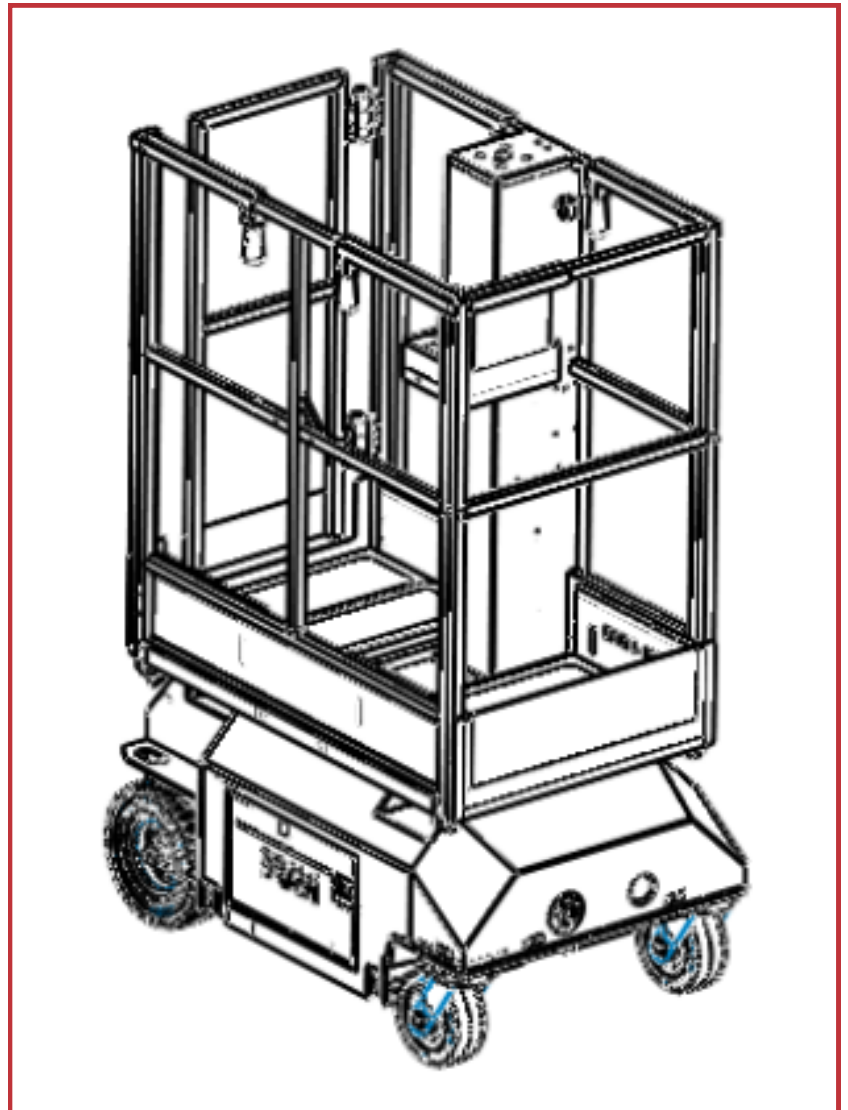




USER AND MAINTENANCE MANUAL

Original instructions



LUI HD (indoor version)
LUI HD WD (outdoor version)

SOME NOTES ON THIS USER MANUAL

Remember that the USER MANUAL is not an accessory of the platform but it is an integral part of it and a SAFETY MEASURE (EN 12100-1).

It has been designed in this form to let you easily find what you are looking for.

This is the reason why you have to keep it in good condition close to the platform itself.

In this way it can be obtained from the PLATFORM all the information about the reason it has been manufactured and use it in a maximum security.

Remember that any update must be inserted in the manual itself as it will be indicated by Braviisol Divisione Meccanica srl.

The manual must not be damaged, it should remain intact (do not tear the sheets), kept away from moisture and heat during the consultation should be avoided to get oil on it or deteriorate its readability.

To make the consultation easier, the manual has been divided into parts, so that, each step is well articulated.

For practicalness of use, each subject has been divided into numbered steps which, when the action requires it, are written on the drawings themselves.

Parts that need more attention are highlighted with symbols and well-detailed illustrations on the side of the page.

In this way, BRAVIISOL DIVISIONE MECCANICA wants to draw – unequivocally- the operator's attention to WARNINGS, CAUTIONS and HAZARDS concerning him.

This Platform has been manufactured in Italy by:

BRAVIISOL DIVISIONE MECCANICA SRL

S.S. 16 Adriatica km. 314,600

60022 Castelfidardo (AN), Italy

Tel. 0039 071 7819090 Fax 0039 071 7819355

If you have any question about use and/or working, please contact the Manufacturer.

This Platform is in compliance with EC directives, ANSI A92.20 2018, CAN/CSA - B354.6:17.

EC CONFORMITY DECLARATION WE

TRADE NAME **BRAVISOL DIVISIONE MECCANICA SRL**
 ADDRESS AND HEAD OFFICE S.S. ADRIATICA 16 KM 314,600 – 60022 CASTELFIDARDO (AN)
 ITALY
 FISCAL CODE AND VAT NUMBER **01234570420**
 TELEPHONE – TELEFAX **Tel. +39.071.7819090 Fax +39.071.7819355**
 INTERNET SITE www.bravi-platforms.com
 MAIL info@bravi-platforms.com

DECLARE UNDER OUR OWN RESPONSIBILITY THAT THE PLATFORM:
HYDRAULIC MOBILE WORK PLATFORM

Model: _____

Serial Number: _____

Year of manufacture: _____

AS DESCRIBED IN THE ATTACHED DOCUMENTATION AND IN OUR ARCHIVES IS IN COMPLIANCE WITH THE EU DIRECTIVES:

- **2006/42 Machines – 2014/30/UE Electromagnetic Compatibility - ANSI standards A92.20**
- **CAN/CSA - B354.6:17**

STANDARDS AND SPECIFICATIONS:

UNI EN ISO 12100-1 – UNI EN ISO 12100-2 – EN60204/1 – UNI EN ISO 13857 – EN 55011 – EN 50081/2 – EN 50082/2 – EN 280.

NAME AND SURNAME **BRAVI PIERINO**
 POSITION **MANAGING DIRECTOR**
 DATE _____

NOTIFIED BODY:

RESIDUAL RISKS

Even if Braviisol Divisione Meccanica srl has done everything possible to manufacture the Platform with the greatest knowledge in its possession on security and consulting all the directives, laws and regulations at its disposal, still exist, even if reduced, some residual risks during the phases of:

Transport and Handling
 Maintenance

Therefore, who works in these areas or is responsible for these phases must be a trained person acquainted with the fact that are “dangerous” and as regards the Platform protections category, has not been possible to eliminate them entirely.

The staff in charge with these operations must be always have at disposal and consult the USER AND MAINTENANCE MANUAL.

The user and maintenance manual shows step by step all the necessary indications beginning from the 1.7.4 paragraph (use instructions) of the Annex 1 of the Machinery Directive, and it is specifically required to follow it step by step, in order to avoid clumsy actions which, even if minimal, can cause harm to someone.

MAINTENANCE SUMMARIZATION TAB

In order to assure the right working of the mobile Platform it is necessary to follow the instructions here below:

| MAINTENANCE TYPE | TIME | PAGE |
|---|---------------|------|
| 9.1 - Ordinary Maintenance Introduction | always | 9.50 |
| 9.2 - Safety positioning, lifted basket | maintenance | 9.52 |
| 9.3 - Caster Wheel Greasing | 6 months | 9.54 |
| 9.4 - Oil Check and Refill | 3 months/150h | 9.54 |
| 9.5 - Battery Terminals Check | 2 months | 9.55 |
| 9.6 - Battery electrolyte Level Check | 32 h | 9.56 |
| 9.7 - Battery Charge Procedure | 8 h | 9.57 |
| 9.8 - Nuts, Bolts and Pins tightening Procedure | 1 month | 9.58 |
| 9.9 - Wiring Check | 2 months | 9.58 |
| 9.10 - Inspections | | 9.59 |
| 9.10a Frequent Inspection "Frequent Inspection Check List " | 3 months | 9.59 |
| 9.10b Annual Inspection "Annual Inspection Check List " | 1 year | 9.60 |

INDEX

| Content | Page |
|--|-------|
| Part 1 Introductory Informations | 1.5 |
| Part 2 Safety Prescriptions | 2.11 |
| Part 3 Machine Specifications | 3.25 |
| Part 4 Transport and Handling | 4.27 |
| Part 5 Control panel | 5.34 |
| Part 6 Operations | 6.38 |
| Part 7 Shutdown Phase | 7.46 |
| Part 8 Cleaning | 8.49 |
| Part 9 Ordinary Maintenance | 9.50 |
| Part 10 Troubleshooting and Error Codes | 10.61 |
| Part 11 Technical Informations | 11.62 |
| Part 12 Annex | 12.67 |

1.1 DELIVERY NOTE

The operator must not accept any responsibility of exercise without first having understood his responsibilities shown in this manual and in the ANSI Manual of Responsibilities supplied together with the Platform.

The Platform can be operated only by authorized staff. **It is forbidden to make changes to the Platform without the written consent of the manufacturer.**

The Platform has been manufactured in compliance with the directives: CEE 2006/42, CEE 2014/30/UE and has been designed in compliance with the other interested rules and according to the ANSI Standards A92.20 and CAN/CSA - B354.6:17.

Therefore, it does not present any danger to the operator:

- If used according to the instructions shown in this manual;
- On condition that the technicians, who are charged by the manufacturer, have attended a training course,
- And on condition that the safety devices are kept in constant efficiency.

This sheet is intended to certify that on receipt of the Platform:

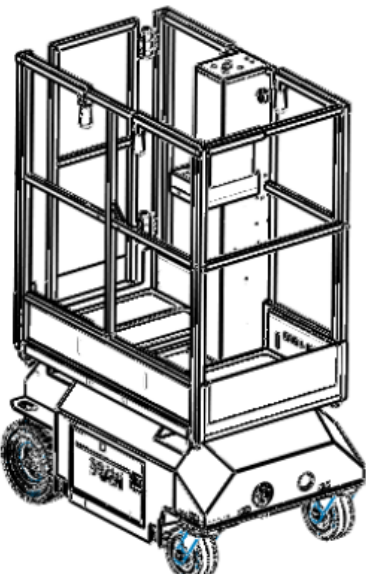
- Safety devices are efficient,
- That together with the Platform has been supplied the present manual
- And that the operator takes the responsibility of following it step by step.

Braviisol Divisione Meccanica srl informs that any modification or tampering of the Platform and/or operations carried out not in compliance with what is written in this manual, especially the non-observance of safety requirements, will invalidate the warranty and the EC declaration of original conformity become null and void.

Remember that:

- All technical values refer to the Platform (see Part 3),
- The drawings and any other document supplied together with the Platform is property of Braviisol Divisione Meccanica srl that reserves all rights and cannot be put at disposal of third parties without its written consent.

The manufacturer hopes that you can take advantage of the multiple functions of the Platform. It is strictly forbidden any reproduction, even partial, of the text and illustrations. The original copy has been given to the owner together with all of the documents relating to the Platform.

| | | |
|---|--|------------------------|
|  | <i>Macchina/Machine</i> <i>Modello/Modell</i> <i>Tipo/Type</i> | |
| | <i>Matricola/Serial number</i> | |
| | <i>Timbro/Stamp</i> | |
| | <i>Data/Date</i> | <i>Firma/Signature</i> |

1.2 PLATFORM IDENTIFICATION AND SERIAL NUMBER

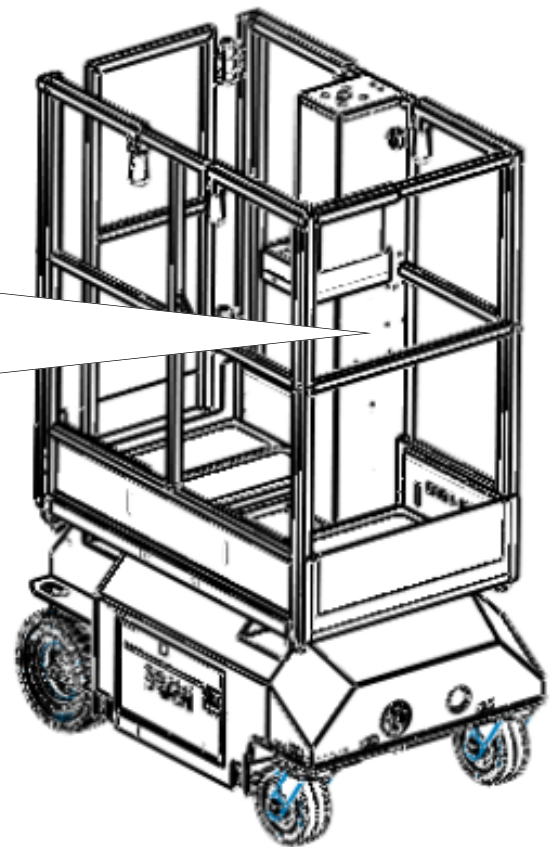
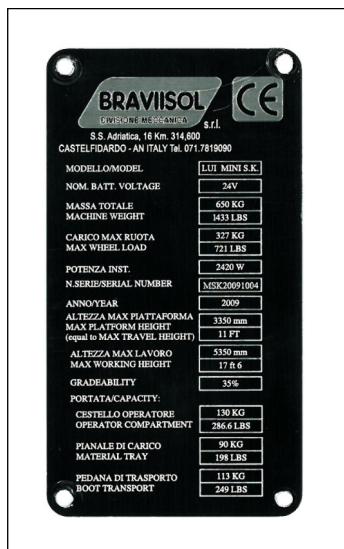
1.2.1

The number of this manual is written at the bottom of each page.

Each Platform has its own number, with the consequent CE marking.

1.2.2

To contact Braviisol Divisione Meccanica srl or its centres of assistance concerning the Platform, please always refer the model and serial number legibly affixed to the identification plate placed on the basket of the Platform.



1.3 GENERAL DELIVERY NOTES

Platforms and their components and/or accessories can be shipped in containers, or on a pallet wrapped in a protective film, or packed in boxes (optional).

Always verify that upon receipt:

- 1 - The packaging is intact
- 2 - The supply corresponds to the order specifications (see bill of lading or packing-list)
- 3 - There is no damage to the Platform or accessories.
- 4 - The safety devices, at the time of delivery, are in perfect efficiency.
- 5 - The present manual has been delivered together with the Platform.
- 6 - The operator accepts the responsibility, point by point, of the following

In case of damages or missing parts, please immediately contact the Manufacturer, his local representatives, the dispatcher or the insurance company, providing detailed information and/or photos.

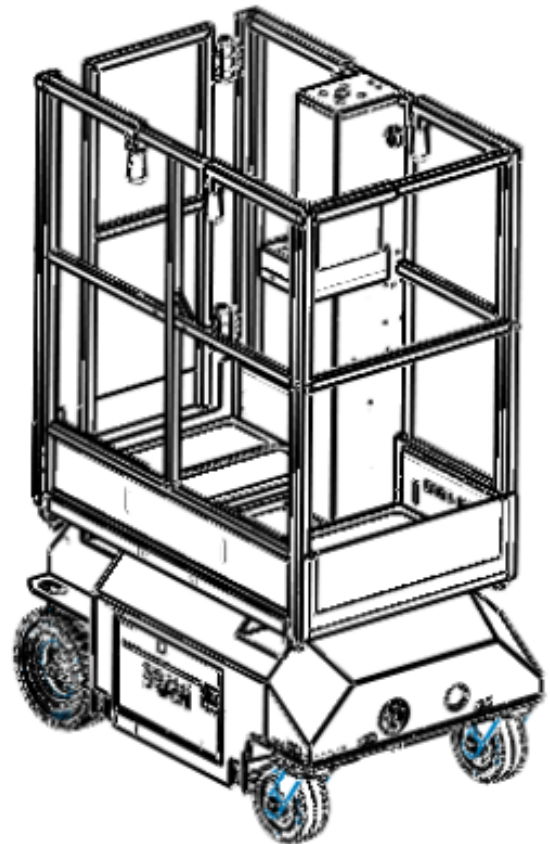
Spare parts and accessories can sometimes be shipped in separate containers.

Description

- 1 Complete Platform
- 2 User's manual
- 3 Platform original documents:
 - Warranty
 - Delivery note
 - Test sheet

The raised platform is formed by four pieces:

- N. 01 Side rail (single)
- N. 01 Side rail + N. 02 Front rails
- N. 01 Walking surface basement
- N. 01 Ladder



1.4 LIMITED WARRANTY—Warranty Statement

IF THE WARRANTY IS NOT INCLUDED IN THE SALES CONTRACT, THE FOLLOWING GUIDELINES APPLY TO THE MACHINE WARRANTY.

The Manufacturer BRAVIISOL SRL warrants that all new units of equipment manufactured and sold by it conform to the Company latest specifications. Moreover, Mast and hydraulic cylinder carry a Special Warranty of 10 years. The manufacturer warrants its equipment to the original purchaser against defect in material and/or workmanship under normal use and service for 3 years from date of registered sale or date the unit left the factory if not registered. Excluded from such warranty is the battery(s) which carries 1 year warranty from described purchase date. Warranty claims within such warranty period shall be limited to repair or replacement of the defective part in question. The manufacturer will send, free of charge, any component recognized as having faulty design or defective construction. The labor to perform the necessary repair or replacement and the travel expenses involved carry a warranty of 1 Year from described purchase date, based on the Manufacturer's then current flat rate.

Warranty claims are valid ONLY providing the defective part in question is shipped prepaid to the Manufacturer and is found upon inspection by the Manufacturer to be defective in material and/or workmanship. Furthermore, warranty claims can be accepted ONLY when all information specifically required by the Manufacturer (such as Serial Number) are provided.

The manufacturer reserves the right to replace, repair, exchange, or to provide a new, used or rebuilt component, assembly, sub-assembly, or weldment based on its unquestionable judgment.

THIS WARRANTY POLICY DOES NOT COVER DAMAGES CAUSED BY:

1. Shipment
2. Misuse of unit, including operation beyond Factory established limits, loads and/or specifications.
3. Natural disasters (such as flood, fire, wind and lightning)
4. Failure to properly service and maintain the unit in accordance with the Company manuals or Factory Service Bulletins.

BRAVIISOL DOES NOT ACCEPT ANY RESPONSIBILITY FOR:

1. Any part requested for work that was tampered with.
2. Unauthorized alterations or modifications to the unit carried out without being agreed upon in writing in advance with the manufacturer.
3. Labor on consumable items, such as tire, batteries
4. Any indirect incidental, consequential or special damage (including without limitation to loss and profits, loss of revenue, cost of capital, cost of substitute equipment, downtime, examination fees, claims of third parties, and injury to person or property) based upon any claim of breach of warranty, breach of contract, negligence, strict liability in tort, or any legal theory.

ELECTRICAL COMPONENTS ARE COVERED BY THE WARRANTY UNDER THE FOLLOWING CONDITIONS

The battery is properly connected for re-charge, according to the specifications of this manual and/or electrical drawing provided by the Manufacturer.

PART 1 INTRODUCTORY INFORMATIONS**PROCEDURE OF THE WORKS COVERED BY THE WARRANTY:**

- *The manufacturer must be notified of all claims covered by the warranty within 48 hours of the anomaly, in writing or by fax (not only verbally) and as detailed as possible.*
- *Warranty claims should be forwarded to your nearest local distributor or directly to the Manufacturer:*

BRAVIISOL Divisione Meccanica S.r.l.
S.S. 16 Adriatica km. 314,600
60022 Castelfidardo (AN), Italy
Tel. +39.071.7819090 Fax +39.071.7819355
info@bravi-platforms.com

- *The manufacturer will confirm, in writing or by fax, eventual acceptance of the covered intervention carried out by the customer or will provide guidance of his own technicians for the .*
- *Any defective material replaced by the customer (authorized by the manufacturer) must either be held 120 days so that the manufacturer can question or verify defective material. If needed defective parts will be sent back to the Manufacturer.*
- *If required, please, take photographs of the defective part and of the area where the machine has been operated. This is both to prevent unpleasant controversies and to improve the quality, warranty, and safety of our machines.*

THIS WARRANTY STATEMENT IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. ALL SUCH OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. No employee, dealer, Sales Representative, or other person purporting to act on behalf of BRAVIISOL DM SRL is authorized to alter the terms of this warranty, or in any manner assume on behalf of the Manufacturer any liability or obligation which exceeds BRAVIISOL DM SRL obligations under this warranty.

1.5 PLATFORM DESCRIPTION

1.5.1 Purpose and product description

The machine is an aerial work platform with compact dimension designed for an easily working and for the operator safety. The purpose of the Platform is to bring the necessary personnel their tools and materials on the work position. It has been manufactured to solve different users' difficulties as: painters, electricians, hydraulics, false ceilings installers, manufacture industrials as they must work at very high heights (see Part 3 "Specifications").

Safety is our priority.

The Platform eliminates the necessity of scaffolds, scissor lifts. Nor stairs or stands. It is possible to easily work on safety, in a speed and efficient way.

Its unique design allows to use very narrow areas. Little lifts, narrow entrances, passages, mezzanines and restricted work areas, these are only some of the different places where the Platform can work.

The transport represents another key factor.

Light, compact and easily loadable on vans, trucks or pickups, the Platform can be operated or dandled only by a person.

The Manufacturer has made possible to lengthen the work surface (see Part 3 "Specifications"), so the operator has a bigger work area, nevertheless it stands firm.

The Platform is provided with a battery charger which allows to recharge batteries through the connection of a simple cable, avoiding loss of time and a more safe work.

A characteristic of the lifting column is that it does not need particular maintenance.

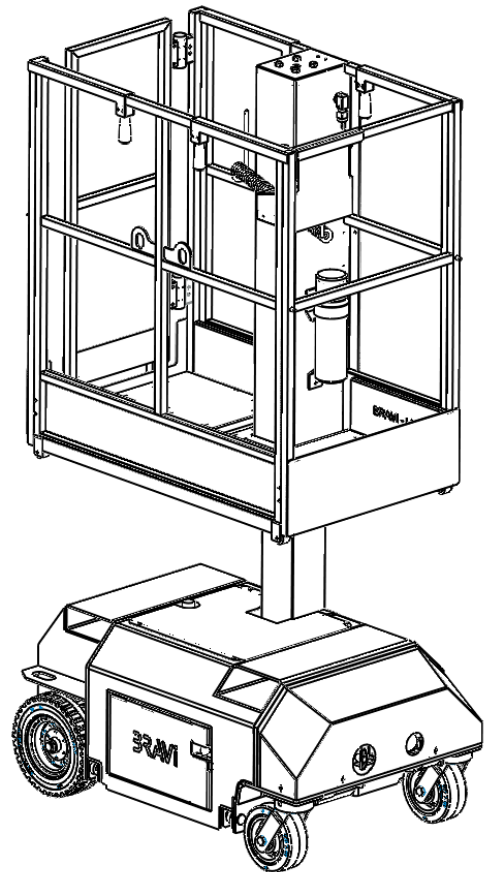
The machine may be operated at temperatures between -20 e 40° C (between 0 e 104° F). Consult BRAVIISOL D.M. SRL for values relative to operation of the machine at temperatures not included in the range indicated.

1.5.2 Improper use

Any other use different from the provided use is to be considered improper.

1.5.3 Reasonably expected improper use

It can happen that some users use the Platform as a crane, please note that the Platform has been designed only to be used as provided and any other use is to be considered improper.



2.1 INTRODUCTION TO THE SAFETY PRESCRIPTIONS

The BRAVIISOL DIVISIONE MECCANICA SRL has designed the Platform to be safe and reliable. It is designed to place the personnel together with the equipment and materials on aerial work positions.

The owner/user/operator of the Platform does not accept any responsibility when using the Platform without an adequate training period.

The ANSI and CSA standards identify all the requirements of all parties who can be involved in the use of the self-moving working Platform.

To ensure a safe use it is necessary to carry out frequently and yearly inspections of pre-starting at fixed intervals as prescribed by the Standards, in accordance with the recommendations of Braviisol Divisione Meccanica srl expressed in the attachment of the User and the Assistance Manual.

2.2 CONVENTIONAL SYMBOLS AND THEIR MEANING

During the consultation of this user and maintenance manual, and on the Platform itself, you will find some symbols, color coding and signaling words, which have a particular meaning.

SAFETY ALERT SYMBOL

This symbol is used to alert personnel to potential personal injury hazards. Strictly obey all safety messages that follows this symbol to avoid possible serious injury or death.

DANGER— White font on a red Background

It indicates the presence of an imminent hazardous situation which, if not avoided, *will* result in death or serious injury.

WARNING—Black letters on a orange background

It indicates the presence of a potentially hazardous situation which, if not avoided, *could* result in death or serious injury.

CAUTION—Black Letters on a yellow background

It indicates the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury or damage to the equipment.

NOTICE—White letters on a green or background

It indicates maintenance or operation information



CAUTION! DANGER OF ELECTROCUTION

Warns the staff in charge that by not carrying out the operation described according to the safety precautions that apply they run the risk of an electric shock.

**WARNING– GENERIC RISK**

Warns the staff in charge of any potential physical damage incurred if the operation described is not carried out according to the safety precautions that apply.

**NOTE**

Draws the attention of the staff in charge to some relevant or important information.

**WARNING**

Draws the attention of the staff in charge to some procedures that could cause light personal injuries or damage to the machine if not respected.

**OPERATOR OR MACHINE DRIVER**

Refers to qualified staff, i.e. staff having specific skills, inasmuch as the operations are entirely manual and will therefore require all of the driver's attention to ensure the best quality results.



It is therefore strictly forbidden to the operator to carry out any operation that would otherwise be the responsibility of the maintenance technician.

MAINTENANCE TECHNICIAN

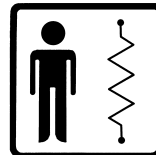
Qualified technician who can operate the machine under normal conditions of use and carry out all adjustment, maintenance and repair interventions needed on mechanical parts.

However this person is not qualified to carry out interventions on live electrical plants.

**ELECTRICAL TECHNICIAN OR SKILLED PERSON**

(See EN 60204 paragraph 3.55)

Qualified technician who can drive the machine under normal conditions of use and carry out all electrical adjustment, maintenance and repair interventions. This person can work on live electrical cabinets and boxes.

**PERSONAL PROTECTION**

When one of the symbols appearing next to the description is found, the operator must absolutely be equipped with safety wear because of the implicit hazard.

EXTRAORDINARY MAINTENANCE OPERATIONS

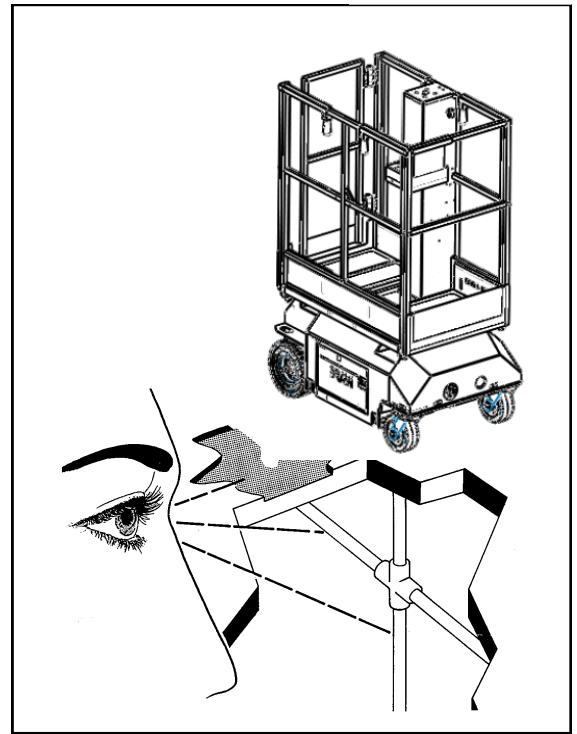
Any maintenance intervention highlighted by this symbol must be required to the authorized dealer Braviisol Divisione Meccanica srl.



2.3

Before using the Platform, the operator must make sure that:

- The floor, where it will be used, is sufficiently leveled (leveled and without holes)
- Can support the weight (see Chapter 3 Specifications)
- The environment is closed and well lit
- The outdoor version can be used in wind condition up to 12,5 m/s (28 mph)



2.4

The personnel in charge of using and moving the Platform must always wear work gloves, safety shoes, helmet and belt.

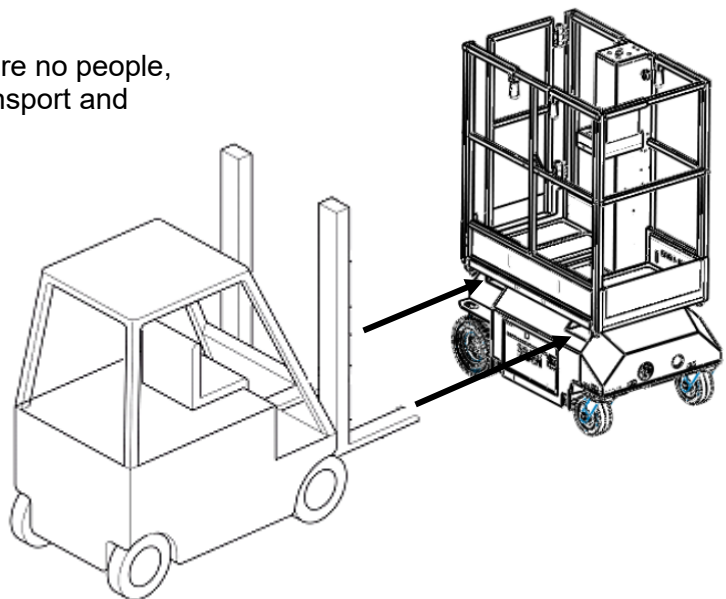


2.5

As regards all the moving operations of the packaged Platform please see Part 4.

In any case, you have to:

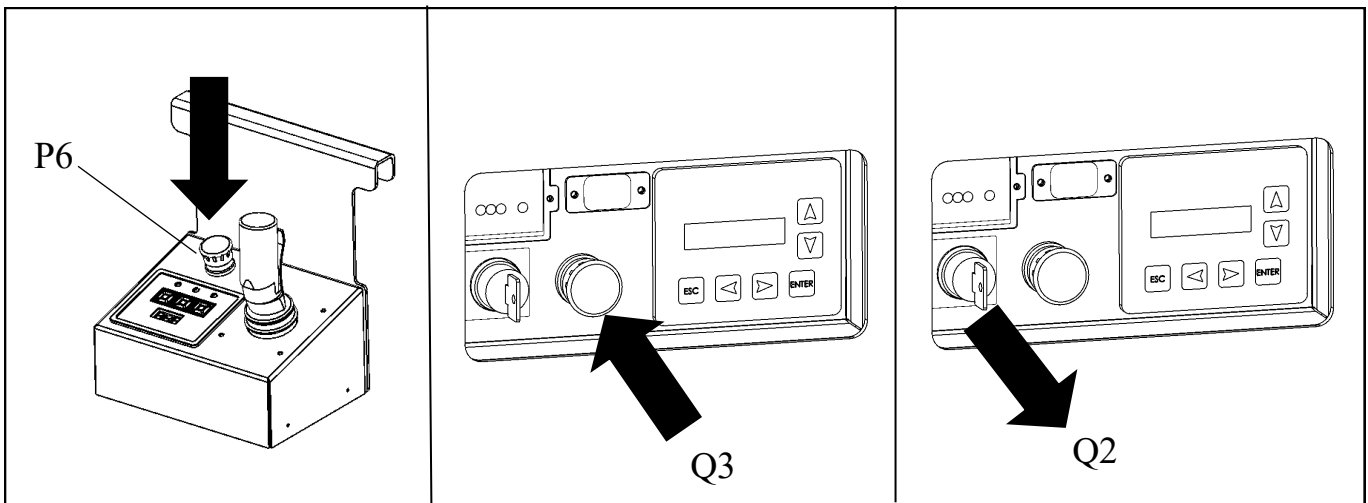
- **Lift it with the basket completely lowered.**
It is absolutely forbidden to lift it up, even if a little, with the column to operate.
- Lift it up at no more than 30 cm from ground (unless obstacles)
- Move it very slowly.
- The operator must look out that there are no people, animals or things on the way of the transport and that there are no holes in the floor.



2.6 “ZERO”POWER CONDITION: DISCONNECTION FROM POWER SOURCE

Before performing any cleaning, maintenance and lubricating operation, it is necessary to bring the Platform to the Zero Power Condition, that is:

- Platform completely lowered (see PART 5)
or, in case of maintenance, with the basket locking device on.
- The emergency buttons pressed .
- The **Q2** Key switch must be removed from the Ground module and handed over to the Production Manager.



2.7 CAUTION! DANGER OF ELECTROCUTION

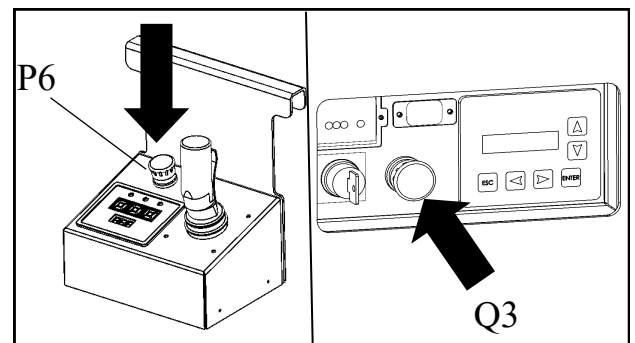
Only a licensed electrician can intervene on the electrical system and carry out the necessary maintenance, but always only bringing the Platform to the Zero Power Condition. It is absolutely forbidden to tamper with the electrical system.



2.8

If any mishap arises when using of the Platform please immediately press the STOP/EMERGENCY button. Please remember that the STOP/EMERGENCY button stops immediately all the moving parts, so you have to pay the maximum attention especially when the Platform is lifted up.

Moreover, please read in the Part 4 “Shut down” all the ways to have the Platform stopped.



2.9

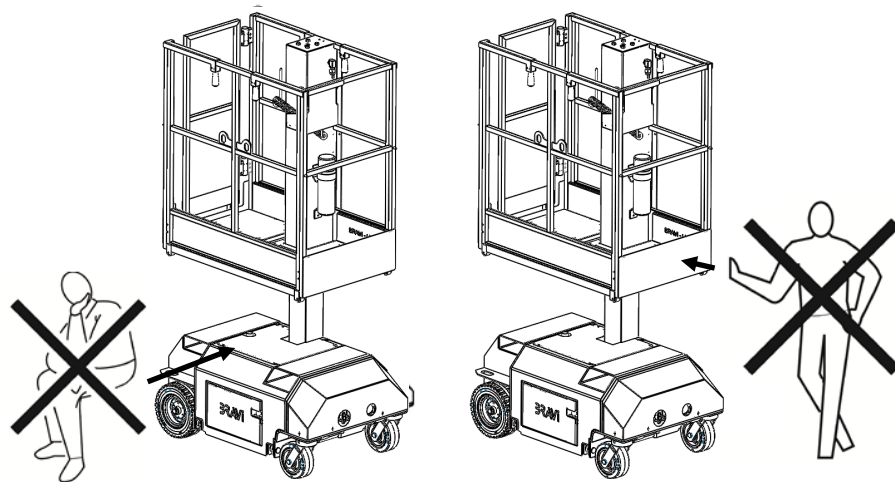
If, in case of extraordinary interventions, it would not be possible to bring totally the Platform to the Zero Power Condition, please signal work in progress by placing the sign on the Platform.



2.10

Never lean or sit for any reason on any part of the Platform, whether it is in the phase of the productive cycle, or in the emergency state or in the Zero Power Condition.

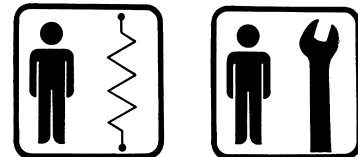
The operator must be careful, physically fit, and does not be under the influence of alcohol or drugs which can distort sight, hearing, attention and reactions.



2.11

Only highly qualified and trained personnel, who has attained a practical course at the Manufacturer or its authorized Distribution centers, enabling him to use the Platform, can use it.

Besides, he must have read and understood all the safety prescriptions and content of this Manual.



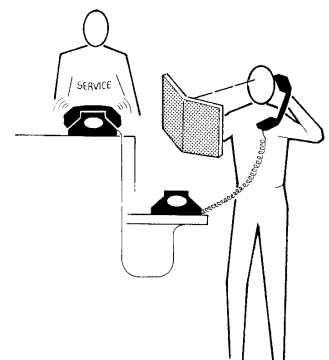
2.12

The maintenance of the Platform should be carried out only by the trained Electric Maintenance or Maintenance Technician, who has attained a practical course at the Manufacturer or its authorized Distribution Centers, enabling him to use the Platform. Besides, he must have read and understood all the safety prescriptions and content of this Manual.



2.13

The keys to drive the Platform shall be always handed over the Production Manager when the Platform is not used.



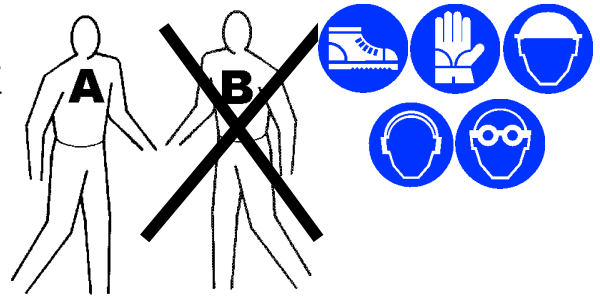
2.14

The use, cleaning and maintenance must be strictly performed, unless otherwise indicated, by a single operator and never by MORE PEOPLE.

The operator must always wear all work safety protections. Moreover he has to:

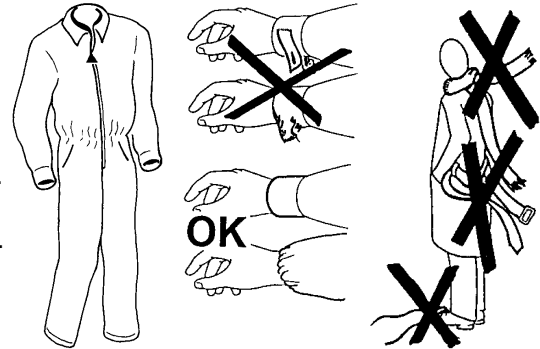
- Wear a work overall closed at the wrists.
- In case of long hair he has to tie them.

He never has to wear objects and/or fluttering and/or tore clothes (as for example: necklaces, watches, rings, bracelets, scarves, ties, etc.).



2.15

Never temper with or restrain or disconnect the micro-switches or other safety devices, for no reason, nor create by-pass or use them for purposes different from those established and for those they have been installed.



2.16

Caution Risk of Falling

THE IMPROPER USE OF FALL ARREST SYSTEMS MAY CAUSE MACHINE TO TIP RESULTING IN SERIOUS INJURY OR DEATH.

if Lanyard Attachment Anchorage is required by site authorities or other regulations, the anchorage point on this machine is recommended to be used as an attachment point for safety belt. Do not use this point to lift, anchor, secure or support the platform or any other apparatus or material. **The lanyard attachment anchorage is used for travel restraint, within the limits of the platform only. It is not a fall arresting device. Use as such could result in death or serious injury.**



2.17

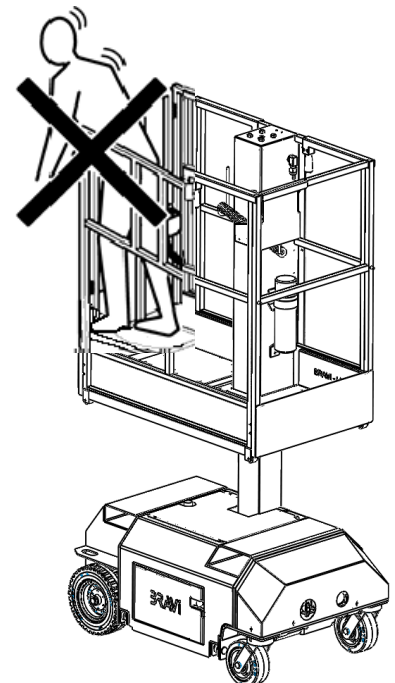
When using the Platform the correct position, in which the operator must stand, is in front of the push-button panel.

From that point the operator can observe the operating space of the Platform and, in case, turn away people who are exposed.

It is strictly forbidden to lean out of the parapet of the Platform.

2.18

Please remember, that after each cleaning, lubricating, adjustment and maintenance intervention all safety devices must be reinstated and all the safety carters reassembled and/or closed.



2.19

At the end of the maintenance or repair, before having the Platform moving, verify that there are no tools, rags or other materials left in the spaces containing the parts in motion.

2.20

The first installation must be done by the Manufacturer and it is strictly forbidden to carry out any kind of unauthorized intervention.

2.21

Before using the machine the operator must check all the operations describe in the Part 6 "Operations".

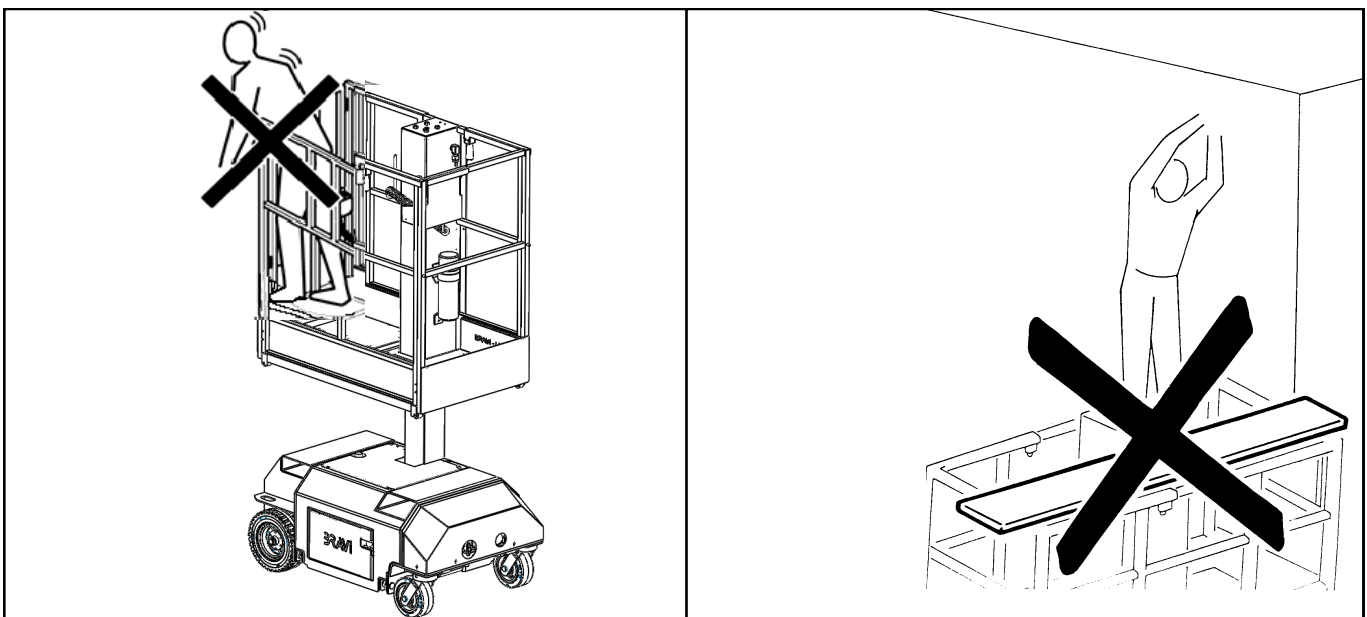
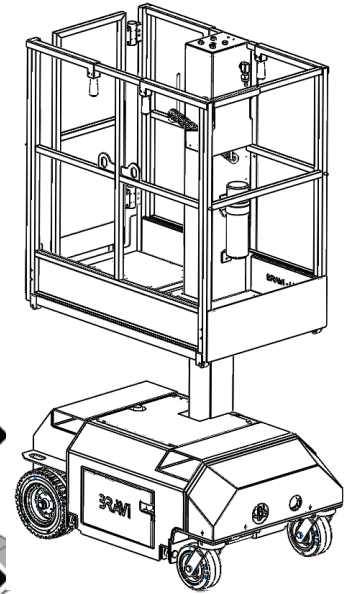
2.22

Caution– Risk of fall

It's forbidden:

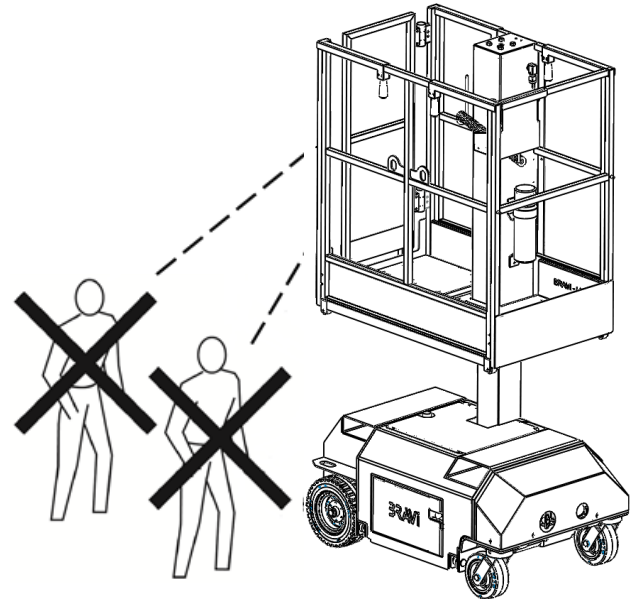
- To let go on the Platform more than a person.
- Exceed the limits for which the platform is certified and / or pre-set (see Part 3).
- Use stands, staircases, bridges or any other means to lift again the trampling floor.
- Loading and unloading operations when the Platform is raised

It's absolutely forbidden to load goods on the basket from an upper position



2.23

It is to be considered dangerous the zone within two meters from the Platform. The operator must be sure that there are no standing or passing people, animals, things exposed in this area and that there are no obstacles both in the lower part of the Platform (in the ground), and in the higher (as tie-rods, columns, rods or other air barriers).

**2.24**

The operator must constantly carry out the maintenance operations (Part 9)

2.25

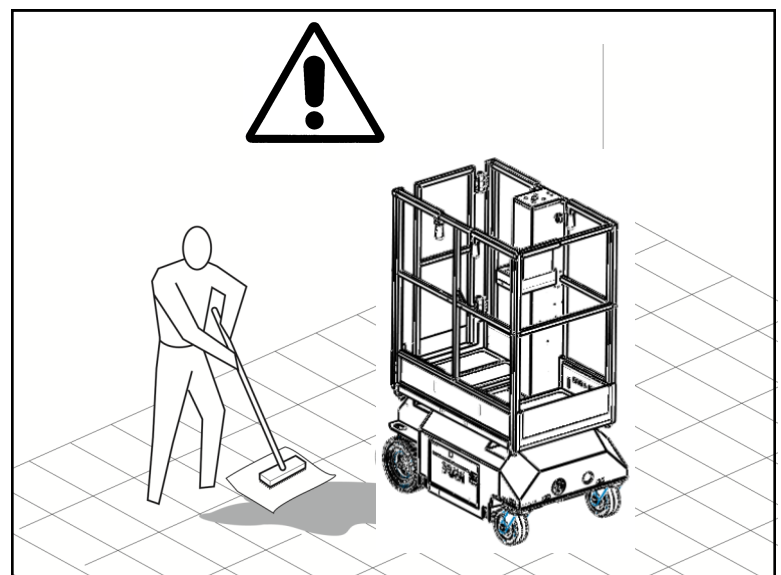
Be careful never hook yourself to an adjacent structure while you are on the Platform.

2.26**Caution – Risk of fall**

Make sure before using it, that the entrance to Platform is well closed.

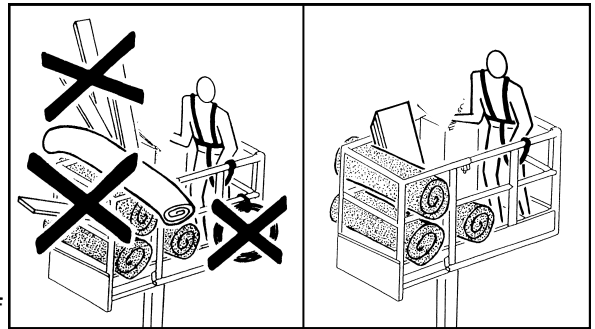
**2.27****Caution – Risk of Overturning**

During the movements ahead or back, the operator must constantly make sure that there are no exposed persons, besides must also be sure that the floor is clean, without holes, dips, inclinations or objects.



2.28

The additional load of the Platform **MUST NOT**:
 - Exceed the working load limit (See Part 3, Specifications)
 - Stick out from the basket, but must be well balanced.



2.29

It is strictly forbidden to use the Platform as a crane

2.30

The operator must monthly check the state of tightening of ALL the screws and if necessary replace them (Section 9.8 Maintenance).

2.31

Caution Risk of Electrocutation.

It is forbidden use the Platform near no protected voltage power lines.

The Platform and the fence are not electrically isolated.

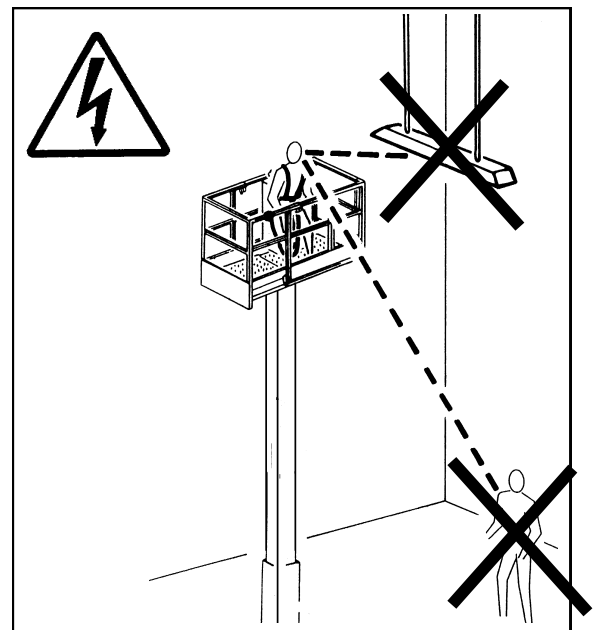
Keep a distance of at least 3 m (10 ft) between the parties of the machine and the occupants, with their relative tools and equipments, and a power line or equipment provided with a electric charge up to 50.000 volts.

It is possible to reduce the minimum safe operating distance in presence of insulating barriers installed to prevent contacts and if these barriers are set to the voltage of the power line to be protected.

The barriers should not be a part of the machine or be connected to it.

The minimum safe operating distance should be reduced within the provided operating dimensions of the insulating barrier.

This distance should be determined by a qualified person in accordance with the company, local and government regulations regarding the conduct of the work near equipments under voltage.



| VOLTAGE RANGE (FROM PHASE TO PHASE) | MINIMUM OPERATIONAL SAFETY DISTANCES m (ft) |
|--|--|
| From 0 to 50 kV | 3 (10) |
| From over 50 kV to 200 kV | 5 (15) |
| From over 200 kV to 350 kV | 6 (20) |
| From over 350 kV to 500 kV | 8 (25) |
| From over 500 kV to 750 kV | 11 (35) |
| From over 750 kV to 1000 kV | 14 (45) |

NOTE: These minimum operational safety distances are to be applied except in cases in which company, local or governmental regulations are more stringent.

2.32

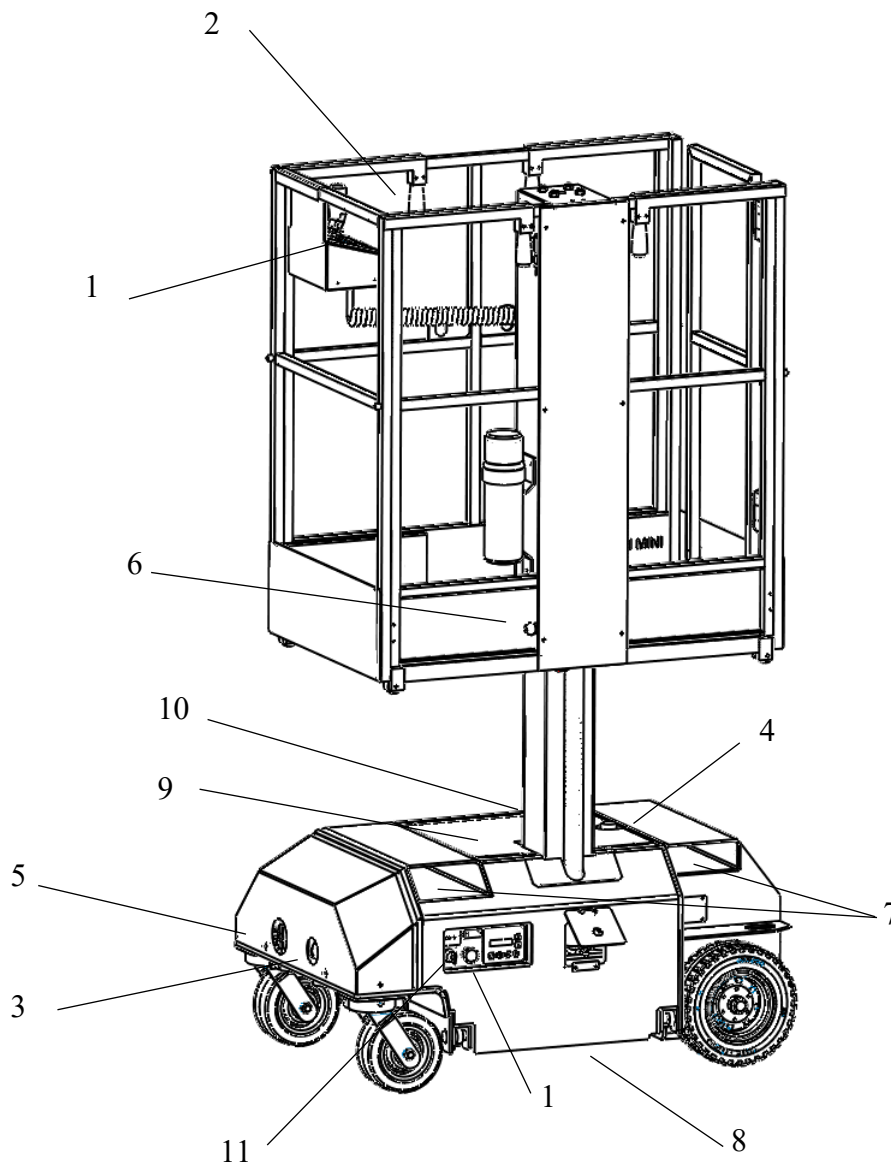
DO NOT REPLACE CRITICAL ITEMS FOR THE STABILITY OF THE PLATFORM WITH ARTICLES WITH DIFFERENT WEIGHTS AND SPECIFICS.

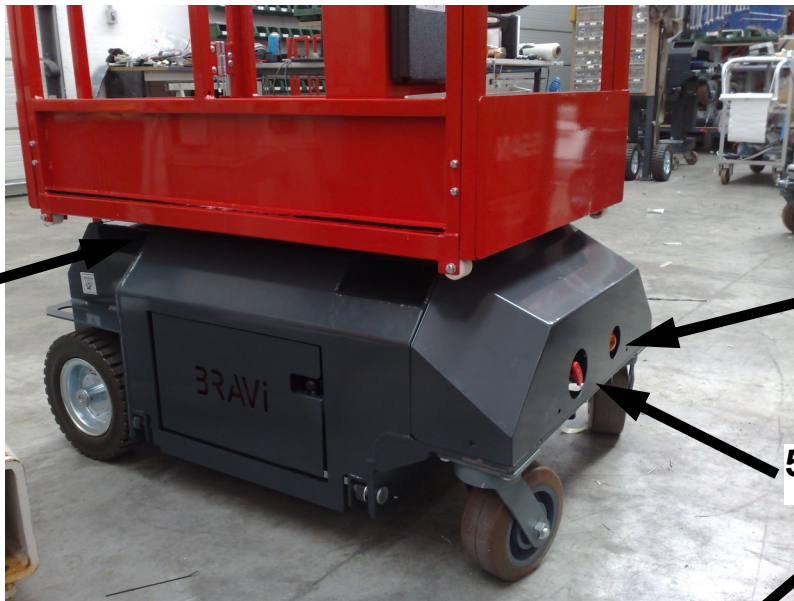
Battery total weight: 42 kg (each battery 21 Kg);

To replace all broken or worn parts, use only original spare parts.

2.33 Safety features:

- | | |
|-----------------------------|-------------------------------|
| 1 Emergency stop button | 7 Tie down and lifting points |
| 2 Basket slide stop devices | 8 Pothole protection system |
| 3 Flashing /acoustic device | 9 Overload system |
| 4 Tilt sensor device | 10 Limit switch |
| 5 Manual emergency descend | 11 Key switch |
| 6 Basket blocking bar | |

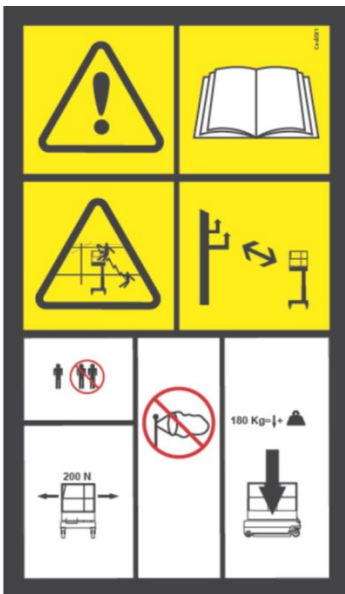




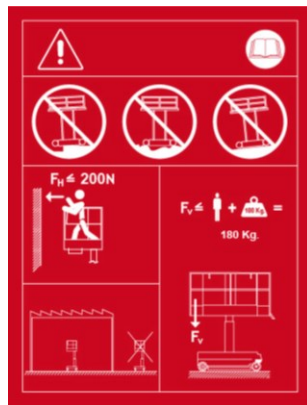
2.34

| N° | DESCRIPTION |
|-----|---|
| 001 | Indoor version |
| 002 | DANGER rated Workload, Side Load, Rated number of occupants (INDOOR VERSION) |
| 003 | Lanyard anchorage point decal |
| 004 | Forklift point |
| 005 | Anchor point |
| 006 | Outdoor version |
| 007 | DANGER rated Workload, Side Load, Rated number of occupants (OUTDOOR VERSION) |
| 008 | WARNING: Batteries |
| 009 | WARNING: Crush |
| 010 | Manual Emergency lever decal |
| 011 | Stop-Emergency |

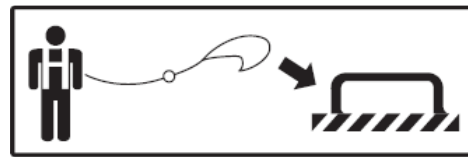
001



002



003



004



005



006



007



Do not temper with or voluntarily damage the safety screens, end strokes,

008



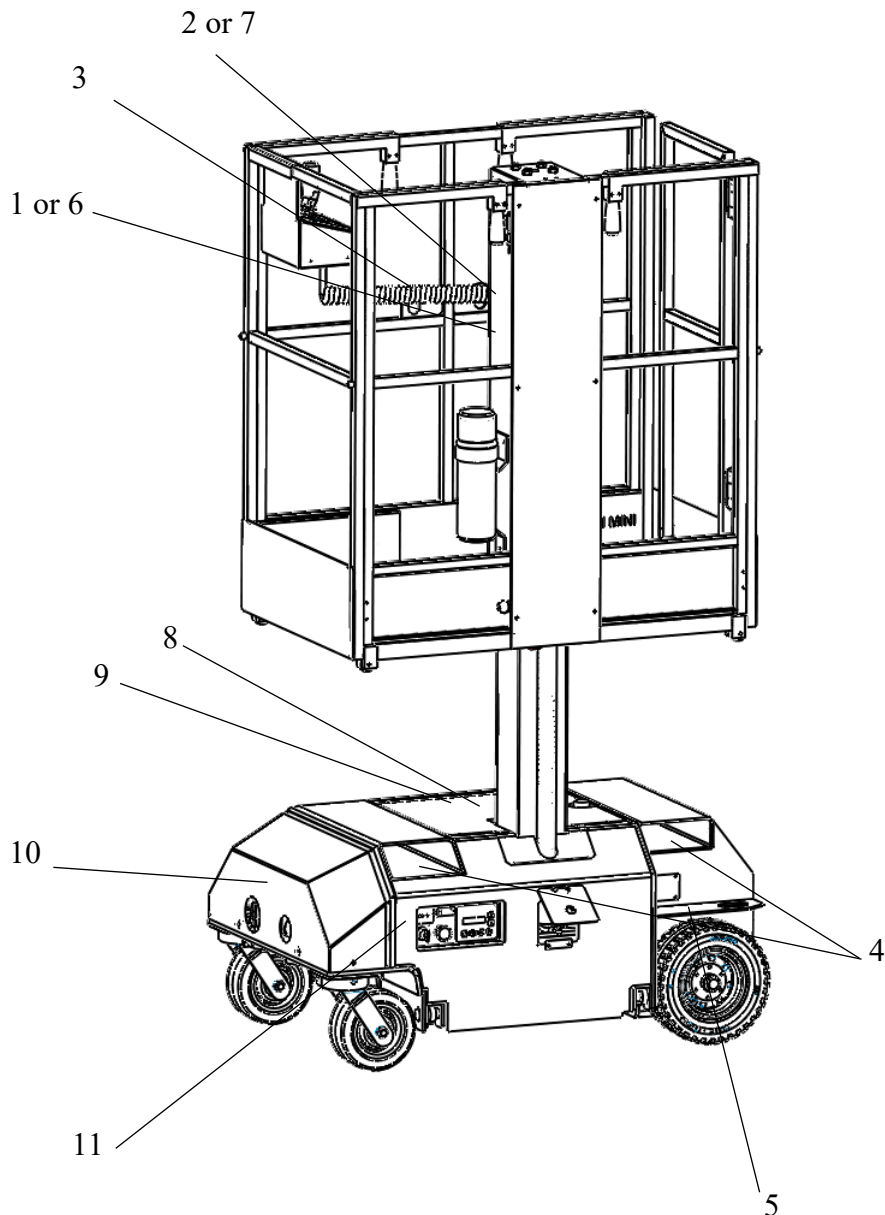
009



010



011



nor remove or hide warning labels. In case of damage or illegibility of the labels please ask immediately for their change.

2.35

It is forbidden to do any makeshift repairs just to start working.

2.36

Supplemental information (only for CE machines)

The following information is provided in accordance with the requirements of the European Machinery Directive 200/42/CE and are exclusively applicable to the CE Machinery.

As regards electric powered machines, the level of the continuous sound pressure (A measurement), in correspondence with the platform, is lower than 70 dB (A).

The total value of vibrations to which the hand-arm system is subjected does not exceed $2,5 \text{ m/s}^2$. The weighted maximum medium quadratic value of the weighted acceleration in the whole body subjected does not exceed $0,5 \text{ m/s}^2$.

2.37

In case it is necessary to replace worn and/or broken parts, please use exclusively original spare parts.

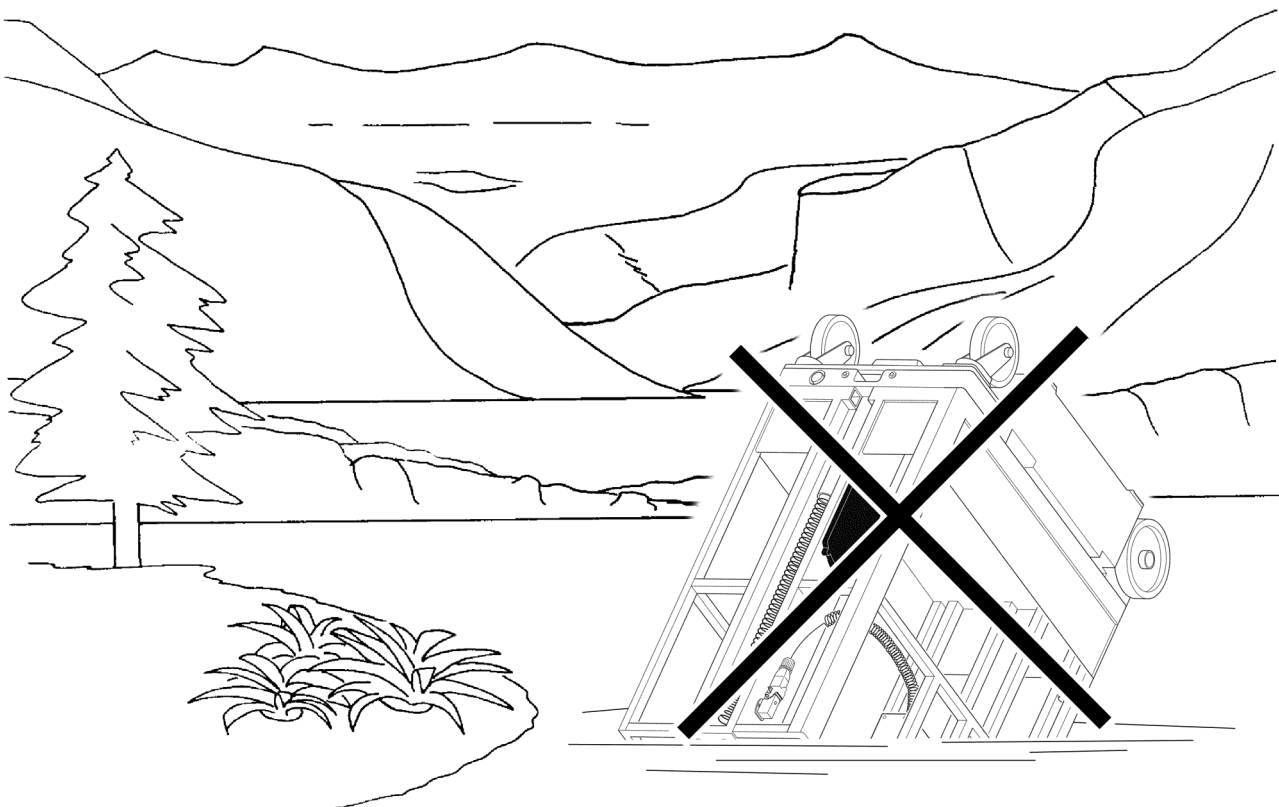
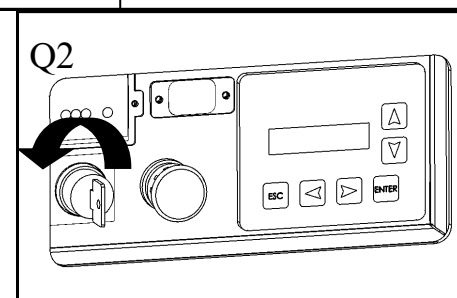
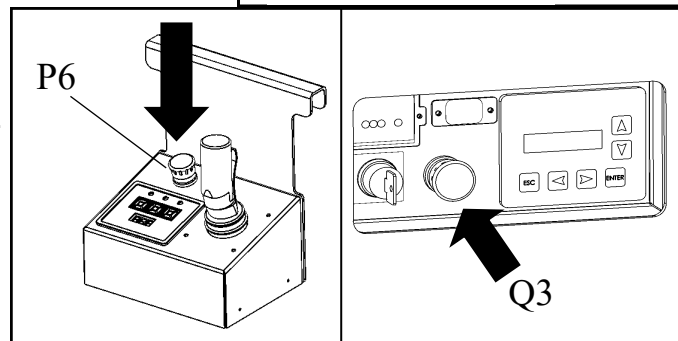
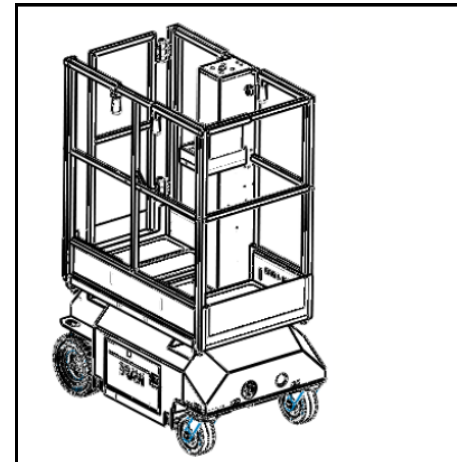
2.38

At the end of the work it is forbidden to leave the Platform in potentially dangerous areas, so bring it to the **Zero Power Condition**.

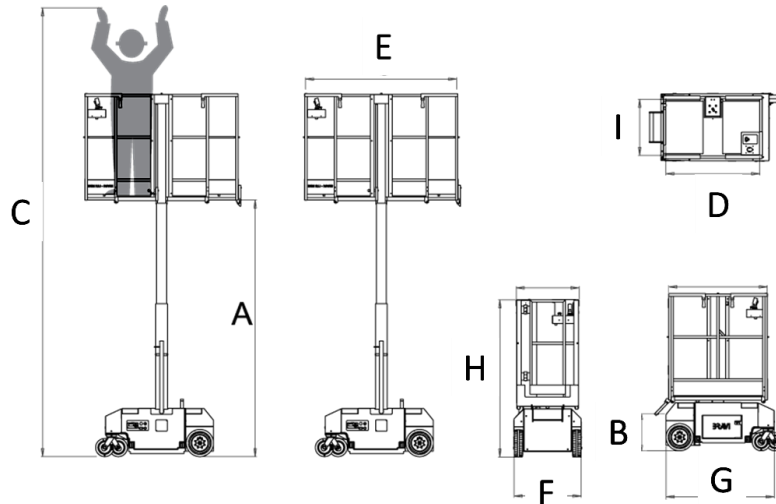
2.39

Caution – Risk of Pollution

At the end of the life of the Platform, do not throw away it in the environment, but address to authorized waste agencies or directly to the Manufacturer, who will give you written instructions about it. In any case, before



3.1 MACHINE SPECIFICATIONS



| MODEL | | LUI HD | LUI HD WD |
|----------------------------------|----------|---|---|
| DIMENSIONS | | | |
| Working Height | C | 4900 mm - 16 ft | 4900 mm - 16 ft |
| Platform Height | A | 2900 mm - 9 ft 6 in | 2900 mm - 9 ft 6 in |
| Height Stowed | H | 1747 mm - 5 ft 7 in | 1747 mm - 5 ft 7 in |
| Length Stowed | G | 1192mm - 3 ft 10 in | 1192mm - 3 ft 10 in |
| Length with decks ext | E | 1700mm - 5 ft 6 in | 1700mm - 5 ft 6 in |
| Width | F | 760 mm - 2 ft 5 in | 760 mm - 2 ft 5 in |
| Ground clearance | | 60 mm - 2.3 in | 60 mm - 2.3 in |
| Platform Capacity with decks ext | | 180 Kg - 397 lbs | 180 Kg - 397 lbs |
| Platform width | D | 1036 mm - 3 ft 5 in | 1036 mm - 3 ft 5 in |
| Platform length | I | 630 mm - 2 ft | 630 mm - 2 ft |
| Max Wind Speed | | Zero - indoor use only | 12,5 m/s – 28 mph |
| Entry Step | B | 400 mm 1 ft 3 in | 400 mm 1 ft 3 in |
| Rated number of occupants | | 1 | 1 |
| PERFORMANCE | | | |
| Drive Speed Stowed | | 3 Km/h - 1.9 mph | 3 Km/h - 1.9 mph |
| Drive Speed Elevated | | 0.6 Km/h - 0.35 mph | 0.6 Km/h - 0.35 mph |
| Inside Turning Radius | | ZERO zero | ZERO zero |
| Outside Turning Radius | | 1050 mm - 3 ft 5 in | 1050 mm - 3 ft 5 in |
| Gradeability | | 35% | 35% |
| Raise/Lower Speed | | 16/14sec | 16/14 sec |
| POWER | | | |
| Power Source | | 110/220 V ca, 24V cc | 110/220 V ca, 24V cc |
| Batteries | | N 02, 12V 85Ah@20h | N 02, 12V 85Ah@20h |
| Hydraulic System Capacity | | 4 lt / 1.05 gal | 4 lt / 1.05 gal |
| Weight (without load) | | 530 Kg-1168 lbs | 560 Kg-1234lbs |
| Max wheel load | | 233 Kg - 513 lbs | 245Kg - 540 lbs |
| Standard Compliance | | Ansi A92.20, CE Compliance, CAN/CSA - B354.6:17 | Ansi A92.20, CE Compliance, CAN/CSA - B354.6:17 |

| | |
|--------------------------------------|---|
| Translatory Movement Motors | Watt 500; Volt24; Nm 1.33; F.F. 1; RPM 3600; Ah26; IP 54; DUTY S2;brake 24V +/-10% stabilized |
| Gearbox | MRIV 50 U03A; PW 1400 min-1: 0,27 Kw; i=56; |
| Pump | 2200W; 24V; 105 Ah; 2100 RPM; Nm 9.09; IP 20; F.F. 1 |
| Wheel Blocking Electromagnets | 18W; 24V; IP 40 |
| Rear Drive Wheels | mm 300x90 |
| Controls | One hand proportional Joystick |
| Tires | Solid rubber no marking |
| Hydraulic Oil | Mineral oil ROLOIL LI22 HIV |
| Filter | internal 90 μ |
| Oil Pressure | 18-23 bar |
| Slow movement | <i>m/min 14</i> |
| Fast movement | <i>m/min 40</i> |
| Lifting | <i>m/min 5</i> |
| Noise | <i>Less than 70 dB(A)</i> |

throwing the Platform, remove oil (Part 11), batteries (Part 10), stop all the moving parts and move it (Part 4).

4.1 INTRODUCTION TO THE TRANSPORT AND HANDLING

4.1.a

Danger of crushing, collusion and abrasion
The staff in charge of the Platform moving must have read and understood the safety requirements in lead of this manual (see Part 2).

It should wear work gloves, helmet and safety shoes.



4.1.b

Independently by the number of persons in charge of the moving of the Platform, there must be always a responsible.

4.1.c

Before transporting the Platform, make sure that the floor is leveled and without holes.

4.1.d

Before starting, please read all the Part 4 in order to be prepared in time in case of need.

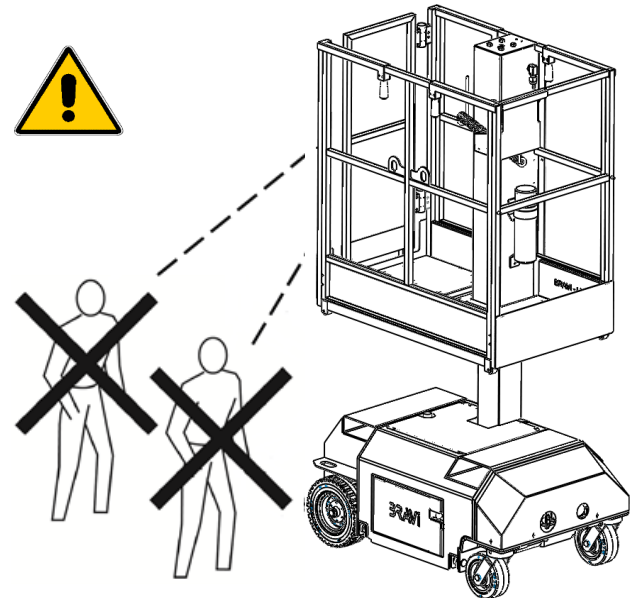
4.1.e

Clean the area where the Platform will be positioned, in order to prevent slipping, tripping or falling.

4.1.f

The Platform can be unloaded in 4 different ways:

1-With a forklift with a suitable lifting capacity (see Part 3 Specifications or on marking the voice "weight") see Section 4.2.2-By using the loading/unloading device and a suitable set of ramps, see Section 4.3.3-By using loading and unloading skids and a cargo winch, see Section 4.4.4-By moving the Platform by a crane, see Section 4.5.



4.1.g

Danger of crushing and capsizing

Transport operations are dangerous, so the operator must carry out them very slowly, must be very careful and make sure that there are no exposed people, animals or things.

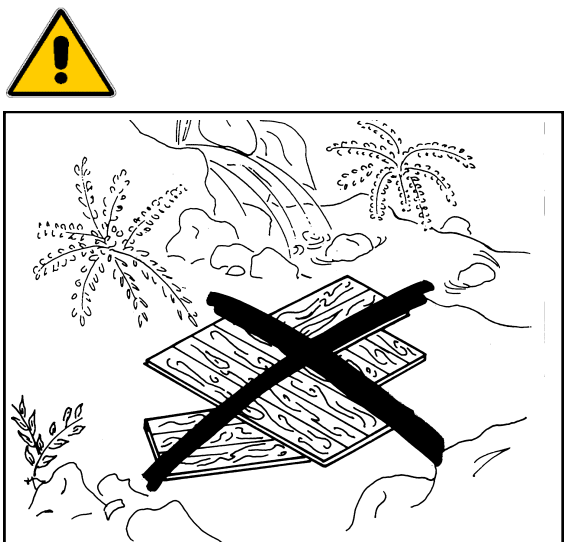
4.1.h

Danger of pollution

Do not throw away the packing in the environment, but select it depending on the type of material (cardboard, wood, steel, polyurethane, etc. ...), then it must be given for disposal (depending on the rules of the country where the Platform is used).

4.1.i

The Platform is on the truck, please make sure that there are no pipes or cables that may interfere with the forks.



4.2 UNLOADING/UPLOADING PLATFORM PROCEDURES WITH A FORKLIFT

4.2.a

The Platform can arrived:

- 4.2.a1- boxed with a pallet
- 4.2.a2 – wrapped in cellophane with a pallet
- 4.2.a3 – wrapped in cellophane without pallet

4.2.a1 - Boxed with a pallet

To unload the Platform in a box with a pallet using a forklift, do as follows:

- Place the forks of the forklift in the pallet.
- Lift the box very slowly for about 10 or 20 cm and ...
- Making sure that there are no people exposed, take the box out of the truck or container and place it on the ground.

- Danger of cutting

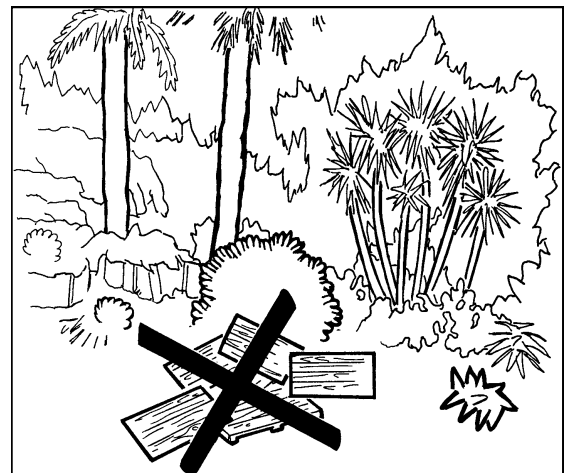
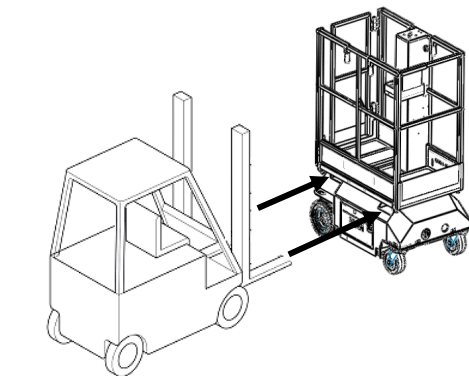
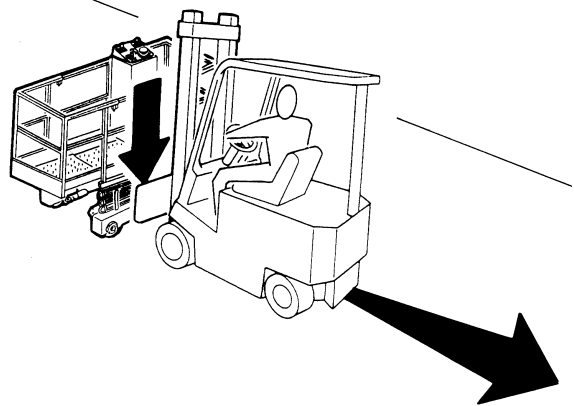
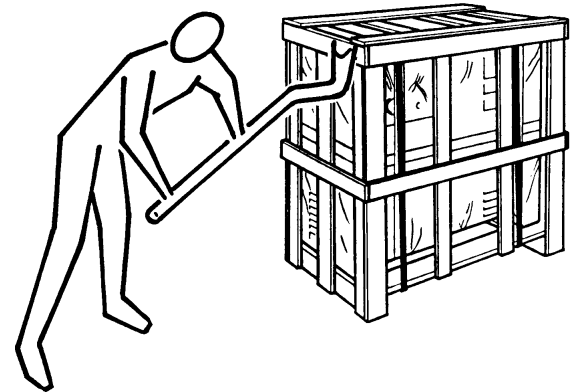
Once placed it on the ground, the operator must wear cut-resistant gloves and with a suitable tool remove the lid, therefore

- Unscrew the screws on the wall and remove the 4 walls.

- Danger of pollution

Do not throw the packing in the environment, but apply to authorized disposal agencies or keep the package for future transports.

- Remove the forks from the pallet and ...
- Insert the forks in the suitable housings of the Platform.
- Making sure that in the area there are no people exposed, lift up again very slowly the Platform for about 10 or 20 cm and bring it near the area of use.
- the unload of the Platform in the box with the pallet using the forklift is done.



4.2.a2 - Wrapped in cellophane with pallet

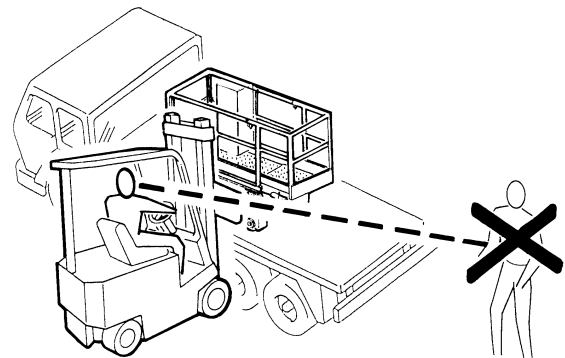
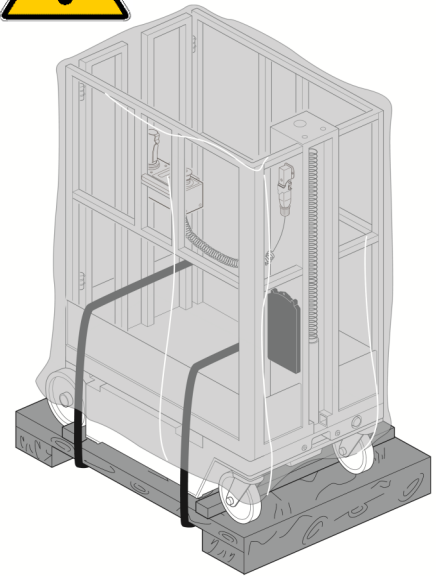
To unload the Platform with cellophane on a pallet using the forklift do as follows:

- Place the forks of the forklift in the pallet.
- Lift up the Platform very slowly for about 10 or 20 cm and ...
- Making attention that in the area there are no people exposed, take the Platform out of the truck or container and place it on the ground.

Danger of cutting

The operator must wear anti cut gloves

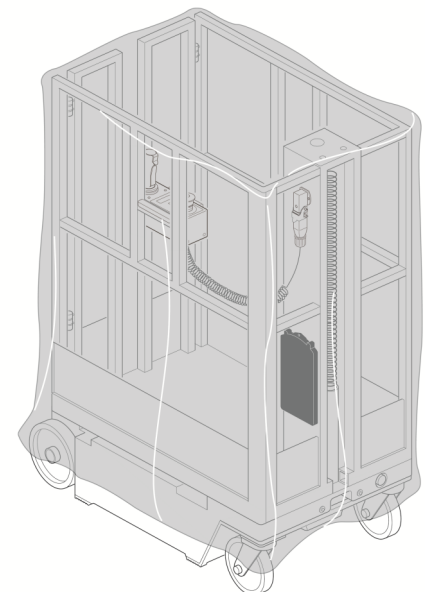
- Take the scissors and cut the small bands
- So, always making attention, lift up again the Platform very slowly for about 10 or 20 cm and take it near the area of use.
- the unload of the Platform in the box with the pallet using the forklift is done



4.2.a3 - Wrapped in cellophane without pallet

To unload the Platform with cellophane by using the fork lift do as follows:

- Place the forks in the suitable housings of the Platform.
- Lift up the Platform very slowly for about 10 or 20 cm and ...
- Making attention that there are no people exposed in the area, take the Platform out of the truck or container and take it near the area of use.
- the unload of the Platform wrapped in cellophane using the forklift is done.



4.3 LOAD/UNLOAD PLATFORM PROCEDURE BY USING RAMPS AND WINCH

4.3.a

To carry out the load/unload Platform procedure by using ramps and winch do as follows:

Danger of cutting

The operator must wear anti cut gloves

-Take the shears
-Take away the cellophane making attention not to hurt the hands and damage the Platform.



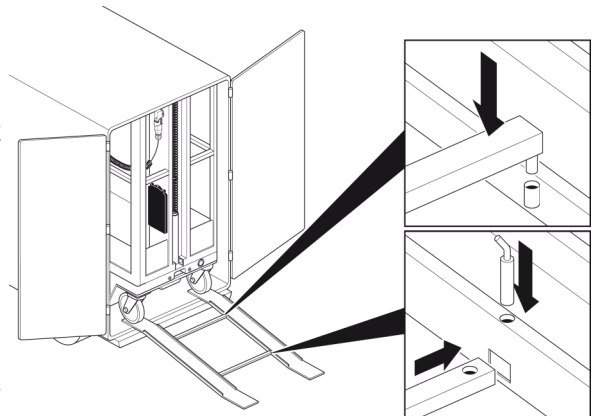
- Danger of sliding

Take away the cellophane and immediately throw it into the suitable containers for special waste materials.

4.3.b Unload ramps positioning

-Get load/unload ramps suitable and authorized by the Manufacturer to support the weight of the Platform, others models are not authorized (see Part 3 Specifications).

-Place the load/unload ramps and fasten them using a bolt and, when possible, between them using spacers to make the lowering more secure and stable.



- Beware general dangers

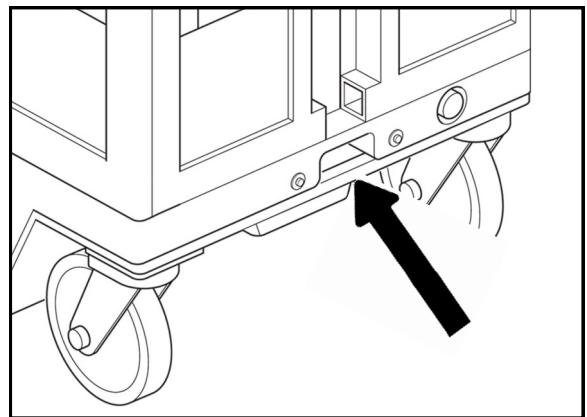
The operator must make sure that:

-The Platform is totally lowered
-no persons, animals or objects are located in the movement area
-The floor is flat (without holes) and well clean.

4.3.c

Take the hook winch and insert it (making sure that it is well secure) into the suitable housings of the Platform with the rope well-drawn.

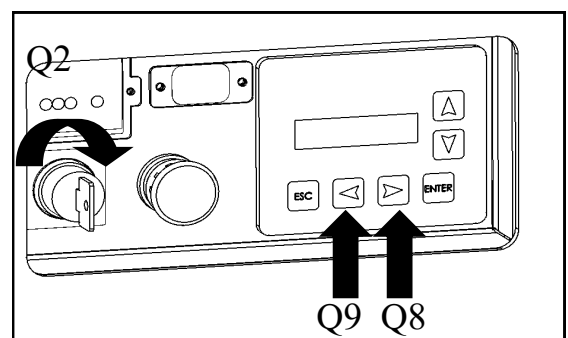
Pull the **Q3** or **P6** Stop/Emergency buttons



4.3.d

Turn to the right the **Q2** ignition key to enable the controls from the bottom.

Within 30 seconds press at the same time the two buttons **Q9** and **Q10** (left and right arrow) until you will hear a "CLICK" of the electric brake release, and a written will appear in the display



4.3.e**Danger of overturning**

Go on the ramps very slowly making sure that both wheels are well channeled.

**4.3.f**

Place by hand the Platform on the ramps and ...

4.3.g

... calmly operate the winch to move the Platform and/or to bring it near the load/unload ramps.

4.3.h

Once carried out the moving and/or unload from the ramps switch off the winch.

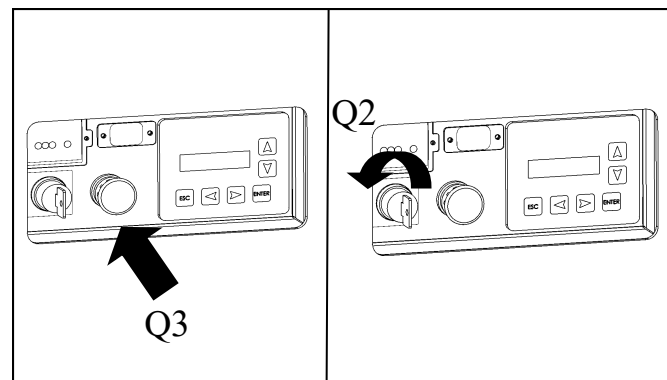
Press the **Q3** and/or **P6** Stop/Emergency button and turn the **Q2** ignition key to the "0" position.

4.3.i

Remove the load/unload ramps from the means of transport.

4.3.l

The unload/load Platform procedure using ramps and winch is done.





4.4 LOAD/UNLOAD PLATFORM PROCEDURE USING A CRANE

4.4.a

To carry out the procedure to load/unload the Platform using a crane please do as follows:

4.4.b

Danger of cutting

The operator must wear anti cut gloves

-Take the shears

-Take away the cellophane making attention not to hurt your hands and damage the Platform.

- Danger of sliding

Take away the cellophane and immediately throw it into the suitable containers for special waste materials.

4.5.a

Danger of crushing

Check the chains and belts in order to verify that there are no anomalies before using them to move the Platform.

Make sure that they are securely fixed to the hook of the crane and that the crane can support the load of the Platform (see Part 3 "Specifications").

It is strictly forbidden to stand in the dangerous zone when this last one is moved by a crane!!

The minimum safety distance must be of 3 meters.

4.5.b

Check that the **Q3** and/or **P6** Stop/Emergency buttons are pressed.

Remove the push-button panel and put it inside the basket.

4.5.c

Insert the chains or belts inside the chassis lifting points

4.5.d

Pass the tip of the chains or belts through the inside of the basket and ensure all of them to the hook of the crane.

4.5.e

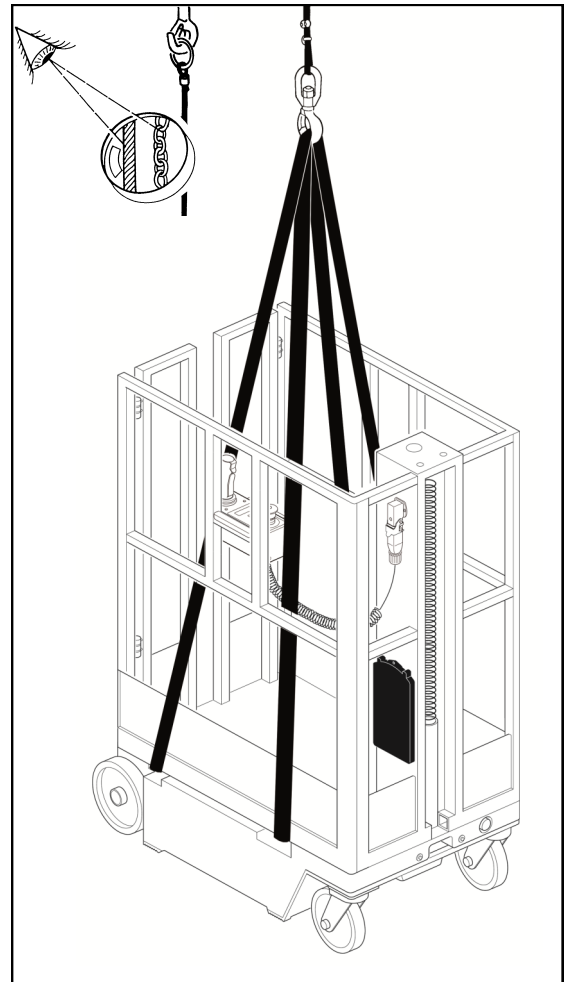
Move the Platform making sure there are no exposed people or animals, until the positioning on the ground area.

4.5.f

Repeat backwards all the operations described above.

4.5.g

The procedure of load/unload of the Platform using a crane is done.



4.6 MANUAL EMERGENCY HANDLING

4.6.a

Pull the **Q3** and/or **P6** Stop/Emergency buttons.

4.6.b

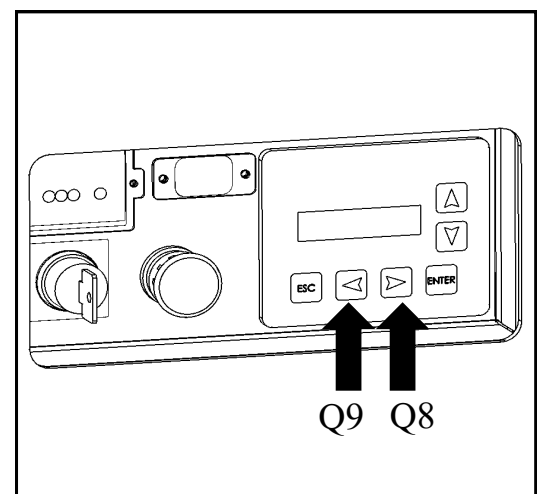
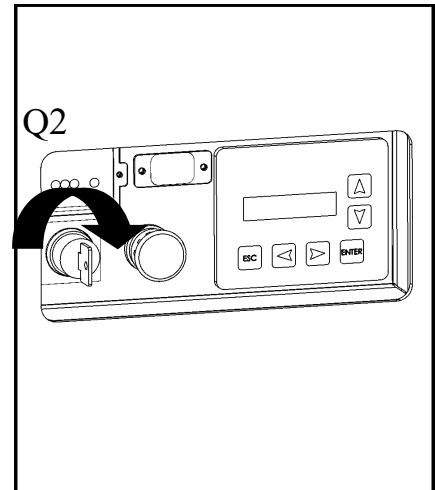
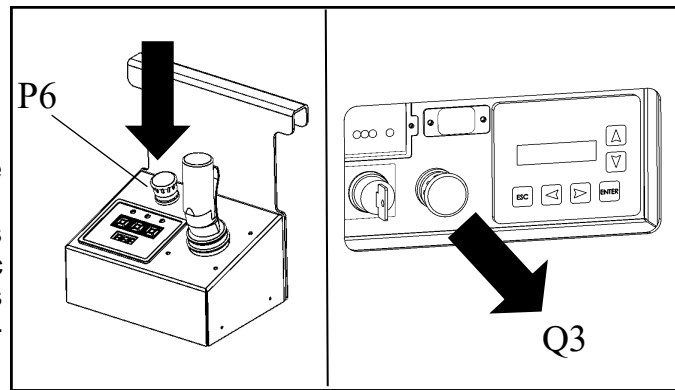
Turn to the right the **Q2** ignition key (light on), to enable the controls from the bottom.

Within 30 seconds press at the same time the two buttons **Q9** and **Q10** until you will hear a "CLICK" of the electric brake release, and both the light of the basket and chassis start flashing (from this moment the electric brakes are disabled).

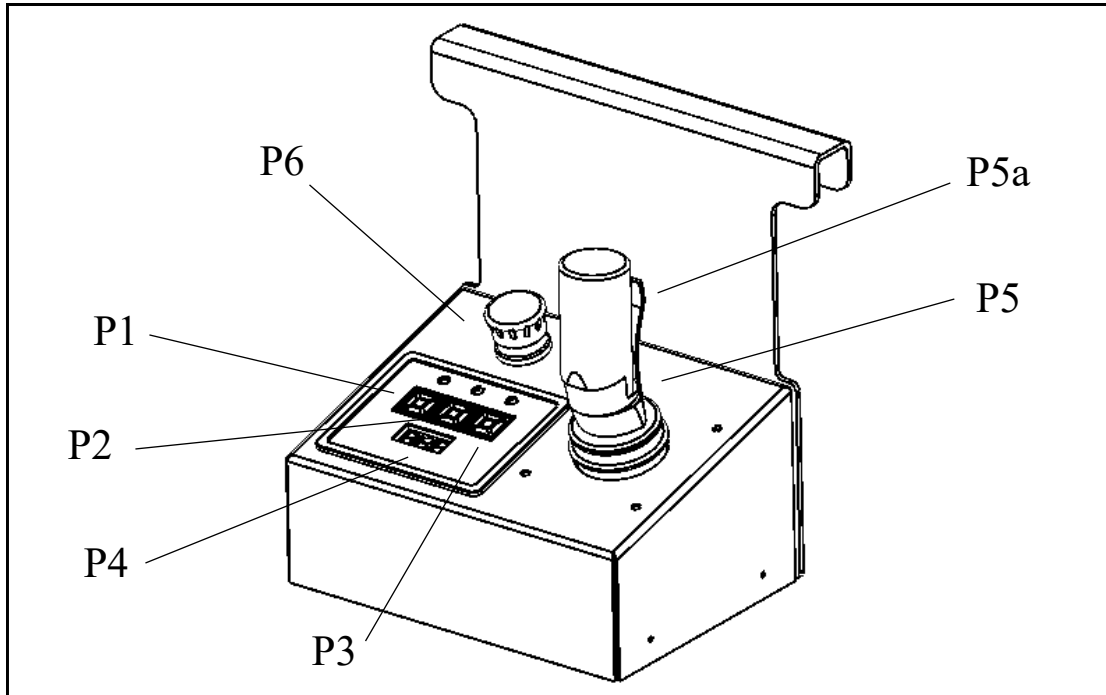
4.6.c

Place by hand the Platform in the prearranged repair area.

4.6.d Bring the machine to the Zero Power Condition



5.1 CONTROL PANEL



CONTROL PANEL AND ITS DESCRIPTION

The ground modules and control boxes can have different positions, personalization or compositions, even divided in different panels or joined in a single block.

The disposition here represented shows the complete versions. In any case, if the command is different from the scheme represented, there is always written in it the function to which it refers.

NOTE

For further information about the scheme, please refer to the reference scheme of the installed Platform.

P - PLATFORM CONTROL BOX

P1 - Wheel blocking device:

Pressing the corresponding button the wheel stop device is put in action, allowing to drive the vehicle only towards the straight line, both to and from.

LED on indicates that the wheel stop device has been activated.

LED off indicates that the device is deactivated allowing, therefore, to drive the vehicle in any direction.

P2 - Mode key Lift/Lower

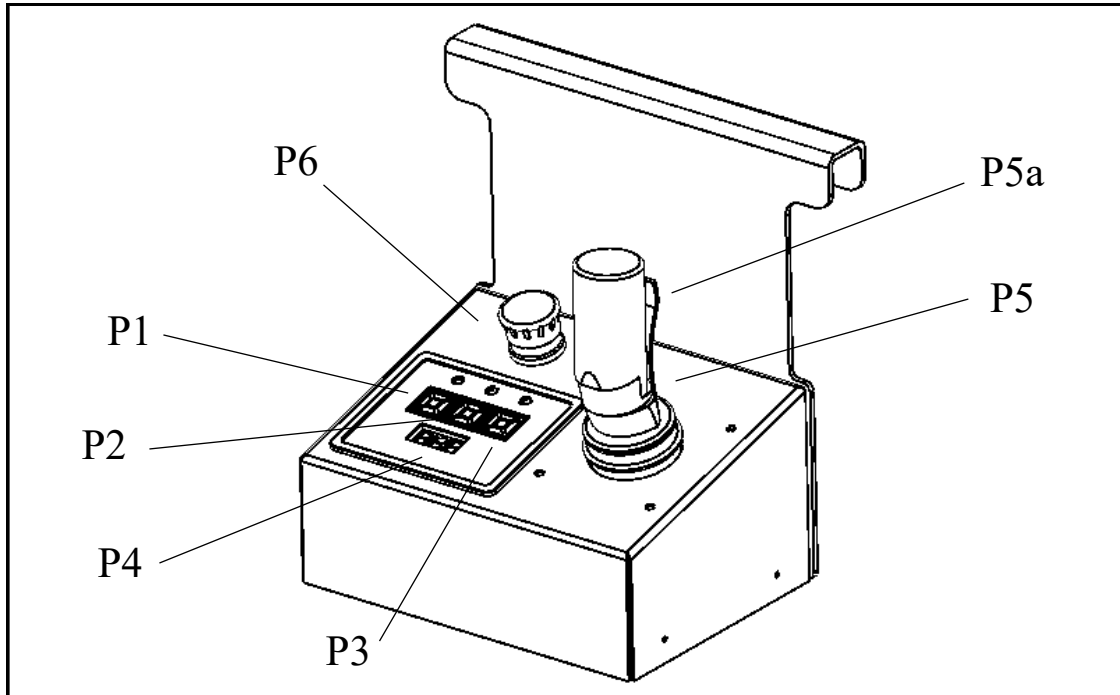
LED ON means that the lifting/lowering function has been selected.

LED OFF indicates that the lifting/lowering function has not been selected.

P3 - Mode key Traction

LED ON indicates that the drive function has been activated.

LED OFF indicates that the drive function has not been activated.

**P4 - Battery Gauge**

BCI represent the battery charge express in percentage.

P5 - Joystick Module

The Joystick controls the driving of the vehicle as well as the lifting and lowering of the Platform.

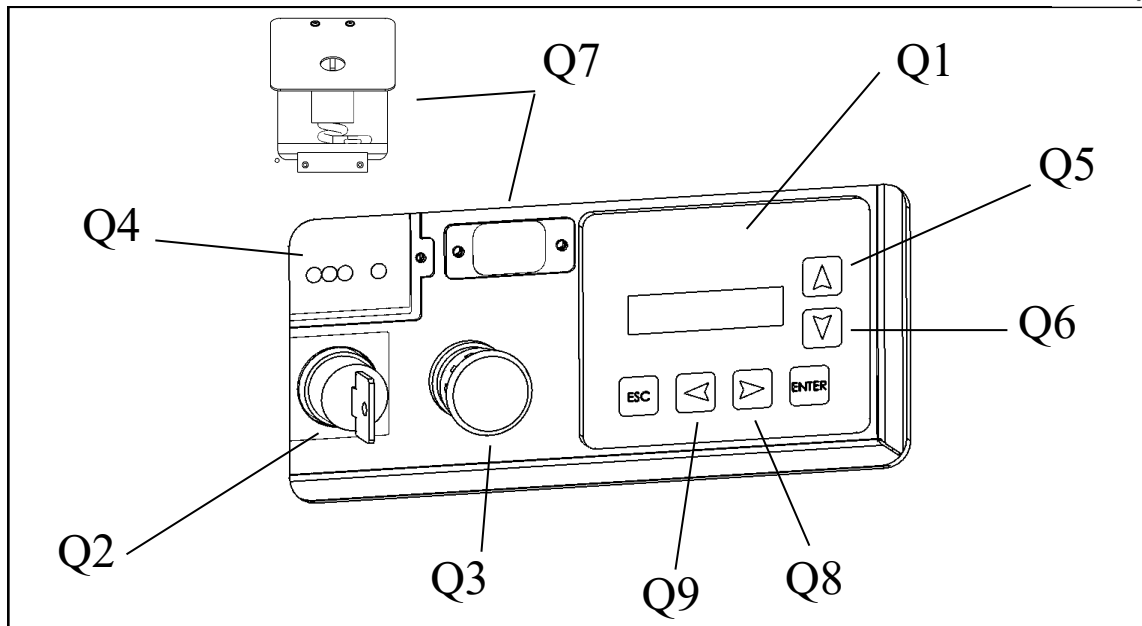
On the Joystick there is the enable lever (**P5a**) used to move the Platform.

It must be pressed all the time when the Joystick is moved, and once pressed a sound signal is activated.

In the lift mode, the release of the joystick stops the Platform during the lifting or lowering phase. The speed of movement is proportional and it is controlled by the Joystick movement.

P6 - Emergency Stop Button

In case the Platform will work improperly or there will be an urgent need to block all the moving activities of the vehicle, press this button to cut off the power supply. If the button is deactivated, it will not start the Platform but will enable the entering of the tension.



Q - GROUND MODULE

When the Ground Module is selected, the Platform Control Box is automatically excluded

Q1 - DISPLAY

Q - GROUND MODULE

When the Ground Module is selected, the Platform Control Box is automatically excluded

Q1 - DISPLAY

This is the main display for the control system and shows useful information regarding the status of the system as well as diagnostic information, should the system detect a problem with the vehicle.

Q2 POSITION KEYSWITCH

Turned to the **left** it enables only the commands from the control box on the Platform board

Turned to the **right** it enables only the commands from the ground module of the chassis

In **central position**, switch off each contact. The operator must take the key off and give it to the responsible for Security.

Q3 - EMERGENCY STOP BUTTON

Pushed immediately stops all the operational phases of the machine.

Reset **DOES NOT** actuate the machine, but enable the command devices.

Q4 - BATTERY STATUS INDICATOR WHEN IT IS UNDER CHARGE

Upon the first connection, automatically, the battery charger LED start to blink for few seconds and performs a brief LED test, then the charging begins.

When the last GREEN LED lights up, the batteries are charged. At this point, it is possible to disconnect the battery charger from their AC mains power supply. (grasp the plug and pull it out from the wall outlet. Do not pull on the cord so as to not damage it.)

Q5 - UP KEY

This button works only when the key switch **Q2** is turned on the **right**.

By pressing and keeping it pressed, this button allows the raising of the basket.

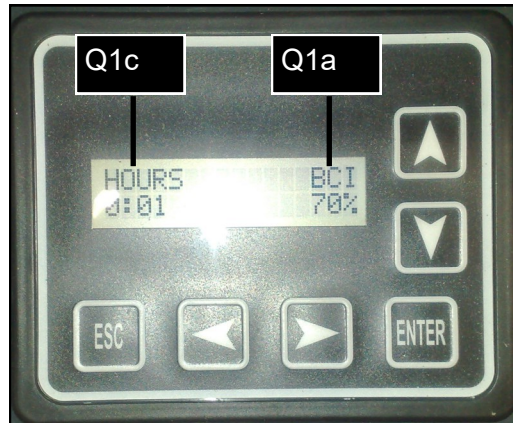
Q6 - DOWN KEY

This button works only when the key switch **Q2** is turned on the **right**.

By pressing and keeping it pressed, this button allows the lowering of the basket.

Q7 - A.C. POWER INPUT FOR THE BATTERY CHARGER

Q8 - Q9 - BUTTON FOR THE SOLE USE OF THE MANUFACTURER OR TRAINED AND QUALIFIED TECHNICIANS AND FOR BRAKE RELEASE



At power-up and during operation the LCD display on the ground Control Module displays the current machine operating status. The following information is communicated:

Q1a BATTERY CHARGE STATE

BCI represent the battery charge express in percentage.

Q1c HOUR METER

The number displayed shows the hours worked.

6.1 INTRODUCTION BEFORE EVERY USE

6.1.a

Danger of crushing – collision and abrasion

The operator in charge of using the Platform must be informed about the safety instructions shown in this manual (see Part 2) and must wear work gloves and safety shoes.

6.1.b

Before and after every use at the beginning of every moving the operator **must always carry out:**

The pre-start inspection (6.2) – Functioning test (6.3)

6.2 PRE-START INSPECTION

6.2.a

Make sure that all manuals are in the suitable containers on the Platform board.

6.2.b

Make sure that the marking of the Platform and all safety labels are in their place perfectly integral and readable.

6.2.c

Check the Platform to verify the absence of anomalies (example: cracks on the weldings, missing or loosing bolts, different dents, buckling, etc.), malfunction or non authorized variations (example: non authorized lifted flatcar) depending on how the Platform has been delivered by the Manufacturer.

6.2.d

Check the integrity of the basket and the right functioning of the entrance (automatic lock).

6.2.e

Check and test the functioning of all the safety devices (**Q3** and **P6** Stop/Emergency buttons, flashing, safety bar, microswitch, tilt device, pot hole devices, overload device).

6.2.f

Check the functioning of the key switch **Q2**.

6.2.g

Check and test the functioning of the safety manual lowering lever

6.2.h

Check the electrolyte level in the batteries, make sure there are no leaks. Cables must be constantly right fixed to the clamps; there must be no corrosion.

6.2.i

Check that the rubber wheel has not any damage, abrasion or deep cuts and that there are no rubbish on the wheels or around them.

6.2.l

Check the basket extension system.

6.2.m

Check that there are no leak of oil.

6.2.n

Check that the hydraulic oil is at level, in case fill to the correct level (see Part 9 Maintenance).

6.2.o

In case you will find one or more anomalies is forbidden to use the Platform, so do all the necessary before starting to use it (see Part 9 Maintenance).

6.2.p

Check and verify, by testing, the proper operation of the manual descending emergency lever.

6.2.q

The pre-starting inspection procedure is finished.
Proceed with the working test.



6.3 FUNCTION TEST

Do not forget that, before carrying out the Function Test, the operator must have carried out the pre-starting inspection procedure.

6.3.a

Danger – Risk of electrocution

The machine is **NOT** insulated.

6.3.b

Maintain safe clearances from electrically charged conductors (power lines) and apparatus. You must allow for machine sway (side to side movement) when elevated and electrical line movement. This machine does not provide protection from contact with, or proximity to, an electrically charged conductor.

6.3.c

Warning: electrocution hazard

Before operating the Platform make sure that the area above it is free from obstacles in order to allow the full elevation of the Platform itself.

6.3.d

Do not operate the Platform if the following controls show a defect.

6.3.E FUNCTION TEST

- A) GROUND CONTROL OPERATION AND CHECK

6.3.e1

Turn the key switch **Q2** to the right (chassis control).

6.3.e2

Press and keep pressed the lifting button **Q5** to allow the raising of the basket. If you want to stop the platform elevation release the button.

6.3.e3

Press and keep pressed the lowering button **Q6** to allow the lowering of the basket. If you want to stop the platform descend release the button.

6.3.e4

Q3 Stop/Emergency working test.

With the Platform in motion, press the **Q3** Stop/Emergency button.
The Platform must immediately stop.

6.3.e5

Emergency mechanical lowering lever test.

With the Platform with the basket lifted, pull the emergency lever to mechanically lower the basket of the Platform.

The release of the lever must stop the lowering.

6.3.e6

The “Working Test procedure – A) Ground Control Operation and Check” is finished.

Proceed with the “Function test procedure – B) Check and working of the basket control”.

6.3.F FUNCTION TEST

- B) PLATFORM CONTROL OPERATION AND CHECK:

6.3.f 1

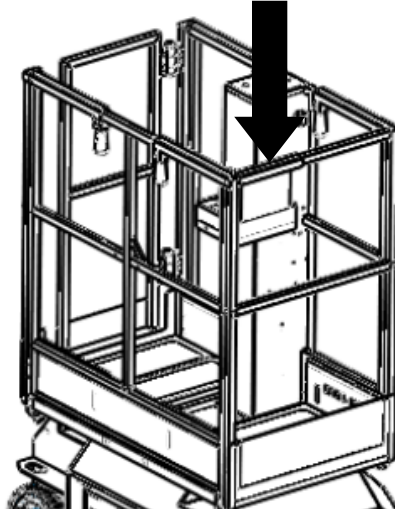
Turn the key switch **Q2** to the left (basket control).

6.3.f 2

Enter the platform and close and check the properly closing of the gate.

6.3.f 3

Check that the top control box is placed at the top rail side opposite to the entry gate as showed in the picture. This is the place dedicated the top control box in order to maneuver the machine in operation condition.



6.3.f 4

Press the traction modality button **P3** to select the drive function.

Press and keep pressed the enable lever **P5a** of the joystick and, moving the joystick **P5**, check the steering (left/right – ahead/back).

Releasing the joystick enable lever or returning the joystick to central position should stop driving.

6.3.f 5

Stop/Emergency function Test **P6**.

While the Platform is moving, press the Stop/Emergency button **P6**.

The Platform immediately stops.

6.3.f 6

Press the selector lifting/lowering modality **P2** to select the lifting/lowering functions

6.3.f 7

Press and keep pressed the enable lever **P5a** of the joystick and, moving ahead and back the joystick **P5**, check the lifting and lowering of the basket.

Releasing the joystick enable lever or returning the joystick to central position should stop raising/lowering the platform.

6.3.f 8

Stop/Emergency function Test **P6**.

While the Platform is lifting/lowering, press the Stop/Emergency button **P6**.

The Platform immediately stops.

6.3.f 9

In case you will find one or more anomalies is forbidden to use the Platform, so do all the necessary before starting to use it (see Part 9 Maintenance).

6.3.f 10

Bring the Platform to the **Zero Power Condition**.

6.3.f 11

Repairs must be carried out before starting the Platform, it is of primary importance to assure its working under safety conditions.

6.3.f 12

The “Working Test procedure – B) Platform Control Operation and Check” is finished.

Proceed with the Operating Instructions.



6.4 OPERATING INSTRUCTION - Introduction

6.4.a

Warning – Generic risks

Operation must be only carried out by qualified Operators who have been trained on how to use the machine. Operators must also carefully read and understand the safety regulations in Part 2 and the contents of this manual before operating the machine.

6.4.b

BEFORE STARTING THE OPERATION

Warning – Generic risks

The operator must:

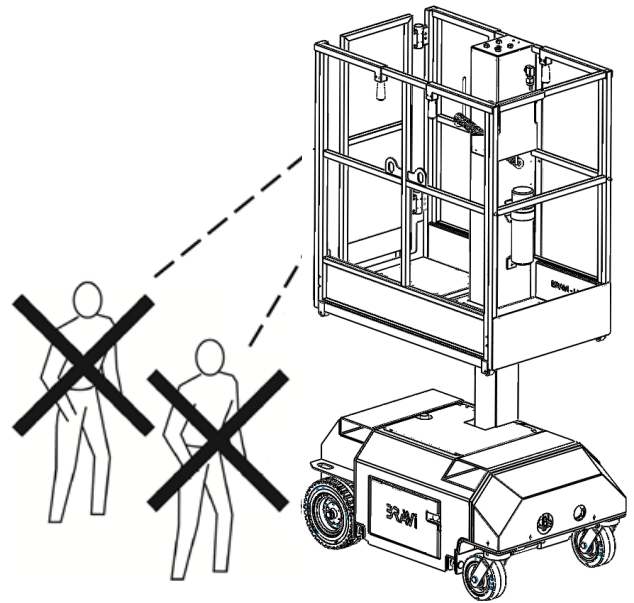
a) Check that the Platform is positioned on a clean floor, without holes and well leveled and is capable to support the weight of the Platform (see Part 3 Specifications).

b) Check that in the moving area there are no exposed people, animals or things and that there are no aerial obstacles in the area where you will work.

c) Do not forget that:

-The operator must carry out all the maneuvers through the controls settled on the push-button panel on the Platform board;

- The translation is adjustable through the joystick **P5**,
- When the basket is totally lowered the maximum speed is about 50 m/min;
- When the basket is lifted the speed is automatically limited to a maximum of 9 m/min.
- The extensions of the basket must be withdrawn during the incoming/outgoing of the operator to/from the basket.



6.5 BEFORE GETTING IN THE PLATFORM

Check in the ground module that:

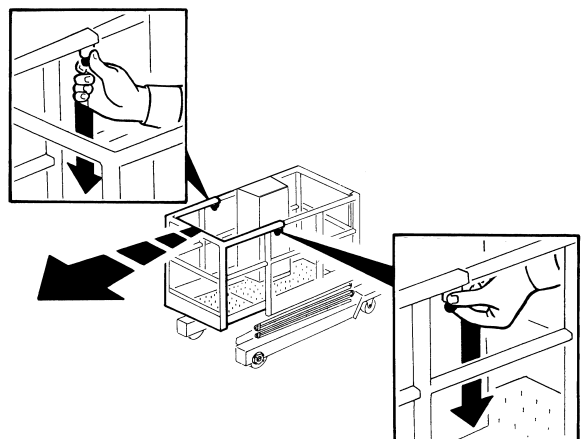
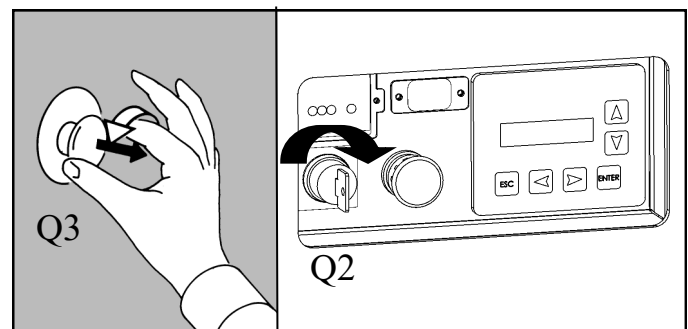
- The Keyswitch **Q2** is on the Platform Control position
- the Stop/Emergency buttons **Q3** is deactivated

6.6 GET ON THE PLATFORM

6.6.a

When you need to extend the basket do as follows:

- Pull the black knobs down (they will go out from the housing).
- Push forward on the extension of the basket until the end stroke.
- Release the knobs, you will hear a noise. The two knobs are in their safety position again.
- Repeat the procedure to extend the other side of the basket.



6.6.b

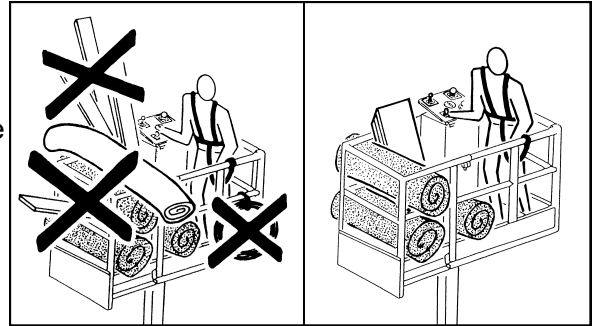
TO POSITIONING THE LOAD ON THE BASKET make sure that:

- the load is balanced,
- the maximum weight is not exceeded (including the weight of the operator).
- the load does NEVER stick out more than 20 cm from both sides of the basket

- Warning Danger of Crush

if some parts of the load are sticking out, tie them to the basket rail

- NEVER tie anything out of the basket



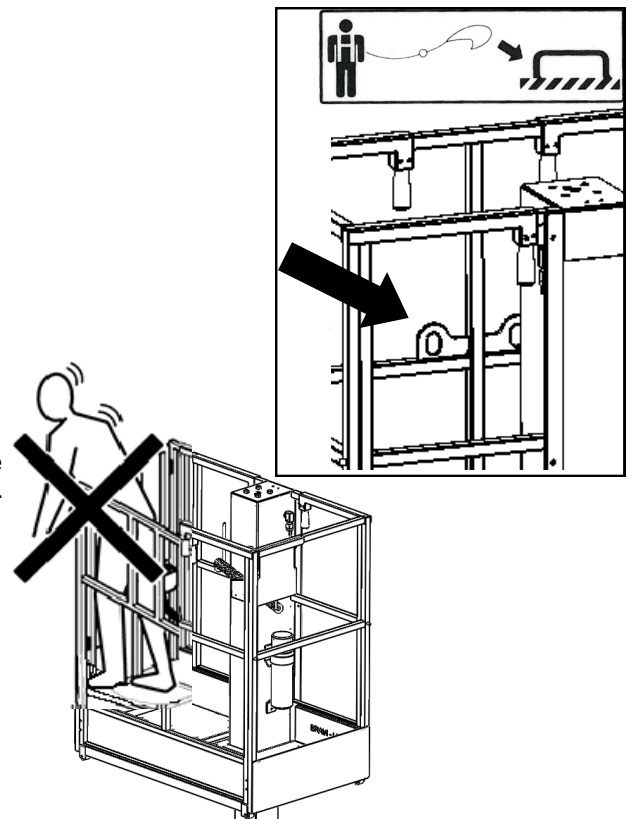
6.6.c

Wear the safety belt and hook it into the suitable housing.

6.6.d

Danger: hands could be crushed or limbs severed

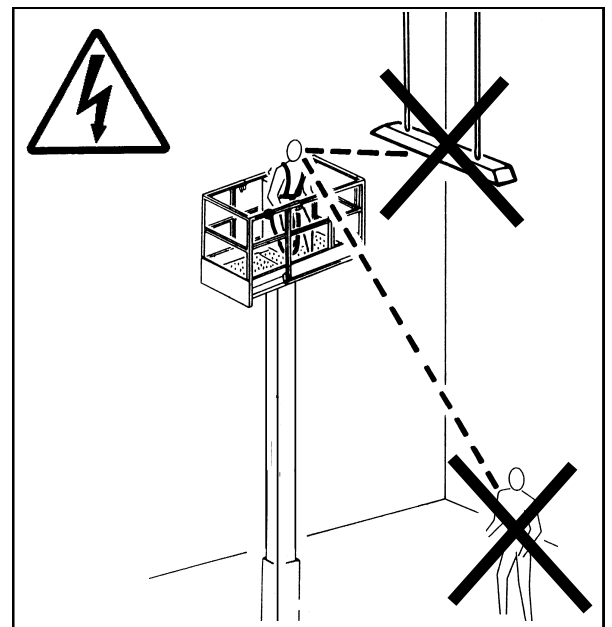
During moving operations, position your body inside the basket so that your limbs do not interfere with the surrounding fixed parts.



6.6.e

Warning Risk of collision

During the translation and/or lifting/lowering operation, the operator must pay attention in order that the working area on the ground and over the basket is always free from obstacles or dangers.

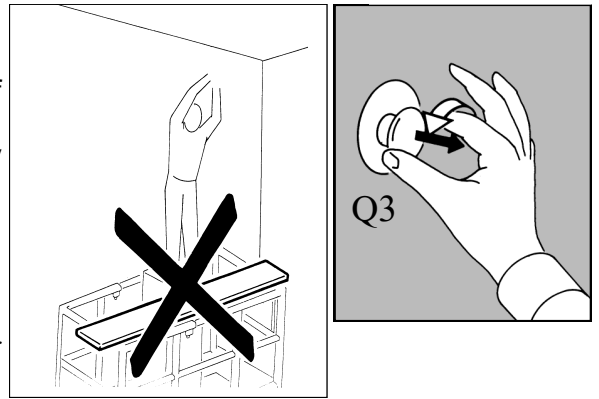


PART 6 OPERATIONS

6.6.f

Warning-Danger of Fall

The operator does not, in any case, go on the railings of the basket, nor place on it stairs, boards or other things to reach higher working positions. Moreover, does not in any case lean out of the basket railing of the Platform.



6.6.g

Decide what function activate, whether the translation or the lifting/lowering.

6.6.h

The “Operating Instruction” procedure is finished, proceed with the other drive operations.

6.7 DRIVING OPERATIONS

6.7.a

Press once the **P3** traction modality button, the corresponding led will lighten (drive function activated).

Note: when the LED blink or is off, to restart the function press the same button again.

6.7.b

Check that the wheel blocking device **P1** is not activated.

6.7.c

Press and keep pressed the enable lever **P5a** of the Joystick **P5** and move it depending on the necessity.

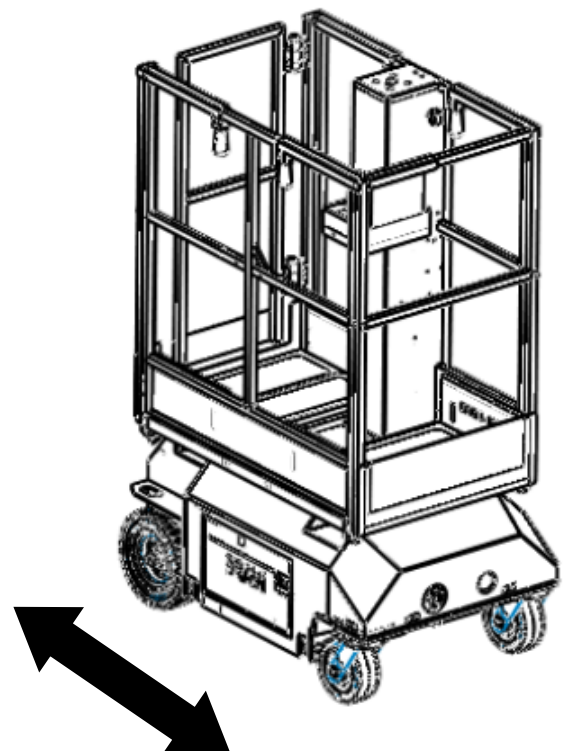
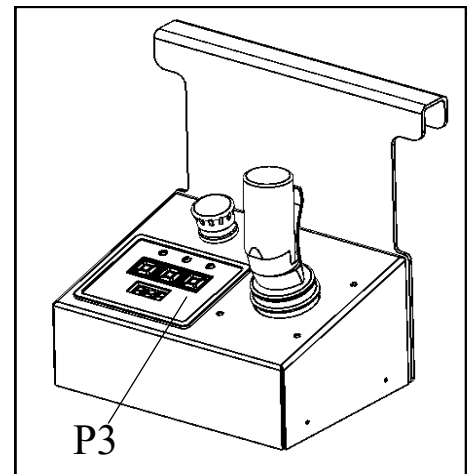
6.7.d

To stop the vehicle is sufficient to release the enable lever **P5a** of the Joystick **P5**, or the joystick **P5** itself. Brake is automatic.

6.7.e

If necessary move the Platform along a straight line (ahead/back), use the button **P1** to activate the wheel blocking device.

The LED will lighten to indicate that the Wheel Block Device has been activated.



6.7.f Lifting/Lowering Operation

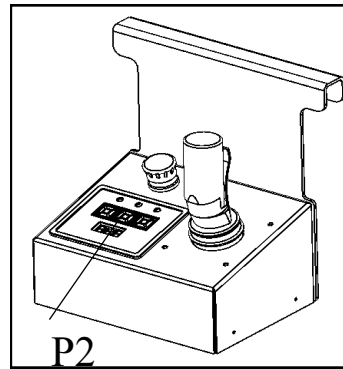
-Press once the **P2** button, the LED will lighten to indicate that the lifting/lowering function has been selected.

Note: when the LED is blinking or off, to restart the function please press the button again.

-The enable lever **P5a** of the joystick **P5** is used to enable the controls of the joystick **P5** and must be kept pressed when the joystick **P5** is used.

-Move the joystick **P5** to lift or lower the basket.

-Release the joystick to stop the vehicle during the lifting/lowering phase



6.7.g

If during the working there is the necessity to change place use the joystick **P5**, that is to say press and keep pressed the enable lever **P5a** of the joystick **P5** and move it depending on the necessity after having pressed the **P3** button

6.7.h

Once finished the work in that area or if you need to do a new load proceed as follows:

6.7.i

Warning Danger of Crushing

Make sure that under the Platform there are no people, animals or things

6.7.l

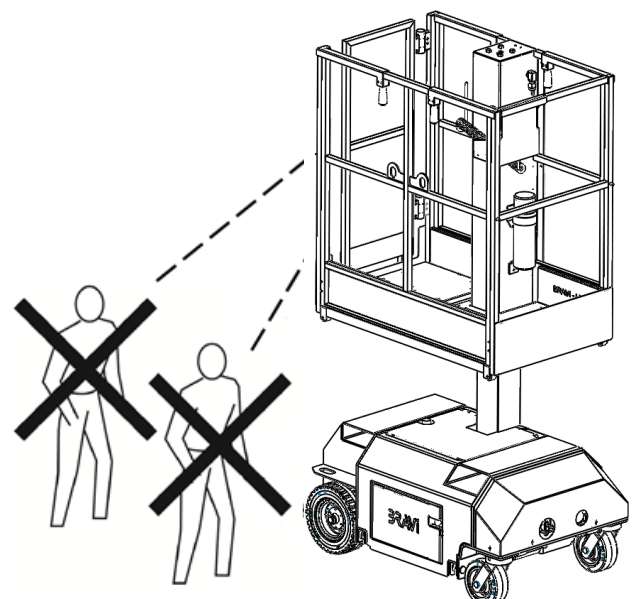
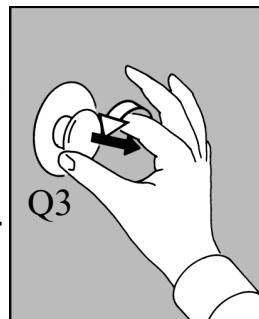
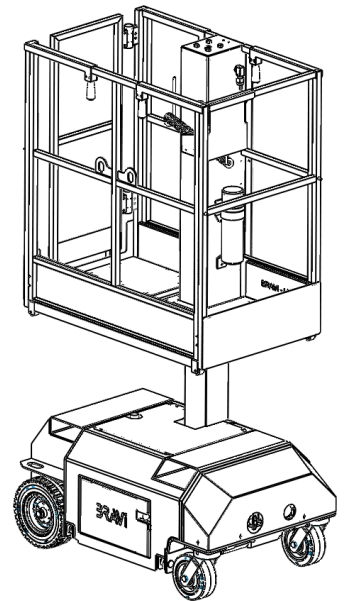
Move the joystick **P5** and completely lower the Platform and proceed with the work.

6.7.m

At the end of the work bring the Platform to the **Zero Power Condition**.

6.7.n

The "Operating Instruction" procedure is finished.



6.8 AT THE END OF WORKING DAY**6.8.a**

Check the electrolyte level in the batteries, and if necessary fill up as described in the Section 9.6

6.8.b

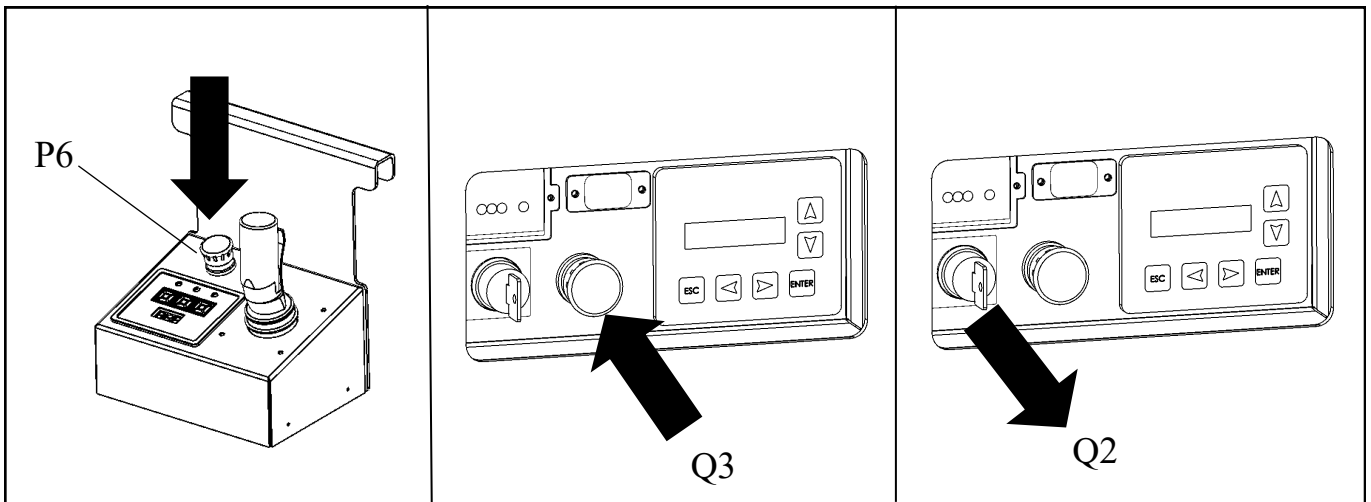
Check the battery charge state and if necessary recharge as described in the Section 9.7

6.8.c

Clean daily as described in the Part 8.

6.8.e

The “At the end of working day” procedure is finished.



7 INTRODUCTION-SHUTDOWN PHASE

The Platform can be stopped as described hereunder:

- 7.1 - Temporary shutdown
- 7.2 - Daily shutdown
- 7.3 - Prolonged shutdown
- 7.4 - Emergency shutdown
- 7.5 - Emergency lowering
- 7.6 - Manual emergency handling

7.1 TEMPORARY SHUTDOWN

For a temporary platform stop, release the control joystick **P5** and the enable lever **P5a** and all the movement-related functions will automatically stop.

7.2 DAILY SHUTDOWN

To stop the machine at the end of the working day perform the following actions:

7.2.a

Move the platform indoor, to an area protected against any water leakage or condensate; the access to this area must only be allowed to trustworthy staff (any potential external tampering condition must be eliminated thus guaranteeing the operators safety).

7.2.b

Check the status of the batteries and if necessary have the battery re-charged, as shown in the Section 9.7.

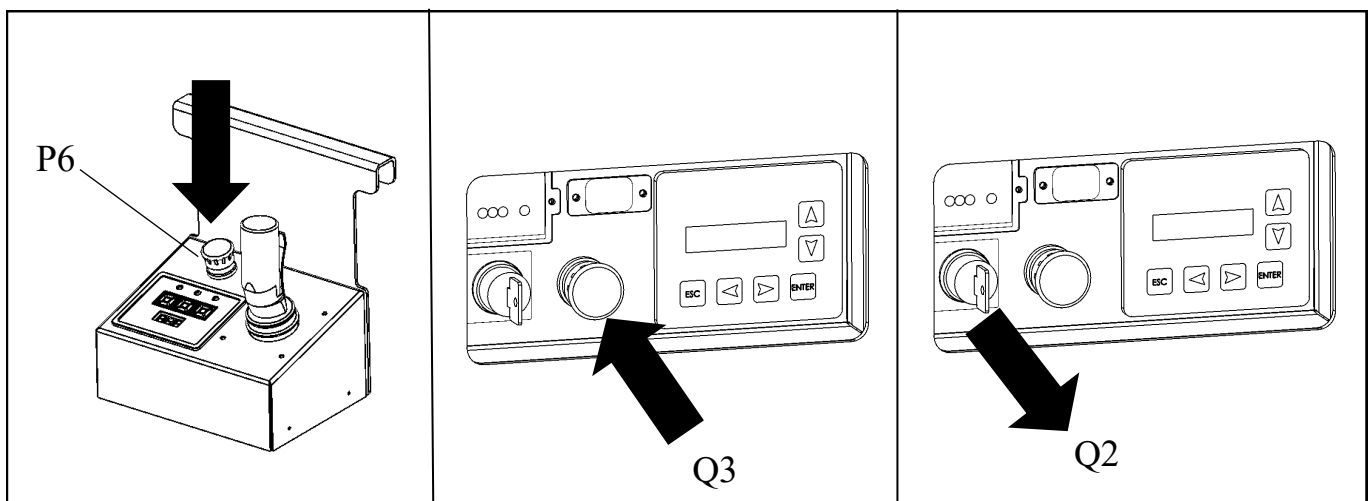
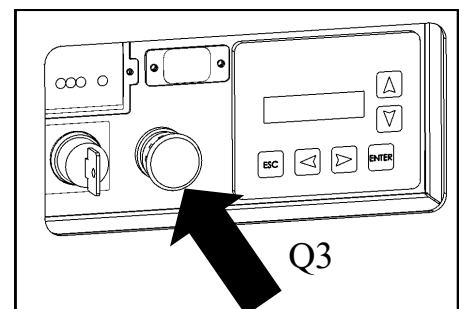
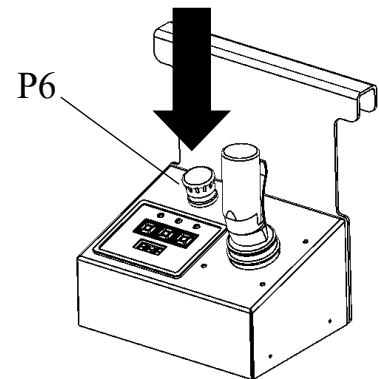
7.2.c

Make sure that the machine is in “zero” power condition, that is:

- the platform is completely lowered,
- the Stop/Emergency Button **Q3-P6** is pressed
- the Keyswitch **Q2** has been removed from the control panel and is under the responsibility of the Production Manager.

7.2.d

The daily shutdown procedure is finished



7.3 PROLONGED SHUTDOWN

For this kind of shutdown, please do as follows:

7.3.a

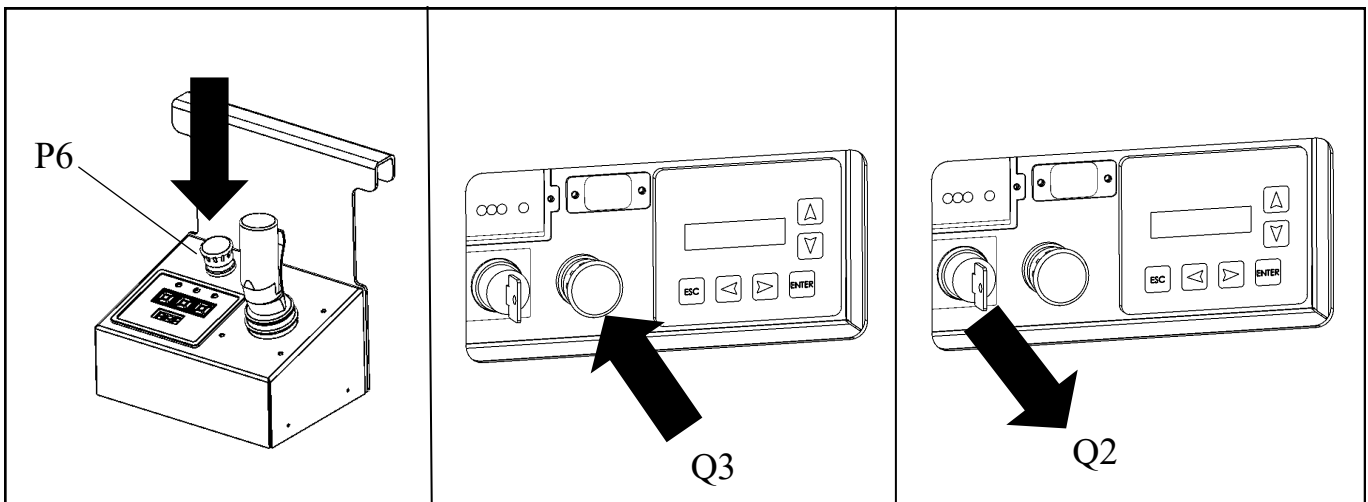
Move the platform indoor, to an area protected against any water leakage or condensate; the access to this area must only be allowed to trustworthy staff (any potential external tampering condition must be eliminated thus guaranteeing the operators safety).

7.3.b

Make sure the Platform is in **Zero Power Condition**.

7.3.c

Perform the ordinary maintenance as described in Part 9



7.3.d

Clean the machine as described in Part 8.

7.3.e

Is preferable remove the Control box as described herunder:

7.3.h

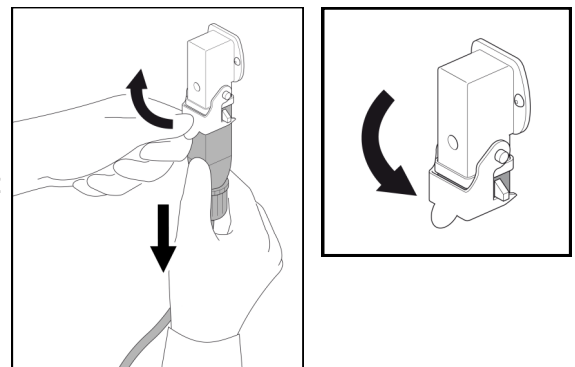
Disconnect the ILME connector and put the safety cover

7.3.i

Remove the Control Box and put it in a safe place.

7.3.l

The Prolonged shutdown procedure is finished.



7.4 EMERGENCY SHUTDOWN

7.4.a

In case the operator is compelled to push the Stop Emergency button **P6-Q3**, perform the following operation:

7.4.b

Inspect the machine to find out the cause of the emergency stop.

7.4.c

Choose:

A – whether it is necessary to bring the machine to the **Zero Power Condition**

B – whether it is necessary to contact the technical assistance

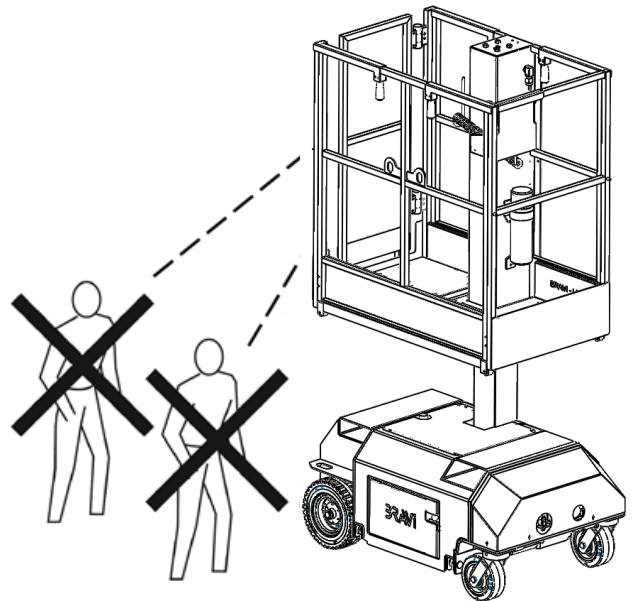
C whether it is possible to repair the damage

7.4.d

If it is possible to eliminate the cause of the emergency stop, pull the Emergency stop button **P6-Q3** and start the platform following the instruction on Part 6 of this Manual.

7.4.e

The emergency shutdown procedure is finished.



7.5 EMERGENCY LOWERING

7.5.a

WARNING: CRUSHING HAZARD

When carrying out this activity the operator must make sure that no individuals, animals or objects are located in a 2-metre area and that no impediments are present above the chassis (this is the area that the basket needs during the lowering stage).

7.5.b

The emergency descent can be done in two different ways:

- a - Using the emergency lever
- b - Using the Down Keys Q6 on the ground control panel

a - **Using the emergency lever** it is sufficient to pull the lever. In this way the basket will start to slowly lower.

-Once finished the lowering phase, leave the lever again.

b - **Using the button Q6** on the Gound Module with the key selector **Q2** turned to the right.

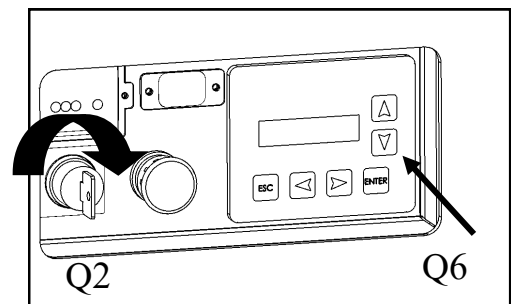
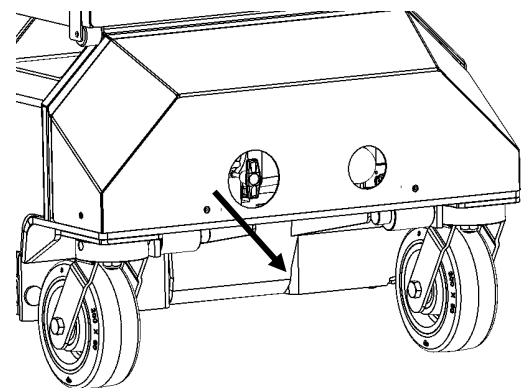
- Push the **Q6** button to lower the basket.

7.5.c

Follow the procedure as descibed in section 7.4 Emergency shutdown

7.5.d

The emergency lowering procedure is finished.



8.1 CLEANING

8.1.a

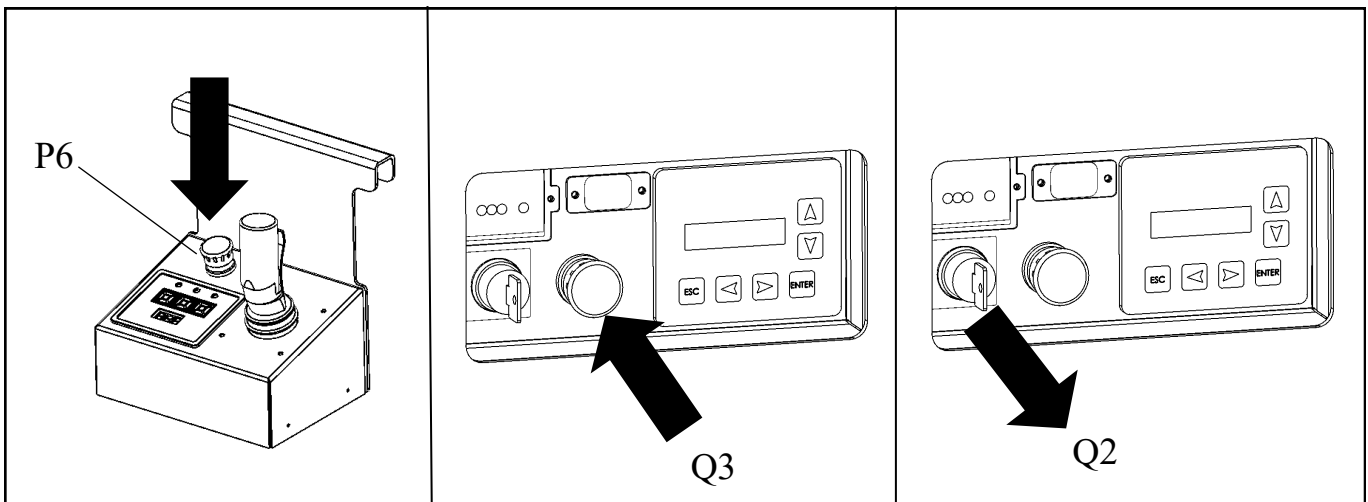
As the Platform works in presence of dusts, it must be daily or whenever it would be necessary clean it.

8.1.b

The person in charge with the cleaning must have read and well understood the safety prescriptions shown in this manual (Part 2)

8.1.c

Before each cleaning operation bring the Platform to the **Zero Power Condition**.



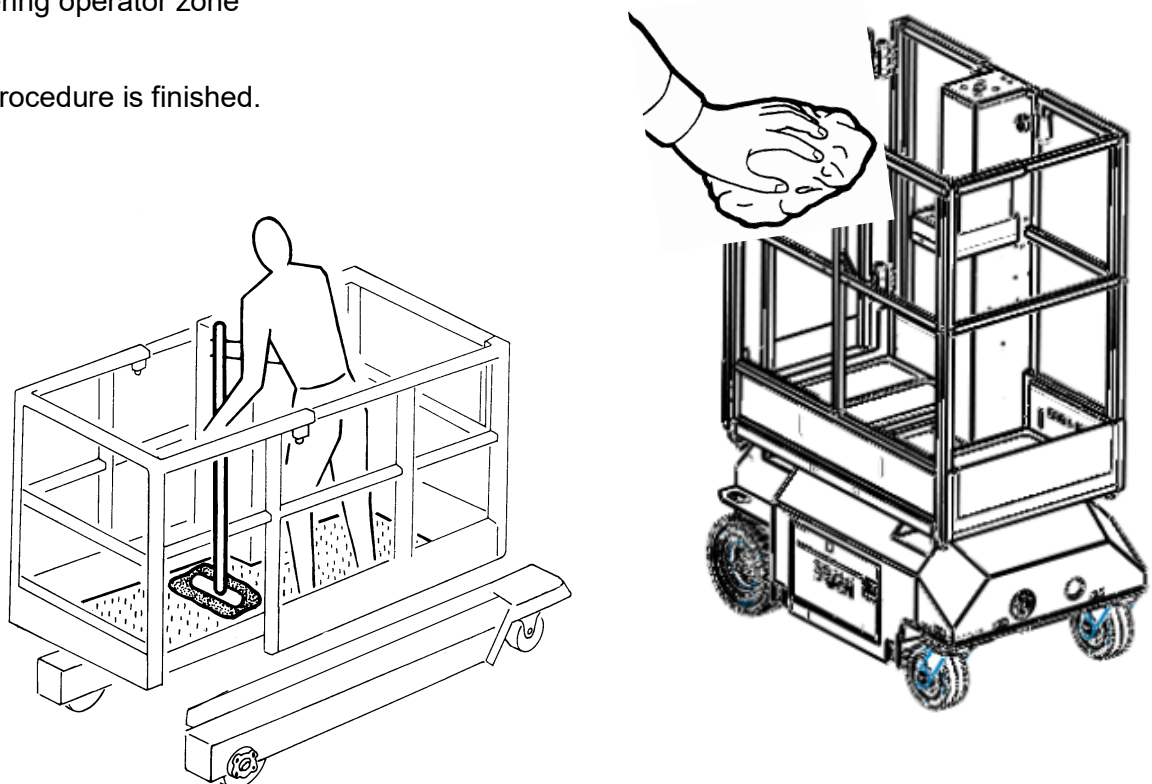
8.1.d

With a cloth slightly dampened with water clean:

- the switchboards,
- the trampling surface of the Platform,
- the lifting/lowering operator zone

8.1.e

The cleaning procedure is finished.



9.1 PREFACE AND GENERAL MAINTENANCE TIPS

9.1.a

Regular inspection and conscientious maintenance is the key to efficient economical operation of your machine.

The manufacturer has worked hard to improve machine reliability and simplify ordinary maintenance operations. Your equipment will perform satisfactorily with a minimum of service and repair. Never perform any service or maintenance to the machine without having first performed the safety procedure to lock the basket in the safe service position, using the safety bar.

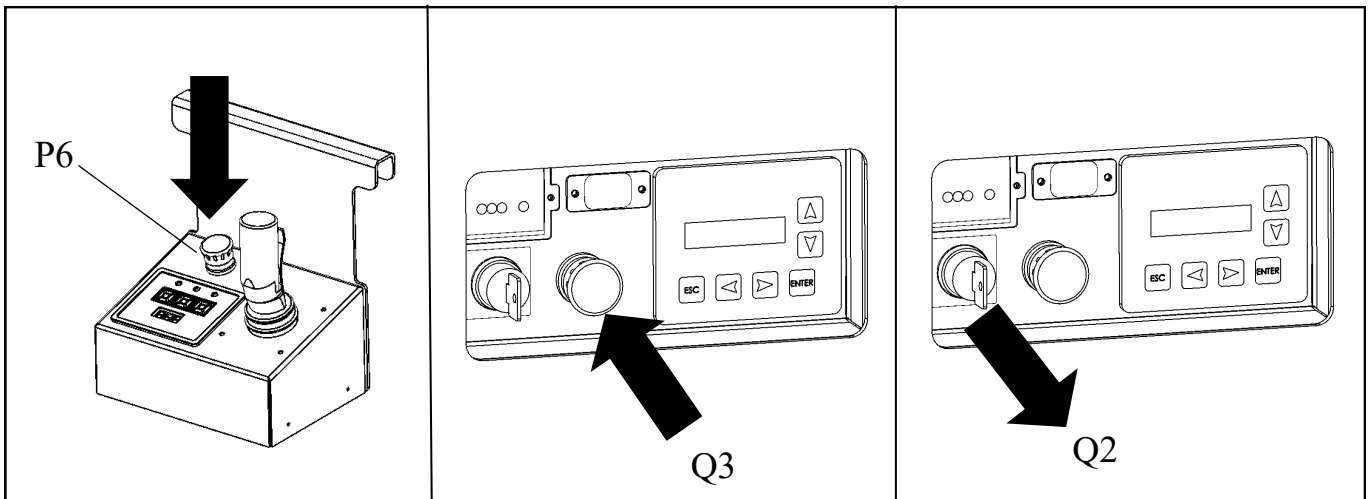
ADDITIONAL PRECAUTIONS:

Never leave hydraulic components or hoses open. They must be protected from every type of contamination. Never open a hydraulic system where there are contaminants in the air.



9.1.b

The person in charge with the maintenance must have read and well understood all the safety prescriptions shown in this manual as described in the Part 2 "Safety Prescriptions".



9.1.c

The maintenance must be strictly carried out with the Platform in the **Zero Power Condition** (Part2 page 2. 16).

9.1.d

The maintenance operations must be strictly carried out only by a single qualified operator, unless where specified, **NEVER BY MORE PEOPLE**.

9.1.e

Warning Generic Risks

The maintenance operations must be carried out by qualified staff:

- who has read and well understood the safety prescriptions shown in this manual (see Part 2).
- who has the individual safety devices and use them when necessary
- must have on disposal clothes, suitable equipments and must wear and use them depending on the necessities and dangers.
- and with the Platform in the **Zero Power Condition**.

9.1.f

Each intervention not specified here below is to be considered as extraordinary maintenance.



9.1.g

Repairs, modifications, extraordinary maintenance operations other than the ones indicated below cannot be carried out without the prior written approval of the Manufacturer's after-sales technical service.

9.1.h

Based on the specific situation, the Manufacturer will give his written approval (together with all the necessary instructions) or recommend the intervention of his own technical staff.

9.1.i

Such a cautious measure is necessary since incorrect or improper operations may cause functional anomalies, machine damages and personal injuries. The Manufacturer accepts no responsibility for the possible consequences of the aforementioned operations.

9.1.l

Besides they void the warranty and annul the EC declaration of original conformity.

9.1.m

Before resuming operation, check the entire system as indicated in the start procedures. (see Part 6).

9.1.n

Failure to comply with these precautions may cause machine damages and personal injuries

9.1.o

Here below are shown the ordinary maintenance interventions.

9.2 - Safety positioning, lifted basket

9.3 - Caster wheel greasing

9.4 - Oil check and refill

9.5 - Battery terminals check

9.6 - Battery electrolyte level check

9.7 - Battery charge procedure

9.8 - Nuts, bolts and pins tightening Procedures

9.9 - Wiring check

9.10 - Inspections

9.10a Frequent Inspection "Frequent Inspection Check List "

9.10b Annual Inspection "Annual Inspection Check List "

Here below is shown what you have to do in each one of these cases.

9.2 STANDARD SAFETY POSITION WITH LIFTED BASKET

This operation must be performed only when maintenance activities are required. The operator must use the ground control according to the following procedure:

9.2.1

Disabling all the Emergency buttons

9.2.2

Select the Ground Station Mode turning the Keyswitch **Q2** to the right

9.2.3

Press the Up Key **Q5** to lift the basket up to 1,5 mt

9.2.4

Remove the side cover

9.2.5

Put one hand under the exit of the safety bar and at the same time pull the black pommel

9.2.6

The safety bar descend completely, accompanying it with the hand.

9.2.7

Press the Up or Down Keys **Q5 - Q6** to slowly move the basket until the edge of the safety bar touch the chassis.

9.2.8

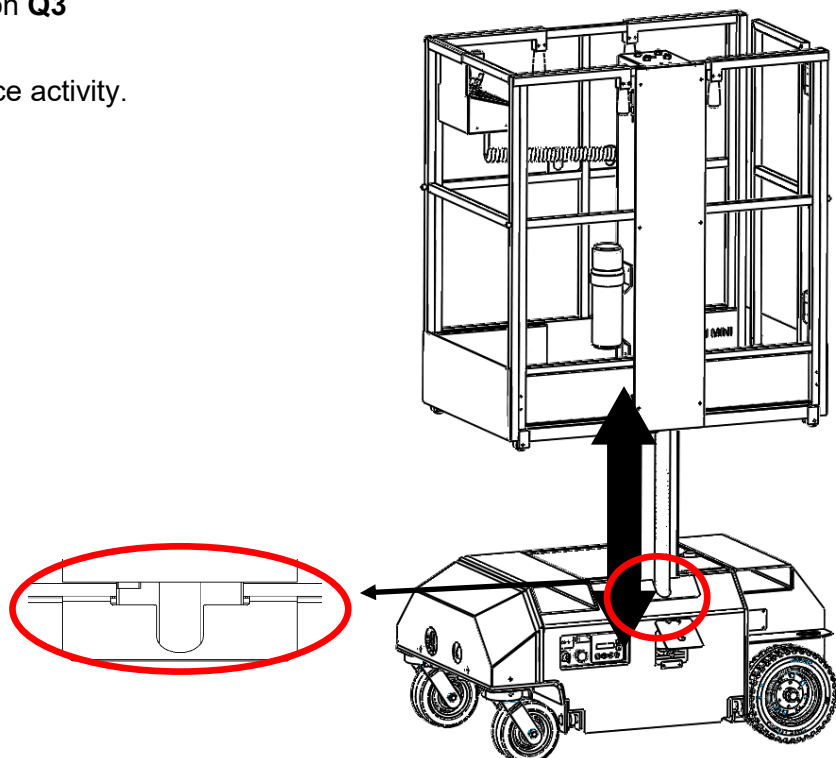
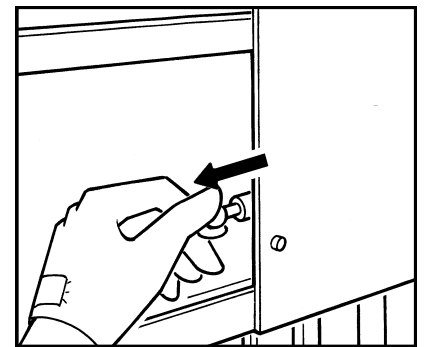
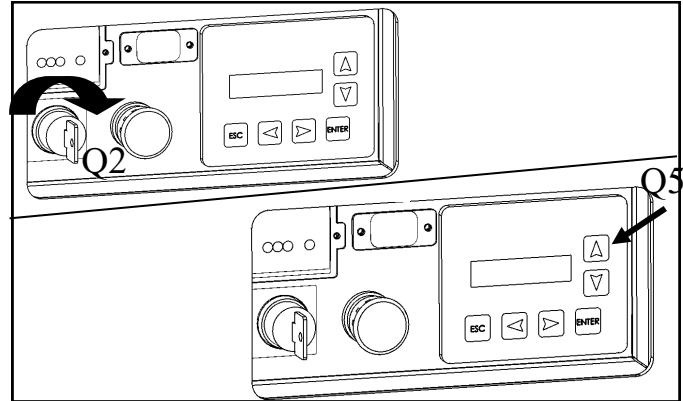
Select the OFF Mode turning the Keyswitch **Q2** to the center and remove the key.

9.2.9

Press the Stop/Emergency Button **Q3**

9.2.10

Perform the required maintenance activity.



9.2A THE BASKET CANNOT BE ELECTRICALLY LIFTED**9.2a1**

Bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.2a2

Take a forklift with a suitable capacity (See Chapter 3 “Specifications”)

9.2a3

Lift up with the forks the basket and take it slowly to a height of 1,5 meters.

9.2a4

Remove the covers.

9.2a5

Unhook and let totally go out the safety bar, you will hear a “CLICK”.

9.2a6

With the basket held by the forks of the forklift, lower the basket until the safety bar leans on the frame.

9.2a7

At this point it is possible to carry out the necessary maintenance operations.

9.3 CASTER WHEEL GREASING

9.3.a

Six-monthly check and if necessary grease the caster wheels articulations with small quantities of grease as: STRINGY COMMON GREASE.

9.3.b

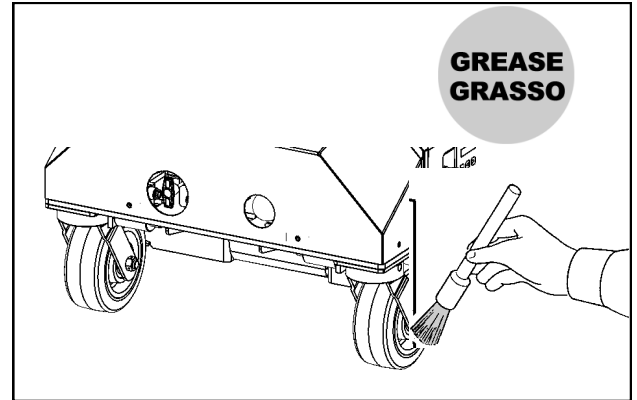
To proceed with this operation it is necessary to bring the Platform to the **Zero Power Condition** (Part 2 page 2.14).

9.3.c

With a brush, grease the caster wheels articulations.

9.3.d

The caster wheel greasing procedure is finished



9.4 OIL CHECK AND REFILL

9.4.a

Every three months check the oil level and, if necessary, fill it with mineral oil type: ROLOIL LI22 HIV.

9.4.b

Lift up the basket using the ground control button and perform the safety bar procedure.

9.4.c

Remove the front cover, the upper cover and the oil cap.

9.4.d

Remove the safety bar and lift up completely the basket using the ground control button

9.4.e

Lift completely down the basket using the manual emergency lever

9.4.f

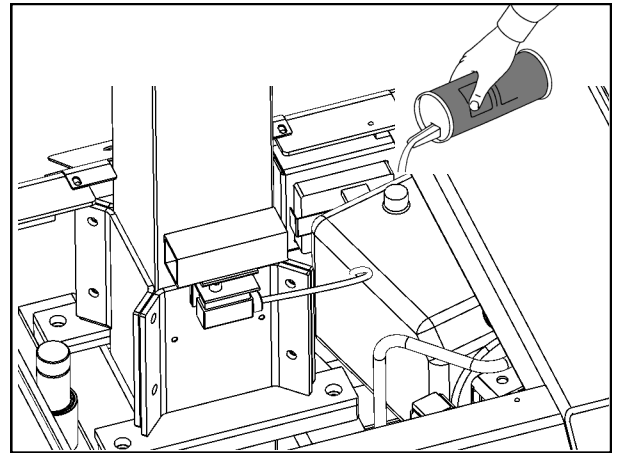
Check the oil level: if it is not at max level, using the frontal side of the machine access (front cover removed) fill up at the level indicated in the oil tank. Don't fill up over the max level due to overflow of oil during normal machine operation

9.4.g

After performed the refilling repeat backward the operation described

9.4.h

The oil check and refill procedure is finished



9.5 BATTERY TERMINALS CHECK

9.5.a

The condition of the battery terminals must be checked every two months.

9.5.b

If the battery terminals are dirty or oxidized, perform the following actions:

9.5.c

- Open the hatch using the black pommel

9.5.d

Use a wrench for loosening the nuts.

9.5.e

Disconnect the terminals and clean them with a wet cloth. If the oxide layer is thick, brush the surface layer away and soak them in water for at least 30 minutes.

9.5.f

Dry them thoroughly.

9.5.g

Place them back paying attention to the position of the positive and negative poles. Then tighten them.

9.5.h

Apply a protection lubricant for contacts on the terminals

9.5.i

Use a wrench for tightening the nuts.

9.5.l

Place and/or close again the cover.

9.5.m

The battery terminals check procedure is finished



9.6 BATTERY ELECTROLYTE LEVEL CHECK

9.6.a

Bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.6.b

The batteries electrolyte level must be checked every 4 working days or before recharging the battery

9.6.c

- Open the hatch using the black pommel

9.6.d

The electrolyte level must always be at least 5 mm above the covers of the internal elements. Before starting the re-charging cycle, check the electrolyte level and add some demineralized water, if necessary.

9.6.e Warning

As during the charge part of the electrolyte evaporates it is necessary to check again after 30 minutes of work.

9.6.f

Perform standard operations with the machine for 30 minutes and perform this procedure another time to achieve the required electrolyte level.

9.6.g

For the right maintenance of the battery please refer to the relative user manual

9.6.h Warning

LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES. KEEP SPARKS AND FLAME AWAY FROM BATTERIES. DO NOT SMOKE WHILE CHARGING.

9.6.i

Replace the plastic cover on the batteries.

9.6.l

Place and/or close again the cover of the machine.

9.6.m

The battery electrolyte level check is finished



9.7 BATTERY CHARGE PROCEDURE

9.7.a

Bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.7.b

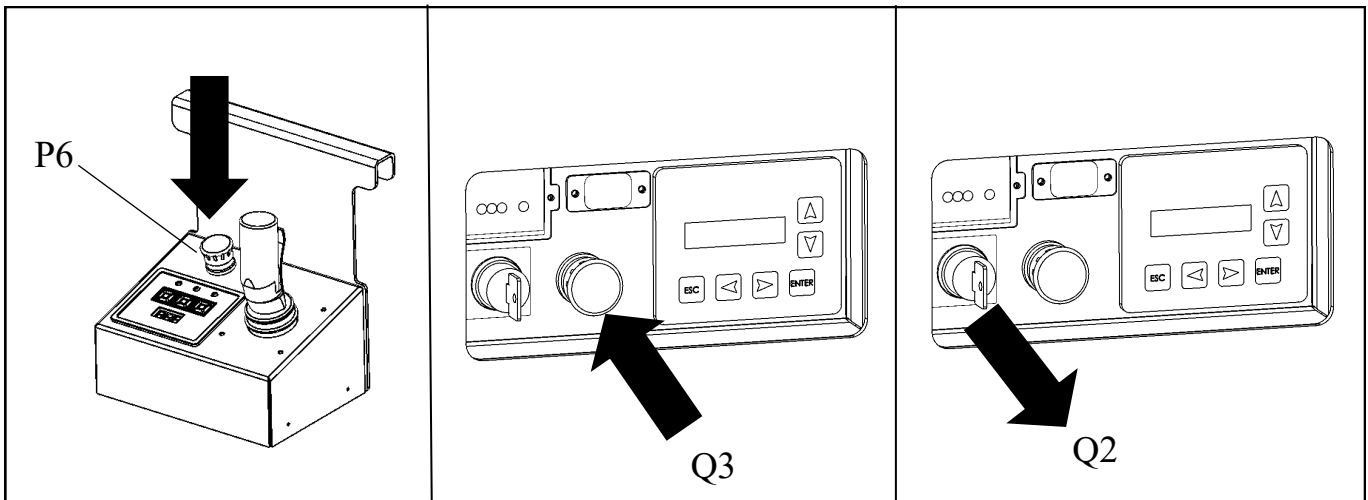
Warning – Battery check and recharge

The full charge of the batteries must be done:

- After the daily use
- After a long work stoppage of the Platform
- And at least once every 7 days.

9.7.c

To have the batteries charged do as follows:



9.7.d

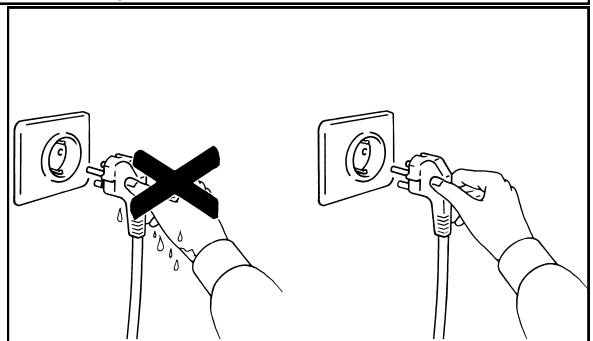
Bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.7.e

Connect the appropriate cable into the socket.

9.7.f

The batteries charge is finished when the Battery Charge signal **Q7** (green LED on) shows that the batteries are charged.

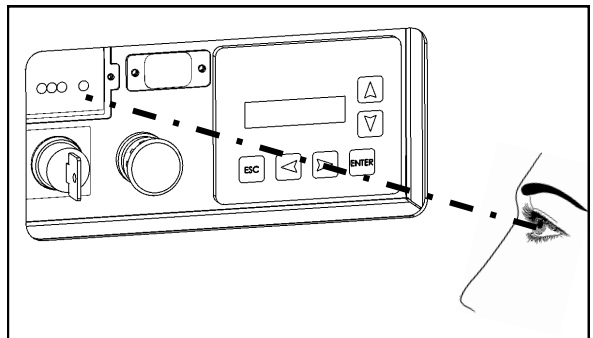


9.7.g

Once have the batteries charged, disconnect the cable.

9.7.h

The Battery charge procedure is finished.



9.8 NUTS, BOLTS AND PINS TIGHTENING PROCEDURE

9.8.a

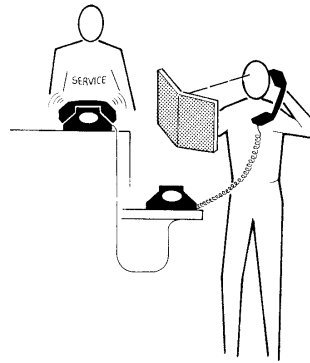
Bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.8.b

The operator must check once a month nuts and bolts and pins and, if it necessary, must call for the technical assistance which will carry out the necessary maintenance.

In any case, once a year he must call for the technical assistance which will check and carry out the maintenance of the nuts and bolts and pins of all the Platform.

Do not forget that all the operations must be carried out only and strictly by maintenance technicians authorized by Braviisol Divisione Meccanica srl and who have followed a training course in the authorized assistance centers.



9.9 WIRING CHECK

9.9.a

These operations must be carried out every two months. To carry out the visual check of the cables do as follows:

9.9.b

The operator must:

- wear work clothes, in particular gloves,
- have read and well understood the safety prescriptions shown in the Part 2 of this manual,
- bring the Platform to the **Zero Power Condition** (Part 2 page 2.14)

9.9.c

Remove all the covers.

9.9.d

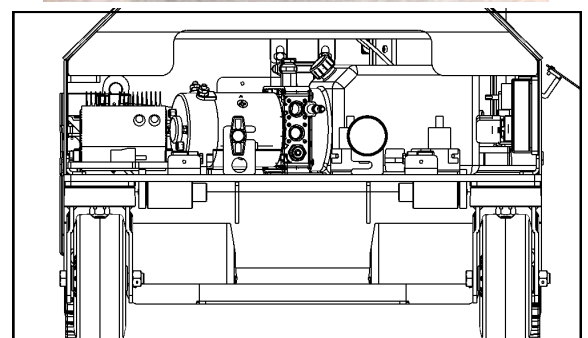
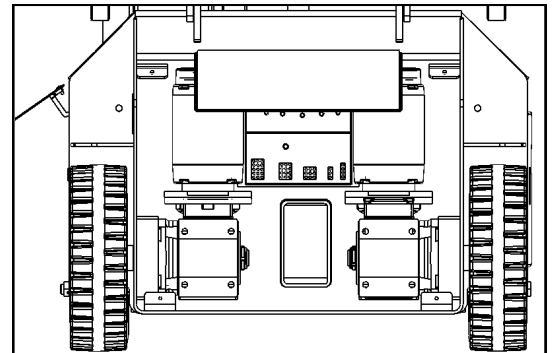
Check the wear and tear state of the cables.

9.9.e

If it is necessary to replace them, please call for the technical service which will provide with the replacement.

9.9.f

The wiring check procedure is finished.



9.10 INSPECTIONS

The user/operator should not accept operating responsibility until the Manual has been read and fully understood as well as having operated the lift under supervision of an experienced and qualified operator.

Only trained and authorized personnel shall be permitted to operate this machine.

This manual and its attachments should be considered integrant part of this machine and should remain with the machine all the time.

As the manufacturer has no direct control over utilisation and application of this machine proper safety practice are responsibility of the user and operating personnel.

It is the responsibility of the operator to perform a pre-start inspection and routine maintenance.

9.10a FREQUENT INSPECTION - FREQUENT INSPECTION CHECK LIST

WARNING

THIS INSPECTION MUST BE COMPLETED EVERY 3 MONTHS OF SERVICE OR 150 HOURS, WHICHEVER OCCURS FIRST, OR IF A MACHINE HAS BEEN OUT OF SERVICE FOR GREATER THAN 3 MONTHS. FAILURE TO DO SO COULD RESULT IN DEATH OR SERIOUS INJURY.

- Owner or user is responsible for Frequent inspections
- The inspection must be performed by a qualified technician, qualified as a mechanic, trained on the use and maintenance of this specific make and model of aerial work platform.
- Always keep inspection records up-to-date
- Record and report all discrepancies and anomalies to your supervisor.

FREQUENT INSPECTION CHECK LIST - FORM A

MODEL _____

SERIAL NUMBER _____

YEAR OF CONSTRUCTION _____

DESCRIPTION

- _____ 1. Perform all checks listed on Pre-start Inspection
- _____ 2. Check the oil level and status - be sure that the oil has a clear light colour.
- _____ 3. Check the entire machine for signs of damage, broken welds, loose bolt, improper or makeshift repairs
- _____ 4. Check that all adjustable flow valves are locked
- _____ 5. Check that the basket with a full load does not lower
- _____ 6. Inspect the motor and motor brushes
- _____ 7. Check the electrical components and wires for any damaged or oxidized part.
- _____ 8. Check the demineralised water level in the batteries

DATE _____

SIGNATURE _____

INSPECTED BY _____

9.10b ANNUAL INSPECTION - ANNUAL INSPECTION CHECK LIST

WARNING

THIS INSPECTION MUST BE COMPLETED NO LATER THAN 13 MONTHS FROM THE DATE OF THE PRIOR ANNUAL INSPECTION. FAILURE TO PERFORM THIS INSPECTION COULD RESULT IN DEATH OR SERIOUS INJURY.

- Owner or user is responsible for Frequent inspections
- The inspection must be performed by a qualified technician, qualified as a mechanic, trained on the use and maintenance of this specific make and model of aerial work platform.
- Always keep inspection records up-to-date
- Record and report all discrepancies and anomalies to your supervisor.

ANNUAL INSPECTION CHECK LIST - FORM B

Date:
 Serial Number:
 Model:
 Date last inspection :
 Date placed into Service

Customer:
 Address:
 City/State/ZIP code:
 Phone:
 Contact Name:

Dealer:
 Address:
 City/State/ZIP code:
 Phone:
 Contact Name:

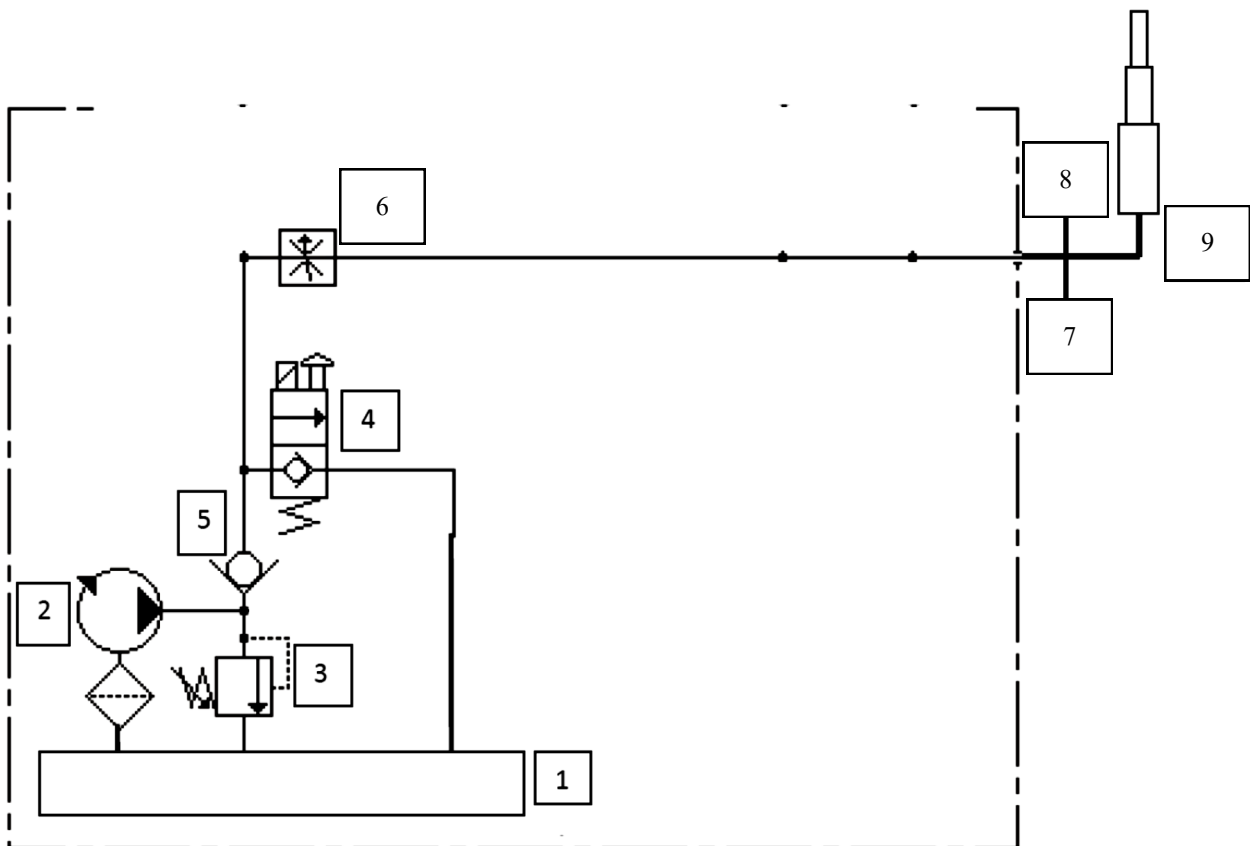
| DECAL | |
|--|--|
| Legibility | |
| Loading Capacity clearly marked | |
| Correct Position | |
| Quantity | |
| PLATFORM RAILS | |
| Entry Gate closes properly | |
| Weather Resistant container for Manuals on board the machine | |
| Manuals into the container | |
| Proper Weld— no signs of corrosion or damage | |
| PLATFORM EXTENSION | |
| Sliding smoothly and easy | |
| Teflon sliding wheels entire and not damaged | |
| Bolt and washers | |
| ELEVATING SYSTEM | |
| Mast structure | |
| Lifting movement and speed | |
| Noise while lifting/Lowering | |
| Spiral cable passing through the steel tube | |
| SAFETY MAINTENANCE BAR | |
| Functioning | |
| Stability | |

| ELECTRICAL COMPONENTS | |
|--|--|
| Ground Module Functioning | |
| Connectors | |
| Wires | |
| Joystick Functioning | |
| Spiral cable | |
| Batteries Integrity | |
| Batteries proper Functioning | |
| Battery Charger Functioning | |
| EMERGENCY STOP | |
| Break all circuit | |
| CHASSIS | |
| Bolts tight | |
| Chassis Proper Weld— no signs of corrosion or damage | |
| Drive Shaft Fastened | |
| Front Turning Wheels Secured | |
| Load bearings | |
| | |

10.1 TROUBLESHOOTING AND ERROR CODES

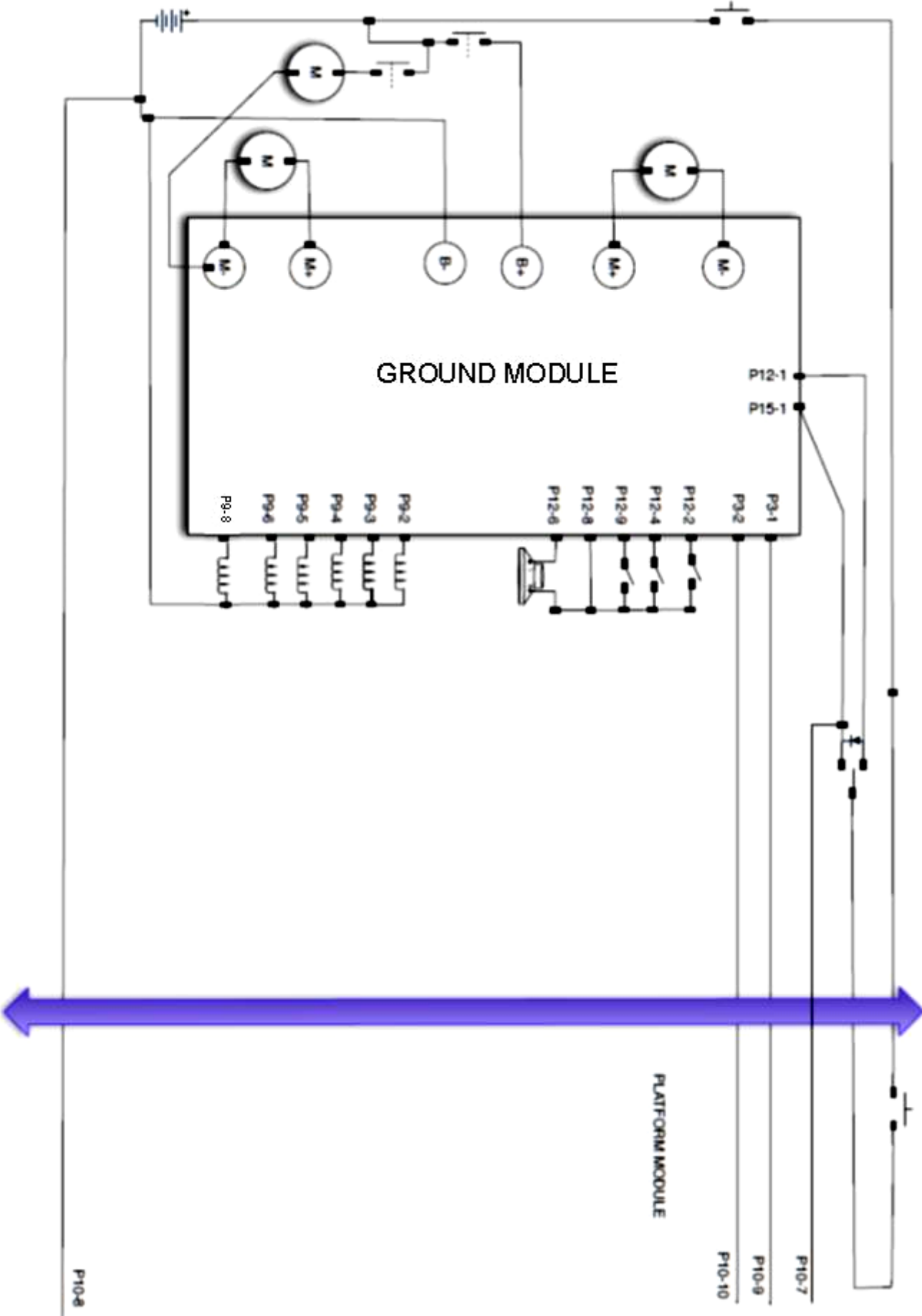
| MOST COMMON ERRORS | ERROR CODE |
|---------------------------|-------------------------------|
| LOW BATTERY | FLASH BC1 when at LOW BATTERY |
| DEAD BATTERY | FLASH BAT on CAN DISPLAY |
| BATTERY CHARGING | FLASH `2-3 |
| BRAKES Manually Released | FLASH`8-2 |
| Trigger Fault | FLASH`2-4 |
| Footswitch Fault | FLASH`2-5 |
| Drive Joystick Fault | FLASH`2-6 |
| Steer Joystick Fault | FLASH `2-7 |
| OVERLOAD | FLASH `2-8 |
| TILT | FLASH `2-9 when elevated |
| ELEVATION SWITCH | FLASH `6.3 |

| DESCRIPTION | ERROR CODE |
|---|-------------------|
| FAULT: BAD P/N | 1,1 |
| NOT CALIBRATED | 1,1 |
| HEIGHT NOT CALIBRATED | 1,1 |
| FUNCTIONS LOCKED - NOT CALIBRATED | 1,1 |
| FUNCTIONS LOCKED - TEST MODE SELECTED | 2,2 |
| FUNCTIONS LOCKED - POT HOLE | 2,2 |
| FUNCTIONS LOCKED - ARM GUARD | 2,2 |
| FUNCTIONS LOCKED - OVERLOADED | 2,2 |
| FUNCTIONS LOCKED - UNDERLOADED | 2,2 |
| FUNCTIONS LOCKED - TOO HIGH | 2,2 |
| FUNCTIONS LOCKED - TILTED | 2,2 |
| FUNCTIONS LOCKED - EXTERNAL SHUTDOWN | 2,2 |
| DRIVE LOCKED - CANNOT STEER | 2,2 |
| CHECK GROUND INPUT SWITCHES | 2,2 |
| CHECK DRIVE/LIFT SELECT SWITCH | 2,2 |
| CHECK JOYSTICK | 2,2 |
| RELEASE TRIGGER | 2,2 |
| RELEASE GROUND SWITCHES | 2,2 |
| RELEASE ROTATE SWITCHES | 2,2 |
| RELEASE JOYSTICK SWITCHES | 2,2 |
| SHUTDOWN - CHECK EMS SWITCHES | 2,1 |
| FAULT: ENERGIZED VALVE - CHECK P9 WIRING | 3,2 |
| FAULT: BAD INTERNAL SAFETY OUTPUT | 3,4 |
| DRIVE LOCKED - BRAKING | 3,4 |
| MOTOR OVERLOAD | 3,4 |
| FAULT: CAPBANK VOLTAGE TOO HIGH - CHECK LINE CONT | 3,3 |
| FAULT: VALVE FEEDBACK HIGH - CHECK VALVE WIRING | 3,2 |
| FUNCTIONS LOCKED - BATTERY | 4,4 |
| FAULT: BAD INTERNAL 12V | 4,3 |
| FAULT: BAD 5V JOYSTICK SUPPLY - CHECK P15-12 WIRING | 4,5 |
| FAULT: BAD INTERNAL 5V | 4,2 |
| FAULT: BAD TILT SENSOR | 4,2 |
| FAULT: BAD INTERNAL SLAVE | 4,2 |
| FUNCTIONS LOCKED - TOO HOT | 4,2 |
| FAULT: BATTERY VOLTAGE TOO LOW | 4,4 |
| FAULT: BATTERY VOLTAGE TOO HIGH | 4,4 |
| FAULT: CHECK ELEVATION SWITCH | 6,3 |
| FAULT: CAN BUS | 6,6 |
| FAULT: MOTOR A SHORT TO HIGH | 7,2 |
| FAULT: MOTOR A SHORT TO LOW | 7,3 |
| FAULT: MOTOR B SHORT TO HIGH | 7,4 |
| FAULT: MOTOR B SHORT TO LOW | 7,6 |
| FAULT: MOTOR CONNECTIONS SHORTED | 7,5 |
| FAULT: CAPBANK VOLTAGE TOO LOW - CHECK STUD WIRING | 7,7 |
| DRIVE LOCKED - CHECK FIELD CURRENT | 7,7 |
| B+ SUPPLY ERROR | 9,9 |
| BRAKES MANUALLY RELEASED | 8,2 |

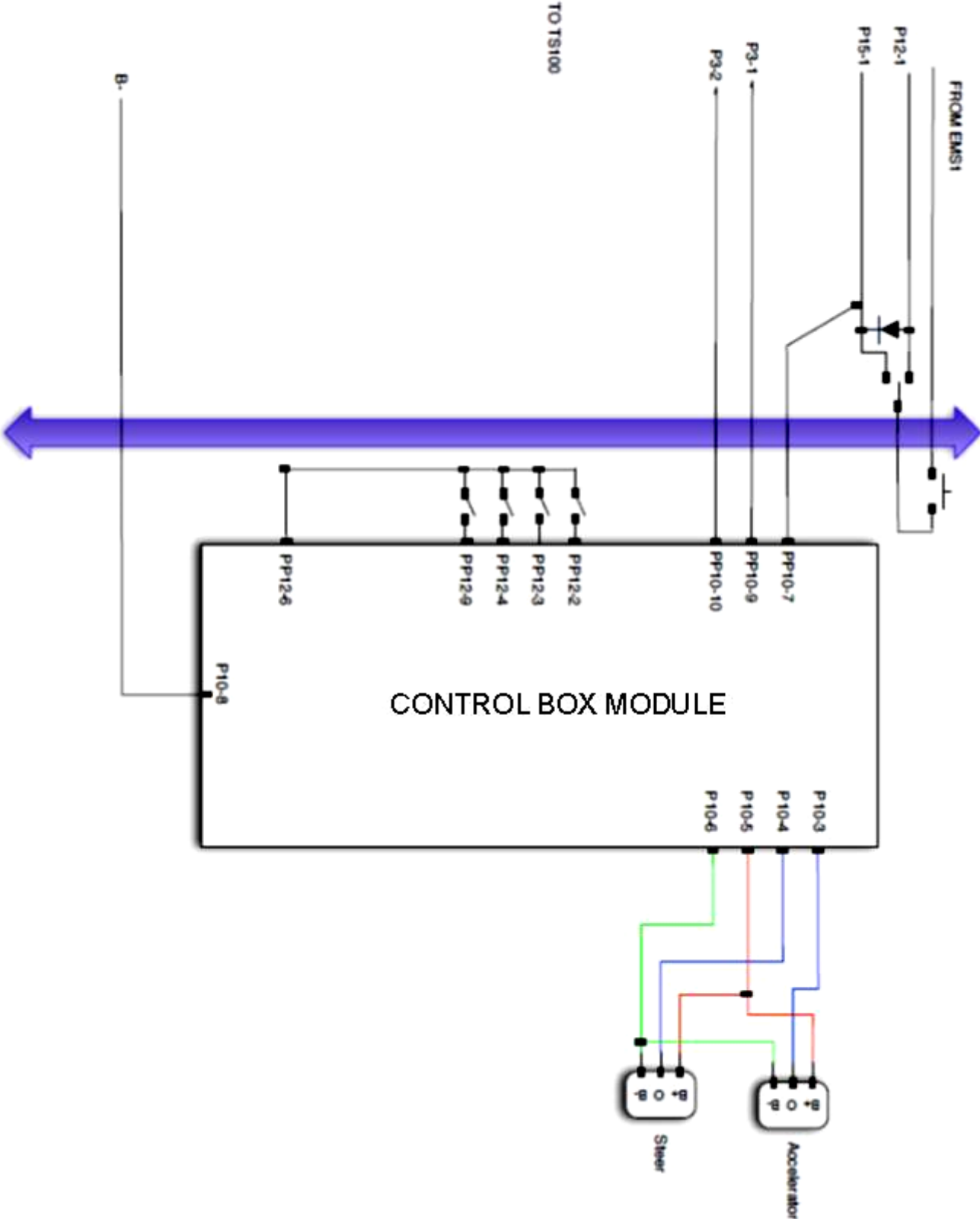
11.1 HYDRAULIC DIAGRAM

- 1 Oil tank
- 2 Motor pump
- 3 Unlock valve (loading capacity)
- 4 Block solenoid
- 5 One way valve
- 6 Flow rate control valve
- 7 Pressure gauge
- 8 Pressure transducer
- 9 Telescopic cylinder

11.2 ELECTRIC DIAGRAM



| TS100 PIN | DESCRIPTION | INPUT |
|-----------|---------------------------------------|--------------------------------|
| PCAN-1 | CAN1H | TO CAN DISPLAY MODULE (Plat) |
| PCAN-2 | CAN1L | TO CAN DISPLAY MODULE (Plat) |
| PCAN-3 | Shield | |
| PRS232-1 | RS232 B+ supply | |
| PRS232-2 | RS232 Rx | to DIAGNOSTIC CENTER |
| PRS232-3 | RS232 Tx | to DIAGNOSTIC CENTER |
| PRS232-4 | RS232 Gnd | |
| P9-1 | PWM High side output (B+ when active) | |
| P9-2 | PWM High side output (B+ when active) | DOWN VALVE |
| P9-3 | High side output (B+ when active) | Brake |
| P9-4 | High side output (B+ when active) | Pump contactor |
| P9-5 | High side output (B+ when active) | Drive contactor |
| P9-6 | High side output (B+ when active) | CASTOR LOCK |
| P9-7 | High side output (B+ when active) | |
| P9-8 | switch input (B+=active) | POT HOLE |
| P9-9 | High side output (B+ when active) | |
| P12-1 | switch input (B+=active) | GND select/supply |
| P12-2 | switch input/Low side sw | Battery Cutout |
| P12-3 | switch input/Low side sw | UPPER ELEVATION SWITCH |
| P12-4 | switch input (B+=active) | |
| P12-5 | switch input (B+=active) | |
| P12-6 | Low side sw. 1.7A min. | GND Alarm |
| P12-7 | Analog Input | |
| P12-8 | B+ feed | B+ supply for sensors/switches |
| P12-9 | switch input (B+=active) | ELEVATION SWITCH |
| P12-10 | Analog Input | PRESSURE TRANSDUCER |
| P12-11 | Analog Input | |
| P12-12 | Analog Input | |
| P15-1 | switch input (B+=active) | PLATFORM MODE |
| P15-2 | switch input (B+=active) | |
| P15-3 | switch input (B+=active) | |
| P15-4 | Low side sw. 1.7A min. | |
| P15-5 | switch input (B+=active) | |
| P15-6 | switch input (B+=active) | |
| P15-7 | Low side sw. 1.7A min. | HORN (optional) |
| P15-8 | switch input (B+=active) | |
| P15-9 | switch input (B+=active) | |
| P15-10 | Low side sw. 1.7A min. | |
| P15-11 | switch input (B+=active) | |
| P15-12 | 5V (low current, for sensors only) | PRESSURE TRANSDUCER |
| P15-13 | Analog Input | |
| P15-14 | Analog Input | |
| P15-15 | 0V (low current, for sensors only) | |



| CAN TILLER | DESCRIPTION | INPUT |
|--------------|------------------|-----------------------------|
| P10-1 | out 1 | TILT ALARM |
| P10-2 | out 2 | OVERLOAD ALARM |
| P10-3 | ana 1 | HALL A/B (Drive FWD/REV) |
| P10-4 | ana 2 | HALL C/D (STEER LEFT/RIGHT) |
| P10-5 | 5V for ana | 5V for Joystick |
| P10-6 | neg for ana | Neg For Joystick |
| P10-7 | B+ supply in | FROM P15-1 |
| P10-8 | B- supply in | FROM B- |
| P10-9 | CAN H | FROM P3-1 of TS100 |
| P10-10 | CAN L | FROM P3-2 of TS100 |
| 12 positions | | |
| P12-1 | digital input 1 | |
| P12-2 | digital input 2 | Horn (Optional) |
| P12-3 | digital input 3 | Trigger Switch |
| P12-4 | digital input 4 | Overload(Optional) |
| P12-5 | out 3 | |
| P12-6 | Sw. B+supply | |
| P12-7 | digital input 5 | |
| P12-8 | digital input 6 | |
| P12-9 | digital input 7 | Slow Speed |
| P12-10 | digital input 8 | |
| P12-11 | digital input 9 | |
| P12-12 | digital input 10 | |

FREQUENT INSPECTION CHECK LIST - FORM A

MODEL _____

SERIAL NUMBER _____

YEAR OF CONSTRUCTION _____

DESCRIPTION

- _____ 1. Perform all checks listed on Pre-start Inspection
- _____ 2. Check the oil level and status - be sure that the oil has a clear light colour.
- _____ 3. Check the entire machine for signs of damage, broken welds, loose bolt, improper or makeshift repairs
- _____ 4. Check that all adjustable flow valves are locked
- _____ 5. Check that the basket with a full load does not lower
- _____ 6. Inspect the motor and motor brushes
- _____ 7. Check the electrical components and wires for any damaged or oxidized part.
- _____ 8. Check the demineralised water level in the batteries

DATE _____

SIGNATURE _____

INSPECTED BY _____

ANNUAL INSPECTION CHECK LIST—FORM B

Date:
 Serial Number:
 Model:
 Date last inspection :
 Date placed into Service

Customer:
 Address:
 City/State/ZIP code:
 Phone:
 Contact Name:

Dealer:
 Address:
 City/State/ZIP code:
 Phone:
 Contact Name:

| DECAL | |
|--|--|
| Legibility | |
| Loading Capacity clearly marked | |
| Correct Position | |
| Quantity | |
| PLATFORM RAILS | |
| Entry Gate closes properly | |
| Weather Resistant container for Manuals on board the machine | |
| Manuals into the container | |
| Proper Weld— no signs of corrosion or damage | |
| PLATFORM EXTENSION | |
| Sliding smoothly and easy | |
| Teflon sliding wheels entire and not damaged | |
| Bolt and washers | |
| ELEVATING SYSTEM | |
| Mast structure | |
| Lifting movement and speed | |
| Noise while lifting/Lowering | |
| Spiral cable passing through the steel tube | |
| SAFETY MAINTENANCE BAR | |
| Functioning | |
| Stability | |

| ELECTRICAL COMPONENTS | |
|--|--|
| Ground Module Functioning | |
| Connectors | |
| Wires | |
| Joystick Functioning | |
| Spiral cable | |
| Batteries Integrity | |
| Batteries proper Functioning | |
| Battery Charger Functioning | |
| EMERGENCY STOP | |
| Break all circuit | |
| CHASSIS | |
| Bolts tight | |
| Chassis Proper Weld— no signs of corrosion or damage | |
| Drive Shaft Fastened | |
| Front Turning Wheels Secured | |
| Load bearings | |
| | |

ANNEX 1

EXTRA EQUIPMENT

All the Aerial Platform showed in this Manual can have dedicated extra equipment that can be installed only if supplied by Braviisol D.M. srl. or its approval.

Extra equipment can be used only if the User has read and understood his responsibilities shown in this manual and in the extra equipment User Manual supplied with each device.

The intended use of any extra device need to be clearly understood before using it.

For extra equipment detailed spec. please contact Braviisol D.M. srl.

ANNEX 2

Wheel Lock Device:

The Device (**P1**) described in Part 5 - **Control Panel of this User Manual**

Wheel blocking device:

The Wheel Blocking device is activated by moving the selector to the right or pressing the corresponding button, allowing to drive the vehicle only towards a straight line, both to and from.

LED ON indicates that the Wheel Blocking device has been activated.

LED OFF indicates that the Wheel Blocking device is deactivated allowing, therefore, to drive the vehicle in any direction.

WARNING:

When Wheel Blocking device is on, fixation of the front wheels will only be actual and effective after the wheels have reached a straight-forward or straight-backward position, so that the locking pins have engaged in on both caster supports and locked them.

If the wheels are not in a straight position when the Wheel Blocking device is activated, drive forwards or backwards sufficiently, so that the front wheels reach the correct straight position. Check that the Wheel Blocking device is actually started, before proceeding to the next steps. A visual inspection and the slow movement of the joystick left or right will instantly indicate if the block is effectively activated or not.



BRAVIISOL Divisione Meccanica S.r.l.

S.S. 16 Adriatica km. 314,600
60022 Castelfidardo (AN)

Tel. 071.7819090

Fax 071.7819355

E-mail: info@bravi-platforms.com

Website: www.bravi-platforms.com

Spare parts: www.bravi-parts.com