

# VACUUM PACKAGING MACHINES



INSTRUCTIONS HANDBOOK

# CHAPTER 1

## Identification of the "Instructions Handbook"

*The instructions handbook is a document issued by the manufacturing company and is an integral part of the machine. This document is adequately identified for easy tracing and/or subsequent references.*

*All rights relating to the reproduction and disclosure of the information contained in this handbook and the documentation quoted and/or attached are reserved.*

## Aim of the document

*This handbook contains the information necessary to the customer and assigned personnel for the correct installation, use and maintenance of the machine at good conditions and at maximum safety.*

## Safety precautions and manufacturer's responsibility limits.

*Every operator-machine interaction relating to the intended use of the machine and its overall life cycle has been carefully and thoroughly analysed by the manufacturing company during the design phase, construction phase and the drafting of the instructions handbook.*

*It is nevertheless understood that experience, adequate training and "common sense" of the personnel operating on the machine are of primary importance. These requirements are therefore considered indispensable during all machine operating phases and consultation of this handbook.*

*The non-observance of the safety precautions or specific warnings indicated in this handbook, the use of the machine by unauthorized personnel, violate all safety standards regarding the design, construction, and intended use of the machine and relieve the manufacturer from every liability in the case of damage to persons or property.*

*The manufacturing company is therefore in no way responsible for the non-observance on the part of the user of the safety precautions listed in this handbook.*

## Reference to standards

This document has been drawn up in accordance with the indications given in the following:

- Attachment "I" of Machine Directive 89/392/CEE and subsequent issues: point 1.7.4;
- UNI EN 292/2 – 1992, point 5.5

MACHINE MOD.	●	●	V	●	HZ	●
SERIAL NUMBER	●	●		●		●
SHIPMENT DATE	●	●		●		●
TESTING ENGINEER	●	●		●		●

## CHAPTER 2

### How to consult and use the "Instructions Handbook"

#### Care of the instruction handbook

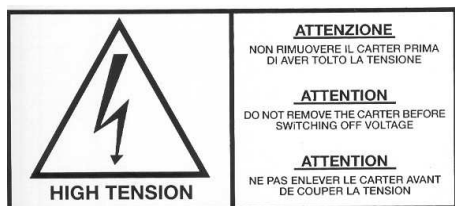
This document is an integral part of the machine. Preserve a copy of this instructions handbook for the entire working life of the machine even if transferred or sold to third parties. Requests for further copies of this document must be made by means of purchase order addressed to the manufacturing company.

To maintain the instructions handbook in good condition:

- use the instructions handbook taking care not to damage its contents. In particular, do not leave the instructions handbook around during use and remember to return it to its proper place immediately after consultation;
- do not remove, rip out or rewrite parts of the instructions handbook. Any changes required must be referred to and subsequently supplied by the manufacturing company.
- keep the instructions handbook in a safe place, away from damp, heat and other environmental elements which could damage it.

#### Symbols applied to the machine

The following safety precaution plates are applied to the machine:



DO NOT REMOVE

#### Definitions

The following definitions are used according to the "Machine Directive" CEE 89/392 and subsequent issues:

- **Operator:** person or persons assigned to machine operation, adjustment, routine maintenance or cleaning.
- **User:** body or person responsible for and/or owner of the machine.

#### Machine manufacturer identification data and positioning of the "CE MARKING"

Identification of the manufacturing company as producer of the machine in accordance with the legislation in force by means of the following data:

- Declaration of conformity;
- CE marking;
- Instructions Handbook.

A special plate (fig. 1), applied to the machine is marked permanently with the following data concerning **CE MARKING**:

MODELLO MODEL	
MATRICOLA MATRICULATION	
ANNO DI PRODUZIONE MANUFACT. YEAR	
POMPA PER VUOTO VACUUM PUMP	
SCHEDA ELETTRONICA ELECTRONIC CARDS	
POTENZA INSTALLATA INSTALLATION POWER	
TENSIONE VOLTAGE	220 V
FREQUENZA FREQUENCY	50 Hz
<b>CE</b>	

fig. 1

**Do not remove the CE MARKING plate and/or replace it with a different one. Should the CE MARKING plate be accidentally damaged, detached from the machine or the manufacturer's seal removed, the customer must compulsorily and immediately inform the manufacturing company.**

# CHAPTER 3

## WARRANTY

*The manufacturing company engages, for 12 (twelve) months from the date of shipment and direct delivery of the goods, to assure the customer or concessionaire the integrity and the good working of the components regarding the above mentioned machine.*

*All machine components normally subject to wear, that is to say components in which use causes a constant wear and tear, are not included in the warranty:*

- A. *Electrical resistances – Teflon – Rubber gaskets – Chamber opening pistons – Sealing diaphragms – Air filters – Oil filters – Oil change – Pump blades.*
- B. *If the vacuum pump of a machine under warranty is sent to the manufacturing company because of aspiration problems and malfunction, the manufacturing company has the right to check whether any foreign bodies have been aspirated (liquids, solids, sauces, etc.). If this should be the case, the repair (materials and the labour) will be duly charged, since the problem is not due to manufacturing defects, but to customer negligence during use.*
- C. *Possible problems linked to the electronic panel cards of the circuit will have to be examined by the manufacturing company before sending the part which has to be replaced under warranty. A sudden change in voltage, an electrical overfeeding, a disturbance in the external current network, could cause damages which are not to be attributed to the manufacturing company.*
- D. *Possible problems with pneumatic, structural, mechanical parts will be duly solved as per warranty terms without any charge.*
- E. *During the warranty period, for interventions under warranty, the replaced materials will not be charged, while the labour will be duly charged. During the warranty period, for interventions not included in the warranty for various reasons, both the materials replaced and the labour will be duly charged.*
- F. *During the warranty period, should any external intervention of our technicians be requested, the travel costs (to and from) will be fully charged independently of the reason behind the intervention.*
- G. *Any interventions on the machines are to be carried out at the manufacturer's premises both during the warranty period and after the warranty period; we point out that no transport costs (to and/or from) will be refunded.*
- H. *The transport for any materials sent to the manufacturing company, both during the warranty period and after the warranty period, must compulsorily take place in ex works.*
- I. *Any materials sent to the manufacturing company with transport charges will be automatically refused.*
- J. *Any components considered defective (pump, electronic panel card, etc..) and mishandled by the customer during the warranty period will not be considered under warranty. The manufacturing company has the task of carrying out this function in a strict manner.*

*Do not remove the "CE MARKING" plate and/or replace it with a different one. Should the "CE MARKING" plate be accidentally damaged, detached from the machine or the manufacturer's seal removed, the customer must compulsorily and immediately inform the manufacturing company.*

## CHAPTER 4

### General safety precautions

*It is recommended to comply strictly with the following safety precautions:*

- *never touch the metal parts of the machine with wet or damp hands;*
- *do not pull the supply cable or the machine itself to disconnect the plug from the current outlet;*
- *children or unqualified personnel are not allowed to use the machine without supervision;*
- *electrical safety of the machine is ensured by its correct connection to an effective earthing as in accordance with the electrical safety standards in force; it is necessary to check this fundamental requirement and, if in doubt, ask for a thorough check by professionally qualified personnel. The manufacturing company cannot be held responsible for possible damages caused by the lack of a plant earthing;*
- *in the case of a possible damage to the safety earthing, disconnect the machine in order to prevent its activation;*
- *always use fuses complying with safety standards in force, and with the correct value and with the proper mechanical characteristics;*
- *do not make use of repaired fuses and avoid causing short circuits between the terminals located on the fuse holder;*
- *the user of the machine must not replace its supply cable; in the case the supply cable is damaged or needs replacing, refer only to the manufacturing company of the machine for its replacement;*
- *keep the cable away from hot parts;*
- *always switch off and disconnect the machine from the power supply before beginning any general cleaning or washing operation;*
- *clean machine coating, panels and controls using soft and dry cloths, or cloths slightly soaked in mild alcohol or detergent solution.*

### Obligations in the case of malfunction and/or potential danger

Operators are obliged to signal any deficiency and/or potentially dangerous situation immediately to a direct superior.

### User obligations

The user must inform the manufacturing company immediately of any safety system defect and/or malfunction and of any presumed danger encountered. It is strictly forbidden to the user and/or third parties (excluding duly authorized personnel of the manufacturing company) to make modifications of any kind or extent to the machine and its functions or to this technical publication. In case of malfunctions or danger due to the non-observance of the above, the manufacturing company cannot be held responsible for the consequences. It is advisable to request any modifications directly to the manufacturing company.

# CHAPTER 5

## INSTALLATION

Remove the packaging and check that the machine is undamaged. In particular, look for any possible damages caused by transport. If in doubt, do not use the machine and refer to the manufacturing company.

### Place

Position the machine in a place with low humidity percentage and far from heat sources.



**DO NOT INSTALL THE MACHINE IN AN EXPLOSIVE ATMOSPHERE.**



**DISCONNECT THE POWER SUPPLY PLUG FROM THE MAINS BEFORE STARTING ANY CHECKING OPERATION WHICH MAY REQUIRE PARTS DISASSEMBLY.**

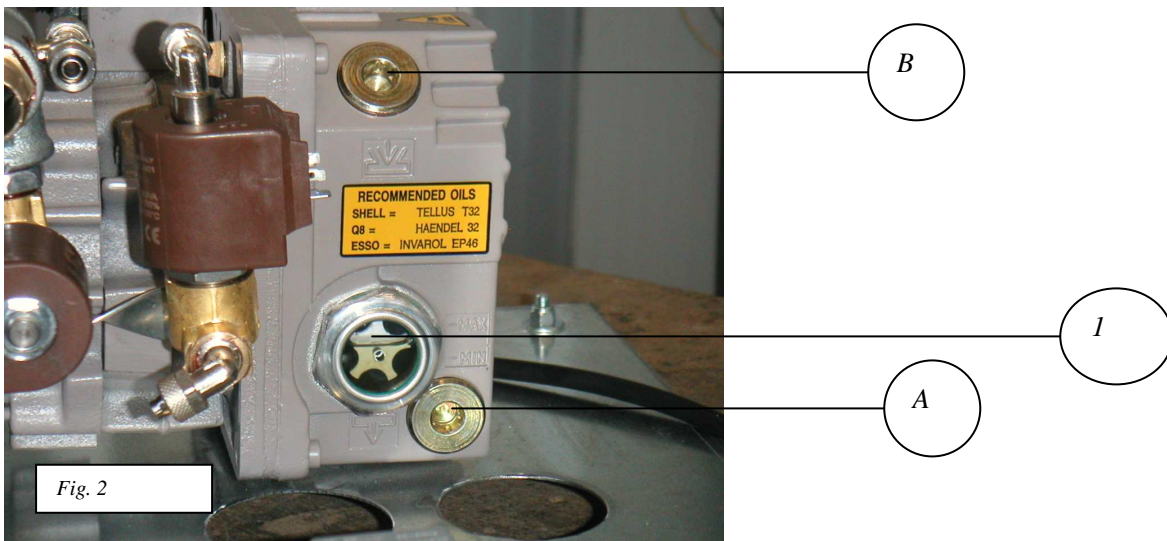


Fig. 2

### Connections

Before starting the machine, check the oil level through the sight glass located on the motor (fig. 2, detail 1). Loosen the 4 screws locking the casing and remove it to reach the sight glass (models with oil bath vacuum pumps).

### Note

**BEFORE CONNECTING THE VACUUM PACKAGING MACHINE, MAKE SURE THAT THE PLATE DATA CORRESPONDS WITH THE SUPPLY MAINS DATA.**

The plate is located on the side of the casing.

After level checking and casing re-installation, connect the plug to a current outlet 220V.

If it is not possible to connect the plug and the outlet, the outlet must be replaced with the correct one by professionally qualified personnel who should also check that the outlet cable section is correct for machine power consumption.

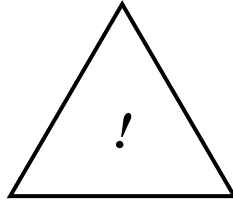
It is not advisable to use adapters, multiple outlets and/or extensions.

If this should be the case, use only simple or multiple adapters and extensions in accordance with the safety standards in force. Do not exceed current capacity limit and maximum power level marked on the multiple adapter.

## MACHINE AND CONTROLS DESCRIPTION

The bell-lid vacuum packaging machines produced by us are modern machines with an interchangeable modular card and totally electronic controls which therefore are not subject to wear.

The sealing system, with electronic control, is composed of one stainless steel bar (with plate resistance : 5mm.) which thanks to an excellent pneumatic system, guarantees a balanced and homogeneous welding of any kind of bag being used (nylon, polyethylene, aluminium, cryovac). The extremely modern vacuum pump guarantees together with a high final vacuum degree, a surprising operative silentness, even working at non-stop cycles.

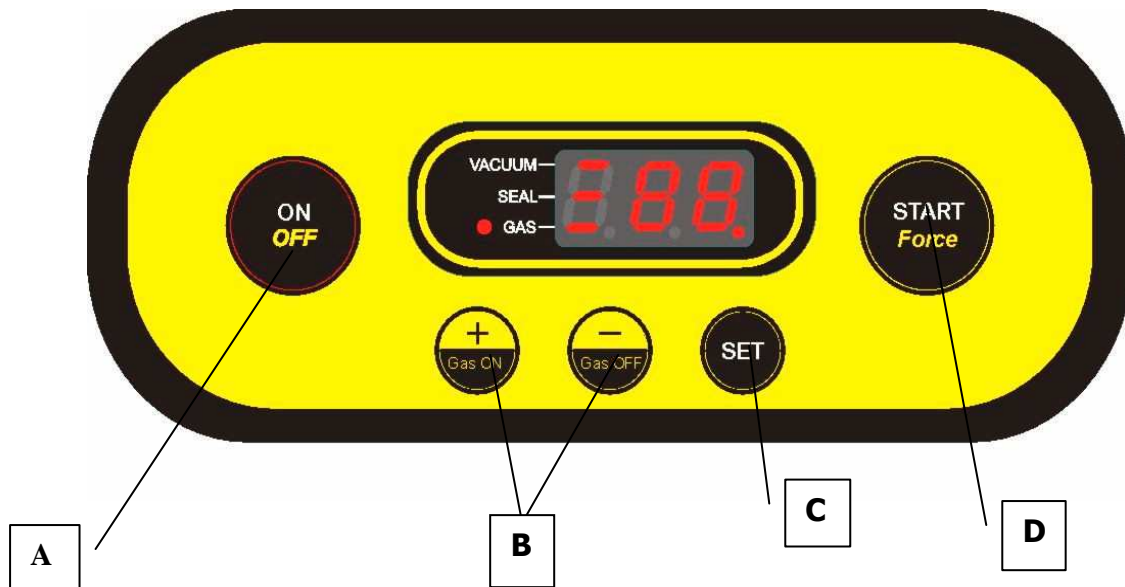


MACHINES DESCRIBED UP TO THIS POINT HAVE BEEN PARTICULARLY DESIGNED FOR VACUUM-PACKAGING OF PRODUCTS ACCORDING TO THE INSTRUCTIONS GIVEN IN THE PRESENT HANDBOOK AND THEREFORE THEY ARE INTENDED FOR THIS USE ONLY. ANY OTHER USE IS TO BE CONSIDERED INCORRECT AND THEREFORE DANGEROUS. THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR POSSIBLE DAMAGES CAUSED BY INCORRECT, UNREASONABLE USE.



- |   |   |
|---|---|
| 1 | Stainless steel external structure                      |
| 2 | Plexiglas bell-lid                                      |
| 3 | Stainless steel chamber                                 |
| 4 | Aluminium hinge which fixes the bell-lid to the machine |
| 5 | Food atoxic polyethylene shelves                        |
| 6 | Silicone sealing counter-bar                            |

## DIGITAL PANEL



The ECOVAC line of vacuum packaging machines has got 6 different working programs (P1-P2-P3..) that you can regulate depending on the user's choice.

- A.** "ON/OFF" general button, to switch the digital panel on and off. If this button is pressed during the work cycle, the machine discharges.
- B.** +/- buttons to change the machine parameters (Vacuum, sealing and - where available- gas time)
- C.** When the "SET" button is pressed, we'll enter P1 (Program n.1). As we click it once again, we'll see a small red led appearing near the "vacuum" sign and, thanks to the "+" and "-" buttons, we can increase or decrease our vacuum time (average vacuum time is 30/32sec.) After regulating the vacuum time, if we push once more the "SET" button, we'll see a red led closet o "SEAL" and we'll follow the same rules previously described to change this value (Average seal time 3/4sec.) → the small red dot that you see on the right of the seal time shows a 1/2 sec. Please follow the same rules to change P2-P3 and so on. Please follow these rules to customize all the other programs P2, P3 and so on. You can activate the inert gas option (You'll be informed of its activation by the small red led on the left side of the word "GAS") immediately after pushing the "SET" button: as you see P1 (or P2 ect..) blinking, you can turn this option on or off by using the "+" or "-" buttons.
- D.** START/FORCE button:
  - When the machine is not working and the bell lid in open, the pump runs for about 15 sec and warms itself up
  - If you push it once while working, the machines seals immediately your bags and the lid opens.
  - If you push it twice very quickly when you're having you working cycle, every single activity of your machine will be stopped and the bell-lid opens.



# CHAPTER 6

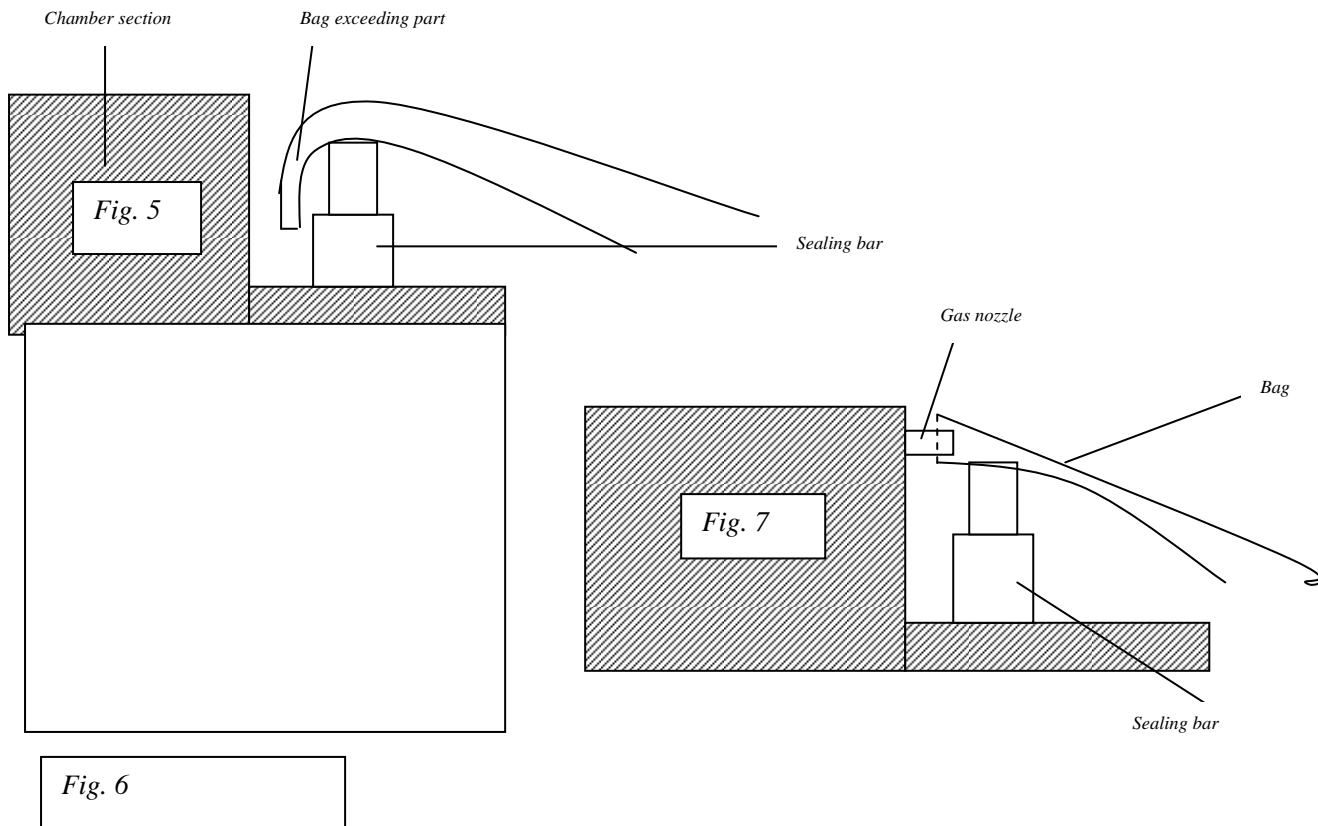
## USE OF THE MACHINE

### Vacuum-packaging

1. Connect the bipolar plug, if 220V/240V, or the three-pole plug, if 380V/415V, to the current outlet.
2. Press the line main switch 7 and the ON/OFF button thus connecting the electric circuit which supplies the modular card for the automatic cycle phases.
3. Set the vacuum time (or percentage) required, the sealing time and the gas injection time (if the machine is equipped with such a system).
4. Position the bag (or bags) inside the vacuum chamber; put the bag opening perfectly flat on the sealing bar. Put the exceeding part of the bag, if any, in the fissure between the chamber and the sealing bar.
5. Two or three removable food atoxic polyethylene shelves are positioned inside the vacuum chamber to level the product thickness according to the sealing bar. The polyethylene shelves can be removed or left inside the vacuum chamber depending on necessity..
6. Lower the bell-lid and press adequately on it until it remains closed, thus permitting the work cycle to begin.
7. The different cycle phases are automatic and after a time preset by the manufacturer the bell-lid opens thus enabling the subsequent cycles to begin.

### Vacuum-packaging with inert gas injection (Optional)

1. Set the work cycle with inert gas injection on the control panel by pre-selecting the relevant time.
2. Connect the hose coming from the gas cylinder to the hose connection positioned on the side/rear of the vacuum packaging machine (1 fig. 6) by means of the relevant clamp, then set the gas cylinder gauge at a pressure value of 1 ATA.
3. Position the bag containing the product inside the vacuum chamber, fitting the gas nozzle inside the bag opening (1 fig. 7); make sure that there are no folds obstructing the gas flow.



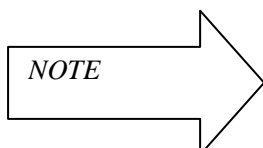
<i>PRODUCTS</i>	<i>OXYGEN % (O2)</i>	<i>CARBON DIOXIDE % (CO2)</i>	<i>NITROGEN % (N2)</i>
<i>Sliced salami</i>	-	20	80
<i>Roast meat</i>	80	20	-
<i>Beer/Can drinks</i>	-	100	
<i>Biscuits and oven products</i>	-	100	100
<i>Coffee</i>	-	100	100
<i>Fresh meat</i>	70/80	30/20	-/-
<i>Dehydrated meat and spices</i>	-	-	100
<i>Minced meat</i>	-	-	100
<i>Chocolate</i>	-	100	-
<i>Fresh cheese / Mozzarella</i>	-/-	20/-	80/100
<i>Mature cheese /Cream/Butter/Margarine</i>	-	-	100
<i>Fresh salad / Parsley</i>	-	50	50
<i>Yoghurt / Puff pastry</i>	-	100	-
<i>Powdered milk</i>	-	30	70
<i>Baking powder</i>	-	100	100
<i>Apples</i>	2	1	97
<i>Sliced bacon</i>	-	35	65
<i>Sandwich loaf / Bread</i>	-	100	-
<i>Toast / Toasted bread</i>	-	80	20
<i>Pasta</i>	-	-	100
<i>Fresh pasta / Tortellini / Lasagne</i>	-	70/100	30
<i>Potatoes / Fried potatoes / Snacks / Hop</i>	-		100
<i>Anchovies, sardines, etc..</i>	-	60	40
<i>Fish</i>	30	40	30
<i>Pizza</i>	-	30	70
<i>Poultry</i>	-	75	25
<i>Tomatoes</i>	4	4	92
<i>Precooked food</i>	-	80	20
<i>Sausages</i>	-	20	80
<i>Escalopes</i>	70	20	10
<i>Fruit juice</i>	-	-	100
<i>Trouts / Fish-breeding</i>	-	100	-
<i>Wine / Oil</i>	-	-	100

## VACUUM PACKAGING OF LIQUID OR SEMILIQUID PRODUCTS

By means of the bell-lid vacuum packaging machines produced by us it is possible to vacuum package liquid or semiliquid products (soups, sauces, etc..) thus increasing their duration time and keeping hygiene and taste unchanged.

Fill the bag up to 50% of its capacity only, and keep a difference of level between the bag edge and the sealing bar (by removing the internal shelves) when positioning the bag in the machine.

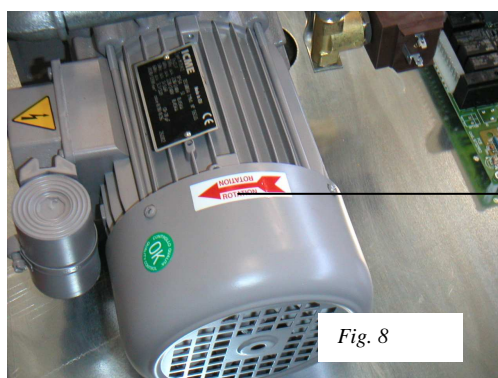
- Vacuum cycles are set as described in the chapter *USE OF THE MACHINE*.
- Since it is not possible to compress liquids, they do not need a modified environment during packaging, that is with inert gas addition.
- All the vacuum packaged products can be stored one upon another in the cold room.



**THE VACUUM PACKAGING MACHINES ARE NOT SUITABLE FOR THE PACKAGING OF FOAMING LIQUID PRODUCTS OR CONTAINING SUGAR WITHOUT STEP/VAC, AS FOAM INCREASES DURING SUCTION OPERATION THUS CAUSING PRODUCT LEAKAGE FROM THE BAG.**

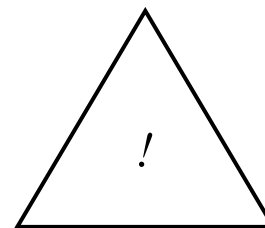
## SAFETY PRECAUTIONS

- Reset the line by pressing the luminous button (fig. 7 page 8) to “OFF” position thus switching it off, each time work processing with the machine is completed.
- Check the direction of rotation of the motor on vacuum packaging machines with three-phase power supply. The direction of rotation is indicated by a sticker on the motor itself (1, fig. 8). Should the motor rotate in the opposite direction (in this case, there is a loud clang and the bell-lid does not remain closed) exchange two of the three supply cables in the plug (except the yellow-green earthing).



- If necessary, exchange the position of the brass bars in the motor terminal board to turn the three-phase motor star connection (380V/3) into the delta connection (220V/3). Then act on the two transformers by moving the jack plugs from the 380V terminal to the 220V terminal.
- During normal processing, the vacuum chamber and bell-lid do not require cleaning operations. Should this operation be necessary (for example – because of product leakage from the bag) use a cloth soaked with alcohol.

**BEFORE STARTING CLEANING OPERATIONS, DISCONNECT THE SUPPLY PLUG FROM THE MAINS.**



*DURING WINTER TIME, IT IS ADVISABLE TO PRE-HEAT THE PUMP IN ORDER TO LIQUEFY THE OIL BEFORE IT CIRCULATES THROUGHOUT THE MACHINE. LOWER THE BELL-LID (DO NOT CLOSE IT) UNTIL THE PUMP STARTS WORKING AND KEEP IT IN THIS POSITION FOR 10/15 SEC. BEFORE STARTING THE NORMAL WORKING CYCLE (see HEAT PUMP).*

**PRESERVATION PERIOD FOR VACUUM-PACKAGED PRODUCTS AT A TEMPERATURE OF + 0° / +3°C.**

**FRESH MEAT**

BEEF	30/40 days
VEAL	30/40 days
PORK	20/25 days
WHITE MEAT	20/25 days
RABBIT AND FOWL (with the bone)	20 days
LAMB AND KID	30 days
SAUSAGES	30 days
GIBLETS	10/12 days
(liver, heart, brains, tripe, etc..)	

**FISH**

*Average duration: 7/8 days with really fresh products.*

**MATURED SALAMI**

*Preservation period: more than 3 months.*

**MATURED CHEESE**

*Parmesan cheese, sheep's milk cheese, etc...: 120 days.*

**FRESH CHEESE**

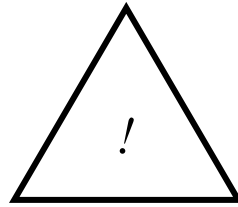
*Mozzarella, brie, etc...: 30/60 days.*

**VEGETABLES**

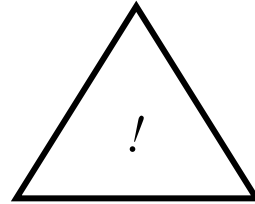
*Generally: 15/20 days.*

## CHAPTER 7

### CHECKING AND MAINTENANCE OPERATIONS



*ACCESS TO THE MACHINE INTERNAL COMPONENTS IS PERMITTED TO THE MANUFACTURER'S QUALIFIED PERSONNEL ONLY. IN CASE UNAUTHORIZED PERSONNAL ENTERING THE MACHINE OF HIS/HER OWN WILL, THE MANUFACTURING COMPANY CANNOT BE CONSIDERED RESPONSIBLE FOR POSSIBLE ACCIDENTS AND DAMAGES TO PERSONS OR THINGS.*



*ALL ELECTRIC COMPONENTS ARE PROTECTED INSIDE THE MACHINE BODY AND IT IS NECESSARY TO REMOVE THE RELEVANT SAFETY CASING (WHICH IS FASTENED WITH SCREWS) TO REACH THEM. BEFORE ENTERING THE MACHINE BODY, DISCONNECT THE CURRENT PLUG FROM THE ELECTRIC SUPPLY PANEL.*

### Maintenance

1

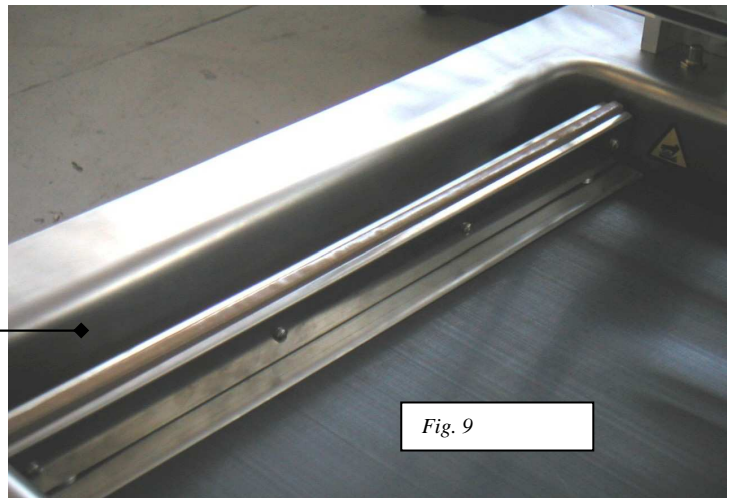
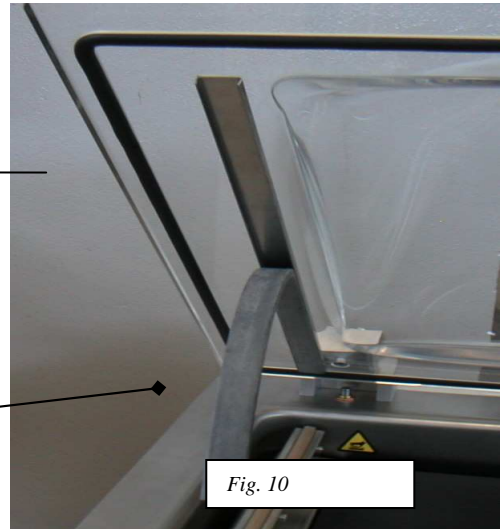


Fig. 9

1. Clean the sealing bars (1 fig. 9) and the silicone counter-bar (1 fig. 10) with alcohol every 15 days.

2

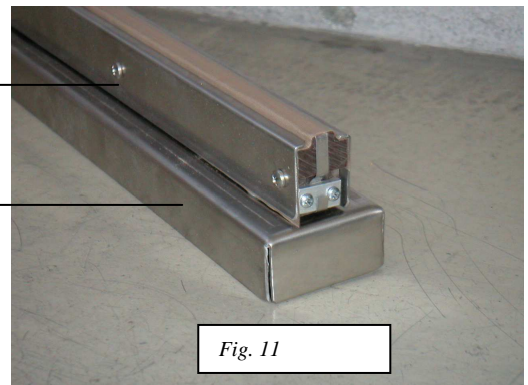
1



2. Change the oil every 400 working hours (variable data according to the type of product to be packaged).

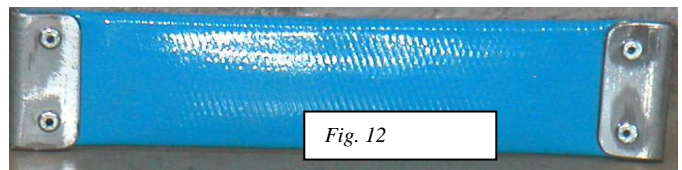
2

1



3. Replace the electric resistances (1, fig. 11) the sealing bar teflon (2, fig. 11), the bell-lid rubber gaskets (2, fig. 10) every 200 working hours.

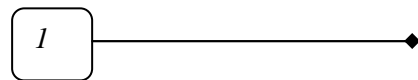
1



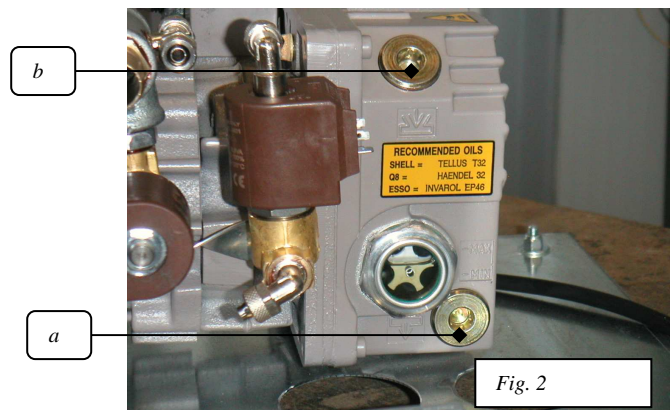
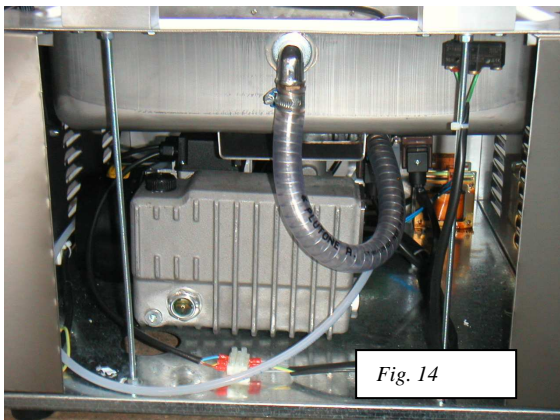
4. Replace the sealing diaphragm every 500/600 working hours (1 fig. 12).
5. Replace the counter-bar silicone (1, fig. 10).
6. Check the pump blades, the filters, the pneumatic solenoid valves every 2000 working hours.

# OIL CHANGE

BEFORE CARRYING OUT THE OIL CHANGE, TAKE THE MACHINE TO A SUITABLE PLACE FOR THIS KIND OF OPERATION AND DISCONNECT THE CURRENT OUTLET FROM THE POWER SUPPLY PANEL.



1. Remove the safety casing (1, fig. 13) by unscrewing the 4 (6) fixing screws to enter the machine.



2. Remove the casing as shown in fig. 14.
3. Position a container under the oil discharge opening.
4. Loosen and totally remove the cap positioned near the level sight glass (a).
5. For a fast oil discharge, loosen and remove the cap (b).
6. Once the tank has been completely discharged, fit the cap (a) again and tighten it well.
7. Fill the tank by the opening provided (b) with oil as indicated by the manufacturing company.

### Recommended oil types:

- TERESSO 100
- MOBIL RADIUS 425
- SCHELL CORENA 100
- BP ENERGOL RC 100
- IP SIANTIAX
- VANGUARD PRESSURE RA 77

8. Once the maximum level shown by the sight glass is reached (about  $\frac{3}{4}$ ) tighten the filling opening and close the casing by means of the screws.

**OIL DISPOSAL IS TO BE CARRIED OUT IN COMPLIANCE WITH THE STANDARDS IN FORCE.**



## CHAPTER 8 PROBLEM SOLVING



### AFTER SWITCHING ON, THE MACHINE DOES NOT START



- a) Check that the plug is correctly inserted into the current outlet and in case check the contacts inside the plug itself.
- b) Check that the micro-switch, positioned at the back under the left hinge (which fixes the bell-lid), is correctly energized when the bell-lid is lowered.
- c) Check the safety fuses on the electronic panel card positioned inside the machine, particularly the fuses related to the motor (5x20, 10A).
- d) If a three-phase motor is installed, disconnect the machine and open the rear door to check the possible intervention of the motor magneto-thermic overload.



### THE MACHINE UNEXPECTEDLY STOPS WHILE IT IS RUNNING



- e) Check that the rear micro-switch is correctly energized.
- f) Check that the 3 (three) safety fuses located on the electronic panel card are intact.
- g) Check for the magneto-thermic overload intervention when a three-phase motor is installed.



### THE MACHINE WORKS PROPERLY BUT THE BAG IS NOT SEALED AT LID OPENING



- a) Lift the sealing bar to check that the 2 cables with 24V current are well fixed to the sealing bar itself.
- b) Lift the teflon to check that the resistance is not interrupted anywhere and is locked to the side terminals.



### IF THE MACHINE DOES NOT ATTAIN THE OPTIMUM VACUUM

- a) Close the bell-lid and when the depression of 90% has been reached disconnect the line. If the vacuum-meter pointer is still in position there is no leakage and therefore the problem is caused by a different source (pump blades, oil replacement). If the pointer moves back there is air infiltration into the vacuum chamber and therefore:
  - Check that the diaphragm under the sealing bar is not pierced or torn;
  - Check that the rubber gaskets on the lid are intact;

If necessary, refer directly to the manufacturing company for replacement of the above mentioned parts.

