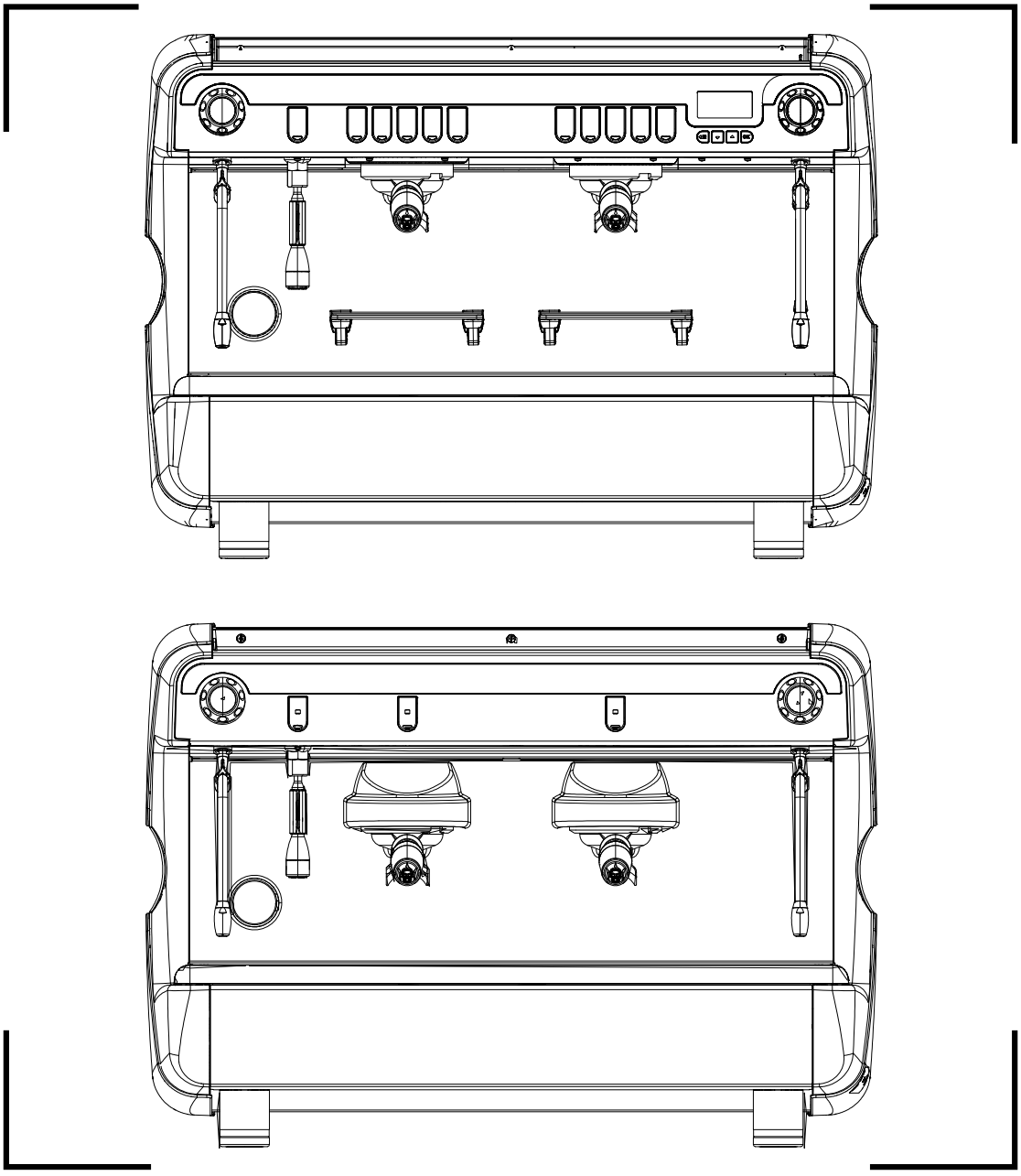
CASADIO
BOLOGNA - 1950

NETTUNO



IT	Manuale del tecnico
EN	Technician's Manual
FR	Manuel du technicien
DE	Techniker-Handbuch
ES	Manual del técnico
PT	Manual do técnico

EN

CONTENTS

1. IMPORTANT SAFETY MEASURES

Read the entire contents of this manual carefully before using the appliance.

Make sure this manual is available to all personnel authorised to use the appliance.

NB: The manufacturer disclaims all responsibility for harm to people or damage to property resulting from failure to respect the safety rules.

2. INTRODUCTION

2.1 AIM OF THIS MANUAL

The appliance covered by this operating and maintenance manual is the professional coffee machine **NETTUNO**.

The manufacturer of the appliance is:

Cimbali Group S.p.A.

Via A. Manzoni, 17

20082 Binasco (MI), Italy

This manual provides information reserved for personnel authorised to use the appliance (standard use and maintenance).

2.2 HOW TO READ THIS MANUAL

The manual is divided into chapters and paragraphs. Each paragraph is a sub-level of the relative chapter. References to titles or paragraphs are indicated with the abbreviation ch. or par., followed by the relative number. For example: “ch.2” or “par.2.1”.

The figures in this manual are progressively numbered in relation to the specific chapter - e.g. figure 1.3 is the third figure of the first chapter. The references to the figures are indicated with the abbreviation Fig., followed by the relative number. For example: “Fig.1.3”. The components indicated in the figures are referred to with letters or numbers, depending on the case in question. For example, a reference to component C in figure 2 of chapter 3 will appear as: “see C - Fig.3.2”, or simply “(C - Fig.3.2)”.

ATTENTION: the pictures in this manual are intended as a general indication. The real components may vary from those shown. If in doubt, contact the technical support service.

Apart from instructions for use and maintenance, this manual also contains safety information that calls for special attention. This information is highlighted as follows.

ATTENTION: failure to respect the indication leads to a situation of potential risk which, if not avoided, may cause slight damage to the appliance.

NB: provides additional information (on top of the previous safety instructions and messages).

3. SAFETY LABELS AND SYMBOLS

WARNING: Keep the safety labels (see Fig. 3.1) clean and fully legible. Replace worn, illegible labels with identical new ones in the same positions.

Symbol	Description
	**ATTENTION:** electricity hazard
	**ATTENTION:** hot surface Adopt the maximum caution when approaching and working in areas where this symbol is displayed.

3.1 IDENTIFICATION PLATE

The identification plate (see Fig. 3.1) is attached directly to the appliance.

ATTENTION: Do not remove the identification plate. If the plate gets damaged and/or is no longer legible, contact the technical support service.

The identification plate shows the following data:

A. Manufacturer's details
B. Machine model
C. Type of machine
D. Serial number
E. Year and month of manufacture

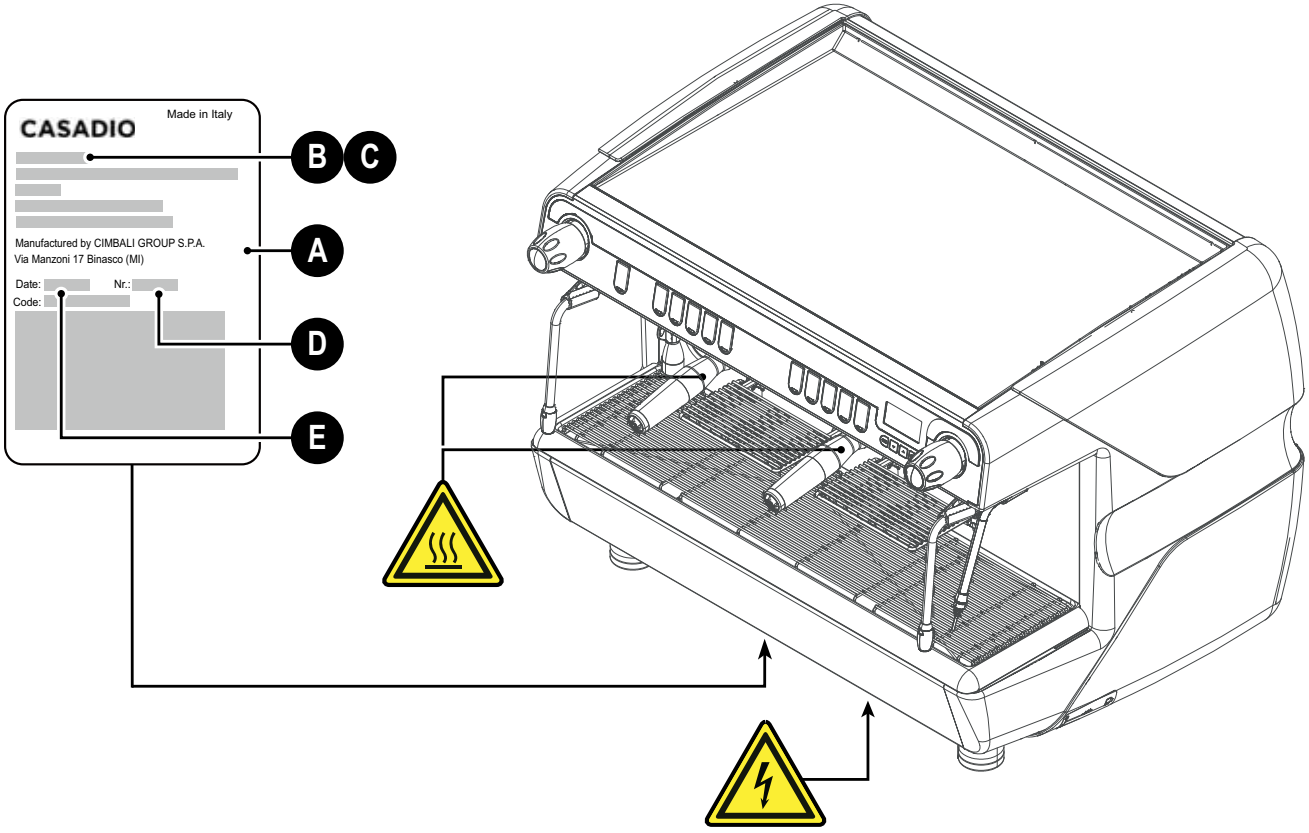


Fig. 3.1 - Labels on the device

4. DESCRIPTION OF SYMBOLS ON DISPLAY

There is a display on the device that can show controls or information about the operation of the device.

NB: During normal operation, the display shows the boiler temperature.

DISPLAY ICONS

Description	Icons
1. **Dispensing:** dispensing phase duration	
2. **Easysteam**	
3. **Boiler water level**: optimal level achieved.	
4. **Boiler resistance**: when the resistance is active and functioning, it is shown by a thicker luminous flux passing through the resistance.	

NB: The user cannot activate/deactivate the electric heating. With the on/off function set, the activation of the electric heating takes place automatically.

5. PROGRAMMING

5.1 NAVIGATION COMMANDS

To navigate through the menus and programming screens, use the commands described below.

- Press the button ▶ to access a selected option.
- Press the navigation buttons ▼ and ▲ to select the options in the programming menus or change displayed values.
- Press the button ◀ to exit the displayed menu without confirming the data change.
- Press the **OK** button to confirm changes to values and exit the displayed menu.

The technician menu is accessed by holding down ▲ and pressing ◀☰ . See Fig. 5.1 - Automatic push buttons.

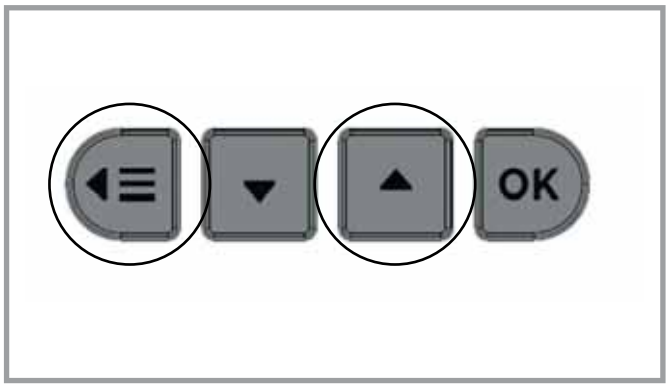


Fig. 5.1 - Automatic push-buttons

Menu display available: using the buttons ▲ and then press ▶.

Menu access: Position the cursor at the desired line using the buttons ▼and ▲, then press the button ▶ (press a selection button in the case of the Button selection menu).

Modify menus and sub-menus: Position the cursor at the desired line using the ▼ and ▲ buttons and then press the ▶ button.

Change the indication or vary the value again using the buttons ▼ and ▲.

Exit from programming panels: to exit the programming panels, there are 2 possibilities:

1. confirm the changes made by pressing **OK**;
2. Exit the menu while leaving the data unchanged by pressing ◀☰ .

5.2 DOSE PROGRAMMING

To access the Dose Programming menu, select the following menu.

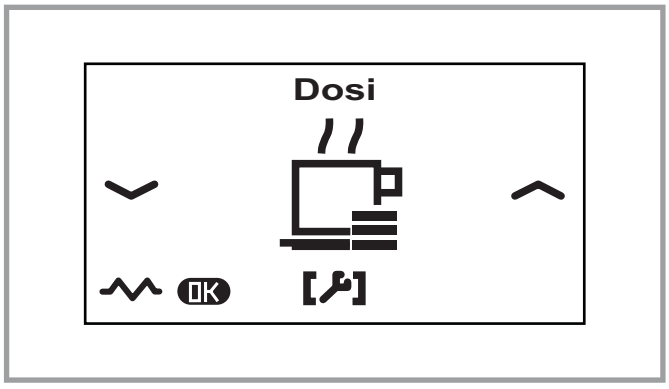


Fig. 5.2 - Coffee dose programming menu

- Access the KEY SELECTION menu.

- Press one of the dose dispensing buttons on the dispensing unit (the associated LED remains lit).

Fig. 5.3 - Dose menu

Pressing the **OK** button performs a dispensing test with the set dose and the BUTTON MENU screen appears on the display (Fig. 5.4 - Button Menu).

Fig. 5.4 - Button menu

Within the BUTTON MENU, it is possible to choose the type and dose of coffee.

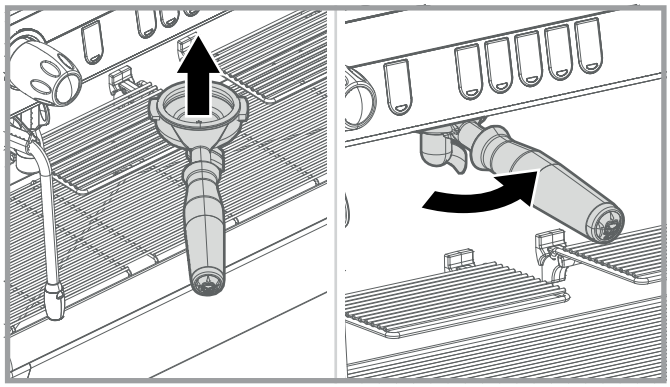
5.2.1 DOSE PROGRAMMING FOR SELF-LEARNING

- Access the DOSES LEARNING menu.

Fig. 5.5 - Dose learning menu

1. Allows to set the dispenser group to be programmed.
2. Displays the currently set dose. During self-learning, the learning dose is displayed.

- Insert the filter holder into the dispensing group with the dose of ground coffee.



- Place the cup(s) under the spouts of the filter holder.
- At the dispensing group, press the dispensing button to be programmed. Keep the button pressed until the desired dose is reached in the cup(s).
- During self-learning dispensing, the pulse value of the volumetric dispenser is increased until the button is released during programming. The value reached is stored and appears below the programmed key.

5.2.2 GROUP COPY

The function GROUP COPY allows the settings of the selected coffee group to be copied to all other groups in the appliance.

- Position the cursor on Group copy using the and buttons and press ◀☰ .
- Set which group to clone from all other groups on the appliance using the buttons, then confirm with ◀☰ .
- At the end of the procedure, all groups will have the same parameters.

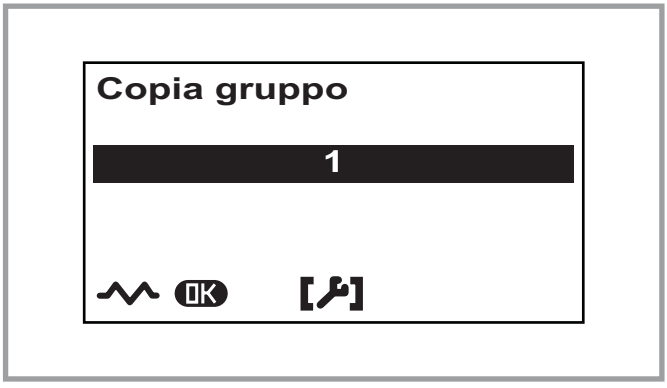


Fig. 5.6 - Group copy 1

Fig. 5.7 - Group copy 2

5.3 MANUAL CONTROLS

Fig. 5.8 - Manual controls 1

Within the MANUAL CONTROLS menu (Fig. 5.8), the following functions can be activated or deactivated.

- Pump
- Solenoid valve Group 1
- Solenoid valve Group 2
- Loading solenoid valve
- Hot water solenoid valve
- Boiler resistance
- Steam solenoid valve
- Air pump

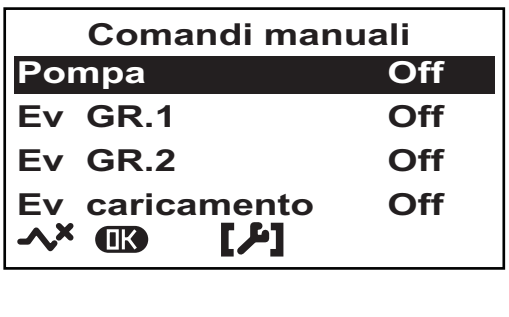


Fig. 5.9 - Manual controls 2

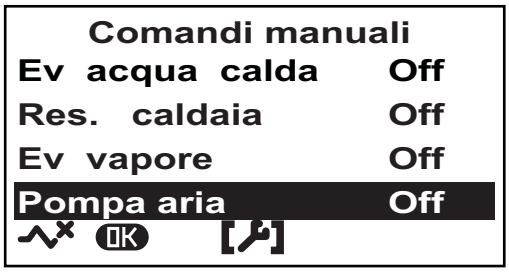


Fig. 5.10 - Manual controls 3

5.4 CONFIGURATION

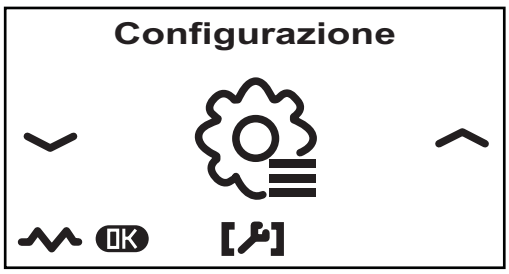


Fig. 5.11 - Configuration menu

Within the CONFIGURATION MENU, the following parameters can be activated or deactivated.

- **Boiler**: The resistance and the auto-level function of the service boiler are activated or deactivated by changing the parameter Boiler ON/OFF.

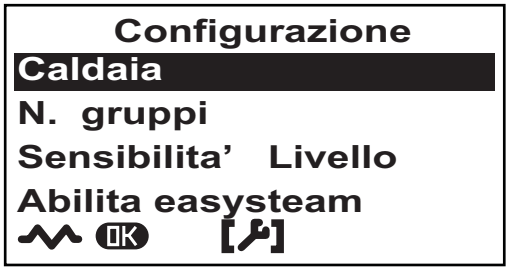


Fig. 5.12 - Configuration 1

- **Groups number** (1, 2 and 3).
- **Sensitivity level**: Indicates the degree of sensitivity of the level probe acting accordingly on the water feed to the boiler. For safety reasons, the boiler auto-level management is disabled when the boiler resistance is switched off.

NB: Set value 1 if the appliance is installed with very conductive water. Set value 3 if the water used is poorly conductive (very soft).

- **Enable easysteam:** to enable/disable easysteam.
- **Units of measurement**: includes the following 2 sub-menus.
  - **Temperature unit** - can be set: °C, degrees Celsius or °F, degrees Fahrenheit.
  - **Pressure unit** - can be set: bar or psi.
- **Time control**: YES/NO. Display of dispensing time (from 1' to 60').

Fig. 5.13 - Configuration 2

- **Programming block**: YES/NO. Activating the function (YES) inhibits all buttons belonging to the programming keypad, including the cup-warmer button.
- **User lock**: YES/NO. If enabled (YES), prevents the user from accessing user programming.
- **Filter replacement**: when the set litres are reached, a message appears on the display indicating that the filter should be replaced. For both functions, the efficiency percentage (Filter) is displayed, decreasing from 100% to 0%.

Fig. 5.14 - Configuration 3

- **Maintenance**: includes 3 items for maintenance parameters setting.

1. **Max cycles** - represents the number of cycles initially set: 40000.
2. **Max days** - represents the number of days initially set: 185.
3. **Reset** - the choices are:
   - **NO**, countdown of cycles and remaining days to next maintenance;
   - **YES**, the values for the number of cycles (40000) and remaining days (185) are re-established;
   - **OFF**, all scheduled maintenance checks are deactivated and the cycle and day counters in the maintenance panel are reset. Once maintenance has been performed, the message must be reset in technician mode to eliminate it.

Fig. 5.15 - Maintenance

- **Historic reset**: allows the resetting of the faults (Washing History, Fault History and Water Change) occurred and stored in the appliance: YES/NO.
- **Boiler emptying**: allows the boiler to be emptied.
- **Standard data**: standard data loading: YES/NO.
- **IoT protocol**: to enable/disable the IoT protocol.

Fig. 5.16 - Configuration 5

5.5 DATA MENU

- Access the DATA MENU menu.

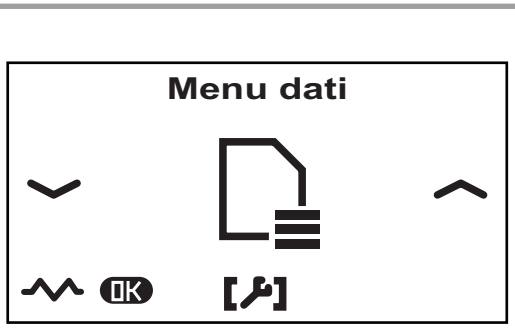


Fig. 5.17 - Data menu

5.5.1 COUNTERS

- Access the COUNTERS menu.

Fig. 5.18 - Counters 1

Fig. 5.19 - Counters 2

Fig. 5.20 - Counters 3

- Press any dispensing button. On the dispenser unit, the LED associated with the button remains lit. The services display shows the number of dispensing made with that key.

Fig. 5.21 - Counters 4

- The displayed counter can be reset by pressing ▶.

In the DATA MENU, the following counted parameters are displayed:

1. No. coffee gr. 1
2. No. coffee gr. 2
3. No. water
4. No. steam 1
5. No. steam 2
6. Total no. coffee
7. T. on

NB: These parameters refer to the number of dispensing and the total switch-on time of the device (T. on). Within the DATA MENU, it is possible to display information about the device, such as:

- CPU (3D5 fw rel. 1.17);
- DISPLAY (LCD fw rel. 1.08).

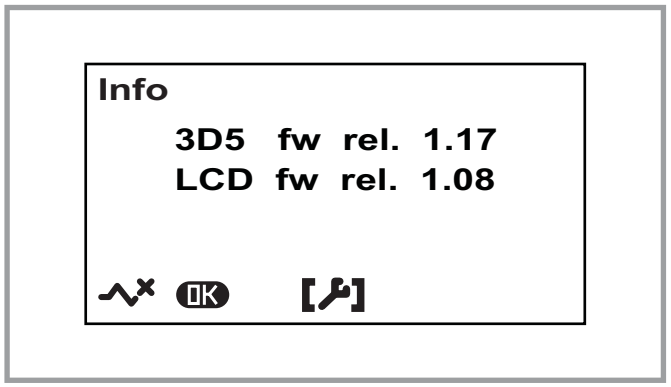


Fig. 5.22 - Appliance info

5.6 EASYSTEAM

- Access the EASYSTEAM menu.

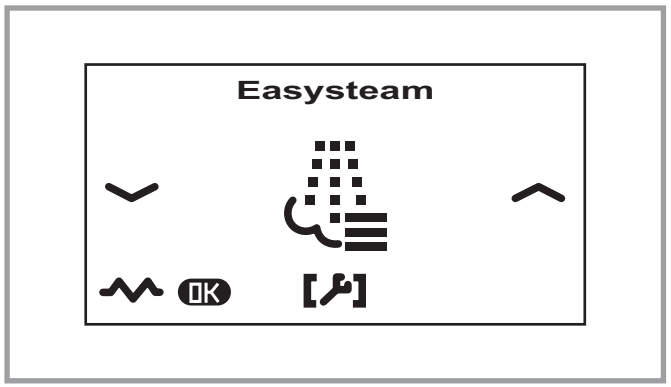


Fig. 5.23 - Easysteam menu

- Access the KEY SELECTION menu.

Fig. 5.24 - Menu Button selection

- Select one of the two easysteam (ES1 or ES2).

Fig. 5.25 - ES1 and ES2

6. STATUS INDICATIONS

INDICATION	CAUSE	SOLUTION
Cold machine wait	The boiler has not reached the set operating pressure and a release button is pressed.	Wait for the boiler to reach operating pressure.
Volumetric sensor	In the event of a volumetric sensor disconnection/ fault, the error condition is indicated on the display; This occurs after 5" of dispensing and does not block the dispensing in progress. The error is signalled by an icon instead of the group icon with the corresponding timer of the group selected for dispensing.	Contact the technical support service.
Filling time-out	The device is equipped with a timer to manage the non-filling of the boiler; if the level sensor remains uncovered for 15', the device goes into lockout, preventing any dispensing managed by the electronics, and all LEDs on the coffee dispensing keypads will flash simultaneously.	Contact the technical support service.
EasySteam error	In the case of devices equipped with EasySteam, if the function is enabled, any ES error is handled; this is a single error with the following possible causes: • Faulty thermocouple/not connected to thermocouple interface; • Thermocouple interface faulty/not connected to display board. The error is signalled to the user on the display by a flashing icon instead of the standard EasySteam operation icon: 	Contact the technical support service.
Connection error No tank water display	The display connection error is indicated by the icon:  The error may appear due to the following causes: • Mainboard connection cable: display connected to wrong display connector (must be connected to white connector). • Mainboard connection cable: display not correctly inserted. • Mainboard connection cable: display not correctly assembled (pins not inserted into the casing, cables crimped incorrectly, cable with pins 2 and 3 not crossed).	Check the mainboard connection cable.

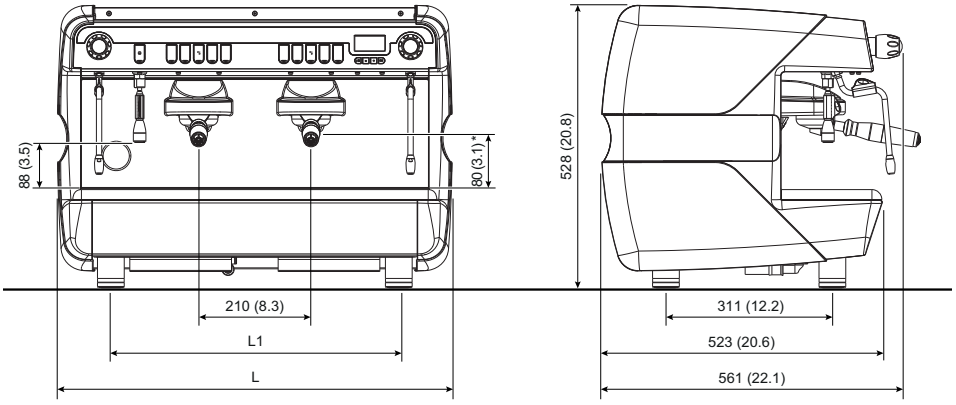
INDICATION	CAUSE	SOLUTION
No water tank	For appliances equipped with a water tank, the No Water Tank error is managed, which is visualised by the simultaneous flashing of the LEDs of all dispensing buttons. The presence of the error inhibits dispensing.	Insert the water tank in the correct position.
Water tank level	For devices equipped with a water tank, the Water Tank Level error is managed, which is displayed by simultaneous flashing of the LEDs of all dispensing buttons when the water level in the tank is below the minimum level. The presence of the error inhibits dispensing.	Restore the water level above the minimum level in the tank.
No drain pan	For devices equipped with a dirty water drain tray, the No drain tray error is handled, which is shown by the scrolling flashing of the LEDs of all dispensing buttons when the drain tray is not in the correct position. The presence of the error inhibits dispensing.	Insert the dirty water drain pan in the correct position.
Drain pan full	For devices equipped with a drain tray, the No drain tray level error is managed, which is shown by the scrolling flashing of the LEDs of all dispensing buttons when the drain water in the tray reaches the level of the sensors. The presence of the error inhibits dispensing.	Empty the water drain pan.

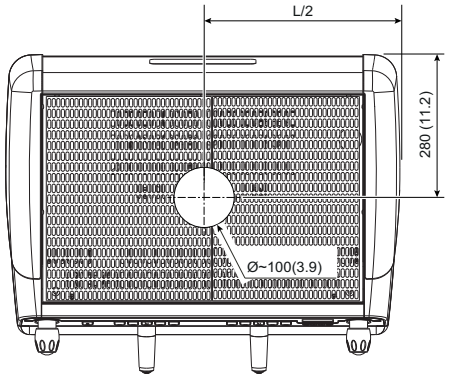
7. TECHNICAL DATA

NB: The manufacturer reserves the right to make changes or improvements without prior notice.

CASADIO
SINCE 1950

NETTUNO





*** 145 (5.7) for VA version**

DIMENSIONI / DIMENSIONS					
		1 gr.	Compact	2 gr.	3 gr.
L	mm	457	570	736	946
	inches	*18*	*22.4*	*29*	*37.2*
L1	mm	258	372	538	748
	inches	*10.2*	*14.6*	*21.2*	*29.4*
Peso netto Net weight	Kg	39	47	52	64
	pounds	*86*	*103.6*	*114.6*	*141.1*

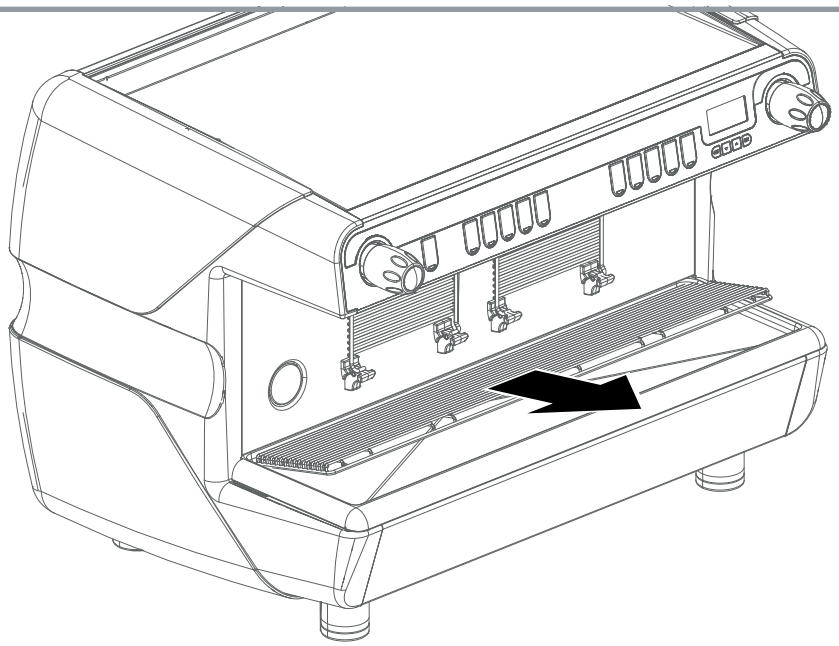
MACCHINA MACHINE	ALIMENTAZIONE ELETTRICA POWER SUPPLY	POTENZA INSTALLATA INSTALLED POWER	CORRENTE DI LINEA LINE POWER	SEZIONE CAVO ALIMENTAZIONE SUPPLY CABLE SECTION
1 GR.	220-240 V 50-60 Hz	2,8-3,3 kW	14 A	3 x 1,5 mm²
	100 V 50-60 Hz	1,2 kW	15 A Plug	3 x 2 mm²
	100-120 V 60 Hz	1.2-1.7 kW	20 A Plug	14/3 AWG
COMPACT	220-240 V 50-60 Hz	2,8-3,3 kW	14 A	3 x 1,5 mm²
	220 V 60 Hz	2,8 kW	14 A	3 x 1,5 mm²
	100 V 50-60 Hz	1,2 kW	12 A	3 x 2 mm²
	100-120 V 60 Hz	1.2-1.7 kW	20 A Plug	14/3 AWG
	208-240 60 Hz	2.6-3.4 kW	20 A plug	14/3 AWG
2 GR.	220-240 V 50-60 Hz	2,8-3,3 kW	14 A	3 x 1,5 mm²
	reduced power version 220-240 V 50-60 Hz	2,0-2,4 kW	10 A	3 x 1,5 mm²
	380-415 V3N 50-60 Hz	3,8-4,5 kW	10 A	5 x 2,5 mm²
	220 V 60 Hz	2,8 kW	14 A	3 x 1,5 mm²
	200 V 50-60 Hz	2,4 kW	12 A	3 x 2 mm²
	208-240 60 Hz	2.6-3.4 kW	20 A plug	14/3 AWG
3 GR.	380-415 V3N 50-60 Hz	5,6-6,6 kW	10 A	5 x 2,5 mm²

INTERRUTTORE	- Omnipolare con distanza di apertura contatti 3 mm - Protezione da corrente di dispersione con valore pari a 30 mA	SWITCH	- Omnipolar, 3 mm opening contact distance - Protection from leakage current with a value equal to 30 mA
MESSA A TERRA	- Obbligatoria	GROUNDING	- Required
ALLACCIAMENTO IDRAULICO	- ø 3/8 gas	HYDRAULIC CONNECTION	- ø 3/8 gas
PRESSIONE DI ALIMENTAZIONE IDRAULICA	- 1 ÷ 6 bar (0.6 MPa)	HYDRAULIC FEEDING PRESSURE	- 1 ÷ 6 bar (0.6 MPa)
SCARICO IDRAULICO	- ø min. 50 mm	WATER DISCHARGE	- ø min. 50 mm

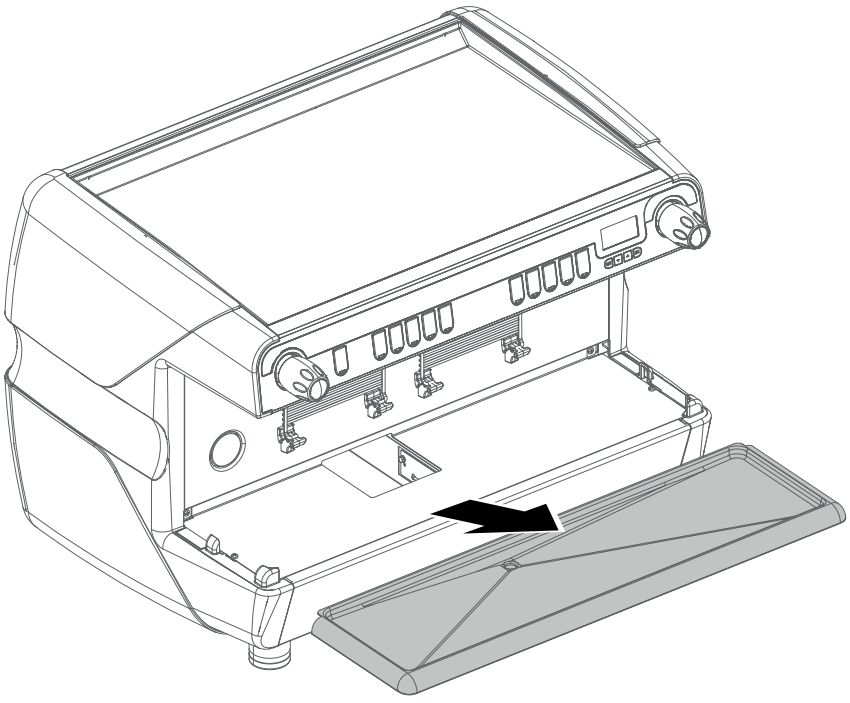
8. DISMANTLING AND ADJUSTMENTS

8.1 TRAY

1

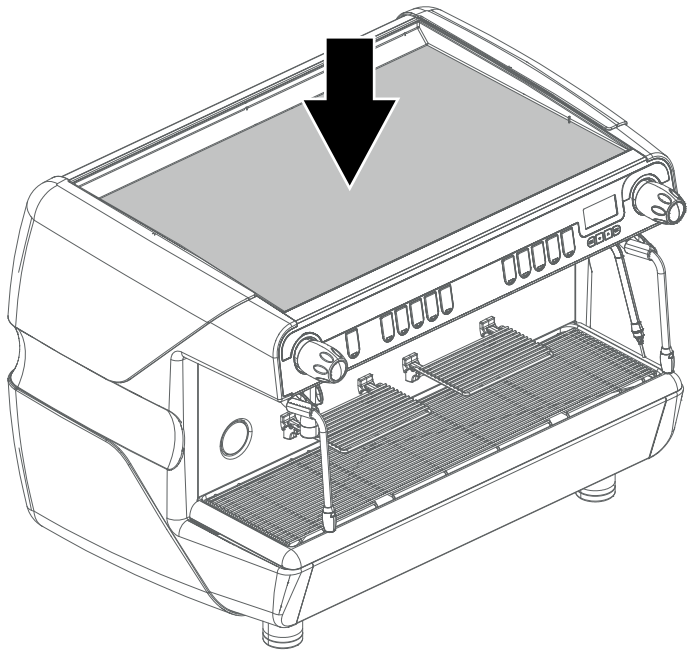


2



8.2 CUP WARMER

1



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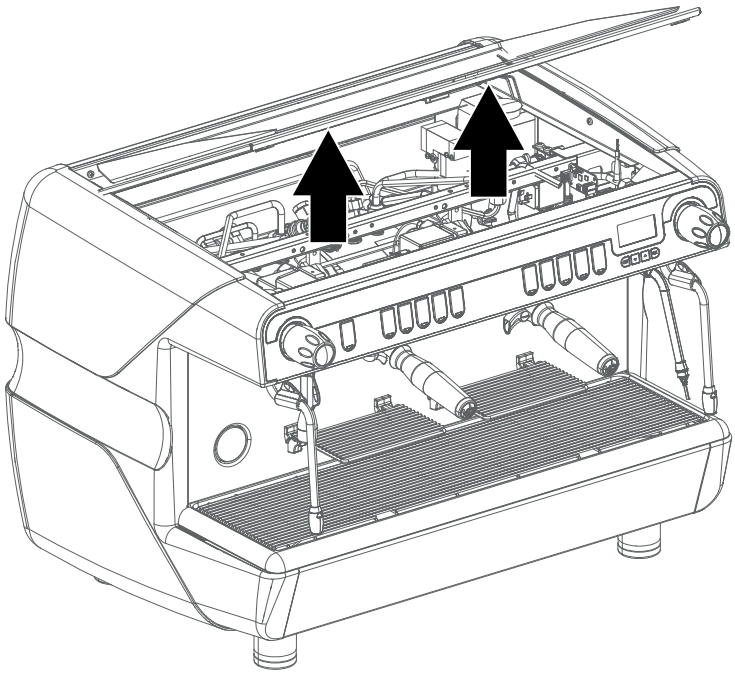
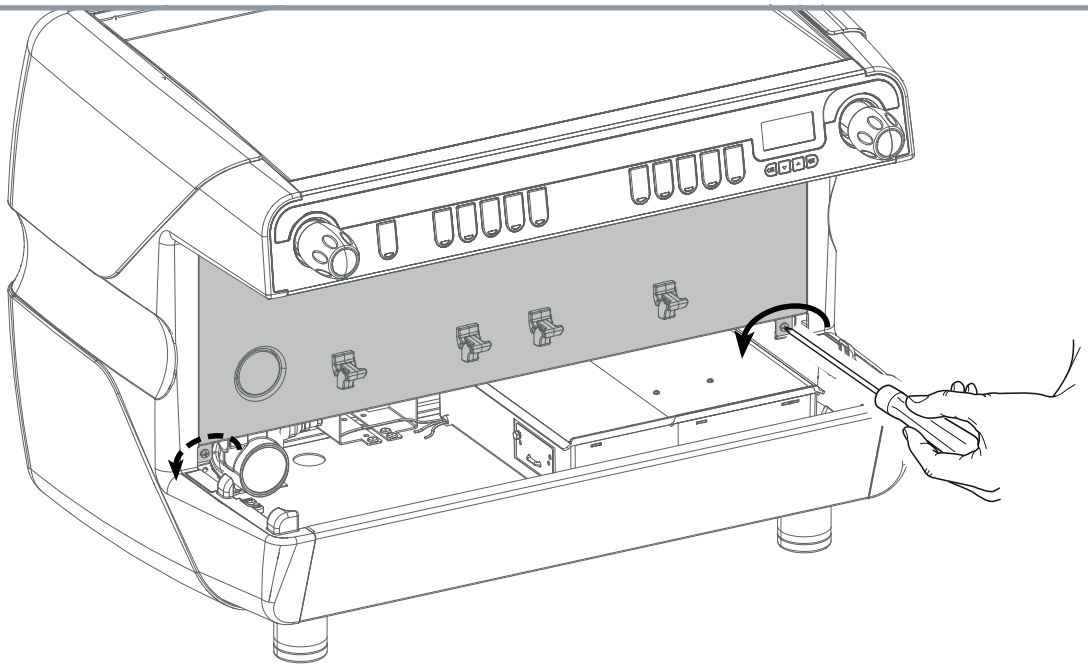


8.3 STAINLESS STEEL FRONT PANEL

1



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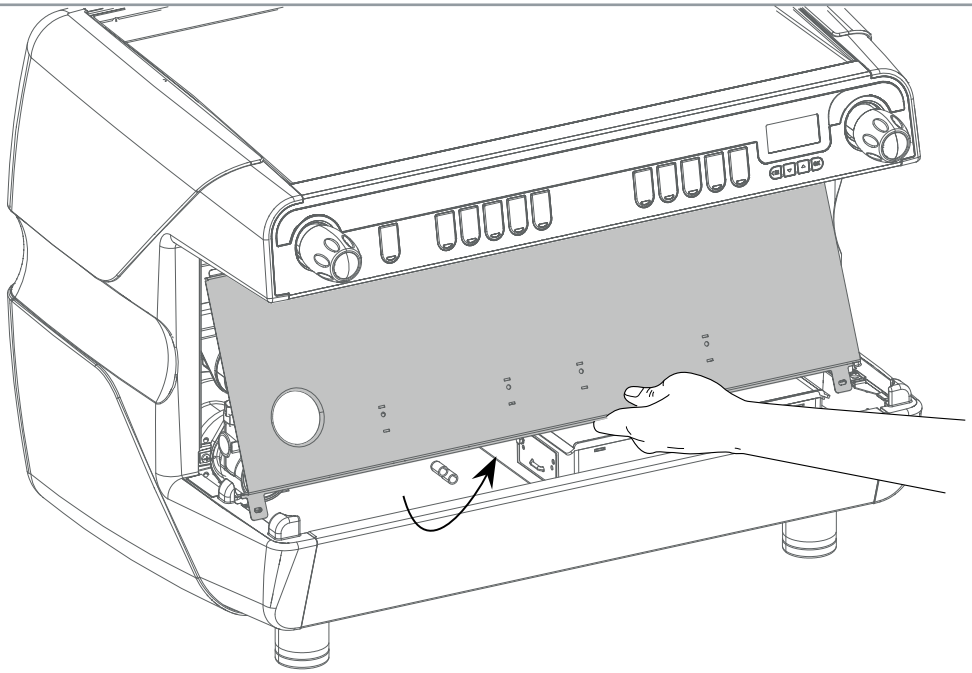
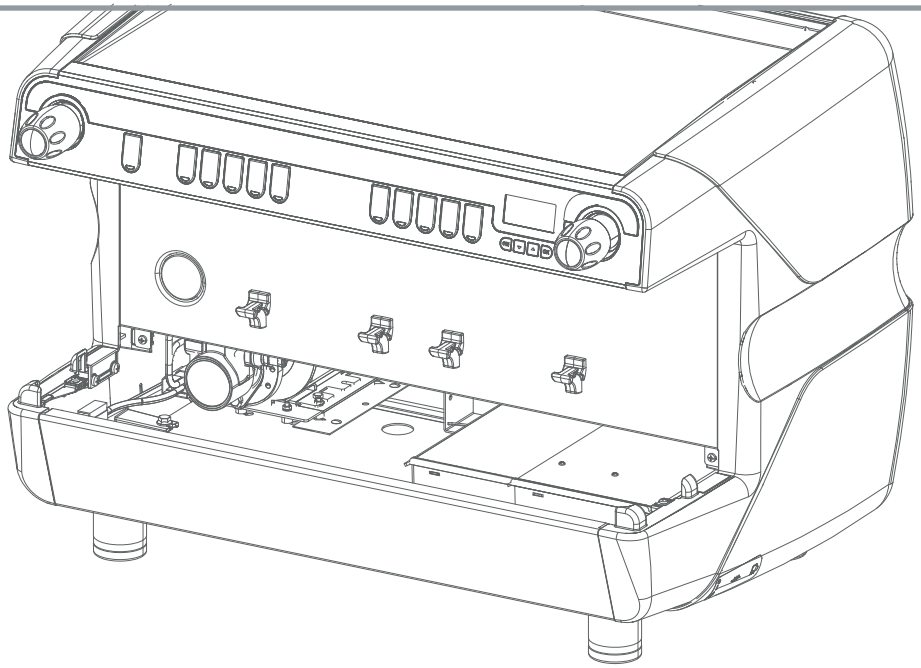


8.4 SIDES DISMANTLING

The side panels must be removed after removing the cup-warmer.

1



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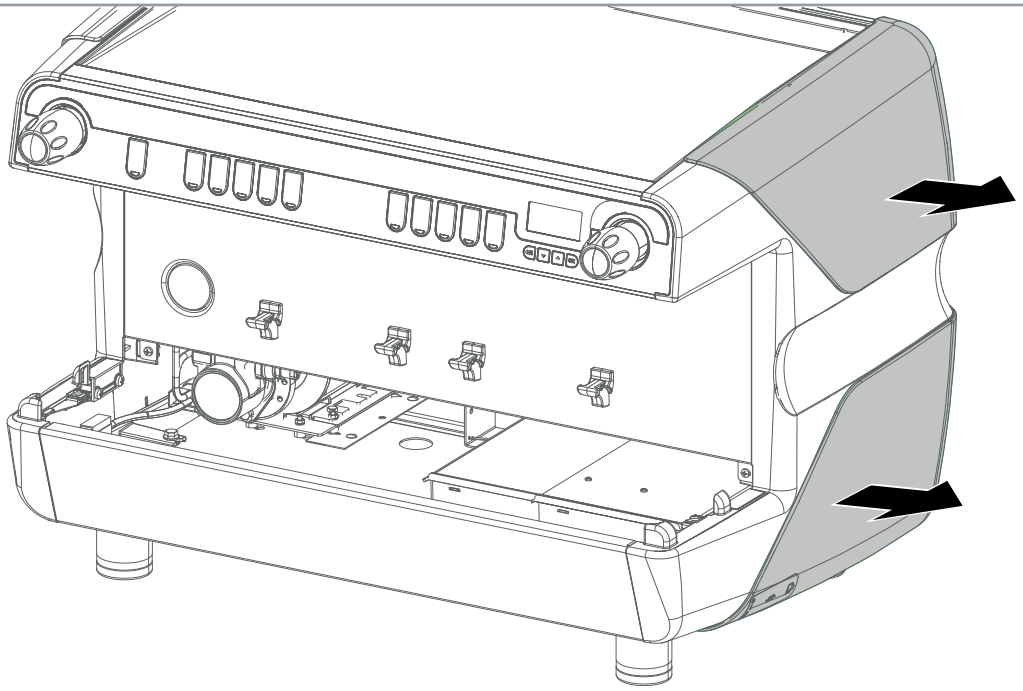
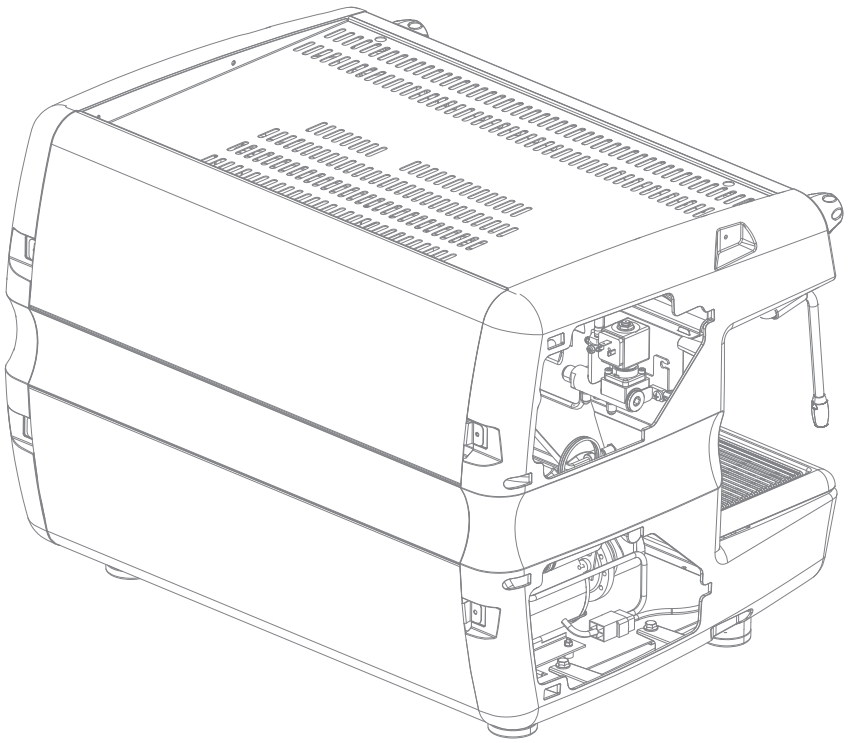


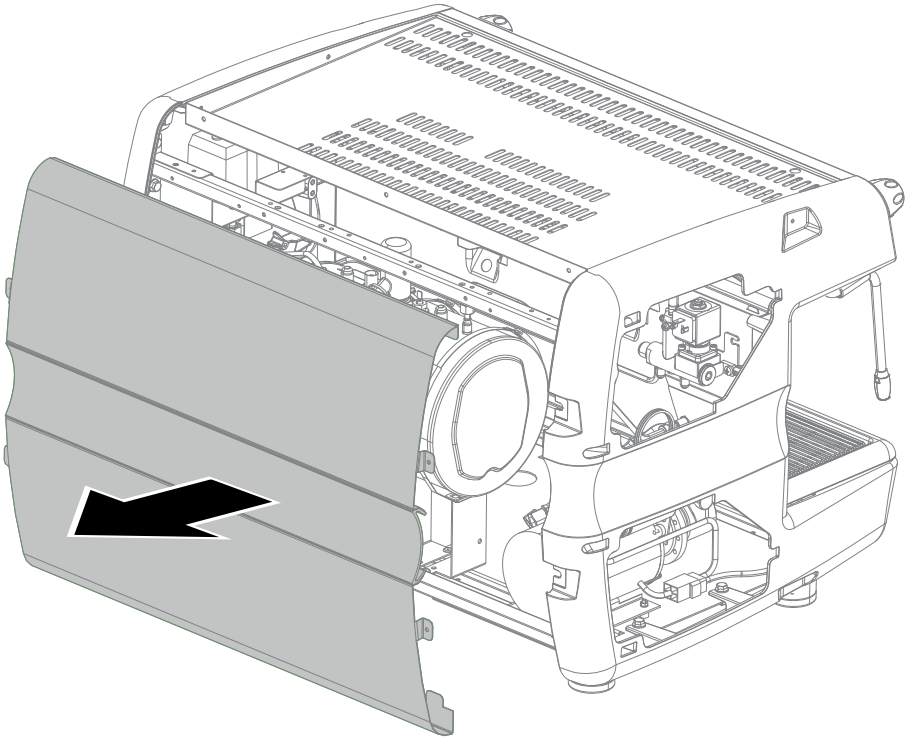
8.5 REAR PANEL

The rear panel should only be removed after the cup-warmer has been removed.

1

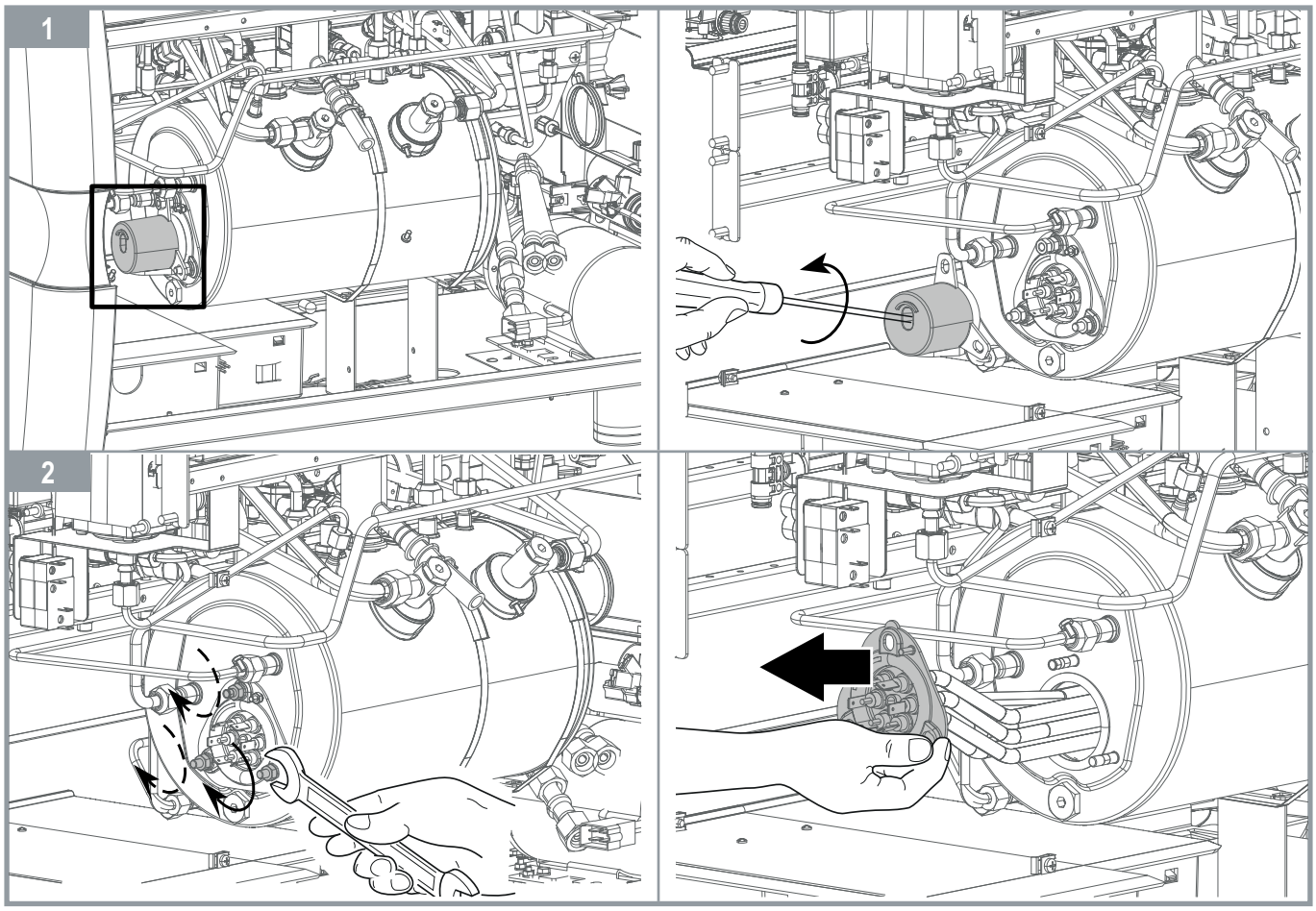


2

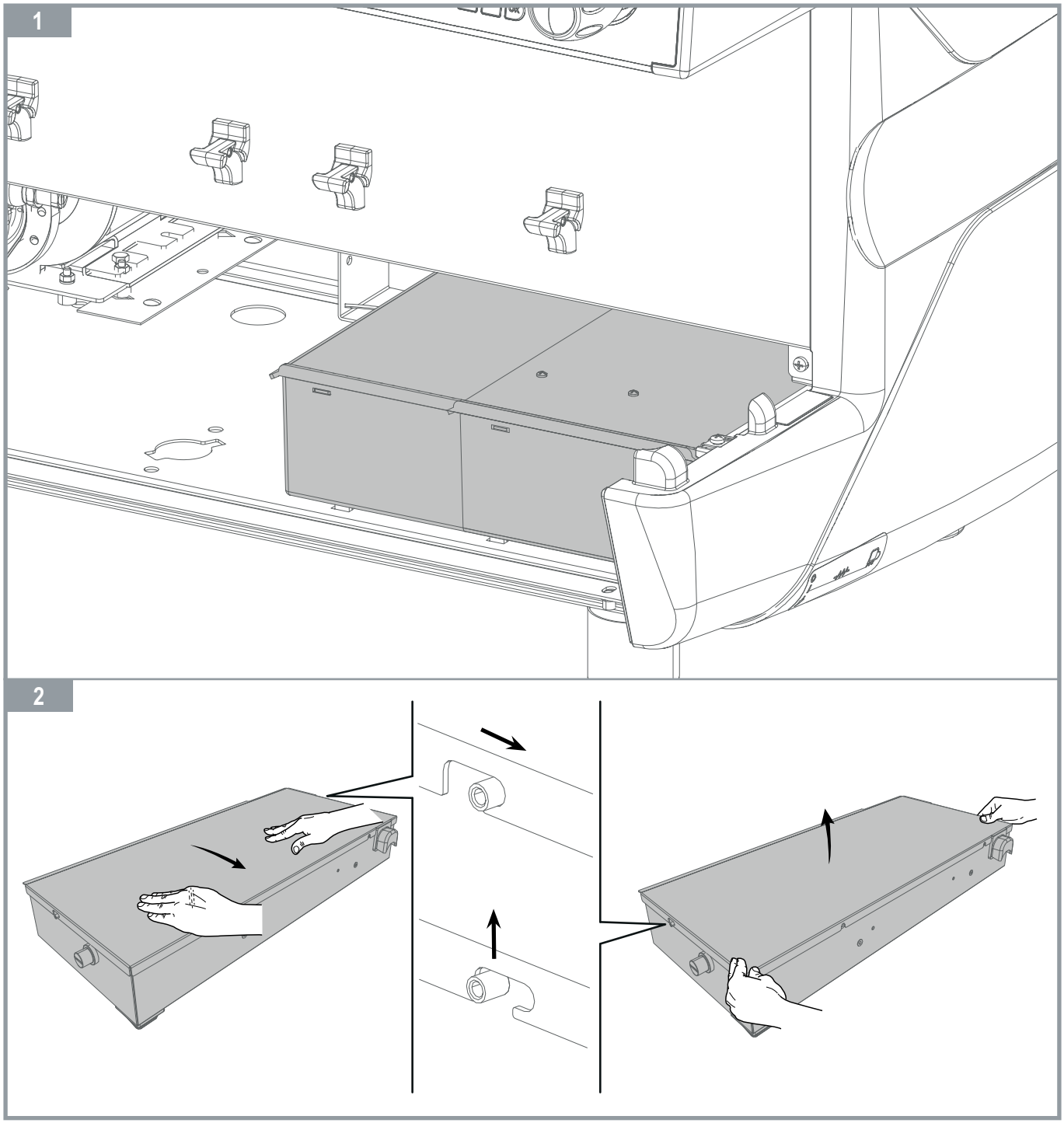


8.6 DISMANTLING OF BOILER RESISTANCE

Disassembly of the resistance must only be carried out after the boiler has been drained.

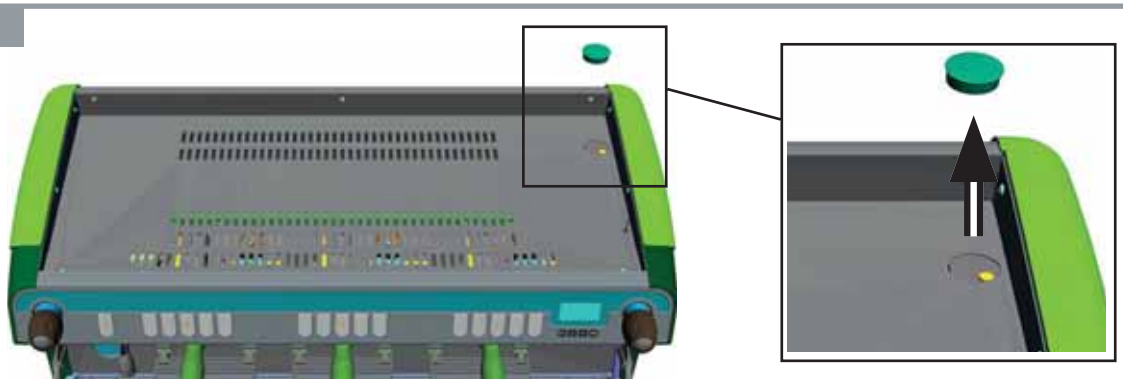


8.7 ELECTRIC BOX

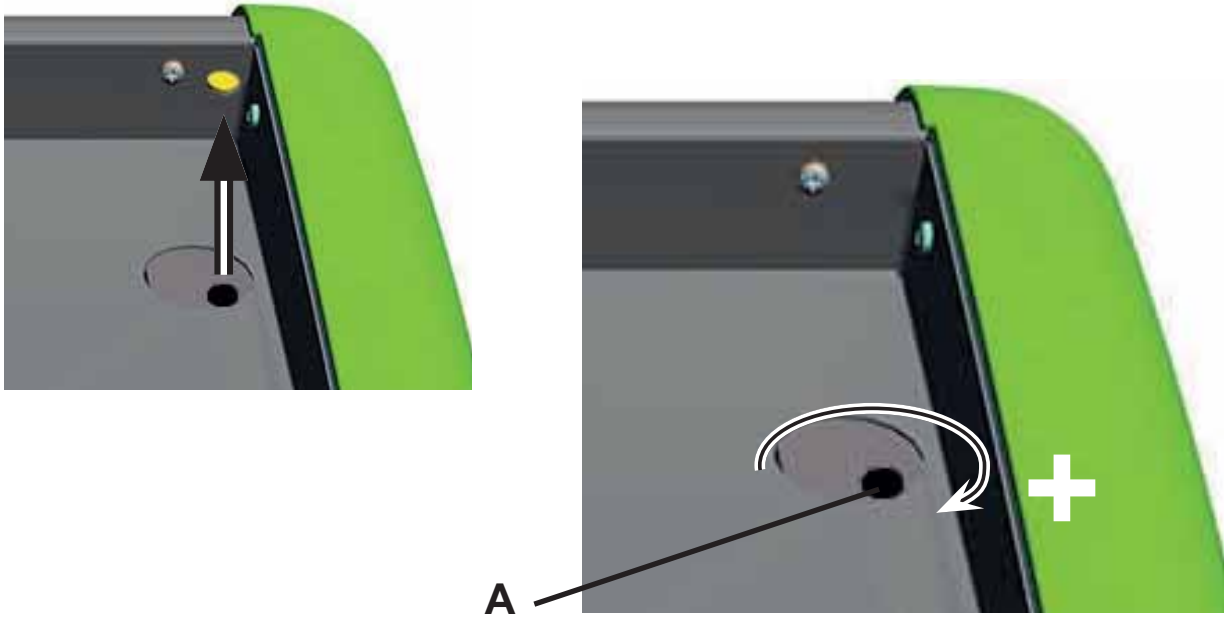


8.8 PRESSURESTAT

1



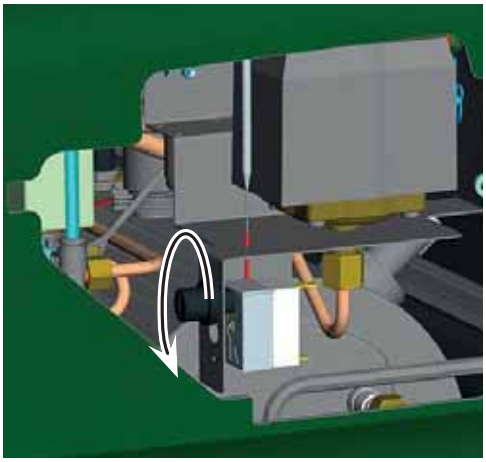
2

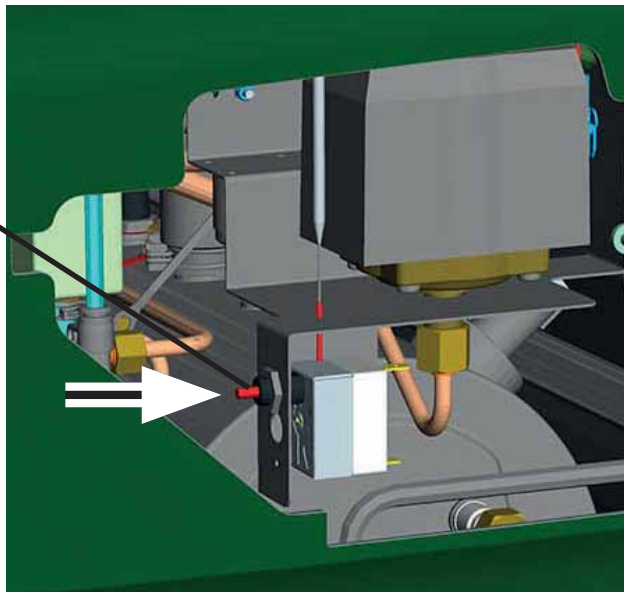


A - Screw for adjusting the boiler pressure

8.9 MACHINE EQUIPPED WITH SAFETY THERMOSTAT

1

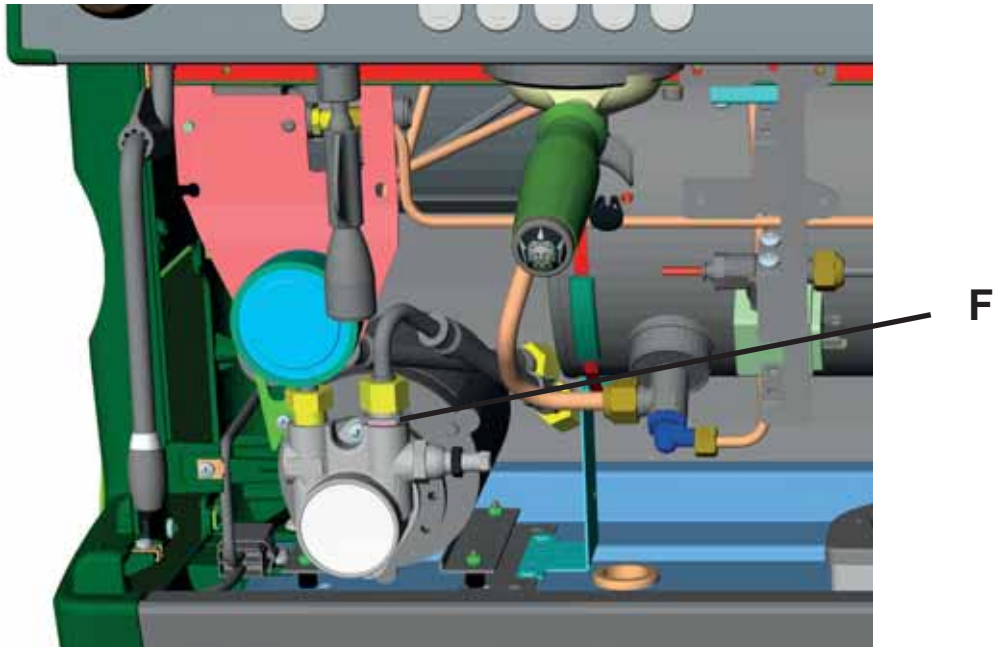


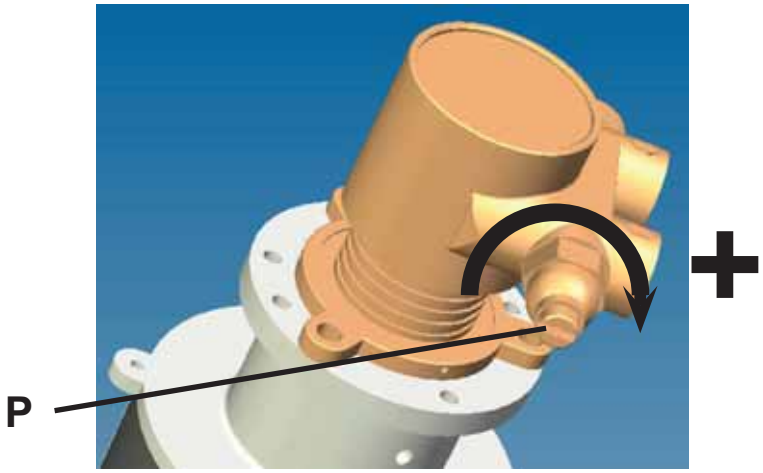


In case of thermostat (T) intervention, switch on again.

8.10 VOLUMETRIC PUMP WITH FILTER

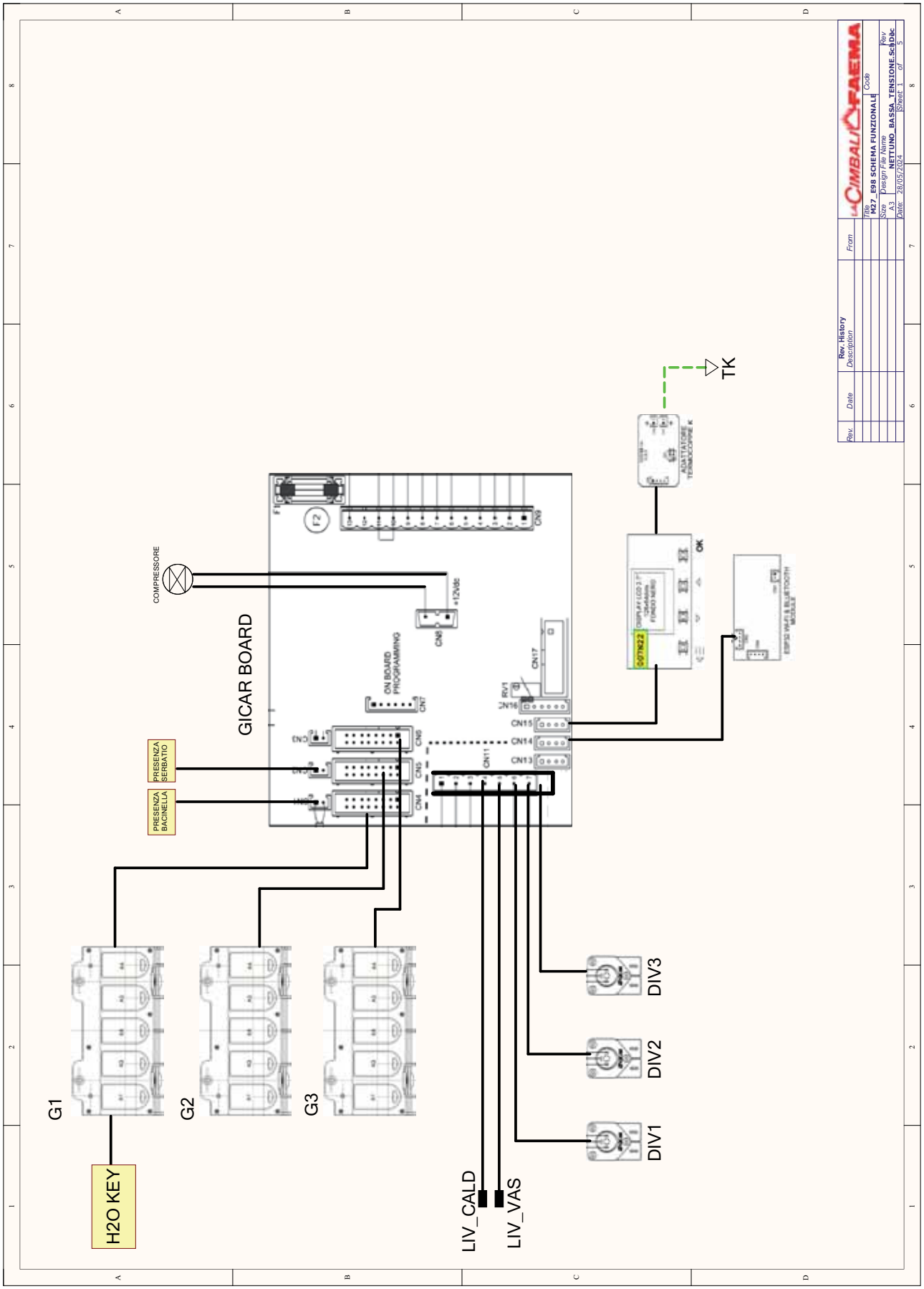
1



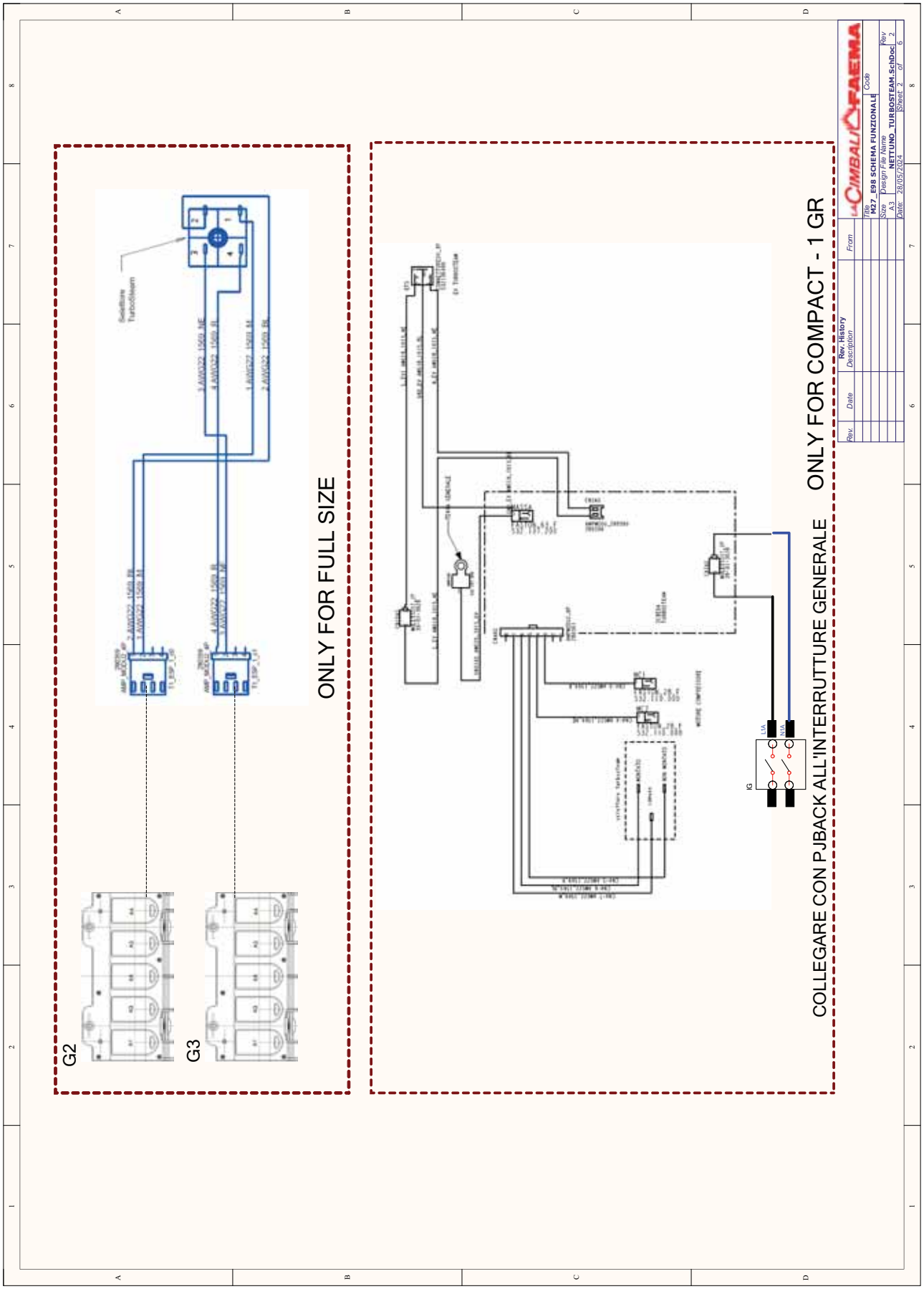


If there is noise, clean the filter F
BY-PASS: P - Nut for adjusting the pump pressure

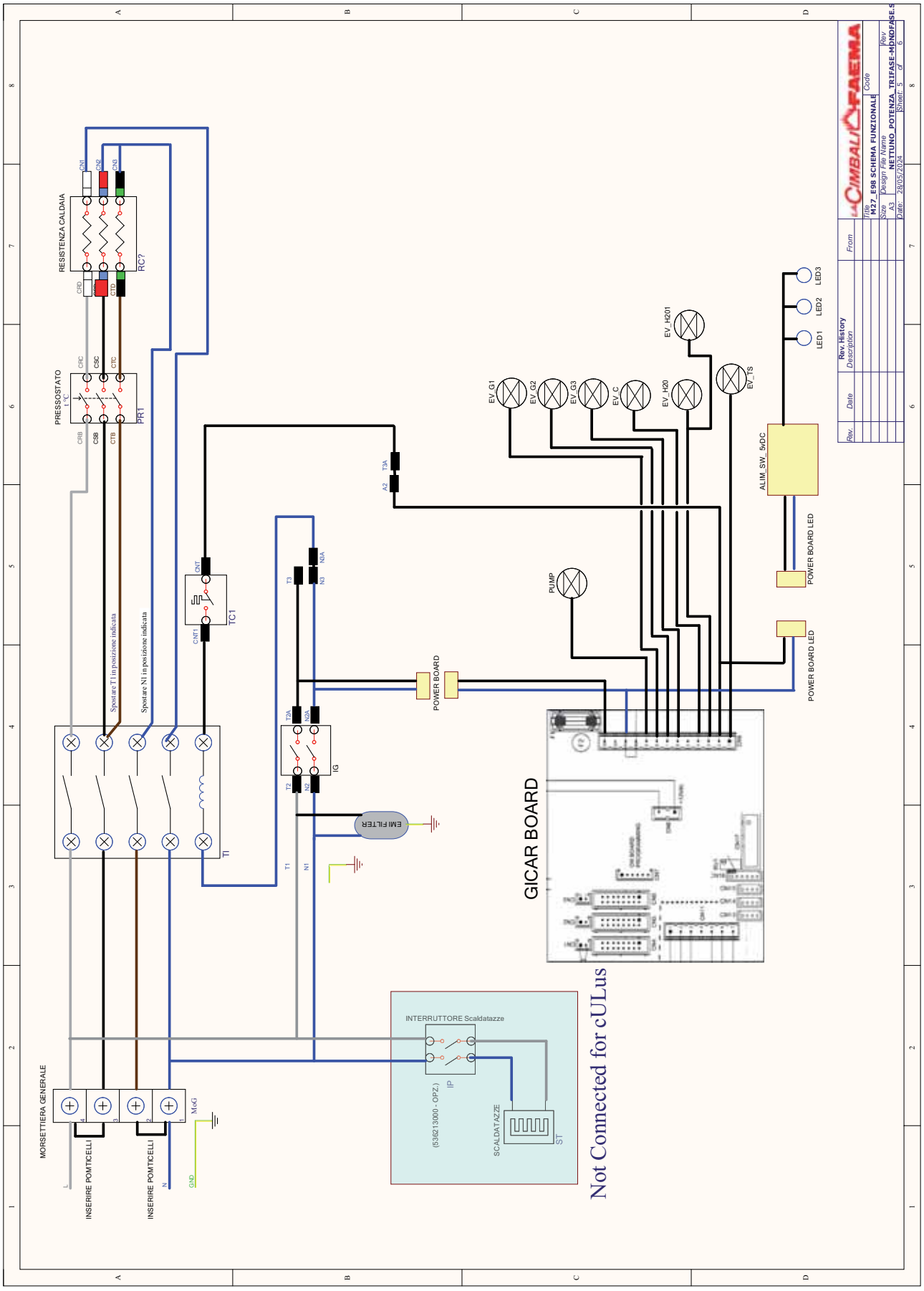
Schema elettrico - Wiring diagram - Schéma éléctrique - Elektrischer Shaltplan - Esquema electrico - Esquema eléctrico



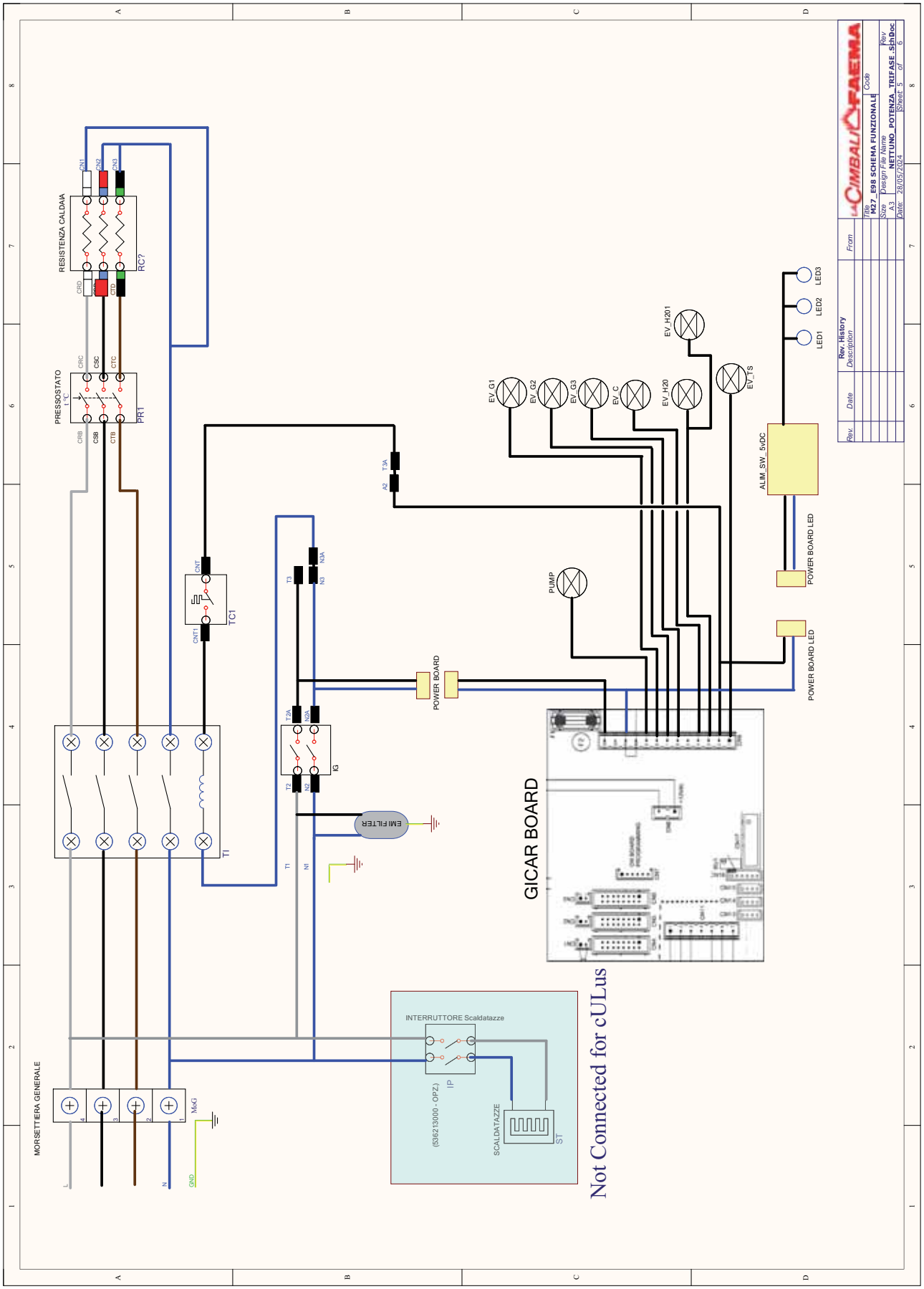
Schema elettrico - Wiring diagram - Schéma éléctrique - Elektrischer Shaltplan - Esquema electrico - Esquema eléctrico



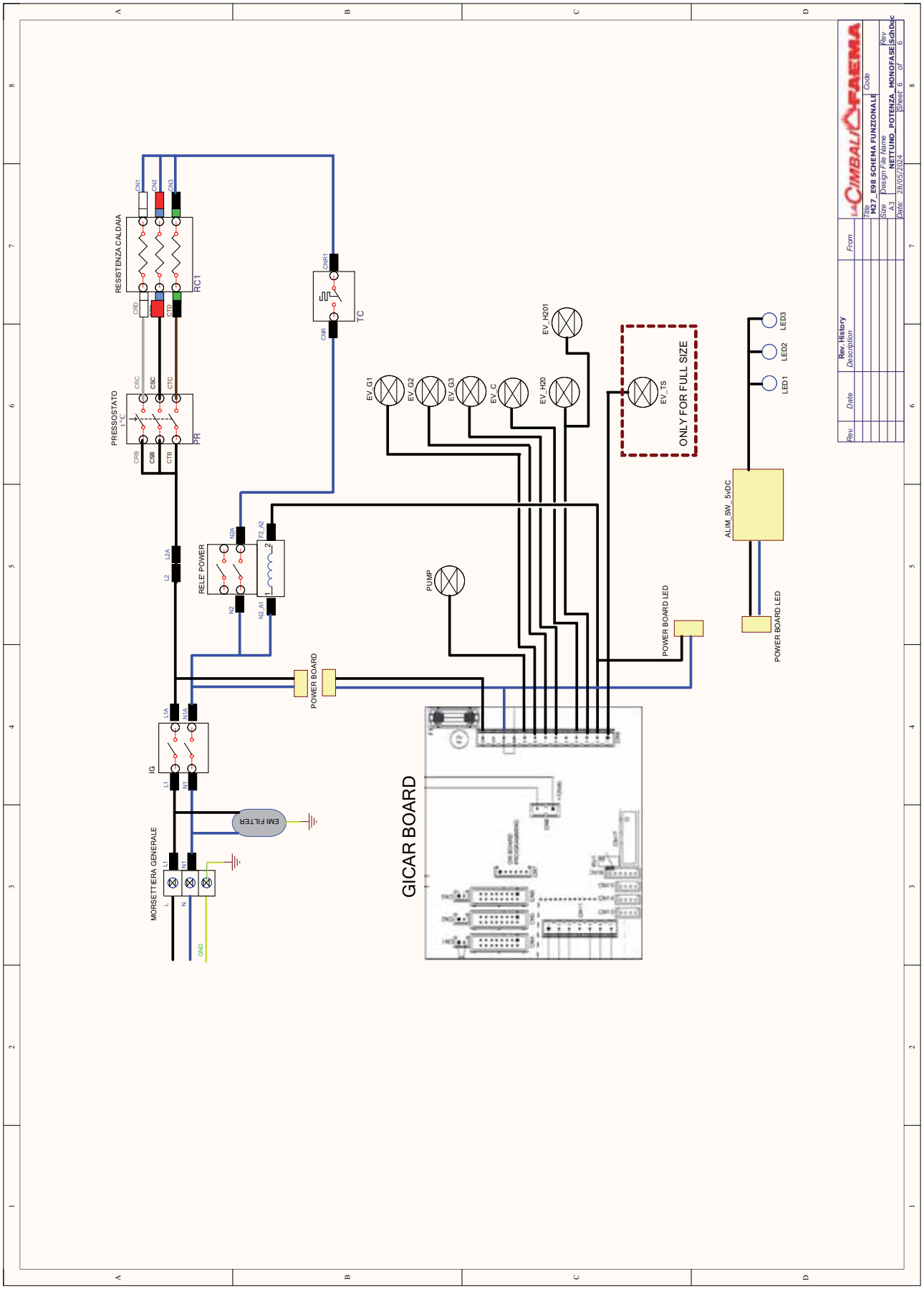
Schema elettrico - Wiring diagram - Schéma éléctrique - Elektrischer Shaltplan - Esquema electrico - Esquema eléctrico



Schema elettrico - Wiring diagram - Schéma éléctrique - Elektrischer Shaltplan - Esquema electrico - Esquema eléctrico

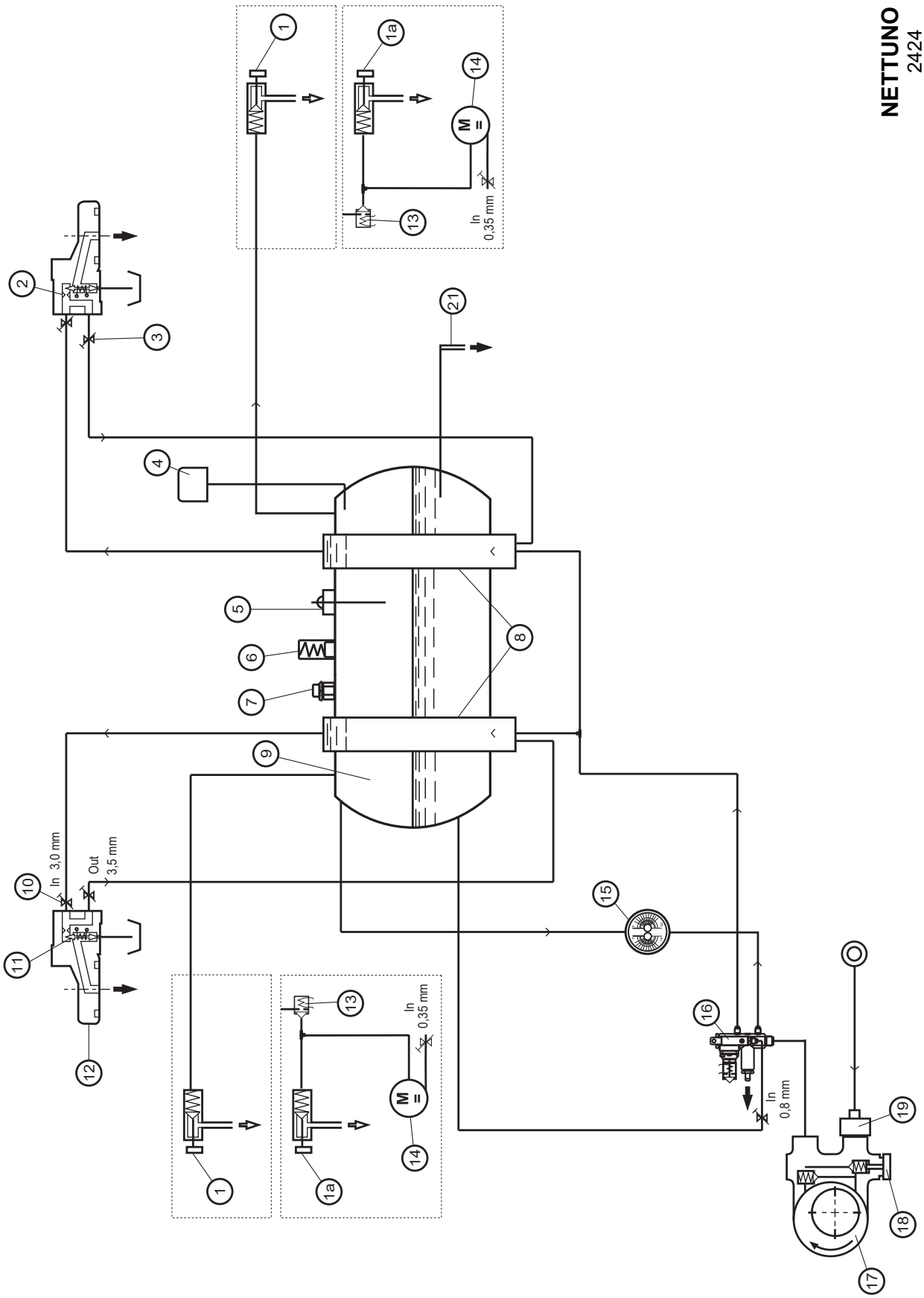


Schema elettrico - Wiring diagram - Schéma éléctrique - Elektrischer Shaltplan - Esquema electrico - Esquema eléctrico



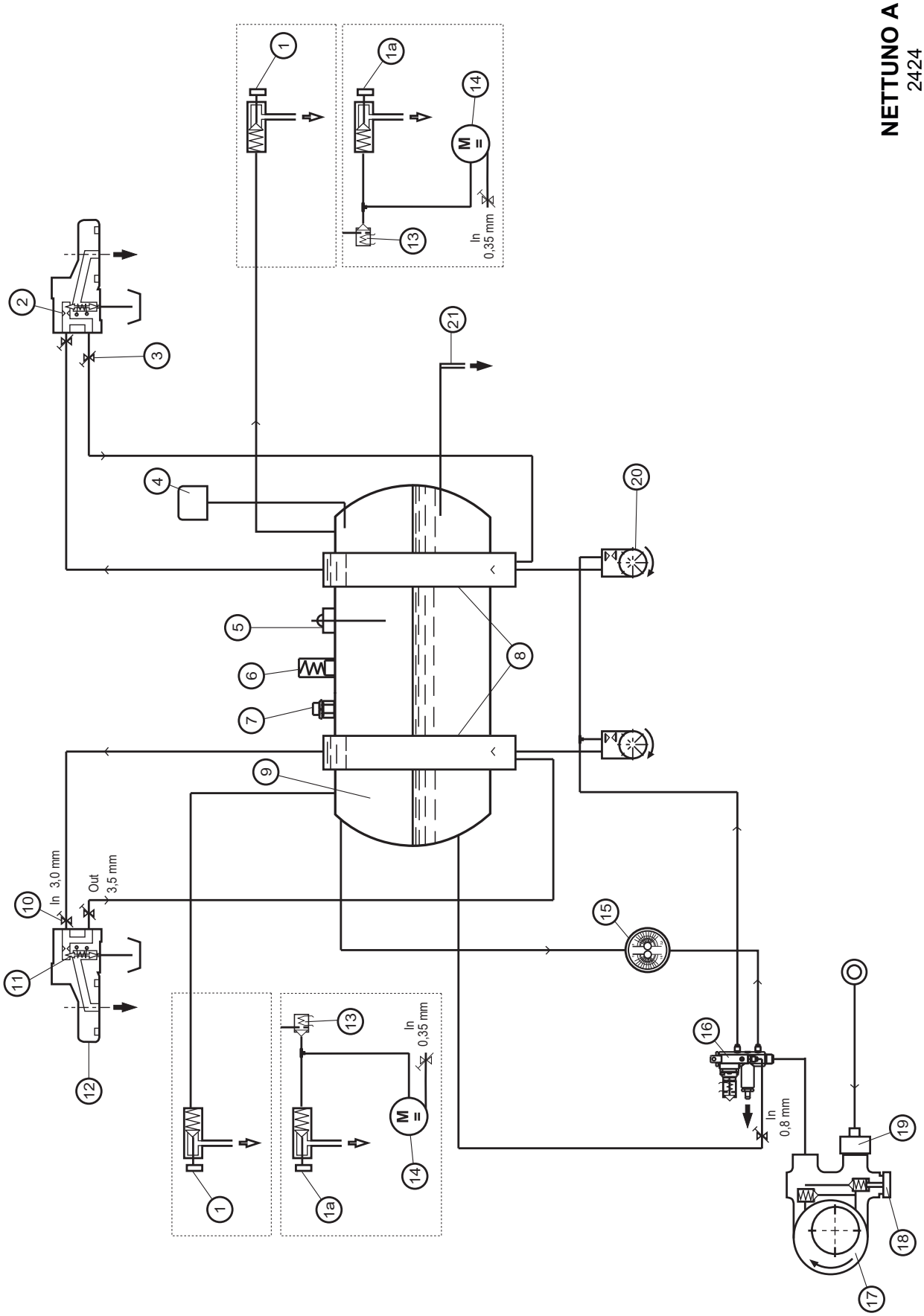
Circuito idraulico - Hydraulic circuit - Circuit hydraulique
Hydraulikplan - Circuito hidraulico - Circuito hidráulico

NETTUNO S
2424



Circuito idraulico - Hydraulic circuit - Circuit hydraulique
Hydraulikplan - Circuito hidraulico - Circuito hidráulico

NETTUNO A
2424



Circuito idraulico - Hydraulic circuit - Circuit hydraulique
Hydraulikplan - Circuito hidraulico - Circuito hidráulico

IT LEGENDA

1 = Lancia erogazione vapore
1a = Lancia erogazione vapore Easysteam
2 = Iniettore gruppo
3 = Iniettore
4 = Pressostato
5 = Sonda autolivello
6 = Valvola di sicurezza
7 = Valvola anti-depressione
8 = Scambiatori di calore
9 = Caldaia
10 = Strozzatura gruppo
11 = Elettrovalvola gruppo
12 = Gruppo erogatore
13 = Elettrovalvola Easysteam
14 = Compressore
15 = Manometro caldaia/pompa
16 = Gruppo valvole
17 = Motore pompa
18 = Regolazione pressione pompa
19 = Filtro per pompa
20 = Turbinetta
21 = Lancia erogazione acqua calda

EN LEGEND

1 = Steam dispensing nozzle
1a = Easysteam dispensing nozzle
2 = Dispenser group iniector
3 = Iniector
4 = Pressure switch
5 = Automatic level probe
6 = Safety valve
7 = Vacuum release valve
8 = Heat exchangers
9 = Boiler
10 = Dispenser neck
11 = Group solenoid valve
12 = Coffee dispenser group
13 = Easysteam solenoid valve
14 = Compressor
15 = Boiler/pump pressure gauge
16 = Valves group
17 = Pump motor
18 = Pump pressure regulator
19 = Pump filter
20 = Turbine
21 = Hot water dispensing nozzle

FR LEGENDE

1 = Lance débit vapeur
1a = Lance débit vapeur Easysteam
2 = Injecteur de groupe
3 = Injecteur
4 = Manostat
5 = Sonde niveau automatique
6 = Valve de sécurité
7 = Valve anti-dépression
8 = Echangeurs de chaleur
9 = Chaudière
10 = Etranglement du groupe
11 = Electrovalve groupe
12 = Groupe de débit
13 = Electrovalve Easysteam
14 = Compresseur
15 = Manomètre chaudière/pompe
16 = Bloc clapet
17 = Moteur pompe
19 = Filtre pour la pompe
18 = Réglage de la pression de la pompe
20 = Petite turbine
21 = Lance débit eau chaude

DE LEGENDE

1 = Strahler Dampfabgabe
1a = Easysteam Dampfabgabe
2 = Injektor Abgabeeinheit
3 = Injektor
4 = Druckwächter
5 = Fühler automatische Standanzeige
6 = Sicherheitsventil
7 = Entlastungsventil
8 = Wärmetauscher
9 = Heizkessel
10 = Drossler Abgabeeinheit
11 = Magnetventil Abgabeeinheit
12 = Abgabeeinheit
13 = Magnetventil Easysteam
14 = Kompressor
15 = Druckmesser Heizkessel/Pumpe
16 = Ventileinheit
17 = Pumpenmotor
18 = Einstellung Pumpendruck
19 = Pumpenfilter
20 = Turbine
21 = Strahler Heißwasserabgabe

ES LEYENDA

1 = Tubo erogación vapor
1a = Tubo erogación vapor Easysteam
2 = Inyector grupo
3 = Inyector
4 = Presostato
5 = Sonda autonivel
6 = Válvula de seguridad
7 = Válvula anti-depresión
8 = Cambiadores de calor
9 = Caldera
10 = Estrangulación grupo
11 = Electroválvula grupo
12 = Grupo erogador
13 = Electroválvula Easysteam
14 = Compresor
15 = Manómetro caldera/bomba
16 = Bloqueo de válvulas
17 = Motor Bomba
18 = Regulación presión bomba
19 = Filtro para bomba
20 = Turbina
21 = Tubo erogación agua caliente

PT LEGENDA

1 = Lança de distribuição do vapor
1a = Lança de distribuição do vapor Easysteam
2 = Injector do grupo
3 = Injector
4 = Pressostato
5 = Sonda de auto-nível
6 = Válvula de segurança
7 = Válvula anti-depressão
8 = Permutadores de calor
9 = Caldeira
10 = Estrangulamento do grupo
11 = Electro-válvula grupo
12 = Grupo de distribuição
13 = Electro-válvula Easysteam
14 = Compressor
15 = Manómetro de caldeira/bomba
16 = Bloco da válvula
17 = Motor da bomba
18 = Regulação da pressão da bomba
19 = Filtro para bomba
20 = Turbina
21 = Lança de distribuição da água quente

cod. 000-000-000 (2423)

Cimbali Group S.p.A.
Via A. Manzoni, 17
20082 Binasco (MI), Italia