

ICE-CREAM CABINET

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DEAR CUSTOMER

for the safety of the operator the cabinet devices should be kept in efficient working order. This manual illustrates the cabinet use and maintenance to be carefully followed by the operator.

DENOMINATION

ICE-CREAM CABINET

MODEL

SACHER

CONSTRUCTION YEAR

MANUFACTURING NUMBER

GUARANTEE Rules and regulations

Warranty validity is attested by the fiscal invoice and by the label on enclosed ticket showing both bar and alphanumeric codes. Customers should keep all these which have to be cited or shown when warranty service is required.

Warranty lasts threeyears, beginning from the date of display cabinet leaving **CLABOGROUP** factory, and provides for repair and free replacement of defective parts in display cabinets with cooling system, the compressor having been tested by **CLABOGROUP** S.p.a.

Warranty provides for electric, electronic, mechanical and refrigerant componenty.

Three years warranty is not applied to glasses, lamps, coverings, finishes and similars which have a one-year warranty, beginning from the date of display cabinet leaving the factory.

Three-years warranty is valid only for those display cabinets which have been set up in Italy.

One-year warranty validity is applied also to display cabinets unprovided with cooling system.

Warranty doesn't provide for damages produced by third-party transport, by wrong installation and maintenance, by carelessness in use, by tampering.

Warranty-provided service assistance is available on written application to **CLABOGROUP** Sales Management or to zone agent.

Clabogroup S.p.a. will unobjectionably decide to repair or to replace some components instead of the whole display cabinet.

CLABOGROUP S.p.a. will not take any further responsibilities and also for direct or indirect damages.

Possible complete replacement of a display cabinet does not protract or renew the warranty term.

During warranty being validity, shipping charges and transport risks for all damaged and thus replaced componenty and for replaced display cabinet are to be paid by customer.

Damaged and replaced componenty must be returned to **CLABOGROUP** S.p.a.

1 TECHNICAL SPECIFICATIONS

1.1 DESCRIPTION OF DISPLAY CABINET

The display cabinet consists of two sections:

- 1) Refrigeration system section
- 2) Support structure section

The refrigeration system consists of a condenser motor and an evaporator system.

The motor condenser comprises the compressor and the condenser whilst the evaporating system comprises the evaporator and the different fans that maintain the products in the display cabinet at the required temperature.

The supporting structure consists of three parts.

- a) A lower part that acts as a support base. This consists of a steel structure that contains the refrigeration units.
- b) The display cabinet is fitted on top. This consists of a painted steel cabinet that is insulated by expanded polyurethane foam and contains the refrigerating evaporators, the fans for circulating the cold air and the ice cream tubs (arranged in two rows);
- c) The window is fitted above the ice cream tubs and consists of two side pieces in tempered silk screen printed glass and a curved panel of tempered glass. This is opens at the back by means of sliding clear methacrylate doors.

All glass surfaces are fitted with anti-condensation resistances.

1.2 APPLIED STANDARDS

This display cabinet agrees with the laws: CEI 110 - 1 (EN 55014) Limits and measure methods of the machine noises characteristics of electric appliances, portable tools and similar electrical gears.

IEC 801 - 2 Electrostatic discharge

IEC 801 - 4 Electrical fast transient/Burst requirements

IEC 801 - 5 Surge immunity requirements

IEC 1000 - 4 - 11 Voltage dips and interruptions

and it is in conformity with the law 89/336 CEE, concerning the electromagnetic compatibility.

1.3 WORKING PLACEMENTS

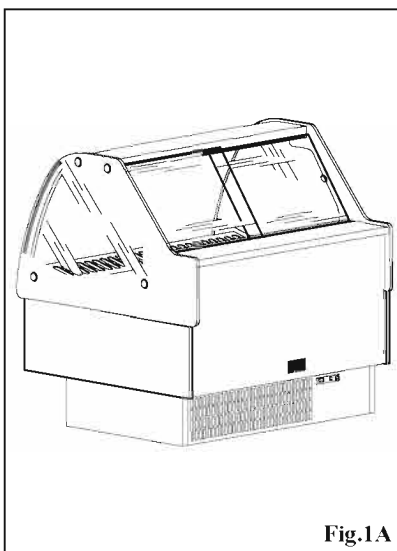
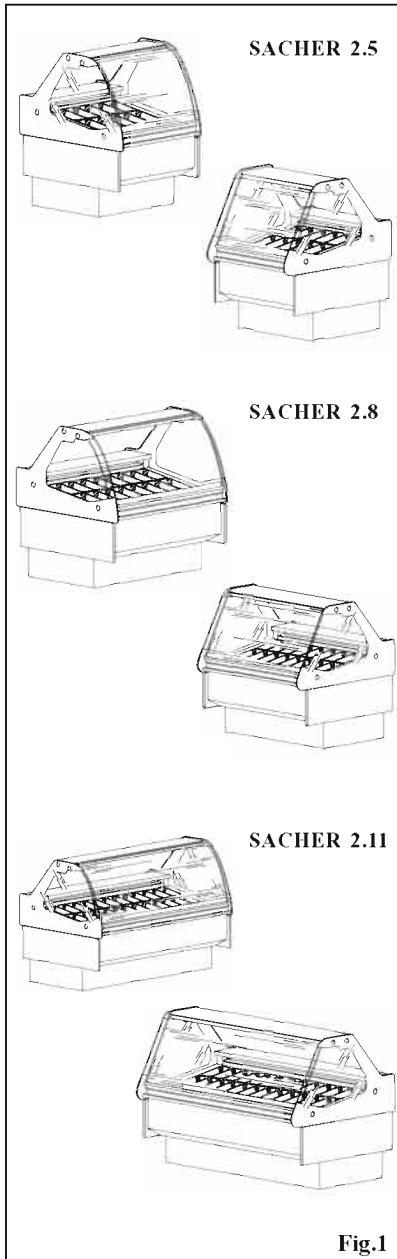
The working area is placed on the back of the display cabinet itself, where there is the apposite admittance to the ice cream pieces.

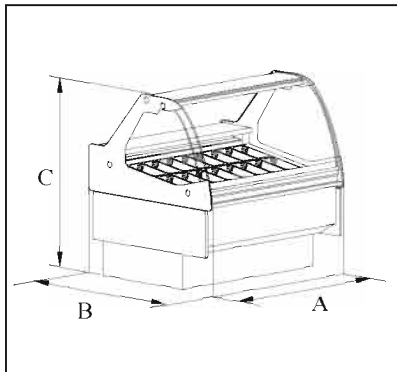
1.4 ACCESSORIES

The fittings of the machine are:

- Built in water condensate cooling Unity;
- Outward cooling Unity.

1.5 MODELS (fig.1)





(mm)	A	B	C	Kg.
SACHER 2.5	1024	975	1305	195
SACHER 2.8	1524	975	1305	280
SACHER 2.11	2024	975	1305	310

Fig.2

1.6 IDENTIFICATION (fig.1A)

For any communication with the producing factory or with technical assistance service centres please always mention the MACHINE REGISTERING NUMBER (Fig.1A)

1.7 OVERALL DIMENSIONS AND WEIGHTS (fig.2)**1.8 TECHNICAL NOTES (Tab.1)****1.9 NOTES ON THE RAPID FREEZER AND THE ENVIRONMENT****Packaging**

Do not simply throw away the different packaging items. Sort them into categories (cardboard, wood, steel, polyester, etc) and dispose of them in accordance with the regulations applying in the country in which the rapid freezer is being decommissioned.

- Decommissioning the rapid temperature

TAB.1	SACHER 2.5	SACHER 2.8	SACHER 2.11
Compressor power	1,2 HP	1,2 HP	1,5 HP
Absorbed power compressor	900 W	900W	1210 W
Total absorbed power	1270 W	1360W	1820 W
Cooling efficiency	900 W	900 W	1200 W
Refrigerant	R-404A	R-404A	R-404A
Working temperature	-18°C/-20°C	-18°C/-20°C	-18°C/-20°C
Expansion temperature	-30°C	-30°C	-30°C
N. Evaporators	1	1	1

TAB.1	SACHER 2.5	SACHER 2.8	SACHER 2.11
Power supply	220V/1/50Hz	220V/1/50Hz	220V/1/50Hz
Inox steel working plane	AISI 304 18/10	AISI 304 18/10	AISI 304 18/10
Control unit	Electronic	Electronic -	Electronic
Cycling hot gas defrosting	Automatic	Automatic	Automatic
Refrigation	with ventilators	with ventilators	with ventilators
Cooling condenser -	Air or Water	Air or Water	Air or Water
Compressor type	Hermetic --	Hermetic	Hermetic
Supporting structure	Steel	Steel	Steel

2 INSTALLATION

2.1 TRANSPORT

On the display cabinet two longitudinal ledges have been fixed. The display cabinet is normally shipped on means of landtransport. The normal wrapping is made of shelter sheets for wrapping, by special request the business concern provides special wrappings.

2.2 RAISING AND MOVEMENT

The display cabinet is lifted by the mean of transport through trans pallet, making the lifting fork's insertion easy, leaning the wrapping and then finish to place it on the forks, trying to balance its weight.

Once on the floor, the wrapping can be placed in its established area, pushing it by hand and remembering to remove the two ledges from the display cabinet base before placing definitively the display cabinet.

The ledges can be removed taking away the screws at points 1, 2, 3, 4, which fix them. (fig.3)

This operation must be carried with caution, putting security wedges, as shown in fig.3 pos. A and B.

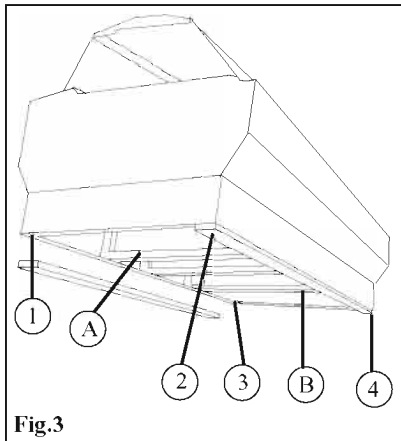


Fig.3

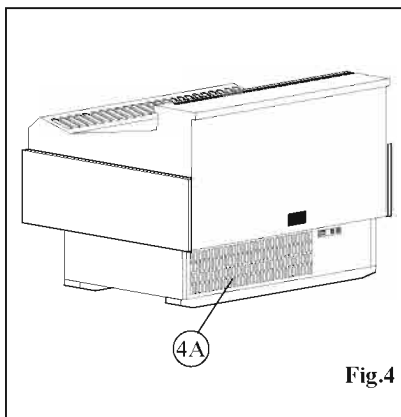


Fig.4

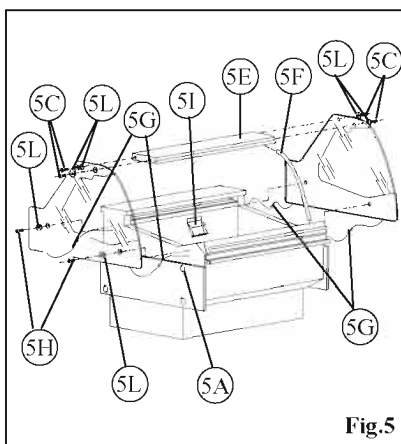


Fig.5

2.3 ENVIRONMENT NOTES

When positioning the cabinet please take care to the environmental conditions both of temperature, which should be about +30°C, and of humidity which should be about +55%. Moreover during the installation make sure that:

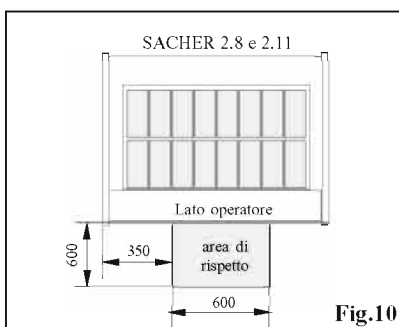
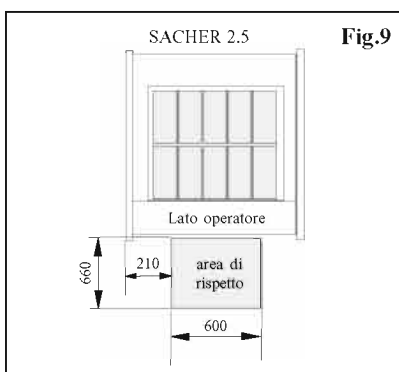
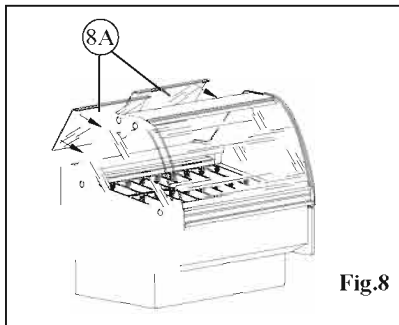
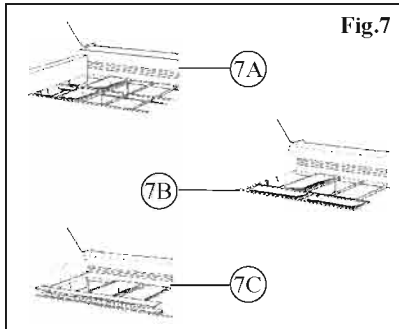
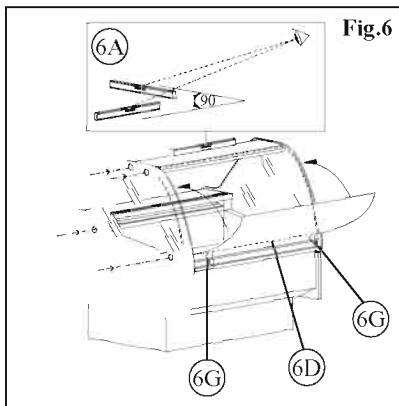
- a good circulation of air but not draughts is provided around the cabinet;
- the cabinet is not near warm sources;
- the cabinet is not directly exposed to the sunlight;
- the grates for the passage of the cooling air from the condenser are not blocked (Fig.4 - pos.4A);
- Conditioned or heated air is not directly pointed towards the display.

It is of primary importance to respect the directions given above to avoid any malfunctions which will not be covered by warranty.

2.4 POSITIONING

Before installation, ensure that:

- there is sufficient space behind for the operator to move
- there is sufficient space guarantee that the machine is used and maintained safely in the manner prescribed in Paragraph 2.6;
- ensure that the earthing complies with



reducer

- When decommissioning:
- Drain the refrigerant from the rapid temperature reducer's refrigerator circuit
- Drain all oil, remove all rubber parts (e.g. O-rings and seals)
- Finally, send the rapid freezer to be scrapped. European Standards (EN);
- cut the plastic straps very carefully as they are very taut and may spring up when they are cut;
- lift the display cabinet of the pallet and place it in the position assigned to it. Position in such a way that the display cabinet is completely flat, i.e. horizontally level; this is essential if the cabinet is to work properly (fig. 6-6A).

- remove the top from the packaging, using the hardware products in the package (fig. 5 - 5I) inside the display cabinet and follow these instructions to assemble:
- fit the side panels to the base and fix them with the screws (fig. 5 -5A)
- connect the fastons (fig. 5 - 5G) of the anti-condensation resistance of the side silkscreen printed glass panels and fix them to the tub by means of the screws (fig. 5 -5H) provided, and mounting the bushes provided (fig.5-5L).

CAUTION: do not overtighten the screws.

- Fit the lead into the appropriate seat (fig. 5 -5F).
- fix the top (fig. 5 - 5E) between the two side panels, using the screws (fig. 5 -5C) provided, mounting the bushes provided (fig.5-5L).
- connect the fastons (fig. 6 -6G) of the anti-condensation resistance of the front glass panel and insert in the groove for the hinge (fig. 6 -6D) .
- hook on the methacrylate guard to the bottom of the ceiling;
- position the central bar and the tub spacers (fig. 7 -7A/7B/7C).
- fit the sliding doors in transparent methacrylate into the runners in the ceiling and (fig. 8 -8A).

CAUTION: the sliding doors are fragile and must be handled with care

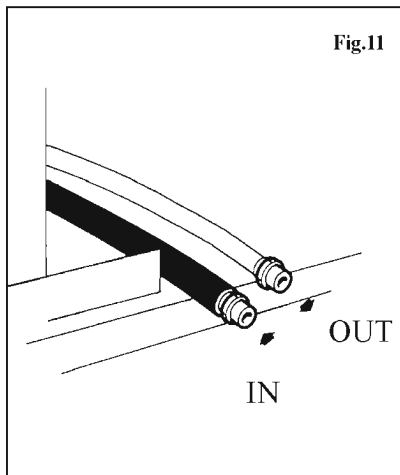
Place the ice cream flavour labels into the holders in the appropriate places (fig. 8 - 8B).

2.5 SPARE AREA FOR THE EXTRACTION OF THE MOTORS

Service being requested, please take out power plants from the display cabinet positioned on a plate which is fastened with screws to the structure.

The taking out must be performed on the back side of the display cabinet (operating side).

For this reason, it is necessary not to obstruct the spare area (shown in the following pictures) with pipings and similar (even below the footboard). Measures are expressed in mm.



2.6 WATER CONNECTION

Only in water-cooled condenser version it is necessary to connect the inlet/outflow water pipes to the conduit.

The inlet water has a peculiar coating for termic insulation (Fig.11).

WARNING: before starting, make sure that taps are open and that water is regularly flowing.

2.7 ELECTRIC CONNECTION

Before starting the assembly procedure, please ensure that a suitable grounding plant has been realized according to the European Standards (EN).

Check the voltage: it must be compatible with the characteristics written on the label placed on operating side on the display cabinet (see fig.1).

WARNING: Tension fluctuations above 10% of the nominal voltage value written on the label could permanently damage the compressor and the other electromechanical instruments which, in this case will not be covered by warranty.

In any case, local Standards on electric installation should be respected.

Turn the master switch of the network installation OFF.

The display cabinet is provided with three linkage cables.

The yellowgreen one is intended to the display cabinet's grounding plant, and protects the user from being electrocuted.

WARNING: Never cut, not remove, for any reason at all, central pin.

The three feeders must be connected to the main network, endowed with an efficient earth network, according to national and local rules (if existing) for electric installations and suitable for electric absorption of display cabinet, relating to table at point 1.8 - item Total Absorbed Power.

3 FUNCTIONING

3.1 PRELIMINARY CONTROL

WARNING: Before the cabinet starts to work, be sure that the main switch of the electric main plant is disconnected.

The three feeders must be connected to the main network endowed with an efficient earth network

according to national and local rules (if existing) for electric installations and suitable for electric absorption of display cabinet, relating to table at point 1.8 - item Total Absorbed Power.

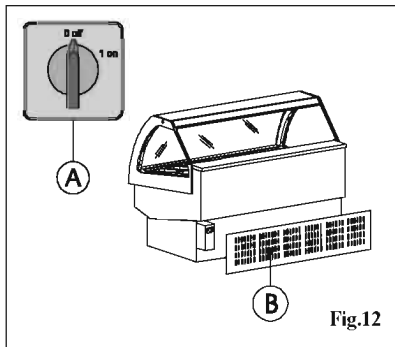


Fig.12

Switch on the main switch placed on the rear panel of the cabinet, till reaching position "1", as shown in fig. 12.

WARNING: The master switch supplies the electric feeding to the cabinet and it must be disconnected always in the case of eventuels maintenance as described on chap. 4.

3.2 TEMPERATURE SETTING

The refrigerating plant of the display cabinet is controlled by means of an electronic console.

The electronic console consists of:

- 1) a command console
- 2) a display

T640: orizzontal keyboard with 6 keys (185x38 mm)

To visualise or change the set point. When programming this button is used to select a parameter or to confirm a value.

This button is used during programming for going through the parameter codes or for increasing their value.

If pressed and then released you will visualise the controlled section (LOC, SE2, ALL).

If pressed continually for 3 seconds this button allows you to gain access to the sections menu.

This button is used during programming for going through the parameter codes or decreasing their value.


Keep this button pressed for 3 seconds to start the manual defrosting cycle.

Use this button to turn the display cabinet lights on and off.


Turn the instrument on and off.

There are a series of luminous points on the display, the meaning of which you will find in the table below:

ON: Compressor on

FLASHING: Programming phase (flashing with LED )

ON: Ventilator and evaporator active

FLASHING: Programming phase (flashing with LED )

ON: Defrosting active

FLASHING: Dripping time underway

ON: Keyboard in "ALL" mode

FLASHING: Keyboard in RVD mode (remote control)

ON: ALARM SIGNAL

- In the "Pr2" programme it indicates that the parameter is also present in "Pr1"



1. Press the SET key and release it to see the set point: you will visualise the set point immediately.

2. To change the set point press the SET key and keep it pressed for 3 seconds: the led will flash * :

3. To change the value activate ▼ and ▲ .

4. To memorise the new set point, press the SET key or wait 15 seconds to exit the programming feature.

N.B. It is very important to bear in mind that the optimal air temperature varies considerably with the variation of the composition of the ice-cream (in particular the percentages of sugars and fats).

Before placing the ice-cream in the display cabinet you should wait about 45 minutes from the start-up of refrigeration in order to allow the plant to reach its set functioning temperature.

Press the DEF key and keep it pressed for more than 2 seconds.

By pressing the ON/OFF key the instrument will show "OFF".

In this configuration the loads of all of the regulations will be deactivated. To turn the instrument back ON press the ON/OFF key again.

The OFF condition allows for the exclusion of the instrument from monitoring without generating any type of alarm.

N.B. The LIGHT key remains active in the OFF position.

Local alarms:

“ P1 “	Thermostat probe failure: Output according to " Con " and " COF " parameters
“ P2 “	Evaporator probe failure: Unchanged
“ P3 “	Auxiliary probe failure: Unchanged
“ HA “	High temperature alarm: Unchanged
“ LA “	Low temperature alarm: Unchanged
“ EE “	Memory anomaly
“ EAL “	Digital input alarm: Unchanged
“ BAL “	Blockage alarm from digital input: Regulation outputs deactivated
“ rtc “	Clock alarm: Unchanged
“ rtf “	Clock alarm failure / not present: Alarm output active, other outputs unchanged.



3.3 AUTOMATIC DEFROSTING

This display is provided with a warm gas automatic defrosting system that rapidly eliminates the frost from the evaporator vanes.

The automatic defrosting process occurs every 8 hours: a proper light is on during the defrosting cycle.

Ventilating fans are not in function during defrosting phase, up to two minutes after.

This does not allow the heat, produced by the evaporator for ice melting, to reach the ice cream in the exposure area.

3.4 SWITCHING OFF THE DISPLAY CABINET

Use the switches located on the control panel at the back of the display cabinet to turn off the display cabinet (fig.12).

In an emergency, turn off the mains supply switch in the premises in which the display cabinet has been installed.

4 ORDINARY MAINTENANCE

4.1 PRELIMINARY SAFETY OPERATIONS

WARNING! Before starting any maintenance procedures, switch off power supply!

4.2 CONDENSER CLEANING

Dust and dirt on the air condenser blades reduce refrigerating efficiency or may even prevent refrigeration and the compressor: the condenser must therefore be cleaned regularly (every 20-30 days), as indicated in figure 13. To clean, proceed as follows:

disconnect from the power supply;

- Remove the rear metal grill;
- Remove the compressor unit by running it along its guide tracks;
- Clean the dust and dirt from the condenser blades with a brush or paint brush or vacuum cleaner (fig.13).

WARNING! Do not use metal or stiff tools as these might bend the blades and lessen operating efficiency.

- Refit the compressor unit;
- Refit the grill.

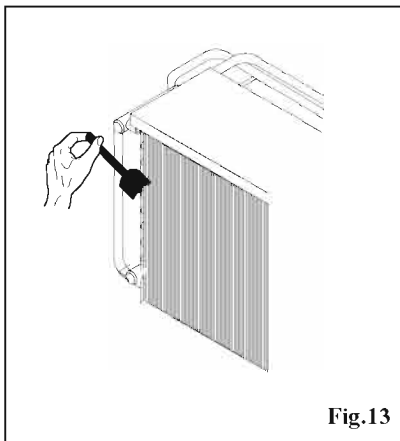


Fig.13

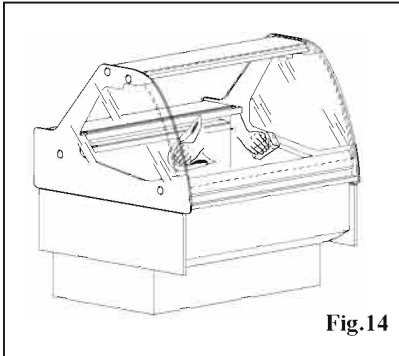


Fig.14

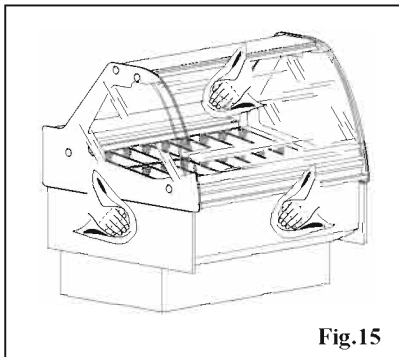


Fig.15

4.3 REFRIGERATED BASIN CLEANING

Also the inside of the refrigerated basin should be weekly cleaned at the end of a working day, following the instructions given below:

- take the ice-cream off the display c. and store it in a freezer at -20°C
- switch off power supply
- allow at least 60 minutes for defrosting
- clean the inside of the display cabinet, using a damp sponge (or cloth) and tepid water, but no detergents (fig.14).

WARNING! do not use too much water which will drip into collecting basin and then overflow.

4.4 EXTERNAL CABINET CLEANING

The outside of the display should be cleaned with water and a delicate detergent. Never use steel-wool, glass paper, abrasives and similars, not strong chemical products, such as acid, chlorine and derivatives, ammonia and similars. Metacrilate sliding doors should be cleaned using water with liquid detergents having no ammonia or alcohol inside which could damage the surfaces. Alcohol could be employed only when watered-down (Fig.15).

WARNING! don't pure alcohol.

4.5 SUPPLEMENTARY DEFROSTING

When high temperatures are combined with high humidity rates, programmed automatic defrosting cycles could not be enough: this occurrence can be revealed by presence of hoarfrost on the evaporator, by a low cold air flow and by progressive ice-ceram melting. In this case, a supplementary defrosting cycle can be started by pressing the appropriate button.

Being supplementary defrosting over, the display will repeat programmed automatic cycles starting from when the supplementary defrosting has been made.

4.6 REGULAR DEFROSTING

In order to ensure that the display cabinet operates at maximum efficiency, defrost at regular intervals for a prolonged period (about 12 hours).

How often the display cabinet needs to be defrosted will depend on the ambient conditions (temperature and humidity levels) in which the display cabinet operates.

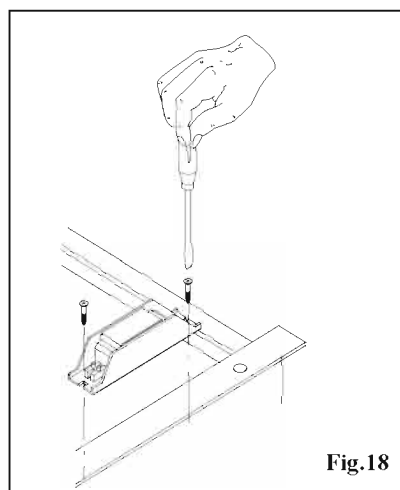
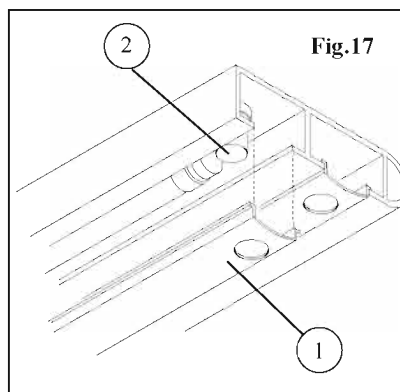
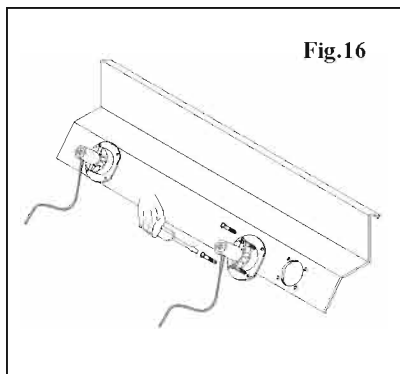
Nevertheless the display cabinet should be defrosted at least once every two weeks.

5 SUPPLEMENTARY MAINTENANCE

5.1 PRELIMINARY SAFETY OPERATIONS

WARNING: Before starting any maintenance procedures, switch off power supply!

WARNING: Any supplementary or corrective maintenance operations must be carried out by specialised personnel.



5.2 VENTILATORS' REPLACEMENT

In order to substitute the ventilator cooling system, first of all, it is necessary to execute operations at point 5.1, and then disconnect the ventilator feeders from the junction box of the electric board, refer to wiring diagram TAV.2).

Working from inside the tank, remove tank's bottom protections (ref. sides 3 and 9 TAV.1), and then, using a screw driver, remove fastening screws of the ventilator (fig.16). Remove the ventilator and unthread the electric cable from channels.

After that execute the same operations in the reverse direction for the new ventilator assembling procedure.

WARNING! To set up the new ventilator, do not forget to plug in again electric cable in the opposite channel, before fixing the ventilator.

5.4 LAMPS - REACTORS - STARTER REPLACEMENT

To substitute electric parts, first of all, execute operations at point 5.1.

It is possible to approach near the lamp removing the protection of transparent plastic, pressing the suitable venthole and pulling it down (pos.1-fig.17).

Once the venthole has been removed, you can disassemble the lamp, pressing on its caps, placed at the end of the lamp.

To set up the new one execute operations in the reverse direction.

In order to take away the starter, (pos.2 - fig. 17), placed near the lamp's right cap, execute an orthogonal rotation around his axle.

To install the new starter execute operations in the reverse direction.

To substitute the reactor, placed in the display cabinet's electric board, remove clamping screws and electric connections (fig.18).

To set up the new reactor, execute operations in the reverse direction.

WARNING! While setting the new wiring reactor, refer to diagram TAV. 2 for electric connections.

5.5 GAS LEAKAGE CHECK

Check gas leakages using an appropriate electronic gas detector (escapes searching) along all the cooling circuit, referring to TAV.4, in order to locate the points of the circuit.

5.6 WATER CONDENSER CIRCUIT CHECK

In case of anomalous water flux in the condenser, in order to check the circuit, remove back security panel and draw out the freezing circuit, working on the movable bearing base.

First of all check if the water flux of the opening tap is regular (pos.1 - fig.19).

If it is the reason of the malfunction, substitute the opening tap, disassembling its hydraulic caps. If there is still a malfunction, check flux control valve (pos.2-fig.19).

If the valve flux control does not work properly, substitute it, disassembling its hydraulic caps.

WARNING! The disassembling must be done only after having closed the opening tap of cooling gas (pos.3 - fig.19).

If even this one is not the cause of bad working, work on the last possible cause, that means on the oil condenser (pos.4-fig.19). Check if it is just a simple occlusion, which can be removed with products against limestone or if it must be removed.

WARNING! Remove the gas from the system before replacing the coil.

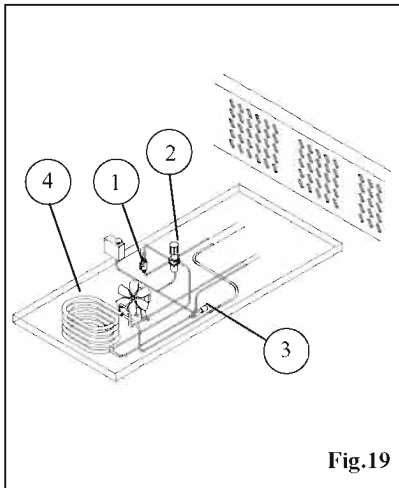


Fig.19