INTEGRATED DEWATERING UNIT AND TEMPORARY TANK

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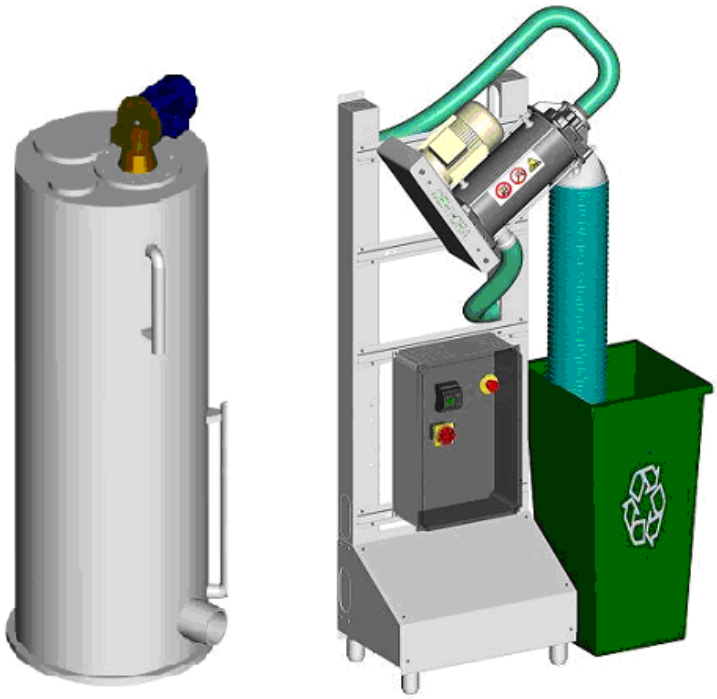

BASIC COMPOSITION OF AN INTEGRATED DEWATERING UNIT AND TEMPORARY TANK:

- A TANK
- AN INTEGRATED DEWATERING UNIT

EVERY UPDATE IMPLIES DIFFERENT TECHNICAL AND/OR DIMENSIONAL FEATURES

USE AND MAINTENANCE MANUAL

Unit name

INTEGRATED DEWATERING UNIT AND TEMPORARY TANK

Model or system composition: _____

Serial number: _____

USE AND MAINTENANCE MANUAL

Release: December 2011
Review: 00

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Chapter 1
General information

1.1. General data

This Use and Maintenance Manual is an integral part of the INTEGRATED DEWATERING UNIT and TEMPORARY TANK (identified in this document by the term MACHINE) made by Ecofast Italia S.r.l.; for such a reason it has to accompany the machine in 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 authorization 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
Chapter 1 General information	- 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.
Chapter 2 Description of the machine	- Description of the machine and of the functional process.	All staff in charge of the machine.
Chapter 3 Safety and Technical Data	- 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
Chapter 4 Transport and Installation	▰ 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).
Chapter 5 Fine tuning	▰ Instructions for the **fine tuning** of the machine	All staff in charge of the machine.
Chapter 6 Use of the machine	▰ Description of the procedures to follow for the **start up and use** of the machine.	All staff in charge of the machine.
Chapter 7 Machine maintenance	▰ Description of the **checking and co**ntrol 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).
Chapter 8 Demolition	▰ 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).
Chapter 9 Failure search	▰ 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	
Chapter 10 List of spare parts	➢ **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).
Chapter 11 Mechanical drawings	➢ **Mechanical drawings** of the machine	All staff in charge of the machine.
Chapter 12 electrical drawings	➢ **Diagrams and documents** inherent to the electrical part of the machine	All staff in charge of the machine.
Chapter 13 Documentation of components useful for maintenance	➢ 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 *INTEGRATED DEWATERING UNIT and TEMPORARY TANK*.

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.

1.4.4. Personal means of protection and rules of behaviour

For each operation described in this 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.*

1.4.5. 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).

1.4.6. 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.

What 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 *INTEGRATED DEWATERING UNIT and TEMPORARY TANK* 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.

The Manufacturer ECOFAST ITALIA S.R.L. , though advising about the best realisation of electric and hydraulic connections, is not to be anyhow held responsible for the connections themselves or for possible direct or indirect damages ascribable to them, because information are given by Ecofast merely for completeness and in order to obtain the best performances by the MACHINE. Secondly, the Manufacturer ECOFAST ITALIA S.R.L. , not being able of checking electric and hydraulic systems, drainages, and buildings, and not being responsible for their setup, retains a right to shut down the MACHINES whenever the named systems might jeopardize the proper use and / or working of the MACHINES.

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

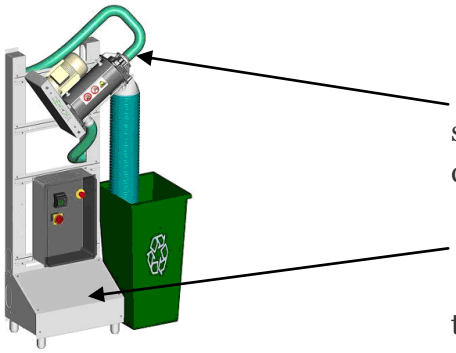
Dewatering unit DSA3.0:

The Stand Alone [*] dewatering unit is a compact assembly allowing to integrate in a single unit all the components of the dewatering system, thanks to a special load-bearing structure. This structure includes:

- Dewatering device / spin dryer
- PLC control panel
- Pump assembly

The dewatering unit DSA3.0 allows to:

- Cleverly integrate components, avoiding their positioning and on site installation and thus saving money
- Obtain several configurations depending on operative or installation needs
- Obtain a perfect electric and hydraulic wiring, both on the functional and the esthetic side, having been tested at the factory

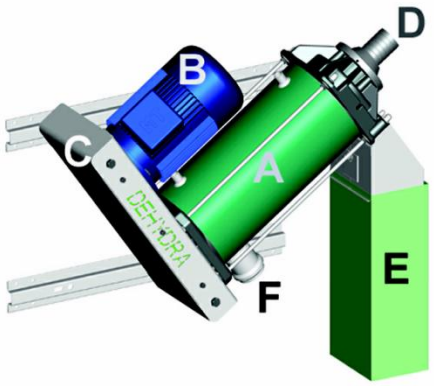


on top, a centrifugal dewaterer which separates the waste from the watery component

Pump: it collects the material from storage tank

[*] *depending on the system type, the dewatering unit Stand Alone can be setup as single component or as a set, and the control panel can be mounted on a frame or intended to be fastened to a wall in the specific case of a multiple installation*

The dewatering unit set on the steel frame is composed 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 are also:

(D) inlet of the waste water to be dewatered (ground food waste mixed with water)

(E) dehydrated waste chute

Storage tank

The S60.300 and S80.600 units are cylindrical tanks, respective dimensions are Ø 600 x 1700mm (about 300 litres), and Ø 850 x 1700mm (about 600 litres), intended for two specific purposes:

- To temporarily store the refluent liquid (water + ground material) coming from the free standing units (food waste disposers)
- To keep the refluent liquid density homogeneous, by stirring it

The tank is made up by the following components:

A – inlet opening for the material (refluent liquid)

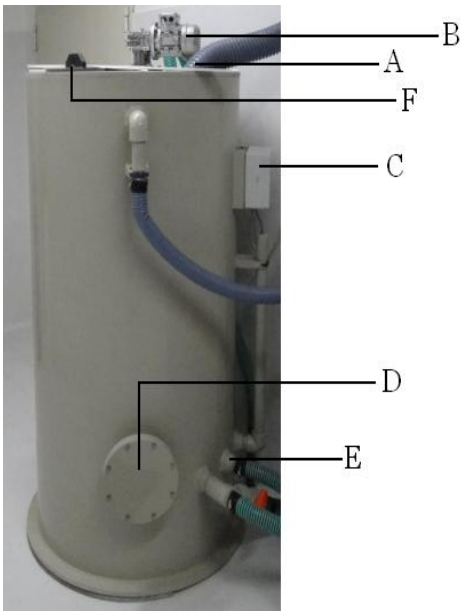
B – engine coupled to a mixer

C – electronic pressure transducer for levels control

D – lower opening for visual inspection

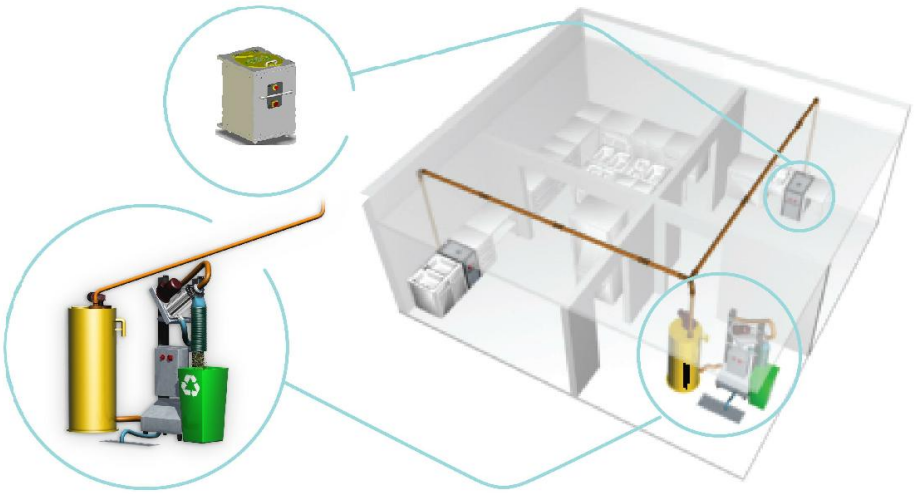
E – waste water outlet

F – upper opening for inspection



2.1.1 Working principle

The *INTEGRATED DEWATERING UNIT and TEMPORARY TANK,* which is a part of an assembly (called *REMOTE SYSTEM*) designed to use the constituent machines themselves when they are located far from each other. The so-called remote system is made up by several free standing units installed in various places inside the building, then connected by a special piping network to a tank for temporary storage and then to a dewatering unit (see following picture)



The refluent liquid (a mix of ground waste and water) coming from the free standing units, through a special pipe, reaches the tank for temporary storage. Inside the tank, a mixer makes the refluent liquid uniform while it remains inside the tank, and avoids any settling; the pressure transducer send the information to the PLC located in the control panel, which defines the working of dewatering unit and of the whole system.

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 reuse.

Operationally the dewaterer holds the ground materials contained in the waste water thanks to a micro perforated metal cylindrical 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 drops in the collecting bin, while the residual water is drained into the sewerage system.

The *REMOTE SYSTEM* is driven by a central PLC located into the control panel of the dewatering unit, which is also connected to the PLCs installed in the panel of each free standing unit. The PLC program can report any possible failure and/or malfunction.

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 about 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 **Errore. L'autoriferimento non è valido per un segnalibro.**.

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*).

3.2. Devices and solutions for protection

3.2.1. Passive 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 **fixed** safety devices

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.

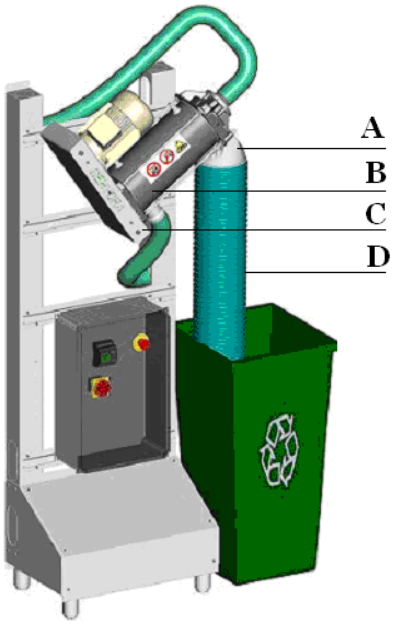
About risks due to moving parts, the following is to be noticed:

a protection prevents the rotating parts to be touched, as prescribed by **UN EN 953** and **UNI EN ISO 13857**.

The powertrain of the dewaterer, where there could be a danger of dragging or entanglement, are completely protected by a metal casing fixed to the machine structure (C in the picture). For its removal therefore it is necessary using special tools.

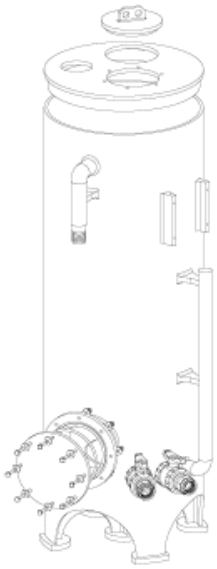
The rotating parts of the dewaterer (cylinder and auger), where there could be a danger of cutting or entanglement, are protected by an appropriate drainage flange (B), by the drainage collector (A), and by a 950 mm long corrugated hose-pipe whose length does not permit the reaching of the moving parts.

It is strictly forbidden to tamper with and/or modify the corrugated hose-pipe changing its length. Furthermore it is forbidden using the unit without the drainage collector (A)



The mixer blades are the tank parts involving a possible danger of dragging or entanglement. Blades are located on the tank bottom and locked up inside the machine structure.

The openings for inspection and cleaning are located on the upper side and in the lower part of the tank. The cover of the upper one is easily removable, but the moving parts and the hole dimensions protect the operator from any risk. The cover of the lower inspection opening can be removed only by special tools.



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.

3.3. Warnings concerning residual risks

3.3.1. Lifting and transport

3.3.1.1. NECESSARY INDIVIDUAL MEANS OF PROTECTION

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

The MACHINE is designed to be easily transported according to the following precautions:

- its shape is made so that the normal lifting means can easily fit it
- it has been designed and built so that the moving parts can be removed or fastened during transport and handling

The machine is transported on wooden pallets after having been wrapped by plastic leaves in order to prevent the moving parts to be ejected.

Besides plastic leaves, also carton leaves are used to ensure an appropriate protection.

Speaking of the MACHINE lifting and transport, the following recommendations are to be considered.

The means for lifting and transport (such as cranes, tackles, lifts, forklift trucks) must be appropriate about safety to the nature, shape, volume and weight of loads they are intended to handle, as well as to the working conditions.

Means for lifting and transport must be used in a correct way considering their features; above all, the needed actions to ensure stability of means and of its load (possibly secured for hoisting) are to be implemented, considering the type of means used, its speed, accelerations during starting and stopping, and the route traits, in order to avoid the load to be damaged or to fall, or to be displaced so that becoming dangerous for persons and/or objects.

Risks during mechanical or manual load handling can be reduced using appropriate IMPs such as helmet, gloves, safety shoes and if needed lumbar protections, able to recover the spine lineup and to keep the compression of intervertebral discs uniform.

The staff performing these tasks must be competent and breeded to this specific assignment.

It is forbidden to transit under hanging loads.

It is forbidden to be transported together with the load.

3.3.2. Installation and connection

3.3.2.1. NECESSARY INDIVIDUAL MEANS OF PROTECTION

3.3.2.2. SIGNAGE

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

3.3.2.3. 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.

3.3.3. 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 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 or disconnected from mains [*] and with the engine and the apparatus cold and they have to be carried out in the absence of free flames or high temperatures

Basic cleaning tasks, that is to say cleaning the machine outer side and the rooms, have to be performed daily. For this purpose the staff may use a cold water hose, whereas the room for storage and dewatering must be equipped with a cold water hose and with a grilled drain hole on the floor to collect and drain the cleaning water.

[*] AC mains can be disconnected no longer than 50 hours in order to avoid the PLC clock in the control panel to lose the time. In case of mains disconnection for more than 50 hours and a resulting irregular working, the customer service will have to be contacted to recover the correct functioning.

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 actions 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 actions 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 control panels).

3.4. Emplacement of operator

The MACHINE doesn't need an operator during its working, it being fully automatic and organised by the control panel.

Nevertheless, it is essential the periodic intervention by an operator to remove the material from the disposal bin and/or to replace the bin itself, or for daily cleaning actions described in par. 3.3.3.3

3.5. Indications about noise

3.5.1. Noise

The MACHINE has been designed and built 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 **lower than 70 dB.**

3.6. Proper and improper use of the machine

Machine can be **exclusively** used for storage and subsequent dewatering of food waste.

The machine is designed, built and equipped to limit the operator actions to removal of solid material from the disposal 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 Department 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 and7or 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.***

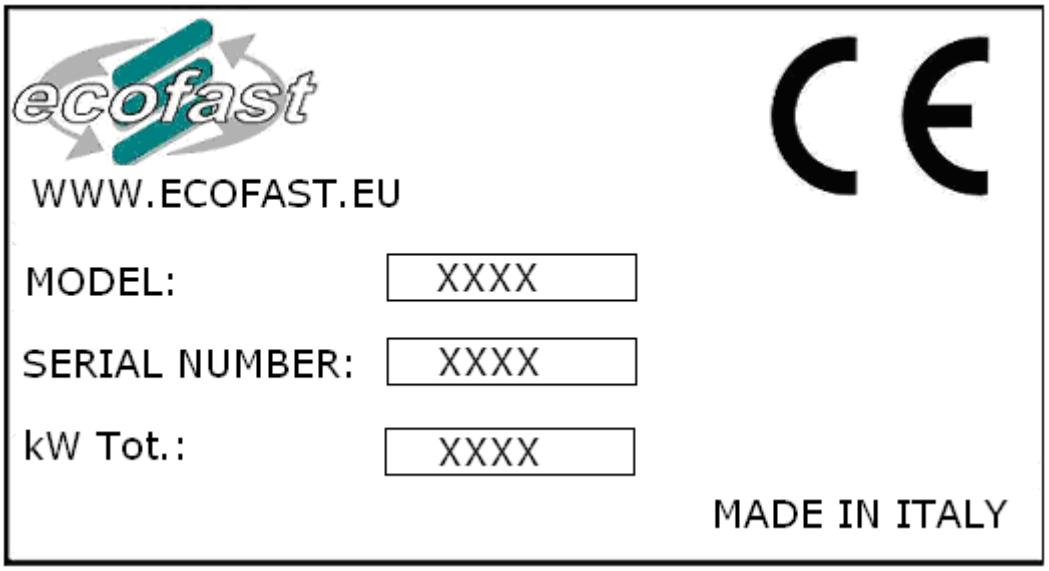
ATTENTION: ***all material of environmental impact which it is necessary to dispose of after any interventions or operations on the machine have to be disposed of according to current rules and regulations.If necessary, refer to specialized companies for their disposal.***

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 (**Errore. L'autoriferimento non è valido per un segnalibro.**); 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.

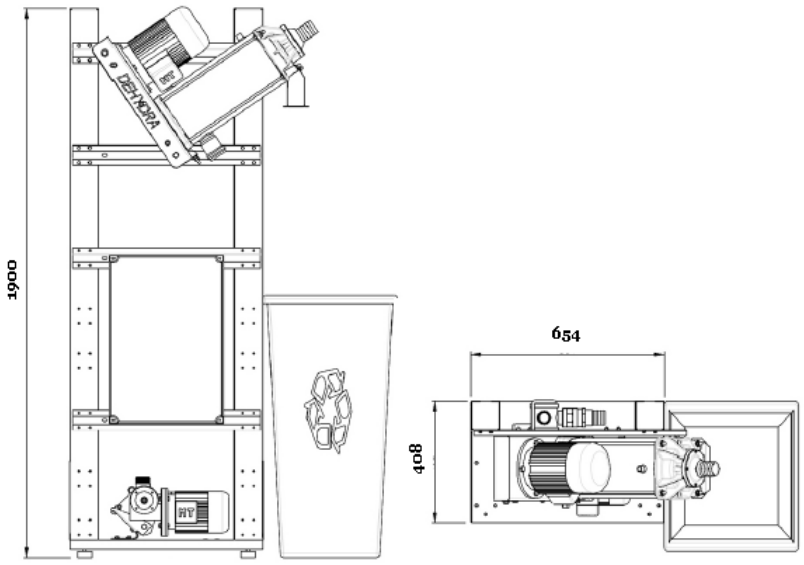
Diagram 1



3.8. Technical data and overall sizes

- DIAGRAM 1 -

- **OVERALL DIMENSIONS: 408 L. - 654 W. - 1900 H.**
- **WEIGHT: 150 kg.**
- **AC INPUT: three-phase 400V-50Hz [3P+T]**
- **POWER INPUT: 1.9 kW total**



- DIAGRAM 2 -

- **OVERALL DIMENSIONS:**

Model S60.300 : 1940 H – Diam. 700

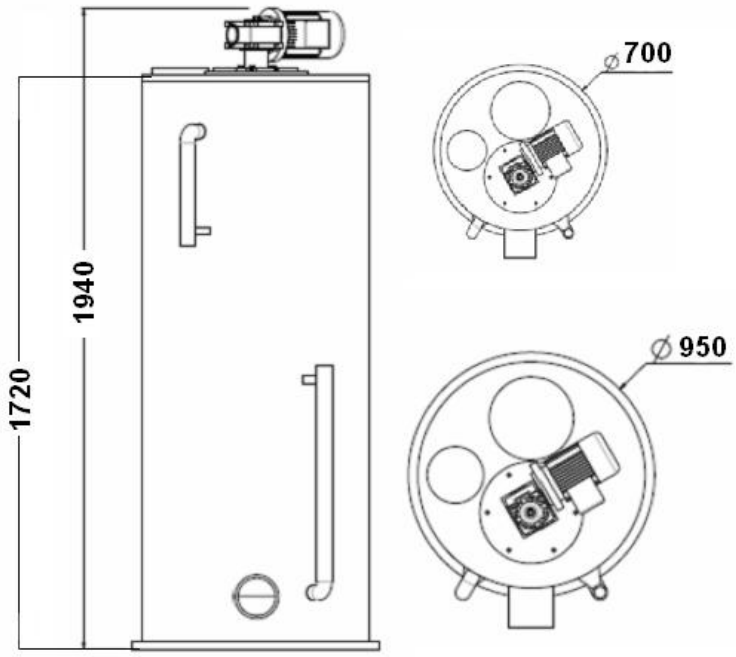
Model s80.600 : 1940 H – Diam .950

- **CAPACITY:**

Model S60.300: 300 lt.

Model S80.600: 600 lt.

- **WEIGHT: 60 kg (S60.300)**
- **WEIGHT: 112 kg (s80.600)**
- **AC INPUT [THROUGH CONTROL PANEL]**



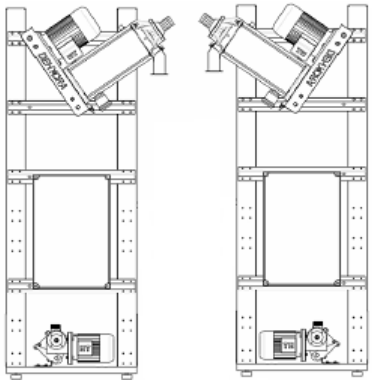
INSTALLING SETS OF DEWATERING UNITS

Some typical uses need a set of dewatering units.

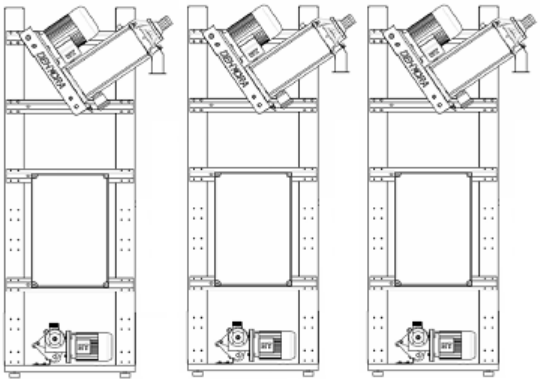
- diagrams on the right -

In this event the MACHINES need rooms featuring different dimensions which have to be taken into account during design.

For a set of dewatering units, the control panel is unified and it has to be installed to a wall. This has to be considered during design and in case of system *UPGRADE*.



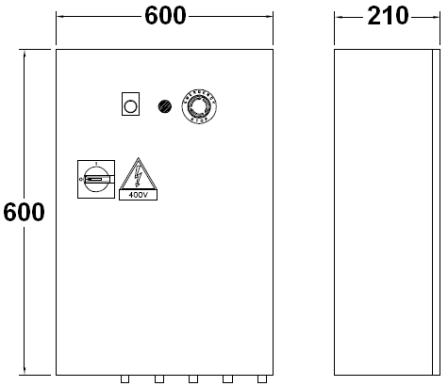
BATTERIA DISIDRATATORI CONTRAPPOSTI



BATTERIA DISIDRATATORI IN SERIE

UNIFIED CONTROL PANEL FOR A SET OF DEWATERING UNITS

[600 x 600 / 210 - 45 Kg.]



Chapter 4
Transport and installation

4.1. General information

4.1.1. Environmental conditions of the installation place

5. 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.
6. The MACHINE has been designed to be installed in a closed environment and sheltered from atmospheric agents.
7. 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

INTEGRATED DEWATERING UNITS are usually set in a special room, featuring the needed dimensions for a proper use and an easy maintenance.

Between TANK and DEWATERING UNIT leave enough room to allow the normal actions of cleaning and maintenance, and to reach the command parts.

Anyway, it is useful evaluating a manageable assembling / disassembling or even the mere moving of working plans close to the machine.

Do not put heat sources close to the waste bin, they might promote fermentations to start and thus annoying odours to raise.

4.2. Transport and handling

See paragraphs 3.3.1.3.

4.2.1. Unloading and unpacking

Once the MACHINE has been positioned in the workplace, using the most opportune means remove the supports and the wooden, plastic and cardboard protection, disposing of the packaging material according to the current laws.

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 through an interlocked socket, equipped by retarded fuses for electric motors, and to operate the switch on the electric panel.

AC INPUT: three-phase 400V - 50Hz

POWER INPUT: 1,9 kW total (tank + dewatering unit)

SOCKET : 3P+T - 16Amp (4 poles)

Ensure that the electrical supply is suitable and correctly sized for the specific power requirement of the machine.

4.3.2. Connection to the water supply

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

HOT WATER: 3/4" - 3 bars (*required to feed the cleaning cycle of the dewaterer*)

COLD WATER: 3/4" - 3 bars (*required to clean the room, preferably by a winding up hose*

4.3.3. Connection to mains drainage

The machine is equipped by 50 mm diameter in/out lines, nevertheless it would be advisable a 110 mm diameter drain line to have a proper hydraulic direct connection to a sewer and to optimize connections.

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

5.1.1 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. Machine starting

6.1.1 Machine starting method

All the machines, *INTEGRATED DEWATERING UNIT and TEMPORARY TANK* and *FREE STANDING UNITS,* are equipped by a start button and by an emergency stop switch, which has to be operated in case of real emergency only.

The emergency stop switch is also provided with a key to limit an improper use by the operators; if you stop the unit by pressing it, you need the key to reset the machine. Thus, by giving the keys of all machines to an accountable operator (e.g. head of system or canteen), it is possible to control the correct working of each machine.

The INTEGRATED DEWATERING UNIT is designed, built and equipped in order to limit the operator actions to just a few ones: removal of dehydrated material from the disposal bin, daily cleaning of the machines and of the rooms.

The working program sequence and of any other function are automatically run by the PLC located in the control panel: the machine starts and stops automatically.

When the machine is sold, the PLC features a standard program able to satisfy normal needs which the machine is intended to.

At starting, the machine performs a working cycle program, predetermined by manufacturer, with a precise sequence of commands which has to be completed or modified by pressing the only dual control green button on the panel. This button is the only available command to modify the machine functioning.

Features of the standard PLC program for *INTEGRATED DEWATERING UNIT and TEMPORARY TANK*:

- The control panel of the dewatering unit leads, manages and monitors the tank[1] and each free standing unit. [2]
- When a given level of refluent liquid is reached inside the tank, the dewatering unit starts up: (a) sucking the refluent liquid until the tank is empty - (b) dehydrating the refluent liquid got from the tank.
- At the end of the day[3] or periodically, the system washes the auger and the cylinder, besides the tank.
- At the end of every working cycle each FREE STANDING UNIT runs a program to wash up the intake and its piping network branch.

The factory can modify some program parameters due to special needs (working timing, cleaning timing and cycles etc.), nevertheless it is certainly forbidden to modify the program without authorization: any possible program editing is to be requested to the manufacturer.

1	The control panel continuously receives data about the tank level and depending on needs can adjust the operative program of the free standing units, of the mixer and of the dewatering unit.
2	The control panel of the dewatering unit remotely manages the free standing units and can send several kinds (*) of operative commands – especially: o It can stop the free standing units o It can pause the free standing units o It can order to free standing unit an intermittent pouring of water into the hopper (*) depending on the system configuration
3	The integrated remote system runs a cleaning program every day at 12:00 am: it is thus crucial a correct setting of the clock. The clock setting might reset if voltage is missing for more than 50 hours, in this case a maintenance manager or an electrician has to be contacted to recover the timing. (see “appendix: main proceedings for maintenance staff only”).

The following scheme describes the actions to be taken for a proper machine working.

STARTING

Open the hot water tap to supply needed water for automatic cleaning of dewaterer

Check availability of electric current at the socket: switch to ON

Feed voltage to the system, operating the switch on the control panel: rotate to ON

Check if the emergency button is pulled out (restored), in case pull it by the dedicated unlocking key

After a few seconds the MACHINE is ready for use and it is awaiting for the refluent liquid to be processed. *No further starting command is therefore needed.*

ALL SUBSEQUENT WORKING AND INTERACTION PHASES WITH THE SINGLE FREE STANDING UNITS ARE MANAGED AUTOMATICALLY BY THE PLC INSIDE THE CONTROL PANEL

MANUAL CLEANING CYCLE

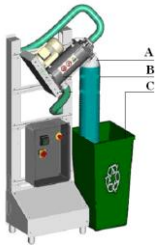
If needed, press and hold the START button for 3 secs to start the dewaterer cleaning program.

The manual cleaning cycle is not needed to be performed at given time intervals, because they depend on the intensity of use of the assembly.

A possible need for manually wash occurs when the dehydrated material is too moist.

- in case of failure, the proceeding can be performed again -

Alternatively it will be needed a manual cleaning by a nozzle, which is reserved for skilled personnel or to maintenance staff, and is described in "appendix: main proceedings for maintenance staff only".



PARTS NOMENCLATURE

(A) plastic chute

(B) corrugated drain collector

(C) bin

BAG REPLACEMENT

Dehydrated material can be collected in bins of various kind and/or dimensions and also using a bag. At least once a day the bin bag has to be replaced – *we recommend not to fill too much the bin because the dehydrated material has a high density.*

- Press shortly the START button and wait for the dewaterer to stop
- Replace bag or collecting bin

The action must be completed in 45 secs, then the dewaterer restarts

OTHER CLEANING AND MAINTENANCE TASKS

At least one a week the dewaterer and the whole dehydrating area have to be deeply cleaned.

This task is reserved for specially trained or maintenance personnel

Disconnect the electricity switching the buttons on control panel and on the socket to [OFF]

- Remove the dewaterer plastic chute and the corrugated drain collector by a hex screw and clean by a brush the collector, its plastic chute and the drain output to dewaterer.

IT IS NOT ESSENTIAL USING WATER, BUT REMOVE PERIODICALLY POSSIBLE DEPOSITS

- Reposition the dewaterer corrugated drain collector

Using a wind up hose and cold water, clean the room together with machine and bins, not heading the water jet directly towards the electric panel or the sockets.

Rotate the mains switch to [ON]

After 10 secs the machine is ready and awaiting for the next activity:

- Awaiting some refluent liquid to process
- Manual washing by nozzle [periodic proceeding reserved for specially trained or maintenance personnel and described in “appendix: main proceedings for maintenance staff only”]

6.2. Controls and settings

Check for the electricity supply, switches and emergency button to be enabled.

6.2.1 Anomalous situations and alerts

Anomalies and alarms are pointed out by the yellow warning light, while on the PLC screen a brief description is showed, which will have to be reported to the customer service.

ALARMS AND THEIR SOLUTION

anomaly description	Warning lights [yellow light on control panel]	Solution
"emergency" [emergency button]	Always ON	The emergency button is disabled (has been pressed) – restore it by pulling it out to get the power
"Thermal protection" [dewaterer] [pump] [mixer]	Always ON	Position the interlocked socket on [OFF], open the control panel and set the thermal trip switch [**task reserved for specially trained or maintenance personnel, or to an electrician**]
Tank overflow + Free Standing Units stop	1 flash every 5 secs	Wait until the tank is half full (about 10 secs) and then the system should allow the free standing units to be operative again
"wrong phases sequence" Or missing phase	1 flash every 2 secs	Replace a possibly blown fuse or electrically reverse the phases [**task reserved for specially trained or maintenance personnel, or to an electrician**]

For all failed solutions:

1) **Immediately stop the remote free standing units disconnecting the power and setting an "out of service" warning**
2) **Stop the Integrated Dewatering Unit disconnecting the power and setting an "out of service" warning**
3) **Report to the department head and to customer service, describing in detail what happened and reporting information shown by the flashing warning light – then wait for specific instructions**

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 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. Failures 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
Machine 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 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 actions 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 actions 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

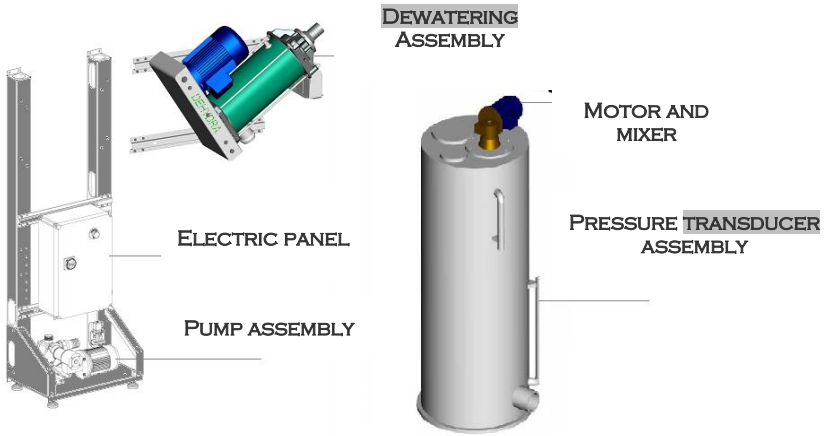
Phone: (+39) 02 66111618

Fax: (+39) 02 66112000

Email: INFO@ECOFAST.EU

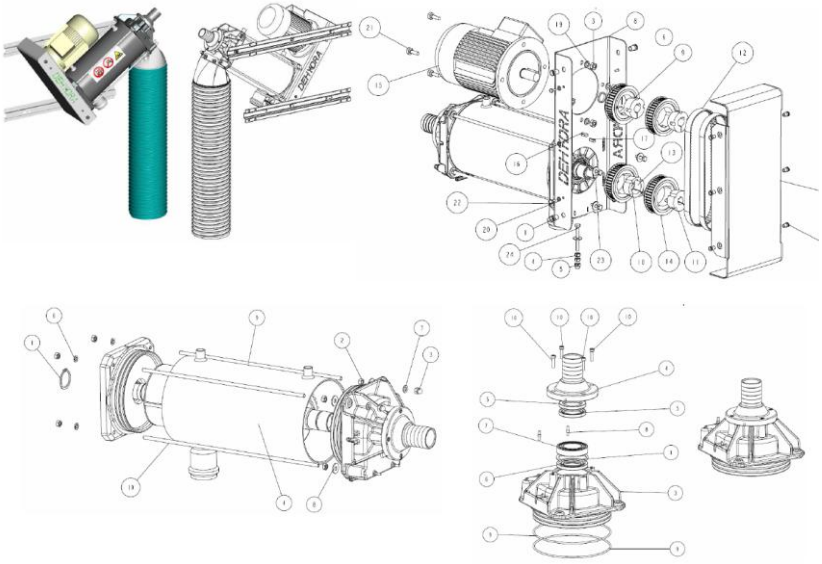
It is recommended to specify the name and the model of the machine in service .

10.2 machine's main parts picture



Chapter 11
Mechanical drawings

All mechanical drawings are available at the manufacturer's offices.



To contact the Technical Service please refer to:

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Piazza Franco Martelli, 5

20162 Milano (MI) – ITALY

Phone: (+39) 02 66111618

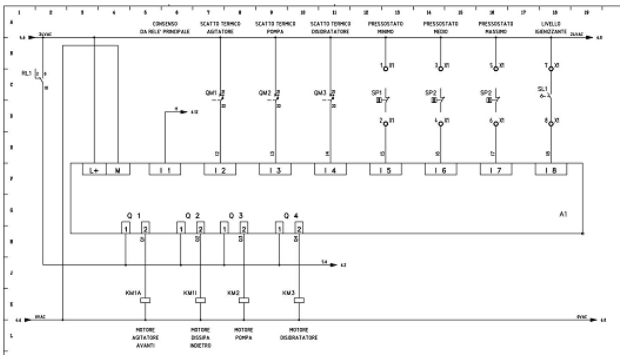
Fax: (+39) 02 66112000

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 always inserted in the control panel of the machine.



Chapter 13
Technical documentation useful for maintenance

All drawings and documentation of the parts are available at the manufacturer's offices.

To contact the Technical Service 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.