

Operation and Maintenance Manual

POLYBOX System

Polymer preparator and dosing equipment



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| Review 1 | May 2021 |
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1. GENERAL INFORMATIONS

1.1 MANUFACTURER

A team with many years of experience in the field of water treatment, allowed Fluiteco Srl to develop a complete range of machines to suit all applications in both industrial and municipal sectors. Our research aims particularly to study and develop machines for the pre-treatment of any type of waste, coming from industrial or municipal, and for the transport and the dehydration of the extracted solids.

Fluiteco Srl offers the market high-tech products, quality, reliability, technical service and customized products at low cost and service.

1.2 CONTENTS OF THE MANUAL

This technical manual of use and maintenance, is issued in reference to EU Directive Machinery (2006/42/EC), it is an integral part of the supply of the machine. It contains all the information necessary for the operation and maintenance of the machine supplied by the manufacturer, in addition to the proper use of an on-site to ensure the safety of personnel involved in the operation of the machine, whether used singly or in a broader context (plant).

The manufacturer reserves the right to make to the manual, at any time, variations that do not require prior notice. This manual is assigned, depending on the supply of the documents that will complement the supply of machinery (certificate of conformity - test certificate - other attachments).

NOTE: THE USER OF THE MACHINE MUST HAVE READ COMPLETELY THIS MANUAL AND DOCUMENTATION BEFORE PROCEEDING WITH ANY TRANSACTION.

The manufacturer Fluiteco srl will not be responsible for the actions that the customer takes on the machine, in the event of failure to observe the safety precautions described and contained in the EU directive machines. Also according to the EU directive, this document must be kept with care so as not to damage the contents, it must therefore be kept in a clean and away from any source which can may cause the illegibility (2006/42/EC).

This document should always be available for any consultation.

In the event that the manual is lost, damaged or torn, please contact our Technical - Sales Department to request a copy.

Fluiteco s.r.l.

Strada del Lavoro 119 47894 Chiesanuova RSM

Web site www.fluiteco.com

1.2.1 Consulting of the manual

This manual has been organized so that the user can find the information necessary for the operation and maintenance of the machine quickly and easily. The user must read the manual in its entirety, very carefully, and make sure all the information contained is perfectly assimilated.

The secondary function of the manual is to be a reference document and for consultation, to be used whenever it is necessary to perform a procedure or operation. Therefore is always kept at the disposal of staff engaged in management and to the maintenance in order to be consulted at any time.

The consultation of this manual is facilitated by the presence of a general index, which allows you to immediately locate the section of the topic that interests you.

For greater clarity, there are few safety symbols next to certain paragraphs to highlight the importance and facilitate their identification. Pay particular attention to these notes.

1.2.2 Legislation Reference

MACHINERY DIRECTIVE 2006/42/EC (implemented in Italy by Legislative Decree no. 17/2010).

LOW VOLTAGE DIRECTIVE 2006/95/EC (recoding of Dir. 73/23/EC and subsequent amendments

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC

1.2.3 Reference norms

UNI EN 12100:2010

Safety of machinery - Terminology, Methodology, Standard for the assessment of risk

UNI EN ISO 13857:2008

Safety of machinery - Safety distances to prevent danger zones being reached by the upper and lower limbs.

EN 60204:2006

Electrical equipment of machines - General requirements.

1.2.4 Information contained in the manual

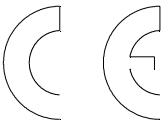
The contents of this technical catalog contains all the instructions related to the technical features of the machine, all the information and data necessary for its proper use and proper installation. The user must follow all of these instructions below.

The information regarding the maintenance of the machine must be followed and implemented by qualified and specialized in installation and maintenance of machinery used in construction or industrial and / or municipal water treatment.

1.2.5 Machine identification data

The data that identify the car and its manufacturer, are reported on a metal plate actually called "nameplate", the metal plate must be attached to the machine on one side of it so that it is clearly visible. The data contents are as follows:

- Manufacturer data
- CE mark which certifies that the machine complies with the applicable directives.
- Year of construction
- Machine
- Model
- Serial Number
- Specifications

| | |
|--|---|
| FLUITECO fluiteco@fluiteco.com |  |
| TIPO / TYPE | |
| MATRICOLO / SERIAL | |
| ANNO / YEAR | |
| MASSA / WEIGHT | Kg |
| POTENZA / POWER | Kw |
| TENSIONE / VOLTAGE | V |

The identification plate must be kept in good condition, must not be removed, should not be ruined. In this case, the user should contact the manufacturer to ask for a second company providing a return that ruined (according to what is reported in the current Machinery Directive 2006/42/EC: Material for recognition of the machine and its manufacturer).

1.3 EC DECLARATION OF CONFORMITY

DICHIARAZIONE DEL FABBRICANTE
 DECLARATION OF THE MANUFACTURER
 DÉCLARATION DU FABRICANT



La Società: Fluiteco s.r.l.
 The Company / La Société

Sede Legale ed operativa: Strada del Lavoro 119 47894 Chiesanuova RSM
 Registered Office and Factory / Siège Social - Usine

DICHIARA, sotto la propria responsabilità, che il prodotto:
 DECLARES, under its own responsibility, that the product
 DÉCLARE, sous sa propre responsabilité, que le produit

è costituito da una macchina con funzione di Trattamento delle acque reflue
 consists of a machine with function of Sewage Treatment
 est constituée par une machine avec fonction de traitement des eaux usées

MACCHINA TIPO: POLIPREPARATORE
 MACHINE TYPE / TYPE MACHINE POLYMER PREPARATOR

MODELLO: Polybox
 MODEL/ MODELE

SERIE/MATRICOLA :
 SERIAL No./ SÉRIE

ANNO :
 YEAR/ANNEE

la quale è conforme a tutti i requisiti essenziali di sicurezza pertinenti; nonché ai punti applicativi delle seguenti disposizioni particolari:

which meets all the essential requirements of relevant safety, as well as in applicative points of the following particular provisions:

qui répond à toutes les exigences essentielles de sécurité applicables, et les points d'application des dispositions particulières suivantes:

- DIRETTIVA MACCHINE 2006/42/CE / MACHINERY DIRECTIVE 2006/42/EC / DIRECTIVE MACHINES 2006/42/CE
- DIRETTIVA BASSA TENSIONE 2006/95/CE / LOW VOLTAGE DIRECTIVE 2006/95/EC / / DIRECTIVE BASSE TENSION 2006/95/CE
- DIRETTIVA COMPATIBILITA' ELETTROMAGNETICA 2004/108/CE / ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2004/108/EC / DIRECTIVE COMPATIBILITÉ ELECTROMAGNÉTIQUE 2004/108/CE

Inoltre è conforme alle seguenti norme europee armonizzate:

It also complies with the following Harmonized European standards:

Il est également conforme aux normes européennes harmonisées suivantes:

1. UNI EN ISO 12100:2010 Sicurezza del macchinario : Principi generali di progettazione - Valutazione del rischio e riduzione del rischio. / Safety of machinery: General principles for design - Risk assessment and risk reduction. / Sécurité des machines: principes généraux de conception - Appréciation du risque et réduction du risque.

1.4 ORDINATION SPARE PARTS AND SERVICE

Any request regarding spare parts or assistance must be notified to the company Fluiteco Srl at the following addresses: engineering@fluiteco.com Tel +378 0549911491 fax +378 0549957055.

1.5 LIABILITY

The Company Fluiteco Srl is not responsible for generic malfunctions or failures, caused by the not allowed use of the machine, or interventions and / or modifications made by anyone other not authorized by the same Fluiteco Srl.

The electrical system of the building must be equipped with protection against the effects of lightning or must at least be "self protected".

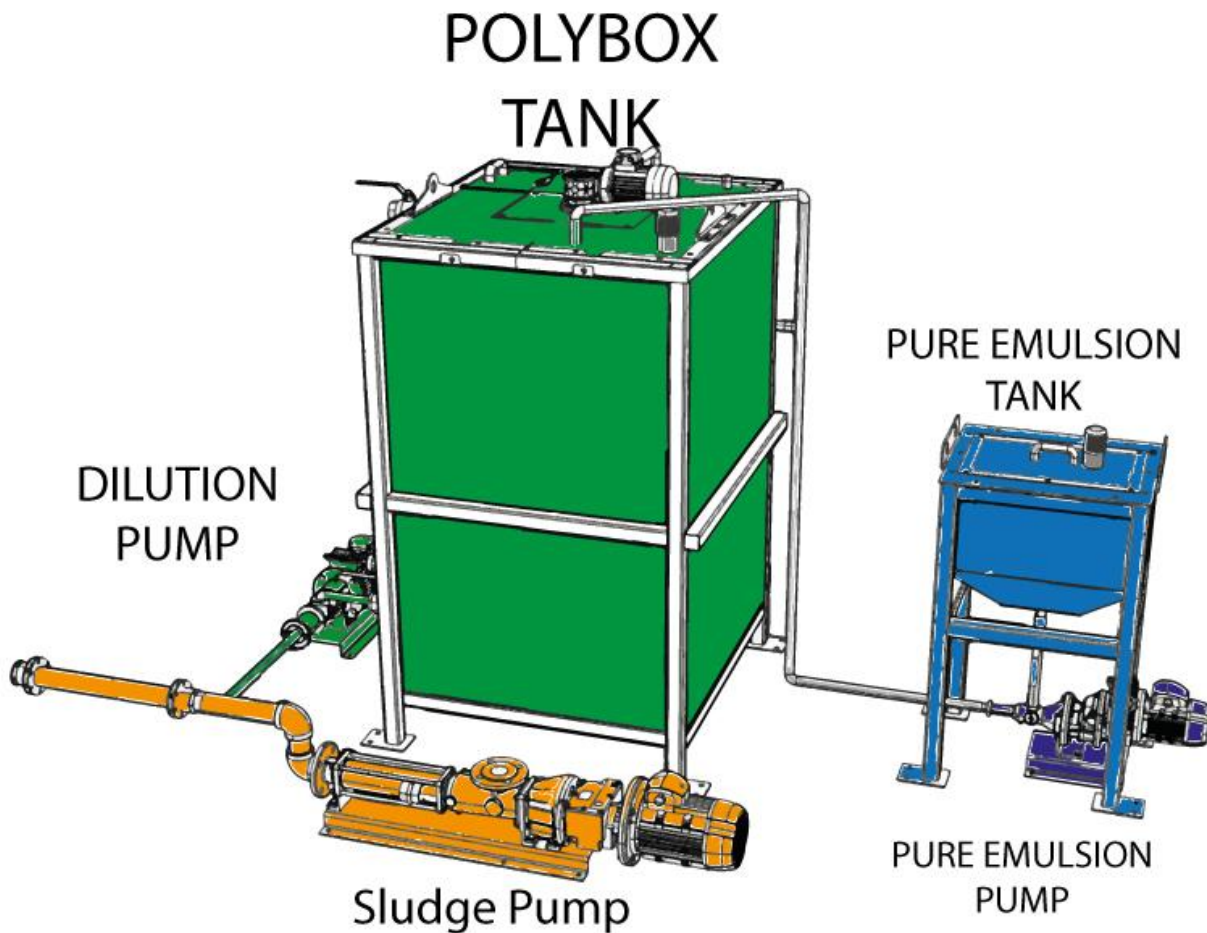
The compressed air supply is sectioned using a special manual valve

SAFETY DEVICES

2. DESCRIPTION, SPECIFICATIONS AND WARNINGS

2.1 POLYMER PREPARATOR - Polybox

The machine is designed to prepare and to dose a solution of polyelectrolyte in emulsion diluted with water



2.2 UNAUTHORIZED USE OF THE MACHINE

The use of the machine and equipment for the various operations to be performed, have contraindications that the user **MUST FOLLOW** and are as follows:

- Take full vision for documentation in order to place themselves in a position to properly use and maintenance of the machine as well as the safety of the personnel;
- It is mandatory for the user to do all the operations and the use of equipment only by highly qualified and trained to the aforesaid benefits;
- Observe all hazard statements resulting from the signs affixed to the machine in conjunction with areas of possible danger;
- Do not remove tags, and warning and danger signs affixed to the machine;
- It is forbidden to remove the protections of the machine is equipped, **ALWAYS WORK WITH PROTECTIONS CLOSED**;

- The machine and equipment must be used only for the purposes for which they were designed, planned and built;
- It is mandatory for the user to perform various operations and any installation, maintenance and / or repair, only in case of real necessity;
- Before carrying out any work on the machine, make sure that all electrical connections have been switched off. In this regard the machine arm, for the metal part, a ground connection;
- Carry out cleaning operations exclusively to electrical connections disconnected;
- Do not use the machine for the manufacture of explosives and flammable substances hazardous;
- Do not use the machine if it present immediately anomalies. The use in such conditions will void any liability and warranty by the manufacturer of the machine;
- After the machine has been subjected to interventions of various kinds, it must be checked (see below) according to the manufacturer's instructions;
- Do not make any modification to, otherwise invalidate the warranty and certification.

2.3 REQUIREMENTS FOR THE SAFETY OF THE OPERATORS

- The rules listed below must be read carefully and become a fundamental part of daily practice in the management and maintenance of EXHIBITOR MOCK-UP, in order to prevent any kind of injury to persons and /or damage to property.
- Do not groped to put the machine into operation until it has been clearly understood the operation. If doubts arise, and despite having read through this manual completely and its attachments, call for service.



- Before starting the machine, the operator must verify the presence of visible defects in the safety devices and machine. In this case, immediately notify the department manager and possibly the Fluiteco Srl of the damage occurred.
- Check daily, the correct operation of all the switches and safety devices.
- The protective devices must not be removed or rendered ineffective when the machine is in operation.
- It is mandatory to keep all the plates with warning signs and safety in perfect condition. In the event of damage or deterioration must be replaced promptly.
- The operator must be aware of the function and location of the controls.
- Replace the parts considered faulty with others indicated by Fluiteco Srl - Not groped NEVER risky solutions.



- Pay close attention to all the signs of caution, warning and danger on the machine.
- Do not operate with wet hands and objects on the machine if it is connected to the mains.
- Note: Apply and enforce safety regulations at all times.



- Do not use the machine for purposes other than those specified in the manual.
- Do not install the machine in a potentially explosive atmosphere or fire hazard.

IMPORTANT !

DOCUMENTATION: These instructions are intended for use by people in your company that are entrusted to the use and monitoring of machines Fluiteco Srl

and therefore of utmost importance that this documentation is actually delivered to such persons.

IMPORTANT !

ASSEMBLY AND INSTALLATION: The assembly and installation of machinery Fluiteco Srl and its components may only be performed by qualified personnel in

this regard and to follow all instructions and installation instructions that were provided.

IMPORTANT !

this documentation.

MAINTENANCE / CLEANING: The cleaning and maintenance should only be performed by qualified personnel who have first studied than in accordance with

IMPORTANT !

OPERATION AND ADJUSTMENTS: Commissioning and adjustments must be performed by qualified personnel. It is essential that before the first commissioning service personnel studies in detail all the instructions contained in the documents and instructions.

IMPORTANT !

PROTECTION AGAINST INJURY: It must absolutely be observed as set out in this document on the prevention of accidents.

IMPORTANT !

REQUIRED EDUCATION: People running machines or installations Fluiteco Srl or it is the owner is obliged to make informed of these instructions the staff who work with these machines and installations and teach him about the particular risks associated with the function of these machines and installations.

2.4 DEFINITION OF TERMS OF SAFETY

In this manual, in relation to security, you will make use of the following terms:

- a) "hazard" means a potential source of injury or damage to health;
- b) "danger zone" means any zone within and / or around machinery in which the presence of a person constitutes a risk to the safety and health of such person;
- c) "exposed person" means any person wholly or partially in a danger zone;
- d) "operator" means the person or persons responsible for installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery or carry out maintenance;
- e) "risk" means a combination of the likelihood and severity of an injury or damage to health that can arise in a hazardous situation;
- f) "guard" means a part of the machinery used specifically to provide protection by means of a physical barrier;
- g) "protective device" means a device (other than a guard) which reduces the risk, either alone or in conjunction with a guard;
- h) "intended use" means the use of the machine in accordance with the information provided in the instructions for use;

i) "reasonably foreseeable misuse" means the use of machinery in a manner different from that stated in the instructions for use, but which may result from readily predictable human behavior.

IMPORTANT !

It is important that each employee does not carry out work outside of their field of knowledge and responsibility.

2.5 SAFETY SIMBOLS AND ADHESIVES

The machine is applied to certain plates indicating the following symbols to highlight the possible dangers on the machine and obligations that the operator must follow when using the machine:



ELECTRICAL HAZARD

Applied to the electrical panel and junction boxes



DANGER OF MOVING PARTS

Applied in correspondence of the mechanical motion.



PROHIBITION TO REMOVE THE SAFETY DEVICES

Applied in correspondence of fixed and movable guards in the perimeter of the machine.



PROHIBITION OF USE WATER TO TURN OFF FIRE

Applied on the control panel



PROHIBITION OF ACCESS FOR UNAUTHORIZED PERSONNEL

Applied on the control panel



SEE THE OPERATION & MAINTENANCE MANUAL

Applied on the control panel in the control station.

2.6 PERSONAL PROTECTIVE EQUIPMENT

The operator, before starting work, has to know the layout and operation of controls and features of the machine and must have thoroughly read this manual and the manuals attached.

IMPORTANT !

It is the obligation of the employer to provide to provide the Personal Protective Equipment and inform the staff on their proper use and maintenance.

IMPORTANT !

The operator must observe the instructions indicated by the sign shown on the machine.

The PPE (Personal Protective Equipment) that the operator must use, are shown below.

During the operations of Maintenance, Cleaning and Transport:

Work clothing, shoes with non-slip sole and work gloves. We recommend the use of ear protection.



it is also necessary follow the following behaviors:

Constantly clean the gloves according to the manufacturer's instructions.

- 2 Regularly clean gloves in the manner specified by the manufacturer
- 3 Store the gloves in a suitable place.
- 4 Check the integrity of gloves before use

IMPORTANT !

it is the obligation of the employee to use personal protective equipment required to be carried out in complete safety lifting and transportation,

operation, maintenance and cleaning of the machine.

IMPORTANT !

The operator must observe the instructions indicated by the sign shown on the machine.

IMPORTANT !

it is the obligation of the employer to provide to provide the Personal Protective Equipment and inform the staff on their proper use and maintenance.

2.7 WORKPLACE

The machine has been designed by Fluiteco Srl

2.8 FIXED AND MOVABLE GUARDS OF THE MACHINE

To ensure maximum safety for operators who are working on the machine, it has been equipped with fixed and movable guards, designed and implemented so as to achieve comprehensive protection without compromising ease of use.

IMPORTANT !

The guards, fixed to the frame of the machine, can be removed only by authorized personnel using appropriate tools.

IMPORTANT !

Unauthorized removal of the protective devices is considered to be tampering with the machine and as such subject to criminal prosecution.

do not remove the protective devices with the machine working. The removal of a guard must always be performed with the machine stopped, with the main switch open. Never use the machine without guards fitted.

The operator of a machine is obliged to observe the rules and the instructions provided in that manual so as to achieve the greatest possible safety for personnel working with machines.

The guards of the machine must always be mounted and kept closed during operation of the machine. Carter opened or disassembled sources are dangerous sources for wounds bruise or cut.

3. MACHINE SUPPLY

3.1 WARRANTIES SUPPLY

The manufacturer provides the machine user with the following warranties:

- Guarantee of validity of the documentation throughout the life of the machine (can be modified by the manufacturer at any moment);
- Warranties linked to the machine supply.

This Manual is meant for personnel who will use and operate the machine which is the object of the supply. The operator must read the documentation (including attachments, if present) to be able to carry out all the operations necessary on the machine correctly and in complete safety, including:

- various ordinary and/or extraordinary maintenance operations;
- assembly/disassembly operations on machine parts (first installation, spare parts replacement);
- extraordinary maintenance during normal machine operation.

The documentation can be modified by the manufacturer at any moment without obligation to inform the machine user.

As regards the warranties linked to the machine, remember that the envisaged duration of use depends on the conditions and material for which the machine is meant. This information can be obtained by contacting out Technical - Commercial Dept. The warranty conditions will not be valid in case of failure to respect the following indications for use:

- use the machine correctly according to the indications given here;
- operate appropriately during maintenance;
- constantly check parts subject to wear; these must be replaced before they are completely worn, as they can cause serious mechanical as well as structural damage to the machine. In this condition safety for the personnel may also be affected.

The customer must remember that the warranty on the supply only covers the machines in case of mechanical defects or defects in assembly if carried out by Fluiteco srl or the manufacturer's trusted assembly personnel. The warranty is invalidated in case of:

- Improper use of the machine;
- Use of the machine by unskilled personnel not qualified for the tasks to be performed on the machine;
- Use not conforming to the standards applicable in the matter;
- Defects in installation of the machine components;
- Incorrect electricity and hydraulic connections of the various parts of the machine;

- Incorrect maintenance operations not conforming to the indications in this Manual;
- Use of spare parts that are not genuine;
- Transport, lifting and handling operations without using suitable means.

3.2 MACHINE RECEIVING

On receiving the machine, the use must carry out a series of checks to:

- Check the number of packages delivered and verify this on the transport documentation;
- Check the condition of the machine and the equipment;
- Check the machine for visible damage.

If there is a discrepancy between the packages delivered or their contents and the transport, inform the haulage contractor and then contact our Technical - Commercial Dept.

In case of damage or missing parts, inform the shipping agents immediately in detail and notify Fluiteco srl. Prompt notification is necessary to ensure that the manufacturer can supply or replace the machine parts. On receiving the goods, check for the presence and condition of:

- The Instruction Manual;
- EC Declaration of conformity;
- Machine identification plate.

When the machine is received, before positioning it, the customer must prepare the installation area for positioning all the electrical and hydraulic connections.

3.3 TRANSPORT, LIFTING AND HANDLING

Transporting the machine and the equipment **MUST ALWAYS BE DONE IN COMPLETE SAFETY, BY RESPECTING THE STANDARDS CONCERNING SAFETY OF THE WORKERS AND THE CONDITION OF THE ENTIRE SUPPLY.** Take great care during handling operations; abide by the instructions given below:

1. Transport, lift and handle the machine using only the means suitable for these operations;
2. While carrying out these operations, always keep at a safety distance of at least 2 m;
3. For the lifting and the handling of the machine **do not** use only the eye bolts as lifting points;
4. Use appropriate bands, to encircle completely the machine so that can be lifted and handled in total safety
5. Once the machine has been lifted by means of belts, with a second lifting machine, can be used the eye bolts in order to drive the positioning.
6. All the lifting equipment used **MUST BE** suitable for the weight of the machine;
7. Make sure the machine is not subjected to knocks which could affect its correct working. The manufacturer shall not accept responsibility for damage caused due to impact;

8. It is advisable to use the means used for the machine also for lifting and handling other components included in the supply;
9. Never place the machine directly on the ground, but on suitably thick wooden planks and/or pallets;
10. All transport, lifting and handling operations must be performed exclusively by workers suitably trained for the tasks.

4. INSTALLATION OPERATIONS

4.1 PRELIMINARY INSTALLATION OPERATIONS

All machines, manufactured by Fluiteco srl, are subjected to a series of checks (bench test - no-load tests) before shipment to guarantee a machine free of any kind of defect; these defects, if present, can affect correct use and cause decline of the workers' safety conditions. The factory tests are conducted by the manufacturer strictly according to the indications in the European standards concerning safety matters.

The machine must be positioned in such a manner as to ensure sufficient clearance around it for passage and for other operations (checking, assembly/disassembly, maintenance).

4.2 PREPARATION AND INSTALLATION OF THE MACHINE

4.2.1 Machine installation

To guarantee the correct operation and safety of machine, further to satisfy the limits of machine use during installation, it is necessary to guarantee that:

- a flat surface (deg. 0-1 °) for install and anchor the unit on it
- space around the unit for maintenance accessibility

Not correct fixing could cause damage to the persons and to the objects, it is necessary to follow very carefully the instruction of this manual.

After finishing the installation it is necessary to check the alignment of the machine measuring the two diagonals. In case of differences the machine could not work perfectly.

The machine was executed as per drawing approved for this specific installation. Please check that the machine is exactly installed as per the drawing.

4.2.2 Machine and equipment storage

If the machine is not installed as soon as it is received, it must be stored in a clean, dry, covered place, avoiding damp and/or salty places. Keep it protected from atmospheric agents and dusty areas which can cause damage to the entire structure, especially the drive unit. If the machine is kept in the open for long periods for various reasons, protect it with wraps. During such long shutdowns, keep the machine on a wooden pallet, never place it directly on the ground. Do not rest the machine on its side, place it on a suitable surface, without humps and unevenness, the level surface must be free of oil stains.

Drain out the oil from the reduction gears and clean thoroughly to prevent residue which can form lumps over time. Do not remove the parts from their packing. During installation, before start up, carry out certain routine checks:

- Check the electrical systems to ensure they are intact;
- Check all the item installed on the unit components to make sure they are intact;
- Check and in case refill the the gearbox with oil (with the type of oil indicated by the part manufacturer) to the maximum permitted level;
- Clean the loading and unloading points

4.2.3 Prevention and protection

The machine is provided with guards and systems to guarantee correct use in complete safety.

However, remember that unsafe situations can be avoided if the entire manual is read and the machine is operated by qualified personnel.

5. MACHINE POWER SUPPLY

5.1 ELECTRICAL CONNECTIONS

This supply is complete with all the drive units necessary for operation. The machine user is responsible for setting up the installation area with all the safety precautions necessary concerning the electricity network; he is also responsible for providing all the electrical connections for the drive units.

THE CUSTOMER IS RESPONSIBLE FOR PROVIDING THE ELECTRICAL CONNECTIONS.

While making the connections, the user must take into consideration the environmental conditions of the machine installation area; the machine may be installed in closed or open areas.

The user must operate in accordance with the international standards (EEC) as well as the standards applicable in the country in which the machine is installed.

ALL OPERATIONS ON THE MACHINE MUST BE CARRIED OUT WITH THE ELECTRICITY DISCONNECTED.

Before starting up the machine, the user must carry out certain checks to avoid damage. The mains voltage must be checked to make sure it corresponds to that required for the drive unit; the cross check must be done by checking the drive unit rating plate.

Also check to make sure the direction of rotation of the screw is as indicated by the arrow on the drive unit; operation in the opposite direction will lead to NON FUNCTIONING and possible DAMAGE.

MAKE THE CONNECTIONS ENSURING THAT THE ELECTRICAL COMPONENTS NEVER COME INTO CONTACT WITH THE WATER OF THE MACHINE CLEANING SYSTEM.

5.2. GROUNDING

The performance of the system responds to specific characteristics that are defined by EN 60204-1.



The legislation requires that all masses present on a machine should be connected to the grounding of the power supply.

The network of grounding must be appropriate, such as sizing, the load potential of the entire system and must also comply with the specific regulations governing the industry.



Make sure that the earthing system is coordinated with the protective devices of the power supply of the machine

5.3. DRIVE UNIT

Please make reference to the specific operation manual for gearmotor STM

6. MACHINE START-UP

6.1 START-UP INDICATIONS

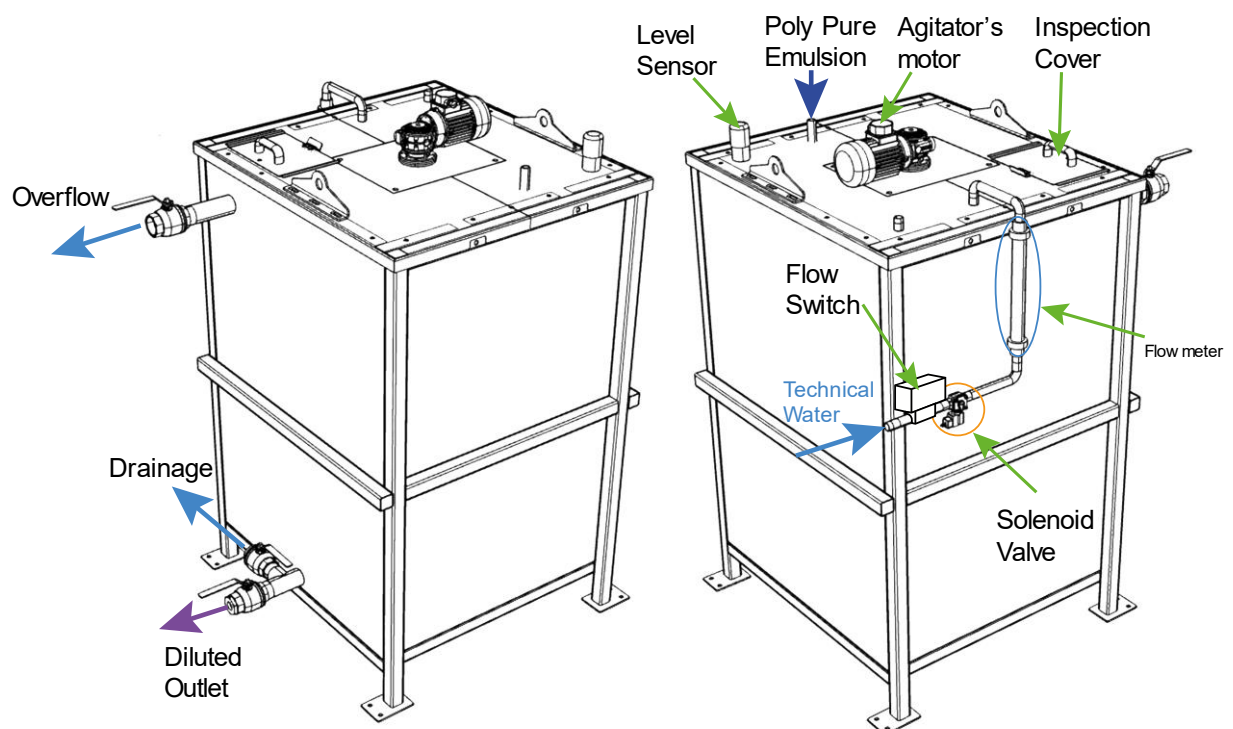
While starting up the machine, the operators trained for working on the machine, must check the following:

- that the machine and its various components have not been damaged during transport, assembly and installation;
- that all plates (identification and drive unit rating) are intact;
- all the documentation included in the supply is present and intact;
- all electrical and pneumatic connections are made correctly;
- the machine supply voltage is correct;

- the terminal boxes of the motors are perfectly sealed and are not damaged;
- the safety switches are fixed to the door openings, and check the correct functioning;
- the correct hydraulic system supply, by checking the inlet water supply flow;
- that the machine parts are fixed firmly;
- the correct positioning of the machine;
- that the safety standards concerning functioning of the machine are respected;
- the workers are familiar with all the contents of this Manual, before working on the machine;
- that all the guards are installed near the loading and unloading areas;
- the presence of warning and hazard notices;
- there are no foreign substances or bulk particles inside the screw and the tank, which can damage the machine.

These checks must be carried out every time the machine is stopped and restarted after a shutdown exceeding one week.

During the first start up, check to make sure that the machine does not emit noise or show evident signs of malfunctioning with considerable vibrating motion. In such cases, stop the machine, disconnect the electric supply and contact our Technical Dept.



6.1.1 Machine Noise Level

The noise pressure level registered outdoor by the manufacturer is not above **80 dB(A)**; such value is measured with the specific instrument at 1 meter from the empty unit (dry run).

This noise depends on various factors linked to the constructional features of the machine, such as:

- machine dimension;
- type of construction material;
- type of handled product;
- filling level inside the machine.

6.1.2 Preventive measures during start-up

While using the machine, the operators must observe certain rules to ensure the safety conditions necessary. The following indications must be followed in this case:

- It is forbidden to wear rings, wrist watches, necklaces, loose flowing clothing or hanging parts like ties, torn clothing, scarves, unbuttoned or unzipped jackets which can get trapped in moving parts;
- It is compulsory to use personal protective equipment such as hard hats, anti-slip footwear, ear muffs, safety goggles, gloves, masks;
- Consult the employer regarding the safety standards applicable and the safety devices.

7.1 ORDINARY PROCEDURES

The workers responsible for machine maintenance must be suitably trained and qualified to work in complete safety. The measures described here must be followed strictly since failure to respect these instructions will free the manufacturer of all responsibility.

All maintenance operations must be carried out always with the machine stopped and with the electricity disconnected. The area in which the operators work must always be kept thoroughly clean, free of oil or grease stains (motors, gear reducers).

During cleaning phases, do not use compressed air sources; use pressurized water jets to prevent large particles from remaining stuck on the machine. This measure must be adopted for those parts which do not have washing systems.

During these operations, do not use naked flames for lighting. A series of checks the operators must carry out to avoid having to work on the machine in case of an emergency are described below. The operator must, however, intervene periodically to prevent such situations and damage to the machine.

7.1.1 Checks carried out by the manufacturer

Before delivery, the manufacturer must proceed with a general inspection of the machine and the relative equipment; this involves a no-load test to check the following:

- checking the electrical system to check the voltage;
- the pneumatic system, especially the working of the spray nozzles (if presents);
- the mechanical and dimensional features of the machine;
- ensuring the presence and good condition of all the plates on the various machine components (identification plate and drive unit rating plates);
- the locking of the bolts on the entire structure;
- all the packaging and the crate used for shipping the machine;
- the presence of all the documentation necessary to complete the supply.

7.1.2 Checks before start-up

Visual control of machine: Verify machine integrity (damages supported during transport and/or machine handling)

Suitability of supporting floor: Verify that are respected the requirements mentioned in the present manual

Requirements of space: Verify that are respected the requirements mentioned in the present manual

Lighting: Verify that installation place is sufficiently lighted, as foreseen by D.Lgs 626/94

Presence of level feelers or timers: Check if have been foreseen feelers or timers

Presence of by-pass channel: Verify if installation foresees a by-pass channel

Machine anchoring: Verify that machine is properly anchored to the supporting floor

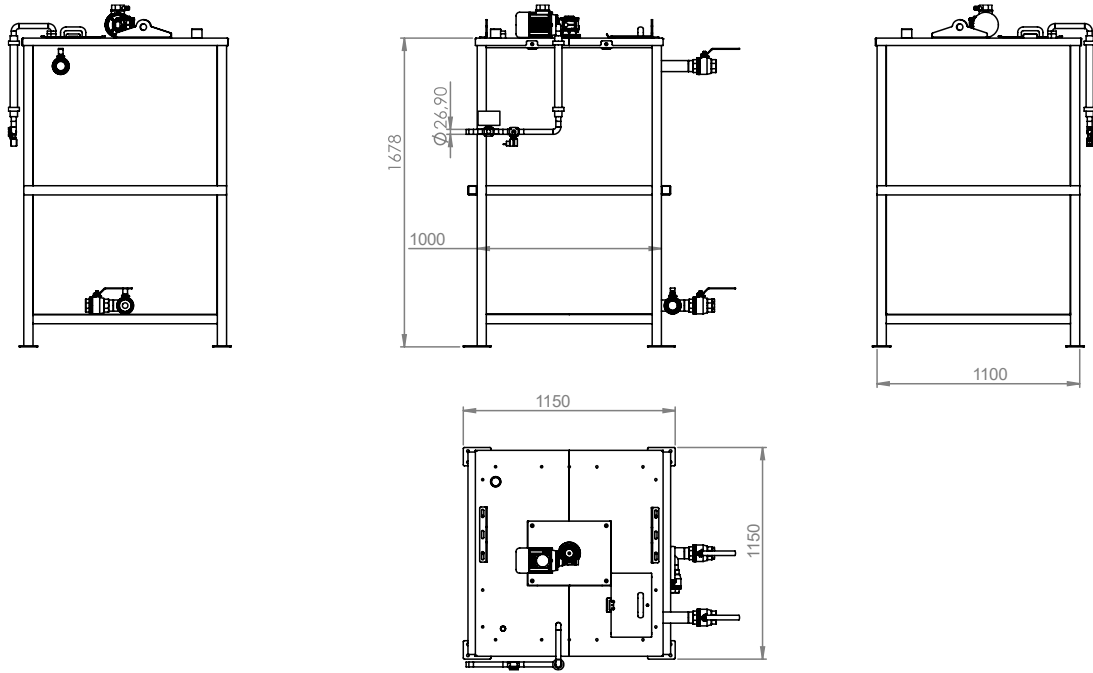
Oil in the reducer: Verify that reducer is filled with oil

Check of rotation sense of agitators: Give tension to plant

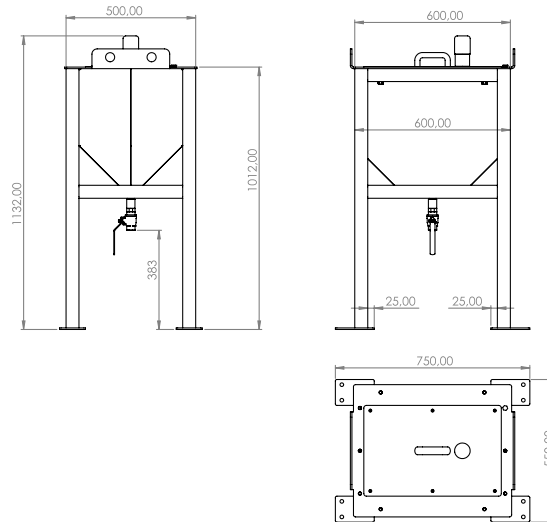
Test with machine loaded with material to treat: Verify correct connection.

7.2 Overall dimension

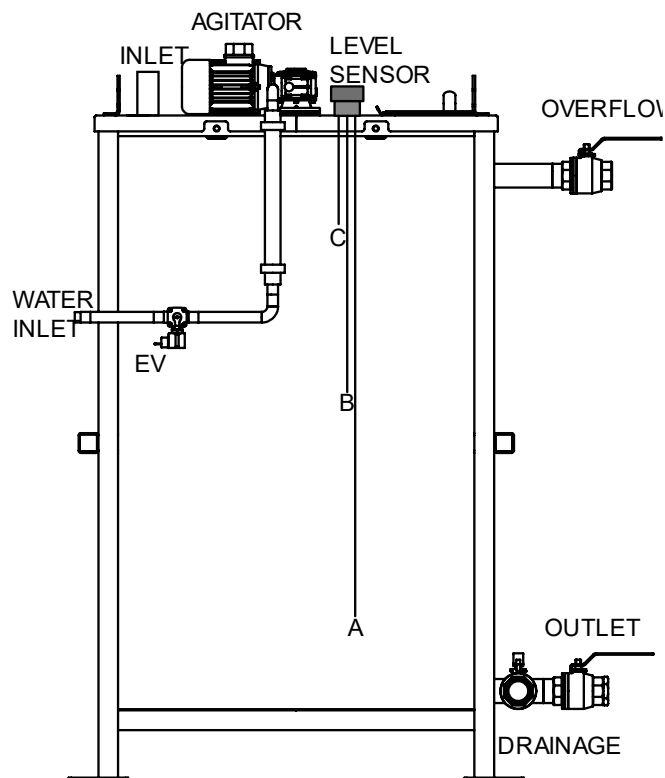
-Polybox



-Pure Emulsion Tank



8. WORKING LOGIC



Initial condition

A is not immersed (Polybox empty), the following are activated:

- Polybox agitator
- Emulsified pump
- Solenoid valve

When C is immersed, the following go out:

- Polybox agitator
- Emulsified pump
- Solenoid valve

If A and B are immersed in the dilute, the machine is ready to load the sludge and waiting for an external consent which will activate the Polybox pump.

If A is NOT submerged, the emergency is activated. If B and C are NOT submerged, they are activated:

- Pump of the emulsified product and the solenoid valve for filling the water opens for a settable time.

If C is submerged, turn on:

- Emulsified pump
- Solenoid valve

9. RESIDUAL RISKS

9.1 INTRODUCTION

Throughout this chapter, are indicated the residual risks, as listed in the standard EN 12100:2010.

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|--|------------------|----|---|--|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 1 Risks of mechanical nature | Acceleration / deceleration | X | | Moving parts of the machine: motors, agitators,.. There are shelters either fixed and mobile, which prevent to reach them. | 6.2.2.1 6.2.2.2 6.2.3 a 6.2.3 b |
| | Edges | | X | | 6.2.6 6.2.10 |
| | Encroachment of a moving element to a fixed (crushing) | | X | Moving parts of the machine: motors, agitators,... There are shelters either fixed and mobile, which prevent to reach them. | 6.3.1 6.3.2 |
| | Sharp parts | | X | | 6.3.3 |
| | Elastic elements | | X | | 6.3.5.2 |
| | Falling objects | X | | During the early stages of placement / transport of the machine, if you do not follow instructions in the User Manual. | 6.3.5.4 6.3.5.5 6.3.5.6 |
| | Gravity (stored energy) | | X | | 6.4.1 |
| | Height from the ground | | X | | 6.4.3 |
| | High pressure | | X | | 6.4.4 6.4.5 |
| | Instability | | X | The machine for its weight does not have problems of instability. In any case provide anchor points to the ground by using appropriate anchorage systems. | |
| | Kinetic energy | X | | Moving parts of the machine: motors, agitators,... There are shelters either fixed and mobile, which prevent to reach them. | |
| | Machine mobility | | X | | |
| | Moving elements | X | | Moving parts of the machine: motors, screws, ... There are shelters either fixed and mobile, which prevent to reach them. | |
| Rotating elements | X | | | | |
| Roughness / slippery surfaces | | X | | | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | |
|---|------------------|----|--|-------------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | YES | NO | | |
| Sharp edges | | X | | |
| Stored energy | X | | Compressed air system. The plant is built with commercial components suitable for the use. | |
| Empty | | X | | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|---|------------------|-------------------------------------|--|---------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 2 Risk of electrical nature | Electric arc | | X | | 6.2.9 6.3.2 |
| | Electromagnetic phenomena | X | | Electrical equipment, due to outside interference. Electrical equipment manufactured according to EN 60204. | 6.3.3.2 6.3.5.4 6.4.4 |
| | Electrostatic phenomena | X | | Board/Electrical equipment, due to outside interference. Electrical equipment manufactured according to EN 60204. | 6.4.5 |
| | Elements in tension | X | | Board (where provided), Internal of the control panel (where provided), Electrical equipment manufactured according to EN 60204. | |
| | Insufficient distance with elements in high voltage | | X | | |
| | Overcharge | X | | Whole machine if the network is not protected (by the customer). | |
| | Parts which may go in tension, due to malfunction | X | | Whole machine in case of failure or malfunction . Electrical equipment manufactured according to EN 60204. | |
| | | | Whole machine in case of failure or | | |
| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 3 Thermal Risks | Explosion | | X | Electric board machine in case of short circuit. Electrical equipment manufactured according to EN 60204. | 6.4.4 b 6.2.8 c |
| | Flames | X | | Electric board machine in case of short circuit. Electrical equipment manufactured according to EN 60204. | 6.3.2.7 6.3.3.2.1 6.3.4.5 |
| | Objects or materials with high or low temperature | | X | | |
| | Radiation from hot surfaces | X | | Electric motors in the case of overload. Electrical equipment manufactured according to EN 60204. | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|--|------------------|----|---|--|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 4 Risks of physical nature: Noise | Cavitation phenomena | | X | | 6.2.2.2 6.2.3 c |
| | Discharge system (combustion engines) | | X | | 6.2.4 c 6.2.8 c |
| | Passage of gas at high speed | | X | | 6.3.1 6.3.2.1 b |
| | Manufacturing processes (stamping, cutting, etc ...) | | X | | 6.3.2.5.1 6.3.3.2.1 |
| | Moving Parts | X | | Moving parts of the machine: motors, screws. All moving parts are enclosed in shelters either fixed or mobile. | 6.3.4.2 6.4.3 6.4.5.1 b 6.4.5.1 c |
| | Scratched surfaces | | X | | |
| | Unbalanced rotating parts | X | | Present screws. All moving parts are enclosed in shelters either fixed or mobile. There are specific instructions for maintenance. | |
| | Tires noises | | X | | |
| | Worn parts | X | | Mechanical parts requiring maintenance, particularly the bearings of the screws. All moving parts are enclosed in shelters either | |
| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 5 Risks of physical nature: Vibrations | Cavitation phenomena | | X | | 6.2.2.2 6.2.3 c |
| | Misalignment of moving parts | | X | | 6.2.8 c 6.3.3.2.1 |
| | Mobile equipment | X | | Moving parts of the machine: motors, screws, Systems are provided to minimize the vibrations present. There are specific instructions for maintenance. | 6.3.4.3 6.4.5.1 c |
| | Scratched surfaces | | X | | |
| | Unbalanced rotating masses | X | | Moving parts of the machine: motors, screws,. Systems are provided to minimize the vibrations present. There are specific instructions for maintenance. | |
| | Vibration equipment | | X | | |
| | Worn parts | X | | Moving parts of the machine: motors, screws,. Systems are provided to minimize the vibrations present. There are specific instructions for maintenance. | |









| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|--|------------------|----|--|-----------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 6 Risks of physical nature: Radiations | Sources of Ionizing Radiation | | X | | 6.2.2.2 6.2.3 c |
| | Electromagnetic radiation at low frequency | X | | Electrical panel and board machine (if any). Electric motors. The plant is built in accordance with the standard EN 602004. | 6.3.3.2.1 6.3.4.5 6.4.5.1 c |
| | Optical radiation (infrared, visible and ultraviolet), including laser | | X | | |
| | Electromagnetic radiation of radio frequencies | | X | | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|---|------------------|----|---|-------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 7 Materiali e sostanze pericolose | Aerosol | | X | | 6.2.2.2 6.2.3 b |
| | Biological and microbiological agents (viruses or bacteria) | X | | Waste water treated / to be treated. There are special precautions for the safety of workers in the user manual. | 6.2.3 c 6.2.4 a 6.2.4 b |
| | Fuels substances | | X | | 6.3.1 6.3.3.2.1 |
| | Powders | | X | | 6.3.4.4 |
| | Explosives materials | | X | | 6.4.5.1 c |
| | Fibres | | X | | 6.4.5.1 g |
| | Flammables | | X | | |
| | Fluids | X | | Waste water treated / to be treated. There are special precautions for the safety of workers in the user manual. | |
| | Smokes | | X | | |
| | Gas | | X | | |
| | Fogs | | X | | |
| | Materials and hazardous materials | | X | | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|---|---|------------------|----|---|-------------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 8 Ergonomic hazards | Access | | X | | 6.2.2.1 6.2.7 |
| | Design or positioning of the indicators, and display screen | | X | | 6.2.8 6.2.11.8 |
| | Design, placement or identification of control systems | X | | Control systems (where present). The plant complies with with the provisions of EN 60204 | 6.3.2.1 6.3.3.2.1 |
| | Effort | | X | | |
| | Flickering lights, glare, shadows, Stroboscopic Effects | | X | | |
| | Local lighting | X | | Working area of the machine, only in the case in which there is no adequate lighting. This is a special warning in the manual of use and maintenance. | |
| | Lack of commitment / mental overload | X | | Working area of the machine during cleaning and maintenance. All moving parts of the machine during operation of resolving any malfunction / maintenance / lubrication and cleaning. There are specific warning in the manual of use and maintenance. | |
| | Posture | | X | | |
| | Repetitive tasks | | X | | |
| | Visibility | | X | | |

| LIST OF FEEDBACK FOR THE ANALYSIS OF RISKS: AUTODIAGNOSTICS | | | | | |
|--|--|------------------|----|---|-------------------------------|
| List of Risk According to UNI EN ISO 12100 Annex B | | Presence of risk | | Source of risk and safety measures adopted | Art. of Ref. UNI EN ISO 12100 |
| | | YES | NO | | |
| 9 Risks associated with the environment in which the machine is placed | Dust and fog | | X | | 6.2.6 6.2.11.11 |
| | Electromagnetic interference | X | | Any electrical / electronic equipment installed in the environment of of the machine. Material in compliance with the Low Voltage Directive and EMC. | 6.3.2.1 6.4.5.1 b |
| | Lighting | X | | Working area of the machine, only in the case in which is inserted in environment in which the current legislation is not respected | |
| | Humidity | X | | Whole machine since it can not be used outside the terms of use clearly indicated in the manual. See the user manual. | |
| | Pollution | | X | | |
| | Snow | X | | Structure of the machine. The plant is built in accordance with the codes of calculation. | |
| | Temperature | X | | Whole machine since it can not be used outside the terms of use clearly indicated in the manual. See the user manual. | |
| | Water | X | | Electrical system. The IP rating of the boxes of the terminal box is IP65 with electric cables fully protected by a special metal cover (housing tube). To avoid any electrical problem to make the connections of connections by qualified personnel for these operations | |
| | Wind | | X | | |
| | Lack of oxygen | | X | | |
| 10 Combination of risks | Repetitive tasks + Commitment + high ambient temperature | X | | Working area of the machine, due to the instructions provided in the user manual is not followed. Pay particular attention to the step of: - Installation / lifting and transport - Removal of blockages - Lead troubleshooting - maintenance - lubrication - Cleaning. During the operations of maintenance, operators must be aware of the risks due to any incorrect maneuvers. See how much referring to the instructions for use. | - |

Below are summarized principal risks in the machinery. This list is non-exhaustive, as any further warnings are given in the relevant chapters of this manual.

| | | | |
|--|---|--|--|
|  | DANGER OF MOVING PARTS INSIDE THE PLANT |  | ELECTRICAL HAZARD |
|  | BY OPENING OF THE MOVABLE REPAIR ARE PRESENT PROTRUDING PARTS |  | DANGER OF CRUSHING THE UPPER LIMBS |
|  | RISK OF CONTACT WITH OIL OR GREASE |  | PAY PARTICULAR ATTENTION TO LIFTING AND TRANSPORT OPERATIONS |
|  | RISK OF ORGANIC/CHEMICAL NATURE DUE TO SEWAGE WATER |  | DANGER OF SLIPPING / TRIPPING BECAUSE OF EVENTUAL LEAKS IN THE PLANT |

10. MACHINE DEMOLITION AND RETURNED

10.1 RETURNING THE MACHINE

In case of return of the machine, please postpone reusing the transport packaging. In case where the packaging has been dismantled, ship the machine using wooden cage and in each case pallets of wood, using a suitable film for packing.

It must not be damaged during the transport phase. The returned machine, SHALL BE COMPLETED with all tags (identification, motors).

The returned machine must first be clean, taking care to remove any residue from the treated material.

Remember that if the machine was received in several sections, the return must be made with the same parts removed and cleaned.

10.2 DEMOLITION AND DISPOSAL

At the end of the cycle of real life, the user company has to proceed to the alienation of the machine in compliance with the regulations providing first emptying of lubricating fluids and general cleanliness of the various elements and subsequently to the separation of the pieces that constitute the machine. After dismantling the machine is necessary to separate the various materials in accordance with what is required under legislation of the country in which the machine must be eliminated. The machine does not contain dangerous substances or components that require special procedures for removal.

To dismantle the machine, proceed according to the following general procedure of disassembly:

- Remove the power supply.
- Remove the air supply
- Disconnect the electrical parts.
- Disconnect the mechanical parts.
- Divide the various components depending on the nature of the material (metal, plastic, oils, materials of different nature);
- Depriving the machine's rating plate, which must be returned to the manufacturer;
- Empty the gearboxes and motors from oil residues, wipe recovering the removed oil that must be delivered to the center of collection of waste oils.



CAUTION: When handling waste, require the use of appropriate personal protective equipment.

10.3 DISPOSAL OF THE MACHINE

The disposal of waste arising from the demolition of the machine must be done in an environmentally, do not pollute the soil, air and water. In any case will have to be complied with local laws in force. It should be noted that waste means any substance or object which the holder discards or intends or is required to discard (Legislative Decree 152/2006). The waste arising from the demolition of the machine are classified as special waste.

10.4 DEMOLITION MATERIALS

They are non-hazardous waste that can be recovered, in accordance with Legislative Decree 152/2006. With regard to the elimination should be noted that the materials which form the machine are not of a dangerous nature.

CAUTION

During the process of disposal shall be need to follow the rules in force in the country.

Store materials pollutants, such as oils and solvents, only in metal drums.

Consumables: Regarding the disposal of consumer products, observe the following rules:

Gear oil: Used oil, oil residues and oil soaked items must be disposed of through the appropriate collection points, and not discharged into the sewage urban areas.

10.5 INDICATIONS FOR A SUITABLE TREATMENT OF WASTE

The proper management of hazardous waste includes:

- Storage in suitable places avoiding the mixing of hazardous waste with non-hazardous waste.
- Make sure that the transport and disposal / recovery of the same is made by shippers and authorized recipients.

Transport their own waste to authorized collection centers is only allowed if you are in possession of entry in the Register of Environmental Managers.

10.6 WASTE FROM ELECTRICAL /ELECTRONIC EQUIPMENT (WEEE)

With the Legislative Decree 151 of 25 July 2005, the Italian Government has implemented the Directives of the European Parliament regarding the disposal of waste electrical and electronic equipment (WEEE) (Directive 2002/95/EC and 2003/108/EC) . Measures: The decree establishes, in particular, measures and procedures to:

- prevent the production of WEEE;
- promote the reuse, recycling and other forms of recovery of WEEE, in order to reduce the amount to be disposed;
- improve from an environmental point, the intervention of the partners involved in the life cycle of these devices (manufacturers, distributors, consumers and operators directly involved in the treatment of WEEE);
- reduce the use of hazardous substances in electrical and electronic equipment.



The decree requires the limitation and elimination of certain substances present in WEEE: bandits are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers. The machine has been designed and manufactured in compliance with this Directive. Follow the directions set forth below. This symbol, depicting a wheeled bin for rubbish column shows the separate collection of electrical and electronic equipment of the machine.

The user of this machine can contact the collection centers set up by the municipalities or directly from the manufacturer, or require their withdrawal from the dealer, to a proper disposal of the same.