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USE AND MAINTENANCE **MANUAL**

Machine:

“MANUAL PALLET TURNER”

Model:

“TOPPY INVERTER”



LAST UPDATES

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1 INTRODUCTION

1.1 GENERAL INFORMATION



BEFORE CARRYING OUT ANY OPERATION ON THE MACHINE AND/OR THE PACKAGING, OPERATORS AND QUALIFIED TECHNICIANS MUST CAREFULLY READ THE INSTRUCTIONS CONTAINED IN THIS PUBLICATION (AND IN THE ATTACHED PUBLICATIONS) AND FOLLOW THEM WHILE CARRYING OUT FORESEEN INTERVENTIONS.



IF IN DOUBT ABOUT A CORRECT INTERPRETATION OF THE INSTRUCTIONS, CONTACT THE MANUFACTURER OR THE AFTER-SALES ASSISTANCE CENTRE IN ORDER TO OBTAIN NECESSARY CLARIFICATION.

The Manufacturer is available for completing personnel training courses at the Customer's headquarters.



THE PLANT SAFETY MANAGER must:

- ♦ **verify that the knowledge level is sufficient in order to read and comprehend the manual:**
- ♦ **carry out sufficient practical training and, by way of testing, make sure that those running the machine are capable of doing so correctly and safely, both in normal operating conditions and in emergency situations.**

* This manual was created to provide the user with a general knowledge of the machine and maintenance instructions considered necessary for it to operate properly.

* Before proceeding with installation, maintenance and repair operations, carefully read the Manual, it contains all information necessary for correctly using the machine and avoiding injury.

* The control and maintenance frequencies recommended in the manual are always considered the minimum necessary for guaranteeing efficiency, safety and machine duration under normal work conditions; it must however be checked constantly and one must intervene in case of an anomaly.

* Guards must only be removed with the machine stopped, by authorised personnel and in zero energy conditions as prescribed by the 292/2 Nov. 1992 Standard at Point 4.1.4.

* All routine maintenance, controls and general lubrication must be carried out with the machine stopped and without electrical power and hydraulic oil pressure, therefore in zero energy conditions.



No operation is foreseen, or can be carried out, while the machine is powered/operational. This recommendation is MANDATORY.



Any modification of the machine that is carried out without the manufacturer having knowledge of alters foreseen functionality modifying contents of the risk analysis from the Technical Booklet and/or generating additional risks that were not highlighted, will be completely responsibility of those carrying out these modifications.

These modifications, if completed without manufacturer authorisation, will terminate any type of warranty given and invalidate the conformity declaration guaranteeing safety standards related to Machinery Directive 2006/42/CE and subsequent mod.

1.2 PRECAUTIONS

* Where a safety selector switch or a key lock is foreseen, the maintenance person and the operator must remove the key and keep it on their person or in an area where access is limited to them and authorised personnel.

* While changing/adding lubricant, always wear oil/grease resistant gloves and once the work is terminated, wash hands with abundant water and soap.

* Immediately clean oil and grease stains on the floor in order to avoid falls caused by slipping.

* During operations, in particular when removing powder, dust, or other residues, wear suitable clothing, where possible, only use vacuum cleaners, if the use of compressed air is necessary, wear masks, protection glasses, protection gloves and close sleeves using an elastic band. In every circumstance, always use suitable protective clothing and equipment.

* Avoid wearing rings, watches, bracelets, chains, loose long hair or clothing that is too loose or hangs down, when coming close to the machine while it is moving.

* Never insert hands or other body parts under pieces that are not perfectly fastened to the machine with fixing equipment.

* Before any operation, make sure that any drift in moving parts are sectioned and that the parts are completely stopped.

1.3 MANUAL ORGANIZATION AND CONSULTATION







The following manual has been structured to make searching the desired topic very simple.

From the general index it is possible to easily access the desired chapter; at the beginning of each chapter there is an additional index that makes it easier to find the specific topic.

The manual comes with pictures and drawings that make it easier understand topics covered; sometimes some of these are slightly different that actual machine appearance, this does not however make the nature of the content invalid and it therefore remains reliable and correct.

The manual also uses symbols to bring attention to particular instructions or warnings.

The symbols used are included here below:

	ATTENTION: This symbol indicates mandatory operator recommendations.
	PROTECT EYES.
	WEAR PROTECTIVE HELMET.
	WEAR PROTECTIVE GLOVES.
	WEAR SAFETY FOOTWEAR.
	USE PROTECTIVE EARMUFFS.

1.4 MEASUREMENT UNIT

The measurement units used in this instructions manual are defined here below.

kg (kilograms)	mass
ton (tons)	mass
cm ³ (cubic centimetres)	engine capacity
r.p.m (revs per minute)	revolution speed
mm (millimetres)	length
kw (kilowatt)	power
g/Kwh (grams per kilowatt hour)	consumption
Nm (Newton metre)	torque
Km/h (kilometers per hour)	speed
A (ampere)	electric absorption
V (volt)	electrical potential
Hz (hertz)	frequency
Bar	pressure
NI/m (normal litres per minute)	capacity
Lt. (litres)	capacity
dB (decibel)	sound emission
°C (centigrade degrees)	temperature
daN/mm ² (decanewtons per squared millimetre)	load capacity.

2 MACHINE DESCRIPTION

2.1 PREMISES

The «**MANUAL PALLET TURNER**» “**TOPPY INVERTER**” model machine under consideration has been designed and manufactured by «**TOPPY S.r.l.**» to be used exclusively in an environment that is:

- Industrial;
- covered,
- suitably lighted,
- that is not potentially explosive.

The stationary machine has been designed and manufactured for tipping 180° packaged loads such as:

- stable loads (e.g.: boxes);
- unstable and fragile loads (e.g.: bottles or vials);
- unstable and resistant loads (e.g.: bags, big bags, vats, etc.).

positioned on a pallet.

For dimension characteristics of loads that can be worked,
see specific table in paragraph 7.2.1.1.

This machine is safe **only and exclusively** if it has not been tampered with or modified from the original manufacturing configuration.



Any modification of the machine that is carried out without the manufacturer having knowledge of alters foreseen functionality modifying contents of the risk analysis and/or generating ADDITIONAL RISKS that were not highlighted, will be completely responsibility of those carrying out these modifications.

as for damage to property, persons or animals resulting from such modifications.

These modifications, if completed without manufacturer authorisation, will also terminate any type of warranty given and invalidate the conformity declaration guaranteeing safety standards related to Machinery Directive 2006/42/CE and subsequent modifications.

In factory manufacturing conditions it is never possible to exclude safety devices using the controls, especially since no operation requires it.

2.2 MACHINE DESCRIPTION, COMPOSITION AND ACCESS TO THE WORK AREA.

The **«MANUAL PALLET TURNER»** machine under consideration has been designed and manufactured for tipping packaged loads by 180° degrees.

The main machine components are the following:

- Machine base;
- Gripper unit with hydraulic rotation fifth wheel;
- Hydraulic oil control unit;
- Electrical power supply board and control push-button panel with emergency stop;
- Fixed perimeter protection netting;
- Electronic safety barrier.



N.B.: Additional information is present in Chap. 7.1.

The base of the machine is made of a heavy tubular electrowelded and painted structure equipped with a robust vertical structure, that the load pick-up Gripper Unit hydraulic rotation fifth wheel (purchased certified) is solidly fixed to.

The machine rests on the floor by way of 4 base plates welded to the base, they are fastened to the ground using M16 anchors (one per base plate) and is recommended exclusively to avoid accidental moving in case of bumping, but it is not completely necessary to guarantee machine stability, since the machine has been mechanically manufactured as stable.

The Pick-up gripper unit is fixed on the hydraulic fifth wheel, it is made of a load bearing structure with side load support and 2 sliding platforms on guides, where each one is moved by a hydraulic cylinder equipped with a safety check valve.

In order to protect the work area, the entire machine can be completely protected along the perimeter of three sides with wire netting fixed guards with a mesh of 40x40mm and an approximate height of 1,890 mm (with a distance from the machine of about 1,000mm) and on the front opening (used for loading/unloading the product to be processed) using an electronic safety barrier made of 2 individual beams, that are respectively positioned from the ground:

2nd beam:	900 mm from the ground
1st beam:	400 mm from the ground

and about 850 mm from the machine.

Using such safety devices is possible thanks to the very low closing/rotation speed of the machine and its basically instantaneous stop in case of something entering the processing area during the tilting phase.

In order to avoid crushing danger in case of missing hydraulic oil supply to hydraulic components (for example if the supply pipe were to break accidentally), these gripper closing hydraulic oil cylinders are equipped with safety check valves that block any uncontrolled/not commanded movements.

The electrical board with control panel is integrated on the machine, while the control panel is located outside of the possible perimeter protections.

On the operator panel and the board there is also an emergency stop button and all controls and signals necessary for a correct and safe use of the machine.

On the Control push-button panel there are also selector switches controlling individual movements.

If the machine is equipped with an electronic safety barrier, on the control panel there is also a restore electronic barrier button (is supplied) used to restore the electronic barrier while inside the processing area.

For additional details, see the Lay-out and the Use and Maintenance Manual of the Electrical board and control panel attached to this.

In general, protection devices can be temporarily removed only and exclusively by personnel in charge of maintenance, while the machine is stopped and the electrical and hydraulic power supplies are excluded (0 energy).

Their restoration is a necessary condition for the machine to operate.

In any case, no moving part can be reached based on the original factory installation.



If it were to be necessary to remove the protections of the above mentioned machine, eliminating its necessary precautions, come close to the unprotected area (without protection devices in the processing area) only and exclusively after removing electrical and hydraulic power from the above mentioned machine.



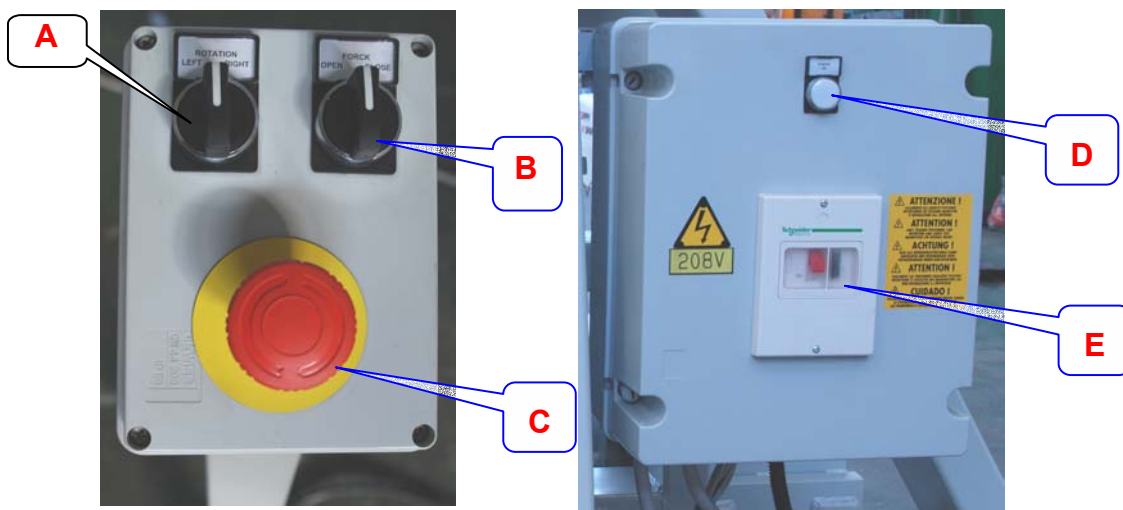
No maintenance operation is foreseen or will be able to be carried out while the machine is operational.
This recommendation is MANDATORY.

In such conditions, movable parts must not be able to be moved accidentally.



Such operations must be carried out by a single operator, properly trained and officially authorised by the company using the machine, who will also be responsible for the safety of any personnel transiting in the area.

2.2.1 LAY-OUT OF CONTROLS AND RELATED LUMINOUS SIGNALS



Key:

- A** Fifth wheel Left / right rotation control selector switch;
- B** Forck Open / close control selector switch;
- C** Emergency button;
- D** Machine powered warning light;
- E** Main switch;

2.3 SAFETY DEVICES

2.3.1 EMERGENCY STOP DEVICE

There are two emergency stop buttons on the machine (Red mushroom shaped emergency stop button) positioned on the board and on the control panel.

The emergency stop blocks the dangerous process in the shortest possible amount of time, completely interrupting machine operation, bringing it to zero energy condition in real time; it has absolute priority over all machine controls, without creating additional risks.

The stop order is maintained by a block of the emergency stop device, even after action on the control is interrupted and it is maintained until there is a manual release.

<the release, occurring after an intentional manoeuvre, does not restart the machine, it simply gives its consent to restart the machine; the restart procedure must be fully repeated, the emergency stop, once activated, must be restored before the machine can be restarted.

EACH STOP COMMANDS HAS PRIORITY ABOVE ANY OTHER COMMAND AND COMPLETELY BLOCKS THE MACHINE, EXCLUDING AN ACCIDENTAL START-UP.



If the need to remove perimeter protections from this machine were to arise, eliminating its necessary protections, come close to the unprotected area (processing area) only and exclusively after cutting electrical and hydraulic power from this machine.

2.3.2 PROTECTION DEVICES

In order to avoid crushing danger, upon request, the entire machine can be completely protected along the perimeter of three sides with wire netting fixed guards with a mesh of 40x40mm and an approximate height of 1,890 mm (with a distance from the machine of about 1,000mm) and on the front opening using an electronic safety barrier made of 2 individual beams, that are respectively positioned from the ground:

2nd beam:	900 mm from ground
1st beam:	400 mm from ground

and about 850 mm from the machine.

Using such safety devices is possible thanks to the very low tilting speed of the machine and its basically instantaneous stop in case of something entering the processing area during the tilting phase.

In order to avoid crushing danger in case of missing hydraulic oil supply to hydraulic components (for example if the supply pipe were to break accidentally), these gripper closing hydraulic oil cylinders are equipped with safety check valves that block any uncontrolled/not commanded movements.

The electrical board and the related control panel are integrated into the machine, but outside of the perimeter protections.

On this last one there is also an emergency stop button and all controls and signals necessary for a correct and safe use of the machine.

On the control panel there can also be an electronic barrier restore button (if present); its purpose is to keep the electronic barrier from being restored as long as someone is inside the processing area, between the processing area and the electrical board there is a electrowelded and painted wire netting panel with 40x40mm mesh, 1,890 mm tall and wide enough to keep from reaching the restore button from the inside.

For additional details, see Chap. 7

In order to avoid crushing danger even in case of missing hydraulic oil supply to pick-up gripper closing cylinders or if the supply pipe were to break accidentally, these hydraulic oil cylinders have been equipped with safety check valves that block any uncontrolled/not commanded movements; the same thing is true for the hydraulic fifth wheel.

The fixed wire netting perimeter protections, 1,000mm distant from the machine, are fasten to the floor using anchors that require tools for removal and can only be removed by the personnel in charge of maintenance, that must advised to assemble them again before restarting the machine.

The fixed perimeter guards cannot remain placed without the clamping fittings, restoring them is necessary to restart machine processing.

In any case, no dangerous moving part can be reached.



Starting or using the machine with the protections or safety devices removed or modifies is strictly prohibited.

2.4 NOISE EMISSIONS

The machine is designed and manufactured so that noise emissions are reduced to a minimum, in particular, acoustic emissions are generated by the hydraulic oil control unit (purchased certified).

After the measurement completed during automatic processing (maximum noise condition) at 1 m from the machine, with the instrument positioned at 1,60 from the ground, along the entire perimeter, it detects a noise emission in the order of 85 decibel weighted sound pressure A (dB A) (Attachment I , 1.7.4 point f of Machinery Directive 2006/42/CE).



The use of protective earmuffs or earplugs must be considered mandatory when in proximity of the machine.

This disposition must be communicated to persons exposed of the using company by means of communication through a bulletin board.



This obligation must be signalled using specific light blue indicator signs.

The company using the equipment must also supply suitable protections and make sure that exposed persons and operators wear them at the workplace.



The following declaration frees of any for HEARING DAMAGE TO PERSONS EXPOSED IN THE WORKPLACE.

2.5 SIGNALS

There are a series of warning plates; the purpose of their presence is to keep operator alert at a maximum.



WARNING PLATES THAT SERVE A SAFETY FUNCTION MUST NOT BE REMOVED, COVERED OR DAMAGED.

THEY MUST HOWEVER REMAIN VISIBLE AND READABLE.

DAMAGED PLATES MUST BE REPLACED WITH PLATES THAT ARE THE SAME.

**NOT FOLLOWING
THIS PROCEDURE TERMINATES
THE WARRANTY AND THE PURCHASER TAKES ON ALL LIABILITY.**

3 STORAGE, TRANSPORT, INSTALLATION AND DEMOLITION

3.1 STORAGE

In case of long inactivity, components that make up this machine must be stored with precautions related to the area and storage time:

- Store components in a closed, dry environment, without rodents and with a thermal excursion that must be between a minimum of -5°C and a maximum of 45°C , with humidity that does not exceed 50% at 40°C or does not exceed 90% at 20°C .
- Lifted 10 cm from the ground.
- Grease any parts that are not painted.
- Protect components from collision and stress.
- Avoid that components come in contact with corrosive substances.

In order to avoid that atmospheric dust depositions onto sensitive components (e.g.: sensors), it is recommended to cover them with suitable tarpaulins that allow transpiration without causing condensation.

3.2 LIFTING AND TRANSPORT

3.2.1 DIMENSIONS AND WEIGHT

For the weight of individual components that make up the machine, see Chap 7.2.

3.2.2 HANDLING

The machine has been designed considering transport needs/problems in order to also guarantee safety for this sector.

In particular, lifting and handling of the machine body must be carried out using a suitable capacity fork-lift with the large forks inserted in the anti-tipping tubular pieces present on the back of the base of the machine (see paragraph No. 7.3).

The wire netting perimeter protections, if supplied, must be taken apart into individual panels and the package must be firmly fixed to pallets that can be lifted using the fork-lift.

- | |
|---|
| <ul style="list-style-type: none">• <u>Hydraulic oil control unit</u>: see attached Use and Maintenance Manual of the manufacturer.• <u>Hydraulic oil fifth wheel</u>: see attached Use and Maintenance Manual of the manufacturer.• <u>Electrical power supply and control board</u>: see attached Electrical diagram. |
|---|

The minimum capacity (P) of each individual belt/ rope/ chain to be used for lifting the various machine components, must never be less than the total weight (P_t) to be lifted, multiplied by 1.5:



$$P = P_t \times 1.5$$

THE COMPANY DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT OBSERVING THE FOLLOWING RECOMANDATIONS RELATED TO LIFTING AND TRANSPORT

3.3 INSTALLATION: POSITIONING AND LEVELLING

The type of machine and processing completed does not require particular attention with regard to its installation or levelling; as a matter of fact, it rests on the floor by way of 4 base plates welded to the base, they are fastened to the ground using M16 anchors (one per base plate) and is recommended exclusively to avoid accidental moving in case of bumping, but it is not completely necessary to guarantee machine stability, since the machine has been mechanically manufactured as stable;

In any case, there are no overturning risks in conditions where the support base is stable.

- Installation of the electrical power supply and control board with related electrical connections: see attached Electrical diagram.
- Installation of Hydraulic oil control unit with related electrical connections: see attached related Use and Maintenance Manual of the control unit.
- Hydraulic oil fifth wheel installation: see attached related Use and Maintenance Manual of the manufacturer.



All operations described must be carried out by trained personnel, regularly certified and equipped with all personal protective equipment required by law (such as glasses, gloves, etc. according to regulations in force in that country).



THE COMPANY DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT OBSERVING THE FOLLOWING RECOMANDATION RELATED TO INSTALLATION.

3.3.1 LIGHTING

The machine does not require incorporated lighting for use, the user must provide for it by installing in a suitable room.

Room lighting must conform to regulations in force in the Country where the machine is installed and must however guarantee good visibility in any point, not create dangerous reflexes and allow for clearly reading the control panel and locating the emergency button.

3.4 PREVENTIVE VERIFICATIONS

Operations preparing the machine for initial start-up must be carried out by the Technician from the manufacturer, possibly in collaboration with the Customer's Technician that in this manner will be able to acquire a minimum amount of information for subsequently carrying out maintenance activities.

Before commissioning the machine, it is necessary to carry out a series of verifications and control in order to prevent errors or accidents during the Commissioning phase:

- Verify the machine was not damaged during the assembly phase.
- Verify that all mobile parts move freely and are able to rotate without any obstacle.
- Verify, paying particular attention, the integrity of the electrical board and the control panel, electrical cables, etc...
- Check that all external energy sources have been connected exactly.
- Verify that the hydraulic oil control unit works correctly.
- Before connecting to electrical power, verify that wires are not powered and that the main switches are open.
- Verify that movable parts move freely once the command has been given;
- Verify low voltage connections on the control panel, check that operational logic is followed and correspond to the foreseen sequences and operations.
- Verify that operational and safety device logic is followed.

3.5 PROCEDURE FOR DISMANTELLING AND DISPOSAL OF THE MACHINE

3.5.1 DISPOSAL

During the work process, it is possible that waste or scrap material are generated that must then be collected, recycled or disposed of according to Regulations in force in the Country where the installation has taken place.

3.5.2 DEMOLITION AND DISPOSAL

Upon demolition it is necessary to separate parts in plastic material and electric components, which must be sent to separate waste collection centres according to Regulations in force.

As far as the metal frame of the machine, it is sufficient to divide among steel parts and those in other metals or alloys, in order to correctly send to be recycled by way of melting.

Besides:

- Any packaging material must be collected separately and placed in specific recycle containers.
- The metal parts that the machine is mainly made of must be taken apart and sent to the foundry for recycling.
- All lubricants must be collected as much as possible and sent to companies authorised for their disposal.
- All parts in plastic or other non degradable materials must be collected separately and sent to a company authorised for disposal or recycle.

4 MACHINE USE

4.1 USAGE LIMITS

The «**MANUAL PALLET TURNER**» machine under consideration has been designed and manufactured by «**TOPPY S.r.l.**» to be used exclusively in an environment that is:

- Industrial;
- covered,
- suitably lighted,
- that is not potentially explosive.

The stationary machine has been designed and manufactured for tipping by 90° / 180° packaged loads such as:

- stable loads (e.g.: boxes);
- unstable and fragile loads (e.g.: bottles or vials);
- unstable and resistant loads (e.g.: bags, big bags, vats, etc.).

positioned on a pallet; due to load dimensions

This machine is safe **only and exclusively** if it has not been tampered with or modified from the original manufacturing configuration.



**Y DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS
CAUSED BY NOT OBSERVING THE FOLLOWING RECOMANDATION RELATED
TO ITS USE**

4.2 INFORMATION ON DANGERS

– Moving parts cannot trap limbs since the distance between the machine danger areas and the area where exposed persons are present is surrounded by suitable perimeter protection devices that make it possible to safely come close to the machine during the work phase.

– It is recommended in any case, while accessing inside the processing area for maintenance or adjustment operations (with electric and hydraulic power to the machine disengaged using the padlocked main switch), to wear suitable clothing, overalls with containment elastic bands at wrists and feet, and anti-crushing footwear.

– As far as the Hydraulic oil Control unit, consult the specific Use and Maintenance Manual attached to this one.

– As far as the Hydraulic oil Fifth wheel, consult the specific Use and Maintenance Manual attached to this one.

– Climbing on the machine or its parts is not foreseen for any operation, since it has not been designed and manufactured for that use and no operation is foreseen that may require it.

– Safety for the machine and its components is strictly related to the presence and proper operation of perimeter protections and safety devices it was equipped with during the manufacturing phase; using the machine with safety / protection devices removed or modified is prohibited.



THE COMPANY DECLINES ANY RESPONSIBILITY RELATED TO DAMAGE TO ANIMALS OR PERSONS CAUSED BY NOT FOLLOWING THE RECOMMENDATION REGARDING MACHINE USE WITH MODIFIED OR DEACTIVATED PROTECTION DEVICES!

4.2.1 ELECTRICAL POWER

Every part of the machine was designed and manufactured according to current regulations both as far as the materials used and design aspects related to the safety aspect.

Materials are certified and conforming for use, easy to connect, identifiable as foreseen by standards, suitable for avoiding dangers related to direct and indirect contact, and overload risks in particular.



WASHING ELECTRICAL COMPONENTS USING WATER IS STRICTLY PROHIBITED: THE COMPANY DECLINE ANY LIABILITY FOR DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT FOLLOWING THOSE RECOMMENDATIONS.

4.2.1.1 Static electricity

The machine was designed with an earthing device, for discharging possible static discharges; it is responsibility of the end user to verify that the machine has been earthed and provide maintenance.

4.3 NOT ALLOWED USE

The machine must not be used:

- In an environment that is explosive, aggressive or with a high concentration of flammable dusts or oily substances suspended in the air.
- In an environment with a fire / explosive danger.
- Exposed to the elements or, however, in an area that is not covered.
- With the electrical panels open or with safety devices excluded.
- With electrical and or mechanical jumpers that exclude devices/parts of the actual machine.
- When processing materials that are not suitable based on characteristic requirements of the machine.
- With non original spare parts.

Besides, it is not allowed to:

➤ Carry out modifications to safety devices by adding, through such modifications, additional risks to the risk analysis completed by the manufacturer and an integral part of the technical booklet of the machine. Any operational modification, even if not substantial, must be communicated by letter and also approved by the manufacturer, who will then approve it only if this modification does not create additional risks for the risk analysis.



Any modification of the machine that is carried out without the manufacturer having knowledge of alters foreseen functionality modifying contents of the risk analysis and/or generating additional risks that were not highlighted, will be completely responsibility of those carrying out these modifications.

These modifications, if completed without manufacturer authorisation, will terminate any type of warranty given and invalidate the conformity declaration guaranteeing safety standards related to Machinery Directive 2006/42/CE and subsequent mod.

- Using materials, accessories and tools that are different from those foreseen for machine functions.
- Carrying out Maintenance operations while the machine is powered;
- Carrying extraordinary maintenance interventions without a technician from **"TOPPY S.r.l."** being present.



THE COMPANY DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT OBSERVING THE FOLLOWING RECOMANDATIONS RELATED TO NOT ALLOWED USE!

NOT FOLLOWING THESE RECOMMENDATIONS WILL REQUIRE THE DEFAULTER TO TAKE ON FULL RESPONSIBILITY AND WILL TERMINATE CERTIFICATION ON THE PART OF THE MANUFACTURER.



IT IS STRICTLY PROHIBITED TO REMOVE OR MODIFY THE PLATE FIXED TO THE MACHINE CONTAINING ALL IDENTIFICATION AND SAFETY DATA!

THE COMPANY DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT OBSERVING THIS PROHIBITION!

NOT FOLLOWING THIS RECOMMENDATION WILL REQUIRE THE DEFAULTER TO TAKE ON FULL RESPONSIBILITY AND WILL TERMINATE CERTIFICATION ON THE PART OF THE MANUFACTURER.

4.4 PERSONS IN CHARGE

The machine has been designed to be used by an Operator: "Machine manager".

Personnel in charge of operating the machine must possess (or acquire through suitable training and instruction) the requirements indicated below, and also have knowledge about the present Manual and all Safety related information:

- General and technical culture that is sufficient to understand the content of the Manual and correctly interpret Drawings and Diagrams.
- Know the main Hygiene, accident prevention and technology Standards.
- General knowledge of the machine and the plant the machine is inserted in.
- Specific experience in technologies necessary for processing.
- Know how to behave in case of an Emergency, where to find personal protective equipment and how to use them correctly.

Maintenance personnel, besides the above mentioned characteristics, must also have suitable Technical preparation and regular certification.



It will be responsibility of the Safety manager internal to the Company using the machine to verify the level of operators assigned to machine use and evaluate their capacity to safely use the machine in all possible conditions.

4.5 OPERATOR TASKS

4.5.1 GENERAL OPERATOR TASKS

- Keep machine functions under control.
- Oversee the operation of automation in case of incidents.
- In case of malfunction call maintenance for necessary interventions.
- Verify that no unauthorised persons are in proximity of the machine, in particular in the control area or inside the processing area, and that no one intervenes on machine protections for any reasons, especially while the machine is in operation.

4.5.2 SPECIFIC OPERATOR TASKS

- Starts/shuts off the machine according to the procedure specified in "Command Use Instructions" included in the Use and Maintenance Manual of the Electrical power supply and control board and according to paragraph 2.2.2 of the following.
- Positions the load or removes it from the machine.
- Checks the regular completion of processing.
- Resets the emergency circuits (restores barriers or possibly the emergency stop button).

4.6 VERIFICATION TO BE COMPLETED BEFORE STARTING UP THE MACHINE

- Verify preservation condition of pictograms, the correct positioning of protections and safety devices.
- Verify that movable parts and their guides are clean.
- Switch on the main electrical board according to instructions contained in Chap. 4.7 and verify their operational conditions.
- Before starting the processing cycle, carry out an operational test with no load.
- Once the test has been completed and correct machine operation has been verified, start the continual processing cycle.

4.7 STARTING AND STOPPING THE MACHINE

4.7.1 STARTING THE MACHINE CYCLE

- a) Make sure that emergency buttons are not pressed; if necessary, re-arm them by pulling them upwards;
- b) Rotate the main switch to "I";
- c) Press the START button;
- d) Position the load on the floor of the machine;
- e) Use the selector switch to control closing of the lower and upper gripper;
- f) Use the selector switch to control the 180° load rotation;
- g) Use the selector switch to control gripper opening;
- h) Remove the load from the floor.

4.7.2 START-UP AFTER PARTICULAR CONDITIONS

4.7.2.1 Start-up after the emergency has been activated

- A. Remove what caused the emergency.
- B. Release the interested emergency device and restore it.
- C. Repeat the start-up sequence from the beginning (resetting).

4.7.3 STOP DUE TO PARTICULAR CONDITIONS

4.7.3.1 Stop because of an absence of power (Electromotive Force).

If the electrical power supply to the machine were to be cut suddenly, all switches fall, the line automatically positions itself in emergency mode and all of its component parts stop immediately. Once electrical power supply is restored, the entire start-up procedure must be repeated.

4.7.3.2 Stop due to the supervening hydraulic oil supply absence or decrease.

In case of sudden interruption in hydraulic oil supply or a decrease in pressure for any reason, no risk of any kind is generated; this type of energy powers operation of the 2 hydraulic oil cylinders (closing / opening the load pick-up grippers) and the fifth wheel; there are safety check valves present on such components (certifications are attached to the this) that would stop any uncontrolled or not commanded movement, at the most blocking the machine in the position it has reached.







The presence of a pressure switch (in case of low pressure, places the machine in alarm, stopping it) and the fixed perimeter protections and electronic barrier, if supplied, are independent from such energy source and eliminate that risk totally.

4.7.3.3 Stop due to presence/probability of danger

In case of a sudden danger condition, activate the emergency stop button or interrupt one of the beams of the Electronic barriers, if supplied, **without coming close to the area where the danger took place.**

5 MAINTENANCE

5.1 GENERAL RECOMMENDATIONS

					
<p><u>Maintenance operations must be completed by expert personnel, regularly certified, with the machine stopped and with current and hydraulic pressure disengaged.</u> <u>and also with suitable Personal Protective Equipment (PPE) that is worn correctly, in maximum safety conditions (zero energy)</u></p> <p><u>THIS RECOMMENDATION IS MANDATORY!</u></p>					

Programmed maintenance is reduced to a limited number of interventions.

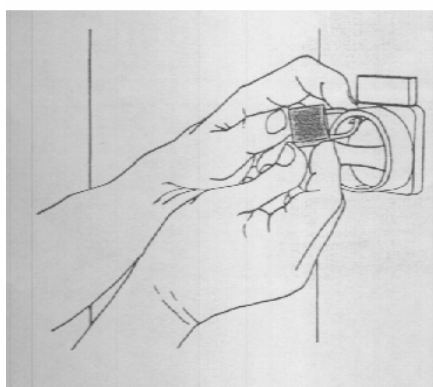
The manufacturer recommends that minimum programming instructions indicated in this manual are followed precisely.

User experience may bring additional optimisation of the indicated maintenance intervals that must however never be reduced compared to what is indicated or be abandoned.

5.1.1 MACHINE ISOLATION (IF PRESENT)

Before carrying out any type of Maintenance or Repair, it is necessary to proceed with isolating the Machine from power supply sources by completing the following operations:

- **Open and padlock the Electrical disconnecting switch (main switch of the electrical board).**



5.1.2 GENERAL PRECAUTIONS

When carrying out Maintenance or repair work, it is best to apply the following recommendations:

- Before starting any work, put on a sign indicating "MACHINE UNDER MAINTENANCE" in an easily visible area.
- Do not use solvents and flammable materials
- Pay attention not to disperse lubricant fluids into the environment.
- When accessing the higher parts of the machine, use suitable and certified equipment that is foreseen for the operations to be completed.
- Do not climb onto machine parts since they have not been designed to support People.
- At the end of the job, restore and correctly fasten all protections and guards that have been removed or opened.

5.2 FREQUENCY OF VERIFICATIONS

In order to keep the machine perfectly efficient, there are very few required maintenance interventions, it is therefore recommended to follow the instructions in order to avoid degradation of the safety level, in order to obtain greater operation regularity and greater duration.

The control and intervention frequencies are indicative and are always mean as minimum necessary for a correct maintenance.



A reminder however that cleaning and shutting off the machine after processing is the basic element for long lasting and safe operation.

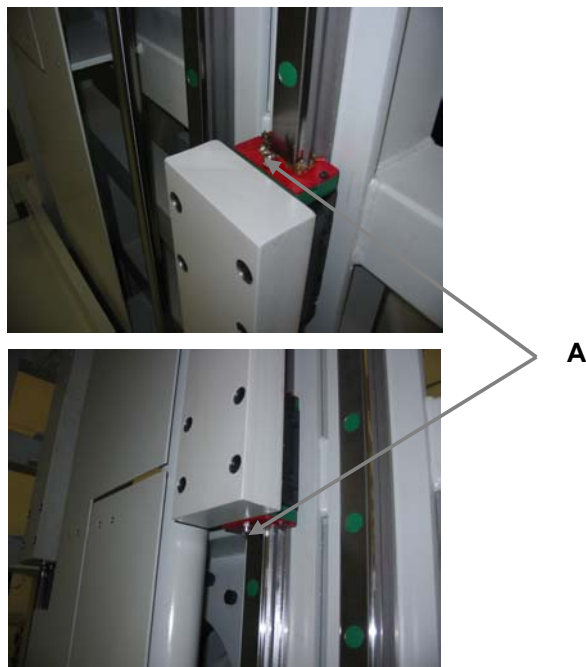
**NEVER USE WATER JETS TO CLEAN THE MACHINE.
USE A DAMP CLOTH**

5.2.1 DAILY MAINTENANCE

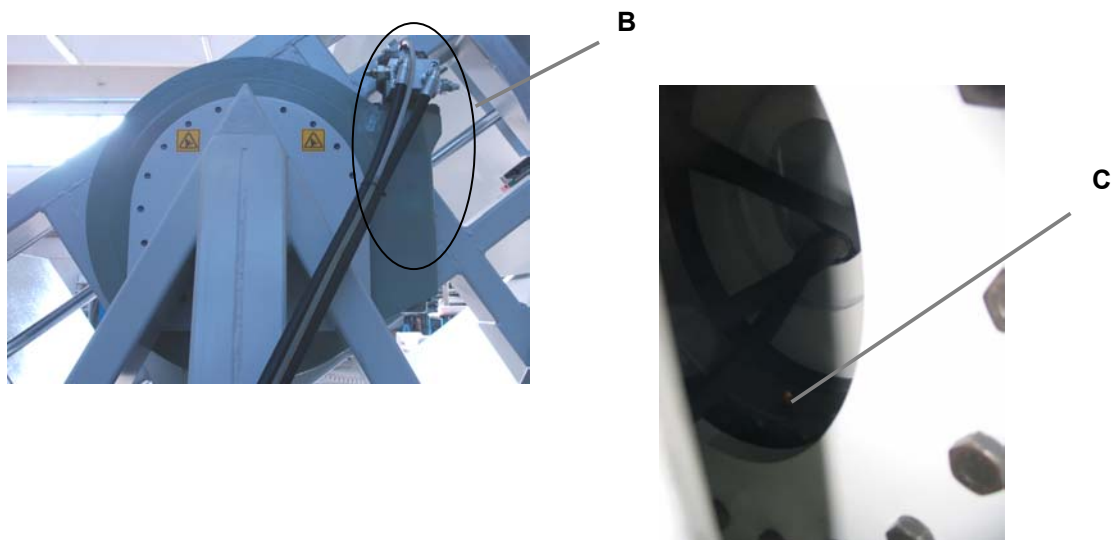
- Verify that pictograms on the machine can be read and are positioned correctly.
- Verify that all safety devices are operating correctly.
- Verify the presence and correct installation of the guards.

5.2.2 MONTHLY MAINTENANCE

Inject grease of the kind **ISO XM1** to the lubricator A (operation to be carried out for all the runners) .



- ◆ Inject grease to the B and C rotation gear (inside part of the gear).



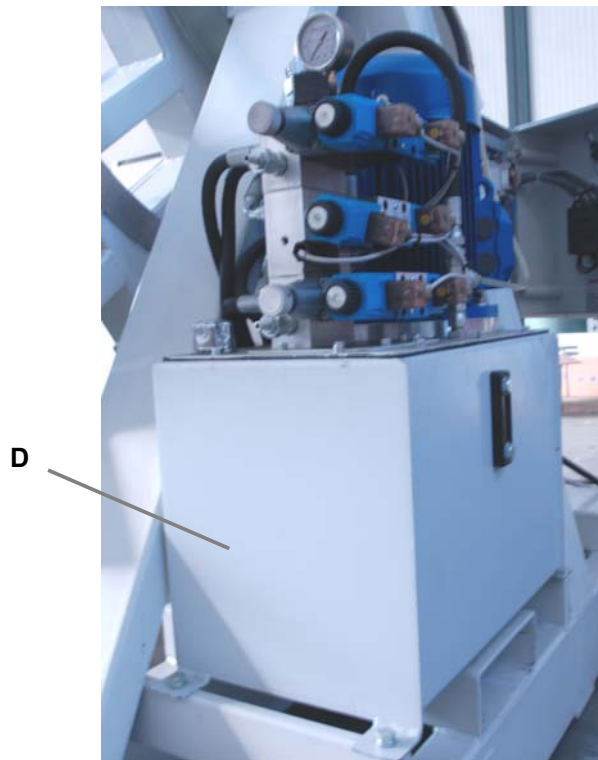
5.2.3 AFTER 500 HOURS OF WORK:

- Replace the hydraulic power unit oil (D). Oil of the kind **ISO VG 46** should be used.

5.2.4 EVERY 2000 HOURS OF WORK:

- Replace the hydraulic power unit oil (D)
- Check the conditions of the hydraulic pipe, with utmost care to the joints. In case of wear or breakage, replace these parts.

CAUTION: hydraulic oil is extremely polluting and must not be dispersed. For the disposal of such material, please contact a specialist company.



5.3 EXTRAORDINARY MAINTENANCE

If the machine requires extraordinary maintenance, it must be communicated to **“TOPPY S.r.l.”** that will make sure their technician intervenes to supervise operations.



**FOR PROBLEMS THAT
REQUIRE SUBSTANTIAL OPERATIONS
ALWAYS CONTACT: “TOPPY S.r.l.”.**
Via Muzza Spadetta, 18 - 40053 Bazzano (BO)
Tel.: + 39 (0) 51 833.701 - Fax : + 39 (0) 51 834.097

6 EMERGENCIES

6.1 EMERGENCY STOP

6.1.1 EMERGENCY STOP DEVICES

The control panel (positioned externally from the processing area of the machine) is equipped with a red coloured emergency button (mushroom shaped button) with a yellow under ring fixed to the panel.

Positioning of this device basically covers all dangerous areas of the machine.

The emergency stop blocks the dangerous process in the shortest possible amount of time, completely interrupting machine operation, bringing it to zero energy condition in real time; it has absolute priority over all machine controls, without creating additional risks.

The stop order is maintained by a block of the emergency stop device, even after action on the control is interrupted and it is maintained until there is a manual release.

The release, carried out with an intentional manoeuvre, does not restart the machine, but simply gives consent to restart; the restart procedure must be completely repeated. The emergency stop, once activated, must be restored before the machine can be restarted.

Operational logic, according to the EN 418 June 1994 directive and Standard, provide that the restart procedure is completely repeated, therefore restoring the emergency button activated on its own basically only gives a consent to restart the machine, without actually restarting it.



**EACH STOP COMMANDS HAS PRIORITY
ABOVE ANY OTHER COMMAND AND
COMPLETELY BLOCKS THE MACHINE, EXCLUDING AN ACCIDENTAL START-UP.**

6.2 FIRE EXTINGUISHING

In case of fire, cut the power (if such action can be completed safely!) to the machine and never use water, but fire extinguishing powders loaded with CO₂, always using a fire extinguisher, that must be available near the machine.

Always apply standard procedures foreseen in the "Safety plan" of the company using the machine.

6.3 HARMFUL EMISSIONS

Direct harmful emissions of the machine can only occur in case of a fire, as a result of the combustion of paints, plastic materials and lubricants, in this case precautions to be followed are the same as the normal ones in case of a fire.

7 DESCRIPTION

7.1.1 DETAILED MACHINE COMPOSITION

The «**MANUAL PALLET TURNER**» machine under consideration has been designed and manufactured for tipping packaged loads by 180° degrees.

The main machine components are the following:

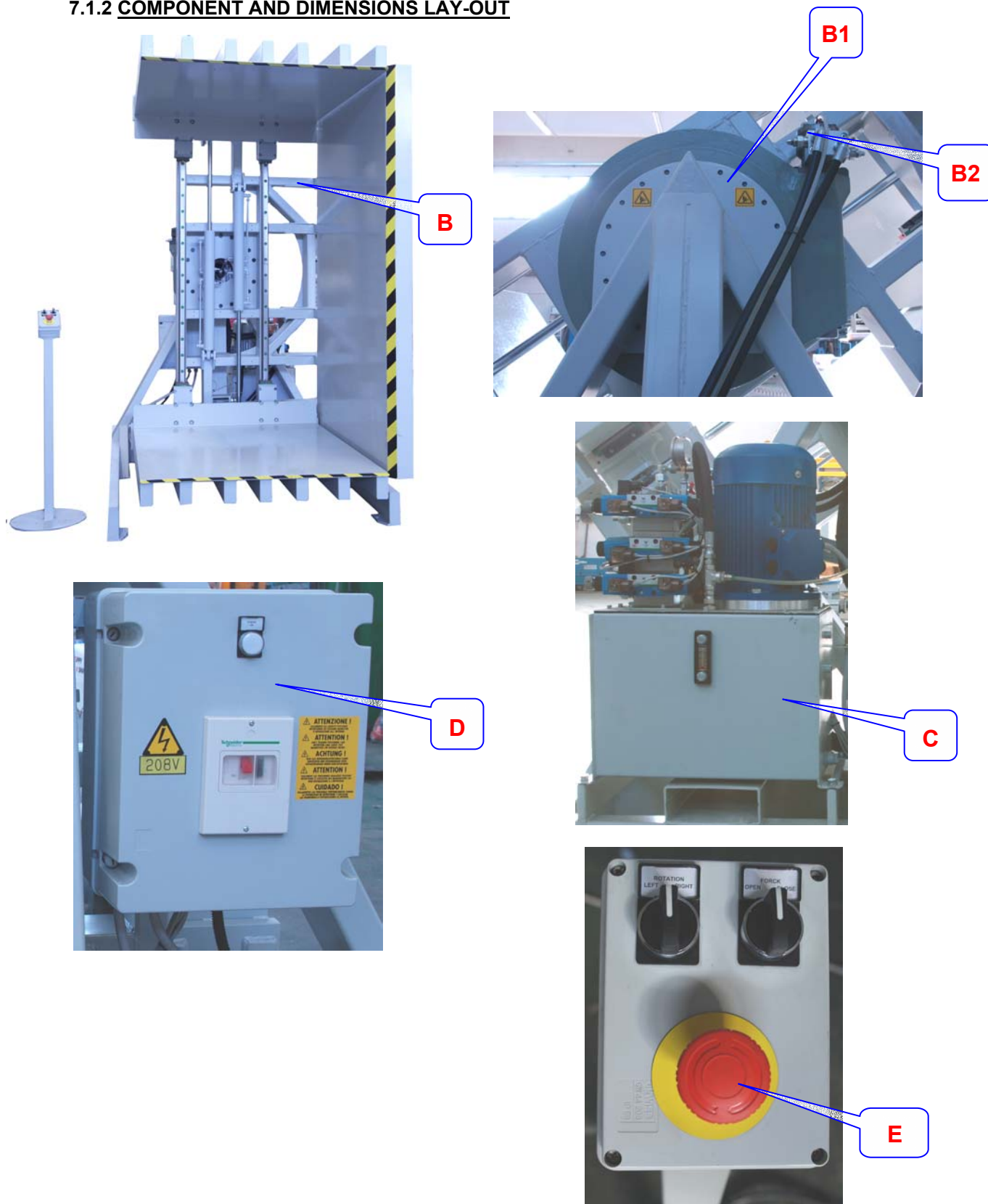
- The machine base is made of a heavy tubular electrowelded and painted structure equipped with a robust vertical structure, that the load pick-up Gripper Unit **(B)** hydraulic rotation fifth wheel **(B1)** (purchased certified) is solidly fixed to.
- Gripper pick-up unit with hydraulic rotation fifth wheel **(B1)**, made of a supporting structure with side load support and 2 sliding floors on guides, each one moved by a hydraulic cylinder **(B2)** equipped with a safety check valve;
- Hydraulic oil control unit **(C)**;
- Electrical power supply board and control panel **(D)**;
- fixed perimeter protections on 3 sides made of electrowelded and painted wire netting, with a 40x40 mm mesh and a height of about 1,890 mm (with a distance from the machine of about 1,000 mm) (OPTIONAL);
- Electronic safety barrier on the front opening (used for loading/unloading the product to be processed) made of 2 individual beams, positions at the following height from the ground:

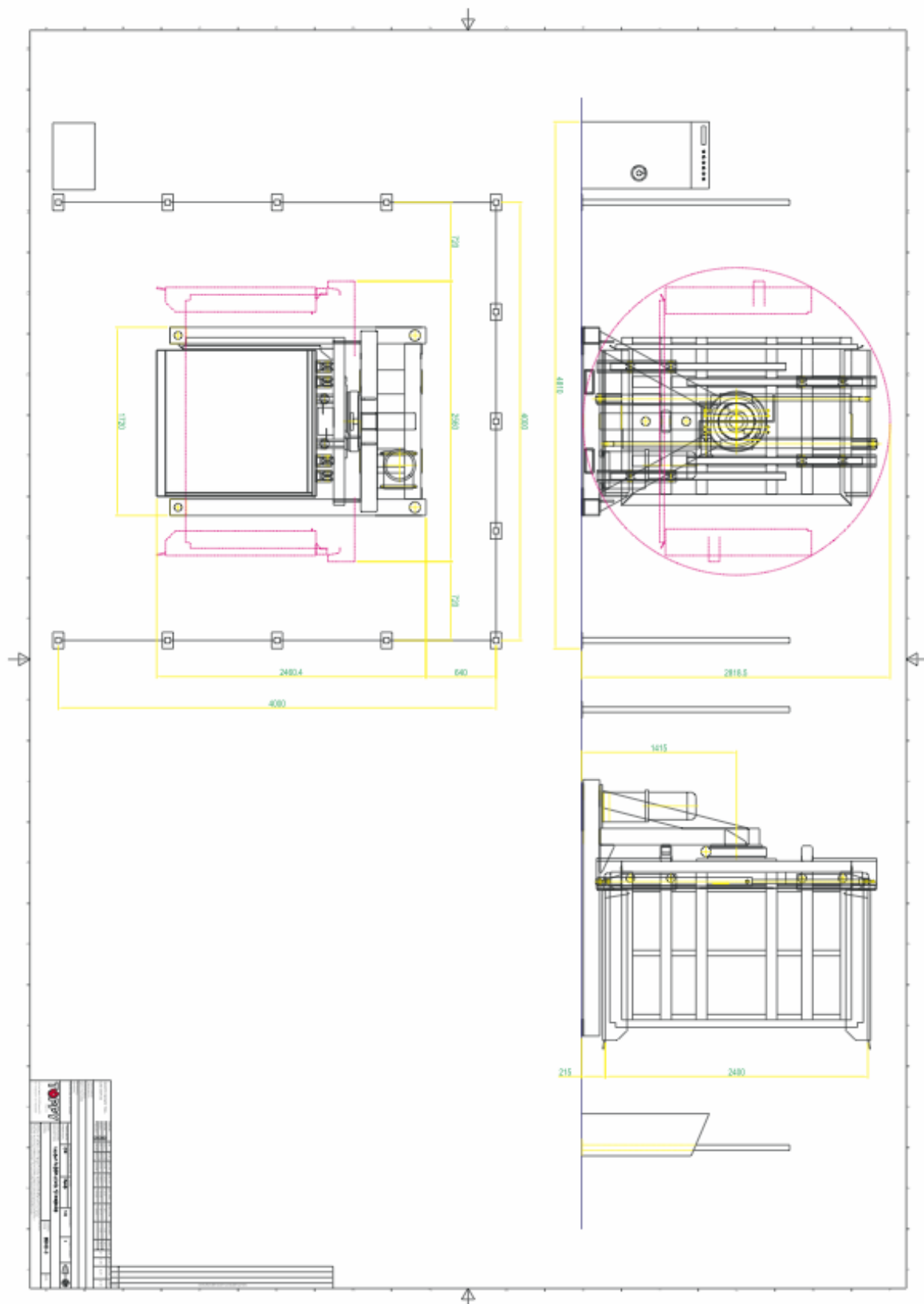
2nd beam:	900 mm from ground
1st beam:	400 mm from ground

and about 850 mm from the machine (OPTIONAL).

- Control push-button panel with emergency stop button **(E)**.

7.1.2 COMPONENT AND DIMENSIONS LAY-OUT



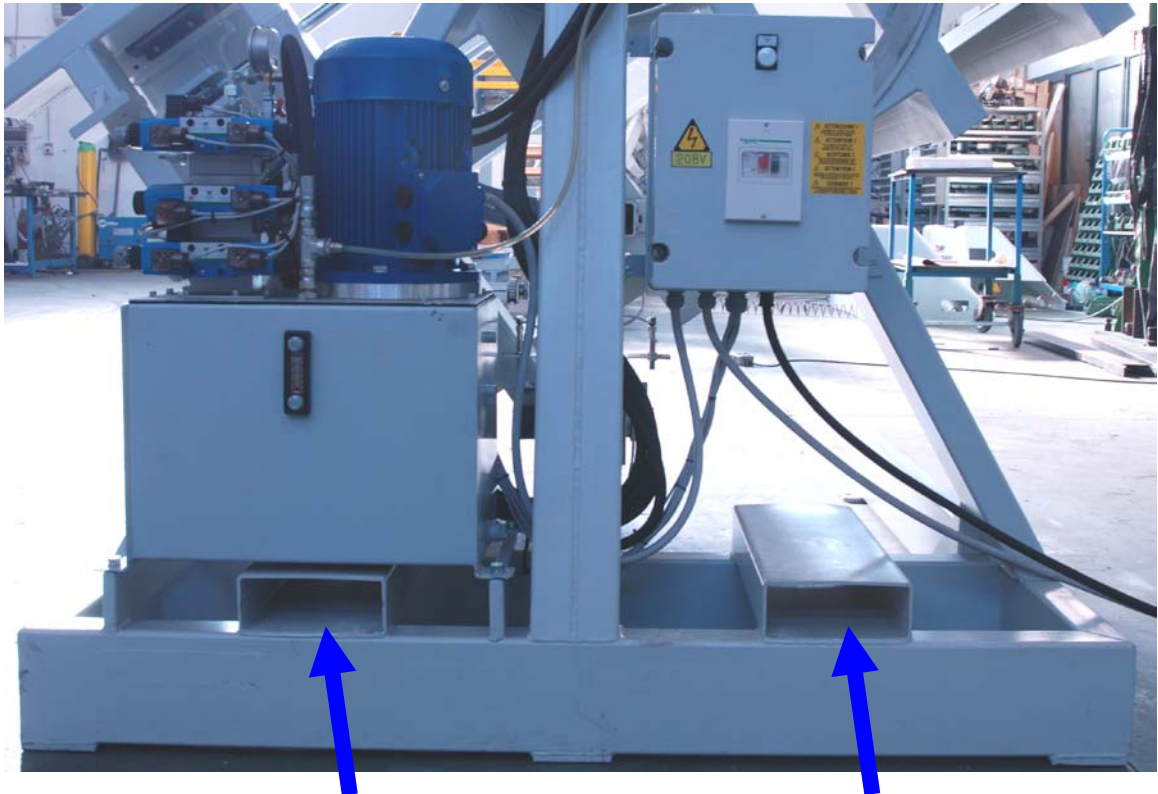


7.2 TECHNICAL CHARACTERISTICS OF THE MACHINE**7.2.1 TECHNICAL CHARACTERISSTICS****7.2.1.1 Generic information**

	Machine model	
	INVERTER SILVER	INVERTER
Maximum capacity:	1250 kg	1500 kg
Maximum load height (max gripper opening):	1680 mm	2000 mm
Max load width w/pallet:	1220x1020 mm	1220x1020 mm
Max load depth w/pallet:		
Total absorbed power:	3 kW	6 kW
Max overturning time (180°):	~ 20 sec.	~ 26 sec.
Performance	~ 22 pallets/hours	~ 20 pallets/hours
Electrical power supply:	3 phases 400 V + G, 3 kW	3 phases 400 V + G, 6 kW
Maximum machine width:	1510 mm	1800 mm
Maximum machine length:	1830 mm	2100 mm
Maximum machine height:	2150 mm	2200 mm
Short-circuit interruption power requested:	5 kA	5 kA
Degree of general machine insulation:	IP 54	IP 54
Operating hydraulic pressure:	Min.: 20 bar / Max160 bar	Min.: 20 bar / Max160 bar
Weight of machine body without the electrical board::	1100 Kg	1300 Kg
Rotation	Hydraulic	Hydraulic
Control	Push-button panel or PLC	Push-button panel or PLC

7.3 MACHINE LIFTING

A reminder that lifting and handling of the machine body must be carried out using a suitable capacity fork-lift with the large forks inserted in the anti-tipping tubular pieces present on the back of the machine base.



The wire netting perimeter protections, if supplied, must be taken apart into individual panels and the package must be firmly fixed to pallets that can be lifted using the fork-lift.

N.B.: When lifting and handling internal components for disassembly (Electrical power supply and control board, Hydraulic control unit and hydraulic fifth wheel), see related Use and Maintenance Manuals of respective manufacturers.



THE COMPANY DECLINES ANY LIABILITY RELATED TO DAMAGE TO PROPERTY, ANIMALS OR PERSONS CAUSED BY NOT OBSERVING THESE RECOMMENDATIONS!

7.4 INSTALLED SAFETY DEVICES

7.4.1 EMERGENCY STOP BUTTON

If danger is current or imminent, intervene on the emergency stop button positioned on the control panel of the electric power supply and control board.



7.4.2 SAFETY DEVICES

7.4.2.1 Fixed protections (OPTIONAL)



7.4.2.2 Electronic barriers (OPTIONAL)



7.5 EXAMPLE OF COMPILED CE PLATE PRESENT ON THE MACHINE

TOPPY		Tuppy srl Via Muzza Spadetta, 18 40053 Bazzano - (BO) - Italy Tel. ++39.051.833701 Fax. ++39.051.834097 www.tuppy.it ~ info@tuppy.it		CE
Modello Model	<input type="text"/>	Matricola Serial N.	<input type="text"/>	
Anno di costruzione Manufacturing year	<input type="text"/>	Portata nominale kg Rated capacity kg/Lbs	<input type="text"/>	
F.to max carta mm Max pallet size mm/inch	<input type="text"/>	Baricentro mm Load center mm/inch	<input type="text"/>	
		Massa a vuoto (senza batteria di trazione) kg Unladen weight (without traction battery) kg/Lbs	<input type="text"/>	
Batteria da trazione Traction battery	Volt	<input type="text"/>		
Massa Weight	MIN kg/Lbs	<input type="text"/>	MAX Kg/Lbs	<input type="text"/>