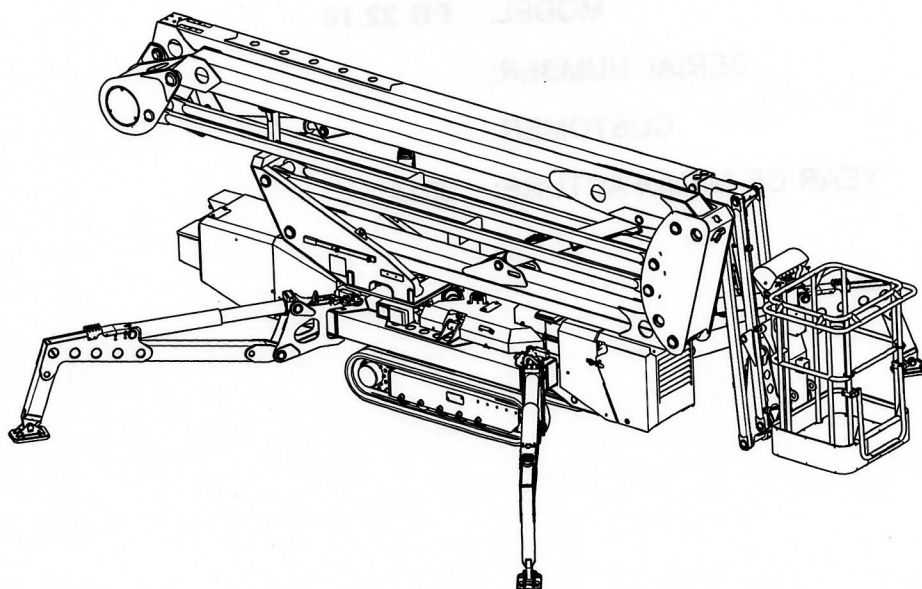


Reference use and maintenance manual

IT

CE



PB 22.10

Self-propelled platform



Attention

Before proceeding with any work on the machine read the present handbook in its entirety and ensure you understand the information contained herein.

Keep the handbook in a safe place where it is easily accessible for consultation.

**Translation of the original
instructions**

Logbook code

4838540201.1

Version

05-15



MANUFACTURER: **PLATFORM BASKET**

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DOCUMENT TYPE: **MANUALE D'USO E MANUTENZIONE**

MODEL: **PB 22.10**

SERIAL NUMBER:

CUSTOMER:

YEAR OF MANUFACTURE: **2014**

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The builder reserves the right to change the characteristics of the machine described in the present document without notice.

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A - GENERAL INFORMATION

A.1. Introduction

Dear Clients,

Platform Basket thanks you for your choice.

Your new access equipment is the result of an innovative approach and the pursuit of quality.

It has been designed to be functional, safe, comfortable and durable with style and excellent operating features.

When your machine requires maintenance, only the spare parts supplied by us must be used in order to ensure reliability and suitability.

If you encounter problems or need more information contact our staff directly by calling one of the following numbers or send us an e-mail:

Phone **+39 0522967666**

fax **+39 0522967667**

web **www.platformbasket.com**

Best regards

A.2. Warranty

For the warranty conditions, refer to that stated in the sales contract (in this way "they can be customised").

A.3. Introduction

As our products are always in change (as components of our suppliers) some details could not match exactly those installed on Your machine type.

In such cases, if you are in doubt with regard to the correct operation, consult an authorised service centre. Never proceed by trial and error.



Note

For the intervention requests (also by telephone), it is important for the manufacturer to know the number of machine working hours (indicated by the timer) and the serial number. Make sure you have this information on hand before making an intervention request.

In order to always give a better product, report errors or omissions of the manuals provided, in particular situations involving safety, recommendations for improving the machine and our aftersales service or anything else you would like to communicate.

This manual lists information relating to the : PB 22.10 model only



Note

Italian is declared the official language.



Attention

In this publication, the term machine refers to the PB 22.10 elevating platform.



Note

The company Platform Basket is referred to as the Manufacturer.

A - GENERAL INFORMATION

A.4. How to consult the manual

A.4.1. Topics not covered by the manual

This publication DOES NOT address the following subjects:

- Maintenance or non-routine interventions.

Non-routine maintenance tasks must be performed by personnel specifically authorised by the manufacturer.

- The installation and disassembly of the machine or its function units.

This procedure is to be carried out by authorised personnel, trained as necessary by the Manufacturer.

A.4.2. Structure of the publication

The manual is composed of separate sections with an initial table of contents showing the sequence of titles of the sections, the chapters, and the topics addressed, complete with page numbers.

Page numbering is progressive.

A - GENERAL INFORMATION

A.5. Notes for the user



Attention

- It is forbidden to modify any part of the machine for any reason without explicit written authorisation from the manufacturer.
None of the manufacturer's agents or representatives is authorised to give instructions that modify the "user instructions in any way, safety prescriptions, the warranty and/or the way of using the product.
- **The manufacturer declines all liability in relation to unauthorised modifications and reserves the right to take any actions it deems necessary to protect its interests.**

A.5.1. User or machine operator

The user is directly responsible for personal injury or injury of others or damage to property resulting from:

- improper use of the machine and any part of the machine;
- failure to comply with the safety prescriptions and safety regulations

The use of the machine must be entrusted only to qualified operators

A qualified operator is construed as a person who has:

- read the "operating instructions" in their entirety;
- understood the concepts expressed in this publication;
- gained familiarity with the instructions by attending the course (mandatory if envisaged for the specific type of machine) for training in the use of the machine.

The course is held by personnel authorised by the manufacturer.

It is advisable to ensure that more than one operator attends the training course.



Note

If provided, the training course is designed to present the information given in the "Operating instructions" and provide immediate clarification of any doubts, effectively improving the training of operators in compliance with the requirements of statutory legislation.

After the initial training course other personnel can be trained by qualified operators if the owner considers that the qualified operators in question possess the necessary abilities to pass on the skills they have learned.

A.5.2. Manufacturer

The manufacturer is not responsible for consequences due to an incorrect or inappropriate use of the machine, such as:

- Non conform method of use;
- Lack of attention in maintenance, in controls during production process and in checking the efficiency of the tools;
- removal or disabling of active and passive safety devices;
- Irresponsible conduct not in compliance with good common practice;
- Unauthorised modifications.

A.5.3. Checking the Supplied Product

On receipt of the supplied product check that the delivered material complies with the order and that the "Operating Instructions" are attached.

When the machine is delivered check it carefully for damage or missing parts.

If you notice signs of damage or missing parts contact the manufacturer or LOCAL AGENT.

When the product is received, in the presence of inconsistencies, missing material, or manifest signs of damage, inform the manufacturer immediately, write your reservations clearly on the delivery note and immediately send a documented report to the shipping agent's insurance company, complete with photographic evidence of the problem(s).

A - GENERAL INFORMATION

A.6. Intended use

In accordance with Machine Directive 2006/42/EC, these machines may only be used by personnel defined "professional".

Moreover, this staff has to be "qualified" for using the specific machine, through proper "formation and information" (by and to the account of the customer) and through these "Instructions for use" that have to be at disposal of the operator before using the machine.

The machine has been designed to lift operatorAAA with the limits indicated in this publication. The machine must be used and manned by at least 2 operators (one at a height and one on the ground).

A.7. Improper use

It is strictly prohibited to use the machine for any purpose other than that described in chapter "Intended use" - "General safety rules".

A - GENERAL INFORMATION

A.8. Symbols utilised

Below are the symbols used in this manual which point out to the reader the various levels of danger in the operation and maintenance of the machine.



Danger

Information or procedures, which if not exactly followed could cause death, serious personal injury, or damage to the machine. It often refers to “residual risks” or, in any case, dangerous conditions.



Attention

Information or procedures which advise the operator as to how best to use the machine to prolong its life, avoid damage or loss of programming data, and optimize the work in compliance with the standards.



Note

Ancillary information.

A - GENERAL INFORMATION

A.9. Glossary

Operator/User/In charge of use	In compliance with the EN ISO12100 and 98/37//EC harmonised standards, an operator is defined as the person or persons in possession of the skills and information necessary in order to guarantee total safety during the installation, operation, adjustment, maintenance, cleaning, repair and transportation of the machine.
Danger	Situations or actions that could be the source of possible injury to persons or animals or damage to property.
Exposed person.	Anyone who is entirely or partly inside a hazardous zone.
Risk	Combination of the probability and degree of seriousness of possible injury or harm to health in a dangerous situation.
Hazardous zone	Any area inside and/or in the proximity of a machine in which the presence of an exposed person constitutes a risk for the health and safety of such a person.
Routine maintenance	<p>Operations, planned by the manufacturer for machine checks and maintenance which do not require particular tools or mechanical knowledge.</p> <p>These are operations such as: Lubrication, greasing, the replacement of components subject to regular wear and dealing with any looseness due to use.</p> <p>These operations can be carried out by the machine operator in accordance with the indications shown in this manual with the tools supplied or easily found.</p>
Non-routine maintenance	Operations, both planned by the manufacturer and not, necessary to conserve and restore the safety, efficiency and functionality of the machine and also those which are unexpected and caused by breakages or wear due to particular events during use which require the compulsory intervention of a specialised operator, approved by the manufacturer and in possession of tools suitable for the purpose.
Intended use	Machine used in compliance with the information provided in the operating instructions.
Incorrect use that can be reasonably expected	Machine used in a manner not indicated in the operating instructions, but which could result from human behaviour which may be reasonably expected.
Guard	Safety measures that consist in the use of specific technical means, designated "protections" (guards, safety devices), to protect persons from potential hazards that cannot be reasonably eliminated or sufficiently restricted by means of design strategies.
Shelter	Machine element used specifically to guarantee protection through a material barrier.
Safety device	Electrical or mechanical device that prevents accidents and/or damage to property and personal injury; activation of safety devices may be voluntary when performed by an operator or may be caused automatically by the presence of a potential hazard (opening of a protection or access to a certain area).
Basket	<p>Container, connected to the working platform, where one or two operators have their positions, according to the capacity of said platform.</p> <p>Its purpose is to protect and support operators who need to work at a height.</p>
Cage	See basket.
Working platform	This is a machine designed to make a working area accessible at a certain height to operators with their equipment.

B - DESCRIPTION

B.2. Applied signals

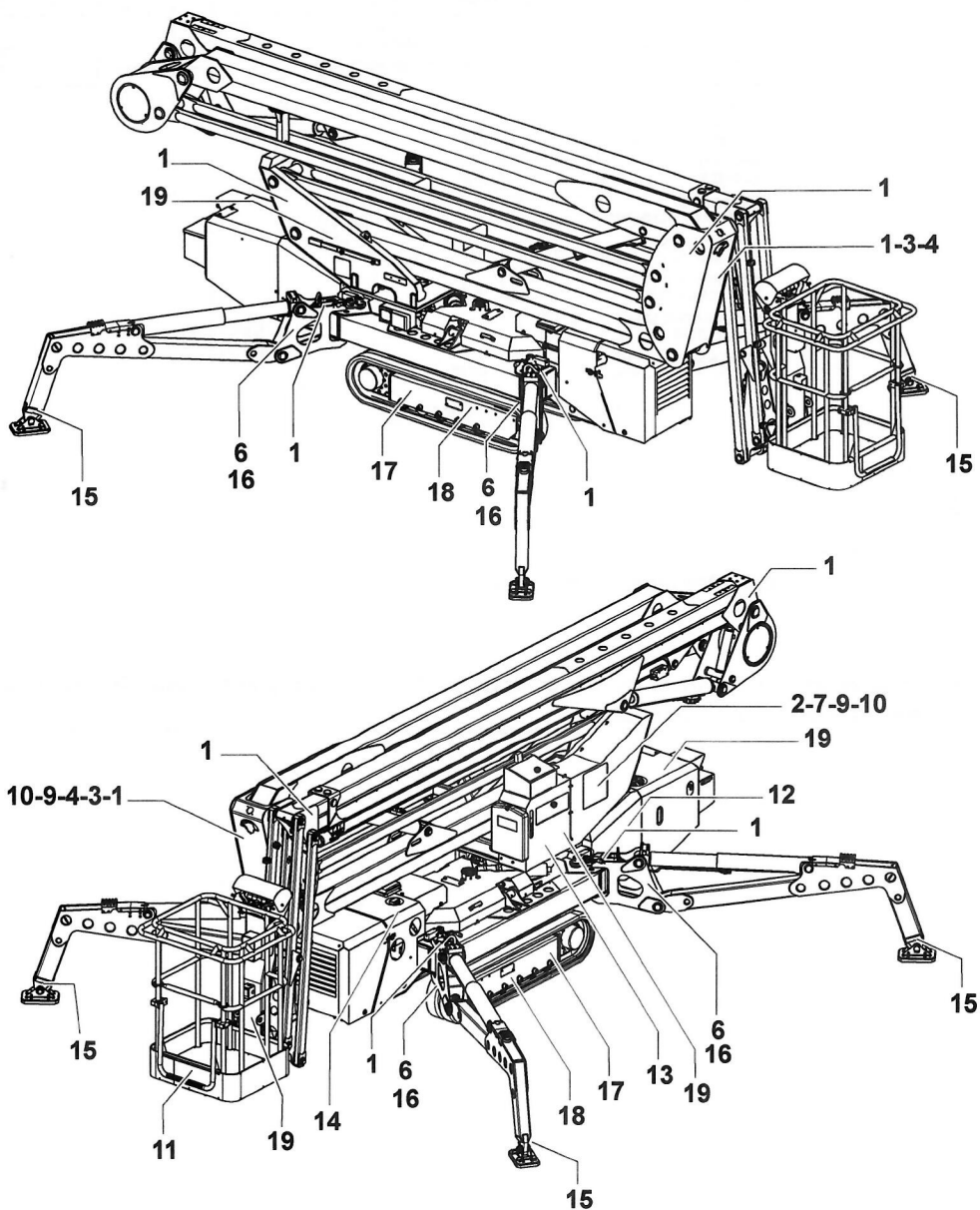


Attention

Printed indications may be present on the commercial parts and are the responsibility of the manufacturer of the commercial part.

Its description is not given in the manual.

B.2.1. Where to apply the signals



B - DESCRIPTION

B.2.1.1. Danger signs

1 LIMB CRUSHING RISK



2 DANGER: LIVE ELECTRICAL PARTS



3 COLLISION HAZARDS



4 RISK OF FALLING TOOLS



5 LIMB CRUSHING RISK



6 DANGER OF TENSIONED ROPES OR BELTS



B.2.1.2. Prohibition signs

7 DO NOT USE WATER TO EXTINGUISH FIRE ON ELECTRICAL PARTS



8 MUST NOT BE WALKED ON



B - DESCRIPTION

B.2.1.3. Other decals

9 SAFETY RULES



10 READ THE MANUAL BEFORE USING THE MACHINE



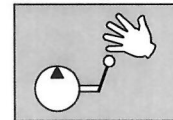
11 MAXIMUM BASKET LOAD



12 TOPPING UP OIL



13 MANUAL EMERGENCY PUMP



14 UNLEADED FUEL (diesel engine only)



15 GROUND PRESSURE



16 LIFTING COUPLING POINT



17 FORWARD MOVEMENT



18 BACKWARD MOVEMENT



19 ELECTRIC SHOCK HAZARD (this machine is not insulated)



B - DESCRIPTION

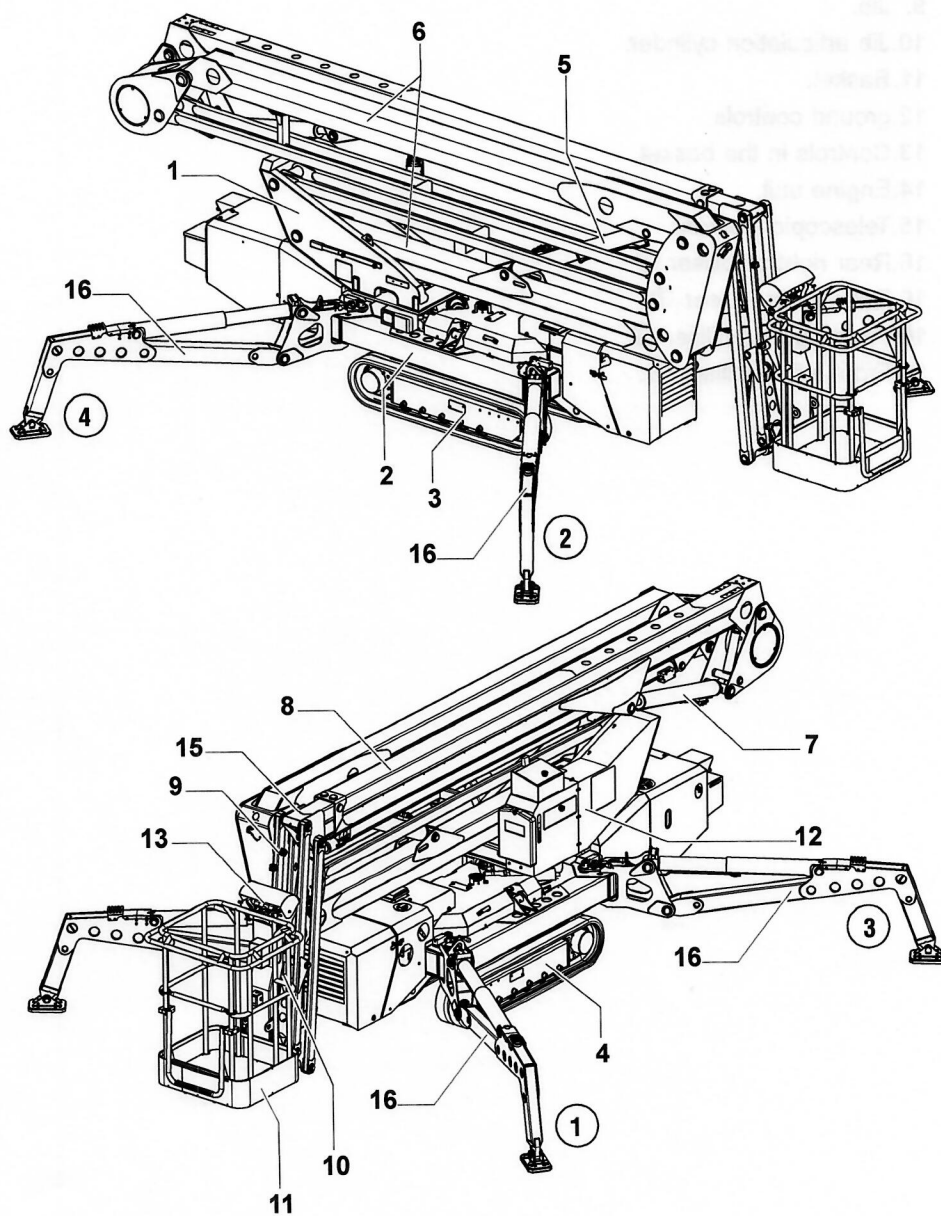
B.3. Machine description

B.3.1. Main components



Note

The model illustrated may be slightly different from the model in possession.

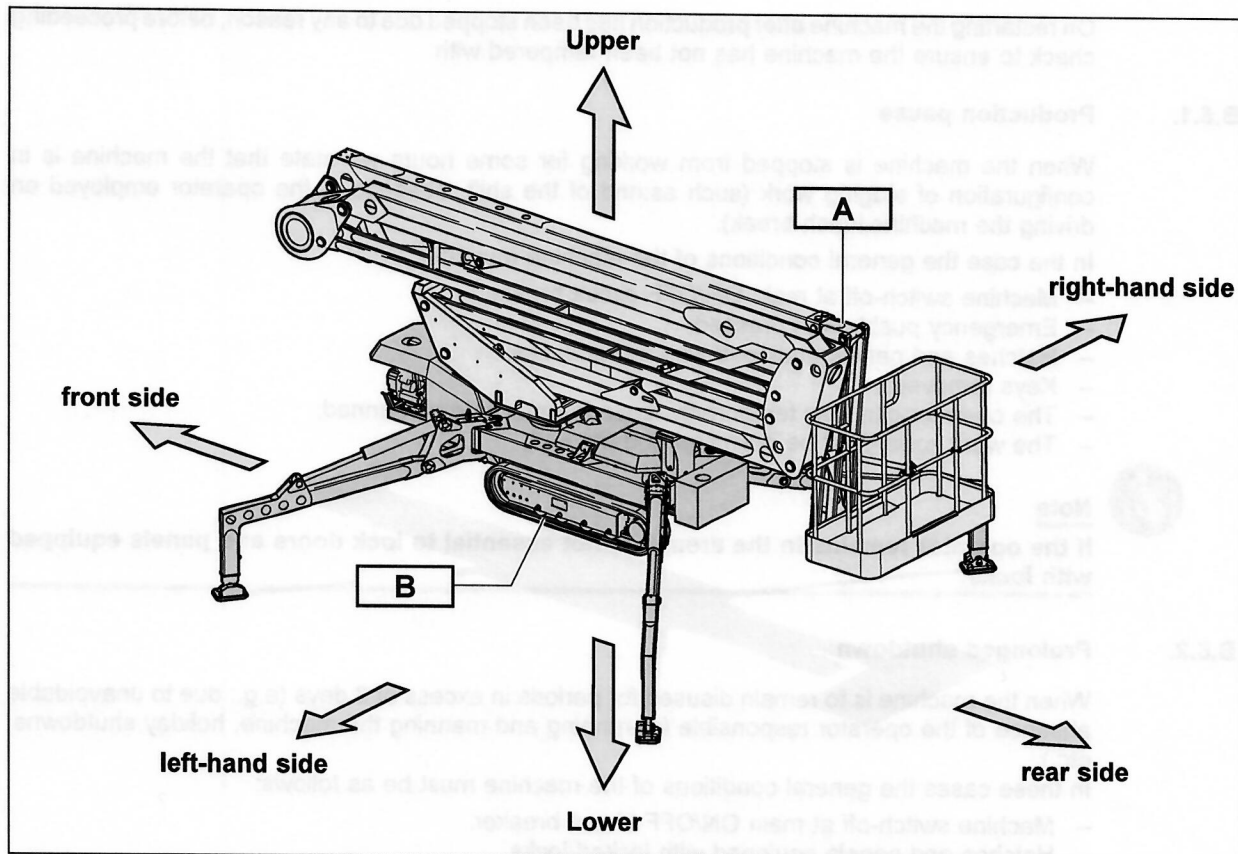


B - DESCRIPTION

1. Turret.
2. Carriage.
3. Left track.
4. Right track.
5. Scissor booms lifting cylinder.
6. Scissor booms.
7. telescopic boom lifting cylinder.
8. Telescopic boom.
9. Jib.
10. Jib articulation cylinder.
11. Basket.
12. ground controls.
13. Controls in the basket.
14. Engine unit.
15. Telescopic element.
16. Rear right stabiliser ①.
16. Rear left stabiliser ②.
16. Front right stabiliser ③.
16. Front left stabiliser ④.

B - DESCRIPTION

B.4. Orientation



A - Superstructure.

B - Ground part. (Carriage - Undercarriage - Stabiliser)

B - DESCRIPTION

B.5. Machine conditions

On restarting the machine after production has been stopped due to any reason, before proceeding check to ensure the machine has not been tampered with.

B.5.1. Production pause

When the machine is stopped from working for some hours we state that the machine is in configuration of staging work (such as: end of the shift, absence of the operator employed on driving the machine, lunch break).

In the case the general conditions of the machine must be:

- Machine switch-off at main ON/OFF circuit breaker;
- Emergency pushbutton pressed;
- Hatches and panels equipped with locked locks;
- Keys removed;
- The operator can now temporarily leave the machine unmanned;
- The work zone must be delimited and marked.



Note

If the operator remains in the area, it is not essential to lock doors and panels equipped with locks.

B.5.2. Prolonged shutdown

When the machine is to remain disused for periods in excess of 3 days (e.g.: due to unavoidable absence of the operator responsible for running and manning the machine, holiday shutdowns, etc.).

In these cases the general conditions of the machine must be as follows:

- Machine switch-off at main ON/OFF circuit breaker.
- Hatches and panels equipped with locked locks.
- Keys removed.
- Emergency pushbutton pressed.
- Machine cleaned and disconnected from all energy supplies.
- If the maintenance schedule so requires, all the necessary maintenance work must be performed.

B.5.3. Momentary stop

Machine in momentary stop configuration refers to situations in which operation of the machine is suspended for brief periods.

In this case the general conditions of the machine must be as follows

- Machine switch-off at main ON/OFF circuit breaker.
- Emergency pushbutton pressed.
- Operator present in the machine control station.
- The work zone must be delimited and marked.

B.5.4. Working condition

Machine in working configuration refers to situations in which the machine is operational and running

In this case the general conditions of the machine must be as follows

- The machine is switched on at the main ON/OFF circuit breaker.
- Operator present in the machine control station.
- In the machine working area, there is an operator who mans the machine and the ground controls.
- There must be no other operators in the machine working area.
- The work zone must be delimited and marked.

C - TECHNICAL SPECIFICATIONS

	S.I.		US	
Live loads for buildings				
Live loads, crawler vehicle (Only area of the tracks in narrow configuration) (*)	kN/m ²	28,8	psi	4,18
Live loads, crawler vehicle (Area of the machine with basket mounted and tracks in narrow configuration) (*)	kN/m ²	4,69	psi	0,68
Live loads, stabilized vehicle (*)	kN/m ²	2,00	psi	0,29
Maximum force exerted on a (*) stabilizer	kN	21,8	lbs	4901

(*) *Data calculated on the heavier version*

Standard equipment

Expandable hydraulic tracked carriage.

110 VAC electric pump for internal use.

Air/water lines in basket.

In compliance with the EN280 European standard.

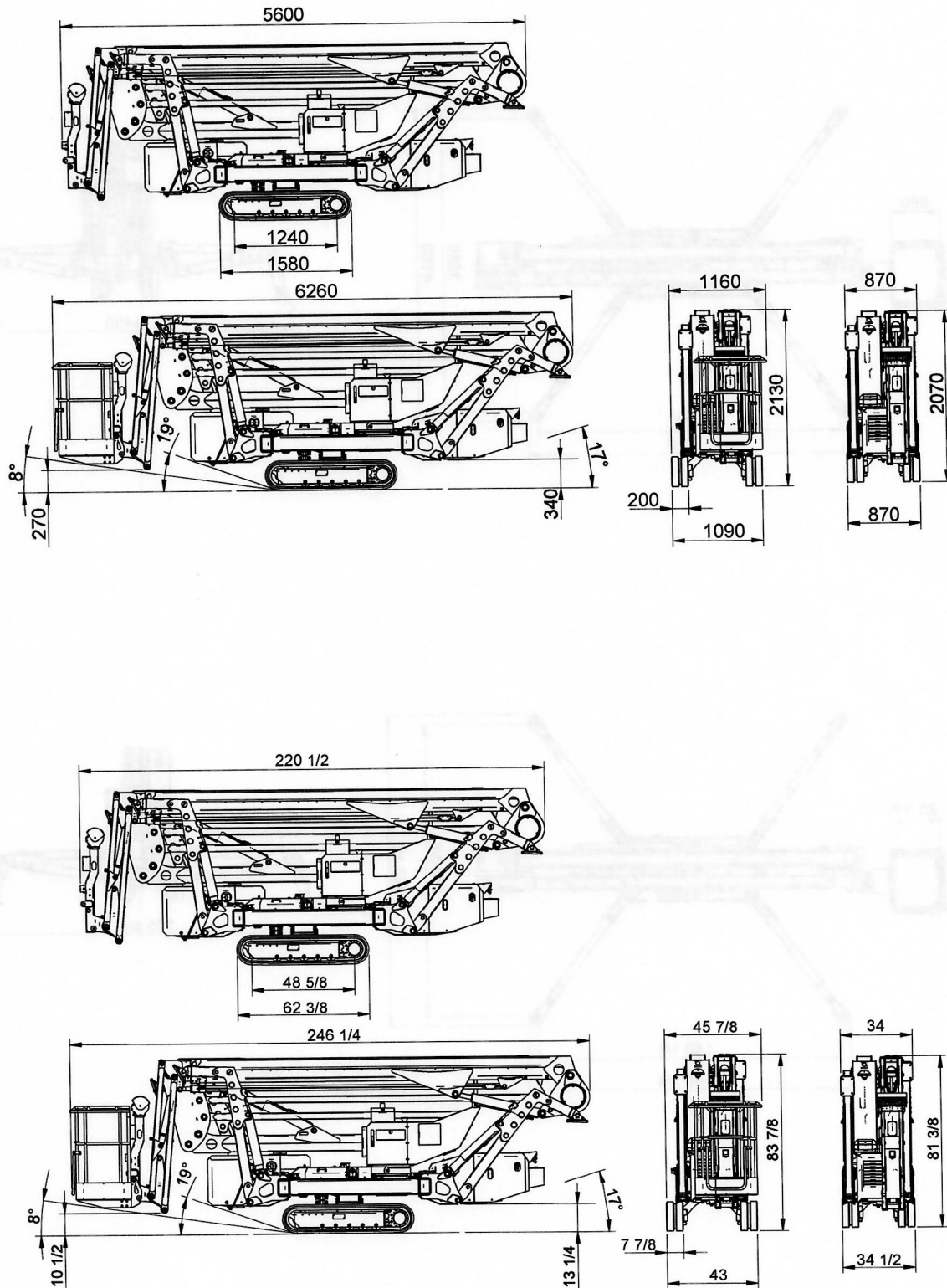
C - TECHNICAL SPECIFICATIONS

C.1. Technical specifications

		S.I.		US
Maximum working height	m	21,7	ft	71,2
Walkway height	m	19,7	ft	64,6
Maximum straddle	m	10,0	ft	32,8
Maximum basket load	kg	136	lbs	300
Turret rotation angle	°	180 + 180		
Jib length	mm	1620		
Length of the machine closed	mm	6260	ft	20,5
(Basket disassembled)	mm	5600	ft	18,4
Width of the machine closed	mm	1060	inch	41,73
(Basket disassembled)	mm	870	inch	34,25
Height of the machine closed (narrow tracks)	mm	2070	inch	81,5
Overall stabilisation dimensions	mm	3880 x 4020	ft	12,7 x 13,2
Aluminium basket dimensions	m	0,88 x 0,722	inch	34,6 x 28,4
Maximum speed	Km/h	1,5	mph	0,9
Electric pump	kW	1,5		
Net installed power	kW	12,5		
Measured sound power	dB(A)	102		
Guaranteed sound power	dB(A)	104		
Sound pressure	dB(A)	< 85		
Controls		proportional		
Maximum gradient which can be exceeded	°	16	%	29
Maximum lateral gradient	°	16	%	29
Total vibrations transmitted	m/sec ²	≤ 0,5		
Tyres		Crawler		
Hydraulic tank	l	48	Gallons	12,68
Fuel tank	l	12	Gallons	3,17
Total weight (lighter version)	kg	3130	lbs	6900
Inclinometer		Yes		
Maximum inclination	°	1	%	2
Electrical circuit	V	12		
Battery	Ah	55		
Work with wind at	km/h	45		
Track pressure on the ground	N/cm ²	6,50		
Z602E Kubota - Diesel	kW/rpm	12,5/3200		

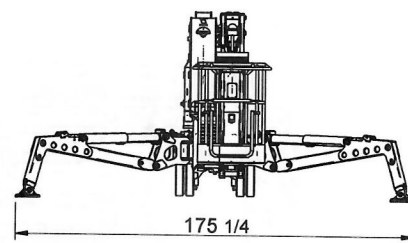
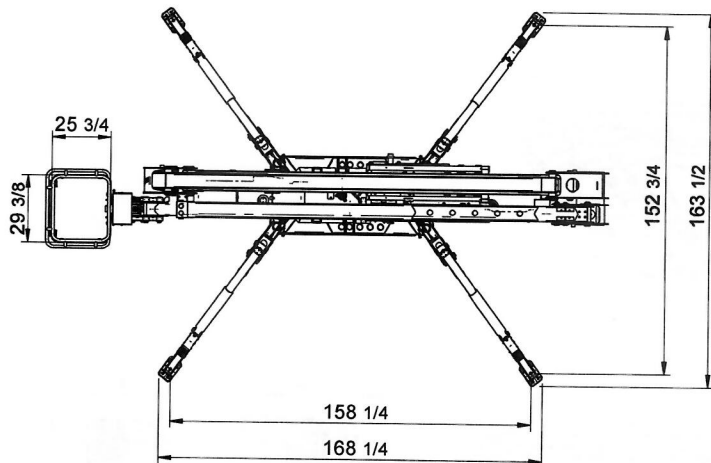
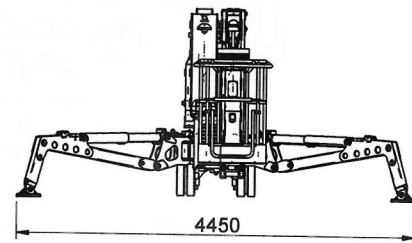
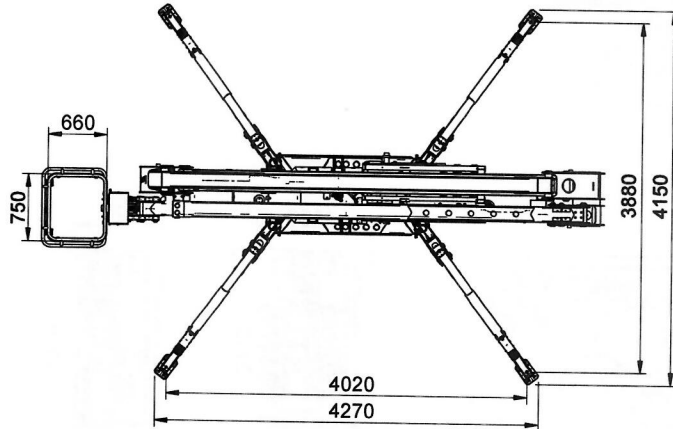
C - TECHNICAL SPECIFICATIONS

C.1.1. Overall dimensions



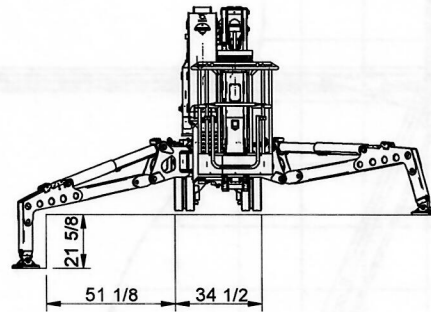
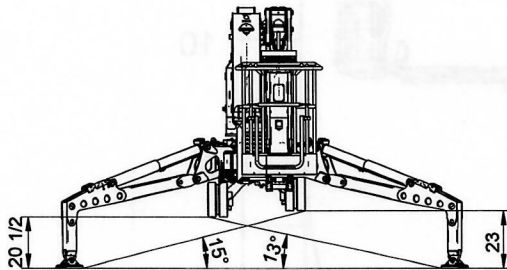
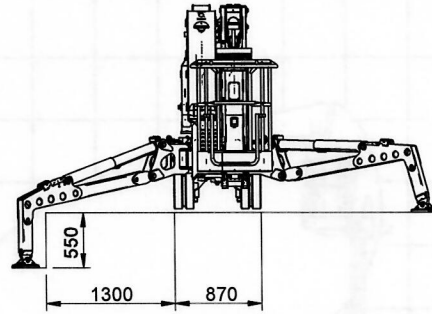
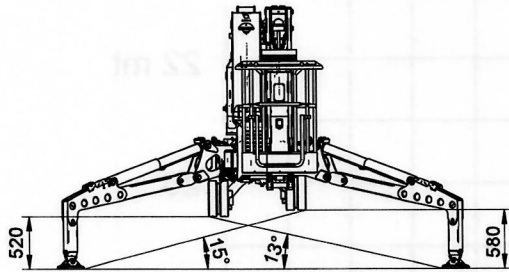
C - TECHNICAL SPECIFICATIONS

C.1.2. Outrigging dimensions



C - TECHNICAL SPECIFICATIONS

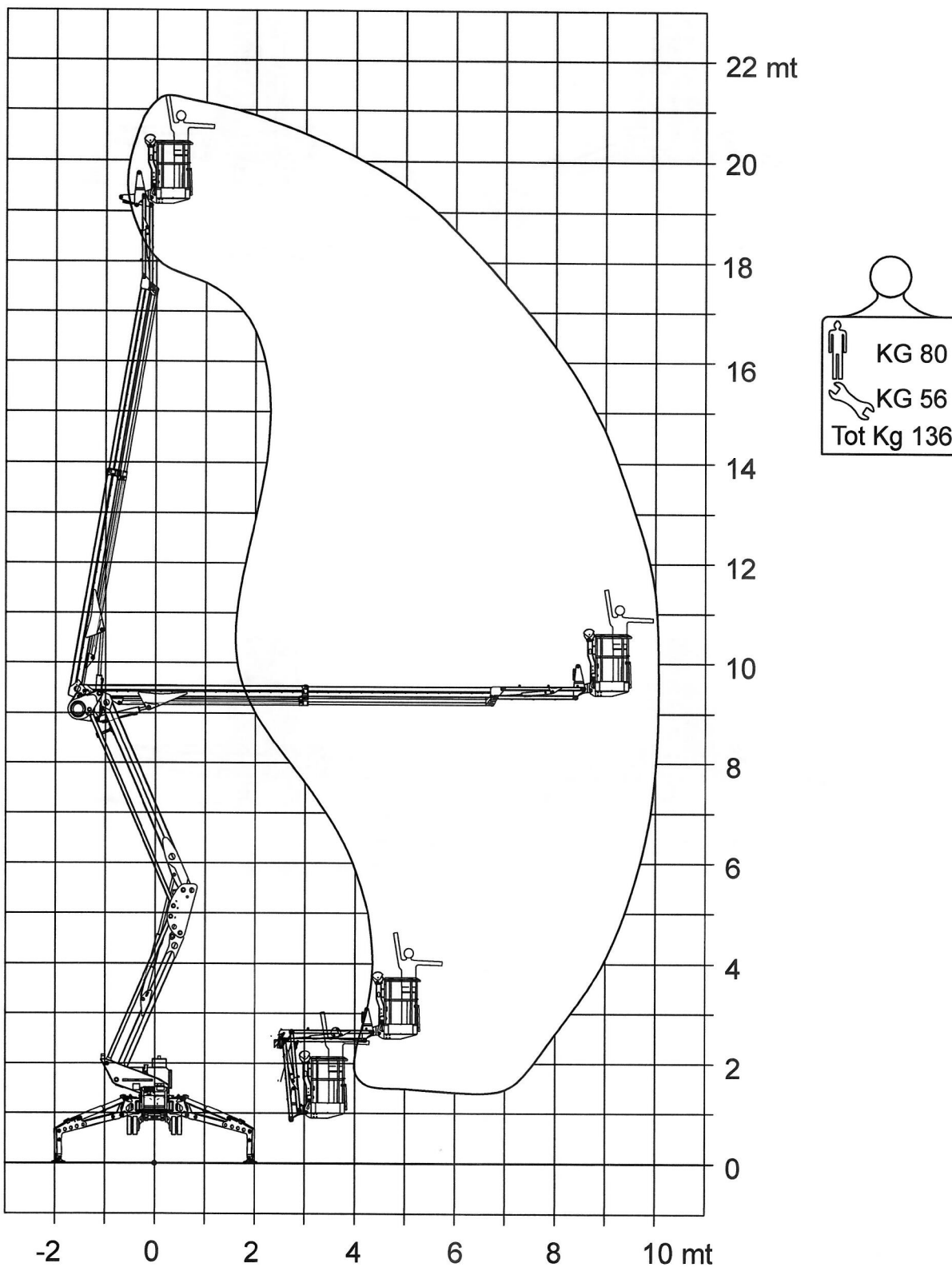
C.1.3. Positioning dimensions



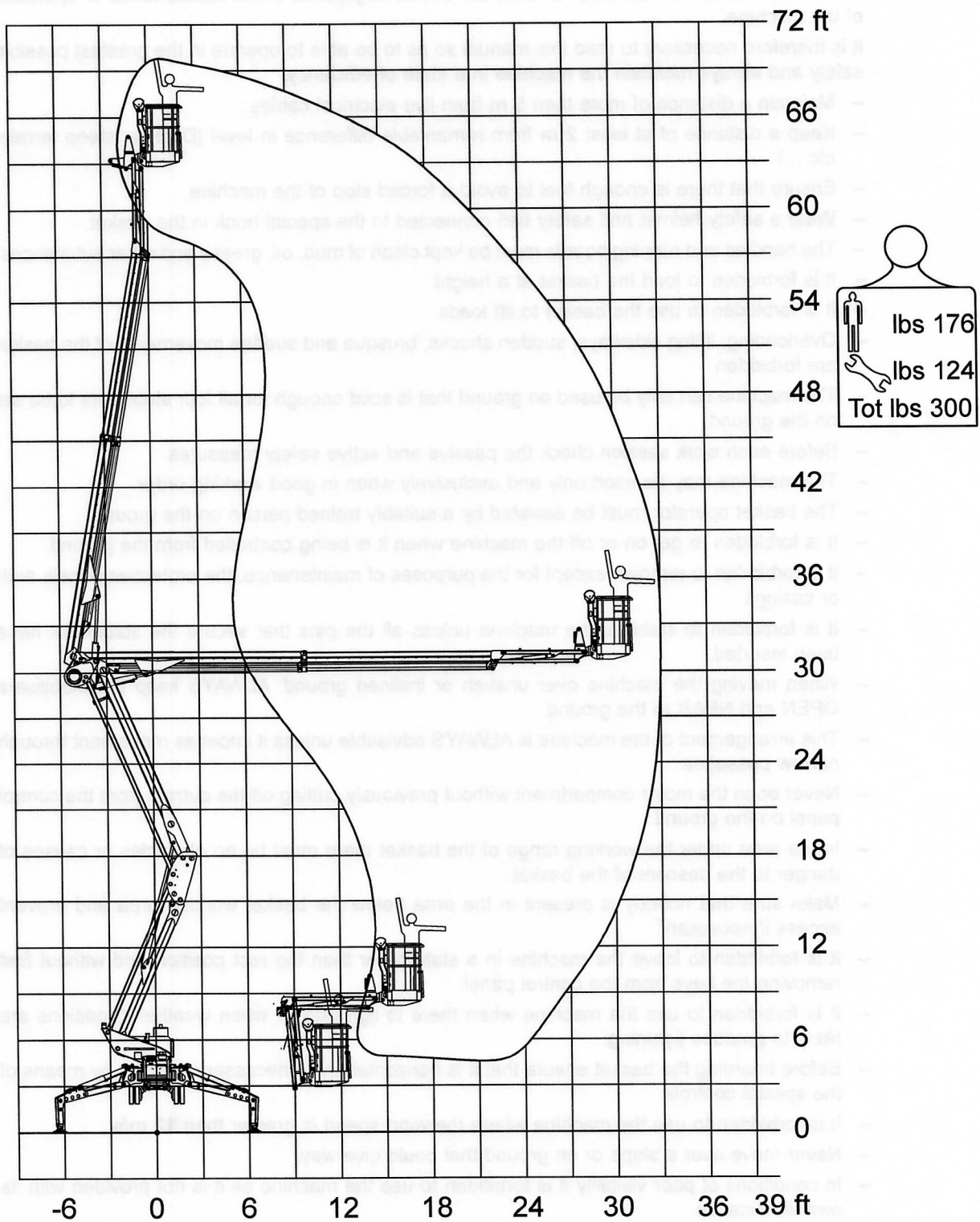
C - TECHNICAL SPECIFICATIONS

C.1.4. Workflow diagram

C.1.4.1 Stabiliser configuration



C - TECHNICAL SPECIFICATIONS



D - SAFETY

D.1. General safety rules

Most of the accidents that occur at work are due to negligence in the maintenance or operation of the machine.

It is therefore necessary to read this manual so as to be able to operate in the greatest possible **safety and always maintain the machine in a state of efficiency.**

- Maintain a distance of more than **5 m** from live electrical cables.
- Keep a distance of at least **2 m** from remarkable difference in level (Ditches, steep terrain, etc ...).
- Ensure that there is enough fuel to avoid a forced stop of the machine.
- Wear a safety helmet and safety belt connected to the special hook in the basket.
- The handles and running boards must be kept clean of mud, oil, grease and other substances.
- It is forbidden to load the basket at a height.
- It is forbidden to use the basket to lift loads.
- Overloading, lifting sideways, sudden shocks, brusque and sudden movements of the basket are forbidden.
- The machine can only be used on ground that is solid enough for all four stabilizers to be set on the ground.
- Before each work session check the passive and active safety measures.
- The machine may be used only and exclusively when in good working order.
- The basket operator must be assisted by a suitably trained person on the ground.
- It is forbidden to get on or off the machine when it is being controlled from the ground.
- It is forbidden to remove, except for the purposes of maintenance, the protective panels and/or casings.
- It is forbidden to stabilise the machine unless all the pins that secure the stabilisers have been inserted.
- When moving the machine over uneven or inclined ground, **ALWAYS** keep the stabilisers **OPEN** and **NEAR** to the ground.
- This arrangement of the machine is **ALWAYS** advisable unless it impedes movement through narrow passages.
- Never open the motor compartment without previously cutting off the current from the control panel on the ground.
- In the area under the working range of the basket there must be no obstacles or causes of danger to the descent of the basket.
- Make sure that nobody is present in the area below the basket working area and prevent access if necessary.
- It is forbidden to leave the machine in a state other than the rest position and without first removing the keys from the control panel.
- It is forbidden to use the machine when there is lightning or when weather conditions are likely to produce lightning.
- Before boarding the basket ensure that it is horizontal and if necessary adjust it by means of the special controls.
- It is forbidden to use the machine where the wind speed is greater than **12 m/s**.
- Never move over a slope or on ground that could give way.
- In conditions of poor visibility it is forbidden to use the machine as it is not provided with its own illumination.
- It is forbidden to drive the machine on roads open to traffic.
- The machine is not homologated for such use.
- An operator must not accept operative responsibility unless adequate training has already been given by competent authorized personnel.

D - SAFETY

- Before operation check there are no overhead electric lines, no other machines such as bridge cranes, machines operating on road and rail, and building equipment in the working area.
- Before starting work the operator and the person in charge must take suitable precautions in order to avoid known dangers.
- Do not operate the machine unless maintenance has been done in compliance with the specifications and the expiry dates indicated by the manufacturer.
- Ensure that daily inspections and checks on correct working are carried out before using the machine.
- Check that there is enough space above, beside and under the basket when performing lifting, descent, boom rotation or when using the telescopic function.
- Make sure that the operators of other aerial or ground machines are aware of the presence of the aerial basket.

Switch off the current to aerial cranes.

If necessary place obstacles on the ground.

- Do not push or pull the machine or other objects using the telescopic mechanism of the boom.
- Do not rest parts on the basket railing without the approval of the manufacturer.
- Never use the boom other than for moving personnel, their tools and equipment to the work position.

- Never exceed the rated capacities of the basket.

Consult the load diagrams shown in this manual.

Place loads evenly on the floor of the basket.

- Never work with a machine in poor working condition.

If there should be a break down, stop the machine, place a **CLEARLY VISIBLE** sign and advise the personnel in charge.

- Sudden or erratic movements must not be done on the basket.
- The operator is prohibited to move between the basket and a structure outside the machine, machine stability could be jeopardised.

Staff and equipment must enter and exit the basket only when the same is on the ground.

- Never use ladders or steps, or similar objects on the basket or under the machine in order to obtain additional reach for any reason.
- When moving about or working on the basket both feet must be firmly placed on the bottom of the basket.

- Never walk on the boom to reach the basket or to leave it.

- If the boom or the basket is trapped with one or more stabilizers raised from the ground, all the personnel must be removed from the basket before setting about freeing the machine.

If necessary use cranes, forklift trucks or other equipment to remove personnel and stabilize the machine.

- The operator is responsible for preventing personnel on the ground from using the machine controls and warning them not to work, walk or stop under the boom or the basket.

Cordon off the machine at ground level if necessary.

- When the machine is to be relocated, check that there are no people, holes, gutters, sudden changes in ground level, obstructions, debris and covers that may hide holes or other hazards.
- Do not move the machine on gradients higher than those indicated in the technical specifications.
- The machine cannot be moved with the boom raised over the limit set by the machine's logic.
- To prevent the machine from toppling over do not drive over soft or uneven surfaces.
- Ensure that the conditions of the ground are adequate to sustain the maximum load for the stabilisers and if necessary improve the supporting surface using strong wooden planks.
- Do not drive the machine near to ditches, loading bays or other changes in ground level.
- When relocating the machine check that there are no obstructions around or above the

D - SAFETY

machine while it is in motion.

- When moving the machine the stopping distance must be known.
- Where visibility is obstructed call for an assistant and use the acoustic warning signal.
- Keep non-operating personnel at least 2 metres away from the machine while it is in motion.

D - SAFETY

D.2. Preparation and inspection

D.2.1. General preparation

This section provides the personnel responsible for making the machine ready and for its entry in operation with the information necessary and lists the checks that are to be done before operating the machine.

It is important that the information given in this section is read and understood before using the machine.

Ensure that all the necessary inspections have been done with positive outcomes before using the machine.

These procedures have the purpose of lengthening the working life of the machine and guaranteeing its safety.



Attention

Since the manufacturer is unable to exercise any direct control over the inspections on the spot and maintenance work, these activities fall under the exclusive responsibility of the owner and the operator.

D.2.2. Making ready for use

Before using a new machine it is necessary to inspect it carefully for any evidence of damage sustained during shipment and then to give it routine inspections as indicated in the section "Inspections to be done routinely and on receiving the machine".

During start up and initial operation, the machine must be checked carefully for hydraulic fluid leaks.

The activities for making the machine ready for use come under the responsibility of personnel in charge.

The activities for making the machine ready for use come under the responsibility of personnel in charge.

Make ready requires common sense (for example the telescopic boom should extend and retract without encountering obstacles and the brakes should work correctly) combined with a series of visual inspections.

The compulsory requirements are listed in the section "daily visual inspections".

It is necessary to verify that the directions listed in the sections "Inspections on receipt", "Routine Inspections" and "Daily working order check" have been followed.

D.2.3. Inspections to be done routinely and on receipt



Note

Annual inspection must be done no more than 13 months after the previous annual inspection.

The inspection must be carried out by qualified personnel who have experience with our products.

The following list systematically outlines the inspection procedure aimed at detecting parts that are defective, damaged or incorrectly installed.

The list indicates the components to be inspected and the conditions to be examined.

Periodic inspections should be carried out every working **3 months** or **150 hours**, at the first deadline that occurs or at shorter intervals, where justified by the environmental conditions, the severity and frequency of use.

This list is also applicable for machines placed in storage or those exposed to severe or changeable climates and must be carefully followed.

These inspections must also be done after maintenance work has been carried out.

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D.2.3.1. Frame

- Check that the belts are not worn or loose, that all parts and bolts are in position and tight.
 - Check that the stabilizer are locked into position, that they do not show signs of damage and that the hydraulic pipes do not leak.
 - Check that the cylinders for the stabilizer feet are tightened in position, do not show evident signs of wear and that the hydraulic piping shows no leakage.
 - Check that the microswitches on the stabiliser feet are tightened.
 - Check that the solenoid valves and hydraulic tubes are not damaged or leaking and that they are secured in position.
 - Check the electrical voltage and make sure there are no traces of corrosion on the electrical connections.
 - Check the drive gears, electrical or hydraulic motors, brakes and any hydraulic tubes present for damage or leaks.
 - Check that the ground controls do not have loose or missing parts and that all parts are locked in position.
 - Check the voltage in the electrical connections, make sure that there are no traces of corrosion or exposed wires.
- Ensure that all the switches work properly.
- Check the oil level in the drive gears (If necessary contact the service personnel for assistance).



Note

The drive gears must be half full of lubricant oil.

- Check the batteries (if present), ensuring that the bleed valves are not loose or missing, that the electrical connections are secure and are not corroded and that the electrolyte level is correct.
- Check that the tank and hydraulic pipes are not damaged or leaking and that the refill plug is locked in position.
- Check all electrical cables for damaged or missing parts.
- Check accessories, making certain that they are not damaged, that no parts are loose or missing, and that they are locked in position.
- Check all the access doors for damage and that the locks and hinges work correctly and are secured in position.
- Check that the fuel lines are not damaged or leaking and that they are secured in position.

D - SAFETY

D.2.3.2. Turret

- Check the turret for damage, loose or missing parts and that it is locked in position.
Check that the rotation gears and its brake do not show signs of damage, loose or missing parts, that the hydraulic pipes and the component housings do not show signs of leaks;
Check that the slewing gear is not worn.
- Check the slewing ring for damage, wear, lubricant and for loose or missing bolts.
- Check that the solenoid valves and hydraulic tubes are not damaged or leaking and that they are secured in position.
Check the electrical voltage and make sure there are no traces of corrosion on the electrical connections.
- Check the voltage in the electrical connections, make sure that there are no traces of corrosion or exposed wires.
Ensure that all the switches work properly.
- Check that the securing bolts of all the pins are tightened in position and do not show signs of wear.
- Check that all the joints of moving parts are lubricated.
- Check that the hydraulic directional control valve and its tubes are not leaking or damaged.

D.2.3.3. Booms

- Check that the booms, cylinders and pins are locked in position and do not have damaged or missing parts
- Check that the securing bolts of all the pins are tightened in position and do not show signs of wear
- Check that the hydraulic pipes and electrical cables are secured in position and do not have damaged or missing parts
- Check all the bushings for signs of wear or damage
- Check that all the joints of moving parts are lubricated
- Check that the sliding blocks have no visible signs of damage, missing parts and that they are locked in position
- Check that the chains (if any) of the sliding parts have no signs of damage or missing parts and that their tension is correct

D.2.3.4. Basket

- Check that the basket and the control panel are in position and that there are no damaged, loose or missing parts.
- Check that the switches, control levers and electrical connections are not live and that there are no traces of corrosion.
Check that all the cables are not defective or damaged.
Ensure that the switches work properly.
- Check that the rotation system of the basket (if present) is tightened in place, well lubricated, operating properly and is not damaged.
Check that the hydraulic pipes are secured in position and that they are not damaged or leaking.



Note

Check that all the signs DANGER, WARNING, INSTRUCTION applied all over the machine are in position and legible.

D - SAFETY

D.2.4. Bolt and screw tightening

The tightening torque table (see the pages specified) consists of standard torque values, based on the diameter and the class (hardness) of the screws; this also establishes the torque values with and without lubricants according to the practice recommended by the factory.

This table is provided for the purpose of helping the user or the operator if the need should arise for immediate adjustment during an inspection or operation so that the maintenance service personnel are informed.

Using the tightening torque table in combination with the index of the points to be tightened shown in the chapter entitled "Maintenance" will improve the safety and performance of the machine.

D.2.5. Daily visual inspection

Inspection on workdays before starting up the machine comes under the responsibility of the operator and the user.

Operators and users are advised to inspect the machine before use, even if the machine has already been used by another user/operator.

This daily visual inspection is the best inspection system.

These checks must also be made after maintenance has been done to the machine.

In addition to the daily visual inspection, make sure that the following operations are included as a part of the daily inspection procedure:

- **General cleaning**
Check that all the weight-bearing surfaces are free of spills of oil, fuel, hydraulic oil, mud and foreign bodies. Check the general cleanliness.
- **Plates**
Keep all information and operating nameplates data clean and visible. To maintain visibility, it is recommended to protect them when spraying paint or performing blasting.
- **User manual**
Ensure that a copy of this manual is kept in the special container.
- **Machine logbook**
Ensure that notes are kept, or even better a logbook for the machine; ensure that it is kept up to date and that nothing is left in doubt, as this could reduce the safety of the machine.
- **Begin each working day with the batteries charged and/or a full tank of fuel.**



Attention

To avoid injury, do not operate the machine unless all breakdowns have been repaired.

The use of a defective machine constitutes a violation of the safety rules.

To avoid injuries ensure that the electrical current is switched off during the daily visual inspection



Note

Check visually and manually that the safety micro-switches are in position and that they are working correctly.

- Check that the brakes work correctly when the machine is moving on a slope with gradient not exceeding the specification in the technical data, and stop the machine



Note

After changing the oil on new and recently overhauled machines and all those which have had the hydraulic oil changed, operate all the movements for at least two full cycles and check the oil level in the tank again.

- Ensure that all the parts requiring lubrication are given maintenance.
Refer to the specific pages for the methods to be adopted.

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D.2.6. General inspection

Begin the visual inspection from the number on the list shown below.

Continue to check the condition of each part indicated in the list of daily visual inspection checks.



Attention

To avoid injury, do not operate the machine unless all breakdowns have been repaired.

The use of a defective machine constitutes a violation of the safety rules.

To avoid injuries ensure that the electrical current is switched off during the daily visual inspection.



Note

Do not underestimate the importance of inspecting the base of the frame.

Checking this area often reveals conditions that can cause serious damage to the machine.

- Basket overall - No loose or missing parts; No damage visible; the clevis pins and/or trunnions should be locked in position.
- Control panel on the basket - The switches should be in the correct position; No loose or missing parts; No damage visible; all labels and plates should be present, intact and legible; all control signs should be legible.
- levelling cylinders - No damage visible; the trunnions should be locked in position; the flexible pipes should have no visible damage or traces of leakage.
- Booms/lifting cylinders and extension cylinders - No damage visible; the trunnions should be locked in position; the flexible pipes should have no visible damage or traces of leakage.
- Limiter micro-switches - micro-switches should be in good working order; No damage visible.
- Brakes, gears, drive motor - No damage visible; no signs of leakage.
- Track assembly drawing - Notched wheel correctly positioned and tight; no nuts, bolts or screws should be loose or missing; No damage visible; Track in order.
- Hydraulic oil filter - the filter should be correctly locked in position; No damage visible; no signs of leakage.
- Hoods - covers should be correctly secured in position; No loose or missing parts.
- Control solenoid valves - No loose or missing parts; no signs of leakage; no electrical cables or flexible tubes should be unsupported; no electrical cables should be damaged or broken.
- Fuel feed - Fuel tank cap should be locked in position; there should be no visible damage to the tank and no sign of leakage; correct level.
- ground controls - switches should be working; No damage visible; labels should be in place and legible.
- Hydraulic oil tank - the oil level should be correct (check the level when the oil is cold, the components are not moving and the machine is in the rest position); The cap should be locked in position.
- Batteries - The electrolyte level is correct; electrical cables are secured without visible signs of damage or corrosion.
- Motor air filter - Properly tightened in place, no loose parts or missing; No damage visible; clean air filter.
- Motor oil - Correct oil level on the dip stick; Fuel tank cap should be locked in position.
- Hydraulic pump - No loose or missing parts; no signs of leakage.
- Exhaust pipe and silencer - correctly locked in position - Exhaust pipe and silencer - correctly locked in position; no signs of leakage.
- Slewing ring of the turret - No loose or missing screws or nuts; No damage visible; appropriate lubrication; no signs of loosening between the bearing and the structure.
- Swivel motor and gears - No loose or missing screws or nuts; No damage visible; appropriate lubrication.
- Basket rotation cylinders (if present) - No damage visible; flexible pipes should not be damaged and should not leak.

D.2.7. Daily working checks

Once the visual inspection has been completed, it is necessary to do a working check of all the systems in an area free of ground and aerial obstructions.

First use the ground controls and check all the functions operated by these controls.

Then use the controls on the basket to check all the functions operated from this position.



Attention

To avoid serious injuries, do not operate the machine if any one of the controls that operate it does not return to its off or neutral position when released.



Attention

To avoid collisions and injuries if the machine does not stop when a control is released, remove the foot from the pedal switch or use the emergency stop button to stop the machine.



Note

NEVER move the machine while the boom is raised from the resting position.

- Lower and raise the booms of the machine.
Check that the operation is correct and without obstacles.



Note

Carry out the checks on the ground controls first and then the basket controls.

- Raise, extend, retract and lower the booms.
- Check that the operation is normal and without obstructions.
- Extend the telescopic boom so that it moves from the retracted position to the extended position and vice versa a number of times with different lengths of extension.
Check that the telescopic mechanism works correctly and without obstruction.
- Rotate the turret to the left and then the right by a minimum of 45°.
Check that the rotation occurs without obstruction.
- Check that the basket automatic levelling system works correctly during raising and lowering of the boom.
- ground controls.
Rotate the general key switch to the OFF position.
No command must be operating.
Neither the commands of the basket need to run.

D.2.8. Maintenance of the batteries

To avoid injury caused by explosion, do not smoke near the batteries or bring a naked flame or a source of sparking close during maintenance work.



Attention

Always wear protective goggles when doing maintenance on the batteries

- The batteries do not need maintenance except for the occasional cleaning of the terminals as described below.
- Remove the cables from each terminal of the battery one at a time beginning with the negative terminal.
Clean the cables with a neutral solution (for example: sodium bicarbonate and water or ammonia) and a metal wire brush.
Replace the electrical cables or the screws in the terminals if necessary.

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- Clean the terminals of the battery with a metal wire brush then reconnect the cables to the terminals.
Apply mineral grease or vaseline to the surfaces that are not in contact.
- When all the cables and terminals have been cleaned make sure that the cables are secured correctly and not squashed.
Close the battery housing cover panel.

D.2.9. Electric pump maintenance

Follow the instructions given in the manufacturer's manual.

D - SAFETY

D.3. Qualification of operating personnel

The personnel using or operating the machine must be competent and meet the following requirements.

- **Physical**
Good eyesight, hearing, co-ordination and the ability to safely carry out all the necessary facilities required for use of the machine.
- **Mental**
Ability to understand and apply the established safety standards, precautions and rules. personnel must be attentive, use good judgment for personal safety and the safety of others; they must think about how to carry out the work correctly and responsibly.
- **Emotional**
Personnel must be calm and able to withstand stress and to use good judgment in regard to their physical and mental conditions.

D.3.1. Personnel training

The lifting platform is a machine intended for use by personnel.

Consequently, it is essential that the operation and maintenance should be entrusted only to authorized personnel, who have demonstrated their understanding of the peculiarities of use and maintenance of the machine.

It is important that all the personnel assigned to the unit and responsible for the operation and maintenance of this machine follow a thorough training programme and complete a period of probation in order to become familiar with the operational features of the machine before using it.

Persons under the influence of alcohol or drugs and persons suffering from epileptic fits, dizziness or loss of motor nerve control must not be allowed to use the machine.

D.3.2. Operator training

Operator training is based on the following

1. Use and limitations of the controls in the basket, those on the ground and the emergency controls
2. Knowledge and comprehension of this manual and the control signs, instructions and warnings affixed to the machine
3. Knowledge of all the work safety rules imposed by the employer and the laws in force, including training in regard to the recognition and prevention of potential dangers present in the place of work, with special attention to the specific job to be carried out
4. Correct use of all obligatory safety equipment, in particular safety helmets and other fall protection items, with a rope attached to the basket at any time
5. Sufficient knowledge of the mechanical working of the machine to be able to recognize actual or potential breakdowns
6. The best ways to operate the machine in the proximity of suspended obstructions, other moving equipment and where there are obstructions, depressions, holes, sudden dips, etc. in the surface supporting the machine
7. The safest ways to avoid danger from bare electrical conductors
8. Any other requirement specific to a given application of the machine

D.3.3. Training supervision

The training must take place under the supervision of a qualified operator or supervisor, in an open area without obstacles until the personnel under training have developed the ability to safely operate the lifting platform in congested areas.

D - SAFETY

D.3.4. Operator's responsibilities

The operator must be informed that he has the responsibility and the authority to stop the machine in the case of a breakdown or other conditions of reduced safety associated either with the machine or the work place and to request instructions from the supervisor or the distributor of the product before proceeding further.



Note

At the time of delivery of the first unit and, successively, at the request of the user or his personnel, the manufacturer or the distributor will provide qualified personnel to assist in the training of the operators.

D - SAFETY

D.4. Working clothes

Always ensure you are wearing suitable work apparel before approaching the machine and/or starting work with the machine.

When working with the machine the following precautions must be observed:

- Wear close fitting apparel without loose appendages that may be caught up in moving and rotating parts of the machine.
- Wear clothes with appropriate fastening systems (buttons, zips, velcro, etc.) and always fasten them.
- Sleeves must be close-fitting, belts properly fastened, bibs and braces correctly secured.
- Do not wear scarves, ties, etc.
- Do not wear sweaters, aprons and similar garments hanging on the shoulders or tied around the waist.
- Do not wear necklaces, chains, bracelets, rings or watches.
- Tie back long hair before working with the machine.

D.5. Working and transit area

Keep the work stations and transit areas clear of obstructions and clutter at all times.



Attention

Do not run in the vicinity of the machine.

Always proceed at a walking pace, paying attention to the possible presence of obstacles.

Ensure that there are no other persons in the immediate proximity of the machine during machine operation and maintenance.

D - SAFETY

D.6. Controls

Keep all the machine controls in perfect working order at all times

Ensure the controls identification plates are always perfectly legible

Do not place beverages or other liquid containers on the control console or on other electrical equipment: electric shock hazard in the event of spillage of liquids on electrical parts

D.6.1. Operating positions

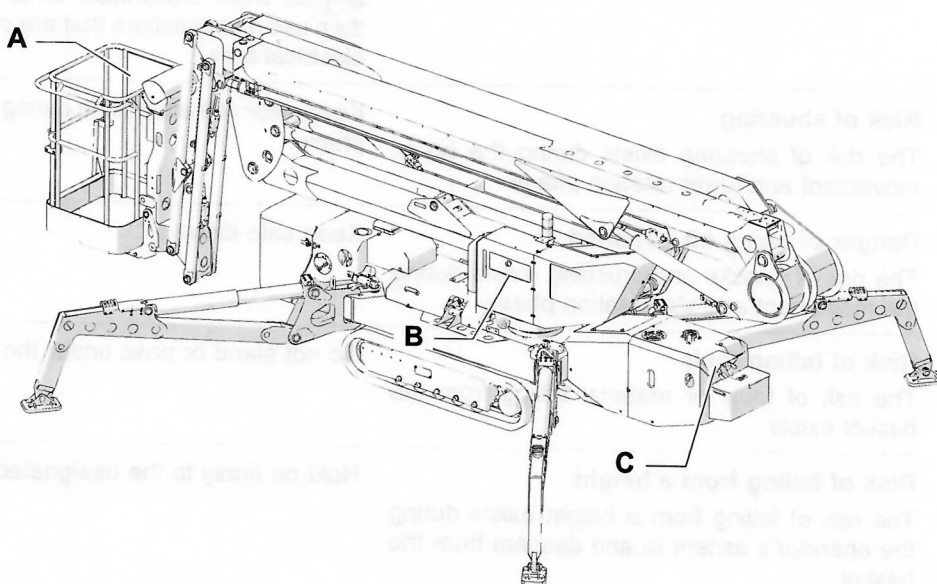
The operating positions of the machine are as follows.

A. one operator in the basket.

B. On the side of the machine but NOT under the boom for the second operator on the ground.

This position must be used:

- to control work operations;
- in case of emergency.



C. At the back of the machine for the translation and stabilization.

D.6.2. Emergency stop

"Emergency stop" controls are present on the machine and must be activated in the event of an immediate presumable danger.

Therefore be aware of the position of the various "emergency stop" controls in order to use them promptly when necessary.



Attention

Before restarting the machine or parts of the machine after an emergency stop, ensure that the causes of the emergency stop have been remedied and check carefully to ensure that there are no persons or obstacles in potentially dangerous areas.

D - SAFETY

D.7. Residual risks and rules of conduct

During machine operation, a number of residual risks may arise; it is therefore necessary to adopt the precautions listed below.

TYPE OF RISK	Conduct to adopt
Risk of electrocution The machine is constructed in compliance with statutory safety regulations concerning electrical systems. There is an electric shock hazard in the case of damage to cables and electrical equipment, with the associated risk of serious or fatal injury.	Always check that electrical cabinets are in perfect condition and properly closed, and that power cables, cable glands, and electrical equipment are in perfect condition. Inform the company's maintenance service immediately in the event of damage.
Fire hazard Electrical equipment may be the source of fire outbreaks.	Always ensure the electrical equipment is in perfect condition and repair any damage. If a fire starts disconnect power by setting the all-pole main disconnect switch to OFF and then use extinguishers that are compatible with electrical fires.
Risk of shearing The risk of shearing exists during the boom movement and turret rotation phase.	Keep clear of the machine during the movement phase.
Danger of being hit /crushed The risk of knocks and crushing exists during the movement and stabilisation phase.	Keep safe distance.
Risk of falling tools The risk of tools or material falling from the basket exists.	Do not stand or pass under the basket.
Risk of falling from a height The risk of falling from a height exists during the operator's ascent to and descent from the basket.	Hold on firmly to the designated supports.

D - SAFETY

D.8. Personal protective equipment (PPE)

When carrying out the normal working activity and during maintenance operations it must be guaranteed that the operators are provided with and use the following personal protection devices:



**Cut-resistant and
piercing-resistant
gloves**

Contact with sharp parts.

Oil-proof gloves

Contact with lubricating oil and grease and hydraulic fluid.



**Safety footwear with
reinforced toecap and
nonslip sole**

Slippery floors; Falling of heavy components.



Attention

The personal protection devices must be carefully stored and replaced when damaged

D - SAFETY

D.9. Method used to access hazardous areas

To prevent access to hazardous parts composed of moving parts in general, guards are present on various machine parts (made of sheet metal, metal mesh, plastic etc.) and are fixed with screws and/or nuts etc....

To avoid the risk of serious injury due to the presence of moving parts adhere strictly to the following rules of conduct.

The guards must always be present and correctly secured during machine operation.

The guards must only be removed by authorised personnel using suitable tools.

The guards must only be removed when the machine is at a standstill and cannot be restarted by third parties.

Before proceeding to remove the fixed guards, disconnect the power supply to the machine and exhibit the sign "Works in progress; No manoeuvring allowed".



Before restarting the machine, reposition the guards and secure them as envisaged by the manufacturer.

The threaded fasteners must be torqued in such a way as to prevent their removal using only the hands or makeshift tools.

D - SAFETY

D.10. Safety regulations for machine maintenance

The maintenance operations may only be carried out by authorised personnel suitably trained and skilled and expressly authorised by the company using the machine.

Maintenance work on the machine must be performed in observance of all the safety indications given in the present publication.

Before you proceed to remove the fixed guards, disconnect the machine from the power supply and exhibit the sign "Works in progress; No manoeuvring allowed"..

The instructions below must also be observed.

D.10.1. Consultation of technical documents

Before performing maintenance work on the machine, read the technical documentation supplied by the manufacturer and the suppliers of individual commercial parts of the machine.

In particular consult:

- the "operating instructions";
- Diagrams of systems (electrical, hydraulic, pneumatic, ETC).

The manufacturer's technical service is at your complete disposal for any information concerning maintenance work to be carried out on the parts supplied.



Attention

In the event of operational faults, do not attempt to resolve the situations which may occur by using makeshift tools and procedures.

D - SAFETY

D.11. Replacement parts

The use of non-authentic spare parts may cause machine malfunctions, which in turn may lead to hazardous situations for the operator and any individuals working near the machine.

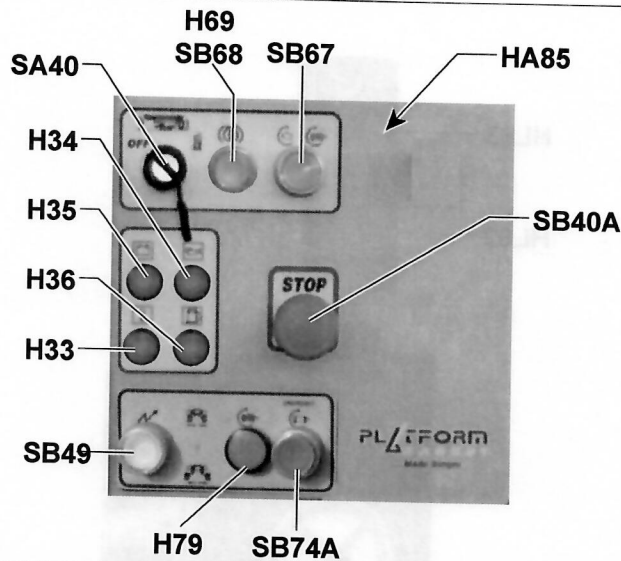


Attention

Always use exclusively genuine original replacement parts supplied by the manufacturer.

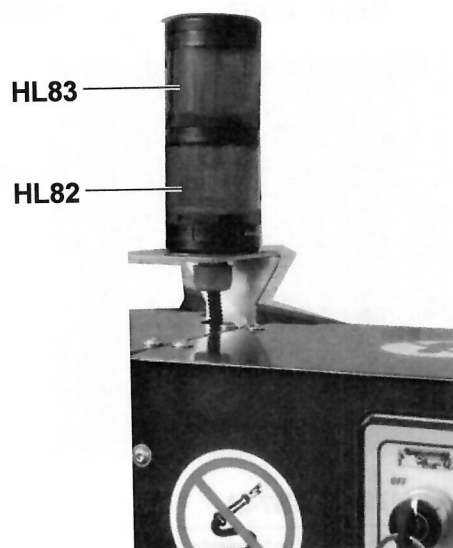
E - CONTROLS

E.1. Ground control panel



SA40	Key switch and enabling of base/basket controls <ul style="list-style-type: none"> – Switch to OFF turns off the machine. – Switch turned to the centre switches the machine on and enables the ground controls. The ground working position has priority over the basket position. – Switch turned to the right switches the machine on and enables the basket controls.
H69	Light button for glow plugs pre-heating (With diesel engine only).
SB68	The light turns off after 8 seconds of glow plugs pre-heating.
SB67	Button for endothermic or electric engine start / stop
H35	Alternator indicator light (With diesel engine only) The indicator light is off when the alternator is charging the battery.
H34	Oil telltales The indicator light is on when the pressure or the quantity of oil is insufficient.
H33	Temperature indicator light The indicator light is on if the water is overheating.
H36	Fuel indicator. If the indicator light is on, it means that the quantity of fuel is below the minimum level.
SB40A	Emergency button. With the button pressed all movement is immediately stopped and the electrical power to all the controls is cut off. Reset by turning the button in the direction of the arrows.
SB49	Operational presence button (dead man device) Operator presence button (Trolley and aerial part).
SB74A	12V electric emergency pump start button
H79	Electric motor indicator light When on, this shows that the motor is active.
HA85	HA85 Acoustic signal Activated when: <ul style="list-style-type: none"> – The machine is moved. – Stabilisation takes place. – There is an overload in the basket (HL83 indicator light on (fixed)).

E - CONTROLS



HL82	Green lamp The lamp comes on with a fixed light when the aerial part is in a safe position
HL83	Red lamp The lamp comes on with a fixed light when the machine is not levelled horizontally. It comes on with a fixed light when the machine is working at the working curve limit. The lamp comes on when there is an overload.

E - CONTROLS

E.2. Stabiliser controls

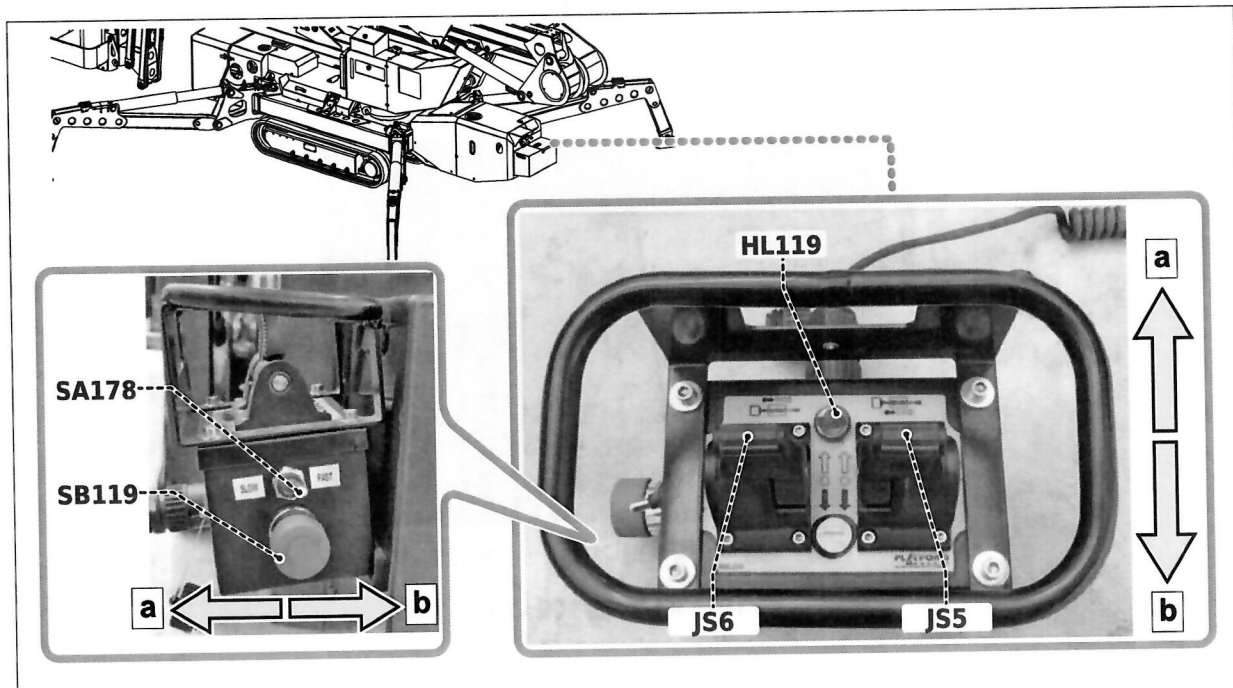


YV97 -95 YV105 -103 YV121 -116
YV101 -99 YV109 -107

Name	Description	Function	
		position a	position b
YV97 -95	Stabiliser foot movement lever 1	Lifting	Lowering
YV101 -99	Stabiliser foot movement lever 2		
YV105 -103	Stabiliser foot movement lever 3		
YV109 -107	Stabiliser foot movement lever 4		
YV121 -116	Lever for opening/closing tracks	Opening	Closing

E - CONTROLS

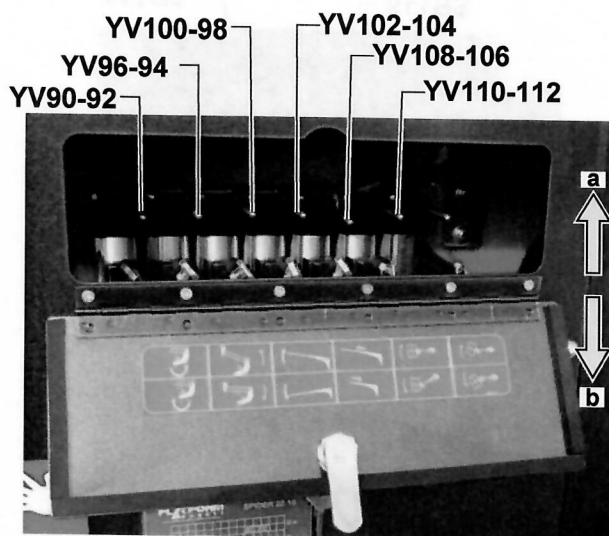
E.3. Wire controlled translation controls



Name	Description	Function	
		position a	position b
JS6	Left track movement lever	Lifting	Lowering
JS5	Right track movement lever		
SB119	Emergency button - OFF panel When pressed the wired panel stops immediately. To reset button turn it following arrows.		
HL119	Green indicator light - Pushbutton panel activation/connection. On indicates that panel is working, off that panel is disabled.		
SA178	Shifting speed change selector	slow speed	Fast speed

E - CONTROLS

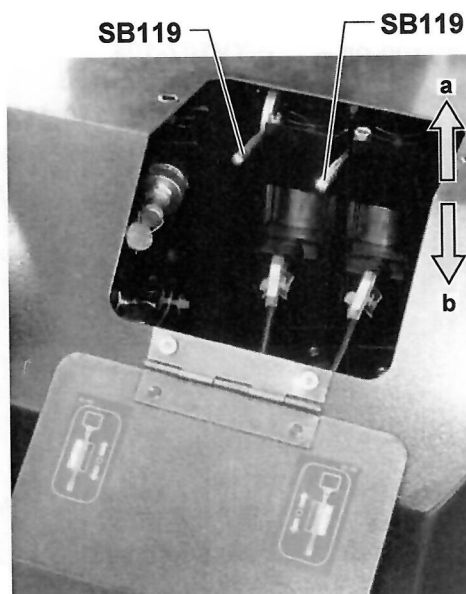
E.4. Aerial part emergency controls



Name	Description	Function	
		position a	position b
YV90-92	Column movement lever	counterclockwise rotation	clockwise rotation
YV96-94	Pantograph boom movement lever	Lifting	Lowering
YV100-98	Telescopic boom movement lever		
YV102-104	Extension movement lever	Exit	Retraction
YV108-106	Jib movement lever	Opening	Closing

E - CONTROLS

E.5. Emergency translation controls

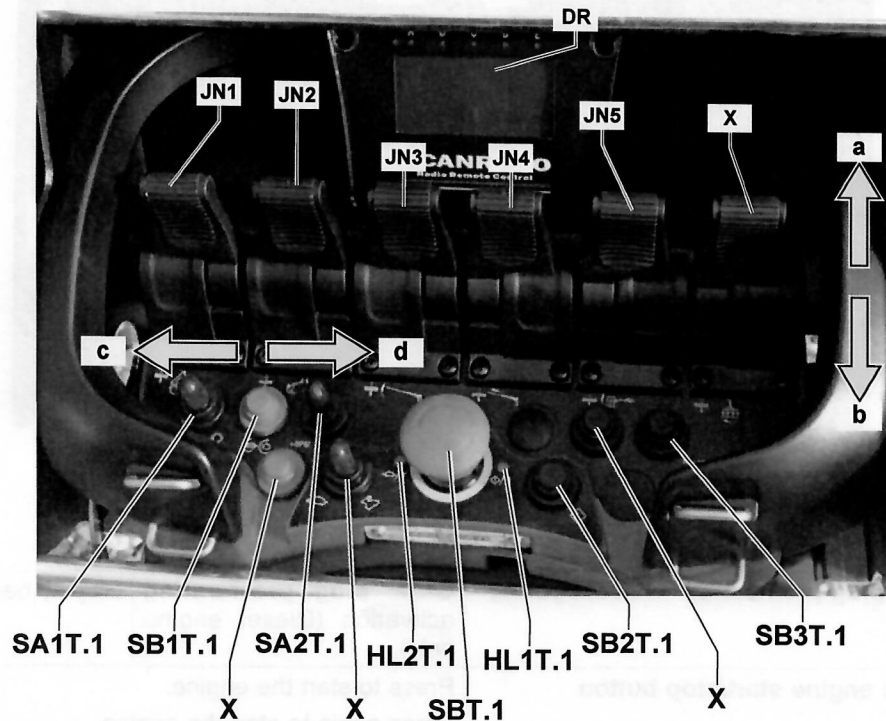


Name	Description	Function	
		position a	position b
YV113 -111	Left track movement lever	Forward	Backward
YV93 -91	Right track movement lever	Forward	Backward

E - CONTROLS

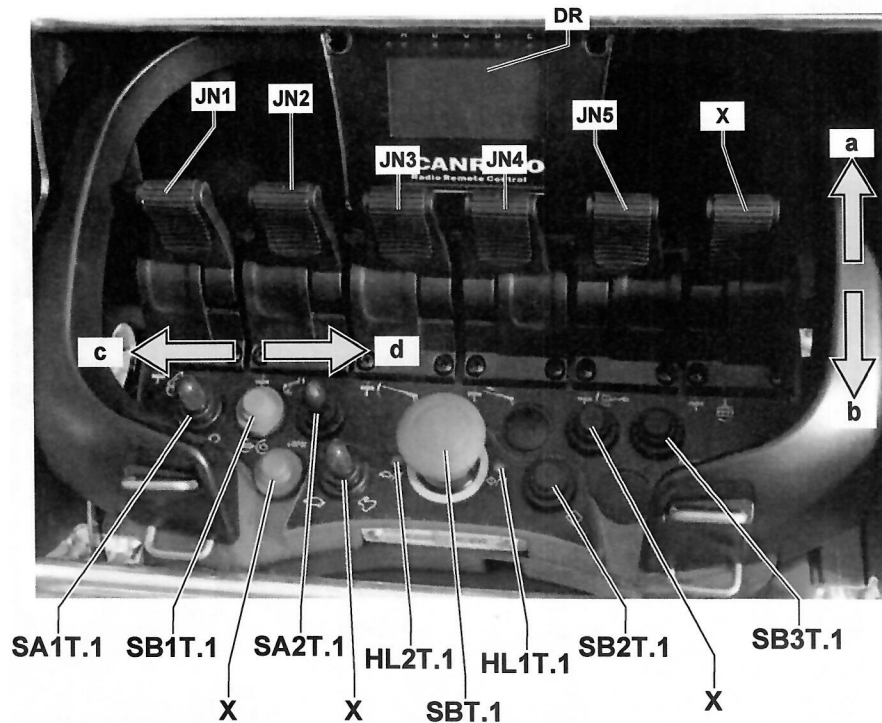
E.6. Controls in basket

E.6.1. Cage remote control (Aerial part only)



Name	Description	Function	
		position a/c	position b/d
JN1	Column rotation command lever	Anti-clockwise	Clockwise
JN2	Pantograph arm lever	Lowering	Lifting
JN3	Upper arm handling lever	Lowering	Lifting
JN4	Upper boom extensions movement lever	Retraction	Extension
JN5	Leva di movimentazuione antenna	Retraction	Extension
X	Free		

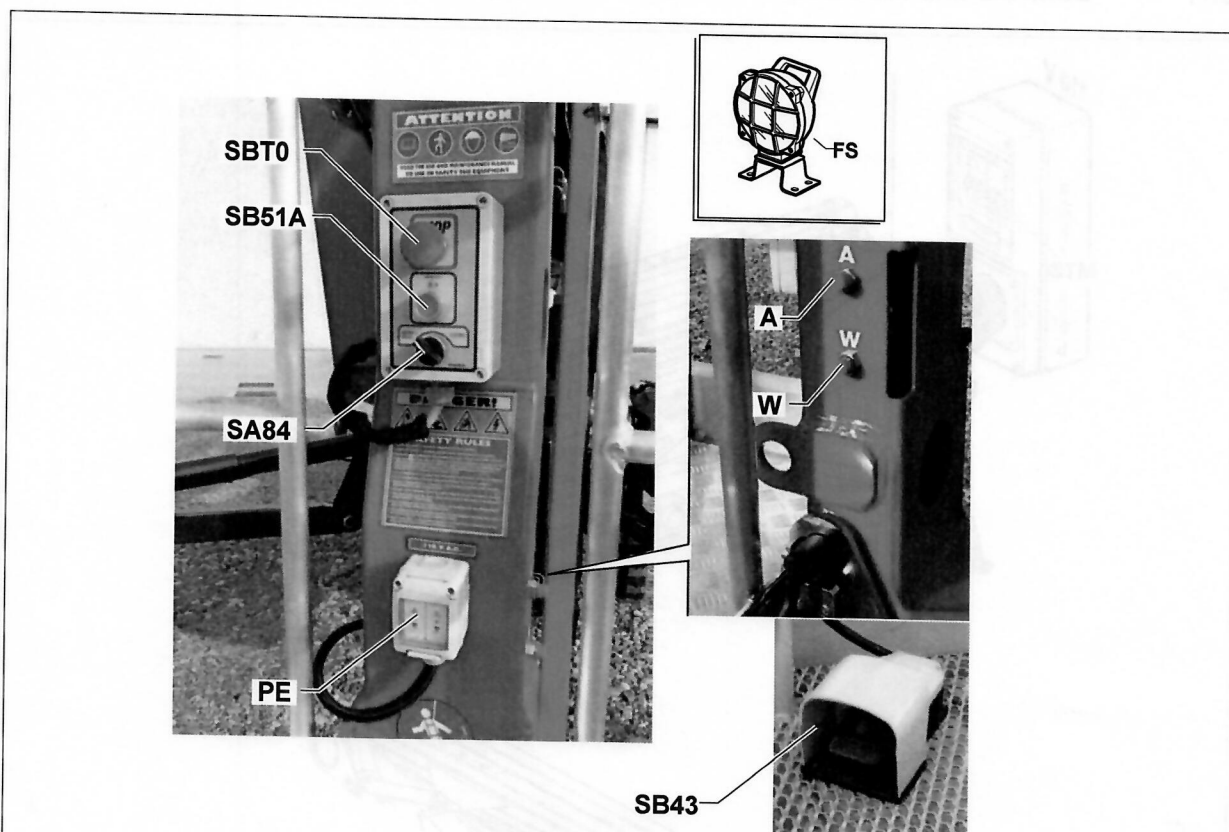
E - CONTROLS




SA1T.1	Glow plug pre-heating - Backlighting	Glow plug pre-heating activation (Diesel engine only)	Display backlighting on
SB1T.1	Green engine start/stop button	Press to start the engine. Press again to stop the engine.	
SA2T.1	Aerial part movements speed selector switch	With engine running, the system automatically regulates the minimum speed (1600 rpm) and on the basis of the movement in progress, the system selects the most suitable speed to perform the manoeuvre.	
		Activate to have constant maximum speed allowed for all movements (3100 rpm). Activate the selector in the opposite direction to go back to automatic speed.	Activate to have a constant minimum speed for all movements (1600 rpm). Activate the selector in the opposite direction to go back to automatic speed.
SBT.1	Emergency button - OFF panel When pressed, it causes an immediate halt to all movements. To reset button turn it following arrows. When pressed, it switches of the pushbutton panel. To enable the pushbutton panel, turn the button, following the direction of the arrows.		
HL1T.1	Status of the keypad	On indicates that the keypad is active.	
SB2T.1	Black push-button / Horn Pressed it allows to activate the pushbutton panel. Pressed, after activation of the pushbutton panel and with all functions active, it operates as an acoustic warning device (Horn).		
SB3T.1	Change page button Pressing the button allows the various functions to be shown on the display, one after the other, with the relative information present in the machine control system.		

E - CONTROLS

E.6.2. Other commands in the cage



SBT0	Emergency stop button
SB51A	Button activating the emergency electric pump When pressed, it activates the emergency electric pump.
SA84	Work engine selector switch <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  </div> <div> <p>Attention</p> <p>Before starting to operate the machine and after having enabled the ST2 battery switch, select through this switch the type of motor you want to use and start.</p> </div> </div>

E.6.3. AIR/WATER utilities in basket

A	Compressed air service utility
W	Water service utility

E.6.4. Electric current in the basket (Optional)

PE	Electric current service utility outlet (110V) On request, an electric service outlet (PE) is installed. The system is the continuation of the outlet (PEC) installed on the carriage.
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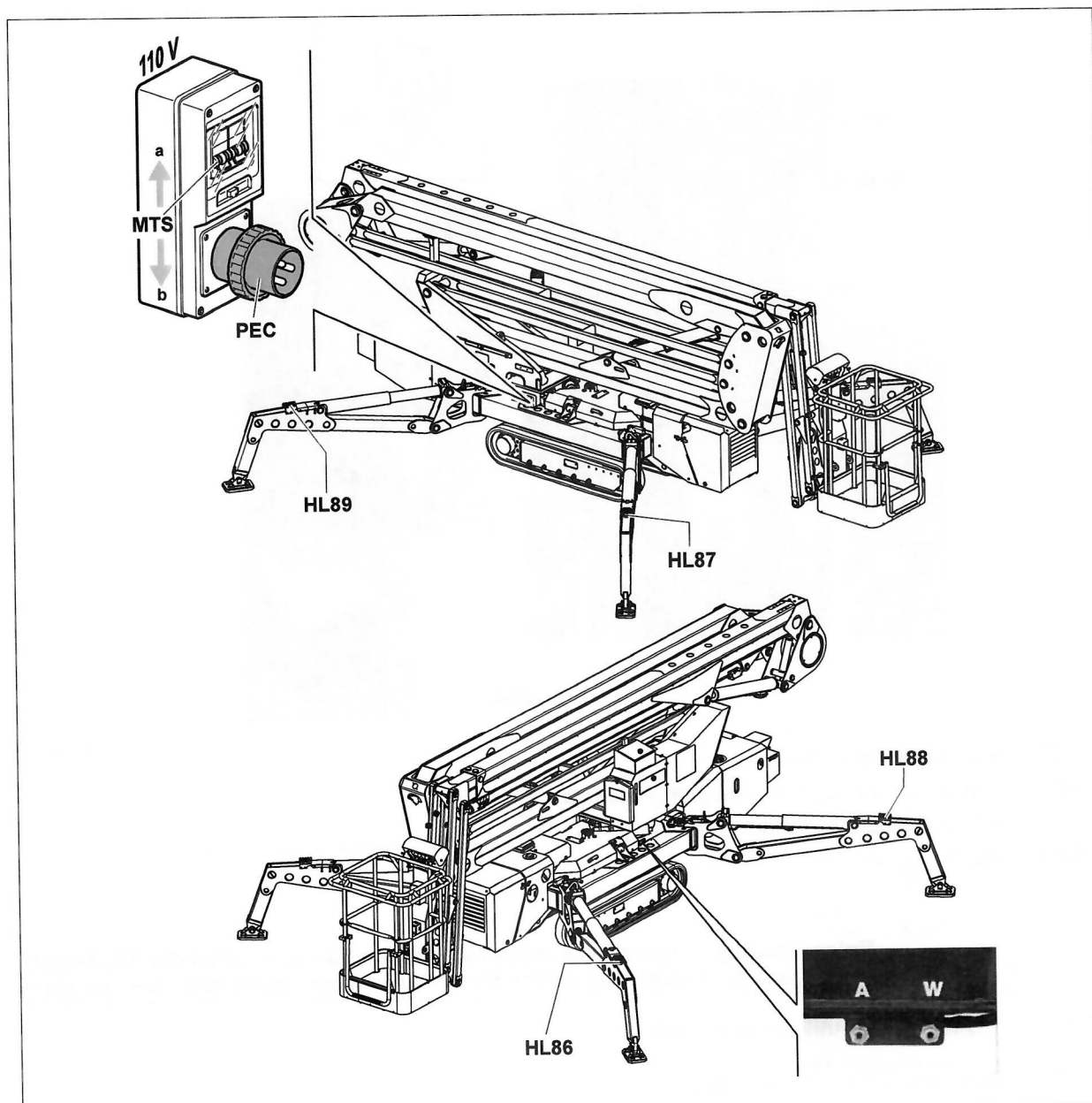
E.6.5. Dead man (Optional)


SB43	On request a Dead Man pedal is installed; this Device must be pressed from the operator into the basket in order to obtain consens for aerial part movements from the basket.
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Work lamp (Optional) On request it is possible to have a floodlight for work (FS) installed on the basket. The switch is located directly on the basket.

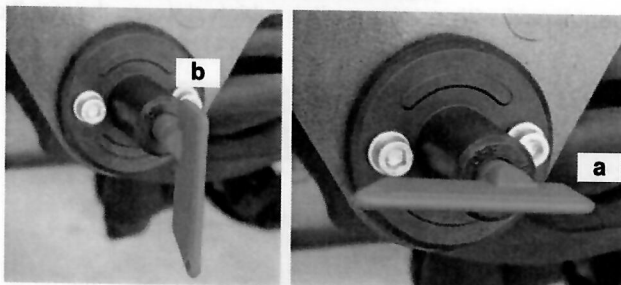
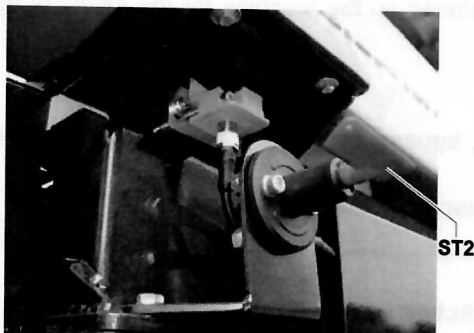
E - CONTROLS

E.7. Controls and instruments on board the machine



PEC	Current outlet from external electrical system (110V)  Attention During the machine movement phase, check that the cable and the connection are not damaged.		
MTS	Circuit breaker to protect the electric service utility	Enables electric service utility operation.	Disables electric service utility operation
HL86	Stabiliser foot indicator light 1 The indicator light comes on when the foot is stabilised correctly.		
HL87	Stabiliser foot indicator light 2 The indicator light comes on when the foot is stabilised correctly.		

E - CONTROLS



HL88	Stabiliser foot indicator light 3 The indicator light comes on when the foot is stabilised correctly.
HL89	Stabiliser foot indicator light 4 The indicator light comes on when the foot is stabilised correctly.
A1	Compressed air service utility connection in the cage.
W1	Water service utility connection in the cage.
ST2	Diesel motor battery switch In (a) ON position, it enables engine operation. In (b) OFF position, it disables engine operation. The key can be removed in this position.

F - DEVICES

F.1. Safety devices

A number of safety devices are installed on the machine for the safety of the operator and the protection of the machine.



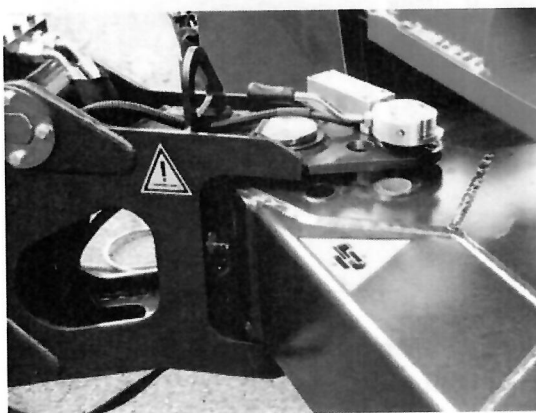
Attention

Do not tamper with, disconnect, bypass or remove any of the machine's safety devices or guards.

The Manufacturer declines all responsibility for machine safety if this instruction is not observed.

F.1.1. Stabiliser foot position microswitches

Each stabiliser foot is equipped with a microswitch which detects the position in which the pin is blocked.

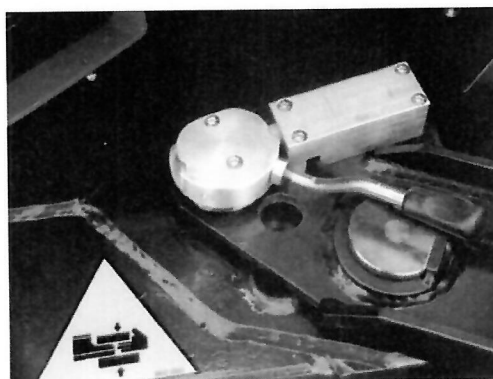
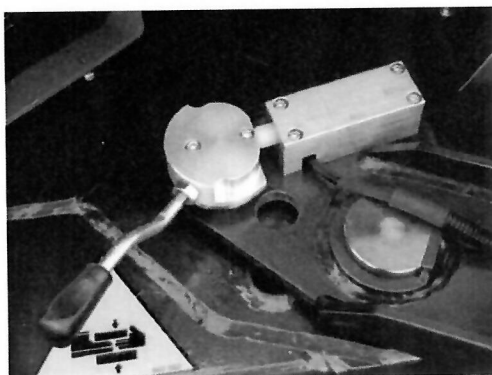


F.1.2. Microswitches which signal the position of the stabiliser feet blocking pin (Sensor)

Each stabiliser foot is equipped with a microswitch which detects the open position of the stabiliser foot and its correct blocking.

Turn the pin in order to press the microswitch to signal the correct insertion and blocking in position.

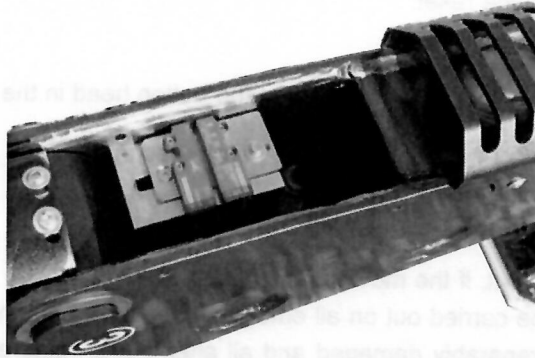
The combinations defined by the condition of the stabiliser foot position and blocking pin position microswitches transmit the exact position of the stabiliser feet to the machine control system.



F - DEVICES

F.1.3. Sensor to detect the correct position of the outriggers

Each outrigger is equipped with a Proximity for the control of the thrust it exerts on the ground.



The enabling of the outrigger in its correct position, is given by the combination of this Proximity and the position micro switch of the locking pin.

If the outrigger is in the correct position and the control panel is lit, the warning light on outrigger starts to flash.

Otherwise, when only one of the two sensors indicates that the machine is not stabilized, the red light **HL83** running continuously 3 close flashes.

F.1.4. Acoustic signal / Visual signal

It signals every emergency situation and is also activated each time the machine moves.



F - DEVICES

F.1.5. Emergency button

Each control station is equipped with a device **SB40, SB40A, SBT**) that allows the operator to stop the machine in the presence of imminent danger.

Push the emergency red mushroom like button to stop every movement.

To restart the machine reset:

- The work conditions;
- The safety conditions;
- The emergency stop device by twisting the button head in the direction shown by the arrows marked on it.

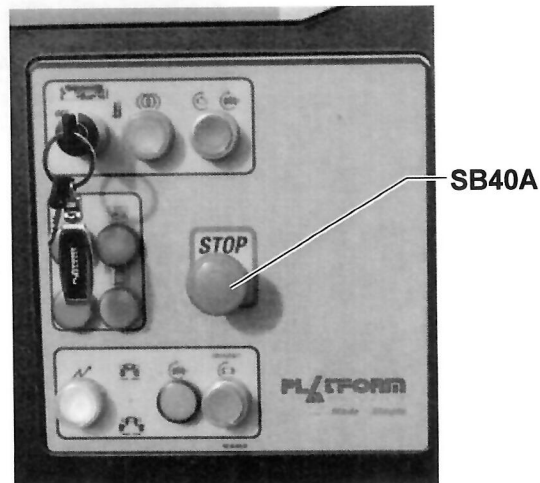
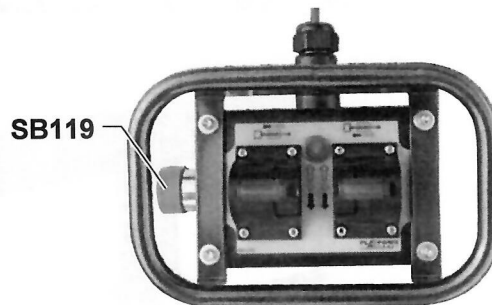
Check the efficiency of the safety device before each use of the machine.

- Give energy to the power system;
- start a work cycle;
- Press pushbutton.

The device is efficient, if the movement stops.

The check must be carried out on all emergency devices present in the command position.

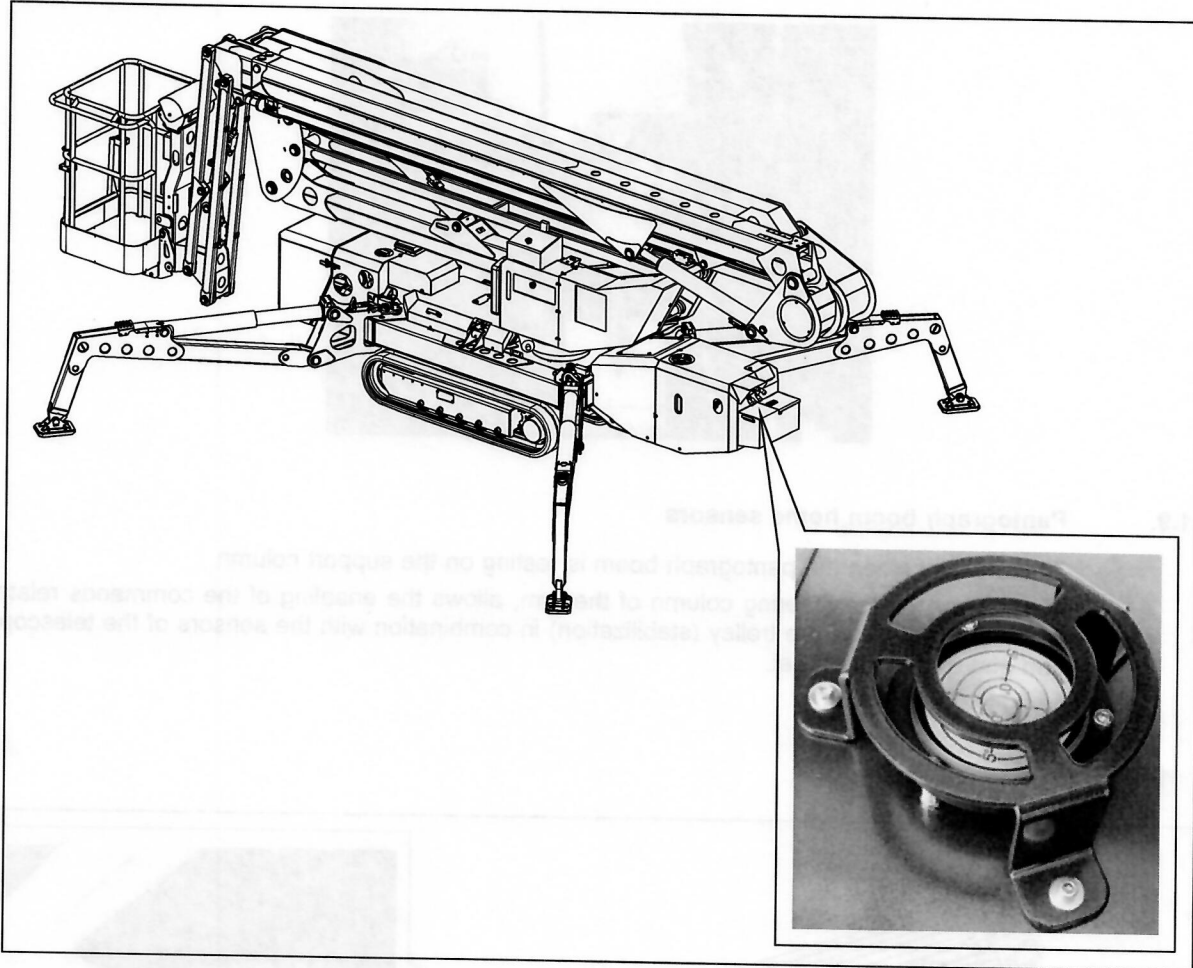
If the device is irreparably damaged and all attempts to restore the working configuration are unsuccessful, contact the service centre for information on how to reset the device and the machine.



F - DEVICES

F.1.6. Bubble level

Allows control of machine flatness.

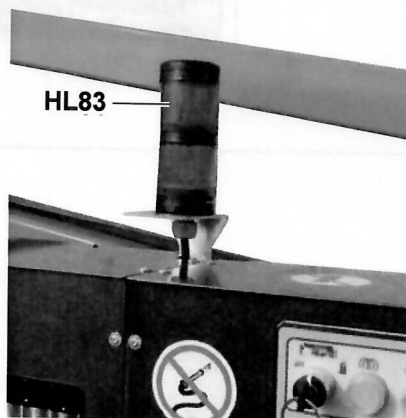


F.1.7. Inclination control

It controls machine planarity electronically

When a certain gradient is exceeded, the indicator light HL83 comes on.

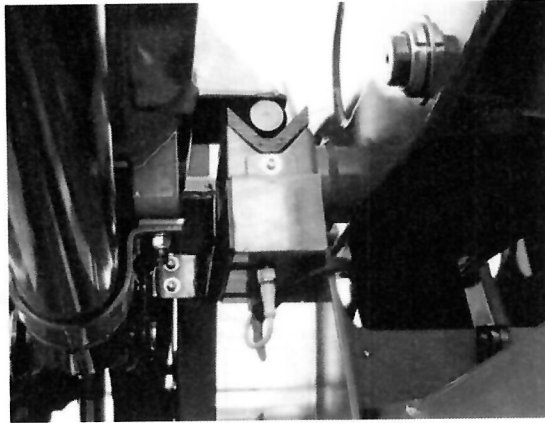
The "NO LEVEL" message appears on the pushbutton panel display.



F - DEVICES

F.1.8. Telescopic boom and extension home sensors

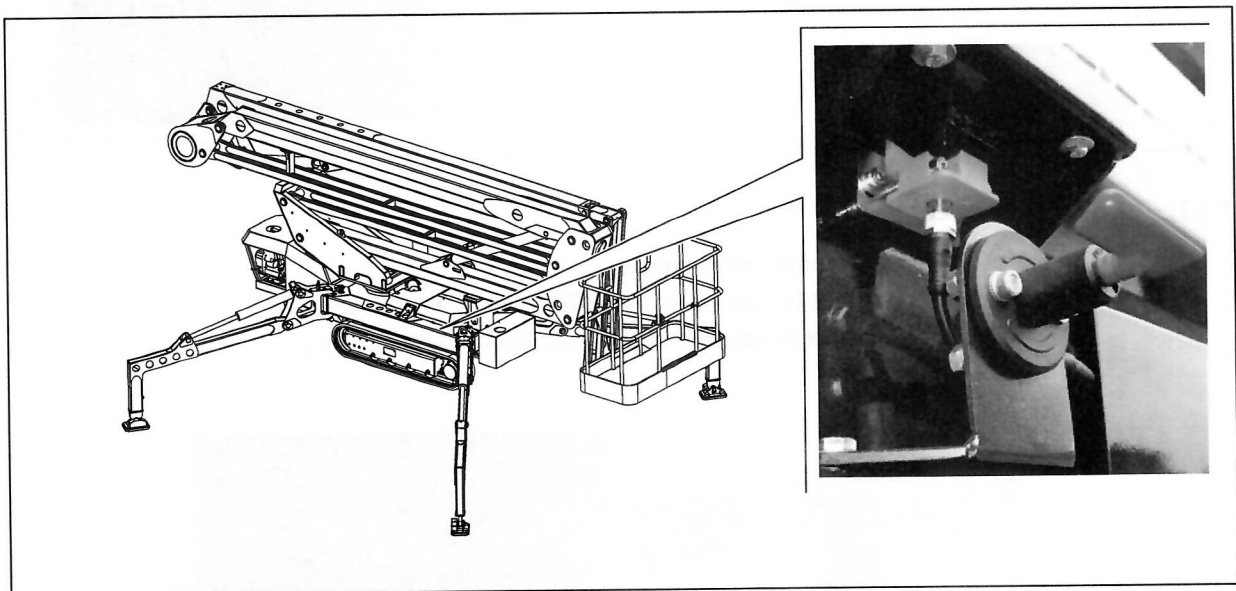
These detect the complete closure of the telescopic boom and the total retraction of the extension



F.1.9. Pantograph boom home sensors

These detect when the pantograph boom is resting on the support column.

The support on the steering column of the arm, allows the enabling of the commands related to the movements of the trolley (stabilization) in combination with the sensors of the telescopic arm and extension at rest.

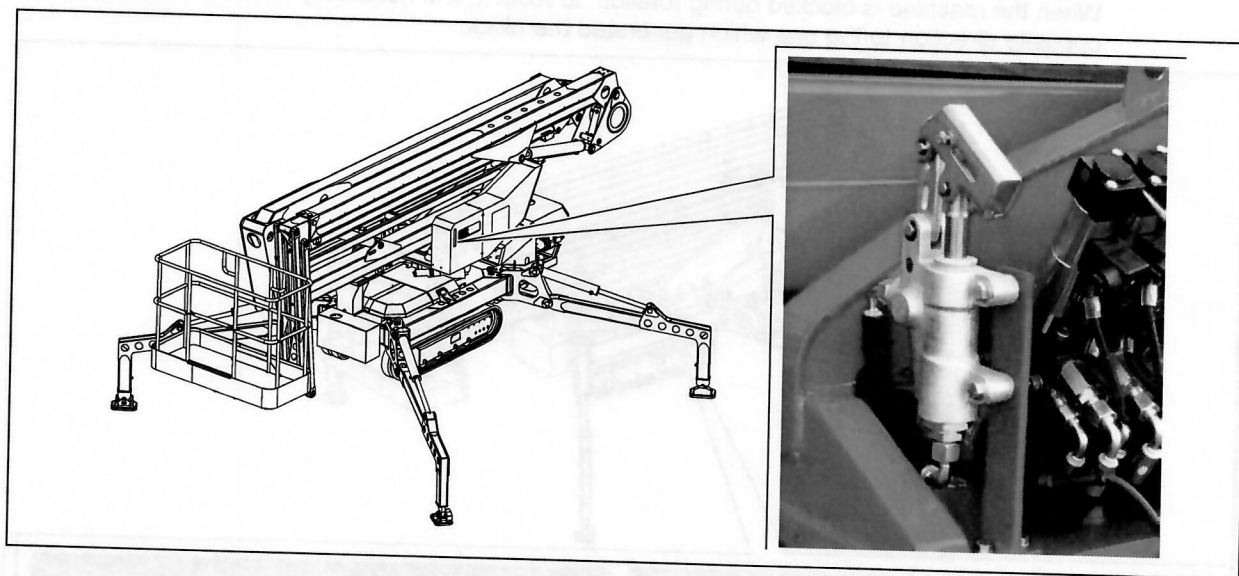


F - DEVICES

F.1.10. Manual emergency pump

The machine has a manual emergency pump in the cases in which there is a failure that determines a total machine block (see "Movements in an emergency").

In addition to the hand pump, on request, it is possible to install a further **12 V** electric pump, with the same function as the manual pump, which makes use of the battery power.



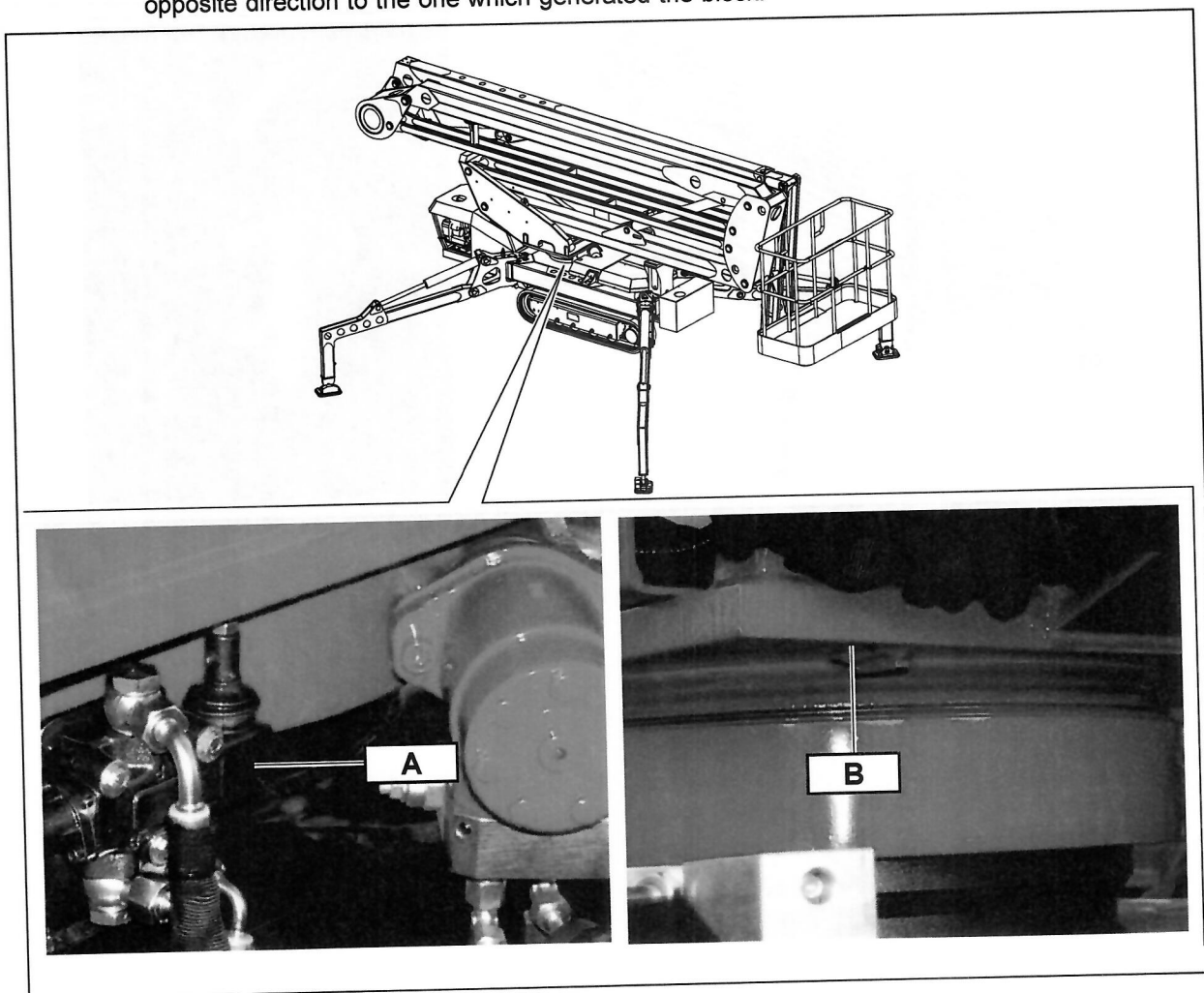
F - DEVICES

F.1.11. Rotation check

The rotation of the turret is **360°** non-continuous (approx. **180°** on the right-hand side and approx. **180°** on the left-hand side)

The device is composed of a by-pass valve **(A)** which intercepts the plate **(B)**, blocking the rotation at **180°**.

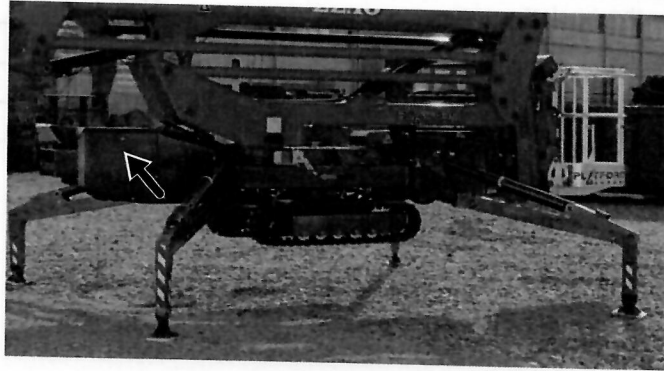
When the machine is blocked during rotation, to reset it, it is necessary to rotate the turret in the opposite direction to the one which generated the block.



F - DEVICES

F.1.12. Electric pump emergency kit 12 V DC

The machine has an emergency 12V electric pump, having the same function as the manual pump, which uses the battery voltage.



G - OPTIONAL

G.1. Accessories on request

Anti traces continuous track		
Work lamp in the basket		
Electric outlet in the basket	Vca	110
	A	16
Lubricant kit for arctic climate		
Oversized plates for stabilisation		

H - TRANSPORT

H.1. Foreword

The following chapter contains important prescriptions that must be strictly observed to protect personal safety

Always observe also all the general and specific regulations concerning lifting equipment and handling and transport operations, including those that are not expressly stated in this manual



Attention

The manufacturer's technicians are not qualified to use the lifting equipment or to supervise the work of third parties from a safety point of view.

The customer must therefore provide our technician with qualified personnel equipped with suitable lifting means.

The manufacturer declines all liability related to the use of unsuitable lifting means.

H - TRANSPORT

H.1. Foreword

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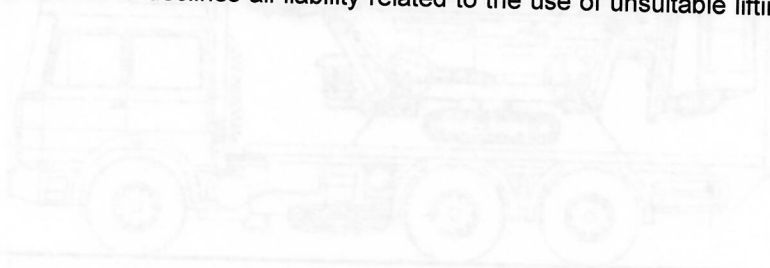


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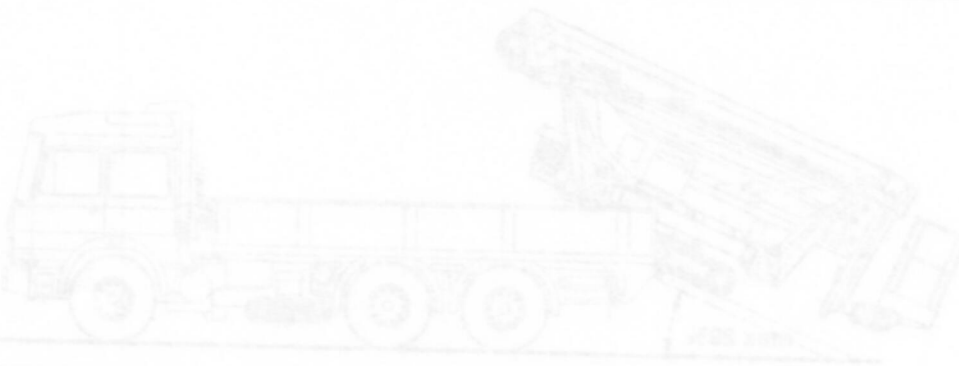


During transportation, the machine must ALWAYS be secured to the vehicle body with
cables or chains

It can be loaded and unloaded in two different ways:
- using the machine through a ramp
- load by means of the crane

Loading and unloading by ramp

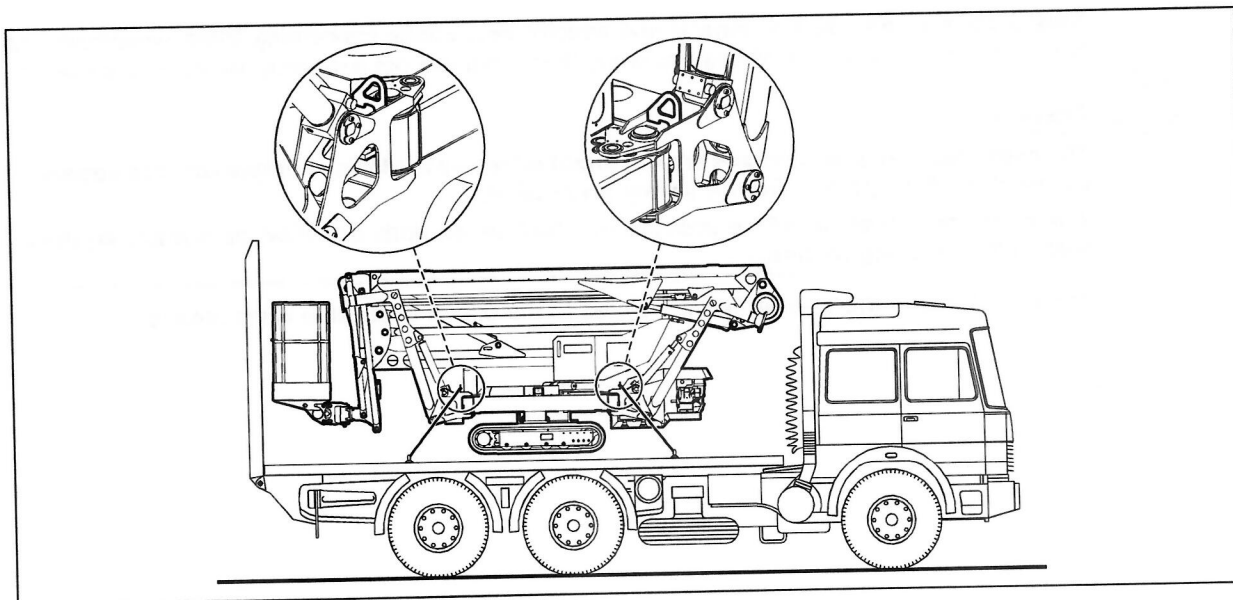
For driving on and off the truck, the manufacturer may be used. The instructions of the crane must
NOT exceed 25%
Then use the remote control to go up and down the ramps



H - TRANSPORT

H.2. Handling and/or storage

The machine may be transported on a truck.



Attention

During transportation, the machine must ALWAYS be secured to the vehicle body with cables or chains

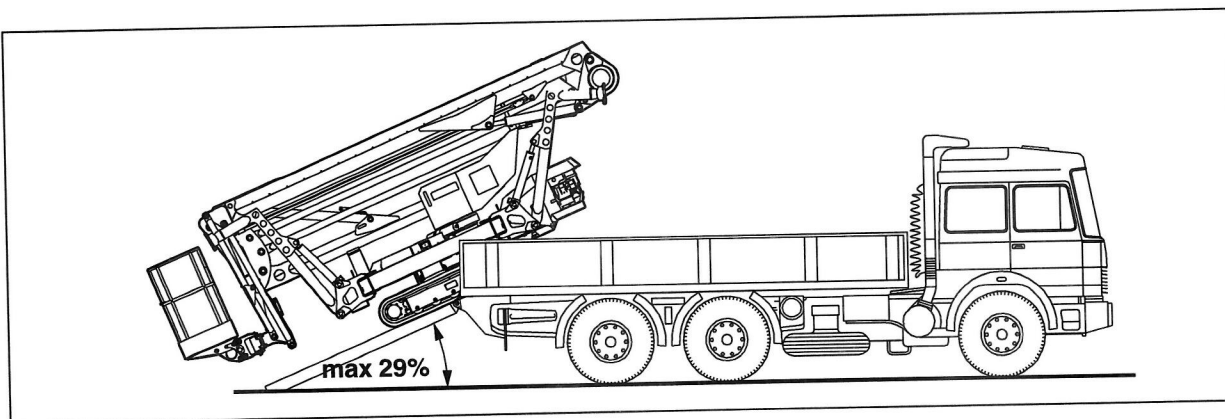
It can be loaded and unloaded in two different ways:

- lifting the machine through a ramp;
- load by raising the same.

H.2.1. Loading and unloading by ramp

For driving on and off the truck normal ramps may be used. The inclination of the ramps must NOT exceed **29%**.

Then use the normal machine traverse controls to go up and down the ramps.



Note

If necessary, raise the jib.

H - TRANSPORT

H.2.2. Lifting

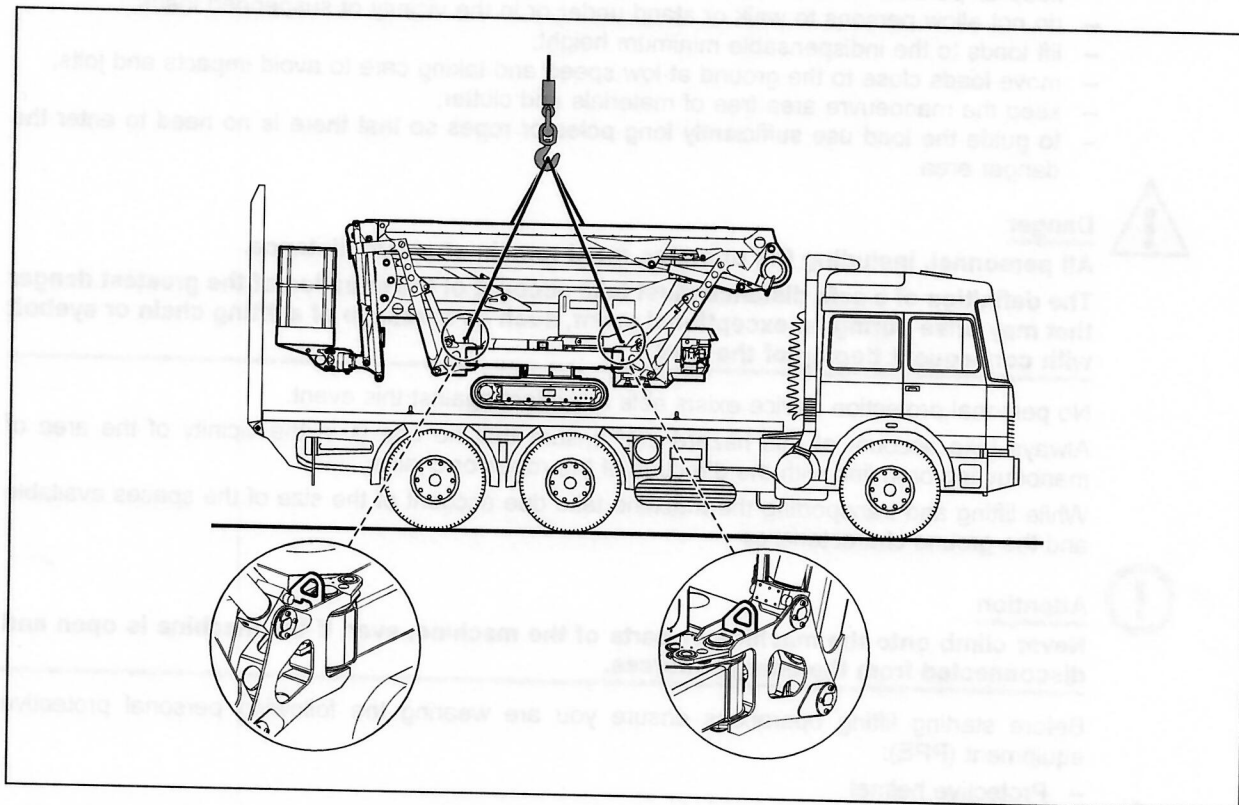
The machine can be loaded on and unloaded from a vehicle using a crane.

In this case, the machine must be lifted by attaching it to the pierced plates used to secure the machine during transport with ropes of a suitable capacity.



Danger

Always check that the cables used for raising are in good working condition.



H - TRANSPORT

H.2.3. Safety prescriptions for transport and handling operations

The transport, lifting and assembly operations must be carried out by specialised companies working in the machinery transport sector.

It is only possible to perform the various operations in conditions of safety when suitable skills are combined with the use of the correct equipment.

During lifting procedures:

- use the utmost caution;
- keep all persons clear of the area of operations;
- do not allow persons to walk or stand under or in the vicinity of suspended loads;
- lift loads to the indispensable minimum height;
- move loads close to the ground at low speed and taking care to avoid impacts and jolts;
- keep the manoeuvre area free of materials and clutter;
- to guide the load use sufficiently long poles or ropes so that there is no need to enter the danger area.



Danger

All personnel, including the operator, must remain at a safe distance.

The definition of a safe distance must take account of the situation of the greatest danger that may arise during an exceptional event, such as breakage of a lifting chain or eyebolt with consequent tipping of the load.

No personal protection device exists able to protect against this event.

Always take account of this hazard and ensure that no one is in the vicinity of the area of manoeuvring or in line with the direction of the ropes or chains.

While lifting and transporting the machine take due account of the size of the spaces available and the ground characteristics.



Attention

Never climb onto the machine or parts of the machine, even if the machine is open and disconnected from the energy sources.

Before starting lifting operations ensure you are wearing the following personal protective equipment (PPE):

- Protective helmet
- Cut-resistant gloves
- Accident-prevention footwear with slip-proof sole and reinforced toe-cap.

I - USE

I.1. Foreword

The sequence of main operations necessary to make the machine operational is as follows:

- **Shifting**
- **Stabilisation**
- **Aerial part movement**

There follow the instructions for safe configuration and use of the machine.



Note

The sequence of operations necessary to install the machine is affected above all by the operational situations.

According to the working conditions, the operator should adopt the safest and most suitable operational sequence.

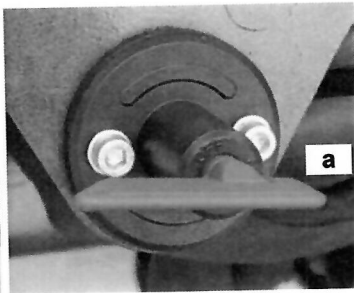
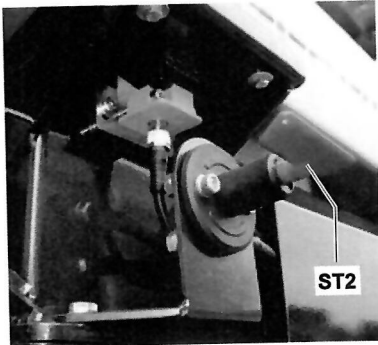
I - USE

I.2. Start/stop engine

The actions of starting and stopping of the motor are possible from the ground controls and those on the basket.



Enable the engine by rotating the key in the battery disconnecter (ST2) to (a) ON.



Select the engine to be used using the selector switch (SA84) in the cage.



Attention

The engine can only be selected using the selector switch SA84 in the cage.

I - USE

I.2.1. Start the Diesel motor or the electric motor 110 volt (if present)

- Move to "Ground control panel".
 - Move the switch **SA40** to "ground position" or "basket position" according to the machine's operating situation.
 - Select the diesel engine using the **SA84** (Selector switch in the cage).
- Press the button/warning light **SB68-H69** for glow plugs pre-heating (ground control panel) or **SA1T.1** (basket control keyboard).
- The indicator light **SB68-H69** stays on until pre-heating has ended.
- Wait until the indicator lights **SB68-H69** go off; the engine cannot be turned with the indicator light on.

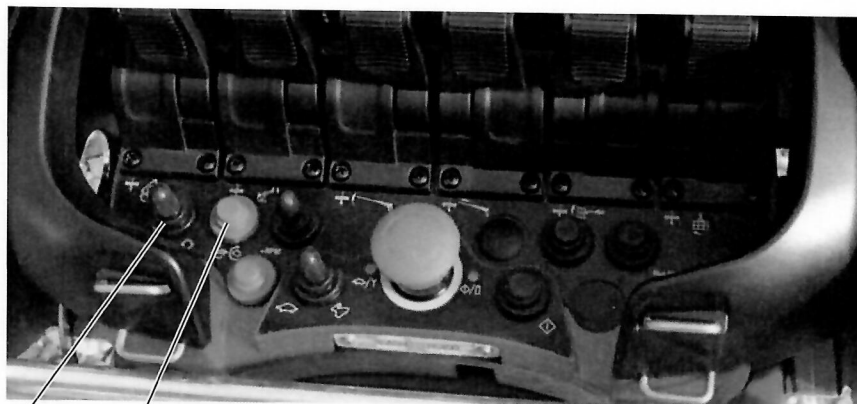
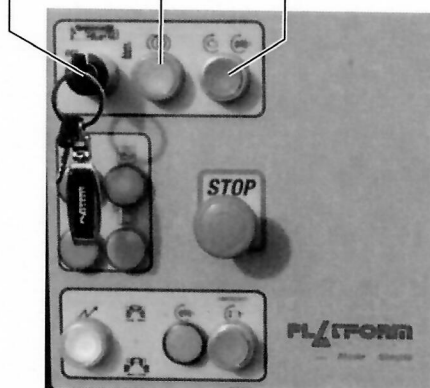


Note

Starting the engine again immediately (while the engine is still hot) does not require the glow plugs to be pre-heated.

Press the **SB70** ignition button for the motor (ground control panel) or the **SB1T.1** switch (basket keyboard).

SA40 SB68-H69 SB70



SA1T.1 SB1T.1

I.2.4. Turning the diesel engine off

- Check that the machine configuration is in maximum safety conditions.
- If the ground controls are enabled you can stop the Diesel engine while holding the button **SB70** (ground control) pressed; if the basket controls are enabled press **SB1T.1** (basket keyboard).



Note

Starting the engine again immediately (while the engine is still hot) does not require the glow plugs to be pre-heated.

- When the manoeuvre has been completed, take the switch **SA40** to "off".
- Disable the engine by rotating the key in the battery disconnecter **ST2** to off.

I - USE

I.3. Messages List

I.3.1. Machine status screens



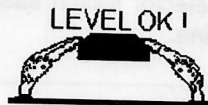
Machine screen seen from above not stabilised, not levelled and with aerial part in safe position.

During the stabilization phase, when the ground thrust of the stabilizer feet reaches the correct pressure, the "ok" symbol will appear near each leg.

After all the legs press correctly on the ground, the next screen will be "LEVEL OK" or "NOT LEVELED" depending upon the inclination of the carriage.

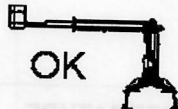


The four "OK" icons appear on each leg.



LEVEL OK!

The machine is stabilized within the allowed limits.



OK!

This appears when the machine is operating without the allowed parameters.

I.3.2. Machine status or limiting conditions messages



#02

Cage overload 200 kg alarm.



#03 - LEVEL ALARM.

Dangerous inclination.



#04 - ANGLE EXTENSION DIAGRAM LIMIT.

Work diagram limitation reached due to moment/load limitation on legs.

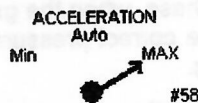
I - USE



#57 - ACCELERATION = MIN.

This appears for a second when the minimum movement screen is forced, then it returns to the previous screen.

It does not appear when you are in the "scroll" menu.



#58 - ACCELERATION = MAX.

This appears for a second when the maximum movement screen is forced, then it returns to the previous screen.

It does not appear when you are in the "scroll" menu.



#59 - ACCELERATION = AUTO.

The display shows for one second when you set the speed of the automatic movements, then the system returns to the previous screen.

It does not appear when you are in the "scroll" menu.



#60 - FUEL LEVEL.

Attention, fuel level low.

Appears only when the selector switch saSA84 in the cage is set on combustion engine.



#61 - ENGINE OIL LOW PRESSURE.

Alarm, low oil pressure, combustion engine.



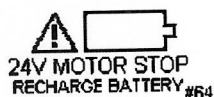
#62 - ENGINE HIGH TEMPERATURE.

Alarm, high temperature, combustion engine.



#63 - 24V MOTOR OVER TEMPERATURE.

Alarm, high temperature, 24Vv electric engine.



#64 - 24V MOTOR STOP RECHARGE BATTERY.

Alarm, batteries low. Recharge the batteries.

Appears only when the selector switch saSA84 in the cage is set on electric engine.



#65 - RECHARGE 24V BATTERY.

Attention, low battery level.

Appears only when the selector switch saSA84 in the cage is set on electric engine.

I - USE

I.3.3. Automatically appearing malfunctions

In the event of malfunctioning that preclude normal machine operation (cables spliced, redundant sensors with signals that are too divergent with each other, short circuits, etc...), a line appears on the screen with the following structure:

!!! ERROR # !!!

A number appears between the gate (#) and the last three exclamation points (!!!), which indicates the type of problem occurring.

Error	Description
#5	Carriage angle sensor wire spliced
#6	Sheared wire of the load cell of the A sensor basket.
#7	Sheared wire of the load cell of the B sensor basket.
#8	Error difference signal between the sensors of the load cell of the basket.
#9	Sheared wire / Left track joystick short circuit.
#10	Left track joystick fault signals
#11	Sheared wire / Right track joystick short circuit
#12	Fault signals of the right track joystick

I.3.4. Cyclical updating screens

The battery values and signal quality (radio command only) of the pushbutton panel are updated cyclically.

The updating frequency is 1,5 seconds.

0
33%
66%
100%

Battery
0, 33%, 66%, 100%

I - USE

I.3.5. Succession of pages that can be displayed (scroll)

They are pages that are displayed when the SB3T and SB3T.1 change page (scroll) key on the pushbutton display has been pressed.

When pressed repeatedly, it leafs through the pages to display different machine parameters.

On reaching the end, it automatically goes back to the initial screen.

On switching the pushbutton display off, it exits the scrolling screens automatically.

The division of these pages is grouped into four categories:

- Timer;
- Pages with on/off values;
- Pages with whole and positive numerical values (distances, weights, tensions, etc...);
- Pages with values with decimal point and signs (angles in degrees).

Timer ("timer")

HOURS:



MINUTE:

The TIMER displays the sum of the time in which the engine has operated.

Stabilization: lock ("stab")

STAB. 1 LOCK OK
STAB. 2 LOCK OK
STAB. 3 LOCK OK
STAB. 4 LOCK OK

A "tick" appears at the side of the stabilizer that has the pin inserted.



The "tick" icons.

Control of the lower boom

LOW BOOM RETRACT

SENS.1= SENS.2=

OK
OK

This screen is used to check the two sensors that give the status of the lower extension.

When "OK" appears it means that the sensor reads the retracted extension.

Control of the upper boom

UPPER BOOM CLOSED

SENS.1= SENS.2=

OK
OK

With this screen, you control two sensors which indicate the status of the upper extension.

When "OK" appears it means that the sensor reads the retracted extension.

I - USE

Pages that can be displayed (scroll)

RPM [rev/min] :	Displays the revolutions of the internal combustion engine
BATTERY 24V [%] :	Displays the percentage of 24V battery
CHASSIS ANGLE [°]:	Displays the angle x, y of the trolley
CAGE LOAD [Kg] :	Displays the load read by the two sensors in the basket

I.4. Radiocontrol/remote control hardware management

On the basket keypad there is the possibility to activate the backlight of the display by moving the suitable SA1T.1.

The backlight on the remote control has a duration of 5 minutes.

I.5. Track extension/retraction



Attention

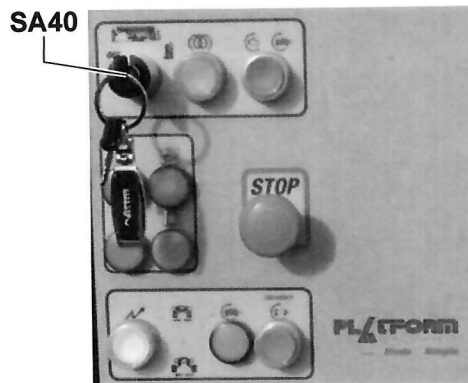
Perform the track extension and retraction into profile operations with the aerial part of the machine in a safe position, stabilised (see I.9. "Stabilising the machine") and raised at least 20 cm from the ground.



Note

The extension/retraction operation is performed from the ground control panel.

- Start the engine (see I.2. "Start/stop engine").
- Move the switch **SA40** to "ground position" (see E.1. "Ground control panel").
- Stabilise the machine (see I.8. "Stabilising the machine").



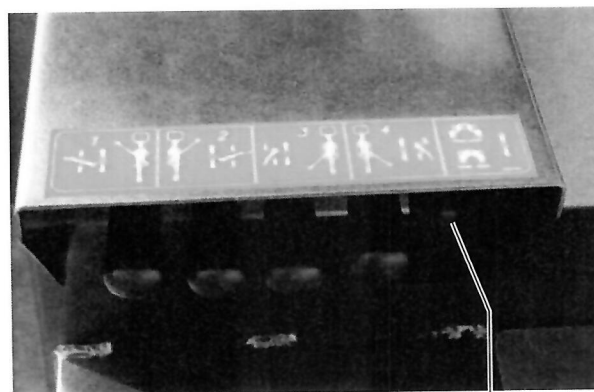
- Pull the **YV121-116** lever down to extend out of gauge the tracks.



Attention

The extension movement produces the proportional descent of the tracks at the same time.

- Operate lever **YV121-116** upwards to retract the tracks to their shape.



YV121 -116

I.6. Shifting



Attention

Translation operations can be performed only from the ground.

In the movement phase, the machine can exceed gradients of up to:

- Longitudinal gradient : 16° (29%)
- Transversal gradient : 16° (29%).



Attention

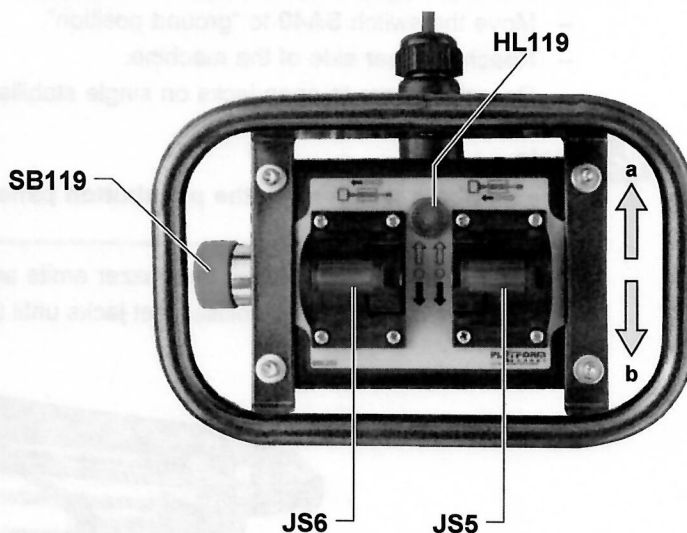
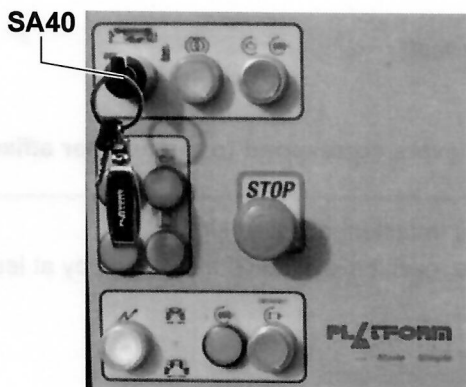
To exceed the ascent on the access ramps to the transport vehicle platform and gradients of around 16°, perform backward movement with the jib partially raised and facing the platform to prevent dangerous interference.



Attention

Perform movement with the aerial part of the machine in a safe position (the upper and lower boom resting on the column) (the telescopic boom and the pantograph arm resting on the steering column).

- Start the engine (see I.2. "Start/stop engine").
 - Move the switch **SA40** to "ground position" (see E.1. "Ground control panel").
- If the conditions of the surrounding area permit it, extend the tracks completely (see I.5. "track extension/retraction") in order to have maximum stability in the movement phase.



- Move at least 1 metre away from the machine.
- Proceed with closing the stabiliser feet (see I.8. "Stabilising the machine").
- Via the wired remote control to operate the handling of tracks.

Each track can be moved individually.

The speed and the direction of movement are proportional to the movement attributed to the levers.

I.7. Stabilising the machine



Note

The sequence set out below assumes that the operator has not yet taken his/her position in the basket and that the machine has terminated the movement phase or has just been lifted onto the ground after transportation on a vehicle.

- Pull the pin (A) and manually rotate the outrigger at the correspondence of the hole prepared to lock.
- Insert the pin, turning it so as to press the feeler (B).
- Perform the operation on all the stabiliser feet.



- Start the engine (see I.2. "Start/stop engine").
- Move the switch SA40 to "ground position".
- Reach the rear side of the machine.
- Operate levers to open jacks on single stabiliser feet.



Note

The numbers which mark the pushbutton panel levers correspond to the number affixed to the stabiliser feet.

During the stabilisation phase, the buzzer emits an intermittent acoustic signal.

- Continue opening the stabiliser feet jacks until the machine is lifted off the ground by at least 20 cm.



At the end of stabilisation, the orange indicator lights on the stabilisers continue to flash.

- Adjust stabilisation so that the red indicator light on the illuminated column goes off.
The red indicator on the illuminated column goes off if machine levelling is within a gradient of 1°.



Note

Check the stabilization through the spirit level.

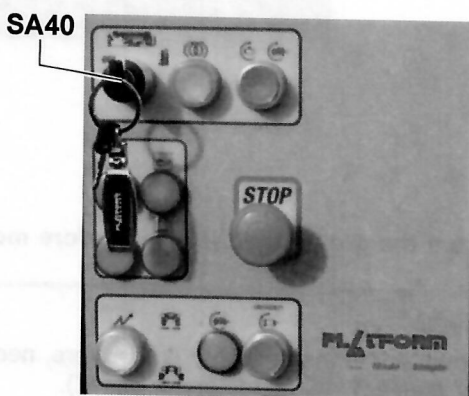
I.8. Stabilisation closing



Attention

Perform stabilisation closing with the aerial part of the machine in a safe position and the pantograph boom resting on the column (A).

- Start the engine (see I.2. "Start/stop engine").
- Move the switch **SA40** to "ground position" (see E.1. "Ground control panel").
- If necessary, retract completely with the tracks (see I.5. "Track extension/retraction").
- Reach the front part of the machine.
- Act on the levers to control the closing of the jacks of each outrigger.

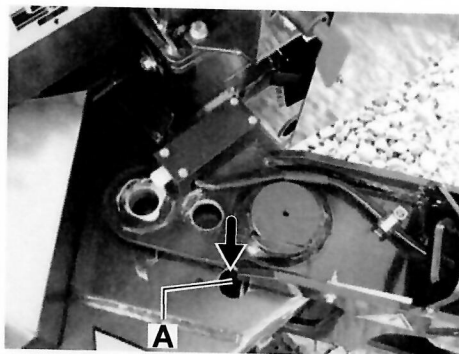


Note

The numbers which mark the pushbutton panel levers correspond to the number affixed to the stabiliser feet.

During the stabilisation closing phase, the buzzer emits an intermittent acoustic signal.

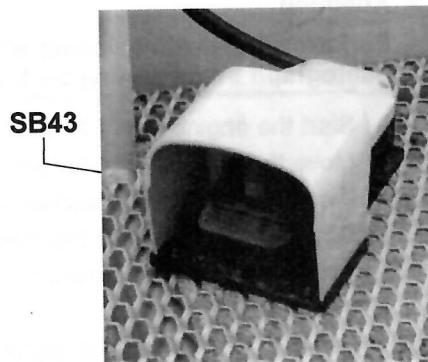
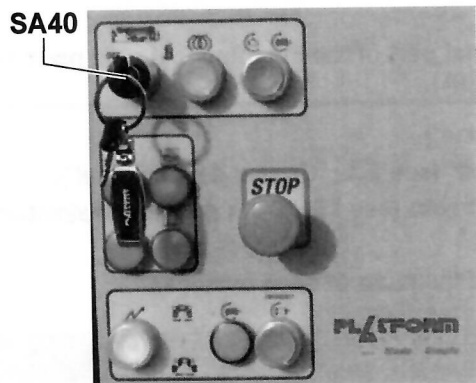
- Remove the pin.
- Turn the stabiliser foot manually at the blocking hole (A) which moves the stabiliser feet inside the profile.
- Insert the pin.
- Perform the operation on all the stabiliser feet.



With the stabiliser feet in the profile and blocked, the orange indicator lights on the stabilisers stop flashing.

- Move the switch **SA40** to "OFF" (see E.1. "Ground control panel").

I.9. Aerial part movement



I.9.1. Opening



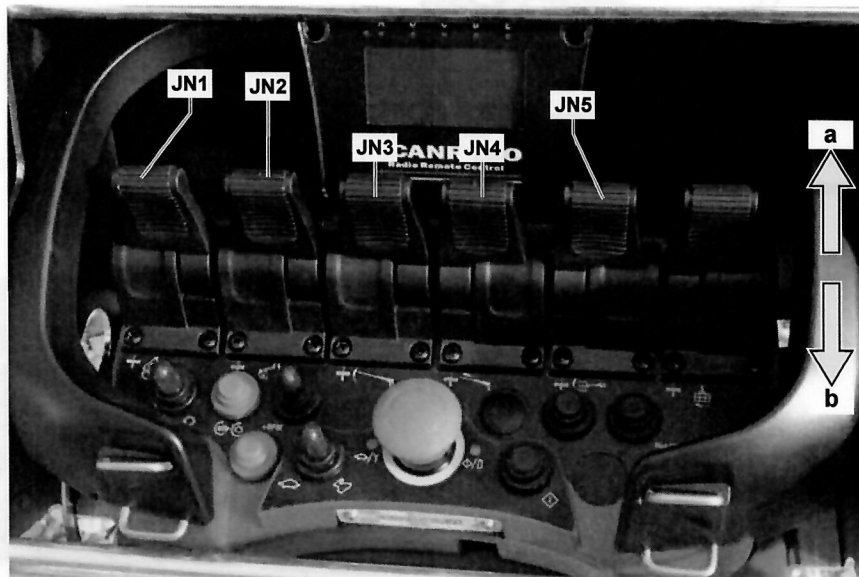
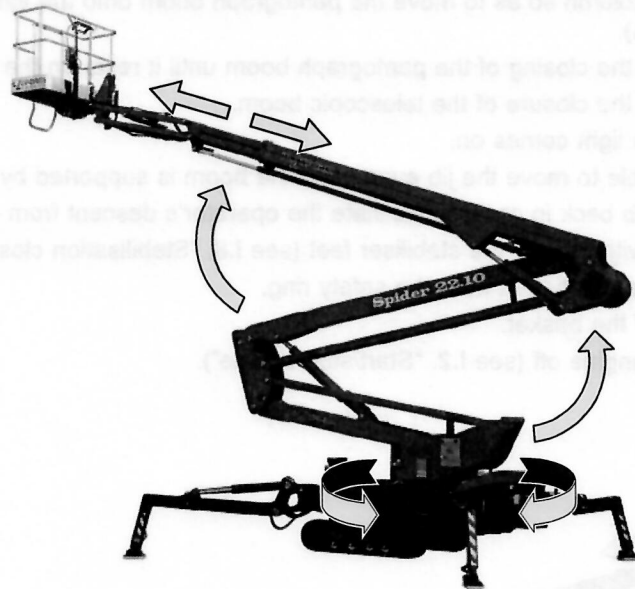
Attention

The machine must be stabilised, raised from the ground and levelled before moving the aerial part.

- Start the engine (see I.2. "Start/stop engine").
The aerial part is normally moved by the operator in the basket. It is therefore, necessary to move the switch **SA40** to "basket position" (see E.1. "Ground control panel").
If it becomes necessary to move the aerial part from the ground, it is necessary to move the switch **SA40** to "ground position" (see E.1. "Ground control panel").
- Climbing into the basket.
- Check that the sliding bar which protects the opening of the basket is closed and positioned correctly.
- If presente Optional "dead man pedal SB43" Operator must press this pedal in order to obtain consens for the aerial movements; If this pedal is not pressed any movements is not possible.

I - USE

- Attach the safety belt to the safety ring.
- Command the JN5 "Jib" movement to move away from the carriage.
- Command the JN2 lifting of the pantograph boom from the support column.
- Turn the column JN1 in the direction of the point of work.
- Lift the telescopic boom (JN3).
- Refine your search for the exact operating point by moving the extension JN4 and the antenna JN5.



I.9.2. Closing

- Retraction with the extension.
- Lower the telescopic boom.
- Lower the pantograph boom.

Do not close the pantograph boom completely.

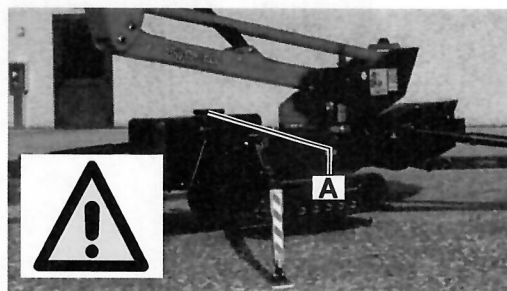
Keep the boom at a height where, in the column rotation phase, it does not interfere with the support column (A).

- Turn the column so as to move the pantograph boom onto the vertical axis of boom support column (A).
- Complete the closing of the pantograph boom until it rests on the column (A).
- Complete the closure of the telescopic boom.

The green light comes on.

It is possible to move the jib even once the boom is supported by the column.

- Fold the jib back in order to facilitate the operator's descent from the basket.
- Proceed with closing the stabiliser feet (see I.8. "Stabilisation closing").
- Detach the safety belt from the safety ring.
- Get out of the basket.
- Turn the engine off (see I.2. "Start/stop engine").



I - USE

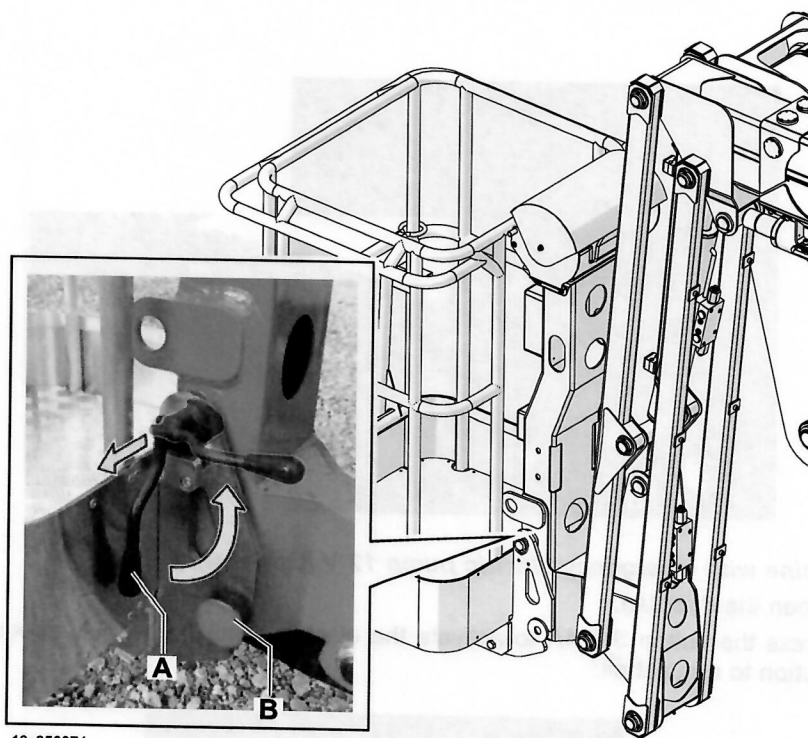
I.10. Cage release/attachment

The machine has rapid cage attachment and release.

If transportation or anything else makes it necessary to unhook the cage from the machine, proceed as follows:

- Up a suitable lifting device for the cage installed on the machine;
- Remove the copped positioned on the opposite side of the lever (A);
- Use lever (A);
- Remove the pin;
- Remove the cage by making a small rotation movement with successive lifting, in a way to release it from the fork support (B).

To reassemble the basket, it must be positioned in the (B) fork and lock it activating the (A) lever o the quick coupling/release system.



Danger

It is strictly prohibited to install any cage other than the original.

It is important to know that:

- The machine is tested and certified with the cage installed at the time of delivery.
- The electronic control system is set and calibrated based on the type of cage installed at the time of delivery.

I.11. Movements in an emergency

Faults and emergency situations require manoeuvres which allow the movement of the aerial part with the aim of bringing the operator in the basket back to the ground and moving the stabilisers for subsequent closure of the machine which can then be moved using suitable means

The execution of these manoeuvres varies according to the type of fault

(faulty main pumps/motors with electric control parts on or faulty main pumps/motors + faulty electric control parts).

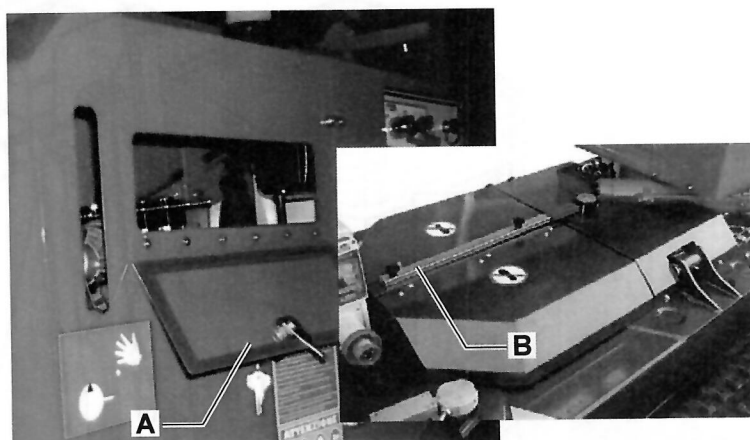
I.11.1. Superstructure

A - Situation where there is:

fault with the pumps/main engines with active electrical control part

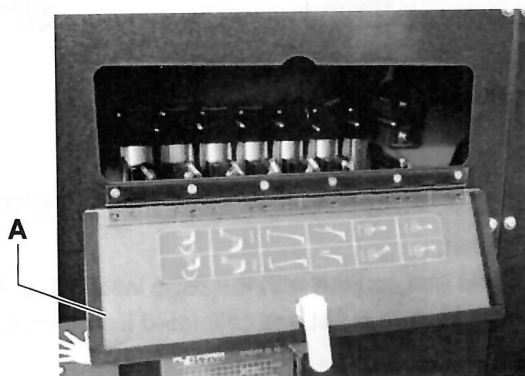
Machine without emergency 12 V electric pump (Optional)

- Open the door (A);
- Operate the emergency hand pump with the help of the lever (B) and control the movements of the machine with levers.



Machine with emergency electric pump 12 V (Optional)

- Open the door (A).
- Press the button **SB74A** to activate the electric pump and simultaneously press the **SB49** button to request oil.



- Control the movements of the aerial part via the levers.

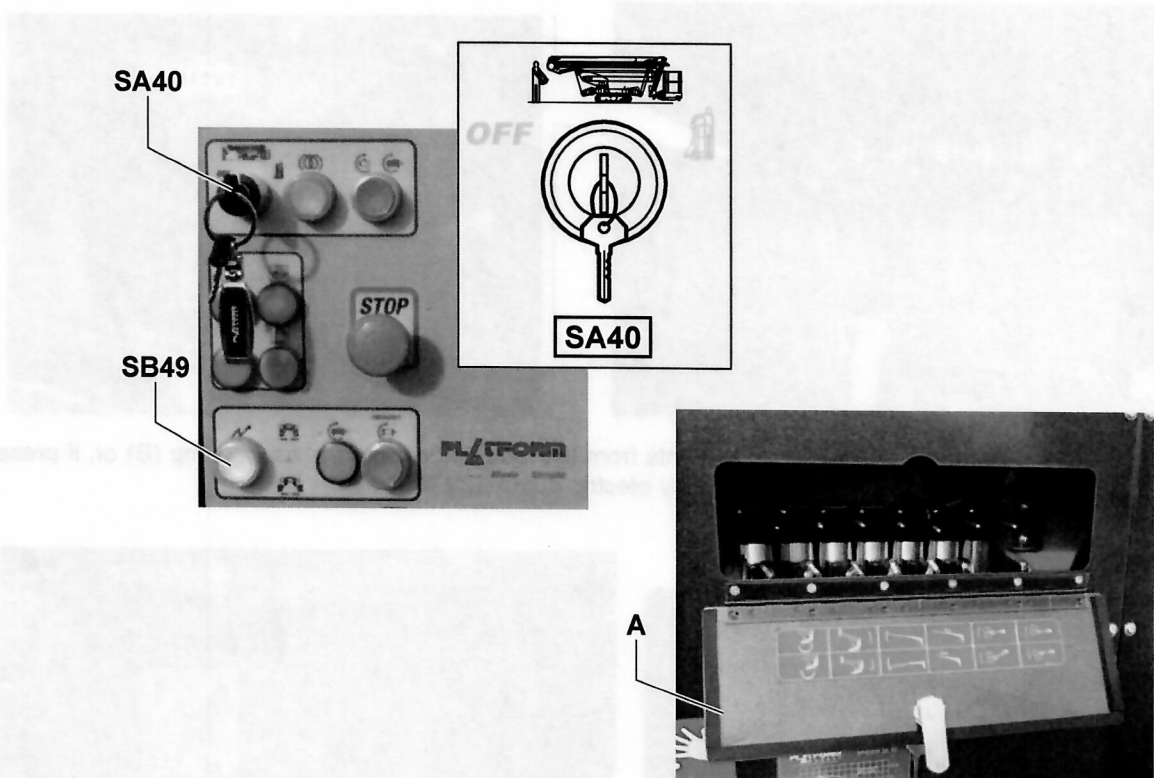
I - USE

B - Situation where there is:

no operation of the control system from the basket or where the operator is taken ill in the basket

In this situation, the machine must be used by the second operator on the ground as follows:

- Turn the selector **SA40** to "ground controls";
- Open the door (**A**);
- Press pushbutton **SB49**;



- Return to the ground the basket using the levers of the emergency dispenser.

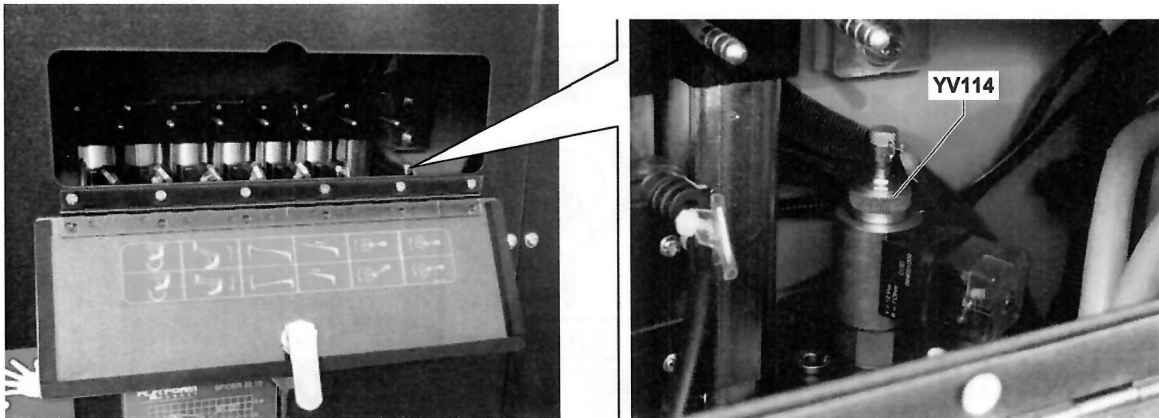
I - USE

C - Situation where there is:

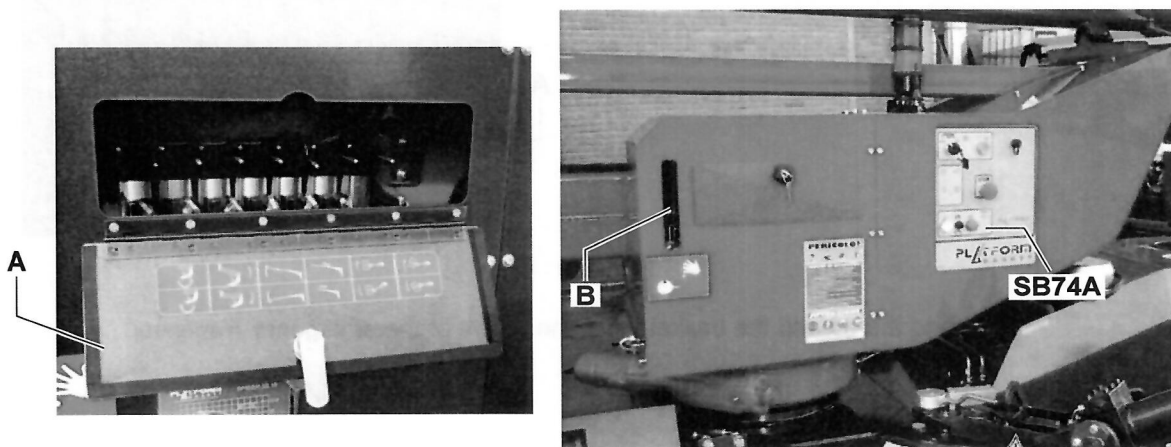
fault with the main electrical system and it is impossible to start up the pumps/main engines

To do this, proceed as follows:

- Open the door (A);
- Break the seal, press and turn the pin clockwise until it remains in the lowered positioned and is blocked to bypass the valve YV114.



- Command the return movements from the distributor using the hand pump (B) or, if present and operational, the emergency electric pump 12V SB74A;



- Perform the sequence of movements listed below to bring the operator back to the ground:
 1. Extension retraction
 2. Pantograph descent
 3. Boom down



Attention

In this situation, the machine has no range limit control therefore it is only possible to perform extension retraction movements towards the centre of the machine, close the pantograph joint and then bring the boom down in order to bring the operator in the basket back to the ground safely.

Contact an authorised service centre for any repairs necessary and to replace the seal on the solenoid valve YV114.

It is forbidden to use the machine with the solenoid valve YV114 without the seal.

I.11.2. Stabiliser movement

A - Situation where there is:

fault with the pumps/main engines with active electrical control part



Attention

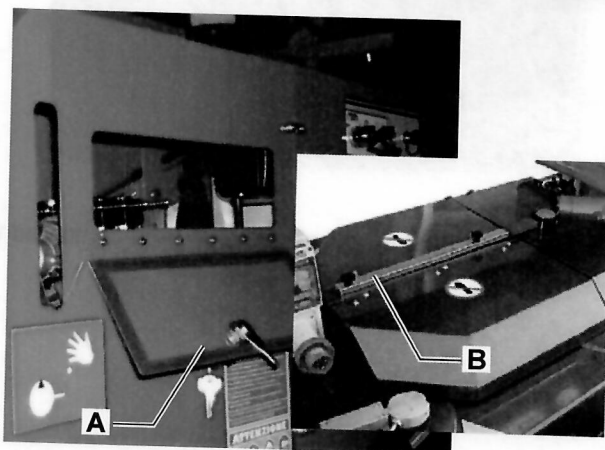
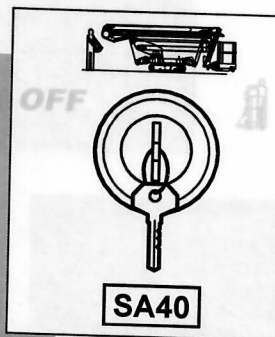
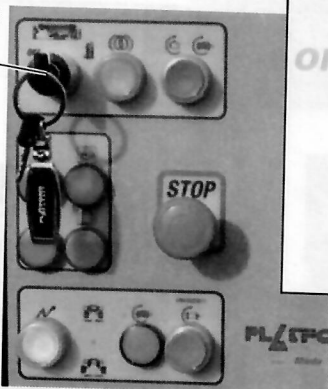
In this situation it is only possible to move the outriggers.

The transfer on tracks is not enabled.

Machine without emergency 12 V electric pump (Optional)

- Turn the selector **SA40** to "ground controls";
- Operate the emergency hand pump with the help of the emergency lever (**B**) and control the movements of the outriggers using the levers.

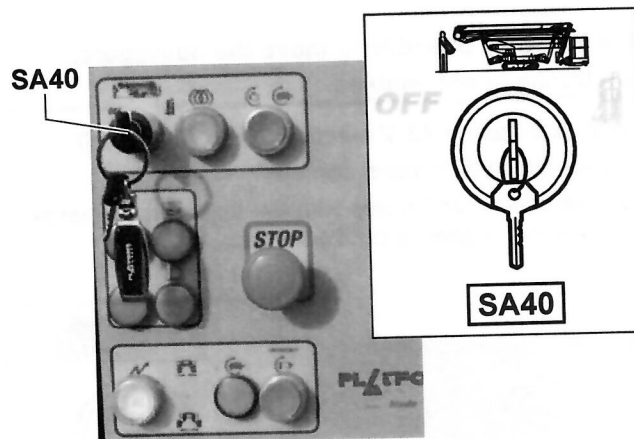
SA40



I - USE

Machine with emergency electric pump 12 V (Optional)

- Turn the selector **SA40** to "ground controls";
- Select the radio control operating mode, moving the switch **SA3T** to "ground part";



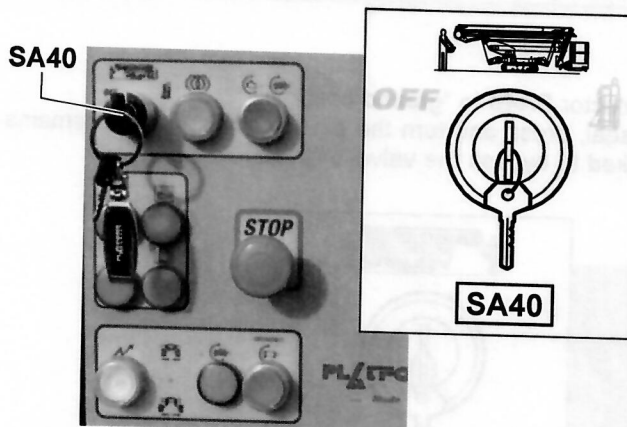
- Activate the emergency pump using the button on the main panel **SB74A** and command the machine movements with the radio control.

I - USE

B - Situation:

failure of the wired remote control for the movement of the tracks

- Turn the selector **SA40** to "ground controls";
- Open the door (**A**);
- Move the tracks through the levers.



I - USE

C - Situation where there is:
fault with the main electrical system and it is possible to start up the pumps/main engines

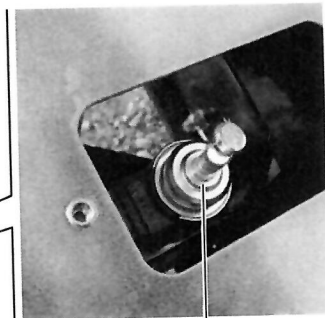
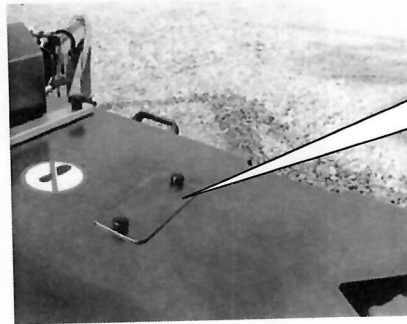
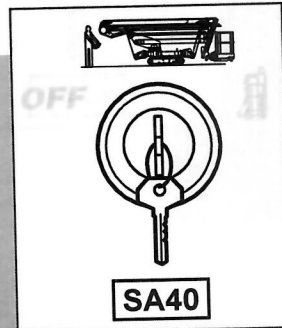
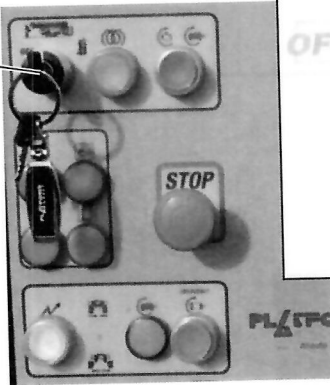


Attention

If the cursor of the solenoid valve YV114 was previously locked, you must unlock it by unscrewing it, before acting on the pins of the solenoid valves to handle the trolley.

- Turn the selector **SA40** to "ground controls";
- Break the seal, press and turn the pin clockwise until it remains in the lowered positioned and is blocked to bypass the valve YV115;

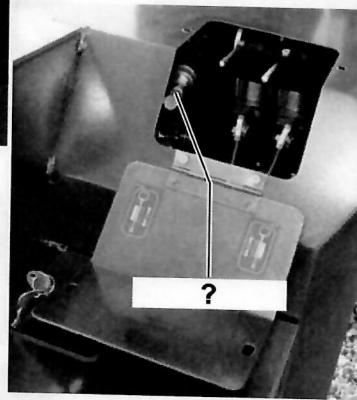
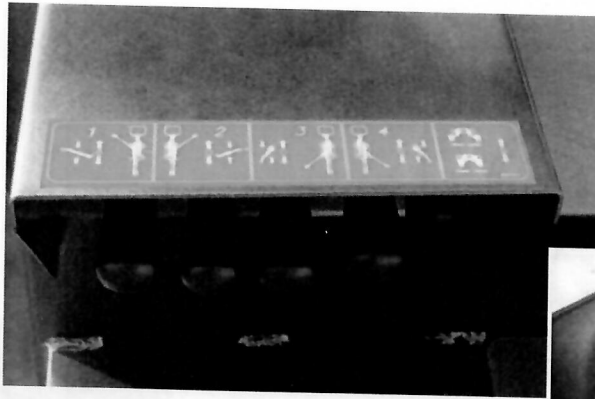
SA40



YV115

I - USE

- Move to the rear side of the machine;
- Break the seal, press and turn the pin clockwise until it remains in the lowered positioned and is blocked to bypass the valve YV135.
- Start the engine using **SB67**;
- Through the appropriate levers, handle both outriggers and tracks.

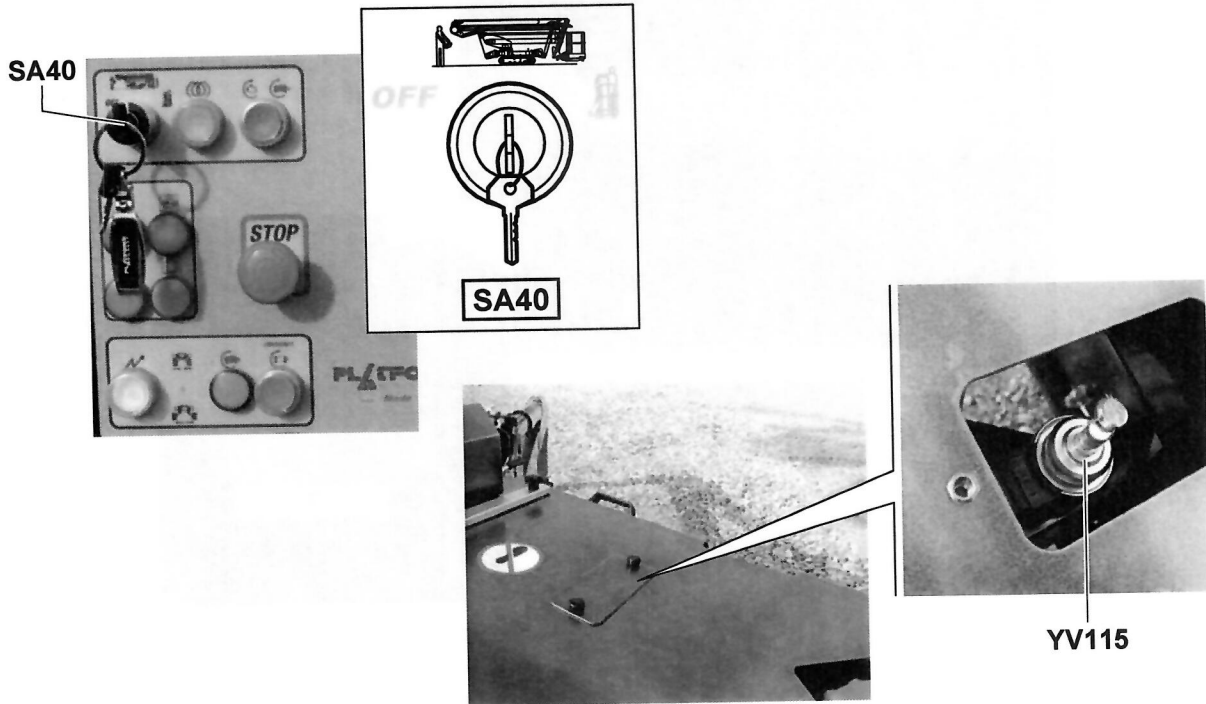


I - USE

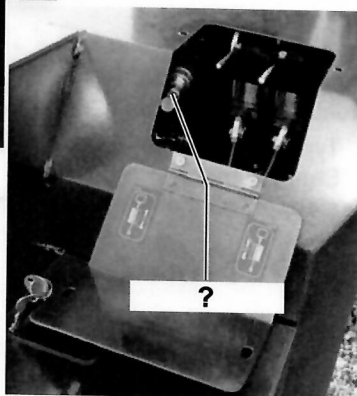
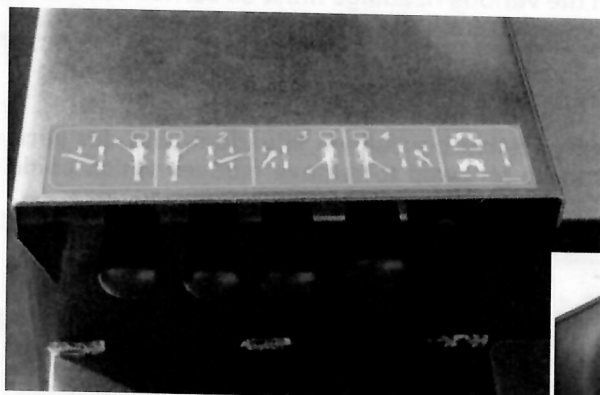
D - Situation where there is:

fault with the main electrical system and it is impossible to start up the pumps/main engines

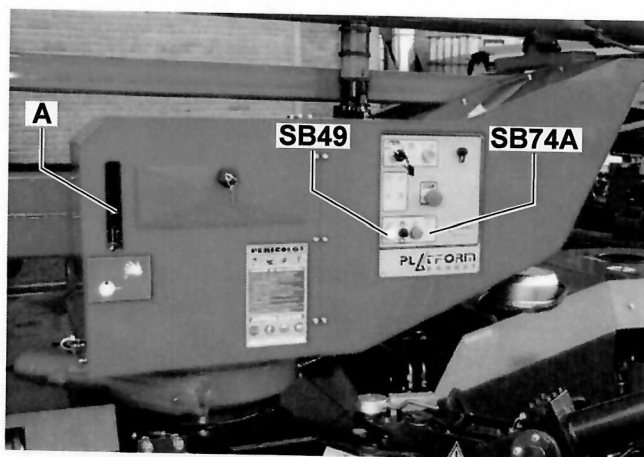
- Turn the selector **SA40** to "ground controls";
- Break the seal, press and turn the pin clockwise until it remains in the lowered positioned and is blocked to bypass the valve **YV115**;



- Move to the rear side of the machine;
- Break the seal, press and turn the pin clockwise until it remains in the lowered positioned and is blocked to bypass the valve YV135.



- Move the stabilisers from the carriage distributor using the manual pump (A) or, if present and operational, the emergency electric pump 12V SB74A.



Attention

Using the machine in emergency mode conditions B, C and D the machine is not fitted with the safety devices on the outreach limiting control, before re-using the machine, you must contact an authorized service centre for repairs necessary to restore all safety devices and seal the solenoid valves tampered.

L - TROUBLES, CAUSES AND REMEDIES

L.1. Foreword



Danger

The operations described in the various headings must be carried out exclusively with the machine stopped and disconnected from the power sources (electrical and pneumatic)



Attention

The following cases present possible breakdown situations and, for each one, there is a list of control sequences to be followed to remove motives which could have caused machine damage

L.1.1. Technical support

Consult your PLATFORM BASKET Dealer, or contact PLATFORM BASKET Technical Service directly, specifying the information found on the machine identification dataplate:

- Type of machine
- Serial number

Also supply all the relevant information concerning the problem detected

L - TROUBLES, CAUSES AND REMEDIES

L.2. Mains defects



Attention

The operations reported in this chapter are to be done exclusively by the authorised shops

The motor does not start even though the starter works correctly

<i>Causes</i>	<i>Remedy</i>
No fuel - Insufficient oil pressure	Check the quantity of hydraulic oil in the tank (petrol only). Check the quantity of fuel (petrol engine only). See the enclosed user instructions for the endothermic engine.

The hydraulic pump is very noisy

<i>Causes</i>	<i>Remedy</i>
Too low oil level	Check oil level
The pump sucks too much air	Fasten the line fittings
Too thick oil	Replace oil
Wear kinematisms	Overhaul the pump

Cylinders loosing oil, decreasing capacity with pump not working, power decreasing

<i>Causes</i>	<i>Remedy</i>
Wear tight-seals	Replace seals, checking wear not coming from linings on the telescopic rod or on the cylinder Overhaul valves check valves cleanliness and setting Overhaul control valve, check valves cleanliness and setting
Leakages on lock valves	
Control valve with internal leakages	

The machine moves with irregular motions of booms, jerkily and slowly

<i>Causes</i>	<i>Remedy</i>
Presence of air in the hydraulic circuit.	Sometimes make stopper- up going- down going-movements untill the complete discharge of air. Replace worn down wear pads.
Telescopic boom wear pads.	

The machine doesn't complete the movements, jerkily steerings.

<i>Causes</i>	<i>Remedy</i>
Insufficient oil.	Reset oil level
Air suction.	Fasten fittings.
Valves wrong setting.	Recalibrate the valves.
Breakdown pump.	Check the pump.

Metal particples founded in the oil filters

<i>Causes</i>	<i>Remedy</i>
Parts of the oleo dynamic system are damaged	Find the breakdown parts, replace them

L - TROUBLES, CAUSES AND REMEDIES

Movements prevented

<i>Causes</i>	<i>Remedy</i>
Machine overloaded.	Let the extensions come in.
Impurities presence in solenoid valve spool.	Disassemble the valve and clean the internal parts.
The coil of the solenoid valve does not work.	Change the coil.

Light oil filaments in cylinders seals

<i>Causes</i>	<i>Remedy</i>
After long inactive periods	After a certain number of working hours, you will not have any filaments

Load holding valves whistle too much

<i>Causes</i>	<i>Remedy</i>
Dirty load holding valve.	Disassemble and clean the valve.
Ruined load holding valve.	Check valve setting.
Too low valve setting.	check control valve setting.
Too high control valve setting.	Replace valve.
Enervate valve spring.	

Oil loosing from the cylinders tops

<i>Causes</i>	<i>Remedy</i>
Ruined cylinder seals.	Replace cylinder seals.
Too slow end cap on rod.	Unfasten end cap, clean and reassemble with loctite.
Cylinder with swelled outer casing.	Replace cylinder.
Rust under seals setting place.	Replace only the ruined component.

The machine seeps much oil of connectors and of seals generally

<i>Causes</i>	<i>Remedy</i>
Presenza di linee di alta tensione vicino alla macchina.	Sostituire modulo radio del distributore.
Batteria radiocomando scarica.	Sostituire batteria al radiocomando.

La macchina trasuda molto olio dai raccordi o dalle tenute in genere.

<i>Causes</i>	<i>Remedy</i>
General seal ruined.	Fasten fittings or check however their sealing.
Too slow fittings.	Add oil in tank.
Too warm oil.	
Few oil in tank.	
Too old or ruined system rubbers.	

L - TROUBLES, CAUSES AND REMEDIES

Control valve lever which stops or which comes back hardly

<i>Causes</i>	<i>Remedy</i>
Dirt into the spool	Disassemble and clean spool even with paste erasing micro-impurities
Ruined spool	Replace spool
Return spring too weak or broken	Replace springs
Too much friction on the shaft of the double command	Unfasten double control rod and set it
CE cylinders, which do not discharge pressure	Check discharge pressure from the CE cylinders
Radio module stop or always in voltage	Verify discharge pressure
Too back pressure in control valve discharge	replace OR seals
Cursor opening and closing badly done	Check with a dynamometric key the control valve tightening tie rods
Sealing OR which produce too friction	Slacken caps screws
Assembled control valve and tie rods too strongly fastened	Clean with air the control valve element
Too strongly fastened rod-side or opposite side caps	

Machine with electric pump which does not move

<i>Causes</i>	<i>Remedy</i>
Electric pump does not receive power.	Check electric connections.
Burnt electric pump.	Check electric pump.
Wrong electric connection.	Replace electric pump.
Emergency pushbutton pressed.	Replace or add oil.
Oil lack.	Replace pump or oil cover.
Pump leaking oil.	Replace fuse and discover why it has blown.
Burnt fuse.	

Stabiliser cylinders come out unable to keep pressure

<i>Causes</i>	<i>Remedy</i>
Dirty or damaged load holding valve.	Check valve.
Damaged cylinder gaskets.	Check control valve spool.
Cylinder with swelled outer casing.	Check internal cylinder sealings.
Centre distributor spool open.	Replace gaskets/seals.
	Replace cylinder.

M - MAINTENANCE

M.1. Foreword



Attention

Before doing any maintenance work and especially maintenance and/or repairs to the electrical system or if it is necessary to do WELDING, COMPLETELY DISCONNECT ALL THE BATTERIES OF THE MACHINE BY REMOVING THE CONNECTOR TERMINALS

The terms periodic and routine maintenance refer to interventions which must be performed regularly throughout the whole of the machine's working life at a set frequency

Inspection and careful maintenance allow the machine to work continually and with maximum efficiency. The following is a list of operations to be performed on the machine

Remember also that the prompt replacement of a worn part avoids further damage and reduces the time that the machine is inoperative

Other maintenance work not covered by this section is to be considered as special maintenance and is not part of the duty assigned to the operators who use the machine. This kind of work must be done by a specialized workshop



Danger

All maintenance work must be done with the machine inoperative, in other words with the motor switched off, the electrical voltage to the panels cut off and the machine in the rest position



Attention

A few pages have been added to this manual so that the operator assigned to maintenance can keep notes of the maintenance work done and the number of hours the machine has worked, in the latter case making use of the hour-meter .

HOURS:

MINUTE:



During operating and maintenance do not dispose of pollutants (oils, greases, etc.) into the environment, and dispose of the various products separately in compliance with current laws in this regard.

Electrical and Electronic waste may contain hazardous substances that may potentially be harmful to the environment and the health of people. We urge you to dispose of it in the correct manner.

In terms of the WEEE (Electrical and Electronic Equipment Waste) directive, when scrapping, the user is to separate the electrical and electronic components and dispose of them via authorised collection centres, or they must hand them over, still installed, to the seller when making a new purchase.