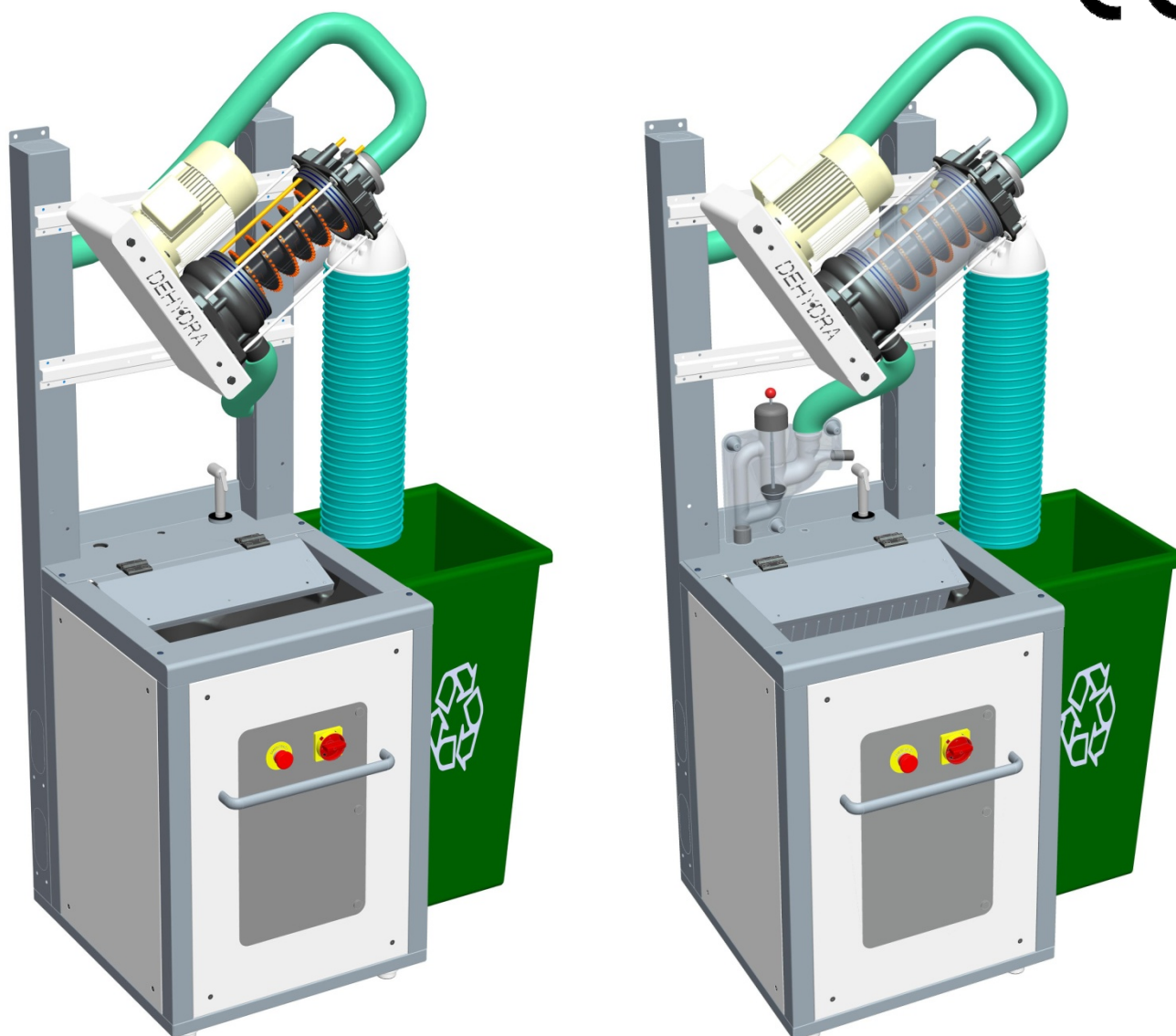


DEHYDRA COMPACT UNIT

MODELS SC1, SC1R

CE



USE AND MAINTENANCE MANUAL



Name of the Unit:

DEHYDRA COMPACT UNIT

Model or system composition: SC1 and SC1R

Serial number: _____

USE AND MAINTENANCE MANUAL

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ECOFAST ITALIA S.R.L. is not to be held responsible or indictable for damage caused by a misreading of the documentation. In order to avoid wrong manoeuvres which could cause danger to people it is important to read all the documentation supplied with the DEHYDRA COMPACT UNIT.

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Chapter 1

General Information

1.1. General data

This Use and Maintenance Manual is an integral part of the DEHYDRA COMPACT UNIT (identified, in the Present Document, by the term MACHINE) made by ECOFAST ITALIA S.R.L.; for such a reason it has to accompany the MACHINE in the case it should be transferred to a new user or owner.

This manual has to be kept with care and protected from any agent which could deteriorate it, for all the life cycle of the MACHINE.

This manual has been compiled with the purpose of providing the operators and the technicians in charge of the use and maintenance of the MACHINE with the information and the instructions essential to operate correctly and in conditions of safety



ATTENTION: *having to be of easy and immediate consultation, the present manual has to be kept in a known and accessible place.*

This manual contains all the data and information necessary for carrying out the preliminary training of the staff in charge of managing the MACHINE correctly; it is imperative it be used to this end.



DANGER: *for reasons of clarity, some of the illustrations of this manual show the machine and its components open or dismantled; it is forbidden, however, to use the machine in these conditions.*

While highlighting all the warnings and the precautions for a correct use of the MACHINE by the operators or to allow the staff in charge of the machine to intervene correctly, this manual presupposes that, in the environments in which the MACHINE has been installed, the current rules and regulations concerning safety and hygiene are observed and that the staff in charge of operation and maintenance have a level of instruction which enables them to understand correctly the information given.



NOTE: *the User may request a copy of the present document for example, in the case of damage of the original document) by means of a written request to the Technical Office of the Manufacturer (see Paragraph 1.6.1 – Request for Assistance Interventions of the Present Chapter), ensuring, however, that the damaged copy is returned.*

1.2. Property of information

This Use and Maintenance Manual contains information of reserved property. All rights are reserved.

This manual may not be reproduced or photocopied, in its entirety or in part, without the prior written authorisation of the Manufacturer. Use of this documentary material is allowed only to the client to whom the manual has been supplied together with the machine and only for reasons of installation, use and maintenance of the machine to which the manual refers.

The Manufacturer declares that the information contained in this manual is congruent with the technical and safety specifications of the machine to which the manual refers. The drawings, the diagrams and the technical data given have been updated to the date of publication of this document and are valid exclusively for the machine to which they have been attached.

The manufacturer reserves the right to modify or improve this documentary material without forewarning.

The Manufacturer is not to be held responsible in any way for direct or indirect damage to the people, things or domestic animals resulting from a use of the machine in conditions different from those foreseen.

1.3. Contents

This manual, in fact, contains, as well as a functional description of the MACHINE and of its principal parts, the instructions and the indications for:

- transporting and installing the machine correctly;
- using the machine correctly;
- carrying out correct cleaning, adjustment and maintenance operations on the machine;
- observing the basic rules of safety and prevention of accidents at work.

The above mentioned staff will be able to know about with both the potential of the MACHINE and the problems which may occur during its management.

It is necessary to read all the chapters attentively to understand the indications provided in this manual and to operate the MACHINE; for a further and more user friendly contents search please refer to *Table 1*, which contains a description of the topics dealt with in the chapters.

.Table 1 – Structure of the Use and Maintenance Manual

CHAPTER	CONTENTS	ADDRESSEES
<i>Chapter 1 General information</i>	<ul style="list-style-type: none"> • Description of the present Use and Maintenance manual, of its structure and of the conventions used; • Definitions of the terms used; • Definition of the relationship between the Manufacturer and the Purchaser/User (in terms of conditions of guarantee and assistance). 	All staff in charge of the machine.
<i>Chapter 2 Description of the machine</i>	<ul style="list-style-type: none"> • Description of the machine and of the functional process. 	All staff in charge of the machine.
<i>Chapter 3 Safety and Technical Data</i>	<ul style="list-style-type: none"> • General indications on the machine, on the solutions to be adopted for the protection of the operating staff, on the generic warnings to be observed for a correct use and on the residual risks present during the phases of life of the machine; • Description of the principal technical data concerning the machine 	All staff in charge of the machine (in particular, the electrical and mechanical maintenance workers and those in charge of handling).

CHAPTER	CONTENTS	ADDRESSEES
<i>Chapter 4 Transport and Installation</i>	<ul style="list-style-type: none"> • Description of the necessary requisites for the place of installation; • Description of the lifting and transport procedure of the parts which constitute the MACHINE; • Description of the procedure for connecting to power supplies and services; • Description of the procedure for storage of the machine 	All staff in charge of the machine (in particular, the electrical and mechanical maintenance workers, the technicians of the Manufacturer and those in charge of handling).
<i>Chapter 5 Fine tuning</i>	<ul style="list-style-type: none"> • Instructions for the fine tuning of the machine 	All staff in charge of the machine.
<i>Chapter 6 Use of the machine</i>	<ul style="list-style-type: none"> • Description of the procedures to follow for the start up and use of the machine. 	All staff in charge of the machine.
<i>Chapter 7 Machine maintenance</i>	<ul style="list-style-type: none"> • Description of the checking and control procedures for the parts and the components of the machine (in particular the parts most subject to wear); • Description of the procedures which enable staff to clean the machine. 	All staff in charge of the machine (in particular, the electrical and mechanical maintenance workers, the technicians of the Manufacturer and those in charge of handling).
<i>Chapter 8 Demolition</i>	<ul style="list-style-type: none"> • Indications for carrying out the disassembly and the demolition of the machine. 	All staff in charge of the machine (in particular, the electrical and mechanical maintenance workers, the technicians of the Manufacturer and those in charge of handling).
<i>Chapter 9 Failure search</i>	<ul style="list-style-type: none"> • Indications concerning the search for the causes of failure and malfunctions which the machine 	All staff in charge of the machine

CHAPTER	CONTENTS	ADDRESSEES
	could present	
<i>Chapter 10 List of spare parts</i>	<ul style="list-style-type: none"> • List of spare parts of the machine 	All staff in charge of the machine (in particular, the electrical and mechanical maintenance workers and the technicians of the Manufacturer).
<i>Chapter 11 Mechanical drawings</i>	<ul style="list-style-type: none"> • Mechanical drawings of the machine 	All staff in charge of the machine.
<i>Chapter 12 electrical drawings</i>	<ul style="list-style-type: none"> • Diagrams and documents inherent to the electrical part of the machine 	All staff in charge of the machine.
<i>Chapter 13 Documentation of components useful for maintenance</i>	<ul style="list-style-type: none"> • Collection of instruction manuals of the principal components present on the machine 	All staff in charge of the machine.

1.4. Conventions and definitions

1.4.1. General information

The Use and Maintenance Manual of the MACHINE has been divided into chapters which, for each principal phase of the life of the MACHINE (transport, installation, use, adjustment, maintenance and shut down), permit the necessary information to be found more easily by the user of the MACHINE.

The entire documentation relative to the machine has been compiled developing the themes indicated by the Machines Directive (2006/42/EC) and by the existing Rules and Regulations; therefore, it is indispensable *to read all of the relative manual* in order to obtain from the machine the best performance and to ensure the maximum duration of all the organs.

The configuration of some organs or devices described or shown may differ from that with which the MACHINE is provided in the specific set up carried out according to particular requirements or safety standards; in such case, some descriptions, references or procedures advised may have a generic character while still maintaining their efficiency. The use of tools or special equipment provided with the MACHINE is strictly tied to the specific characteristics and to the existing safety standards in each country. Dimensioned drawings and photographs are provided for explanatory purposes as a reference for an easier understanding of the text.

1.4.2. Terminology conventions

MACHINE : is the term used in the present Use and Maintenance Manual to indicate the DEHYDRA COMPACT UNIT.

IMP: is the acronym which indicates the Individual Means of Protection.

1.4.3. Definitions

DANGER ZONE

Any ZONE inside or in proximity of the machine, in which the presence of a person exposed, constitutes a risk for the safety and health of that person.

USER

Any PERSON (entrepreneur/enterprise) who uses the machine adequately or who entrusts its use and the operations connected to its use to prepared people.

EXPOSED PERSON

Any PERSON who is entirely or in part in a danger zone or in proximity of such a zone.

OPERATOR

Personnel, generally without specific competences, who carries out the operations necessary to run the machine and the cleaning of the machine and of the place where it is installed, if necessary they may carry out simple adjustment or start up operations on the machine.

MECHANICAL MAINTENANCE WORKER

A QUALIFIED TECHNICIAN who may intervene on any mechanical organ to carry out the adjustments, the repairs and the necessary maintenance interventions.

The mechanical maintenance worker has to have sufficient experience in the field of pneumatics, hydraulics and of the technique of control; typically he or she is not qualified to carry out interventions on electrical plants in the presence of tension.

ELECTRICAL MAINTENANCE WORKER

A QUALIFIED TECHNICIAN who is responsible for all the interventions of an electrical nature (regulating, maintenance and repairs) and, when necessary, he or she operates in the presence of tension inside the electrical boxes and of the connector blocks.

HANDLER

QUALIFIED PERSONNEL who carries out tasks of handling the machine or the materials used should the operation require the use of lifting devices.

TECHNICIAN OF THE MANUFACTURER

A QUALIFIED TECHNICIAN made available by the Manufacturer of the machine to carry out operations of a complex nature in particular situations or, anyway, when agreed with the user.

1.4.2. Personal means of protection and rules of behaviour

For each of the operations described in the present manual, means of protection are indicated which are to be used by the staff in charge (if necessary in addition to those that the staff have to wear in the place of installation of the MACHINE) and the rules of behaviour to be observed to ensure the safeguard of the operators themselves.

NOTE: Paragraph 3.6.1 – Warnings and General Rules of Behaviour of Chapter 3 – Safety and Technical Data gives, in particular, a series of general recommendations to be respected to avoid conditions of risk to people or damage to the machine.

1.4.3. State of the MACHINE

The *State of the machine* is the characteristic which describes both the operational procedure. (for example, running, stopping), and the safety conditions present (for example, aprons included, aprons excluded, cutting off from the electricity supply).

1.4.4. Typography conventions

The graphic lay out of the present Use and Maintenance Manual is such as to permit an *easy recognition of the contents*; in this optic, for example, the instructions are associated with lists, as shown below:

- this symbol identifies a generic list of points or a list of points formed by simple actions (the order in which the actions are presented is not binding, but advisable);
- 1. in this way an explanatory numbered list is identified for a complex procedure (the order in which the actions are presented is binding for the correct and safe performance of the intervention in question).

Text in italics is used in, particular, for:

- the cross referencing used in this manual is expressed in the following way: “Paragraph/Figure/Table” with the number and, generally, the specification “of the Chapter” with the number and the relative denomination (when it is not specified it is understood that the paragraph, the table or the figure belong to the current Chapter);
- the technical and specialised technical terms, the first time they appear in the text;
- the terms in a foreign language of not common use (also, usually, only the first time they appear in the text).
- The **bold** text is used to highlight words, sentences or parts of procedure.
- In the description of the machine, its components, its use and its maintenance, explanatory figures are used of the portion in question and on it, the specific points of interest are identified, with the following wording:
-

number

Symbolic representation of a command or signaling device (for example, switch, selector or pilot light).

letter or **number**

Symbolic representation of a part of the MACHINE.

-
- WWhat is more, to guarantee a more in depth knowledge of the machine and of the indications for a safe and correct use, the text of the present Use and Maintenance Manual is supplied with indications which complete it, providing supplementary information, indispensable precautions or particularly significant dangers to be considered; the following notation is then used:



NOTE:

indicates the notes, the warnings, the suggestions and other points to which the attention of the reader is to be drawn or it completes the explanation with further information.



ATTENTION:

indicates situations or operations in which there is the possibility of damaging the machine, the apparatus connected to it or the environment.



DANGER:

indicates situations or operations which it is compulsory to carry out or the information to which particular attention has to be paid to avoid damage to people.

GRAPHIC SYMBOLS USED TO INDICATE THE NECESSITY FOR INDIVIDUAL MEANS OF PROTECTION

In this paragraph the graphic symbols are indicated which are used in the present manual to indicate the need to wear determined IMP.



Indicates the need to use a protection for the head suitable to carry out the operation described.



Indicates the need to use protective gloves suitable to carry out the operation described (if necessary dielectric gloves for performing interventions on the electrical plant).



Indicates the need to use protective clothing suitable to carry out the operation described.



Indicates the need to use anti-accident shoes suitable to carry out the operation described.

1.5. Guarantee

The Manufacturer, ECOFAST ITALIA S.R.L., guarantees the DEHYDRA COMPACT UNIT and the equipment produced by the same Manufacturer, free from defects of material or machining, for a period of twelve months from the date of installation.

During the guarantee period, the Manufacturer undertakes to remove within the required time the evident defects of material or machining in the case of malfunction or breakages; that is on condition the machine has been assembled with the assistance of the technicians of the Manufacturer and that it has been used correctly in compliance with the best rules of behavior and maintenance indicated in this manual.

The defective parts under guarantee will be repaired or replaced for free by the Manufacturer, if proven that the defects already existed.

Transport or shipping costs, if not otherwise stated in the contract of sale, as well as the travelling expenses relative to the intervention of the technicians of the Manufacturer to the premises of the User are at the expense of the user

For the construction of the machine, the Manufacturer uses materials, organs and mechanisms of a type, state and quality, which are retained to be, in his unquestionable opinion, suitable for the function the machine has to carry out; the Manufacturer, in carrying out a policy of constant development and updating of the product, reserves the right to modify both the functional characteristics and the aesthetic ones, to alter the design of whatsoever functional organ or accessory, or to stop the production and the supply without undertaking to inform of this without any obligation. What is more, ECOFAST ITALIA S.R.L. reserves the right to carry out any structural or functional modification, as well as modifying the supply of spare parts and accessories without being under obligation to communicate this to whosoever for whatever reason.

1.6. Assistance

As concerns the maximum exploitation of the performance provided by the machine and the operations of extraordinary maintenance, this manual does not replace the experience of installers, users and maintenance staff both qualified and trained.

In this case, the Technical Assistance Service of ECOFAST ITALIA S.R.L. provides:

- Telephone support for the characteristics and the most simple interventions to be carried out on the machine;
- The sending of documentary material;
- Interventions of training of the User's staff in charge of the MACHINE;
 - Interventions to modify the machine (ONLY ON REQUEST).



ATTENTION: *in case of doubts on the correct interpretation of the instructions given in the present Use and Maintenance Manual, call the Technical Assistance Service (as shown below) to obtain the NECESSARY clarifications.*

1.6.1. Request for assistance interventions

To contact the Technical Service of the Manufacturer, please refer to:

ECOFAST ITALIA SERVICE DEPARTMENT

Piazza Franco Martelli, 5

20162 Milano (MI) – ITALY

Phone: (+39) 02 66111618

Fax: (+39) 02 66112000

Email: INFO@ECOFAST.EU

During the requests for assistance interventions specify the name and the model of the machine.

Chapter 2

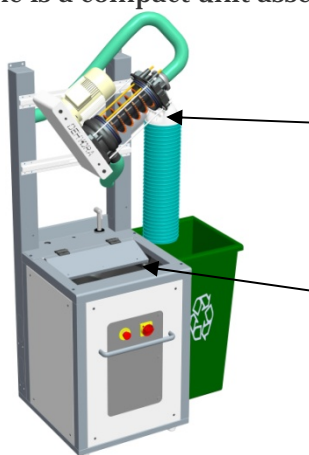
Machine description

2.1 Machine description

The machine is a compact system designed to grind and dehydrate food waste produced in the kitchen of communities with the following objectives:

- To obtain a food waste reduction in weight, volume and fermentation;
- To minimize the workload of those in charge of waste management and more in general, to improve the quality of their job and internal organization;
- To improve, if possible, the observance of the HACCP sanitary rules and regulations;

The machine is a compact unit assembled in a stainless steel cabinet and made up by:



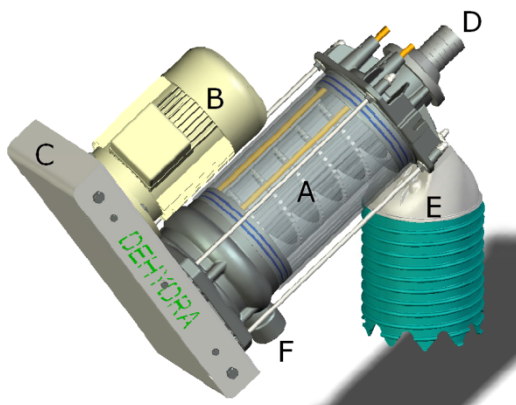
on top, a centrifugal dewaterer which separates the waste from the watery component;

below, a heavy duty disposer provided with a suitable feed hopper for conferring the food waste;

The feed hopper is provided with passive safety, determined by the particular design of the hopper itself and of the relative closing lid, the specific coupling of which prevents the moving organs from being reached.

The feed hopper and the machine in general, is provided with active safety systems which determine the immediate stop in case of danger – as an example: the opening, intentional or accidental of the lid determines the disconnection of a safety micro-switch which interrupts the working cycle stopping the machine instantly.

The centrifugal dewaterer, placed above the feed hopper, is made up by:



(A) a cylinder containing the rotating parts (auger and cylindrical micro-perforated sieve)

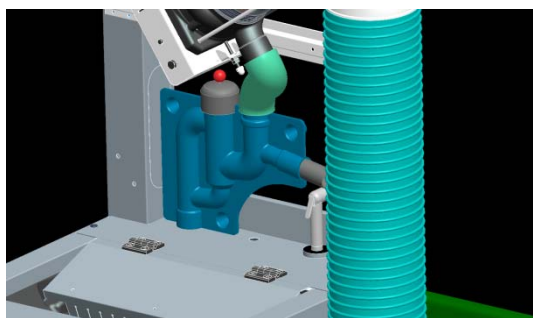
(B) a motor to transmit the movement to the auger/cylinder sieve assembly

(C) a driving system made up by geared belts and pulleys completely encased, which transfers and reduces the movement to the auger/cylinder sieve assembly

On the dewaterer cylinder there is also (D) the inlet of the waste water to dewater (ground food waste mixed with water)

(E) the drainage of the dehydrated waste

(F) the drainage of the liquid



The water recirculation system is an **optional device** to save water when the machine is in use.

The liquid coming from the dewaterer drainage (F) is conveyed into the disposer's hopper chamber by gravity. The pressure inside the hopper chamber automatically determines the quantity of waste-water which can be saved without the intervention of the operator.

When the machine is stopped by the operator and during the cleaning cycle of the dewaterer a hydro-pneumatic piston automatically opens a valve to drain the liquid.

2.1.1 Working principles

Once the ground food waste is washed away from the disposer, a rubber impeller geared pump, housed inside the unit, pushes the effluent into the dewaterer.

The dewaterer is the unit which physically carries out the de-watering activity separating the process water from the ground waste: whilst the liquid component is flushed down the drain into the sewerage system, the ground and dehydrated food waste is easily stored in a bin and then disposed for a possible re-use.

Operationally the dewaterer holds the ground materials contained in the waste water thanks to a micro perforated metal cylinder sieve in which an auger turns: while the ground material, driven by the movement of the auger advances along the perforated cylinder, it is "dried" by the centrifugal force.

The dehydrated material is pushed towards the exit through a plastic tube and it deposits in the collecting bin, while the residual water is drained into the sewerage system.

The electrical control panel, also inside the cabinet, manages the machine by means of a PLC provided with an adequate work program, able to report any eventual failure and/or malfunctions.

The operational procedure is clearly described in chapter 6 "Use of the Machine" which, printed and plasticized, has to be affixed to the side of the machine so it may be consulted by the operator.

Chapter 3

Safety and technical data

3.1. General information on safety

3.1.1. Design criteria

For the design of the machine have been adopted the principles and the concepts which are introduced by the pertinent paragraphs on the rules and regulations indicated in *Table 2*.

Table 2 – Principle harmonized rules and regulations used for the design of the machine

RULES AND REGULATIONS	TITLE
UNI EN ISO 12100-1: 2005	Safety of the machinery – Fundamental concepts, general principles of design - Part 1: Basic terminology, methodology
UNI EN ISO 12100-2: 2005	Safety of the machinery – Fundamental concepts, general principles of design- Part 2: Technical principles
UNI EN ISO 14121-1: 2007	Safety of machinery – Evaluation of risk – Part 1: principles
UNI EN 954-1: 1998	Safety of the machinery – Parts of the command system connected to safety. General design principles
UNI EN ISO 13857: 2008	Safety of the machinery – Safety distances to prevent the upper and lower limbs from reaching dangerous zones
UNI EN 349:2008	Safety of the machinery – Minimum distances to avoid crushing of parts of the human body
UNI EN 953: 2009	Safety of the machinery – Protection guards – General requisites for the design and construction of fixed and mobile protection guards
CEI EN 60204-1: 2006	Safety of the machinery – Electrical equipping of the machines - Part 1: General rules

The compliance of the pertinent paragraphs of the above mentioned harmonized rules and regulations has permitted the elimination or reduction of the risks in the best way possible, equally during normal function and during the adjustment and maintenance operations, for all the life cycle of the machine.

The components used have been accurately chosen amongst those available on the market and the materials which make up the machine (and the accessory instruments) are devoid of risks for the health and integrity of the person. All parts provided by third parties are marked EC (when foreseen) and conform to the relative directives of reference. All the particulars have been strictly controlled in conformity with the standards of quality as prescribed by the current rules and regulations.

What is more, the necessary measures of warning and protection concerning residual risks have been adopted for the machine (see *Paragraph 3.3 – Warnings concerning Residual Risk*).

3.1. Devices and solutions for protection

3.1.2. Safety devices

The Safety Devices of the MACHINE have been selected, designed, built and installed according to the actual risks; the designers have taken note of the Essential Safety Requirements and of the regulations regarding:

- the general principles concerning the safety of the machinery;
- the design and construction of safety mechanisms;
- the safe distances required to prevent reaching dangerous areas with upper limbs;

This MACHINE is provided with a set of safety devices of **fixed and movable interlock**.

The **Fixed** devices are installed to increase the level of safety provided by the MACHINE meeting the requirements listed below.

They are firmly fixed to the metal structure of the MACHINE.

They are set so that their removal is only possible with special tools (or because they are welded or fixed by means of appropriate fasteners, such as, for example, screws or bolts) and in this way, the operator must act intentionally, using special tools, to remove these devices from the UNIT.

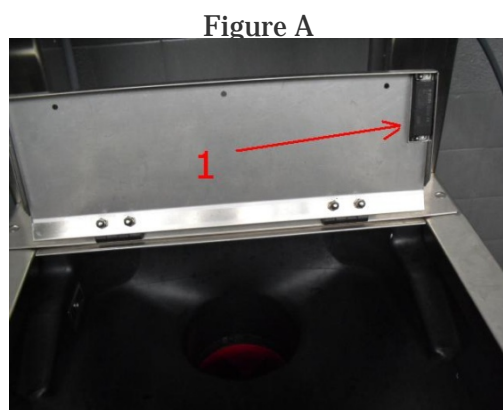
Where possible, these devices will not stay in place without their fixings.

Figure A

The machine has a **removable safety device** (hopper lid) close to the heavy duty disposer, where the food waste is introduced to the feed hopper.

The removable device is equipped with a magnetic micro-switch (1):

The opening of hopper lid immediately stops the disposer.



With regard to the risks related to the moving parts existing on the MACHINE, it must be noted as indicated below:

Wherever there exists the danger of cutting and/or of sectioning and/or entanglement, the rotating part of the grinder (grinding system (1) in figure B) are inside the structure in cast iron of the disposer which is housed in the metal cabinet of the machine.

Both the body of the disposer and the metal parts of the machine are assembled in such a way that their removal is possible only using special tools.

The possibility of reaching the rotating part is prevented by the presence of the protective hopper lid: in fact, it is impossible to reach the rotating part with an upper limb as required by the rules and regulations **UNI EN ISO 13857**.

The machine presents a **removable safety device** (hopper lid) close to the heavy duty disposer, where the food waste is introduced to the feed hopper.

The removable safety device is equipped with a magnetic micro-switch (1):

The opening of hopper lid entails the immediate stop of the disposer.

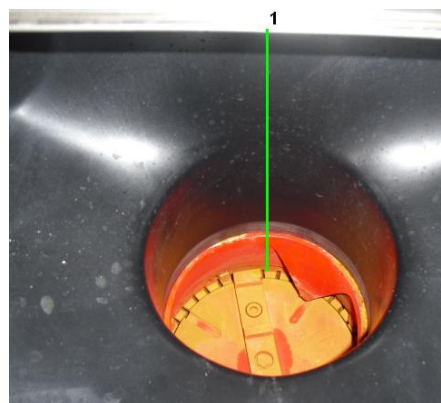


Figure B

The moving elements of the auger and the micro perforated metal cylinder sieve, for which the dangers of entanglement and/or drag, are fully protected by a metal casing securely attached to the machine structure (1 in Picture C). For its removal, it is necessary to use special tools.

The rotating parts of the dewaterer (2 Figure C), where there would be a danger of cutting or entanglement, are protected by means of an appropriate drainage flange (B) and a corrugated hose-pipe (A) whose length does not permit the reaching of the moving parts. The corrugated hose-pipe conveys the dehydrated material to the appropriate container (C) and measures 950 mm.

It is strictly forbidden to tamper and/or modify the corrugated hose-pipe.

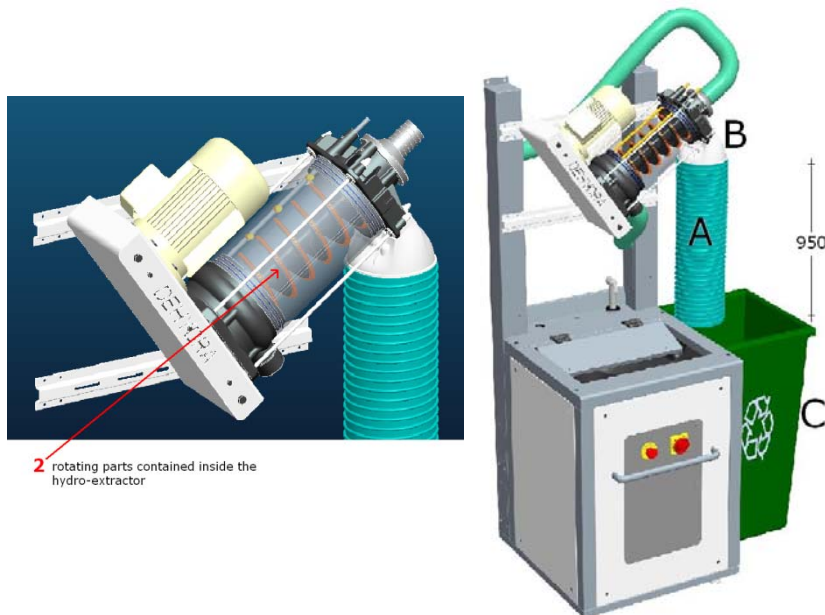


Figure C

On the machine, in proximity of the areas of potential risk the appropriate danger and/or prohibition signs are placed. (See paragraph 3.2.6 Tab 3.)

The controls on the control panel are set out in such a way as to guarantee the safe operation of the system. They are protected so that the command cannot take place unintentionally.

They have been manufactured to resist foreseeable strain during normal operation.

As well as the safety devices described above, the PLC placed inside the control panel manages any anomalies of function and/or sequence of actions.

Figure D

The management software of the machine is in English/Italian and consists of a few screens, easily understandable by the operator.



Figure D

3.3 Warnings concerning residual risks

3.3.1 Lifting and transport

3.3.1.2 NECESSARY INDIVIDUAL MEANS OF PROTECTION



3.3.1.3 PRECAUTIONS TO BE TAKEN DURING THE PHASES OF LIFTING AND TRANSPORT

The MACHINE has been designed to be easily transportable in accordance with the following precautions:

- it is of such a shape that the normal lifting devices can easily adapt to it;
- it has been designed and built to permit the removal or fixing of the mobile components during transport and handling operations.

Transport of the machine takes place on wooden pallets after the machine has been wrapped in protective plastic sheeting so that the mobile parts are not protruding from the machine.

As well as plastic sheeting, cardboard is used to guarantee adequate protection.

As concerns the lifting and transport procedure of the MACHINE the general indications given below are valid.

The means of lifting and transport (for example, cranes, hoists, lifts, fork lift trucks) have to be appropriate, as concerns safety, to the nature, to the form, to the volume and weight of the loads the lifting and transport of which they are to be used for, as well as the conditions of use.

The means for lifting and transport have to be used in a way which corresponds to their characteristics, in particular, they have to adopt necessary measures to ensure the stability of the means and of its load (if necessary in a sling), in relation to the type of means, its speed, its acceleration in the phases of start up and stop and to the characteristics of the itinerary, to prevent the load from being damaged or to avoid its falling or its movement from its original position so as to become a source of danger to people and/or things.

The risks present in the handling activity of the load, both manual and mechanical, may be reduced using the appropriate IMP, such as, for example, safety hat, gloves, anti-accident shoes and, if necessary lumbar protection (able to re-establish the realignment of the backbone and to maintain uniform compression between the discs of the backbone).

The staff who carry out these operations have to be competent and trained for this specific task.

It is prohibited to transit below the suspended loads. It is not possible to be transported with the load.

3.3.2. Installation and connection

3.3.2.1. NECESSARY INDIVIDUAL MEANS OF PROTECTION



3.3.2.2. PRECAUTIONS TO BE TAKEN DURING THE PHASES OF INSTALLATION AND CONNECTION

The assembly and installation of the MACHINE have to be carried out on the premises of the user by qualified staff: this consists in staff who have specific training relative to (electrical and mechanical setting up and maintenance) of industrial and civil machinery.

In fact, the MACHINE is delivered as a whole to the final client requiring exclusively installation rather than a real assembly.

There is, however, the risk of assembling or reassembling in an incorrect manner some elements of the MACHINE due to distraction or insufficient instruction of the operators in charge of such operations; it is recommended, therefore, to have the reassembly of the MACHINE carried out by (chosen and authorized for this task) a member of staff who has undergone specific training

In case of doubts concerning the correct installation always refer to the technical office of the constructor (Par. 1.6.1)

The MACHINE, in the operating conditions foreseen, is **stable** and does not comport **any risks of falling or undue movement**.

The MACHINE has been designed and constructed to be installed in a closed environment sheltered from atmospheric agents.

The MACHINE has not been designed and constructed to be installed in an explosive environment.

3.3.2.3. SIGNAGE

The machine is provided with appropriate signs of danger and prohibition, see *Paragraph 3 5 – Indications Concerning Safety*.

3.3.3 Use and cleaning

3.3.3.1. NECESSARY INDIVIDUAL MEANS OF PROTECTION



3.3.3.2 SIGNAGE

The machine is provided with appropriate signs of danger and prohibition, see *Paragraph 3. 5 – Indications Concerning Safety*.

3.3.3.3 PRECAUTIONS TO BE TAKEN DURING THE PHASES OF USE AND CLEANING

The MACHINE has to be used **exclusively** for grinding food waste (including bones) deriving from preparation and/or cleaning up and for the successive de-watering of the ground material.

The use of the MACHINE for other operations could cause damage to the people or the machine and are therefore to be considered **improper use** for which the Manufacturer is not to be held responsible.

The MACHINE carries out, at the end of every cycle, an automatic cleaning cycle of the dewaterer and at every start up a wash of the feed hopper. However, it may be necessary for the operator to carry out this operation manually thanks also to the hose-spray with which the machine is provided.

The staff in charge of the cleaning operations of the MACHINE has to have the competency necessary to carry out the cleaning interventions and will have to follow the instructions given in the Use and Maintenance Manual of the MACHINE.

All cleaning and maintenance interventions have to be carried out with the MACHINE at a standstill and with the engine and the apparatus cold and they have to be carried out in the absence of free flames or high temperatures.

3.3.4 Maintenance and demolition

3.3.4.1. RESIDUAL RISKS

None of the materials used for the construction of the components of the machine is dangerous for the people in charge of its management (during all the phases of life of the MACHINE); in the specific, the materials used for the construction of the MACHINE are, principally:

- derivatives of iron (prevalently);
- derivatives of plastic (for example for the sleeves of the command panels and for the isolation of the electric cables);
- derivatives of copper (for example, for cabling and electric wires).

3.3.4.2 NECESSARY INDIVIDUAL MEANS OF PROTECTION



3.3.4.3 SIGNAGE

The machine is provided with appropriate signs of danger and prohibition, see *Paragraph 3. 5 – Indications Concerning Safety*.

3.3.4.4 PRECAUTIONS TO BE TAKEN DURING THE PHASES OF MAINTENANCE AND DEMOLITION

It is to be underlined that for any eventual disposal of oils and fats it is necessary to comply with the current rules and regulations in charge in the country of installation of the MACHINE.

When the MACHINE has finished its life cycle, before proceeding to the final disassembly, certain operations are necessary with the purpose to minimize the environmental impact tied to the disposal of the components of the system, as required by current rules and regulations on waste disposal.

The operations are:

recovery and disposal of oils: any oil contained in the components or sections of the MACHINE has to be drained and collected in suitable containers, the disposal has to be carried out by appropriate structures (Compulsory Consortium for Used Oils);

separation and storage of the parts of environmental impact: the various parts which could cause pollution are (particulars in plastic or rubber, electric cables and electrical/electronic components) these have to be separated from the others and destined to a different separate waste collection, carrying out a selection of the materials with the objective of helping recycling.

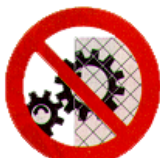



disposal of the casing: having concluded the removal and the storage of the polluting elements, it is necessary to entrust the disposal of the casing to specialized companies.

At the end of the interventions, it is necessary to inform the Technical Office of the Manufacturer of the completed disposal of the MACHINE

3.3.5 Indications concerning safety

On the MACHINE there are sign plates relative to the potential dangers and prohibitions shown in Table 3.

Table 3 – Description of the sign plates present on the MACHINE

	PLATE	DESCRIPTION
A		Indicates the prohibition to remove the safety devices and aprons installed and is usually accompanied by the explanatory words: DO NOT REMOVE THE PROTECTION DEVICES.
B		Indicates the prohibition to carry out any intervention (including lubrication and cleaning) in correspondence of moving organs; typically, it is accompanied by the explanatory words: DO NOT REPAIR OR REGISTER WHILE MOVING.
C		Indicates the danger of dragging in correspondence of the zone where the MACHINE is situated
D		Indicates danger of the presence of electric tension (typically positioned in correspondence of electric control panels).

3.4 Emplacement of the operator

During operation, the position of the operator is in proximity of the loading hopper.

The operator has to stand in front of the hopper and has to be able to manoeuvre and reach the various commands and/or emergency switches in a rapid way.

3.5 Indications about noise

3.5.1 Noise

The MACHINE has been designed and constructed to reduce the level of noise emitted during normal operation to a minimum.

In compliance with criteria imposed by the current rules and regulations, the level of acoustic pressure weighed and measured in correspondence to the operator's emplacement during operation is equal to 79 dB (A).

3.6 Proper and improper use of the machine

The machine may be used **exclusively** for the grinding of food waste (including bones) deriving from preparation and/or cleaning and the successive dehydration.

The MACHINE has been designed, constructed and equipped to limit the intervention of the operator just to the intervention of processing the food waste to be ground and the removal of the solid material from the collecting bin.

Use of the machine for other operations could cause damage to people or to the machine and is therefore considered **improper use** for which the Manufacturer is not responsible.

Unforeseen uses are all those uses not explicitly indicated in Foreseen uses, in particular:

- processing waste other than that indicated in Foreseen uses, in particular the machine is not suitable for grinding **PLASTIC, METALS or RAGS**;
- cleaning the command and control instruments with water;
- installing and using the MACHINE in an aggressive environment or with a high concentration of dust or oily substances in suspension in the air;
- installing and using the MACHINE in the open.
- installing and using the MACHINE in a potentially explosive environment.

The MACHINE has been designed and constructed to work in places where **there is not a potentially explosive environment** and it itself cannot generate a potentially explosive environment.

It is a good precaution to dispose anyway of powder extinguishers in the vicinity of the machine. To foresee the possibility of fire it is necessary to keep the machine free from pieces of plastic, oils, solvents, paper and rags.



ATTENTION: *in case of a different use it is indispensable to consult the Technical Office of the Manufacturer beforehand.*

3.6.1 Warnings and general rules of behaviour

In order to avoid whatever condition of risk to people or damage to the machine, it is recommended to follow scrupulously the warnings and the general rules of behaviour given here.



DANGER: *the Manufacturer declines all responsibility for any eventual damage to things and/or people deriving from improper interventions carried out by unqualified, untrained or unauthorised staff.*

The operators in charge of the management of the machine have to be opportunely instructed to use the machine to its best without risks and they have to operate in a comfortable environment which guarantees the best safety and hygiene conditions possible



DANGER: *prevent the machine from being used by unauthorised staff or staff who are not instructed to operate without supervision: in fact, before start working, each operator has to be perfectly aware of the position and the function of all the commands and of the characteristics of the machine; and has, what is more, to have read the present manual IN ITS ENTIRETY.*

- Before using the machine check that whatever condition dangerous for safety has been opportunely eliminated and that no operators are present in the dangerous zones in proximity of the machine itself.
- Before using the machine, check that all the protection apparatus are in their place and that all the safety devices are present and efficient.
- Warn the person in charge about every irregularity of operation of the machine or of every problem relative to the integrity of the protections of the machine.
- Consult the present manual concerning the current safety measures and the specific IMP to adopt for personal safety, in particular, however, the staff in charge of the machine have to wear suitable clothing, avoiding and paying due attention to:

- Flapping clothes,
 - Loose sleeves,
 - Loose ties or scarves,
 - Necklaces, bracelets and rings.
- To avoid causing damage to the machine and triggering dangerous situations, it is recommended not to try to climb on to the machine.
 - Staff in charge of machine maintenance have to be aware of all the procedures given in *Chapter 7 – Maintenance of the Machine* and should have an adequate technical preparation to interpret correctly the instructions and the diagrams attached to the present manual and to intervene on the machine.
 - The area where the maintenance operations are to be carried out (ordinary and extraordinary) has always to be clean, dry and with the suitable equipment always available and efficient.
 - The work area should never be occupied as to interfere with the freedom of movement of the operator. In the case of an emergency immediate access to the machine by the staff in charge has to be guaranteed.
 - Access to the above mentioned area is forbidden to people who are not directly in charge of the operation of the machine thus to avoid dangers due to distraction or negligence during intervention on the machine
 - If it were necessary to carry out interventions in proximity of electrical components operate with properly dried hands and use dielectric gloves (operating on the electrical components with wet hands may cause a near certain danger of electric shock).



DANGER: *before any intervention on the machine or in correspondence of its components or accessory equipment, it is necessary to cut off the power supplies; if that were not possible it is necessary to foresee measures which permit, anyway, operation in complete safety on the machine.*



DANGER: *mishandling or unauthorised replacement of one or more parts of the machine and the use of accessories, tools, consumer materials other than those indicated by the Manufacturer may generate the danger of accidents at work.*



ATTENTION: *all material of environmental impact which it is necessary to dispose of after any interventions or operations on the machine have to be disposed of according to current rules and regulations.*



If necessary, refer to specialized companies for their disposal.

3.7 Data and technical features of the machine

3.7.1 Identification plate

For the identification of the machine an appropriate identification plate has been affixed (*Diagram 1*); the identification data given on this plate have to be communicated to the offices of the Manufacturer at every request for intervention or for ordering spare parts.

Diagram 1

		
WWW.ECOFAST.EU		
MODEL:	<input type="text" value="XXXX"/>	
SERIAL NUMBER:	<input type="text" value="XXXX"/>	
kW Tot.:	<input type="text" value="XXXX"/>	
		MADE IN ITALY

3.8 Technical data and overall sizes

The technical characteristics and the overall size of the machine are listed below.

- **OVERALL DIMENSIONS:**

650Width - 700 Depth - 1909 Height

- **WEIGHT: 150 kg.**

- **POWER SUPPLY: 3 PHASE 400V - 50Hz**

- **POWER INPUT : 4,1 kW total**

SOCKET OUTLET : 3P+Earth - 16Amp

(4 wires)

FOR SINGLE PHASE UNITS

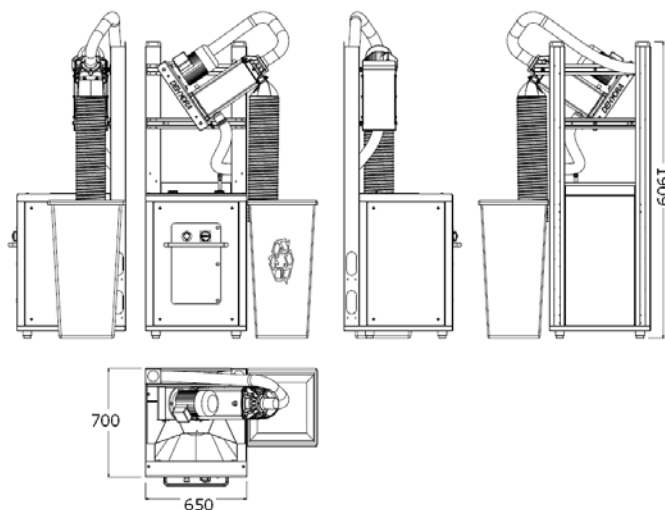
- **POWER SUPPLY: 1 PHASE 230V - 50Hz**

- **POWER INPUT : 3,9 kW total**

SOCKET OUTLET : 1P+Earth - Neutral

32Amp

(3 wires)



Chapter 4

Transport and installation

4.1. General information

4.1.1. Environmental conditions of the installation place

The MACHINE (including all the command and indication devices) has been designed and constructed in such a way that it can operate and be cleaned and maintained in safety in environments with normal lighting. To this effect the machine does not dispose of supplementary illumination.

The MACHINE has been designed to be installed in a closed environment and sheltered from atmospheric agents.

Do not install the MACHINE in an aggressive environment or one where there is a high concentration of dust or oily substances in suspension in the air.

Please remember that the MACHINE has NOT been designed to operate in potentially explosive environments.

4.1.2. Minimum room for installation of the machine

- Width: 1500 mm (by taking into account the placement of a waste bin 700x700)
- Depth: 700 mm
- Height: 2000 mm

The machine may be aligned with other machines in the kitchen but, nevertheless, it is preferable to have a room of about 700 mm. to be able to carry out maintenance on site, avoiding any displacement.

To this end it is useful to assess the ease of assembly/disassembly or a simple displacement of any working table side by side the machine.

Avoid having sources of heat near the waste bin which could cause fermentation and therefore noxious odours (1000 mm).

4.2. Transport and handling

See paragraphs 3.2.2.2.

4.2.1. Unloading and unpacking

Once the MACHINE has been positioned in the workplace proceed to remove, with the most opportune means, the supports and the wooden, plastic and cardboard protection, disposing of the packaging material according to the nature of each one

4.3. Installation

4.3.1. Connection to the mains electricity supply

The power supply line of the MACHINE requires a connection to the electrical current by means of an interlocked socket with an ON/OFF switch with suitable fuses or circuit breakers/RCD, as shown in fig. a

Fig. a



POWER SUPPLY: three phase 400V - 50Hz

single phase 230V – 50 Hz

POWER INPUT: 4.1 kW total

3.9 kW total

SOCKET : 3P+Earth - 16Amp (4 wires)

1P + Earth – 32Amp (3 wires)

Ensure that the electrical supply is suitable and correctly sized for the specific power requirement of the machine. Ensure that the supply line upstream of the electrical socket is protected with suitable fuses or circuit breakers/RCD.

The control panel key is inside the panel. Remove the stainless steel front panel with an Allen wrench n. 5. The panel is not locked. Turn the main switch off and open it. Inside there are the keys (panel and emergency switch) and the electrical drawings.

Ensure to check first the sequence of the phases in the power supply (only for three phase unit). In case of incorrect polarity the yellow warning light on the panel will start flashing: 1 flash for two seconds every 5 seconds. The PLC screen inside the panel advises the operator with the following information: LOW WATER PRESSURE/SEQUENCE. In the panel there is a phase reversing device.

By switching from point 2 to point 1 or vice versa the sequence of the phases will be correctly set up. Once the sequence is correct the yellow lights stops flashing.



4.3.2. Connection to the water supply

The machine needs to be connected to the mains hot +cold water supply, in particular:

To connect the hot and cold water to the low voltage solenoid valves
1) open the rear stainless steel panel



2) remove the predrilled hole on the support leg to let the pipes go through



COLD WATER: 3/4" o 1/2" - 2,5 bar

Cold water supply is required to feed the disposer. A pressure resistant flexible pipe is required to be piped to the electrical solenoid valve as close to the machine as possible.

An isolation valve has to be installed to disconnect the machine for maintenance.

HOT WATER: 3/4" o 1/2" - 2,5 bar

Warm water (almost 45° Celsius Degrees) supply is required to feed the cleaning cycle of the dewaterer and the hose-spray. **It is recommended that a thermostatic mixer valve is fitted.**

Piped to the electrical solenoid valve as close to the unit as possible at a comfortable height from the ground with a pressure resistant hose-pipe.

An isolation valve has to be installed to disconnect the unit for maintenance.

Cold and hot water connections must not be reversed

4.3.3. Connection to mains drainage

Ø 50 mm waste line required with trap to avoid odours.

It is recommended to always have the connection and/or installation operations carried out by qualified and sufficiently trained staff.

4.4. Storage

4.4.1. Uninstalling

If the MACHINE has to be disconnected from the workplace and from the various power supplies proceed, first of all, to carry out several cleaning cycles to ensure that no residual organic material remains inside the various functional parts.

Protect the MACHINE adequately from dust and other atmospheric agents by means of suitable packaging.

Position the machine in a safe way on a stable surface and away from transit zones indicating its presence.

When proceeding to demolition and disposal refer to CHAPTER 8.

Chapter 5

Fine tuning

5.1 Fine tuning of the machine

5.5.1 FINE TUNING

No specific Fine Tuning is required for this type of machine seeing as it is a standard model which adapts to normal use in typical kitchen operations (e.g. “restaurant” - see paragraph 2.1);

Nevertheless it is possible to personalize the diagram of the PLC times for eventual specific use (programming and tests have to be previously agreed upon and that this activity takes place exclusively on the premises of the Manufacturer);

The machine does not require any particular fine tuning, except for a simple check of the connections (see paragraph 4.3) and an initial functional test.

Chapter 6




Use of the machine

6.1. Start/stop procedure

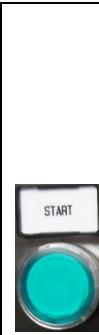
The table on the next page describes the operations to be carried out for the proper operation of the machine. **This PART OF THE MANUAL should be printed, plasticized and affixed next to every input unit.**

LOADING HOPPER “Instructions for the operator on the side of the machine”

PRELIMINARY CHECKS

	Check that the Emergency Stop switch is in OFF position, or armed, and then subsequently check that the electrical supply is turned on: the RED light of the STOP button is ON (while the yellow light alarm is off).
	Check that both the cold and warm water supplies are connected to the machine by checking if the isolation valves are open.
	Check that there is no water in the hopper by lifting the hopper's lid (cover). If any water is present, press and "hold (keep pressed)" the BLUE button for the time required to empty the hopper. After 3 seconds the pump and the dewaterer start working but the disposer does not start. When the hopper is empty, release the button. The pump and dewaterer stop in 2 seconds. ANNOTATION: The pump is designed to work with water. Therefore it is recommended not to keep pressed the CLEANING button if no more water is in the hopper.

STARTING OF THE WORKING CYCLE PROGRAM

	<p>When all the preliminary checks have been executed, press the START button. The working cycle program starts working, and the GREEN LIGHT is ON. Its default run time is set by the manufacturer. In case of no water, the yellow warning light starts flashing: 1 flash for 2 seconds every 5 seconds during the working cycle, then it stops. Open the water supplies and start again the working cycle. Once the default run time has been reached, a short automatic cleaning cycle runs before the system is stopped. The RED LIGHT (of the STOP button) starts flashing, informing the OPERATOR not to pour any food waste into the hopper. This instruction is important to wash and keep cleaned the unit's piping.</p> <p>To start a working cycle program with reduced water consumption, press and hold the START button for at least 2 seconds.</p> <p>ANNOTATION:</p> <p>The machine is designed to process mixed food waste including but not limited to, meat, fish, bones, vegetables, fruits, sauces, bread, rice and pasta. The processing of single (i.e. non-mixed) food stuffs such as rice and pasta, or bakery ingredients such as dough and flour, may cause malfunctions of the dewaterer (dewatering) apparatus. The machine is not designed to grind OYSTER AND OTHER HARD SHELLS, FATS, GREASE AND OIL, CUTLERY, PACKAGING, PAPER, PLASTICS AND RUBBER, CLING FILM, STRING, CLOTH, CORK, WIRE AND OTHER METALS, GLASS or FLOOR MOPS. The introduction of such non-organic matters may seriously damage the MACHINE and greatly reduce its lifespan. The machine is fitted with a magnet to stop metal from going into the disposer's grinding chamber.</p>
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SHUTTING DOWN OF THE WORKING CYCLE PROGRAM



Press the STOP button. The system will perform a short cleaning cycle and shuts down. The stop sequence is predetermined by the manufacturer (less than 1 minute). During the shutting down of the working cycle, the RED LIGHT (of the STOP button) starts flashing informing the OPERATOR **not to pour any food waste into the hopper**.

WARNING

Do not stop the automatic shut down cycle by pressing the EMERGENCY STOP. The stop sequences, predetermined by the manufacturer, have the purpose to wash the pipes and mechanism parts of the machine.

END OF DAY or END OF EACH WORKING SHIFT



1) By using the HOSE-SPRAY provided, clean the hopper using non aggressive, non foaming products, following the schedule indicated by the internal HACCP regulations.

2) Then lift the hopper's lid (cover) and **press and "hold" the BLUE button for the time required to empty the hopper from water**.

3) Then press the START button to start the working cycles thereby removing the last leftovers in the hopper. When the work is completed, press the STOP button to shut down the working cycle, correctly.

DEWATERER CLEANING CYCLE



By pressing the CLEANING button, the operator starts the dewaterer cleaning cycle. Its running time is preset by the manufacturer (6 minutes).

DURING THE CLEANING CYCLE, indicated by the BLUE LIGHT ON and the RED LIGHT which starts flashing, IT IS FORBIDDEN TO POUR FOOD WASTE INTO THE HOPPER OR TO START A NEW WORKING CYCLE. WAIT UNTIL THE MACHINE HAS REACHED A COMPLETE STOP BEFORE STARTING A NEW WORKING CYCLE.

The transparent cylinder of the dewaterer is designed to visually help the operator to keep cleaned this apparatus. It is highly recommended to start a cleaning cycle at each end of the day or end of each working shift (even more than once), until there are no more leftovers into the dewatering apparatus.

The START button is the only control button to be used for starting the normal working cycle:



summary notes

- by briefly pressing it, the operator starts the standard working cycle program;
- by pressing and holding it for at least 2 seconds, the operator starts the working cycle with reduced water consumption.

The STOP button is the only control button to be used for shutting down the working cycle:



summary notes

- by briefly pressing it, the operator properly shuts down the working cycle program.



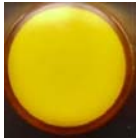

The CLEANING button is the only dual control button to be used for starting the dewaterer cleaning cycle and the emptying of the hopper:




summary notes

- by briefly pressing it, the operator starts the dewaterer cleaning cycle program;
- by pressing and holding it (for the time required), the operator puts into operation the pump and the dewaterer.

IN BOTH CASES IT IS FORBIDDEN TO POUR FOOD WASTE INTO THE HOPPER OR START A NEW WORKING CYCLE.

summary notes	<p>The RED light informs the operator:</p> <ul style="list-style-type: none"> ○ when ON – the machine has power and ready to start; ○ when FLASHING and the green light is also ON – the machine is finishing the working cycle; ○ When FLASHING and the blue light is also ON - the machine is executing the dewaterer cleaning cycle. 	
summary notes	<p>The GREEN light informs the operator:</p> <ul style="list-style-type: none"> ○ when ON – the machine is in operating. 	
summary notes	<p>The YELLOW light informs the operator:</p> <ul style="list-style-type: none"> ○ when ON and the RED light is also ON - the hopper's lid has been lifted or the Emergency SWITCH has been activated; ○ when ON and also the GREEN light is ON while the RED light is flashing – the hopper's lid has been lifted during the working cycle. ○ when FLASHING and the RED light is also ON – there is no water in the machine. 	
summary notes	<p>The BLUE light informs the operator:</p> <ul style="list-style-type: none"> ○ when ON and the RED light is also flashing – the machine is executing the dewaterer cleaning cycle. 	

OPERATIONAL INDICATION IN CASE OF ACCIDENTAL DROP OF NON-ORGANIC MATTERS (SUCH AS NON MAGNETIC CUTLERY) INTO THE HOPPER

	<p>IF DURING THE WORKING CYCLE PROGRAM AN OBJECT DROPS INTO THE HOPPER IT IS RECOMMENDED NOT TO STOP THE WORKING CYCLE BY PRESSING THE STOP BUTTON OR THE EMERGENCY SWITCH. THE CORRECT INSTRUCTION IS TO LIFT THE HOPPER'S LID (COVER). THE YELLOW LIGHT ALARM IS ON. OPENING THE HOPPER'S LID IMMEDIATE STOPS THE DISPOSER. BEFORE REMOVING THE OBJECT FROM THE HOPPER WAIT UNTIL THE MACHINE STOPS THE SEQUENCE PREDETERMINED BY THE MANUFACTURER (1 MINUTE). AS SOON AS THE MACHINE HAS FINISHED THE STOP SEQUENCE, TURN OFF THE ELECTRICAL POWER BY SWITCHING OFF THE MACHINE'S MAIN SWITCH AND REMOVE THE OBJECT FROM THE HOPPER. ONCE THE OBJECT HAS BEEN REMOVED 1) CLOSE THE HOPPER'S LID (COVER) AND 2) RECONNECT ELECTRICAL SUPPLY TO THE MACHINE. NOW THE MACHINE IS READY TO START A NEW WORKING CYCLE.</p>
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The machine is set up by the manufacturer to carry out a cleaning cycle of the dewaterer after every 2 hours from the latest working cycle performed by the disposer.

If the unit is disconnected by the electrical supply the latest working cycle settings are lost.

It is forbidden to use the EMERGENCY SWITCH to stop the machine during the normal working cycle

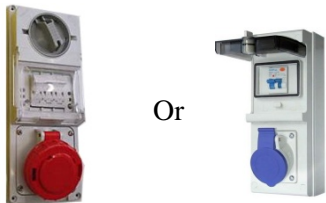
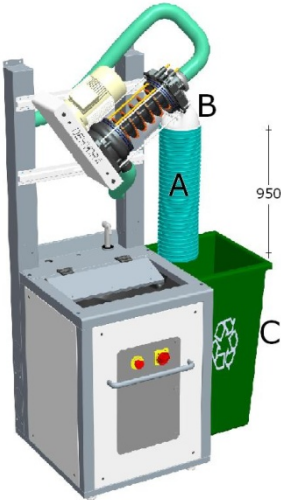
The EMERGENCY SWITCH is provided to ONLY stop the machine in case of a real emergency

THE IMPROPER USE OF THE EMERGENCY SWITCH MAY CREATE BLOKAGES IN THE DRAINAGE LINE BECAUSE IT PREVENTS THE CORRECT EXECUTION OF THE WORKING AND CLEANING CYCLES PROGRAMS OF THE MACHINE. IN ORDER TO AVOID ANY IMPROPER USE, THE EMERGENCY SWITCH IS PROVIDED WITH A KEY WHICH HAS TO BE HANDED OVER TO THE KITCHEN'S MANAGER.

This machine is provided with micro-switch which cuts off the electrical power supply of the disposer when the hopper lid is opened, stopping it from operating.

The MACHINE must always be fully disconnected from the electric power supply before any necessary repair or maintenance work is carried out. Even when the MACHINE is off, to access or clean the closest areas of the rotating parts of the disposer, it is always recommended to disconnect the unit from the electric power supply.

DEHYDRATOR: “Instructions for the operator on the side of the machine”

 <p>Or</p>	<p>It is recommended to clean the dewaterer at the end of the working day. In any case, it is recommended to perform a cleaning cycle as soon as the operator, visually, checks that the transparent body of the dewaterer is dirty.</p> <p>Cleaning of the corrugated hose-pipe</p> <p>At the end of a normal working day, or when necessary:</p> <ol style="list-style-type: none"> 1) switch off the main switch of the machine or of the interlocked socket
	<ol style="list-style-type: none"> 2) remove and clean the corrugated hose-pipe (A) and the special discharge flange (B) 3) change/empty the bag/bin (C), 4) restore the electrical power supply previously switched off, points 1 <p>Change of the bag and cleaning</p> <ol style="list-style-type: none"> 1) for the short time required to change the bag, it is recommended to switch off the machine (see previous points 1) 2) remove the bag/bin, clean and sterilize the waste bin 3) replace the bag (if needed) 4) restore the electric power supply previously switched off (see previous point 4) <p>DO NOT OVERFILL THE BAG/BIN</p>
<p>FREQUENTLY ASKED QUESTIONS – DRAWBACKS</p> <p>If during the starting of the machine metallic noises are heard it is recommended to immediately stop the unit by pressing the Emergency Switch.</p> <p>It is possible that even if the machine is not in use, a piece of cutlery may have inadvertently dropped into the disposer. In this case, switch off the electrical supply, open the hopper's lid, and manually remove the metal or other foreign objects.</p> <p>Be sure that this operation is performed by trained personnel.</p> <p>The machine is fitted with permanent magnets to stop magnetic items from falling into the disposer's grinding chamber.</p> <ul style="list-style-type: none"> - THE MACHINE WORKS ONLY IF THE HOPPER'S LID IS CLOSED – - FOR THE CLEANING CYCLE OF THE FEED HOPPER IS POSSIBLE TO OPEN THE LID AND EXECUTE THE CYCLE MANUALLY (SEE PAG. 38 END OF DAY INSTRUCTION) <p>Excessive vibrations or other working anomalies should be treated in the same way: by stopping the machine, if necessary emptying the hopper by activating the pump and then reporting to technical service.</p> <p>The machine is designed to process food waste including small bones, however, the machine is not adapted to grinding PLASTIC, METALS, GLASS or FLOOR MOPS. The introduction of such non-organic matters may seriously damage the MACHINE and reduce its lifespan, greatly.</p> <p>The disposers are not designed to process any quantity of paper. However, the possible introduction of paper will not harm the Unit.</p>	

It is recommended to always inform and train adequately the various operators on the correct and safe use of the machine.

Every start command of the working process is conducted with voluntary actions by the operator by means of the control button on the control panel of the machine, even in the case of a restarting of the machine after a shutdown (eg. if caused by a lack of supply) or after any voluntary disconnection.

The stop of the MACHINE can be carried out performing the following stopping functions:

- **normal stop:** by pressing the STOP button on the control panel of the machine (the stop is pre-set by a timer).
- **emergency stop (never use as a normal stop):** by pressing the EMERGENCY SWITCH or by opening the feed hopper's lid which disconnects the main power supply by means of a micro switch of protection.
- **general stop:** by cutting off the electric power supply to the machine, by opening the interlocked socket on the control panel or disconnecting the MACHINE's plug from the interlocked socket.

All the rotating parts of the MACHINE are protected because they are inside of the steelwork structure. The Machine has been designed to enable the achievement of the cutting system of the disposer without first opening the feed hopper's lid.

In any case, an emergency SWITCH ON/OFF button has been provided to guarantee an emergency stop equivalent to that determined by opening the interlocked lid.

6.2. Controls and settings

6.2.1 Safety device control

Periodically, at least once a week, it is required to perform a functional test to verify the following components, IN NO LOAD CONDITIONS and with the emergency reset key in your hands:

feed hopper's lid sensors

PROCEDURE

- Start a normal working cycle and open the lid (the machine should stop immediately);

emergency switch

PROCEDURE

- Start a normal working cycle and try to activate the emergency switch (the machine should stop immediately);
- At the end of the test remember to re-activate the emergency switch again, using the reset key.

Metal sensors (if provided)

PROCEDURE

- Start a normal work cycle and insert a metallic object (e.g a fork) inside the hopper paying attention not to let it fall in the grinder (the machine should stop immediately);

Should the machine present anomalies relative to the correct functioning of the safety devices proceed with the immediately stop of the machine, disconnect the electrical power supply, affix a notice with the wording “**out of order**”, inform the person in charge or the assistance service directly describing in detail the occurrence and referring information and/or codes provided by the PLC.

6.2.2 Anomalous situations and alerts

Anomalies and alerts are indicated by the flashing of the YELLOW ALARM LIGHT on the control panel and, for maintenance staff, by useful tips on the PLC screen, located inside the control panel. The following table gives a briefly description of the types of anomaly:

description of anomaly (see also PLC display)	Indication lights	Solution
“Emergency ON”	Always on	The emergency switch has been pressed – arm it again (by using the key provided) in order to restore the electrical power supply
“LID Open”	Always on	Close the hopper’s lid
<p>“Metal Detector (*)”</p> <p>Indicates the accidental introduction of an extraneous body which causes the immediate stop of the machine</p> <p>(*) in case the machine is provided with such a system</p>	<p>1 flash of 1 sec frequency every 2 sec (continuous, without pause)</p>	<p>a) open the hopper’s lid and keep pressed the CLEANING button until the water contained inside the disposer’s grinding chamber is emptied by the pump;</p> <p>b) press the emergency switch, turn off the electrical power by switching off the interlocked socket, disconnect the machine’s plug thus avoiding any interference of third parties;</p> <p>c) remove the extraneous body;</p>

		<p>d) reconnect the power supply, see (b)</p> <p>d) re-start the machine, again</p>
<p>“FWD Thermal Protection”</p> <p>Indicates the intervention of the thermal trip which protects the disposer’s motor</p>	<p>(Disposer)</p> <p>2 flashes for 1 second</p> <p>-pause, then repeats again- while the RED light is ON</p>	<p>Check and remove any extraneous objects involuntary dropped into the disposer. Then, open the control panel and re-set the thermal protection by clicking on the disposer thermal strip switch. If the machine does not restart, report immediately to the Service Manager or to the outsourced Service describing in details what happened</p>
<p>“Pump Thermal Protector ON”</p> <p>Indicates the intervention of the thermal trip which protects the pump’s motor</p>	<p>(Pump)</p> <p>3 flashes for 1 second</p> <p>-pause, then repeats again – while the RED light is ON</p>	<p>Maybe the pump is blocked. Before asking for services, re-set manually the pump thermal strip switch, opening first the control panel, and try to un-jam the pump by contacting the service department. If the machine does not restart, report immediately to the Service Manager or to the outsourced Service describing in details what happened</p>
<p>“Dehydra Thermal ON”</p> <p>Indicates the intervention of the thermal trip which protects the pump’s motor</p>	<p>(dewaterer)</p> <p>4 flashes for 1 second</p> <p>-pause, then repeats again- while the RED light is ON</p>	<p>Maybe the dewaterer is blocked and has to be un-jammed by asking services. Report immediately to the Service Manager or to the outsourced Service describing in details what happened</p>
<p>The machine is not able to drain and the hopper is full of water</p>	<p>Take note of any eventual information provided by the flashing light</p>	<p>a) open the hopper’s lid and keep pressed the CLEANING button until the water contained inside the disposer’s grinding chamber is emptied by the pump, then start a new working cycle</p>

		<p>note: in case of failure, do not repeat the operation more than three times, because the machine is blocked and requires the assistance service;</p> <p>b) switch on (press) the emergency stop, turn off the electric power supply by switching off the interlocked socket, disconnect the machine's plug thus avoiding any interference of third parties;</p>
<p>"Low water pressure "</p> <p>No cold water in the machine</p>	<p>1 flash for 2 seconds every 5 seconds while the RED light is on</p>	<p>Open the gate valve of the cold water. To reset the alarm start again the START button</p>

in all failure cases:

- 1) Immediately stop the machine by disconnecting the electrical power supply
- 2) Affix a notice with the wording "out of order"
- 3) Inform the SERVICE describing in detail what happened and any information provided by the flashing light and the PLC.

Chapter 7

Maintenance

7.1. General information

To guarantee the maximum reliability to the machine and to avoid conditions of danger keep strictly to the instructions and the warnings given in the following pages.



DANGER:

for reasons of safety, all maintenance operations illustrated in the present chapter have to be carried out only by qualified and specifically trained staff.

The technicians in charge, what is more, have to have all the instruments and the IMP necessary to operate in safety.



ATTENTION:

*to guarantee the operators complete efficiency and safety of the machine all the time and to prevent problems tied to the deterioration of the safety measures or machine stoppages which may be onerous, it is necessary to activate an efficient **preventive maintenance** planning interventions at programmed intervals, with the objective of renewing or replacing the parts of normal wear such as: **the grinding system of the disposer, the elastic impeller of pump body, the auger brushes of the dewaterer** and checking the general state of the mechanical and electrical components of the machine (and its auxiliary equipment), thus providing indications on any eventual extraordinary operations which may be necessary.*

Before carrying out any maintenance or cleaning operation as shown in the present paragraph it is necessary to disconnect the machine (and its auxiliary equipment) from the relative power supplies:

- Remove tension from the general control panel by means of the general switch putting it on **OFF**

- Predispose a visible notice with the wording "MACHINE IN MAINTENANCE" and at the same time cordon off the machine.



DANGER: **the manufacturer declines all responsibility for any eventual damage to things and/or to people deriving from improper interventions carried out by unqualified, untrained, inadequately equipped or unauthorised staff.**

7.1.1. Indications concerning safety

To carry out cleaning and maintenance operations correctly it is indispensable to take into consideration the following indications.

- During the interventions it is necessary to inform via suitable notices the intervention on the machine (such indications should be placed so that they prevent all undesired interventions on the machine).
- During the interventions **only authorised staff** may access the workplace



ATTENTION: *the maintenance and cleaning operations have to be carried out only by expert staff who have read and understood all the indications given in the present Use and Maintenance Manual.*



DANGER: **only dismantle the parts of the machine effectively necessary to carry out the specific maintenance operation.**

What is more, before handing the machine back to the operators, it is necessary to check its integrity and functionality.

- All material of environmental impact which has to be eliminated as a result of maintenance operations has to be disposed of according to current rules and regulations.



ATTENTION: *for the disposal of materials of high environmental impact, if required, refer to specialized companies.*

In any case, to carry out all the maintenance and cleaning operations given below in correspondence of the machine, the following Individual Means of Protection are necessary:



7.2. Routine maintenance interventions

7.2.1. Cleaning

The machine does not require ordinary maintenance interventions on behalf of the user, other than those of cleaning and /or safety device running tests, whilst ordinary maintenance relative to the controls on wear of the parts could be programmed with the assistance service with a possible assistance contract which programs at least a visit per term;

Cleaning, of the casing and the hopper, the latter to be carried out accurately at each end of shift, may be carried out using a non aggressive detergent.

7.3. Emergency maintenance operations

7.3.1. Failure or inconveniences not solvable by the operator

All faults or inconveniences have to be reported to the assistance service who, in order to proceed in the best way and the best time, should be informed on any possible causes by means of a simple description of what happened, referring the information reported by the PLC and by the appropriate flashing light (on the panel), and then, stopping the machine (disconnect the electric power supply, affix a notice with the words “**out of order**”);

Chapter 8

Demolition and disposal

8.1 Shut down, disassembly and demolition

To carry out the disassembly and demolition operations the following Individual Means of Protection are necessary:



8.1.1 Shut down of the machine

To shut down the machine for a long period, carry out the following operations:

- 1 Switch off the tension, acting in correspondence of the general disconnecting switch present on the electric control panel.
- 2 Clean the machine.
- 3 Carry out also the ordinary maintenance operations, too; then cover the machine with a canvas.

8.1.2 Disassembly

If necessary to disassemble the machine, follow the procedure as follows.

1. Isolate the machine and the auxiliary equipment from the various sources of power (electric and water)
2. Referring to *Paragraph 4.4.1 – Disassembly of Chapter 4 - Transport and Installation*, proceed with the disassembly of the machine; contact, besides, the Technical Offices of the Manufacturer to obtain the necessary assistance during such an intervention.
3. To proceed with the handling of the machine components, operate according to the instructions given in *Paragraph 4.2 – Transport and handling of Chapter 4 - Transport and Installation*.
4. Arrange opportunely the components to be transported to other premises (refer to *Paragraph 4.2 – Transport and Handling of Chapter 4 – Transport and Installation*), to be stocked (refer to *Paragraph 4.4 – Storage of Chapter 4 – Transport and Installation*) or to be demolished (refer to *Paragraph 8.1.3 – Demolition and generalities on disposal*).



DANGER: *the Manufacturer declines all responsibility for any eventual damage to things and/or people deriving from improper interventions carried out by unqualified, untrained, inadequately equipped or unauthorised staff.*

8.1.3 Demolition and general information about disposal

When the machine (and its auxiliary equipment) has come to the end of its life cycle, before proceeding with its final disposal, it is necessary to carry out a series of operations destined to minimize the environmental impact connected to the disposal of the components of the machine, as required by the current rules and regulations on waste disposal.

Such operations are:

1. Recovery and disposal of oils, that is:
 - a. By means of an appropriate pump, drain any oil which may be contained in components of the machine, collecting it in suitable containers;
 - b. Store the recovered oil in cans or drums;
 - c. Dispose of the recovered oil via appropriate companies;
2. Separate and stock the parts of environmental impact, that is:
 - a. Separate the various parts which could be a source of pollution;
 - b. Carry out a selection of the materials with the purpose to benefit the separate collection and recycling of these waste materials.



NOTE: *for further details on the disposal of components not made by the Manufacturer and integrated in the machine, consult the relative Use and Maintenance Manual.*

3. Dispose of the casing, that is:
 - a. Having finished the removal and storage of the polluting elements, refer to specialized companies for the disposal of the metal casing.



ATTENTION: *Before scrapping the machine, **make obsolete** the identification plate of the machine and the relative technical documentation. It is the Duty of the Purchaser to return such elements to the Technical Office of the Manufacturer who will undertake to destroy them. The mere keeping of the above mentioned elements in an inaccessible place is not allowed.*

*At the end of these operations **communicate** to the Technical Office of the Manufacturer the completed dismantling and scrapping of the machine.*

Chapter 9

Failure search

9.1 Failures and malfunctions

All faults or inconveniences have to be reported to the assistance service who, in order to proceed in the best way and the best time, should be informed on any possible causes by means of a simple description of what happened, referring the information reported by the PLC and by the appropriate flashing light (on the panel).

The user is not required to have a specific instruction on a failure search.

Chapter 10

List of spare parts

10.1 Procedure for ordering spare parts

To contact the Technical Service of the Manufacturer, please refer to:

ECOFAST ITALIA TECHNICAL DEPARTMENT

Piazza Franco Martelli, 5

20162 Milano (MI) – ITALY

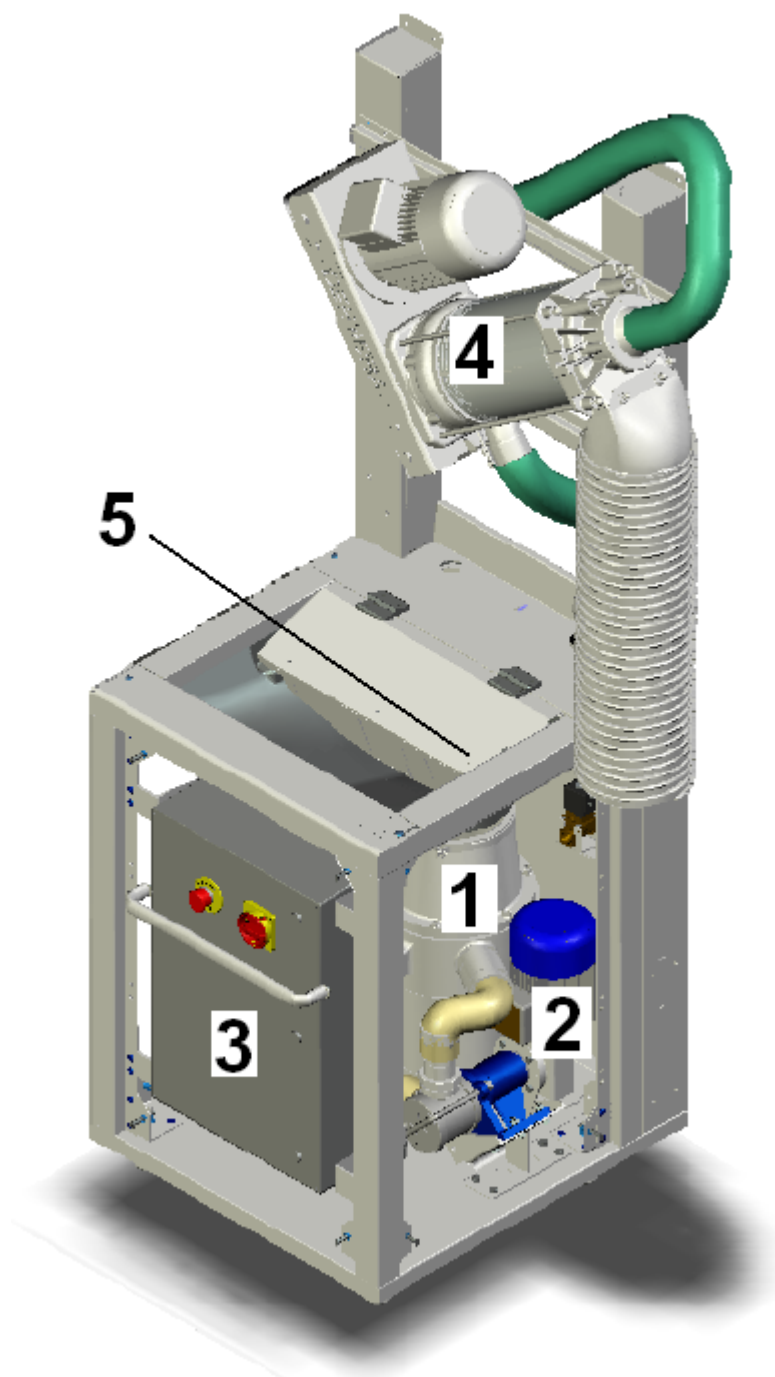
Phone: (+39) 02 66111618

Fax: (+39) 02 66112000

Email: INFO@ECOFAST.EU

It is recommended to specify the name and the model of the machine in service.

10.2 Machine's main parts picture



1. DISPOSER
2. PUMP ASSEMBLY WITH GEARBOX
3. ELECTRICAL CONTROL PANNEL WITH PLC
4. DEWATERER
5. SECURITY MICRO-SWITCH

Chapter 11

Mechanical drawings

To contact the Technical Service of the Manufacturer, please refer to:

ECOFAST ITALIA TECHNICAL DEPARTMENT

Piazza Franco Martelli, 5

20162 Milano (MI) – ITALY

Phone: (+39) 02 66111618

Fax: (+39) 02 66112000

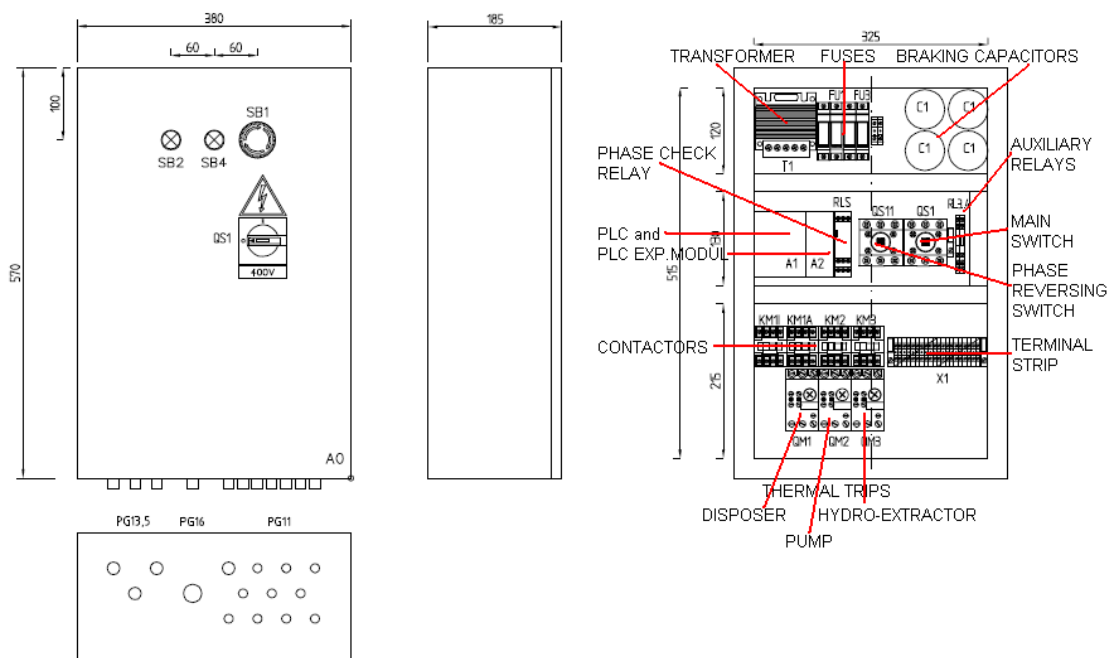
Email: INFO@ECOFAST.EU

It is recommended to specify the name and the model of the machine in service.

Chapter 12

Electrical drawings

The electrical diagram is inserted in the control panel of the machine.



Chapter 13

Technical Documentation useful for maintenance

To contact the Technical Service of the Manufacturer, please refer to:

ECOFAST ITALIA SERVICE DEPARTMENT

Piazza Franco Martelli, 5

20162 Milano (MI) – ITALY

Phone: (+39) 02 66111618

Fax: (+39) 02 66112000

Email: INFO@ECOFAST.EU

It is recommended to specify the name and the model of the machine in service.