

REACH-IN BLAST CHILLER



GO Range

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1. GENERAL WARNINGS



ATTENTION! Live equipment. Always disconnect voltage when performing maintenance and cleaning on the equipment.



ATTENTION! Potentially dangerous situation that could harm people or damage objects near-by.



SUGGESTION

Ideas or advice for maintenance or intervention.

ATTENTION:

THE USE OF NON-ORIGINAL SPARE PARTS PURCHASED FROM THIRD PARTIES NOT AUTHORISED BY FRIULINOX SRL A SOCIO UNICO, AND THEIR MODIFICATION IN A CONFIGURATION DIFFERENT FROM THE ORIGINAL, CANCEL THE EQUIPMENT AND COMPONENT WARRANTY. FRIULINOX SRL A SOCIO UNICO, AND ITS AUTHORISED CENTRES WILL NOT BE HELD LIABLE FOR COMPLAINTS, DAMAGES AND COSTS CAUSED DIRECTLY OR INDIRECTLY BY CHANGES NOT APPROVED AND VALIDATED BY THE SAME.

DO NOT CLEAN THE EQUIPMENT WITH PRESSURE WATER.

DO NOT WORK ON THE EQUIPMENT WITHOUT HAVING READ THIS MANUAL.

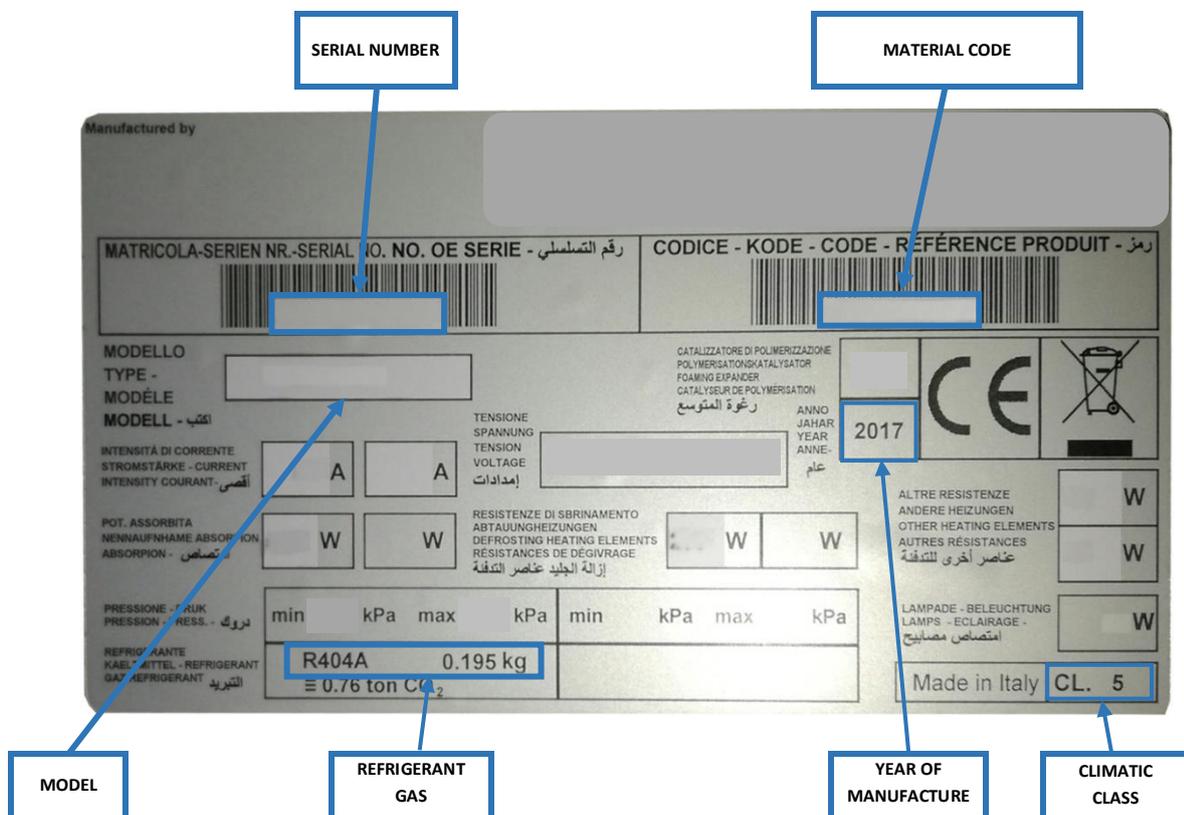
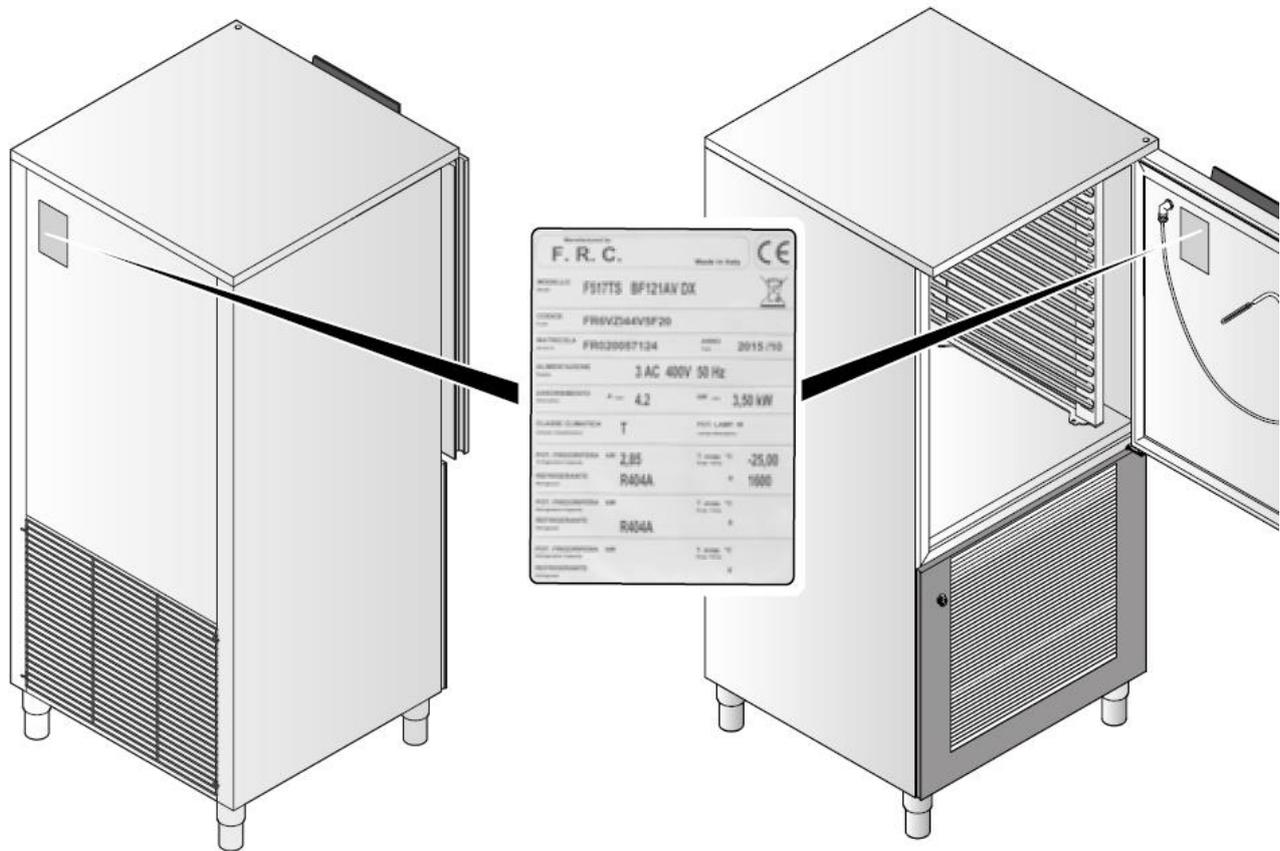
DO NOT WORK ON THE EQUIPMENT IF THE ACCESS PANELS ARE NOT CORRECTLY POSITIONED AND SECURED.

DO NOT WORK ON THE EQUIPMENT IF NOT CORRECTLY INSTALLED AND SERVICED.

PAY ATTENTION WHEN MOVING THE EQUIPMENT. IT CAN WEIGH FROM 50 KG TO 257 KG. USE THE SPECIFIC LIFTING SYSTEMS

CONNECTION TO THE POWER MAINS AND THE CONNECTION SYSTEMS MUST MEET THE REGULATIONS IN FORCE IN THE COUNTRY OF INSTALLATION OF THE EQUIPMENT AND MUST BE CARRIED OUT BY QUALIFIED PERSONNEL AND AUTHORISED BY THE MANUFACTURER.

1.1. Positioning and reading the data plate



2. COMPANY HISTORY

1972

FRIULINOX was born in Azzano Decimo (PN) as a company specialized on the production and sale of professional refrigeration.

1987

FRIULINOX trades the first blast chilling systems, its distribution is accompanied by training sessions, in order to help the end-user towards a new way to think and manage the production process.

2003

Thanks to the acquisition of METOS Group, Friulinox has the possibility to supply its technology to a larger audience.

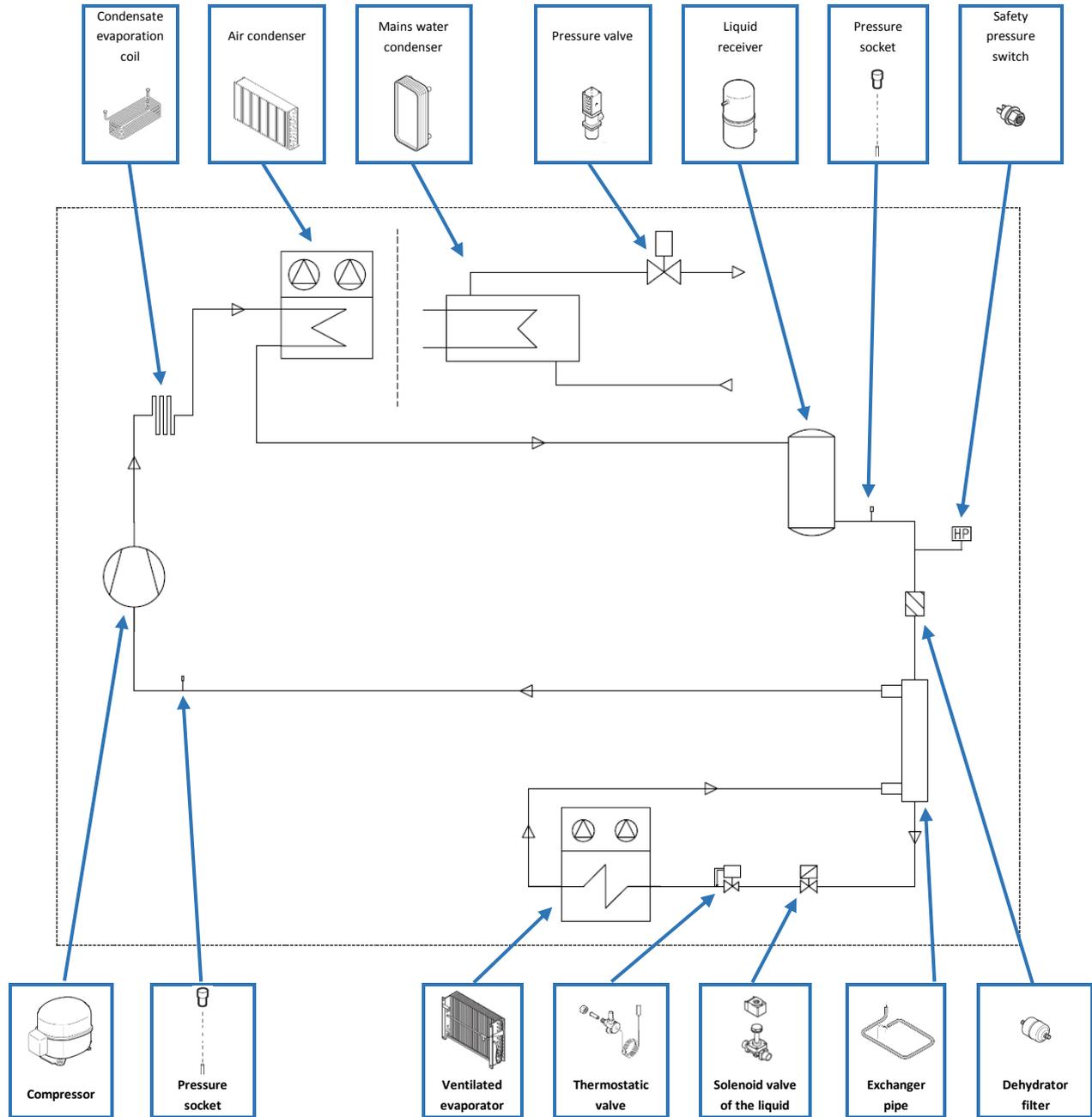
2004

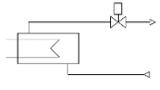
Friulinox joins ALI Group, one of the most important HORECA market leaders for systems and equipment production. The same here, it moves to the new plant of Villotta, more modern and productive, thus enlarging its product range.

2016

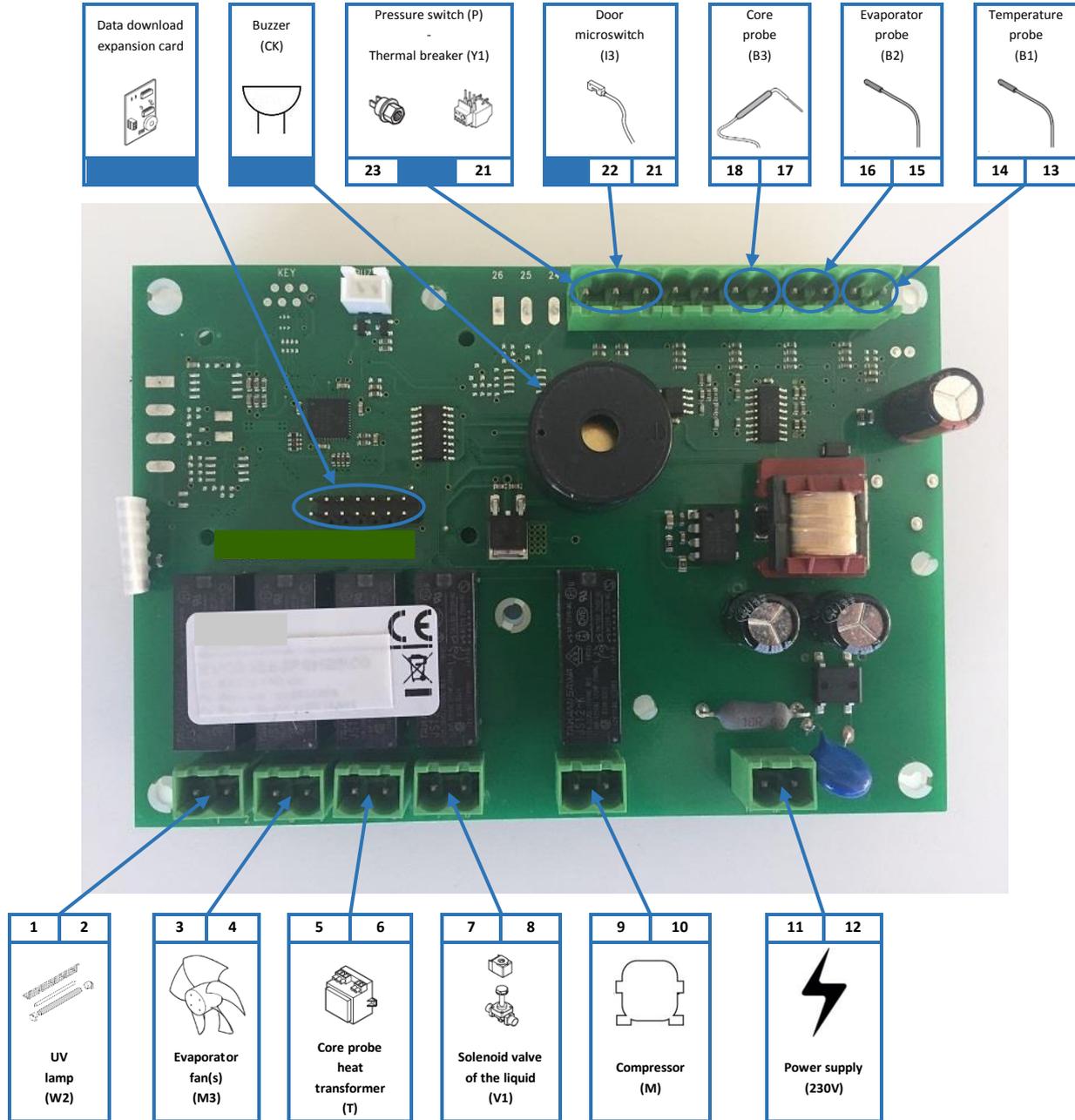
The first polyfunctional equipment is produced, which leads the way to a new concept of kitchen management, becoming the main device for food production.

3. EXPLANATION OF THE REFRIGERATION SYSTEM



		Compressor	Of hermetic type, high-starting torque. Semi-hermetic for model 122.
		Condensate evaporation coil	It allows, during compressor operation, the water coming from the condensate collection bowl installed under the evaporator, to evaporate.
		Air condenser	Ventilated condenser, it allows the system to work regularly with a maximum temperature of 43°C. Proper equipment performance is not guaranteed beyond this value, and the safety pressure switch (AL4) may intervene. There is a filter in front of the condenser which must be regularly cleaned at least once a month.
		Water condenser	Of high-efficiency brazed plate type. Managed water temperature range: from 7 to 20°C Maximum water hardness 17.8°F (French degrees) corresponding to 10°dH (German degrees) Maximum conductivity of 150 µS/cm
		Pressure valve	Modulates the water flow to the condenser. Minimum water inlet pressure of 1.5 Bar Maximum water inlet pressure of 5 BAR Condensation pressure calibration: from 13 to 15 Bar
		Liquid receiver	It acts as refrigerant reserve to correctly feed the thermostatic valve
		Pressure socket	It allows connecting the pressure gauge for reading the condensation pressure/temperature
		Safety pressure switch	High-pressure safety. It intervenes when the pressure exceeds 29.5 bar
		Dehydrator filter	It eliminates any residual impurities and humidity inside the system
		Heat exchanger	Below it cools the refrigerant entering the thermostatic valve It overheats the compressor suction gas to avoid liquid returns
		Liquid solenoid valve	Only installed on the 12 and 16 baking tray models
		Thermostatic valve	Positioned inside the evaporator unit, it is always equipped with MOP -10°C With or without external pressure equalisation, depending on the model
		Ventilated evaporator	Coated with cataphoresis, electrochemical treatment that gives the evaporator excellent resistance to corrosion caused by products such as: eggs, chocolate, food with acetic solution, yeasts, tomato sauce, fish, etc.
		Pressure socket	It allows connecting the pressure gauge for reading the evaporation pressure/temperature

4. EXPLANATION OF THE ELECTRONIC CARD



4.1. Specific electronic card connections

	W2	UV lamp	OPTIONAL, it is enabled with parameter P20. It is managed by parameters P25 and P26.
	M3	Evaporator fan	The start of the fan during the cooling cycles is managed by parameter P66. When the evaporator probe (B2) reads the temperature set by parameter, it enables its operation. During storage, the fan is ON for the time set by parameter P35 and OFF for the time set by parameter P36.
	T	Core probe heat transformer	It is used when the heated core probe B3 is installed.
	V1	Liquid solenoid valve	Installed on the 12 and 16 baking tray models with condensing unit on board, it is managed by parameters P75 and P76. Present on all models set-up for the remote unit.
	M	Compressor	Compressor ON delay from first switch-on parameter P65. Compressor delay OFF parameter P74. Compressor ΔT OFF parameter P30. Compressor minimum time OFF-ON parameter P31. On single-phase models, the compressor is managed by the “Q1” relay. On three-phase models, the compressor is managed by the “K1” remote control switch.
	230V	Power supply	Power supply voltage 230V with +/- 10% tolerance.
	B1	Temperature probe	PTC probe range -55°C → 100°C installed between the evaporator and the fan door, it detects the chamber temperature. Probe calibration parameter P11. °C or °F setting parameter P10. A fault of the probe or of the analogue input of the card determines the Er1 alarm on the display.
	B2	Evaporator probe	PTC probe range -55°C → 100°C installed on the evaporator. It enables the “M3” evaporator fan operation with parameter P66 for the cooling cycles and parameter P58 after defrosting. Probe calibration parameter P71. It enables defrosting with parameter P57. It ends defrosting with parameter P51. Type of defrosting determined by parameter P54 and managed by parameters P50, P52, P53, P55. A fault of the probe or of the analogue input of the card determines the Er3 alarm on the display.
	B3	Core probe	PT1000 probe range -70°C → 150°C, it is enabled with parameter P19 It controls the cooling processes based on the product temperature. It can be of the heated type, especially if the freezing cycles are enabled, parameter P21 = 0. Probe calibration parameter P70. The probe heating function is managed by parameters P27, P28, P29. A fault of the probe or of the analogue input of the card determines the Er2 alarm on the display.

	I3	Door microswitch	<p>It detects whether the door is closed or open during the cooling cycles. Its intervention determines the AL3 alarm. Door microswitch polarity parameter P12. Door open alarm signal delay P13.</p> <p>A fault of the door microswitch or of the digital input of the card determines the AL3 alarm on the display.</p>
	P	Pressure switch	<p>High-pressure safety pressure switch. It intervenes at 29.5BAR, resets at 24.5BAR. Its intervention determines the AL4 alarm on the display and the machine stop. Alarm detection time parameter P22. Pressure switch contact digital input polarity P23.</p>
	Y1	Thermal breaker	<p>The three-phase models are equipped with "Y1" thermal breaker to protect the compressor. The intervention of the Y1 thermal breaker determines the AL4 alarm on the display and the machine stop.</p>
	CK	Buzzer	<p>It sounds to signal the alarm for the time set by parameter P17.</p>
	/	Data download expansion card	<p>OPTIONAL It allows adjusting the clock module. It allows exporting data relating to the cooling cycles via:</p> <ul style="list-style-type: none"> ▪ USB Record by setting parameter P41=2. ▪ Printer by setting parameter P41=1. The printing language can be selected through parameter P72.

4.2. Temperature probes tables

Tabella per sonda PTC							Tabella per sonda Pt1000			
Temperatura ambiente		Coeff. di temp. (%/K)	KTY81-121			Errore di temp.	Temp. ambiente (°C)	Resistenza (Ohm)	Temp. ambiente (°C)	Resistenza (Ohm)
(°C)	(°F)		Minima	Tipica	Massima					
-55	-67	0,99	471	485	500	±3,02	-200	185,281	20	1077,936
-50	-58	0,98	495	510	524	±2,92	-190	228,327	30	1116,731
-40	-40	0,96	547	562	576	±2,74	-180	271,029	40	1155,411
-30	-22	0,93	603	617	632	±2,55	-170	313,408	50	1193,976
-20	-4	0,91	662	677	691	±2,35	-160	355,484	60	1232,426
-10	14	0,88	726	740	754	±2,14	-150	397,277	70	1270,961
0	32	0,85	794	807	820	±1,91	-140	432,903	80	1308,981
10	50	0,83	865	877	889	±1,67	-130	480,081	90	1347,085
20	68	0,80	941	951	962	±1,41	-120	521,127	100	1385,075
25	77	0,79	980	990	1000	±1,27	-110	561,954	110	1422,949
30	86	0,78	1018	1029	1041	±1,39	-100	602,578	120	1460,709
40	104	0,75	1097	1111	1125	±1,64	-90	643,012	130	1498,353
50	122	0,73	1180	1196	1213	±1,91	-80	683,267	140	1535,882
60	140	0,71	1266	1286	1305	±2,19	-70	723,355	150	1573,296
70	158	0,69	1355	1378	1402	±2,49	-60	763,286	160	1610,595
80	176	0,67	1447	1475	1502	±2,80	-50	803,068	170	1647,779
90	194	0,65	1543	1575	1607	±3,12	-40	842,71	180	1684,848
100	212	0,63	1642	1679	1716	±3,46	-30	882,218	190	1721,801
110	230	0,61	1745	1786	1828	±3,83	-20	921,6	200	1758,640
120	248	0,58	1849	1896	1943	±4,33	-10	960,859	210	1795,363
125	257	0,55	1900	1950	2000	±4,66	0	1000	220	1831,972
130	266	0,52	1950	2003	2056	±5,07	10	1039,025		
140	284	0,45	2044	2103	2162	±6,28				
150	302	0,35	2124	2189	2254	±8,55				

5. INSTALLATION CHECK LIST

Blast chiller installation check list rev0 del 17_11_17			
Customer name		Installation date	
Address		Installer technician	
City		Installer company	
Country		Model	
Tel. no.		Serial number	
E-mail address		Power supply voltage	

Checks	Notes		
Verify package integrity	<input type="checkbox"/>		
Verify the presence of aesthetic faults	<input type="checkbox"/>		
Remove protective film from all surfaces	<input type="checkbox"/>		
Castors installed chiller?	yes <input type="checkbox"/>	no <input type="checkbox"/>	
Unità condensante a bordo macchina?	yes <input type="checkbox"/>	no <input type="checkbox"/>	
Install cuboid spacer on equipment back	<input type="checkbox"/>		
Indicate available space around the equipment:			
left side - <i>minimum 50 (mm)</i>	..... .....	
right side - <i>minimum 50 (mm)</i>	..... .....	
front (mm)	..... .....	
back - <i>minimum 50 (mm)</i>	..... .....	
above (mm)	..... .....	
Indicate the equipment installed around the blast chiller (oven/refrigerator/blast chiller/refrigerated counter/working table/dishwasher/wall/free/etc)			
left side	.....	
right side	.....	
front	.....	
back	.....	
above	.....	
Level the equipment out	<input type="checkbox"/>		
Connect drain pipe	pan <input type="checkbox"/>	well <input type="checkbox"/>	
Electrical connection			
Verify that plug is equipped with 30mA high sensitivity	<input type="checkbox"/>		
Connect monophase model with a Shuko plug (already provided)	<input type="checkbox"/>		
Connect trphase model with an adequate plug (non provided) or connect the equipment directly to the electrical panel	Plug <input type="checkbox"/>	On electrical panel <input type="checkbox"/>	
For water condensing unit only			
Verify pipes' property	<input type="checkbox"/>		
Indicate water pressure entering the condenser <i>max 5 (bar)</i>	..... .....	

Indicate water temperature entering the condenser - max 30(°C)	..... .....
Calibrate pressure valve to 13 - 15 bar	<input type="checkbox"/>	
Functional test		
Respect stand by time limit (1 hour) for carter heater equipped models	<input type="checkbox"/>	
Note environment temperature for pull-down test	..... .....
Note cabinet temperature for pull-down test	..... .....
Launch a -18°C cycle time mode	<input type="checkbox"/>	
Note time (min) to attain -35°C inside the cabinet camera (max 50')	..... .....
Verify property of door gasket	<input type="checkbox"/>	
Explain to customer the equipment base functions	<input type="checkbox"/>	
Provide the customer of user manuals, certifications, installation checklist	<input type="checkbox"/>	

Final installation date	
Installer technician	
Customer name	
Customer signature/stamp for acceptance	

6. REGULAR MAINTENANCE

Scheduled maintenance of chillers rev0 of 17/11/2017					
Customer name		Installation date			
Address		Installer technician			
City		Installer company			
Country		Model			
Tel. no.		Serial number			
E-mail address		Power supply voltage			
Reference contact				Frequency	
				Every month	Every 12m.
				Every 24m.	
Checks		Notes			
Clean the air condenser and the filter (Customer)	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Clean the door gasket with water-based neutral detergent (Customer)	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Clean the chiller chamber with water-based neutral detergent (Customer)	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Clean the outside of the chiller with water-based neutral detergent (Customer)	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Clean the condensate evaporation bowl in the technical compartment	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check the integrity of the evaporator surface	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Clean the evaporator	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Make sure the door closes properly, otherwise adjust the hinge	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check the condition of the frame lids	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Clean the electrical box	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check all electrical connections on the terminal board	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check the integrity of the power supply cable	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Make sure all screws on the electrical system are tightened	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check the condition of all refrigerator components	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Check for gas leaks on the system	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Verification of electrical absorption					
Evaporator fans (A)			<input checked="" type="checkbox"/>	
Door resistance (A)			<input checked="" type="checkbox"/>	
Compressor (A)			<input checked="" type="checkbox"/>	
Compressor guard resistance - where present			<input checked="" type="checkbox"/>	
Condenser fan (A)			<input checked="" type="checkbox"/>	
Component replacement					
Replace condenser filter	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Replace the door gasket	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Replace evaporator fan(s) starting condenser(s)	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Compressor relay/remote control switch replacement	<input type="checkbox"/>				<input checked="" type="checkbox"/>
Frame lids replacement	<input type="checkbox"/>				<input checked="" type="checkbox"/>

Replace UV lamps, if present	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Functional checks					
Check "B1" air probe reading at the temperatures of +20°C and -30°C	+20°C	-30°C		<input checked="" type="checkbox"/>	
Check "B3" core probe reading at the temperatures of +20°C and -18°C	+20°C	-18°C		<input checked="" type="checkbox"/>	
Detect room temperature for cooling test with chamber empty			<input checked="" type="checkbox"/>	
Detect chamber temperature before starting the cooling cycle			<input checked="" type="checkbox"/>	
Start -18°C cycle in timed mode	<input type="checkbox"/>			<input checked="" type="checkbox"/>	
Report time (min) to reach -35°C in the chamber (<i>within max 50'</i>)			<input checked="" type="checkbox"/>	
Date of maintenance					
Name of technician who carried out maintenance					
Customer name					
Customer signature/stamp for acceptance					

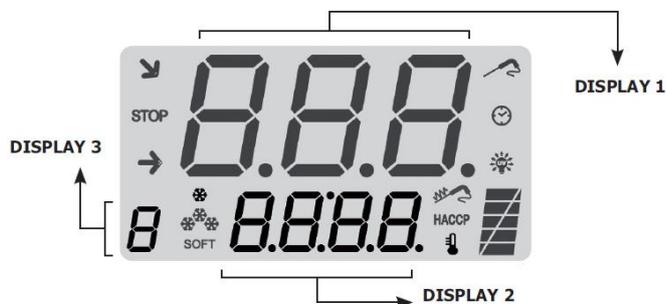
7. ELECTRONIC BOARD OPERATION

7.1. BOARD functions

DISPLAY 1 Time or core probe temperature

DISPLAY 2 Chamber temperature

DISPLAY 3 Work phase in progress



	Equipment ON/OFF Cycle START/STOP
	PRECOOLING function, to be enabled before using the chiller. End at 10° for blast chilling, -25° (for freezing)
	UP KEY Value increase
	DOWN KEY Value decrease
	BLAST CHILLING +3° cycle selection
	FREEZING -18° cycle selection
	SOFT function enabling for blast chilling or freezing
	DEFROST cycle, Defrosting via evaporator fan and door open
	Core PROBE HEATING by extraction after freezing cycle
	STERYLISATION cycle
	SAVE just ended cycle RECALL already saved programmes

	Cell temperature
	Activated, core probe heating on
	Core probe cycle in progress
	Timed cycle (air probe)
	Blast chilling cycle in progress
	Freezing cycle in progress
SOFT	Soft function activated for blast chilling or freezing
STOP	Cycle paused or not selected
	Blast chilling in progress, if flashing compressor delay
	Storage in progress +2° for blast chilling, -20° for freezing
	Sterilisation in progress
	Compressor on
	Evaporator fan on

7.2. Operator parameters

To access the parameters with the machine off, firstly press  and then  for 5 seconds. The following information appears:

- DISPLAY 1 flashing -> setpoint selected
- DISPLAY 2 -> setpoint number "-25"
- DISPLAY 3 -> letter "S"

To navigate the menu and change the values, use the  and  keys. Press  to access parameter edit.

Once the value is modified, press  to confirm and go back to parameter selection.

Press  to exit, otherwise, after 60 seconds the card will automatically exit the menu.

SetPoint	Description	Default	min	MAX
S01	Cabinet SetPoint PHASE 1 in +3°C soft blast chiller	0°C	-60°C	100°C
S02	Core SetPoint PHASE 1 in soft +3°C blast chiller	10°C	-60°C	100°C
S03	Time SetPoint PHASE 1 in +3°C soft blast chiller	30 min	0 min	900 min
S04	Cabinet SetPoint PHASE 2 in +3°C soft blast chiller	0°C	-60°C	100°C
S05	Core SetPoint PHASE 2 in +3°C soft blast chiller	5°C	-60°C	100°C
S06	Time SetPoint PHASE 2 in +3°C soft blast chiller	30 min	0 min	900 min
S07	Cabinet SetPoint PHASE 3 in +3°C soft blast chiller	0°C	-60°C	100°C
S08	Core SetPoint PHASE 3 in +3°C soft blast chiller	3°C	-60°C	100°C
S09	Time SetPoint PHASE 3 in +3°C soft blast chiller	30 min	0 min	900 min
S10	Cabinet SetPoint in +3°C conservation	2°C	-60°C	100°C
S11	Cabinet SetPoint PHASE 1 in +3°C hard blast chiller	-25°C	-60°C	100°C
S12	Core SetPoint PHASE 1 in +3°C hard blast chiller	12°C	-60°C	100°C
S13	Time SetPoint PHASE 1 in +3°C hard blast chiller	30 min	0 min	900 min
S14	Cabinet SetPoint PHASE 2 in +3°C hard blast chiller	-12°C	-60°C	100°C
S15	Core SetPoint PHASE 2 in +3°C hard blast chiller	6°C	-60°C	100°C
S16	Time SetPoint PHASE 2 in +3°C hard blast chiller	30 min	0 min	900 min
S17	Cabinet SetPoint PHASE 3 in +3°C hard blast chiller	-2°C	-60°C	100°C
S18	Core SetPoint PHASE 3 in +3°C hard blast chiller	3°C	-60°C	100°C
S19	Time SetPoint PHASE 3 in +3°C hard blast chiller	30 min	0 min	900 min
S20	Time SetPoint in P0 +3°C	900 min	0 min	900 min
S21	Cabinet SetPoint PHASE 1 in -18°C soft shock freezer	-10°C	-60°C	100°C
S22	Core SetPoint PHASE 1 in -18°C soft shock freezer	3°C	-60°C	100°C
S23	Time SetPoint PHASE 1 in -18°C soft shock freezer	80 min	0 min	900 min
S24	Cabinet SetPoint PHASE 2 in -18°C soft shock freezer	-25°C	-60°C	100°C
S25	Core SetPoint PHASE 2 in -18°C soft shock freezer	-5°C	-60°C	100°C
S26	Time SetPoint PHASE 2 in -18°C soft shock freezer	80 min	0 min	900 min
S27	Cabinet SetPoint PHASE 3 in -18°C soft shock freezer	-40°C	-60°C	100°C
S28	Core SetPoint PHASE 3 in -18°C soft shock freezer	-18°C	-60°C	100°C
S29	Time SetPoint PHASE 3 in -18°C soft shock freezer	80 min	0 min	900 min
S30	Cabinet SetPoint in -18°C conservation	-20°C	-60°C	100°C
S31	Cabinet SetPoint PHASE 1 in -18°C hard conservation	-40°C	-60°C	100°C
S32	Core SetPoint PHASE 1 in -18°C hard conservation	-18°C	-60°C	100°C
S33	Time SetPoint PHASE 1 in -18°C hard conservation	80 min	0 min	900 min
S34	Cabinet SetPoint PHASE 2 in -18°C hard conservation	-40°C	-60°C	100°C
S35	Core SetPoint PHASE 2 in -18°C hard conservation	-18°C	-60°C	100°C
S36	Time SetPoint PHASE 2 in -18°C hard conservation	80 min	0 min	900 min
S37	Cabinet SetPoint PHASE 3 in -18°C hard conservation	-40°C	-60°C	100°C
S38	Core SetPoint PHASE 3 in -18°C hard conservation	-18°C	-60°C	100°C

S39	Time SetPoint PHASE 3 in -18°C hard conservation	80 min	0 min	900 min
S40	Time SetPoint in P0 -18°C	600 min	0 min	900 min
S41	SetPoint Max Time Blast Chiller with cycle in +3°C time	120 min	0 min	900 min
S42	SetPoint Max Time Blast Chiller with cycle in -18°C time	300 min	0 min	900 min
S43	Cabinet SetPoint in Blast Chiller +3°C infinite time	0°C	-60°C	100°C
S44	Cabinet SetPoint in Blast Chiller -18°C infinite time	-35°C	-60°C	100°C
S45	Room setpoint in +3° blast chilling PreCooling cycles	-20°C	-60°C	100°C
S46	Room setpoint in -18° blast chilling PreCooling cycles	-25°C	-60°C	100°C
S47	Operation as storage compartment 0=no; 1=yes	0	0	1
S48	+3°C Storage compartment setpoint	2°C	-60°C	100°C
S49	-18°C Storage compartment setpoint	-20°C	-60°C	100°C

7.3. Factory parameters

To access the parameters with the machine off, firstly press  and then  for 5 seconds. The following information appears:

- DISPLAY 1 -> parameter value
- DISPLAY 2 flashing -> number of "01" parameter
- DISPLAY 3 flashing -> letter "P"

To navigate the menu and change the values, use the  and  keys. Press  to access parameter edit.

- DISPLAY 1 flashing -> parameter value
- DISPLAY 2 -> parameter number "15"
- DISPLAY 3 -> letter "S"

Press  to confirm and go back to the parameter selection.

Press  to exit, otherwise, after 60 seconds the card will automatically exit the menu.

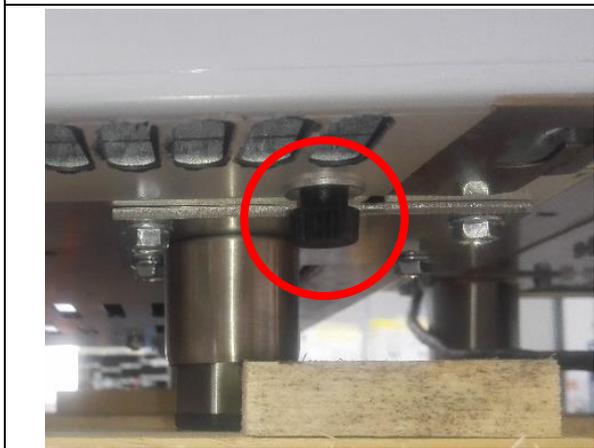
Param.	Description	Default	min	MAX
P01	Hysteresis for temperature alarm cancellation	2°C	0°C	10°C
P02	Threshold of high temperature alarm in posit. conser. compared to the Set CONS	7°C	0°C	50°C
P03	Threshold of low temperature in positive conservation	0°C	-10°C	0°C
P04	Threshold of high temperature alarm in neg. conser.n compared to the Set CONS	6°C	0°C	50°C
P05	Threshold of low temperature alarm in neg. conser. compared to the Set CONS	-10°C	-50°C	0°C
P06	Delay of temperature alarm at start of conservation or defrost	60 min	0 min	300 min
P07	Delay of temperature alarm	30 min	0 min	300 min
P10	Temperature unit of measure (1= Fahrenheit, 0= Celsius)	0	011	1
P11	Cabinet probe offset	0°C	-10°C	10°C
P12	Polarity door 0: DI closed = Closed 1: DI closed = Open	0	0	1
P13	Delay door open alarm	2 min	0 min	60 min
P15	Buzzer activation (0 Disabled; 1 Enabled)	1	0	1
P16	Duration of buzzer at end of blast chiller cycle	10 sec	0	600 sec
P17	Duration of buzzer alarm	1 min	0 min	90 min
P18	Verification core probe insertion 0=No 1=Yes	1	0	1
P19	Enable core probe 0=no 1=yes	1	0	1
P20	Sterilisation relay 0=Absent 1=Present	1	0	1
P21	Only blast chill cycles: 0=positive/negative 1=only positive	0	0	1
P22	Pressure switch alarm time	5 sec	0 sec	60 sec

P23	High pressure digital entry polarity 0: DI Open = Alarm HP active 1: DI closed = Alarm HP active	0	0	1
P25	Duration of sterilisation	15 min	0 min	90 min
P26	Minimum temperature for sterilisation start	15°C	0°C	100°C
P27	Minimum temperature for food probe heating start	-5°C	-50°C	50°C
P28	Duration of food probe heating	90 sec	0 sec	600 sec
P29	Temperature at end of food probe heating	30°C	0°C	100°C
P30	Hysteresis compressor OFF - ON	1°C	0°C	20°C
P31	Min. time between OFF-ON compressor	2 min	0 min	30 min
P32	Delta SetPoint in food probe check with Cabinet Probe Error	-2°C	-10°C	10°C
P33	Minimum temperature of probe for blast chiller start	70°C	0°C	90°C
P34	Duration of probe insertion test (0=test omitted)	3 min	0 min	240 min
P35	Fans ON with compressor OFF in conservation mode	30 sec	0 sec	999 sec
P36	Fans OFF with compressor OFF in conservation mode	300 sec	0 sec	999 sec
P37	Difference in core temperature in food probe insertion test	4°C	0	10°C
P38	Difference in cabinet-core temperature in food probe insertion test	5°C	0	10°C
P40	Location of the instrument	1	1	147
P41	Serial management: 0=Unused 1=Print 2=ModBus	2	0	2
P42	BaudRate: 0= 2400; 1 = 4800; 2 = 9600	1	0	2
P43	Parity: 0= no parity; 1= odd; 2 = even	2	0	2
P44	Sampling time	10 min	1 min	60 min
P50	Defrosting performed at start of blast chill 0=No; 1=Yes	0	0	1
P51	Temperature at defrost end	8°C	-10°C	30°C
P52	Maximum duration of defrost	15 min	1 min	90 min
P53	Interval between two defrosting phases in conservation mode (0=omitted)	0 hour	0	18 hour
P54	Type of defrosting: 0=air 1=hot gas 2=electrical	0	0	2
P55	Draining time	1 min	0 min	90 min
P56	Delay activation compressor with hot gas defrosting	0 sec	0 sec	600 sec
P57	Minimum temperature for defrosting start	0°C	-10°C	30°C
P58	Temperature differential for fan stop after defrosting	5°C	0°C	10°C
P60	Time compressor ON in +3°C cycles with defective cabinet probe	3 min	0 min	60 min
P61	Time compressor OFF in +3°C cycles with defective cabinet probe	7 min	0 min	60 min
P62	Time compressor ON in -18°C cycles with defective cabinet probe	8 min	0 min	60 min
P63	Time compressor OFF in -18°C cycles with defective cabinet probe	2 min	0 min	60 min
P65	Delay in turning compressor power ON	2 min	0 min	60 min
P66	Set temperatur it qualifies regulation fans	25°C	-50°C	50°C
P70	Offset probe sonde	0°C	-10°C	10°C
P71	Offset evaporator sonde 0°	0°C	-10°C	10°C
P72	Language of print: 0-ITA, 1GB, 2F, 3D, 4E, 5P, 6NL, 7FIN	0	0	7
p73	Buzzer sounding time at the end of the PreCooling cycle	60 sec	3 sec	600 sec
p74	Compressor switch-off delay (PumpDown)	10 sec	0 sec	600 sec
p75	Solenoid switch-on delay	5 sec	0 sec	600 sec
p76	Solenoid: 0- PUMPDOWN; 1- HOT GAS DEFROSTING	0	0	1
P77	Download USBRec: 0=all; 1last 48h 2= from last download	0	0	2

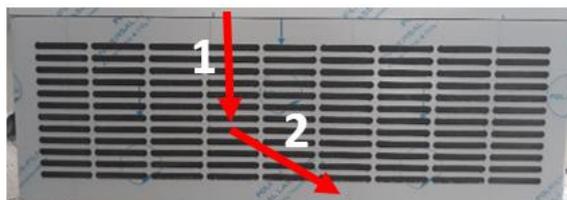
8. INTERVENTIONS ON THE EQUIPMENT

8.1. Electronic card replacement

1. Loosen the two knurled knobs located on the ends of the front lower side.



2. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



3. Using a Phillips screwdriver or a screwdriver, loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



4. Remove the control panel by pushing it downwards and pulling it towards you.



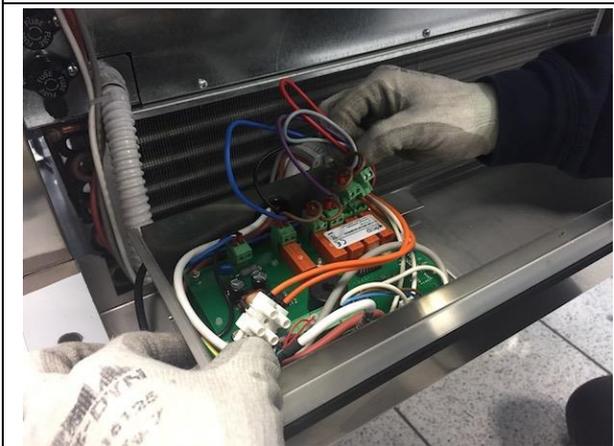
5.  To facilitate the operation, we recommend positioning the control panel as shown.



6. Remove the electrical control box lid.



- 7.** Disconnect all terminals from the card, taking care to make a note of their positions.



- 8.** Loosen the sheath-stop and remove it sideways.



- 9.** Remove the 5 nuts securing the card.



- 10.** Remove the card with care to avoid it jamming on the threaded turrets.



- 11.** Insert the new card and secure it with its nuts.

 Do not excessively tighten, the keys may remain pressed.



- 12.** Refit the sheath-stop in its original position and reconnect all terminals in the respective order [see wiring diagram, par. 10].
Finally, close all previously removed covers and guards again.



8.2. Temperature probe replacement

8.2.1. Core probe replacement

1. Remove the set-up from the left wall inside the chamber



2. Cut the probe cable



3. Join the cut cable to the new one to use it as guide.



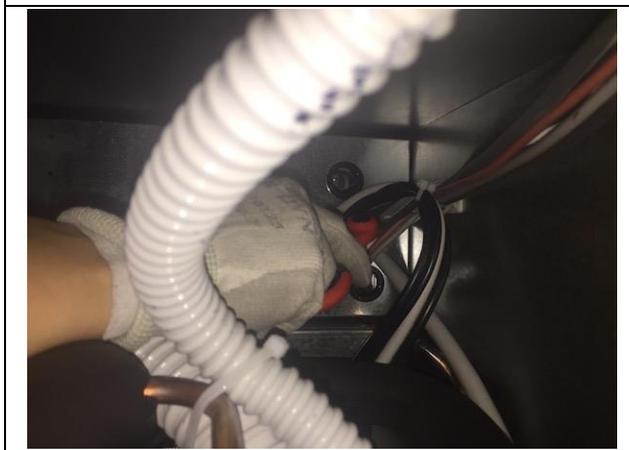
4. Loosen the evaporator support bracket screws and push the cover guard downwards to remove it.



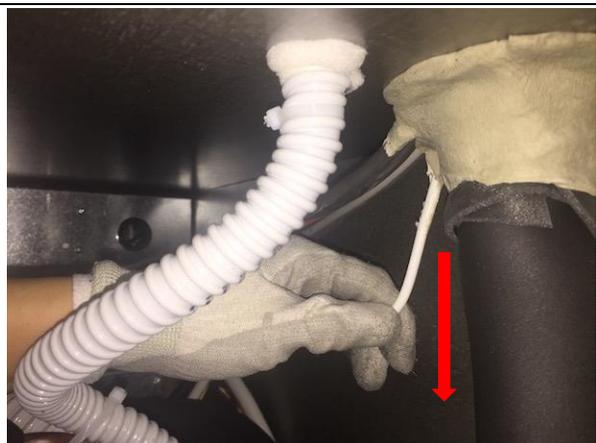
5. Remove the rear grid of the machine.



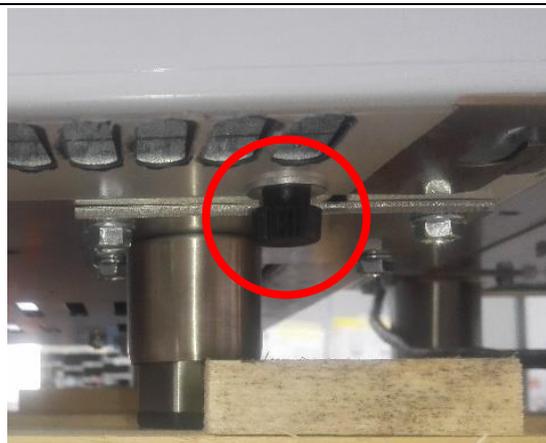
6. Cut the clamps that secure the probe cable.



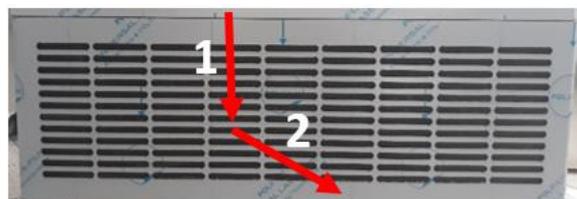
- 7.** Pull the probe cable downwards, taking care to do so as perpendicular as possible to the cell bottom.
⚠ Once the new cable has passed, carefully reseal the hole with sealant.



- 8.** Loosen the two knurled knobs located on the ends of the front lower side.



- 9.** Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



- 10.** Using a Phillips screwdriver or a screwdriver, loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



- 11.** Remove the control panel by pushing it downwards and pulling it towards you.



- 12.** 💡 To facilitate the operation, we recommend positioning the control panel as shown.



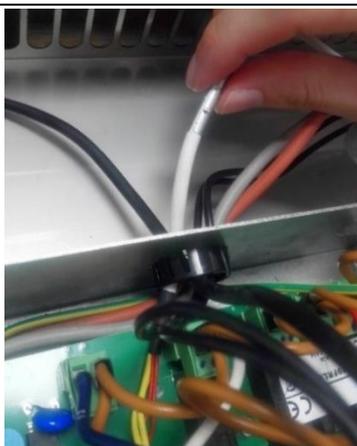
13. Remove the electrical control box lid.



14. Disconnect the wires from card terminals 17 and 18 (if the probe is heated, disconnect the two additional ones also) [see wiring diagram, par. [10](#)].



15. Remove any clamps and carefully pull the probe out.



16. Connect the new probe to the relative terminals, restore the clamps and close all previously removed covers and guards again.



8.2.2. Air probe replacement

1. Remove the set-ups inside the chamber.



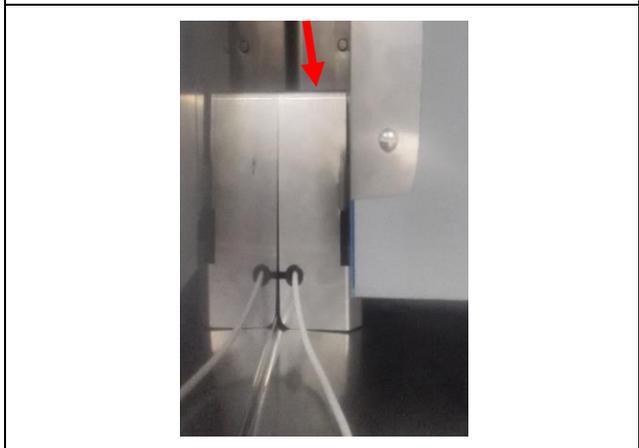
2. Open the evaporator conveyor by loosening its fixing screws.



3. Loosen the evaporator support bracket screws



4. Push the cover guard downwards to remove it.



5. Cut the clamps that secure the probe cable.



6. Cut the probe cable.



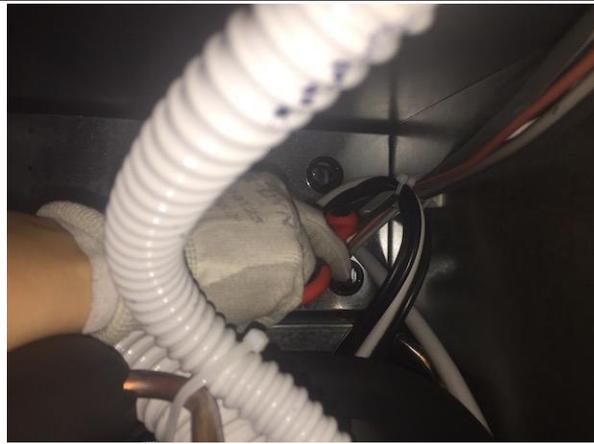
7. Join the cut cable to the new one to use it as guide.



8. Remove the rear grid of the machine.



9. Cut the clamps that secure the probe cable.

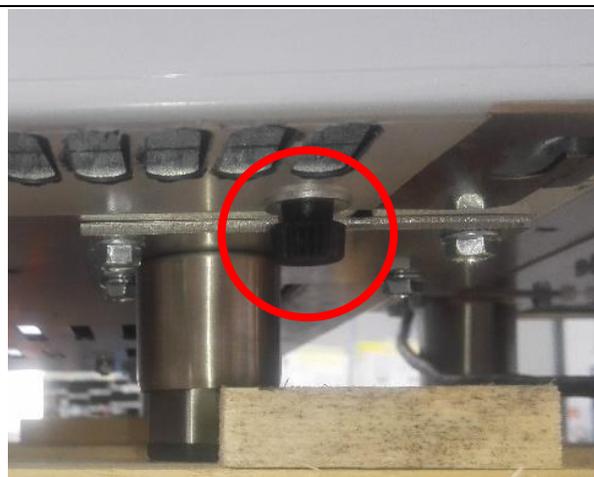


10. Pull the probe cable downwards, taking care to do so as perpendicular as possible to the cell bottom.

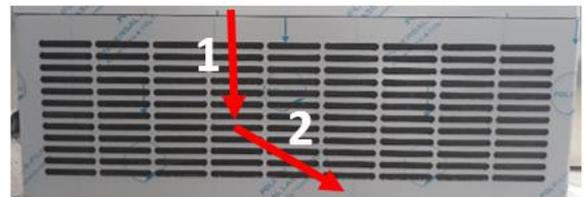
⚠ Once the new cable has passed, carefully reseal the hole with sealant.



11. Loosen the two knurled knobs located on the ends of the front lower side.



12. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



- 13.** Using a Phillips screwdriver or a screwdriver, loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



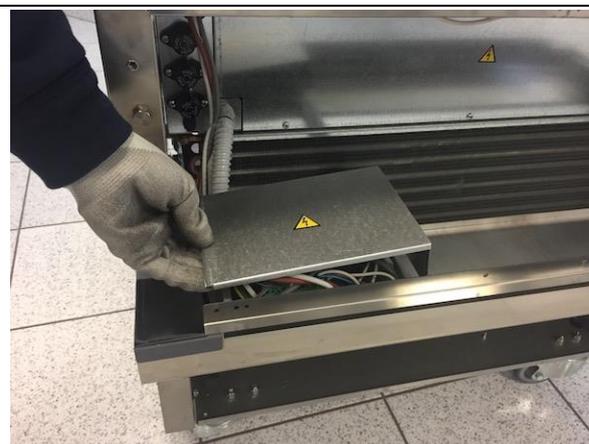
- 14.** Remove the control panel by pushing it downwards and pulling it towards you.



- 15.** ⚠ To facilitate the operation, we recommend positioning the control panel as shown.



- 16.** . Remove the electrical control box lid.



- 17.** Disconnect the wires from card terminals 13 and 14 [see wiring diagram, par.10].



- 18.** Remove any clamps and carefully pull the probe out.



19. Connect the new probe to its terminal.



20. Restore the clamps and close all previously removed covers and guards again.



8.2.3. Evaporator probe replacement

1. Remove the set-ups inside the chamber.



2. Open the evaporator conveyor by loosening its fixing screws.



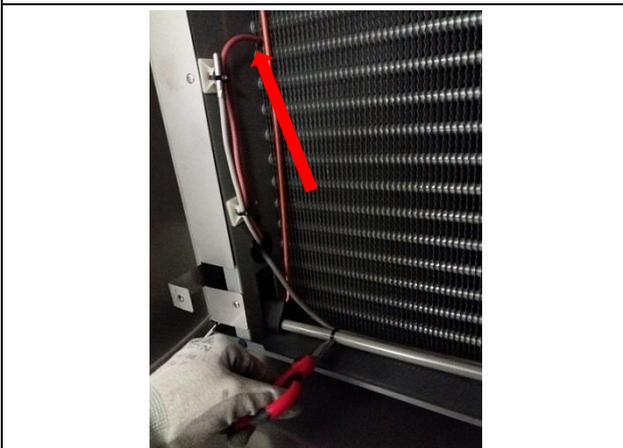
3. Loosen the evaporator support bracket screws



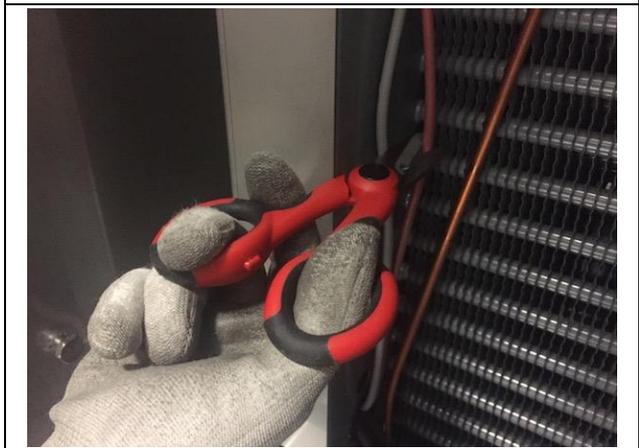
4. Push the cover guard downwards to remove it.



5. Cut the clamps that secure the probe cable.



6. Cut the probe cable.



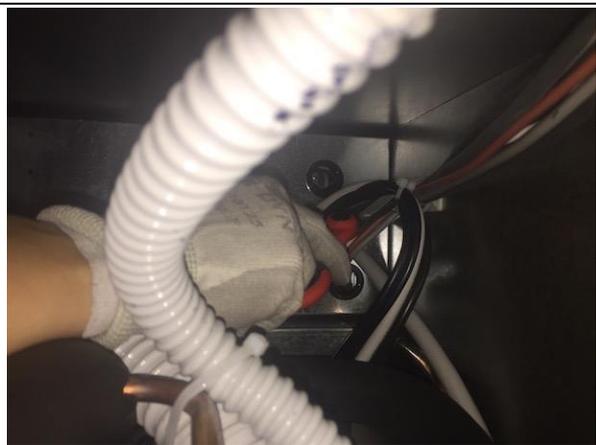
7. Join the cut cable to the new one to use it as guide.



8. Remove the rear grid of the machine.

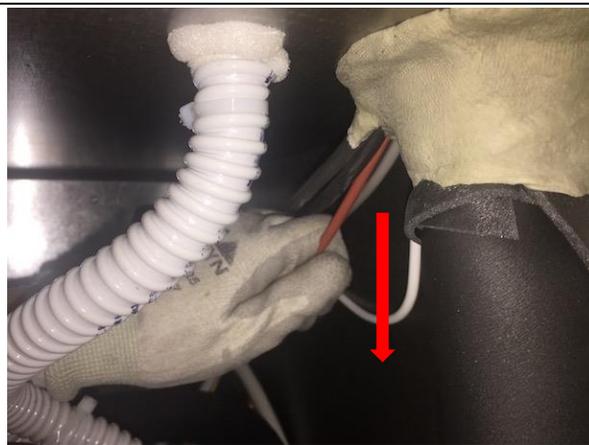


9. Cut the clamps that secure the probe cable.

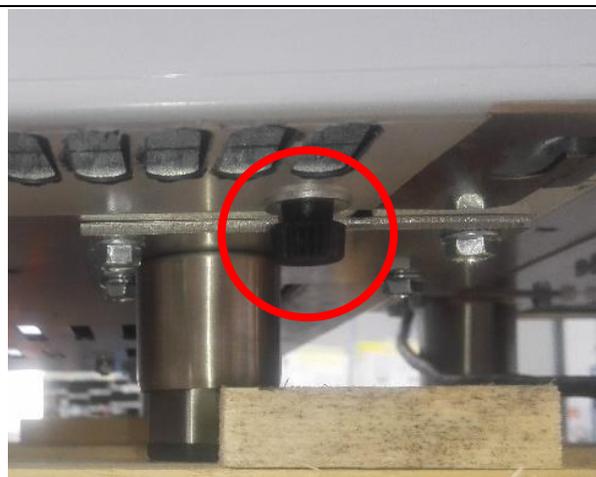


10. Pull the probe cable downwards, taking care to do so as perpendicular as possible to the cell bottom.

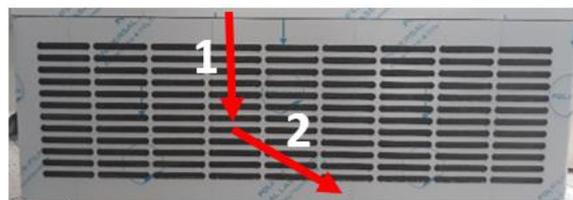
⚠ Once the new cable has passed, carefully reseal the hole with sealant.



11. Loosen the two knurled knobs located on the ends of the front lower side.



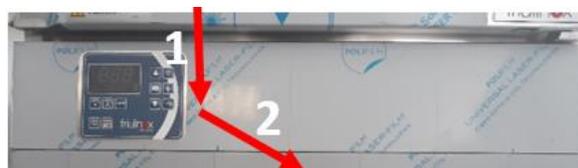
12. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



13. Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



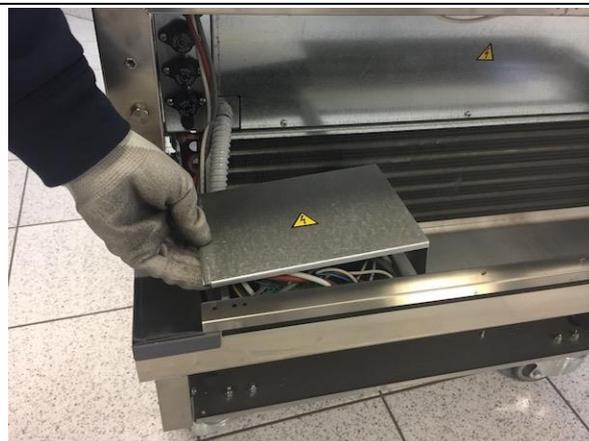
14. Remove the control panel by pushing it downwards and pulling it towards you.



15. ⚠ To facilitate the operation, we recommend positioning the control panel as shown.



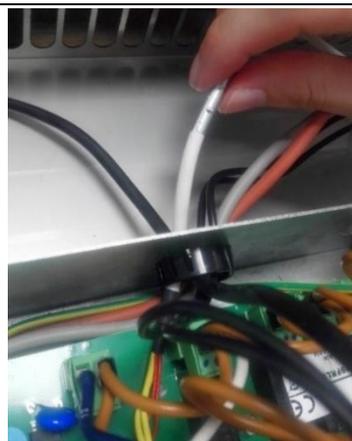
16. . Remove the electrical control box lid.



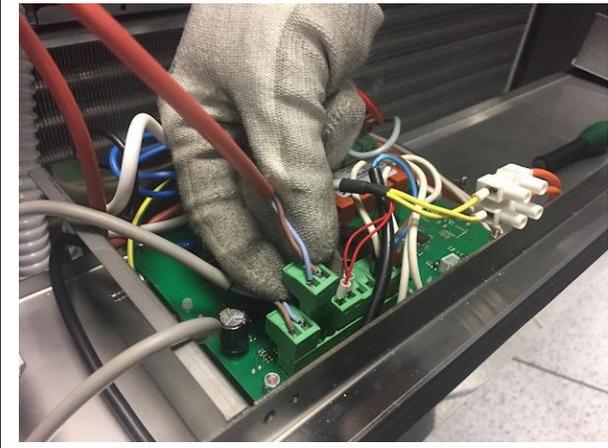
17. Disconnect the wires from card terminals 15 and 16 [see wiring diagram, par. [10](#)].



18. Remove any clamps and carefully pull the probe out.



19. Connect the new probe to its terminal.

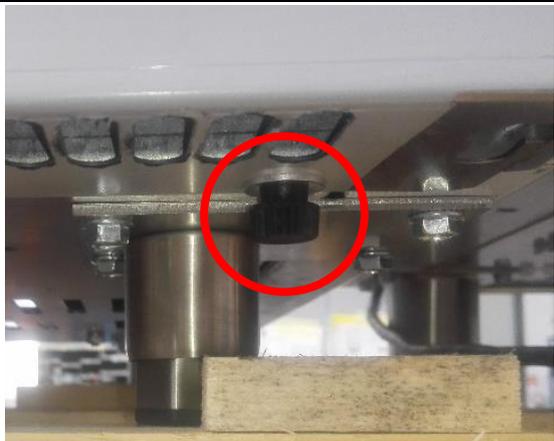


20. Restore the clamps and close all previously removed covers and guards again.

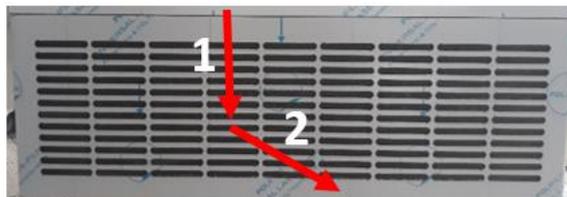


8.3. Door adjustment

1. Loosen the two knurled knobs located on the ends of the front lower side.



2. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



3. Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



4. Remove the control panel by pushing it downwards and pulling it towards you.



5.  To facilitate the operation, we recommend positioning the control panel as shown.



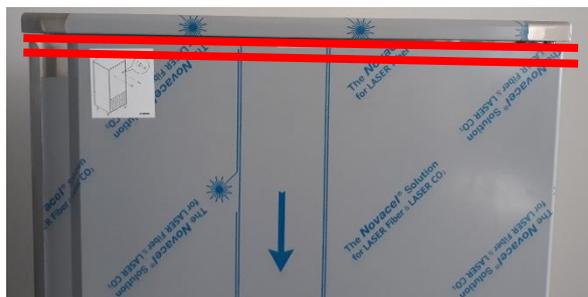
6. Loosen the hinge screws using the 8mm socket wrench.  Do not completely loosen the screws because the hinge could give way and let the door fall.



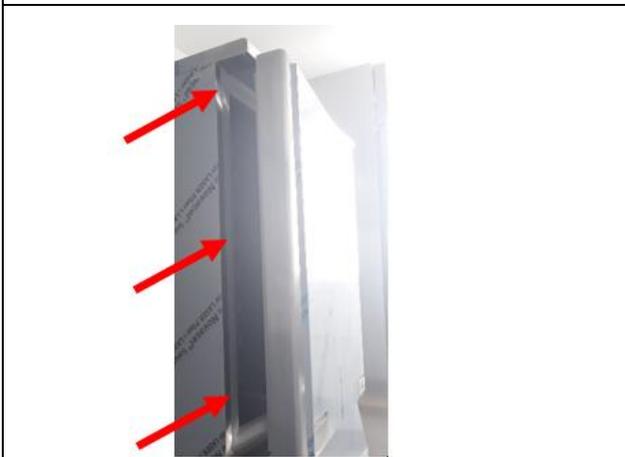
- 7.** Move the bracket slightly to the right or left to adjust the height of the door.



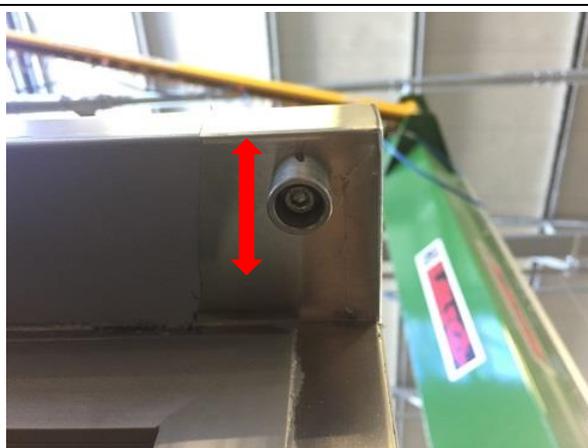
- 8.** To align the door correctly, make sure that the distance between the door body and frame is equal for the whole width of the door.



- 9.** If the door seal does not evenly adhere on the frame lids, act on the upper fixing bushing.



- 10.** The door can be moved near or away from the frame, moving the bushing to the required position.



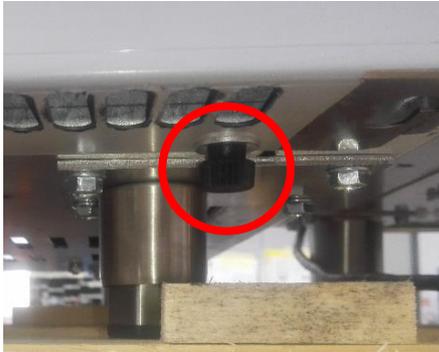
- 11.** After completing the operation, start a timed cycle with -18°C and check that the seal evenly adheres to the entire perimeter of the frame.



A quick check is carried out by inserting a paper sheet between seal and frame; the harder it is to extract the sheet, the better the seal.

8.4. Door opening reversal

1. Loosen the two knurled knobs located on the ends of the front lower side.



2. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



3. Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



4. Remove the control panel by pushing it downwards and pulling it towards you.



5.  To facilitate the operation, we recommend positioning the control panel as shown.



6. Loosen the hinge screws using the 8mm socket wrench.

 During this operation, pay attention to the spring return.

Once loosened, the hinge tends to place itself as shown in the following photo.

 If possible, have two people perform this operation, otherwise fix the door with strong sticky tape.



7. Pull the door downwards to remove it from the pin.



8. Using a 4mm Allen wrench loosen the pin on the top part of the body and tighten it on the opposite side.



9. Remove the spring and the pin from the door.
💡 To remove it from the seat, it is advisable to use a slotted screwdriver.



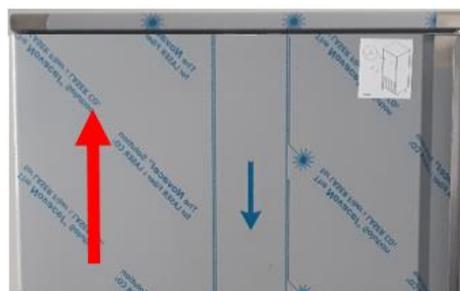
10. Rotate the door



11. Insert the previously removed pin and spring in the part indicated by the circle, in the corresponding order.



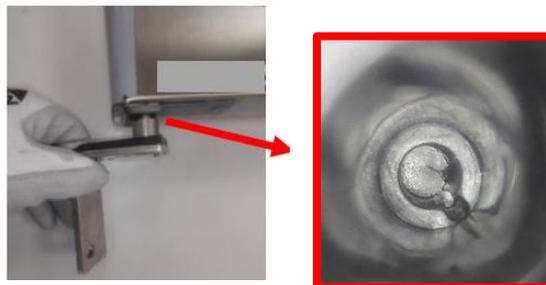
12. Place the door on the pin.
⚠️ If possible, have two people perform this operation, otherwise fix the door with strong sticky tape.



13. Take the LH hinge provided with the kit.



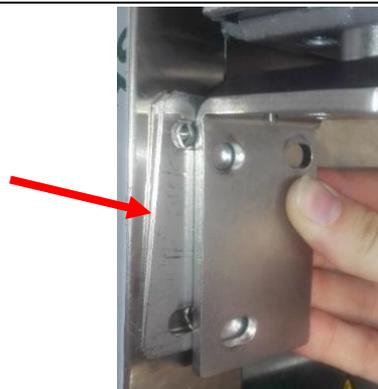
14. Insert the hinge in its seat until it reaches the stroke end.
The end of the spring must enter its seat so that the hinge can be correctly positioned.



15. Turn the hinge anti-clockwise until it is parallel with the chiller body.



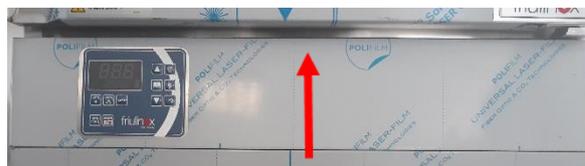
16. Insert the shims.



17. Tighten the screws using the 8mm socket wrench.
 Adjust the door before tightening the screws completely, making sure that its gasket evenly adheres on the frame lids, thus ensuring an optimal seal.



18. Close all previously removed covers and guards again.



8.5. Door gasket replacement

1. Remove the gasket starting from a vertex and lifting its lip.



2. Position the new gasket by inserting it starting from the 4 corners and then pressing it along the respective sides.



3.  Finally, check that the gasket evenly adheres on the frame lids, thus ensuring an optimal seal.



8.6. Frame resistance / lid replacement

1. Insert the blade of a spatula between the lid and frame so that it engages.



2. Using the spatula, force by tilting it towards the inside of the chamber and tapping it on the handle.



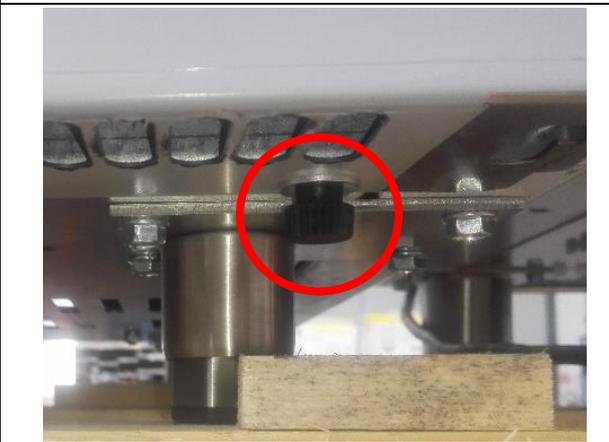
3. When a point of the lid has come away from the frame, grasp it with the other hand to keep it raised.



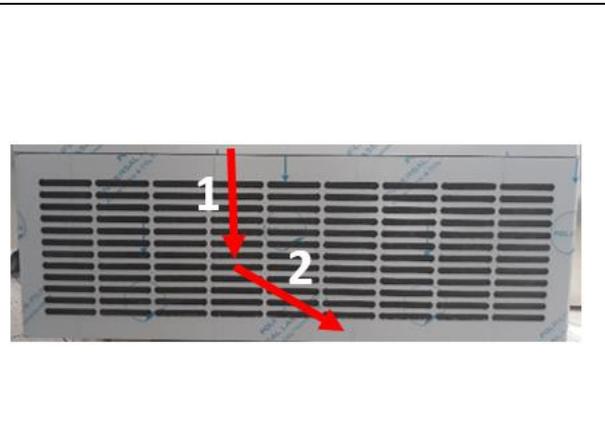
4. Take the lid with both hands and pull it towards you to remove it completely. Proceed in the same way for the other sides; in case of frame resistance replacement, go to the next step, otherwise jump directly to step [19](#).



5. Loosen the two knurled knobs located on the ends of the front lower side.



6. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



7. Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



8. Remove the control panel by pushing it downwards and pulling it towards you.



9. ⚠ To facilitate the operation, we recommend positioning the control panel as shown.



10. Remove the electrical power box lid.

- ⚠ Keep the screws aside as they are specific to avoid damaging the cables.



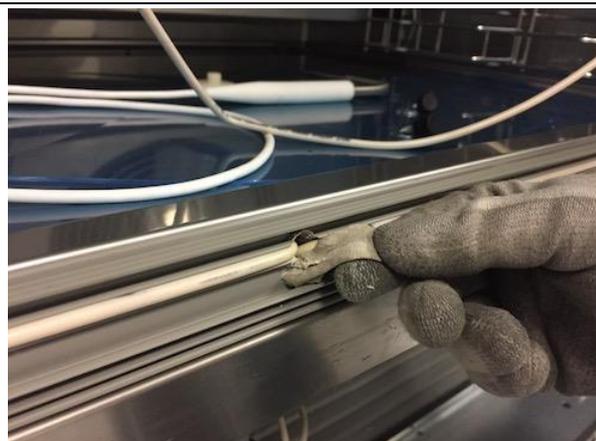
11. Cut the clamps that secure the frame resistance.



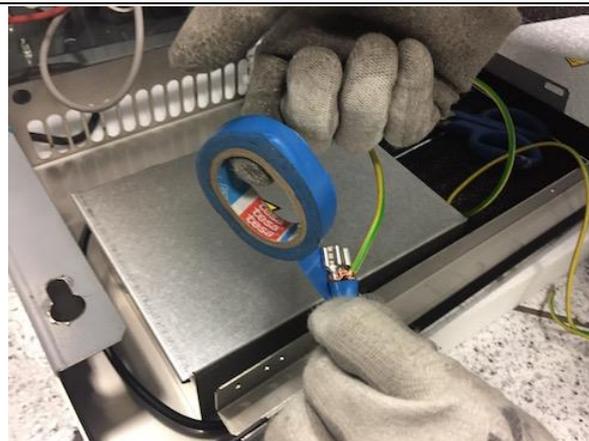
12. Remove the resistance from the frame and disconnect it from the terminal board terminals 7 and 10 [see wiring diagram, par.10].



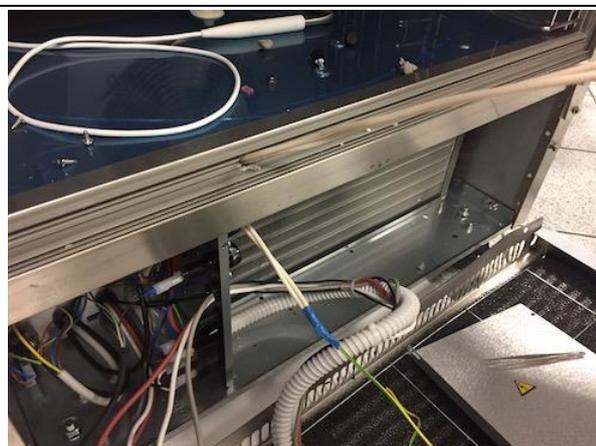
- 13.** Remove the sealant from the resistance passage hole and extract it completely.



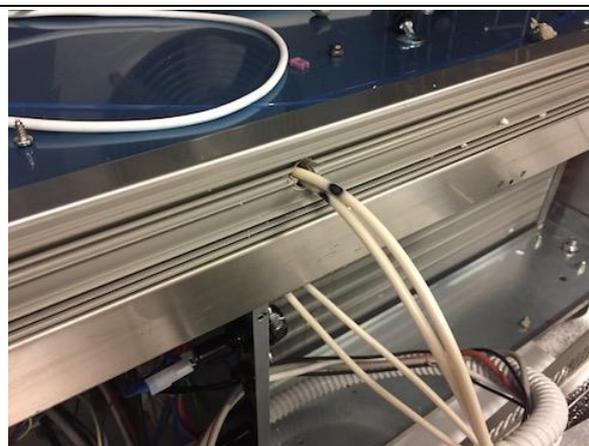
- 14.** Join the fastons of the new resistance to a cable section to be used as guide for insertion into the passage hole.



- 15.** Cautiously drag the new resistance, taking care not to damage it.



- 16.** Roughly the correct position is given when the two black marks are near the passage hole.



- 17.** Carefully position the new resistance along the whole frame perimeter inside the corresponding slot.



- 18.** ⚠ Restore the sealant inside the passage hole, in the lower part also, making sure that the warm sections are not touched.



19. Refit the lids, first engaging them on the outer corner and then tapping them with your hand or a rubber mallet.



20. Proceed in the same way for the other sides until the lid/frame close properly and correct coupling on all corners.



21. Seal all junction corners of the lids with sheet metal silicone.



22. Spread the silicone using a piece of cardboard.



23. Clean residues with alcohol.

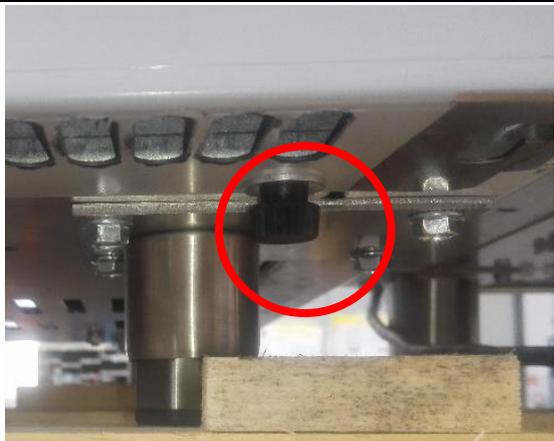


24. Restore the clamps and close all previously removed covers and guards again.

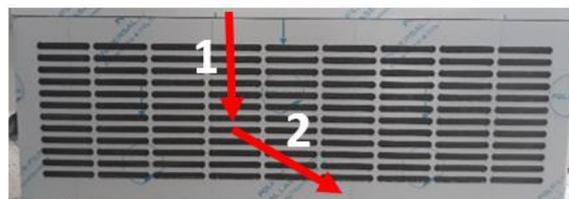


8.7. Condenser filter panel removal and cleaning

1. Loosen the two knurled knobs located on the ends of the front lower side.



2. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



3. Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



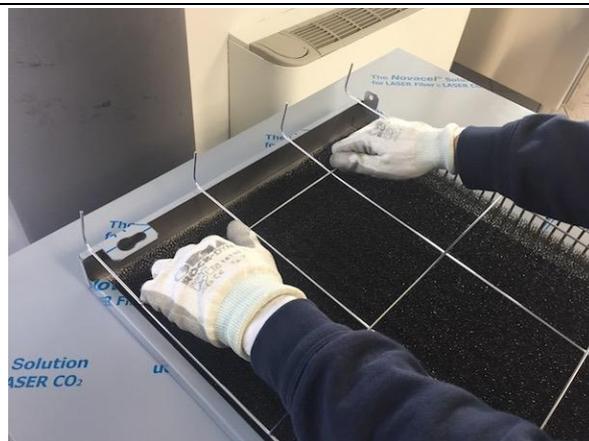
4. Remove the control panel by pushing it downwards and pulling it towards you.



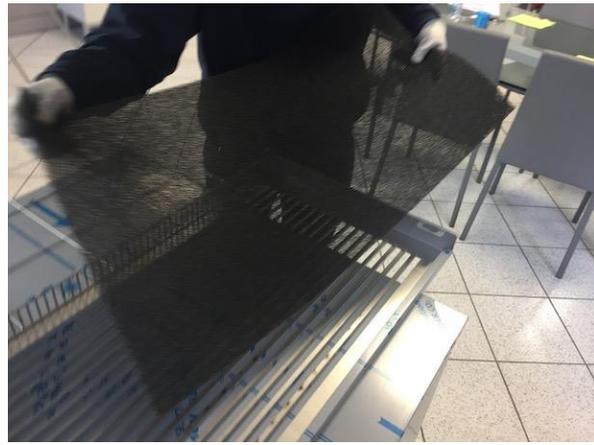
5. ⚠ To facilitate the operation, we recommend positioning the control panel as shown.



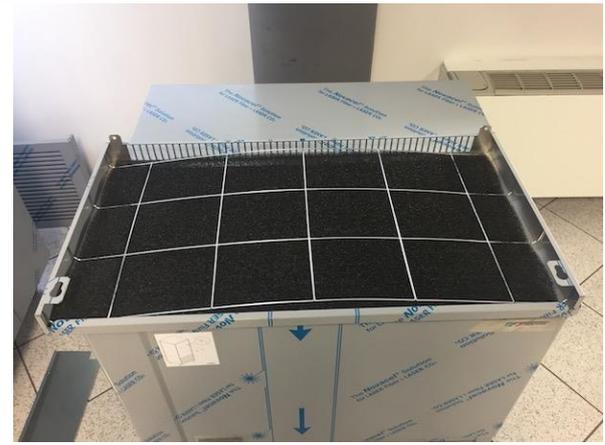
6. Remove the sealing grill of the filter cloth, arching it so that it comes out from its seat.



7. Clean the cloth by washing it with water and let it dry.



8. Reposition the dry cloth, locking it with its grill and reassemble everything.



8.8. Evaporator fan replacement

1. Remove the set-ups inside the chamber.



2. Open the evaporator conveyor by loosening its fixing screws.



3. Loosen the evaporator support bracket screws



4. Push the cover guard downwards to remove it.



5. Remove the fan by loosening the corresponding fixing screws.



6. Cut the clamps that secure the power supply cable of the fan.



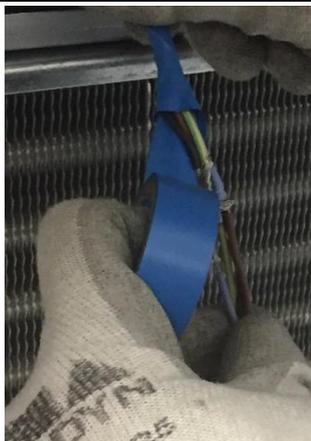
7. Cut the power supply cable of the fan to be replaced.



8. ⚠ Mount the new fan, making sure to match the grill with the relative grooves of the plastic collar.



9. Join the power supply cable of the new fan to the cut one to use the original as guide when dragging the new one.



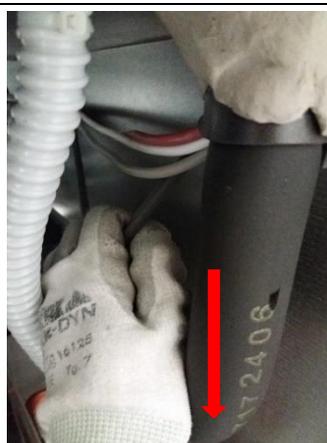
10. Remove the rear grid of the machine.



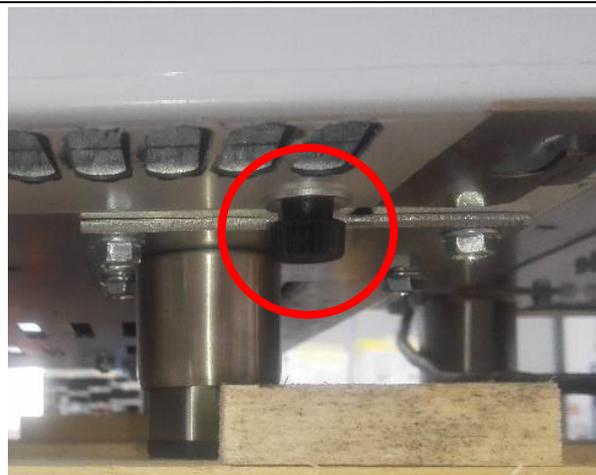
11. Cut the clamps that secure the fan power supply cable.



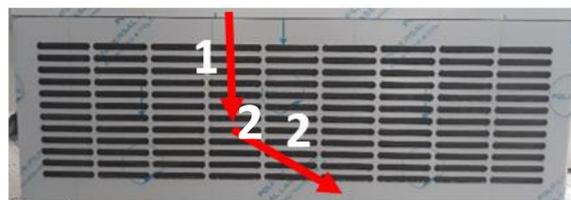
12. Pull the fan power supply cable downwards, taking care to do so as perpendicular as possible to the cell bottom.
⚠ Once the new cable has passed, carefully reseal the hole with sealant.



- 13.** Loosen the two knurled knobs located on the ends of the front lower side.



- 14.** Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



- 15.** Loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



- 16.** Remove the control panel by pushing it downwards and pulling it towards you.



- 17.** ⚠ To facilitate the operation, we recommend positioning the control panel as shown.

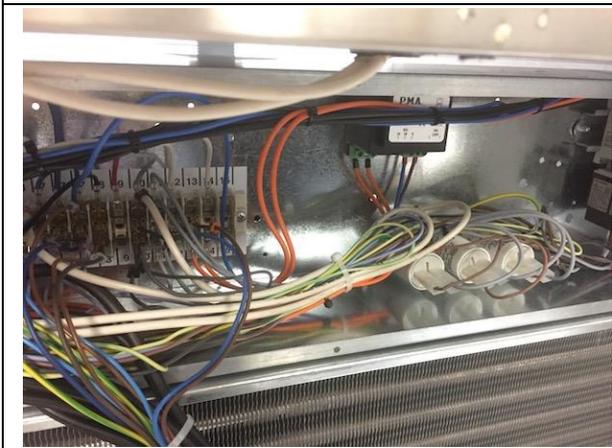


- 18.** Remove the electrical power box lid.

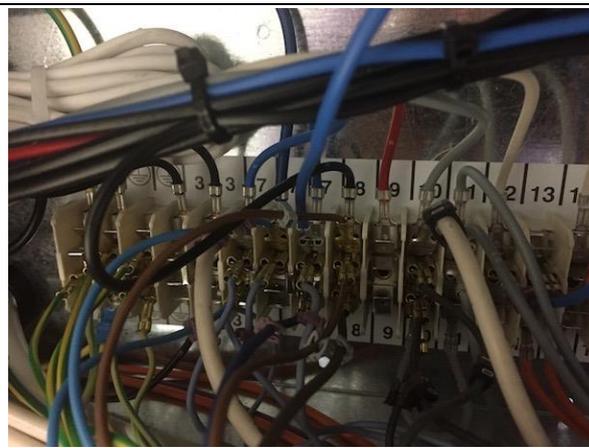
- ⚠ Keep the screws aside as they are specific to avoid damaging the cables.



- 19.** Remove any clamps and disconnect the wires from the power terminal board terminals 7 and 10 and from the corresponding condenser [see wiring diagram, par. [10](#)].



- 20.** Connect the power supply cable of the new fan to the terminal board via 6.3mm fastons. Restore the clamps and close all previously removed covers and guards again.

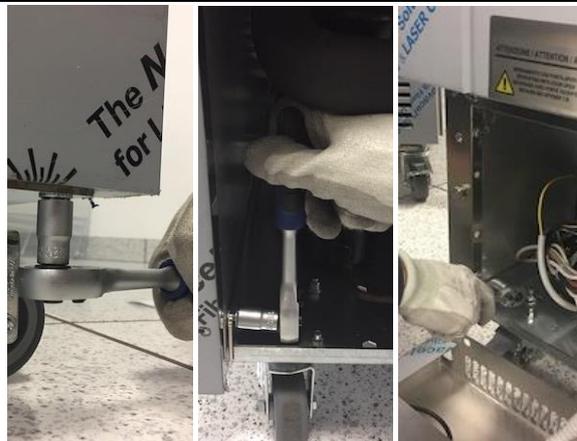


8.9. Condenser fan replacement

1. Remove the rear grid of the machine.



2.  For the 5-baking tray model only, remove the rear screws and tighten the front one to allow the body to rotate. Do not raise above 50mm taking care to lock the door opening before tilting it.



3. Move the discharge pipes to easily access the condenser.



4. Cut the clamps that secure the fan power supply cable.



5. Remove the fan by loosening the corresponding fixing screws.



6. Mount the new fan.

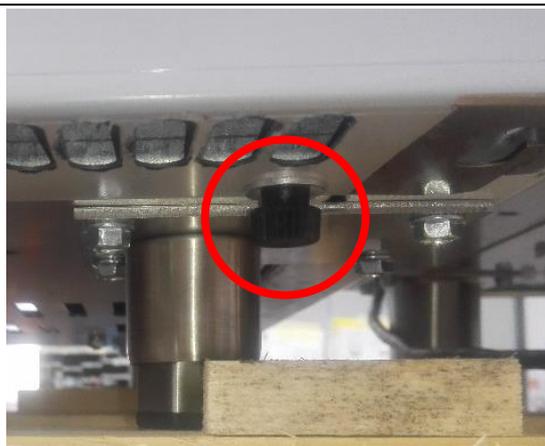
💡 To facilitate the insertion of screws in uncomfortable positions, use magnetised screwdriver or put some sealant on the tip of the tool.



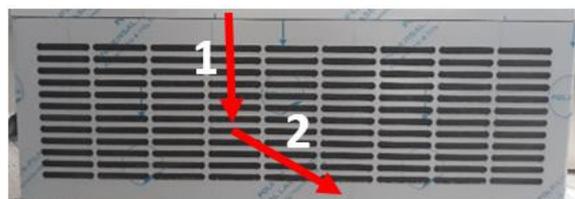
7. Pass the power supply cable of the new fan inside the same hole of the original.



8. Loosen the two knurled knobs located on the ends of the front lower side.



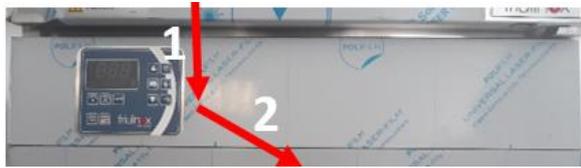
9. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



10. Using a Phillips screwdriver or a screwdriver, loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



- 11.** Remove the control panel by pushing it downwards and pulling it towards you.



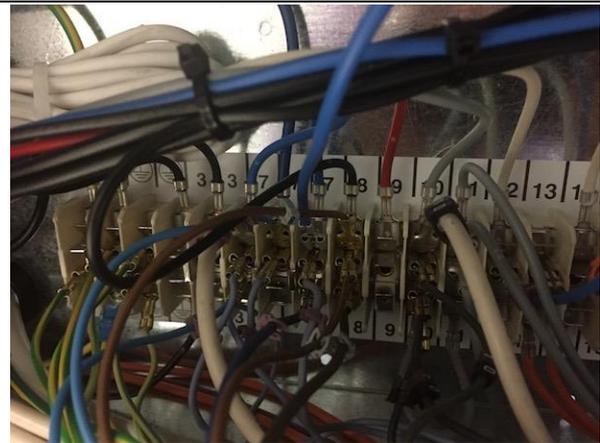
- 12.**  To facilitate the operation, we recommend positioning the control panel as shown.



- 13.** Remove the electrical power box lid.
 Keep the screws aside as they are specific to avoid damaging the cables.



- 14.** Remove any clamps and disconnect the wires from the power terminal board terminals 7 and 8 [see wiring diagram, par. [10](#)].
Connect the power supply cable of the new fan to the terminal board via 6.3mm fastons. Restore the clamps and close all previously removed covers and guards again.

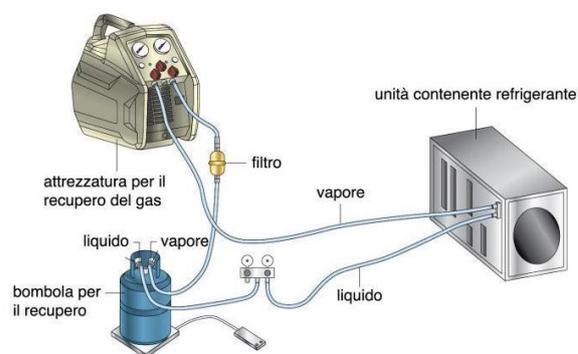


8.10. Compressor replacement

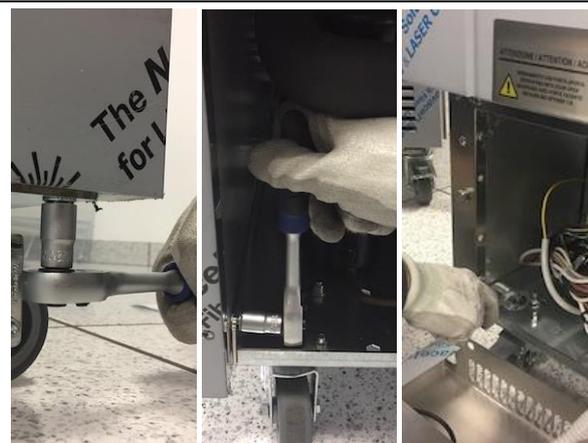
1. Remove the rear grid of the machine.



2. Remove the gas from the system with the appropriate recovery device to store the refrigerant.



3.  For the 5-baking tray model only, remove the rear screws and tighten the front one to allow the body to rotate. Do not raise above 50mm taking care to lock the door opening before tilting it.



4. Unsolder the pipes.
Remove the compressor by acting on the relative anchor systems.



- 5.** Remove the power supply cable and replace the compressor.

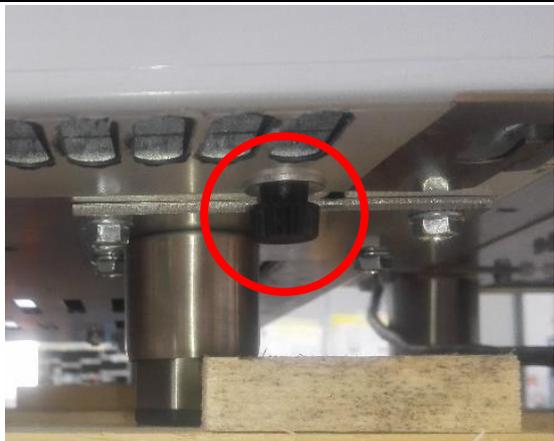
 Provide for the replacement of the dehydrator filter in order to preserve the duration of the unit.



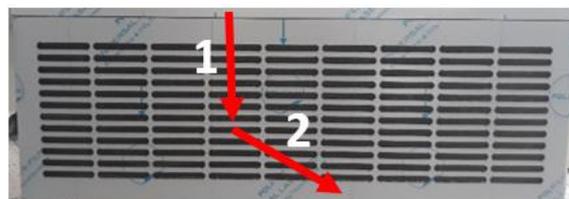
- 6.** Solder the pipes again.
- 7.** Electrically connect the compressor.
- 8.** Make the vacuum.
- 9.** Load the system with new refrigerant, respecting the details on the "data plate" [see par. [4.2](#)].
- 10.** Start a cycle at -18°C to verify the correct operation of the system, see "installation check list" [par. [5](#)].
- 11.** Restore the clamps and close all previously removed covers and guards again.

8.11. Door microswitch replacement

1. Loosen the two knurled knobs located on the ends of the front lower side.



2. Remove the front panel by pushing it downwards and pulling it towards you (not necessary for 5-backing tray mod.).



3. Using a Phillips screwdriver or a screwdriver, loosen the central screw located under the control panel (not necessary for 5-backing tray mod.).



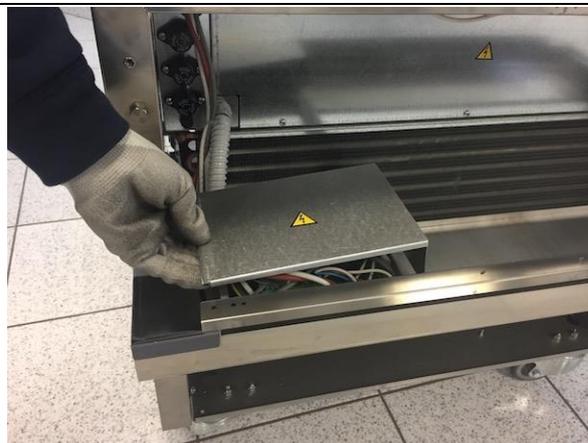
4. Remove the control panel by pushing it downwards and pulling it towards you.



5. ⚠ To facilitate the operation, we recommend positioning the control panel as shown.



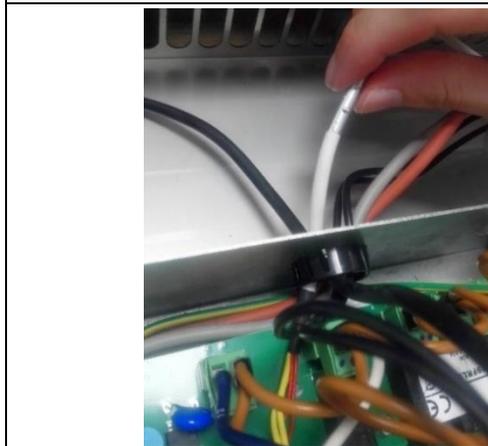
6. Remove the electrical control box lid.



- 7.** Disconnect the wires from card terminals 21 and 22 [see wiring diagram, par.10].



- 8.** Remove any clamps and the door microswitch cable.



- 9.** Replace the door microswitch and reconnect the wires in the terminal board.



- 10.** Restore the clamps and close all previously removed covers and guards again.



9. DIAGNOSTICS

9.1. Electronic board alarms

The buzzer is silenced by pressing any key on the control panel.

9.1.1. AL1 - High temperature in cell alarm

AL 1, alarm high temperature in cell during the positive or negative storage phase occurs when the cell temperature is higher than the value given by the storage temperature (see cycle parameters) + P02/P04 for more than P07 minutes, and the P06 delay time from the cycle activation has expired
When the chamber temperature drops by P01 below the alarm threshold, the alarm automatically resets

see
par. [7.3](#)

1. Checks on Customer use of the equipment Make sure that:

the door is not frequently or for prolonged times opened

the door closes properly

no warm product (from oven) is inserted during storage

Sensitise the Customer on the correct use of the equipment

2. Check that the evaporator is not packed with ice

If packed with ice, start a defrosting cycle and make sure that the equipment works properly (see point 4 below)

Inform the Customer that the chiller must be defrosted daily after use

3. Check that cell probe B1 is not out of calibration

Access the electronic card where the B1 cell probe is connected

With the multimeter set in Ω , check that the resistive value of the probe matches the temperature in the surrounding environment (see tab. PTC)
If the resistive value is incorrect or unstable, replace the probe



see
par. [8.1](#)

see
par. [4.2](#)
par. [8.2.2](#)

4. If the cell temperature reading is correct and stable, make sure that the equipment cools properly

Start a timed -18°C cycle and check that the chamber temperature reaches -25°C within 20 minutes with chamber empty

If the equipment is slow in cooling →, see "The compressor works but the machine does not cool"

see
par. [9.2.4](#)

5. Check that the parameters that manage the compressor ON/OFF, P30 and P31, are correct, otherwise set the default values

see
par. [7.3](#)

Using the multimeter, check that the compressor is powered during storage

If not, check if the circuit is interrupted (see wiring diagram)
If the board does not give the command, replace it

see
par. [10](#)
par. [8.1](#)

If the compressor is powered but has trouble starting or does not start smoothly, replace the compressor

par. [8.10](#)

9.1.2. AL2 - Low temperature in chamber alarm

AL2, alarm low temperature in cell during the positive or negative storage phase occurs when the cell temperature is lower than the P03 value given by the storage temperature (see cycle parameters) + P05 for more than P07 minutes, and the P06 delay time from the cycle activation has expired.

When the chamber temperature rises by P01 below the alarm threshold, the alarm automatically resets.

see
par. [7.3](#)

1. Check that cell probe B1 is not out of calibration.

Access the electronic card where the "B1" cell probe is connected

see
par. [8.1](#)

With multimeter set in Ω , check that the resistive value of the probe matches the temperature in the surrounding environment (see tab. PTC)
If the resistive value is incorrect or unstable, replace the probe

see
par. [4.2](#)
par. [8.2.2](#)

2. Check that parameter P74 is correctly set, otherwise set the default value

see
par. [7.3](#)

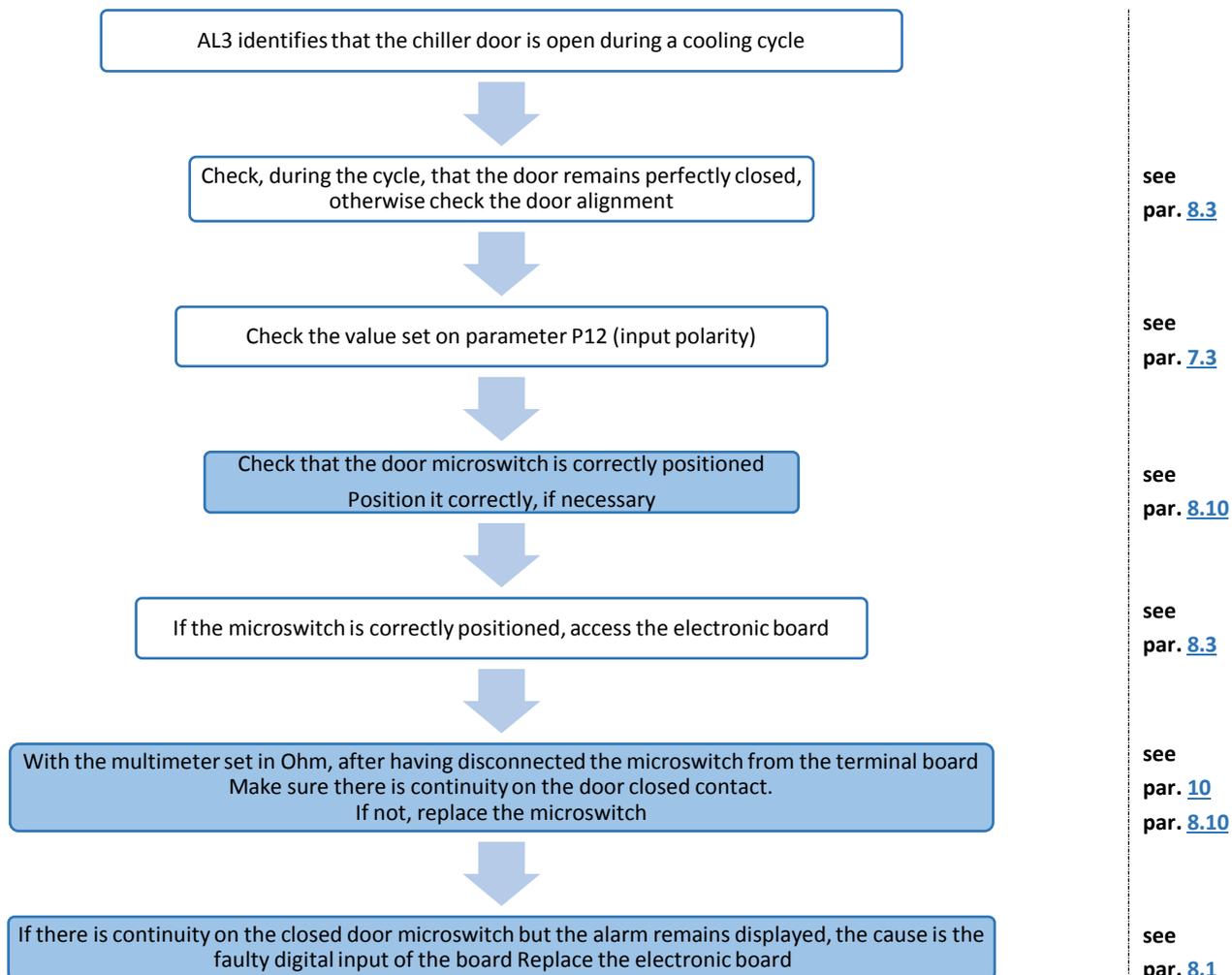
3. Make sure that the compressor stops respecting the time set by parameter P74

see
par. [7.3](#)

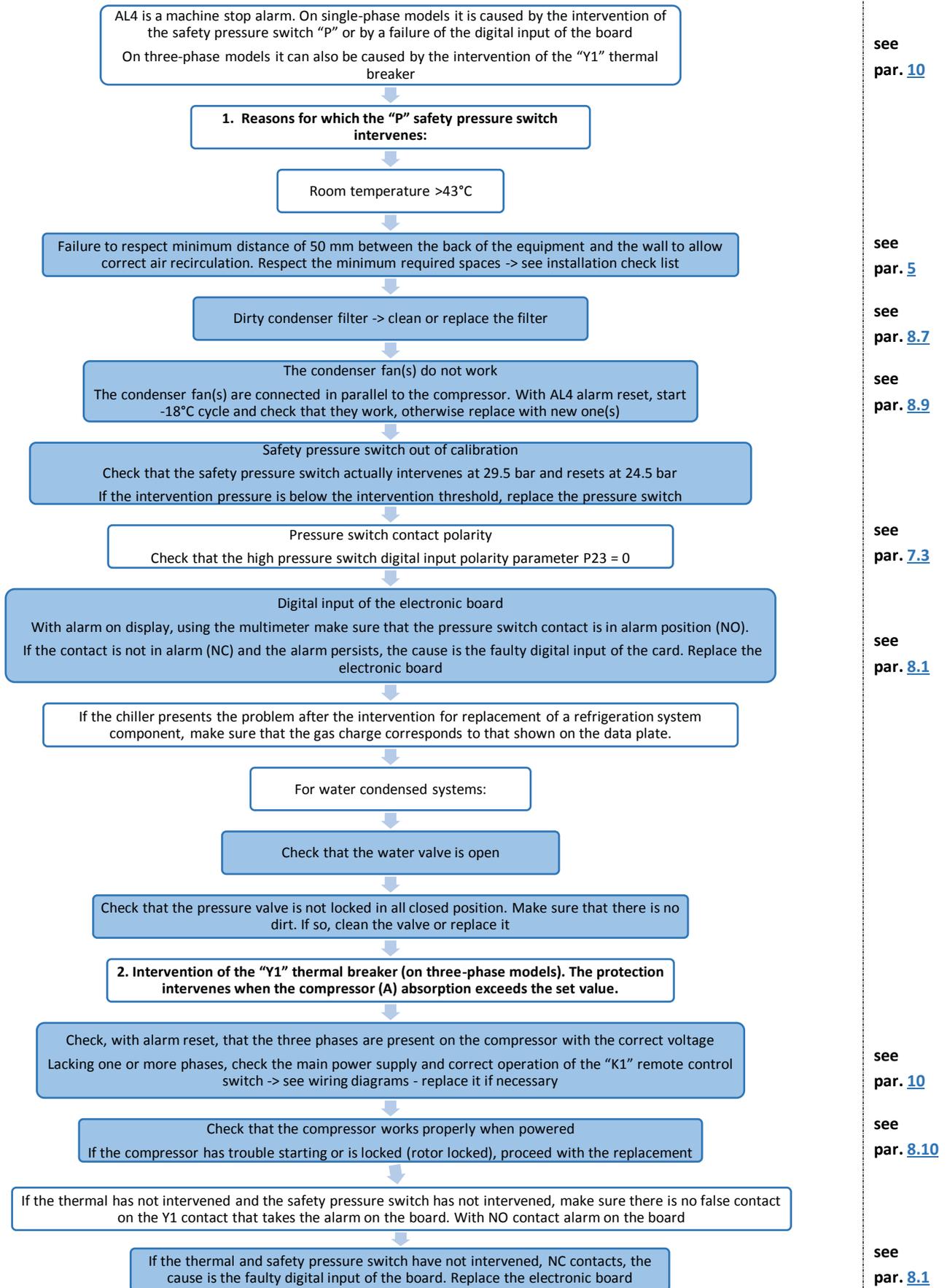
If the compressor continues to work, even with temperature in chamber reached, check if the card relay/"Q1" support relay/"K1" remote control switch is stuck and replace the faulty component.

see
par. [8.1](#)

9.1.3. AL3 - Door open alarm



9.1.4. AL4 - Compressor thermal / pressure switch alarm



9.1.5. AL5 - Cycle in progress timeout alarm

AL5 occurs when, during the cooling cycles with core probe, the cooling phase does not end within the time foreseen by the Setpoint parameter within the operator parameters

see
par. [7.2](#)

1. The cooling times depend on the nature of the product

Thickness, % of water, fat, sugar, type and height of container, product weight and starting temperature determine the cycle time

See user manual chapter on how to correctly load the equipment and which cycle to use

2. Check that the core probe reads the temperature correctly

see
par. [9.1.8](#)

3. Check that the cell probe reads the temperature correctly

see
par. [9.1.7](#)

4. Make sure the equipment cools properly

Start a timed -18°C cycle and check that the chamber temperature reaches -25°C within 20 minutes with chamber empty

If the equipment is slow in cooling →, see "The compressor works but the machine does not cool"

see
par. [9.2.4](#)

9.1.6. AL7 - Black-out/power failure alarm

AL7 occurs when, during a cooling cycle, the power supply is missing
 During a timed cycle, when power is restored, the equipment automatically remembers the cooling phase it was in.
 During a cycle with core probe inserted in the product, on restart, it recognises the probe function and continues to complete the cycle.

1. Check the main power supply

It must respect the tolerance of +/- 10% on the nominal value on the data plate

There must be no power spikes

Frequent blackouts and power spikes during equipment operation can prematurely damage the electrical/electronic components. The warranty is not recognised

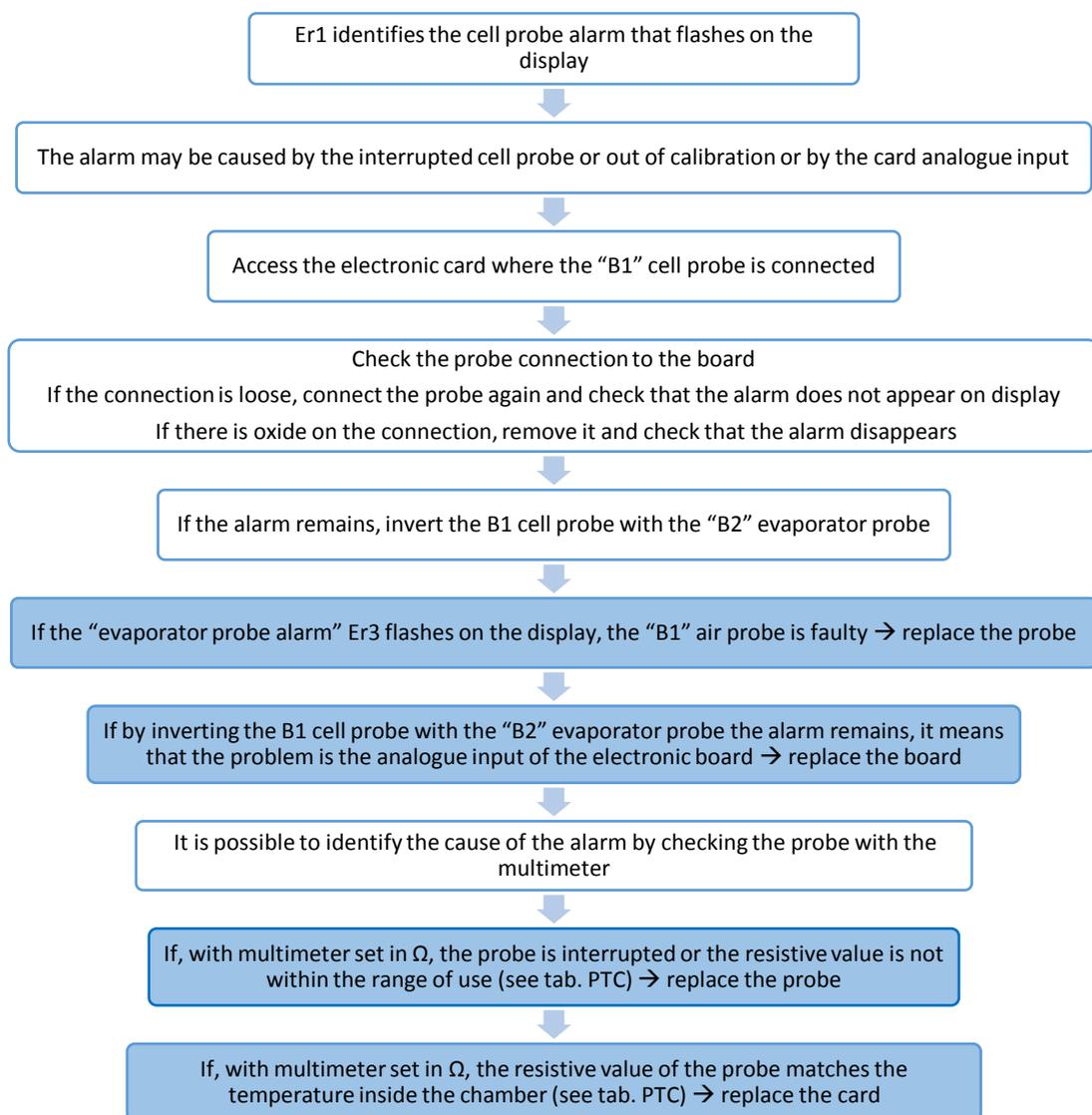
2. Access the electrical system and check all electrical connections of the equipment

Make sure there are no false contacts. If necessary, replace the faulty piece



see
par. [8.1](#)

9.1.7. Er1 - Cell probe alarm



see
par. [8.1](#)

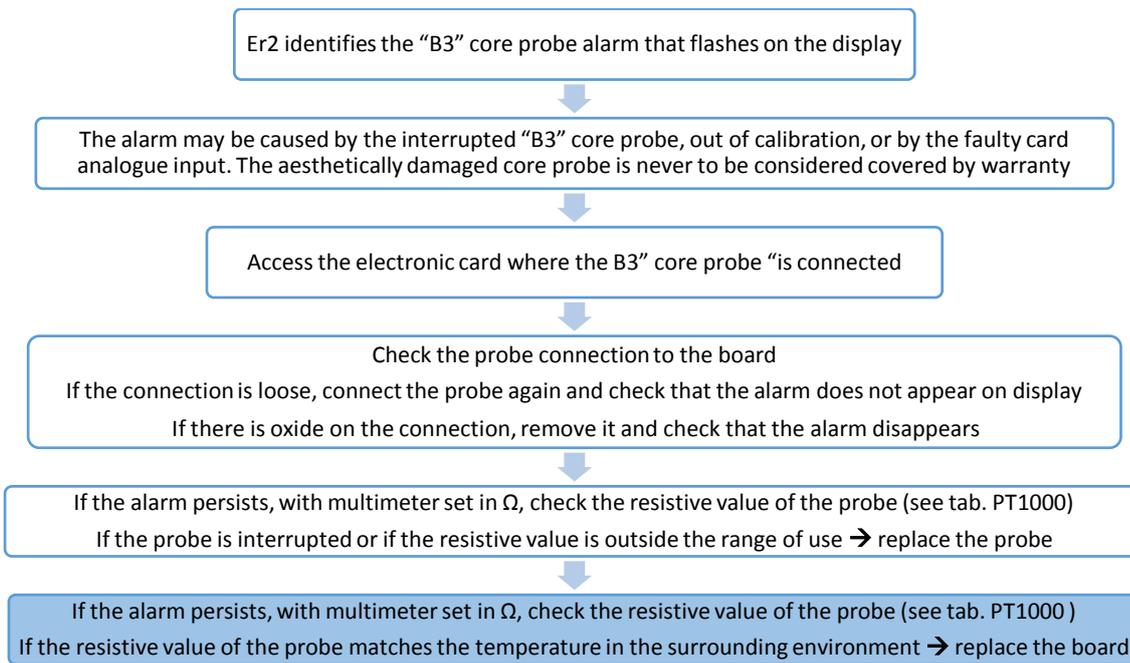
see
par. [8.2.2](#)

see
par. [8.1](#)

see
par. [4.2](#)
par. [8.2.2](#)

see
par. [4.2](#)
par. [8.1](#)

9.1.8. Er2 Core probe alarm

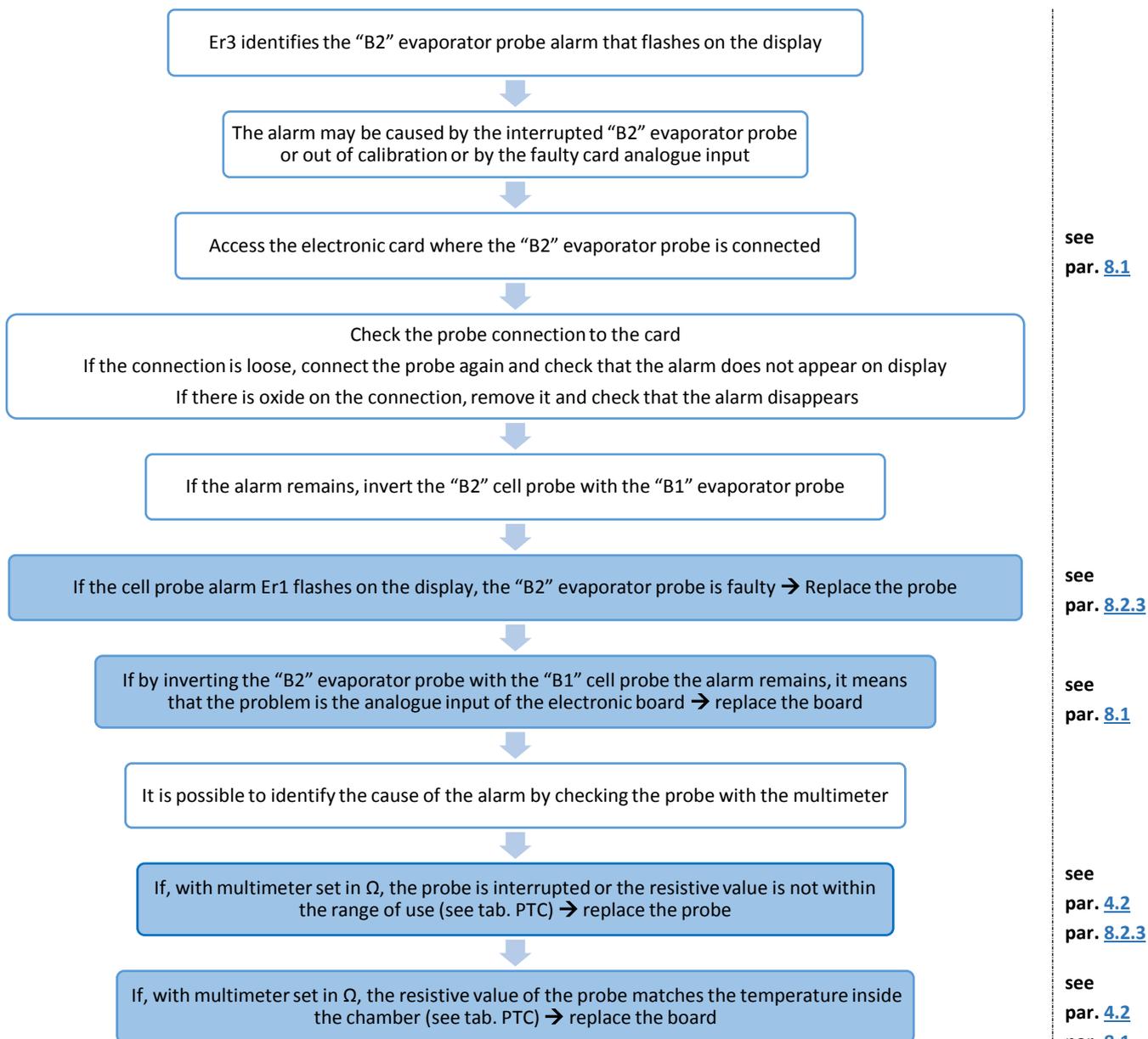


see
par. [8.1](#)

see
par. [4.2](#)
par. [8.2.1](#)

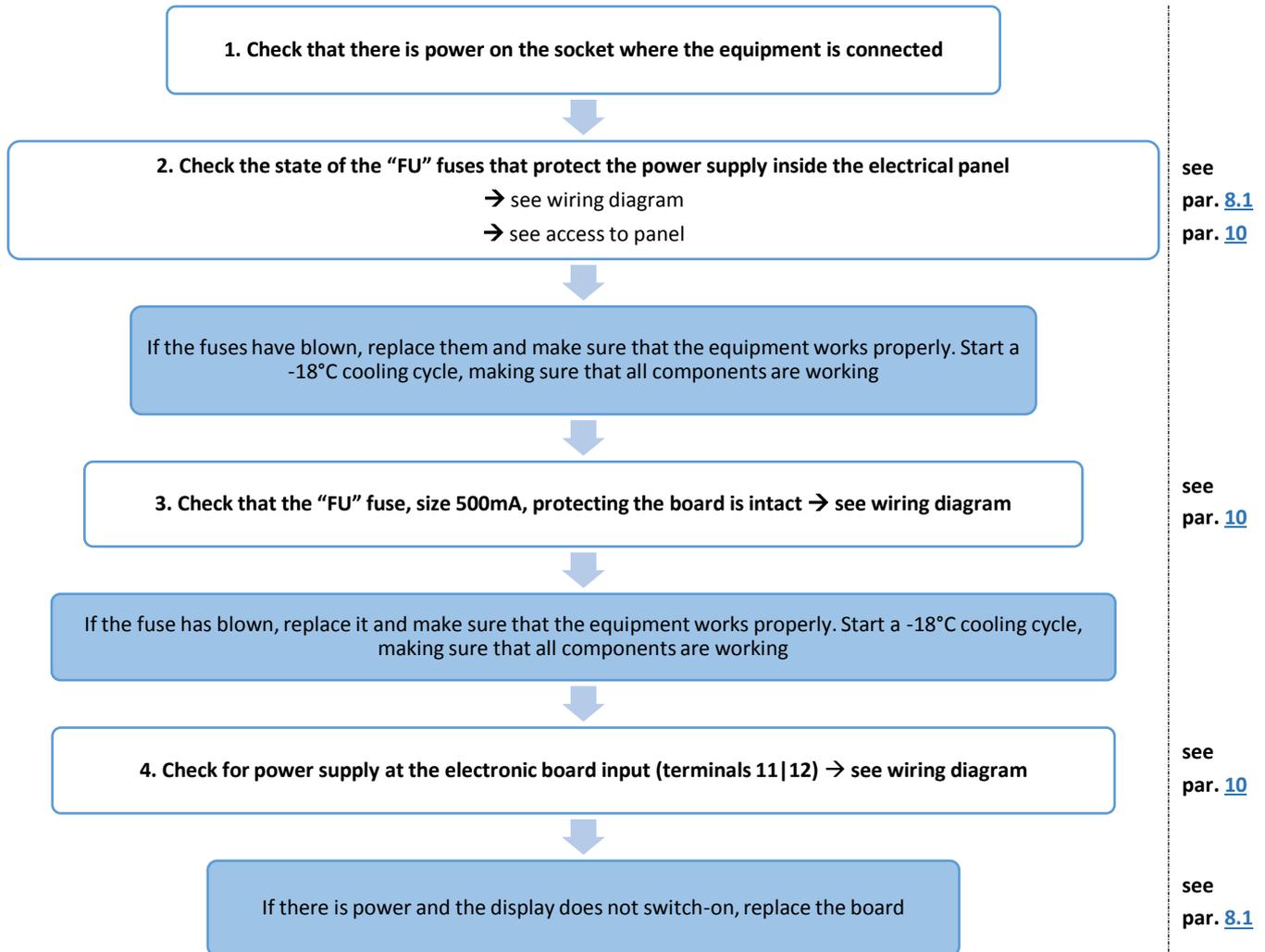
see
par. [4.2](#)
par. [8.1](#)

9.1.9. Er3 - Evaporator probe alarm



9.2. Malfunctions not managed by alarms

9.2.1. The display board does not switch on



9.2.2. The display board is on but the cycles cannot be selected

1. check that by pressing the keys, these work mechanically

If you have trouble pressing the keys, access the electronic card and tighten the nuts to near them to silk-screen printing
Do not excessively tighten because the keys may remain pressed

see
par. [8.1](#)

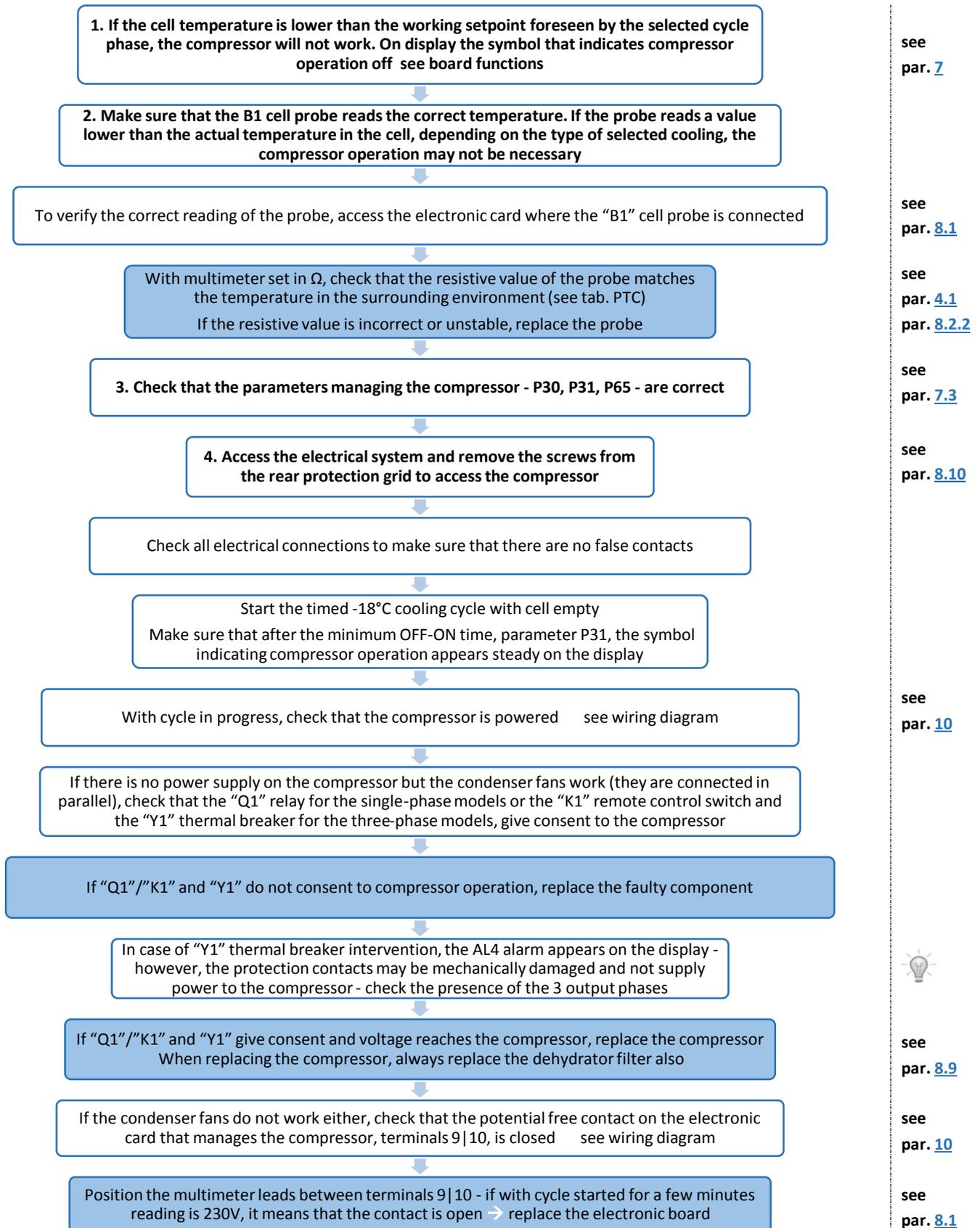
2. Access the electronic board and check for oxide

Carefully remove the oxide from the board connections/tracks with specific product
and check that the card works

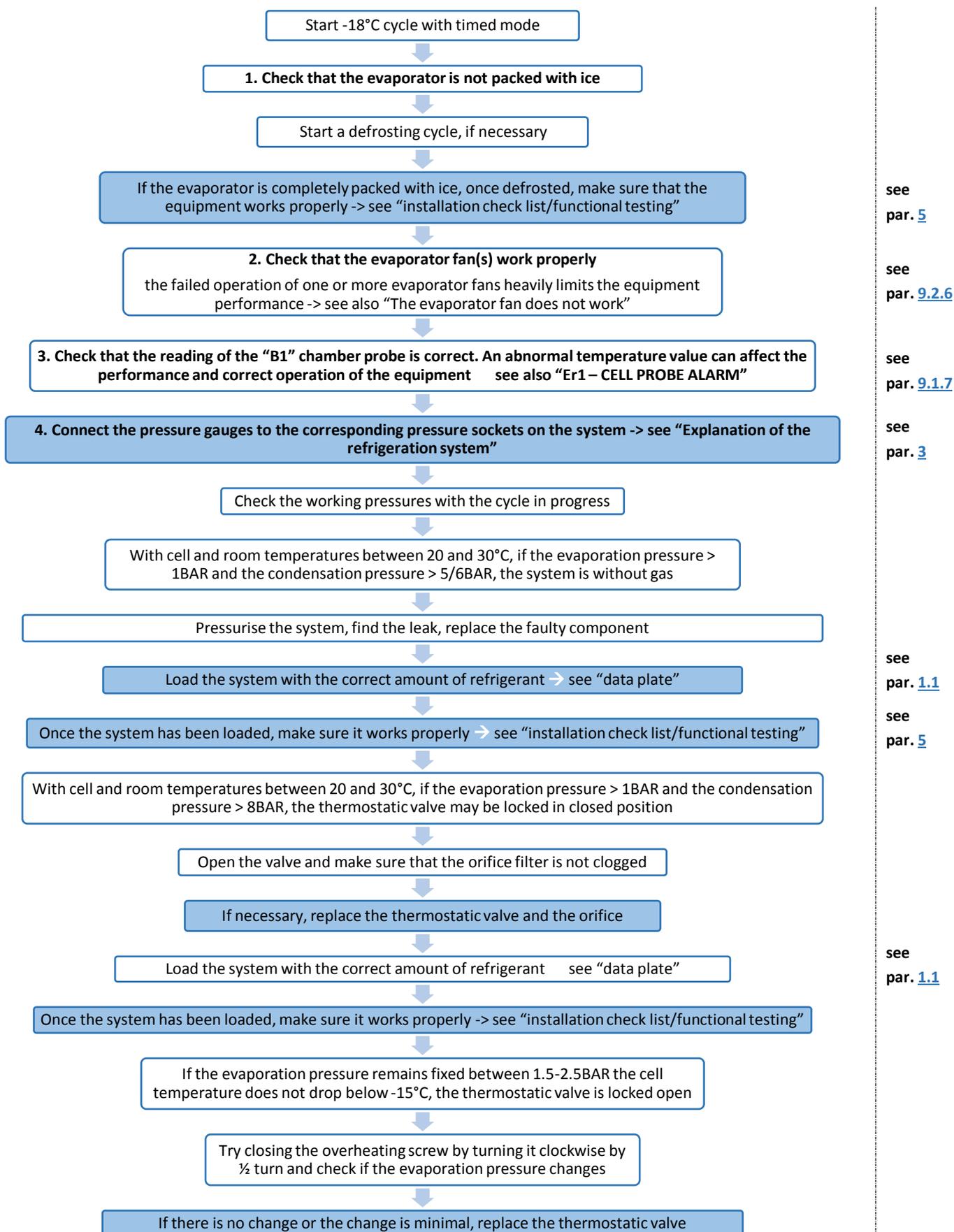
If the cycles cannot be selected yet, replace the board

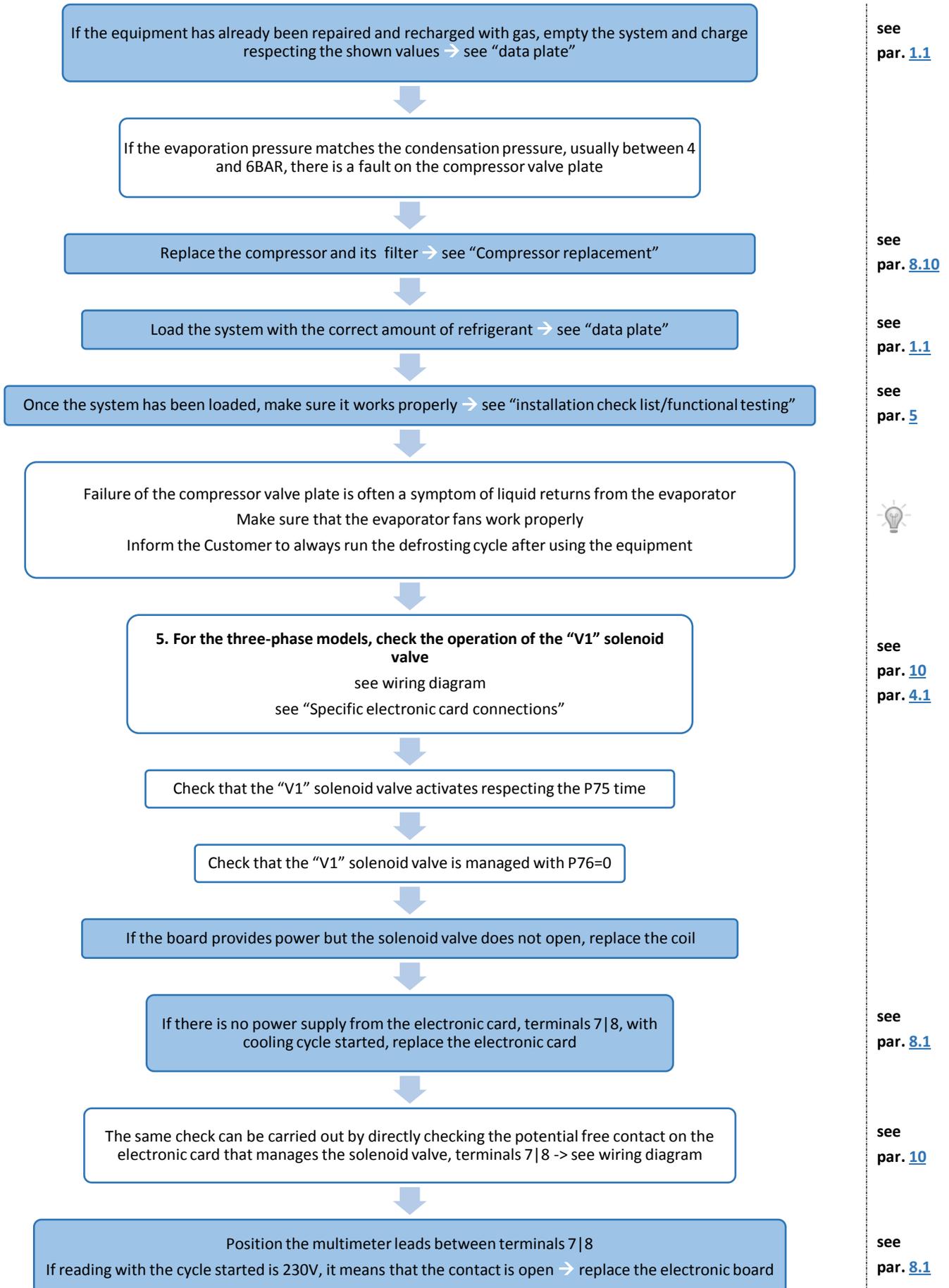
see
par. [8.1](#)

9.2.3. The compressor does not work during the cooling cycle

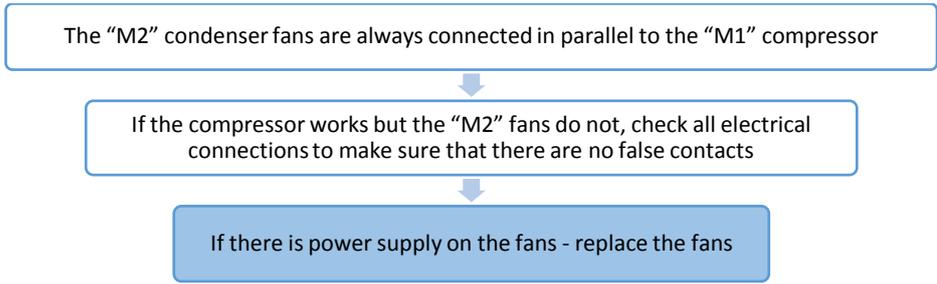


9.2.4. The compressor works but the machine does not cool





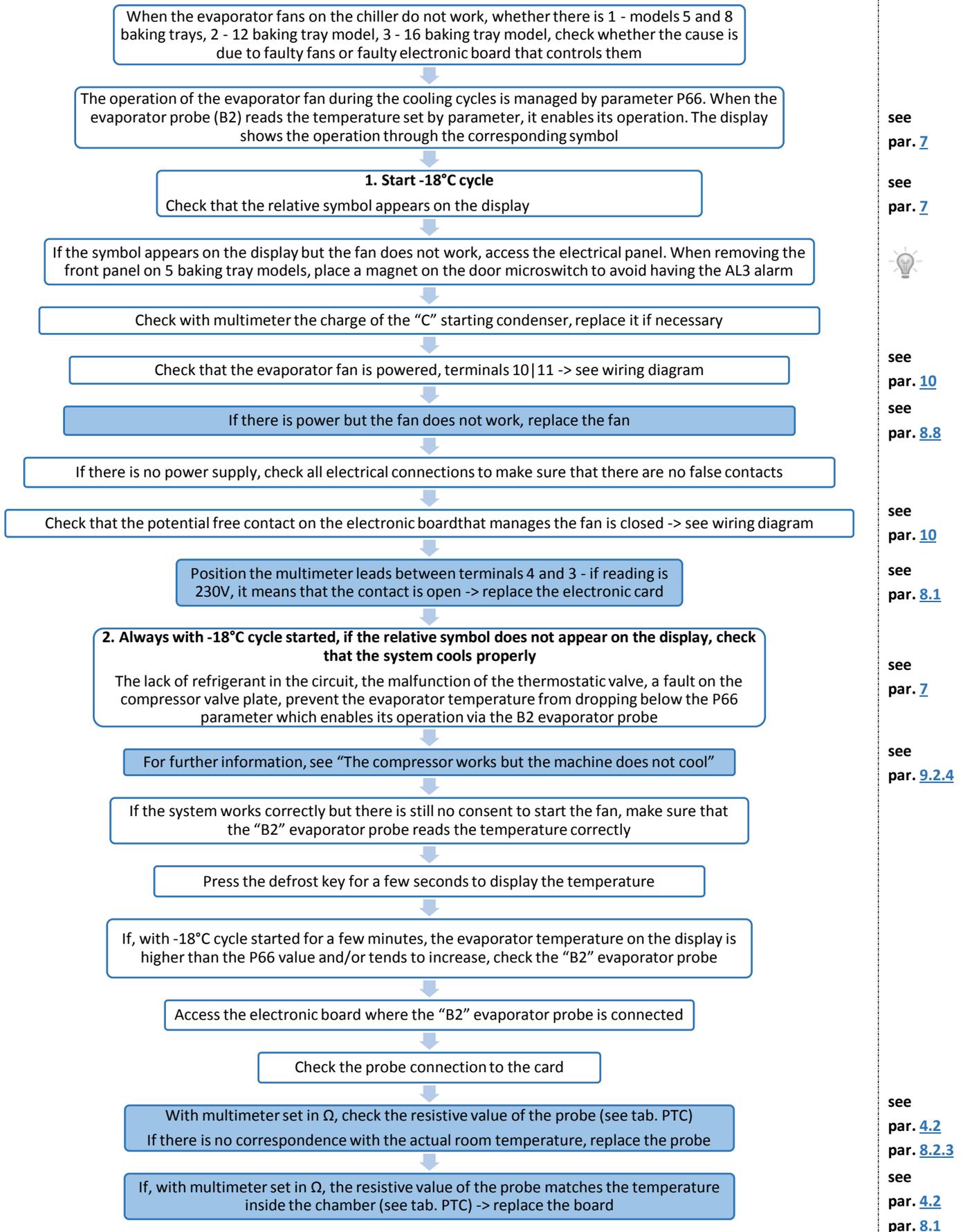
9.2.5. The condenser fan does not work



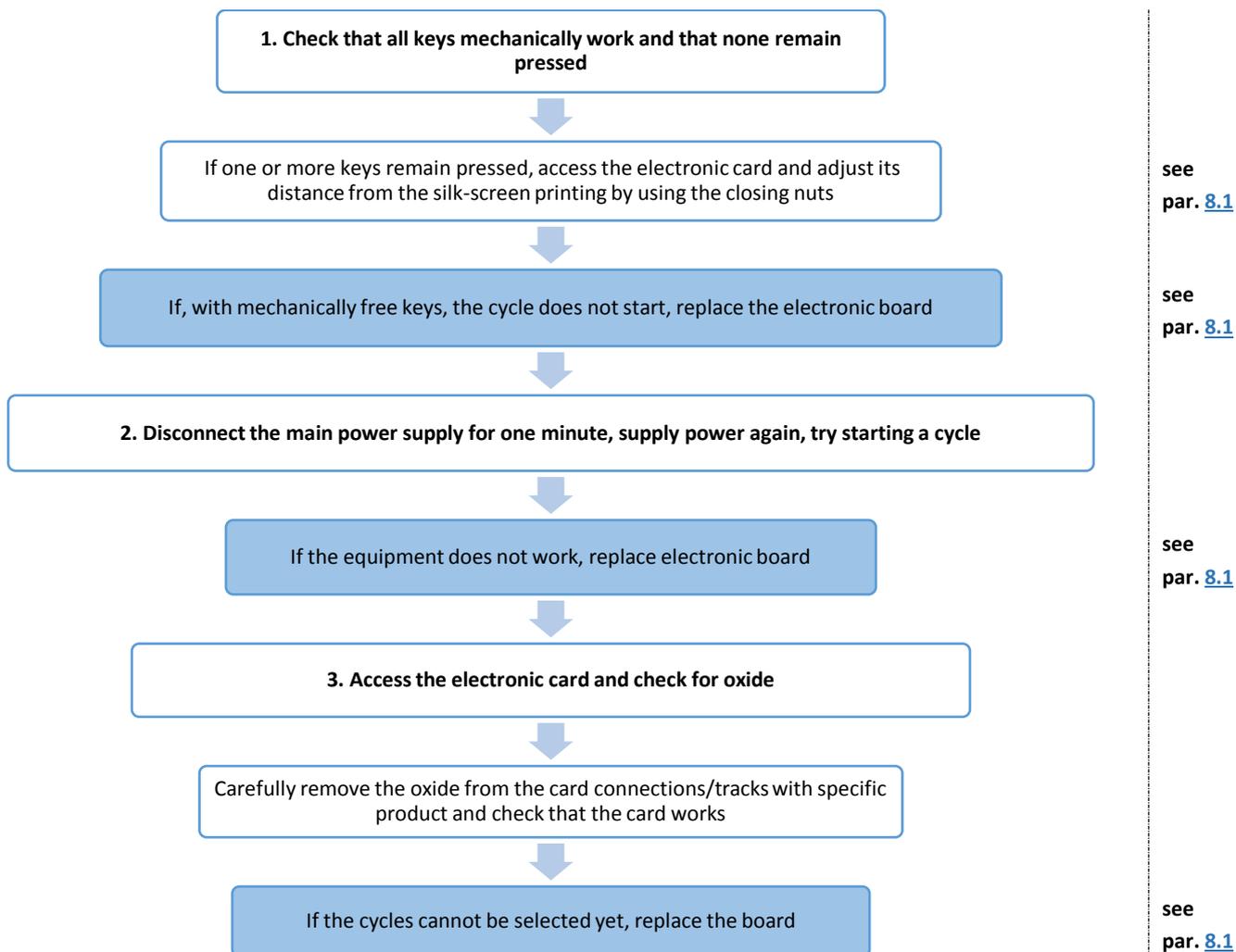
see
par. [10](#)

see
par. [8.9](#)

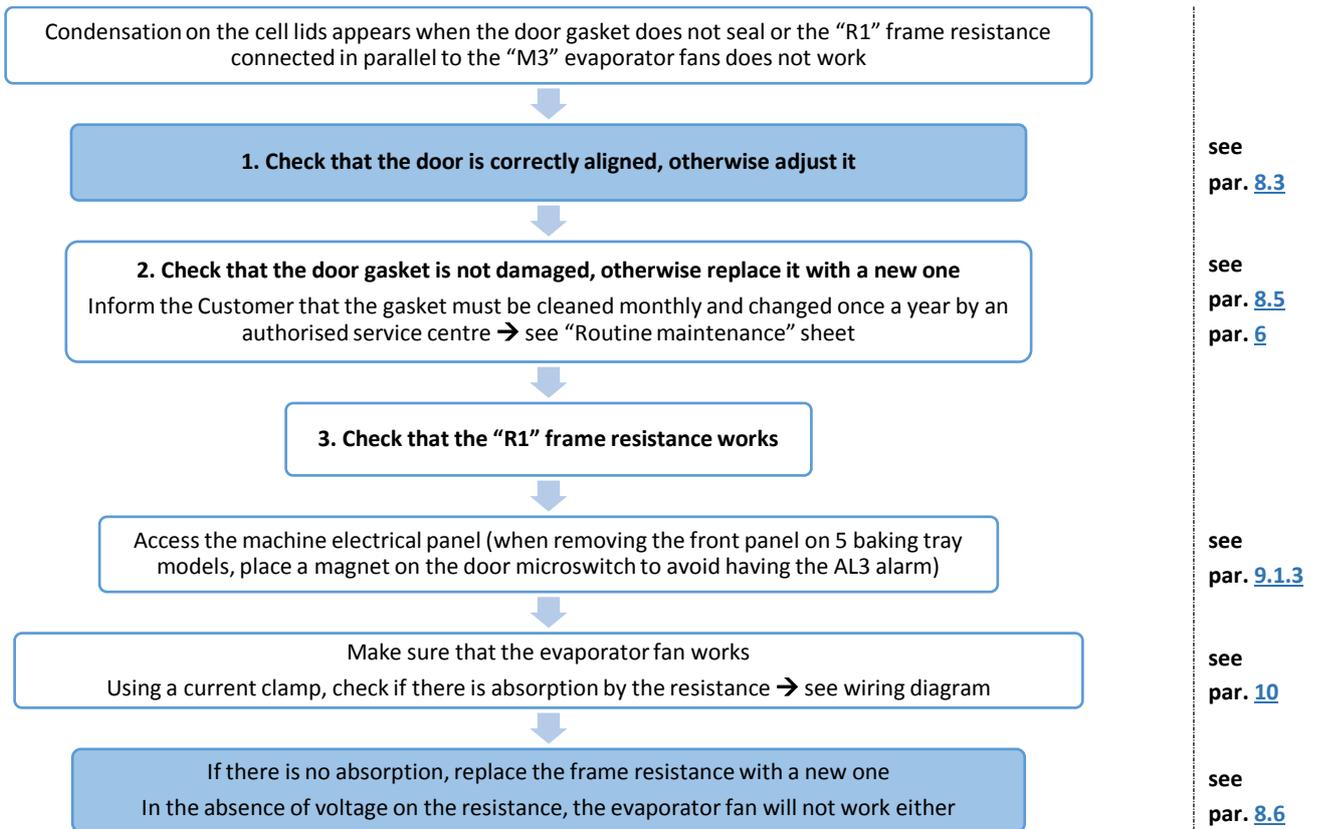
9.2.6. The evaporator fan does not work



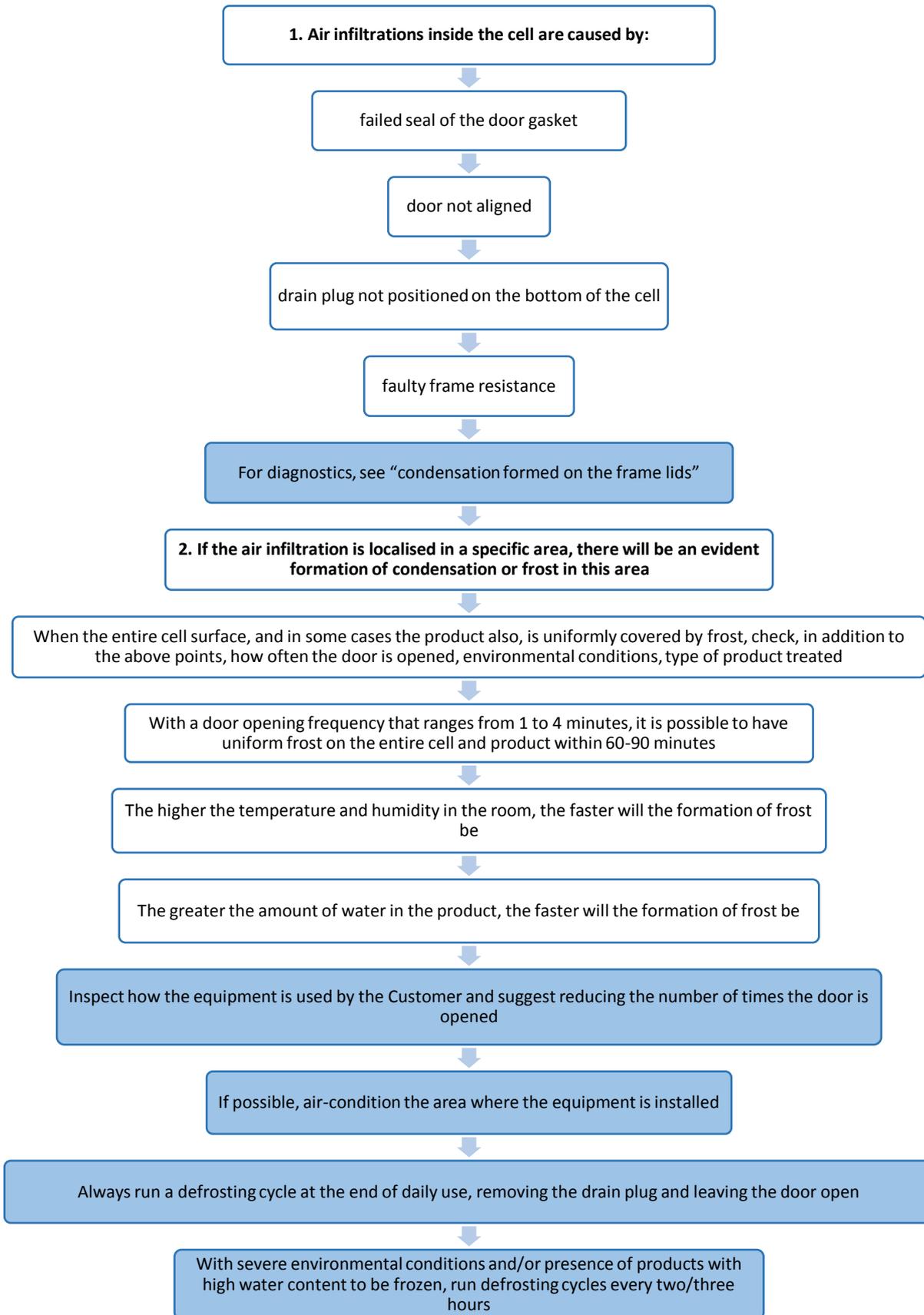
9.2.7. Cycle selected but the equipment does not work



9.2.8. Condensation formed on the frame lids



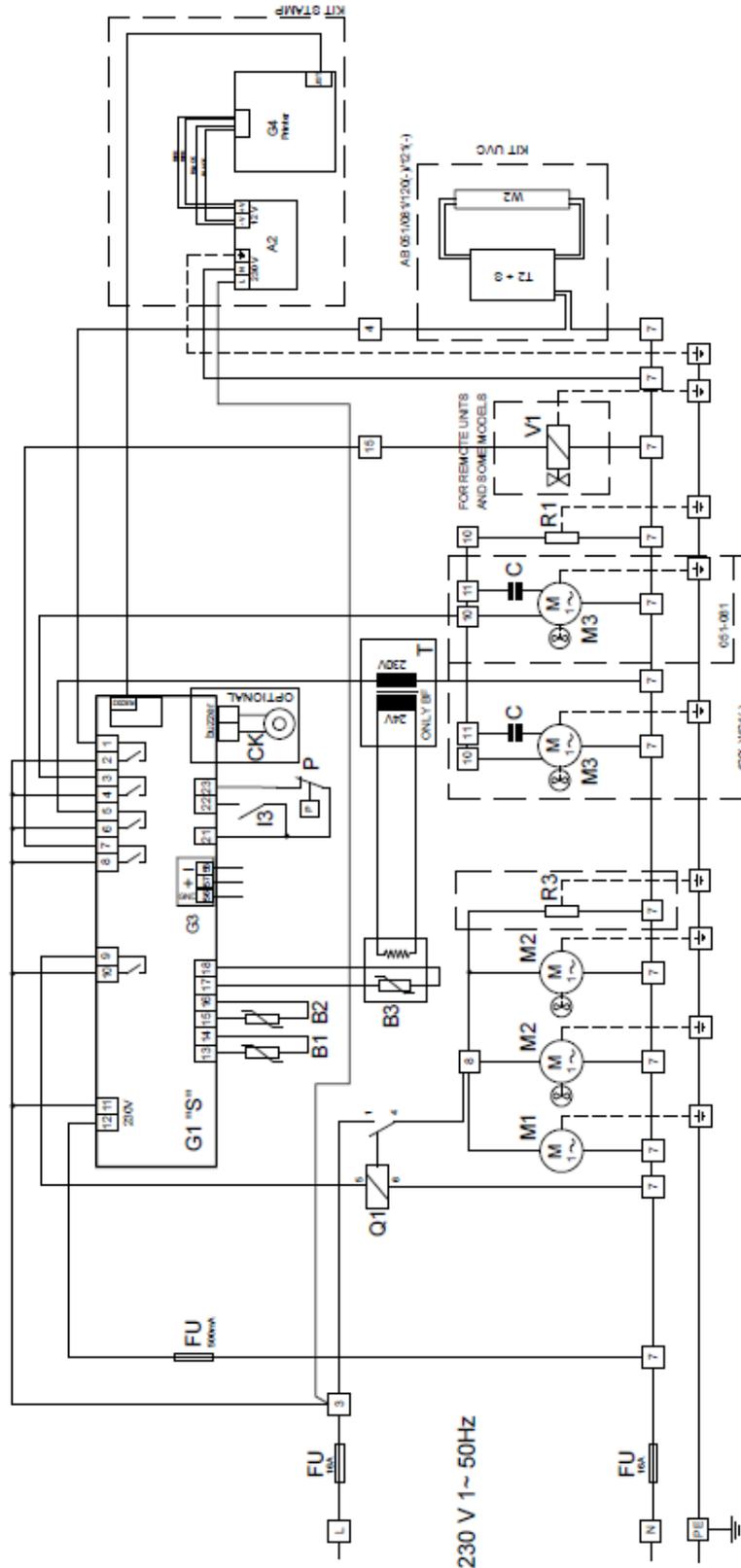
9.2.9. Infiltration of air inside cell and frost present on the product



see
par. [9.2.8](#)

10. WIRING DIAGRAMS

__C/__F 031-051-081 AG • GF 06-12-15 AG
__C/__F 121-120 DG • _RC/_RF 121-120 DG
 230/1~/50 Hz

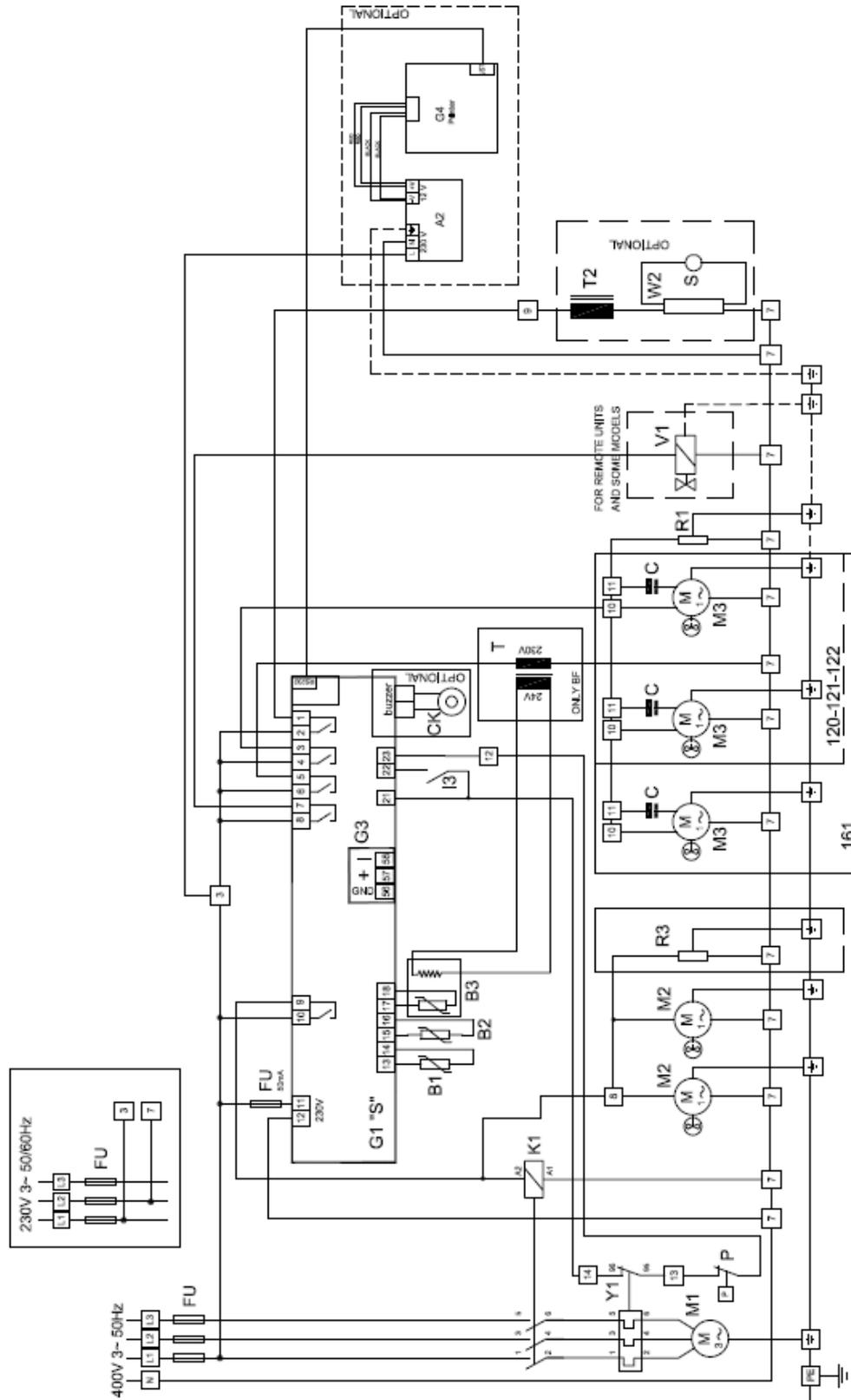


VI:
 Solenoide montato di serie su predisposti e su alcuni modelli motorizzati
 Solenoids that are installed standard on pre-set and some motorised models.
 Bei dafür vorbereiteten und einigen motorisierten Modellen serienmäßig installierte Zylinderspule
 Solenoide de série sur modèles préinstallés et sur certains modèles motorisés
 Solenoide montado de serie en los modelos preparados y en algunos modelos motorizados

711.817.2

__C/__F 120-121 AG • __RC/__RF 120-121 AG
__C/__F 122 DG • __RC/__RF 122 DG
__C/__F 161 AG - DG • GF 21 AG

400/3~/50 Hz



V1: Solenoide montato di serie su predisposti e su alcuni modelli motorizzati
 Solenoids that are installed standard on pre-set and some motorised models.
 Bei dafür vorbereiteten und einigen motorisierten Modellen serienmäßig installierte Zylinderpumpe
 Solenoïde de série sur modèles préinstallés et sur certains modèles motorisés
 Solenoide montado de serie en los modelos preparados y en algunos modelos motorizados

711.823.2

Key

	IT	EN	DE	FR	ES
A	Alimentatore	Power supply unit	Netzteil	Alimentateur	Alimentador
A1	Alimentatore lampeggiante	Lamp power supply unit	Lampennetzteil	Alimentateur clignotant	Alimentador intermitente
A2	Alimentatore stampante	Printer power supply unit	Druckernetzteil	Alimentateur imprimante	Alimentador impresora
B	Sonda	Probe	Sonde	Sonde	Sonda
B1	Sonda temperatura	Temperature probe	Temperaturfühler	Sonde de température	Sonda temperatura
B2	Sonda sbrinamento	Defrosting probe	Abtausonde	Sonde de dégivrage	Sonda descongelación
B3	Sonda al cuore	Core probe	Kühlgutsonde	Sonde à coeur	Sonda al corazón
B4	Sonda condensatore	Condenser probe	Verflüssigersonde	Sonde du condensateur	Sonda condensador
B5	Sonda sottovuoto	Vacuum probe	Vakuumsfühler	Sonde sous vide	Sonda al vacío
B6	Sonda umidità	Humidity probe	Feuchtefühler	Sonde d'humidité	Sonda humedad
C	Condensatore elettrico	Electric condenser	Elektrischer Kondensator	Condensateur électrique	Condensador eléctrico
CK	Buzzer	Buzzer	Buzzer	Buzzer	Zumbador
D	Variatore di tensione	Voltage variator	Spannungsregler	Variateur de tension	Variador de tensión
E	Termostato	Thermostat	Temperaturregler	Thermostat	Termóstato
E1	Termostato di sicurezza	Safety thermostat	Sicherheitsthermostat	Thermostat de sécurité	Termóstato de seguridad
E2	Termostato controllo	Control thermostat	Kontrollthermostat	Thermostat de contrôle	Termóstato de control
FU	Fusibile	Fuse	Sicherung	Fusible	Fusible
G	Teletermostato	Thermostat	Fernthermostat	Telethermostat	Teletermóstato
G1	Scheda potenza	Power card	Leistungskarte	Carte de puissance	Tarjetas de potencia
G2	Scheda comando	Command card	Steuerkarte	Carte de commande	Tarjeta de control
G3	Scheda ausiliaria	Auxiliary card	Hilfskarte	Carte auxiliaire	Tarjeta auxiliar
G4	Stampante + IF RICS	Printer + IF RICS	Drucker + IF RICS	Imprimante + IF RICS	Impresora + IF RICS
G5	Regolatore ventole	Fan control	Lüfter regler	Régulateur ventilateurs	Regulador ventiladores
G6	Encoder	Encoder	Kodierer	Encodeur	Codificador
H	Spia	Indicator light	Kontrollleuchte	Voyant	Indicador luminoso
H1	Spia tensione	Power indicator light	Spannungsanzeige	Voyant tension	Indicador luminoso tensión
H2	Spia allarme	Alarm indicator light	Alarmanzeige	Voyant alarme	Indicador luminoso alarma
H3	Spia sbrinamento	Defrosting indicator light	Abtauanzeige	Voyant dégivrage	Indicador luminoso descongelación
H4	Spia ciclo	Cycle indicator light	Kreislaufanzeige	Voyant cycle	Indicador luminoso ciclo
IG	Interruttore generale	Main switch	Hauptschalter	Interrupteur général	Interruptor general
I1	Interruttore	Switch	Schalter	Interrupteur	Interruptor
I2	Deviatore	Switch	Wechselschalter	Déviateur	Desviador
I3	Micro porta	Door microswitch	Tür-Mikroschalter	Microcontact porte	Microinterruptor puerta
I4	Galleggiante	Float	Schwimmer	Flotteur	Flotador
I5	Selettore	Selector	Wahlschalter	Sélecteur	Selector
K1	Contattore compressore	Compressor contactor	Kompressorschütz	Contacteur compresseur	Contactor compresor
K2	Contattore condensatore	Condenser contactor	Kondensatorschütz	Contacteur condensateur	Contactor condensador
K3	Contattore evaporatore	Evaporator contactor	Verdampferschütz	Contacteur évaporateur	Contactor evaporador
K4	Contattore UVC	UVC contactor	UVC Schalter	Contacteur UVC	Contactor UVC
K5	Contattore sbrinamento	Defrosting contactor	Schalter abtau	Contacteur dégivrage	Contactor descongelación
K6	Contatto ritardato	Delayed contact	Verzögerter kontakt	Contact retardé	Contacto retardado
K8	Contattore riscaldamento	Room heating contactor	Raumheizung Schalter	Contacteur chauffage	Contactor calentamiento
L	Linea	Line	Wechselstromleitung	Ligne	Línea
L1	Linea 1 trifase	3-phase line #1	Drehstromleitung 1	Ligne 1 triphasée	Línea 1 trifásica
L2	Linea 2 trifase	3-phase line #2	Drehstromleitung 2	Ligne 2 triphasée	Línea 2 trifásica
L3	Linea 3 trifase	3-phase line #3	Drehstromleitung 3	Ligne 3 triphasée	Línea 3 trifásica
M	Motore elettrico	Electric motor	Elektromotor	Moteur électrique	Motor eléctrico
M1	Motocompressore	Compressor	Kompressor	Motocompresseur	Motocompresor
M2	Motoventilatore condensatore	Condenser fan	Verflüssigerventilator	Motoventilateur condensateur	Motoventilador condensador
M3	Motoventilatore evaporatore	Evaporator fan	Verdampferventilator	Motoventilateur évaporateur	Motoventilador evaporador

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M4	Motoventilatore supplementare	Additional motorised fan	Hilfsventilator	Motoventilateur complémentaire	Motoventilador suplementario
M5	Attuatore lineare	Linear actuator	Linearantrieb	Actionneur linéaire	Actuador lineal
M6	Motoventilatore riscaldamento e deumidificazione	Heating and dehumidification fan	Heiz- und Entfeuchtungs-luefter	Motoventilateur chauffage et déshumidification	Motoventilador calentamiento y deshumidificación
N	Neutro	Neutral	Mittelleiter	Neutre	Neutro
O	Timer	Timer	Timer	Timer	Temporizador
P	Pressostato	Pressure switch	Druckwächter	Pressostat	Presóstato
PE	Punto terra	Earth point	Potentialausgleichspunkt	Point de mise à la terre	Punto tierra
P1	Trasduttore di pressione	Pressure transducer	Druckgeber	Transducteur de pression	Transductor de presión
P2	Pressostato differenz. ritardato	Pressure transducer	Druckgeber	Pressostat différentiel retardé	Presostato diferencial retardado
Q	Relè	Relay	Relais	Relais	Relé
Q1	Relè di potenza	Power relay	Leistungsrelais	Relais de puissance	Relé de potencia
Q2	Relè doppio scambio	Relay with 2 contacts	Relais mit 2 Umschaltern	Relais à 2 contacts	Relé doble intercambio
Q3	Relè protettore termico compressore	Thermal protection relay for compressor	Kompressor Wärmeschutzrelais	Relais protecteur thermique compresseur	Relé protector térmico compresor
Q4	Relè alimentazione acqua	Water supply relay	Wasser versorgung Relais	Relais alimentation eau	Relé alimentación agua
Q5	Relè alimentazione detergente	Detergent supply relay	Reinigungsmittelversorgungs-Relais	Relais alimentation détergent	Relé alimentación detergente
Q6	Relè pompa detergente	Detergent pump relay	Reinigungsmittelpumpe-Relais	Relais pompe détergent	Relé bomba detergente
Q7	Relè valvola drenaggio	Drain valve relay	Abflußventil-Relais	Relais vanne de drainage	Relé válvula drenaje
Q8	Relè riscaldamento	Heating relay	Heizungsrelais	Relais chauffage	Relé calentamiento
Q9	Relè sistema scarico	Drain safety relay	Abfluß-System-Relais	Relais système de vidange	Relé sistema descarga
R	Resistenza	Resistance	Widerstand	Résistance	Resistencia
R1	Resistenza cornici	Frames resistance	Heizwiderstand Türrahmen	Résistance cadres	Resistencia marcos
R2	Resistenza sbrinamento	Defrosting resistance	Abtau-Widerstand	Résistance dégivrage	Resistencia descongelación
R3	Resistenza evaporazione	Evaporation resistance	Verdampfung-Widerstand	Résistance évaporation	Resistencia evaporación
R4	Resistenza riscaldamento	Heating resistance	Heizwiderstand	Résistance chauffage	Resistencia calentamiento
R5	Resistenza carter	Guard resistance	Heizwiderstand Gehäuse	Résistance carter	Resistencia resguardo
R6	Resistenza scarico	Discharge resistance	Auslasswiderstand	Résistance vidange	Resistencia descarga
R7	Resistenza valvola bilanciamento pressione	Pressure balancing valve resistance	Druckausgleichsventil-Heizung	Résistance vanne d'équilibre de la pression	Resistencia válvula equilibrio presión
R8	Resistenza porte vetro (nel vetro)	Frame heating glass doors (on the glass)	Glasstürheizung (auf dem Glas)	Résistance porte vitrée (sur la porte vitrée)	Resistencia puertas vidrio (vidriera)
R9	Resistenza perimetrale porte vetro	Perimetrical heater for glass doors	Perimeter-Heizung Glastüre	Résistance périmétrale portes vitrées	Resistencia perimetral puertas vidrio
R10	Resistenza umidificazione	Humidify heating element	Befeuchter Widerstand	Résistance humidification	Resistencia humidificación
S	Starter	Starter	Starter	Starter	Starter
T	Trasformatore	Transformer	Transformator	Transformateur	Transformador
T1	Autotrasformatore	Automatic transformer	Spartransformator	Autotransformateur	Autotransformador
T2	Reattore	Ballast	Vorschaltgerät	Réacteur	Reactor
U	Termometro	Thermometer	Thermometer	Thermomètre	Termómetro
V1	Valvola solenoide	Solenoid-valve	Solenoidventil	Vanne solénoïde	Válvula solenoide
V2	Elettrovalvola acqua	Water solenoid-valve	Wasser Elektroventil	Electrovanne eau	Electroválvula agua
V3	Valvola solenoide gas caldo	Solenoid-valve warm gas	Warmes des ventil solenoïdes	Vanne solénoïde gaz chaud	Válvula solenoide gas caliente
W	Lampada	Lamp	Lampe	Lampe	Lámpara
W1	Lampada neon	Neon lamp	Neonleuchte	Lampe au néon	Lámpara neón
W2	Lampada UVC	UVC lamp	UVC-Lampe	Lampe UVC	Lámpara UVC
X	Morsetto	Terminal	Klemme	Borne	Borne
X1	Morsettiera	Terminal board	Klembrett	Bornier	Regleta de bornes
Y1	Magnetotermico compressore	Compressor thermal-breaker	Thermomagnetschalter Kompressor	Magnétothermique compresseur	Interruptor magnetotérmico compresor
Y2	Magnetotermico condensatore	Condenser thermal-breaker	Thermomagnetschalter Kondensator	Magnétothermique condensateur	Interruptor magnetotérmico condensador
Y3	Magnetotermico evaporatore	Evaporator thermal-breaker	Thermomagnetschalter Verdampfer	Magnétothermique évaporateur	Interruptor magnet. evaporador
Y5	Magnetotermico sbrinamento	Defrosting thermal-breaker	Thermomagnetschalter abtau	Magnétothermique dégivrage	Interruptor magn. descongelación
Z	Filtro antisturbo	Noise prevention filter	Störschutzfilter	Filter anti-perturbations	Filtro antiinterferencia

11. SERVICE CONTACTS

For any technical request on our products, contact the FRIULINOX Technical Support on +39 0434 635423 or the Back Office on +39 0434 429086, or via e-mail to service@friulinox.com.

Quotes and spare parts orders can be made directly through the website www.friulinox.com, via e-mail to parts.cr@aligroup.it or by calling +39 0438 911020.

Personnel is available from Monday to Friday from 8:30 to 12:30 and from 13:30 to 17:30.

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