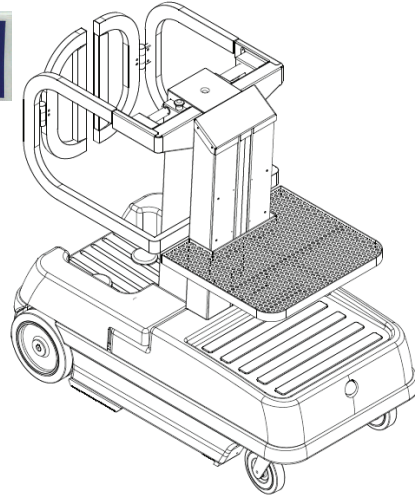


BRAVi

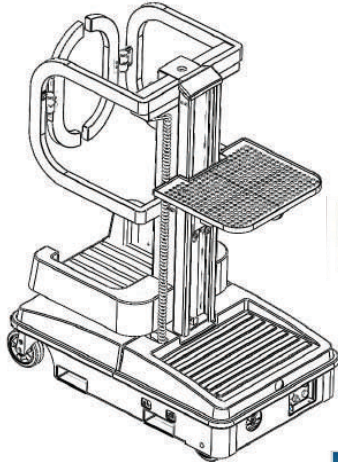
PLATFORMS

Use and Safety Manual

ISP-11



Aerial Platform
Stock-picking
LUI MINI S.K.
(ISP-11)
LUI MINI P.A.
(ISP-7M)



ISP-7M

*Always keep
this manual with
the machine in
its special
container.*

Rev05_12

ANSI

CE



INTRODUCTION

INTRODUCTION

This manual is an extremely important element. Always keep it stored on the machine.

The purpose of this manual is to illustrate, for the owner, users, operators, firms offering leasing and those subjects receiving leasing of the machine, the essential precautions and operational procedures for the safe and correct operation of the machine based upon the utilisation anticipated.

Due to the continuous improvements brought about on the products, the firm, BRAVIISOL DIVISIONE MECCANICA S.R.L., reserves the right to modify the technical specifications of this machine without any notice.

For updated information, contact

BRAVIISOL Divisione Meccanica S.r.l.
S.S. 16 Adriatica km. 314,600
I-60022 Castelfidardo (AN)
Tel. 071.7819090 Fax 071.7819355

HAZARD AND TERMINOLOGY SYMBOLS



This hazard symbol is necessary to call attention to potential dangers that could cause injuries. To avoid possible serious injuries or fatal accidents, comply with all of the safety instructions that follow this symbol



DANGER

INDICATES AN IMMINENTLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED COULD CAUSE SERIOUS INJURIES OR EVEN FATAL ACCIDENTS. THIS ADHESIVE HAS A RED BACKGROUND.



ATTENTION

INDICATES A POTENTIALLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED COULD CAUSE INJURIES OF A MODERATE EN- TITY. IN ADDITION, IT MAY BE USED TO SIGNAL UNSAFE PRO- CEDURES. THIS ADHESIVE HAS A YELLOW BACKGROUND.



WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED COULD CAUSE SERIOUS INJURIES OR EVEN FATAL ACCIDENTS. THIS ADHESIVE HAS A BLUE , WHITE OR ORANGE BACKGROUND.



WARNING

THIS PRODUCT MUST CONFORM TO ALL OF THE PROCEDURES REGARDING SAFETY INDICATED IN THE TECHNICAL BULLETINS.

FOR INFORMATION ON EVENTUAL TECHNICAL BULLETINS REGARDING THE SAFETY OF BRAVIISOL DIVISIONE MECCANICA S.R.L. PRODUCTS BEING USED, CONTACT BRAVIISOL DIVISIONE MECCANICA S.R.L., OR ELSE YOUR LO- CAL AUTHORISED BRAVIISOL DIVI- SIONE MECCANICA S.R.L. REPRESENTATIVE.



IMPORTANT

BRAVIISOL DIVISIONE MECCANICA S.R.L. REGULARLY SENDS TECHNICAL BULLETINS REGARDING SAFETY TO THE REGISTERED OWNER OF THE MA- CHINE.

CONTACT BRAVIISOL DIVISIONE MEC- CANICA S.R.L TO MAKE SURE THAT THE INFORMATION RELATIVE TO THE CURRENT OWNER HAS BEEN UPDATED AND IS EXACT.



IMPORTANT

EVENTUAL ACCIDENTS OCCURING DURING THE USE OF BRAVIISOL DIVI- SIONE MECCANICA S.R.L. PRODUCTS, WHICH MAY HAVE CAUSED INJURIES OR DEATH TO PERSONNEL OR ELSE SIGNIFICANT DAMAGE TO PROPERTY OR TO THE SAME BRAVIISOL DIVISIONE MECCANICA S.R.L. PRODUCTS, ARE TO BE IMMEDIATELY REPORTED TO BRAVIISOL DIVISIONE MECCANICA S.R.L.

For:

- Accident notification
- Publications relating to the safety of the product
- Updating of the information relative to the current proprietor
- Questions relating to the safety of the product
- Information regarding compliance with standards and regulations
- Questions relating to the special applica- tions of the product
- Questions relating to the modifications of the product

CONTACT:

**BRAVIISOL
Divisione Meccanica S.r.l.**

S.S. 16 Adriatica km. 314,600
60022 Castelfidardo (AN)
Tel. 071.7819090 Fax 071.7819355

Reference Regulations:
2006/42/EC
DIN EN280
DIN EN 1076-2:2000

Dynamic and static tests performed by:

TÜV SÜD Industrie Service GmbH
Zentralbereich Fördertechnik-
Sonderbauten
Hebezeuge und Krane
Westendstraße 199
80686 München
Deutschland

Document: EG-MRL 048
Date: 20 April 2010

Document: KP 172
Date: 18 January 2012

SECTION 1. SAFETY PRECAUTIONS

SECTION 1. SAFETY PRECAUTIONS

1.1 GENERAL INFORMATION

This section illustrates the precautions necessary for the correct and safe use and maintenance of the machine. To guarantee the correct use of the machine, it is indispensable to establish a daily routine procedure based on the directions furnished in this manual. In addition, to guarantee the safe operation of the machine, it is necessary that a qualified person establish a maintenance program based on the information provided in this manual and in those for repair procedures and maintenance. Said program is to be followed scrupulously.

The owner, users, operators, firms offering leasing and those subjects receiving leasing of the machine must not accept the responsibility for its function before having read this manual and completed training in the operational procedures, under the supervision of a qualified, expert operator.

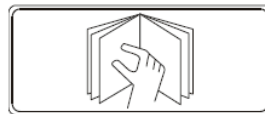
For further information in regard to safety, training, inspection, maintenance, application and operation, contact BRAVIISOL Divisione Meccanica s.r.l.



**LACK OF OBSERVATION OF THE SAFETY PRECAUTIONS LISTED IN THIS MANUAL
COULD CAUSE DAMAGE TO THE MACHINE TO PROPERTY AND SERIOUS OR FATAL
INJURIES TO PERSONS**

1.2 PRELIMINARY PROCEDURES

Operator Training and Comprehension



- Before using the machine, read the manual thoroughly.
- Use the machine only after having completed training by authorised personnel.
- Use of the machine is permitted only for authorised and qualified personnel, who have carefully read and fully understood the indications of HAZARD, WARNING and ATTENTION as well as the operating instructions of the machine found in the manual.
- Use the machine for applications among those anticipated by BRAVIISOL DIVISIONE MECCANICA S.R.L..
- All operational personnel must become familiar with the commands, controls and emergency functions of the machine specified in the manual.
- Carefully read and obey all of the company rules and local and governmental regulations in force relative to the operation of the machine.

Machine inspection

- Use the machine only after having carried out the functional inspection checks and verifications. For further indications, consult Section 2 of this manual.
- Activate the machine only after having carried out all of the service and maintenance procedures indicated by the requirements specified in the procedure and maintenance manual.
- Make sure that all of the safety devices function correctly. Eventual modifications of these devices constitute a violation of safety regulations.



WARNING

**EVENTUAL MODIFICATIONS OR ALTERATIONS OF THE AERIAL
WORK PLATFORM MAY BE CARRIED OUT EXCLUSIVELY SUBJECT
TO WRITTEN AUTHORISATION OF THE MANUFACTURER.**

- Do not run machines on which the signs or adhesive stickers indicating safety regulations or instructions are illegible or missing.
- Avoid accumulations of debris on the floor of the platform. Avoid that mud, oil, grease or other similar slippery substances from coming into contact with footwear or the floor of the platform.

Inspection of the Workplace

- Before using the machine, the operator must take all necessary precautions so as to avoid any hazard in the workplace.
- Do not activate the platform on trucks, semi trailer truck beds, rail-road cars, boats on the water, scaffolds or similar structures or vehicles, on which BRAVIISOL D.M. SRL has not approved operation in writing.
- 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.

SECTION 1.

SAFETY PRECAUTIONS

1.3 OPERATION

General information

- Use the machine exclusively for transport of personnel with respective tools and equipment or for the manual handling of stock items.
- Do not operate a broken machine. If a malfunction occurs, turn off the machine.
- Do not suddenly shift the switches or command levers from one position to the next passing through the neutral position. Always bring the switch to the neutral position before shifting it to the position corresponding to the next function. Actuate the commands using a slow and uniform pressure.
- If there are persons on the platform, allow personnel to release or activate the machine from the ground only in case of emergency.
- Make sure that electrical tools are put away properly avoiding their being left hanging by their power cords in the platform work area.
- Before leaving the machine unattended, completely lower the basket and disconnect the power supply.
- Transport of passengers on the machine is forbidden.
- During operation, only the operator is permitted to be present on the machine.
- When welding is being performed on the elevated platform, it is necessary to take precautions for the protection of all of the components of the machine from contact with the general welding spatter or with molten metal.
- The battery fluid is extremely corrosive. Make sure that it does not come into contact with the skin or clothing.
- Charge the batteries in a well ventilated area.



Risk of Falling

- Before using the machine, make sure that all of the safety railings and gates are attached in their correct positions.
- Keep both feet firmly planted on the floor of the platform.
- Do not set ladders, boxes, steps, boards or other similar articles on the platform floor in order to increase the range of action of the same.
- Do not use the lifting group to climb up onto the platform nor for climbing down from it.
- Pay very close attention when getting onto the platform or when getting off of it. Make sure that the lifting group is completely lowered. When getting onto the platform or when getting off of it, do so facing the machine.
- The operation of the commands, controls and safety sensors, for LUI MINI S.K., have been designed in such a manner that the operator may always keep "four points of contact" with the machine: Both hands and both feet MUST BE continuously in contact with the machine when it is in operation.
- Always keep "three points of contact" with the machine, doing so in such a manner that both hands and one foot or else both feet and one hand are continuously in contact with the machine when getting on or getting off of it.

SECTION 1. SAFETY PRECAUTIONS

Electrical Shock Hazard



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.	

Maintain a distance of at least 3 metres (10 feet) between any part of the machine and its occupant, with respective tools and equipment, and an electrical power line or piece of equipment with an electrical charge rated at least 50,000 volts.

It is necessary to add 0.3 metres (1 foot) for each additional increase equal to or less than 30,000 volts.

It is possible to reduce the minimum safe operational distance in presence of insulating barriers for the prevention of contacts, if those barriers have been adjusted to the voltage of the electrical lines they are set to protect.

The barriers must not be a part of the machine *nor may they be connected to it*. The minimum operational safety distance may be reduced within the operational dimensions indicated by the insulating barriers. This distance is to be determined by a qualified person subject to the company, local and governmental regulations regarding the undertaking of work operations in the vicinity of high voltage equipment.

Toppling hazard

- Before driving the machine, the user must become familiar with the surface area of the workplace. While driving the vehicle, do not exceed the slopes or the transversal slopes permitted.
- Do not raise the platform or drive the machine with the platform raised on a slope or on an irregular or soft surface.
- Before driving onto floors, bridges, trucks or other surfaces, verify the maximum load bearing values of those platforms.
- Do not exceed the maximum load of the elevated platform. Distribute cargo uniformly over the cargo compartment and on the platform.
- Keep the chassis of the machine at a minimum distance of 0.6 metres (2 feet) from holes, rough areas, descents, obstacles, debris, hidden holes and other potential hazards that may be found on ground level.
- Do not attempt to use the machine as a crane. Do not tie or bind the machine to any other adjacent structure.
- Do not increase the size of the platform with extensions of the landing or unauthorised additions. If the area of the machine exposed to the wind is increased, its stability is decreased.
- If the lifting group or the platform become stuck in such a manner that one or more wheels come off of the ground, it is necessary to have the operator climb down off of the platform before attempting to free the machine. To stabilise the machine and have personnel descend from the platform, use a crane, a fork lift truck or other suitable equipment.
- It is strictly forbidden to go in and out the platform when raised



SECTION 1. SAFETY PRECAUTIONS

Crushing and Impact Hazards

- All personnel, whether operational or on the ground, must wear the personal safety equipment required by the regulations in force or by the risk analysis performed in the workplace.
- When the machine is being used, or the platform is being raised or lowered, make sure to observe the distances above, below and on both sides of the platform itself.



- When the machine is in operation, do not lean out from the platform railings.
- When driving the machine in areas of limited visibility, have an assigned person proceed ahead so as to indicate any eventual hazards.
- When driving, always keep non operational personnel at a distance of at least 1.8 metres (6 feet) from the machine.
- Adjust the driving speed based upon the following conditions: ground or floor surface conditions, traffic, visibility, slope, location of other personnel and any other factors that could constitute a hazard of collision or personal injuries.
- Keep the braking distances in mind independently of the speed of the machine.
- Do not drive at high speed in restricted, tight or narrow areas or in reverse gear.
- Always pay maximum attention so as to avoid that eventual obstacles collide with the operational commands or the person on the platform or that they interfere with the same.
- Make sure that the operators of other machines that are elevated or on ground level are informed regarding the presence of the aerial platform. Disconnect the electrical power to elevated cranes.
- Advise other personnel not to work, stand, or transit under the elevated platform. Delineate the floor or ground with appropriate barriers, as needed.

1.4 LIFTING AND TRANSPORT

General information

- During lifting and transport, personnel are prohibited from standing on the platform.
- Push or tow, for LUI MINI S.K., the machine exclusively in the event of an emergency, malfunction, power interruption or to load or unload it and ALWAYS after having unlocked the motor-brake, according to the instructions found in this manual.
- Before lifting or transport, make sure that the platform has been completely retracted and is empty.
- During lifting of the machine by way of a fork lift, arrange the forks exclusively in correspondence to the appropriate areas of the machine itself. Carry out the lift by way of a fork lift with an adequate load capacity. For the weights of the machine consult the technical specifications table in Section 5 - Technical Specifications of the Machine.
- For lifting information, consult, section 3 - Machine Operation, in this manual.

SECTION 2. PREPARATION AND INSPECTION

2.1 PERSONNEL TRAINING

The aerial platform is a personnel transport device. Therefore, it is to be used and maintained exclusively by trained and qualified personnel.

Use of the machine is not permitted by persons under the influence of alcohol or drugs or those subject to attacks of epilepsy, vertigo or loss of physical control.

Operator training

Operator training must include what follows.

1. Use and limits of the commands from the platform, from the ground and emergency commands as well as safety systems.
2. Command and control signage, instructions and warnings attached to the machine.
3. Regulations defined by the employer and by government regulation.
4. Use of the approved anti-fall protection device, when needed.
5. Sufficient knowledge of the mechanical function of the machine to recognise a true or potential malfunction or breakdown.
6. Safe methods for the use of the machine when encountering super-elevated obstacles, other equipment or obstacles in movement, dips, holes and inclined descents.
7. Methods for the avoidance of hazards from unprotected electrical conductors.
8. Requirements for a particular job or a particular application of the machine.

Training supervision

Training must be given under the supervision of a qualified person, in an open area, free of obstacles. It must continue until the trainee is capable of using the machine safely.

Operator responsibility

The operator must be instructed regarding the responsibility and the authority to turn off the machine in case of malfunction or breakdown or in the presence of other unsafe conditions, relative to both the machine and the workplace.

NOTE: *The manufacturer or the distributor must make qualified personnel available for training both at the time of delivery of the first units and afterwards, if requested by the end user or the by assigned personnel.*

2.2 PREPARATION INSPECTION AND MAINTENANCE

BRAVIISOL provides information relative to machine inspection, indicated in the following table 2.2 on page 8.

For further information regarding the aerial work platforms, consult local regulations.

The frequency of inspections and maintenance procedures must increase according to necessity: when the machine is used under adverse environmental conditions, with greater frequency or for difficult or particularly demanding jobs.

2.3 PRELIMINARY INSPECTIONS BEFORE START UP

The inspection prior to use includes the following operations:

1. Cleaning – Verify and check for any eventual leaks (oil, hydraulic fluid or battery acid) or for foreign objects on any of the surfaces.
Warn maintenance personnel of any apparent leaks.

2. Signs and adhesive stickers – Check and verify that these are all clean and legible.

Check that no sign or adhesive sticker is missing.

Make sure that any sign or adhesive sticker that is not legible is cleaned or substituted. (See "Application of the adhesive stickers" in Section 3).

3. Use and safety manuals – make sure that the following manuals are present in the weather resistant compartment (PIC. 3.A):
Use and Safety Manual EMI Safety Manual (only for ANSI/CSA specifications) and the ANSI responsibility Manual (only for ANSI/CSA specifications).

4. Outline of complete daily inspection – (See Section 2.4).

5. Battery – Charge as needed (See Section 3.5).

6. Hydraulic oil – The level of the hydraulic oil in the reservoir can vary according to the temperature of the oil. That is, in a cold machine, it is possible that the Oil level will not reach the FULL mark on the dip stick.

Lift and lower the elevator several times to obtain a more precise reading of the level on the dip stick.

When the hydraulic oil is heated up, verify the reading on the dip stick, which should indicate a level equal or near the FULL mark.

- DO NOT FILL BEYOND THE FULL MARK.
- ALWAYS TOP UP the oil if its level is below the mark - ADD.

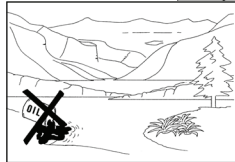


NOTE:

Check the level of the hydraulic oil **with the machine having the basket lowered**, from the sight glass found under the cover. If necessary, top up with a mineral oil with a viscosity index of 22 (for climactic conditions with very cold temperatures, that is, below -20°C, the use of mineral oil with a lower freezing point, about -45°C, is recommended).

**Attention Pollution Hazard**

Do not dispose of the oil into the environment.

**TABLE 2.2**

TYPE	FREQUENCY	MAIN RESPONSIBILITY	QUALIFICATION FOR SERVICE	REFERENCE
PRELIMINARY INSPECTION FOR START UP	Before each day of work, or else at each change of operator.	User or operator	User or operator	Safety and Use Manual and relative Inspection Forms
FREQUENT INSPECTION	At an interval of 3 months or 150 hours, according to the circumstances, or else if the machine has not been used for over 3 months or else if it has been purchased used.	Owner, concessionary or user.	BRAVI Qualified Mechanic	Service and Maintenance Manual and relative Inspection Forms
ANNUAL INSPECTION	Annual, within 13 months from the last inspection	Owner, concessionary or user.	BRAVI Qualified Mechanic	Service and Maintenance Manual and relative Inspection Forms

2.4 COMPLETE DAILY INSPECTION**WARNING**

TO AVOID POSSIBLE INJURIES, MAKE SURE THAT THE ELECTRICAL POWER SUPPLY OF THE MACHINE IS TURNED OFF DURING THE INSPECTION. DO NOT USE THE MACHINE BEFORE ANY AND ALL MALFUNCTIONS HAVE BEEN REPAIRED.

**WARNING**

DO NOT NEGLECT THE VISUAL INSPECTION OF THE LOWER PART OF THE BASE FRAME. CHECK AND VERIFY THAT THERE ARE NO FOREIGN OBJECTS OR DEBRIS THAT COULD CAUSE SERIOUS DAMAGE TO THE MACHINE.

The operator must not accept the responsibility of operating the machine until this manual has been read and understood in each of its parts and a first test-drive of the vehicle has been taken under the supervision of a qualified expert operator.

Only authorised personnel and qualified operators may operate this machine. This manual and its attachments must be considered an integral part of this machine and must remain with the machine at all times.

**WARNING**

The manufacturer, BRAVIISOL D.M. SRL, has no direct control over the utilisation of the machine. Utilisation of the machine according to safety regulations is the responsibility of the end user.

It is the responsibility of the operator to make a thorough inspection of the machine before each use.

The purpose of the complete daily inspection is to check and verify that the machine is in order, to ascertain the absence of anomalies, faults or malfunctions and to determine if routine maintenance is required. If any damage or unauthorised changes to the machine, with respect to how it was delivered, are found, immediately tag it as such and DO NOT USE IT.

BEFORE EVERY USE

- Make sure that all of the manuals are in their weather resistant container on board the machine.
- Make sure that the tag with the serial number of the platform as well as all of the adhesive safety stickers are in their place, and that they are all perfectly integral and legible.
- Inspect the machine in order to ascertain the absence of anomalies, welding cracks, faults or malfunctions or any damage or unauthorised changes to the machine, with respect to how it was delivered by the manufacturer.
- Check and verify the basket, the platform railings, check that the entry gate functions properly and that it closes completely and automatically.
- Check the water level in the batteries and make sure that there are no leaks. The battery cables must be correctly connected to the terminals. There must not be any corrosion on them.
- Check and verify by testing that all of the safety and personal protection devices function properly.
- Check and verify that the tires show no damage, abrasions or deep cuts. Check and verify that there is no debris attached to the wheels, tires or around them.
- Visually inspect the hydraulic, electrical and mechanical components. For each component make sure that all of its parts are present, not loosened and fixed solidly in their respective positions and that there are no visible leaks, signs of excessive wear or damaged areas.
- Check and verify that there are no wires or cables that have come loose and that hang from the underside of the vehicle.
- Check and verify the correct operation of the keyed main selector on the dashboard.
- Check and verify the operation of the emergency stop buttons: those that are found on the command panel, on board the machine and the one on the chassis control panel.
- Check and verify, by testing, the proper operation of the mechanical emergency descent system.

2.5 FUNCTIONAL VERIFICATIONS

At the end of the “complete inspection”, carry out a functional verification of all of the systems in an area that is free of super-elevated or ground level obstacles.

For further indications on operation, consult Section 3 of this manual.



WARNING

IF THE MACHINE DOES NOT FUNCTION PROPERLY, TURN IT OFF IMMEDIATELY. NOTIFY THE PERSONNEL ASSIGNED TO MAINTENANCE OF THE PROBLEM. DO NOT USE THE MACHINE UNTIL IT HAS BEEN DECLARED SUITABLE FOR SAFE OPERATION.

Functional verification elements

1. From the ground command panel, without a load on the platform, perform the following operations:
 - a. Actuate the ground commands: the raising and the lowering of the platform.
 - b. Make sure that all of the machine functions have been disabled when the Emergency Stop Button is activated (pressed).
 - c. Check and verify the proper function of the manual descent valve.
2. From the platform command panel, perform the following operations:
 - a. Raise and lower the platform from 0.61 to 0.92 metres (from 2 to 3 feet) several times. Check and verify that the raising and the lowering of the platform come about in a regular manner. Check and verify that with the raising of the basket the traverse shift is activated in automatic slow safety speed (only for LUI MINI S.K.)
 - b. Actuate all of the functions and check and verify the correct operation of all of the limit switches, the general cut off switches and the actuation switches.
 - Vehicle brakes - Drive the vehicle on an slope (not exceeding its nominal operational capacity on the grade) then stop it, so as to make sure that the brakes will hold on an incline.

- **Slope alarm limit-** With the platform completely lowered, drive the vehicle on a slope greater than 1.5° in any direction (**not exceeding its nominal operational capacity on a grade**). The alarm of the vehicle will indicate a sloped condition in the event of an attempt to raise the platform.

- **Transmission speed reduction limit:** If the platform is raised for more than 0.4 m (1.5 - 2 ft), the transmission velocity is reduced by 1/4 compared to the transmission speed for the lowering of the platform(only for LUI MINI S.K.)

- **Platform gate opening limit:** The entry gate is equipped with springs on both of its wings that automatically close the ingress as soon as they are released.

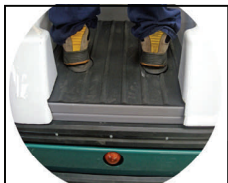
- **Left or left/right handle and pedal switch sensor** - The machine operates (it moves and it is raised) exclusively if the operator keeps his or her hand resting on the left or left/right side handle (pic.A1 or pic.A2 depending on the model) and with both heels pressing on the foot switches positioned on the platform (pic.B1). This safety position is to be maintained throughout all operations of the machine (only for LUI MINI S.K.). In the LUI MINI P.A. only one footswitch need to be pressed (pic.B2).



A1



A2



B1



B2

c. Make sure that all the machine functions have been disabled when the Emergency Stop Button is activated (pressed).

SECTION 3. OPERATION OF THE MACHINE



ATTENTION

THE MANUFACTURER HAS NO DIRECT CONTROL WHATSOEVER ON THE APPLICATION OR THE OPERATION OF THE MACHINE. THE USER AND THE OPERATOR ARE HELD TO FOLLOW THE CORRECT SAFETY PROCEDURES.

This section provides information necessary for the comprehension of the operational command functions.

3.2 DESCRIPTION OF THE MACHINE

This lifting device is an electrical, self-propelled (LUI MINI S.K.) or push around (LUI MINI P.A.) vehicle and it is equipped with an aerial work platform, mounted on a strut elevation mechanism, actuated by a special single hydraulic cylinder with a synchronised effect.

The purpose of the personnel elevation machine is to allow access to areas above ground level, and the placing of loads, which will be placed on the load platform.

The main command panel is located on the platform.

From the platform command panel, the operator may drive the vehicle (only for LUI MINI S.K.) and lift up or lower the platform. The LUI MINI S.K. is equipped with an electrically actuated cargo lift area controlled by two easily accessed buttons located on the side of the machine, which allow the operator to raise and lower the cargo platform, which is reserved only for objects and materials, without leaving his or her position.

The LUI MINI P.A. is equipped with a manually actuated cargo lift area controlled by an easily lever located underneath the cargo shelf, which allow the operator to raise and lower the cargo platform, which is reserved only for objects and materials.

The LUI MINI S.K. has two drive wheels in the rear and two castor wheel in front.

It is necessary to use the ground programmable command station panel when the machine is being turned on, when maintenance or functional verifications are performed or in case of emergency, if the operator on the platform is not capable of lowering it.

The LUI MINI P.A. has two free castor wheel in the rear and two self braking wheel in front. It is necessary to use the ground command station when the machine is being turned on, when maintenance or functional verifications are performed or in case of emergency, if the operator on the platform is not capable of lowering it.

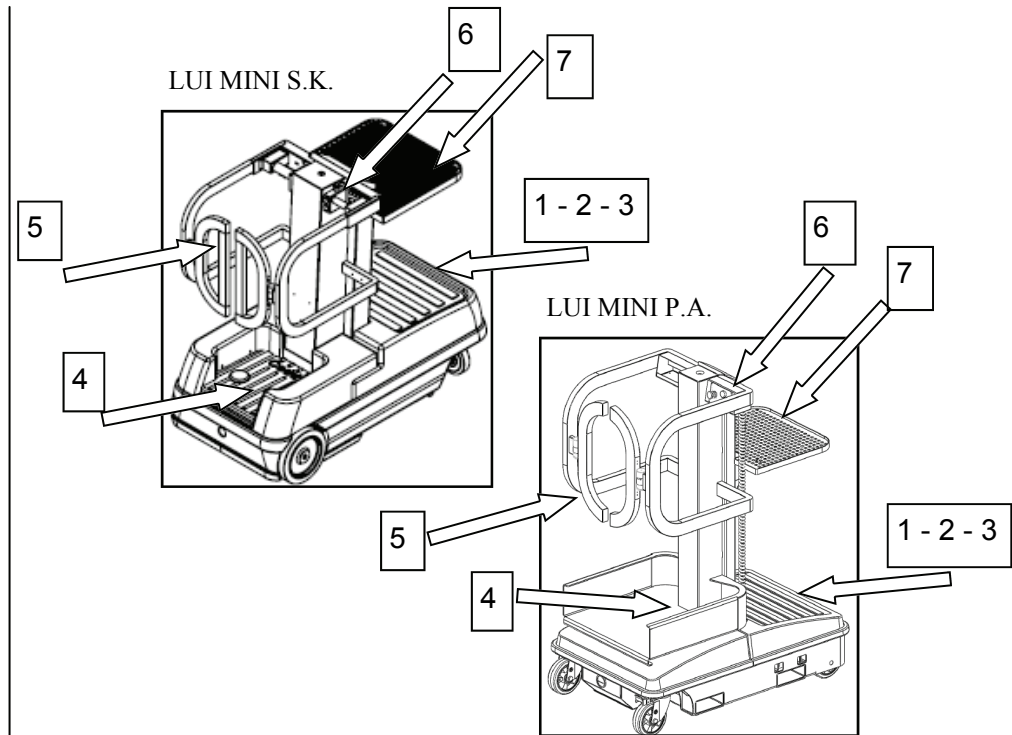
NEVER MANOEUVRE THE LUI MINI P.A. WITH A PERSON INSIDE THE BASKET

3.3 FUNCTION OF THE MACHINE

Preliminary Operations

Before activating the machine using the commands on the ground station panel or those on the platform, it is necessary to satisfy the following command conditions.

- Battery voltage must be sufficient for operation. The battery discharged alarm does not necessarily have to be present either on the ground command panel, or on the battery status indicator found on the side of the vehicle (only for LUI MINI S.K.).
- The main electrical power switch on the ground command station panel must be set either on the ground command mode or on the platform command mode.
- The emergency stop buttons, on the command panel of the platform and on the ground must be in RESET position (extended outward).
- For LUI MINI S.K.: the LCD screen on which the status of the machine may be visualised on the ground command station must indicate normal operational conditions upon turn-on of the machine.
- FOR LUI MINI S.K.: the machine operates, (it moves and lifts) only if the operator has his or her hand on the left or right sensor handle (depending on the model) and both heels pressing down on the foot switches on the platform. This safety position is to be maintained at all times during operation. (PICs. A1/A2 and B1 section 2.5)
- FOR LUI MINI P.A.: the machine raise and lower only if the operator has his or her foot pressing down on the footswitch on the platform. (PIC B2 section 2.5)



1. **Ground Command Station (Section 3.6)**
2. **Manual Platform descent valve (Section 3.8)**
3. **AC power supply for battery charger and charge status LED (Section 3.6)**
4. **Platform foot switch**
5. **Platform Entry Gate**
6. **Platform Command Panel (Section 3.7)**
7. **Materials handling compartment**

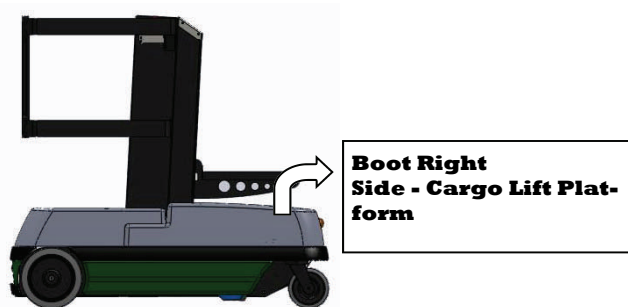
3.4 BOOT - (TRANSPORT PLATFORM)

Removal

1. Lift the boot in correspondence to the back part (column) so as to free the rubber bumper on the base frame. Therefore have the boot slide forward while lifting it to completely detach the boot from the vehicle.

Installation

1. Position the boot on its relative bumper on the upper part of the frame and have it slide backwards.



THE BOOT (TRANSPORT PLATFORM) MUST BE USED EXCLUSIVELY FOR CARGO MATERIALS. PREVENT TRANSIT OF PERSONNEL ON THE TRANSPORT PLATFORM BOOT.



3.5 BATTERY CHARGING

Battery low voltage alarm warning light

On the ISP-11 LUI MINI S.K. command panels on the platform and the ground station have indicators of low battery voltage.
ON ISP-7M LUI MINI P.A. frame section has the indicator of low battery voltage.

Battery charging procedure

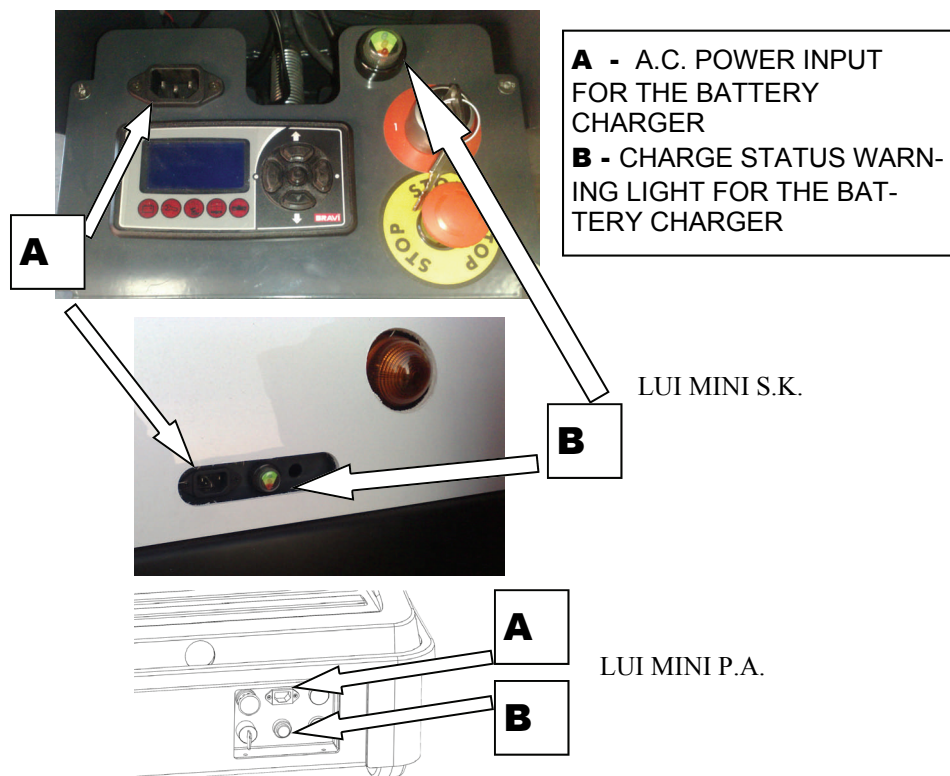
This machine is equipped with a battery charger with an AC electrical power input/DC electrical power output. The battery charger stops charging the batteries automatically when they have reached full charge.

NOTE: When the battery charger is connected to an AC electrical outlet, the platform vehicle transmission is disabled.

THE LEAD ACID BATTERIES MAY GENERATE EXPLOSIVE HYDROGEN GAS DURING NORMAL OPERATION. KEEP SPARKS, OPEN FLAMES OR LIT TOBACCO AT A SAFE DISTANCE FROM THE BATTERIES. DURING BATTERY CHARGING PROVIDE FOR ADEQUATE VENTILATION IN THE AREA. DO NOT CHARGE A FROZEN BATTERY. CAREFULLY STUDY THE PRECAUTIONS SPECIFIED BY THE BATTERY MANUFACTURER RELATIVE TO THE SPEED OF CHARGING RECOMMENDED AS WELL AS THE POSSIBILITY OF REMOVAL OF THE CELL CAPS DURING CHARGING.



1. Park the vehicle in a well ventilated area near an AC wall socket.
2. Always use a grounded (earthed) AC socket. Connect the battery charger to a correctly installed AC socket with ground connection according to all of the local regulations in force. The grounded socket is necessary so as to reduce the risk of electrical shocks - do not use grounded adapters and do not modify the plug. If an extension is used, avoid excessive drops in voltage by using the 3 wire 12 AWG type.



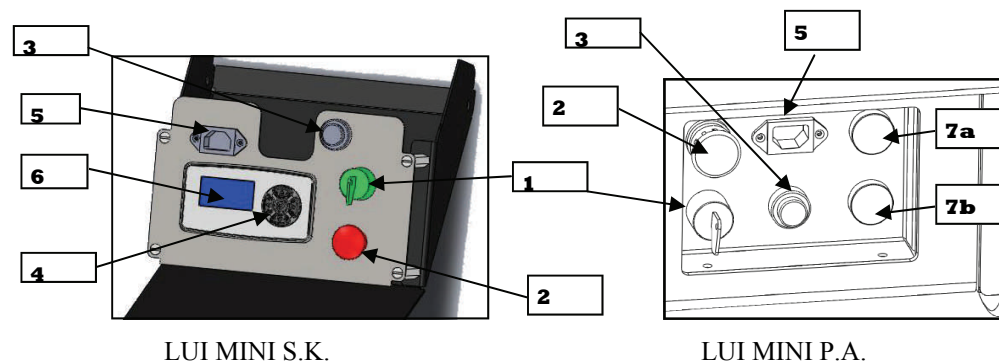
The charge status warning lights for the batteries are located near the AC power input on the battery charger, on the ground command panel.

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

2. When the 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.)

NOTE: When green LED is on the battery charger is switched off automatically

3.6 GROUND COMMAND PANEL

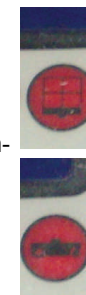


For LUI MINI S.K. the panel is found under the cover, in an extractable fold-away drawer, and is made up of the following components;
 For LUI MINI P.A. the panel is in the front of the chassis, with their relative functions:

1. Key selector platform/switch off/ground
2. Emergency stop/switch off button
3. Battery charger - charge in progress indicator
4. Multifunction Button Group
5. Battery Charger plug
6. LCD Machine screen for display of the machine Status
7. Up(7a) and down(7b) lifting push buttons basket
8. Battery gauge

Key selector platform/switch off/ground

- **Central Position "ZERO":**
Rotate into this position to turn the machine off after use.
- **Position On Board Vehicle Command Mode "1":**
(Basket LED will light up only for LUI MINI S.K.). In this position, the machine may be actuated from the platform command panel station.
- **Position Ground Command Mode "2":**
(Chassis LED will light up only for LUI MINI S.K.). In this position, the machine may be actuated from the ground command panel station.



NOTE:

Automatic Machine Switch Off - Stand By Mode (**only for LUI MINI S.K.**)
 If during operation, no command function is activated for 5 minutes, (predefined programmable setting), the ground command module suspends power supply to the machine so as to save the battery charge. Turn on the machine again by way of key selector for power supply or the emergency stop/switch off switch on the platform command unit or the ground command panel station.

Emergency stop/switch off button

Pushed immediately stops all the operational phases of the machine.
 Reset **DOES NOT** actuate the machine, but enable the command devices.

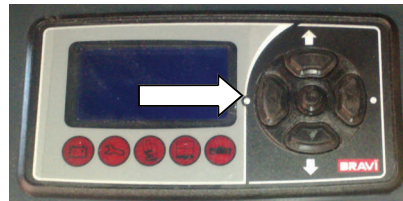
Display(for LUI MINI S.K.)

This is the principle control display system on LUI MINI S.K..

- It visualises useful information on the status of the system and
- It gives diagnostic information on eventual anomalies or faults in the system.

Multifunction Button Group:

This button group is made up of one round central button and four other buttons placed around the round button. All of the buttons are enabled only when the keyed selector switch is turned to the **Ground Command mode**.



- **The central round button is used for the programming of the electronic data card and MUST BE used only by a specialised BRAVI technician.**
- Pushing and holding down the **upper button**, the raising of the basket is actuated. RELEASE TO INTERRUPT THE ELEVATION OF THE BASKET.

- Pushing and holding down **the lower button**, the lowering of the basket is actuated.
RELEASE TO STOP THE DESCENT OF THE BASKET.
- Pushing both buttons, left and right ,
SIMULTANEOUSLY activates **the release of the brakes**.

The brakes may be released when there is the need to manually move the platform by pushing it.

For the manual release of the brakes, it is necessary that the machine is **TURNED ON GROUND COMMAND MODE** and the **basket is completely lowered**.

NOTE: if the battery charge becomes completely depleted in the machine, it is not possible to manually release the brakes.

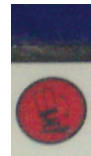
**ATTENTION**

RELEASE THE BRAKES MANUALLY ONLY IF THE MACHINE IS ON A HORIZONTAL SURFACE AND IT IS COMPLETELY LOCKED.

The operator **MUST** make sure that in the hazard zone, there are no persons exposed or obstacles.

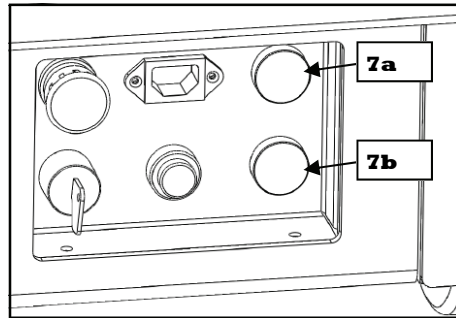
Slope Alarm

The LCD screen of the ground command station flashes a malfunction code and emits an acoustic signal. The LEDs on the platform command panel also flash during the slope alarm notification.

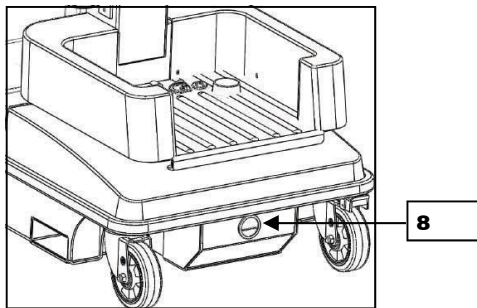
**WARNING**

THE GROUND COMMAND STATION INCLUDES A SLOPE ALARM . IF THIS ALARM IS ACTIVATED, IT IS NOT POSSIBLE TO ELEVATE THE PLATFORM. IN ADDITION, IF THE SLOPE ALARM IS ACTIVATED WHILE THE PLATFORM IS ELEVATED, THE TRANSMISSION AND LIFTING FUNCTIONS ARE DISABLED UNTIL SUCH A TIME AS THE PLATFORM IS COMPLETELY LOWERED AND THE SLOPE CONDITIONS HAVE BEEN ELIMINATED.

Display(for LUI MINI P.A.)



7a Pushing and holding down **the upper button**, the raising of the basket is actuated.
RELEASE TO STOP THE RAISING OF THE BASKET.
7b Pushing and holding down **the lower button**, the lowering of the basket is actuated.
RELEASE TO STOP THE DESCENT OF THE BASKET.

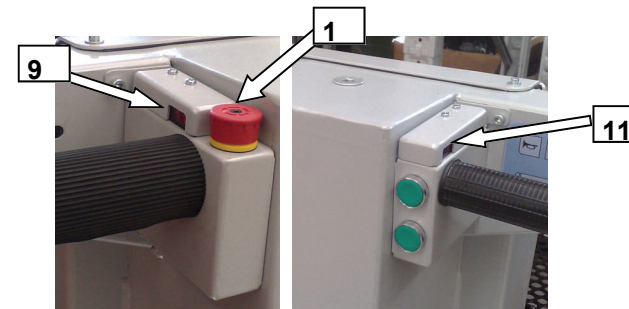
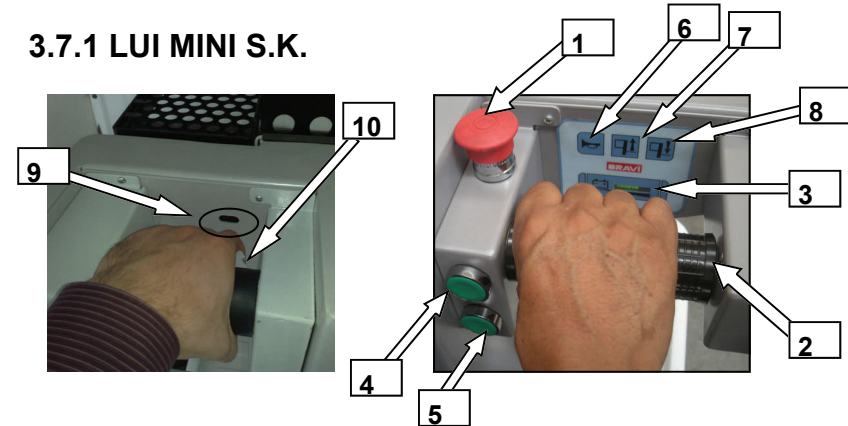


Battery gauge (for LUI MINI P.A.)

It shows the battery charge status. When red LED is on the raising of the basket is not allowed and the battery need to be charged.
NOTE:SWITCHING OFF THE MACHINE WHEN NOT IN USE WOULD INCREASE THE BATTERY LIFE

3.7 PLATFORM COMMAND CONSOLE OPERATION

3.7.1 LUI MINI S.K.



1. Emergency stop/switch off button
2. Accelerator Forward Drive/Reverse Drive
3. Battery Gauge
4. Raise Platform Button
5. Lower Platform Button
6. Horn Button
7. Raise Cargo Platform Button
8. Lower Cargo Platform Button
9. Left hand Dead Man Switch
10. Right/Left Tiller Switch
11. Right hand Dead Man Switch

General Information

NOTE: STAND BY MODE - If during operation, no command function is activated for 5 minutes, (predefined programmable setting), the ground command module suspends power supply to the machine so as to save the battery charge. Turn on the machine again by way of the key switch for power supply selection or the emergency stop/switch off switch on the platform command unit or the ground command panel station.

Before activating the machine by way of the commands on the ground or those on the platform, it is necessary to satisfy the following command conditions.

- Ground Command Station - The key switch must be set to the PLAT-FORM COMMAND MODE.
- Ground Command Station - The emergency stop/switch off button must be in RESET position (POWER SUPPLY CONNECTED).

Platform Emergency stop/switch off button

Pushed immediately stops all the operational phases of the machine. Reset **DOES NOT** actuate the machine, but enable the command devices

NOTE:

For manoeuvring the machine it is necessary that the emergency stop/switch off buttons on the ground command station and on the platform need to be turned to the RESET position.

Left or Left/Right Hand Dead Man Switch

The left or Left and Right hand must be placed on the handle, in front of the switch, to allow the activation of the running/raise/lower functions of the machine.

NOTE: Remember to activate, besides the left or left/right hand sensor, also both the foot switches, so as to enable all the machine functions: running/raising /lowering.

Accelerator Forward Drive/Reverse Drive

Grasp the handle in the right hand and



ROTATE it FORWARD (back of the hand in the direction opposite to the operator) to activate the movement of the vehicle in FORWARD GEAR. The release of the handle AUTOMATICALLY stops the Machine



ROTATE the handle backwards (back of the hand in direction of the operator) to activate the movement of the vehicle in REVERSE GEAR.

The release of the handle AUTOMATICALLY stops the machine.



ATTENTION

Operation of the platform is exclusively limited to personnel who have been previously trained and authorised and who have thoroughly read and understand the safety indications of this manual.

WHEN THE PLATFORM IS RAISED, DRIVE ONLY ON A SMOOTH, SOLID AND HORIZONTAL SURFACE that is clean, free of holes and of a suitable consistency, able to support the weight of the machine and the weight of what the vehicle can transport. (See Section 5 Machine Technical Specifications)

Raise/Lower Cargo Platform Button

The cargo material compartment has been designed for a maximum load of 90 kg (199 lb). It may be rapidly raised or lowered vertically on the front part of the elevator group using the relative buttons on the machine.

Push and hold down the upper button (Button 7 section 3.7) to activate the electrical lifting of the cargo platform. Release of the button automatically stops its movement.

Push and hold down the lower button (Button 8 section 3.7) to activate the lowering of the cargo platform. Release of the button automatically stops its movement.

Acoustic Signal Device Button

When the machine is turned on, the pressure on this button determines the activation of the acoustic signal device.



Platform Raising and Lowering Buttons

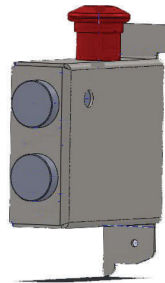


ATTENTION

The operator must not for any reason climb up on top of the basket railings, nor place ladders or other things there, in order to achieve greater heights at which to work. In addition, he or she must never lean out or extend him/herself outside of the railing of the platform basket.

Before activating the machine, verify that:

- the platform is positioned on a clean pavement, free of holes, levelled, of an adequate consistency,
- where there are no aerial obstacles in the zone where work is to be done



Push and hold down the lift button (Button 4 section 3.7) to activate the electrical lifting of the basket platform. Release of the button automatically stops its movement.

Push and hold down the lowering button (Button 5 section 3.7) to activate the lowering of the basket platform. Release of the button automatically stops its movement.

Right/Left Transmission Selector

NOTE: Use the tiller selector left/right, to actuate the drive in the direction desired, activated by the Accelerator Forward/Reverse gear handle (Component No. 2 section 3.7). **In the double sensor model the turning of the machine on its axis is allowed only using the tiller selector left/right**



The tiller has been designed to be easily activated with the left hand.

Push the tiller left toward the right or the left or the right and hold it in this position as long as one desires that the direction chosen be maintained.

Remember to activate both of the foot switches that activate the platform functions and the left or left/right hand sensor to actuate the raising/lowering/driving functions.

1. Push and hold the selector toward the **Right**, to activate the direction to the right. Release the selector if only backwards and forwards movement is desired.
 - a. Activating the transmission accelerator handle in **FORWARD GEAR**, the machine will move forward, turning to the right (the front of the vehicle toward the right of the operator)
 - b. Activating the transmission accelerator handle in **REVERSE GEAR**, the machine will move backward, turning to the right (the front of the vehicle toward the left shoulder of the operator). In the double sensor model the machine will move backward, turning to the right (the front of the vehicle toward the right of the operator)

2. Push and hold the selector toward the **Left**, to activate the direction to the left. Release the selector if only backwards and forwards movement is desired. .
 - a. Activating the transmission accelerator handle in **FORWARD GEAR** , the machine will move forward, turning to the right (the front of the vehicle toward the right of the operator)
 - b. Activating the transmission accelerator handle in **REVERSE GEAR** , the machine will move backward, turning to the right (the front of the vehicle toward the left shoulder of the operator)

NOTE: THE RIGHT/LEFT TILLER AND THE ACCELERATOR HANDLE MUST BE ACTIVATED AT THE SAME TIME IN ORDER FOR THE VEHICLE TO MOVE IN THE DIRECTION SELECTED. FOR THE MOVEMENT OF THE MACHINE FORWARD/ BACKWARD IN A STRAIGHT LINE, POSITION THE VEHICLE IN THE DIRECTION DESIRED AND MOVE BACKWARDS OR FORWARDS ONLY ACTIVATING THE ACCELERATOR HANDLE. IN THE DOUBLE HAND SENSOR MODEL THE TURNING ON ITS AXIS IS ALLOWED ONLY USING THE RIGHT/LEFT TILLER

PEDAL SWITCHES FOR THE ACTIVATION OF PLATFORM FUNCTIONS

NOTE:

DO NOT PLACE THE FOOT ON THE PEDAL ACTIVATION SWITCH DURING THE START UP OF THE VEHICLE.

ACTIVATION OF COMMANDS DIFFERENT FROM THE KEY SWITCH TURN ON / TURN OFF OR THE RESET OF THE EMERGENCY STOP/ SWITCH OFF SWITCHES DURING THE START UP OF THE VEHICLE WILL CAUSE THE DISPLAY OF AN ERROR.

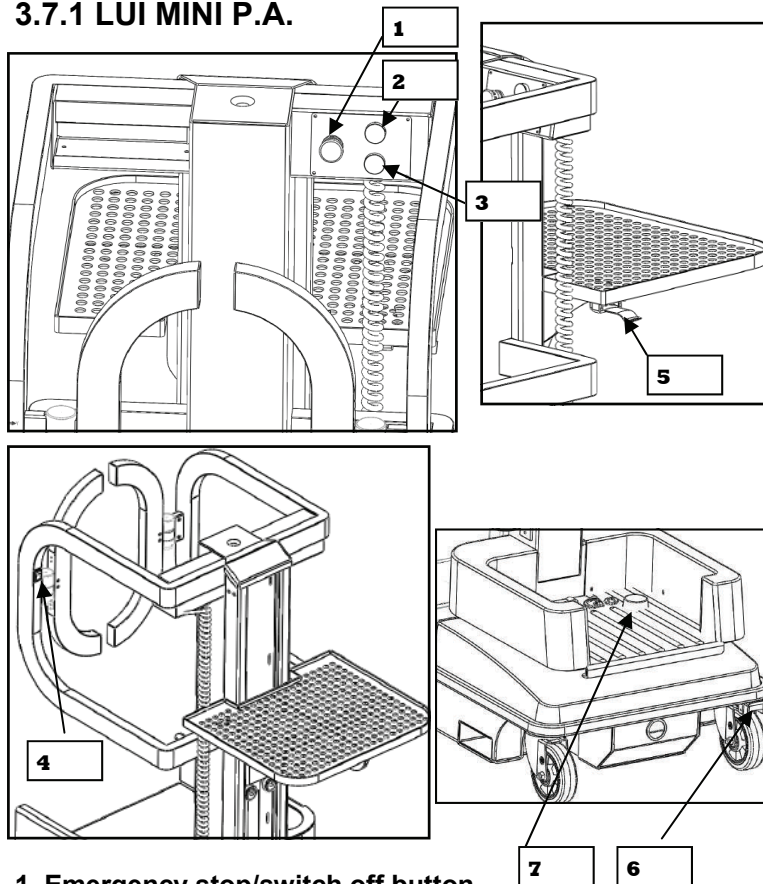


On the personnel platform two contact floor pedal switches, activated with the heels, which guarantee the stable positioning of the operator without limiting his or her comfort.

Removing one foot from one of the two switches, all of the functions of the machine, raising, lowering and running, are disabled immediately.

NOTE: Remember to activate, besides both of the pedal switches also the left or left/right hand sensor, (Section 3.7), so as to enable all of the machine functions: running/raising /lowering.

3.7.1 LUI MINI P.A.



1. Emergency stop/switch off button
2. Raise Platform Button
3. Lower Platform Button
4. Auto braking on fixed castor release button
5. Raise and lower Cargo Platform Lever
6. Pedal lever
7. Footswitch

Platform Emergency stop/switch off button

Pushed, immediately stops all the phases of the machine.
Reset **DOES NOT** actuate the machine, but enable the command devices

NOTE:

In order to move the machine is necessary that the emergency stop/switch off buttons on the ground command station and on the platform need to be turned to the RESET position.

Platform Raising and Lowering Buttons



ATTENTION

The operator must not for any reason climb up on top of the basket railings, nor place ladders or other things there in order to achieve greater heights at which to work. In addition, he or she must never lean out or extend him/her self outside of the railing of the platform basket.

Before activating the machine, verify that:

- the platform is positioned on a clean floor, free of holes, levelled, of an adequate consistency,
- where there are no aerial obstacles in the zone where work is to be done

Push and hold down the footswitch 7 as operator enable and then the lift button 2 to activate the electrical lifting of the cage platform. Release of the button or footswitch automatically stops its movement.

Push and hold down the footswitch 7 as operator enable and then the lift button 3 to activate the electrical lifting of the cage platform. Release of the button or footswitch automatically stops its movement.

Auto Braking on Fixed Castor Release Button

Push and hold the button 4 to release the auto braking on fixed castor since the desired position of the LUI MINI P.A. has been reached.

Release of the button immediately engage the auto braking on fixed castor system.

NOTE:

The function of the auto braking on fixed castor release button is available only when the key selector is switched on board vehicle command mode “1” and the basket is completely lowered.

Raise/Lower Cargo Platform Lever

The cargo material compartment has been designed for a maximum load of 90 kg (199 lb). It may be rapidly raised or lowered vertically on the front part of the elevator group using the relative lever underneath the cargo shelf

Push and hold the lever 5 and lift up with both hands the cargo shelf for raise the cargo platform. Release of the lever automatically stops its movement.

Push and hold the lever 5 and lift down with both hands the cargo shelf for lower the cargo platform. Release of the lever automatically stops its movement.

Pedal Lever

Use this lever in order to push the machine only on a straight line

Slope Alarm

THE LUI MINI P.A. INCLUDES A SLOPE ALARM . IF THIS ALARM IS ACTIVATED AN ACOUSTIC SIGNAL IS EMITTED AND IT IS NOT POSSIBLE TO ELEVATE THE PLATFORM. THE RAISING OF THE BASKET IS NOT ALLOWED UNTIL SUCH A TIME AS THE PLATFORM CAN BE COMPLETELY LOWERED AND THE SLOPE CONDITIONS HAVE BEEN ELIMINATED.

3.8 MANUAL PLATFORM DESCENT COMMAND VALVE



ATTENTION

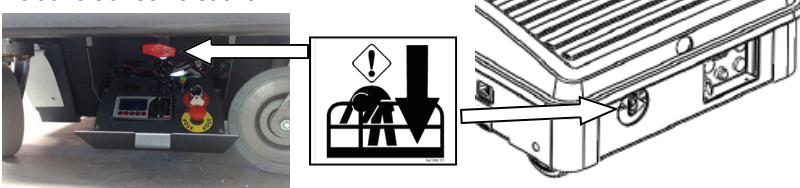
CRUSHING HAZARD

During the following operations and after having performed all of the procedures for the emergency descent, the operator must pay great attention to leaving the area and making sure that no other person, animal or thing is within range or may come into range of the movement for a distance of at least 6.56 ft (2 metres) and above all that there are no other obstacles on top of the plastic cover (and the space that is specifically for the reception of the basket in its descent phase.)



The manual platform descent lever allows the personnel on the ground to lower the platform in the event that the operator of the same is unable to do so after it has been elevated.

In the fold away compartment found below the boot, where the control panel is found, there is an emergency lever, indicated by its relative adhesive sticker.



LUI MINI S.K.

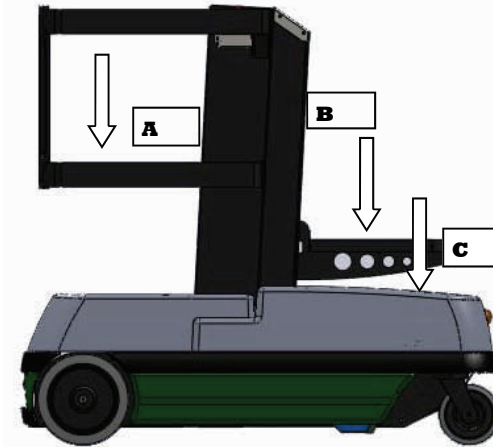
LUI MINI P.A.

In the event that one wanted to or needed to lower the platform manually it is sufficient to pull the lever. In this manner the basket will begin to descend very slowly.

RELEASE the lever to stop the descent of the platform.

3.9 PLATFORM CONFIGURATION

Platform Maximum Load Capacity



A - LOAD OPERATOR BAY CAPACITY	286.6 lb / 130 kg
B - TRANSPORT HOOD TRAY CAPACITY	198.4 lb / 90 kg
C - MATERIAL TRAY CAPACITY	
for LUI MINI S.K.:	249.12 lb / 113 kg
for LUI MINI P.A.:	198.4 lb / 90 kg

3.10 PARKING THE VEHICLE

- Drive the vehicle to a well sheltered and ventilated area.
- Make sure that the platform is completely lowered and rotate the main selector power switch in the OFF position.
- If necessary, remove the key from the platform to avoid that unauthorised persons use the vehicle.

NOTE: If necessary charge the batteries in preparation for the following day's work (See Section 3.5)

3.11 TRANSPORT PROCEDURES HOISTING AND TIE DOWN

General Information

The BRAVI elevator device may be transported to the workplace with one of the methods described below:

- Driving the vehicle and completing the journey on the base wheels, the surface to be travelled permitting.
- Moving it with a fork lift truck, positioning the forks in the places indicated, found in the base of the frame.

Transport on a fork lift truck

Position the forks of the truck in the points indicated on the vehicle. This allows the machine to be transported to the work area or to lift it to an upper level by way of a standard fork lift.

NOTE:

The fork lift truck must be capable of sustaining the gross weight of the machine. See the operational technical specifications of the machine, at the beginning of the section.

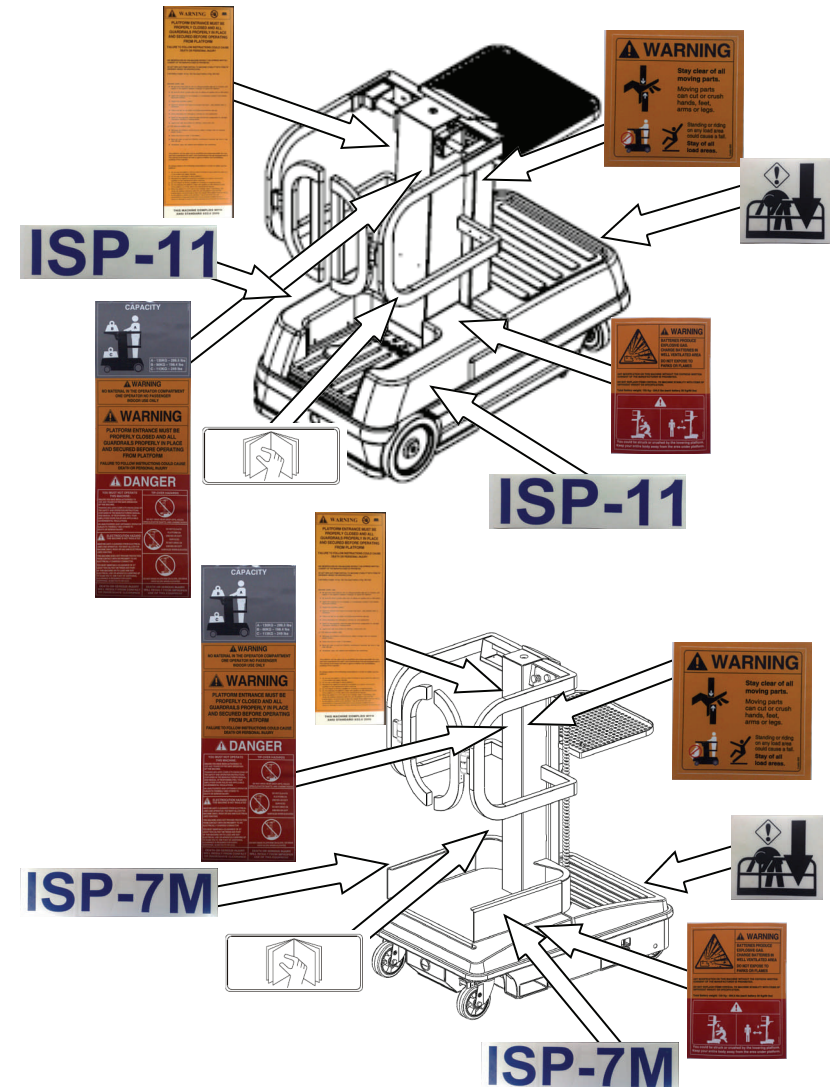
Transport vehicle - tie down strapping

With the machine turned off on the transport vehicle in position for tie down (*brakes set*), follow the directions indicated for tying it down during transport.

IF EXCESSIVE FORCE IS EXERTED WHEN TYING DOWN THE VEHICLE (LOAD ON THE WHEELS) COMPONENTS OF THE REAR DRIVE WHEELS OR OF THE FRONT ORIENTATION WHEEL ASSEMBLIES MAY BE DAMAGED.

Tie the machine down onto the transport vehicle with suitable strapping, having them run through the railings of the basket and avoiding the entry gate doors.

3.12 ADHESIVE STICKER POSITIONS



SECTION 4. EMERGENCY PROCEDURES

4.1 GENERAL INFORMATION

4.2 EMERGENCY FUNCTIONS

Operator not capable of controlling the machine

CONDITION IN WHICH THE OPERATOR OF THE PLATFORM IS IMMOBILISED, TRAPPED OR UNABLE TO ACTIVATE OR CONTROL THE MACHINE.

1. Other personnel must actuate the machine from the ground command panel only in the event of necessity.
2. The platform commands may be utilised only by qualified personnel present on the platform itself.
STOP WORK WITH THE MACHINE IF THE COMMAND CONTROLS DO NOT FUNCTION PROPERLY.
3. The recovery equipment may be used to have the occupant of the platform descend from it. It is possible to use cranes or fork lift trucks to stabilise the movement of the machine.

Platform locked in elevated position

If the platform locks up or is stuck in elevated structures or equipment, transfer the people aboard into a safe location before moving the machine.

SECTION 5. GENERAL TECHNICAL SPECIFICATIONS AND OPERATOR MAINTENANCE

5.1 INTRODUCTION

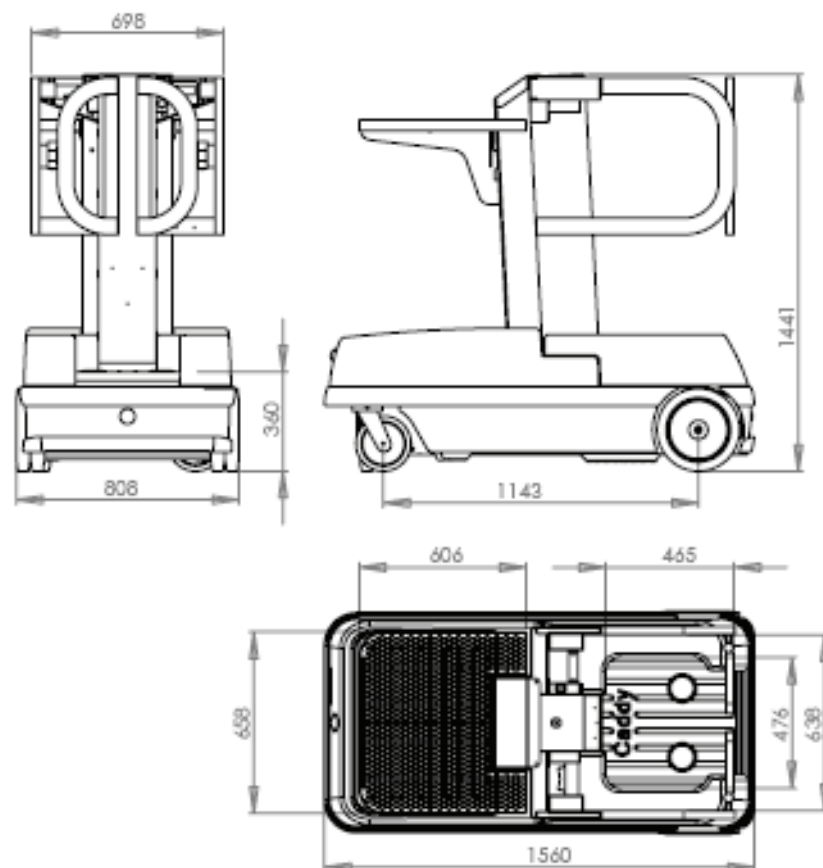
This section of the manual provides further information necessary for the operator so that he or she may tend to the proper operation of the machine and relative maintenance.

Maintenance operations and procedures must be performed by qualified personnel:

- Who have read and perfectly understood the safety indications in the front of this manual (See PART 2)
- Who possess personal safety equipment and use it as needed.
- and with the machine at a zero energy condition.

Any procedure not found below is to be considered extraordinary maintenance. Repairs, modifications and extraordinary maintenance may not be performed without previous consultation with the manufacturer, who according to the case, will provide written authorisation to proceed or will suggest the involvement of one of its own service technicians. These precautions are due to the fact that faulty or incorrect procedures may cause anomalous operational conditions, damage for the platform and risks for personnel. All responsibility, as pertains to such operations, is therefore declined. Before putting the machine back into service, check and verify the entire system in accordance with the start up procedures. Lack of observance of these precautions may cause harm to persons and damage to the machine.

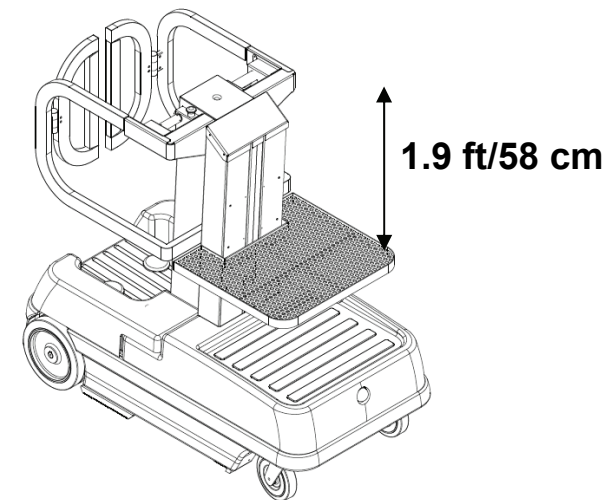
In this section, the part relative to maintenance contains information aimed at assisting the machine operator only in the performance of daily maintenance procedures. Therefore, this part does not substitute the more in depth preventative maintenance and inspection program contained in the maintenance and procedure manual reserved exclusively for specialised technicians.



REV. DATA/EAS										MODIFICAZIONE/DESCRIPTION										DESIGNER/DESIGNER										APPROVED BY/ APPROVED									
Dimensioni in millimetri/Dimensions										Dimensioni in pollici/Dimensions										Dimensioni in pollici/Dimensions										Dimensioni in pollici/Dimensions									
mm 30 60 90 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 660 690 720 750 780 810 840 870 900 930 960 990 1020 1050 1080 1110 1140 1170 1200 1230 1260 1290 1320 1350 1380 1410 1440 1470 1500 1530 1560 1590 1620 1650 1680 1710 1740 1770 1800 1830 1860 1890 1920 1950 1980 2010 2040 2070 2100 2130 2160 2190 2220 2250 2280 2310 2340 2370 2400 2430 2460 2490 2520 2550 2580 2610 2640 2670 2700 2730 2760 2790 2820 2850 2880 2910 2940 2970 3000 3030 3060 3090 3120 3150 3180 3210 3240 3270 3300 3330 3360 3390 3420 3450 3480 3510 3540 3570 3600 3630 3660 3690 3720 3750 3780 3810 3840 3870 3900 3930 3960 3990 4020 4050 4080 4110 4140 4170 4200 4230 4260 4290 4320 4350 4380 4410 4440 4470 4500 4530 4560 4590 4620 4650 4680 4710 4740 4770 4800 4830 4860 4890 4920 4950 4980 5010 5040 5070 5100 5130 5160 5190 5220 5250 5280 5310 5340 5370 5400 5430 5460 5490 5520 5550 5580 5610 5640 5670 5700 5730 5760 5790 5820 5850 5880 5910 5940 5970 6000 6030 6060 6090 6120 6150 6180 6210 6240 6270 6300 6330 6360 6390 6420 6450 6480 6510 6540 6570 6600 6630 6660 6690 6720 6750 6780 6810 6840 6870 6900 6930 6960 6990 7020 7050 7080 7110 7140 7170 7200 7230 7260 7290 7320 7350 7380 7410 7440 7470 7500 7530 7560 7590 7620 7650 7680 7710 7740 7770 7800 7830 7860 7890 7920 7950 7980 8010 8040 8070 8100 8130 8160 8190 8220 8250 8280 8310 8340 8370 8400 8430 8460 8490 8520 8550 8580 8610 8640 8670 8700 8730 8760 8790 8820 8850 8880 8910 8940 8970 9000 9030 9060 9090 9120 9150 9180 9210 9240 9270 9300 9330 9360 9390 9420 9450 9480 9510 9540 9570 9600 9630 9660 9690 9720 9750 9780 9810 9840 9870 9900 9930 9960 9990 10020 10050 10080 10110 10140 10170 10200 10230 10260 10290 10320 10350 10380 10410 10440 10470 10500 10530 10560 10590 10620 10650 10680 10710 10740 10770 10800 10830 10860 10890 10920 10950 10980 11010 11040 11070 11100 11130 11160 11190 11220 11250 11280 11310 11340 11370 11400 11430 11460 11490 11520 11550 11580 11610 11640 11670 11700 11730 11760 11790 11820 11850 11880 11910 11940 11970 12000 12030 12060 12090 12120 12150 12180 12210 12240 12270 12300 12330 12360 12390 12420 12450 12480 12510 12540 12570 12600 12630 12660 12690 12720 12750 12780 12810 12840 12870 12900 12930 12960 12990 13020 13050 13080 13110 13140 13170 13200 13230 13260 13290 13320 13350 13380 13410 13440 13470 13500 13530 13560 13590 13620 13650 13680 13710 13740 13770 13800 13830 13860 13890 13920 13950 13980 14010 14040 14070 14100 14130 14160 14190 14220 14250 14280 14310 14340 14370 14400 14430 14460 14490 14520 14550 14580 14610 14640 14670 14700 14730 14760 14790 14820 14850 14880 14910 14940 14970 15000 15030 15060 15090 15120 15150 15180 15210 15240 15270 15300 15330 15360 15390 15420 15450 15480 15510 15540 15570 15600 15630 15660 15690 15720 15750 15780 15810 15840 15870 15900 15930 15960 15990 16020 16050 16080 16110 16140 16170 16200 16230 16260 16290 16320 16350 16380 16410 16440 16470 16500 16530 16560 16590 16620 16650 16680 16710 16740 16770 16800 16830 16860 16890 16920 16950 16980 17010 17040 17070 17100 17130 17160 17190 17220 17250 17280 17310 17340 17370 17400 17430 17460 17490 17520 17550 17580 17610 17640 17670 17700 17730 17760 17790 17820 17850 17880 17910 17940 17970 18000 18030 18060 18090 18120 18150 18180 18210 18240 18270 18300 18330 18360 18390 18420 18450 18480 18510 18540 18570 18600 18630 18660 18690 18720 18750 18780 18810 18840 18870 18900 18930 18960 18990 19020 19050 19080 19110 19140 19170 19200 19230 19260 19290 19320 19350 19380 19410 19440 19470 19500 19530 19560 19590 19620 19650 19680 19710 19740 19770 19800 19830 19860 19890 19920 19950 19980 20010 20040 20070 20100 20130 20160 20190 20220 20250 20280 20310 20340 20370 20400 20430 20460 20490 20520 20550 20580 20610 20640 20670 20700 20730 20760 20790 20820 20850 20880 20910 20940 20970 21000 21030 21060 21090 21120 21150 21180 21210 21240 21270 21300 21330 21360 21390 21420 21450 21480 21510 21540 21570 21600 21630 21660 21690 21720 21750 21780 21810 21840 21870 21900 21930 21960 21990 22020 22050 22080 22110 22140 22170 22200 22230 22260 22290 22320 22350 22380 22410 22440 22470 22500 22530 22560 22590 22620 22650 22680 22710 22740 22770 22800 22830 22860 22890 22920 22950 22980 23010 23040 23070 23100 23130 23160 23190 23220 23250 23280 23310 23340 23370 23400 23430 23460 23490 23520 23550 23580 23610 23640 23670 23700 23730 23760 23790 23820 23850 23880 23910 23940 23970 24000 24030 24060 24090 24120 24150 24180 24210 24240 24270 24300 24330 24360 24390 24420 24450 24480 24510 24540 24570 24600 24630 24660 24690 24720 24750 24780 24810 24840 24870 24900 24930 24960 24990 25020 25050 25080 25110 25140 25170 25200 25230 25260 25290 25320 25350 25380 25410 25440 25470 25500 25530 25560 25590 25620 25650 25680 25710 25740 25770 25800 25830 25860 25890 25920 25950 25980 26010 26040 26070 26100 26130 26160 26190 26220 26250 26280 26310 26340 26370 26400 26430 26460 26490 26520 26550 26580 26610 26640 26670 26700 26730 26760 26790 26820 26850 26880 26910 26940 26970 27000 27030 27060 27090 27120 27150 27180 27210 27240 27270 27300 27330 27360 27390 27420 27450 27480 27510 27540 27570 27600 27630 27660 27690 27720 27750 27780 27810 27840 27870 27900 27930 27960 27990 28020 28050 28080 28110 28140 28170 28200 28230 28260 28290 28320 28350 28380 28410 28440 28470 28500 28530 28560 28590 28620 28650 28680 28710 28740 28770 28800 28830 28860 28890 28920 28950 28980 29010 29040 29070 29100 29130 29160 29190 29220 29250 29280 29310 29340 29370 29400 29430 29460 29490 29520 29550 29580 29610 29640 29670 29700 29730 29760 29790 29820 29850 29880 29910 29940 29970 30000 30030 30060 30090 30120 30150 30180 30210 30240 30270 30300 30330 30360 30390 30420 30450 30480 30510 30540 30570 30600 30630 30660 30690 30720 30750 30780 30810 30840 30870 30900 30930 30960 30990 31020 31050 31080 31110 31140 31170 31200 31230 31260 31290 31320 31350 31380 31410 31440 31470 31500 31530 31560 31590 31620 31650 31680 31710 31740 31770 31800 31830 31860 31890 31920 31950 31980 32010 32040 32070 32100 32130 32160 32190 32220 32250 32280 32310 32340 32370 32400 32430 32460 32490 32520 32550 32580 32610 32640 32670 32700 32730 32760 32790 32820 32850 32880 32910 32940 32970 33000 33030 33060 33090 33120 33150 33180 33210 33240 33270 33300 33330 33360 33390 33420 33450 33480 33510 33540 33570 33600 33630 33660 33690 33720 33750 33780 33810 33840 33870 33900 33930 33960 33990 34020 34050 34080 34110 34140 34170 34200 34230 34260 34290 34320 34350 34380 34410 34440 34470 34500 34530 34560 34590 34620 34650 34680 34710 34740 34770 34800 34830 34860 34890 34920 34950 34980 35010 35040 35070 35100 35130 35160 35190 35220 35250 35280 35310 35340 35370 35400 35430 35460 35490 35520 35550 35580 35610 35640 35670 35700 35730 35760 35790 35820 35850 35880 35910 35940 35970 36000 36030 36060 36090 36120 36150 36180 36210 36240 36270 36300 36330 36360 36390 36420 36450 36480 36510 36540 36570 36600 36630 36660 36690 36720 36750 36780 36810 36840 36870 36900 36930 36960 36990 37020 37050 37080 37110 37140 37170 37200 37230 37260 37290 37320 37350 37380 37410 37440 37470 37500 37530 37560 37590 37620 37650 37680 37710 37740 37770 37800 37830 37860 37890 37920 37950 37980 38010 38040 38070 38100 38130 38160 38190 38220 38250 38280 38310 38340 38370 38400 38430 38460 38490 38520 38550 38580 38610 38640 38670 38700 38730 38760 38790 38820 38850 38880 38910 38940 38970 39000 39030 39060 39090 39120 39150 39180 39210 39240 39270 39300 39330 39360 39390 39420 39450 39480 39510 39540 39570 39600 39630 39660 39690 39720 39750 39780 39810 39840 39870 39900 39930 39960 39990 40020 40050 40080 40110 40140 40170 40200 40230 40260 40290 40320 40350 40380 40410 40440 40470 40500 40530 40560 40590 40620 40650 40680 40710 40740 40770 40800 40830 40860 40890 40920 40950 40980 41010 41040 41070 41100 41130 41160 41190 41220 41250 41280 41310 41340 41370 41400 41430 41460 41490 41520 41550 41580 41610 41640 41670 41700 41730 41760 41790 41820 41850 41880 41910 41940 41970 42000 42030 42060 42090 42120 42150 42180 42210 42240 42270 42300 42330 42360 42390 42420 42450 42480 42510 42540 42570 42600 42630 42660 42690 42720 42750 42780 42810 42840 42870 42900 42930 42960 42990 43020 43050 43080 43110 43140 43170 43200 43230 43260 43290 43320 43350 43380 43410 43440 43470 43500 43530 43560 43590 43620 43650 43680 43710 43740 43770 43800 43830 43860 43890 43920 43950 43980 44010 44040 44070 44100 44130 44160 44190 44220 44250 44280 44310 44340 44370 44400 44430 44460 44490 44520 44550 44580 44610 44640 44670 44700 44730 44760 44790 44820 44850 44880 44910 44940 44970 45000 45030 45060 45090 45120 45150 45180 45210 45240 45270 45300 45330 45360 45390 45420 45450 45480 45510 45540 45570 45600 45630 45660 45690 45720 45750 45780 45810 45840 45870 45900 45930 45960 45990 46020 46050 46080 46110 46140 46170 46200 46230 46260 46290 46320 46350 46380 46410 46440 46470 46500 46530 46560 46590 46620 46650 46680 46710 46740 46770 46800 46830 46860 46890 46920 46950 46980 47010 47040 47070 47100 47130 47160 47190 47220 47250 47280 47310 47340 47370 47400 47430 47460 47490 47520 47550 47580 47610 47640 47670 47700 47730 47760 47790 47820 47850 47880 47910 47940 47970 48000 48030 48060 48090 48120 48150 48180 48210 48240 48270 48300 48330 48360 48390 48420 48450 48480 48510 48540 48570 48600 48630 48660 48690 48720 48750 48780 48810 48840 48870 48900 48930 48960 48990 49020 49050 49080 49110 49140 49170 49200 49230 49260 49290 49320 49350 49380 49410 49440 49470 49500 49530 49560 49590 49620 49650 49680 49710 49740 49770 49800 49830 49860 49890 49920 49950 49980 50010 50040 50070 50100 50130 50160 50190 50220 50250 50280 50310 50340 50370 50400 50430 50460 50490 50520 50550 50580 50610 50640 50670 50700 50730 50760 50790 50820 50850 50880 50910 50940 50970 51000 51030 51060 51090 51120 51150 51180 51210 51240 51270 51300 51330 51360 51390 51420 51450 51480 51510 51540 51570 51600 51630 51660 51690 51720 51750 51780 51810 51840 51870 51900 51930 51960 51990 52020 52050 52080 52110 52140 52170 52200 52230 52260 52290 52320 52350 52380 52410 52440 52470 52500 52530 52560 52590 52620 52650 52680 52710 52740 52770 52800 52830 52860 52890 52920 52950 52980 53010 53040 53070 53100 53130 53160 53190 53220 53250 53280 53310 53340 53370 53400 53430 53460 53490 53520 53550 53580 53610 53640 53670 53700 53730 53760 53790 53820 53850 53880 53910 53940 53970 54000 54030 54060 54090 54120 54150 54180 54210 54240 54270 54300 54330 54360 54390 54420 54450 54480 54510 54540 54570 54600 54630 54660 54690 54720 54750 54780 54810 54840 54870 54900 54930 54960 54990 55020 55050 55080 55110 55140 55170 55200 55230 55260 55290 55320 55350 55380 55410 55440 55470 55500 55530 55560 55590 55620 55650 55680 55710 55740 55770 55800 55830 55860 55890 55920 55950 55980 56010 56040 56070 56100 56130 56160 56190 56220 56250 56280 56310 56340 56370 56400 56430 56460 56490 56520 56550 56580 56610 56640 56670 56700 56730 56760 56790 56820 56850 56880 56910 56940 56970 57000 57030 57060 57090 57120 57150 57180 57210 57240 57270 57300 57330 57360 57390 57420 57450 57480 57510 57540 57570 57600 57630 57660 57690 57720 57750 57780 57810 57840 57870 57900 57930 57960 57990 58020 58050 58080 58110 58140 58170 58200 58230 58260 58290 58320 58350 58380 58410 58440 58470 58500 58530 58560 58590 58620 58650 58680 58710 58740 58770 58800 58830 58860 58890 58920 58950 58980 59010 59040 59070 59100 59130 59160 59190 59220 59250 59280 59310 59340 59370 59400 59430 59460 59490 59520 59550 59580 59610 59640 59670 59700 59730 59760 59790 59820 59850 59880 59910 59940 59970 60000 60030 60060 60090 60120 60150 60180 60210 60240 60270 60300 60330 60360 60390 60420 60450 60480 60510 60540 60570 60600 60630 60660 60690 60720 60750 60780 60810 60840 60870 60900 60930 60960 60990 61020 61050 61080 61110 61140 61170 61200 61230 61260 61290 61320 61350 61380 61410 61440 61470 61500 61530 61560 61590 61620 61650 61680 61710 61740 61770 61800 61830 61860 61890 61920 61950 61980 62010 62040 62070 62100 62130 62160 62190 62220 62250 62280 62310 62340 62370 62400 62430 62460 62490 62520 62550 62580 62610 62640 62670 62700 62730 62760 62790 62820 62850 62880 62910 6																																							

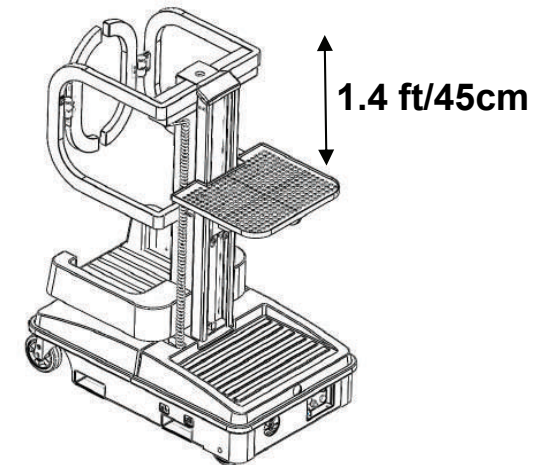
TECHNICAL SPECIFICATIONS LUI MINI S.K.	
Maximum speed	95 mt/min
Turning Radius (Internal)	ZERO
Maximum Slope Practicable (EXCLUSIVELY WITH PLATFORM COMPLETELY LOW-ERED)	35%
Platform Cycle Performance	Raising 18 sec
	Lowering 14 sec
Drive System	Two Hand Proportional
Tyres	Anti-Skid Solid Rubber
Electronic Slope Control	Standard
Load on Wheel	661 lb/300Kg
LOAD CAPACITIES	
LOAD CAPACITY OPERATOR COMPARTMENT	286.6 lb/130Kg
BOOT PLATFORM LOAD CAPACITY	249.13lb /113 Kg
CARGO ELEVATOR LOAD CAPACITY	198.4 lb/90 Kg
POWER SUPPLY	
Batteries	N 04, 6V 245Ah(20hr)
POWER SUPPLY	24 V c.c.
Recharge lines power supply	110 V AC 60Hz/220 V AC 50 Hz.
NOISE LEVELS	Less than 70 dB (A)

Operational height	17.55 ft/535 cm
Platform Height (Elevator Completely Extended)	10.99ft/335cm
Platform Height (Platform in Completely Lowered Rest Position)	4.72 ft/144cm
Machine Length (Total)	5.11 ft/156cm
Machine Width (Total)	2.65 ft/80.8 cm
Occupants: (persons permitted on the platform)	1
Platform Entry Height	1.19 ft/36 cm
Machine Gross Weight (Vehicle Empty)	1433 lb/660 kg



TECHNICAL SPECIFICATIONS LUI MINI P.A.	
Turning Radius (Internal)	ZERO
Platform Cycle Performance	Raising 18 sec
	Lowering 15 sec
Tyres	Anti-Skid polyurethane
Electronic Slope Control	Standard
Load on Wheel	462lb/210Kg
LOAD CAPACITIES	
LOAD CAPACITY OPERATOR COMPARTMENT	286.6 lb/130Kg
BOOT PLATFORM LOAD CAPACITY	198.4 lb/90 Kg
CARGO ELEVATOR LOAD CAPACITY	198.4 lb/90 Kg
POWER SUPPLY	
Batteries	N 01, 12V 85Ah@20hr
POWER SUPPLY	12 V c.c.
Recharge lines power supply	110 V AC 60Hz/220 V AC 50 Hz.
NOISE LEVELS	Less than 70 dB (A)

Operational height	13.6 ft/416 cm
Platform Height (Elevator Completely Extended)	7 ft/216cm
Platform Height (Platform in Completely Lowered Rest Position)	4.85 ft/148cm
Machine Length (Total)	3.77 ft/115cm
Machine Width (Total)	2.39 ft/73 cm
Occupants: (persons permitted on the platform; interior use only)	1
Platform Entry Height	1.19 ft/36 cm
Machine Gross Weight (Vehicle Empty)	617 lb/280 kg
INTERNAL USE ONLY	



5.2 Weight of the Machine Components

COMPONENT	WEIGHT
Batteries (LUI MINI S.K.)	66.13 lb each/30 kg 1pcs - 264.55 lb totale/120 kg totale
Batteries (LUI MINI P.A.)	46 lb /21 kg
Boot Removable (LUI MINI S.K.)	27.99 lb/12,70 kg
Boots Removable (LUI MINI P.A)	3.7 lb each/1,7 kg 1pcs 7.5 lb total /3,5 kg totale

Supplemental Information (ONLY FOR CE MACHINES)

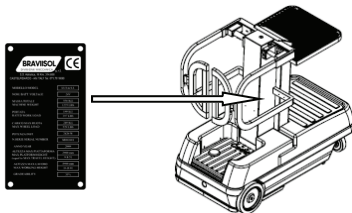
The following information is provided in accordance with the requirements of the European Machinery Directive 2006/42/EC and is only applicable to CE machines.

As specified in the above chart, the equivalent continuous A-Weighted sound pressure level at the work platform is less than 70dB(A).

The vibration total value to which the hand-arm system is subjected does not exceed 2,5m/s². The highest root mean square value of weighted acceleration to which the whole body is subjected does not exceed 0,5 m/s².

Location of the serial numbers

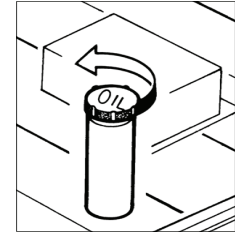
In order to identify it, the machine has a tag on which the serial number has been engraved. The tag is located on board the machine, on the right or left of the column.



5.3 MAINTENANCE TO BE PERFORMED BY THE OPERATOR

5.3.1 Hydraulic oil top up

The level of the hydraulic oil is to be checked **with the machine having the basket lowered**, from the sight glass found under the cover. If necessary, top up as follows:

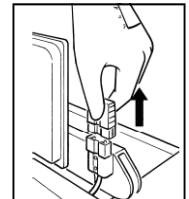


- Unscrew the hydraulic oil fill cap.
- Top up with a mineral oil with a viscosity index of 22 (for climactic conditions with very cold temperatures that is, below -20°C, the use of mineral oil with a lower freezing point, about -45°C, is recommended).
- Check and verify the oil level from the sight glass provided. If necessary top up again.
- Tighten down the filler cap well.



Attention - Pollution Hazard

Do not dispose the oil in the environment .



5.3.2 Battery Inspection and Maintenance Procedures

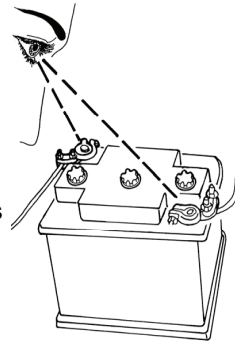
BEFORE PERFORMING ANY PROCEDURES ON THE BATTERIES, disconnect the red Battery/electrical system power plug.

Inspection Battery Terminals

If during the inspection of the battery terminal connectors on the machine, oxidation or grime build-up is found, proceed as follows:

- Disconnect the terminal connectors and clean them with a rag, wet with water. If the oxidation layer is particularly thick, brush off the top layer and clean them with a rag wet with water.

- Dry the terminal connectors well
- Put the connectors back in their place, paying close attention to the correct positive/negative pole connection, then tighten well.
- Coat the terminal connectors with a protective lubricant for electrical contacts (such as a lubricant with a Pharmaceutical Vaseline oil base).



Battery Water Inspection

The battery water level is to be performed every 4 working days or AFTER each and every battery recharge. It is possible to check the levels by lifting the cover.

The water level must always be at least 5 mm above the internal element plates. If necessary, top up the level with demineralised water.

Given that part of the water evaporates during recharging it is necessary to check the level again after 30 minutes of work.

Perform the job for 30 minutes, and then repeat the battery check and top up procedure until the proper level is achieved.

SECTION 6. INSPECTION AND REPAIR LOG

PRELIMINARY INSPECTIONS BEFORE START UP CHECK-LIST

MODEL _____

SERIAL NUMBER _____

YEAR OF MANUFACTURE _____

	Cleaning – Verify and check for any eventual leaks (oil, hydraulic fluid or battery acid) or for foreign objects on any of the surfaces.
	Signs and Adhesive Stickers Check and verify that all of these are clean and legible. Check that no sign or adhesive is missing. Make sure that any sign or adhesive that is not legible is cleaned or substituted.
	Use and safety manuals – make sure that in the weather resistant compartment all of the following manuals are present: Use and Safety Manual EMI Safety Manual (only for ANSI/CSA specifications) and the ANSI responsibility Manual (only for ANSI/CSA specifications).
	Battery – Charge as needed

DATE

INSPECTION PERFORMED BY

DAILY INSPECTION CHECK-LIST

MODEL _____

SERIAL NUMBER _____

YEAR OF MANUFACTURE _____

	Make sure that all of the manuals are in their weather resistant container on board the machine.
	Make sure that the tag with the serial number of the platform as well as all of the adhesive safety stickers are in their place, perfectly integral and legible.
	Inspect the machine in order to ascertain the absence of anomalies, faults, welding cracks or malfunctions or any damage or unauthorised changes to the machine, with respect to how it was delivered by the manufacturer.
	Check and verify the basket, the platform railings, check that the entry gate functions properly and that it closes completely and automatically.
	Check the water level in the batteries and make sure that there are no leaks. The cables must be correctly connected to the terminals. There must not be any corrosion on them.
	Check and verify by testing that all of the safety and personal protection devices function properly.
	Check and verify that the tires show no damage, abrasions or deep cuts. Check and verify that there are no debris attached to or around the tires and wheels.
	Visually inspect the hydraulic, electrical and mechanical components. For each component make sure that all of its parts are present, not loosened and fixed solidly in their respective positions and that there are no visible leaks, signs of excessive wear or damaged areas.
	Check and verify that there are no wires or cables that have come loose and hang from the underside of the vehicle.
	Check and verify the correct operation of the key main selector on the dashboard.
	Check and verify the operation of the emergency stop buttons: that found on the command panel on the side the machine and that on the dashboard control panel.
	Check and verify by testing the proper operation of the mechanical emergency descent system.

DATE

INSPECTOR PERFORMED BY

ANNUAL INSPECTION CHECK-LIST

Customer:

Address:

City/State/ZIP code:

Phone:

Contact Name:

Date:

Serial Number:

Model:

Date last inspection :

Date placed into Service

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	
ELEVATING SYSTEM	
Mast structure	
Lifting movement and speed	
Noise while lifting/Lowering	
Spiral cable passing through the steel tube	
Bolts tight	

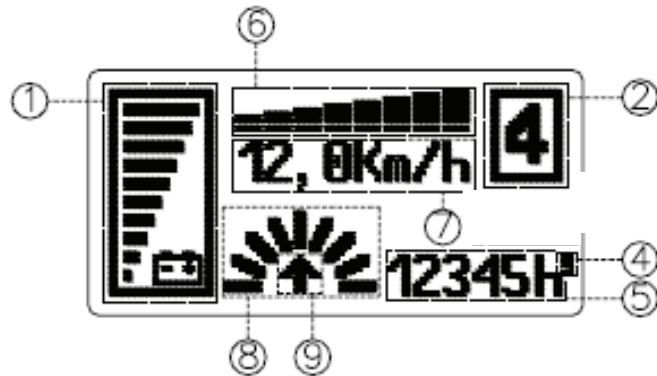
ELECTRICAL COMPONENTS	
Ground Module Functioning	
Connectors	
Wires	
Joystick Functioning	
Spiral cable	
Batteries Integrity	
Batteries proper Functioning	
Battery Charger Functioning	
EMERGENCY STOP	
Break all circuit	
CHASSIS	
Bolts tight	
Chassis Proper Weld— no signs of corrosion or damage	
Drive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

SECTION 7

7.1 DISPLAY LUI MINI S.K.

Ground Control Station (LUI MINI S.K.):

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:



Battery's state of charge

The battery's state of charge indication (number 1 in figure) is displayed on the left side of the unit; it is shown by ten notches. Each notch represents the 10% of the battery charge. As the battery becomes discharged, the notches turn off progressively, one after the other, in proportion to the value of the residual battery charge. When the residual battery charge is $\leq 40\%$ the notches displayed start to blink. When BATTERY LOW alarm appears on the traction controller, the battery symbol which is near the notches also blinks.

Performance

The number which appears in the rectangle displayed in the top right side of the unit (number 2 in figure) shows the performance mode which is being used in the controller.

Performances can be scrolled pressing button ◀. When one performance is selected, the related information will be sent via can-bus to traction and pump controllers that will manage this data. The standard functioning reduces truck performance passing from performance mode #4 to performance mode #1. The real meaning, in terms of parameters level of these performances, depends on software present on pump and traction controllers:

- 4 corresponds to highest performance;
- 3 corresponds to medium performance;
- 2 corresponds to low performance;
- 1 corresponds to minimum performance.

Hour meter

The number displayed on the bottom right side of the unit (number 5 in figure) shows the Hours Worked.

The letter present over the hour meter (number 4 in figure) shows which hour meter is displayed:

- K: the key hour meter is displayed;
- S: the seat hour meter is displayed;
- M: the machine hour meter is displayed; it increases if traction or pump control is working.

Accelerator

The accelerator level indication (number 6 in figure) is displayed on the central top side of the unit; it is shown by eight notches. When the accelerator level is minimum only a notch is displayed, when the accelerator level is maximum all the eight notches are displayed. Each notch represents 1/8 of the difference between maximum and minimum accelerator level.

Speed

The number displayed under the accelerator notches on the center of the unit (number 7 in figure) shows the truck speed. The unit can be km/h or mph depending on the SPEED UNIT parameter setting (see 7.4).

Wheel position and running direction

The notch displayed on the left of the hour meter (number 8 in figure) represents the wheel (only one of the nine notches is displayed) and shows the steering angle (it corresponds to the relative truck direction if the truck is running).

The arrow (number 9 in figure) shows the set truck running direction. The arrow point is up when the truck is forward running; the arrow point is down when the truck is reverse running. If the truck doesn't run a dot is displayed instead of the arrow.

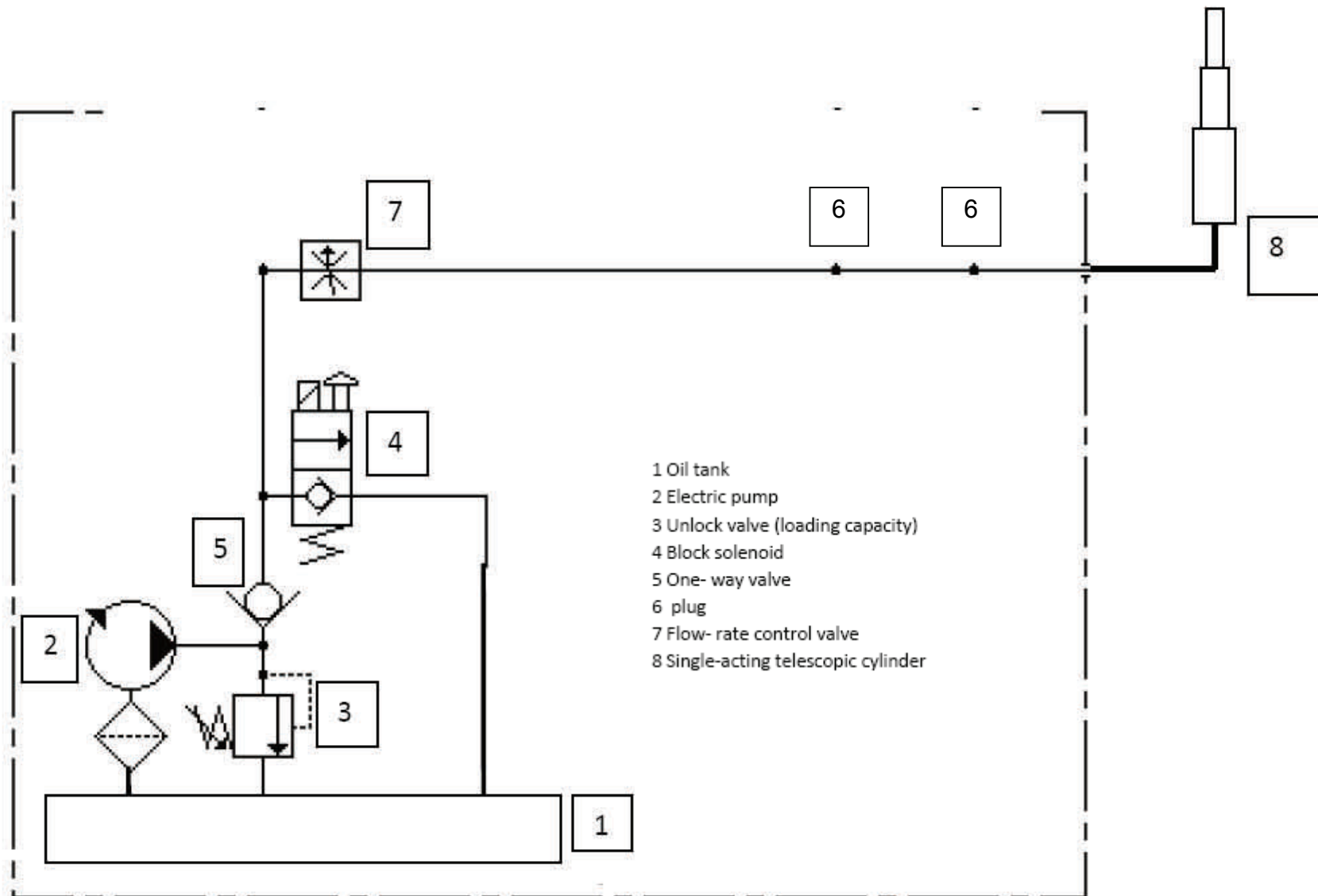
At the bottom of the display there are five LED symbols that show:

- Battery status - the LED lights when the battery voltage is less than 40%
- Wrench - the LED lights when the platform is in alarm
- Tilt- the LED lights when the platform reach the tilting angle
- Basket - the LED lights when the platform is setted on control box command
- Frame - the LED lights when the platform is setted on ground station command

TYPE W=warning A=allarm	ZAPI CO- DE		DESCRIPTION
W	66	BATTERY LOW	Low level of battery voltage
W	228	TILLER OPEN	The truck is in stby with tiller switch opened for more than
A	254	AUX DRIV SHRT	When the mos of EB is shorted
A	251	WRONG BATTERY	The battery voltage is too low or too high (< 0,8 Vbatt OR > 1,2 Vbatt)
A	246	AUX DRIV.OPEN	Driver of EB coil is damaged (not able to close)
W	241	LIFT + LOWER	Double request, LIFT + LOWER
A	197	VMN NOT OK	Voltage on tractoin motor different from more 20% of imposed value
A	60	CAPACITOR CHARGE	Power capacitors voltage does not increase
A	206	TRUCK DISABLED	Battery charge input open, truck is disabled
A	248	NO CAN MSG.	generic CAN message alarm. Traction didn't receive an expected CAN message form display or tiller card
A	222	SMARTDRIVER KO	Smart driver is open, not able to provide EB positive
A	74	DRIVER SHORTED	Driver of LC coil is shorted, so it is not able to open the LC, or LC coil is disconnected
A	234	DRV. SHOR. EV	EV driver is shorted
A	223	COIL SHOR. MC-EB	Shortcircuit on LC or EB coil
W	235	COIL SHOR. EV.	Coil short on EV valve
A	38	CONTACTOR OPEN	The LC coil has been driven but LC does not close
A	208	TILLER ERROR	Input mismatch between hard&soft switch input and tiller input
W	78	VACC NOT OK	The acceleretor value is higher than the minimum value recorded, and the direction/enable switches are opened.
W	79	INCORRECT START	TRAC Incorrect starting sequence
W	242	PUMP INC START	PUMP Incorrect starting sequence
W	245	PUMP VACC NOT OK	Vacc for pump is high without enable switch
W	200	KEY ON INC.ST. P	At key-on is present a pump request. Release request.
W	201	KEY ON INC.ST. T	At key-on is present a traction request. Release request.
W	219	DEAD MAN ABSENT	With the parameter "Positive EB" at level 2 in the "HW setting" menu and "Deadman" input open the alarm appears
A	195	TILTED	Input A7 open. The tilt device is not in the safety range.

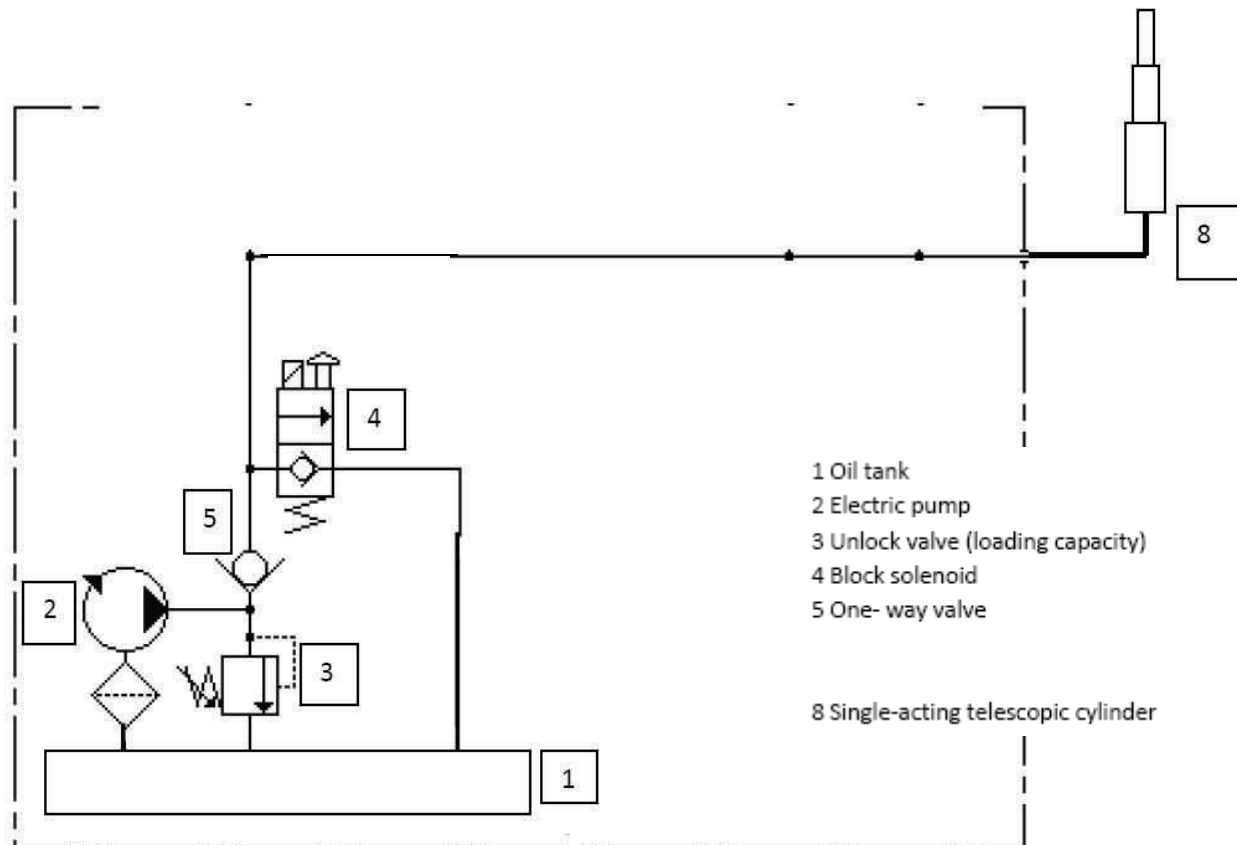
SECTION 7

7.2 HYDRAULIC SCHEME LUI MINI S.K.

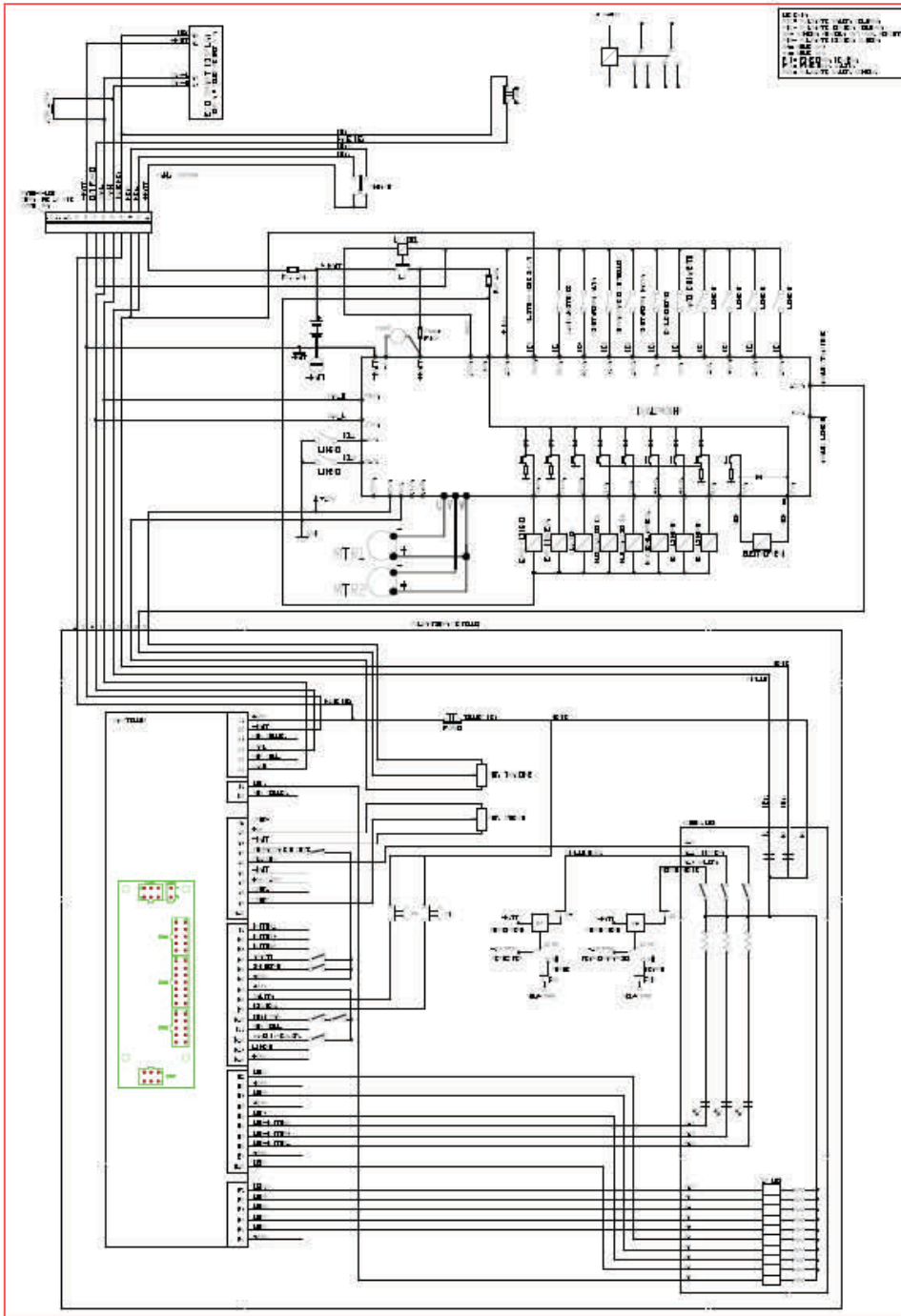


SECTION 7

7.2 HYDRAULIC SCHEME LUI MINI P.A.

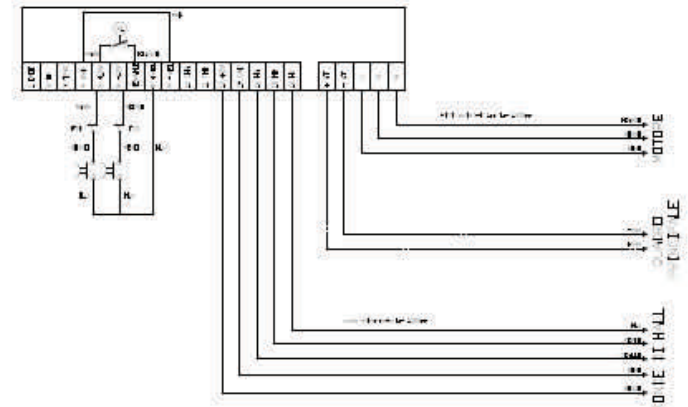


7.3 WIRING DIAGRAM LUI MINI S.K.



DISEGNO N° 003.2009.1001
Data 01.10.2009

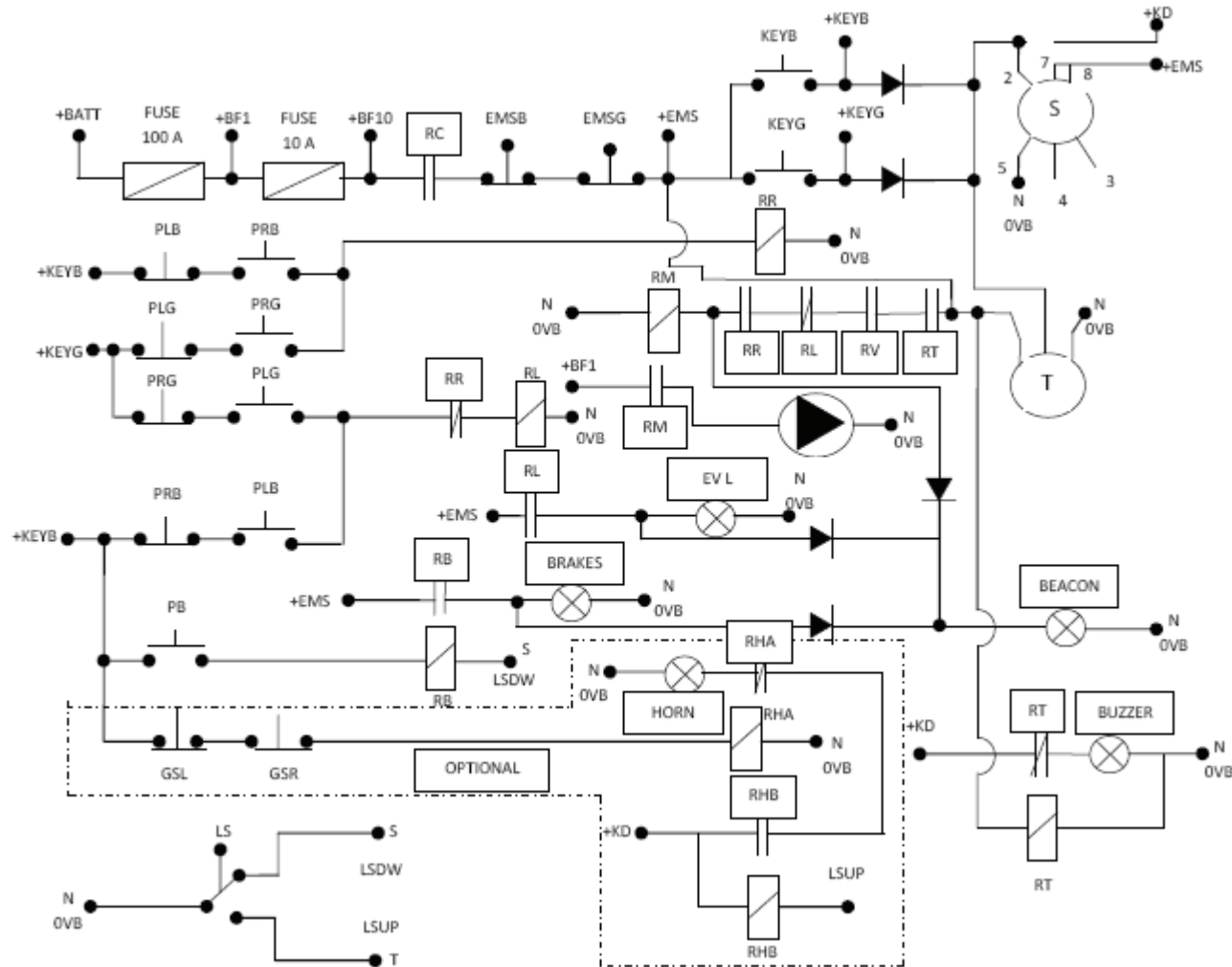
Drawing N°003.2009.1001
Date: 01.10.2009



```
LE ENA
FI FIEDONIA IIDEA
FI FIEDONIA DALITA
*LE = FILE DI ACCENSIONE (4) CL. 400-22
```

SECTION 7

7.3 WIRING DIAGRAM LUI MINI P.A.



RHA: HORN A RELAY
 BF10: +V ON 10A FUSE
 RHB: HORN B RELAY
 BF1: +V ON 100A FUSE
 RR: RAISE RELAY
 0VB: 0 VOLT BATTERY
 RL: LIFT RELAY
 S: BATTERY GAUGE
 RB: BRAKES RELAY
 T: TILT DEVICE
 RV: BATTERY INDICATOR RELAY
 NORMALLY CLOSED
 NORMALLY OPEN
 RT: TILT DEVICE RELAY
 LS: LIMIT SWITCH
 EMSG: GROUND EMERGENCY BUTTON
 LSUP: NORMALLY CLOSED LIMIT SWITCH RAISED BASKET
 EMSB: BASKET EMERGENCY BUTTON
 RM: PUMP RELAY
 LSDW: NORMALLY CLOSED LIMIT SWITCH LOWERED BASKET
 PLB: LOWER PUSH BUTTON BASKET POSITION
 PRB: RAISE PUSH BUTTON BASKET POSITION
 PLG: LOWER PUSH BUTTON GROUND POSITION
 PRG: RAISE PUSH BUTTON GROUND POSITION
 PB: BRAKES PUSH BUTTON
 KEYB: KEY SWITCH ON BASKET POSITION
 KEYG: KEY SWITCH ON GROUND POSITION
 +KD: +V FROM KEY SWITCH POSITION
 +EMS: +V EMERGENCY STOP BUTTON

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.

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.



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@braviisol.com

Absolute E-Z Up LLC
295 Seven Farms Drive Suite C-193
Charleston, SC 29492
843-388-2556---office 843-388-2558---fax
www.absolute-zup.com

- Warranty claims should be forwarded to your nearest local distributor or directly to the Manufacturer:
- The manufacturer will confirm, in writing or by fax, eventual acceptance of the covered works carried out by the customer or will provide guidance of his own technicians for works to be performed.
- 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.



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@braviisol.com

Sito: www.braviisol.com