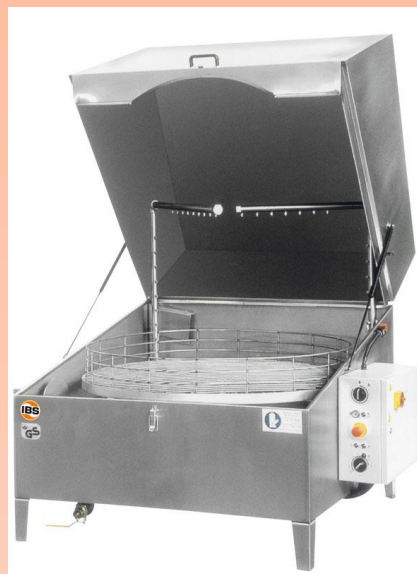


IBS Scherer GmbH



OPERATION AND MAINTENANCE MANUAL



IBS-PARTS WASHERS TYP MAXI 91-1/ MAXI 91-2/ JUMBO 115-2

**TRASLATION ORIGINAL INSTRUCTIONS
REVISION: X51-1213 EN - ibs**

IBS Scherer GmbH

Gewerbegebiet - 55599 Gau-Bickelheim

Fon: +49 (6701) 9383-0

Fax: +49 (6701) 9383-33

www.ibs-scherer.de

E-Mail: info@ibs-scherer.de

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GENERAL INFORMATION REGARDING THE INSTRUCTION MANUAL

Introduction

This manual is a valid help in knowing and using correctly your machine, it is therefore necessary that you **Read it carefully** before use.

This instruction manual has been produced by IBS Scherer GmbH. and **is in integral part of your parts washing machine.**

Every machine contains its own instruction manual. The user is responsible for the management of this manual for the full working life of the machine, and must provide for it's destruction with the dismantling of the machine.

The company IBS Scherer GmbH does not respond to eventual "tampering with" of this manual or for changes made to the machine by the user, after delivery of the same, and not foreseen in the present document.

The company reserves the right of the intellectual ownership of the manual and prohibits the disclosure in whole or in part, in any format (printed, photocopies, microfilm, o other) as well as the elaboration, reproduction, or the distribution by electronic means, to persons, juridical or fiscal without its approval and registration.

Reference to the directives CEE and terminology used

Indications contained in the following documents have been used in the realisation of this manual:

- Directive 2006/42/CE machinery directive;
- Directive 2004/108/CE EMC Directive;
- Directive 2006/95 CE Low Voltage Directive;

The machine has been built according to the following rules:

- EN ISO 12100-1 Machine safety standards;
- EN ISO 13857:2008 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs;
- EN ISO 14121:2007 Safety of machinery -- Risk assessment -- Part 1: Principles;
- EN 1037:1996+A1:2008 Prevention of unexpected start-up;
- EN ISO 14159:2008 Safety of machinery. Hygiene requirements for the design of machinery.

Purpose of the document

The purpose of the manual is to provide the user with indications and the information **that must be followed scrupulously for the correct operation** of the machine and for the safety of the operator who must interact with it. For this reason we ask the user:

- **to make this document available in all work areas, make it's presence known and illustrate it to all the operators;**
- to pass this manual onto successive owners of the machine.

GENERAL INFORMATION REGARDING THE INSTRUCTION MANUAL

Personnel qualifications

The machine must be used by trained personnel only in accordance with the following levels of qualification:



Skilled worker: an operator without specific skills, capable of performing simple tasks, i.e. is able to use the machine with loading/unloading controls and with the safety guards in operation.



Skilled technician: an operator capable of using the machine under normal operating conditions with the protection systems disabled, intervening on mechanical and electrical parts for controls, repairs and maintenance.



Manufacturer's technician: Operator for complex operations and specifications agreed, however, with the user.

Use and conservation of the manual

This manual is addressed to the Machine User and to all coordinators responsible for the machine's handling, installation, operation, monitoring and final dismantling.

This manual indicates the machine's usage as intended by its engineering design and technical specifications, providing instructions for the machine's handling, proper and safe installation, assembly, adjustments and use; the manual provides information targeting maintenance interventions, facilitates the ordering of spare parts and provides information on any residual risks.

In particular, the operating manual must be constantly consulted concerning the following information:

- operating conditions prescribed for the machine;
- the workplace occupied by the operator;
- instructions related to:
 - the machine's start-up;
 - operation;
 - transportation;
 - installation;
 - assembly and disassembly;
 - regulatory measures;
 - maintenance and repairs.

Respect for legislation

In addition to the rules and instructions outlined in this manual, specific legal provisions in the field of injury prevention in the workplace must be followed.

Storing the manual

This user manual is considered an integral part of the machine and must be kept in good condition until the machine's final dismantling and disposal.

The manual should be kept in secure dry place, away from direct sunlight, and should always be available and accessible for consultation, in the machine's vicinity.

User information

1 - This manual reflects the machine's current state of the art and as such cannot be considered inadequate simply because it is updated based on new information.

2 - The Manufacturer reserves the right to update products and manuals, without any obligation to update previous products or manuals.

3 - The characteristics of materials can be modified at any time without prior notice in light of technical developments.

4 - In the event that the machine is supplied without electrical controls and protection systems (electrical panel on board the machine), the manufacturer assumes no responsibility regarding safety issues arising from electrical parts that do not comply with the recommendations and/or instructions. In all cases, compliance with laws and regulatory standards for electrical equipment supplied with the machine shall be the sole responsibility of the customer, who shall implement such measures in a workmanlike manner and suitable for their use.

5 - The manufacturer shall be exempt from any possible liability in the event that the machine is subjected to:

- improper use;
- use by untrained personnel;
- use contrary to the terms of this manual;
- use contrary to regulatory standards and legislation in force;
- use with the absence of primary power;
- use with serious deficiencies in maintenance;
- use with modifications or unauthorized changes unless explicitly provided in writing by the Manufacturer;
- use with non-original spare parts or not specifically defined for the machine model;
- use with a total or partial non-observance of the instructions contained in this manual.

6 - The general warranty shall be void in the case of:

- poor storage and maintenance;
- inconveniences due to misuse;
- use by unskilled persons;
- exceeding of performance limits;
- excessive mechanical and/or electric and pneumatic stress;
- use in non-optimal conditions described in Section 5.

Any requests for additional copies of this document must be made through a purchase order submitted to IBS Scherer GmbH.

MACHINE DESCRIPTION AND SAFETY FEATURES

The machines IBS 91-1, 91-2 e 115-2 are spray, parts washers with rotating baskets, for the degreasing of mechanical parts with hot water and biodegradable detergents.

The spraying of the water/detergent solution at a temperature of 60 °C assure an optimal optimum degree of cleaning, thanks to a system of nozzles that give full coverage of the area subject to the wash process.

The pressure combined with the temperature and the chemical action of the detergent permits the removal of all types of encrustation.

The heat accumulated by the parts during the wash cycle permits a there rapid drying, once the hood has been opened.
opened.

Residual risk

To be able to work in conditions of maximum safety, **In order to avoid the creation of dangerous situations**, here is a list of the normative that the operator must follow in order to avoid injury.

a) Residual risks relative to chap. "USE OF THE MACHINE"

- If for any reason it should be necessary to stop the machine quickly press the red emergency button situated on the side of the command panel.
- It is absolutely forbidden , during the operation of the machine to remove the protection predisposed by the manufacturer for the safeguard of the operator
- **only qualified and expert operators are allowed to operate the machine.**
- Never leave the machine unattended.



During machine operation wear work gloves.



During machine operation wear safety shoes.



During machine operation wear protective cloathing.



During machine operation safety glasses must be worm



During machine operation masks must be worn

MACHINE DESCRIPTION AND SAFETY FEATURES

a) Residual risk relative to chap. "TRANSPORT AND MOVEMENT OF THE MACHINE"



Safety gloves must be worn during the movement and transport of the machine.



Safety shoes must be worn during the movement and transport of the machine.



Safety helmet must be worn during the movement and transport of the machine.

Residual risk warning labels

The following warning labels about residual risks are present on the machines:



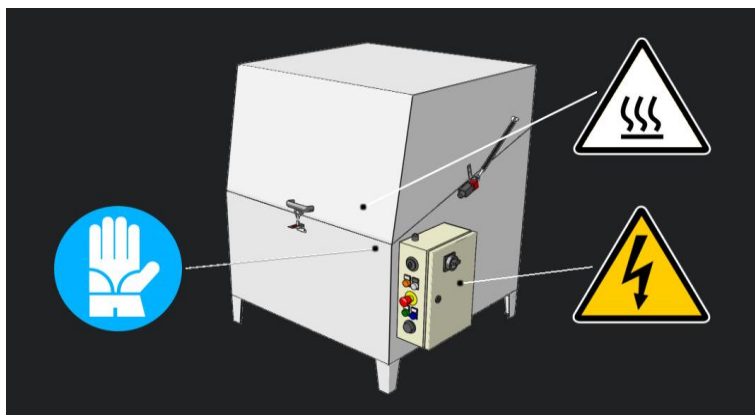
GLOVES MUST BE WORN



WARNING ELECTRICAL CURRENT



WARNING HOT SURFACE



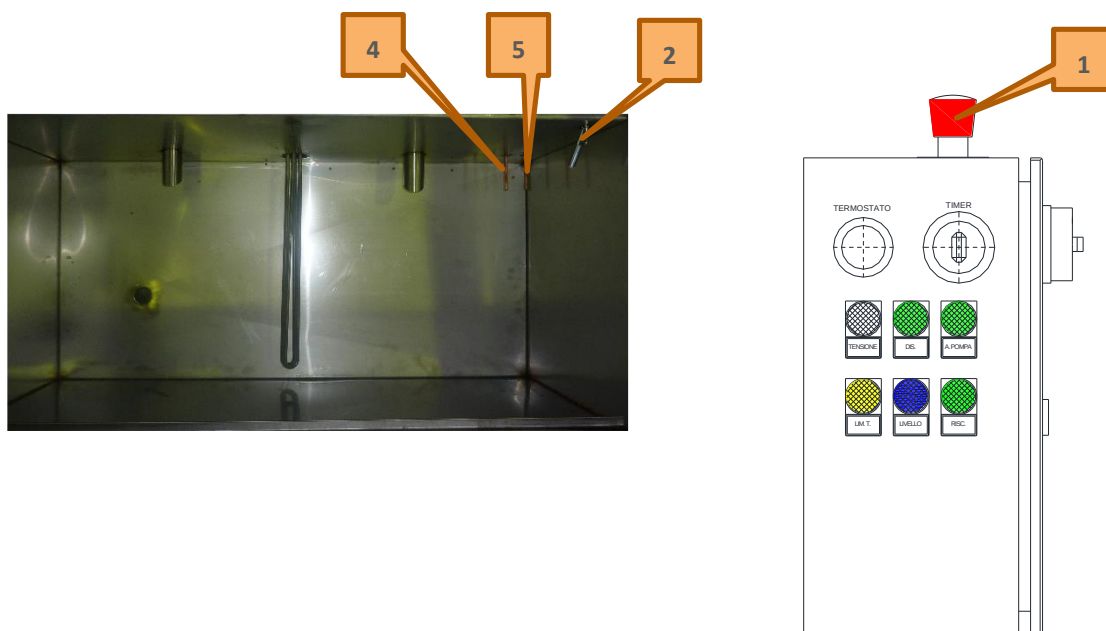
THE WARNING LABELS ON THE MACHINE MUST NOT BE REMOVED OR TAMPERED WITH FOR ANY REASON.

MACHINE DESCRIPTION AND SAFETY FEATURES

Safety features

To protect the operator from possible injury caused by contact with moving mechanical parts, hot parts and components or electrical wires, the following protection devices are present:

DESCRIPTION	POSITION	FUNCTION	MODEL
1 Emergency stop button	Electrical cabinet exterior	Cuts off all electrical and pneumatic power	91-1 – 91-2 – 115-2
2 Tank level control	Tank	Turns off the resistance and pump	91-1 – 91-2 – 115-2
3 Safety Switches	Machine panel	Turns off the pump and the gear motor (optional)	91-1 – 91-2 – 115-2
4 Safety temperature probe	Tank	adjusted and blocked at 70°C, switching on in case of trouble (or tampering) of the thermostat located inside the control panel	91-1 – 91-2 – 115-2
5 Temperature probe	Tank	Temperature regulation	91-1 – 91-2 – 115-2
6 Brake	Tank	Block the basket when opening the lid	91-1 – 91-2
7 Gear motor	Machine panel	Block the basket when opening the lid	115-2 (option 91-1 – 91-2)





The protection devices present on the machine have been designed to safeguard the operator from injury while carrying out his job.

During the operation of the machine, the protection devices must not be removed for any reason.

The operator, even if expert, must follow the instructions and warnings present in this manual.

Control daily all the safety devices present on the machine.

Side effects and dangers of non foreseen use

A different use of the machine from the purpose of its design is dangerous for the operator.

- The machine has not been designed to work in an explosive ambient, it is therefore forbidden to place and use the machine in areas with a possible explosive atmosphere.
- For any use not foreseen, the operator is obliged to get information from the constructor about any eventual side effects or dangers that may arise from an improper use of the machine.
- For any modification that one may want to make to the machine after it has left the factory you are obliged to get information from the manufacturer about what risks the modification may cause and to control there compatibility the relevant safety normative.
- The position of the kinematics must not be changed in order to modify the sequence of the machine work cycle.
- During the use of the machine IT IS ABSOLUTLY FORBIDDEN the use of flammable products. Use only cleaning products or detergents destined for use with washing machines with sprinklers. Respect the technical instructions attached to the product.

Attention

1. only qualified and expert operators are allowed to operate the machine.
2. Never leave the machine unattended during use.
3. When operating the machine wear protective gloves, protective shoes, protective mask, protective clothing and protective goggles.
4. A safety helmet, protective shoes and protective gloves must be worn during the movement and transport of the machine.
5. The warning labels on the machine must not be removed or tampered with for any reason.
6. The protection devices present on the machine have been predisposed in order to safeguard the operator from injury while carrying out his job. During the operation of the machine, the protection devices must not be removed for any reason. The operator, even if expert, must follow the instructions and warnings present in this manual.
7. In the case that the crate is being lifted by a crane, persons extraneous to the operation must not pass or stop in the area where the machine is being lifted, whereas the personnel carrying out the operation must remain at a safe distance to avoid being struck by the machine.
8. Lift the machine using only steel straps or cables of adequate size for the weight to be lifted. To lift the machine only use safety hooks.
9. Pay maximum attention that no one passes within the area where the lifting operation is being carried out, in order to avoid any possible injury to the personnel, during the movement of suspended loads.
10. During the lifting and movement of the machine no sudden or harsh manoeuvres must be carried out in order to not damage or injure things or persons present in the area.
11. A person standing outside the area must follow the operations in order to advise the operator about possible obstacles he can't see.
12. We recommend, especially for transport by sea, that the mechanical parts are protected by a film of anti-rust lubricant, and that a bag of hygroscopic salt is placed in the packaging to protect it from humidity.

MACHINE DESCRIPTION AND SAFETY FEATURES

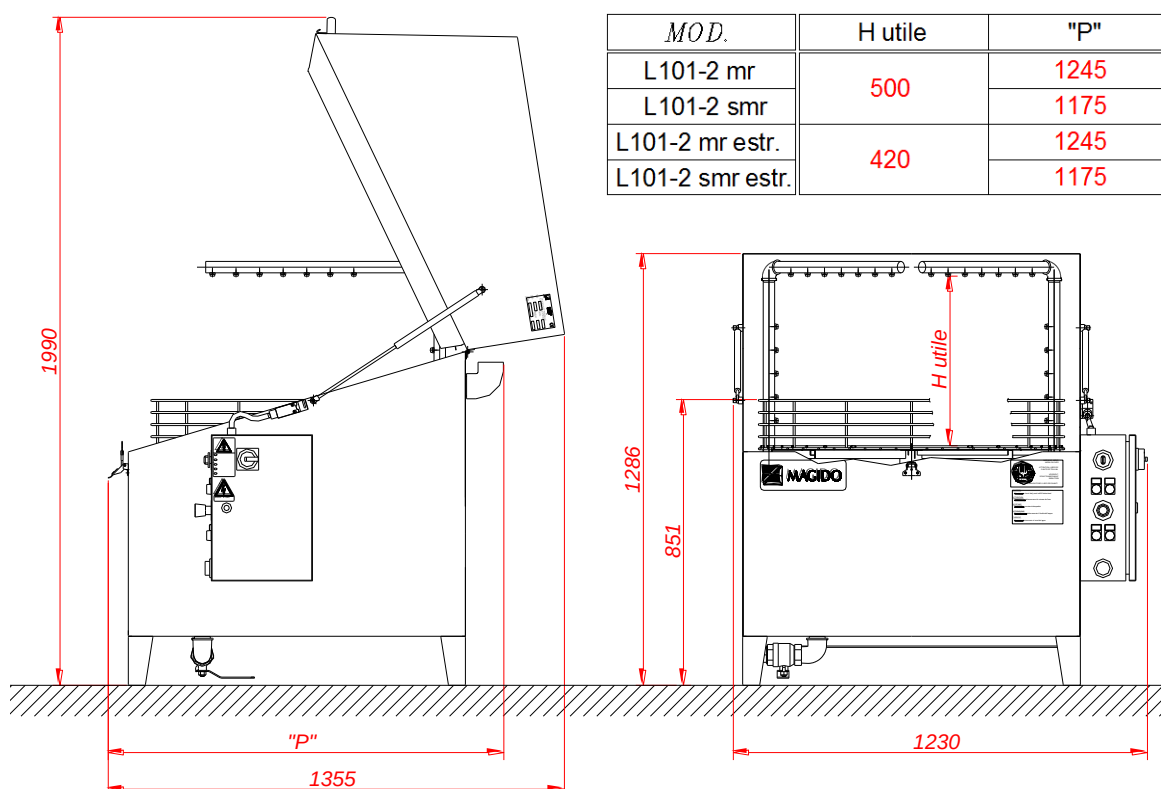
13. Whenever the machine is sent packed in a crate or wooden cage, for the movement of the machine adequate slings must be used.
14. Once the machine has been placed on the truck or transport vehicle, it must be secured with ropes, steel cables or wooden wedge of opportune size for the dimension and weight of the machine.
15. The area in which the machine is installed must be well aired and without the presence of explosive gases.
16. The temperature of the area where the machine is installed should be between 10°C and 40°C.
17. the cleaning of the machine on arrival in workshop must be performed wearing work gloves and safety goggles.
18. All the operations to connect the machine to external power sources must be performed by qualified technical operators.
19. check the supplied voltage of the user correspond to that on the data plaque on the machine otherwise consult the manufacturer.
20. It will a user duty to install protection against short circuit and overload in according to local regulations to protect the machine supply using circuit breakers and differential switches.
21. All the operations to connect the machine to electrical power supply must be performed by experience and qualified technical operators, according to the regulations in force.
22. For all the regulations and set up not contemplated in this manual consult the manufacturer or the dealer.
23. The machine to work only needs one operator . During its cycle no one other than the operator must stop near by the machine or worse still interfere with it.
24. It is absolutely forbidden to drain the wash liquid to the environment or sewer . Follow scrupulously the local regulation concerning waste treatment.
E' assolutamente vietato scaricare nell'ambiente o nella rete fognaria il liquido contenuto nella vasca.
25. Before carrying out any maintenance or substitution always remember:
 - turn the MAIN SWITCH to the OFF position;
 - disconnect the machine from all power supply.
26. Maintenance, replacement and repair operations must be performed by a qualified technician who understanda the technology applied on the machine.
27. When carrying out any maintenance always wear safety clothing: gloves , shoes and safety goggles.
28. When carrying out any cleaning operation always wear proper gloves and protective goggles.
29. For all the regulations and set up not contemplated in this manual consult the manufacturer or the dealer.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

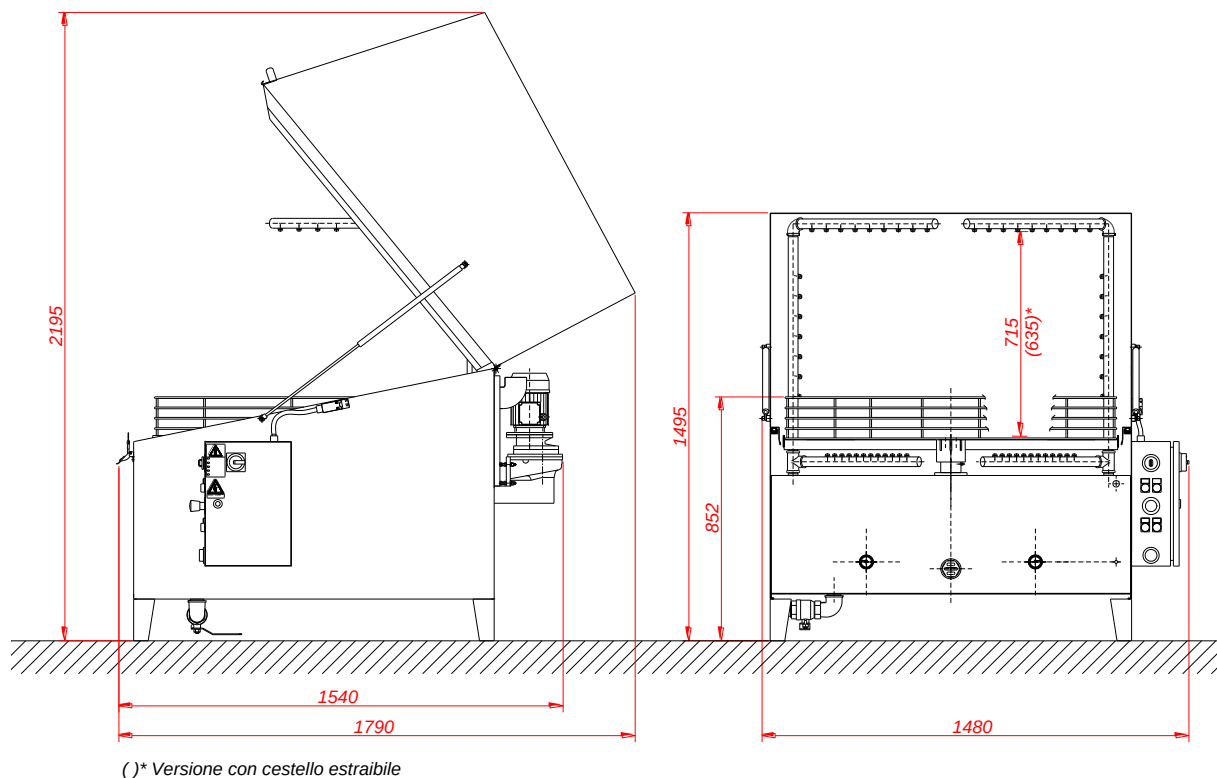
PARAMETERS		91-1	91-2	115-2
Tank capacity	L	175	175	280
Ø Basket	mm	910	910	1150
Internal Ø basket	mm	897	987	1138
Basket board	Kg	200	200	350
Usable height	mm	420/500	420/500	635/715
Total weight	kg	140	150	250
Ø darin	Pollici	1" ½	1" ½	1" ½
Heating	kW	6	6	10
Wash pump power	kW	1,5	0,9 x 2	1,5 x 2
Total power	kW	7,6	7,9	13,5
Total current	A	13	13,5	25
Supply tension	V	400		
Phase	Ph	3		
Frequency	Hz	50		
Electrical panel protection	-	IP54		
Kind of liquid to be used	Water + non-hazardous and non-foaming detergents in compliance with the standards required (see technical sheet supplied with the detergent)			

Layout 91-1 – 91-2



TECHNICAL SPECIFICATIONS

Layout 115-2



CE Identification plaque of the machine

A manufactures plaque is present on this machine. This shows the name and address of the company **IBS Scherer GmbH**, the model of the machine, the serial number and the CE mark.

 IBS Scherer GmbH		
IBS Scherer GmbH Gewerbegebiet 55599 Gau-Bickelheim Tel.: +49 6701 93830 Fax: +49 6701 938333		
Typ	Gewicht	Baujahr
	kg	
Leistung	Volt/Hz	
kW		
Max.Belastung	Höchsttemperatur	Tankinhalt
kg		
Maschinen-Nr.		

All other information regarding the CE marking are reported in the CE declaration attached this Manual.

Noise level of the machine

The sound pressure level weighted average A: $L_p = 65 \text{ dB(A)}$

Sound power level: $L_{wa} = 83,5 \text{ dB(A)}$

INTENDED AND NON-INTENDED USAGE

The machines is designed for degreasing and cleaning mechanical parts at medium pressure using hot water and biodegradable detergents.



Any usage which differs from the uses foreseen by the manufacturer and described in this manual are considered improper and dangerous use, and may cause severe damage to the equipment and operators.

Counter indications and risks for unforeseen usage

- The machine is not designed for working in explosive atmospheres. **The machine's use in an environment with a danger of explosion is strictly prohibited.**
- The user should contact the manufacturer for any machine use differing from those expressly set forth in this manual, **for information on possible counter indications or hazards.**
- The user is required to contact the manufacturer in order to apply any changes to the machine subsequent to its delivery; **any risks generated by the changes must be determined, and their compatibility must be verified with the safety standards established by current regulatory legislation.**
- **In altering the machine's operating cycle, its kinematics must absolutely not be modified in any way.**
- **It is absolutely forbidden to apply and make use of flammable products inside the machine.** Only use products and/or specific detergents for washing manufactured for this class of machines. **Always follow the instructions specified in the data sheet and Material Safety Data Sheet of the product/detergent used.**

MOVEMENT AND TRANSPORT OF THE MACHINE

The use of the following personal protective equipment is mandatory during the machine's transport and/or handling operation:



Safety gloves must be worn during the movement and transport of the machine.



Safety shoes must be worn during the movement and transport of the machine.

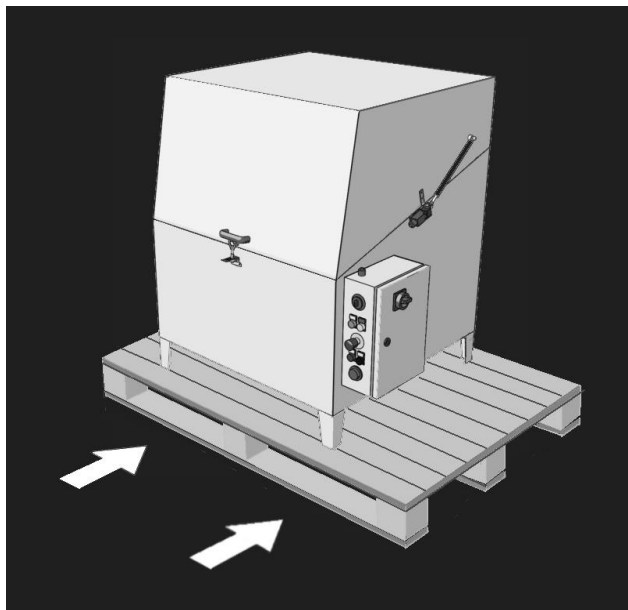


Safety helmet must be worn during the movement and transport of the machine.

The transport and movement of the machine must be carried out by use of a fork lift or a pallet truck after having secured it to a pallet (see Pitc.).

This operation must be performed by a qualified operator, with the help of a second operator. For the lifting of the positioning of the machine must be carried out using opportune straps of adequate size for the weight to be lifted.

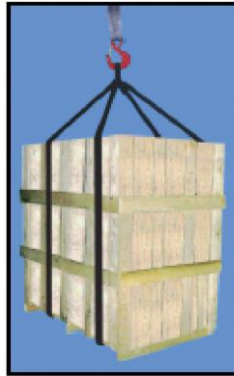
Pack the machine properly in the corrugated fibreboard after having fixed it securely to the skid.



For transport over long distances, on request by the client, it is necessary to pack the machine in a crate or wooden cage of suitable size.

Lift the crate using a fork lift or crane, securing it with adequate straps.

MOVEMENT AND TRANSPORT OF THE MACHINE



In the case that the crate is being lifted by a crane , persons extraneous to the operation must not pass or stop in the area where the machine is being lifted, whereas the personnel carrying out the operation must remain at a safe distance to avoid being struck by the machine.

Lift the machine using only steel straps or cables of adequate size for the weight to be lifted.

To lift the machine only use safety hooks.

Persons extraneous to the operation must not pass or stop in the area where the machine is being lifted, whereas the personnel carrying out the operation must remain at a safe distance to avoid being struck by the machine.

Pay maximum attention that no one passes within the area where the lifting operation is being carried out, in order to avoid any possible injury to the personnel, during the movement of suspended loads.

During the lifting and movement of the machine no sudden or harsh manoeuvres must be carried out in order to not damage or injure things or persons present in the area.

Someone outside the area must follow the lifting operation in order to warn about any obstacles that are not visible to the operator of the crane.

We recommend, especially for transport by sea, that the mechanical parts are protected by a film of anti-rust lubricant, and that a bag of hygroscopic salt is placed in the packaging to protect it from humidity.

Whenever the machine is sent packed in a crate or wooden cage, for the movement of the machine adequate slings must be used.

Once the machine has been placed on the truck or transport vehicle, it must be secured with ropes, steel cables or wooden wedge of opportune size for the dimension and weight of the machine.

INSTALLATION OF THE MACHINE



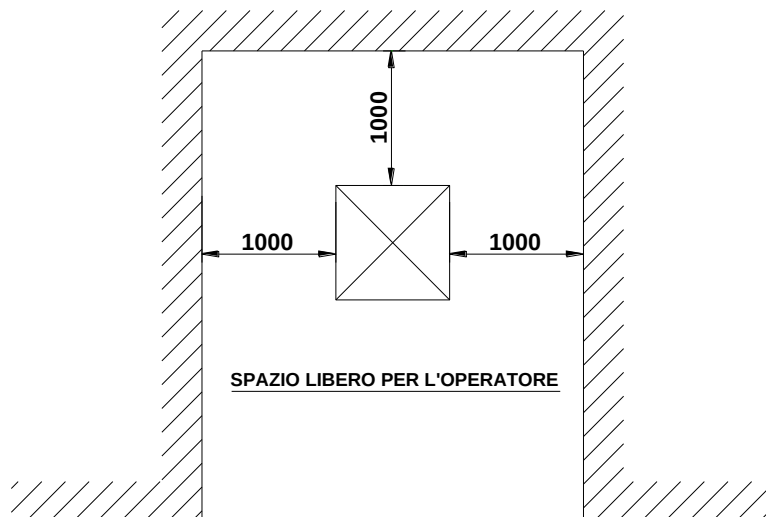
The machine should be installed in a location where the atmospheric conditions are respected for the well being of the operator in order to reduce to a minimum stress and strain and allow the operator to work in maximum safety conditions.

The area in which the machine is installed must be well aired and without the presence of explosive gases.

The temperature of the area where the machine is installed should be between 10°C and 40°C.

Free working spaces

To allow a correct use and easy maintenance over the machine, in secure conditions, we advise that the machine be installed in a position that respect the minimum distance, indicated in millimetres, from walls and large obstacles as indicated in the pictures.



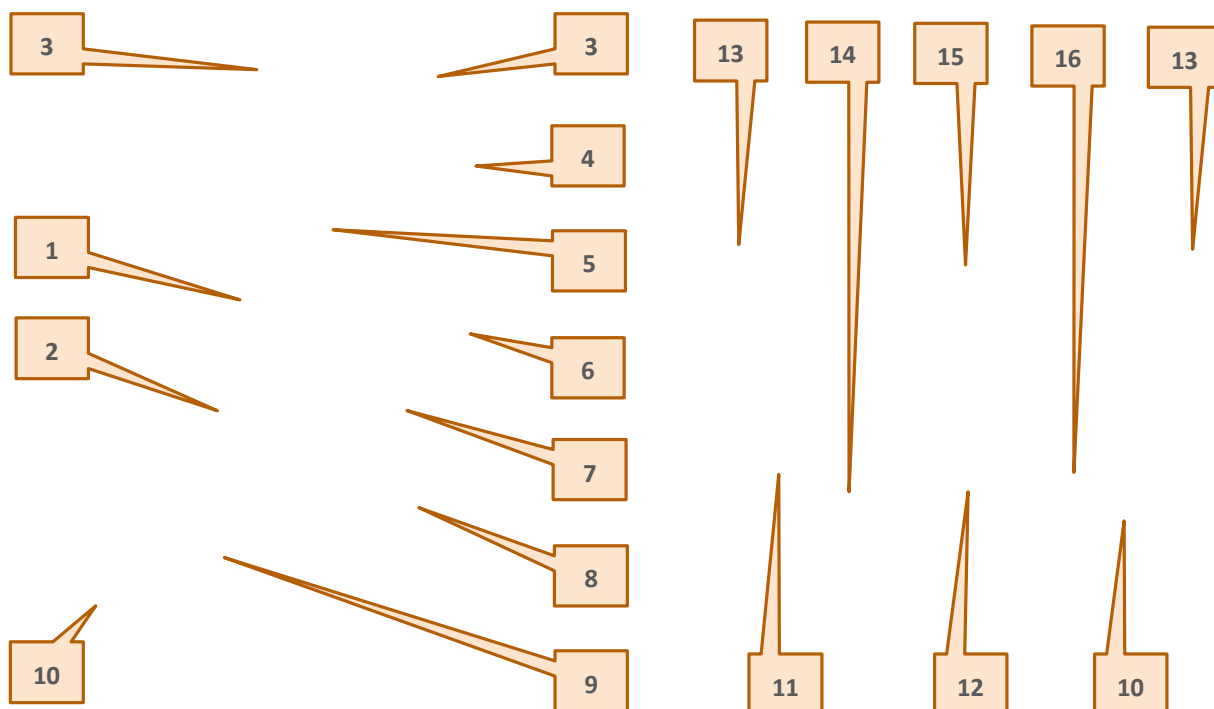
Positioning of the machine

The machine must be installed on a smooth industrial type pavement that permits a uniform closure of the mobile protection (door).

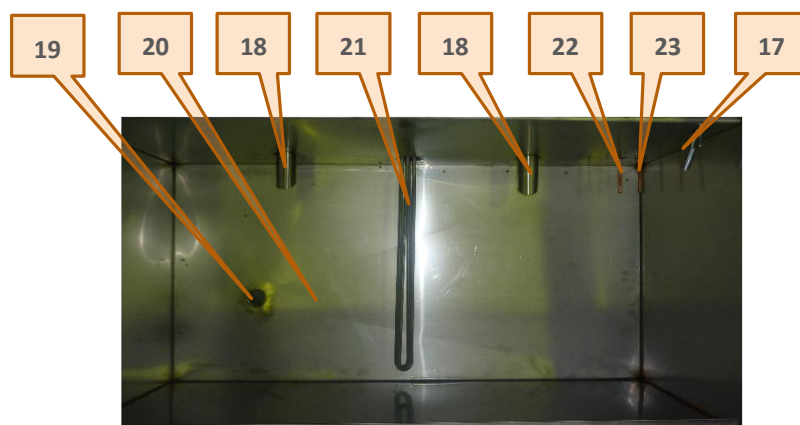
It is not necessary to anchor the machine to the floor

INSTALLATION OF THE MACHINE

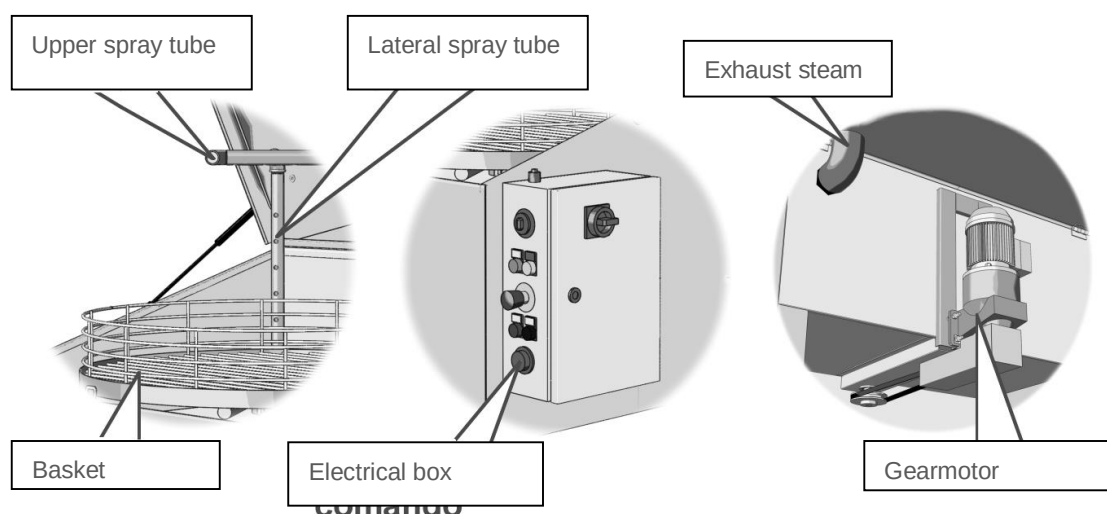
Main machine views



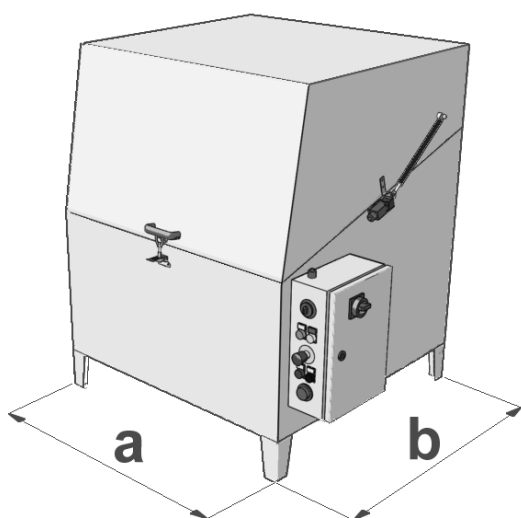
- | | |
|-------------------------|-------------------------------------|
| 1 Lateral spray tube | 13 exhaust fumes |
| 2 Basket | 14 Pump 1 |
| 3 Lid handle | 15 Gear motor (opt. su 91-1 e 91-2) |
| 4 Lid | 16 Pump 2 (solo su 91-2 e 115-2) |
| 5 Upper spray tube | 17 Level probe |
| 6 Gas shock absorber | 18 pump suction |
| 7 Safety interlock | 19 tank drain |
| 8 Electric panel | 20 tank bottom |
| 9 Tank | 21 Heating |
| 10 Drain valve | 22 Temperature probe |
| 11 Probe accommodation | 23 Safety temperature probe |
| 12 Heating junction box | |



INSTALLATION OF THE MACHINE



Floor diagram of the machine



DIMENSION		91-1	91-2	115-2
A	mm	1000	1000	1250
B	mm	1000	1000	1250

ASSEMBLING AND PREPARING THE MACHINE

Setting up the machine for operation

Follow the instructions below for the machine's correct positioning upon its arrival at the User's production location:

- unpack the machine, removing any protective wrapping;
- lift the machine by following the instructions and warnings described in the sect. "Machine handling and transport";
- set up the machine in the desired location.

Accessory assembly

The machine is completely assembled in the Manufacturer facilities.

Assemble the exhaust steam externally and with the hole upward (see pict. pag.16 "sfiato").

Assemble the handle outside the lid (see pict. 15 point "3"), for the transport it will be assembled inside.

Assemble the knob of the main switch on the electrical panel following the instructions placed besides the main switch.

If the machine is equipped with fan, assemble this in its housing.

Preventive control and checking

Immediately on receiving the machine we advice that :

- Verify that all the machine components have been delivered correctly.
- Carry out a series of preventatives controls and checks as described.

Control of eventual damage to the machine caused during transport

In order to find eventual damages caused to the machine during the shipment , we advice that you check the integrity of all the protruding parts , and in particular:

- check the integrity of the electrical box;
- check the integrity of the micro switch on the lid;
- check the integrity of mobile and fix protections.

Clean and lubrication of the machine

On arrival of the machine in the end user workshop, clean the machine with care, removing all traces of dust, dirt and other substances that were deposited during shipping



Cleaning of the machine on arrival in workshop must be performed wearing work gloves and safety goggles.

ASSEMBLING AND PREPARING THE MACHINE

Electrical connection to power supply

Check the supplied voltage of the user correspond to that on the data plaque on the machine otherwise consult the manufacturer.

It will a user duty to install protection against short circuit and overload in according to local regulations to protect the machine supply using circuit breakers and differential switches.

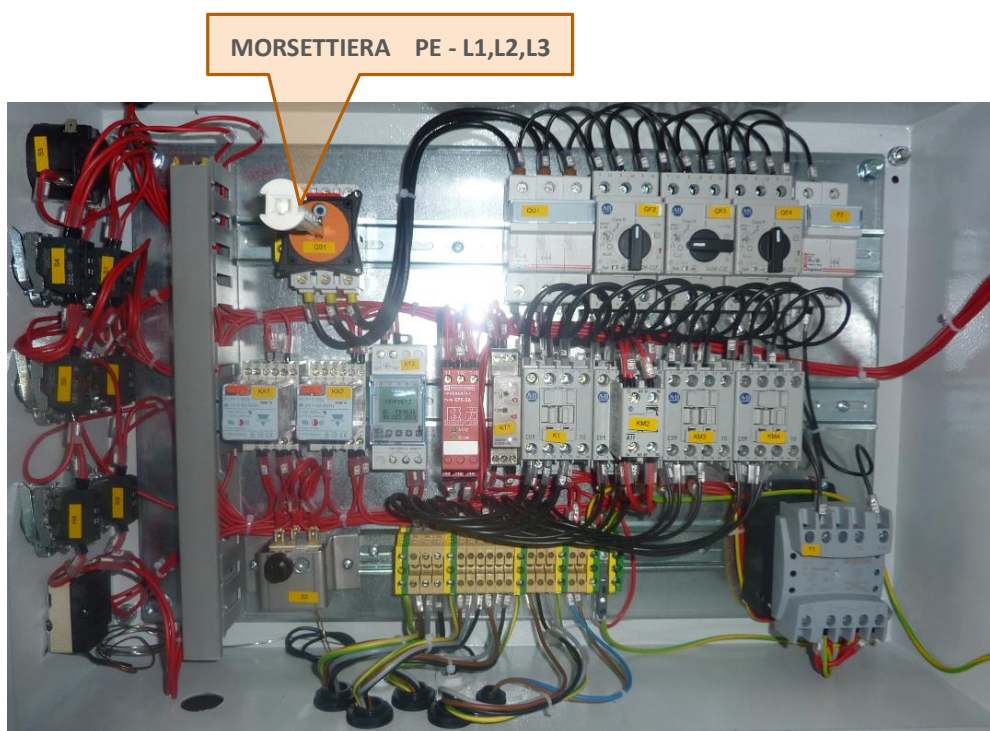
To connect machine to electrical power source proceed as follow

- Open the door of the electrical box using the supplied key;
- Connect the electrical wire from the main directly to the free terminal blocks of the main switch Q.



Connection to the mains supply must be performed by a qualified technician in according to local regulations.

Always connect the machine to the ground.

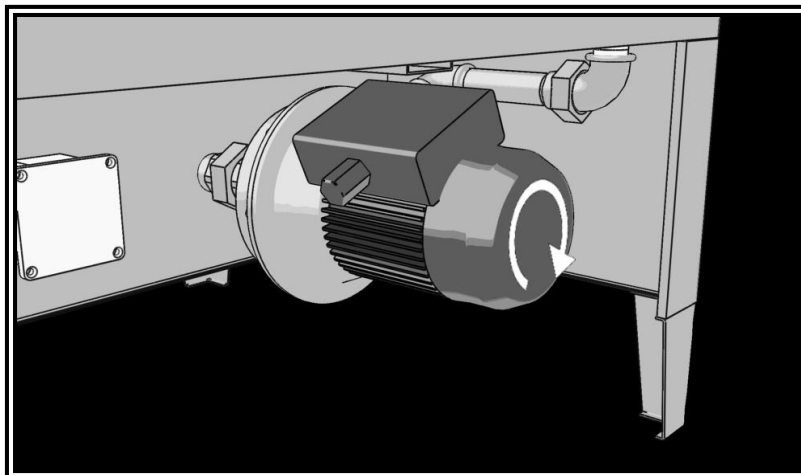


Check the supplied voltage of the user correspond to that on the data plaque on the machine otherwise consult the manufacturer.

It will a user duty to install protection against short circuit and overload in according to local regulations to protect the machine supply using circuit breakers and differential switches.

- **Connection of the machine to external power sources must be performed by electricians technically qualified.**
- By changing the 3 phases of the machine, the rotation of the pump can be changed. The pump direction must be clockwise (in the direction of the arrows as indicated in the pictures below). If the rotation is not correct it is necessary to invert the phase wires to the main power supply.

ASSEMBLING AND PREPARING THE MACHINE



Hydraulic connections (optional)

If the machine is equipped with the automatic water refilling, connect the main water supply to the solenoid valve of $\frac{3}{4}$ " placed on the side of the machine.

Checks, regulation and machine preparation

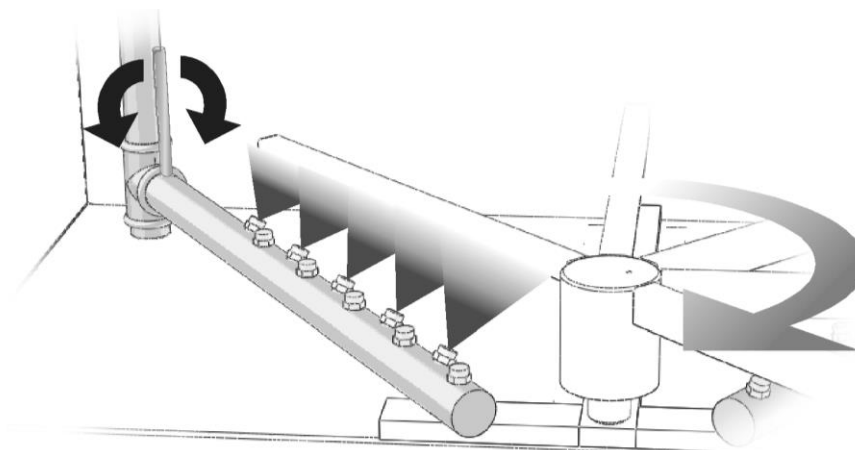


For all the regulations and set up not contemplated in this manual consult the manufacturer or the dealer

Orientation of lower spray bar

Only for machines without the driven basket.

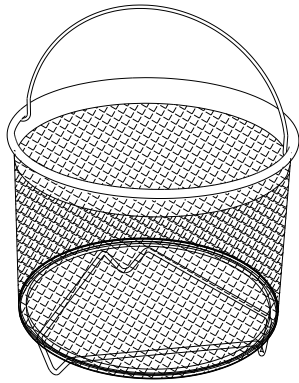
According to the weight of the part to be wash it is necessary to orientate the lower spray bar using the handle fix on the tube.



ASSEMBLING AND PREPARING THE MACHINE

Additional basket for small parts supplied with the machine

Following parts are supplied along with the machine:

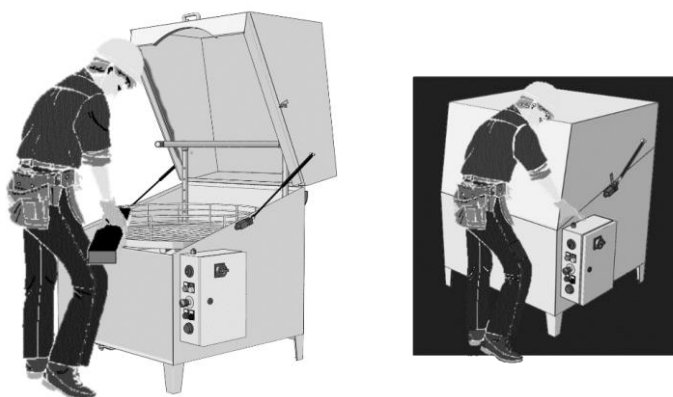


Cestello minuterie

MACHINE START UP

Work and command position

Operation of the machine is performed by means of the control panel.
By opening the lids can parts be loaded/unloaded.
Both can be performed by one operator.



The images above are only indicative of the position of the operator.



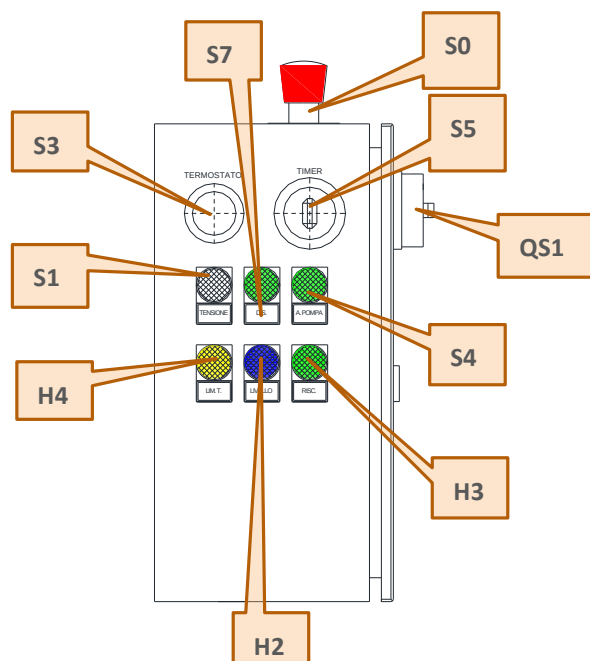
The machine to work only needs one operator. During its cycle no one other than the operator must stop near by the machine or worse still interfere with it.

Electric control panel

The following is a description of the different devices on the electrical panel and operator's work area.

Devices on the electrical panel casing:

SIGLA	DESCRIZIONE
S0	EMERGENCY BUTTON
QS1	Door locking switch / main switch
S1	"Auxiliary Power" button/light
S4	Start cycle
S7	Start oil skimmer (optional 91-1 e 91-2)
H3	Light indicator "on/off heating"
H2	Light indicator "min. level"
H4	Light indicator "temp. max"
S3	Thermostat
S5	Timer $t_{max} = 60$ min



MACHINE START UP

The door locking switch / main switch**QS1** has two settings:

- ON: Machine powered on;
- OFF: Machine powered off.

The machine's emergency button is a red mushroom button on a yellow background **S0** situated on the control panel. Press the emergency button to cut off the machine's power completely.

To restore operation after pressing the emergency button, proceed as follows:

- release the emergency button's mechanical stopper by turning it counter-clockwise;
- Press the button**S1**.



PERIODICALLY CHECK THE EMERGENCY BUTTON'S CORRECT OPERATION.

Electrical system diagrams

See attached electrical diagrams.

MACHINE OPERATION



To immediately stop the machine for any reason whatsoever, press the red emergency push-button situated on the control panel.

During the machine's operation, it is absolutely forbidden to remove the safety systems designed and assembled by the manufacturer in order to ensure the operator's safety.

The machine must be operated by qualified and experienced personnel only.

Under normal user conditions, the machine operator must wear the following personal protection equipment:



Protective gloves



Safety footwear



Protective clothing



safety glasses must be worn



masks must be worn

The operator has the possibility to command the basket rotation manually by pushing the start button with the lid open, particularly when the basket is gearbox driven; in this conditions the operator can reach not protected moving parts.

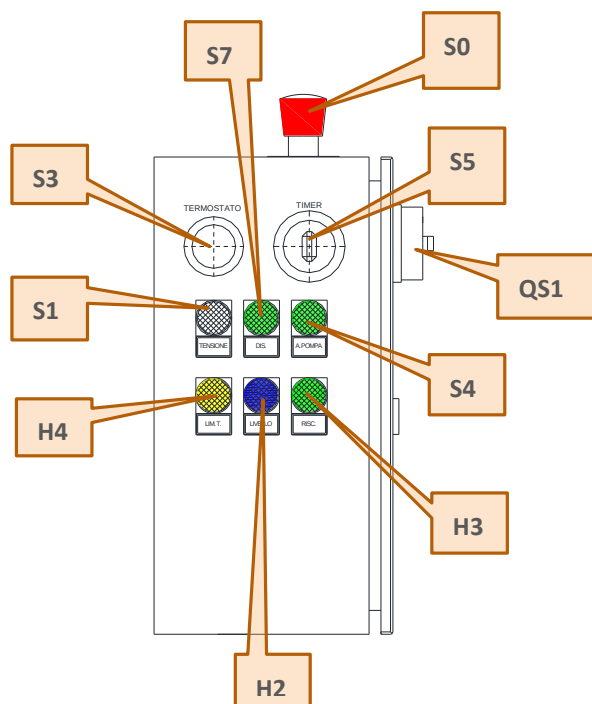
Wash cycle description

After having made that all the connections and checks are correctly executed as described in the previous chapters, start up the machine as follow :

1. Turn the "MAIN SWITCH" to the ON position;
2. Push the blue control circuit voltage;
3. Fill the tank with water until - the probe is covered by at least 5 cm of water;
4. Add the wash detergent following the manufacturer instructions. If using powder detergent supplied with the machine, dissolve it in a separate bucket with cold water before pouring in the tank. Use max. 3% of detergent in respect of water quantity. (NOTE : always use protective clothing listed above).;
5. Set the desired temperature on the THERMOSTAT (max 60°).
6. Wait until the settled temperature is reached (HEATING INDICATING LIGHT OFF).
7. Load the basket with the parts to wash distributing uniformly the weight . For the maximum load weight see the table in chapter 3.1 , under paragraph " MAX. LOAD CAPACITY ALLOWED "
8. Set the upper spray tubes in a diagonal position.

MACHINE OPERATION

9. Regulate the inclination of the lower spray tube so that the water jet turns the basket (only for the machine without driven basket).
10. Close the lid and secure it properly with its latch;
11. Set the desired wash time with the TIMER (max 60 min.);
12. Push the START button S4;
13. At the end of the wash cycle open the lid; if the basket rotation has not stopped yet, the brake will automatically stop it.
14. Unload the washed parts (NOTE : always use protective clothing listed above)



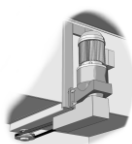
Verification of washed parts

At the end of the cycle verify the cleanliness of the parts. To improve the quality of the wash follow this instruction :

- Change the speed of rotation of the basket (only for the machines without driven basket). To do this change the inclination of the lower spray tube
- Increase wash time.

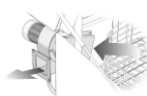
ACCESSORIES

The machine can be equipped with the following accessory



Driven basket

This item allows the automatic rotation of the basket when the START CYCLE button is pushed.



Fan

The fan is required in case you want to use the machine at a temperature over 60°C. The fan starts automatically at the end of the wash cycle. It is possible to increase or decrease the fan time, changing the set up on the timer inside the electrical box. The ducting for the extraction of the water vapour must be connected to the flange on the fan (diam. 90mm).



Automatic water refilling

The water level is controlled by two probes (min.-max.), inside the tank, that operate a solenoid valve, to be connected up to the water supply. A one-way valve is mounted on the top of the electrovalve, in order to protect the water net of the user.



Drain pump

A drain pump, activated by a push button placed on the electrical panel, allows for the drain water. To drain the tank open the drain tap, and push the button.

If the machine has automatically refill, the refill selector must be positioned to "0".



To safeguard the environment, scrupulously follow the local laws concerning the waste management and effluent disposal.



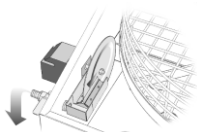
Hour counter

This item works only during the wash cycle to facilitate the timely water change.



Weekly heating timer

The function of this item allows the heater to be switch on at a preset hour. For instruction consult the attached manual



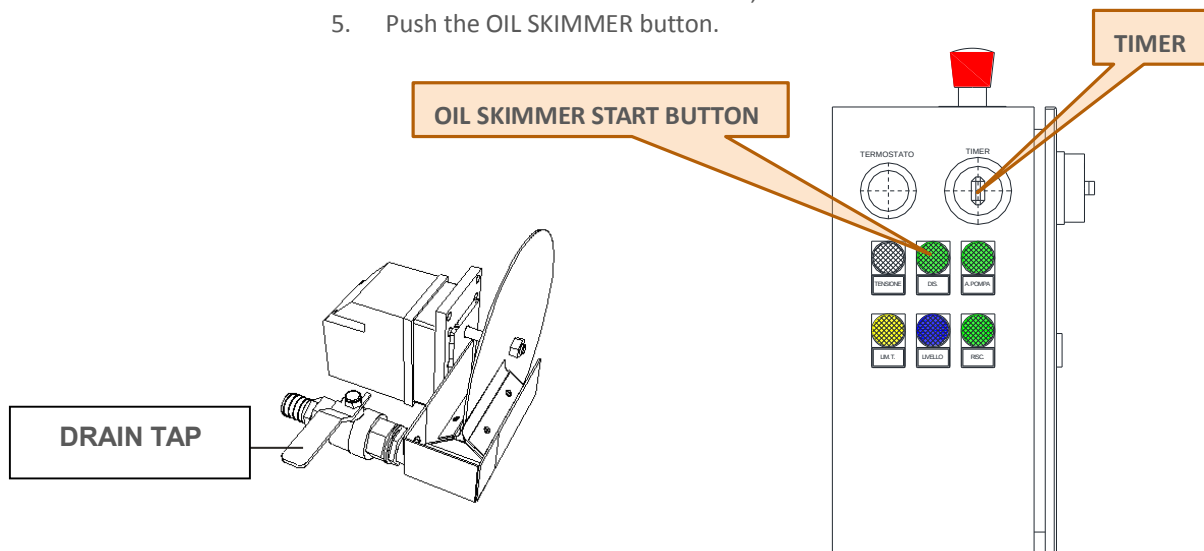
Oil Skimmer

This item allows the remove of oil residue or at least a great part of it, present in the water

ACCESSORIES

Proceed as follows:

1. Wait at least 1 hour to allow water and oil to separate;
2. Position a container under the oil drain tap;
3. open the drain tap;
4. Set the desired time on the TIMER;
5. Push the OIL SKIMMER button.



Insulation

The complete insulation of the machine is required in case you want to use the machine at a temperature over 60°C.

MAINTENANCE AND REPAIRS



Always remember to perform the following procedures prior to any maintenance or replacement interventions:

- Turn the MAIN SWITCH to the OFF position;
- Disconnect the machine from all power sources.
- Maintenance, part replacements and repairs must be performed by a qualified technician who is familiar with the technologies applied to the machine.

Do not power on the machine during cleaning, maintenance and repairs.

Always wear the following personal protective equipment when carrying out maintenance operations: gloves, safety footwear and eyeglasses.

Precautions for the machine's maintenance condition

Proceed as follows prior to setting the machine in a state of maintenance:

- disconnect the electricity power supply;
- affix a warning sign indicating the machine's maintenance status.

Maintenance operations

Proper maintenance is crucial towards ensuring a longer machine life under optimal performance conditions, and to guarantee the operability of the safety features provided by the manufacturer.

Operation	Machine part	Frequency
Visual control	Machine Electrical parts	Weekly
Cleaning	General Internal	Weekly
Control level	Tank	Daily
Change water	Tank	Monthly
Greasing	Tubi	Monthly
Internal cleaning	Tubi	Monthly
Cleaning	Filter	Daily
Cleaning	Tank	Monthly
Safety control	Basket Brake	Monthly

Visual control of the machine

o guarantee the reliability of the machine and to prevent the arise of eventual problems we suggest that you carry out a periodically visual control of the machine , and in particular the moving parts.

MAINTENANCE AND REPAIRS

Verify that these controls are carried out when the machine is switched off from all the power supply.

In particular verify that all parts are in their place in the correct position and there are not any loose parts.

General cleaning of the machine

Verify daily the state of the machine and in particular the nozzles and the cylindrical filters. Clean the whenever necessary.

Clean any eventual scale from the level probes, if the machine is equipped with this. In the case of the water becoming dirty very quickly change the water more often.



Dirty water will quickly cause the pump seal to wear out, resulting in leaking water.

All machine cleaning operations must be carried out with suitable protective gloves and eyewear.

Do not wash the machine using direct jets of water, liquids or corrosives, solvents or benzene. Clean the machine and electrical components using a cloth slightly moistened with a mild detergent solution.

Visual control of the water

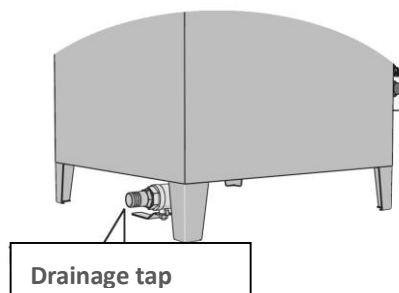
Control the water level daily, top up to normal level if necessary.

Water change

Change the water when necessary as follows:

- Place a container underneath the drain tap;
- Open the drain tap located under the machine until it has completely emptied;
- Close the drain tap.

N.B. : change the water less frequently if the machine is only used sporadically



It is absolutely forbidden to drain the wash liquid to the environment or sewer. Follow scrupulously the local regulation concerning waste treatment

MAINTENANCE AND REPAIRS

Greasing of the bearings

Grease monthly the basket bearings . For the machine with driven basket there is a grease nipple present on the support shaft. Use water resistant grease

Spray bar cleaning

Remove monthly the spray tube and clean the internally to remove dirt , scale and solid residues

Filter cleaning

Remove daily the filter and clean it with a jet of water.

Basket brake check

Check monthly the correct working order of the basket brake , only for machine without driven basket.

Intervention that must be carried out by the manufacturer technicians

Listed below the maintenance interventions that require a precise technical competence and that must be performed by manufacturer qualified technicians.

The user must not under any circumstances carry out :

- intervention on the electrical box;
- intervention on the machine mechanical parts;
- substitution of electrical components.



For all the regulations and set up not contemplated in this manual consult the manufacturer or dealer.

Trouble shooting

A number of possible inconveniences that may occur on the machine are listed below.

PROBLEM	CAUSE	SOLUTION
1- The machine does not start	Main power supply fuses have blown	Change
	Bad connection between machine and main power supply	Reset
	Step down transformer fuse has blown	Change
2- The pump does not start	Timer has not been set	Set
	Circuit breaker not engaged *	Engage
	Lid not close properly	Close
3 – The heater does not heat up	Fuses F1 have blown	Change
	The thermostat is defective	Change
	Heater element burnt out	Change
	Weekly timer (optional) not set	Set
4 – The basket does not rotate	Excessive load	Decrease the weight
	Load not uniformly distributed	Correct
	The spray nozzles are clogged	Clean
	Pump rotates in the wrong direction	Invert rotation
	Filter is dirty or obstructed	Clean
	Lower spray tube is not regulate	Set
	Basket brake is defective	Control
5 – Incomplete wash	Wash time too short	Increase time
	Wash solution too dirty	Change solutions
	The spray nozzles are clogged	Clean
	Filter is dirty or obstructed	Clean
	Basket does not rotate	See point 4
	Pump rotates in the wrong direction	Invert rotation
	Not suitable detergent	Change
6 – Pump leaks water	Mechanical seal is worn	Replace

In case of electrical overload the pumps and motors may stops.

In this case re-engage the circuit breakers by pushing the ON button on circuit breaker itself.

In case of continuous anomaly have the cause verified by a qualified electrical technician

MACHINE DEMOLITION

The User, according to EEC directives, or according to the Laws in force in the User's country, must see to the demolition, disposal and elimination of the various materials that make up the machine.

If the machine or a part of it is to be demolished, it is necessary to adopt preventative safety measures in order to avoid the risks associated with the decommissioning of industrial machinery.

Be especially careful during the following phases:

- Disassembly the machine from its operating area.
- Transport and handling of the machine.
- Dismantling the machine.
- Separation of the various materials making up the machine.

In addition, in carrying out the demolition and disposal of the machine, it is necessary to observe basic norms in order to safeguard public health and the environment:



Eliminate even the slightest traces of oil and grease on the machine; lubricating substances should not be thrown out into the environment, but should be recovered and treated by a plant specialised in the elimination of these products.

If the materials used for the production process, as well as lubricants and condensation water are not disposed of according to the Laws and Regulations in force, residual risks may subsist, such as:



1) Environmental pollution



2) Intoxication of persons carrying out disposal operations

For operations involving the separation of materials and their recycling or disposal, please refer to National or Regional Laws in force concerning the disposal of solid industrial wastes and toxic and hazardous waste:

Sheathing, hoses and plastic or non-metal components must be removed and disposed of separately.

Pneumatic and electrical components, such as valves, solenoid valves, pressure switches, switches, transformers, etc., should be disassembled to be re-used if still in good condition, or if possible, reconditioned and recycled.

The body, and all metal parts of the machine, should be dismantled and grouped according to type of material. The various parts thus obtained can then be scrapped and melted down to allow the recycling of the material forming the original machinery.



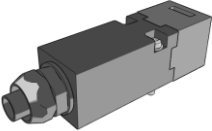
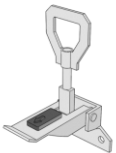
The disposal of toxic products considered harmful - should be carried out in accordance with National and Regional Laws, conferring waste materials to disposal firms belonging to an authorised consortium for the disposal of waste oils.

SPARE PARTS

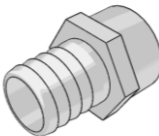
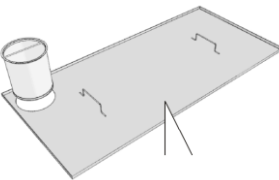
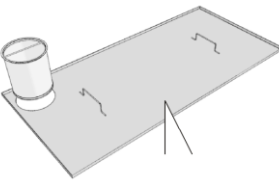
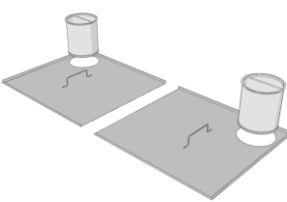
The manufacturer guarantees the machine's safety and reliability solely if original spare parts are used. The Manufacturer declines all responsibility for damage resulting from the use of non-original spare parts.

When ordering spare parts, list the following:

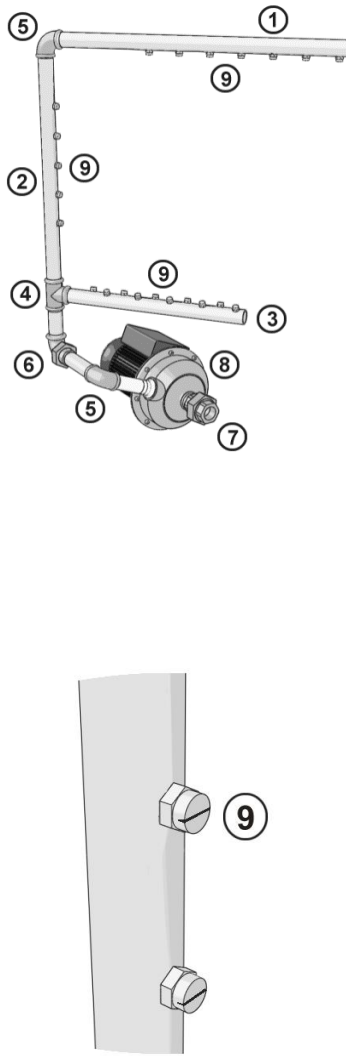
- the machine model;
- serial number;
- part description;
- code;
- quantity.

Tab.12.1 Spare parts	Description	91-1		91-2		115-2	
			Nr.		Nr.		Nr.
	Safety interlock	2129236	1	2129236	1	2129236	1
	Gas shock absorber						
	Without insulation	2129044	2	2129044	2	2129081	2
	With insulation						
	Heating element	2129050	1	2129050	1	2129042	1
	Lid handle	2129237	1	2129237	1	2129237	1
	Adjustable latch	2129238	1	2129238	1	2129238	1

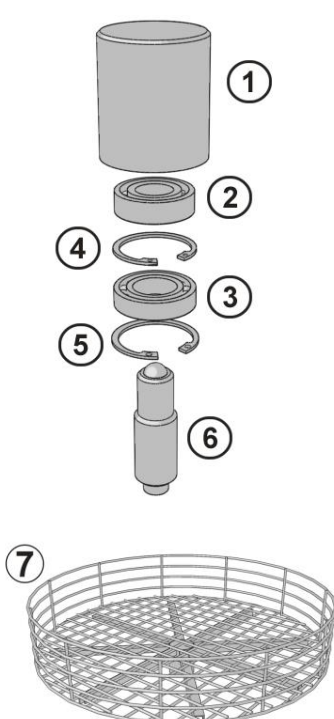
SPARE PARTS

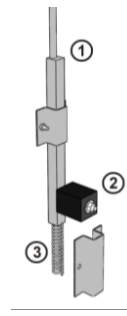
Tab.12.1 Spare parts	Description	91-1	91-2	115-2
	Hook	2129393	2129393	2129393
	Exhaust steam	2129239	2129239	2129239
	Drain tap	2129240	2129240	2129240
	Hose crimping	2129241	2129241	2129241
	Filter	2129229	2129229	2129229
	Chip tray (with gearmotor)	2129242	2129242	
	Chip tray (without gearmotor)	2129243	2129243	
	Chip tray			2129244
				2129245

SPARE PARTS

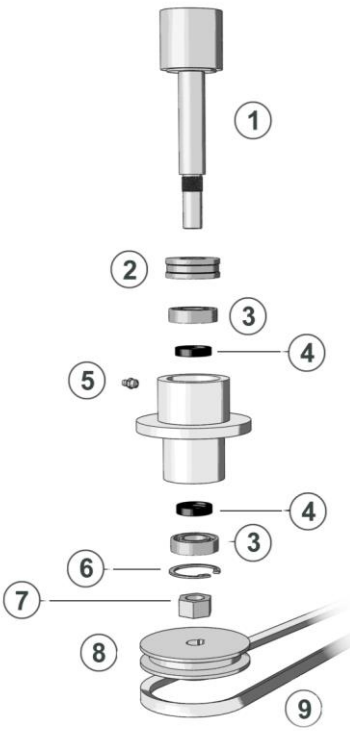
Tab. 12.2 Hydraulic circuit	Pos.	Description	91-1	Nr.	91-2	Nr.	115-2	Nr.
	1	Upper spray tube	2129246 (verzinkt)	1	2129246 (verzinkt)	2	2129248 (verzinkt)	2
			2129247 (Edelstahl)		2129247 (Edelstahl)		2129249 (Edelstahl)	
	2	Lateral spray tube	2129250 (verzinkt)	1	2129250 (verzinkt)	2	2129252 (verzinkt)	2
			2129250 (Edelstahl)		2129250 (Edelstahl)		2129253 (INOX)	
	3	Lower spray tube	2129254 (verzinkt)	1	2129254 (verzinkt)	2	2129256 (verzinkt)	2
			2129255 (Edelstahl)		2129255 (Edelstahl)		2129257 (Edelstahl)	
	4	Tee 1"	verzinkt	1	2129258	2		2
			VA		2129259			
	5	Elbow 1"	verzinkt	2	2129260	4	F90-1Z	4
			VA		2129261		*F90-1I	
6	Union 1"	verzinkt	1	2129262	2	F96-1Z	2	
		VA		2129263		F96-1I		
7	Union	2129264 verzinkt	1	2129266	2	2129268	2	
		2129265 VA		2129267		2129269		
8	Wash pump	2129270	1	2129231	2	2129270	2	
9	Nozzles	2129271	22	2129271	44	2129271	58	

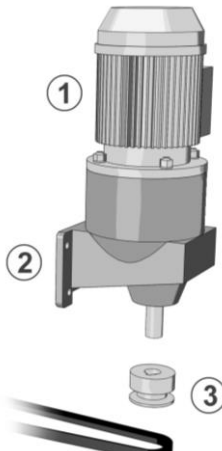
SPARE PARTS

Tab.12.3 Basket (without gearmotor)		Pos.	Description	91-1	Nr.	91-2	Nr.	115-2	Nr.
		1	Bearings hub	2129272	1	2129272	1	-	-
		2	Radial bearing	2129062	1	2129062	1	-	-
		3	Radial bearing	2129063	1	2129063	1	-	-
		4	Seeger	2129064	1	2129064	1	-	-
		5	Seeger	2129065	1	2129065	1	-	-
		6	Pivot	2129273	1	2129273	1	-	-
		7	Complete basket (brake type)	2129274 verzinkt 2129275 VA	1	2129274 verzinkt 2129275 VA	1	-	-

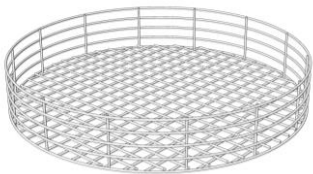
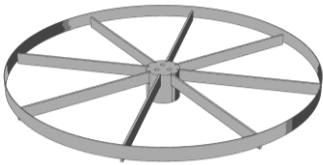
Tab.12.4 Brake kit		Pos.	Description	91-1	Nr.	91-2	Nr.	115-2	Nr.
		1	Brake support	2129276	1	2129276	1	2129276	-
		2	Brake pad	2129277	1	2129277	1	2129277	-
		3	Brake spring	2129278	1	2129278	1	2129278	-

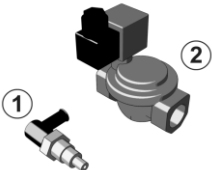
SPARE PARTS

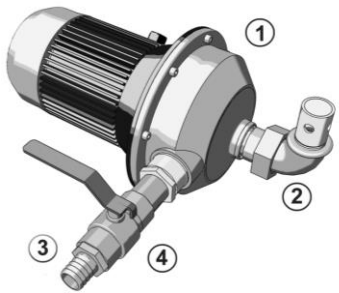
Tab. 12.5 Basket with gearmotor system			91-1		91-2		115-2	
	Pos.	Description		Nr.		Nr.		Nr.
	1	Driven basket shaft	2129279	1	2129279	1	2129279	1
	2	Thrust bearing	2129072	1	2129072	1	2129072	1
	3	Radial bearing	2129073	2	2129073	2	2129073	2
	4	Spindle O-Ring	2129074	2	2129074	2	2129074	2
	5	Greasing nipple	2129077	1	2129077	1	2129077	1
	6	Lock ring	2129076	1	2129076	1	2129076	1
	7	Shaft nut A2 M20x1	2129280	1	2129280	1	2129280	1
	8	Shaft pulley	2129281	1	2129281	1	2129281	1
	9	V-belt for gearbox	2129069	1	2129069	1	2129070	1

Tab.12.6 Gearmotor			91-1		91-2		115-2	
	Pos.	Description		Nr.		Nr.		Nr.
	1	Motor	2129276	1	2129276	1	2129276	-
	2	Gear box	2129277	1	2129277	1	2129277	-
	3	Gear box pulley	2129278	1	2129278	1	2129278	-

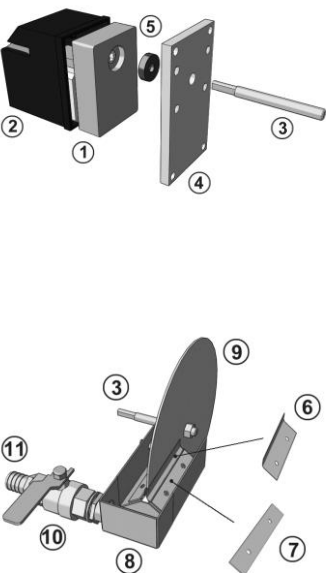
SPARE PARTS

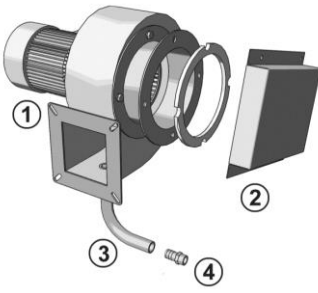
Tab.12.7 Basket with gearmotor		91-1	Nr.	91-2	Nr.	115-2	Nr.
Description							
	Basket (gearbox type)	2129099 (verzinkt)	1	2129099 (verzinkt)	1	2129101	1
		2129182 (Edelstahl)	1	2129182 (Edelstahl)	1		
	Motorised basketboard	2129286	1	2129286	1	2129287	1

Tab. 12.8 Water level control and automatic fill		91-1	Nr.	91-2	Nr.	115-2	Nr.
Pos.	Description						
	1 Level probe	2129288	1	2129288	1	2129288	1
	2 Solenoid valve	2129289	1	2129289	1	2129289	1

Tab. 12.9 Drain pump		91-1	Nr.	91-2	Nr.	115-2	Nr.
Pos.	Description						
	1 Drain pump	2129290	1	2129290	1	2129290	1
	2 Union 1"	2129262	1	2129262	1	2129262	1
	3 Hose crimping	2129291	1	2129291	1	2129291	1
	4 Drain tap	2129292	1	2129292	1	2129292	1

SPARE PARTS

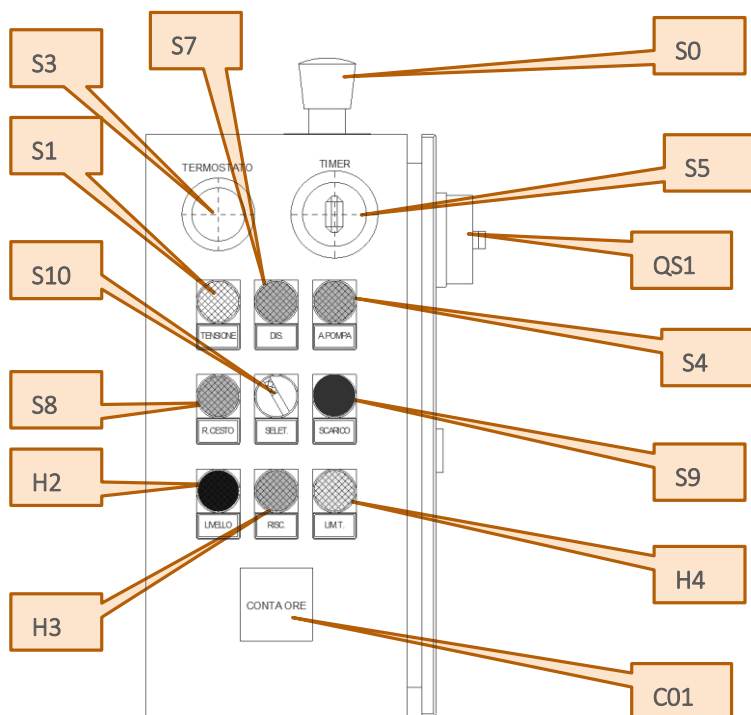
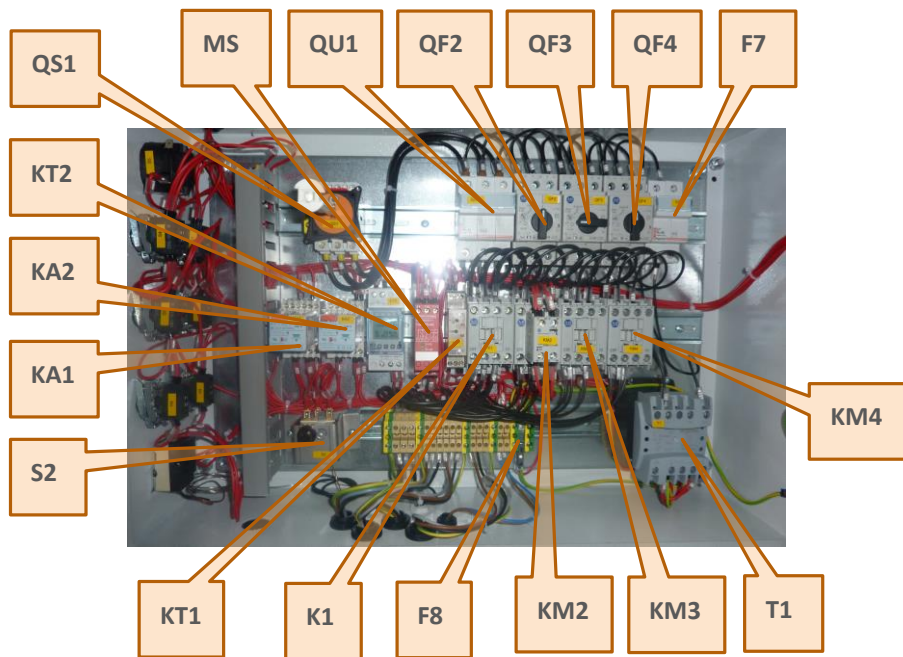
Tab.12.10 Oil-skimmer			91-1	91-2	115-2		
	Pos.	Description					
	1	Gearmotor	2129029	1	2129029	1	2129029
	2	Motor guard	2129056	1	2129056	1	2129056
	3	Pivot	2129293	1	2129293	1	2129293
	4	Flange	2129294	1	2129294	1	2129294
	5	Spindle O-Ring	2129295	1	2129295	1	2129295
	6	Lips for oil-skimmer	2129057	2	2129057	2	2129057
	7	Catch	2129296	2	2129296	2	2129296
	8	Tank	2129297	1	2129297	1	2129297
	9	Disc	2129298	1	2129298	1	2129298
	10	Drain tap	2129299	1	2129299	1	2129299
	11	Hose crimping	2129300	1	2129300	1	2129300

Tab.12.11 Fan			91-1	91-2	115-2		
	Pos.	Description					
	1	Fan	2129301	1	2129301	1	2129301
	1a	Motor	2129302	1	2129302	1	2129302
	2	Protection fan	2129303	1	2129303	1	2129303
	3	Plastic hose	2129304	1	2129304	1	2129304
	4	Hose crimping	2129301	1	2129301	1	2129301

SPARE PARTS

POSITION	DESCRIPTION	BRAND	MODEL CODE
QS1	Main switch	Schneider	VCCF 0
S2	Temperature limiting device	IMIT	LS1 7025
QU1	Fuse carrier	Legrand	05838
QF2	Circuit breaker	Allen Bradley	140M-C2E-B40
QF3	Circuit breaker	Allen Bradley	140M-C2E-B25
QF4	Circuit breaker	Allen Bradley	140M-C2E-B25
F7	Fuse carrier	Legrand	05828
T1	Transformer	Legrand	LG642321/23/24
F8	Fuse carrier 24V	Legrand	37181
KA1	Relé	Gavazzi	RCP11003
KA2	Relé	Gavazzi	RCP11003
KT1	Relé temp.	Legrand	412633
KT2	Relé temp.	Omron	H3DS-AL
MS	Safety modul	Telemecanique	XPSAC5121
K1	Auxiliary	Allen Bradley	100-C09KJ10
KM2	Auxiliary	Allen Bradley	100-C09KJ10
KM3	Auxiliary	Allen Bradley	100-C09KJ01
KM4	Auxiliary	Allen Bradley	100-C09KJ01

SPARE PARTS



SPARE PARTS

Pos.	Description	91-1	Nr.	91-2	Nr.	115-2	Nr.
S0	Emergency button	2129305	1	2129305	1	2129305	1
S1	push button	2129306	1	2129306	1	2129306	1
S3	Thermostat	2129307	1	2129307	1	2129307	1
S4	push button	2129308	1	2129308	1	2129308	1
S5	Timer	2129204	1	2129304	1	2129304	1
H2	indicating light	2129309	1	2129309	1	2129309	1 1
H3	indicating light	2129310	1	2129310	1	2129310	1
H4	indicating light	2129311	1	2129311	1	2129311	1
S7	push button	2129312	1	2129312	1	2129312	1
S8	push button (Option)	2129313	1	2129313	1	2129313	1
S9	push button (Option)	2129314	1	2129314	1	2129314	1
S10	Selector (Option)	2129315	1	2129315	1	2129315	1
CO1	Counter (Option)	2129316	1	2129316	1	2129316	1