







**MW**  
MACHINERY WORLD

**OPERATING  
AND  
MAINTENANCE INSTRUCTIONS**

**VF / MF**

			
Matr. <b>1C9656</b>	Cod. <b>900812102</b>		
<b>VF 6 MF1 LK</b>		<b>A</b>	
<b>380 U</b>	<b>3N</b> 	<b>50</b> <b>Hz</b>	<b>7</b> <b>kw</b>
	<b>25 A</b>		
<b>R507A</b> Refr.	<b>2,5 kg</b>		
<b>CE</b> C1			





# GENERAL INDEX

**INTRODUCTION ..... 7**

**1. DESCRIPTION OF THE PRODUCT ..... 8**

1.1 INTENDED PURPOSE ..... 8

1.2 CAUTIONARY MEASURES ..... 8

1.2.1 AIR-COOLED MACHINE ..... 8

1.2.2 WATER-COOLED MACHINE ..... 8

1.2.3 ELECTRICAL CONNECTION ..... 8

1.3 IDENTIFYING THE MACHINE ..... 8

1.4 TECHNICAL SPECIFICATIONS ..... 9

1.4.1 TECHNICAL SPECIFICATIONS MULTIFUNCTION 1 ..... 9

1.4.2 TECHNICAL SPECIFICATIONS MULTIFUNCTION 2 ..... 10

1.4.3 TECHNICAL SPECIFICATIONS MULTIFUNCTION 3 ..... 11

1.5 VERSIONS ..... 12

**2. SAFETY RULES ..... 13**

2.1 GRAPHIC SYMBOLS ..... 13

2.2 PRINCIPLES ..... 13

2.3 GENERAL NOTES ..... 13

2.4 ORGANIZATION ..... 13

2.5 MACHINE PROTECTIONS ..... 14

2.6 OTHER HAZARDS ..... 14

2.7 PROTECTIVE EQUIPMENT ..... 14

2.8 ROUGHNESS IN AREAS IN CONTACT WITH FOODSTUFFS ..... 14

**3. MACHINE STRUCTURE AND OPERATION ..... 15**

3.1 INTRODUCTION ..... 15

3.2 MACHINE STRUCTURE ..... 15

3.3 DESCRIPTION OF FUNCTIONS ..... 15


3.4 CHECKING AND SAFETY DEVICES ..... 15


**4. CONTROLS AND FUNCTIONS AVAILABLE TO THE OPERATOR ..... 16**


4.1 CONTROLS ..... 16


4.1.1 DISPLAY ..... 16


4.2 STOP FUNCTION ..... 17


4.3  PRODUCTION FUNCTION ..... 18


4.3.1  DISPENSE FUNCTION ..... 19











4.3.1.1  COOLED DISPENSE FUNCTION ..... 19

4.3.2  HIGH SPEED FUNCTION ..... 20

4.3.3  HALF CHARGE FUNCTION ..... 20

4.4  PASTEURIZATION FUNCTION ..... 21

4.4.1  HALF CHARGE PASTEURIZATION FUNCTION ..... 23

41	STAINLESS STEEL PROTECTION	7.3.7	
41	DISINFECTANTS	7.3.6	
41	CLEANSERS	7.3.5	
41	ANTIFREEZE	7.3.4	
41	COMPRESSOR OIL	7.3.3	
40	GEAR-MOTOR OIL	7.3.2	
40	REFRIGERANT FLUID	7.3.1	
40	RECOMMENDED PRODUCTS	7.3	
40	MONTHLY MAINTENANCE	7.2	
40	WEEKLY MAINTENANCE	7.1	
40	<b>MAINTENANCE</b>		<b>7.</b>
39	START-UP	6.4	
39	ASSEMBLY (BY AUTHORIZED PERSONNEL ONLY)	6.3	
39	AIR-COOLED MACHINE	6.2.2	
39	WATER-COOLED MACHINE	6.2.1	
39	INSTALLATION	6.2	
39	INTRODUCTION	6.1	
39	<b>COMMISSIONING</b>		<b>6.</b>
38	<b>ALARMS</b>		<b>5.</b>
37	EVENTS SEQUENCE	4.8.2	
36	DATE-TIME-LANGUAGE SETTING	4.8.1	
35	HELP FUNCTION	4.8	
35	HIGH SPEED BEATING FUNCTION	4.7.2	
34	CYLINDER HEATING FUNCTION	4.7.1	
33	CLEANOUT FUNCTION	4.7	
32	CHOCOLATE STORAGE FUNCTION	4.6.2	
28	BITTER CHOCOLATE FUNCTION	4.6.1	
27	CHOCOLATE FUNCTION (available on models VF/MF3)	4.6	
24	CUSTARD FUNCTION (available on models VF/MF2 and VF/MF3)	4.5	





<b>8.</b>	<b>REPAIRS</b> .....	<b>41</b>
8.1	INTRODUCTION .....	41
	8.1.1 SAFETY RULES .....	41
8.2	DIFETTI DI FUNZIONAMENTO, POSSIBILI CAUSE E RIMEDI .....	42
<b>9.</b>	<b>DISCONNECTION, STORAGE</b> .....	<b>43</b>
9.1	INTRODUCTION .....	43
	9.1.1 SAFETY RULES .....	43
9.2	STORAGE CONDITIONS .....	43
9.3	DISCONNECTION .....	43
9.4	REINSTALLATION .....	43
<b>10.</b>	<b>PACKING AND TRANSPORT</b> .....	<b>44</b>
10.1	INTRODUCTION .....	44
	10.1.1 SAFETY RULES .....	44
	10.1.2 RESPONSIBLE PERSONNEL .....	44
10.2	PACKING .....	44
10.3	TRANSPORT .....	44
<b>11.</b>	<b>WASTE DISPOSAL</b> .....	<b>45</b>
11.1	INTRODUCTION .....	45
	11.1.1 SAFETY RULES .....	45
	11.1.2 RESPONSIBLE PERSONNEL .....	45
11.2	WASTE DISPOSAL .....	45
11.3	DIFFERENTIATED DISPOSAL .....	45
11.4	DISPOSAL SITES .....	45
<b>12.</b>	<b>SPARE PARTS</b> .....	<b>46</b>
12.1	INTRODUCTION .....	46
<b>13.</b>	<b>INSTRUCTIONS FOR EMERGENCY SITUATIONS</b> .....	<b>46</b>





## INTRODUCTION

The **VF-Multifunction** is available in four versions with different tub sizes: 4, 6, 12 and 20 liters. It substitutes having to buy four traditional machines: ice-cream making machine, pasteurizer, boiler and a chocolate tempering machine.

The **VF-Multifunction** allows you to:

- Freeze the liquid mix to produce ice cream or sorbet with no need for pasteurizing cycles.
- Introduce ingredients into the tub of your choice like milk, eggs, sugar, fruits etc., to pasteurize the product at 85°C (or at a temperature selectable from the control panel) and finally to freeze it.
- Produce custard of various types.
- Produce chocolate coatings.

Each cycle is pre-programmed and runs without interruption.

### Swiss quality

Ott Swiss Freezer products are manufactured in Herzogenbuchsee, Switzerland. You can rely on their outstanding quality and dependability, convenience and safety.

Otto-Swiss equipment ensures extremely reliable, rapid and safe operation.

### Ice Cream

The **VF-Multifunction** mixes and freezes the compound through continuous beating.

The ice cream produced from a processing cycle is perfect, dry, smooth and has an unprecedented texture.

### Custards and sauces (function available on VF/MF3)

The custards are visibly better with pre-programmed cycles of heating and cooling and renders the product homogeneous.

The even scraping and the uniform distribution of heat prevents the custard from burning on the sides of the tub.

### Chocolate coatings (function available on VF/MF3)

Up to now, the chocolate temperings depended on the skill of the confectioner.

Presently the parameters of chocolate tempering are controlled by microprocessors.

From now on your chocolate coatings will have the desired look.

The beater motor with three speeds has been specifically designed for a various range of products.

Integrated software controls the final product and the microprocessors verify the chocolate temperature curve step by step.

**1. DESCRIPTION OF THE PRODUCT**

**1.1 INTENDED PURPOSE**

The machine is used to produce ice cream, custard or chocolate intended solely for the foods industry. Both the ice cream and the produced may be mixed with pieces of fruit or vegetables. The machine has not been designed to:

- produce pasta
- freeze water, or produce ice cream with a high water content
- mix, process, etc. explosive or harmful products.

**1.2 CAUTIONARY MEASURES**

**1.2.1 AIR-COOLED MACHINE**

To ensure the necessary air circulation, the machine must be installed at least 30 cm from the wall and any other obstacles.

**1.2.2 WATER-COOLED MACHINE**

To prevent the water from freezing, the machine must not be exposed to ambient temperatures below 0°C.

**1.2.3 ELECTRICAL CONNECTION**

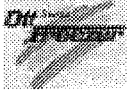
The machine must be connected via a socket protected against surge current.

**1.3 IDENTIFYING THE MACHINE**

The identification plate is attached to the front of the machine (i.e. VF-4 Multifunction 3). The serial number is engraved above the tub, and is visible when the hopper lid is removed. The plate indicates the year of manufacture, model, serial number, rated voltage and frequency, installed power, refrigerants, weight and the CE mark.





**1.4 TECHNICAL SPECIFICATIONS****1.4.1 TECHNICAL SPECIFICATIONS MULTIFUNCTION 1**

	VF-4	VF-6	VF-12	VF-20
<b>Air-cooled machine dimensions</b>				
Width (mm)	470	600	600	650
Depth (mm)	610	660	730	850
Height (mm)	1320	1390	1425	1500
<b>Water-cooled machine dimensions</b>				
Width (mm)	470	600	600	660
Depth (mm)	610	660	730	970
Height (mm)	1320	1390	1425	1500
<b>Technical specifications</b>				
Machine frame	1.4301	1.4301	1.4301	1.4301
Tub capacity (liters)	4	6	12	20
Hourly output with pasteurizing ** (liters)	7	12	20	30
Hourly output without pasteurizing ** (liters)	16	28	45	65
Maximum load (liters)	3	4,5	9	16
Cycle with pasteurizing (minutes)	25	25	30	40
Cycle without pasteurizing (minutes)	10	10	12	12
Compressor power (kW)	1,1	1,5	2,2	3,7
Circulation pump power (kW)	0,25	0,25	0,25	0,25
Boiler power (kW)	3	3,75	5,0	6,0
Beater motor power (kW)	1,1/1,6	1,5/2	2,6/3,8	2,6/3,8
Cooling system=pressure (Bar)	15	15	15	15
Safety (Bar)	24	24	24	24
Refrigerant	R507	R507	R507	R507
Cooling system supply (kg)	1,7	2	2,5	3
Water pipe	3/4*	3/4*	3/4*	3/4*
Max. water pressure (Bar)	5	5	5	5
Electrical connection *	3x400V/50Hz	3x400V/50Hz	3x400V/50Hz	3x400V/50Hz
Safety (A)	16	20	20	25
Weight (kg)	190	250	290	360

\* Voltage may be changed upon request

\*\* Throughput varies according to the mass composition and temperature of the ice cream.

## 1.4.2 TECHNICAL SPECIFICATIONS MULTIFUNCTION 2

	VF-4	VF-6	VF-12	VF-20
<b>Air-cooled machine dimensions</b>	470	600	600	660
Width (mm)	610	660	730	880
Depth (mm)	1320	1390	1425	1500
Height (mm)	<b>Water-cooled machine dimensions</b>			
Width (mm)	470	600	600	660
Depth (mm)	610	660	730	970
Height (mm)	1320	1390	1425	1500
<b>Technical specifications</b>	1.4301	1.4301	1.4301	1.4301
Machine frame	4	6	12	20
Tub capacity (liters)	7	12	20	30
Hourly output with pasteurizing** (liters)	16	28	45	65
Hourly output without pasteurizing** (liters)	3	4,5	9	16
Maximum load (liters)	25	25	30	40
Cycle with pasteurizing (minutes)	10	10	12	12
Cycle without pasteurizing (minutes)	1,1	1,5	2,2	3,7
Compressor power (kW)	0,25	0,25	0,25	0,25
Circulation pump power (kW)	3,0	3,75	5,0	6,0
Boiler power (kW)	1,1/1,6	0,3/1,5/2,0	0,3/2,6/3,8	0,5/3,0/5,0
Beater motor power (kW)	15	15	15	15
Cooling system=pressure (Bar)	24	24	24	24
Safety (Bar)	R507	R507	R507	R507
Refrigerant	1,7	2	2,5	3
Cooling system supply (kg)	3/4"	3/4"	3/4"	3/4"
Water pipe	5	5	5	5
Max. water pressure (Bar)	3x400V/50HZ	3x400V/50HZ	3x400V/50HZ	3x400V/50HZ
Electrical connection *	16	20	20	25
Safety (A)	190	250	300	380
Weight (kg)				

\* Voltage may be changed upon request  
 \*\* Throughput varies according to the mass composition and temperature of the ice cream.



### 1.4.3 TECHNICAL SPECIFICATIONS MULTIFUNCTION 3

	VF-4	VF-6	VF-12	VF-20
<b>Air-cooled machine dimensions</b>				
Width (mm)	470	600	600	660
Depth (mm)	610	660	730	850
Height (mm)	1320	1390	1425	1500
<b>Water-cooled machine dimensions</b>				
Width (mm)	470	600	600	660
Depth (mm)	610	660	730	970
Height (mm)	1320	1390	1425	1500
<b>Technical specifications</b>				
Machine frame	1.4301	1.4301	1.4301	1.4301
Tub capacity (liters)	4	6	12	20
Hourly output with pasteurizing ** (liters)	7	12	20	30
Hourly output without pasteurizing ** (liters)	16	28	45	65
Maximum load (liters)	3	4,5	9	16
Cycle with pasteurizing (minutes)	25	25	30	40
Cycle without pasteurizing (minutes)	10	10	12	12
Compressor power (kW)	1,1	1,5	2,2	3,7
Circulation pump power (kW)	0,25	0,25	0,25	0,25
Boiler power (kW)	3,0	3,75	5,0	6,0
Potenza del motore agitatore (kW)	1,1/1,6	0,3/1,5/2,0	0,3/2,6/3,8	0,5/3,0/5,0
Cooling system=pressure (Bar)	15	15	15	15
Safety (Bar)	24	24	24	24
Refrigerant	R507	R507	R507	R507
Cooling system supply (kg)	1,7	2	2,5	3
Water pipe	3/4"	3/4"	3/4"	3/4"
Max. water pressure (Bar)	5	5	5	5
Electrical connection *	3x400V/50Hz	3x400V/50Hz	3x400V/50Hz	3x400V/50Hz
Safety (A)	16	20	20	25
Weight (kg)	210	260	300	380

\* Voltage may be changed upon request

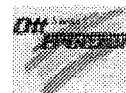
\*\* Throughput varies according to the mass composition and temperature of the ice cream.

**1.5 VERSIONS**

The tub is available in four versions with the following capacities: 4, 6, 12 and 20 liters.  
The machines are available in four versions:


- **VF-Standard:** for ice cream production
- **VF-Multifunction 1:** for ice cream production with pasteurizing and custard
- **VF-Multifunction 2:** for ice cream production with pasteurizing and custard
- **VF-Multifunction 3:** for ice cream production with pasteurizing, custard and chocolate.






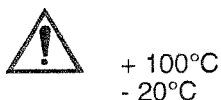
## 2. SAFETY RULES

### 2.1 GRAPHIC SYMBOLS

The following symbol  inside the machine indicates that the system works under pressure.

The following symbol  on the left and right sides of the machine indicates that the machine must be shut off before removing the side panels.

Under the side plates is the symbol:



**It is best to unplug the machine from the power mains during repairs.  
Only skilled technical personnel may work on the refrigerating and electrical system.  
The refrigerant MUST be changed only by skilled personnel.**

### 2.2 PRINCIPLES

This machine takes advantage of the latest applied technology, and complies with current technical safety principles.

The machine must be used only in ideal conditions, with reference to the instruction manual.

Improper use of the machine may cause serious damage. The machine has not been designed for: (see chapter 1.1).

### 2.3 GENERAL NOTES

The machine is used to produce ice cream. The ice cream produced may be mixed with pieces of fruit or vegetables. The machine has not been designed to: (see chapter 1.1).

The machine is controlled by a locking switch with encoded magnet, and is fitted with an emergency device and lock.

Informational labels are applied to the left and right sides of the machine (see chapter 2.1 Graphic symbols).

### 2.4 ORGANIZATION

The system owner is trained by skilled personnel of the manufacturer or area representative. Training must be sufficient to allow future operators to use the machine, with the aid of the instruction manual.

On his part, the owner of the system is required to adequately train his own employees.

Any repairs needed by the machine must be performed solely by skilled technical personnel (electricians, refrigeration system assembly technicians).

The machine guards are made of stainless steel.

Only skilled personnel may remove these guards during repairs.

**Inform the nearest manufacturer service center of any damage or breakdowns.**

**It is prohibited to alter or convert the machine in any way.**

**2.5 MACHINE PROTECTIONS**

Corners are rounded and beveled.  
The hopper has a 5 mm. diameter cross-rod that acts as a protection while working inside the beater.  
For similar safety reasons, the drainage hole has 3 welded cross-rods and a sensor.  
All transmission equipment is located inside the machine bed and separated from the other components by a fixed protective structure.  
The working pressure is 17 bar, the pressure container is protected for up to 25 bar and the pressure switch is set to 24 bar.  
The machine may be moved thanks to four pivoting wheels.

**2.6 OTHER HAZARDS**

Do not insert any tools or products other than foodstuffs inside the drainage hole or hopper.  
This could cause serious harm to operators.

Only cleansers manufactured for the foods industry may be used on the machine.

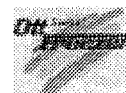
**2.7 PROTECTIVE EQUIPMENT**

Operators must wear protective goggles and rubber gloves whenever using disinfectants or releasing the air pressure.  
Slash-proof gloves must be used when cleaning the spatula (to prevent injuries from cutting).  
The owner of the system must provide the protective equipment described.

**2.8 ROUGHNESS IN AREAS IN CONTACT WITH FOODSTUFFS**

Tub bottom radius = 8 mm (minimum prescribed value = 6.5 mm)  
Tub roughness, Rz = 16 µm (Rz prescribed = 16 µm).





### **3. MACHINE STRUCTURE AND OPERATION**

#### **3.1 INTRODUCTION**

The machine includes mechanical and electrical components, heating and cooling circuits. It is available in air or water-cooled versions.

#### **3.2 MACHINE STRUCTURE**

The cooling units are located at the bottom of the machine. The beater tub and transmission are located in the top portion.

In models VF-4 the electrical installation is on the upper side of the machine.

In models VF-6, VF-12 and VF-20, the electrical installation is on the upper left-hand side of the tub.

The hopper lid is located on top of the machine.

#### **3.3 DESCRIPTION OF FUNCTIONS**

The cooling circuit, starting from the compressor, reaches the condenser via the delivery pipe and extends across the drying filter, level indicator, solenoid valve and injection nozzle until it reaches the beating cylinder. The intake pipe therefore ensures flow from the beating cylinder to the compressor.

The beater is located in the beater cylinder and is powered by a flanged gear-motor.

The cylinder is closed by a lid.

The drainage hole on the front of the cylinder may be closed by means of a sliding door.

#### **3.4 CHECKING AND SAFETY DEVICES**

The machine must be connected to a power socket protected against surge currents.

See chapter 1.4, Technical Specifications, for more information about protections.

The main switch may be fitted with a customized lock to prevent the machine from being turned on accidentally.

The cylinder lid has a locking switch with encoded magnet.

No additional locking devices are necessary. If the lid is not present, the machine will not operate (See chapter 8.2 Malfunctions).

All transmission units are protected against overload by a cut-out relay, while the cooling circuit is equipped with a special pressure switch (factory setting = 24 bar).

## 4. CONTROLS AND FUNCTIONS AVAILABLE TO THE OPERATOR

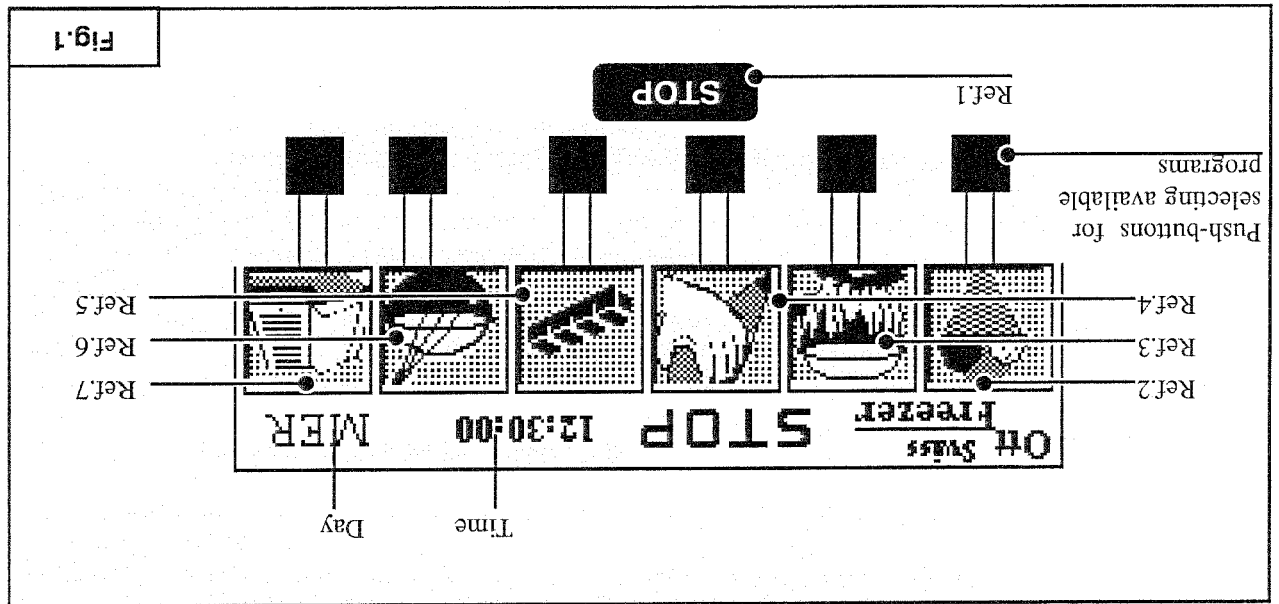
### 4.1 CONTROLS

#### 4.1.1 DISPLAY

As soon as the machine is turned on, its monitor displays the software version. In the event of machine malfunctioning, it is necessary that, besides the machine serial number to be found on data plate, your technician also mentions the software version.

This way, Ott-Freezer Technical Service will solve the trouble much more easily.

The monitor usually indicates the function being active in that very moment, as well as time and day and all available underprograms.



Ref.1-Fig.1 STOP function (Par.4.2)



Ref.2-Fig.1 Production function (Par.4.3)



Ref.3-Fig.1 PASTEURIZATION function (Par.4.4)



Ref.4-Fig.1 CUSTARD function (Par.4.5)



Ref.5-Fig.1 CHOCOLATE function (par.4.6)



Ref.6-Fig.1 CLEANOUT function (Par.4.7)



Ref.7-Fig.1 HELP function (Par.4.8)

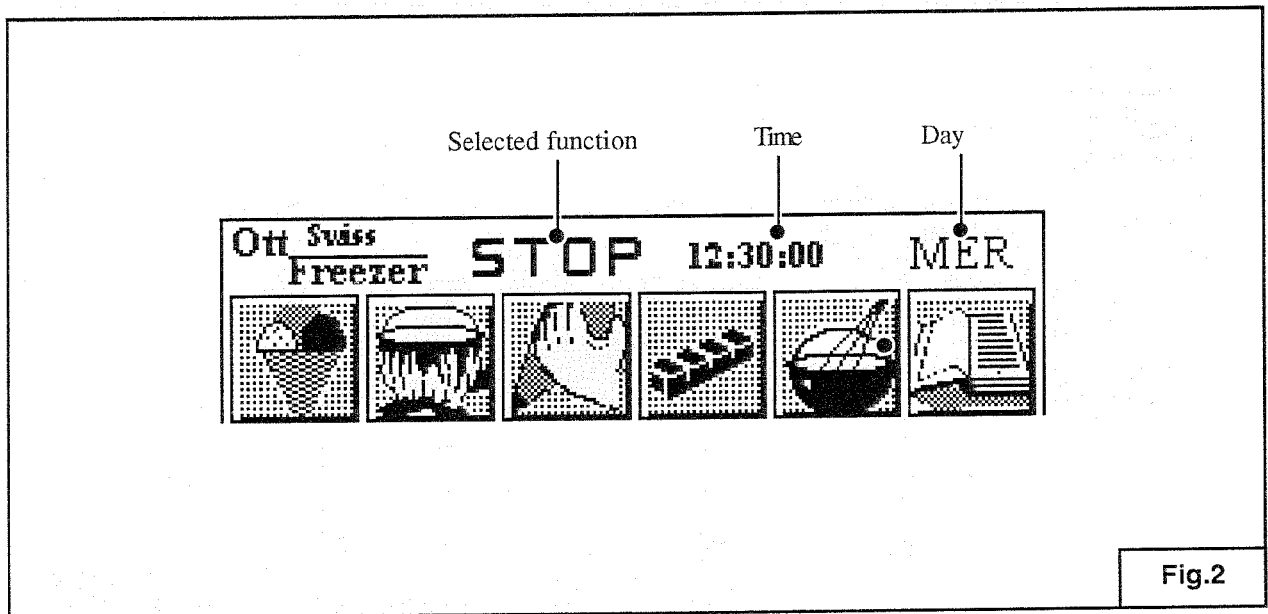


### 4.2 STOP FUNCTION

By pushing this button, the machine stops and you can select any machine function.

The monitor displays real time (Ref.1 -Fig.2) and selected function (Ref.2-Fig.2).

**STOP PUSH-BUTTON IS ALSO USED TO RESET ANY ALARM.**





Ref.7-Fig.3 HALF CHARGE function (see par.4.3.3).



Ref.6-Fig.3 INFORMATION PAGE (devoted to expert engineer).



Ref.5-Fig.3 HIGH SPEED function (see par.4.3.2).

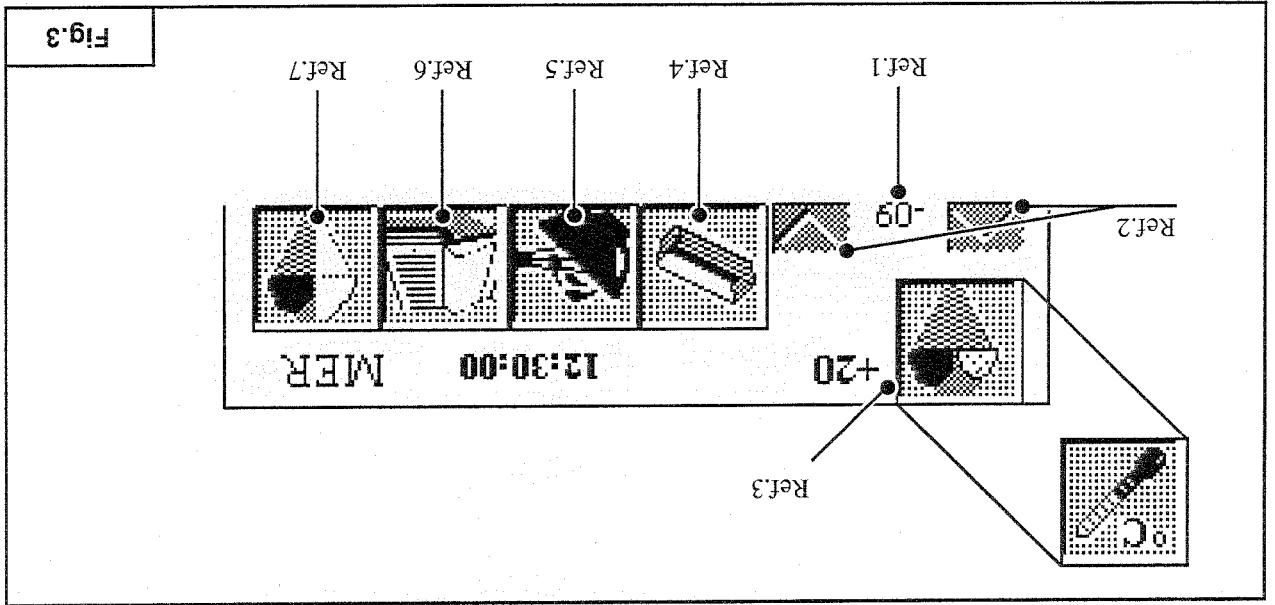



Ref.4-Fig.3 DISPENSE function (see par.4.3.1).

Ref.3-Fig.3 Identification of active program



Ref.2-Fig.3 INCREMENT and DECREMENT push-buttons.


Ref.1-Fig.3 Temperature set



If temperature set is over 0°C, the symbol on display (Ref.3-Fig.3) becomes  STORAGE, in order to emphasize that the product is NOT whipped, but stored.  
 From this function one can enter 4 underprograms more : Dispense, HIGH SPEED, Information Page and Half Charge function.

**NOTE :**


Production temperature can be set -20°C to +25°C through push-button  and  (Ref.2-Fig.3).  
 Product is cooled down to reach temperature set (Ref.1-Fig.3).

By selecting the button  (Ref.2-Fig.1) you enter PRODUCTION function, and the monitor displays what picture 3 shows.

**4.3. PRODUCTION FUNCTION** 



4.3.1  DISPENSE FUNCTION

By selecting the push-button  (Ref.4-Fig.3) you enter DISPENSE function. This program activates HIGH SPEED in order to make easier ice cream dispensing from cylinder. The monitor displays what picture 4 shows. From DISPENSE function you can select underprogram COOLED DISPENSE (Ref.1-Fig.4-see par. 4.3.1.1) or return to PRODUCTION function (Ref.2-Fig.4).

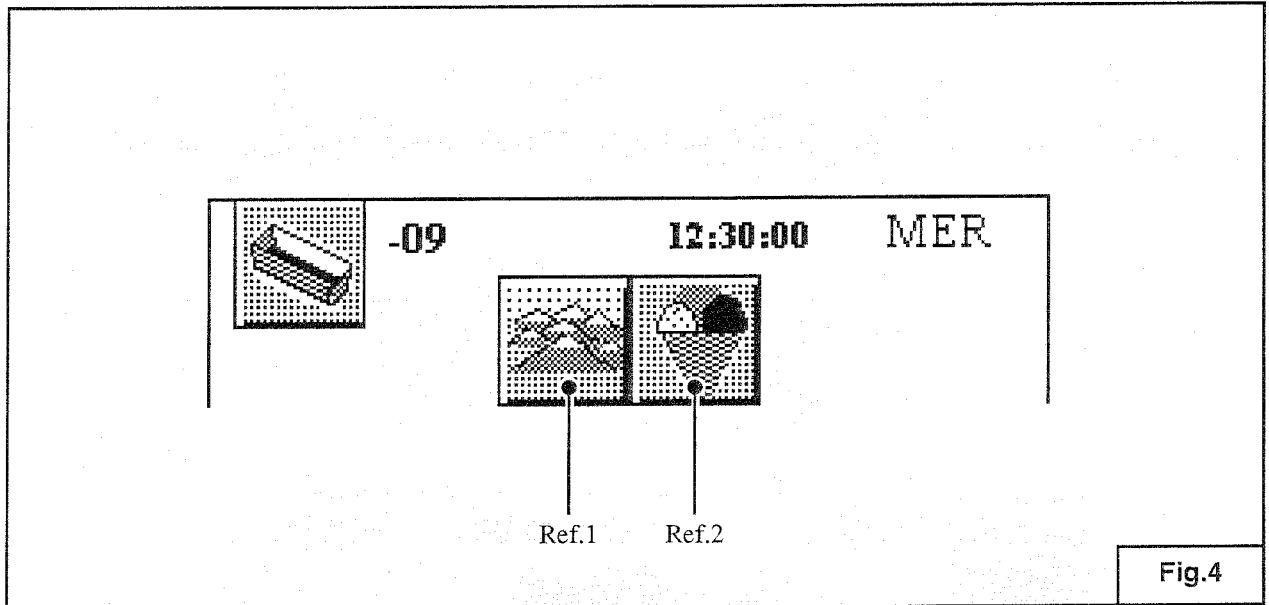



Fig.4

4.3.1.1  COOLED DISPENSE FUNCTION

By selecting the push-button  (Ref.1-Fig.4) you enter DISPENSE function. This program activates HIGH SPEED in order to make easier ice cream distribution from cylinder.

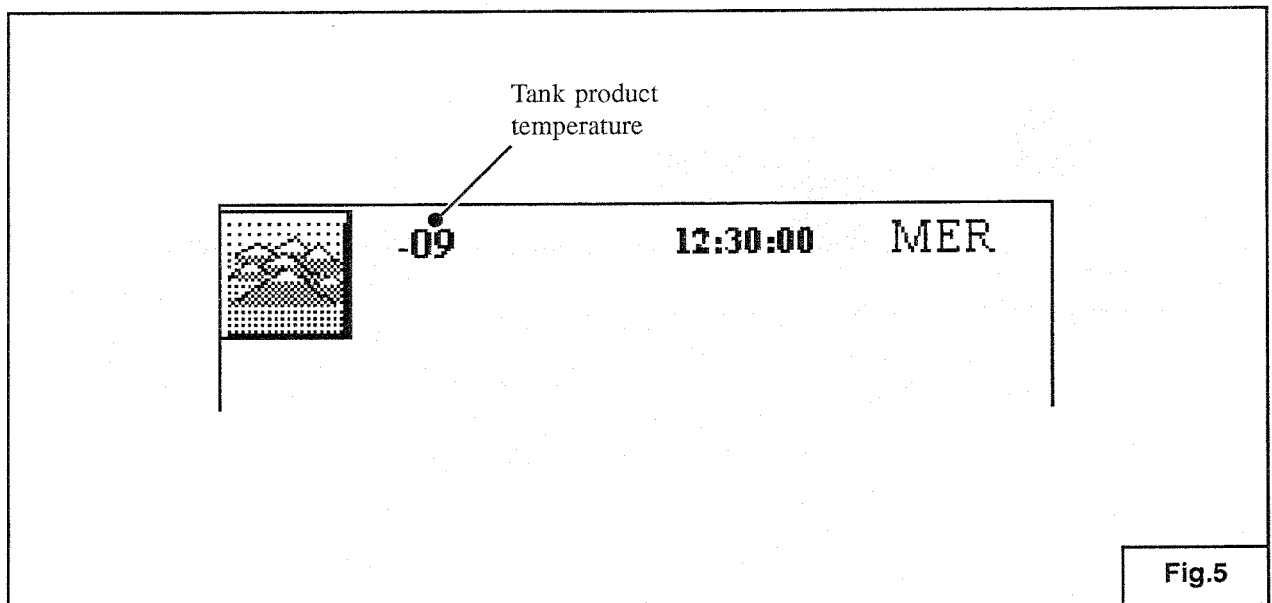


Fig.5

When selecting the push-button (Ref.7-Fig.3) you enter HALF CHARGE function, to be used to produce smaller quantities. Product is cooled down on a cyclic running basis.

4.3.3 HALF CHARGE FUNCTION

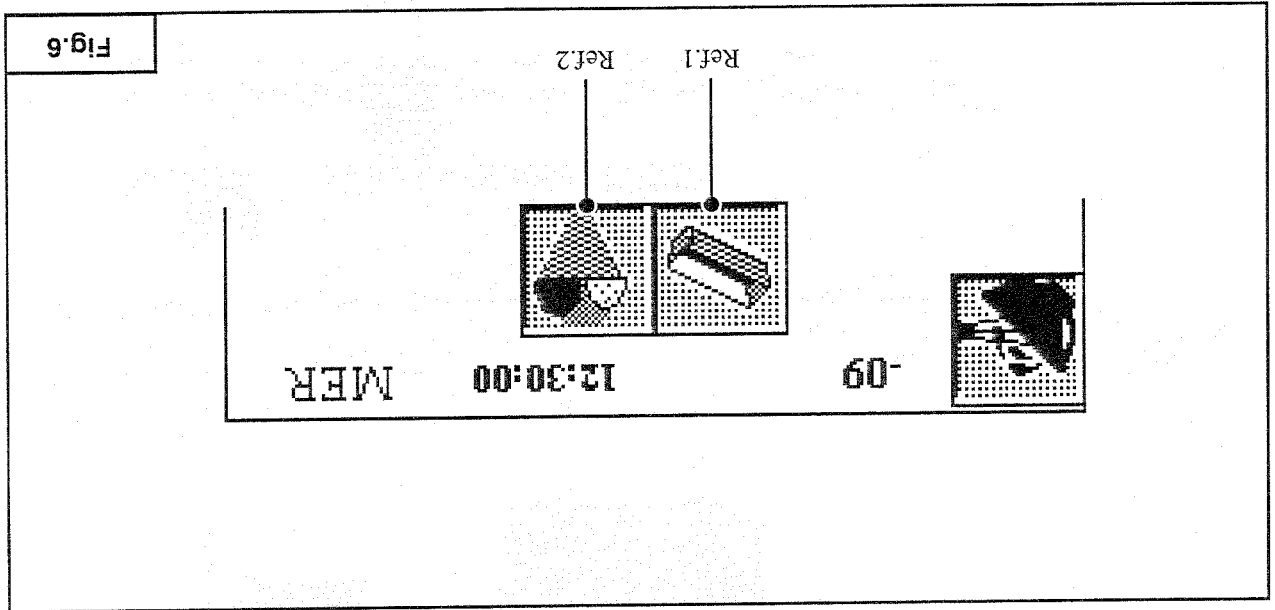


Fig.6

From HIGH SPEED FUNCTION, you can enter DISPENSING function (Ref. 1-Fig.6) or PRODUCTION (Ref.2-Fig.6), if relevant push-button is selected. The selection of one of a.m. function push-buttons, HIGH SPEED will automatically be cut out.


HIGH SPEED is left active all programmed time, after which the machine automatically returns to PRODUCTION.

By selecting the push-button (Ref.5-Fig.3) you enter HIGH SPEED function which, during the production process, allows a homogenous distribution of the product on cylinder walls in order to avoid clotting and thus granting a better thermal exchange. The monitor displays what picture 6 shows.

4.3.2 HIGH SPEED FUNCTION

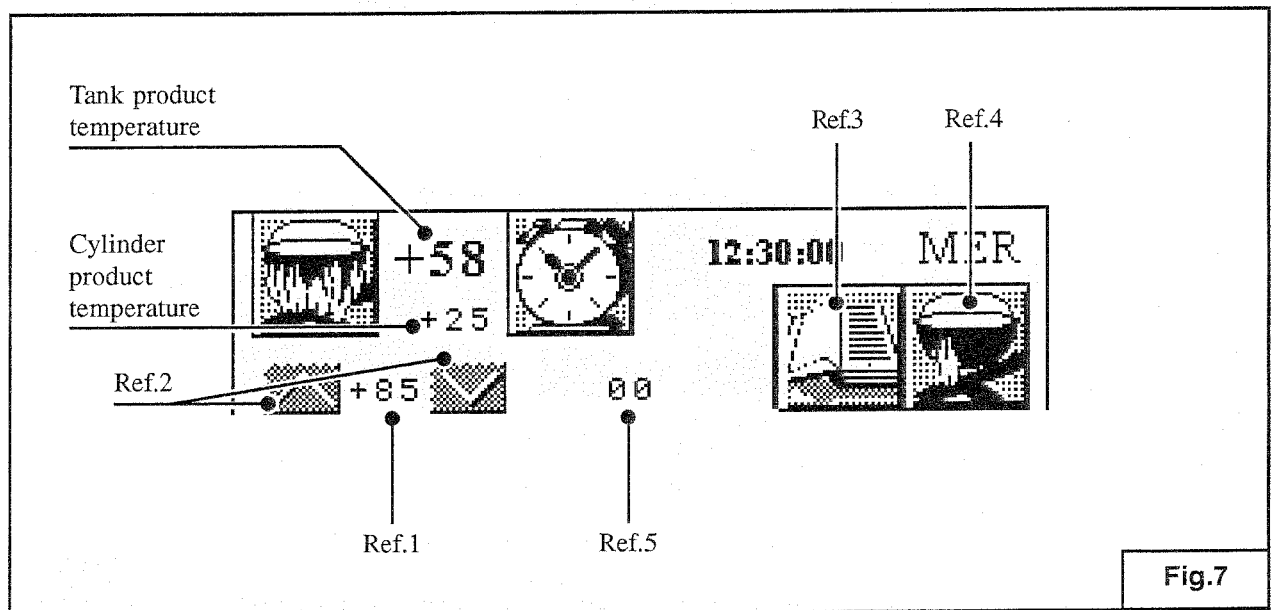


#### 4.4 PASTEURIZATION FUNCTION



By selecting the push-button  (Ref.3-Fig.1) you will enter PASTEURIZATION function.

Product is heated up to 85°C, held at this temperature for a time which is automatically reckoned, thence cooled down.

The monitor displays what picture 7 shows.



**Ref.1-Fig.7** Set PASTEURIZATION temperature

**Ref.2-Fig.7** INCREMENT  and DECREMENT  push-buttons.

**Ref.3-Fig.7**  INFORMATION PAGE (for expert engineer).

**Ref.4-Fig.7**  HALF CHARGE PASTEURIZATION (see par.4.4.1).

**Ref.5-Fig.7** Pause time, automatically reckoned.

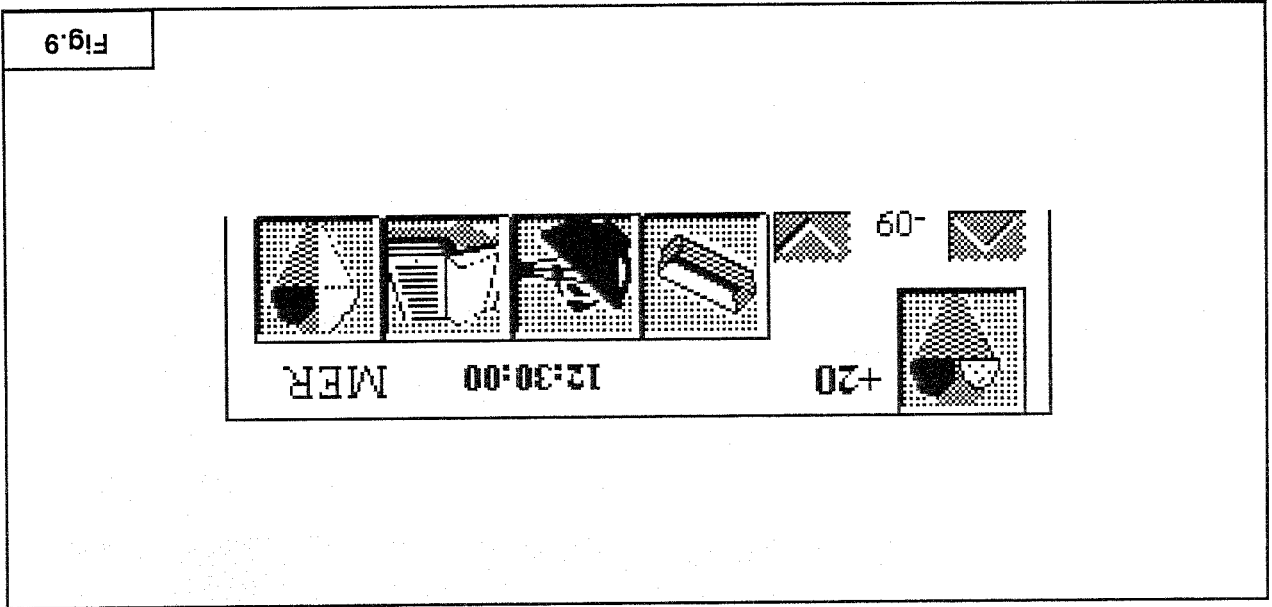


Fig.9

When pause time ends, monitor displays relates to PRODUCTION function (picture 9)

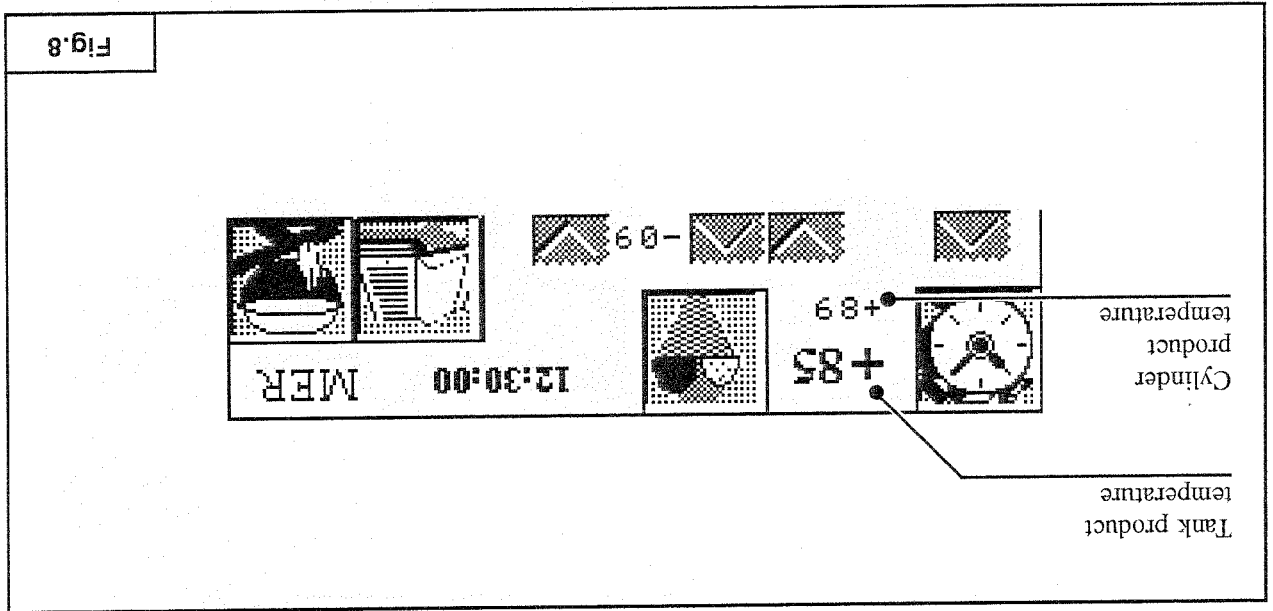


Fig.8


Pasteurization temperature can be modified through button and (Ref.2-Fig.7); in relation to the temperature set, the machine will automatically vary pause time for a correct execution of pasteurization cycle.

During Puase time, the monitor displays what picture 8 shows.



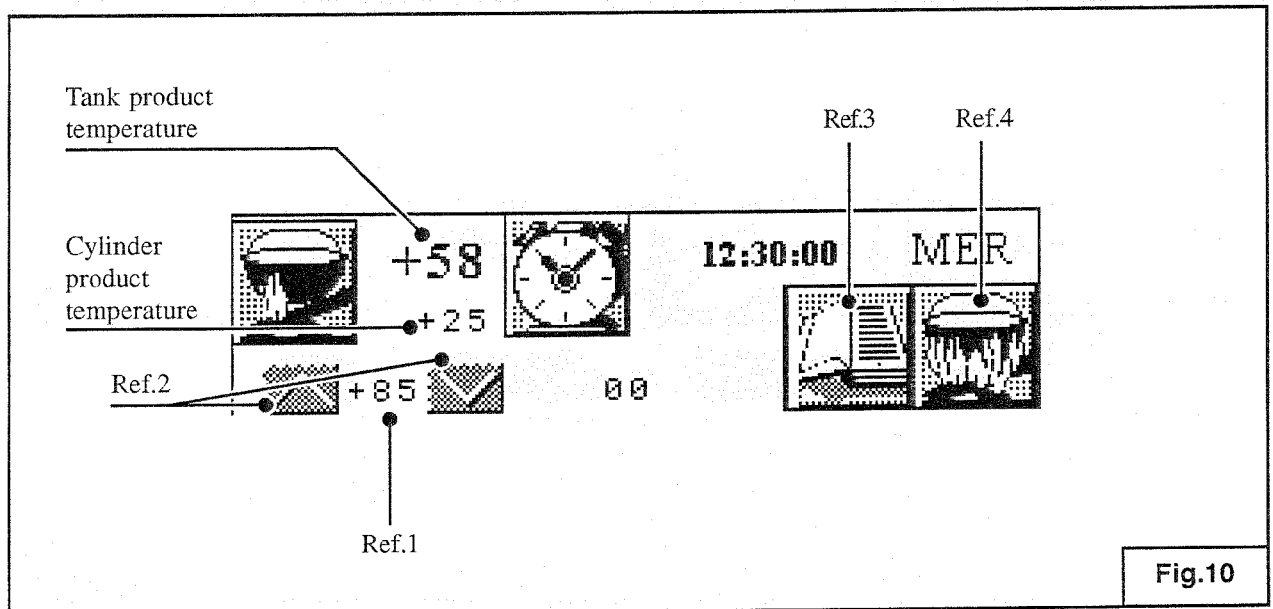


#### 4.4.1 HALF CHARGE PASTEURIZATION FUNCTION



By pushing push-button  (Ref.4-Fig.7) you enter HALF CHARGE PASTEURIZATION, which is to be used to pasteurize smaller batches.

The monitor displays what picture 10 shows.

Once pause time ends, Production program on a half charge basis will start (see par.4.3.3).



**Ref.1-Fig.10** PASTEURIZATION temperature set.

**Ref.2-Fig.10** INCREMENT  and DECREMENT  push-buttons.

**Ref.3-Fig.10**  INFORMATION PAGE (devoted to expert engineer)







**Ref.4-Fig.10**  Return PASTEURIZATION button (see par.4.4).



4.5 CUSTARD FUNCTION (available on models VF/MF2 and VF/MF3)



By pushing the button (Ref.4-Fig.1) you enter a program allowing production of CUSTARD. The product is heated up to reach temperature set, held at this temperature, then cooled down.

- Heating temperature can be set 50°C to 105°C through button  and  (Ref.1-Fig.11).
- Pause time can be set 0 to 99 minutes through button  and  (Ref.2-Fig.11).
- Cooling temperature can be set +10°C to +40°C through button  and  (Ref.3-Fig.11).

The monitor displays what picture 11 shows.

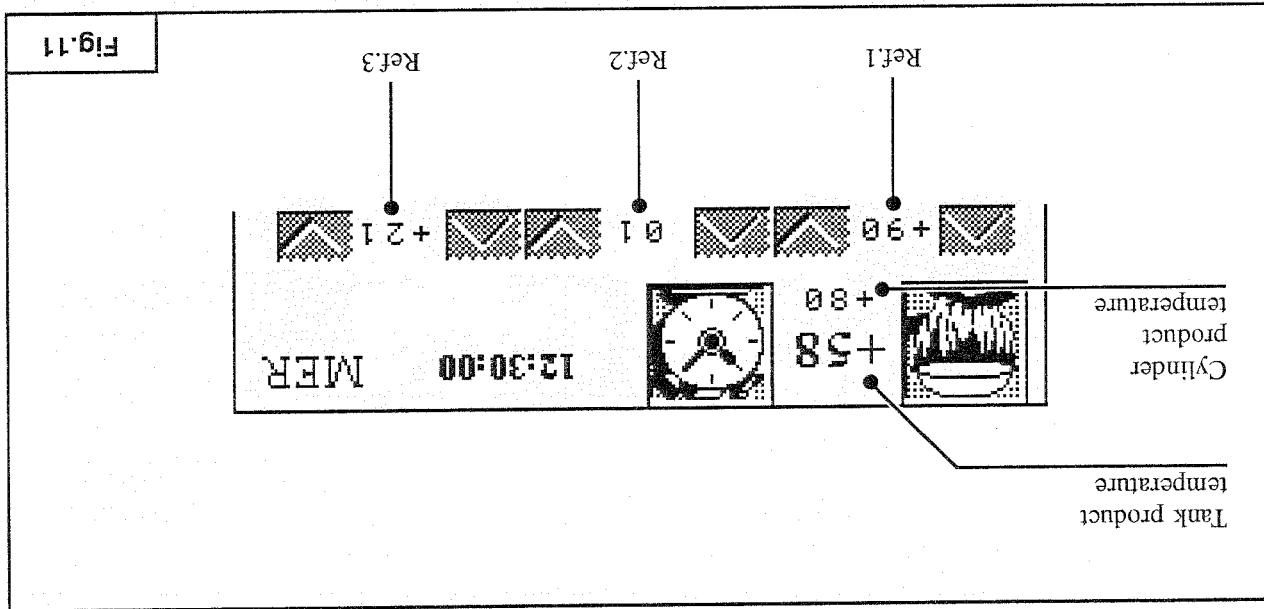




Fig.11



VF / MF



HEATING

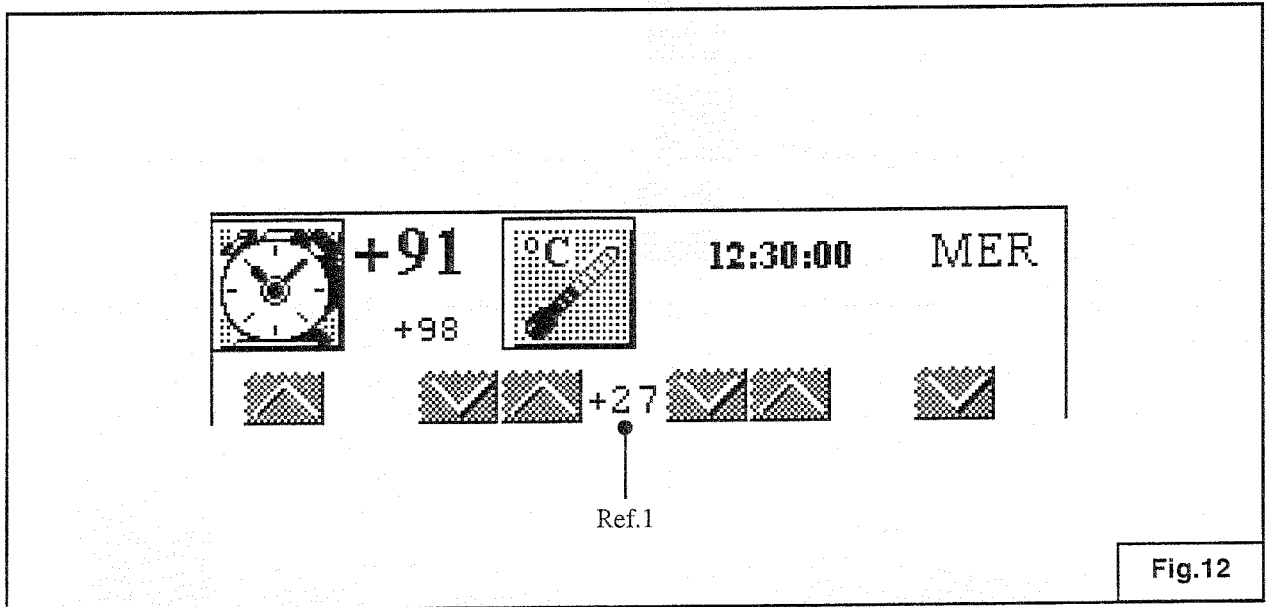
Product is heated up to reach the temperature set (Ref.1-Fig.11), and when heating cycle is complete, the monitor displays what picture 12 shows.

Pause time can be modified by operator (Ref.1-Fig.12) through the push-button  and .

PAUSE

Product is held at heating temperature all set time long.

Cooling temperature can be modified by operator through push-button  and .

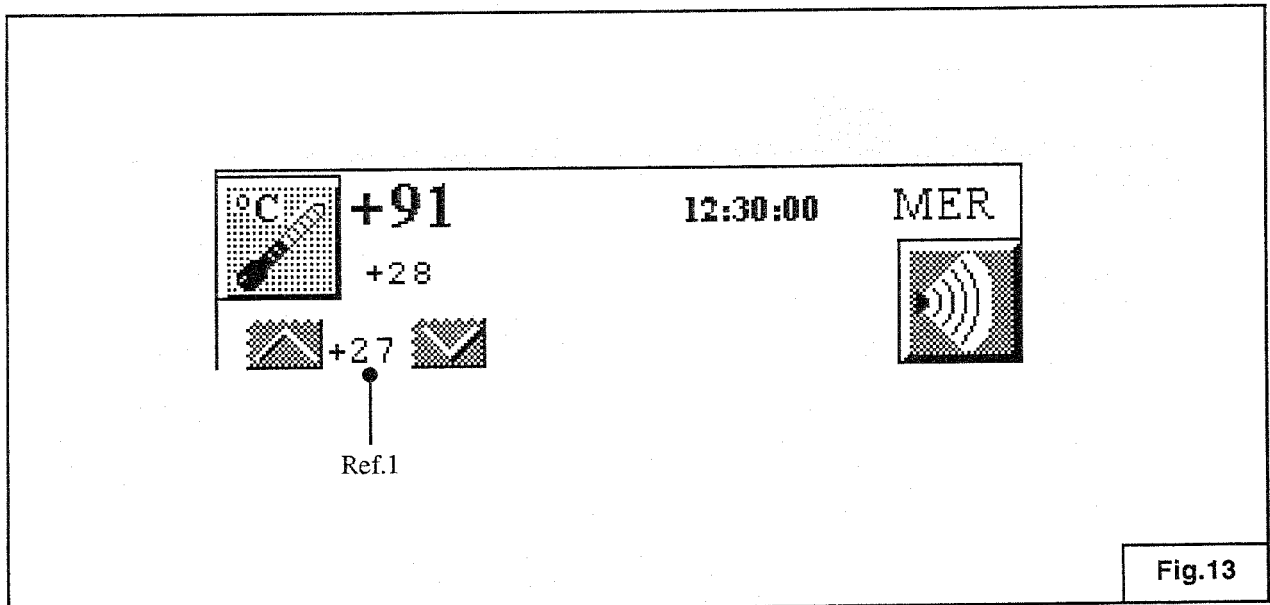


COOLING

When pause time ends, product is cooled down to temperature set (Ref.3-Fig.11 or Ref.1-Fig.13); before reaching final temperature, cooling temperature can be further modified by operator (Ref.1-Fig.13) through

push-button  and .

The monitor displays what picture 13 shows.

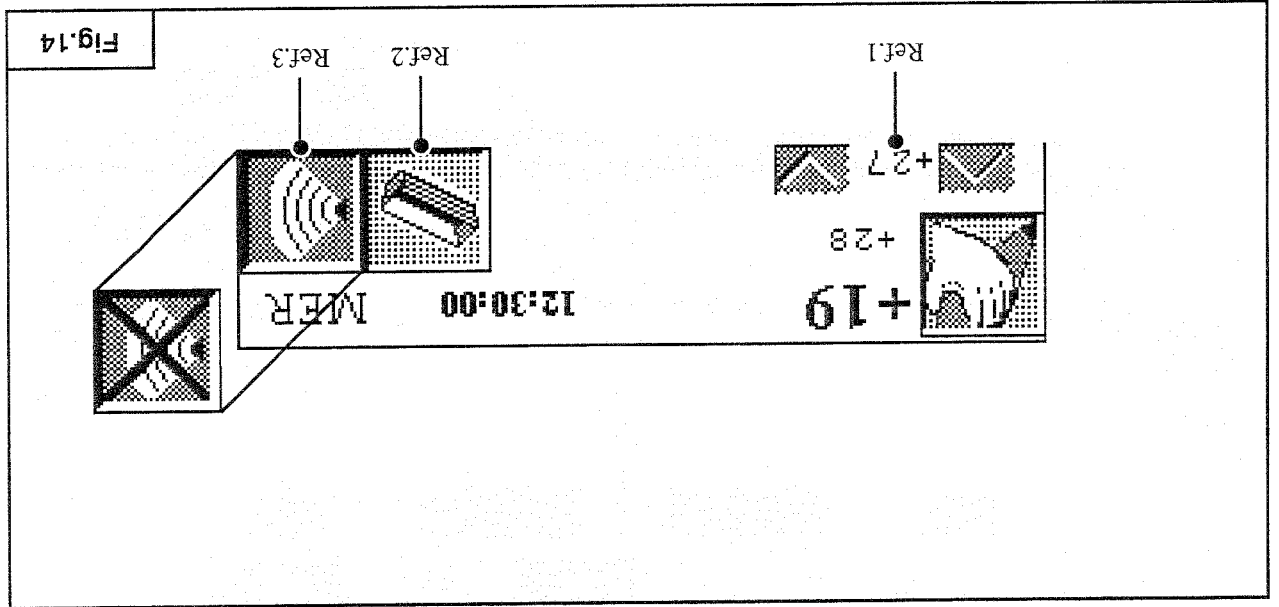


dispensing.

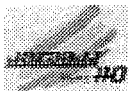
Select DISPENSE push-button



CUSTARD DISPENSE




- if the buzzer is enabled, the push-button will be displayed; select then the push-button disabling it; the monitor will display the push-button
  - if the buzzer is disabled, the push-button will be displayed; select then the push-button enabling it; the monitor will display the push-button
- "Cycle end" warning buzzer can be either enabled or disabled by the operator, as described herebelow:
- When cooling cycle is completed (after 3 minutes) the buzzer will sound (if enabled) and the monitor displays what picture 14 shows.
- Storage temperature can be modified by operator (Ref. 1 - Fig. 14) through push-button and





4.6  CHOCOLATE FUNCTION (available on models VF/MF3)

By pushing the button  (Ref.5-Fig.1) you enter CHOCOLATE tempering. The monitor displays what picture 15 shows.

From this function the operator can choose among three different kinds of chocolate tempering (BITTER chocolate, MILK chocolate and COLOURED chocolate) by simply pushing relevant push-button or can select CHOCOLATE STORAGE function.

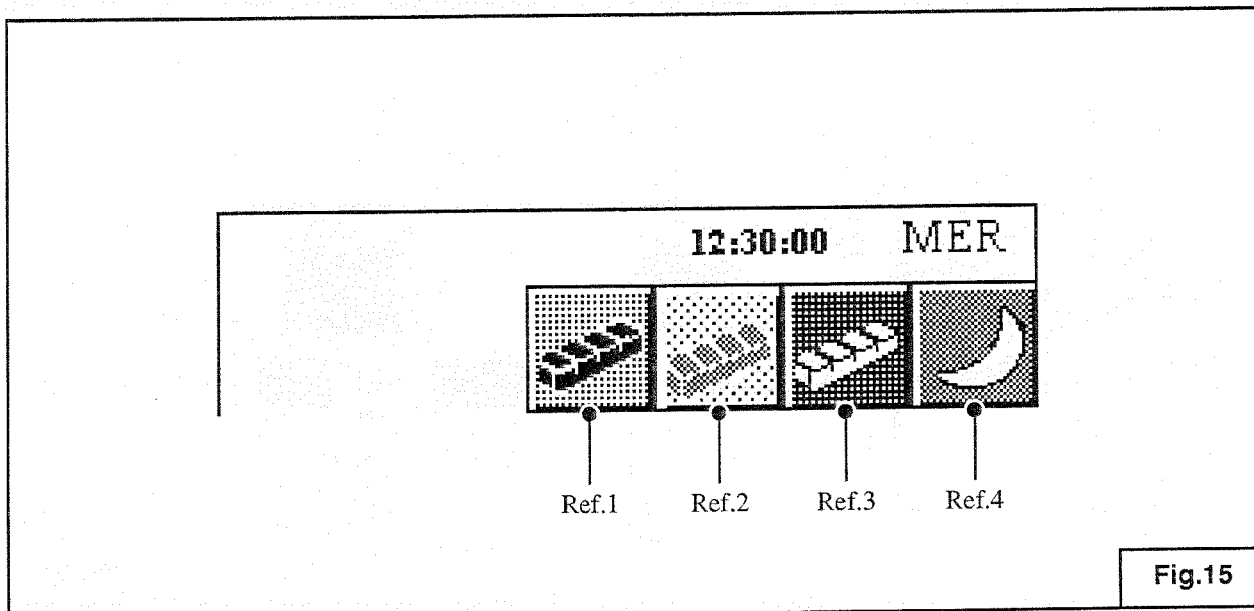



Fig.15

Ref.1-Fig.15  BITTER CHOCOLATE function (see par.4.6.1).

Ref.2-Fig.15  MILK CHOCOLATE function (see par.4.6.1).

Ref.3-Fig.15  COLOURED CHOCOLATE function (see par.4.6.1).

Ref.4-Fig.15  CHOCOLATE STORAGE function (see par.4.6.2).





BITTER CHOCOLATE FUNCTION

4.6.1



By selecting the push-button (Ref.1-Fig.15) you enter the function allowing bitter chocolate tempering.

The monitor displays what shown in picture 16.

First heating temperature (Ref.1-Fig.16), cooling temperature (Ref.2-Fig.16) and second heating temperature (Ref.3-Fig.16) can be modified by operator through relevant push-button  and .

**NOTE:**

Process for tempering all three kinds of chocolate (bitter, milk and coloured chocolate) is the same, only does heating/cooling temperature differ.  
For MILK or CHOCOLATE tempering, select relevant push-buttons (Ref.2 or Ref.3 - Fig.15).

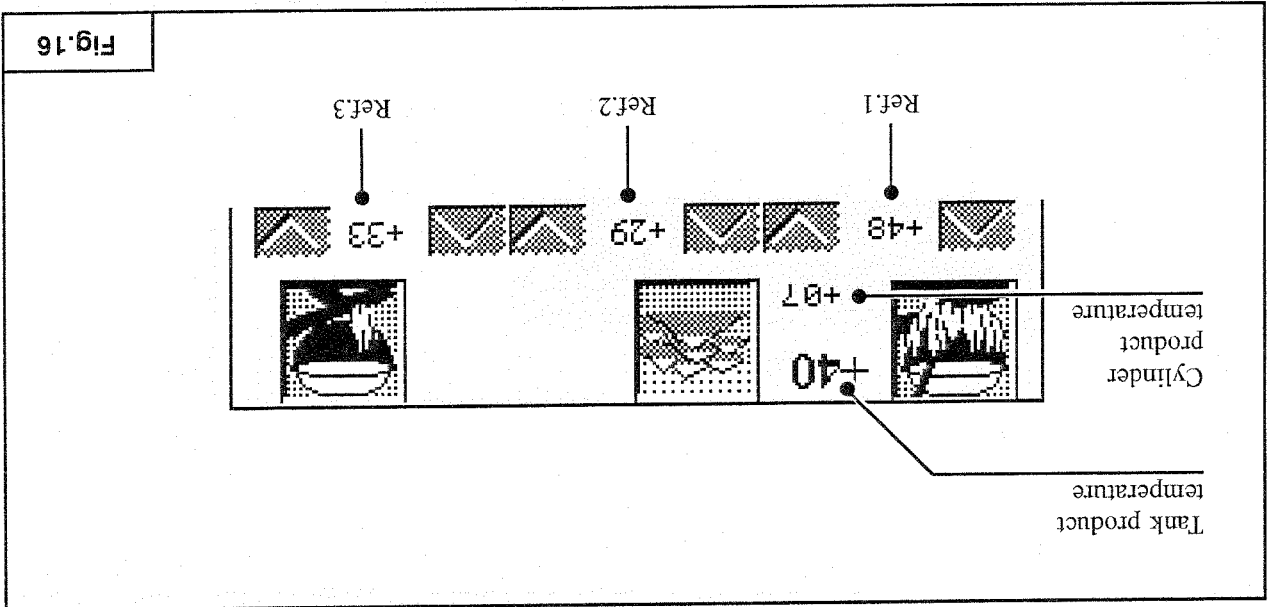






Fig.16

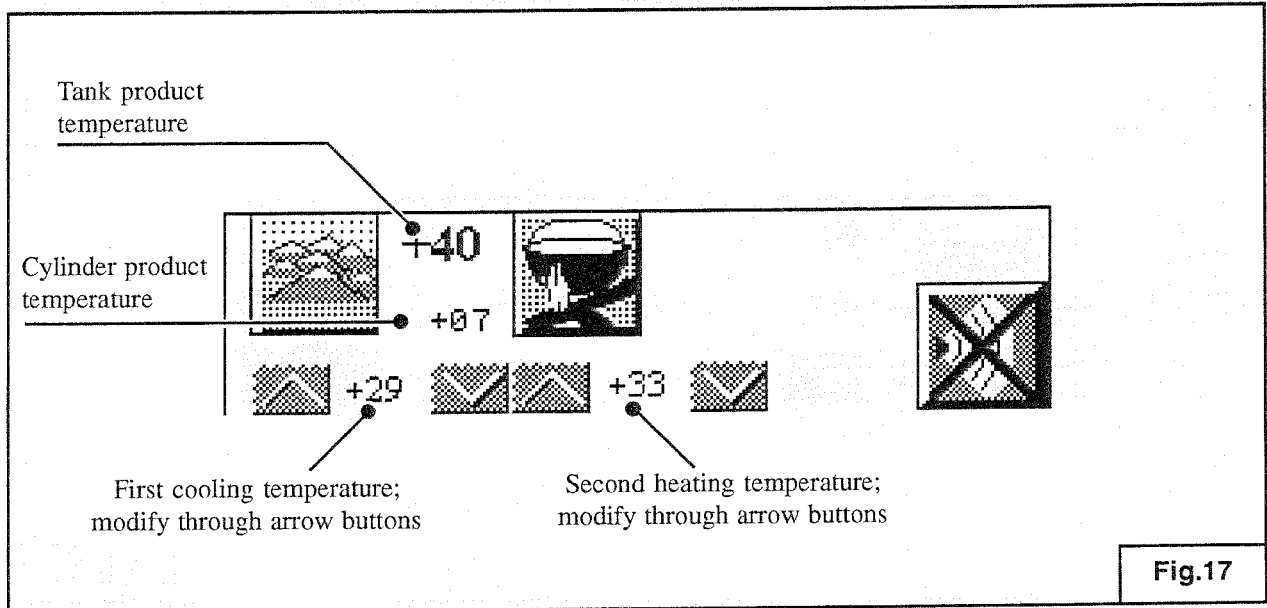


FIRST HEATING

First heating process consists of two phases:

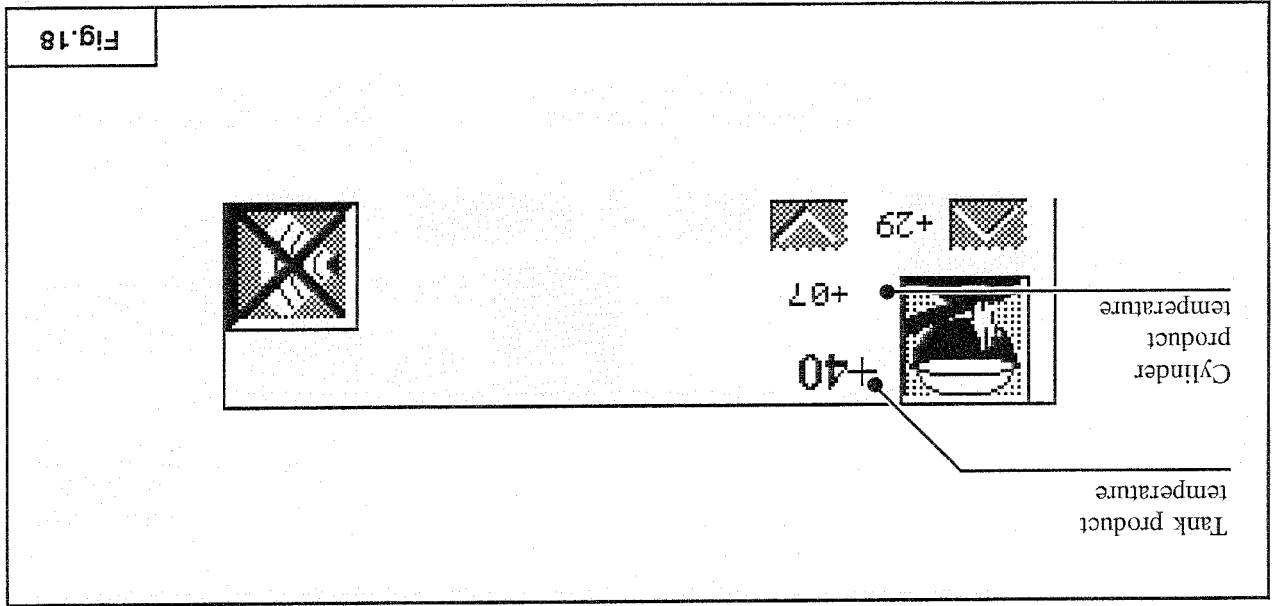
- Product static heating lasting one minute (up to max 60°C).
- Product dynamic heating up to temperature set (Ref.1-Fig.16); when heating cycle is complete, the monitor displays what shown in picture 17. From this moment ahead, the "cycle end" warning buzzer can be either enabled or disabled by operator, as described herebelow:

- if the buzzer is enabled, the push-button  will be displayed; select then the push-button disabling it; the monitor will display the push-button .
- If the buzzer is disabled, the push-button  will be displayed; select then the push-button enabling it; the monitor will display the push-button .



PAUSE

When the first heating cycle is complete, a pause time will follow (the monitor displays what picture 17 shows).

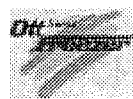


When cooling process is complete, the monitor displays what shown in picture 18.

Product is cooled down up to reach temperature set (Ref.2-Fig.16).

COOLING

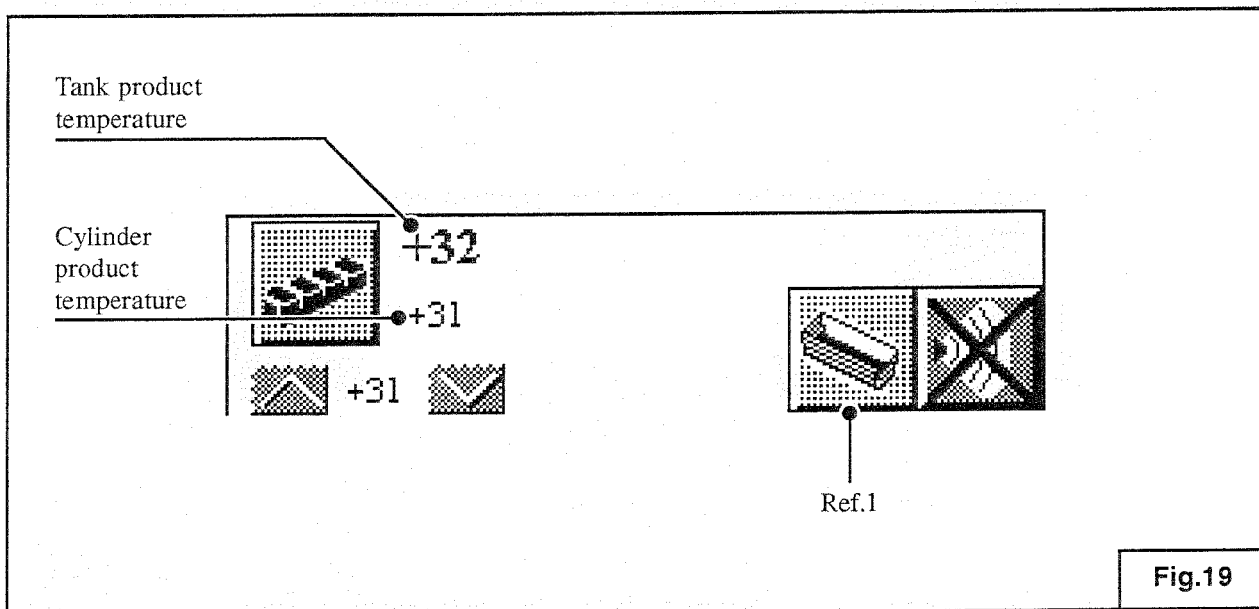




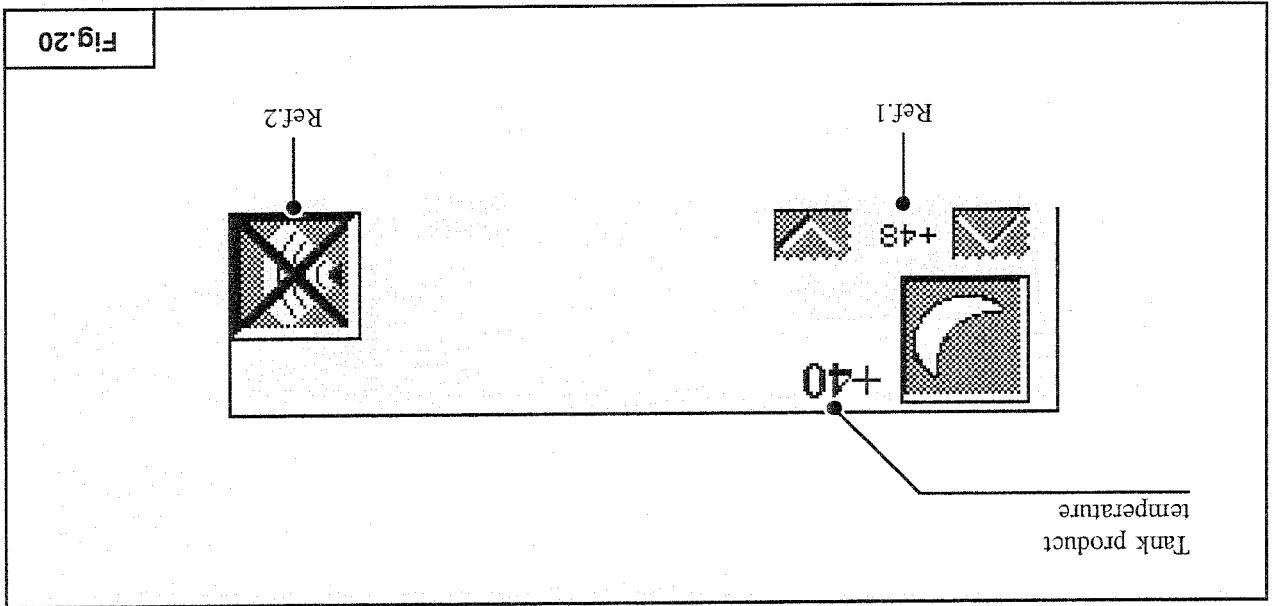
SECOND HEATING



Product is heated up to reach temperature set (Ref.3-Fig.16).


When heating process is complete (after 3 minutes) the buzzer (if enabled) will be activated and the monitor will display what picture 19 shows.



**NOTE:**  
Product is held at temperature previously set and DISPENSE push-button (Ref.1-Fig.19) is inhibited, as the beater runs continuously.



The monitor displays what picture 20 shows.  
 Product is brought to storage temperature set by operator (Ref.1-Fig.20) through push-button  and . "Cycle end" warning buzzer is usually disabled (to enable it select push-button Ref.2-Fig.20).

By selecting the push-button  (Ref.4-Fig.15) you enter CHOCOLATE STORAGE function.

CHOCOLATE STORAGE FUNCTION


4.6.2







#### 4.7 CLEANOUT FUNCTION

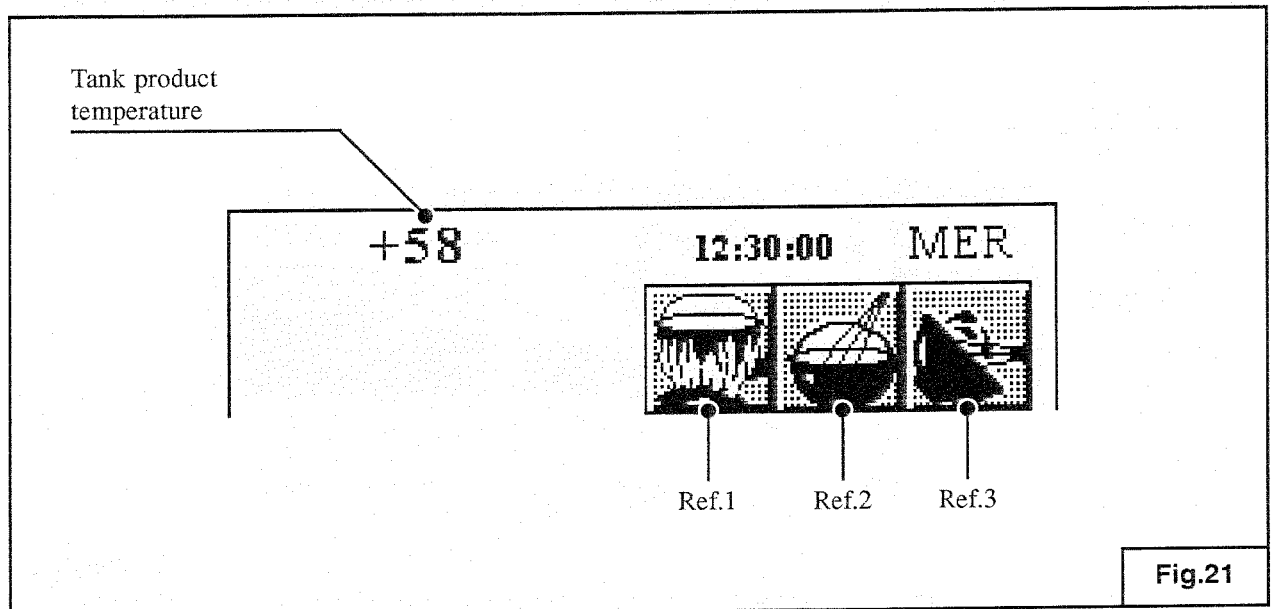
By pushing the button  (Ref.6-Fig.1) you enter CLEANOUT function.

The monitor displays what picture 21 shows.

Mean beating is activated 5 minutes long, then the machine will set at STOP.


From this function, operat or can select one of the two underprograms, namely:

- Manual heating (Ref.1-Fig.21)
- High speed beating (Ref.2-Fig.21)



Ref.1-Fig.21  MANUAL HEATING function (see par.4.7.1)


Ref.2-Fig.21  MEAN BEATING function

Ref.3-Fig.21  HIGH SPEED BEATING function (see par.4.7.2)



4.7.1 CYLINDER HEATING FUNCTION



By pushing the button  (Ref.1-Fig.21) you enter CYLINDER HEATING function.

The monitor displays what picture 22 shows.

Operator can set heating temperature (Ref.1-Fig.22) and time for thermostatic control of mix (Ref.2-

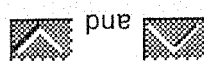




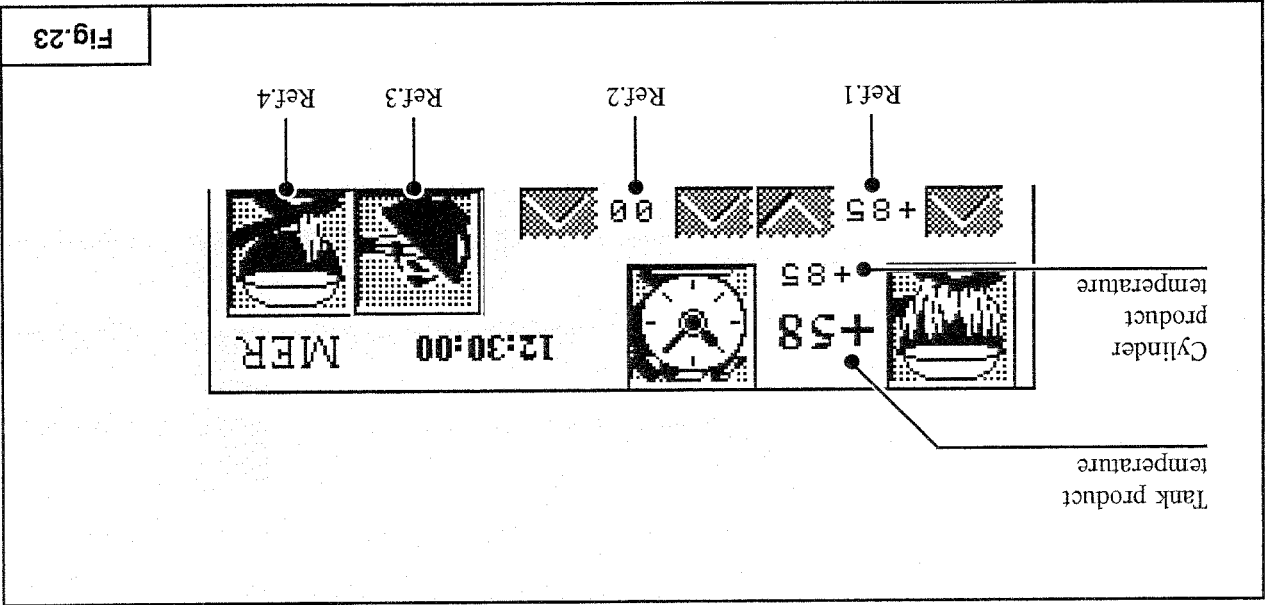
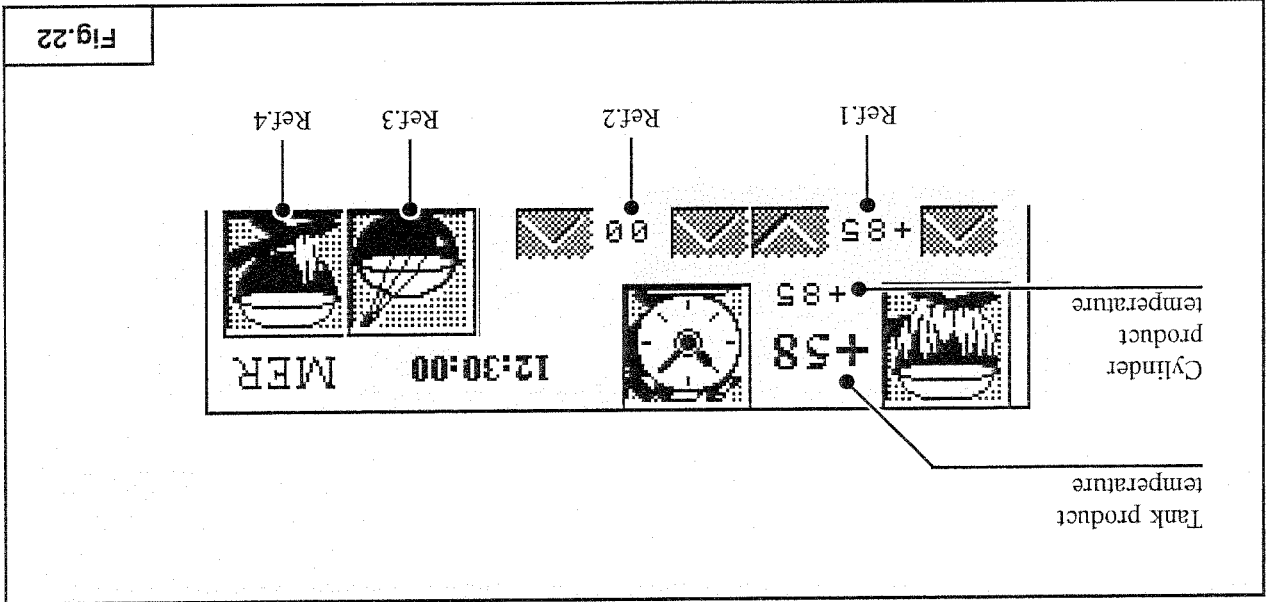
Fig.22) through relevant push-buttons and .

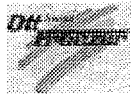


By pushing the button  (Ref.3-Fig.22), the monitor displays what picture 23 shows and high speed beating is turned on; a new pressure on the same button will allow to return to the previous function (slow beating).




By pushing the button  (Ref.4-Fig.22) you enter HALF CHARGE HEATING, to be used for smaller batches.






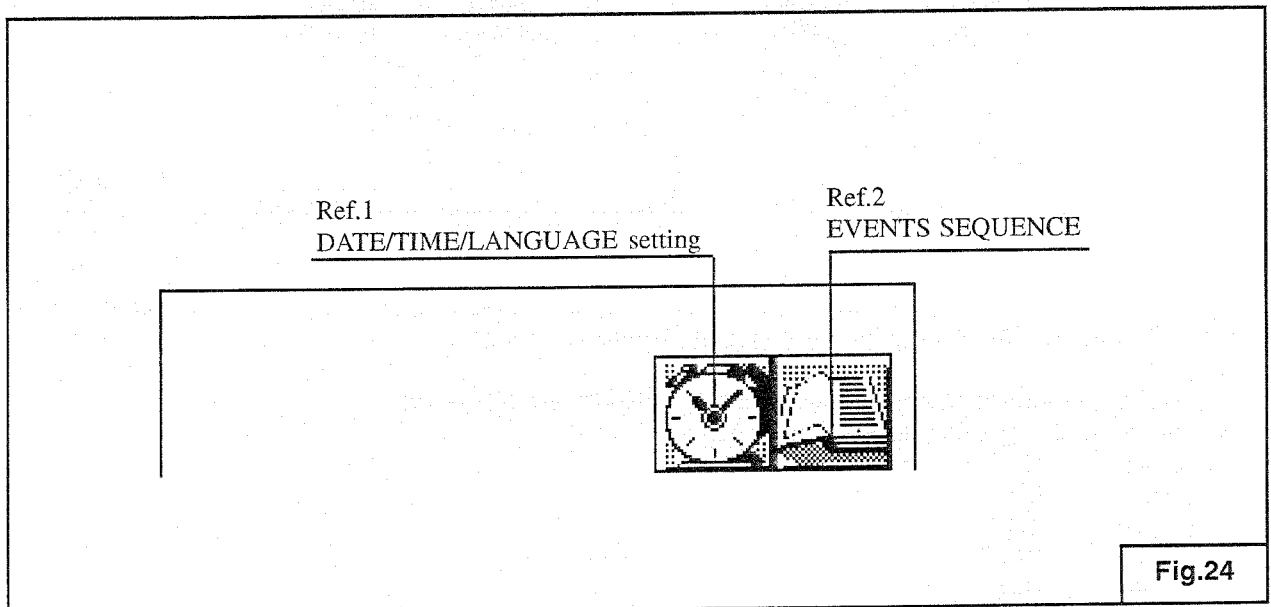
#### 4.7.2 HIGH SPEED BEATING FUNCTION

By pushing the button  (Ref.2-Fig.21) you enter HIGH SPEED BEATING function. High speed beating will be activated 5 minutes long, thence the machine will set at STOP.

#### 4.8 HELP FUNCTION

By selecting the function  (Ref.7 - Fig.1) the monitor displays what picture 24 shows, and you can enter two underprograms, namely:

- TIME/DATE and LANGUAGE setting (Ref.1 - Fig.25 see par.4.8.1)
- EVENTS sequence (Ref.2 - Fig.26 see par.4.8.2).



The second column shows the value that can be modified through arrow buttons (Ref.2-Fig.25). To leave the program, just wait for 30" without pressing any button or simply push STOP.

An arrow by side of the value will indicate the parameter selected (Ref.3-Fig.25).

2) You can now enter HOURS, MINUTES, SECONDS, WEEK DAY, MONTH DAY, MONTH.

- Italian ITA
- Spanish SPA
- English ENG
- German TED
- French FRA

Set the language among following 5 selections:

1) The first parameter concerns LANGUAGE the EVENTS are displayed:

Through left arrow push-buttons (Ref.1-Fig.25) you shift from a parameter to another, whereas with right

arrow push-buttons (Ref.2 - Fig.25) you change parameter values.

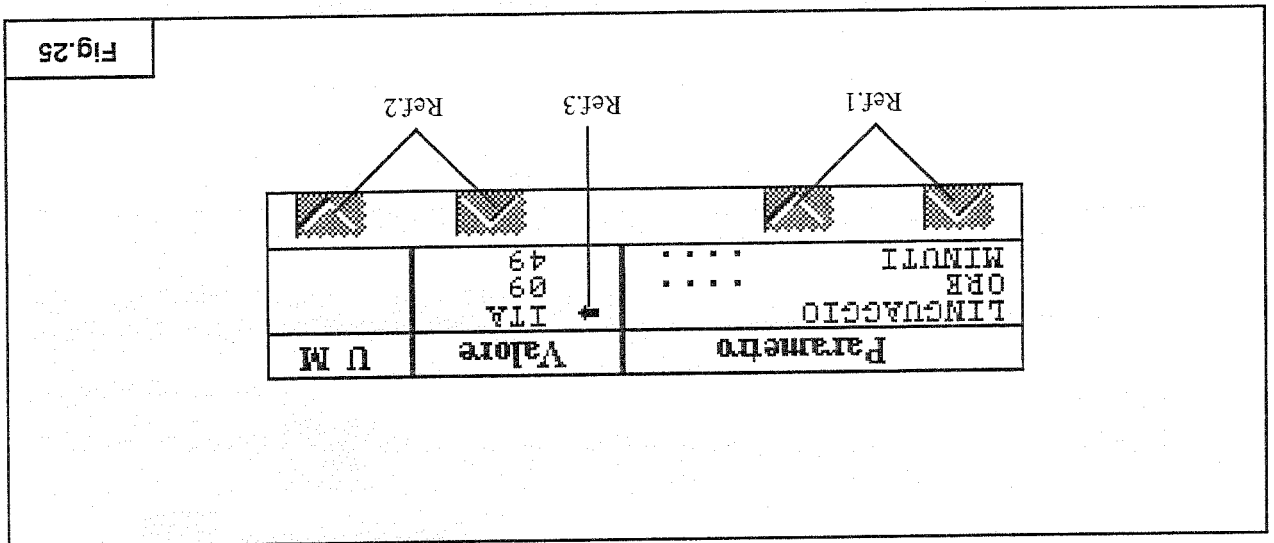


Fig.25

By pushing the push-button (Ref.1 - Fig.24) the monitor displays what picture 25 shows.



DATE-TIME-LANGUAGE SETTING




4.8.1







## 4.8.2

EVENTS SEQUENCE

By pushing the button  (Ref.2 - Fig.24) the monitor displays what picture 26 shows.

TIPO EVENTO	DATA	ORA
		

**Fig.26**

In column EVENT you can read the occurrence (STOP, BLACK-OUT, etc.) and under DATE and TIME


columns you can read time and date the event occurred.


Using the arrow push-buttons, you can see all previous events with relevant time and date.


Here, too, to leave the program just wait for 30" without pushing any push-button or push STOP.

## 5. ALARMS

The machine is provided with an auto-"CHECK" warning the operator about any possible troubles.

- The symbol  is displayed if an alarm is active and remains displayed as a reminder.

- Push the button  in order to read the last alarm occurred.

If a technician must be called, push  in order to read only once the last alarm occurred and consequently inform the technician.

The machine can be used even if an alarm has tripped; if it is a critical one, however, production program (ice cream, custard or chocolate) will not be allowed; **if this is the case, push STOP and do not use the machine till its repair.**

The table herebelow shows all available alarms:

Alarm Name	Description
ALARM TEV	Bowl sensor (Tank temperature) faulty
ALARME TEC	Counter-bowl sensor (Tank evaporator temperature) faulty
ALARM RTC	Compressor motor thermal relay tripped
ALARM RTL	Slow speed beater motor thermal relay tripped
ALARM RTV	High speed beater motor thermal relay tripped
ALARM RTM	Mean speed beater motor thermal relay tripped
ALARM MIP	Front lid open
MIP FAILURE	Front lid switch faulty
ALARM PRESS	High pressure switch tripped

Before calling a technician, check cooling water flow.





## 6. COMMISSIONING

### 6.1 INTRODUCTION

Before unpacking the machine, check for any signs of damage. In this case a representative of the forwarding agent must be present during unpacking in order to report shipping damage immediately.

### 6.2. INSTALLATION

#### 6.2.1 WATER-COOLED MACHINE

Do not install the machine in a location where the temperature might fall below 0°C. In case this happens nevertheless, the machine water circuit must be drained immediately.



#### **FROST DAMAGE.**

#### 6.2.2 AIR-COOLED MACHINE

To ensure the necessary air circulation, the machine must be installed at least 30 cm from walls or any other obstacles.

### 6.3. ASSEMBLY (BY AUTHORIZED PERSONNEL ONLY)

1. Mount and connect the plugs (the machine is delivered without plugs, since the types vary from country to country).
2. Make sure the water inlet and outlet pipes have been connected.
3. A plate on the back of the machine indicates the inlet point. Fitting: 3/4"
4. Set the temperature on the reducer valve to 30°C.

### 6.4. START-UP

1. Plug in the machine
2. Connect the water pipes and open the tap.
3. The machine is ready to start.

## 7. MAINTENANCE

The machine must be cleaned after each load of mix. To do so, remove the lid, fill the tube with water, close the lid, turn on the beater for 3 minutes and drain the liquid obtained through the drainage hole on the front.

### 7.1 WEEKLY MAINTENANCE

Shut off the machine using the power switch or by unplugging it.



Cleaning with pressure devices is not allowed.



The spatula with scraper blade must be dismantled, cleaned, disinfected and rinsed with clean water every week.

- Dismantling the spatula:**
- remove the safety spring
  - remove the spatula
  - remove the blade

- Reassembling the spatula:**
- insert the blade on the helical disk
  - slide the spatula along the shaft
  - insert the two blades into the spatula
  - insert the safety spring

### 7.2 MONTHLY MAINTENANCE

Shut off the machine using the power switch or by unplugging it.



Check for any leaks (oil, water, anti-freeze, etc.).



Clean the air condenser once a month (only for air-cooled machines). To do so, remove the corresponding panel and clean the cooling fins of the condenser using a soft-bristled brush. Do not use metal brushes or sharp objects which could damage the fins and cause refrigerant fluid to leak. Make sure the cover panels have been re-installed before starting the machine.

### 7.3 RECOMMENDED PRODUCTS

#### 7.3.1 REFRIGERANT FLUID

Type: R507

#### 7.3.2 GEAR-MOTOR OIL

Type: Gilcol 30, viscosity ISO 220

500 running hours: check the oil level and make sure there are no leaks

3000 running hours: before an oil change, to be carried out every 3000 running hours thereafter.







VF/MF

### 7.3.3 COMPRESSOR OIL

**Type:** ICEMATIC SW22  
**Type:** EAL ARTIC 22

### 7.3.4 ANTIFREEZE

Propylene glycol, non-toxic

### 7.3.5 CLEANSERS

Use biodegradable, non-aggressive cleansers commonly available on the market.

### 7.3.6 DISINFECTANTS

Powder to clean and disinfect machines:

**Type:** P3-ASEPTO-2000  
**Toxicity:** 5, EGA - n. 30564  
**Contents:** alkaline phosphate and alkaline carbonate

**Corrosive. Do not swallow. Avoid contact with skin and eyes.**

### 7.3.7 STAINLESS STEEL PROTECTION

Odorless, non-toxic, suitable for use in foods industry:

**Type:** Neoblank-Spray  
**Propellant:** Propane / Butane  
**Composition:** per EEC recommendations

## 8. REPAIRS

### 8.1 INTRODUCTION

#### 8.1.1 SAFETY RULES



**Always set the power switch to 0 or unplug the machine.**

The procedures to follow in the event of a malfunction are described in chapter 8.2.



**We recommend calling a technician if the causes of the malfunction cannot be eliminated using the instruction manual alone.**



**All necessary repairs must be performed by skilled technicians.**

Solutions	Possible causes	Malfunctions
<ul style="list-style-type: none"> <li>- Position the lid so that the two handles are parallel to the front and the hopper is in the front position.</li> <li>- Have a technician check the locking switch, and replace if necessary. Have the technician check the cause of the short-circuit, eliminate the damage caused, and replace the fuses.</li> <li>- Press the blue buttons on the left side of the machine</li> <li>- Check (water-cooled): the water tap and cooling water valve must be open the pipes must not be bent</li> <li>- Check (air-cooled): the fins must be clean the condenser fan must not be closer than 30 cm to any obstacles</li> <li>- Remove the fan and replace if necessary</li> <li>- Have a technician: check for any leaks in the refrigeration circuit eliminate the leaks top up the refrigerant</li> <li>- Replace the blades or have them sharpened by a technician</li> </ul>	<ul style="list-style-type: none"> <li>- The tub lid is loose</li> <li>- The tub lid is not mounted correctly</li> <li>- The locking switch, main fuse or control current safety device are defective due to a short-circuit or machine overload.</li> <li>- Servo-motor tripped</li> <li>- If the machine is water-cooled, there is no or insufficient cooling water</li> <li>- If the machine is air-cooled, the condenser is dirty or there is insufficient air circulation</li> <li>- The condenser fan is defective</li> <li>- If the machine is water-cooled, there is no or insufficient, cooling water</li> <li>- If the machine is air-cooled, the condenser is dirty or there is insufficient air circulation</li> <li>- There is not enough refrigerant in the system; bubbles appear in the level indicator during the cooling process</li> <li>- The thermostatic expansion valve is malfunctioning</li> <li>- The blades are worn, and an ice crust forms on the wall of the cylinder</li> </ul>	<ul style="list-style-type: none"> <li>- The machine stops or does not work.</li> <li>- The cooling system switches on and off at intervals .</li> <li>- The refrigeration system does not work properly, and thus the ice cream is lacking consistency.</li> <li>- The refrigeration system works properly, but the ice cream is lacking consistency.</li> </ul>



## **9. DISCONNECTION, STORAGE**

### **9.1 INTRODUCTION**

#### **9.1.1 SAFETY RULES**

Never store the machine lying down, to prevent the compressor oil from flowing into the pipes of the refrigeration system, or the gear-motor oil from leaking out. The machine must always rest on its four pivoting wheels.

### **9.2 STORAGE CONDITIONS**

Although a machine may be stored for an unlimited time, improper storage may cause permanent damage. All models require a surface area of approximately 1m<sup>2</sup>. In relation to the weight of the machine; see chapter 1.4 Technical specifications.

To prevent any water remaining in the condenser from freezing the temperature of the storage area must not fall below 0°C.

It is essential to remove all water from water-cooled machines (see chapter 9.3 Disconnection).

### **9.3 DISCONNECTION**

When the ambient temperature falls below 0°C, the water must be thoroughly removed from water-cooled machines. To do so, apply compressed air to the water inlet hole (3/4" fitting). The air must circulate within the system at a pressure above 4-6 bar, until the system is completely empty.

The machine must be cleaned and sterilized inside and out. Finally, rinse with warm water and dry with a dry rag.

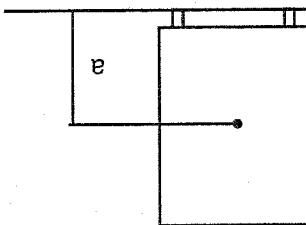
The machine may now be coated with a protective steel spray, to be spread with a dry cloth. This removes dirt and further protects the machine against corrosion (see chapter 7.3.6).

We recommend covering the machine to protect it from dust and dirt.

The machine may be uncovered only in very cold environments, to prevent condensation from forming.

### **9.4 REINSTALLATION**

Clean and dry the machine with a dry rag, then follow the instructions given in chapter 6.4 Start-up.



Machine	Center of gravity (a)
VF-4	570mm calculated value
VF-6	630mm calculated value
VF-12	680mm approximate value
VF-20	580mm approximate value

A fork lift truck must be used to load, transfer and unload the machine. If necessary, the machine may be fastened to the lift truck with belts (belt stretchers).

Overall dimensions:	VF-4 MF	VF-6 MF	VF-11 MF	VF-20 MF
Height:	1300 mm	1750 mm	1750 mm	1750 mm
Width:	500 mm	700 mm	700 mm	800 mm
Depth:	750 mm	930 mm	930 mm	1000 mm
Gross weight:	225 kg	300 kg	320 kg	425 kg
Net weight:	200 kg	265 kg	285 kg	385 kg

Type of machine:	VF-4 MF	VF-6 MF	VF-11 MF	VF-20 MF
------------------	---------	---------	----------	----------

### 10.3 TRANSPORT

The machine must be emptied and cleaned. Place the machine on a wooden skid and fasten it down with two clamps, padding the points where the clamps come into contact with the machine. Wrap the machine with cardboard, and fill all empty spaces with packing material. At least the following information must appear on the packing: two arrows pointing upwards, a glass (fragile goods), an umbrella (protect from water) and, where possible, the number of the delivery note or serial number.

### 10.2 PACKING

Only operators specialized in using fork lift trucks may move the machine.

### 10.1.2 RESPONSIBLE PERSONNEL

Caution! Never leave the machine lying down (see chapter 9.1.1 Safety rules for storage).

### 10.1.1 SAFETY RULES

### 10.1 INTRODUCTION

## 10. PACKING AND TRANSPORT





## **11. WASTE DISPOSAL**

### **11.1 INTRODUCTION**

#### **11.1.1 SAFETY RULES**

Refrigerant fluid must not be disposed of in the environment, but poured into the special collection containers provided.

Follow current regulations for disposing of gear-motor and compressor oil as well.

#### **11.1.2 RESPONSIBLE PERSONNEL**

The personnel in charge of disposal must be suitably trained and educated, and must strictly obey current environmental protection regulations in force in the area in question. Lack of relevant information may harm the environment, animals and people.

### **11.2 WASTE DISPOSAL**

Reusable packing must be reused or returned to the manufacturer or authorized agents.

The refrigerant must be collected using the utmost caution. Oil from the gear-motor and compressor must be stored in separate containers. Once this has been done, the remaining parts may be disposed of.

### **11.3 DIFFERENTIATED DISPOSAL**

The various materials must be separated and carefully grouped together (stainless steel with stainless steel, plastic with plastic, copper with copper, aluminum with aluminum, bronze with bronze, etc.) and delivered to specifically designated disposal areas.

The cooling cylinder may be grouped with stainless steel waste products only after removing the rigid foam, copper pipes and seals. The rigid foam may be eliminated with common waste. Follow the corresponding waste disposal regulations for the other materials.

The side and drainage panels, tub lid (except handles), rings and cooling cylinder are made of stainless steel.

The frame and gray painted parts are steel (St 37-2).

The cooling circuit pipes and electrical wires (except insulation) are copper.

The insulation material from the wires, all seals and the black handles are plastic.

The blades, screw wheels, spatula, helical disk and drainage door are bronze (the latter is chrome-plated).

The motor compartment is aluminum.

You may request a detailed list of components from Maschinenfabrik Ott AG.

Maschinenfabrik Ott AG may personally dispose of the machine for a fee.

### **11.4 DISPOSAL SITES**

The components may be disposed of through specialized firms or at officially designated disposal areas within the territory.

<b>Compressor heater</b>				
P	70W	70W	70W	70W
I	500mA	500mA	500mA	500mA
<b>Cylinder compressor fan</b>				
P	21W	21W	21W	21W
I	250mA	250mA	250mA	250mA
<b>Pump heater</b>				
P	250W	250W	250W	250W
I	2.5A	2.5A	2.5A	2.5A

Electrical utilities of the cooling cylinder in models VF-4/6/11/29 MF 1  
Values for 1x220V/50Hz

<b>Machine model</b>				
VF-4	VF-6	VF-11	VF-20	
<b>Beater motor</b>				
P2	2.2 kW	2.2kW	3kW	3.7kW
I2	4A	4.6A	7.2A	9.5A
<b>Compressor</b>				
P	1.1 kW	1.5kW	2.2kW	3.7kW
I	5A	5.7A	8.4A	12.1A
<b>Condenser fan</b>				
P	80 W	130 W	130 W	150 W
I	0.22A	0.34A	0.34A	0.37A
<b>Boiler heater</b>				
P	3kW	3.75kW	5kW	6kW
I	6.5A	7.1A	10A	12A

Electrical utilities of the cooling cylinder in models VF-4/6/11/20 MF 1  
Values for 3x400V/50Hz

1. unplug the machine from the mains
2. extinguish the fire using a powder extinguisher
3. call the local firefighters

**Possible emergency measures:**

It is impossible to fully eliminate the hazard of fire.

**13. INSTRUCTIONS FOR EMERGENCY SITUATIONS**

1. exact type of machine (shown on the front of the machine itself)
2. the serial number of the machine (remove the tub lid; the serial number is engraved on the cylinder or on the left of the plate)
3. year of manufacture (on the left of the plate)

When ordering spare parts, you must provide certain specific information about the machine:

**12.1 INTRODUCTION**

**12. SPARE PARTS**





VF/MF

Electrical utilities of the cooling cylinder in models VF-4/6/11/20 MF2/3  
Values for 3/380V/50Hz

Machine model	VF-4	VF-6	VF-11	VF-20
<b>Beater motor</b>				
P1	1.2kW	2,5kW	2,5kW	3,0kW
I1	3.5A	6.1A	6.1A	7,0A
P2	1.4kW	3,3A	3,3A	5,0A
I2	4.8A	7.2A	7.2A	10.5A
P3	0.2kW	0.33kW	0.33kW	0.5kW
I3	1.4A	3.3A	3.3A	5.5A
<b>Compressor</b>				
P	1,1kW	1,5kW	2,2kW	3,7kW
I	2,0A	5,7A	8,4A	12,1A
<b>Air condenser fan</b>				
P	80Watt	130Watt	130Watt	150Watt
I	0,22A	0,34A	0,34A	0,37A
<b>Boiler heater</b>				
P	3kW	3,75kW	5kW	6kW
I	6.5A	7.1A	10A	12A

Electrical utilities of the cooling cylinder in models VF-4/6/11/20 MF 2/3  
Values for 1x220V/50Hz

<b>Compressor heater</b>				
P	70Watt	70Watt	70Watt	70Watt
I	500mA	500mA	500mA	500mA
<b>Cylinder compressor fan</b>				
P	21Watt	21Watt	21Watt	21Watt
I	250mA	250mA	250mA	250mA
<b>Cylinder compressor fan</b>				
P	21Watt	21Watt	21Watt	21Watt
I	250mA	250mA	250mA	250mA
<b>Pump heater</b>				
P	250 Watt	250Watt	250Watt	250Watt
I	2.5A	2.5A	2.5A	2.5A

