOARD WITH DISPLAY
209000104	DISPLAY BOARD DISPENSING GROUP
980600110	STEAM LEVER KIT (NO SUPPORT)
980600112	SUPPORT STEAM LEVER KIT
981600127	UPDATED DISPLAY CARD

I3.3 POURING GROUP PARTS



NOTE

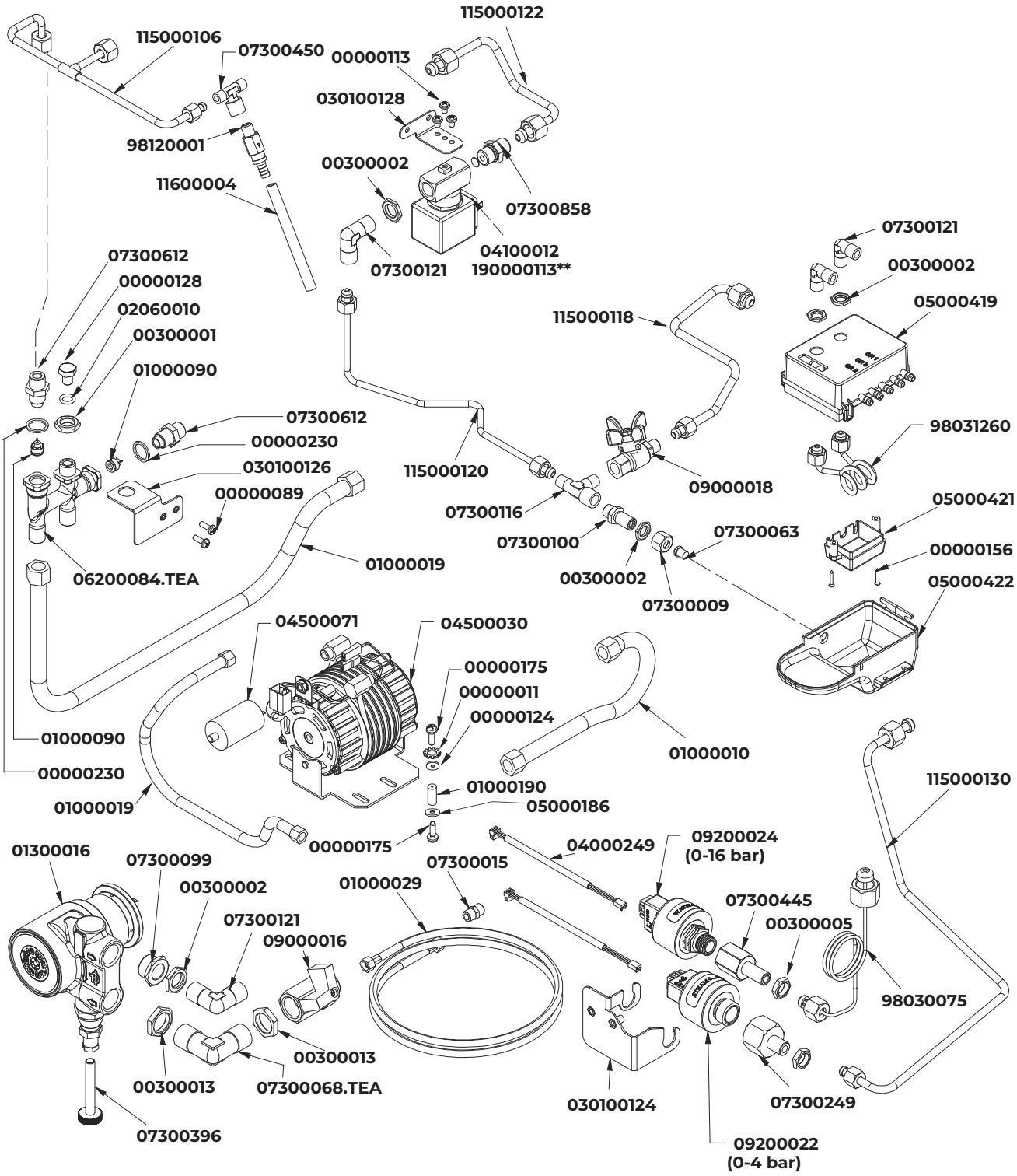
*** Specify version.**

**** North America Market.**

CODE	DESCRIPTION
00000048	SELF-TAPPING SCREW 2.9x4.5 TC/T.CR.
00000113	S/S CROSS HEAD CAP SCREW M4x6 7985
00000118	S/S HEX SOCKET CAP SCREW M4x12 5931
00000168	S/S HEXAGON SOCKET HEAD SCREW M6x35 UNI 5931
00000175	S/S CROSS HEAD CAP SCREW M4X10
00000197	S/S HEX SOCKET CAP SCREW M6x8 ISO 4762
00300021	S/S SLT COUNTERSUNK SCREW M6X18 DIN963
R00300021	KIT S/S SLT COUNTERSUNK SCREW M6X18 - 30Pcs
00300024	S/S GRUB SCREW M4X16 5923
02280012	GASKET O-RING 2093 D.27 EP851
R02280012	KIT GASKET O-RING 2093 D.27 EP - 30Pcs
02280032	GASKET O-RING 114 D15 EP 851
R02280032	KIT GASKET O-RING 114 D15 EP - 25Pcs
02280033	GASKET O-RING 75,92x1,78 NBR XP70
R02280033	KIT GASKET O-RING 75,92x1,78 NBR - 20Pcs
02280050	RED LONG LIFE CONICAL GASKET SHEATH
025000100	GASKET O-RING 14,8x11,2x1,8
03000004	SINGLE BRACKET FOR THERMOSTAT
03000004.1	DOUBLE BRACKET FOR THERMOSTAT
03000066.R	S/S SHOWER REINFORCED
03000072	FILTER ONE COFFEE HIGH 7gr
R03000072	KIT FILTER ONE COFFEE HIGH 7gr - 3Pcs
03000107	BLIND FILTER
R03000107	KIT BLIND FILTER - 8Pcs
030300100	DISPENSING GROUP ANTI-INTRUSION BRACKET
03000461	COFFEE FILTER 18GR (RIDGE LESS)
04000198	FOIL HOLDER M 6.3 D 4.2 45°
04000332	EXT L=85 + FASTON F-F A FLAG AWG18 BROWN
04100017	3WAY SOLENOID DIS BASE 1/8220-230V50/60Hzz F1.5 CE
R04100017	KIT 3WAY SOLENOID DIS BASE 1/8220-230V50/60Hzz - 1Pc
04900991	GROUP TEMPERATURE PROBE PT1000
R04900991	KIT GROUP TEMPERATURE PROBE PT1000 - 1Pcs
04901296	EXT CABLE INDUCTIVE SENSOR FILTER HOLDER
060000102	S/S 1WAY NOZZLE
060000104	S/S 2WAYS NOZZLE
06200081.2	GR RING OR CHROME OT-58 - FILTER HOLDER SENSOR
07300166	FLANGE BLOCK LOCK SOLENOID HOLDER ADD.07.07.03
07300183.I	GROUP DIFFUSER h=3 S/S Aisi316
07300864	FITTING 1/4M 1/8M + THREADED M6 Aisi316 + O-RING
08000017	S/S FILTER LOCKING SPRING
R08000017	KIT S/S FILTER LOCKING SPRING - 15Pcs
08000034	HOSE CLAMP D12
09500002	AUTOMATIC THERMOSTAT 125°C WHITE DRIPPING
09500024	MANUAL THERMOSTAT 135°C TRIP FREE GREEN DRIPPING
11600007	RUBBER HOSE TT/NBR 8x12
14100066	CARTRIDGE HEAT. ELEMENT D10x115 300W 230V
R14100066	KIT CARTRIDGE HEAT. ELEMENT D10x115 300W 230V - 1P
180000106	BREWING GROUP-FRAME INSULATION KIT
190000110	3 WAYS SOLENOID SMALL BASE SCAR.1/8 208-240V 60Hz
98011002	ANODIZED COFFEE TAMPER BRILLIANT WHITE VA 2009
980400101001	DISPENSING GROUP KIT
98050091.VA	S/S 1 WAY FILTER HOLDER VA HANDLE W/OUT FILTER
98050092.VA	S/S 2 WAYS FILTER HOLDER VA HANDLE W/OUT FILTER
980500128	SLOPED FILTER HOLDER + HANDLE VA
98160000002090	FILTER HOLDER PRESENCE SENSOR W/CONNECTION
98260000000950	REPLACEMENT KIT FOR FILTER HOLDER SENSOR + EXTENSIBLE CABLE INDUCT.
KPFCP002	COMP. SLOPED FILTER HOLDER PURE BREW
KRFPB001	CONE FILTER PURE BREW

I3.4 HYDRAULIC PARTS

1 / 2



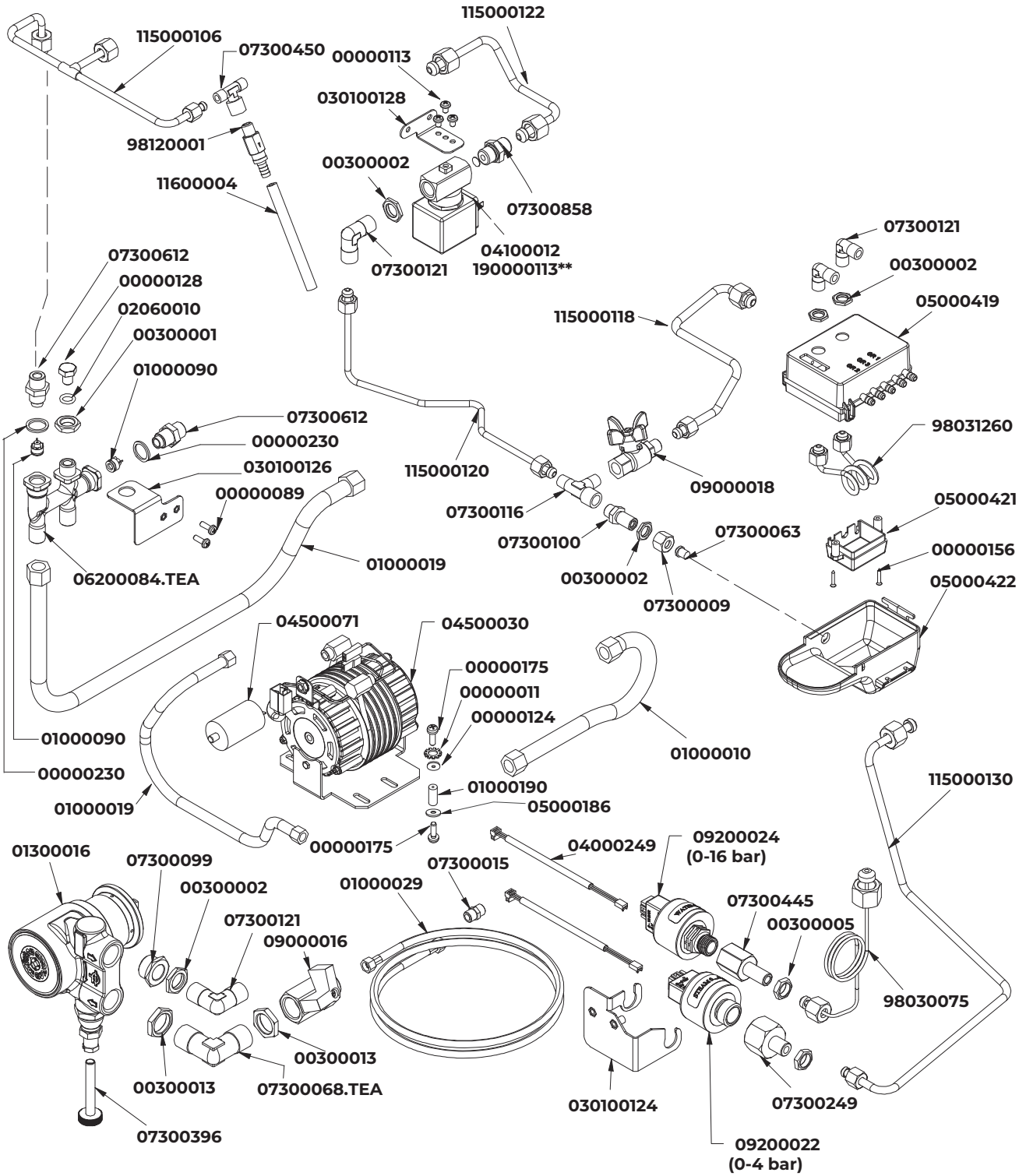
NOTE

**** North America Market.**

CODE	DESCRIPTION
00000011	S/S KNURLED WASHER M4 UNI8842/A
00000089	S/S CROSS HEAD CAP SCREW M4x12 DIN7985
00000113	S/S CROSS HEAD CAP SCREW M4x6 7985
00000124	GALVANIC WASHER D4 3x16x1.5
00000128	S/S HEX CAP SCREW M8x10 THREADED
00000133	S/S CLIP WD12 16-25 C7 W2
00000156	S/S SELF-THREADING SCREW 2.9x19 TCTCR
00000175	S/S CROSS HEAD CAP SCREW M4X10
00000230	COPPER WASHER SEAL 14X18X1.5
00300001	BRASS NUT 1/4 GAS D5 CH18
00300002	BRASS NUT 1/4 D3 CH18
R00300002	KIT BRASS NUT 1/4 D3 - 15Pcs
00300005	BRASS NUT 1/8 GAS D4 ADD 22.07.96 CH13
00300013	BRASS NUT 3/8 GAS D4 CH20 ADD 22.07.96
01000010	S/S FLEXIBLE TUBE 1/4 FF L=320
R01000010	KIT S/S FLEXIBLE TUBE 1/4 FF L=320 - 1Pcs
01000019	S/S FLEXIBLE TUBE 1/4 FF L= 500
R01000019	KIT S/S FLEXIBLE TUBE 1/4 FF L= 500 - 1Pcs
01000029	S/S FLEXIBLE TUBE 3/8 FF L=1500
01000030	S/S FLEXIBLE TUBE 3/8 FF L=500
01000090	RETAINING VALVE D10
R01000090	KIT RETAINING VALVE D10 - 6Pcs
01000113	S/S FLEXIBLE TUBE 3/8 90° 3/8 FF L1500
01000127	DIRECT SLEEVE DISCHARGE TUBE D19 L=2m
R01000127	KIT DIRECT SLEEVE DISCHARGE TUBE D19 L=2m - 2Pcs
01000190	VIBRATION DAMPER D15x30 M4 FF
01300016	S/S VOLUMETRIC PUMP 200 Lt/h
02060010	COPPER O-RING 8.3x13x1.9 ND8
030100124	PRESSURE GAUGE SUPPORT
030100126	MANIFOLD SUPPORT
030100128	SUPPORT SOLENOID SELF LEVEL
04000249	3POLE CONN CABLE RAST 2.5/MOLEX L = 400mm for PSTY
04100012	2WAY SOLENOID 1/8-1/8 1/8 240V50/60hz F3 UL TH2xM5
R04100012	KIT 2WAY SOLENOID 1/8-1/8 1/8 240V50/60hz F3 - 1Pcs
04500030	ELECTRICAL ENGINE 230V 50/60Hz
04500071	CAPACITOR 7 mF 440V FASTON 6,3
05000186	H3 D6,3/20 NYLON INSERT OSCAR GROUP BLACK
05000419	TRAY PLUG UNDER PLATE T.E.R.S.
05000421	INTERNAL CLOSURE TRAY TAP T.E.R.S.
05000422	DRIP TRAY UNDER PLATED
05000763	CONNECTION 3/4 90°F FOR DRAINING TUBE
R05000763	KIT CONNECTION 3/4 90°F FOR DRAINING TUBE - 4Pcs
06200084.TEA	5WAY MANIFOLD OT-57 USA TEA
07300009	NUT FITTING 1/4 GAS
07300015	FITTING 3/8 3/8 GAS OT-58 ADD. 26.06.96
07300063	CLOSED TERMINAL D11
07300068.TEA	CYLINDRICAL ELBOW FITTING G3/8" M/M
07300099	FITTING ADAPTER 3/8-1/4 ES. 20 ADD. 29.05.96
07300100	DISCHARGE ATTACHMENT 1/4 1/4 OT-57 USA
07300116	FITTING T 1/4 M-M-F OT-57
R07300116	KIT FITTING T 1/4 M-M-F - 5Pcs
07300121	FITTING L 1/4 M-M CYLINDER ADD. 18.02.97
R07300121	KIT FITTING L 1/4 M-M CYLINDER - 8Pcs
07300249	FITTING 1/8M L = 12 3/8F
07300396	PUMPING REGISTER KNOW
07300445	FITTING 1/8M L = 20 1/4F for SENSOR
07300450	FITTING T 1/8 M-F-M OT-57

I3.4 HYDRAULIC PARTS

2 / 2

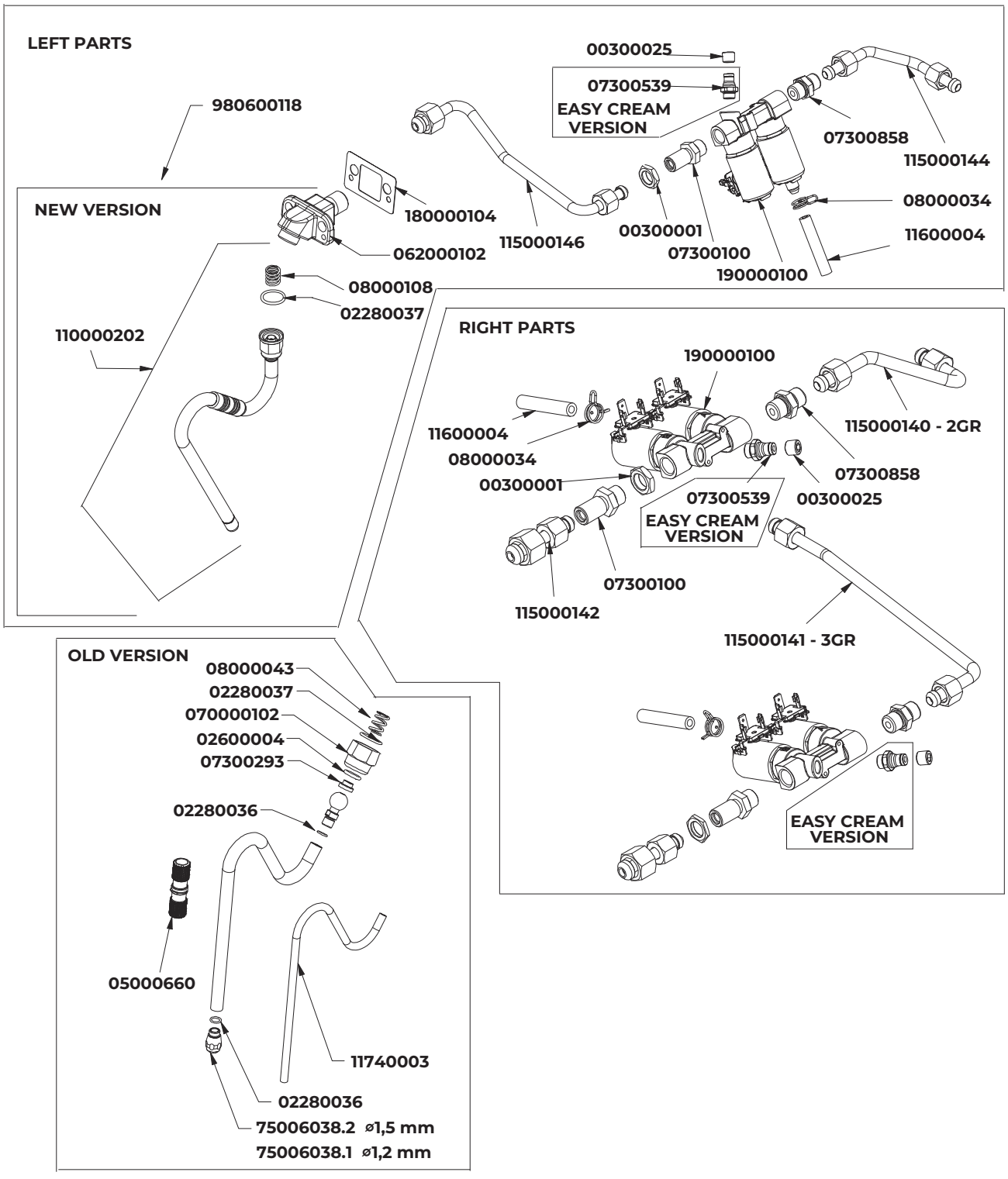


NOTE

**** North America Market.**

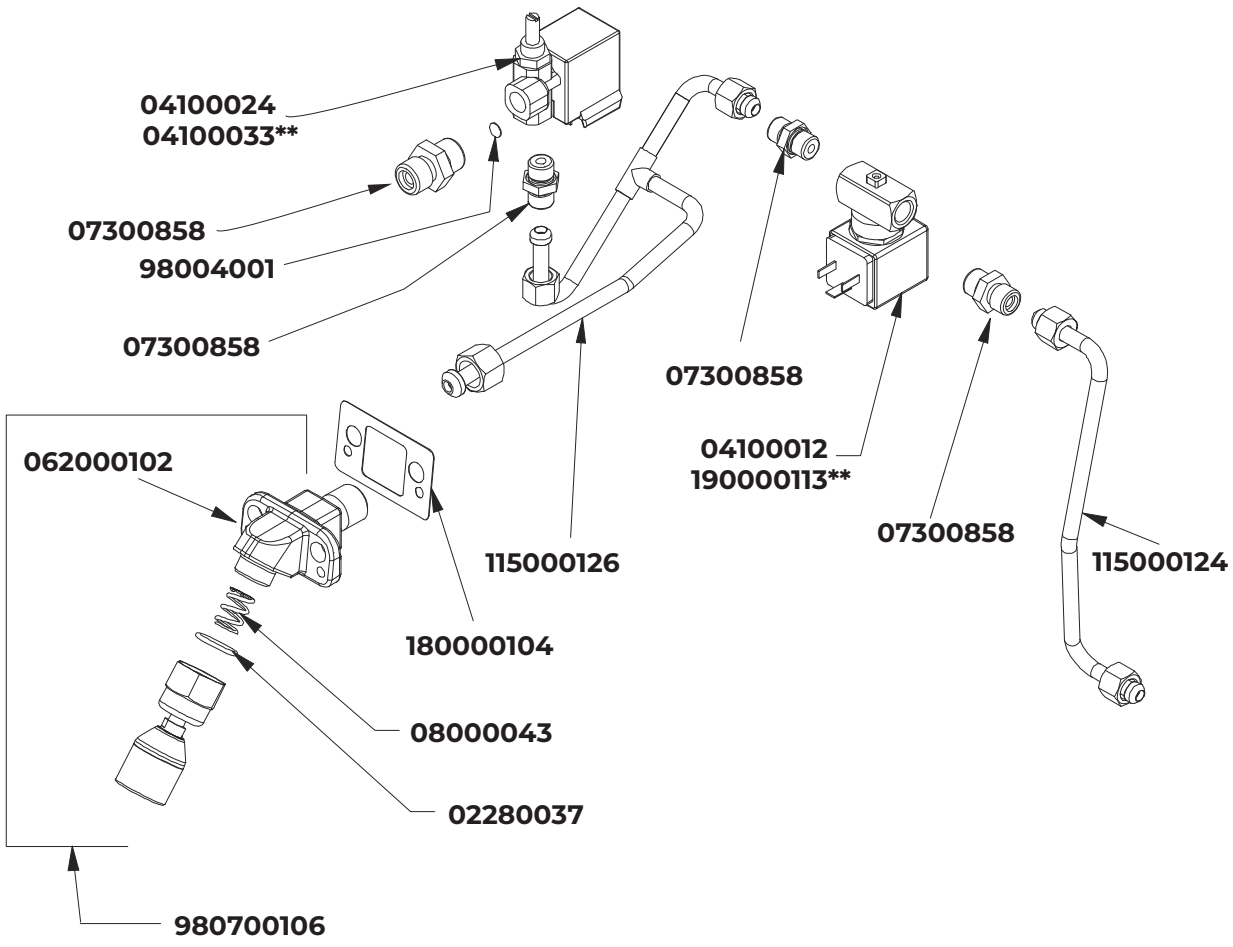
CODE	DESCRIPTION
07300612	FITTING 1/4 1/4 GAS WITH O-RING + RETURN VALVE LOCK
07300858	FITTING 1/4M-1/4M OT-57 USA
R07300858	KIT FITTING 1/4M-1/4M - 15Pcs
09000016	SPHERE TAP - NETWORK CONNECTION 3/8 M-F MINI
R09000016	KIT SPHERE TAP - NETWORK CONNECTION 3/8 M-F MINI -
09000018	DISPENSING SPHERE TAP 1/4 M-F "BUTTERFLY"
09200022	PRESSURE TRANSDUCER 0-4 BAR 3/8
09200024	PRESSURE TRANSDUCER 0-16 BAR 1/4
R09200024	KIT PRESSURE TRANSDUCER 0-16 BAR 1/4-1Pcs
115000106	MANIFOLD TUBE - FLOWMETER + MIXER SOLENOID VALVE
115000118	BOILER CHARGE PIPE
115000120	VALVE LEVEL - TAP TUBE
115000122	VALVE LEVEL - MANIFOLD TUBE
115000130	BOILER TUBE - PRESSURE SENSOR
11600004	SILICONE PIPE 5x9 60Sh PEROX WHITE SEMITRANSPARENT
190000113	2 WAYS SOLENOID 1/4-1/4 208-240V 60Hz FKM F1.5 UL NS
98030075	CAPILLARY TUBE 1/8-1/4 0,9X2X400 GAUGE-PUMP
R98030075	KIT CAPILLARY TUBE 1/8-1/4 0,9X2X400 GAUGE-PUMP - 2P
98031260	SPIRAL TUBE FOR T.E.R.S
98120001	NEPLAX VITON 16,5 BAR VALVE 1/8 HOSE CLAMP
R98120001	KIT NEPLAX VITON 16,5 BAR VALVE 1/8 HOSE CLAMP - 2P

I3.5 STEAM PARTS



CODE	DESCRIPTION
00300001	BRASS NUT 1/4 GAS D5 CH18
00300025	CONICAL TAP 1/8 GAS EI 5.8 ZB
02280036	O-RING FOR STEAM WAND NOZZLE D6x1.2 EPDM70 500 P
R02280036	KIT O-RING FOR STEAM WAND NOZZLE D6x1.2 EPDM - 65
02280037	GASKET O-RING JOINT LOCK 16x2 NBR70
R02280037	KIT GASKET O-RING JOINT LOCK 16x2 NBR - 45Pcs
02600004	O-RING 15,2x10,2x2,5 TEFLON x STEAM WAND SPHERE
R02600004	KIT O-RING 15,2x10,2x2,5 TEFLON x STEAM - 55Pcs
07300858	FITTING 1/4M-1/4M OT-57 USA
08000043	SPRING FOR ARTICULATED WAND D.1.6 D.11.9x16.2 4COI
180000104	LANCE SUPPORT INSULATION - CHASSIS
05000660	RUBBER PROTECTION STEAM WAND D10
062000102	STEAM WAND SUPPORT
070000102	STEAM WAND NUT
07300100	DISCHARGE ATTACHMENT 1/4 1/4 OT-57 USA
07300293	ARTICULATED BUSHING AG.25.06.96 OT-57
R07300293	KIT ARTICULATED BUSHING - 15Pcs
07300539	RAPID FITTING 1/8 STRAIGHT D4
08000108	SPRING FOR ARTICULATED WAND - WIRE D1.5 D.11.8x12
08000034	HOSE CLAMP D12
110000202	U-CAN TOUCH STEAM WAND KIT
115000140	BOILER TUBE - RIGHT STEAM WAND 2GR
115000141	BOILER TUBE - RIGHT STEAM WAND 3GR
115000142	SOLENOID TUBE - RIGHT STEAM WAND
115000144	BOILER TUBE - LEFT STEAM WAND
115000146	SOLENOID TUBE - LEFT STEAM WAND
11600004	SILICONE PIPE 5x9 60Sh PEROX WHITE SEMITRANSPARENT
11740003	CALIBRATED TEFLON PIPE 6/4
190000100	DOUBLE SOLENOID NC 2WAYS+3WAYS 230V 50-60Hz
75006038.1	STEAM NOZZLE M8,65X0,75 F1,2 ESAG.12
75006038.2	STEAM NOZZLE M8,65x0,75 F. 1,5 ESAG.12
980600118	STEAM WAND + ATTACHMENT SET

I3.6 HOT WATER PARTS

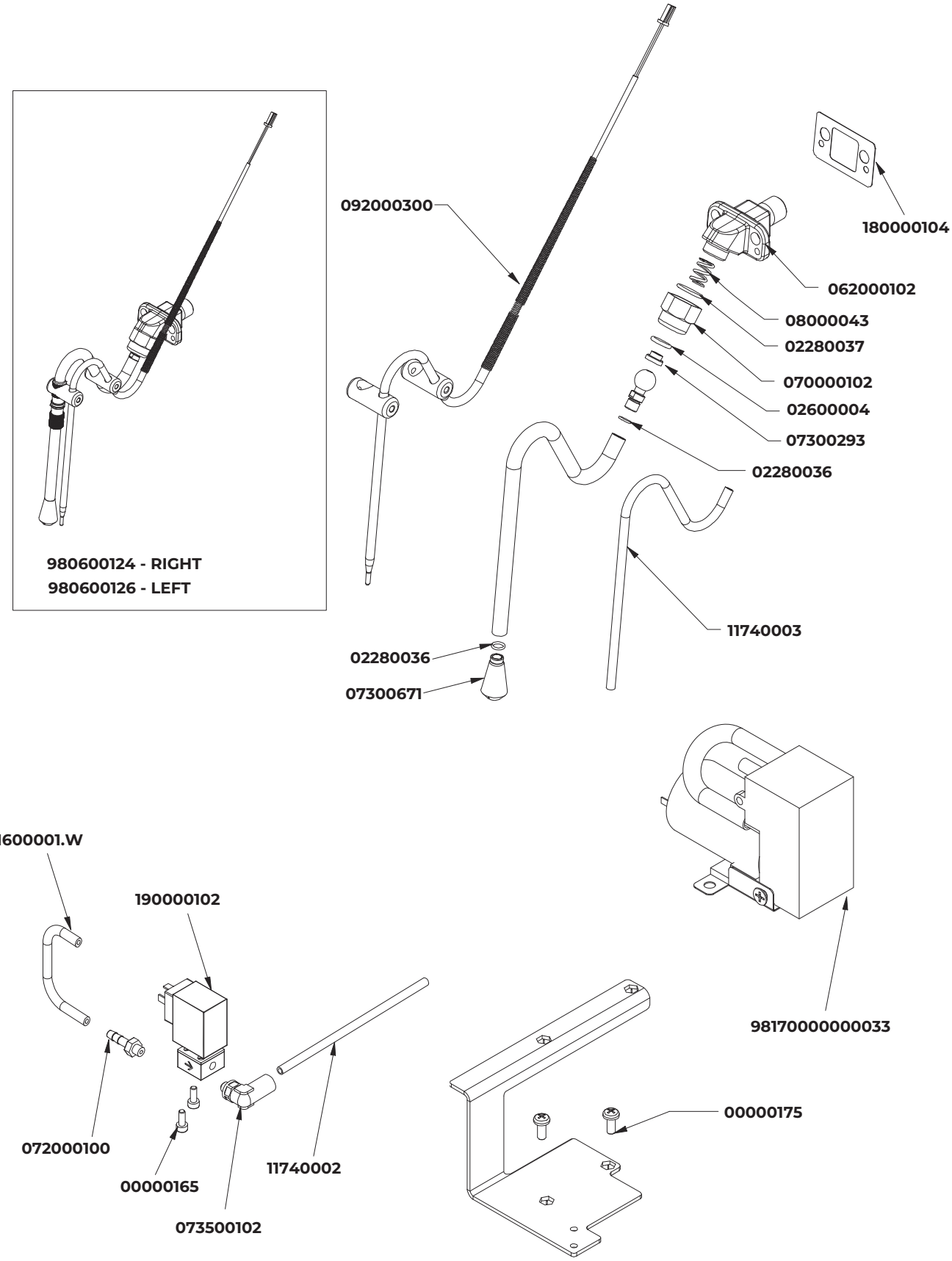


NOTE

** North America Market.

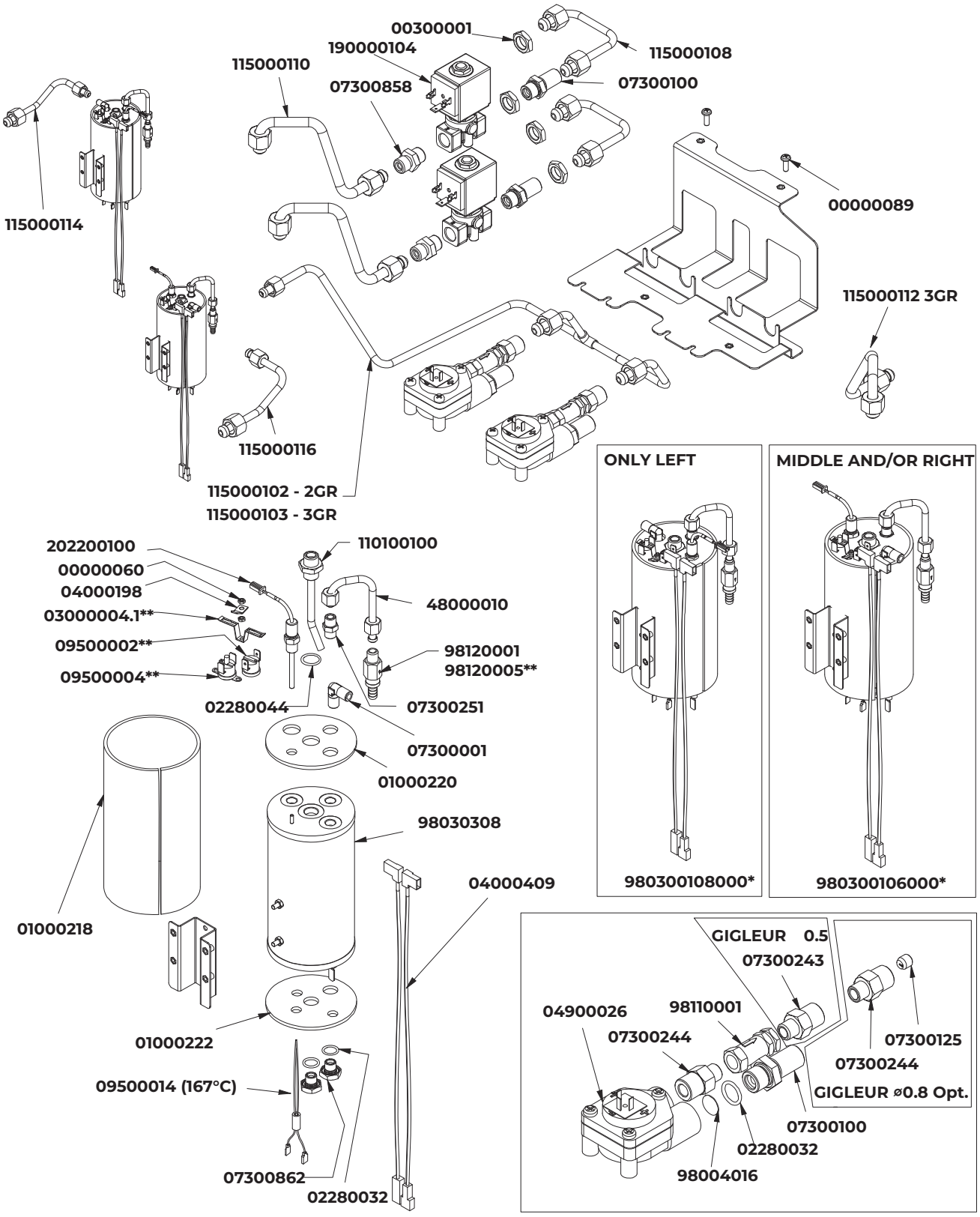
CODE	DESCRIPTION
R02280037	KIT GASKET O-RING JOINT LOCK 16x2 NBR - 45Pcs
02280037	GASKET O-RING JOINT LOCK 16x2 NBR70
04100012	2WAY SOLENOID 1/8-1/8 1/8 240V50/60hz F3 UL TH2xM5
R04100012	KIT 2WAY SOLENOID 1/8-1/8 1/8 240V50/60hz F3 - 1Pcs
04100024	3WAY SOLENOID 1/4 ADJ. 90° 230V50/60Hz F3 CE
R04100024	KIT 3WAY SOLENOID 1/4 ADJ. 90° 230V50/60Hz F3 CE -
04100033	2WAY SOLENOID 1/4 ADJ. 90° 230/240V 50/60Hz F3 UL C
062000102	STEAM WAND SUPPORT
07300858	FITTING 1/4M-1/4M OT-57 USA
R07300858	KIT FITTING 1/4M-1/4M - 15Pcs
08000043	SPRING FOR ARTICULATED WAND D.1.6 D.11.9x16.2 4COI
R08000043	KIT SPRING FOR ARTICULATED WAND D.1.6 D.11.9x16.2 -
115000124	BOILER TUBE - HOT WATER SOLENOID
115000126	HOT WATER MANIFOLD MIX
180000104	LANCE SUPPORT INSULATION - CHASSIS
190000113	2 WAYS SOLENOID 1/4-1/4 208-240V 60Hz FKM F1.5 UL NS
98004001	S/S FILTER D8
980700106	HOT STEAM WAND + ATTACHMENT SET

I3.7 EASYCREAM PARTS



CODE	DESCRIPTION
00000165	S/S SCREW M3x8 TCEI ISO 4762
00000175	S/S CROSS HEAD CAP SCREW M4X10
02280036	O-RING FOR STEAM WAND NOZZLE D6x1.2 EPDM70 500 P
R02280036	KIT O-RING FOR STEAM WAND NOZZLE D6x1.2 EPDM - 65
02280037	GASKET O-RING JOINT LOCK 16x2 NBR70
R02280037	KIT GASKET O-RING JOINT LOCK 16x2 NBR - 45Pcs
02600004	O-RING 15,2x10,2x2,5 TEFLON x STEAM WAND SPHERE
R02600004	KIT O-RING 15,2x10,2x2,5 TEFLON x STEAM - 55Pcs
04000913	EXTENSIBLE CABLE L=780 2WAY CONN AMP TYP MODE II M-F
04000914	EXTENSIBLE CABLE L=2160 2WAY CONN AMP TYP MODE II M-F
062000102	STEAM WAND SUPPORT
070000102	STEAM WAND NUT
07300293	ARTICULATED BUSHING AG.25.06.96 OT-57
R07300293	KIT ARTICULATED BUSHING - 15Pcs
07300671	EASYCREAM NOZZLE 4HOLES
073500102	RAPID FITTING
08000043	SPRING FOR ARTICULATED WAND D.1.6 D.11.9x16.2 4COI
R08000043	KIT SPRING FOR ARTICULATED WAND D.1.6 D.11.9x16.2 -
092000300	TEMPERATURE PROBE STEAM WAND
11600001.W	WHITE SILICONE PIPE 4x7,5 60Sh(1mt=41gr) PLATINICO SE
11740002	CALIBRATED TEFLON PIPE 4/2,5 TRANSPARENT
11740003	CALIBRATED TEFLON PIPE 6/4
180000104	LANCE SUPPORT INSULATION - CHASSIS
190000102	2 WAYS SOLENOID AIR PROPORTIONAL
980600124	ASSEMBLY JOINT + RIGHT EC WAND
980600126	ASSEMBLY JOINT + LEFT EC WAND
98170000000033	MICRO-COMPRESSOR + SUPPORT SET

I3.8 HYDRAULIC GROUP PARTS



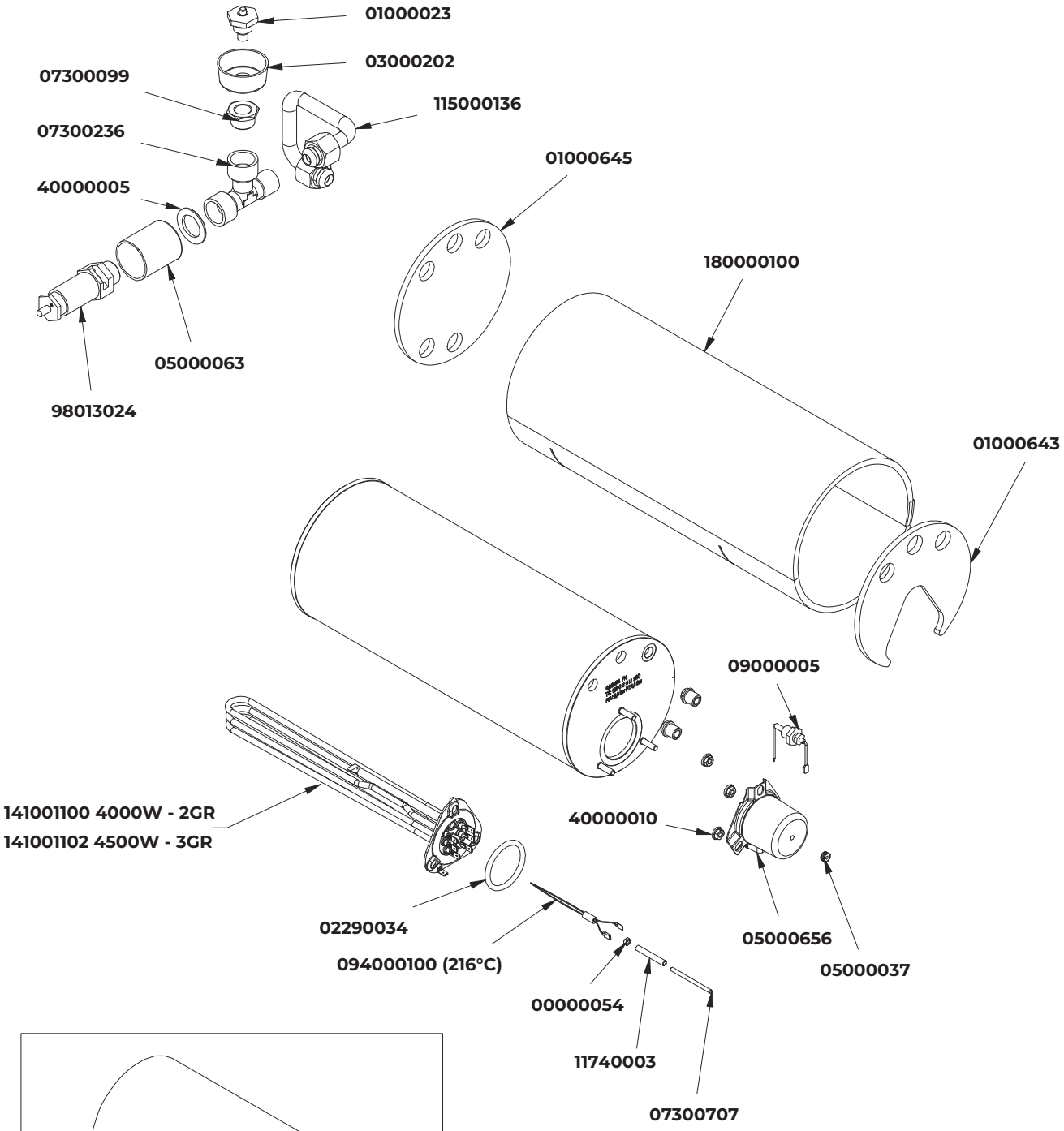
NOTE

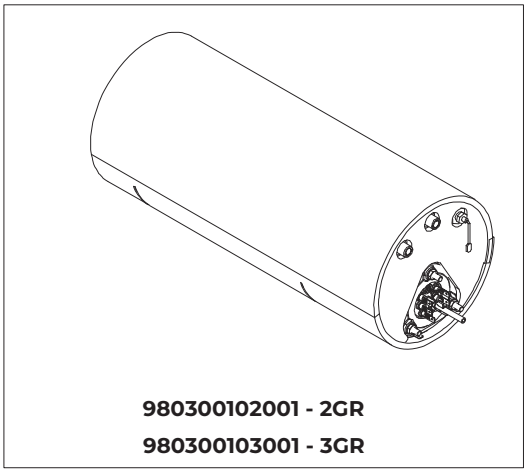
*** Specify version.**

**** North America Market.**

CODE	DESCRIPTION
00000060	GALVANIC MEDIUM NUT AQ M3
00000089	S/S CROSS HEAD CAP SCREW M4x12 DIN7985
00300001	BRASS NUT 1/4 GAS D5 CH18
01000218	BOILER INSULATION D80 115x252,7
01000220	BOILER INSULATION SUPERIOR D80
R01000218	KIT BOILER INSULATION D80 115x252,7 - 3Pcs
R01000220	KIT BOILER INSULATION SUPERIOR D80 - 8Pcs
01000222	BOILER INSULATION INFERIOR D80
02280032	GASKET O-RING 114 D15 EP 851
R02280032	KIT GASKET O-RING 114 D15 EP - 25Pcs
02280044	GASKET O-RING 14x1.78 EP851
03000004.1	DOUBLE BRACKET FOR THERMOSTAT
115000103	CONN. MANIFOLD - FLOWMETER 3 GR
115000108	FLOWMETER - SOLENOID
04000198	FOIL HOLDER M 6.3 D 4.2 45°
04000409	SAFETY THERMOSTAT MAIN BOILER WIRING
04900026	BRASS FLOWMETER 1/4-1/4GAS -ATT. HEAD 2,8x0,5F 1,2 "
07300001	L FITTING 1/8 M-M 459
07300100	DISCHARGE ATTACHMENT 1/4 1/4 OT-57 USA
07300100	DISCHARGE ATTACHMENT 1/4 1/4 OT-57 USA
07300125	GIGLEUR M8x8 F.0,8 OT-57 +TEA
R07300125	KIT GIGLEUR M8x8 F.0,8 +TEA - 15Pcs
07300243	FITTING 1/4M 1/8M GIGLEUR F.0,5
07300244	FITTING 1/4M 1/8M + THREADED M8 Aisi303
07300251	FITTING 1/8 M-M HOLE 5,5 + THREADED M6 x L=11
R07300251	KIT FITTING 1/8 M-M HOLE 5,5 + THREADED M6 x L=11 - 4P
07300858	FITTING 1/4M-1/4M OT-57 USA
R07300858	KIT FITTING 1/4M-1/4M - 15Pcs
07300862	PLUG 1/8 GAS Aisi304 + O-RING POSITION
09500002	AUTOMATIC THERMOSTAT 125°C WHITE DRIPPING
09500004	MANUAL THERMOSTAT 135°C GREEN DRIPPING
R09500004	KIT MANUAL THERMOSTAT 135°C GREEN DRIPPING - 2Pc
09500014	HEATING ELEMENT THERMAL PROTECTION G5 167°C 16A
R09500014	KIT HEATING ELEMENT THERMAL PROTECTION - 2Pcs
110100100	TUBE INJECTOR SET 1/4M S/S COFFEE BOILER
115000102	CONN. MANIFOLD - FLOWMETER 2 GR
115000110	FLOWMETER CURVE FLANGE BOILER TUBE GR. 1-2
115000112	FLOWMETER CURVE FLANGE BOILER TUBE GR.3
115000114	COFFEE BOILER TUBE- 1 GR
115000116	COFFEE BOILER TUBE 2-3 GR
190000104	SOL. VALVE 2 WAYS COIL BDV0823 PULSE JET
202200100	TEMPERATURE PROBE 150 ATT.1/8 INOX 4x40 AMP MODULE
48000010	DISPENSING TUBE VENUS 2-3 GR
98004016	S/S FILTER D12
R98004016	KIT S/S FILTER D12 - 25Pcs
98030308	S/S WELDED BOILER Aisi316 D77 L145 230V 1000W
98110001	RETURN VALVE 1/8 F-FOT-58
R98110001	KIT RETURN VALVE 1/8 F-F - 3Pcs
98120001	NEPLAX VITON 16,5 BAR VALVE 1/8 HOSE CLAMP
R98120001	KIT NEPLAX VITON 16,5 BAR VALVE 1/8 HOSE CLAMP - 2Pcs
98120005	NEPLAX VITON 12 BAR VALVE 1/8 HOSE CLAMP
R98120005	KIT NEPLAX VITON 12 BAR VALVE 1/8 HOSE CLAMP - 1Pcs
980300108001	COFFEE BOILER SET LEFT
980300108002	COFFEE BOILER SET LEFT
980300106001	COFFEE BOILER SET RIGHT
980300106002	COFFEE BOILER SET RIGHT

I3.9 BOILER PARTS

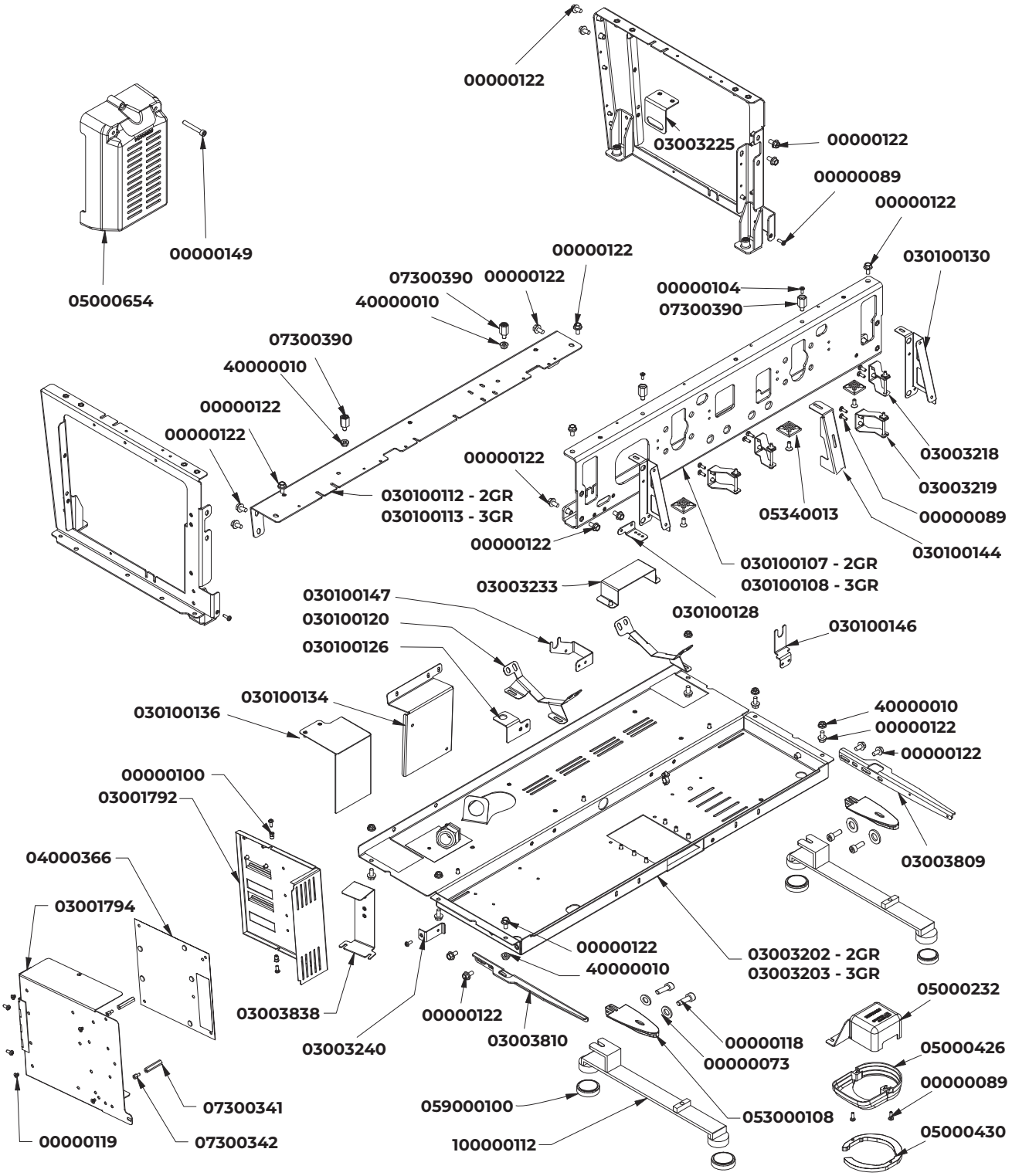




980300102001 - 2GR
980300103001 - 3GR

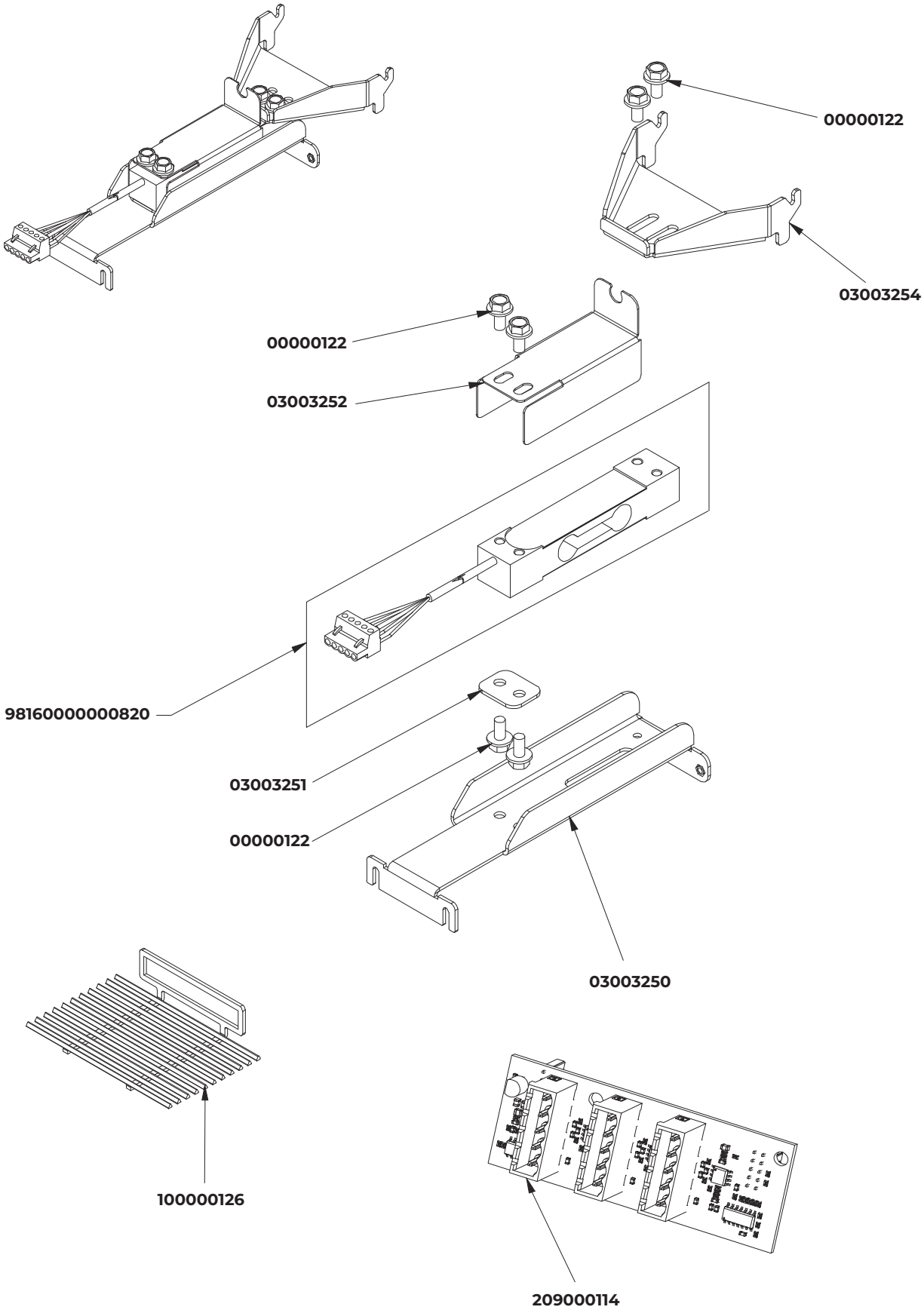
CODE	DESCRIPTION
00000054	GALVANIC HIGH NUT M4
01000023	ANTI VACUUM VALVE
R01000023	KIT ANTI VACUUM VALVE - 3Pcs
01000643	INSULATION D.160 RIGHT MELAMINE STEAM BOILER
01000645	STEAM BOILER INSULATION D.160 SX
02290034	GASKET O-RING 6187 D47x5,34 VITON FDA
03000202	CONDENSATION TRAY MASTER
05000037	THREADED RING NUT FOR PANELS M4 X0,7 NYLON WHIT
05000063	SAFETY VALVE COVER PA6
R05000063	KIT SAFETY VALVE COVER PA6 - 8Pcs
05000656	CYLINDRICAL RESISTANCE COVER
07300099	FITTING ADAPTER 3/8-1/4 ES. 20 ADD. 29.05.96
07300236	T FITTING 3/8 M-F-F 466
R07300236	KIT T FITTING 3/8 M-F-F - 3Pcs
07300707	BRASS THREADED PIVOT M4X60
09000005	COMPLETE AUTOLEVEL PROBE L=130
R09000005	KIT COMPLETE AUTOLEVEL PROBE L=130 - 1Pcs
094000100	HEATING ELEMENT THERMAL PROTECTION 216°CE5 MIC
115000136	SAFETY VALVE TUBE
11740003	CALIBRATED TEFLON PIPE 6/4
141001100	S/S RESISTANCE FLANGE 4000W 230V
141001102	S/S RESISTANCE FLANGE 4500W 230V
180000100	STEAM BOILER INSULATOR
40000005	BRASS WASHER 27x17x2 ROUGH
40000010	NUT M6 W/ WELDED GALVANIC WASHER
98013024	SAFETY VALVE C10 3BAR 3/8 VITON 97/23/CE CAT.IV-
980300102001	BOILER ASSEMBLY 2GR.
980300103001	BOILER ASSEMBLY 3GR.

13.10 FRAME PARTS



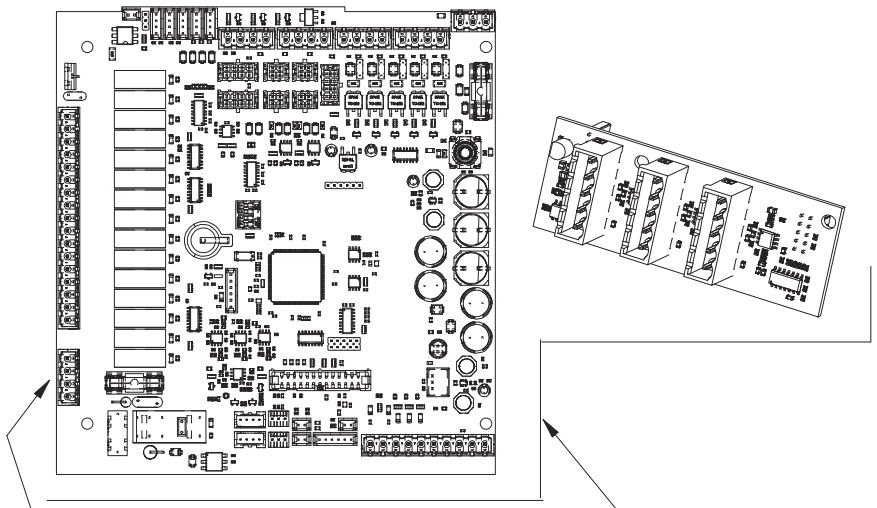
CODE	DESCRIPTION
00000073	S/S WASHER D.8x4x1 UNI6592
00000089	S/S CROSS HEAD CAP SCREW M4x12 DIN7985
00000104	S/S CROSS HEAD COUNTERSUNK SCREW M4x10 DIN965
00000118	S/S HEX SOCKET CAP SCREW M4x12 5931
00000119	SS CROSS HEAD COUNTERSUNK SCREW M4x6 ISO 7046
00000122	WHITE GALVANIC FLANGED KNURLED HEX CAP SCREW 8.8 M
00000149	S/S HEXAGON SOCKET HEAD SCREW M4x30 UNI 5931
03001792	CONTROL BOARD COVER
03001794	CONTROL BOARD CASE
03003202	BASE 2GR
03003203	BASE 3GR
03003218	RIGHT SUPPORT COVER GROUP
03003219	LEFT SUPPORT COVER GROUP
03003225	SAFETY PRESSURE SWITCH SUPPORT
03003233	PROTECTION SHEET CHARGE PIPE
03003240	FIXING BOARD BOX SHEET
05340013	SMALL BASE 19X19 FOR BAND WITH SCREW HOLE M4
03003809	RIGHT PLATE GUIDE SHEET
03003810	LEFT PLATE GUIDE SHEET
03003838	TERMINAL BOARD SUPPORT BRACKET
030100107	GROUP WALL 2GR
030100108	GROUP WALL 3GR
030100112	REAR UPPER CROSSBAR 2GR
030100113	REAR UPPER CROSSBAR 3GR
030100120	SUPPORT BOILER
030100126	MANIFOLD SUPPORT
030100128	SUPPORT SOLENOID SELF LEVEL
030100130	SUPPORT COMMAND PANEL
030100134	SUPPORT TRANSFORMER SUPPLY
030100144	DISPLAY SUPPORT BRACKET
030100146	DOUBLE STEAM SOLENOID SUPPORT RIGHT
030100147	DOUBLE STEAM SOLENOID SUPPORT LEFT
04000366	PVC MAIN BOARD PROTECTION
05000232	SQUARE SWITCH COVER
05000426	VERTEBRA RING SUPER. FEEDER
05000430	VERTEBRA RING FEEDER
05000654	BOILER CONTROL UNIT CLOSING
053000108	FLAT WATER DRIP TRAY
059000100	MACHINE FOOT BI-COMPONENT D.50 H=12,5 CONN. M10
07300341	CENTRAL LOCK VIP S/S NICKEL PLATE L=35 ADD.29.01.98
07300342	NICKEL PLATED CONTROL UNIT SUPPORT PIN
07300390	EXTENSION CUP WARMER FIXING
100000112	FOOT MACHINE
40000010	NUT M6 W/ WELDED GALVANIC WASHER

13.11 AUTOMATIC SCALE PARTS



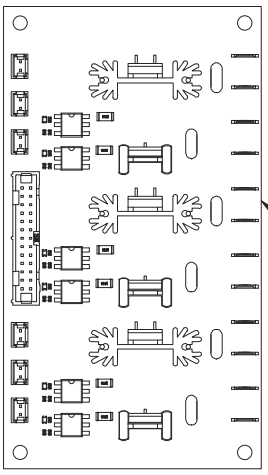
CODE	DESCRIPTION
00000122	WHITE GALVANIC FLANGED KNURLED HEX CAP SCREW 8.8 M
03003250	SCALE SUPPORT
03003251	SCALE EXTENT SUPPORT
03003252	SCALE PROTECTION SUPPORT
03003254	SCALE GRILL SUPPORT
100000126	SCALE GRILL
209000114	SCALES TAB
98160000000820	LOAD CELL SET W/ CONNECTOR
R98160000000820	KIT LOAD CELL SET W/ CONNECTOR - 1Pcs

13.12 ELECTRONIC PARTS

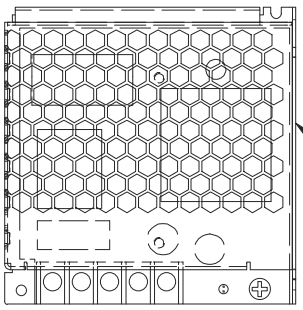


981600126
GRAVIMETRIC version

981600125
VOLUMETRIC version



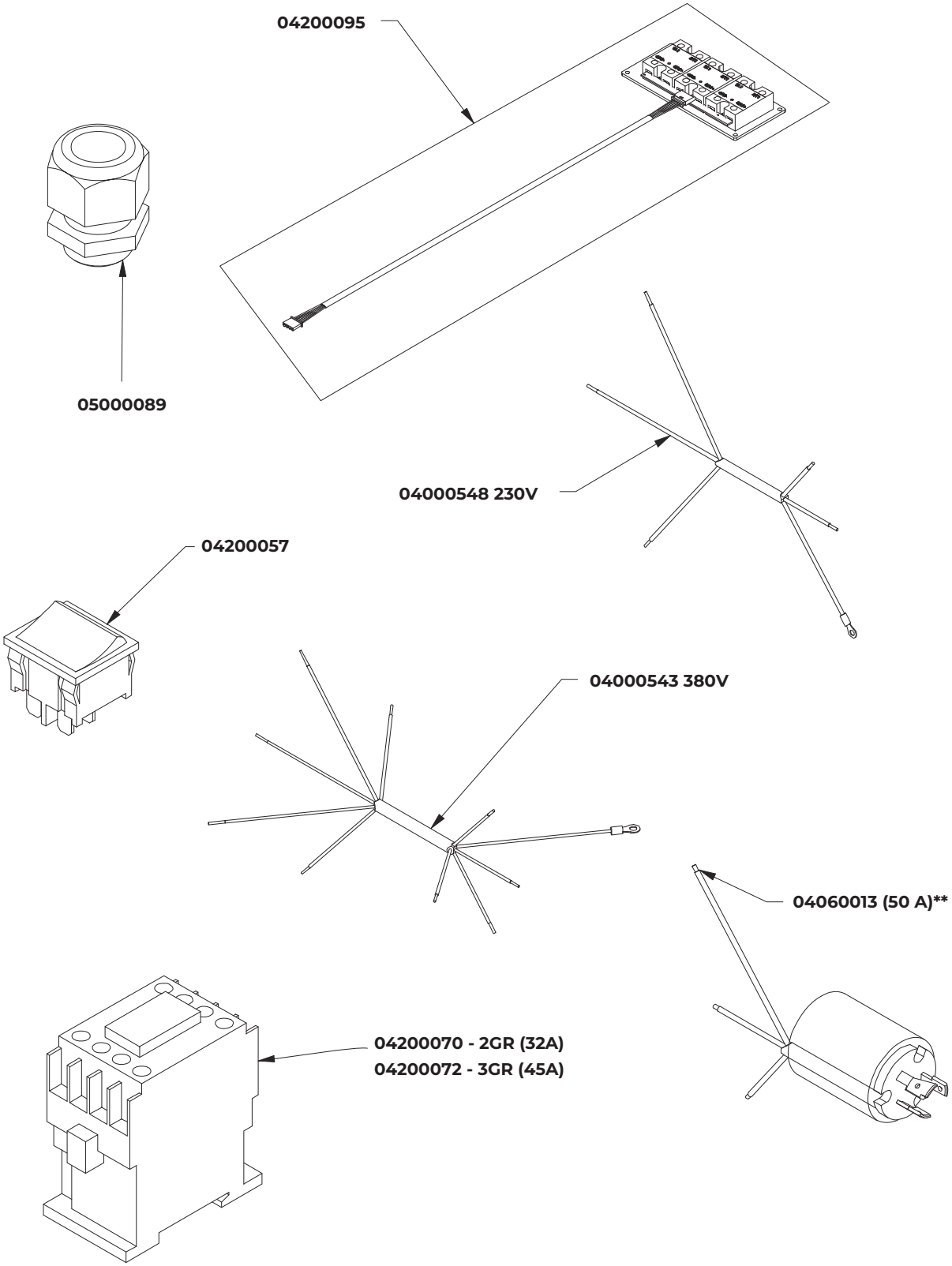
04901340



046000300

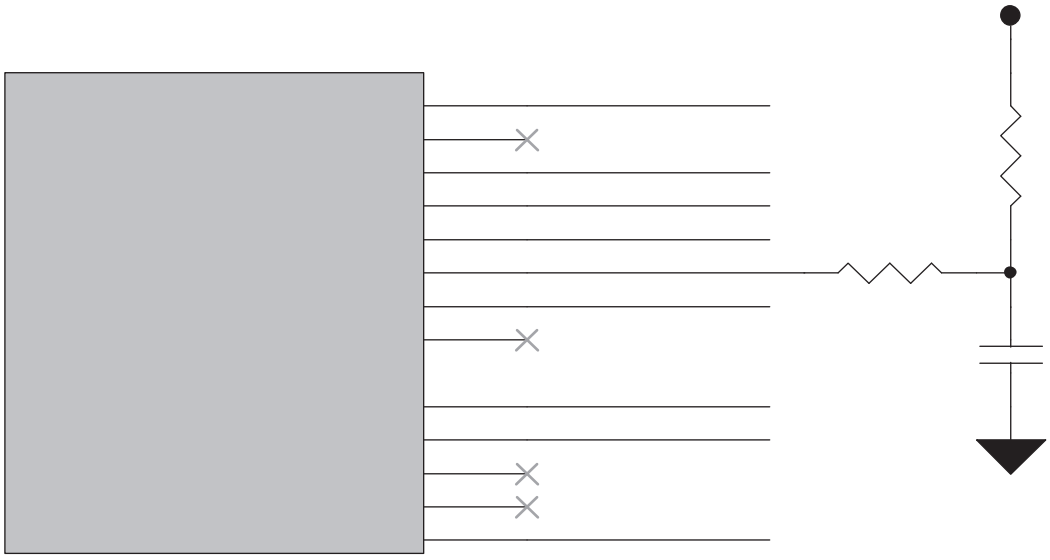
CODE	DESCRIPTION
04000380	CUP WARMER SENSOR CONN CABLE L=100MOD
04000381	CSA CABLING
04000409	SAFETY THERMOSTAT MAIN BOILER WIRING
04000430	FLAT CABLE 10WAY CENTRAL BOARD-TFT DISPLAY
04000432	FLAT CABLE 26WAY CENTRAL BOARD - PID BOARD TFT
R04000432	KIT FLAT CABLE 26WAY CENTRAL BOARD - PID BOARD TFT
04000893	EXTENSIBLE CABLE L=600 2WAY CONN AMP TYP MODE II M-F
04000912	EXTENSIBLE CABLE L=380 2WAY CONN AMP TYP MODE II M-F
04000913	EXTENSIBLE CABLE L=780 2WAY CONN AMP TYP MODE II M-F
040500102	WIRING 2GR HIGH VOLTAGE
040500103	WIRING 3GR HIGH VOLTAGE
040500112	WIRING 2GR LOW VOLTAGE
040500113	WIRING 3GR LOW VOLTAGE
040500116	ADDITION WIRING EASYCREAM
046000300	TRANSFORMER 24V 75W LRS-75-24
04901340	CENTRAL BOARD T3 MACHINE CONTROL
981600125	UPDATED VOLUMETRIC MAIN BOARD
981600126	UPDATED MAIN BOARD

13.13 ELECTRIC PARTS



CODE	DESCRIPTION
04000386	CUP WARMER CABLING 1 TEMP 2GR
04000387	CUP WARMER WIRING 1 TEMP 3GR
04000440	WIRING FOR BOILER SOLID STATE RELAY L=1900
R04000440	KIT WIRING FOR BOILER SOLID STATE RELAY L=1900 - 1P
04000543	ELECTRICAL CABLE 5x2,5 H07RN-F CB450/750V 2,5mt ICEL
04000548	ELECTRICAL CABLE 3x6 H07RN-F CB L=2,5mt ICEL
04060013	CABLE+PLUG AWG3x10 SJOOW UL/CSA 50A 250V NEMA6
04200057	DBL POWER BIPOLAR BIG SWITCH 10A UL 22X19
R04200057	KIT DBL POWER BIPOLAR BIG SWITCH 10A UL 22X19 - 15
04200070	4POLE CONTACTOR 32 A CE/UL COIL 230V
04200072	4POLE CONTACTOR 45A CE/UL COIL 230V
04200095	STATIC RELAY 25A-250V 3pz ASSEMBLED + CONN CABLE
05000089	CABLE DUCT TEC-S M25 WITH NUT

14 DIAGRAMS



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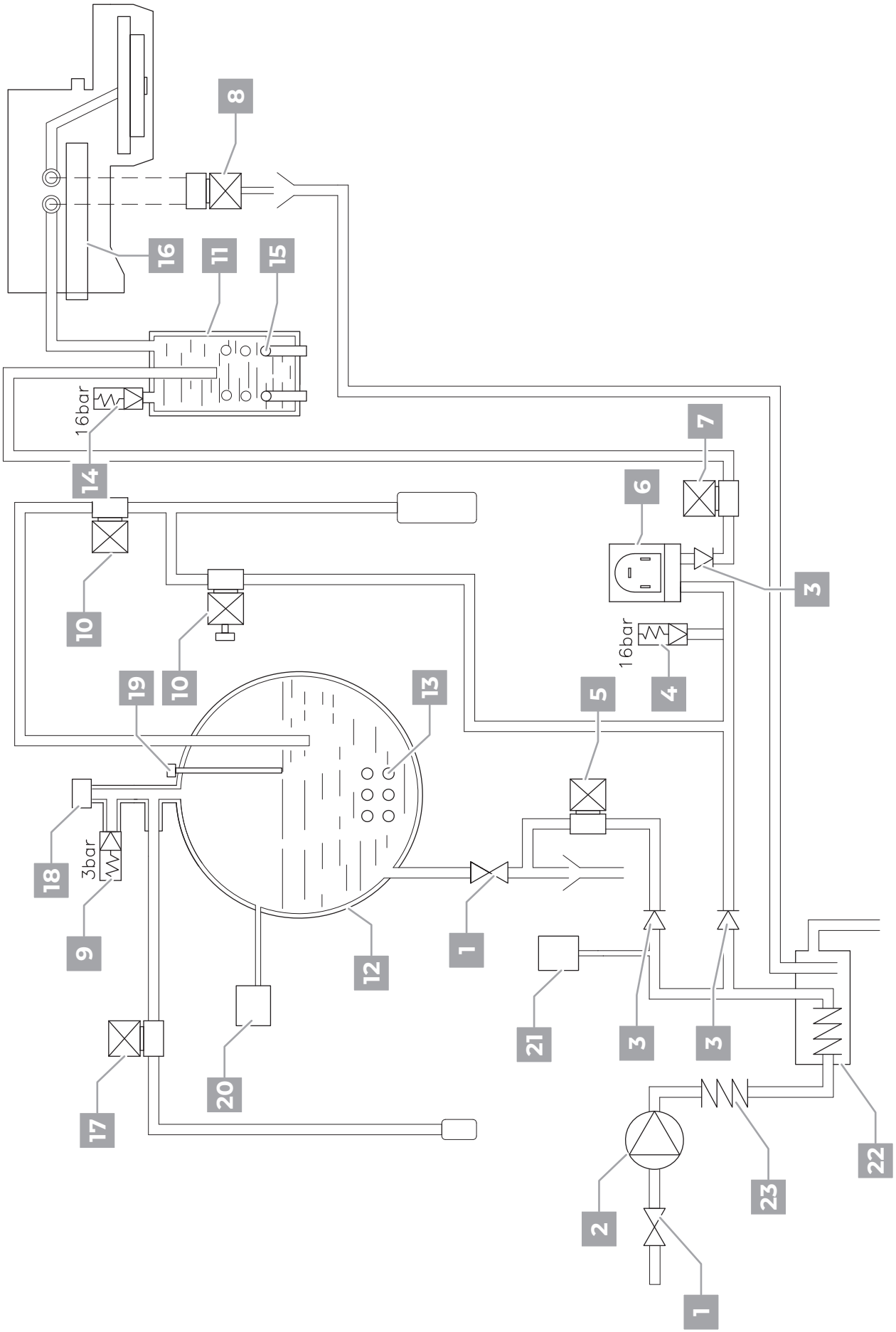
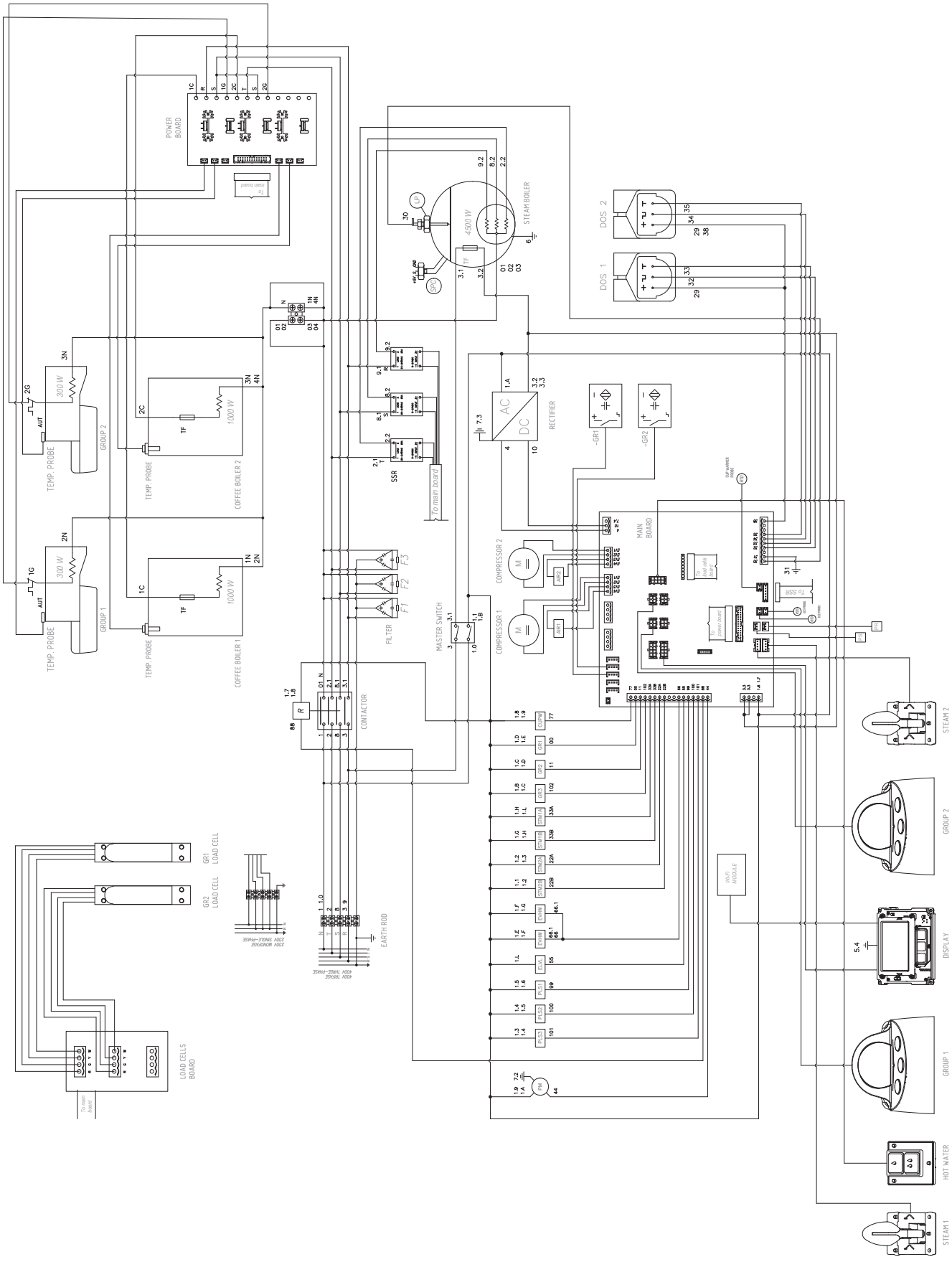
14.1 HYDRAULIC SCHEME



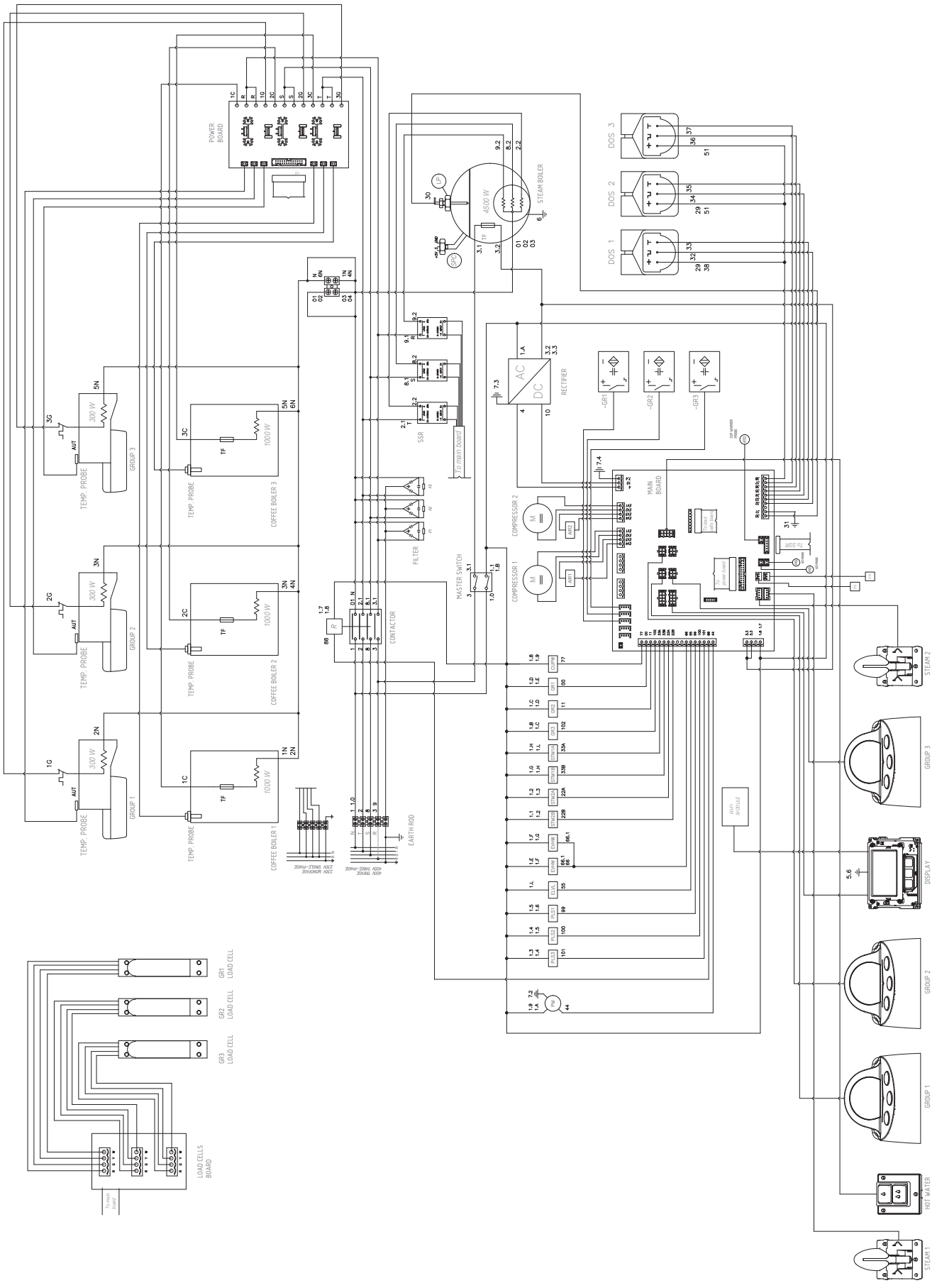
POSITION	DESCRIPTION
1	General Tap
2	Pump
3	Retaining valve
4	Expansion valve 14-16 bar
5	Refill electrovalve
6	Flowmeter
7	Flow control valve
8	Delivery electrovalve
9	Safety valve main boiler
10	Hot Water Electrovalve
11	Coffee boiler
12	Boiler
13	Heating element
14	Safety valve 12 bar
15	Heating Element
16	Heating Element
17	Steam electrovalve
18	Antivacum valve
19	Level probe
20	Digital pressostat
21	Water pressure sensor
22	Thermal energy recovery system
23	Motor liquid cooling system

14.2 2 GROUPS ELECTRICAL DIAGRAM



ELEMENT	DESCRIPTION
EVHW	Steam/hot water solenoid valve
GR1-2-3	Group dispensing solenoid valve
PM	Pump motor
R	Relay
ELVL	Level solenoid valve
LP	Level probe
SPC	Boiler pressure sensor
STM1A-B-2A-B	Steam solenoid valve
TF	Thermal cut-off
PR	Pressure switch
CUPW	Cupwarmer temperature probe
DOS1-2	Volumetric doser
F1-2-3	Fuses
PS	Safety pressure switch
RTD	Resistive sensor
M	Compressor
GROUP1-2-3	Dispensing group
DISPLAY	Touch Screen Display
HOT WATER	Hot water nozzle
PLS1-2-3	Water pulses solenoid valve
LOAD CELLS	Load cells (Gravimetric)
STEAM1-2	Steam Nozzle

I4.3 3 GROUPS ELECTRICAL DIAGRAM



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