VIBROTECH™

1

OPERATION AND MAINTENANCE INSTRUCTIONS

IRON REMOVER FOR LIQUIDS

WHI FILTER

Code: ..... 05122024.WHI FILTER

ENGLISH

Rev. 01	Pag. 2-2; 2-3; 2-4; 3-4; 4-5; 5-2; 5-4; 5-6; 6-4; 6-5; 6-6; 6-7; 6-8; 6-9; 6-10; 7-2.	31-07-2019
Rev. 02	Page 3-3	19-11-2020
Rev. 03	Pag. 2.8; 6.4.3	19-05-2021
Rev. 04	Pag. 2-3; 3-4; 3-5; 5-6; 6-4; 6-5; 6-7; 6-9; 6-10; 6-11	24/10/2024
Rev. 05	Pag. 3-3; 3-4; 5-7; 5-8; 6-10; 6-11	05/12/2024

Publication issued by: **VIBROTECH s.r.l.**
Edition: EN 12/24
© 2024 - All rights reserved
This manual:
- is included in the scope of delivery and it must be read carefully and for a use in accordance with the essential safety requirements;
- was compiled in Italian, as the original language.

VIBROTECH s.r.l. declines all responsibility for damages caused by operations not included in this manual.

CONTENTS

1 General information 1-1
1.1 Foreword 1-2
1.2 Matters dealt with in the manual, meaning of numerical references 1-2
1.3 How to update information 1-2
1.4 Manual symbols 1-3
1.5 Terminologies and abbreviations 1-3
1.6 Personal qualification 1-4
1.7 Staff training 1-4
1.8 Cooperation with the user 1-5
1.9 Warranty 1-5
1.10 Technical assistance 1-6
2 Description and technical specifications 2-1
2.1 Machine description 2-2
2.2 Identification 2-2
2.3 Main parts 2-3
2.3.1 Electrical system 2-4
2.3.2 Hydraulic system 2-4
2.3.3 Pneumatic system 2-4
2.4 Intended use 2-5
2.4.1 Operating environment characteristics 2-6
2.4.1.1 Lighting 2-6
2.5 Noise 2-6
2.6 Vibrations 2-7
2.7 Unintended use 2-7
2.8 Technical data and application limits 2-8
2.8.1 Iron remover (main unit) 2-8
2.8.2 Electrical panel 2-8
3 Safety and accident prevention 3-1
3.1 General safety warnings 3-2
3.2 Residual risks 3-3
3.3 Signalling plates 3-4
3.4 Personal protective equipment 3-6
4 Installation and set-up 4-1
4.1 Delivery 4-2
4.1.1 Unloading from the transport vehicle 4-2
4.2 Checking the contents - disposing of packaging 4-3
4.3 Storage 4-4
4.4 Transport and lifting 4-4
4.5 Installation 4-6

5 Use and operation 5-1
5.1 Principle of operation 5-2
5.2 Using the machine 5-3
5.2.1 Controls on electrical panel 5-3
5.2.1.1 Touch screen panel 5-4
5.2.2 Ignition 5-5
5.2.3 Start-up 5-5
5.2.4 Normal voluntary stop 5-5
5.2.5 Emergency stop 5-6
5.2.5.1 Reset after an emergency stop 5-6
5.3 Oil level check 5-7
5.3.1 Oil level check if minimum level sensor present (optional) 5-8
6 Maintenance 6-1
6.1 Safety warnings 6-2
6.2 General warnings for good maintenance 6-2
6.3 Safe maintenance procedure 6-3
6.4 Routine scheduled maintenance 6-4
6.4.1 Machine cleaning 6-5
6.4.2 Replacing the oil filter cartridge 6-5
6.4.3 Checking and replacing the dehydrating salt cartridge 6-5
6.4.4 Removing and cleaning iron removal grills 6-6
6.4.5 Temperature control of hydraulic unit 6-9
6.4.5.1 Temperature detection from touch screen panel 6-9
6.4.6 Refilling oil 6-10
6.4.7 Oil draining 6-11
6.5 Extraordinary maintenance 6-12
6.6 Problem solving 6-12
6.7 Dismantling 6-13
6.8 Maintenance log 6-14
6.9 Ordering spare parts 6-16
7 Attachments 7-1
7.1 List of attachments 7-2
7.1.1 Circuit diagram 7-2
7.1.2 Assembly instructions (hydraulic cooling unit) 7-2
7.1.3 Why filter operator panel manual 7-2

1 General information

1.1 Foreword

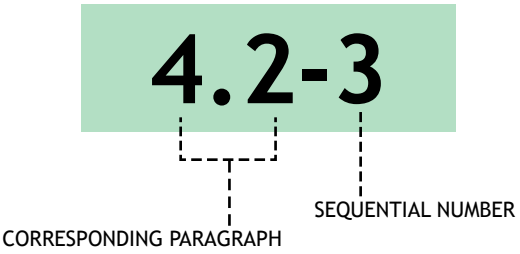
This manual describes the instructions for the safe use and maintenance of the IRON REMOVER FOR LIQUIDS models: WHI FILTER 90/3; WHI FILTER 200/7; WHI FILTER 250/11; WHI FILTER 400/20.
In the rest of the manual, the "WHI FILTER" will be referred to in short form as "MACHINE".
Upon delivery, check that the Machine is complete with all its parts.
Any faults must be reported immediately to the dealer or manufacturer.
Operators are reminded to read it carefully before operating in order to avoid injury to persons and/or damage to property.

1.2 Matters dealt with in the manual, meaning of numerical references

The following matters are described in the manual:
1. Intended use;
2. Technical data and application limits;
3. Main components that make up the Machine;
4. Operator safety aspects;
5. Installation, use and maintenance;
6. Diagnostics.

The spare parts are identified in manual number "2" which can be downloaded from the WEB portal.

Page numbering is set at zero at the beginning of each chapter, so you will find the prefix indicating the chapter and the page number in sequence.
The numbering of the figures refers to the corresponding paragraph.
Example fig 4.2-3 means:



1.3 How to update information

If repairs and/or modifications authorised in writing by **VIBROTECH s.r.l.** make it necessary to update the manual, the following procedure must be followed:
- send a copy of the changes to **VIBROTECH s.r.l.** for inclusion in the Technical File;
- **VIBROTECH s.r.l** will update the information and send an updated copy of the new edition.

IMPORTANT!

A Machine change that results in the introduction of new risks requires a new CE marking, with an update of the manual.

1.4 Manual symbols

DANGER!

It indicates situations of danger for people and recalls accident prevention regulations.
Failure to follow these instructions puts people's lives and health at risk.

CAUTION!

Indicates dangerous situations for the product being processed, the materials used or the machinery, which may be the cause of accidents at work.
Failure to comply with these instructions may endanger people's health and/or create environmental damage.

IMPORTANT!

Warnings of good practice and directions for consultation.
Failure to comply with these instructions may result in damage to the Machine, the product in use or the materials used for processing.

1.5 Terminologies and abbreviations

- **Machine**: IRON REMOVER FOR LIQUIDS model WHI FILTER.
- **E.P.**: Electrical Panel.
- **Operator - Employee**: any person qualified to use the Machine.
- **Exposed person**: any person wholly or partially in a danger zone.
- **Danger zone**: any zone within and/or around the Machine in which a person is subject to a risk to their health or safety.
- **PPE**: personal protective equipment.
- **Service:** Technical Support Centre.

1.6 Personal qualification

Operation of the Machine must be entrusted to personnel who have been trained on the Machine characteristics and on all safety rules adopted by the employer for safe operation.

Operators must be aware of the contents of the manual and meet or become familiar with the following requirements through appropriate training.

- Sufficient general and technical training to understand the instructions for use and maintenance given in the manual and to interpret the drawings and diagrams in the manual correctly;
- Knowledge of the main hygiene, accident prevention and technological rules related to the adopted production process;
- Specific experience with the technology used;
- General knowledge of how the Machine is composed and of the equipment installed on it, in particular the position of the emergency stop and energy cut-off devices;
- Knowledge of what to do in an emergency situation, where to find personal protective equipment and how to use it correctly;
- Sufficient training to skilfully perform tasks, especially in emergency situations.

In addition to the above, maintenance technicians must possess basic technical knowledge as appropriate to the work required. In particular, they must know the main construction methods of the Machine.

1.7 Staff training

If requested, **VIBROTECH s.r.l.** will directly provide the training of the user's employees, who have appointed by it to subsequently operate on the Machine.

During the training period, all aspects of the documentation provided will be analysed together with the persons in charge to make sure they fully understand and memorise what is required to safely carry out each operation.
At the end of training, an authorisation report will be drawn up and signed by both parties, certifying that the Machine has been tested and taken over.

Before that, it will NOT be possible to use the Machine.
Failure to do so will relieve the Manufacturer from all liability for any bodily injury or property damage.

1.8 Cooperation with the user

- The manual reflects the state of the art at the time the Machine was placed on the market, of which it is an integral part.
- Any additions to the manual that VIBROTECH s.r.l. sees fit to send to users must be kept together with the manual.
- VIBROTECH s.r.l. is at the disposal of its customers to provide further information and to consider suggested improvements to allow this manual to better meet the needs for which it was prepared.
- Should the Machine be transferred, the primary user is asked to notify VIBROTECH s.r.l. of the new user's address so that they can be reached with any communications and/or updates deemed essential.

1.9 Warranty

VIBROTECH s.r.l. Via Don Pasquino Borghi, 4 - 41043 Casalgrande (Reggio Emilia), "Manufacturer" of the Machine in question, provides a Warranty for manufacturing defects covering a 12 month period.

The Warranty is only valid if the Machine has been used according to the Manufacturer's instructions and has not been tampered with.
The Warranty period starts from the date on which the customer signs the Machine's test report, or from the date on which the Machine leaves the Manufacturer's premises to be delivered to the recipient.
The Warranty includes replacement of defective parts. The labour required for the replacement of defective parts and out-of-pocket expenses (transport, food, accommodation, etc.) shall be borne by the customer. Machine parts subject to wear and tear are not subject to warranty.

IMPORTANT!

The Warranty expires immediately if technical repair work is carried out on the Machine by unauthorised personnel.

1.10 Technical assistance

If direct servicing requests are made by the Manufacturer's personnel as well as requests to order spare parts, please contact the Technical Assistance Service (SERVICE) at the address below, specifying the Machine's identification data (type, model, year and serial no.).

VIBROTECH S.r.l.
Operational Headquarters: Via Don Pasquino Borghi, 4 - 42013 CASALGRANDE
(Reggio Emilia) - Italy
Tel. +39 0536 82 37 76 - Fax +39 0536 81 20 09
www.vibrotech.biz - email: service@vibrotech.biz

2 Description and technical specifications

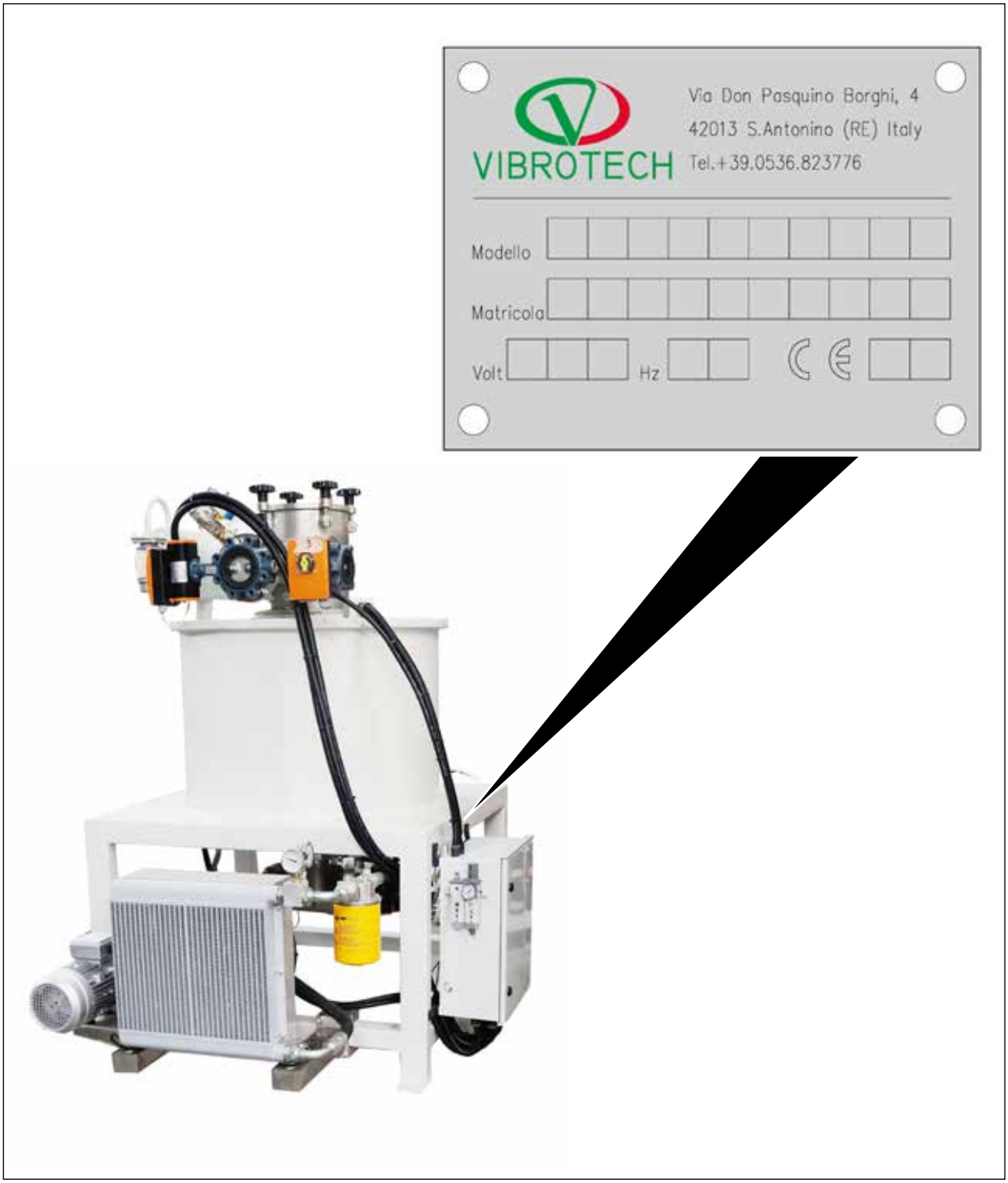
2.1 Machine description

The machine in question is a IRON REMOVER FOR LIQUIDS with a high magnetic gradient, used for removing iron from slips and ceramic glazes.

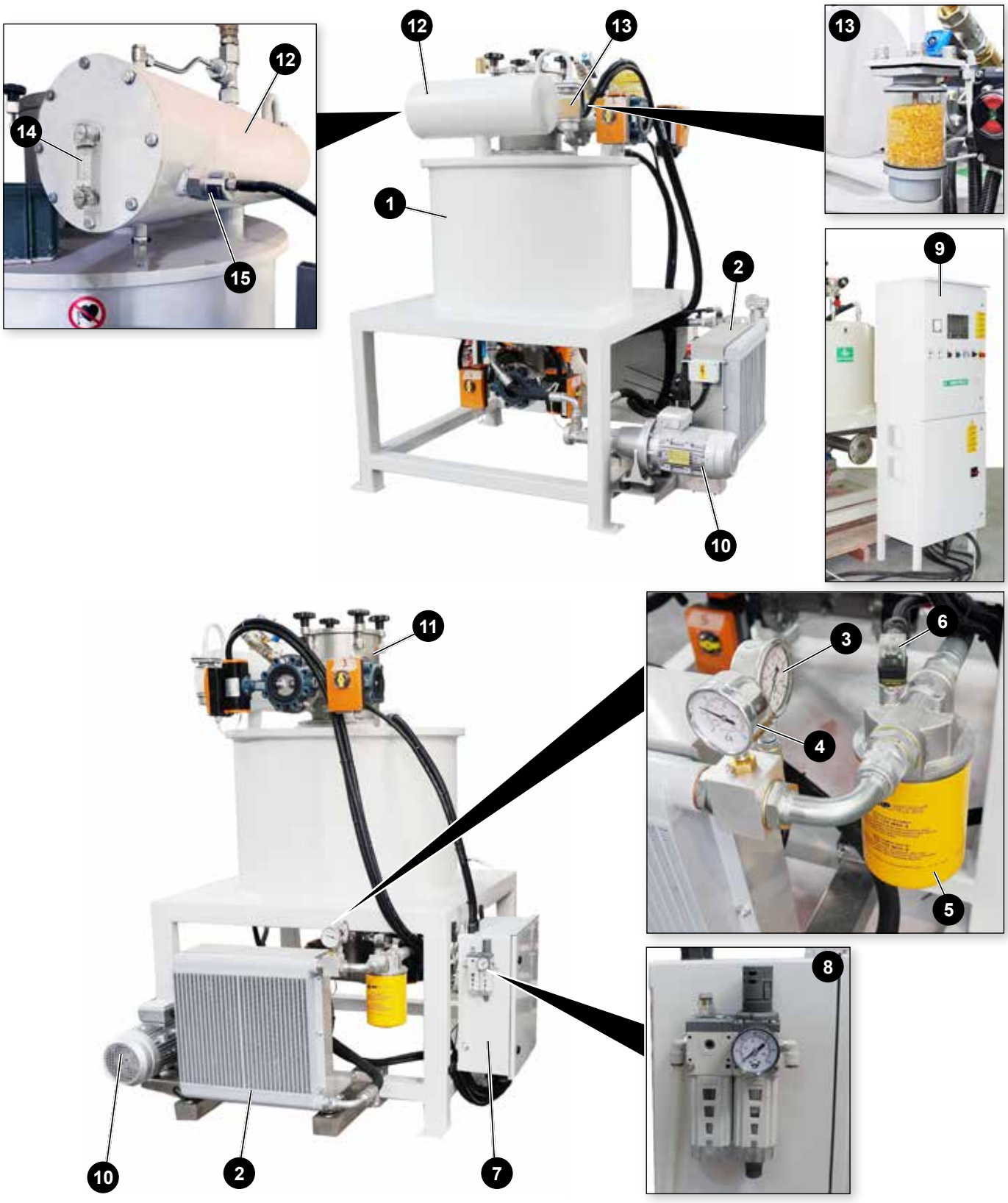
PLEASE NOTE!

For the technical characteristics of the models please refer to par. 2.8

2.2 Identification



2.3 Main parts



1. Iron remover (main unit)
2. Heat exchanger
3. Analogue oil pressure gauge
4. Analogue oil temperature thermometer
5. Oil filter with cartridge
6. Oil filter clogging detection sensor
7. Box containing pneumatic components and junction box
8. Filter unit pressure regulator and lubricator
9. Electrical panel
10. Motor pump
11. Cable pit containing iron removal grills pack
12. Expansion vessel
13. Dehydrating salts cartridge
14. Oil level indicator
15. Minimum oil level sensor (optional)

2.3.1 Electrical system

The electrical system consists of a series of elements shown in the attached circuit diagram.

The main elements are:
- an electrical panel with control buttons and touch screen panel;
- an electrical junction box;
- a series of components (sensor, solenoid valves, etc.) located on the Machine.

IMPORTANT!

- ***All cables are equipped with a label reporting an acronym, and that label can also be found on the electrical diagram.***
- ***All electrical components and their connections are listed in the wiring diagram attached.***

IMPORTANT!

The Machine is supplied without the connection cables to the electrical panel, which is why you must always check that the motor pump is running in the correct direction after making the connection between the two units.

DANGER!

Before any interventions on the Machine, disconnect the electrical power supply. Only qualified operators may work on live components.

2.3.2 Hydraulic system

The hydraulic system consists of a series of elements shown in the hydraulic diagram in par. 5.1.

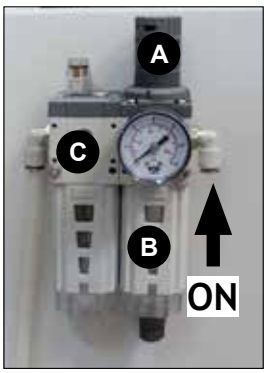
The main elements are:
- a hydraulic power unit;
- an oil filter with a clogging detection sensor;
- a series of components (e.g. solenoid valves, etc.) located on the Machine.

2.3.3 Pneumatic system

The pneumatic system consists mainly of the following elements:
- pressure regulator with manometer (A);
- filter (B);
- lubricator (C);
- a series of components placed inside box "7" par. 2.3

IMPORTANT!

Remember that the compressed air necessary for operation of all the pneumatic units must be clean and sufficiently lubricated.
The working pressure MUST NOT EXCEED 6 bars and must be adjusted as indicated in the technical data.



2.4 Intended use

The WHI FILTER has been designed and constructed to remove iron from slips and ceramic glazes, at temperatures not exceeding 75°C, under the following operating conditions:

- vibrating screen discharge;
- mill discharge;
- after the storage tanks;
- in water deferrisation.

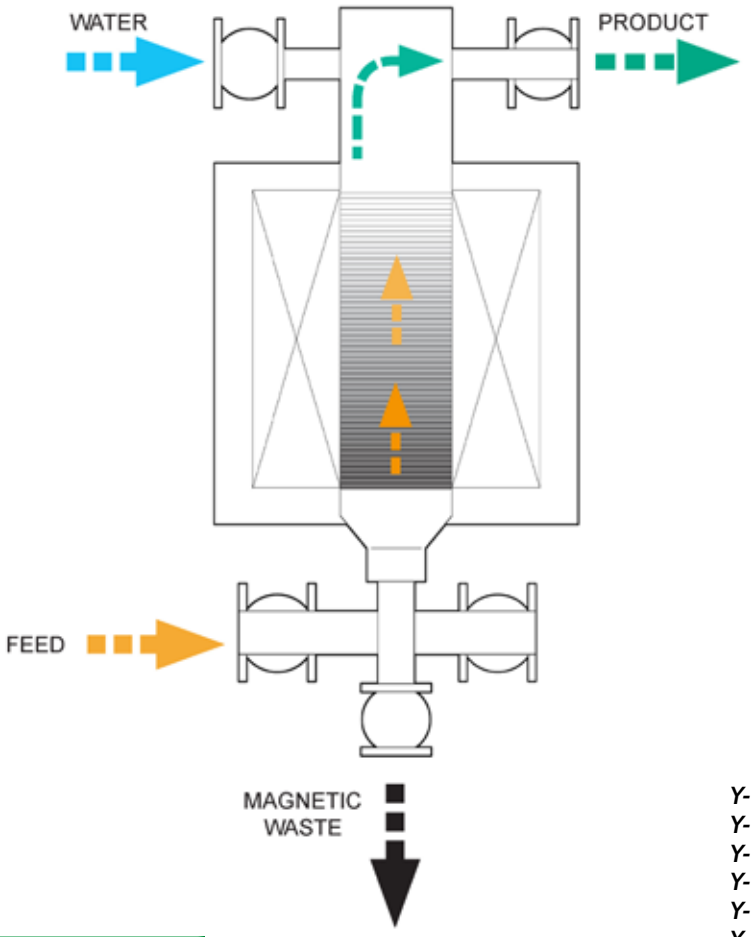
DANGER!

Maintenance or adjustment operations must be carried out when the **Machine is stationary, except under specific conditions by specialised and/or authorised personnel.**

Defining the limits for the presence of personnel is the task of the workplace designer and may entail more restrictive limitations.

DANGER!

Exceptions to the above environmental requirements for the proper use of the Machine require a specific written declaration by the MANUFACTURER.



Y-V1. Slip inlet valve
Y-V2. Slip outlet valve
Y-V3. Washing water inlet valve
Y-V4. Drainage water inlet valve
Y-V5. Ferrous particle discharge
Y-V6. Compressed air

IMPORTANT!

- ***The valves are identifiable by means of an adhesive label applied to them.***
- ***From the touch screen panel, it is possible to view the valves and the Machine's operation diagram (see par. 5.2.1.1)***

2.4.1 Operating environment characteristics

Min. - max. working environment temperature (°C): ..... 5 - 50
Maximum temperature gradient (°C/h) 10
Max. relative humidity (max RH) ..... 10 ÷ 95%
Max. altitude above sea level (m) 1000

DANGER!

The operating environment MUST NOT pose an explosion or fire hazard as the Machine has not been made in explosion-proof construction.
The operating area must remain dry and free of clutter. Safety distances for cleaning or maintenance must be respected. There must be no fixed obstacles that could restrict movement.

Forklift lanes must be marked with appropriate signage and/or, preferably, floor markings.

CAUTION!

If environmental conditions are particularly critical, it is advisable to equip the room with a suitable air-conditioning system to bring humidity and temperature values within acceptable limits.

CAUTION!

The arrangements to be made by the user are described in par. 4.5

2.4.1.1 Lighting

The operating area must have sufficient natural light (where possible) and be equipped with devices that allow proper artificial lighting to safeguard the safety and health of the operator.

The minimum lighting of the room (between 300 and 500 lux) must ensure good visibility in every point of the line and must guarantee the correct perception of the symbols and pictograms.
The maximum lighting must not be blinding to the operator.

2.5 Noise

The weighted equivalent continuous sound pressure level emitted by the Machine is less than 70 dB (A).
The measurement was made on a typical machine in operation near the operators' workstations.

DANGER!

The reported value refers only to the Machine. It is therefore not a value to be taken into consideration as the level of exposure to which the OPERATORS ARE EXPOSED IN THE WORKING ENVIRONMENT IS HIGHER. Accordingly, the user has the responsibility to make checks to define the level of sound pressure and to evaluate whether to use personal protection measures.

2.6 Vibrations

The Machine does not produce vibrations that:
- cause danger to the health of operators;
- cause a disturbance to the surrounding environment, which may affect the stability and accuracy of any nearby equipment.

2.7 Unintended use

Failure to do so releases the Manufacturer from any liability.

It is FORBIDDEN to use the Machine, albeit partially, in one or more of the following conditions:
- in explosive atmospheres;
- in an unprotected outdoor environment or at temperatures differing from those given in par. 2.4.1;
- without protective elements and/or with disabled, faulty or missing safety devices;
- if not properly installed;
- under dangerous conditions or if there are malfunctions;
- for uses contrary to the specific regulation;
- in case of supply defects (electricity, compressed air, etc.);
- after modifications or interventions not authorised by the Manufacturer;
- for uses other than those envisaged by the Manufacturer (misuse);
- by untrained personnel;
- in case of partial or total non-compliance with the instructions.
- to perform operations that were not reasonably foreseeable;
- if there is a lack of maintenance;
- using spare parts that are not original and have not been authorised by the Manufacturer.

Contraindications and dangers of unintended uses
The Machine is calibrated and tested by the Manufacturer according to customer specifications.
- Do not intervene in mechanisms with the intention of changing the intended operating cycle.
- Do not use other products.

DANGER!

It may be detrimental to insert materials that differ from the Machine's specifications.

DANGER!

- ***These conditions concern the use of the Machine. Defining the limits for the presence of personnel is the task of the workplace designer and may entail more restrictive limitations.***
- ***For exceptions to what is reported here, a specific written declaration by the Manufacturer VIBROTECH s.r.l is required.***
- ***It is forbidden to modify parts of the Machine or safety devices that may jeopardise its operation or add further risks not considered by the Manufacturer. Any modification must be notified and approved in writing by the Manufacturer.***
- ***Any alteration that changes the risks, if carried out without the Manufacturer's authorisation, will invalidate any form of warranty and the EC declaration of conformity.***
- ***In addition, the Manufacturer shall not be responsible in case of exceptional events such as earthquakes, floods or fires not directly caused by the System/Machine.***

2.8 Technical data and application limits

2.8.1 Iron remover (main unit)

IMPORTANT!

See attached data sheet

2.8.2 Electrical panel

Main data: ..... see attached circuit diagram.
Weight:.....90 kg



3 Safety and accident prevention

3.1 General safety warnings

1) Do not allow UNTRAINED personnel to intervene on the Machine.
2) DO NOT START UP A FAULTY Machine.
3) Before using the Machine, it is necessary to make sure that any conditions endangering safety have been appropriately eliminated.
   Check that all protective elements (guards, safety devices) are in place and fully operational.
4) Each maintenance operation must be carried out with the Machine isolated from the power distribution networks (electric, pneumatic or other).
5) When there is a possibility of being hit by thrown or falling objects, use side shield goggles and, if necessary, a hard hat or gloves.
6) Before any manual intervention on the Machine or on the material being processed, the Machine itself must be deactivated by carrying out the "SAFE MAINTENANCE PROCEDURE".
7) Connections, start-up, maintenance, measurements and adjustments of the electrical equipment or its components must be carried out by qualified personnel only.
8) Please note that frequency converters (inverters) generate voltages that are dangerous to human life. Before intervening on these devices, if installed, read the relative documentation provided by the Manufacturer of the device or contact the Manufacturer.
9) For work to be carried out with live parts, the relevant regulations in the country of use of the Machine must be respected.

DANGER!

IT IS PROHIBITED:
- *to start the operation of the Machine without first checking the absence of people in the vicinity of the dangerous areas and of foreign objects on the machines. Make sure starting it will not pose any danger for the personnel;*
- *to remove or disable the protective elements (guards and safety devices). Temporarily disabling the protective elements is only allowed for maintenance works;*
- *to perform adjustments or maintenance in the Automatic operating state;*
- *to work on moving parts or electrical parts without first cutting off electric power;*
- *to tamper with or remove the safety labels placed on the Machine;*
- *to bring changes to the Machine without authorisation from the Manufacturer;*
- *to operate the monitoring equipment without having the appropriate skills;*
- *to improperly use or make the safety devices of the Machine or of the operational area inoperative;*
- *to pour water on motors or electrical components;*
- *to punch holes in cable conduits or electrical cable passages.*

DANGER!

IT IS MANDATORY:
- *to read and understand all the documentation supplied with the Machine before operating;*
- *to wear protective equipment that is suitable for the operations to be carried out;*
- *to maintain safety systems and emergency stop buttons fully efficient;*
- *to keep the control instruments efficient and readable and replace them when damaged;*
- *to make sure there are no oil or other liquid leaks when the SCREW Machine is running. Check that the electrical components are working properly and that no smoke is coming out of the motors. Do not ignore suspicious smells or noises;*
- *to stop the Machine as soon as a malfunction occurs;*
- *to place warning signs on the electrical panel and lock the main switch in case of a malfunction or for maintenance;*
- *to keep the pictograms on board the Machine and the controls of the pushbutton panels in good condition, and ensure that they are always legible.*

3.2 Residual risks

Only during maintenance operations is the maintenance employee (technician) subject to the following danger:

HIGH VOLTAGE HAZARD
Risk of electric shock
Before working on any electrical components inside the E.P., inside the electrical box, on the Machine or inside the channel, the "Put in maintenance mode" procedure must be carried out and the main switch located on the panel itself must be switched off.
Danger signalled by pictogram "1" in par. 3.3.

DANGER OF WORKING AT HEIGHTS
Danger of falling from heights
Before cleaning the iron removal grills as described in par. 6.4.4, a mobile walkway must be provided in the vicinity of the Machine to allow the operator to access them and carry out the maintenance work safely.

DANGER GENERATED BY MAGNETIC RADIATION
Risk of harm to persons with active and passive implantable devices, in particular to persons with:

- Active implantable devices (e.g. cardiac pacemakers, cardiac defibrillators, cochlear implants, brain stem implants, inner ear prostheses, neuro-stimulators, retinal encoders, implanted pumps for drug infusion, etc.) the safety distance is 15 cm from the perimeter of the Machine when the Machine is switched off and 230 cm when the Machine is switched on.
  Warning signalled by pictogram "4" in par. 3.3.
- Passive implantable devices (e.g. total joint implants, nails, plates, screws, surgical clips, aneurysm clips, stents, heart valve prostheses, annuloplasty rings, contraceptive implants, etc.) the safety distance is 50 cm from the perimeter of the Machine when the Machine is switched on.
  Warning signalled by pictogram "5" in par. 3.3.

Furthermore, it is not permitted to approach the Machine with watches and metal objects at distances of less than 50 cm from its perimeter when it is switched on.
Warning signalled by pictogram "6" in par. 3.3.

DANGER!

IT IS PROHIBITED TO:
- *ENTER OR INSERT ANY PART OF YOUR BODY INTO THE MACHINE WHILE IT IS IN MOTION OR CONNECTED TO POWER SOURCES*
- *TOUCH MOVING OR LIVE PARTS;*
- *CIRCUMVENT SECURITY SYSTEMS;*
- *PERFORM ANY OPERATION WITHOUT FIRST FOLLOWING THE SAFE MAINTENANCE ACCESS PROCEDURES;*
- *WORK INSIDE ELECTRICAL PANELS IF YOU ARE NOT AUTHORISED TO DO SO;*
- *ACCESS THE WORK AREA WHILE WEARING DANGLING OBJECTS THAT MAY GET CAUGHT ON MOVING PARTS*

CAUTION!

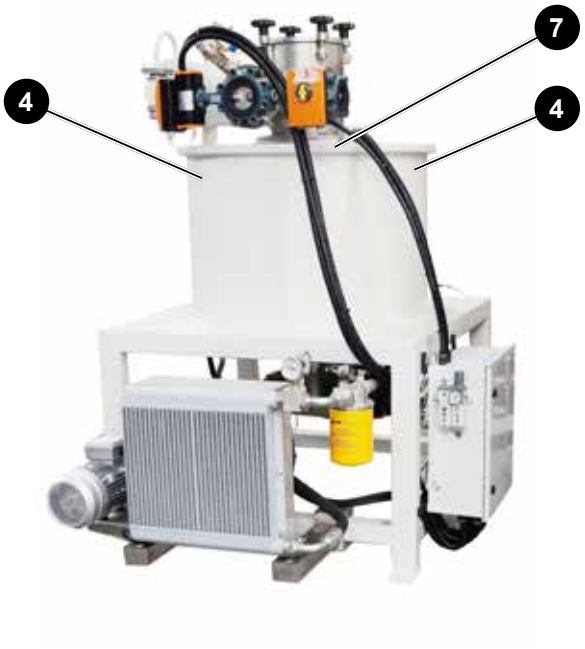
Please refer to the assembly instructions enclosed with this manual to find out about the risks related to the hydraulic cooling unit.

3.3 Signalling plates

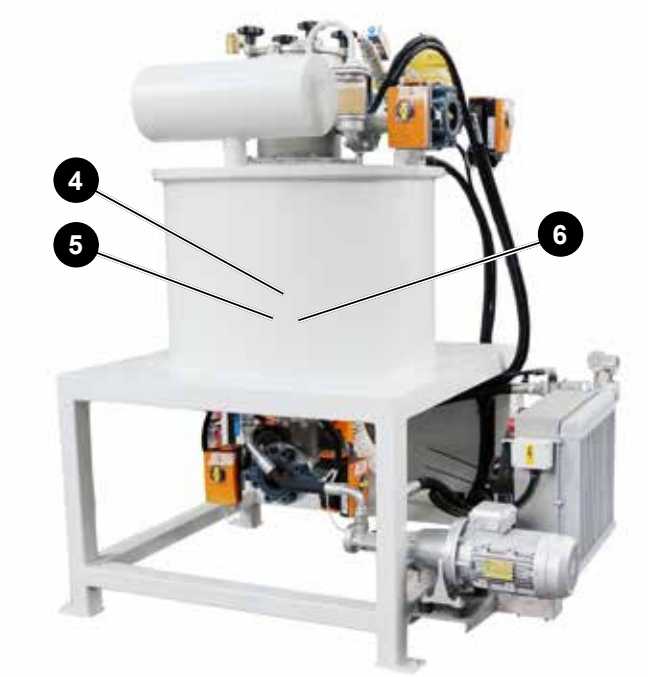
CAUTION!

Make sure that all plates are clearly legible; if not, replace them by repositioning them in the same place.

Pos.	PICTOGRAM	DESCRIPTION
1		Applied to various components, it indicates the presence of power supply voltage (550 V). Only specialised personnel may carry out work on electrical components. Risk of electric shock.
2		**ATTENTION - ONLY AUTHORISED EMPLOYEES MAY CARRY OUT WORK AND OPERATIONS INSIDE** Where applied to the electrical panel, this indicates that only specialised maintenance employees (specialised technicians) may have access to the electrical panel to carry out repair or maintenance operations.
3		**ATTENTION - LIVE EQUIPMENT EVEN WITH OPEN DOOR** Where applied to the inside of the electrical panel, this indicates that there is still voltage even after opening the door of the electrical panel. Only specialised technicians may carry out work on the components inside the electrical panel.
4		Those wearing active implantable devices are prohibited from approaching the Machine (see par. 3.2). Safety distance for workers at risk: Machine switched off: 15 cm Machine switched on: 230 cm
5		Those wearing passive implantable devices are prohibited from approaching the Machine (see par. 3.2). Safety distance for workers at risk: Machine switched on: 50 cm
6		It is prohibited to approach the Machine with watches and metal objects. Safety distance for workers at risk: Machine switched on: 50 cm
7		WARNING - do not insert the product with the magnet switched off if the grills pack is inserted inside. If the product must be inserted with the magnet switched off, be sure to remove the grill pack.


7
4
4


3
1
2
2
2
3
1
1


4
5
6

3.4 Personal protective equipment

In addition to personal protective equipment related to the safety of the workplace environment, the following personal protective equipment must be used in the country where the Machine is used:

- gloves when replacing and/or adjusting components;
- head protection helmet, during the cleaning phase of the iron removal grills (par. 6.4.2).

4 Installation and set-up

4.1 Delivery

CAUTION!

Personnel carrying out loading, unloading and handling operations must have the skills and experience in the specific sector and must be familiar with the lifting equipment to be used.

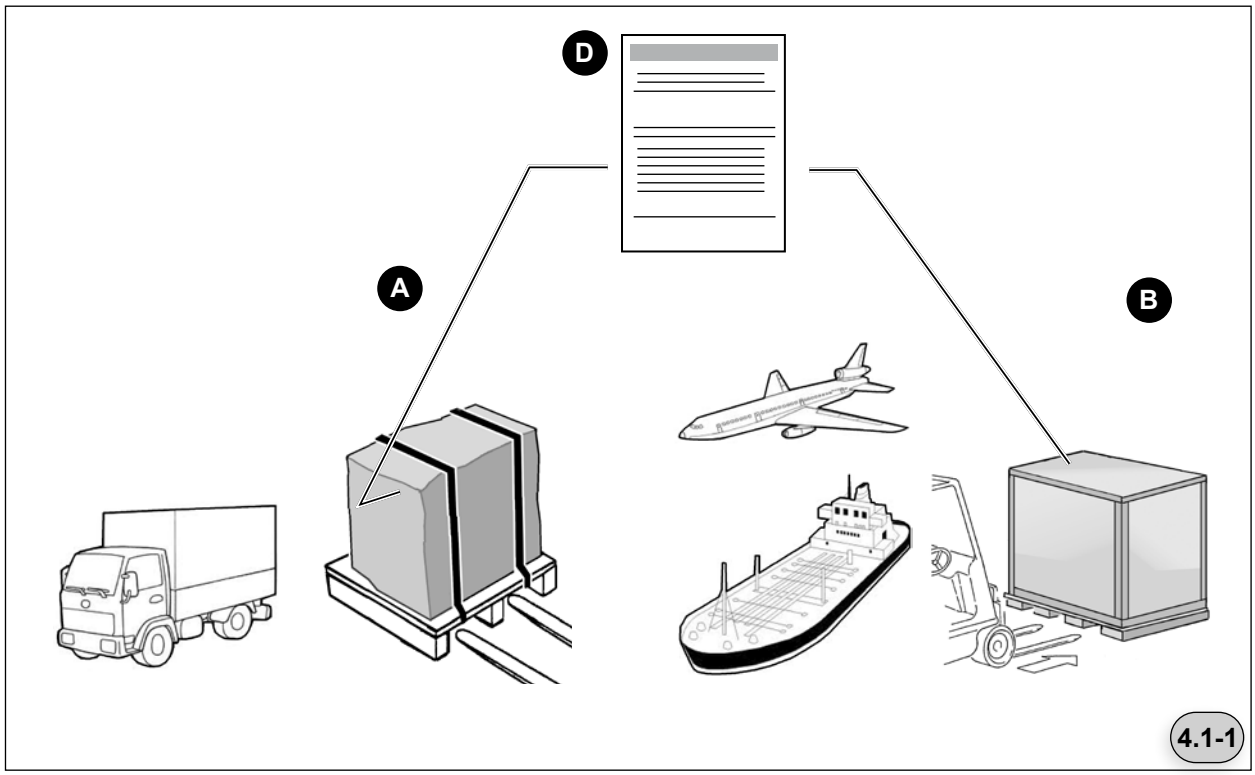
CAUTION!

Lifting and transport equipment must be chosen according to the weight, shape and size of the Machine.

4.1.1 Unloading from the transport vehicle

Depending on the country of destination, the Machine is delivered fully assembled, covered with shrink-wrap material and packed on:
- pallet (A), if shipped by land or in a container;
- wooden crate (B) when requested or by air freight.

The weight of the load to be lifted is shown on the identification document (D) attached to the packaging.



IMPORTANT!

The following points must be observed for the correct and safe lifting and handling of the packaging:
- *Use the lifting system appropriate for the load capacity and size of the packaging*
- *Personnel must be competent and have the qualifications required by the regulations in force, in order to guarantee the utmost safety at work for the driver and his colleagues*

4.2 Checking the contents - disposing of packaging

The entire Machine is thoroughly checked before shipment. When receiving the package, make sure it has not been damaged during transport. In particular, make sure that the packet has not been tampered with and that parts have not been removed. In case of damage or missing parts, notify the carrier and the Manufacturer immediately and provide photographic documentation.

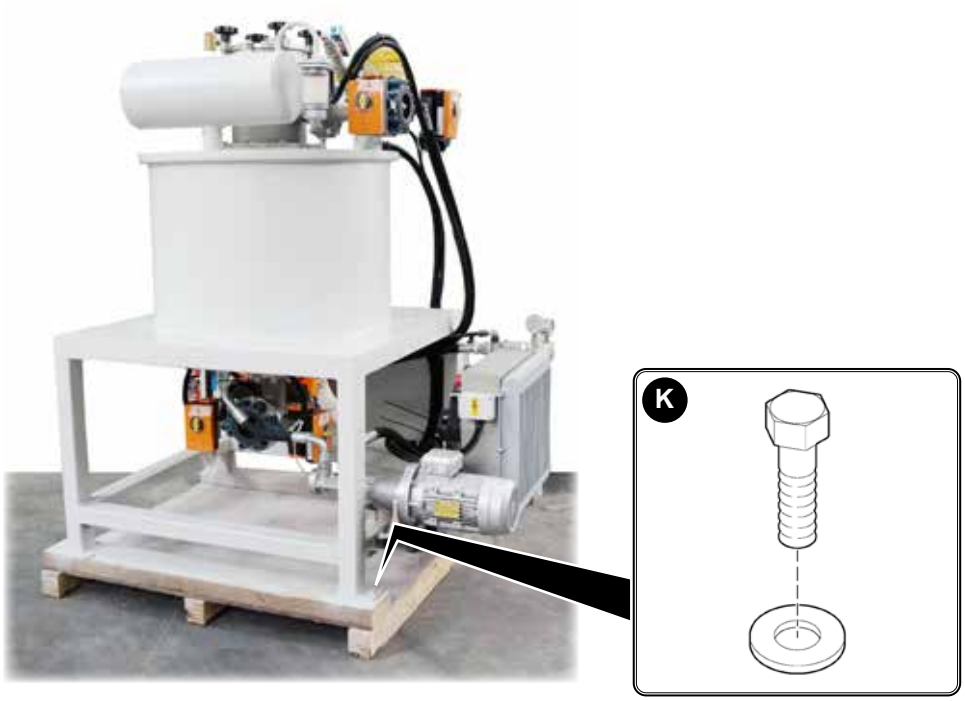
IMPORTANT!

If damage of any kind is discovered, it must be reported to the vehicle driver and the dealer or the Manufacturer must be notified immediately.

CAUTION!

The Manufacturer shall not be liable for damage to the Machine when it is transported and placed inside the plant by third parties.

The box must be opened in the following manner:
- remove the top cover;
- remove the side walls;
- remove the waterproof material and parts attached to the Machine, taking care to support them during removal;
- remove "K" fastening nuts;
- remove additional fasteners;
- check that the Machine has not been damaged during transport; if it has, inform the Manufacturer immediately.



IMPORTANT!

The material used for packaging must be disposed of in accordance with the regulations in force in the country of use.

4.3 Storage

If the Machine components are to be stored for long periods of inactivity, they must be kept protected against external agents (preferably if in their original packaging) and in environments with characteristics corresponding to the levels of protection listed below:
- Temperature: -10/+45 °C;
- Relative humidity 45% max. (not-condensing);
- Closed environment, sheltered from the elements.

CAUTION!

- ***Values other than those above can seriously damage the components.***
- ***Do not place heavy objects on top of the packaging.***
- ***If the packaging has been removed, keep the Units in a sheltered room that provides protection against weather and aggressive chemicals.***

4.4 Transport and lifting

Lift the various units using designated lifting equipment (suitable for the load to be lifted).
Position the Machine in the area intended for its use.

DANGER!

Lifting and handling operations must be carried out by specialised personnel authorised for this type of manoeuvre, who must be equipped with all the necessary safety devices such as:
• safety shoes;
• protective helmet;
• safety hook with its harness (for operations at height), etc.;
• gloves.

No one must stand near the suspended load and/or in the direct range of movement of the lifting equipment while the Machine is being lifted and handled.

DANGER!

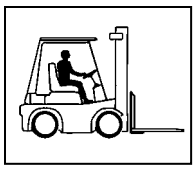
During handling, the load must remain perfectly parallel to a horizontal plane regardless of the type of equipment with which the movements are carried out.
A helper must be present during lifting and transport for any necessary signalling.
Lifting must be constant, without jerks or sudden movements.
It is forbidden to walk or stand under suspended loads.

Before lifting the various parts of the Machine, the following precautions must be followed:
- Have all employees reach the safe position;
- Make sure the load is stable;
- Check for materials that may fall during lifting;
- Manoeuvre vertically to avoid impacts.

Unit	Model	Weight
Iron Remover and Hydraulic Cooling Plant	WHI FILTER 90/3	830 kg
	WHI FILTER 200/7	1,050 kg
	WHI FILTER 250/11	1,710 kg
	WHI FILTER 400/20	3,360 kg
Electrical panel	/	90 kg







DANGER!

The Manufacturer declines any responsibility for damage to property or people resulting from failure to observe existing safety regulations with regard to the lifting and handling of materials inside the user's plant.

4.5 Installation

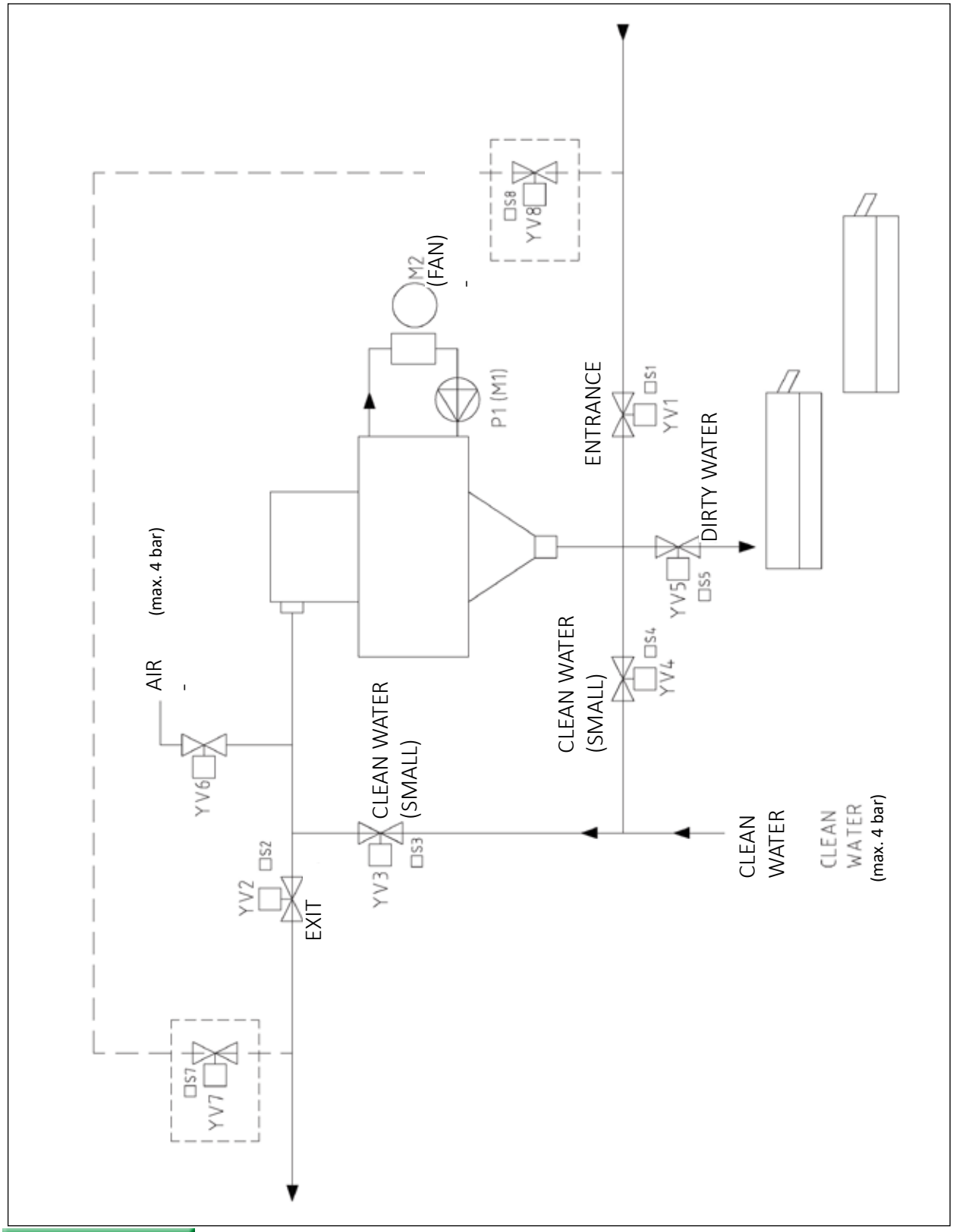
IMPORTANT!

To carry out installation, contact the Technical Support Centre (SERVICE).

5 Use and operation

5.1 Principle of operation

Operation is as shown in the diagram below.



IMPORTANT!

Valves YV7 and YV8 are OPTIONAL and are used to bypass the Machine, e.g. in case of maintenance work.

5.2 Using the machine

The operating cycle is automatic and is managed by the control logic of the product conveyor line to be ironed and by the operator through the use of controls on the electrical panel.

5.2.1 Controls on electrical panel



1. Voltmeter
Voltage indicator inside the Machine.

2. Touch Screen panel
Allows the use of interface software for Machine management.

3. White 24 VDC indicator lamp
Signals that 24 VDC voltage has been detected in the electrical panel.
- Indicator light off - voltage off.
- Indicator light on - voltage on.

4. White indicator lamp 110 VAC
Signals that 110 VAC voltage has been detected in the electrical panel.
- Indicator light off - voltage off.
- Indicator light on - voltage on.

5. Red indicator light
Signals that alarms have been detected due to thermal trip.
- Indicator light off - no alarms.
- Indicator light on - alarms detected.

6. Illuminated blue "AUX" reset button
Button with blue voltage detection indicator light. Pressing this button will enable the Machine's general auxiliary circuits and start the machining cycle or manual operations.

7. White "START STOP CYCLE" button
Pressing the button activates/deactivates the automatic operation of the Machine.
Warning light on: button activated.

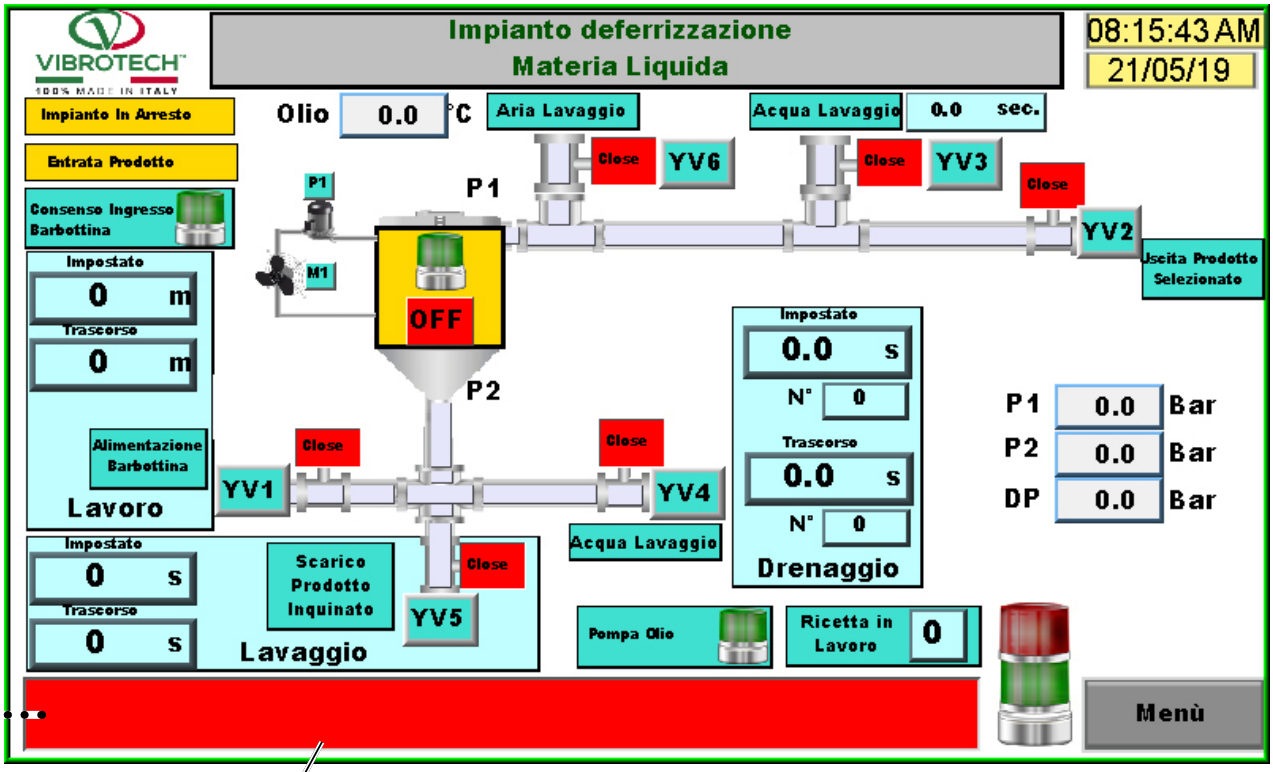
8. Black "MAN/AUTO" selector switch
Allows manual or automatic cycle setting.

9. Emergency button
Red mushroom-shaped emergency button. It is pressed where personnel are subject to dangerous conditions to stop the Machine from operating.
Pressing this button prevents the Machine's auxiliary circuits from being activated, removing power from all moving parts. To reactivate the button, it must be pulled and rotated slightly clockwise.

10. Lockable main switch
Switches the power supply on and off.
- **0** - voltage off
- **I** - voltage on

5.2.1.1 Touch screen panel

Below is the main screen of the touch screen panel from which the following main tasks can be carried out:
- setting the work cycle;
- setting the Machine's washing cycle;
- setting the oil temperature.



This section displays the status of the Machine and any ALARM MESSAGES.

Y-V1. Slip inlet valve
Y-V2. Slip outlet valve
Y-V3. Washing water inlet valve
Y-V4. Drainage water inlet valve
Y-V5. Ferrous particle discharge
Y-V6. Compressed air

The most frequent alarms are listed below; for other alarm messages, please refer to the WHY FILTER OPERATOR PANEL USER MANUAL enclosed with this manual.

ALL_13 OIL TEMPERATURE ALERT: replace the oil filter cartridge (par. 6.4.2).

ALL_18 FILTER FAILURE PRE-ALARM: the oil filter cartridge must be replaced (par. 6.4.2).

IMPORTANT!

The machine is supplied by Vibrotech with "standard" values.
Upon request, the Machine can be supplied to the customer/user with customised values.

5.2.2 Ignition

This is done by setting the main switch to ON.

5.2.3 Start-up

- Switch on the **power** supply by turning the main switch to ON.
- Check that the EMERGENCY stop mushroom button on the side of the Machine is raised.
- Press the "START MAIN CYCLE" button
- The Machine is ready to receive the material.

5.2.4 Normal voluntary stop

From the touch screen, access the dedicated screen and give the command "STOP CYCLE".

5.2.5 Emergency stop

The emergency stop interrupts the operation of the Machine and is controlled by operating the emergency stop control provided by the electrical system fitter. To restart the Machine after an emergency stop, it is essential to unlock the emergency stop control and repeat the entire start-up procedure.

IMPORTANT!

The emergency stop must be performed only be used if there is a danger for operators and not to stop regular operation of the Machine.

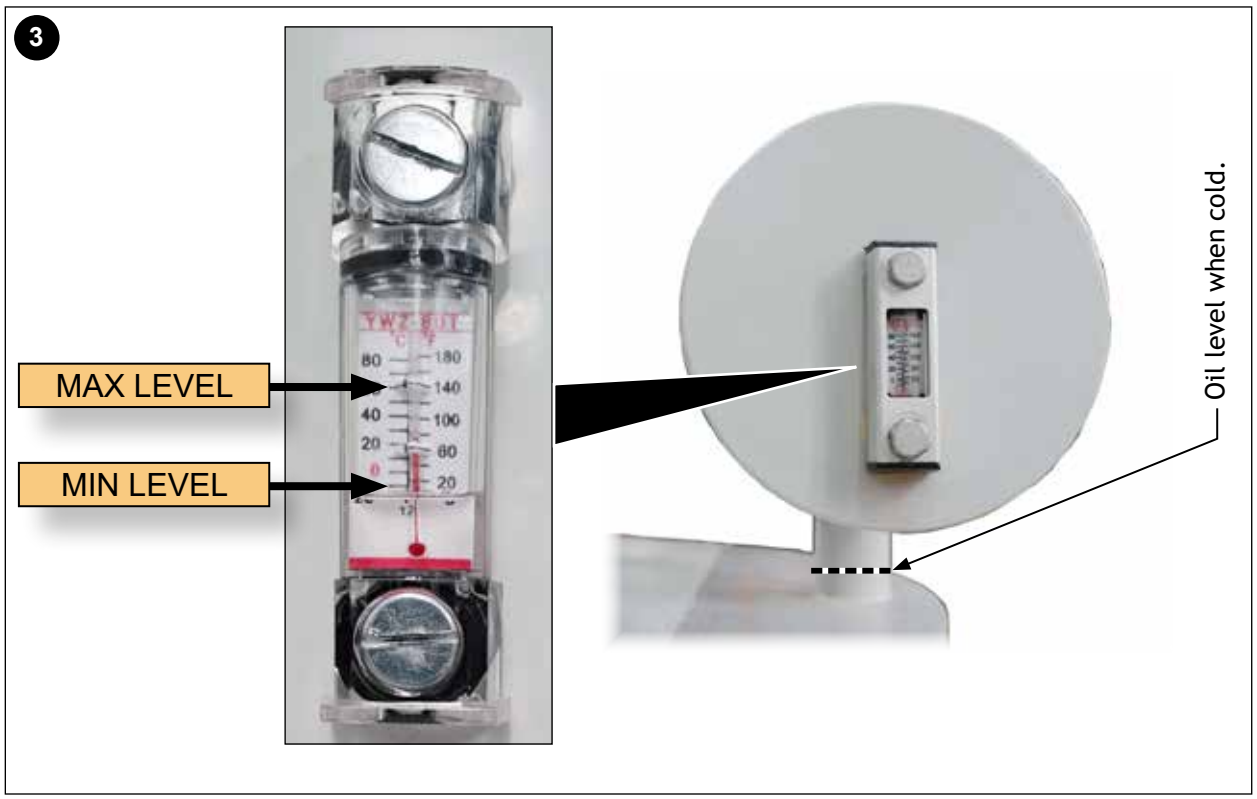
5.2.5.1 Reset after an emergency stop

Resetting the emergency stop button should only be permitted after the cause of the emergency stop has been verified, and only after optimum working conditions have been restored.

1. Eliminate the cause of the emergency stop.
2. Pull and simultaneously rotate clockwise to reset the mushroom-shaped emergency button.
3. From the electrical panel, press the blue "AUX" reset button.
4. Press the "START STOP CYCLE" button to start the cycle.

5.3 Oil level check

1. Procedure to be done when hot.
2. Switch on the Machine (par. 5.2.2).
3. Start the Machine (par. 5.2.3).
4. Make sure that the oil temperature has reached at least 35°C and check that the oil level does not exceed the level of the gauge.
   If it is below the minimum level, top up as indicated in par. 6.4.6.
   If it goes over the maximum level, remove oil as indicated in par. 6.4.7.



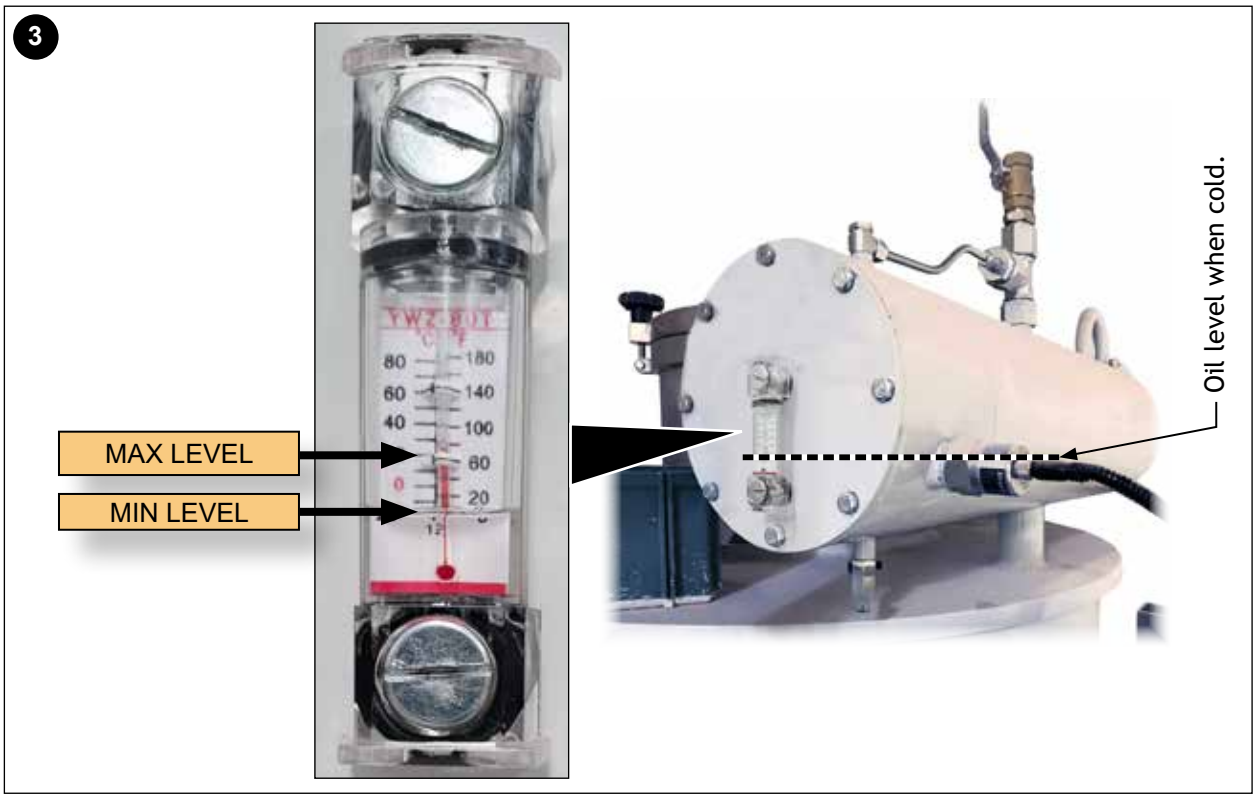
IMPORTANT!

The oil level must be checked when hot. If the oil level is checked when cold, it may be lower than when hot: this value is not reliable.

5. Visually check that there are no oil leaks from pipes or pipe joints.

5.3.1 Oil level check if minimum level sensor present (optional)

1. Procedure to be done when cold.
2. Switch on the Machine (par. 5.2.2).
3. Start the Machine (par. 5.2.3).
4. Make sure that the oil temperature is below 30°C and check that the oil level does not exceed the level of the gauge.
   If it is below the minimum level, an alarm is displayed on the operator panel and it is impossible to start the Machine, in which case top up as indicated in par. 6.4.6.
   If it goes over the maximum level, remove oil as indicated in par. 6.4.7.



IMPORTANT!

The maximum cold oil level must never exceed the minimum level indicated by the Sensor by more than 10 mm.

5. Visually check that there are no oil leaks from pipes or pipe joints.

6 Maintenance

6.1 Safety warnings

DANGER!

- *Maintenance must be entrusted to experienced personnel familiar with the Machine (mechanical maintenance and/or electrical maintenance).*
- *It is forbidden to carry out maintenance work when the Machine is in motion and/or powered up.*
- *Indicate interventions by displaying specific signs.*
- *Wear protective equipment that is suitable for the operations to be carried out.*
- *Adequately illuminate the work area on which maintenance is being carried out. It is forbidden to use matches, cigarette lighters, torches or open flames for lighting.*
- *Keep the maintenance area clean and dry. Remove oil or lubricant stains.*
- *After working on the electrical panel, always close it before resetting the power supply and starting the Machine.*
- *Before restarting the Machine, make sure the protective elements are closed*

6.2 General warnings for good maintenance

To ensure smooth operation and to prevent faults, the maintenance technician must adhere to the intervals indicated in the "**SCHEDULED MAINTENANCE**" table.

At the end of the chapter you will find the "**MAINTENANCE REGISTER**" table, which must be filled in by an appointed Machine operator or by the person carrying out the maintenance work. We recommend keeping it up to date, especially during the warranty period.

It should be remembered that variations in the temperature or operating conditions of the components are particularly burdensome for the latter and it is sometimes advisable to bring forward the time intervals (shown in the table under operating hours, if the environmental and operating conditions require a reduction in the time intervals).

CAUTION!

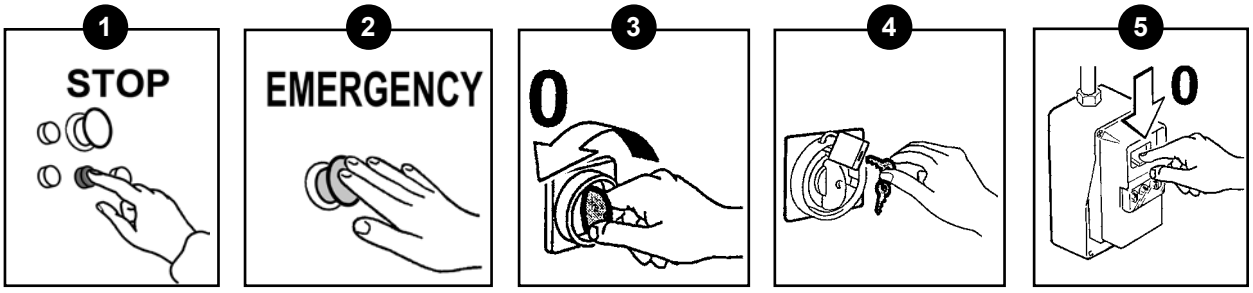
- *Failure to fill in the* "MAINTENANCE REGISTER" *will void the Warranty.*
- *Any defects or damage found must be rectified immediately or reported for subsequent repairs.*
- *In the event of obvious danger for the operator or for the Machine, the system in which the Machine operates must be stopped, and it must not be started before the fault has been repaired.*
- *Keep the Machine clean to optimise performance. Only in a clean and easily accessible Machine is it possible to identify faults, repair them quickly, prevent malfunctions and work in safe conditions.*
- *When disassembling components, avoid getting dust residues into the working areas and the components themselves.*
- *Do not use pieces of sponges, wet and/or abrasive cloths or stringy rags for cleaning. Do not use water jets on electric motors and/or to clean the Machine.*
- *Do not use petrol or flammable solvents for cleaning; always use approved non-flammable and non-toxic commercial solvents.*
- *Do not use compressed air jets to clean the Machine or its components. Dust must be vacuumed paying particular attention to electronical components or using jets of dry air.*
- *When replacing components, it is recommended to use GENUINE SPARE PARTS.*
- *Only use fuses with the prescribed amperage.*
- *Dispose of consumable and auxiliary materials as well as replaced parts in accordance with environmental protection regulations.*

6.3 Safe maintenance procedure

IMPORTANT!

The procedure below:
- *is done from the WHI FILTER touch screen panel;*
- *must be carried out prior to any routine or unscheduled maintenance operation; it involves isolating the Machine from all energy sources.*

1. Stop the operation of the Machine from the touch screen panel.
2. Press the emergency button.
3. Select "O" (OFF) on the main switch on the control panel.
4. **Lock the main switch in place with a padlock and keep hold of the key until maintenance is over.**
5. If maintenance is carried out on electrical parts, disconnect the power supply upstream.
6. **Only the specialised and authorised operator may work on live parts.**



6.4 Routine scheduled maintenance

CAUTION!

Follow the timetable in the table SCHEDULED MAINTENANCE.
Before operating, it is important to comply with the safe maintenance procedure (par. 6.3)

SCHEDULED MAINTENANCE		
INTERVENTION FREQUENCY (working hours)	**OPERATION/INSPECTION**	**PROCEDURE**
Every 24 h	Check protective elements and control systems.	Replace if their wear and functioning is precarious. **In any case, keep them checked, clean and in good condition.**
	Check safety signs	Check the presence and legibility of the adhesive markings applied to the Machine If they cannot be read, they must be replaced by applying identical ones in the same positions
	Clean the Machine	See paragraph 6.4.1
Every 100 h	Replace the oil cartridge	See paragraph 6.4.2
Every 150 h	Clean iron removal grills	See paragraph 6.4.4
	Check hydraulic unit temperature	See paragraph 6.4.5
Every 500 h	Replace the oil filter cartridge	See paragraph 6.4.2
	Check dehydrating salts cartridge	See paragraph 6.4.3
Every 720 h	Hydraulic circuit control	Check that the motor pump turns correctly, in the direction of travel indicated by the arrow on it. Check that the hydraulic power unit is working properly without obstruction, that it is clean and in good condition.
Every 1800 h	Electrical panel control	Check the tightness of all screws on terminals, circuit breakers, relays, contactors and INPUT/OUTPUT boards. ***The main switch power cables in the electrical panel remain LIVE (400 VOLT!) even when the main switch is on "0".***
	Perform grounding check	Check the connection and tightness of the PE terminal
Every year	General inspection	Perform annual maintenance by carrying out the tasks listed above and checking the condition of all mechanical components and electrical equipment.

6.4.1 Machine cleaning

It is good practice to keep the Machine clean in order to avoid both deterioration in product quality and premature wear and damage to moving parts or machine components.
To clean the Machine, use water and, if necessary, non-toxic commercial solvents; **NEVER use petrol or flammable solvents** to clean the Machine.

6.4.2 Replacing the oil filter cartridge

1. Turn the oil filter cartridge (A) anti-clockwise.
2. Pull the cartridge (A) out of its housing.
3. Position the cartridge and turn it clockwise.



6.4.3 Checking and replacing the dehydrating salt cartridge

The condition of the dehydrating salts inside the cartridge **(D)** must be checked every 500 hours.
The correct functioning of the dehydrating salts allows the Machine to perform its work cycle in low humidity conditions, a condition that could prevent it from running smoothly.

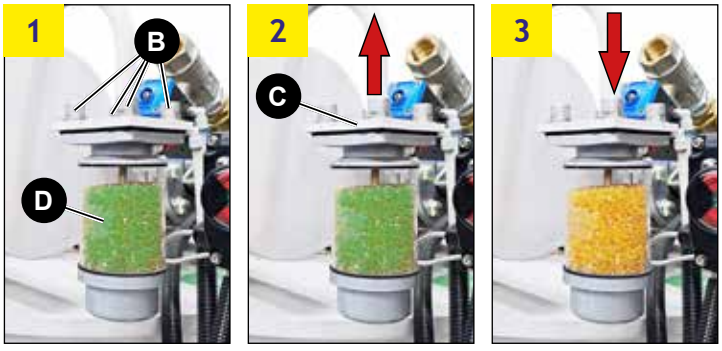
Visually check the dehydrating salts.
Depending on their colouring, two situations may arise:

- ORANGE: the salts are still in an optimal state and no operation is required.
- GREEN: the salts have exhausted their ability to absorb moisture and must be replaced.



SALT REPLACEMENT
Should it be necessary to replace the salts, follow the procedure described below:

1. Remove the fastening screws (B) to remove the upper cover (C) from the cartridge (D).
2. Replace the salts inside the cartridge (D).
3. Replace the cover (C) in place and replace the screws (B).



6.4.4 Removing and cleaning iron removal grills

DANGER!

The procedure described below involves working at height (>1 m from the ground), so before carrying out the procedure you must be equipped with a safety helmet and provide a mobile walkway allowing the operator to access the top of the Machine.

CAUTION!

Suitable lifting equipment (crane, hoist, forklift truck, etc.) must be used to lift the Machine body containing the iron removal grills.

PROCEDURE:

1. Perform the safety maintenance procedure described in par. 6.3.

2. Set up a mobile walkway near the Machine so that the operator can access the cable pit containing the grills pack safely.



CAUTION!

The walkway is not supplied with the Machine.
It is recommended to use a walkway with a chequer plate surface equipped with a guardrail and toe board.

3. Unscrew the locking knobs of the cable pit containing the grills pack.



4. Lift the cover



The illustrations below are indicative.

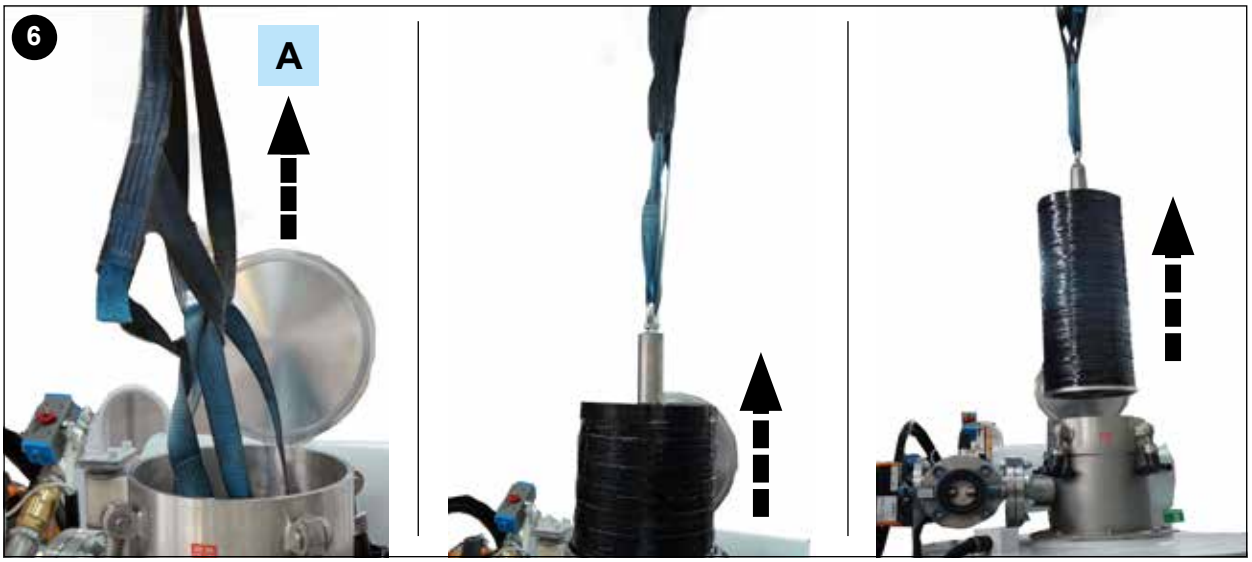
The customer/user must use a lifting system that is suitable for hooking onto the eyebolt (fig. 5) and is appropriate for lifting the load as indicated in the table.

Model	Grills pack weight (A)
90/3	20
200/7	45
250/1	60
400/20	130

5. Insert a strap or the hook of the lifting system into the eyebolt on the grid pack.



6. Lift the grid pack until it is completely out of its housing.



7. Carefully place the grid pack on the floor.



8. Remove the iron removal grills from the main machine body.

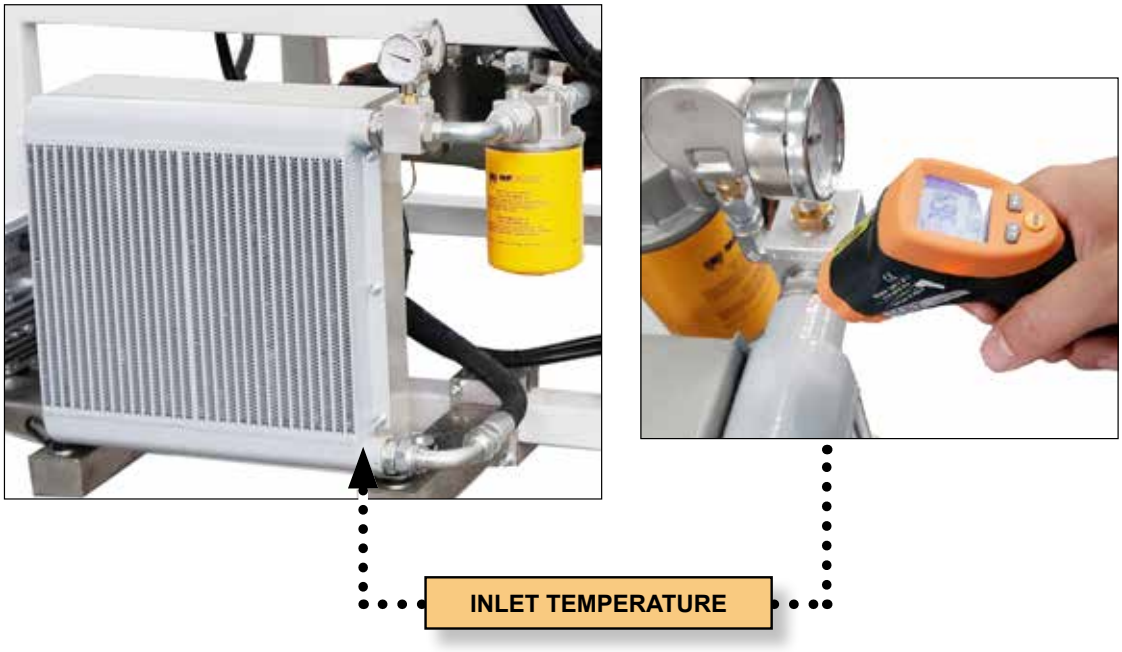


9. Clean the grills with a jet of water.
10. Repeat the above procedure in reverse order to reposition the central machine body with the grills in place.

6.4.5 Temperature control of hydraulic unit

Every 150 working hours, the input temperature of the control unit must be checked to ensure that it matches the display's.
Monitoring the temperature in this way helps to ensure that the temperature sensor is functioning correctly.

This is checked using a digital thermometer (not supplied).



IMPORTANT!

The detected temperature of the INPUT control unit varies depending on the environmental conditions. If the individual temperatures measured are below 65°C, no alarm is displayed and the Machine is functioning correctly.

6.4.5.1 Temperature detection from touch screen panel

INDICATIONS OF TEMPERATURES ABOVE OPTIMAL VALUES

THE INLET OR OUTLET TEMPERATURE IS BETWEEN 65°AND 74°C.
A message is displayed on the touch screen panel (see enclosed Why filter operator panel manual), but the Machine continues to operate.

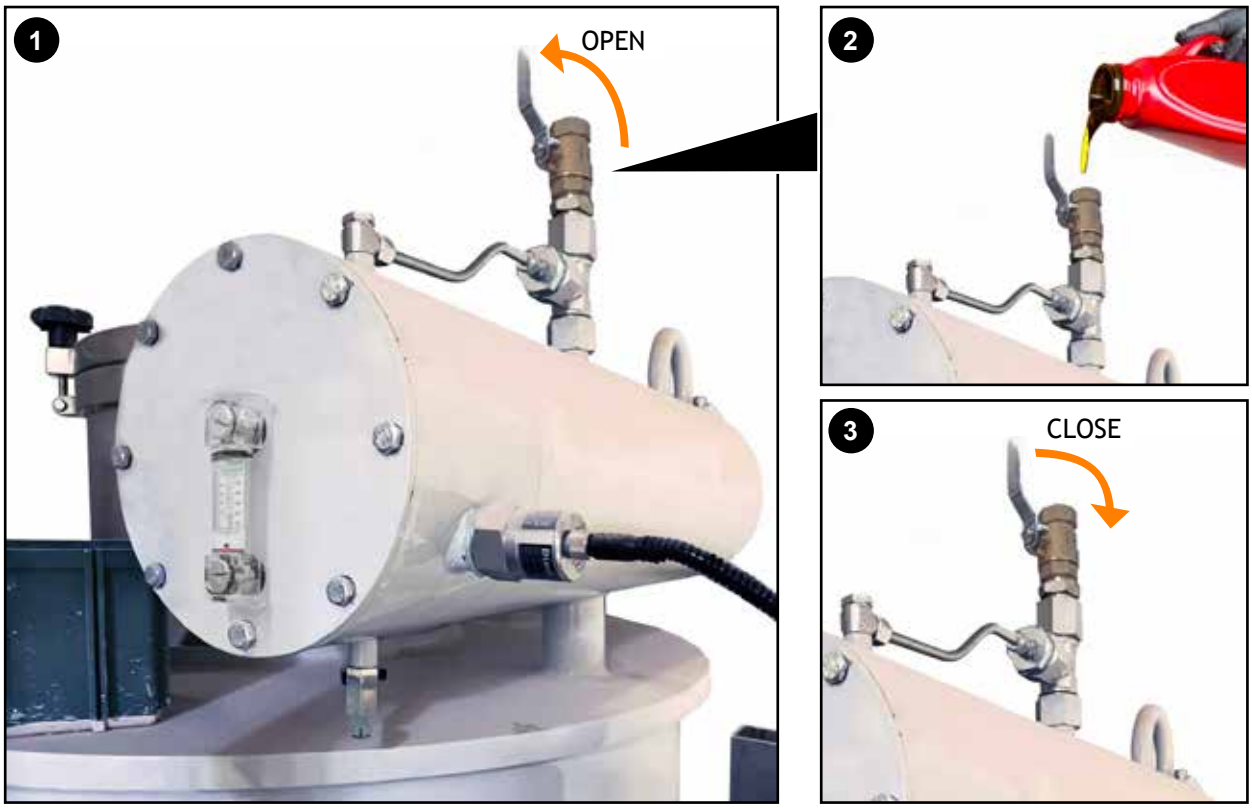
THE INLET OR OUTLET TEMPERATURE IS ABOVE 75° C.
The machine switches off automatically, contact SERVICE.
Once the cause that caused the temperature to rise has been resolved, to restart the Machine, wait for it to cool down and carry out the procedure described below.
1. Press the illuminated blue "AUX" button ("6" par. 5.2.1)
2. Press the "START- STOP CYCLE" button ("6" par. 5.2.1)

6.4.6 Refilling oil

IMPORTANT!

Refilling should only be carried out with the Machine switched off and the oil inside it cold.

1. Open the ball valve at the top of the Machine.
2. Pour the oil into the inlet, use a suitable length rod with a head at the upper end to prevent it from falling into the tank to check that the oil level has reached the correct level (see par. 5.3 o 5.3.1).
3. Once topping up is complete, close the ball valve before starting the Machine.
4. Once the Machine has been started, check the oil level as indicated in par. 5.3.



IMPORTANT!

Once the oil has been introduced, you must wait 5 minutes to see the correct level on the gauge due to the viscosity of the oil itself.

IMPORTANT!

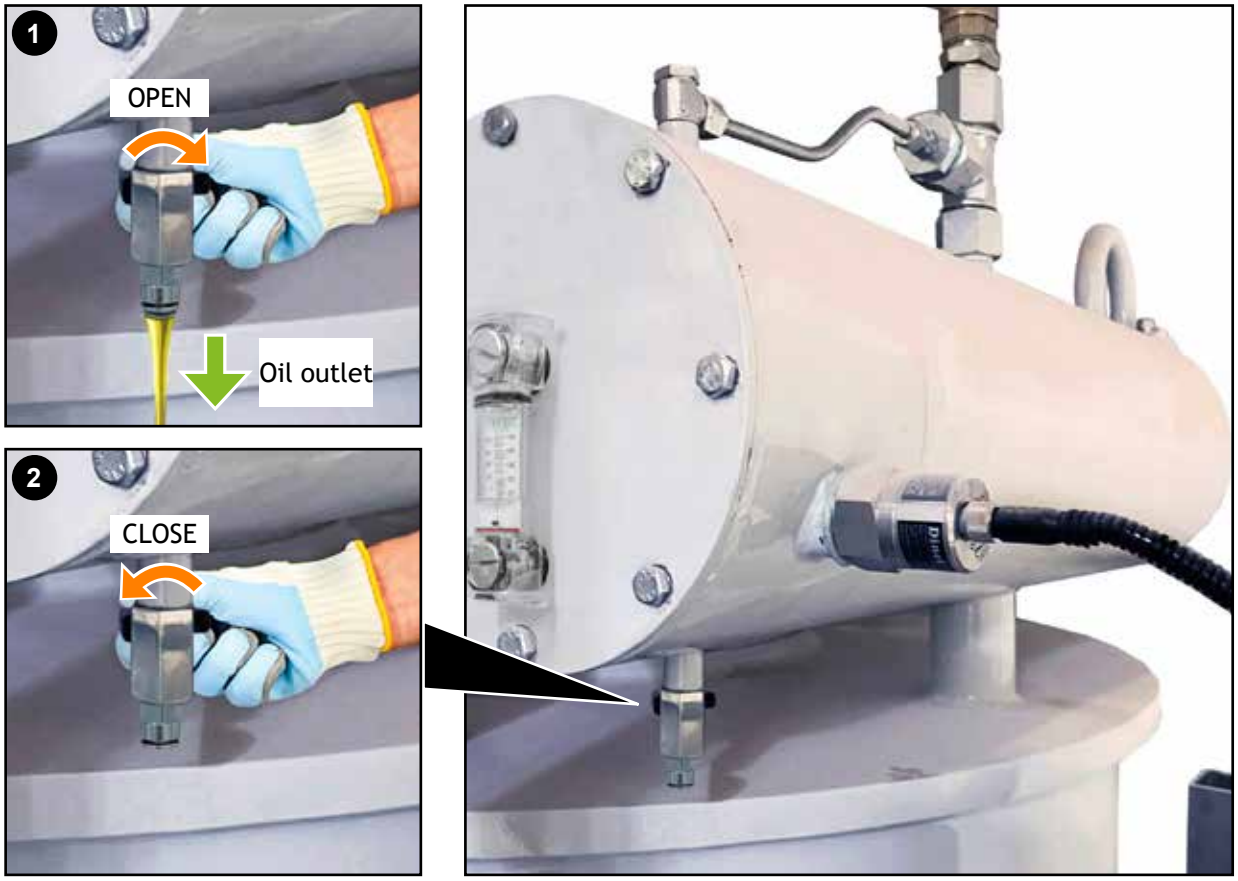
If the oil level has not reached the required level and the oil level Sensor (optional) is present, once the Machine is switched on an alarm message will be displayed on the operator panel and it will not be possible to start the Machine until the required level has been reached (see par. 5.3.1).

6.4.7 Oil draining

IMPORTANT!

Draining should only be carried out when cold and with the oil inside it cold.

1. Open the ball valve underneath the expansion Tank (see figure) to drain the oil, using a suitable length rod with a head at the upper end to prevent it from falling into the tank to regularly check the oil level until it has reached the correct level (see par. 5.3 o 5.3.1).
2. Once draining is complete, close the ball valve before starting the Machine.
3. Once the Machine has been started, check the oil level as indicated in par. 5.3.



IMPORTANT!

If too much oil has been removed and the level does not reach the required level and the oil level Sensor (optional) is present, once the Machine is switched on an alarm message will be displayed on the operator panel and it will not be possible to start the Machine until the required level has been reached (see par. 5.3.1).

6.5 Extraordinary maintenance

IMPORTANT

For all extraordinary maintenance operations, contact SERVICE.

6.6 Problem solving

IMPORTANT

If ALARM messages not described in par. 5.2.1.1 are displayed, please refer to the WHI FILTER OPERATOR PANEL USER MANUAL enclosed with this manual.

6.7 Dismantling

CAUTION!



Dismantling must be carried out by competent personnel trained in the correct intervention and handling methods.
Only use lifting equipment and lifting gear that is appropriate and complies with current regulations and legislation.

If the Machine is to be dismantled, it is recommended to make it inoperative first by following the sequence below.

- Set up a large, clutter-free work area.
- Thoroughly clean the entire Machine, especially the working parts.
- Disconnect the Machine from the mains by removing the power cable from the terminal block in the electrical box.
- Dismantle all parts of the Machine and sort the components to be discarded and to be used.
- Each type of waste material must be processed, disposed of or recycled based on the procedures envisaged by the regulations in force in the country of installation of the Machine.
- Recover waste material in the appropriate containers. Do not discard them into the environment as they could cause a pollution hazard.

6.8 Maintenance log

Write down all routine or extraordinary maintenance work in the following table.

Date	Type of intervention	Time spent	Signature

Date	Type of intervention	Time spent	Signature

6.9 Ordering spare parts

IMPORTANT!

To order spare parts, please refer to Manual No. 2 by downloading it from the VIBROTECH portal We remind you that the customer/user is obliged to always purchase original spare parts (or equivalent parts authorised in writing by the Manufacturer) since the use of non-original spare parts and/or their incorrect assembly release the Manufacturer from all liability, ESPECIALLY FOR SAFETY COMPONENTS.

If necessary, please contact:

VIBROTECH S.r.l.
Operational Headquarters: Via Don Pasquino Borghi, 4 - 42013 S. ANTONINO DI CASALGRANDE (RE) - Italy
Tel. +39 0536 82 37 76 - Fax +39 0536 81 20 09
www.vibrotech.biz - email: service@vibrotech.biz

7 Attachments

7.1 List of attachments

7.1.1 Circuit diagram

7.1.2 Assembly instructions (hydraulic cooling unit)

7.1.3 Why filter operator panel manual

NOTES



VIBROTECH S.r.l.
Registered Office: Via Racchetta, 2 - int. 20 - 42019 Sassuolo (Modena)
Operational Headquarters: Via Don Pasquino Borghi, 4 - 42013 S. ANTONINO DI CASALGRANDE (RE) - Italy
Tel. +39 0536 82.37.76 int. 412 - Fax +39 0536 81.20.09 - www.vibrotech.biz - email: info@vibrotech.biz