



TECHNICAL DOCUMENTATION

TRANSLATION OF ORIGINAL USER INSTRUCTION
MANUAL

DECANTER TL.250-350-500

Mori Tem S.r.l.

Via Leonardo da Vinci, 59 – 50028 TAVARNELLE V.P. (FI)

Tel. 0039/55/8071568 – Fax 0039/55/8071293

E-mail : tem@tem.it – Internet: <http://www.tem.it>

CF e P. IVA 06464360483

DELIVERY LETTER

Dear customer,

We would like to inform you that the equipment dealt with in this manual has been designed, built and tested according to that indicated by applicable mandatory standards, precisely provided in the attached Certificate of conformity.

By means of this manual we intend to describe the sections making it up, the dimensional and technical specifications and the use and maintenance instructions.

We would like to confirm that the equipment entails no risks for the operator if used according to the instructions supplied, if incorporated in a machine in turn declared compliant with the MACHINERY DIRECTIVE 2006/42/EC and provided that:

- ⇒ the installed protections are kept intact;
- ⇒ the safety devices are kept active;
- ⇒ the specific instructions indicated in this manual are supplied to the operators;
- ⇒ periodical maintenance is performed and preservation of components from wear and damage is checked;
- ⇒ the equipment is used within the intended functional parameters and with the machines for which it was designed and built.

Thanking you for having chosen our product, we wish you profitable work.

Signature

The descriptions and illustrations present in this documentation are not binding.
The reproduction, even partial, and disclosure of this document are not allowed without the express consent of the author.
Any infractions will be prosecuted by Law in the intended ways and times.
All the names and trademarks cited in this manual are property of their respective Manufacturers.

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1.0 GENERAL INTRODUCTION

This manual has been drafted as a simple and clear guideline for machine installers, operators and maintenance technicians.

We recommend reading these instructions carefully before starting any activity for the first time.

Though drafted with the utmost care, this manual cannot fully replace the experience of the user who must thereby be suitable for the operations carried out.

The instructions contained herein do not replace, integrate or modify any of the standards, laws and/or decrees in force in the country where the equipment is used.

Any reproduction, adaptation or translation of this manual without prior written consent is prohibited, aside from the cases foreseen by the copyright law.

The technical features contained in this manual are not binding for the manufacturer and they can be changed in future supplies without prior notice.

TEM, in an effort to constantly improve its products, reserves the right to change the contents of this manual at any time without being obliged to modify and/or update the manuals of previous machines and/or systems.

Any modification on machine safety will be promptly transmitted to the customer.

TEM will be pleased to accept any proposal by the Customer aimed at improving the machine and will assess its possible implementation.

1.1 Introduction to this manual

Importance of the manual

- 1) Consider the instruction manual an integral part of the product;
- 2) Guide to the installation, operation, adjustments, maintenance and waste disposal of the machine.

Preserving the manual

- 1) The instruction manual must be considered an integral part of the machine and must be preserved until the machine is scrapped;
- 2) Use the manual without damaging all or part of its contents;
- 3) Do not remove or tear parts of the manual for any reason;
- 4) Keep the manual in a protected, dry and easily accessible place;
- 5) Should the manual be lost or worn, ask for a second copy from the manufacturer or dealer, specifying the machine type, serial number and year of manufacture;
- 6) Should the machine be sold, rented, granted in use or leased, these instructions must be attached to it.

Using the manual

Before starting to perform the operations for which the machine is intended, the operator must have fully read and understood the instructions contained in this manual, paying special attention to its safety devices, to the risks of sound emissions and to the general accident prevention rules foreseen by international directives of legislation in force.

This manual is defined by specific sections with indications and descriptions which can be traced by the index of specific topics.

PLEASE NOTE: All the images present in this manual are purely indicative; the manufacturer reserves the right to modify the machines without updating the images.

1.2 Declaration of having received and viewed the manual

The purchaser must fully fill out the "Declaration of having received and reviewed the instruction manual" in the sheet attached to this manual for the machine warranty which will start from the invoice date; the Company stamp and signature of a legal representative must be applied to it.

A copy of this form must be sent via fax (+39 - (0)55 - 80.71.293), e-mail (in pdf format) to TEM (tem@tem.it) or by regular mail (TEM - Via Cimabue, 4-6 - 50028 Tavarnelle Val di Pesa (FI)) within 15 days of machine delivery.

Failure to return the document within the indicated terms or its partial compilation constitutes an automatic declaration of the integrity of the manual and of the complete and careful viewing of the same and frees TEM from all liability thereof.

1.3 "CE" marking

The CE plate is applied to guarantee that the equipment complies with the requirements of the Machinery Directive 2006/42/EC.

Never remove the plate from its original position chosen by the manufacturer.

Never change or forge the technical data provided.

Do not clean the plate with sharp objects (e.g. metal brushes) to avoid ruining the data.

If the plate wears with use or any of its data becomes illegible, ask the manufacturer for a replacement bearing the data contained in these instructions.

Should the declaration of conformity attached to this manual not be present or be lost, you can ask us for a copy indicating the serial number of the machine displayed on the CE plate.

The "CE Declaration of Conformity" is attached to this manual.

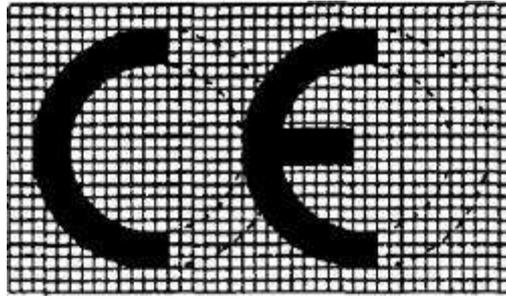


Figure 1 -Declaration of conformity applied to the machine

1.4 Warranty

The machine/s are supplied with TEM's 24-month warranty from the date of delivery (date of issuance of the packing list);

When 24 months from delivery have elapsed, the warranty terminates and any repairs, replacements or service will be carried out charging full expenses according to our current rates;

The warranty does not cover glass parts, knobs, fuses, elastic parts and removable parts made of plastic or parts and components such as microswitches, solenoid valves, etc.;

The warranty does not cover faults caused by tampering or interventions not carried out by TEM personnel or not authorised by them;

The TEM warranty grants the customer the right to have components or parts which are faulty due to poor working quality replaced as quickly as possible;

Damage compensation or production stoppage is excluded from the warranty. Shipping fees, from and to our TAVARNELLE V.P. factory, customs duties, import/export expenses and any other taxes or fees relative to the delivery of machine parts and components covered by warranty to our factory and re-delivery to destination are borne by the customer;

The warranty does not include consumables such as lubricants and cleaning materials, materials or parts subject to wear, and those damaged by improper operation of the machine;

The manufacturer reserves the right to repair or replace faulty parts at his choice;

The warranty does not cover damaged parts caused by transportation, faults caused by poor or incorrect installation or maintenance, incorrect electric or pneumatic supply, carelessness, negligence or incorrect use, and anyway nonconforming with the warnings provided in the instruction booklet;

This warranty will not be applicable for defects resulting from improper or inadequate maintenance, unauthorised modifications or use outside of the specifications indicated for the machine;

The warranty terminates in case of modifications performed on the machine not expressly authorised by the manufacturer;

Tampering, unauthorised replacement of machine parts and use of consumables other than those intended and indicated in the manual could represent an accident hazard and free the manufacturer from all civil and penal liability;

The manufacturer is also free from all liability for accidents which occur to operators ensuing unintended manoeuvres or which this manual advises against;

Damage compensation or production stoppage is excluded from the warranty.

PLEASE NOTE No other warranty is expressed or implicit.

1.5 References

Manufacturer	<p>Mori Tem S.r.l. Via Leonardo da Vinci, 59 – 50028 TAVARNELLE V.P. (FI) Tel. 0039/55/8071568 –Fax 0039/55/8071293 E-mail : tem@tem.it – Internet: http://www.tem.it CF e P. IVA 06464360483</p>
Machine name	DECANTER 250-350-500
Main normative references	<p>Machinery Directive 2006/42/EC EMC Directive 2014/30/EC Low Voltage Directive 2014/35/EU UNI EN ISO 12100</p>
Service centre	The only one at the manufacturer's head office
Manual	January 2016
Revision	Rev.1

Table 1 – References

1.6 Glossary

Hazard: Potential source of injury or damage to health;

Risk: Combination of the likeliness and severity of an injury or damage to health which can arise in a dangerous situation;

Danger zones: Any zone within and/or around machinery in which a person is subject to a risk to his health or safety.

Exposed person: Any person wholly or partially in a danger zone.

Operator or worker: The person or persons installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery.

Expert operator or qualified personnel: Operator in charge of fine tuning and putting in service, lubrication, greasing, routine and extraordinary maintenance, expressly authorised by the "Plant manager".

Expert operator or qualified electric personnel: Operator in charge of fine tuning and putting in service, maintenance of the electric part expressly authorised by the "Plant safety manager".

Protective device: Device which reduces the risk, either alone or in conjunction with a guard;

Intended use: Use of machinery in accordance with the information provided in the instructions for use;

Reasonably foreseeable misuse: The use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour.

2.0 SAFETY

2.1 Intended use

The intended use of the machine in compliance with the information in the instructions;

Only professional operators who have been trained to use the machine and who have read this manual must be allowed to use the machine.

Operators authorised to use the machine prepare the machine for service, start the machine and control and adjust the work parameters. All the operations must be performed in accordance with the operating commands and procedures described in the instruction manual.

The machine was designed to extract olive oil, and separate and drain process waste.

2.2 Reasonably predictable improper use

Reasonably predictable improper use is considered any other use of the machine that is not specified in the instructions, but which may derive from easily predictable human behaviour.

On the basis of the manufacturer's experience, the machine should not be used in the following cases of improper use.

The manufacturer declines any responsibility in the case of improper use of the machine for which it was not designed and built.

The safety regulations and instructions in this manual must always be scrupulously observed. In particular, the operating limits specified in the manual must be observed. Unauthorised personnel must not be allowed near the equipment while it is being used.

Only suitably trained operators equipped with their own personal protective equipment should be allowed to use, service and repair the machine.

The manufacturer shall also be relieved of liability in the following cases:

- Incorrect installation;
- Improper machine/plant use;
- Tampering;
- Tampering with or bypassing the protective systems, also temporarily.
- Unauthorised modifications;
- The use of non-original spare parts;
- Non-compliance with the instructions provided;
- Non-observance of the maintenance schedule;
- Exceptional events;
- Use by operators who have not reached the minimum age required by the laws in force for work in the respective countries the machine is used in.
- Use by operators who have not been previously trained and informed of every risk and the residual machine risks as well as safety.
- Not using the Personal Protective Equipment (PPE) required by the instructions and the rules and regulations in force in the country the machine is used in.
- Using the machine also when it shows signs of malfunctioning or is partially faulty.

- Using the machine in a way which is not compliant with its limits of use (materials, speed, etc.).
- The simultaneous use of the machine by two or more operators who could put each other in danger, or put other exposed persons in danger.
- If used by the machine operator who fails to check that there are no exposed persons in the danger zones of the machine before using the controls.

Using the machine is forbidden:

- In places open to the public;
- In places where there is a risk of explosion and/or fire;
- In places contaminated by agents such as dust, acids, corrosive gasses, etc.;
- In places where there is the possibility of exposing it to radiation.

The work area must be cleaned with the machine stopped and with the electrical power switched off.

In normal conditions of use, removing the safety systems or protective covers is strictly prohibited.

2.3 User's responsibility

The Company using the machine must check that the operators doing the various jobs:

- have read and understood the use and maintenance instructions;
- are suitably trained for the jobs to be done, so they can do the same safely;
- have received specific training on how to use the machine properly;
- have been equipped with suitable personal protective equipment;
- are in a fit physical and mental condition (not under the effect of alcohol, medication or drugs).

2.4 Specific safety instructions

- The Machine must not be used for any other use except for that described in paragraph 3.2;
- Do not remove any safety system and do not attempt to deactivate or bypass the preventive and safety function of the same;
- Do not use any mechanical element to deactivate any kind of interlocking protective system;
- Always keep the machine serviced and in an efficient working condition;
- Regularly check (at least once a year) that none of the bolts on the load-bearing structures, covers, doors or motor connections have worked loose;
- Do not hold cloths, pieces of fabric or anything else near rotating parts of the machine.
- Only wash the machine with non-toxic products suitable for foodstuffs;
- Before doing any maintenance or removing the protective guards, it is obligatory to:
- Turn the electrical power off by opening the power line circuit breakers of both the main power board and the auxiliary power board, locking them with a padlock and giving the key of the padlock to the technicians doing the repairs;
- Check the mushroom-shaped emergency stop buttons have been pressed and locked;

- Place a sign on the power board warning “Machine being serviced”.
- Before starting the machine, check the electrical power line is protected by equipotential protection circuit breakers and the section and insulation of the conductors is that required by regulations;
- All the personnel who will use, service and install the machine must know the safety regulations and be in perfect physical and mental conditions;
- Anyone who is not specifically authorised to use the machine must be prevented from gaining access to the same;
- If any unusual noise or anomalous operation is noticed when using the machine, stop all moving parts and check to see where the problem is coming from. In any case, to prevent damage if mistakes are made when checking or controlling the machine, contact MORI TEM for explanations.

2.5 Job qualifications

In accordance with the manufacturer's risk assessment, the following table sums up how personnel must be qualified for the jobs done on the machine. The qualifications: “machine OPERATOR”, “MAINTENANCE TECHNICIAN”, “SPECIALIZED TECHNICIAN” and “MANUFACTURER'S TECHNICIAN”, are used to provide a clearer interpretation of the term “OPERATOR” as defined by Machinery Directive 2006/42/EC.

JOB	ORDINARY PERSON	OPERATOR	MAINTENANCE TECHNICIAN	SPECIALIZED TECHNICIAN	MANUFACTURER'S TECHNICIAN
Pass nearby or stop near the machine	☑	☑	☑	☑	☑
Transporting, unloading and storage	⊖	⊖	⊖	☑ (1)	⊖
Installation and assembly	⊖	⊖	⊖	☑	☑
Putting the machine into service	⊖	⊖	⊖	☑	☑
Use	⊖	☑	☑	☑	☑
Non-specialized maintenance (cleaning, inspecting)	⊖	☑	☑	☑	☑
Specialized maintenance (adjustments and replacing parts)	⊖	⊖	☑	☑	☑
Fault-finding and repairs	⊖	⊖	☑	☑	☑
Dismantling and scraping	⊖	⊖	⊖	☑ (2)	⊖
	A	B		C	
PERSONNEL TRAINING LEVEL					
A) UNTRAINED PERSONNEL B) TRAINED C) TRAINED (EXPERT TECHNICIAN)					

Key: ☑ Allowed ⊖ Not allowed

NOTE

(1): Technician specialized in moving loads.

(2): Technician specialized in waste disposal.

2.6 Workplaces

The work area must never be occupied in a way that interferes with the operator's free movement.

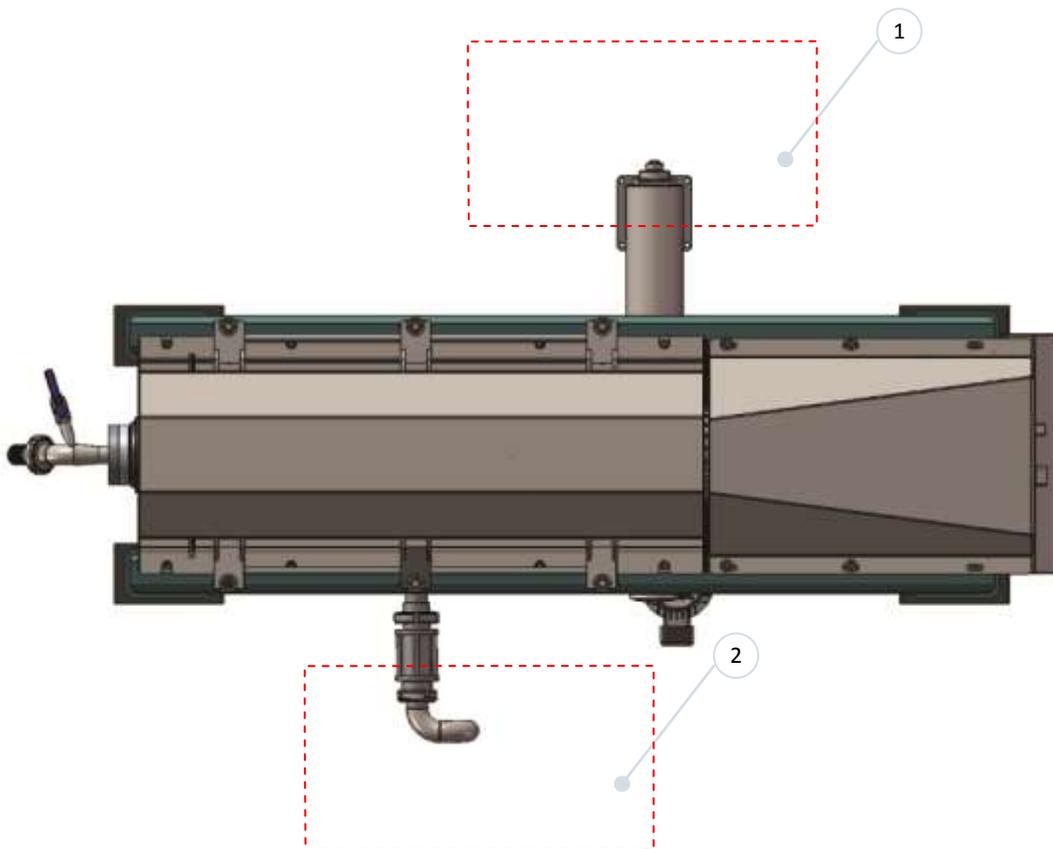
Operators must be able to gain immediate access to the machine in an emergency.

Access to the above area is forbidden for anyone who is not a machine operator, to prevent hazards caused by distraction or carelessness at work.

It is therefore recommended that the operator keeps the work area free of any tools and forbids any unauthorized access in order to work in safe operating conditions.

Workplace layout (OPERATOR)

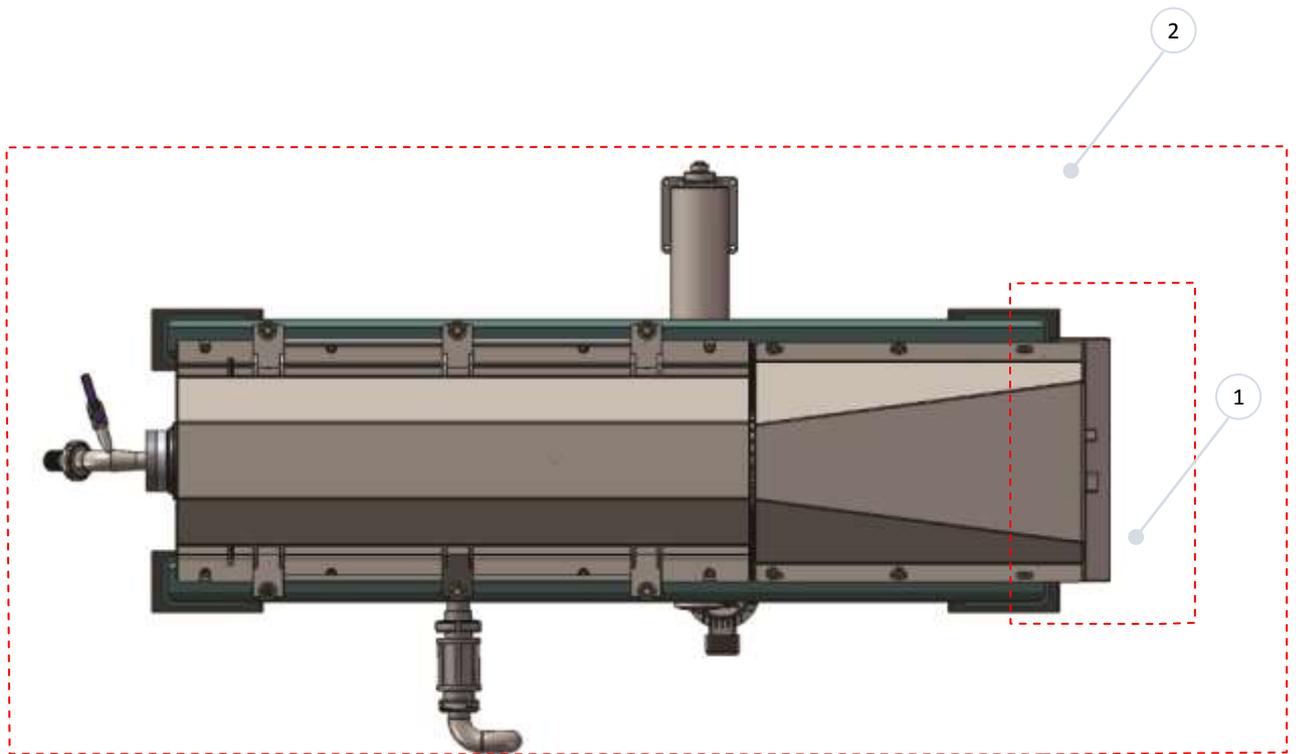
Operators must only occupy the external areas of the machine shown in the following figure, and gain access to the zones protected by mobile protective covers to perform the operations described, using the appropriate openings left for this purpose.



Ref.	Description of the work station
1	WASTE DISCHARGE The zone is used to move the recipients used to collect the waste.
2	OIL COLLECTION The zone is used to move the recipients used to collect the oil.

Workplace layout (MAINTENANCE TECHNICIAN)

The maintenance technicians must perform the maintenance operations described in the areas of the machine shown in the following figure, and only gain access to the zones protected by fixed and mobile protective covers for the operations described after having disconnected the machine from all its energy sources and checked there is no residual energy accumulated anywhere in the machine (ex. charges in condensers, accumulated pressure, etc.).



Ref.	Description of the work station
1	<p>ELECTRICAL BOARDS ONLY specialised electricians qualified to do electrical maintenance can gain access to the area inside the electrical board.</p>
2	<p>MACHINE External and internal area to which only specialized electrical and/or mechanical maintenance technicians can gain access.</p>

2.7 Protective measures adopted

- This paragraph contains information on the protective measures adopted to eliminate or reduce the risks related to the machine.
-
- When a protective measure adopted does not completely eliminate a risk, but a lesser risk remains, this is described in the manual as a residual risk.

The protective measures adopted must be checked and effectively maintained during the entire working life of the machine.

- Perform the periodic checks described in the manual.
- It is forbidden to remove or even temporarily bypass the protective measures (ex. protective covers, photocell barriers, etc.).

Layout of protective measures adopted

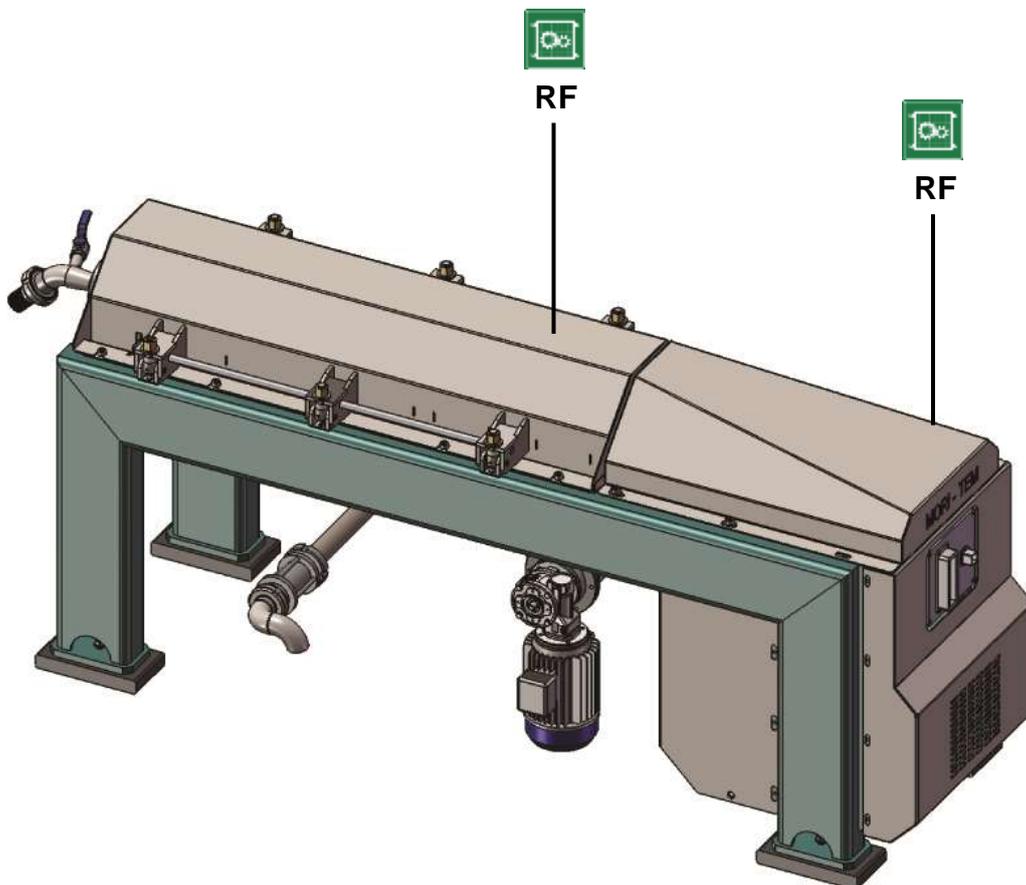
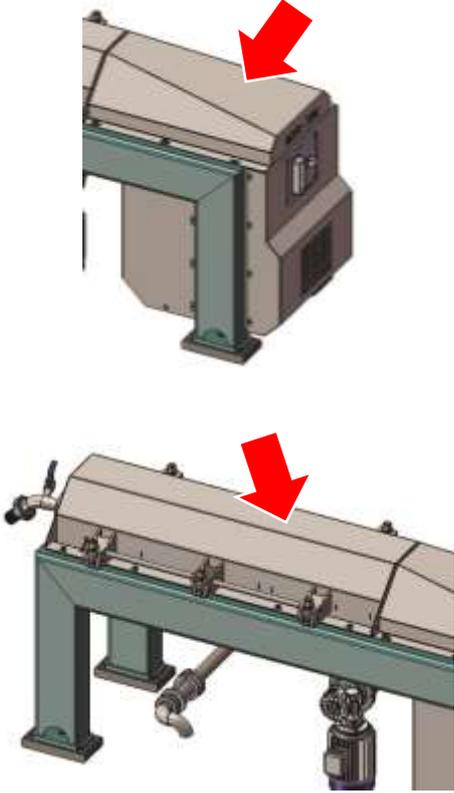


Table of protective measures

MEASURE	TYPE / Function	Photo / notes	CHECK
<p>RF</p> 	<p>FIXED PROTECTIVE COVER Protection over moving machine members consisting of fixed panels which can only be removed with tools (mesh and/or sheet steel).</p>	<p>DECANTER TRANSMISSION FIXED PROTECTIVE COVER</p> 	<p>B</p>

2.8 Checking the protective measures adopted

In accordance with paragraph 1.7.1 of European Directive 2006/42/EC, the following information and warnings are provided on the machine.

The non-observance of any instructions because a safety label has become illegible, been lost or is simply not observed, can cause serious accidents.

- It is obligatory to know and observe the information and warnings on the machine in compliance with the meaning and the actions described in this instruction manual.
- The information and warnings on the machine must be kept in a good condition for the entire operational life of the machine; for this purpose some specific instructions for performing checks are given in the following paragraphs.
- The manufacturer will not be held responsible under any circumstances for the non-observance of the instructions on the machine and in the manuals supplied with the same.

Ref.	MEASURE	CHECKING METHOD	FREQUENCY
B	Fixed and/or movable protective covers	<ul style="list-style-type: none"> • Check if any part of the protective cover has been lost or damaged, in particular if this could reduce its effectiveness in terms of safety (ex. reduction of its resistance to impact, scratches on glass, etc.) • Replace parts subject to wear, in particular checking for any wear in joints or fastening points. • Check there is no damage caused by corrosion, temperature changes or chemicals. • Check no changes have been made to the safe distances and to the sizes of the openings. 	MONTHLY

Summary table of information and warnings

Ref.	PICTOGRAM	INSTRUCTIONS / WARNINGS
SL01		Maintain a safe distance to avoid dangerous direct or indirect contact with live parts. Observe safety regulations and use suitable Personal Protective Equipment (PPE) such as gloves offering protection against electric shocks.
SL02		Do NOT remove the protective covers protecting moving machine members. Only work on the machine with the protective covers removed if the machine has been disconnected from the electrical power line.
SL03		Beware of moving machine members when the machine is operating. Do NOT put your hands into the slots used to insert the product or near moving machine members.

2.9 Protective measures that come under the user's responsibility

Symbol	Description	Technical standard
	<p>Full body protection (1, 2, 3, 4, 5 6, 7)</p>	<p>1) UNI EN ISO13688 Protective clothing. General requirements.</p>
	<p>Always wear suitable protective clothing for the job being done.</p> <p>The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>2) UNI EN ISO 342 Garments and clothing combinations for protection against cold</p> <p>3) UNI EN ISO 11612 Garments that protect the body from heat and flame</p> <p>4) UNI EN 943-1-2 Protective clothing against chemicals</p> <p>5) UNI EN 13034 Protective clothing against liquid chemicals</p> <p>6) UNI EN 1149 Protective Clothing - Electrostatic Properties</p> <p>7) IEC EN 61482-1-2 Protective clothing against the thermal hazards of an electric arc</p>
	<p>Head protection</p>	<p>UNI EN 397 Industrial safety helmets</p>
	<p>Always wear a safety helmet when lifting and positioning the machine and in all cases when there is the risk of objects falling from a height.</p>	

Symbol	Description	Technical standard
	<p>Hand protection (1, 2, 3)</p>	<p>1) UNI EN 374 Protective gloves against chemicals and micro-organisms</p>
	<p>Always wear protective gloves whenever performing operations in which you could be exposed to risks. The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>2) UNI EN 388 Gloves giving protection from mechanical and electrostatic risks</p> <p>3) UNI EN 407 Protective gloves against thermal risks</p>
	<p>Eye protection</p> <p>Always wear eye protection when performing operations in which there is the risk of materials being projected or exposure to splashes or jets of liquids.</p>	<p>UNI EN 166 Personal Eye-protection - Specifications</p>
	<p>Ear protection (1, 2)</p>	<p>1) UNI EN 352-1 Ear muffs</p>
	<p>Use personal protective equipment for the ears in accordance with the noise risk assessment in the workplace and the regulations in force in the country you are working in. The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>2) UNI EN 352-2 Earplugs</p>
	<p>Foot protection (1, 2, 3)</p>	<p>1) UNI EN ISO 20345 Safety shoes</p>
	<p>Always wear safety footwear. The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>2) UNI EN ISO 20346 Protective footwear</p> <p>3) UNI EN ISO 20347 Occupational footwear</p>

	<p>Respiratory protective devices (1, 2, 3, 4)</p> <hr/> <p>Always wear devices protecting the respiratory tract when cleaning the machine with solvents or chemical products.</p> <p>The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>1) UNI EN 149 Filtering halfmasks to protect against particles</p> <p>2) UNI EN 405 Valved filtering half masks to protect against gases or gases and particles</p> <p>3) UNI EN 143 Particle filters</p> <p>4) UNI EN 14387 Gas filters and combined filters</p>
	<p>Protection against falls from a height (1, 2, 3, 4, 5, 6, 7, 8)</p> <hr/> <p>Always wear a safety body belt and harness when working at a height.</p> <p>The column on the right lists the standards of reference on the basis of the required protection.</p>	<p>1. UNI EN 353-1-2 Guided fall arrestors</p> <p>2. UNI EN 354 Lanyards</p> <p>3. UNI EN 355 Energy absorbers</p> <p>4. UNI EN 360 Guided type fall arresters including a flexible anchor line</p> <p>5. UNI EN 361 Full body harnesses</p> <p>6. UNI EN 363 Fall arrest systems</p> <p>7. UNI EN 795 Anchor devices</p>

2.10 Using PPE

Phase								
Operation								
Transportation								
Moving and transporting the machine	X (1)	X	X (2)			X (1)		
Assembling, installing and putting the machine into service								
Assembly/disassembly	X (1)		X (2)			X (1)		
Adjustments								
Washing the machine for the first time	X (1)		X (1)	X		X (1)		
Positioning the machine	X (1)		X (2)			X (1)		
Adjusting the nozzles	X (1)		X (2)			X (1)		
Use								
Starting the work cycle	X (1)		X (2)			X (1)		
Stopping the work cycle	X (1)		X (2)			X (1)		
Emergency stop	X (1)		X (2)			X (1)		
Normal operation	X (1)		X (2)			X (1)		
Using the controls	X (1)		X (2)			X (1)		
Oil, paste drain	X (1)		X (1)			X (1)		
Maintenance								
Various operations, inspections, cleaning, etc.	X (1)		X (2)	X		X (1)		
Working at a height	X (1)		X (2)			X (1)		X (5)
Lubricating/greasing	X (1)		X (1)	X		X (1)	X (1)	
Working on the electrical system	X (1)		X (2)			X (1)		
Working on the air system	X (1)		X (2)	X		X (1)		
Removing toxic/noxious substances after an accidental spillage	X (1)		X (1)	X		X (1)	X (1)	
Replacing worn parts and adjusting components	X (1)		X (2)			X (1)		

Phase								
Operation								
Changing and/or unblocking a jammed decanter drive belt.	X (1)		X (2)			X (1)		
Washing the machine	X (1)		X (1)	X		X (1)		
Fault-finding/anomalies								
Removing blockages	X (1)		X (1)	X				
Faulty components	X (1)					X (1)		
Escape and rescue	X (1)		X (2)			X (1)		
Dismantling, scrapping, disposal								
Waste disposal when scrapping	X (1)		X (1) X (2)	X		X (1)		

2.11 Warnings on residual risks

In compliance with paragraph 1.7.2 of European Directive 2006/42/EC, the remaining residual risks are described despite the fact that protective measures have been included in the design phase and additional protective measures have been applied.

The following paragraphs describe the residual risks in terms of the working life of the machine:

N.B.: When assessing the risks, the manufacturer, in compliance with the laws in force, did not allow for (not had any information on) any risks related to the workplace and specific work procedures adopted by the user.

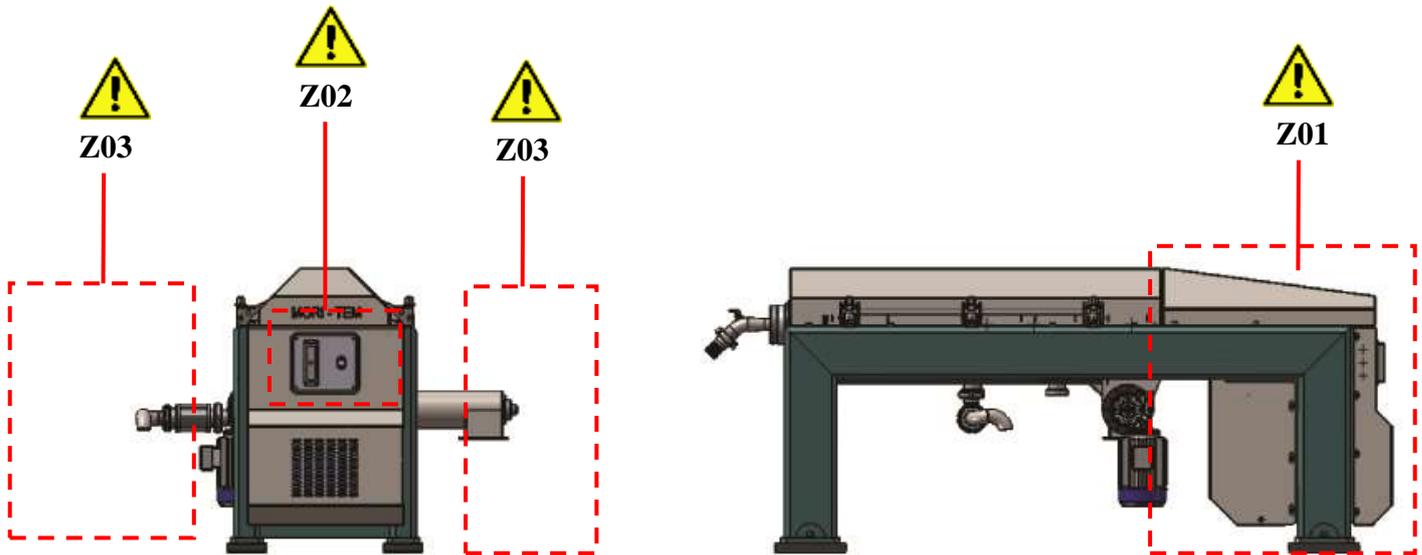
N.B.: These abbreviations are used in the risk sheets in the following paragraphs:

OrdP = Ordinary Person
 SpecT = Specialized Technician
 ManT = Manufacturer's Technician
 OP = Operator
 MA = Maintenance technician
 Danger zones

Ref.	Description	Note
Z00	All zones	The risk may be present in all zones.
Z01	Electrical equipment	Electrical boards and boxes on board the machine containing live parts. Only specialised electrical technicians can work on electrical equipment. N.B.: The outer part of the electrical board can only be reached by the operator to turn the disconnecting switch and machine on/off and use the machine's controls.

Ref.	Description	Note
Z02	Transmission	Zone in which there is the transmission of motion
Z03	Oil and waste collection	The zone in which operator collect the waste and the oil
Z04	Transmission zone	Zone on the machine with the DECANTER motor and drive belts.
Z05	External area	The external area around the machine where the operator normally stands when operating it, and to do maintenance.

Zone layout



Any phase

Operation	Passing by or remaining near danger zones		
Person:	OrdP	Zones	Z00
Dangerous event	Various types of events depending on the work cycle of the machine and the work environment.		
Danger (Origin - Consequence)	Sources of danger on the machine or parts of the same.		
	Hazards deriving from the effects produced by sources of danger on the machine or parts of the same.		
ATTENTION	Residual risk		
	Ordinary persons who have not been trained may be exposed to various risks deriving both from the machine and the work environment.		
	Instructions		
	Ordinary persons who for whatever reason pass by or remain near machinery must always be accompanied by a trained person informed of the relevant risks, whose duty is to supervise ordinary persons. The employer must limit access for ordinary persons to danger zones using suitable company procedures.		

Transportation

Operation	Moving and transporting the machine		
Person:	SpecT	Zones	Z00
Dangerous event	Contact with sharp parts that could cut, sharp corners and edges of the machine.		
Danger (Origin - Consequence)	Sharp parts that could cut		
	Cutting of hands or arm		
ATTENTION	Residual risk		
	Exposure of maintenance technician and specialised technician to mechanical risks during transportation, assembly or disassembly.		
	Instructions		
	<ul style="list-style-type: none"> - The operation must only be performed by an expert person with the relevant know-how and experience, so they are able to analyse the risks and avoid the hazards that the job may entail. - Delimit the area of operations and forbid access to any unauthorised persons. - Follow the instructions for the operation to perform. - The employer should only use an expert person for the transportation, assembly or disassembly operations. - Do not perform any maintenance operations that are not described in the instructions supplied or operations which might require specific knowledge and the manufacturer's assistance. 		
	PPE		
See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"			

Operation	Moving and transporting the machine		
Person:	SpecT	Zones	Z00
Dangerous event	Contact with sharp parts that could cut, sharp corners and edges of the machine.		
Danger (Origin - Consequence)	Sharp parts that could cut		
	Cutting of hands or arm		
ATTENTION	Residual risk		
	Exposure of maintenance technician and specialised technician to mechanical risks during transportation, assembly or disassembly.		
	Instructions		
	<ul style="list-style-type: none"> - The operation must only be performed by an expert person with the relevant know-how and experience, so they are able to analyse the risks and avoid the hazards that the job may entail. - Delimit the area of operations and forbid access to any unauthorised persons. - Follow the instructions for the operation to perform. - The employer should only use an expert person for the transportation, assembly or disassembly operations. - Do not perform any maintenance operations that are not described in the instructions supplied or operations which might require specific knowledge and the manufacturer's assistance. 		
	PPE		
	See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"		

Operation	Moving and transporting the machine		
Person:	SpecT	Zones	Z00
Dangerous event	Any falling load when moving also after a cable used to lift the load breaks.		
Danger (Origin - Consequence)	Falling objects		
	Crushing of body and head		
WARNING	Residual risk		
	The person moving and transporting the load may be exposed to the risk of moving parts falling.		
	Instructions		
	<ul style="list-style-type: none"> - The operation must only be performed by an expert person (EXP) with the relevant know-how and experience, so they are able to analyse the risks and avoid the hazards that the job may entail. - Delimit the area of operations and forbid access to any unauthorised persons. - Follow the instructions provided for lifting and moving the load. - The employer should only use an expert person for moving and transporting operations. 		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Assembling, installing and putting the machine into service

Operation	Assembly		
Person:	SpecT MA	Zones	Z00
Dangerous event	Contact with sharp elements or edges of the machine		
Danger (Origin - Consequence)	Sharp parts that could cut		
	Cutting of hands or arm		
ATTENTION	Residual risk		
	Exposure of maintenance technician and specialised technician to mechanical risks during transportation, assembly or disassembly.		
	Instructions		
	<ul style="list-style-type: none"> - The operation must only be performed by an expert person with the relevant know-how and experience, so they are able to analyse the risks and avoid the hazards that the job may entail. - Delimit the area of operations and forbid access to any unauthorised persons. - Follow the instructions for the operation to perform. - The employer should only use an expert person for the transportation, assembly or disassembly operations. - Do not perform any maintenance operations that are not described in the instructions supplied or operations which might require specific knowledge and the manufacturer's assistance. 		
	PPE		
See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"			

Operation	Assembly		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	- Contact with live parts (direct contact) - Contact with elements that may become live in the case of a fault (indirect contact)		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) to perform this work, in accordance with the definition of IEC 11-27.		
	- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Operation	Assembly		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Fire caused by electrical components and subsequent contact with flammable material		
Danger (Origin - Consequence)	Fire		
	Burning Burn		
WARNING	Residual risk		
	Risk of fire due to possible anomalies in the electrical system and subsequent contact with flammable material		
	Instructions		
	- The employer must provide fire-fighting equipment near the electrical boards		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Operation	Assembly		
Person:	SpecT MA	Zones	Z00
Dangerous event	Any falling load when assembling also after a cable used to lift the load breaks.		
Danger (Origin - Consequence)	Fall from a height Position high off the ground		
	Crushing of body and head		
WARNING	Residual risk		
	Exposure of maintenance technician and specialised technician to mechanical risks during transportation, assembly or disassembly.		
	Instructions		
	<ul style="list-style-type: none"> - The operation must only be performed by an expert person with the relevant know-how and experience, so they are able to analyse the risks and avoid the hazards that the job may entail. - Delimit the area of operations and forbid access to any unauthorised persons. - Follow the instructions for the operation to perform. - The employer should only use an expert person for the transportation, assembly or disassembly operations. - Do not perform any maintenance operations that are not described in the instructions supplied or operations which might require specific knowledge and the manufacturer's assistance. 		
	PPE		
See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"			

Operation	Assembly	
Person:	SpecT - MA	Zones Z01
Dangerous event	Wrong connections and/or section of the power cable and protective systems	
Danger (Origin - Consequence)	Electrocution	
	Contact with elements that may become live in the case of a fault (indirect contact)	
WARNING	Residual risk	
	Risk of electrocution caused by wrong connections made between the machine and the electrical power line.	
	Instructions	
	<ul style="list-style-type: none"> - The machine is usually shipped with the power cable connected, the section of which has been calculated on the basis of the length of the cable. When possible the cable is supplied with an industrial type socket (single phase and/or 3-phase). - If the cable isn't long enough to install the machine in the workplace, the final customer must replace the cable with one of a suitable length and section. - The machine must be connected to a power point with overcurrent cutouts on the power line, which will be installed by the user. - The machine is designed to be used in a "damp environment" and therefore all the connections must be made guaranteeing a minimum degree of protection of IP 55. - Follow the assembly instructions in the manufacturer's use and maintenance manual and the wiring diagrams. 	
	PPE	
	See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"	

Operation	Assembly		
Person:	SpecT - MA	Zones	Z01
Dangerous event	Wrong connections and/or section of the equipotential protection cable		
Danger (Origin - Consequence)	Electrocution		
	Contact with elements that may become live in the case of a fault (indirect contact)		
WARNING	Residual risk		
	Risk of electrocution caused by wrong connection of the machine to the earthing system.		
	Instructions		
	<ul style="list-style-type: none"> - The machine must be connected to the earthing system using the PE equipotential protection terminal in the electrical board, using an earth conductor of a suitable length and section, which must be installed by the user. - Follow the assembly instructions in the manufacturer's use and maintenance manual and the wiring diagrams. 		
	PPE		
See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"			

Adjustments

Operation	Washing the machine for the first time		
Person:	OP MA	Zones	Z03
Dangerous event	Failure to wash the machine for the first time (sanitization)		
Danger (Origin - Consequence)	Biological or microbiological agents (viruses or bacteria).		
	Poisoning, sensitization		
WARNING	Residual risk		
	Risk of contaminating foodstuffs if the machine isn't cleaned properly		
	Instructions		
	<ul style="list-style-type: none"> - It is obligatory to thoroughly clean the zone where the processed product will pass before putting the machine into service for the first time to remove any residues left from construction and protective substances used during transportation. - The machine has a washing circuit used to clean it, so the stone extractor/crusher, malaxer, decanter and pulper can be washed in sequence. - It is in any case necessary to thoroughly clean the machine, totally or partially dismantling parts of the same. Cleaning, while not strictly necessary for the machine to work, is essential to guarantee the quality of the processed product. - When cleaning, use a hose with a nozzle on the end to create a jet/spray of water under pressure. 		
	PPE		
	See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"		

Operation	Washing the machine for the first time		
Person:	OP MA	Zones	Z00
Dangerous event	Deriving from the type of substances used to clean the machine both due to the risk of contact with the skin and breathing in hazardous fumes (ex. accidentally inhaling or touching detergent mixes).		
Danger (Origin - Consequence)	Fluids		
	Poisoning, sensitization		
ATTENTION	Residual risk		
	The risk of sensitization deriving from the type of substances used to clean or lubricate the machine both due to the risk of contact with the skin and breathing in hazardous fumes (ex. accidentally inhaling or touching detergent mixes).		
	Instructions		
	Follow the instructions on the safety sheet of the product being used. The customer/employer must provide suitable PPE for the persons doing the cleaning or lubricating on the basis of the risks deriving from the use of any noxious substances.		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Operation	Washing the machine for the first time		
Person:	OP MA	Zones	Z00
Dangerous event	Deriving from the type of substances used to clean the machine both due to the risk of contact with the skin and breathing in hazardous fumes (ex. accidentally inhaling or touching detergent mixes).		
Danger (Origin - Consequence)	Fluids		
	Poisoning, sensitization		
ATTENTION	Residual risk		
	The risk of sensitization deriving from the type of substances used to clean or lubricate the machine both due to the risk of contact with the skin and breathing in hazardous fumes (ex. accidentally inhaling or touching detergent mixes).		
	Instructions		
	Follow the instructions on the safety sheet of the product being used. The customer/employer must provide suitable PPE for the persons doing the cleaning or lubricating on the basis of the risks deriving from the use of any noxious substances.		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Operation	Positioning the machine		
Person:	OP MA	Zones	Z00
Dangerous event	People getting hit by the moving machine and/or getting crushed between the machine and parts of the building (walls, columns, etc.) or other heavy equipment in the place where the machine will be installed.		
Danger (Origin - Consequence)	- Instability - Machine mobility		
	- Crushing - Getting hit		
ATTENTION	Residual risk		
	Risk of getting hit and crushed by the machine while it is moving		
	Instructions		
	- When moving the machine, always check there is no one in the zone in which the operation will be performed. Once the machine is in position, lock all four wheels with the brakes to make sure the machine remains stable while it is being used. - Always disconnect the electrical power cable to move the machine.		
	PPE		
	See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”		

Use

Operation	Normal operation (operating the machine)		
Person:	OP	Zones	Z00 Z03
Dangerous event	Aerosol, spray of water and microscopic drops of oil produced during the work process.		
Danger (Origin - Consequence)	Aerosol		
	<ul style="list-style-type: none"> - Difficulty in breathing - Sensitisation 		
ATTENTION	Residual risk		
	Various risks deriving from materials and substances (mixed oil/water aerosol)		
	Instructions		
	<ul style="list-style-type: none"> - Use the machine in an environment where there is suitable ventilation that will decrease the presence of an aerosol of water and microscopic oil drops in the air. - Do not use the machine in closed, non-ventilated environments. 		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Fault-finding/anomalies

Operation	Faulty components		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	Contact with live parts Contact with elements that may become live in the case of a fault		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	<p>- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) perform this work, in accordance with the definition of IEC 11-27.</p> <p>- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.</p>		
	PPE		
	See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”		

Operation	Faulty components		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	Contact with live parts Contact with elements that may become live in the case of a fault		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	<p>- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) perform this work, in accordance with the definition of IEC 11-27.</p> <p>- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.</p>		
	PPE		
	See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"		

Dismantling, scrapping, disposal

Operation	Disassembly		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	Contact with live parts Contact with elements that may become live in the case of a fault		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	<p>- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) perform this work, in accordance with the definition of IEC 11-27.</p> <p>- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.</p>		
	PPE		
See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”			

Operation	Disassembly		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	Contact with live parts Contact with elements that may become live in the case of a fault		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	<p>- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) perform this work, in accordance with the definition of IEC 11-27.</p> <p>- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.</p>		
	PPE		
	See chapter on “Safety”, paragraph “Protective measures that come under the user's responsibility”		

Operation	Disassembly		
Person:	SpecT ManT	Zones	Z01
Dangerous event	Direct or indirect contact with live parts		
Danger (Origin - Consequence)	Contact with live parts Contact with elements that may become live in the case of a fault		
	Electrocution		
WARNING	Residual risk		
	Risk of electrocution due to direct or indirect contact with live parts.		
	Instructions		
	<p>- Operations performed on electrical equipment both when live or when the power has been disconnected must only be performed by expert persons (EXP) and warned persons (WAP), in accordance with the definition in IEC 11-27. Standard IEC EN 60204-1 makes no distinction between work done on electrical equipment with the power disconnected or live, and therefore does not require a Person qualified for electrical work (PQUAL) perform this work, in accordance with the definition of IEC 11-27.</p> <p>- Work done on live parts inside the electrical board must only be performed after having disconnected the power and opened the door of the board, then reconnecting the power supplied to the equipment again by voluntarily turning the main switch ON.</p>		
	PPE		
	See chapter on "Safety", paragraph "Protective measures that come under the user's responsibility"		

3.0 PRESENTATION AND DESCRIPTION OF THE MACHINE

General information on the machine

Machine	DECANTER
Model	TL.250-350-500
Serial number	see Declaration of Conformity
Year of manufacture	see Declaration of Conformity

Table 2 - General information on the machine

Identification plate

The system is identified by a plate (Figure 2) made upon request by the Machinery Directive 2006/42 EC

The electric panel (if present) is identified by a plate made upon request by the Standard EN60204-1 at a position not visible from the outside.



Figure 2 - Identification plate

Main components of the machine

The decanters have been designed to process paste at low temperature in one or two phases.

The addition of water in extraction ranges from 0 to a maximum of 10% with two outlets and from 10 to 20% with three outlets.

The internal screw has been designed to obtain the best clarification. Moreover, backfilling with material is found in the wear points

The outlet oil nozzles are adjustable.

A motor-driven screw for the pomace external discharge is placed under the discharge of the decanter.

The AISI 304 stainless steel frame is equipped with anti-vibration mounts.

All the parts that contact the product are made of AISI 304 stainless steel and of material suitable for food use.

1. Waste discharge
2. Oil outlet

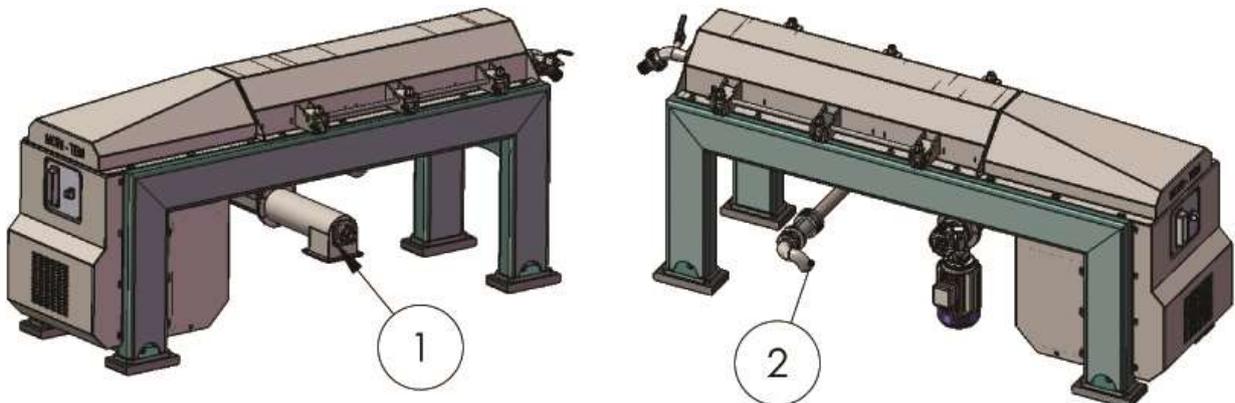


Figure 3

1. Paste inlet
2. Water connection

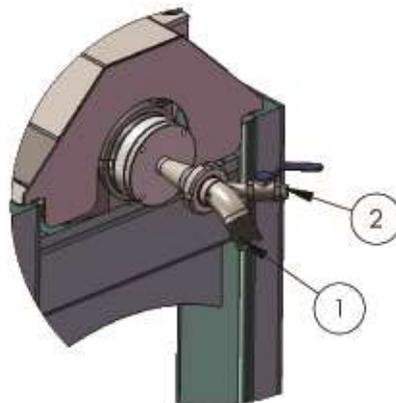


Figura 4

A. Electric connection

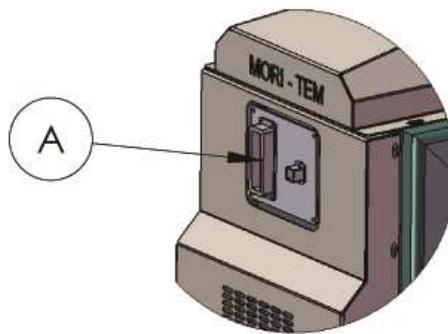


Figura 5

ADJUSTING THE NOZZLES



ATTENTION! The entire plant must be turned OFF and the power supplied to the board must be disconnected.

Before adjusting the nozzles, be absolutely sure you are working at an appropriate level for your skills and qualifications.

Open the guard and adjust the decanter nozzles with the tool supplied (Figure 1).

To adjust the nozzles The position of the nozzles depends on your machine. It can be in the middle (left picture) or at the beginning (right picture)

To adjust the nozzles proceed as follows:

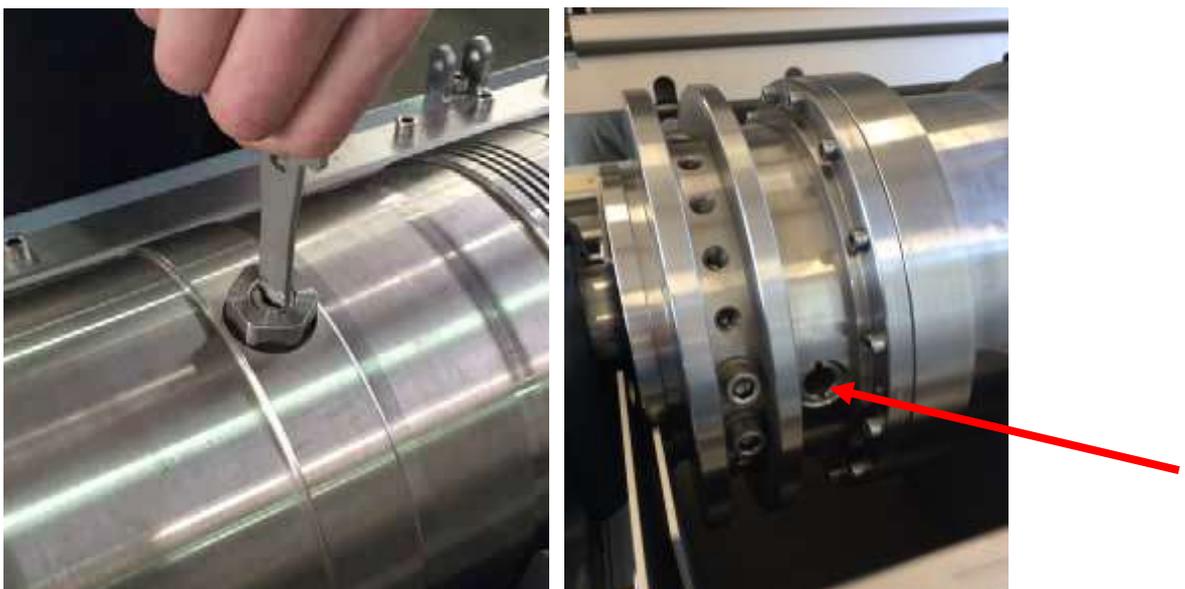


Figure 1

- **The oil outflow is contaminated**

If the oil outflow is contaminated, screw in clockwise 1 turn; if the oil is still contaminated, repeat the operation until the oil outflow is clean.

- **The oil outflow is clean or there are traces of oil in the olive pulp**

If the oil is very pale and transparent or there are traces of oil in the olive pulp, make sure you are using the right EXTRACTION SPEED (16) and open the water supply of the flowmeter. If you are using the right extraction speed and opening the flowmeter water wasn't enough, stop the machine and change the position of the nozzles. Once the machine has been stopped and made safe, open the decanter guard with the specific tool and turn each nozzle on the decanter 1 turn anticlockwise. Start the decanter again. If the oil still flows too clean, repeat the operation until obtaining the correct extraction.

N.B. Turn the nozzles 1 turn at a time for both adjustments.

MAINTENANCE

DECANTER

Greasing the bearings:

Grease the bearings every 200 working hours (the first time. Then every 100 hours) using SKF LGHP2 grease (max 30-50 g).

Belts:

The belts must show no signs of fraying, thinning or stretching. If they do, replace them immediately.

If there are no signs of faults, when pushing the belt inwards, there should not be more than 1 cm play. If this is not the case, tension the belts by adjusting the decanter motor mount plate.

Transfluid (if fitted):

Check there are no leaks of hydraulic fluid. If this is the case, call MORI_TEM Technical Service.

Reducer:

Check there are no leaks of hydraulic fluid or grease. If this is the case, call MORI_TEM Technical Service.