Instructions for Use and Maintenance

Lifting platform

PRO SERIES

VERSION 230 201 187 162
stabilizers A - HE

TRANSLATION FROM ORIGINAL INSTRUCTIONS CTE

Read this manual carefully before attempting to operate the lifting platform in any way

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General index

Section A
Information on the manual

Introduction 2
Storage 3
Intended user 3
Personnel for whom this manual is intended 3
Topics not addressed 3
Composition of the manual 4
Information for the buyer 5
Warnings 6
Glossary 7

Section B
Safety

The EC directives consulted 2
Conformity 2
Normative references 2
Foreseen and unforeseen use 3
Intended use 3
Unauthorised uses 3
Road traffic 4
Residual risks and dangers 5
During use of the lifting platform 5
Operator training 6
Operators' task 6
Training and importance of the procedures 6
Brief outline of directive EC/89/391 7
Definition of the operator positions 8
Operators' tasks 10
Personal protection equipment (PPE) 11
Dangerous areas 12
Risks for persons exposed 13
Dangers for the persons exposed 13
Safe workplace 14
Type of workplace 14
Placing the machine 14
Delimitation of the operating area boundary 14
Electrical tolerances 15
Vibrations and impact 15
Contaminants 15
Ionising and non-ionising radiation 15
Lighting a "normal" setting 16
Noise risk 16

Section C
Description and Technical Data

Main parts - Platform 2
Orientation 3
Identification 4
Main data plates 5
Description and 7
Technical Data 7
MACHINE DIMENSION AND WORKING AREA 9

Section D
Controls

Stabilising controls 2
Controls - frame station 3
Main controls - basket station 7
Stabiliser controls at the station in the basket (opt.) 10
Cabin controls 11
Auxiliary electrical motor control panel (Optional) ... 12

Section E
Safety devices

Emergency buttons 2
Moment limiting device (MC2M) 3
WARNINGS 4
ALARMS 5
Buzzer 7
Outriggers and/or beams out of position 8
Stabiliser interblocking 9
Elevating Operations Consent 10
Basket balancing 11
Control system chain tension adjustment 12
Manual emergency pump 13
Safety harnesses 14

SectionE1
Optional

Electrical outlets - optional 2
Revolving working light 3
Auxiliary service systems 4
Electrical auxiliary motor 5
Battery charger 6

Section F
Procedures for use

Introduction 2
Preliminary checks 2
General warnings 3
Vehicle engine - power take-off 5
Vehicle engine - Power take-off for Iveco vehicle. 6
Auxiliary 220 V electrical motor (optional) 7
Stabilisation - work areas with HE beams 8
Stabilisation - work areas with HE beams 9
Manual stabilisation manoeuvres with HE cross-beams 13
Stabilising operations 15
Stabiliser controls at the station in the basket (optional) 16
Precautions during use 19
Closing the aerial part 20
Closing of aerial part - Frame station manoeuvres .. 21
Stabilisation retraction 22
Stabiliser retraction from the basket station (opt.l) .. 23
PTO deactivation 25
TRANSPORT OR START UP CONFIGURATION 26
Rest mode 27

Section G
Anomalies

Troubleshooting 2

Section H

Maintenance

Cleaning 2
Hydraulic oil level check 3
Paint coat check 4
Lubrification of the articulation 5
Turntable lubrification 6
Lubrification of the telescopic elements 7
Gear Motor Oil Level Check/Change 8
Hydraulic Oil Replacement 9
Telescopic Elements Clearance And Slide Blocks Wear And Tear 10
Pressure Hydraulic Filters Replacement 11
Tank Hydraulic Filters Replacement 12
Turntable Screw Tightening 13
Sub-Frame Screw Tightening 14
Chains 15
Ropes 19
Check ball-bearing clearance 20
Periodical Maintenance Table 21

Section H1
Maintenance

Demolition 2
Elimination 3

Section L
Assistance and guarantee

Guarantee 2
Maintenance and transfer register 2
Delivery to the owner 3
Transfers of ownership 4
Maintenance charts 5
Maintenance charts 6
Maintenance charts 7
Maintenance charts 8

Section N
Emergency operations

Using the solenoid valves 2
Introduction 2
Possible conditions for using emerg. manoeuvres .. 3
ME1 - Electrical system malfunctioning - use of the solenoid valve in the turret 4
ME2 - Hydraulic system malfunctioning - Using the hand pump 5
ME3 - Malfunctioning of the electrical and the hydraulic systems 5

Section S
Anomalies

Certificates 2

NECESSARY CONDITIONS TO PLATFORM'S LIFE
The platform has been manufactured to bear 100.000 working cycles under heavy charge conditions (for ex. 10 years, 50 weeks for years, 40 hours for week, 5 cycles for hour). Before the end of each working cycle, the platform needs to be carely inspected and overhauled by the manufacturer. If the utilisation was particulary heavy, the check-up should be done by closer break times. The recommended inspection's break time is about 1.000 hours; the overhauling break time is about 7.000 hours.

ORIGINAL SPARE PARTS
Any tampering and/or replacing components with non original (cte) spare parts will bring about the conditions for warranty cancellation and may seriously jeopardise operator safety.

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Section

A

Information on the manual

Index

Introduction 2
Storage 3
Intended user 3
Personnel for whom this manual is intended 3
Topics not addressed 3
Composition of the manual 4
Information for the buyer 5
Warnings 6
Glossary 7

Introduction

CTE would like to thank you for your purchase.

Your lifting platform is the result of ongoing research in the personnel lifting sector.

Your machine not only complies with all the applicable safety requirements but it is also innovative, functional, practical and built to last. To ensure it remains reliable, and consequently convenient, please use original spare parts only.

You must read and understand the instructions for use and maintenance contained herein before operating the platform in any way.

This manual exclusively illustrates the movements allowed in compliance with the limits set forth by the technical specifications of this platform.

Please contact the CTE service centre should you have any queries that this manual cannot solve.

Storage

Keep this manual in a safe, easily accessible place for future reference.

Handle it with care, to keep it legible and usable for the full life span of the platform.

The manual must accompany the platform even in the event of transfer of ownership.

Should the manual get lost or damaged, please request another copy from a CTE retailer.

Intended user

This manual features a description of the operations that CTE deems necessary to know in order to operate the lifting platform and maintain its efficiency. It also provides information on the following topics:

1. Description of the safety devices, in order to avoid hazardous situations for the operator and persons exposed;
2. construction characteristics, description, technical data and controls explanation;
3. operation and operating use;
4. routine maintenance which the operator can perform (except where otherwise specified);
5. disposal of materials that make up the platform.

Personnel for whom this manual is intended

This manual is intended for all operators in charge of operating, checking and performing maintenance work on the machine (1st and 2nd operator, supervisor, maintenance worker). In particular, each operator must read and understand both the information concerning safety as well as the information concerning the operator's specific task.

Topics not addressed

The following topics are not addressed in this manual:

- installation of the lifting platform.
- the maintenance work that must be performed by authorised CTE workshops.

Composition of the manual

Each page in this manual is ordered according to the applicable section it belongs to.
This means that the page numbers start from 0 again for every section.
A letter identifying the section can be found on the top right hand corner of every page, followed by the actual page number.

Each section is divided up into chapters (in turn divided up into paragraphs and sub-paragraphs).
The entire manual is subdivided into 14 sections:

A Information about the manual
B Safety
C Technical description and data
D Controls
E Safety devices
E1 Devices (Optionals)
F Procedures for use
G Anomalies
H Maintenance
H1 Demolition and disposal
L Assistance and warranty
N Emergency manoeuvres
P Enclosed documentation
S Certificates

Description of the sections

- Section **A** describes the structure of the manual and how it is divided up.
- Section **B** includes the safety requirements and the main safety norms to observe when using the lifting platform.
- Section **C** includes the data, performance and technical characteristics of the lifting platform.
- Section **D** describes the function of the controls and tools installed on the lifting platform.
- Section **E** lists the general and safety devices installed, and describes their relevant characteristics.
- Section **E1** lists the optional safety devices and other installed devices, describing their relevant characteristics.
- Section **F** describes the operating phases and the instructions for use intended for the personnel in charge of operating the lifting platform.
- Section **G** explains how to recognise and troubleshoot those anomalies that can be dealt with directly by the operator in charge of moving the platform.
- Section **H** includes the main maintenance operations, with an indication of the recommended timing.
- Section **H1** includes instructions for disposal and demolition of the material that the platform is made of.
- Section **L** includes the forms to fill in after all scheduled maintenance work or after extraordinary maintenance work is performed on the machine.
- Section **N** includes the main emergency operations to perform if necessary.
- Section **S** includes some certifications that will be enclosed with the platform.
- Section **P** includes the enclosures, the hydraulic and wiring diagrams of the machine.

Information for the buyer

- The manufacturer is responsible for the efficiency of the product leaving the factory and its compliance with the applicable class of use.
- Always make sure you understand the contents of the Instructions for Use and Maintenance manual. Failure to observe the instructions provided therein relieves the Manufacturer of all liability for material damage and/or personal injury.
- The use of non-original spare parts, or those not authorised by CTE; any modifications or tampering - even minor - relieves the Manufacturer of all liability connected to the correct use, correct operation and personal and/or material safety.
- All installation accessories (pumps, power take-offs, etc.), any equipment, controlling devices (remote/radio-controls, coolers, etc.) and all other appliances supplied must be accompanied by the EC declaration of conformity and the relevant instructions. Check the contents and find out more about the applicable provisions before operating such appliances with the lifting platform. For any technical or information-related problems, please contact CTE directly.

Warnings

How an important note is highlighted to protect the safety of the operator, to protect the lifting platform and other.

- Meaning of the pictograms or danger symbols, warnings and notes:

DANGER

triangular pictogram with yellow background, black border and black symbol. This symbol is used to highlight situations that could cause vital damages both in terms of personal injury as well as to the structure of the lifting platform itself.

ATTENTION

Triangular pictogram with yellow background and black border. This symbol is used to show the operator incorrect or recommended operations or procedures.

PROHIBITION

Circular with white background and red border with a red stripe across it. This symbol is used to show the operator STRICTLY PROHIBITED operations or procedures.

NOTES ***Used to show the operator any exceptions or particular situations where the topic that has just been covered applies.***

Glossary

Machine	The whole assembly comprising the mobile platform and the vehicle.
Joint	Point of articulation between two or more elements that allow for its movement (synonym: hinge).
Telescopic assembly	Tubular unit (two or more tubes) that slide within one another, thereby allowing the assembly to extend or retract (synonym: telescopic extension or extensions).
Hydraulic extension	Extension or return of a specific element by means of a hydraulic movement.
Telescopic extension	See Telescopic assembly above.
Extensions	An expression that is used incorrectly in this sector to indicate a telescopic assembly featuring hydraulic motion.
Stabilising elements	The parts of the lifting platform used to stabilise the machine (distributor, Cylinders, shafts and feet).
Power circuit	System that transmits an energy or force used to move a part of the platform (hydraulic, electric, pneumatic, etc.).
Straddle	Distance between the axis of the tower and the exterior of the car (or enclosure).
Platform	Part of the machine on which the operator(s) stand(s) where the machine controls are situated. In this sector, the platform is often incorrectly referred to as the car, basket or enclosure.
Car	See platform above (synonym: basket or enclosure).
Basket or enclosure	See platform above (synonym: Car).
Operator	Person in charge of using and controlling the lifting platform. In accordance with the standardised norm EN 292/1, paragraph 3.21, the operator is defined as the person or persons in charge of operating, adjusting, performing maintenance work, cleaning and transporting the machine.
Person exposed	Any person located completely or in part in a dangerous area.
Risk	Result determined by the combination of the probabilities and the degree of seriousness of the possible lesions or possible health damages in a dangerous situation.
Dangerous area	Any area inside and/or near a machine where there is a continuous risk for the safety and health of the persons exposed.
Manufacturer	The company that manufactures the lifting platform, and in some cases also combines it with the vehicle.
Elevating part	Part of the lifting platform comprising the fifth wheel, column, arms, arm assembly, antenna, car and the controls that operate the latter.
Stationary part	Part of the machine comprising the counterframe, shafts, stabilising cylinders and the controls that operate the latter.

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Section
B
Safety

Index

Conformity 2
The EC directives consulted 2
Normative references 2
Foreseen and unforeseen use 3
Intended use 3
Unauthorised uses 3
Road traffic 4
Residual risks and dangers 5
During use of the lifting platform 5
Operator training 6
Operators' task 6
Training and importance of the procedures 6
Brief outline of directive EC/89/391 7
Definition of the operator positions 8
Operators' tasks 10
Personal protection equipment (PPE) 11
Dangerous areas 12
Risks for persons exposed 13
Dangers for the persons exposed 13
Safe workplace 14
Type of workplace 14
Placing the machine 14
Delimitation of the operating area boundary 14
Electrical tolerances 15
Vibrations and impact 15
Contaminants 15
Ionising and non-ionising radiation 15
Lighting a "normal" setting 16
Noise risk 16

Conformity

The EC directives consulted

The lifting platform was designed and built in compliance with the applicable directives in force

Directives consulted for the design and construction of the lifting platform			
Directive	Date	Object	Notes
EC/98/37	22/06/1998	European Parliament and Council Directive concerning the approximation of legislations of member Countries relative to machinery.	IN FORCE UNTIL 28 DECEMBER 2009
2006/42/CE	17/05/06	Directive 2006/42/CE of the European Parliament and the Council of 17 May 2006 relating to machinery and that modifies directive 95/16/CE (recasting) Text with EEA relevance	IN FORCE SINCE 29 DECEMBER 2009
EC/89/336	03/05/1989	European Council Directive for the approximation of legislations of member Countries relative to **electromagnetic compatibility**.	Amendments and integrations: EC/92/31, EC/93/68, EC/93/97.
EC/73/23	19/02/1973	European Council Directive concerning the approximation of legislations of member Countries relative to electrical material intended for use within specific voltage limits.	EC/93/68

Normative references

The lifting platform was built with principal reference made to the norms and technical specifications set forth in norm EN 280 + A1 and the new update A2.

Norms consulted for the design and construction of the lifting platform		
Norm	Edition	Title
UNI ENI ISO 12100-1	09.1991	Safety of machinery - Fundamental concepts, general design principles.Terminology, basic methodology
UNI ENI ISO 12100-2	09.1991	Safety of machinery - Fundamental concepts, general design principles. Technical specifications and principles.
EN 13857:2008	30/04/08	Safety distances to impede access to dangerous areas with upper limbs.
UNI EN 349+A1:2008	04.1993	Safety of machinery - Minimum gaps to avoid crushing parts of the human body.
UNI EN 982	.1997	Safety of machinery. Safety requirements for fluid power systems and their components. Hydraulics.
CEI EN 60204-1	06.11.2007	Safety of machinery - Electrical equipment of machines.
UNI EN ISO 13850	2008	Safety of machinery - Emergency stop - Principles of design

Foreseen and unforeseen use

Intended use

The foreseen use is of a machine, DESIGNED SOLELY TO LIFT PERSONNEL, in compliance with the limits set forth by the technical data.

The maximum speed of rotation allowed is 0.7 m/sec, calculated from the exterior edge of the basket and with the telescopic assembly fully extended.

The maximum lifting speed is 0.4 m/sec, calculated from the fully closed position to the fully open position of the jack that operates such movements.

Further information providing the operating limits of the lifting platform is included in the technical data.

ATTENTION

It is forbidden to exceed the limits indicated in the technical data.

DANGER

It is forbidden to use the lifting platform in a different way from which it was foreseen and designed.

Unauthorised uses

Lifting platform

It is forbidden to:

- lift loads or perform oblique lifts;
- use the lifting platform to push and/or pull objects;
- bring into the basket accessories or pieces of equipment, the chemical-physical characteristics of which classify them as dangerous (e.g. flammable, toxic, explosive materials, etc.);
- overload the basket in excess of the limits allowed;
- load the basket when it is in an elevated position;
- increase the wind load by fitting sign posts or advertising billboards onto the platform;
- increase the operating height with ladders, pedestals, etc., once the operating position has been reached;

DANGER

If you use the platform observing not allowed procedures, as described by points above mentioned, the risk of platform's overturning or its structural breaking with resulting danger for health's operator, and specifically his possible wounding or death, is obviously high.

Operating sites

It is forbidden to:

- Operate at a distance of less than 5 metres from the suspended electrical cables;
- use it in settings subject to exlosion and/or fire risk;
- operate in the open air when the wind conditions have an intensity in excess of 12.5 m/s (equivalent to a value of 6 in the Beaufort wind scale);
- operate in the open air in gusty wind conditions;
- operate in the open air when there are storms featuring electrical discharges (thunder and lightning);
- operate in the open air during stormy weather that may produce hail;
- The main slopes which can be achieved from the vehicle positioned in the proper working places are indicated on the document "**MACHINE DIMENSIONS- WORKING AREA**" hereafter attached.

Accessories

It is forbidden to:

- use accessories featuring operating and performance-related characteristics that may cause dynamic stresses in excess of those stated by the manufacturer;
- use accessories connected to independent electrical cables;

Behaviours

Below is a list of behaviours that the design and construction of the lifting platform cannot impede, but which are not allowed due to the high degree of risk involved:

1. **adjusting mechanical, electrical or hydraulic parts of the lifting platform during operation;**
2. **disassembling mechanical, electrical or hydraulic parts of the lifting platform during operation;**
3. **operating with the mechanical, electrical and hydraulic protection devices removed and/or tampered with.**

DANGER

It is the responsibility of the safety foreman to supervise that the machine is not used inappropriately. In fact, if the lifting platform is used inappropriately, this would jeopardise the safety of the operator, of the persons exposed, of animals and also the soundness of the platform itself and of the materials situated in the operating area.

Road traffic

ATTENTION

Make sure the overall dimensions indicated in the technical data comply with the limits set forth by the norm governing road traffic in the country of use of the lifting platform.

Residual risks and dangers

During use of the lifting platform

1 Risk of falling tools from an elevated position due to careless movements, with the consequent danger of impact for the ground-level operator and the persons exposed;

2 Danger of crushing lower limbs (especially feet) during the stabiliser positioning operation for workers pausing or passing though the operating area if they are not warned in advance of the use of the lifting platform.

3 Risk of the lifting platform overturning if the positioning obligations and the load limits indicated in this manual are not observed;

4 Risk of collision with fixed infrastructures and moving objects during platform operation unless the necessary manoeuvring clearances have been taken into consideration;

5 Risk of collision with consequent crushing and falling hazards for the persons and/or workers present in a production area situated in a dangerous area, unless they have been warned in advance of the use of the lifting platform.

Transportation

1 Risk of collision with fixed or mobile infrastructures along the platform's path, unless the equipment used for work is not put back in place after use.

Parking

1 Risk, in the event of a momentary absence of the operator, of acts of vandalism if all doors fitted with a lock are not locked or padlocked.

2 Risk, in the event of a momentary absence of the operator, that unauthorised persons may operate the lifting platform unless the electrical and hydraulic systems are disabled.

Maintenance

1 Risk of yielding of parts of the lifting platform, with the consequent danger of crushing and fall, if operations are performed that have not been authorised by the manufacturer or if work is performed in workshops not authorised by CTE

2 Risk of yielding or breakage of parts of the lifting platform, with the consequent danger of crushing and fall, if parts or items are replaced with non-original spare parts.

3 Risk of leaks or pressurised fluid (oil) if incorrect work and/or work not authorised by the manufacturer is performed on the hydraulic system or if such work is performed in workshops not authorised by CTE

Operator training

Operators' task

During the use of the lifting platform, there must be at least 2 operators present, each with tasks established previously.

Car operator

(S)he has the task of operating the lifting platform from the controls fitted on the car itself.

Ground-level operator

(S)he will have the task of checking the area beneath the operating position, the stability of the platform and operating the emergency controls of the lifting platform.

ATTENTION

Both operators should be suitably instructed on the use of the lifting platform. It is particularly important that the operator landed preventively knows the exact emergency moves controls' site and use.

Operator characteristics

The operators should be physically fit, in full possession of their mental faculties, fully aware of and responsible for the dangers that may arise when using the lifting platform.

physical

Operators should have good eyesight (even through the use of spectacles or contact lenses), good hearing and excellent motor skills.

mental

Operators must not take substances that could alter their physical and mental abilities (such as medication, alcohol, narcotics, etc.).

operators should be aware that

- Less than perfect physical and psychological conditions can cause serious damage, not only in terms of personal injury to the operators themselves, but also to persons, animals or material possessions situated in the operating area.
- Outsiders are not allowed to use the lifting platform, as they are not aware of the risks and dangers involved.
- It is advisable that the lifting platform be used by operators aged at 18 and over
- It is forbidden for the lifting platform to be used by subordinate workers, employed as apprentices.

Training and importance of the procedures

All operators in charge of positioning, using, performing routine maintenance and operating the machine need to attend a training course, to ensure:

- **the correct positioning of the vehicle in the chosen place of operation;**
- **a safe use of the platform during the normal operating process;**

Operator training

- **the safe performance of all emergency procedures;**
- **the correct performance of routine maintenance procedures foreseen by the manufacturer in this manual.**

ATTENTION

Before operation begins, the operator should ensure that all the safety conditions that will prevent any accidents apply.

To avoid any dangerous situations, the operator must read sections B, C, D, E and F of this manual carefully.

Section D contains an explanation of the functions of each individual control fitted on the lifting platform. The operator must always check that all the control parts are fitted with an identification plate (graphic symbol or description plate) to avoid confusing one control for another: do not perform any operations if you are uncertain of the reactions generated by the controls.

Section E contains a description of the safety devices fitted onto the lifting platform. Section F describes all the procedures for the safe operation and use of the lifting platform.

Brief outline of directive EC/89/391

The European Council Directive no. 391 dated 12th June 1989 (assimilated in Italy with Legislative Decree no. 626 dated 19th September 1994 + Legislative Decree n° 242 dated on 19th March 1996, n° 242: amendments and integrations until art. 626), concerning the implementation of measures intending to promote the improvement of safety and health of workers in the workplace, establishes the fundamental criteria for employers and employees to follow in order to prevent accidents.
In particular article 13, included in section III of the Directive, establishes the workers' obligations, and in particular:

1. Each worker, according to the information and instructions provided by the employer, should not only take care of his/her own health and safety, but also that of others; in actual fact of those persons who could be affected by the worker's actions or defaults during work. In order to attain such goals, workers must:

- **a** use machinery, equipment, tools, hazardous chemicals, transportation equipment and all other means correctly;
- **b** use the individual protective devices provided correctly and, after use, put them back in place;
- **c** not disable, change or move arbitrarily the safety devices, but instead use them correctly;
- **d** notify their employer and/or workplace safety foreman of any situation which, for a reasonable cause, may be considered to be a serious and immediate danger to safety and health; likewise, any defects found on the protection systems must be reported;
- **e** contribute, in compliance with the national procedures, together with the employer and/or workplace safety foreman, to the performance of all the tasks or all the obligations set by the competent authority, to protect the safety and health of workers during work;
- **f** contribute, in compliance with the national procedures, together with the employer and/or workplace safety foreman, to the accomplishment of safe and risk-free environmental and working conditions, in order to guarantee workers the safety and health within their field of activity.

Operator training

In line with the contents of section II article 10, the employer must:

- check that the workers and/or their representatives in the company and/or factory are aware of the directives, and the relative safety norms
- check that the workers and/or their representatives in the company and/or factory are aware of the directives, and the relative safety norms
- provide all the necessary information for the protection of the safety and health of the operator.

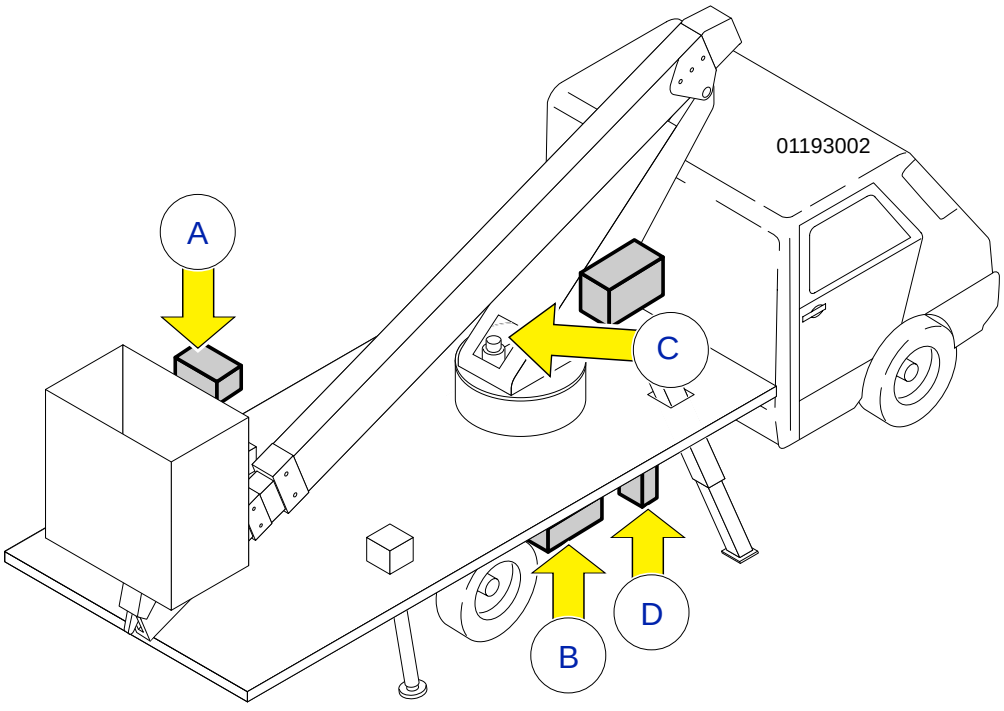
Definition of the operator positions

Operating position A: Main controls in the basket

Standing operator position

This is where the lifting platform operating console is fitted. The operator can perform all the operations inherent to the operating cycle of the machine under normal operating conditions.

The console is fitted with the warning indicator lights and the emergency machine stop device.



Operating position B: Stabilising controls

Standing operator position.
This is where the following are fitted:

- the distributor for the control of the stabilisers;
- the solenoid valve to switch from the car side system to the elevating part system and vice versa.

Operating position C: Emergency controls

Standing operator position.
This is where the solenoid valves are fitted, to be used to perform the operations for the car to return to the ground in the event of a system malfunction and for the lifting platform to return for transportation.

Operating position D: Manual pump for the circulation of the hydraulic oil

Standing operator position
This is where the emergency pump is fitted, which allows the operator to reactivate the circulation of the hydraulic oil for the return of the lifting platform for transportation in the event of a malfunction on the main pump.

Operators' tasks

Operators and their tasks	
Workers' tasks	Tasks assigned
Operators	- In the event of operations on worksites or industrial areas, (s)he must find out from the person in charge of local safety about the dangers present in the intended area of operation of the lifting platform and about the dangers that may be created while operating it; - choice of vehicle parking place and performance of the lifting platform commissioning procedure (triggering of the power take-off, positioning of the stabilisers, etc.); - assessment of the solidity and flatness of the ground on which the platform will be stabilised; - procedure involving the boundary delimination of the operating area to avoid exposing persons and/or animals to the dangers created by loads falling from elevated positions; - assessment of the trajectory to be covered with the load, assessment of the degree of danger that may be caused by fixed and moving obstacles situated in the operating area; - performance of the operations for the lifting platform to return for safe transportation; - visual inspection of the lifting platform to look for any anomalies.
Vehicle driver	- verification of the resting position of the lifting platform to prevent any risk-situations from arising during transportation.
Routine maintenance worker	- verification of the general condition of the lifting platform, especially in terms of wear, fatigue and aging; - routine maintenance activities as set forth by the manufacturer in this manual; - notification of unforeseen circumstances (such as wear, yields, breakages, etc.) not dealt with in this document and due to unforeseeable causes; - supervision of the recording of operations performed in workshops authorised by CTE.
Supervisor (understood as being the person in charge of safety on the worksite or industrial area)	Inform the operator in charge of operating the lifting platform about: - the dangers present in the operating area and the dangers that may arise when using the lifting platform; - the possible presence of workers in the dangerous area (operating area) who, for particular tasks, cannot abandon their workplace; - the possible release of hazardous chemicals into the air or ground that could compromise the safe performance of the platform operation; - the compulsory safety devices in the operating area concerned.

Personal protection equipment (PPE)

Operator in charge of positioning and using the lifting platform:

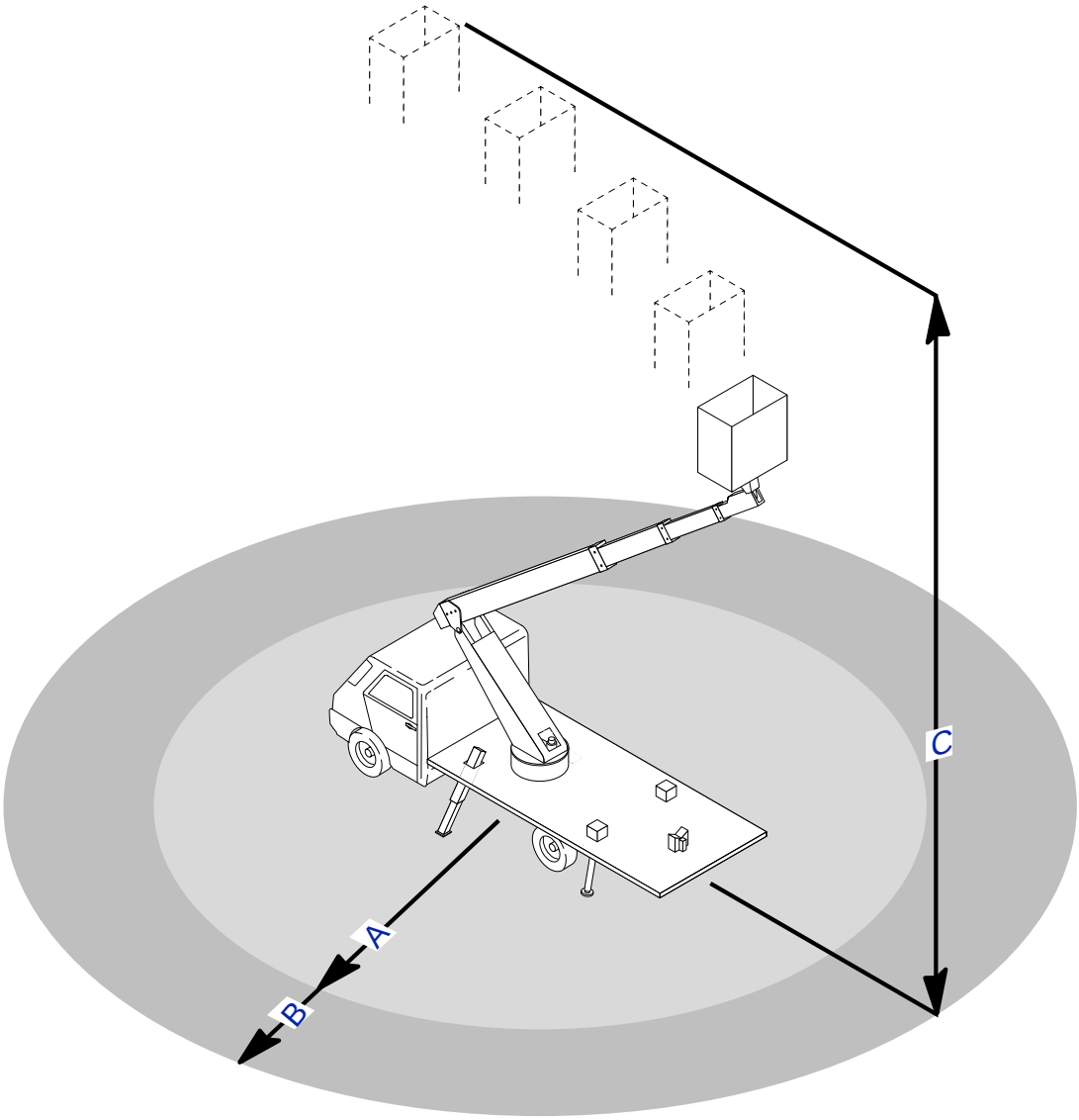
PPE for the worker in charge of handling and assembling the platform		
Identification pictogram	**Description**	**Notes**
	HELMET	Use of the protective helmet to avoid damages due to suspended loads during operation.
	GLOVES	Use of protective gloves to avoid cuts, punctures or pricks during operation.
	FOOTWEAR	Use of safety footwear to avoid damages caused by materials falling from a height during platform operation.
	CLOTHING	Use of suitable protective clothing to avoid it getting caught in moving or transported parts.
	S A F E T Y HARNESS	Use of the safety harness secured to the hooks provided to avoid falls from elevated positions during operation.

Vehicle driver:
During transportation, the vehicle driver does not require any PPE, in actual fact it is hereby emphasised that when driving, devices such as the protective helmet, safety footwear and eyewear (or protective screen) should be removed, so as not to hamper movement.

Routine maintenance worker:

PPE for the worker in charge of routine maintenance		
Identification pictogram	**Description**	**Notes**
	CLOTHING	Use of suitable protective clothing to avoid it getting caught in the mechanical parts of the machine
	GLOVES	Use of protective gloves to avoid cuts, punctures or pricks, caused by mechanical parts not suitably deburred.
	FOOTWEAR	Use of safety footwear to avoid the risks caused by falling materials or equipment used during routine maintenance work.
	EYEWEAR (available)	Obligation to protect the eyes with goggles or protective visors in the event of maintenance work near parts of the pressurised hydraulic circuit.

Dangerous areas



A* = maximum straddle possible when the car is loaded with two (2) operators and equipment kg);
B* = maximum straddle possible when the car is loaded with one (1) operator only and equipment;
C* = maximum operating height.

The data related to platform engaged will be reported on the document "MACHINE DIMENSIONS-WORKING AREA" hereafter attached.

Risks for persons exposed

The dangers caused in the situations described in the table below occur in the following circumstances:

- **the person does not respect the safety boundary and enters the dangerous area;**
- **the operator forgets to delimit the boundary of the dangerous area and to affix the no entry sign in the dangerous area.**

Dangers for the persons exposed

Cause	Danger
failure to observe the safety distance	- **crushing,** - **cutting,**
tools falling from elevated positions	- **impact or crushing,**
impact with moving parts	- **falling on the ground or from a height**
inconvenient position of the operator (between the lifting platform arm and fixed or moving obstacles)	- **crushing, cutting**
displacement of the vehicle during the positioning operation in the workplace	- **being run over**

Safe workplace

Type of workplace

The machine was designed and built for use in the following types of settings:

- in open air places open to the public (e.g. squares, car parks, public roads, etc.);
- private open air places (e.g. yards in front of houses or blocks of flats for maintenance work on roofs, etc.);
- indoor settings open to the public (e.g. shopping centre entrances, sports centres, inside exhibition centres, etc.);
- open industrial areas (e.g. maintenance work on infrastructures such as barns, elevated floors, etc.);
- closed industrial settings (e.g. factory premises, hangars, etc.)
- open areas used for worksites (e.g. construction yards).

CTE lifting platforms can also be used:

- inside airports;
- on shipping docks.

Supporting surface

The surface onto which the vehicle is positioned must be compact and not subject to yielding: concrete and tarred surfaces and compacted ground (worksites) are preferable.
Shoud the tar surface overheat, or the ground not be sufficiently compact, place sturdy wooden planks and/or steel plates between the ground and the stabiliser to prevent the latter from sinking.

Production areas

When operating inside production areas (worksites and industrial sites), take special care in positioning the vehicle.
Wherever possible, choose the operating place (or workplace) of the lifting platform also according to the following suggestions:

- it should be a large enough place to contain the entire structure, so as not to create any dangerous situations during the operations with the lifting platform arm;
- it should not obstruct the escape routes, emergency exits, pedestrian crossings and throughways (for vehicles, fork lift trucks, self-propelled operating machines, etc.);
- it should not obstruct the visibility of signs (boards, illuminated signs, etc.);
- it should not obstruct the operating area of other adjacent pieces of equipment (such as travelling cranes, conveyors, etc.) unless the equipment is not previously disabled for the entire period of use of the lifting platform.

Placing the machine

The placing of the machine, with respect to the position of the user, should allow the latter to observe the correct performance of operation and the upkeeping of safety conditions around the operating area.
During this phase, the accessibility of the controls and the visibility of the applicable areas should be checked, with particular reference to placing, operation and retraction.

Delimitation of the operating area boundary

Before operating the lifting platform, always check first the environmental and visibility conditions, arranging suitable signals to mark the operating area.

Safe workplace

The following are especially recommended:

- **Barriers**
- **area boundary tapes**
- **signs (prohibition, warning, danger, etc....)**

Electrical tolerances

The electrical equipment of the lifting platform was designed and built with reference to the standardised norm EN 60204-1.
The electrical equipment is suitable for use in the surrounding setting and under the following operating conditions.

Ambient air temperature

The electrical equipment is designed to operate correctly at air temperatures of between -5 °C and +40 °C.

Humidity

Electrical equipment can correctly work under whatever weather condition and whatever relevant humidity's degree.

Vibrations and impact

The lifting platform and relative electrical equipment MUST NOT be installed on surfaces that transmit vibrations and in settings where there is a danger of impact with other mechanical units.

Contaminants

The mechanical parts of the lifting platform, and the relative electrical equipment, are suitably protected against the penetration of liquids and solids in accordance with the intended use of the lifting platform and of the use setting of the same.
The various assemblies that make up the lifting platform DO NOT feature any particular protections against any contaminants, such as: special powders, acids, corrosive gases, salt, etc.
Should the operator detect the presence of the action by a contaminant that could cause the machine to malfunction, (s)he should contact a CTE service centre immediatly to check the suitability for the use for which it is momentarily intended.

Ionising and non-ionising radiation

The electrical equipment DOES NOT foresee additional protections against radiation (microwave, ultraviolet rays, laser rays, X rays).
Should you expect the machine to be exposed continuously to such radiation, additional measures must be taken to prevent the incorrect operation of the electrical equipment and the accelerated deterioration of the insulation.

Safe workplace

Lighting a “normal” setting

Use the loading lifting platform in places with suitable natural or artificial lighting.
DO NOT use the lifting platform in poor lighting conditions (at night, in thick fog or in indoor settings without any artificial lighting).
Should you be obliged to operate in poorly lit areas, light the area with fittings installed on columns, connected to power supplies which are separate from the machine.
In this case, do not point the additional light fittings directly into the operator’s eyes. It is preferable to position them behind the operator in order to light the operating area properly, without causing any glare for the operator.

Noise risk

Sound pressure in operator’s ear (in cage) **LpA = ..76 dBA**
Sound power guaranteed in accordance with Directive 2000/14/EC: **LWA = ..93 dBA**

Section

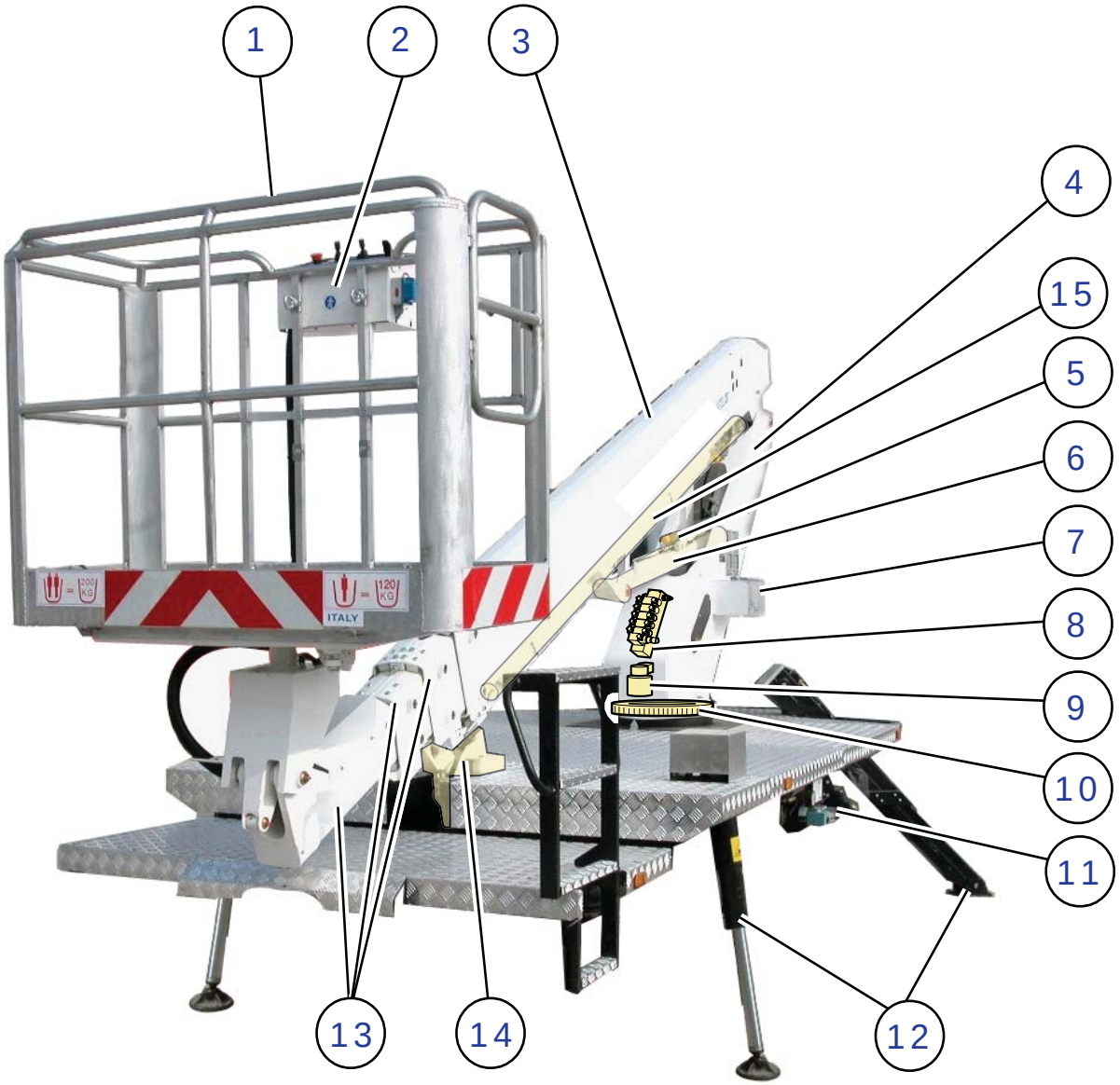
C

Description and Technical Data

Index

Main parts - Platform 2
Orientation 3
Identification 4
Data plates 5
Description and technical data 7

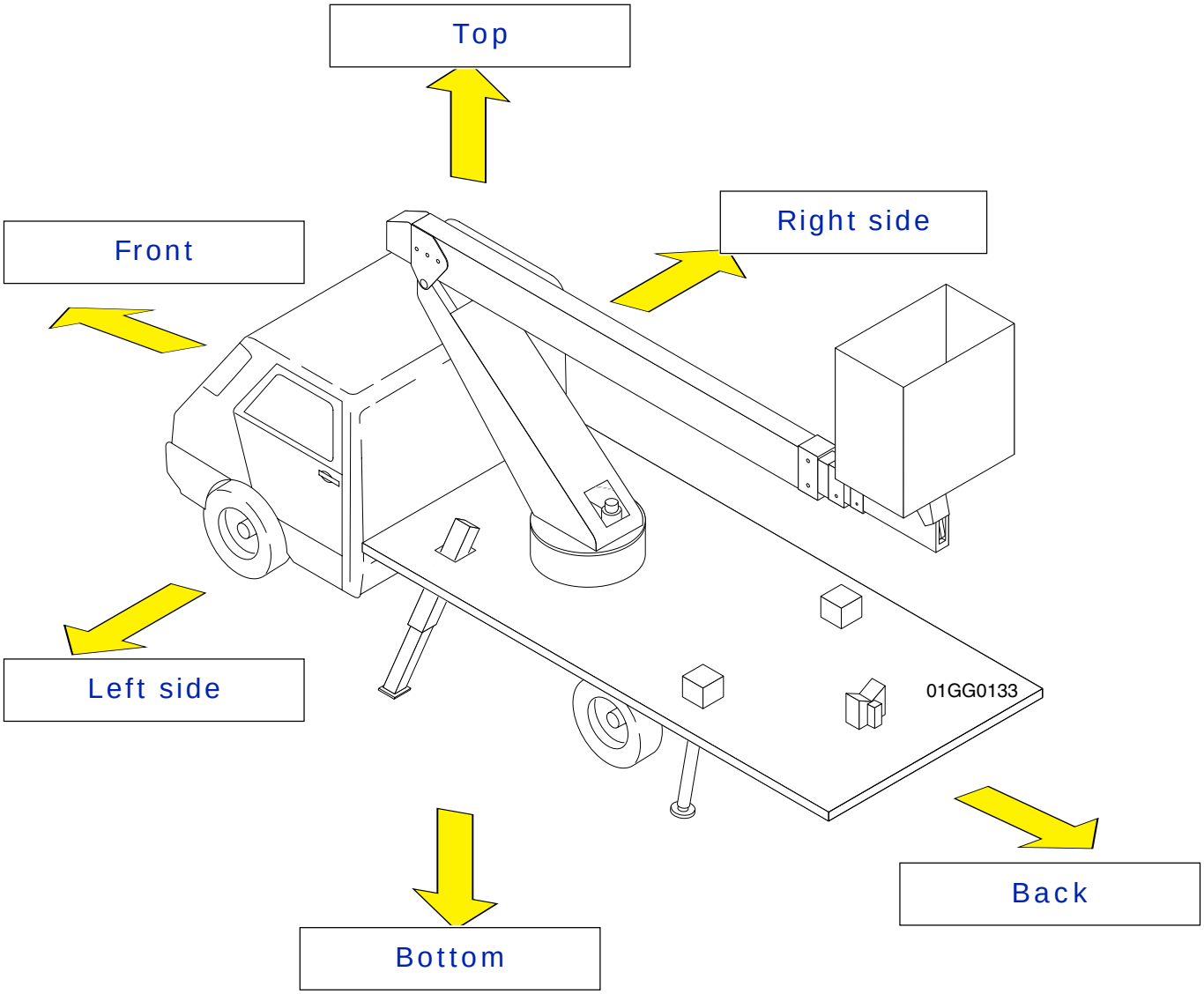
Main parts - Platform



UM0731

1 **Basket**
2 **Main controls in the basket**
3 **Arm**
4 **Turret**
5 **Pressure transducers for limiter device**
6 **Arm-moving jack**
7 **Emergency controls on the turret (optional)**
8 **Solenoid valve assembly**
9 **Rotation assembly**
10 **Slewing ring**
11 **Ground-level stabilising controls**
12 **Stabiliser feet**
13 **Telescopic extensions (extensions)**
14 **Basket support plate**
15 **Extension Hydraulic jack**

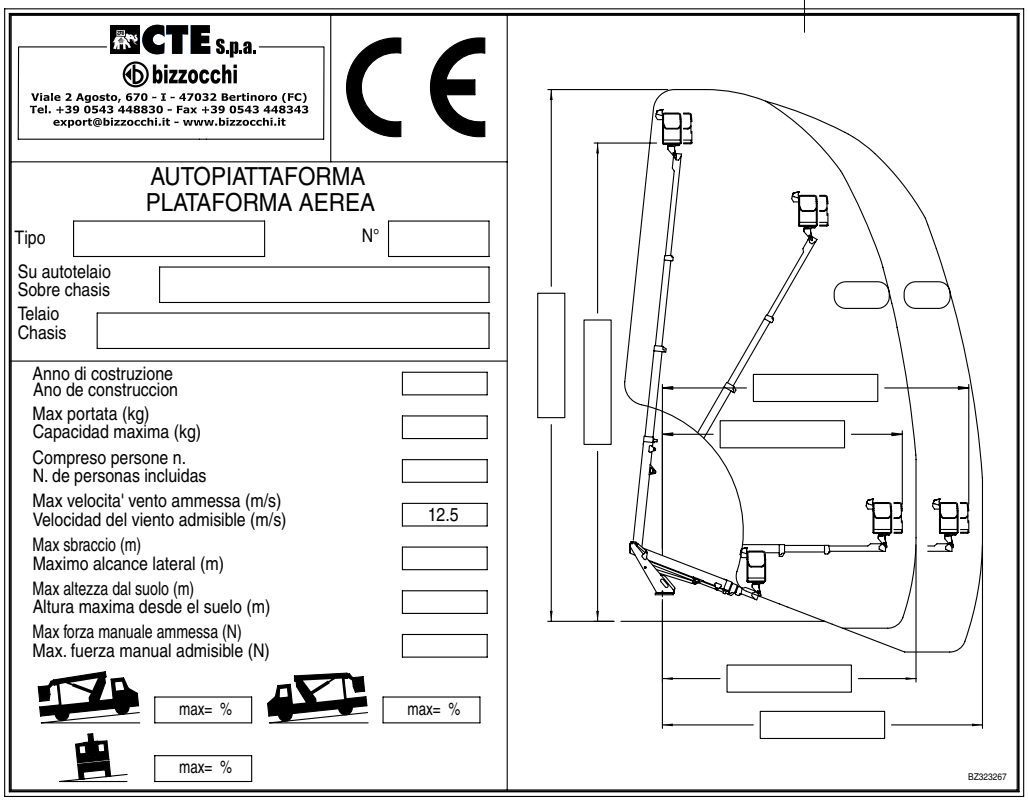
Orientation



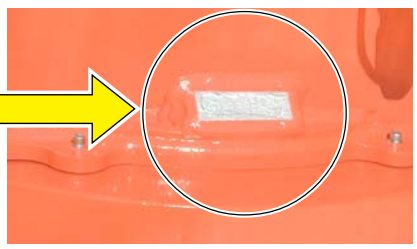
Identification

The identification data plate is affixed to the tower.
The following information is stamped on the data plate:

- Type
- Serial no.
- Chassis no.
- Frame no.



The machine serial no. is stamped and emphasised on the tower too



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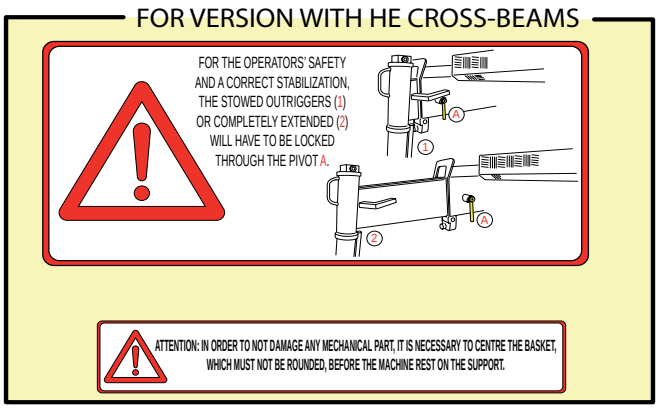
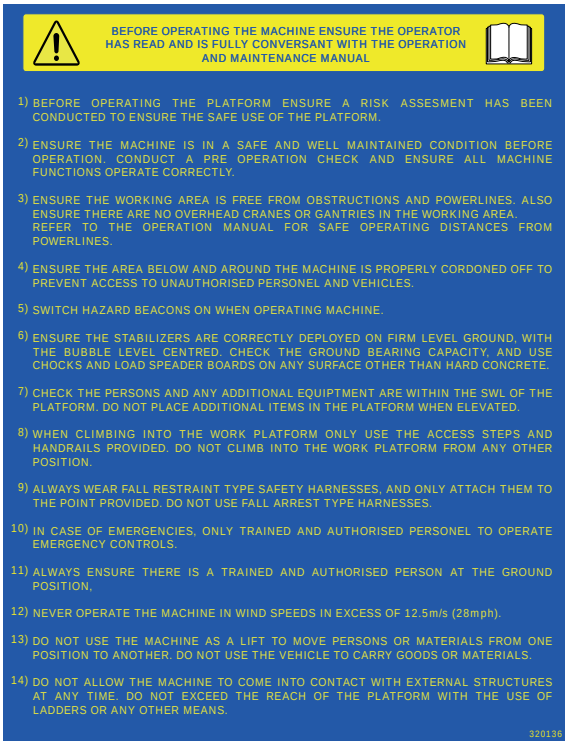
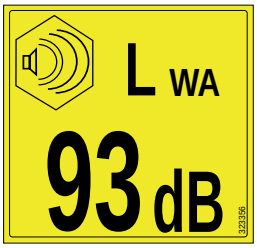
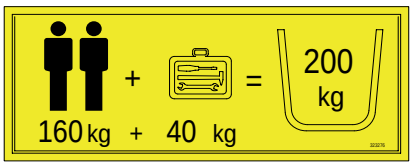
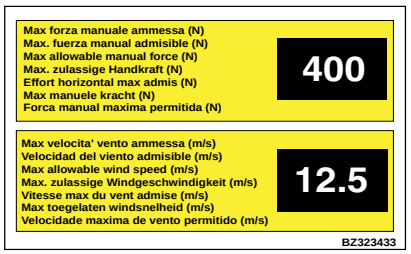
Main data plates

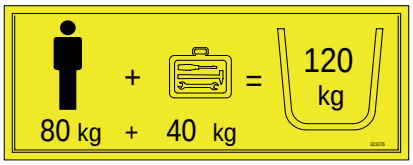


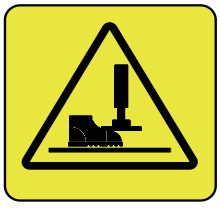


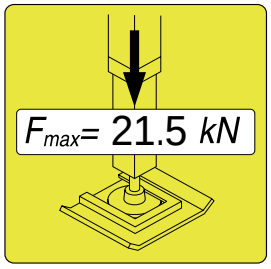


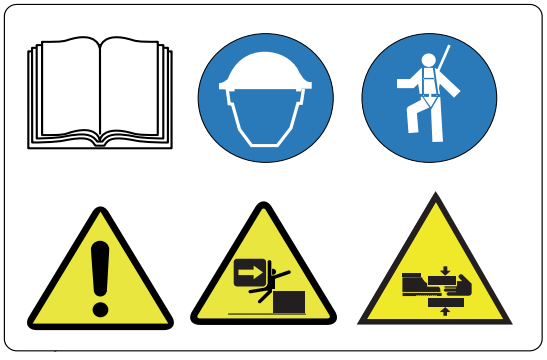












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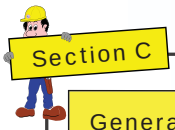
Section

C

Description and Technical Data

THE DATA IN THIS SECTION MAY BE SUBJECT TO MODIFICATION



TECHNICAL SHEET B-LIFT PRO

General elettrical system: 12 V ~~24 V~~

Hydraulic system (pumps)

pump 1

Max pressure [bar]		capacity [l/min]	type
stabilization A / HS / HE	190	15	rolled fixed
stabilization R	200		

pump 2 (when present)

Max pressure [bar]	capacity [l/min]	type
-	-	-

pump 3 (opt.)

Max pressure [bar]	capacity [l/min]	type
-	-	-

hidraulic system (oil)

oil type platforms series PRO/EASY/KF

type	quantity [l]
ARNICA ISO VG 32	40

oil type platforms series HR/B-FIRE

type	quantity [l]
ARNICA ISO VG 32	-

oil type suitable for northern countries (<10°)

type	quantity [l]
RENOLIN MR 520	40

Lubricant's specification

Turret rotation's gear motor

type di lubrificante	quantity
oil ISO VG	2 Kg

Pins joints

lubricant type
grease NILEX EP1

Telescopic elements

lubricant type
grease NILEX EP1

Ralla

lubricant type
grease NILEX EP1

Chains

lubricant type
grease NILEX EP1

Chains

Tension

201/230

output 3rd boom	output 4th boom	Jib	retraction 3rd boom	retraction 4th boom	Jib
8 [N.m]	4 [N.m]	-	10 [N.m]	4 [N.m]	-

162/187

output 3rd boom	output 4th boom	Jib	retraction 3rd boom	retraction 4th boom	Jib
4 [N.m]	-	-	4 [N.m]	-	-

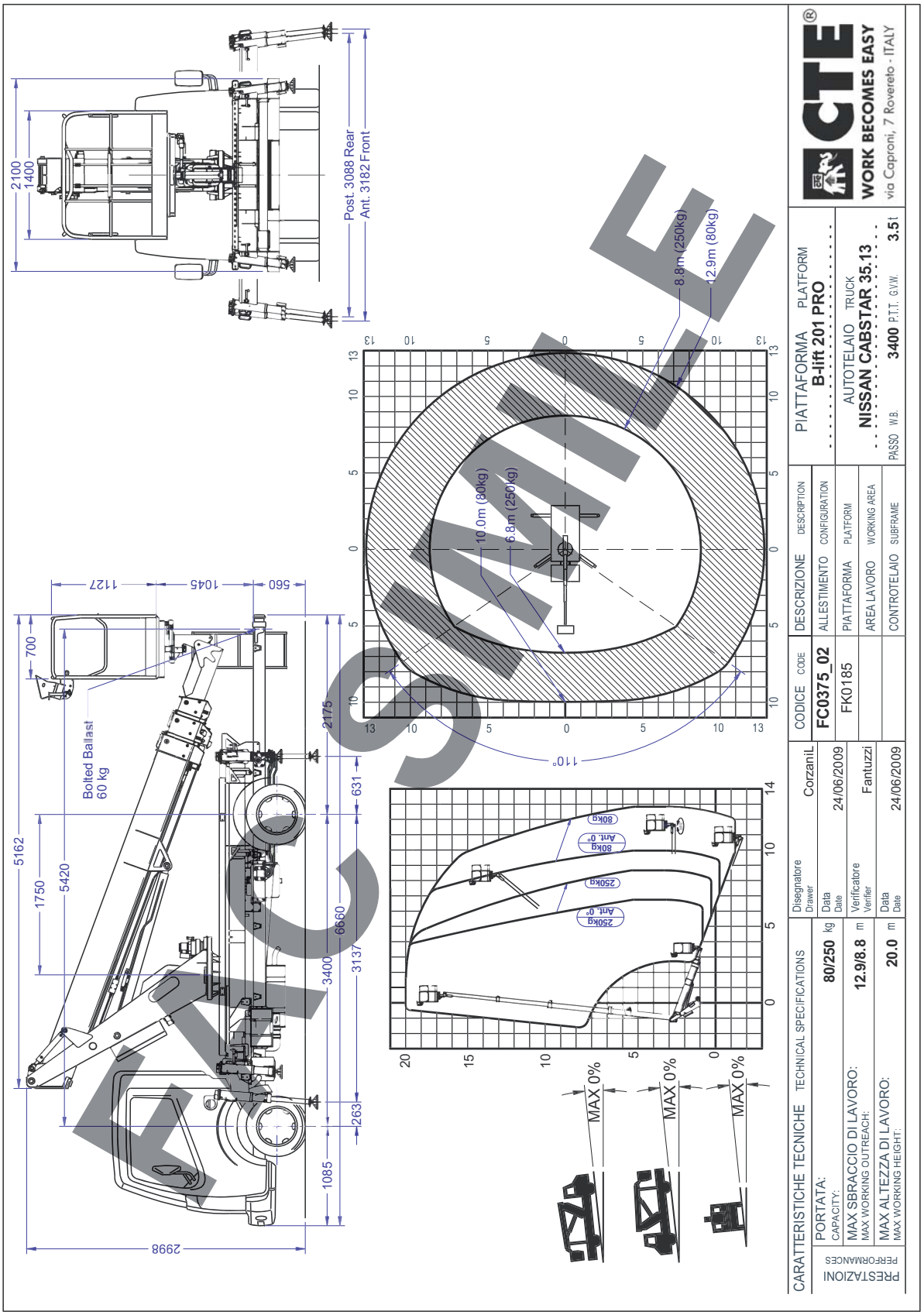
Hydraulic clutch in the basket (opt.)

oil capacity [l/min]	max pressure on hydraulic clutch [bar]
-	-

Air / water (opt.)

max pressure on duty cicle [bar]	max temperature on duty cicle for fluid [C°]
275	80

MACHINE DIMENSION AND WORKING AREA



The data related to platform engaged will be reported on the document "MACHINE DIMENSIONS- WORKING AREA" hereafter attached.

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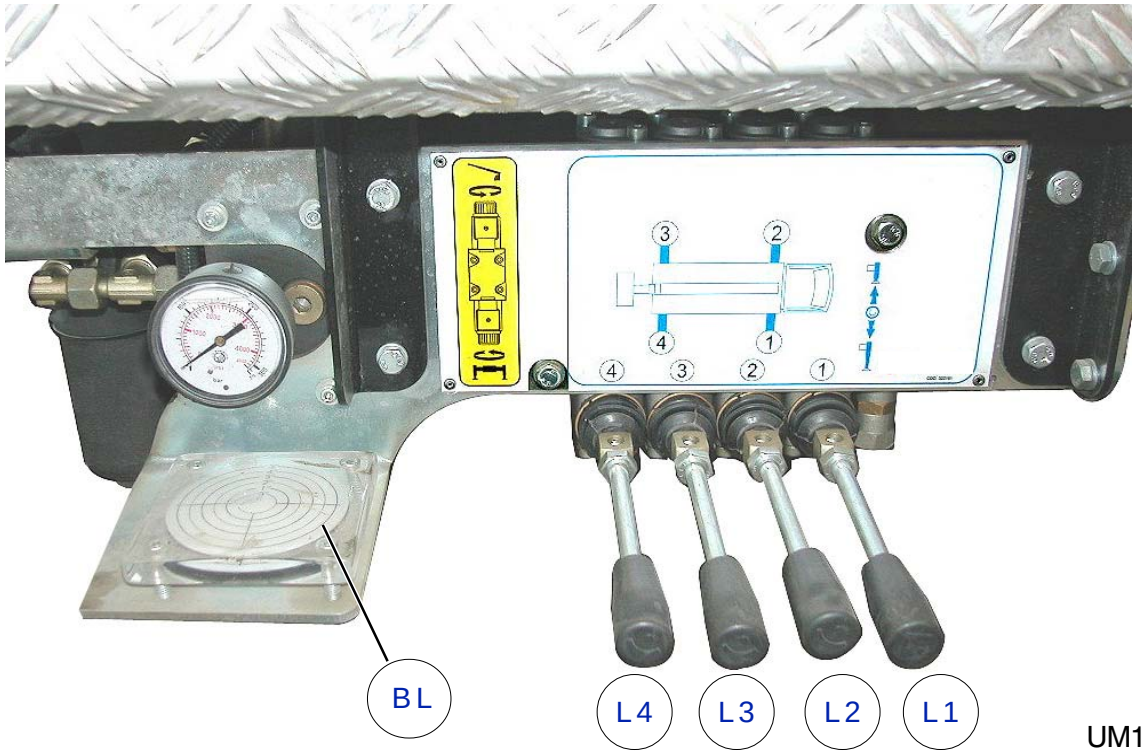
Section
D
Controls

Index

Stabilising controls 2
Controls - frame station 3
Main controls - basket station 7
Stabiliser controls at the station in the basket (optional) 10
Cabin controls 11
Auxiliary electrical motor control panel (Optional) 12

Stabilising controls



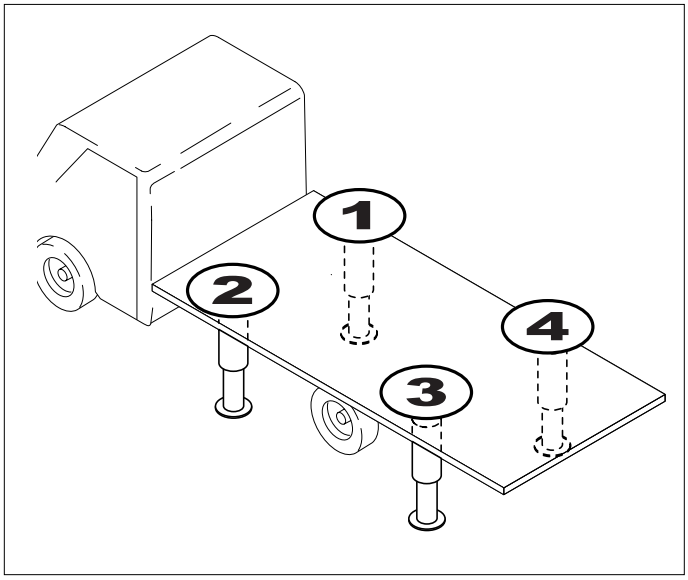
L 1 Stabiliser 1 control lever

L 2 Stabiliser 2 control lever

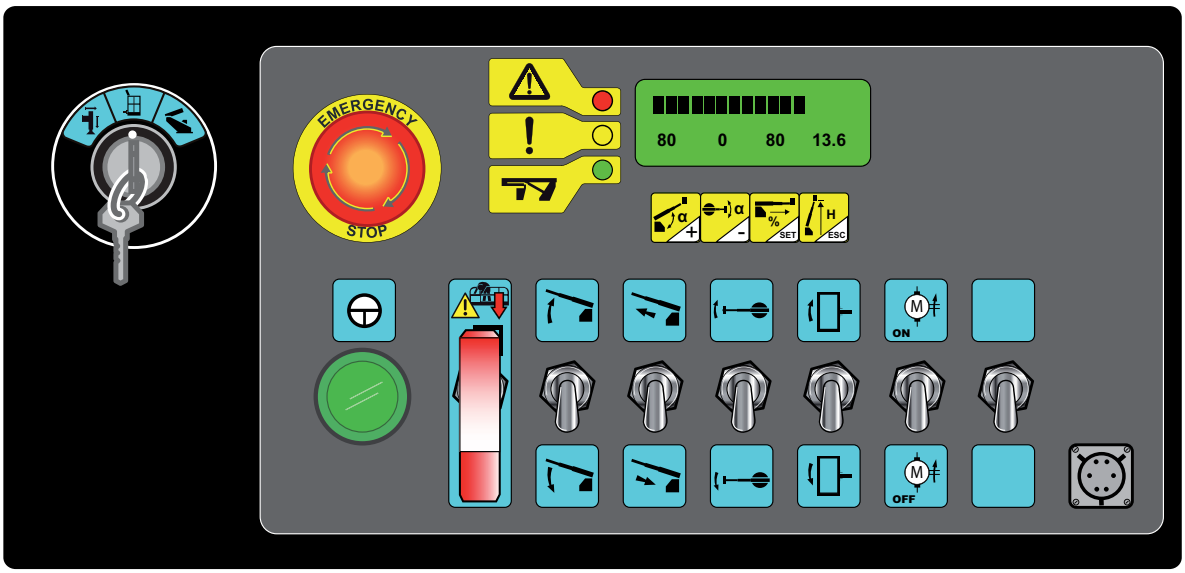
L 3 Stabiliser 3 control lever

L 4 Stabiliser 4 control lever

B L Machine level control bubble

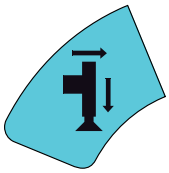


Controls - frame station

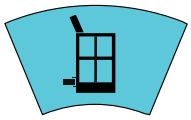


SA2

CONTROL STATION THREE-POSITION KEY SELECTOR



STATION ENABLINGSTABILISATION MANOEUVRES



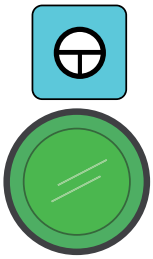
STATION ENABLINGBASKET MANOEUVRES

STATION ENABLINGSUBFRAME CONTROL

SB1

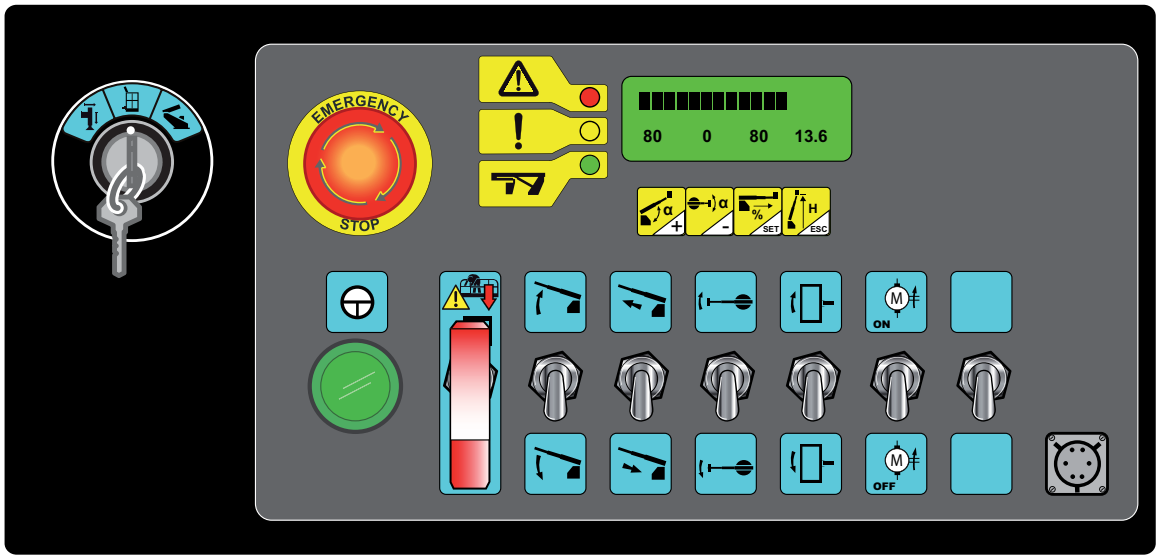
Stop button	**Emergency button: Actuator power deactivation**

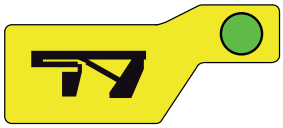
SH3



Consent button	**Aerial manoeuvres permission button (man present): The button must be pressed before activating the aerial manœuvre selectors**

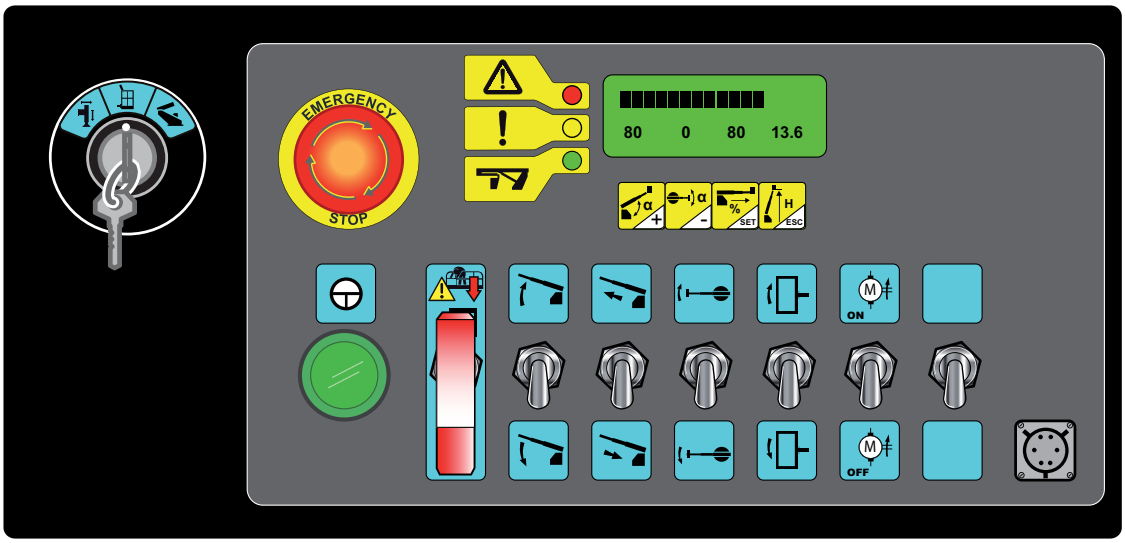
Controls - frame station



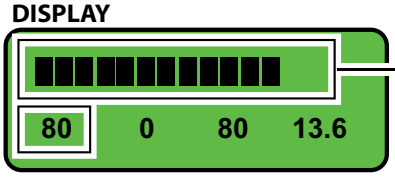
HC1 	**Limiting device anomaly**	**The red light turns on in the presence of a limiting device anomaly.The red light associated to an intermittent acoustic signal warns of the extra limiting device blocking.The red light associated to a steady acoustic signal warns of a limiting device anomaly.The alarm type reference code will appear on the display.**
HC2 	**Limiting device blocking signal**	**The yellow light turns on to signal blocking of the limiting device when at maximum outreach.The signal is accompanied by an intermittent acoustic signal lasting a few seconds.The alarm type reference code will appear on the display.**
HC3 	**Consent for aerial manoeuvres**	**The green light turns on to signal the possibility of carrying out manoeuvres on the aerial part of the platform.**

UM0989_GB

Controls - frame station



DISPLAY



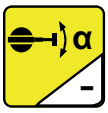
Increase bar

In normal work conditions, bar increase indicates that the maximum allowed outreach is approaching, depending on the weight inside the basket.

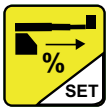
Numerical values

In normal work conditions, the values which appear below the increase bar indicate the state of the four manoeuvres shown in the relative icons.

S1C **DELTA ANGLEMAIN BOOM**



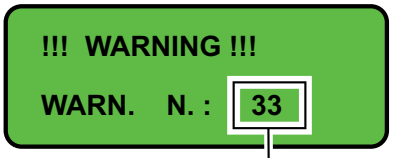
S2C **DELTA ANGLE ROTATIONTURRET**



S3C **INCREASE PERCENTAGEEXTENSION MANOEUVRE**

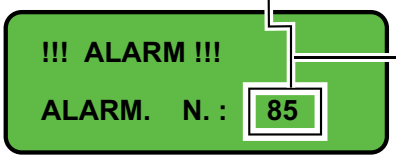
S4C **VALUE (mt.)WORK HEIGHT**

DISPLAY



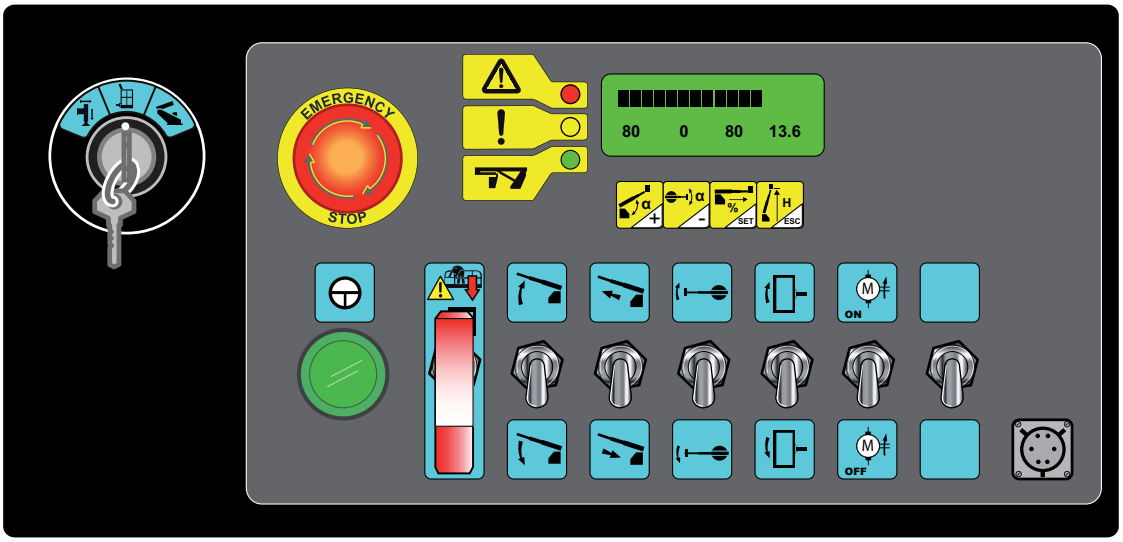
ALARM / WARNING

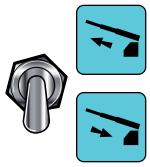
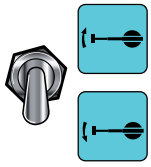
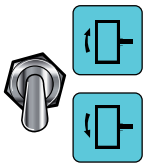
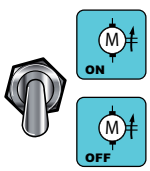
In anomaly or alarm conditions, the display indicates their type and reference number.



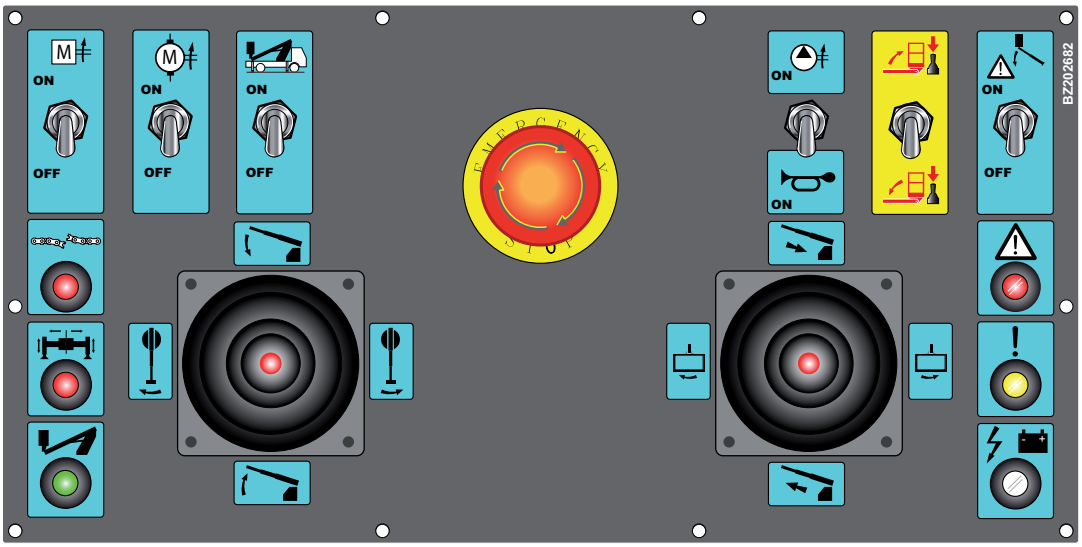
The numerical reference can be found in the **ALARM / WARNING TABLE in Section F.**

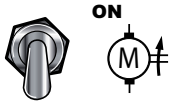
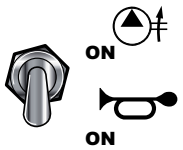
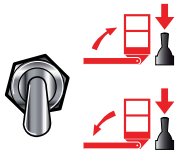
Controls - frame station



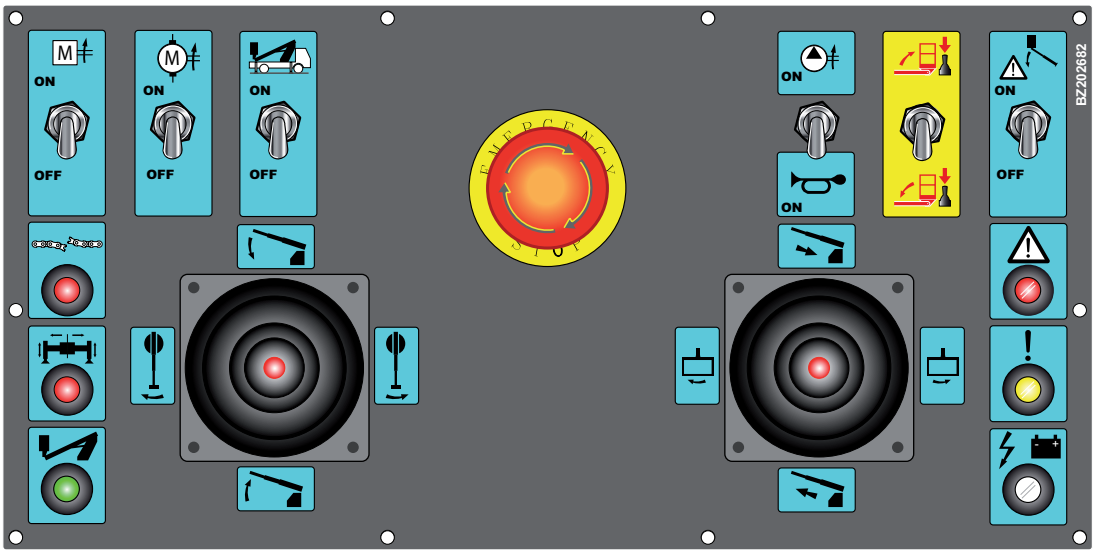
SC1		Override	**Basket emergency button bypass.** The selector must be used only if the operator in the basket has activated the emergency button since there is a difficulty. The Override selector restores the platform functions bringing the operator back to the ground.
SC2		Main boom ascent descent	**Three-position instable selector with return to centre.** Maintaining the selector pressed upwards, the main boom will move upwards.maintaining the selector pressed downwards, the main boom will move downwards.
SC3		Telescopic elements extension retraction	**Three-position instable selector with return to centre.** maintaining the selector pressed upwards, the telescopic elements extend.maintaining the selector pressed downwards, the telescopic elements retract.
SC4		Turret right-left rotation	**Three-position instable selector with return to centre.** maintaining the selector pressed upwards, the turret rotates to the right.maintaining the selector pressed downwards, the turret rotates to the left.
SC5		Basket right-left rotation	**Three-position instable selector with return to centre.** maintaining the selector pressed upwards, the basket rotates to the right.maintaining the selector pressed downwards, the basket rotates to the left.
SC6		Electropump activation	**Three-position instable selector with return to centre.** maintaining the selector pressed upwards (ON) activates the electropump.maintaining the selector pressed upwards (ON) deactivates the electropump.
XCB1		PC connection plug	

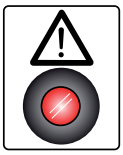
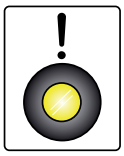
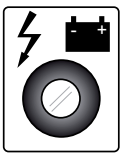
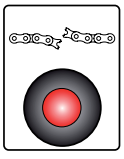
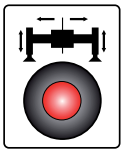
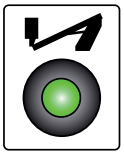
Main controls - basket station



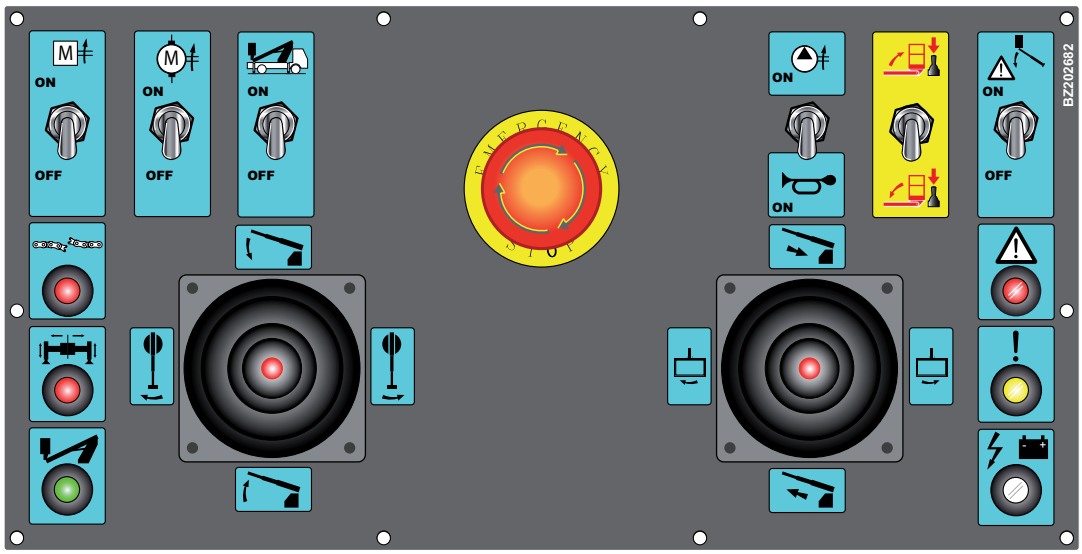
SB2		Stop button	Acting on the emergency button S3 deactivates actuator power
SC8		Vehicle engine start - stop	**Three-position instable selector with return to centre** Maintaining the selector pressed upwards (ON) activates the vehicle engine-maintaining the selector pressed downwards (Off turns the vehicle engine off
SC9		Electropump activation	**Stable two-position selector (on - off)** Positioning the selector pressed upwards (ON) activates the electropump. Positioning the selector downwards (off) deactivates the electropump.
SC17		Automatic closing	**Instable two position selector** Maintaining the selector pressed upwards (on), machine configuration returns to the rest position (on the post).
SC20		Hydraulic inlet Horn	Maintaining the selector pressed upward activates the hydraulic inlet. In this position the selector will be stable. Maintaining the selector pressed downwards activates an acoustic signal on the frame. In this position the selector will be instable, returning to the centre.
SC10		Basket balance correction	**Three-position instable selector with return to centre.** Associated to the selection of the button at the top of one of the two joysticks (man present), maintaining the selector SC10 pressed downwards will correct positive swinging (inside) of the basket.Maintaining it pressed upwards, will correct the negative swinging (outside) of the basket.
SC11		Limiting device by pass	**Instable two position selector.** When the limiting device is blocked with the yellow light HN2 on, the selector SC11 associated to selection of the button at the top of the joystick SJ1 (man present) will allow carrying out boom descent for a few seconds to exit the blocked condition.*This By pass function of the limiting device can be activated only if the previous manoeuvre carried out was boom lifting.*

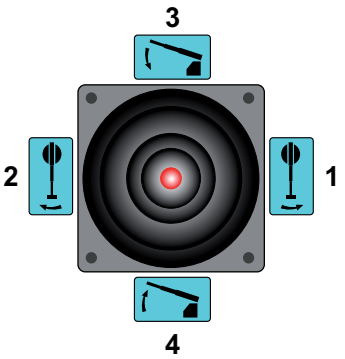
Main controls - basket station



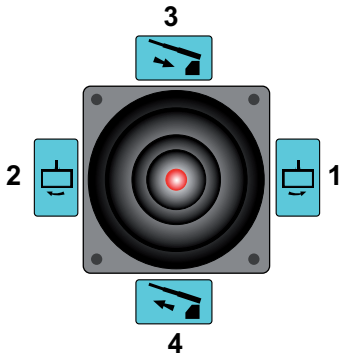
HN1		**Limiting device anomaly** — The red light turns on in the presence of a limiting device anomaly. The red light associated to an intermittent acoustic signal warns of the extra limiting device blocking.The red light associated to a steady acoustic signal warns of a limiting device anomaly.
HN2		**Limiting device blocking signal** — The yellow light turns on to signal blocking of the limiting device when at maximum outreach.The signal is accompanied by an intermittent acoustic
HN3		**Voltage presence** — The white steady light indicates the presence of voltage. **Battery discharged** — The white intermittent light indicates that the battery of the vehicle is discharged.
HN4		**Chains broken** — The red light turns on when chains break.Boom extension blocking
HN5		**Outriggers or beams out of position** — The yellow light turns on when the outriggers or beams are out of position and not in transportation conditions.
HN6		**Aerial manoeuvres consent** — The green light turns on when platform aerial manoeuvres are enabled after stabilisation.

Main controls - basket station

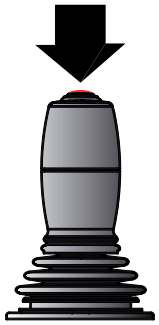




SJ1 **LEFT JOYSTICK**	**Movement selector joystick;** **Turret rotation right (1) left (2)Boom ascent (4) descent (3)To carry out these manoeuvres, press the button at the top of the joystick (man present).** **The proportionality will be given by the movement of the joystick.**

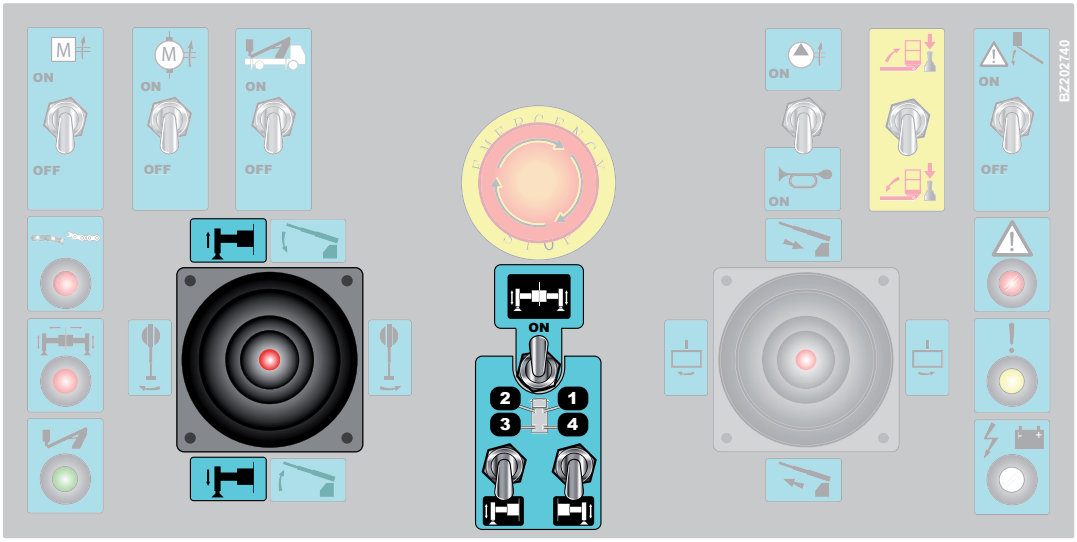


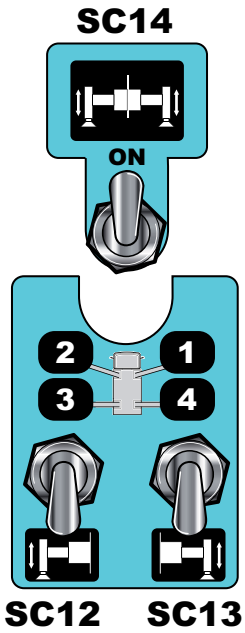
SJ2 **RIGHT JOYSTICK**	**Movement selector joystick;** **Basket rotation right (1) left (2)Extension (4) retraction (3) of boom telescopic elementsTo carry out these manoeuvres, press the button at the top of the joystick (man present).** **The proportionality will be given by the movement of the joystick.**



MANPRESENT	**Maintaining the button at the top of the joystick pressed activates the possibility of carrying out manoeuvres.**

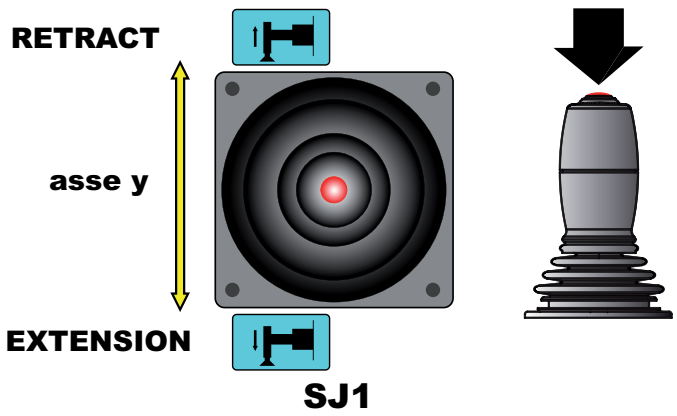
Stabiliser controls at the station in the basket (optional)



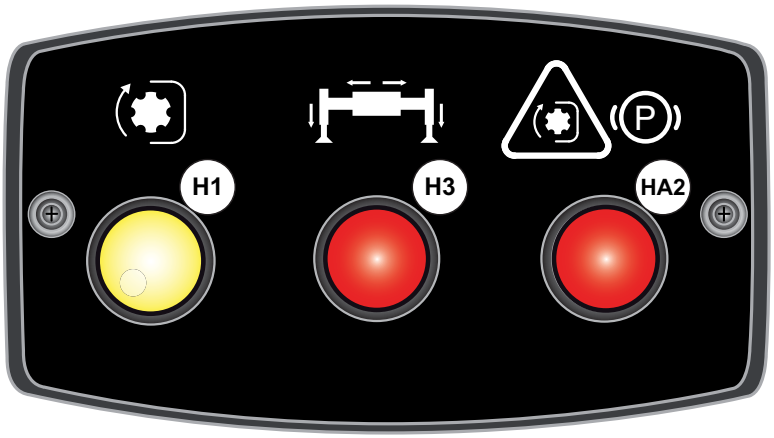


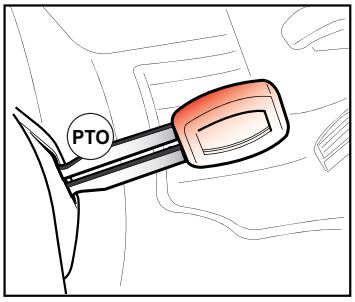
Activating the stabiliser function in the basket	**Maintained contact two-position selector** At the station in the basket, turn the SC14 selector upwards (on) to enable retraction and extension of the stabilisers.

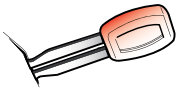
Stabiliser selection	**Stabiliser selection** Momentary contact three-position selector with return at the centre Move the SJ1 joystick along the Y axis and press the manual button with the SC12 and SC13 switches in neutral to move all the stabilisers simultaneously (in on/off mode). Selected stabilisers are activated according to the position of the SC12 and SC12 switches.



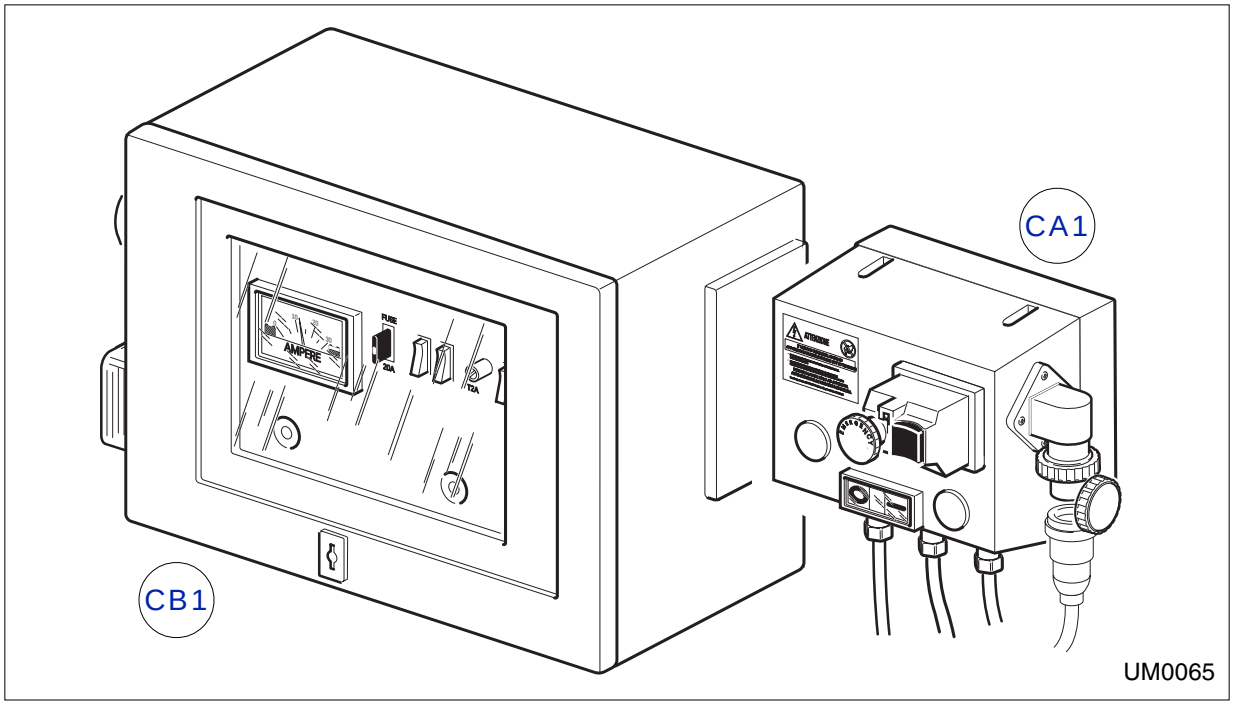
Cabin controls

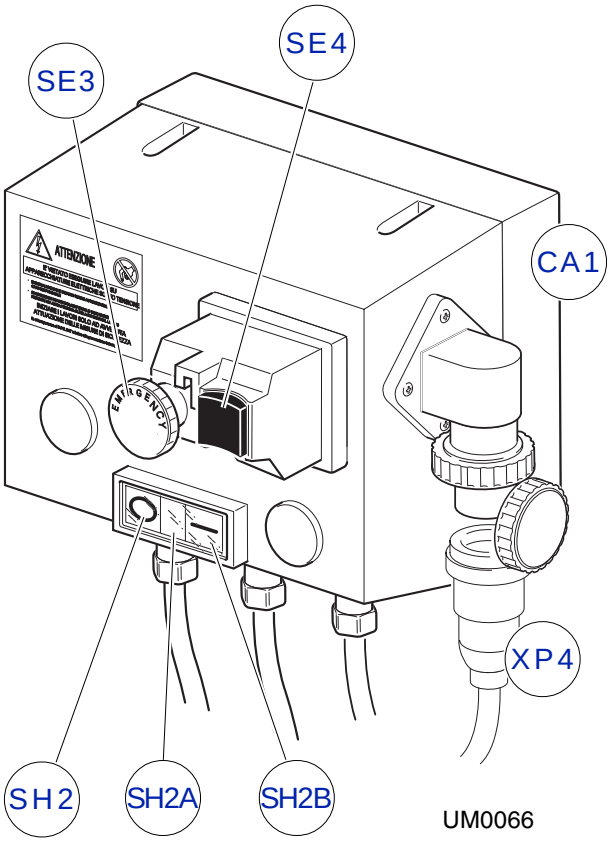




H1		**Yellow light on PTO connected** **Yellow light off PTO disconnected**
H3		**Outriggers and/or beams out of position light:** **With configuration of outriggers and/or beams out of position (not totally retracted) the red light H3 will be on.** **With the outriggers and/or beams in position, the red light H3 will be off.**
HA2		**The red light HA2 associated to an acoustic alarm warns that the parking brake was released with the PTO connected**
PTO		**PTO LEVER**

Auxiliary electrical motor control panel (Optional)





CA1 Auxiliary motor control unit.

CB1 Battery charger.

SH2A Auxiliary motor control panel voltage presence indicator light
Indicator light on = Voltage present at the control panel
Indicator light off = Absence of voltage at the control panel

SH2 Auxiliary motor start-up button

SH2B Auxiliary electrical motor stop button

SE3 Auxiliary motor emergency stop button

SH2 Auxiliary motor reset button

XP4 Electrical motor connecting plug to an external electrical line.

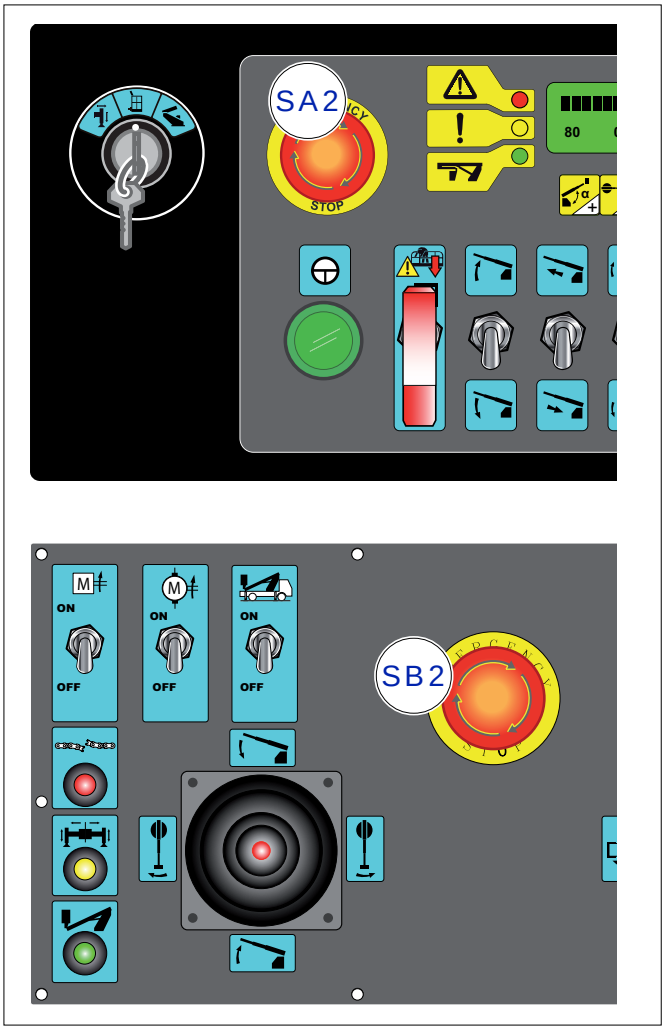
Section
E
Safety devices

Index

Emergency buttons 2
Moment limiting device (MC2M) 3
LIST AND DESCRIPTION OF WARNINGS-ALARMS 4
WARNINGS 4
ALARMS 5
ALARMS 6
Buzzer 7
Outriggers and/or beams out of position 8
Stabiliser interblocking 9
Elevating Operations Consent 10
Basket balancing 11
Control system chain tension adjustment 12
Manual emergency pump 13
Safety harnesses 14

Emergency buttons

There are buttons located on the main lifting platform manoeuvre stations that stop the machine in case of emergencies.
Pressing **SA2** or **SB2** causes:
- interruption of the electrical functions of the machine;
- immediate stop of all movement acting directly on the hydraulic valves.



DANGER

Before rearming the buttons, the causes for its use must be carefully evaluated.

ATTENTION

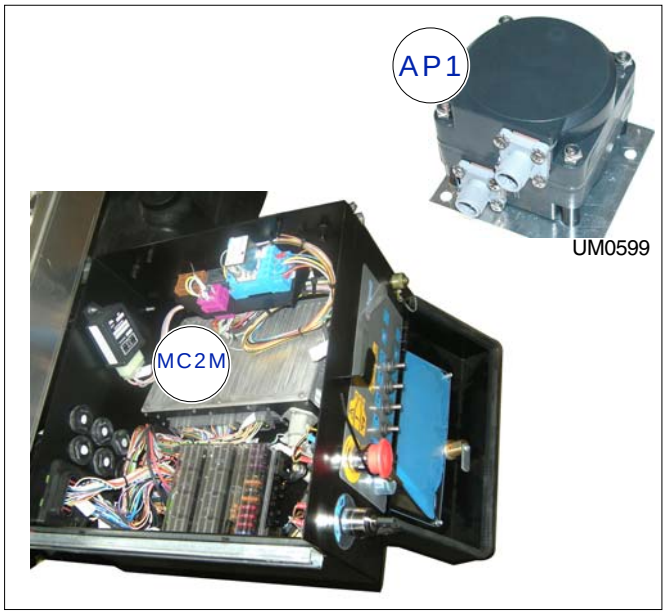
To reactivate the function of the buttons, turn them in the direction indicated by the arrows until they click and lift.

SAFETY DEVICE FUNCTIONALITY CHECK

Press the emergency button SA2 or SB2 and make sure no manoeuvre can be performed. To carry out this operation safely, act inside of the basket with the platform at the rest position

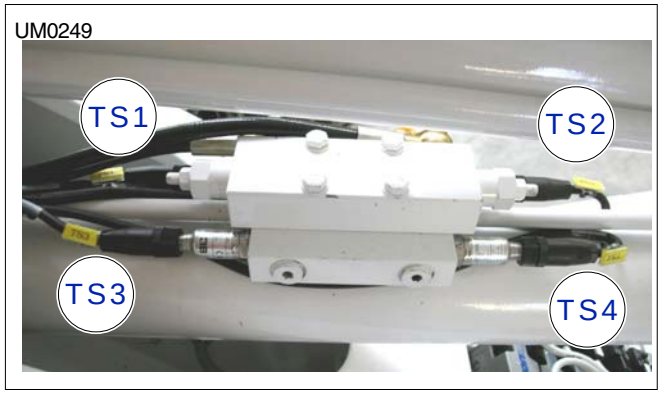
Moment limiting device (MC2M)

The moment limiting device is made up of a device located inside the boom **(AP1)**, a double-channel control unit **(MC2M)** and four transducers **TS1, TS2, TS3** and **TS4** plus two angle sensors EN1 and EN2. the device installed inside the boom is composed of two angle transducers which detect the angle of the boom **(AP1)**.
EN1 and **EN2** are two Encoders which detect the turret rotation angle.
The four transducers **TS1, TS2, TS3 and TS4**, installed on the boom movement cylinder valve, detect the internal differential pressure during movement.



The central unit **(MC2M)** will compare the capacity of the basket and therefore the real pressure detected by **TS1, TS2, TS3 and TS4**, with the theoretical pressure obtained by the values detected by **AP1**, **EN1** and **EN2** in order to operate in a more safe work area.

The machine will block every time the internal cylinder pressure exceeds the reference value set on one of the two channels of the control unit.

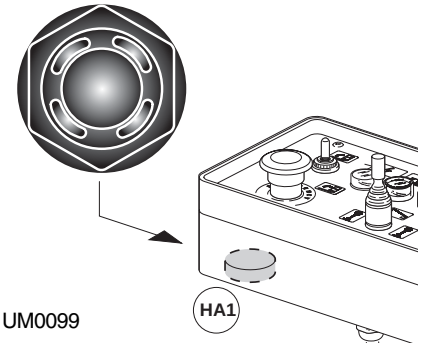


The blocking condition, signalled by a yellow light **H6** with an intermittent horn **HA1** lasting a few seconds, inhibits the following from moving:

- extension of telescopic elements;
- boom descent.

All other movements are possible.
The control unit **(MC2M)** elaborates the sensor signals blocking the lift extension and retraction if exiting the set work curve.

An anomaly to the work field control circuit board (see pages 8 and 9 **Sect. E**), causes:
- horn intervention **HA1** (continuous sound).
- continuous blockage of lift extension and retraction and rotation.

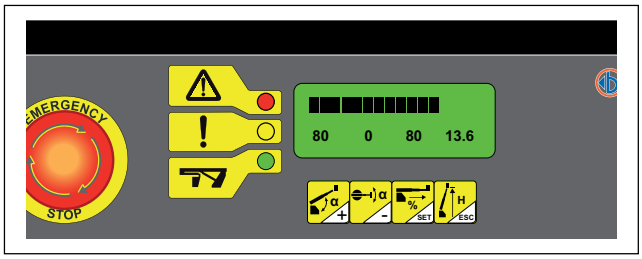


vCHECKING THE WORKING OF THE SAFETY DEVICE

PSee the paragraph "List and description" for checking this safety device ALARMS-WARNINGS page 4, 5 and 6 Sect. E

LIST AND DESCRIPTION OF WARNINGS-ALARMS

The warning and alarm signal codes described hereafter will appear on the display located on the trolley control panel.



WARNINGS

N.	Name	Description
10	warningLMI_BLOCK	Stop for limiting device blocking
11	warningLMI_BLOCK_CW	Clockwise rotation stop for limiting device blocking
12	warningLMI_BLOCK_CCW	Clockwise rotation stop for limiting device blocking
13	warningLMI_BLOCK_UP	Boom ascent stop for reached limit or for safety blocking
14	warningSTRUCTURAL	Stop for structural blocking
15	warningMAX_HEIGHT	Stop for maximum height
20	warningCHAIN_LOSE	Chains broken or loose
21	warningEMERGENCY_PB_TRUCK	Trolley emergency button pressed
22	warningEMERGENCY_PB_CAGE	Basket emergency button pressed
23	warningLOW_BAT	Battery discharged
24	warningCAGE_OPEN	Basket open
30	warningLIM_SLE_CW	Stop for clockwise rotation limit
31	warningLIM_SLE_CCW	Stop for anti-clockwise rotation limit
32	warningLB_TEL_OPEN	Boom descent stop for open telescopic
33	warningBOOM_IN_SUPPORT	Stop for support boom
34	warninCAGE_OUT_LEVEL_UP	Stop for unlevelled basket inside
35	warninCAGE_OUT_LEVEL_DW	Stop for unlevelled basket outside
37	warningLIM_ROT_CW	Basket rotation stop for clockwise limit
38	warningLIM_ROT_CCW	Basket rotation stop for anti-clockwise limit
39	warningLB_AMP_MAX_UP	Boom ascent stop for stop limit
40	warningCAB_COLLISION	Stop for cabin anti-collision
41	warningLADDER_COLLISION	Stop for stairs anti-collision
50	warningINCO_OutrLF	Left front beam end run incongruence
51	warningINCO_OutrLR	Left rear beam end run incongruence
52	warningINCO_OutrRF	Right front beam end run incongruence
53	warningINCO_OutrRR	Right rear beam end run incongruence
100	warningAUTO_SUPPORT_RUN	Automatic closing on
101	warningAUTO_SUPPORT_DISABLE	Automatic closing off

ALARMS

N.	Name	Description
1	alarmSystem	System alarm
4	alarmSoftwareVersion	Software version not compatible
5	alarmLMItype	Limiter type not compatible
6	alarmE2PROM	CRC Eeprom parameters control alarm
7	alarmCPU_CALC	CPU calculations control alarm
8	alarmRELE_WDO	Watch Dog relay control alarm
111	alarmCB_IOEXT_TRUCK	CAN-BUS IoExt trolley communication alarm
137	alarmCB_IOM_CAGE1	CAN-BUS IoMode basket 1 communication alarm
138	alarmCB_IOM_CAGE2	CAN-BUS IoMode basket 2 communication alarm
141	alarmCB_IDR_TRUCK	CAN-BUS Idr trolley communication alarm
147	alarmCB_LB_SENSOR_A	CAN-BUS U2ASA ChA communication alarm
150	alarmCB_LB_SENSOR_B	CAN-BUS U2ASA ChB communication alarm
181	alarmCB_SLE_SENSOR_A	CAN-BUS ChA turret rotation encoder communication alarm
184	alarmCB_SLE_SENSOR_B	CAN-BUS ChB turret rotation encoder communication alarm
223	alarmOutrLFextAincongruence	ChA left front beams micro switch incongruence alarm
228	alarmOutrRFextAincongruence	ChA right front beams micro switch incongruence alarm
233	alarmOutrLRextAincongruence	ChA left rear beam micro switch incongruence alarm
238	alarmOutrRRextAincongruence	ChA right rear beam micro switch incongruence alarm
243	alarmOutrLFextBincongruence	ChB left front beam micro switch incongruence alarm
248	alarmOutrRFextBincongruence	ChB right front beam micro switch incongruence alarm
253	alarmOutrLRextBincongruence	ChB left rear beam micro switch incongruence alarm
258	alarmOutrRRextBincongruence	ChB right rear beam micro switch incongruence alarm
300	alarmSleAngAminVal	ChA turret rotation encoder minimum value alarm
301	alarmSleAngAmaxVal	ChA turret rotation encoder maximum value alarm
303	alarmSleAngAincongruence	ChA turret rotation encoder incongruence alarm
310	alarmLbAngAminVal	ChA boom angle sensor minimum value alarm
311	alarmLbAngAmaxVal	ChA boom angle sensor maximum value alarm
313	alarmLbAngAincongruence	ChA boom angle sensor incongruence alarm
315	alarmLbExtAminVal	ChA boom extension sensor minimum value alarm
316	alarmLbExtAmaxVal	ChA boom extension sensor maximum value alarm
340	alarmRotAngAminVal	ChA basket rotation sensor minimum value alarm
341	alarmRotAngAmaxVal	ChA basket rotation sensor maximum value alarm
350	alarmPtLowAminVal	ChA bottom side sensor minimum value alarm
351	alarmPtLowAmaxVal	ChA bottom side sensor maximum value alarm
353	alarmPtLowAincongruence	ChA bottom side pressure sensor incongruence alarm

ALARMS

N.	Name	Description
355	alarmPtHigAminVal	ChA stem side pressure sensor minimum value alarm
356	alarmPtHigAmaxVal	ChA bottom side sensor maximum value alarm
358	alarmPtHigAincongruence	ChA bottom side pressure sensor incongruence alarm
380	alarmSleAngBminVal	ChA turret rotation encoder minimum value alarm
381	alarmSleAngBmaxVal	ChB turret rotation encoder maximum value alarm
383	alarmSleAngBincongruence	ChB turret rotation encoder incongruence alarm
390	alarmLbAngBminVal	ChB boom angle sensor minimum value alarm
391	alarmLbAngBmaxVal	ChB boom angle sensor maximum value alarm
393	alarmLbAngBincongruence	ChB boom angle sensor incongruence alarm
430	alarmPtLowBminVal	ChB bottom side sensor minimum value alarm
431	alarmPtLowBmaxVal	ChB bottom side sensor maximum value alarm
433	alarmPtLowBincongruence	ChB bottom side pressure sensor incongruence alarm
435	alarmPtHigBminVal	ChB bottom side sensor minimum value alarm
436	alarmPtHigBmaxVal	ChB bottom side sensor maximum value alarm
438	alarmPtHigBincongruence	ChB bottom side pressure sensor incongruence alarm
500	alarmREL_KA1	KA1 emergency relay control alarm
501	alarmPOWER_A	No power in A extension unit alarm
502	alarmPOWER_B	No power in B extension unit alarm
503	alarmPOWER_C	No power in C and D extension unit alarm
510	alarmJ1Y	Joystick 1 Y axis incongruence alarm
511	alarmJ1X	Joystick 1 X axis incongruence alarm
512	alarmJ2Y	Joystick 2 Y axis incongruence alarm
513	alarmSA2	Selector SA2 incongruence alarm
514	alarmSC2	Selector SC2 incongruence alarm
515	alarmSC3	Selector SC3 incongruence alarm
516	alarmSC4	Selector SC4 incongruence alarm
517	alarmSC5	Selector SC5 incongruence alarm
518	alarmSC10	Selector SC10 incongruence alarm
520	alarmSC12	Selector SC12 incongruence alarm
521	alarmSC13	Selector SC13 incongruence alarm
530	alarmINCO_FC_LF	FC front left incongruence alarm
531	alarmINCO_FC_LR	FC rear left incongruence alarm
532	alarmINCO_FC_RF	FC front right incongruence alarm
533	alarmINCO_FC_RR	FC rear right incongruence alarm
534	alarmINCO_S9	Closed boom micro switch S9 incongruence alarm
535	alarmINCO_KDX	Front right ground wheel incongruence alarm
536	alarmINCO_KSX	Front left ground wheel incongruence alarm
540	alarmINCO_CUR_TAB_A	Limiting device A tables incongruence alarm
541	alarmINCO_CUR_TAB_B	Limiting device B tables incongruence alarm
542	alarmINCO_LMI_CALC_A	Limiting device A blocking incongruence alarm
543	alarmINCO_LMI_CALC_B	Limiting device B blocking incongruence alarm
544	alarmINCO_EXTRA_CALC_A	Limiting device A extra blocking incongruence alarm
545	alarmINCO_EXTRA_CALC_B	Limiting device B extra blocking incongruence alarm

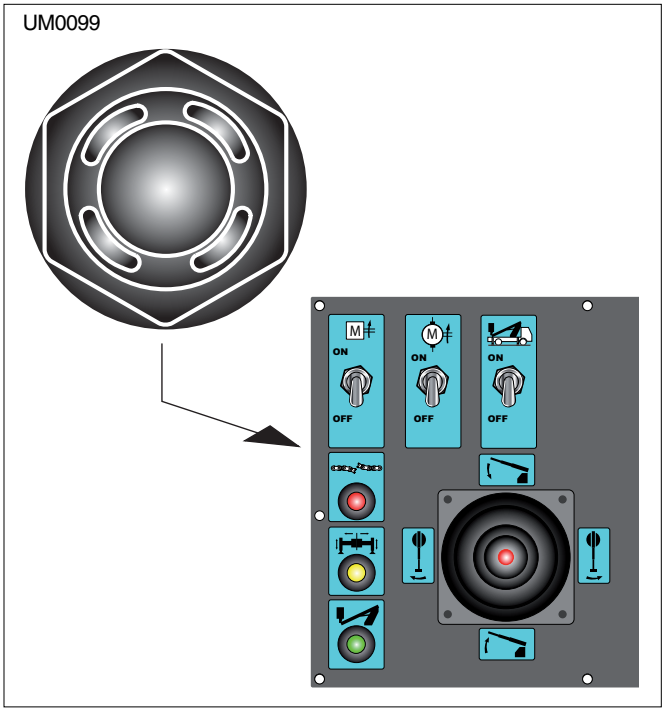
Buzzer

The device is fitted inside the button panel on the car.
The buzzer **HA1** will sound:

On start-up of the machine with an intermittent sound for the duration of the initial check.

In the event of a malfunction of the PCB or its components, sounding continuously.

In the event of an overload in the basket with respect to the maximum capacity set, single operator (120 kg) or dual operator (200 kg), sounding continuously.

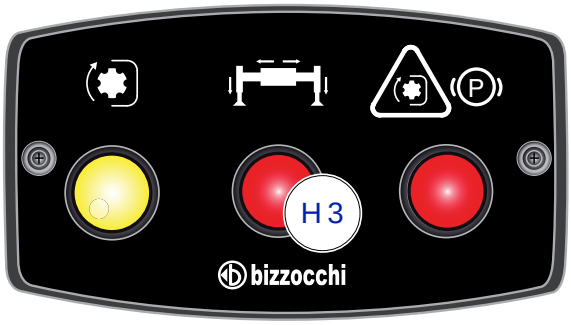


SAFETY DEVICE FUNCTIONALITY CHECK

To check this safety device, the operator needs to make sure that the buzzer emits an intermittent signal lasting a few seconds on start-up of the machine.

Outriggers and/or beams out of position

The red light **H3** on the cabin control panel turns on if the outriggers and/or beams should be out of position (not totally retracted).
This device allows the operator to carry out a further check if the platform is in transport conditions. In that configuration the light **H3** must be off.



CHECKING THE WORKING OF THE SAFETY DEVICE

To check this safety device, make sure that in any condition where the beams and/or the outriggers are out of position, the light H3 on the cabin control panel will be on.

Stabiliser interblocking

According to current standards it is possible to start stabiliser/cross beam movement for the truck only if the platform is closed on its support.
The system detects the position of the boom through the readings from the sensors present in the system.

DANGER

Once the basket has been lifted from the support plate, all operations with the stabilising controls are prohibited.

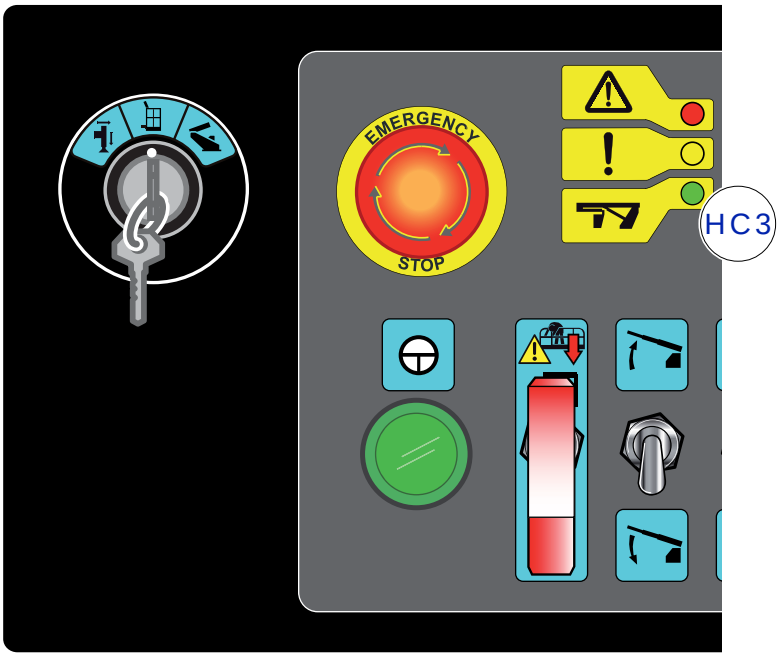
UM1066

CHECKING THE WORKING OF THE SAFETY DEVICE

Lift the elevated portion. No operation can be performed by acting on the stabilising levers.

Elevating Operations Consent

It is designed to allow for the lifting platform to be operated only once the machine has been stabilised.
A microswitch is fitted onto each stabiliser foot, which detects whether the stabiliser itself is resting on the ground. During the machine stabilising phase, only when all the feet are resting on the ground will the green indicator light HC3 come on, corresponding to the stabilising controls, and the arm can be raised.



SAFETY DEVICE FUNCTIONALITY CHECK

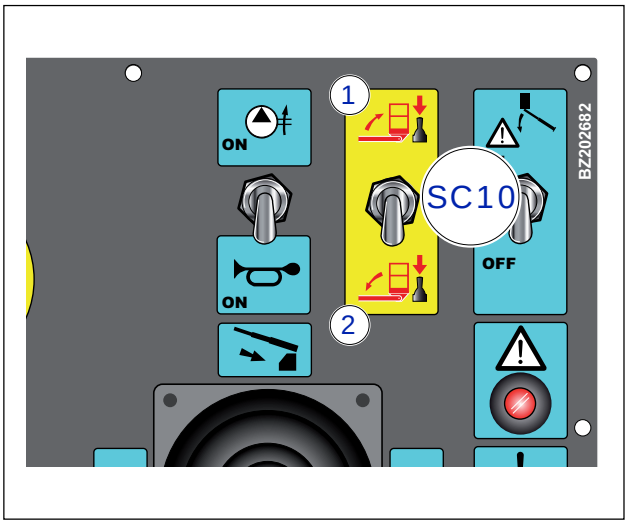
- ***Stabilise the machine until indicator light HC3 comes on.***
- ***Raise one stabiliser and check that the indicator light HC3 turns off.***
- ***Repeat this for each stabiliser.***

Basket balancing

ATTENTION

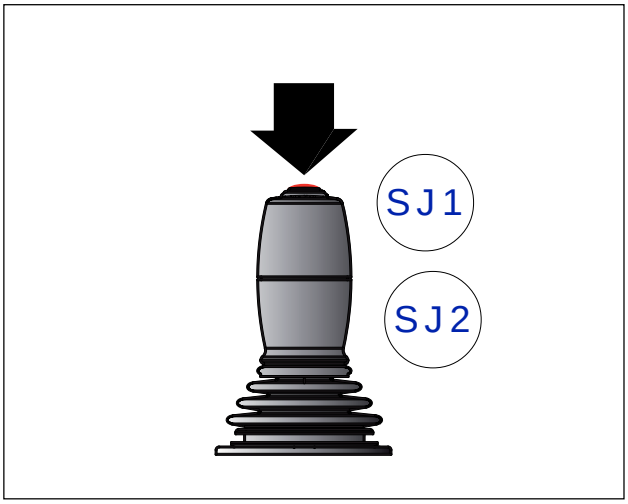
Balancing is only activated when the platform is not moving and when the basket is centred lengthwise.

Verticality of the basket is assured by two close-circuit cylinders.
The planarity of the basket can be corrected if it loses perfect planarity while functioning.



ATTENTION

Vertical correction of the basket must be performed exclusively while the platform is at rest.



To re-establish balance, keep the button at the top of one of the two joysticks pressed and at the same time act on the **SC10** control in the basket

SC10 Basket balance control
1 Negative swinging of the basket
2 Positive swinging of the basket
In case of malfunctioning or failure of the basket balance system, a further device composed of a mercury bubble causes blockage of balancing correction manoeuvres, as well as blocking the manoeuvre which further unbalances the basket.
The inclination of the basket must not exceed 10 degrees positive or negative.

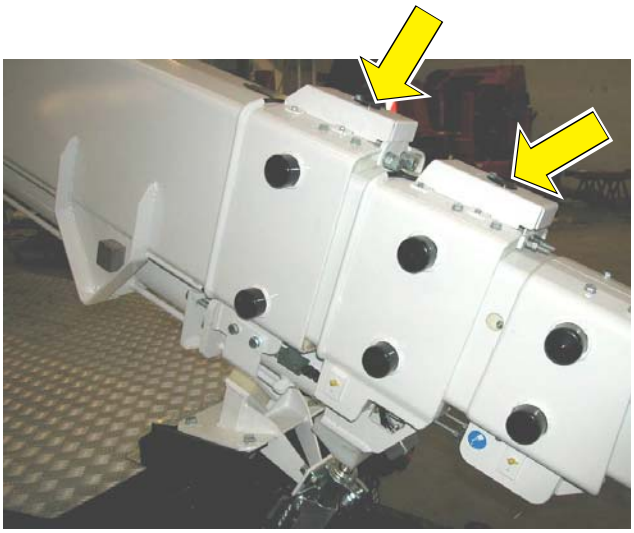
CHECKING THE WORKING OF THE SAFETY DEVICE

AActing on the selector SC10, incline the basket until it blocks in both directions. To carry out this operation safely, act inside of the basket with the platform at the rest position. If the system corrects the horizontal position automatically, (independently from the will of the operator), select the opposite correction by means of the selector SC10. If this does not work, activate the emergency button, retract the platform to safety conditions and contact the CTE authorised workshop immediately.

Control system chain tension adjustment

The verification of the status of the chains that extend the boom telescopic elements is possible by checking visually the chains during the phase of boom returns ***(see the Section H - Maintenance - chains)***.

A



B

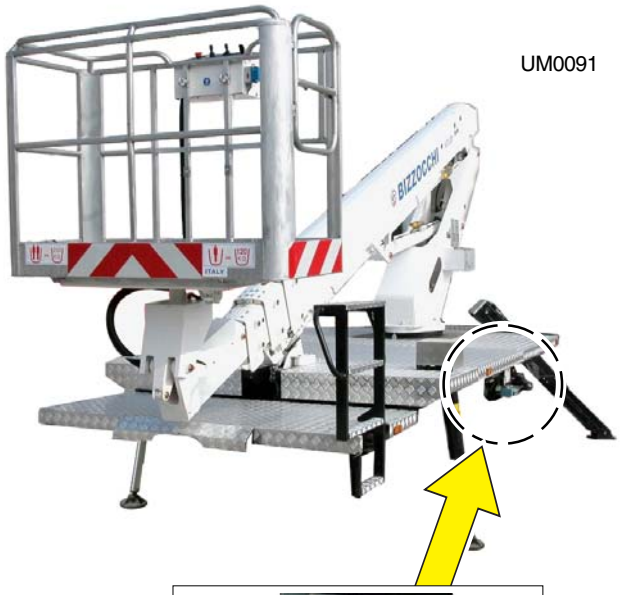
SAFETY DEVICE'S FUNCTIONAL TEST

- The loosening or braking of one of the chains is detected by a microswitch (see pic. A and B), that will block the extension manouvres.

In that case it is necessary to immediately contact an authorized workshop CTE to change the chains or to replace the chain links.

Manual emergency pump

The manual emergency pump PM1 is fitted on the right side, beside the stabilising controls.



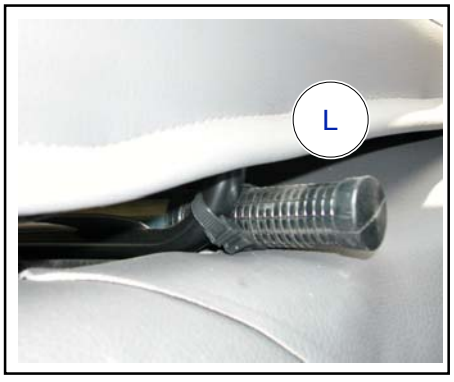
ATTENTION

Only use it when the main pump is malfunctioning.

It is designed to force manually the circulation of the hydraulic oil throughout the system.
To do so, insert the handle provided into the purpose provided slot on the pump and activate it energetically.

ATTENTION

The action will be effective only after the oil has filled the manual pump completely.



SAFETY DEVICE FUNCTIONALITY CHECK

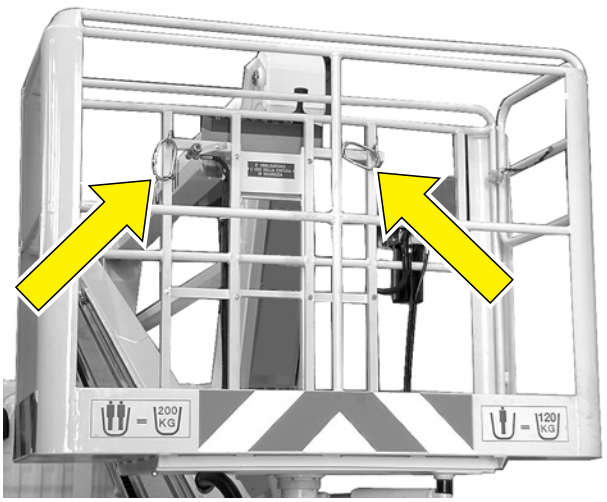
- ***Turn off the vehicle's motor while keeping the Power take-off activated with the platform in an elevated position.***
- ***Insert the lever L , which is situated underneath the passenger seat in the vehicle cab, into the pump PM1.***
- ***Activate manually the lever of the manual emergency pump PM1, while at the same time activating the electrical controls of the control post.***

Safety harnesses

The car is fitted with two attachments onto which the safety harnesses of the operators (or operator) in the car should be hooked.

It is in fact compulsory to start operation only once the safety harnesses have been hooked onto the purpose provided safety attachments.

It is advisable to check the functionality of the click-opening and of the efficiency condition of the ring and solidity of the hook on a regular basis.



Section
E1
Optional

Index

Electrical outlets - optional 2
Revolving working light 3
Auxiliary service systems 4
Electrical auxiliary motor 5
Battery charger 6

Electrical outlets - optional

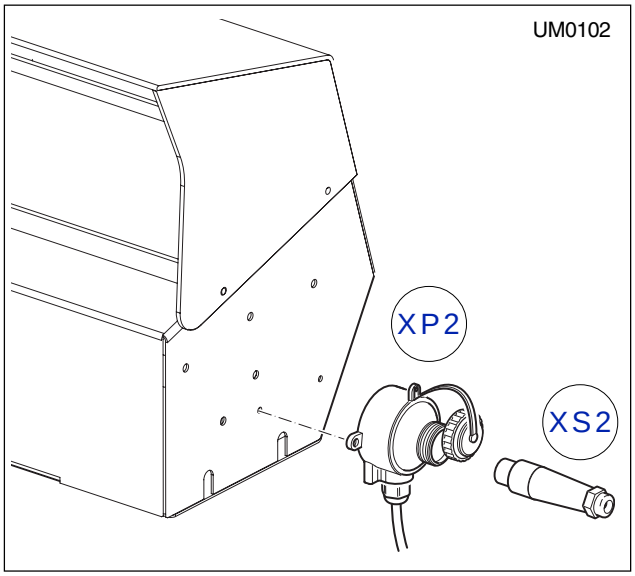
Service electrical system 220 V a.c.
Consists of:

- a plug XS1 connected to an external network inside the tower;
- an autonomous line (not connected to the platform's line) which reaches the basket;
- an outlet XP1 for work equipment inside the car.

The service electrical system is protected by a thermomagnetic differential (QF1).

12 or 24 volt d.c. service electrical system
Consists of:

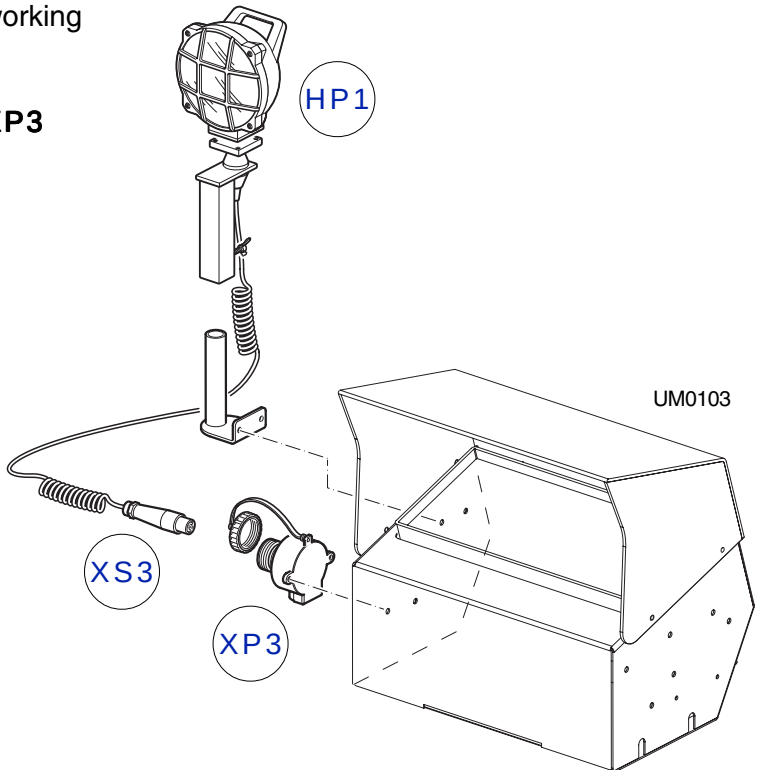
- a system (connected to the platform's system) which reaches the basket;
- an outlet XP2 + plug XS2 for work equipment inside the basket.



Revolving working light

The platform can be fitted with a revolving working Light consisting of:

A Light **HP1, a plug XS3 and an outletXP3**

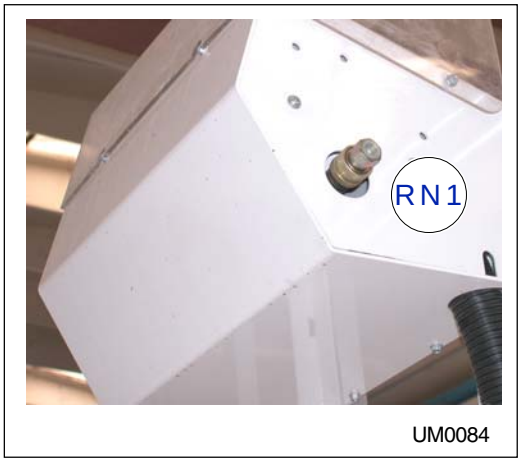


Auxiliary service systems

The platform can be fitted with service systems, which are auxiliary to standard work operation.

Water/pneumatic system
Consists of:

- an outlet RE1, with a quick joint connecting it to an external system inside the tower;
- a pipe which reaches the basket;
- an outlet RN1 to plug in equipment inside the basket.



Electrical auxiliary motor

The platform can be equipped with an auxiliary electrical motor **M2**. Therefore, it can be used with either the vehicle's motor or this auxiliary electrical motor.

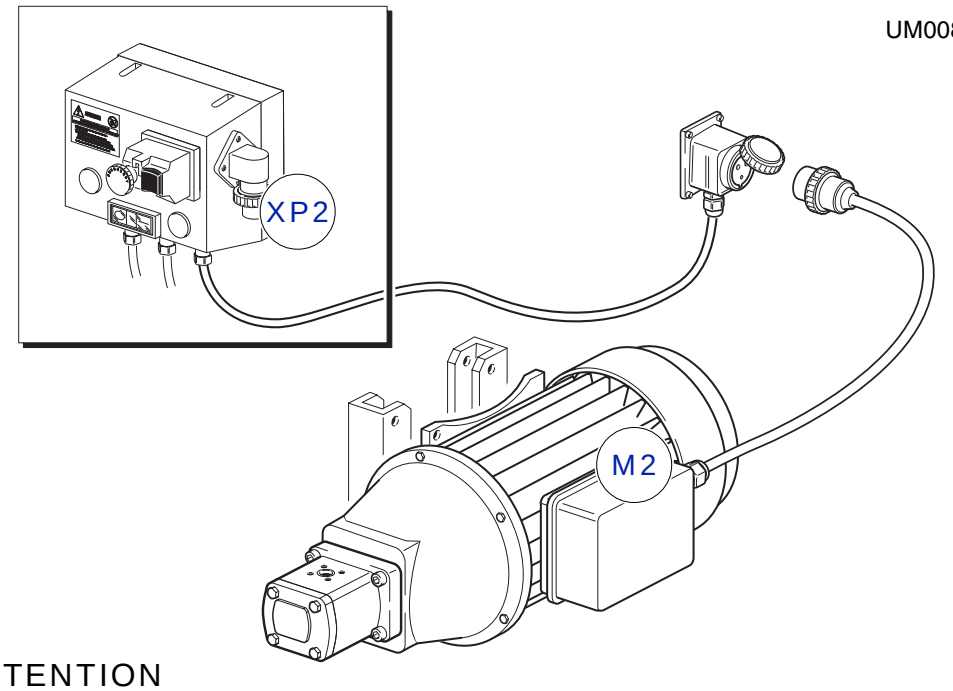
The controls are located on the vehicle platform (see section **D** Controls), on the opposite side of the stabiliser control panel, and they allow you to use the platform without having to activate the system from the cab.

The electrical motor, which is independent from the vehicle on which it is installed, must be connected to an external electrical network (220 Volt), by means of a plug **XP2**.

It can be used under any conditions; in particular, it is recommended that you use it if:

- there is a malfunction of the vehicle's motor;
- there is a malfunction of the hydraulic pump which is connected to the vehicle's motor;
- there is work to be carried out indoors (tunnels, factory premises), to avoid exhaust fumes being discharged into the closed environment.

UM0089



ATTENTION

The use of the electrical motor does not in any way affect the way the platform is used, or the logic behind its use.

ATTENTION

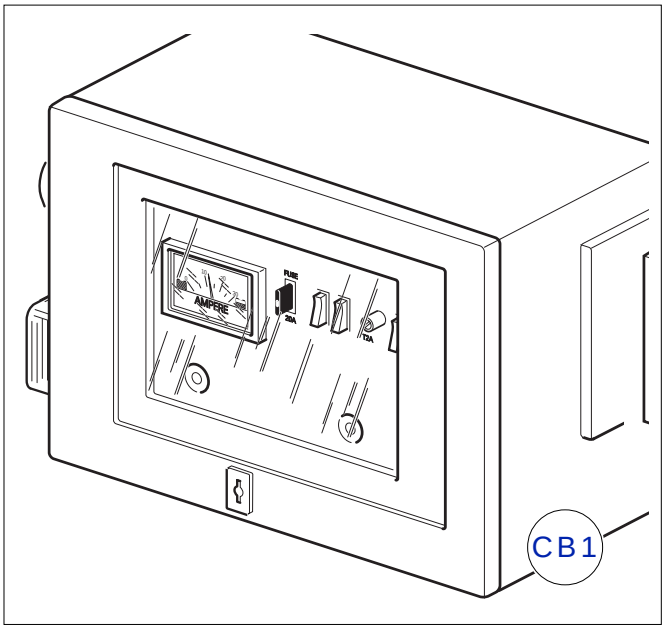
It is recommended that you stop the vehicle's motor when you use the electrical motor.

DANGER

Ensure that the network system is protected by a special cut-off switch and that the system's earthing device complies with safety norms.

Battery charger

To prevent the vehicle's battery from being completely run down during the use of the platform with the electrical motor, a special battery charger has been provided, which operates only when the electrical motor is being used.
The battery charger is fitted with a device which disconnects it from the battery automatically once it is fully charged (in this away, the battery is not damaged), and with a system which protects it from overload (fuse) and overheating.
The battery charger is located in sight, inside a waterproof box, and it comes with a 12V – 24V selector, according to the vehicle's battery.



If necessary:
If either the thermomagnetic protective device (due to overloads or short circuits) or the differential protection are activated, remove the 220V power plug immediately and look for the cause of the fault / contact an authorised CTE workshop.
If the problem arises while the machine is elevated, start the vehicle and, if that is not possible, use the "hand pump" device.

ATTENTION

Do not change the setting from 12V to 24V to avoid an overload, with subsequent activation of the fuse.

ATTENTION

Check periodically that the box which contains the battery charger has maintained its hermetic seal and that there is no humidity inside the box.

ATTENTION

When you start the 220V motor up, use the ammeter to ensure that the battery charger is supplying the amount of current required by the system.

Section
F
Procedures for use

Index

Introduction 2
Preliminary checks 2
General warnings 3
Vehicle engine - power take-off 5
Vehicle engine - Power take-off for Iveco vehicle. 6
Auxiliary 220 V electrical motor (optional) 7
Stabilisation - work areas with HE beams 8
Stabilisation - work areas with HE beams 9
Manual stabilisation manoeuvres with HE cross-beams 13
After having assessed the real solidity of the ground where one must work, it is necessary: 13
Stabilising operations 15
Stabiliser controls at the station in the basket (optional) 16
Precautions during use 19
Closing the aerial part 20
Closing of aerial part - Frame station manoeuvres 21
Stabilisation retraction 22
Stabiliser retraction from the basket station (optional) 23
PTO deactivation 25
TRANSPORT OR START UP CONFIGURATION 26
Rest mode 27

Introduction

ATTENTION

Read the following manual carefully before beginning operation.

This section describes the work cycle which, within reason, the lifting platform is expected to perform.

Any special situations and conditions which could arise for the operators, should be dealt with taking into account and observing the machine's limits (technical data) and, above all, ensuring that everything is carried out with the utmost safety for the operators firstly and, then, for the machine too.

Preliminary checks

Before beginning operation with the lifting platform, it is recommended that you carry out a series of checks, both on the machine and on the area in which the machine will be placed.
In particular, to make work easier you must check that:

- the working area is marked off, indicated with signs and free of obstacles;
- the ground is sufficiently compact; if necessary, everything possible should be done to firm up the ground (e.g.: increase the stabiliser cylinder support base);
- the safety systems are efficient (see Section E, safety system checks).
  If one of these safety systems is damaged or malfunctioning, the platform must not be used; you must report the fault to the nearest authorised CTE workshop.
- there is sufficient fuel;
- the batteries are in good working condition;
- The connections to the external networks have been carried out correctly;
- the path which the car has to take to reach the work point is free of obstacles.

General warnings

KNever exceed the maximum capacity of the basket, especially when the equipment is raised.

The lifting platform can be used only when the vehicle is not moving, with the brakes on, and stabilised on level and consistent ground.

The operator inside of the basket must be assisted by a properly trained person from the ground.

There must be no obstacles or dangerous items in the basket's operating area.

Carry out maintenance work according to the timetable set out in this manual, using work tools that are appropriate and in good condition.

Do not take substances that may alter physical or mental abilities, etc. (alcohol, medications).

If it is necessary to operate in another work area, move the machine with the equipment in transportation mode.

Never deactivate the safety devices to perform operations which would otherwise be impossible.

Never stop the lifting platform abruptly unless it is for safety reasons.

Never lean over the edge of the basket while using the lifting platform.

Always keep handles and foot-rests free from oil and grease.

Leaving the control area on the ground, while the operator is alone in the basket, is prohibited.

It is prohibited to remove covers and/or casings, unless it is for maintenance reasons.

Always wear protective helmet.

Keeping articulations raised without a reason while not working with the lifting platform is prohibited.

Using the lifting platform under conditions of poor visibility is prohibited.

When travelling on roads that are open to traffic, it is mandatory to comply with highway traffic norms that are in force in the country where the platform is used.

Loading the basket with materials and/or things once it has already been raised is prohibited.

Using the lifting platform to raise or move materials and/or things is prohibited.

Accident-prevention Standards in force must be respected during work on the platform.

It is indispensable to verify the perfect functioning and maintenance status of all devices before each use, following the instructions found in the use and maintenance manual.

Tampering with these devices is absolutely prohibited; the penalty for this is the requirement to immediately stop using the machine.

Verify and evaluate the safety of actual work conditions (ground, wind, levelling, etc).

Ensure that the work area free of all obstacles, especially electrical lines.

Coming close to live electrical lines and equipment is prohibited.

Keep a safety distance that agrees with national standards in force. If the nominal voltage of the line is unknown, always keep a distance of at least 5 m.

It is mandatory to delimit the boundaries of the area under the work zone.

The operator must suspend operations when unauthorised personnel enter this area or that of the vehicle platform.

Activate the rotating lights when the platform is operational.

Before using the machine, correctly position the stabilisers on ground that is sufficiently compact and level the vehicle perfectly using the spirit level.

Before entering the basket verify that the weight of the operator and the equipment does not exceed the values shown in the capacity diagram and on the CE plate.

Only access the control posts using the relevant ladders.

Climbing on or off the machine once it has been raised from the transportation configuration is prohibited.

It is mandatory for the operator to use suitable safety harnesses.

During platform use, the control post for emergency interventions must be handled by expert personnel.

Leaving the platform (unguarded) in a position that is different from the transportation configuration, without removing the keys from the control panel, is prohibited.

Using the platform with wind speeds above 45 km/h is prohibited.

Using the platform to lift load or transport materials is prohibited.

Using the platform while it is leaning on other structures that are external to it is prohibited.

Using the platform in environments that are subject to the risk of explosion is prohibited.

Once on the platform it is important to be careful because the aluminium anti-slip parts have sharp edges that may cause problems for the operator.

Operation

Vehicle engine - power take-off

If possible, position the vehicle next to the work point to be reached and prepare the lifting platform:

- Leave the engine of the vehicle running.

- Pull the park brake.

- Position the gear in neutral.

- Press the clutch pedal to facilitate coupling of the hydraulic pump.

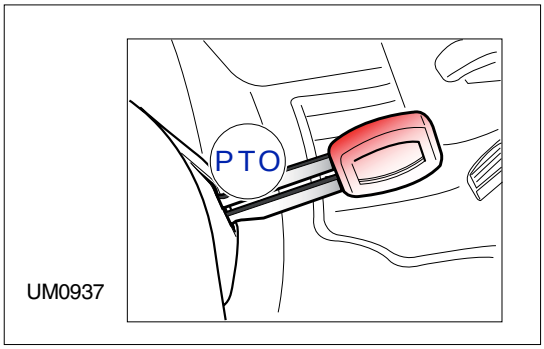
- Insert the **PTO** by means of the coupling lever **PTO**.

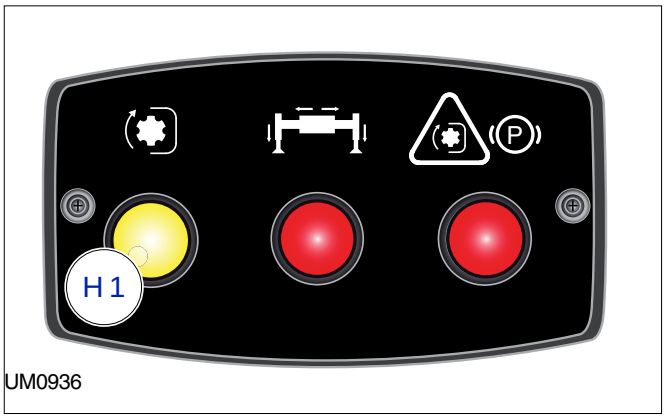
- Release the clutch pedal.

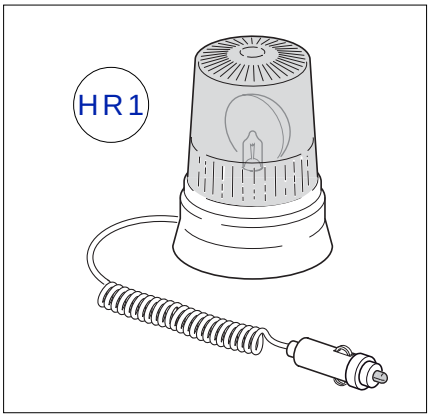
- The light **H1** on the cabin control panel will be on.

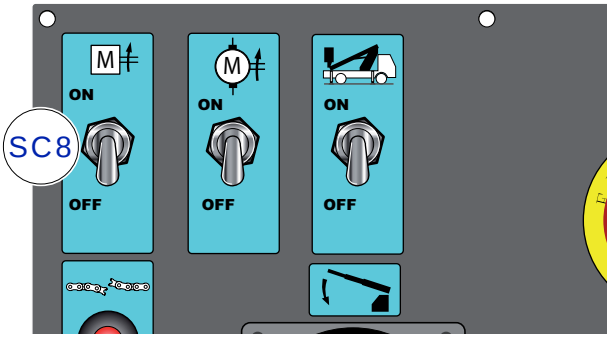
- Position the magnetic spotlight **HR1** on the truck roof and activate it inserting the connector in the lighter plug.

- Adjust engine revs by means of the vehicle's manual regulator at a speed of about **900/ 1000 rpm**. Some vehicles have automatic adjustment and therefore it is not needed.
The engine start and stop control is also located in the basket (s**elector SC8**).









ATTENTION

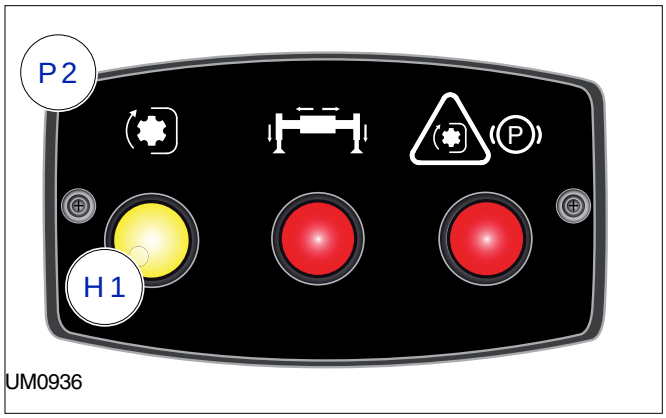
Before starting any manoeuvre (in cold weather), it is advisable to idle the oleodynamic plant pump for a few minutes, so that the oil reaches the minimum operating temperature (about 40°) to allow it to flow correctly.

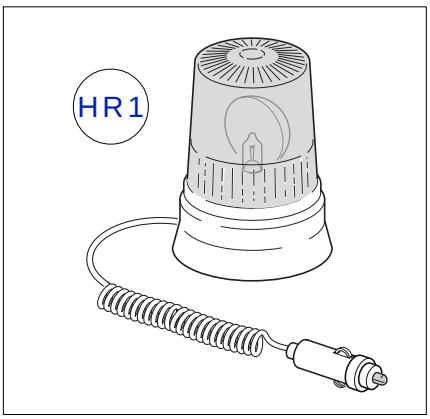
Operation

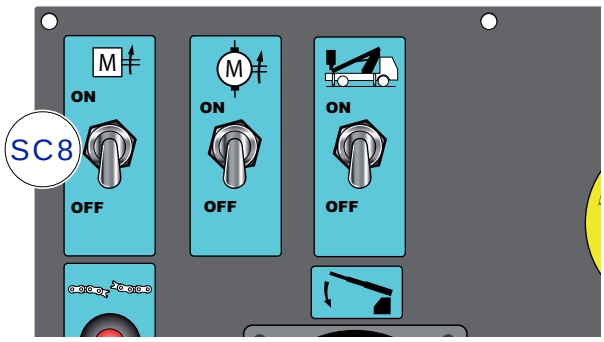
Vehicle engine - Power take-off for Iveco vehicle.

If possible, position the vehicle next to the work point to be reached and prepare the lifting platform:
- Leave the engine of the vehicle running.
- Pull the park brake.
- Position the gear in neutral.
- From the vehicle's control panel **P1** positioned at the side of the steering wheel, insert the **PTO** by means of the **PTO** selector. The yellow light will turn on.
- The light **H1** on the cabin control panel **P2** will be on.
- Position the magnetic spotlight **HR1** on the truck roof and activate it inserting the connector in the lighter plug.
- Adjust engine revs by means of the vehicle's manual regulator at a speed of about **900/ 1000 rpm**. Some vehicles have automatic adjustment and therefore it is not needed.

The engine start and stop control is also located in the basket (**selector SC8**).







ATTENTION

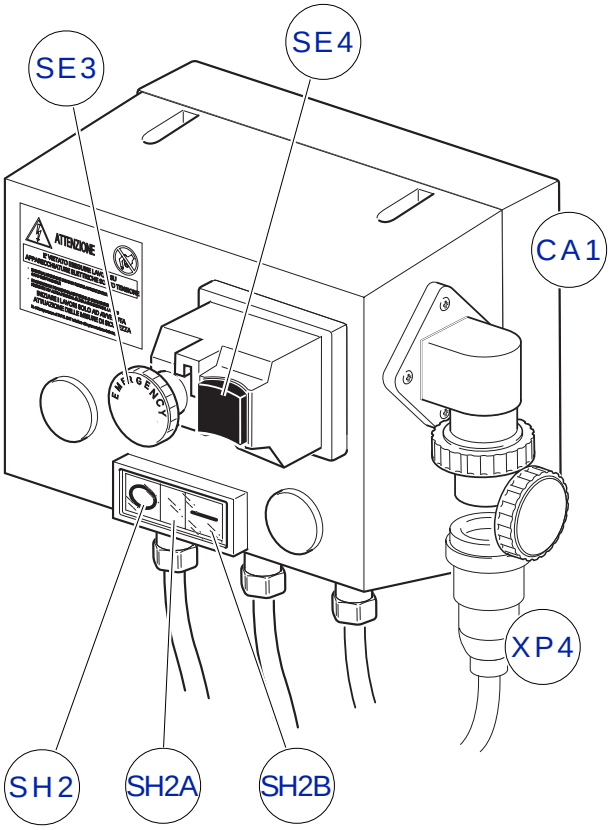
Before starting any manoeuvre (in cold weather), it is advisable to idle the oleodynamic plant pump for a few minutes, so that the oil reaches the minimum operating temperature (about 40°) to allow it to flow correctly.

Operation

Auxiliary 220 V electrical motor (optional)

If possible, position the vehicle beside the point where the work is to be carried out and prepare the lifting platform for operation:

- Turn off the vehicle's motor.
- Place the gear lever in neutral.
- Activate the parking brake.
- Connect the electrical motor to an external electric network by means of plug **XP4**.
- If the indicator light **SH2A** is not on, press the reset button **SE4**.
- Start the electrical motor.
  The speed of the motor is regulated automatically.



Note: ***When you use the 220 V auxiliary electrical motor, the platform's operating speed is slower (by approximately 50%) than when you use the vehicle's motor. This is in order to reduce the required electrical power supply, so that it corresponds to the availability limits of household electrical systems (3 kw).***

DANGER

Only use the 220 V motor pump as an alternative to the vehicle-motor pump; do not used them simultaneously. If they are used simultaneously, the platform's structure could be subjected to excessive mechanical stress.

ATTENTION

The red mushroom-shaped emergency button SE3 can be padlocked and therefore can prevent outsiders from using the platform during breaks from work.

DANGER

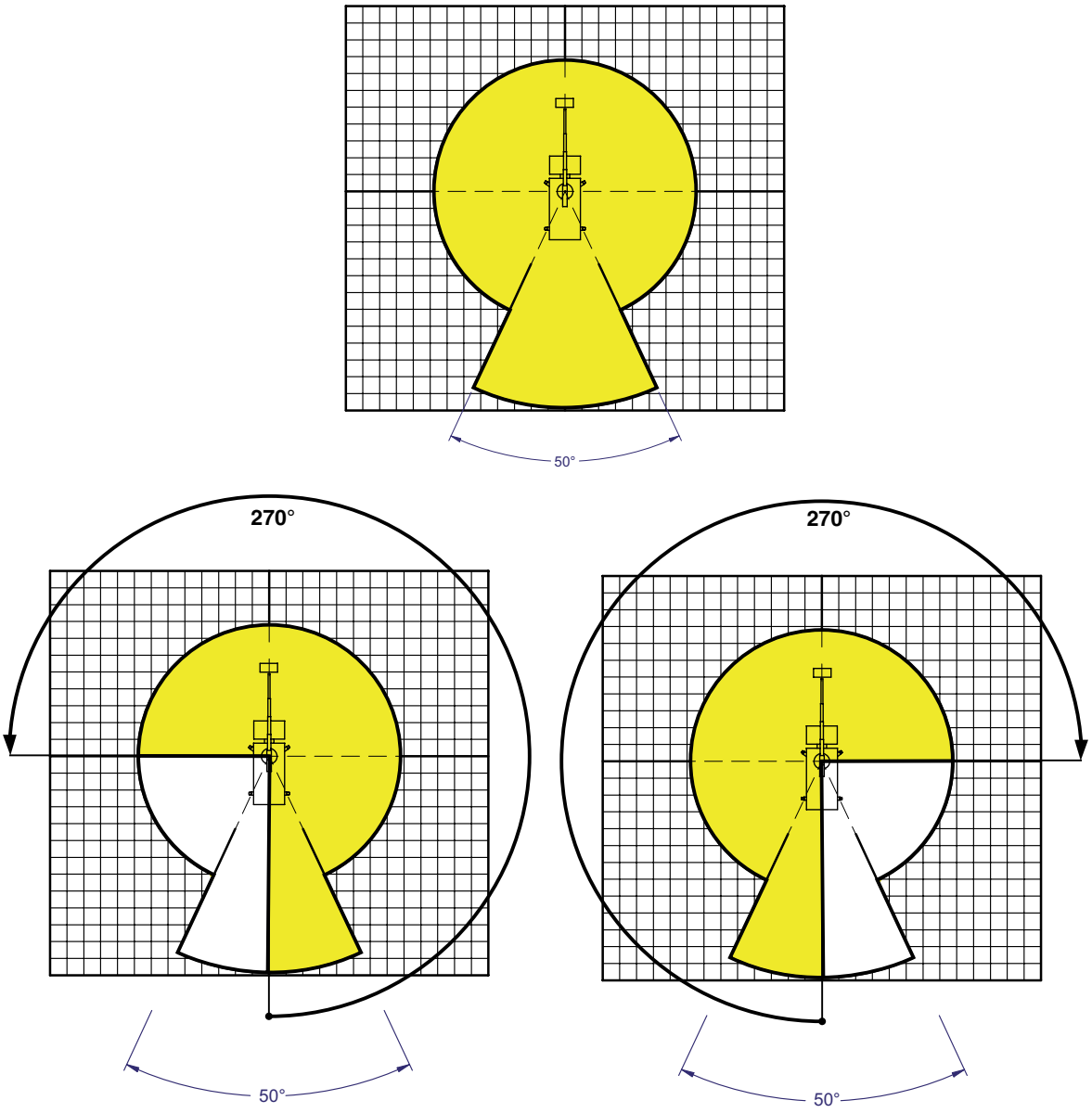
Ensure that the network system is protected by a special cut-off switch and that the system's earthing device complies with safety norms.

Stabilisation - work areas with HE beams

The machine with manually extendible outriggers can work either with the crossbars extended or closed, depending on the customer, either on the right side or the left.
Any combination is allowed. Based on the stabilisation combination chosen by the operator, the system will automatically estimate the corresponding work area depending on the rotation angle of the turret, maintaining machine configuration always in safety.
However the two right or left crossbars must be extended the same way (symmetrical stabilisation), in order to obtain maximum performance in the area in which the crossbars will be extended.
If machine stabilisation is not symmetrical (i.e. on one side a beam is open while the other is closed), it will not be possible to obtain maximum performance and the system will estimate a smaller work area.

Stabilisation - work areas with HE beams

Working sector with stabilizers completely refrained.

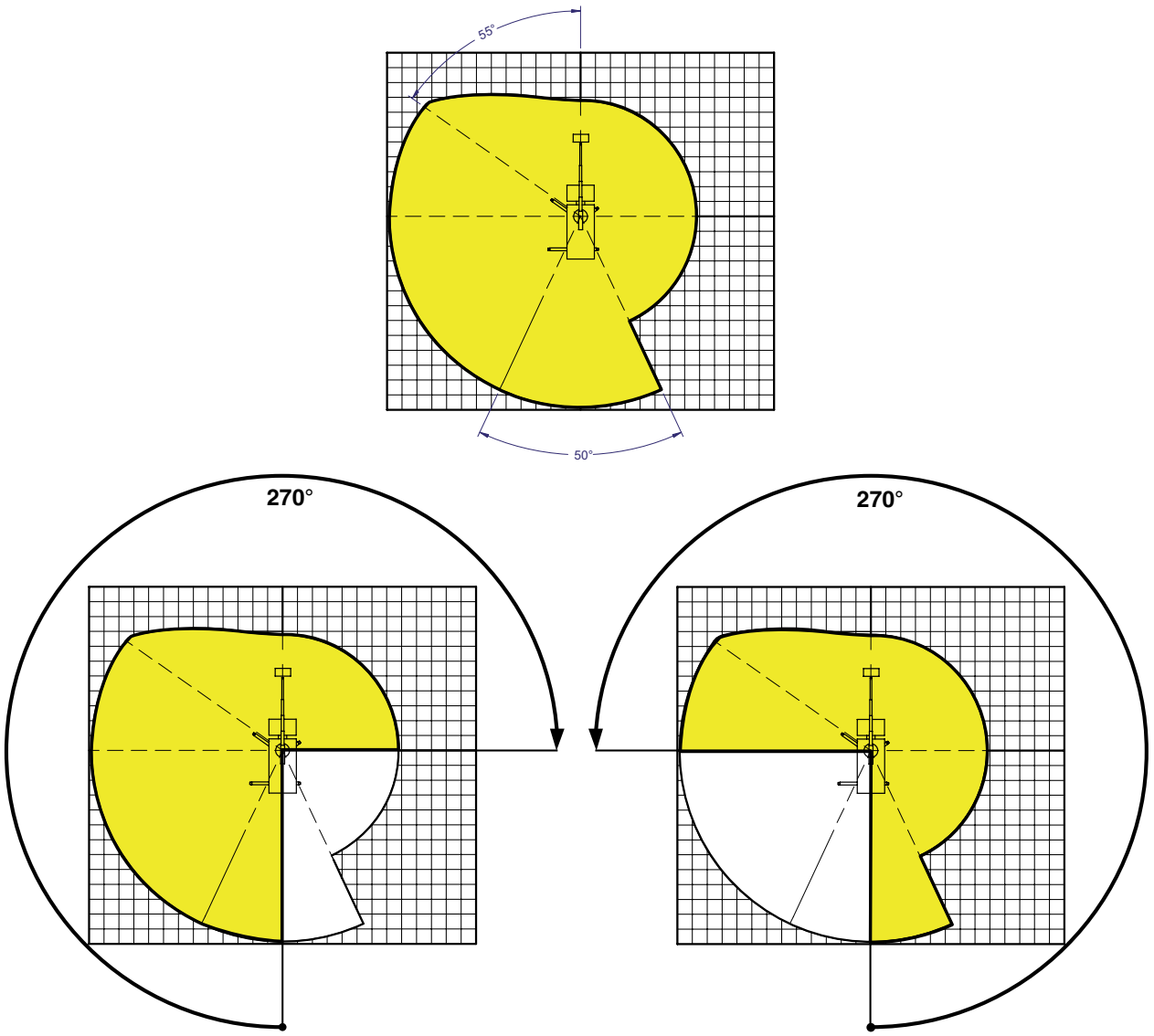


TAKE INTO CONSIDERATION THE VALUES MENTIONED IN SECTION C AS FAR AS THE WORKING AREA IS CONCERNED.

For version with HE cross-beams

Stabilisation - work areas with HE beams

Working sector with stabilizers SX totally extended.

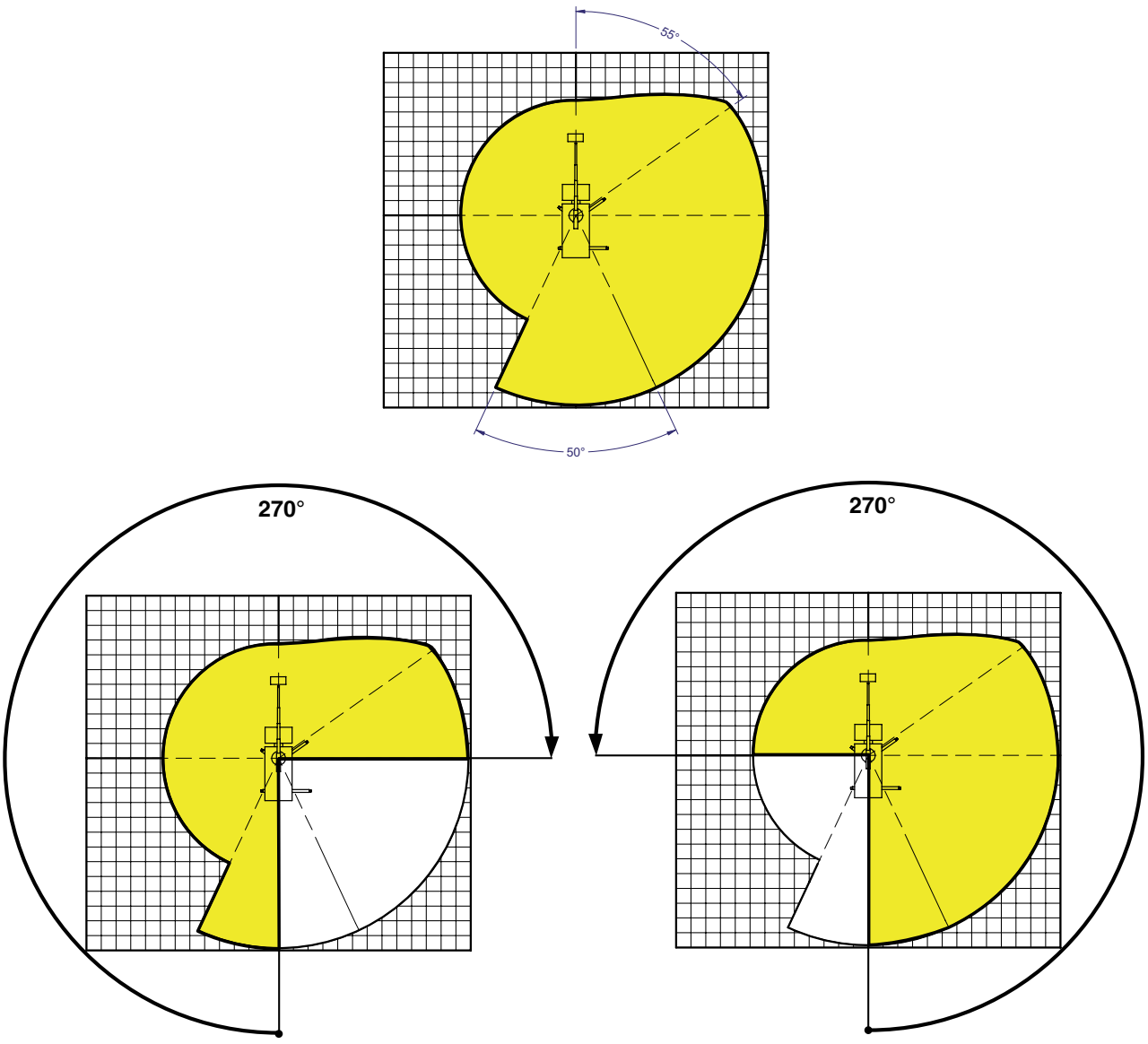


TAKE INTO CONSIDERATION THE VALUES MENTIONED IN SECTION C AS FAR AS THE WORKING AREA IS CONCERNED.

For version with HE cross-beams

Stabilisation - work areas with HE beams

Working sector with stabilizers DX totally extended.

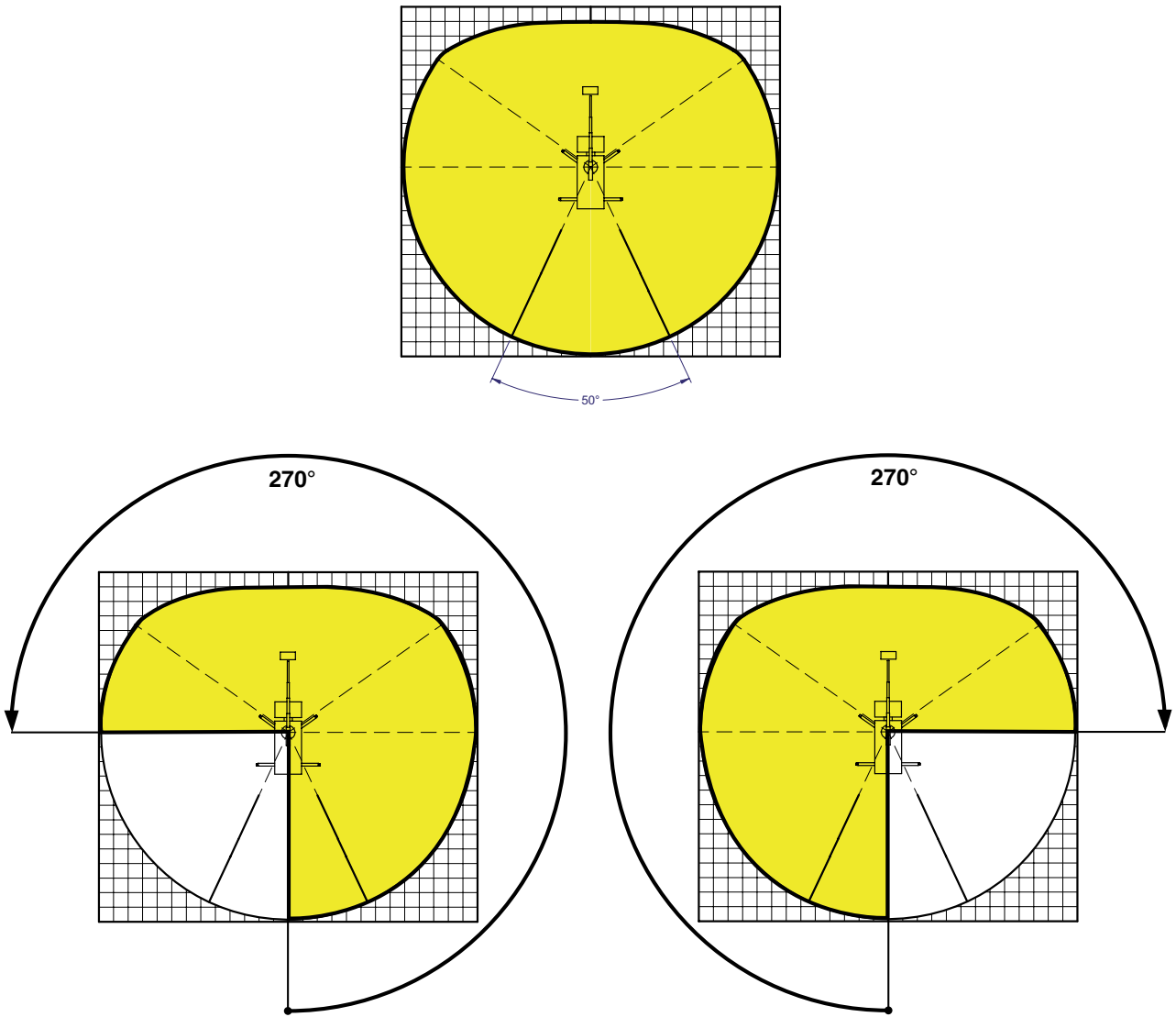


TAKE INTO CONSIDERATION THE VALUES MENTIONED IN SECTION C AS FAR AS THE WORKING AREA IS CONCERNED.

For version with HE cross-beams

Stabilisation - work areas with HE beams

Working sector with stabilizers totally extended.



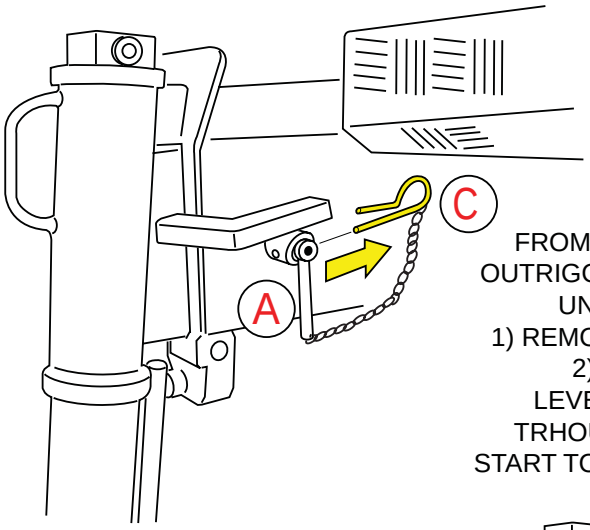
TAKE INTO CONSIDERATION THE VALUES MENTIONED IN SECTION C AS FAR AS THE WORKING AREA IS CONCERNED.

For version with HE cross-beams

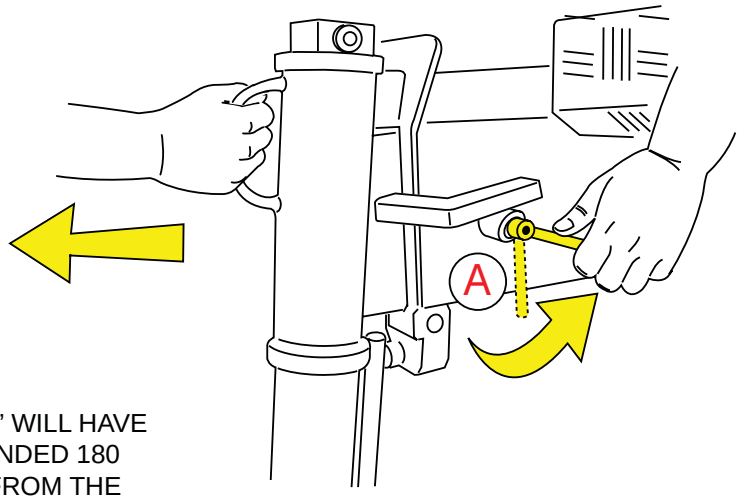
Manual stabilisation manoeuvres with HE cross-beams

For version with HE cross-beams

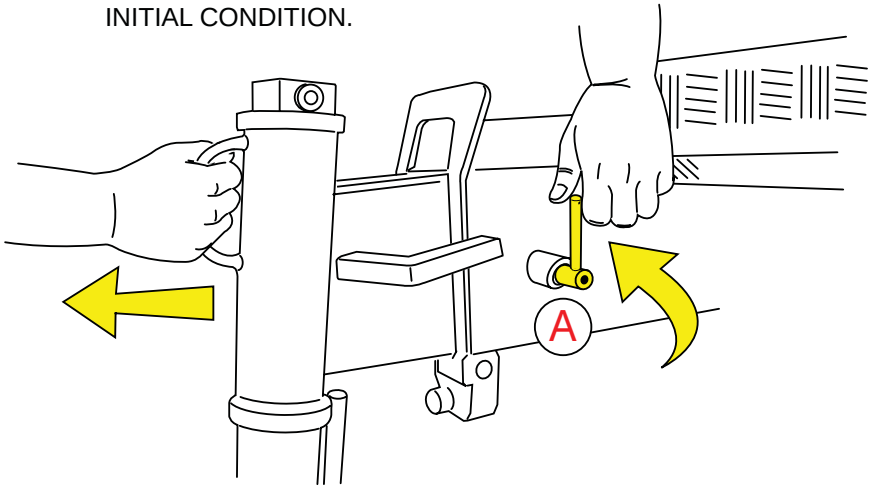
After having assessed the real solidity of the ground where one must work, it is necessary:



FROM THE INITIAL CONDITION OF OUTRIGGER COMPLETELY REFRAINED UNLOCK THE OUTRIGGER:
1) REMOVE THE SAFETY SPLIT PIN C;
2) ROUND THE PIVOT "A" LEVER AND SIMULTANEOUSLY, TRHOUGH THE PROPER HANDLE, START TO UNTHREAD THE OUTRIGGER.



THE PIVOT "A" WILL HAVE TO BE ROUNDED 180 DEGREES FROM THE INITIAL CONDITION.

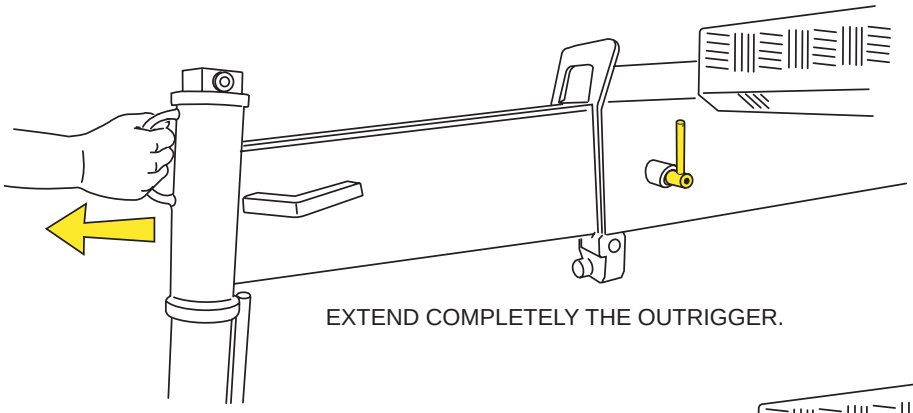


ATTENTION

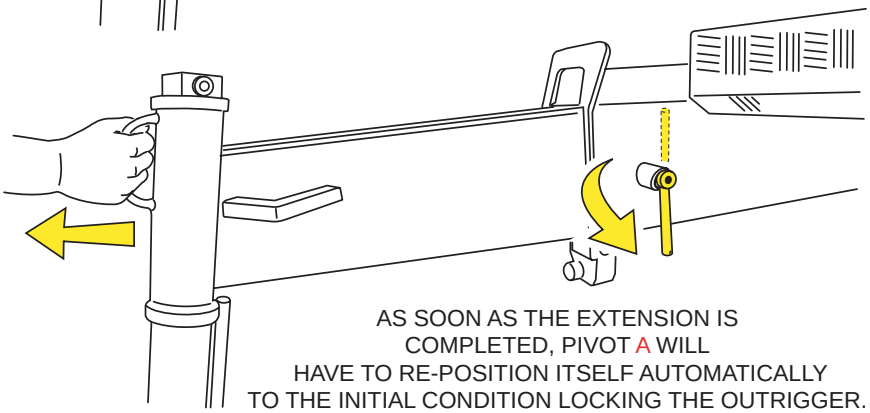
With outriggers and beams out of position, the light H3 in the cabin should be on

Manual stabilisation manoeuvres with HE cross-beams

For version with HE cross-beams

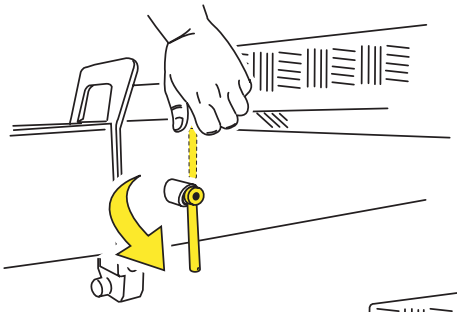


EXTEND COMPLETELY THE OUTRIGGER.

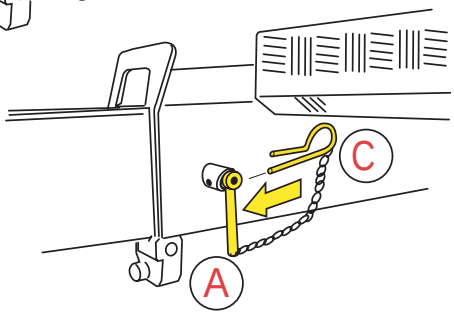


AS SOON AS THE EXTENSION IS COMPLETED, PIVOT A WILL HAVE TO RE-POSITION ITSELF AUTOMATICALLY TO THE INITIAL CONDITION LOCKING THE OUTRIGGER.

IF PIVOT A DID NOT RETURN AUTOMATICALLY TO THE INITIAL POSITION, IT WILL BE NECESSARY TO EXECUTE THIS OPERATION MANUALLY.



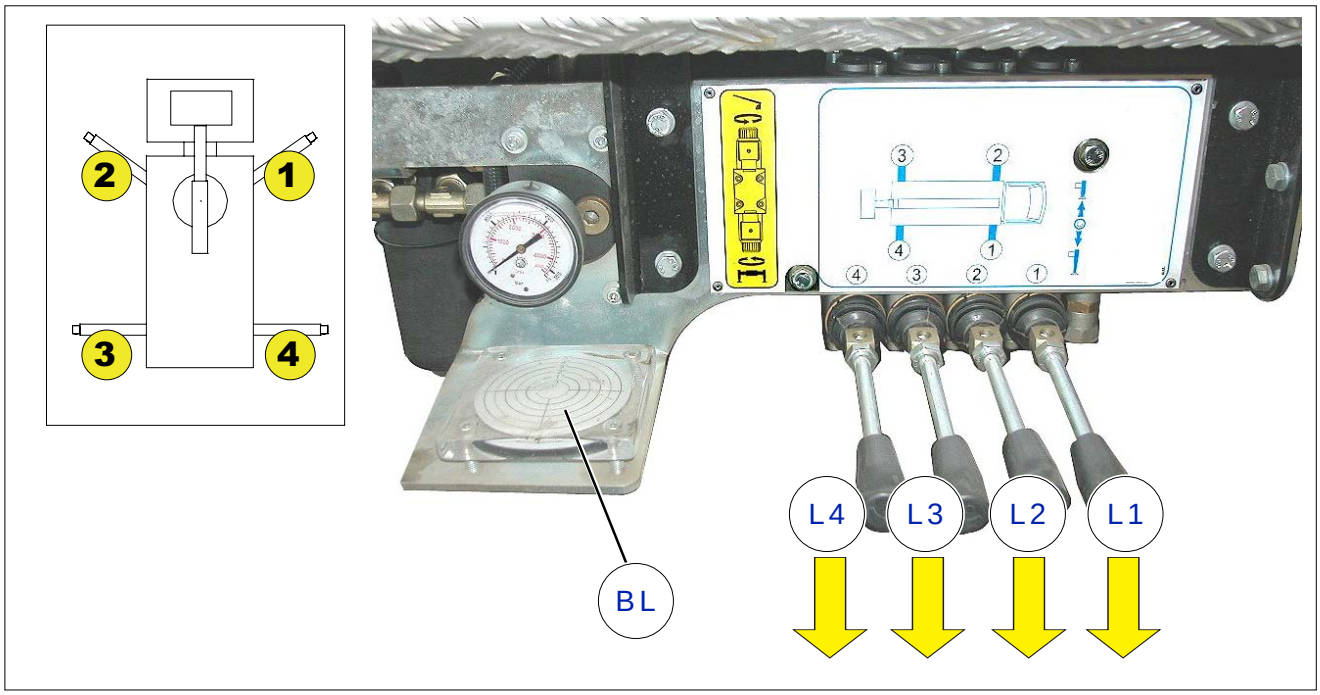
AS SOON AS PIVOT A RETURNS TO THE INITIAL CONDITION, CONNECT THE SAFETY SPLIT PIN C.



The procedure indicated above is the "configuration with completely extended beams". The operator can decide to use different configurations from the above-mentioned one keeping in mind that the work areas of the platform will change (see page 7 Section F).

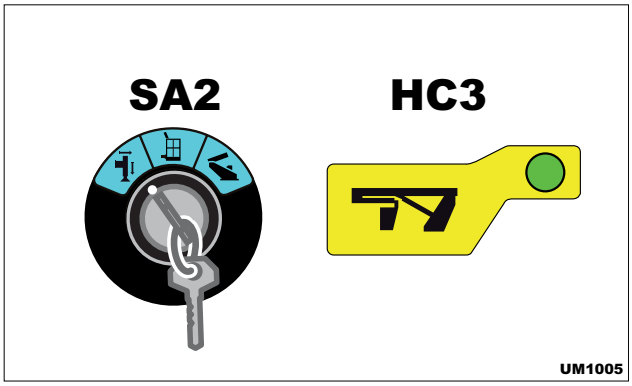
To proceed with stabilisation manoeuvres, make sure that the selector SA2 is in the outrigger selection position.

Stabilising operations



After having assessed the real solidity of the ground where one must work, it is necessary:

- Turn the selector **SA2** to the left position of stabilisation selection.
- Bring the four outriggers to the ground lowering their levers **L1, L2, L3** and **L4**.
- Having reached the desired position, release the levers which will automatically return to the centre.



ATTENTION

For correct stabilisation, the vehicle wheels must be lifted from the ground, except for when the manufacturer of the vehicle has prescribed to work with the wheels on the ground. This information will be inserted in the document attached to the manual "Work area machine dimensions".

- Check that the platform is horizontal, as indicated by the bubble level **BL**. If necessary, act on the individual outriggers to reach horizontal positioning.

- The green light will turn on **HC3** indicating that the boom can be lifted.

ATTENTION

With outriggers and beams out of position, the light H3 in the cabin should be on

Stabiliser controls at the station in the basket (optional)

Instructions on how to use the optional stabiliser controls at the basket station.

Make sure the ground in the work area is solid and firm. Next:

- At the station in the frame, turn the **SA2** selector to the central position to select the basket station.

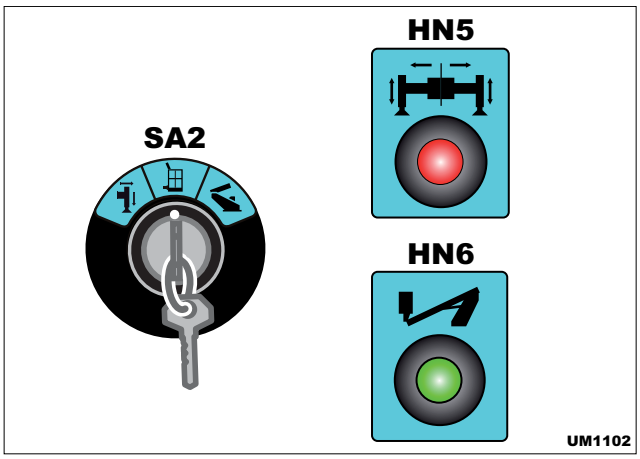
- Check the red **HN5** indicator light at the basket station is flashing; this means the stabilisers can be operated.

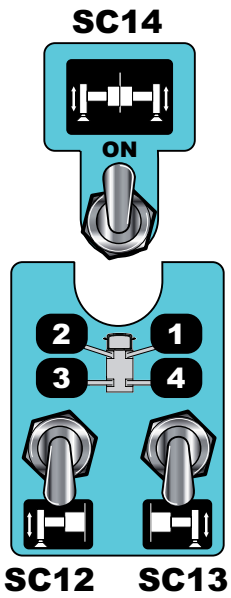
- Move the **SC14** selector to its ON position to activate the stabilising function.

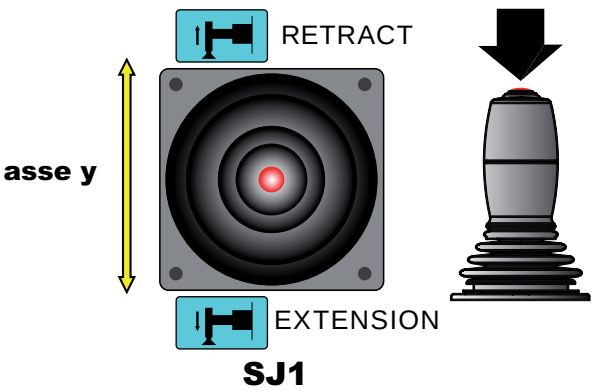
- Move the **SJ1** joystick along the Y axis and press the manual button to move all the stabilisers simultaneously.
You can also turn on the **SC12** and/or the **SC13** selector to move each stabiliser separately.

- Check the platform is horizontal using the basket BL spirit level. Adjust the single stabilisers if necessary to make the platform perfectly level.

- When you have done, the green **HN6** indicator light turns on, enabling elevation.







ATTENTION

For correct stabilisation, the vehicle wheels must be lifted from the ground, except for when the manufacturer of the vehicle has prescribed to work with the wheels on the ground. This information will be inserted in the document attached to the manual "Work area machine dimensions".

ATTENTION

With outriggers and beams out of position, the light H3 in the cabin should be on

Aerial part development – Basket manoeuvres

- from the frame station, move the selector **SA2** to the central basket control position.
- enter the basket.
- close the door, making sure it is locked well;
- hook on the safety belts;
- check that the lights **HN3, HN5, HN6,** are on;
- to carry out boom lifting from the support column:

press the **SJ1**button at the top of the joystick. Intervene on the manoeuvres described in chapter "**Main controls - Section D**".

ATTENTION

Carry out manoeuvres individually to keep equipment stress at a minimum.

Boom lifting from the support column inhibits stabilisation movement.

Therefore if the horizontal position of the platform must be corrected, the boom must be brought back onto the column.

Rotation of the auto-platform is **±270**°.

Basket rotation

The basket can rotate **60**° to the right or **60**° to the left.

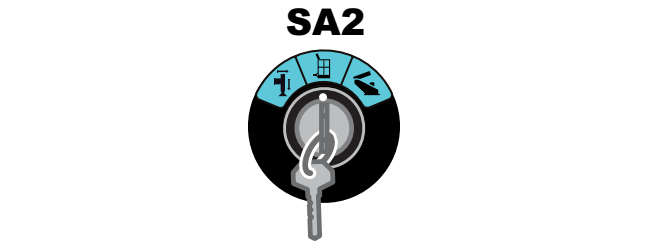
The operator can perform this manoeuvre from the control station in the basket with the joystick SJ2.

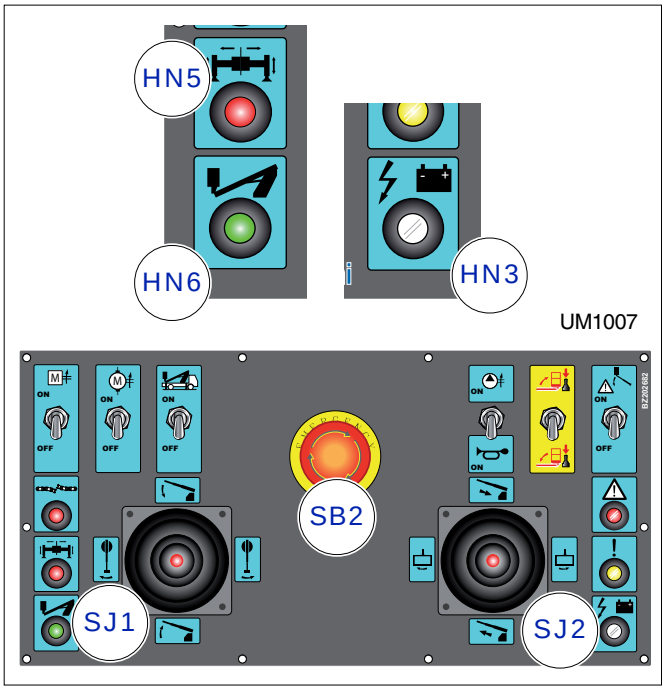
The basket must be centred to be able to close the platform on the support.

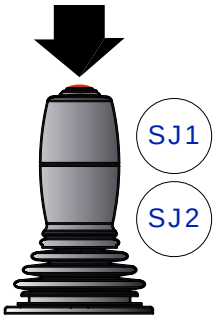
Stopping manouvres

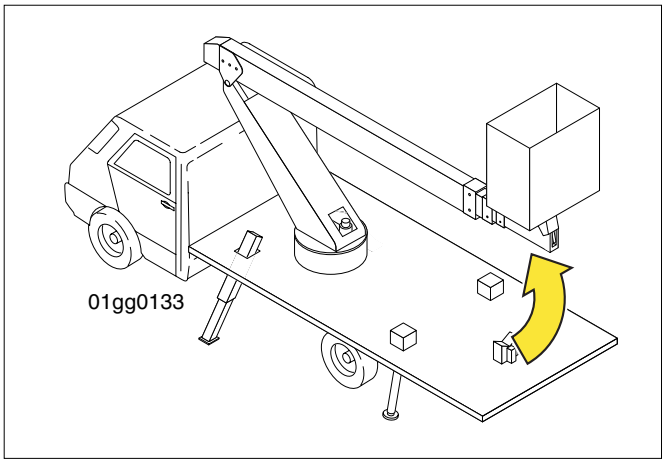
If needed, the operator can immediately interrupt manoeuvres pressing the red emergency button **SB2**.

To restore normal functioning, just carry out a semi-rotation as indicated by the arrows on the button.









Development of aerial part - Frame station manoeuvres

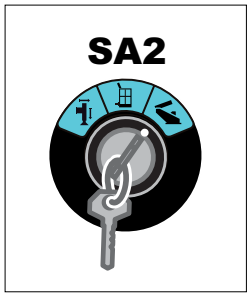
ATTENTION

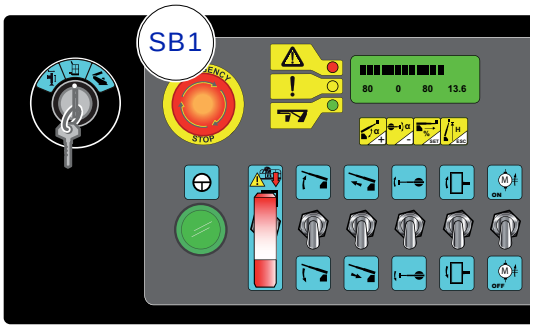
Carry out manoeuvres from the frame station only in case of emergency.

From the frame station, move the selector **SA2** to the right “frame controls” position. In order to activate manoeuvres from the frame station a few seconds before each individual control, press the button **SH3**.

Activate the selector **SC2** to lift the boom. Intervene on manoeuvres described in chapter

“**Main controls - Section D**”.



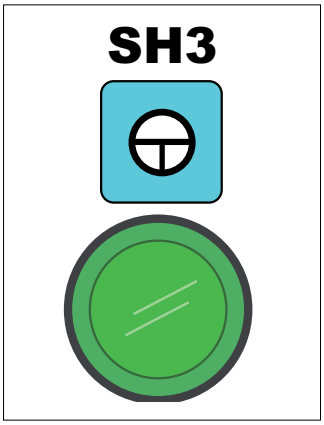


ATTENTION

Carry out manoeuvres individually to keep equipment stress at a minimum.

Boom lifting from the support column inhibits stabilisation movement.

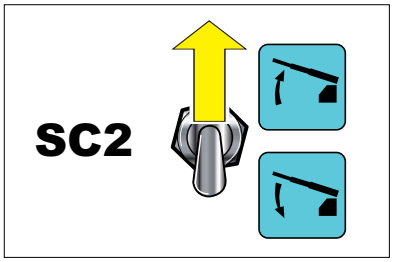
Therefore if the horizontal position of the platform must be corrected, the boom must be brought back onto the column.



Stopping manoeuvres

If needed, the operator can immediately interrupt manoeuvres pressing the red emergency button **SB1**.

To restore normal functioning, just carry out a semi-rotation as indicated by the arrows on the button.



Precautions during use

Always check to see that the weight of your work equipment does not exceed the maximum allowed capacity of **200 kg**, or else **250 kg** if foreseen by the machine.
Control that there are no obstacles in the range of action of the lifting platform.
It is recommended to get to know the movement controls well, especially when using the basket for the first time.
Avoid sudden jerks, both when rotating and moving the basket up and down.
To reach the work position, rotate the column, aim the boom in the right position, lift and then extend until reaching the desired point.
Do not rotate when at maximum extension. Instead, retract the extendible elements, rotate and then go back to the desired position.
In case of anomalies while using the platform, or if it can no longer be controlled by the operator, press one of the emergency buttons from the relative control station. This will block the structure immediately where it is (see Section N- Emergency manoeuvres).
Before using the lifting platform, check the machine's work diagram.

Closing the aerial part

- Retract the telescopic elements of the boom completely with **SJ2**.

Remember that to carry out manoeuvres from the basket, the button at the top of the joystick must be pressed.

- Orient the telescopic boom perpendicular with the front support column. Rotate the column by means of **SJ1**, until the red markers on the turret coincide.

- Position the basket transversally compared to the telescopic boom. Rotate the basket by means of **SJ1**.

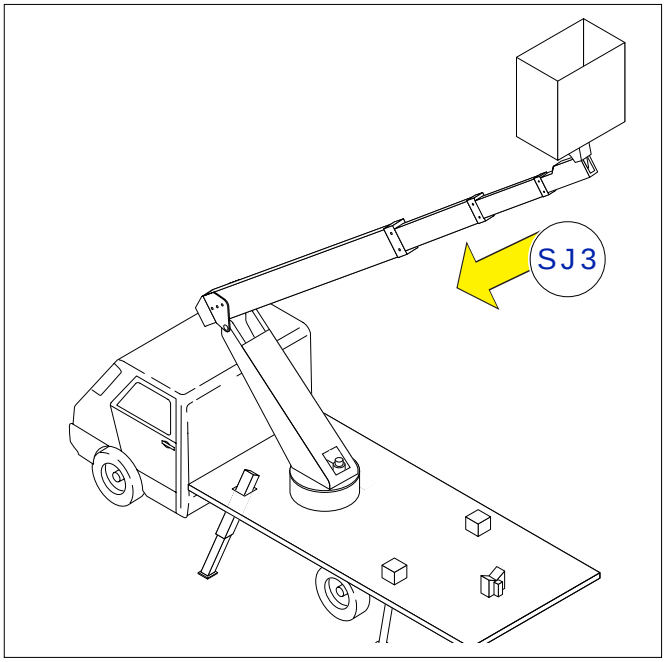
The basket must be centred to be able to close the platform on the support.

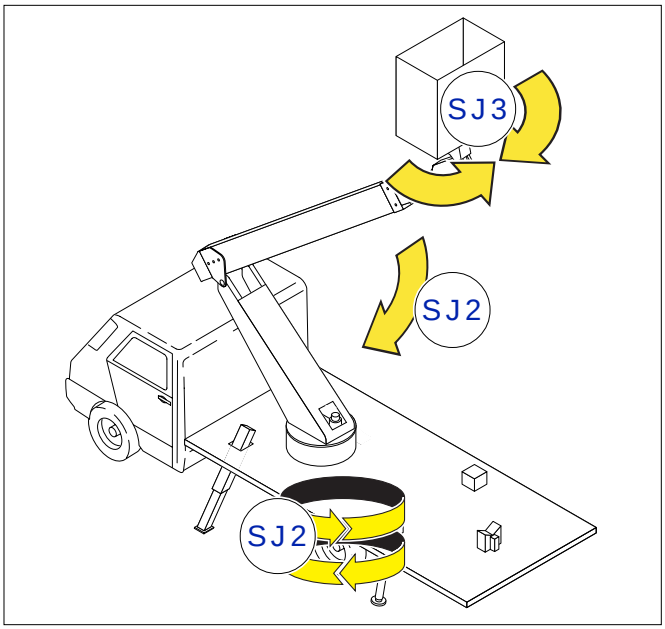
- Carefully control descent of the boom with **SJ1**, until it rests on the column.

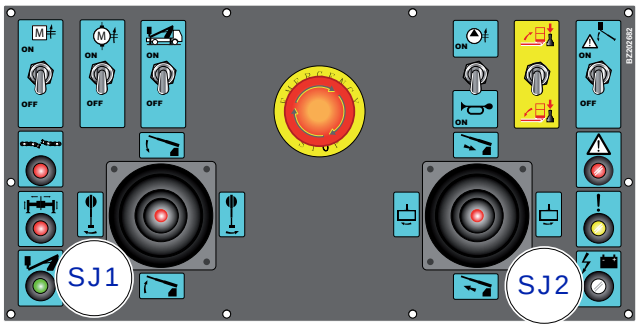
Insist with this manoeuvre for a few instants with the control at top speed.

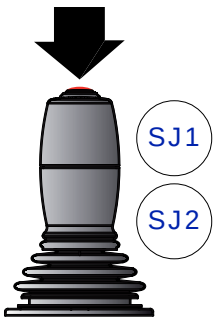
An eye check is always advisable to make sure the boom is centred perfectly on the column.

- Descend from the basket and make sure that nothing is left inside.









Closing of aerial part - Frame station manoeuvres

ATTENTION

Carry out manoeuvres from the frame station only in case of emergency.

From the frame station, move the selector **SA2** to the right "frame controls" position.

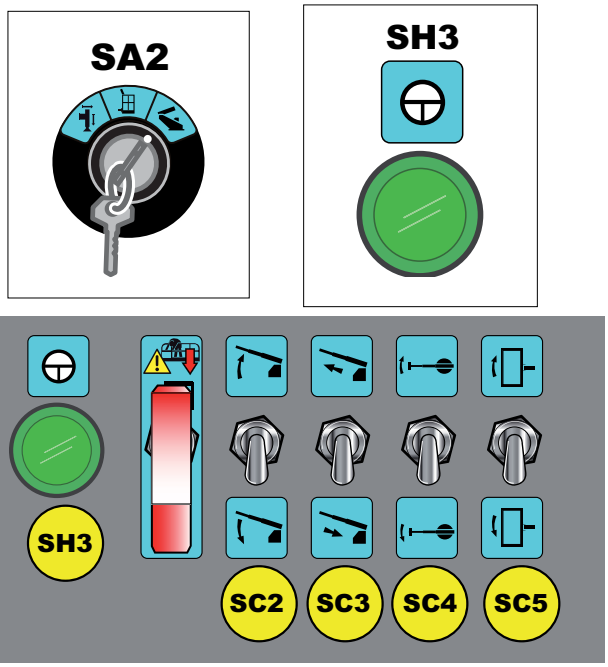
- to activate manoeuvres from the frame station, a few seconds before each individual control, select the button **SH3**.
- Retract the telescopic elements of the boom completely with **SC3**.
- Orient the telescopic boom perpendicular with the front support column. Rotate the column by means of **SC4**, until the red markers on the turret coincide.
- Position the basket transversally compared to the telescopic boom. Rotate the basket by means of **SC5**.

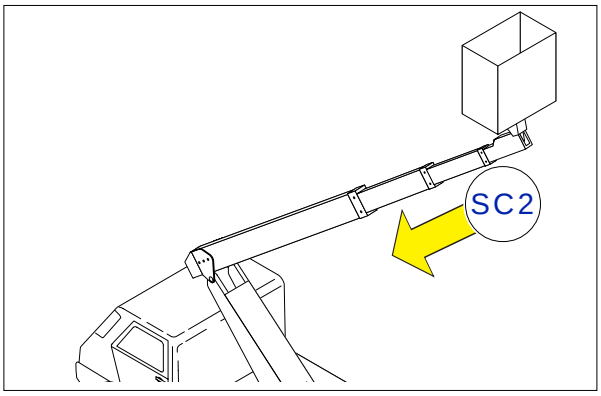
The basket must be centred to be able to close the platform on the support.

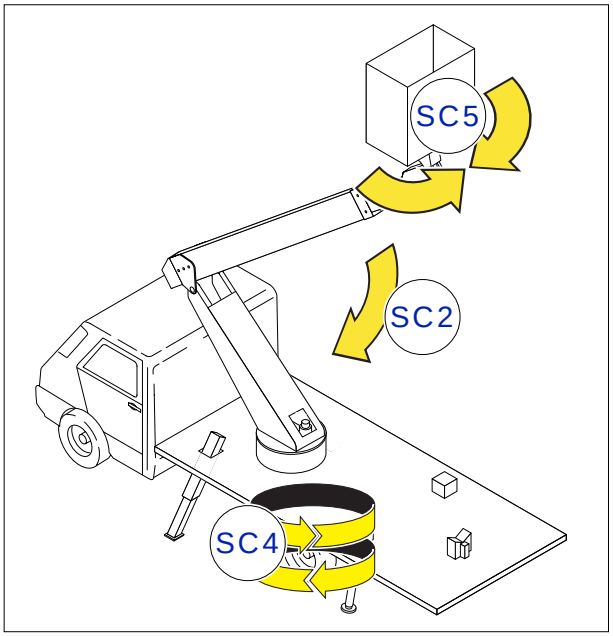
- Carefully control descent of the boom with **SC2**, until it rests on the column.

Insist with this manoeuvre for a few instants with the control at top speed.

An eye check is always advisable to make sure the boom is centred perfectly on the column.

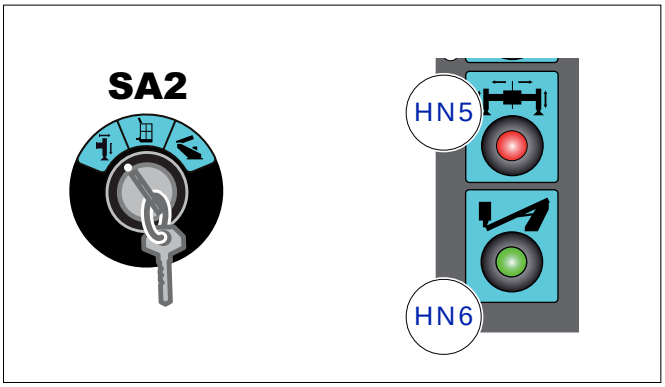






Stabilisation retraction

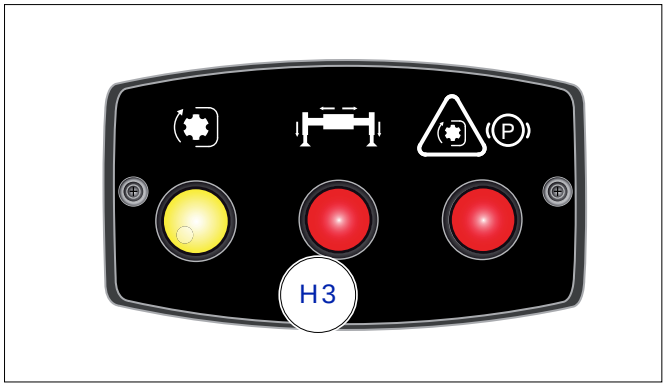
From the frame station, move the selector **SA2**
In this phase, the lights **HN5** and **HN6** in the "outrigger controls" left position of the basket will be on.
Having positioned the aerial part of the lifting platform at rest, all of the outriggers can be retracted by means of the four levers **L1, L2, L3, L4**.
If nothing moves, it means that the booms of the platform are not in the correct position.

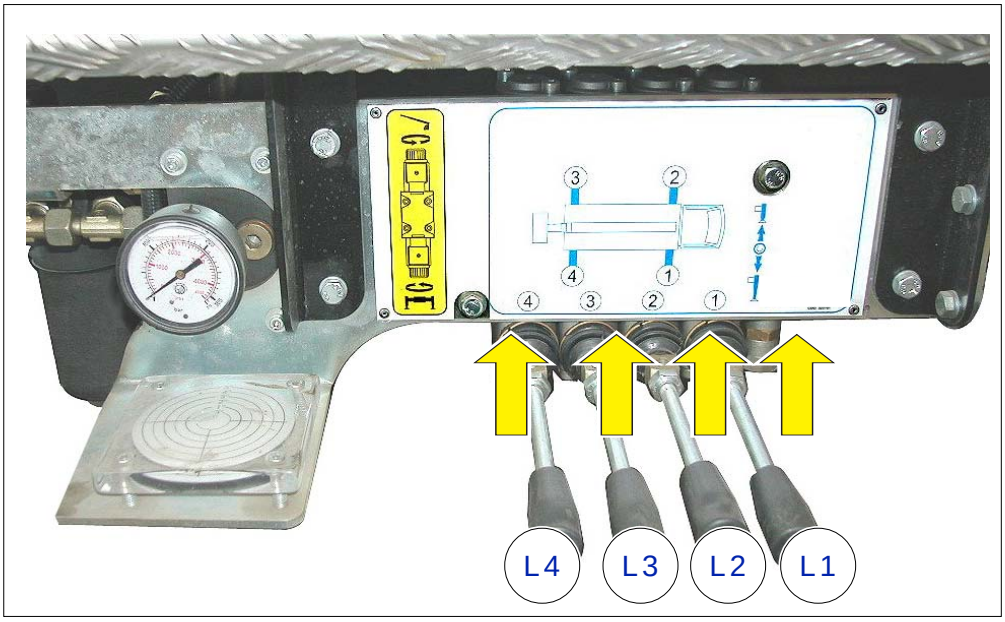


ATTENTION

Check the complete retraction of the outrigger feet placed on the opposite side of the controls.

When the outriggers have retracted completely, the light **HN5** will turn off.
At this point, the beams can be retracted manually.
Disconnect any outside auxiliary networks which the platform may be connected to (electrical, water, pneumatic systems, etc.).





ATTENTION

Make sure that when the outriggers and beams are completely retracted, the light H3 in the cabin is off.

Stabiliser retraction from the basket station (optional)

Instructions on how to use the optional stabiliser controls at the basket station.

- At the station in the frame, turn the SA2 selector to its central position to select the basket station.

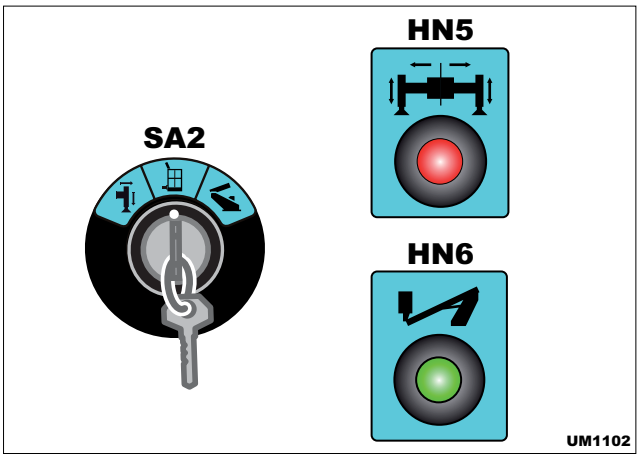
- The HN5 and HN6 indicator lights at the basket station turn on.
  The HN6 indicator turns off when the stabilisers leave the ground.

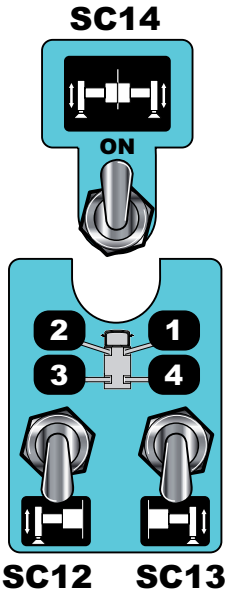
- Turn the SC14 selector to ON, to activate the stabiliser function.

- Move the SJ1 joystick along the Y axis and press the manual button to move all four stabilisers simultaneously.
  You can also turn on the SC12 and/or the SC13 selector to move each stabiliser separately.

- If the action does not have any effect, this means the arms of the lifting platform are not in the correct position.

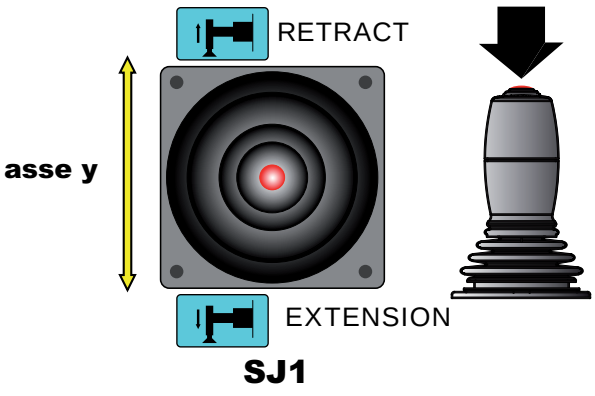
- You can retract the cross-beams manually when the stabilisers are fully retracted.
  Disconnect any external auxiliary networks the platform is connected to (electrical, water or pneumatic systems, etc.).





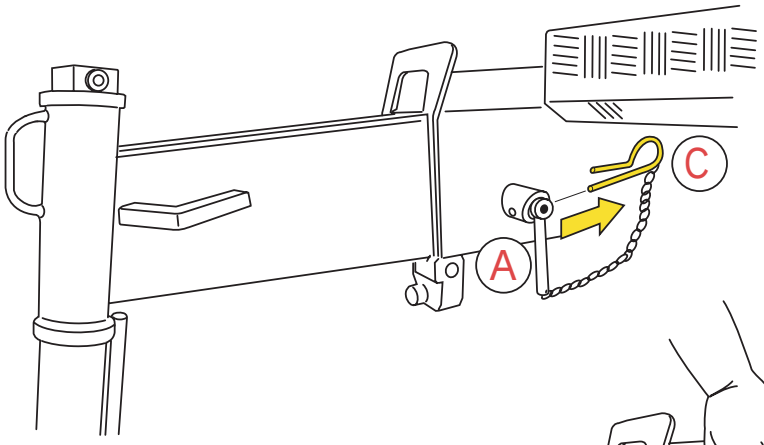
ATTENTION

Make sure that when the outriggers and beams are completely retracted, the light H3 in the cabin is off.

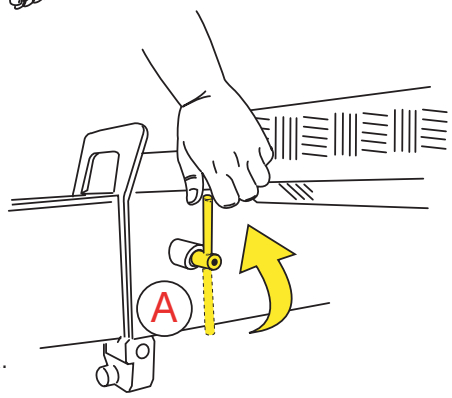


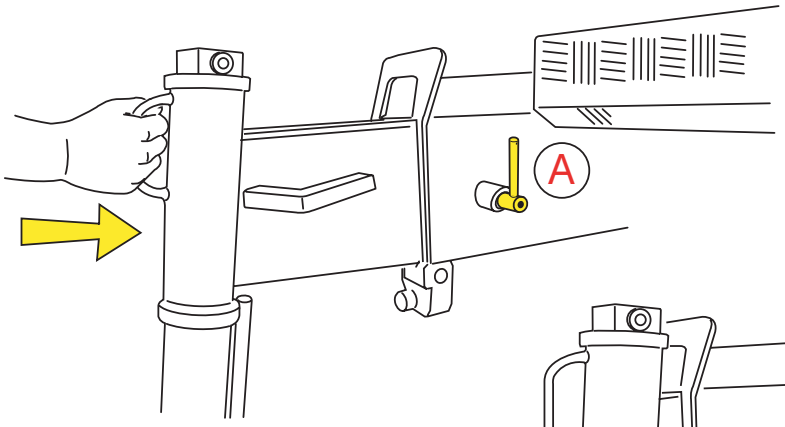
Retraction of stabilisersfor version with HE cross-beams

For version with HE cross-beams

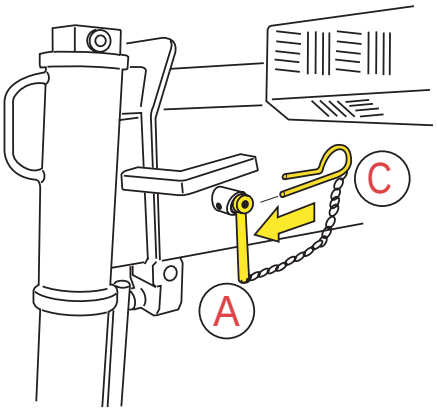


RELEASE THE OUTRIGGER
FROM THE INITIAL
CONDITION AND, THEREFORE,
OUTRIGGER COMPLETELY EXTENDED
CONDITION:
1) REMOVE THE SAFETY SPLIT PIN C;
2) TURN 180 DEGREES THE PIVOT A LEVER.





CLOSE COMPLETELY THE OUTRIGGER.
THE PIVOT A WILL HAVE TO BE POSITIONED
AT THE INITIAL CONDITION LOCKING
THE OUTRIGGER.
CONNECT THE SAFETY SPLIT PIN C.



Disconnect any outside auxiliary networks which the platform may be connected to (electrical, water, pneumatic systems, etc.).

ATTENZIONE

Make sure that when the outriggers and beams are completely retracted, the light H3 in the cabin is off.

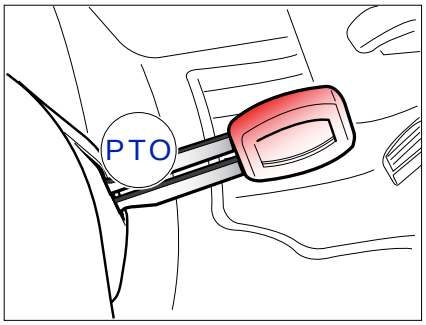
PTO deactivation

Once the lifting platform is completely closed, the vehicle can be moved.
Make sure that there no free tools or objects on the vehicle's platform. If so, place them in the tool box.
- get into the cabin of the vehicle;
- press the clutch pedal to facilitate disengagement of the hydraulic pump.
- disconnect the **PTO** by means of the coupling lever **PTO**. Before releasing the clutch, make sure that the pump coupling lever **PTO** has finished its stroke (the light **H1** on the cabin control panel will turn off);
- release the clutch pedal.

ATTENTION

The pump must be disconnected while running so that the gear synchronisers are not damaged.

- release the park brake.



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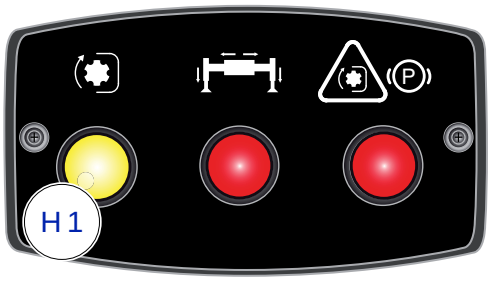


UM0940

TRANSPORT OR START UP CONFIGURATION

The machine is considered in a transport or start up configuration when:
1) arm and basket lean on the column;
2) stabilizers and outriggers are completely returned within the motor vehicle shape;
3) nobody is in the basket;
4) power take off is not connected;
5) electrical and hydraulic equipments are not connected;
6) bonnets and doors of extensible platform are locked.

ATTENTION

for transport or start up configuration, be sure that the safety split pin is connected to the pivot A (see picture 01).

ATTENTION

Do not leave any equipment out of its own seat (equipment box) in order to take precautions against possible impediments as follows:-vandalisms or violations by the way of extraneous people during machine lock.-damages toward people or things during start up.

During start up phase, it is highly recommended to avoid each hard braking and sudden accelerations keeping a constant and moderate speed.

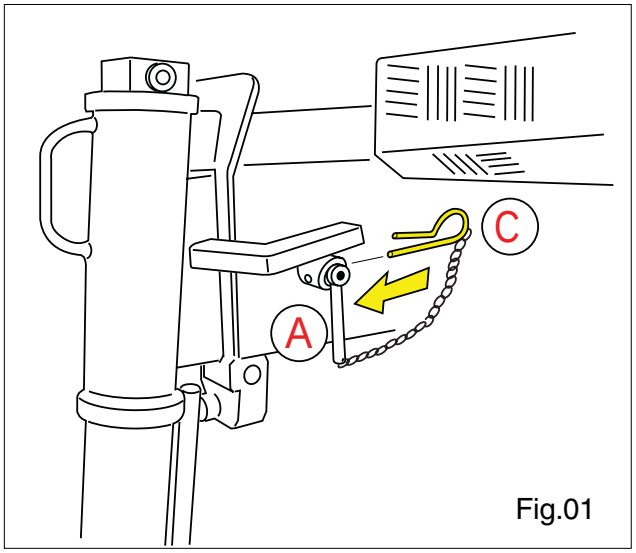


Fig.01

Rest mode

The machine is considered to be in rest mode when:

1) The arm and the enclosure are resting on their support plate.
2) There is nobody inside the basket.
3) The power take-off is deactivated.
4) The electrical and hydraulic systems are disconnected.
5) The stabilisers are rested on the ground.
6) The covers and doors are closed.

ATTENTION

When you leave the machine in rest mode you must:
- deactivate and remove the contact keys;
- use the keys to lock all doors and covers which are fitted with locks;
- remove all keys.

ATTENTION

Do not leave tools lying around (out of their tool boxes) to prevent possible:
- mishandling or vandalism by outsiders while the machine is not operating;
- damage to persons or things, during operation.

DANGER

If you have to leave the machine unattended, even momentarily, make sure that it is always in rest mode.

PAGE LAISSEE VOLONTAIREMENT VIDE

Section
G
Anomalies

index

Troubleshooting 2

Troubleshooting

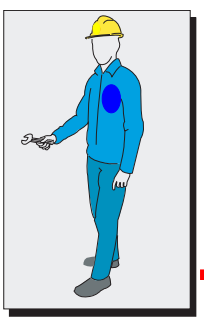
This page includes some the most frequent problems, possible causes thereof as well as possible solutions.

ATTENTION

Some of the problems encountered can be solved by the operator by referring to the operations described in the Section entitled Maintenance, while other problems will have to be solved by contacting an authorised workshop.

Problem	Cause	Solution
Vibration of cylinders, telescopic elements, which don't move smoothly during the initial operation	Hydraulic oil temperature is too low.	*Carry out idle operation for a few minutes in order to heat up the oil.*
Vibrations during all movements when oil is hot	Lack of oil in tank.	*Add hydraulic oil.*
	There is air inside the hydraulic system.	*Shift the cylinders repeatedly in both directions at the end of their runs.*
Vibrations during extension of telescopic elements	Lack of lubricant	*Grease the telescopic elements.*
	Worn slides	*Replace the slides* 
	Uncalibrated arm extension cylinder valve	*Calibrate the valve* 
The machine does not lift the car	Damaged pump	*Replace the pump* 
	Uncalibrated valves	*Calibrate the valves.* 
	Worn cylinder seals	*Replace the seals* 
The machine lifts but cannot support the load	Worn cylinder seals	*Replace the seals* 
	Uncalibrated valves	*Calibrate the valves.* 
	Jack valves dirty or worn	*Replace the valves* 

Problem	Cause	Solution
The machine does not rotate correctly.	Vehicle tilted more than maximum slope allowed	*Stabilise the vehicle within the tolerance permitted*
	Uncalibrated or dirty distributor valves	*Calibrate or clean the valves* 
	Malfunctioning slewing gear	*Replace the slewing gear* 
Creaking of joints and bushings	Lack of lubrication	*Grease the joints or bushings*
Stabiliser cylinder seal failure	Dirty block valves	*Clean or replace the valve* 
The levers do not control any movement	Worn cylinder seals	*Replace the seals* 
	Emergency stop button is pressed	*Rotate the button until it reaches normal position.*
solenoid valves are blocked	Waste inside.	*Operate the solenoid valve cursor to try unblock it and contact a specialised workshop.* 
	Faulty solenoid	*Replace solenoid*
no voltage	Faulty fuse	*Replace fuse*



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Section H Maintenance

CLEANING pag. 2

HYDRAULIC OIL LEVEL CHECK pag. 3

PAINT COAT CHECK pag. 4

LUBRIFICATION OF THE ARTICULATION pag. 5

TURNTABLE LUBRIFICATION pag. 6

LUBRIFICATION OF THE TELESCOPIC ELEMENTS pag. 7

GEAR MOTOR OIL LEVEL CHECK/CHANGE pag. 8

HYDRAULIC OIL REPLACEMENT pag. 9

TELESCOPIC ELEMENTS CLEARANCE AND SLIDE BLOCKS WEAR AND TEAR pag. 10

PRESSURE HYDRAULIC FILTERS REPLACEMENT pag. 11

TANK HYDRAULIC FILTERS REPLACEMENT pag. 12

TURNTABLE SCREW TIGHTENING pag. 13

SUB-FRAME SCREW TIGHTENING pag. 14

CHAINS pag. 15

TENSIONING OF ROPES pag. 19

CHECK BALL-BEARING CLEARANCE pag. 20

PERIODICAL MAINTENANCE TABLE pag. 21

ATTENTION

DURING THE FOLLOWING MAINTENANCE PHASES PAY, CAREFUL ATTENTION TO POSSIBLE HYDRAULIC OIL LEAKS BECAUSE PRESSURE AND TEMPERATURE VALUES MAY BE VERY DANGEROUS.
AVOID DISPERSING HYDRAULIC OIL INTO THE ENVIRONMENT BECAUSE IT IS A HEAVILY POLLUTING SUBSTANCE.

MAINTENANCE

CLEANING

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

To prevent operator's slipping and falling, keep all handles and step clean from oil, greas and dirtness.
Avoid that any dirtness enter beetween movement parts like telescopic booms.
on electrical boxes and electrical components.
After cleaning perform lubrification if necessary.

PRODUCT TO BE USED	CLEANING AGENT
TOOLS	POLISHIN MACHINE OR BY HAND
PERIODIC INTERVENTION	DAILY
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP
WARNING	While washing the equipment pay attention to not use direct and strong water jets

MAINTENANCE

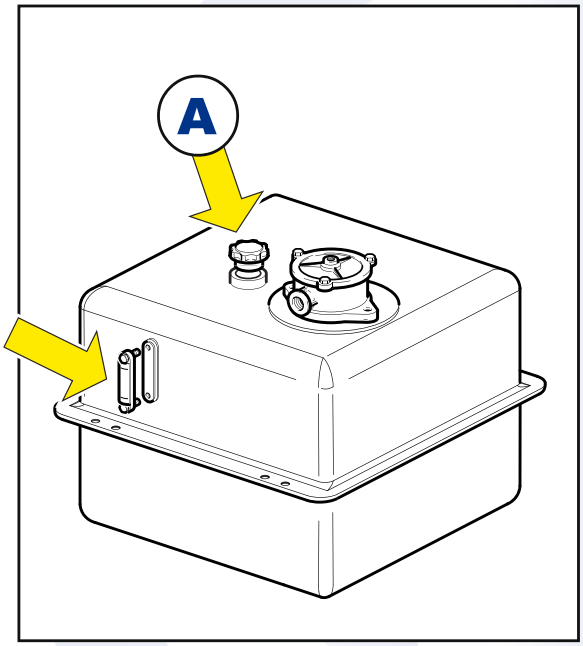
HYDRAULIC OIL LEVEL CHECK

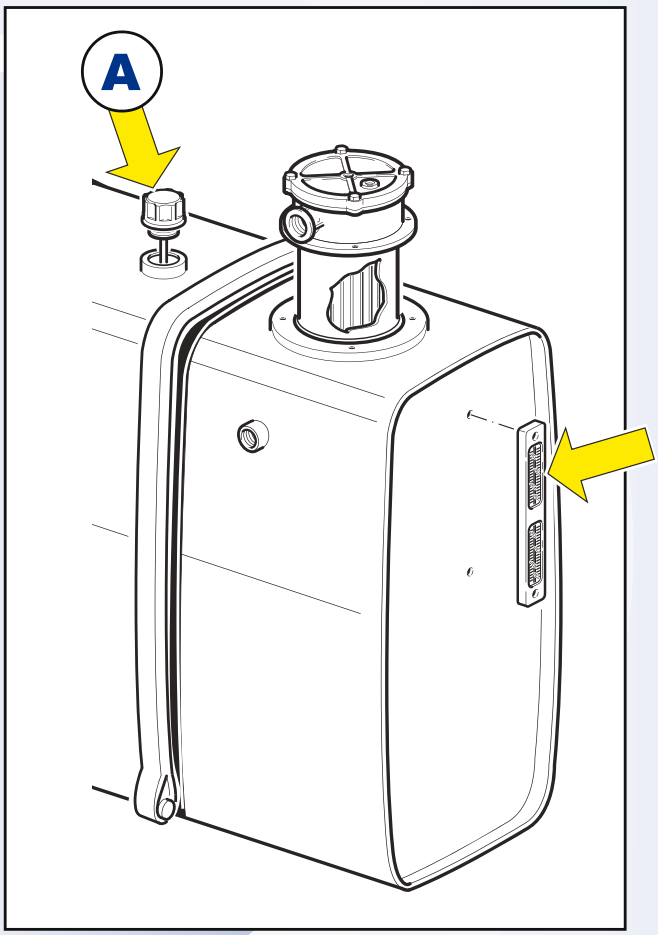
PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

The tank has an oil level indicator.
If it's necessary add oil through the cap **A** until it reaches an optimal level.





OIL AND GREASE SPECIFICATIONS	(*) see technical sheet for specifications **SECTION C** on user manual.
TOOLS	-
PERIODIC INTERVENTION	DAILY
WARNING	DO NOT ADD DIFFERENT KIND OF OIL NOT RECOMMENDED BY THE MANUFACTURER
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

PAINT COAT CHECK

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

All the parts and components of the elevating - working platform are protected from atmospheric agents by a paint coat or other surface treatment.
An ongoing check of the paint coat should also be performed since, if this is in good condition, it is one of the best guarantees for the platform's long working life.
In case of damages to the paint coat, restore it immediately
Periodically check the integrity of the protecting surface treatments.
If necessary, restore the treatment.

PERIODIC INTERVENTION	DAILY

WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

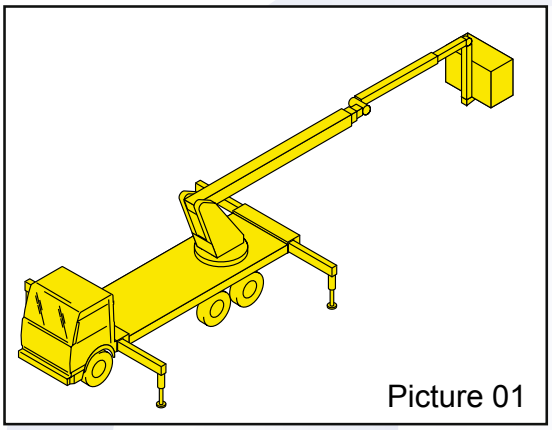
LUBRIFICATION OF THE ARTICULATION

PLATFORM CONFIGURATION FOR THE OPERATION:

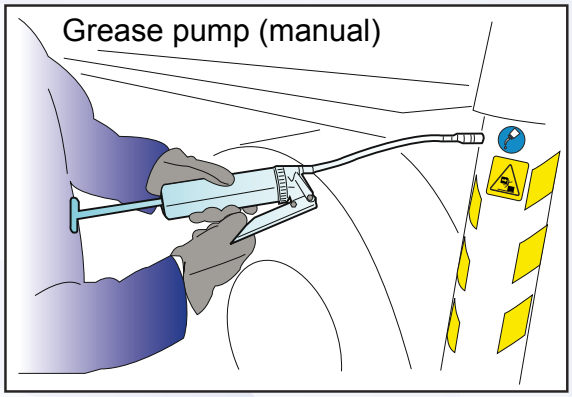
See picture 01

MAINTENANCE:

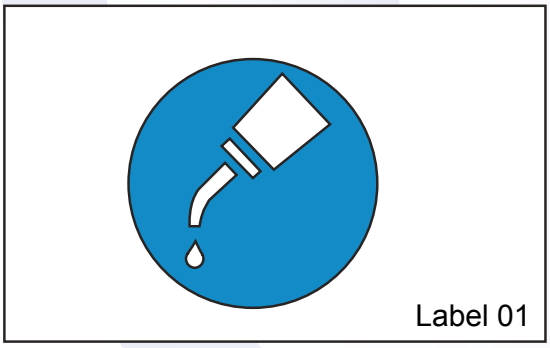
All platform pins are equipped with a ball lubrificator (see the label 01).
For lubrification of joynt and articulations use the lubrification pump and inject grease under pressure throught the ball lubrificators until the old exhausted grease exits.
Lubrificate all the articulation points and all the parts equipped with lubrificators.
Clean all the parts removing (if possible) the exhausted grease poured out from the joint points.
The damage or obstructed lubrificators must be replaced.



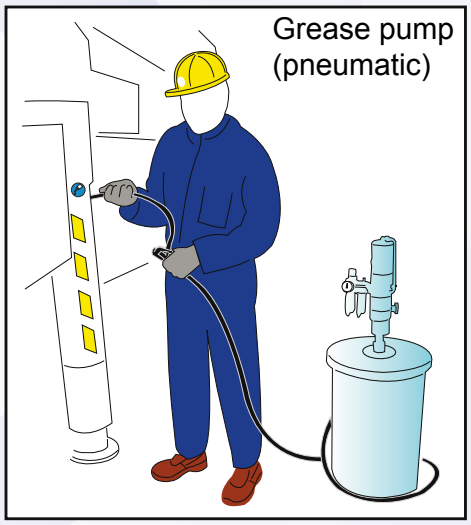
Picture 01



Grease pump (manual)



Label 01



Grease pump (pneumatic)

OIL AND GREASE SPECIFICATIONS	GREASE **NILS NILEX EP1**
TOOLS	GREASE PUMP (BETTER IF PNEUMATIC)
PERIODIC INTERVENTION	EACH 3 MONTH OR EACH 250 WORKED HOURS
WARNING	DO NOT MIX WITH GREASE COMPOSED BY THICKEN OF A DIFFERENT KIND
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

MAINTENANCE

TURNTABLE LUBRIFICATION

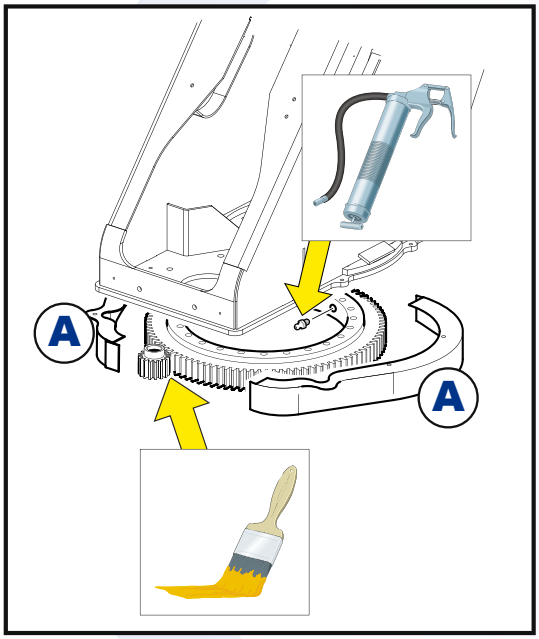
PLATFORM CONFIGURATION FOR THE OPERATION:

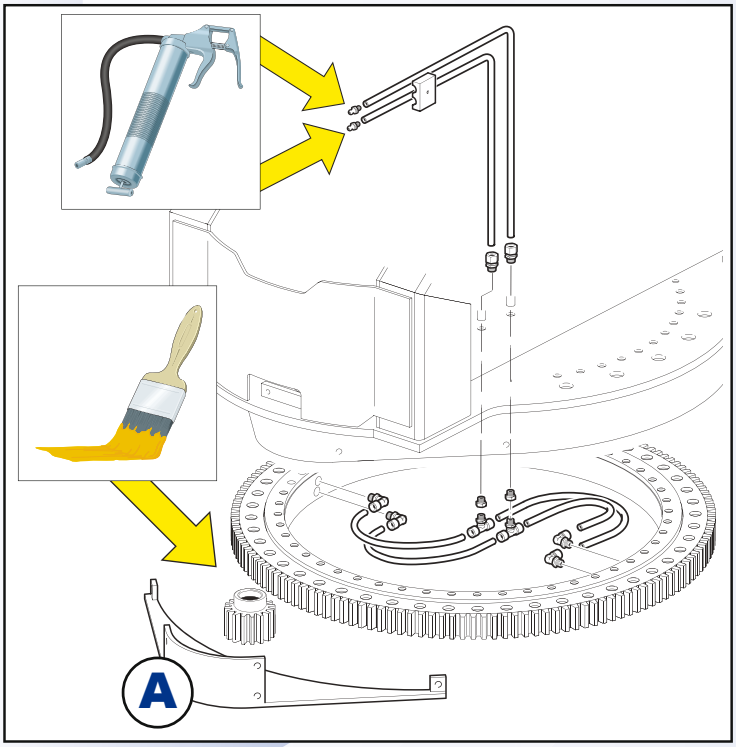
Lift the boom in a configuration that permit the whole rotation (360°) of the platform

MAINTENANCE:

To prevent teeth damage before lubrificate it's necessary to clean from grease, metallic chips and dirtiness turntable teeth.

- Lubricate turntable teeth using a brush and inject grease trough the special balls lubricators.
  Remove protection **A** and lubricate the teeth of turntable and pinion.
- Rotate the column to make reachable all turntable teeth and to lubricate the pinion teeth also.





OIL AND GREASE SPECIFICATIONS	GREASE **NILS NILEX EP1**
TOOLS	GREASE PUMP (BETTER IF PNEUMATIC) BRUSH
PERIODIC INTERVENTION	EACH 6 MONTH OR EACH 500 WORKED HOURS
WARNING	NOT MOVE THE PLATFORM WHEN AN OPERATOR LUBRIFICATE THE TURNTABLE AND PINION TEETH
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

MAINTENANCE

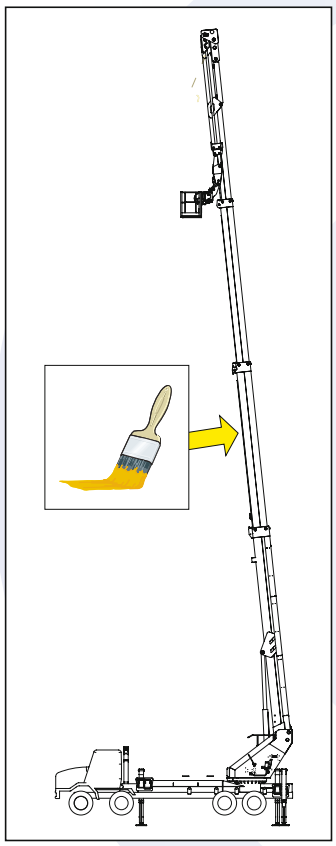
LUBRIFICATION OF THE TELESCOPIC ELEMENTS

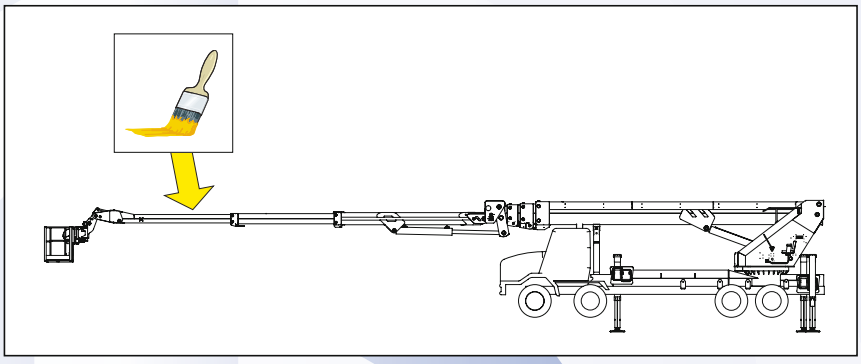
PLATFORM CONFIGURATION FOR THE OPERATION:

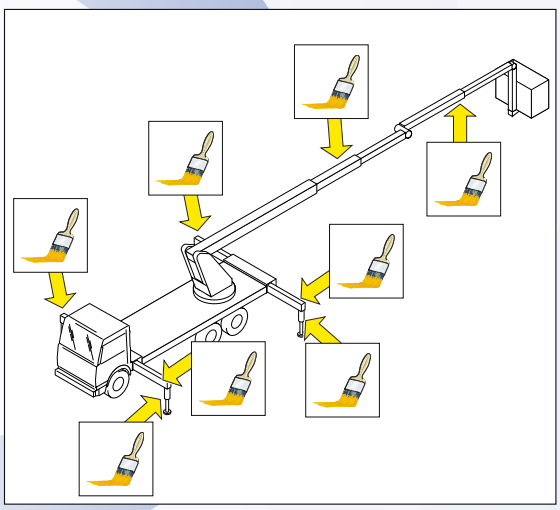
MAIN BOOM LUBRIFICATION: lift the boom to the max angle (84°) and extend completely the machine. Use an other machine to work along the boom.
JIB LUBRIFICATION: to lubrificate the jib extend it completely

MAINTENANCE:

Using a plastic spatula remove the exhausted grease and the dirtness on the boom.
Spread the grease on the external side of boom, extension parts, where the slide blocks touch the boom.







OIL AND GREASE SPECIFICATIONS	GREASE **NILS NILEX EP1**
TOOLS	PLASTIC SPATULA BRUSH
PERIODIC INTERVENTION	EACH 12 MONTH OR EACH 1000 WORKED HOURS
WARNING	PAY ATTENTION TO NOT HIT THE BOOM WITH THE SECOND MACHINE
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

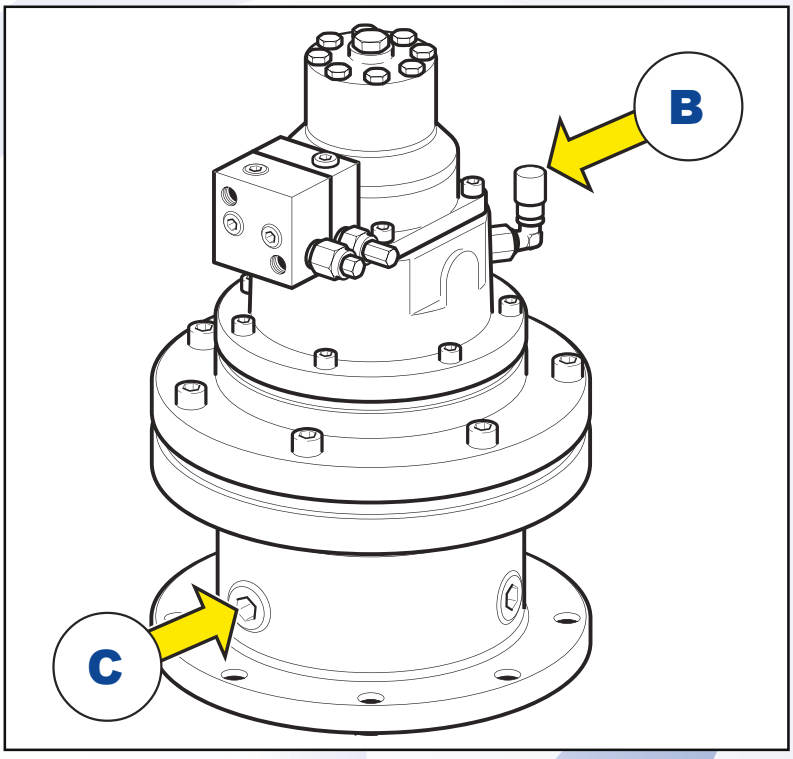
GEAR MOTOR OIL LEVEL CHECK/CHANGE

PLATFORM CONFIGURATION FOR THE OPERATION:

Any position that permite to access to the gear motor

MAINTENANCE:

-Topping up the oil:
Pour in the oil through the hole of the cap **B** until the oil is visible in the hole "**B**".
-Change of oil Unscrew the cap **B**, open the cap **C**, wait until the oil leaks out completely, clean the cap **C** and screw it again.
Pour in approximately quantity (*) of oil through the hole of the cap **B** and screw it again.



(*) see technical sheet for specifications **SECTION C** on user manual.

OIL AND GREASE SPECIFICATIONS	ENVIRONMENT TEMPERATURE	VISCOSITY ISO VG	VISCOSITY °E/50°C
	-20°C +25°C	100	7.3
	+5°C +40°C	150	10.8 - 12.5
	-30°C +65°C	220	15-18
	-40°C +65°C	320	22-26

TOOLS	THE EQUIPMENT
PERIODIC INTERVENTION	EACH 6 MONTH OR EACH 500 WORKED HOURS
WARNING	DURING THE OPERATION AVOID THAT IMPURITY AND DIRTINESS GET INSIDE THE GEAR MOTOR
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

MAINTENANCE

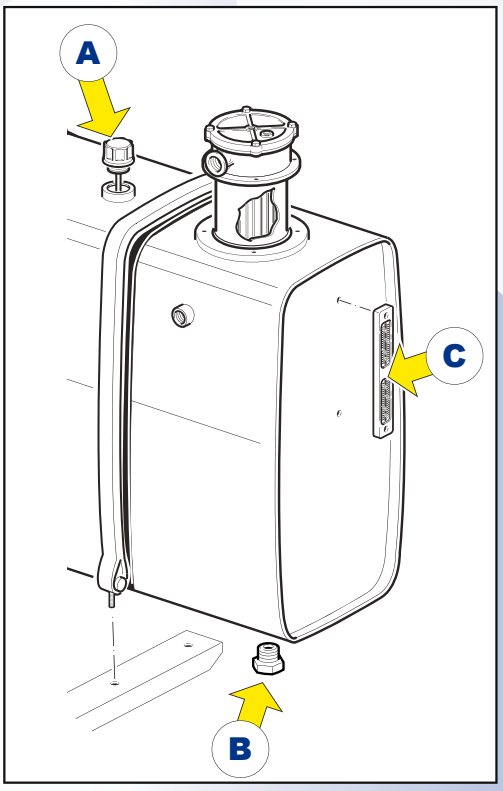
HYDRAULIC OIL REPLACEMENT

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

Prepare a recipient capable to content approximately the quantity (*) of oil and place it under the tank.
Open the faucet **B** and A and wait until the oil leaks out completely.
Close the faucet **B**.
Pour in oil through the faucet A until it reaches the normal level.
Close the faucet **A**.



(*) see technical sheet for specifications **SECTION C** on user manual.

OIL AND GREASE SPECIFICATIONS	HYDRAULIC OIL ISO VG 32
TOOLS	THE EQUIPMENT
PERIODIC INTERVENTION	When the hydraulic oil undergoes deterioration as well as for contaminating agents or chemical degradation (brown coloured or with foam)
WARNING	1) Do not add different kind of oil not recommended by the manufacturer 2) don't disperse oil in te environment. Contact a worn-out-oil-collecting center 3) do not exceed the indicated oil maximun level
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

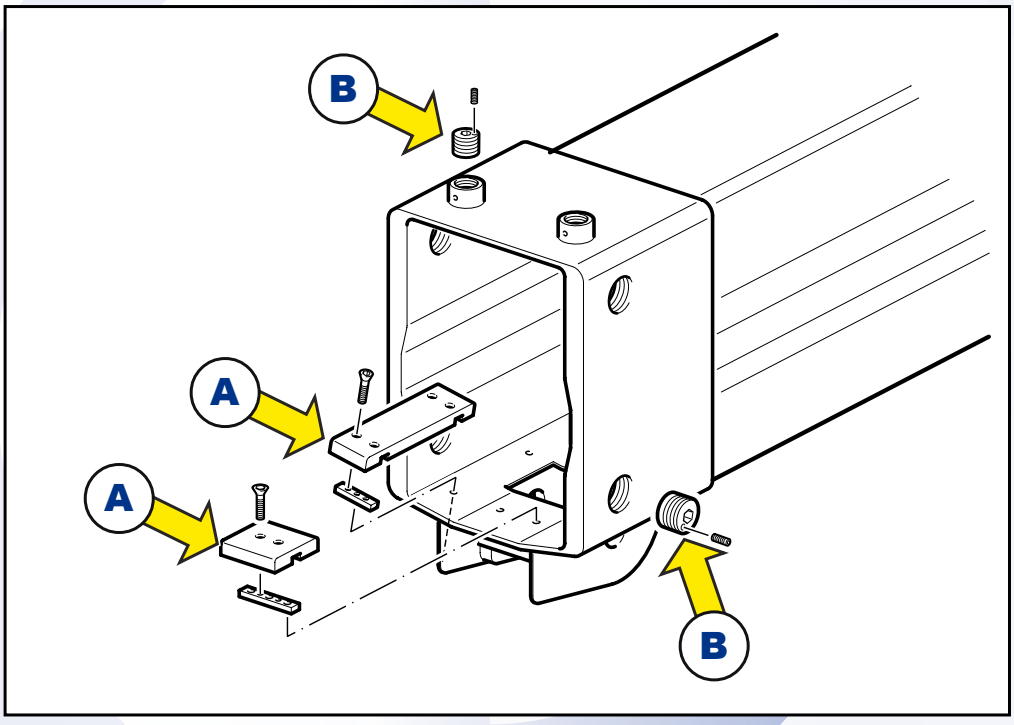
TELESCOPIC ELEMEMTS CLEARANCE AND SLIDE BLOCKS WEAR AND TEAR

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

FIXED SLIDE BLOCKS (A): check wear condition of the telescopic elements slide blocks and replace them if there are more than 5 mm of clearance between the boom tubular elements, when telescopic elements are completely returned
ADJUSTABLE SLIDE BLOCKS (B): Check the clearance between telescopic elements and if necessary adjust them: to do it unscrew the lock and screw the adjustable nuts till the external boom touches the internal part; from this position unscrew the nut 1/2 a turn to allow the necessary clearance beetwen the elements.



TOOLS	SETSCREW WRENCH
PERIODIC INTERVENTION	EACH 12 MONTH OR EACH 1000 WORKED HOURS
WARNING	Do not force the slide block toward the boom: this can cause the boom damage
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

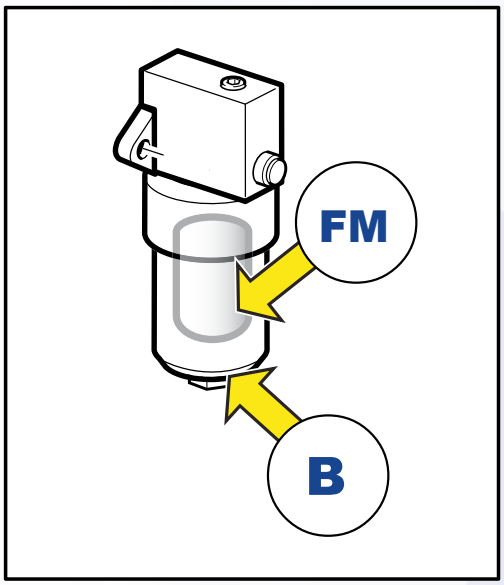
PRESSURE THE HYDRAULIC FILTERS REPLACEMENT

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

Replacement pressure line **FM** :
Stop the vehicle; prepare a recipient for the collection of hydraulic oil; wait few minutes so that the hydraulic oil cools down; unscrew the cup **B**; pull out the filter cartridge and replace with a new one; screw the cup **B**



TOOL	THE EQUIPMENT
PERIODIC INTERVENTION	AFTER FIRST 250 WORKING HOURS OR EACH 3 MONTH AND GENERALLY, EACH 12 MONTH OR 1000 WORKING HOURS.
WARNING	Use a cartridge recommended by the manufacturer; During this operation avoid that impurity and dirtiness get inside
WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

MAINTENANCE

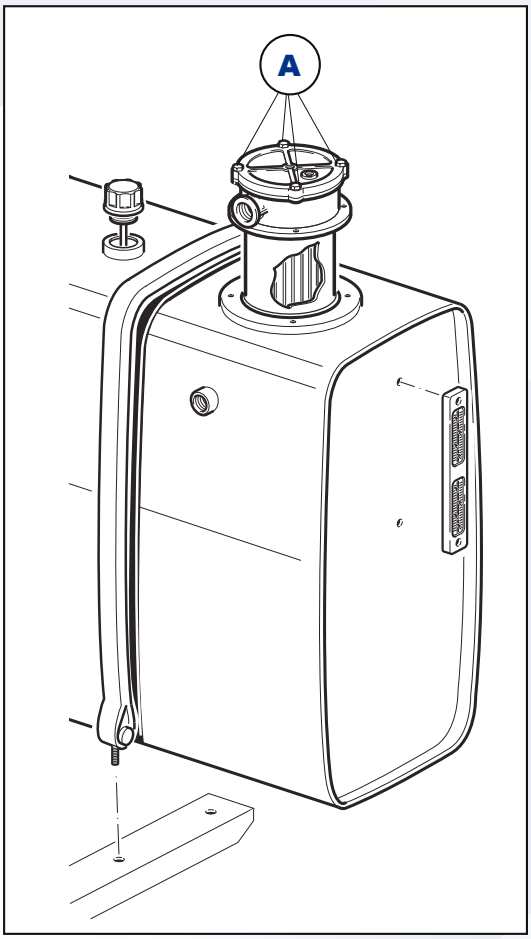
TANK HYDRAULIC FILTERS REPLACEMENT

PLATFORM CONFIGURATION FOR THE OPERATION:

Transport configuration

MAINTENANCE:

Replacement pressure Tank Filters: Stop the vehicle; prepare a recipient for the collection of hydraulic oil; unscrew the screws **A** that lock the filter cap while keeping it pushed with the palm; pull out the control spring situated inside the filter box; pull out the filter cartridge and replace with a new one.



TOOL	THE EQUIPMENT

PERIODIC INTERVENTION	AFTER FIRST 250 WORKING HOURS OR EACH 3 MONTH AND GENERALLY, EACH 12 MONTH OR 1000 WORKING HOURS.

WARNING	Use a cartridge recommended by the manufacturer; During this operation avoid that impurity and dirtiness get inside

WHO MAKE THE MAINTENANCE	FINAL USER / AUTHORIZED WORKSHOP

MAINTENANCE

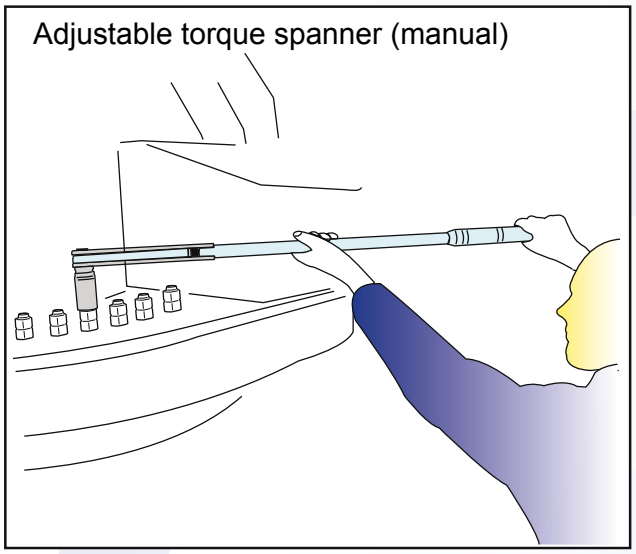
TURNTABLE SCREW TIGHTENING

PLATFORM CONFIGURATION FOR THE OPERATION:

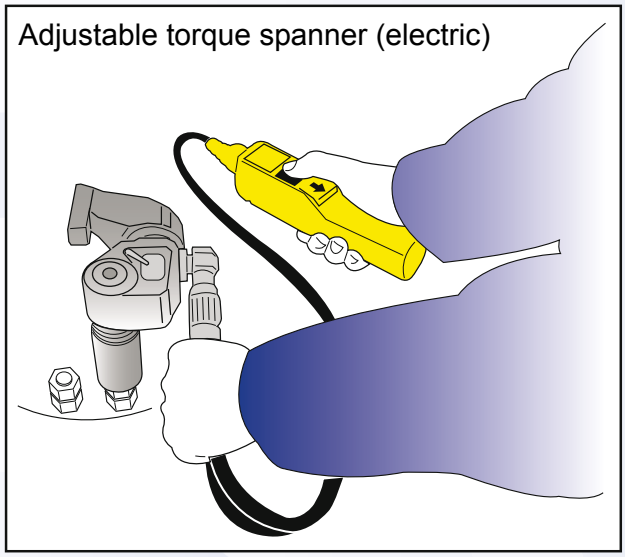
Transport configuration

MAINTENANCE:

Adjustable torque spanner (manual)



Adjustable torque spanner (electric)



Tightening moments for normal screws
(with ISO metric threading)

Ø NOMINAL SCREW	M= Tightening moment (ft lbs)	
	class 8,8	class 10,9
12x1,25	90,6	127
14x1,5	143	202
16x1,5	214	302
18x2,5	288	406
20x2,5	409	576
22x2,5	554	780
24x3	708	996

Reduce M by 10 % when:
- tightening is done with automatic battery wrench
- for GALVANIZED screws

TOOL	Adjustable torque spanner (manual or electric)
PERIODIC INTERVENTION	AFTER FIRST 250 WORKING HOURS OR EACH 3 MONTH AND GENERALLY, EACH 12 MONTH OR 1000 WORKING HOURS.
WARNING	Do not overcome the indicated torque
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

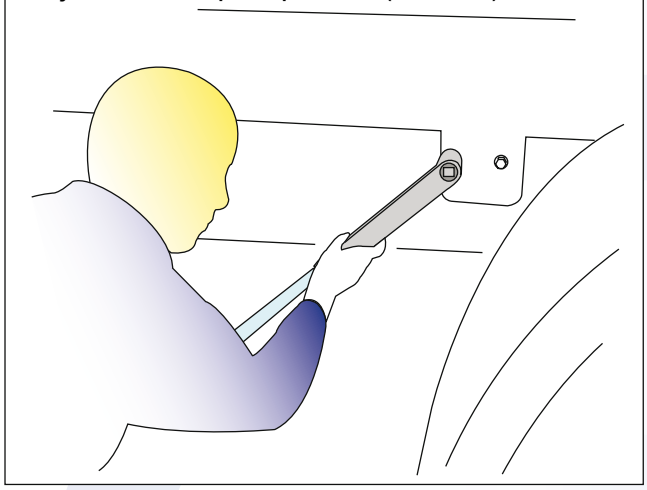
SUB-FRAME SCREW TIGHTENING

PLATFORM CONFIGURATION FOR THE OPERATION:

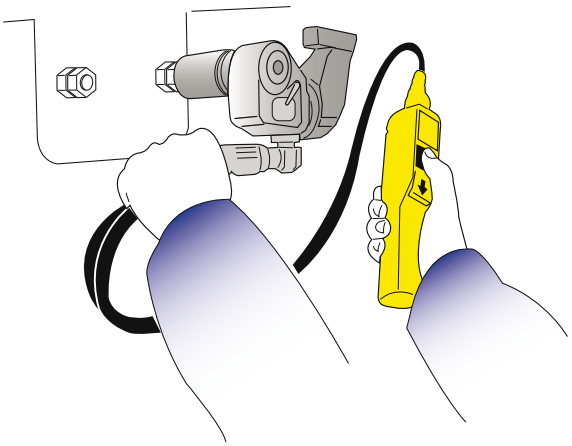
With the stabilizers completely extended

MAINTENANCE:

Adjustable torque spanner (manual)



Adjustable torque spanner (electric)



Tightening moments for normal screws
(with ISO metric threading)

Ø NOMINAL SCREW	M= Tightening moment (ft lbs)	
	class 8,8	class 10,9
12x1,25	90,6	127
14x1,5	143	202
16x1,5	214	302
18x1,5	308	434
20x2,5	409	576

Reduce M by 10 % when:
- tightening is done with automatic battery wrench
- for GALVANIZED screws

TOOL	Adjustable torque spanner (manual or electric)
PERIODIC INTERVENTION	EACH 12 MONTH OR 1000 WORKING HOURS.
WARNING	Do not overcome the indicated torque
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

CHAINS LUBRIFICATION pag. 16

CHAINS TIGHTNESS ADJUSTMENT pag. 17

CHAIN WEAR CHECK pag. 18

MAINTENANCE

CHAINS LUBRIFICATION

PLATFORM CONFIGURATION FOR THE OPERATION:

MAIN BOOM LUBRIFICATION: lift the boom to the max angle (84°) and extend completely the machine. Use an other machine to work along the boom.
JIB LUBRIFICATION: to lubrificate the jib extend it completely

MAINTENANCE:

LUBRICATION

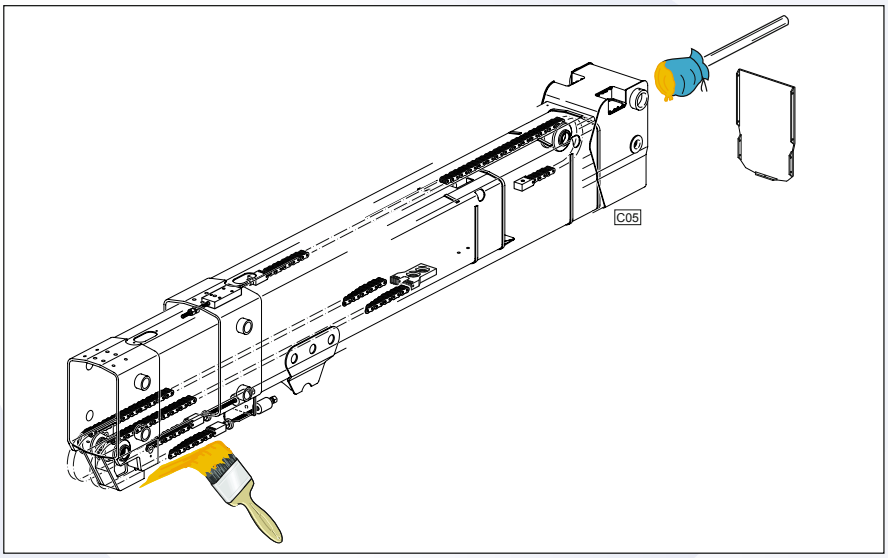
The purpose of lubrication is two-fold.
First of all to prevent friction. By reducing contact between metal and metal, friction, noise and component part wear are reduced.
Secondly, as protection against oxidisation caused by environmental factors.

APPLICATION OF LUBRICANT

To best apply the lubricant:
Fully extend the telescopic sections of the boom and, using a brush, apply a new film of lubricant over the entire surface of the lower chains which have the job of extending the telescopic sections.

FREQUENCY OF LUBRICATION

The frequency of lubrication jobs depends on factors such as frequency of operation, type of lubrication and work environment.
In this sense, regular sight checks should be made.
In normal working conditions however, lubrication frequency should be at least every 12 months or 1000 hours.



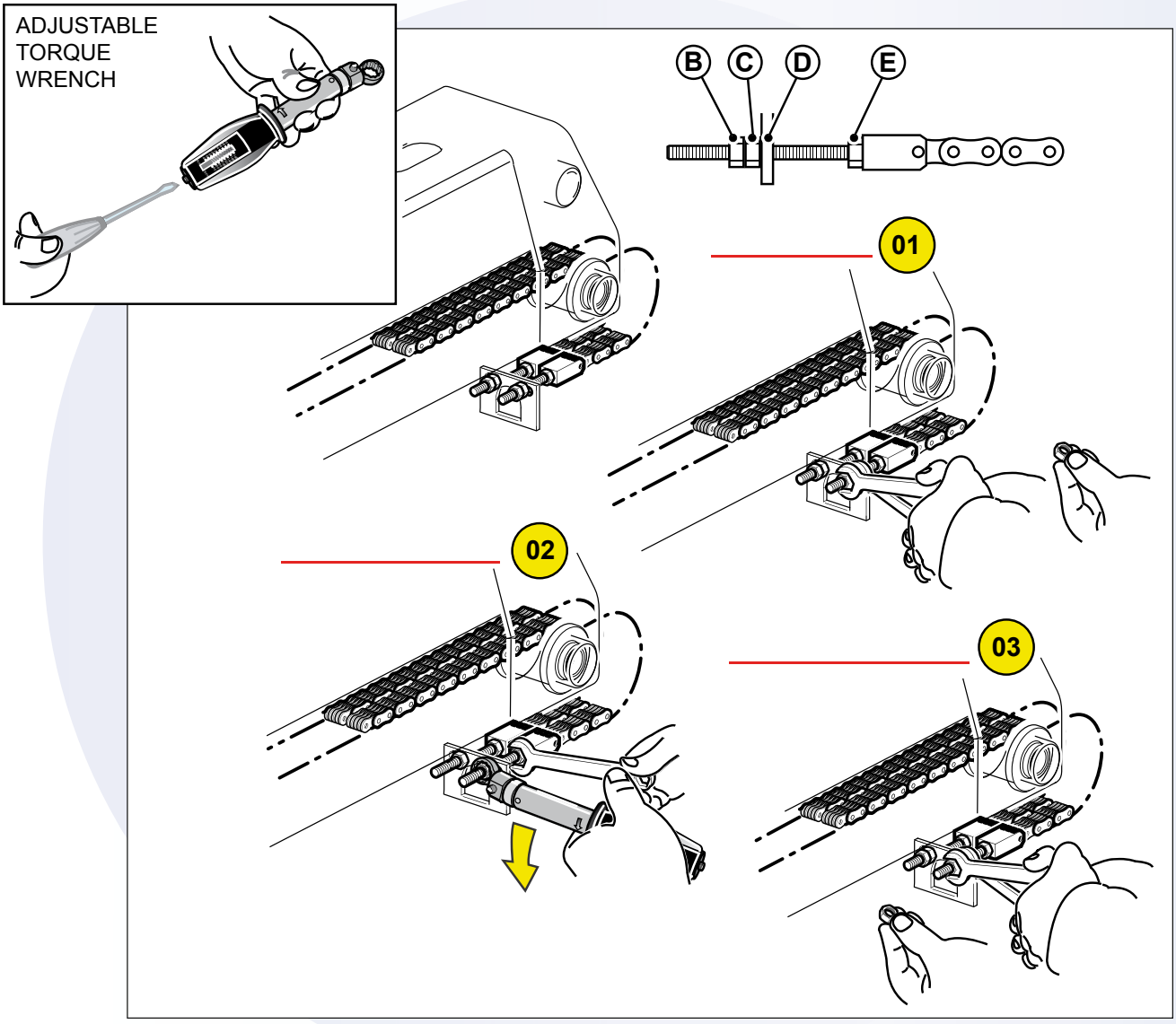
OIL AND GREASE SPECIFICATIONS	GREASE **NILS NILEX EP1**
TOOLS	PLASTIC SPATULA BRUSH
PERIODIC INTERVENTION	EACH 12 MONTH OR EACH 1000 WORKED HOURS
WARNING	If the chain is contaminated by abrasive particles (e.g., sand or paint), before lubricating, clean carefully by washing with suitable solvents.
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

CHAINS TIGHTNESS ADJUSTMENT

PLATFORM POSITION DURING OPERATION:
Transport configuration

MAINTENANCE:
Proceed as follows to correctly tension the chain:
A - Unscrew the lock nuts B (fig. 01)
B - Tighten nuts C USING THE TORQUE WRENCH (fig. 02)
C - Re-tighten lock nuts B to fix the set adjustment (fig. 03).



TOOLS	ADJUSTABLE TORQUE WRENCH
OPERATION FREQUENCY	EVERY 12 MONTHS OR 1000 HOURS' OPERATION
CAUTION	Do not move the chains during tensioning. Contact between nut **E** of the combs and support plate **D** indicates that there is no more margin for ordinary tensioning of the chains.
WHO PERFORMS MAINTENANCE	AUTHORISED WORKSHOP

CHAIN WEAR CHECK

PLATFORM CONFIGURATION FOR THE OPERATION:

Configuration needeed

MAINTENANCE:

The chains should be periodically checked and tested to determine any faults (abnormal wear, corrosion).
The visible part of the chains will also act as a reference for the part inside the booms which is hard to reach.
This type of check must make sure the chain structure has not been modified or deformed with respect to original condition, with the formation of cracks, chinks, evident wear of both the pins and links.
If any faults are found, the chain will have to be changed.
Environmental factors: special environmental factors
(for instance corrosive environments or presence of abrasive materials) can affect chain life (early wear and breakage due to corrosion stress).
The presence of rust on the chain is a sign of end of chain cycle.
In such cases, it is important to protect the structure by increasing the chain cleaning and lubricating frequency.

TOOL	The equipment

PERIODIC INTERVENTION	EACH 12 MONTH OR 1000 WORKING HOURS.

WARNING	-

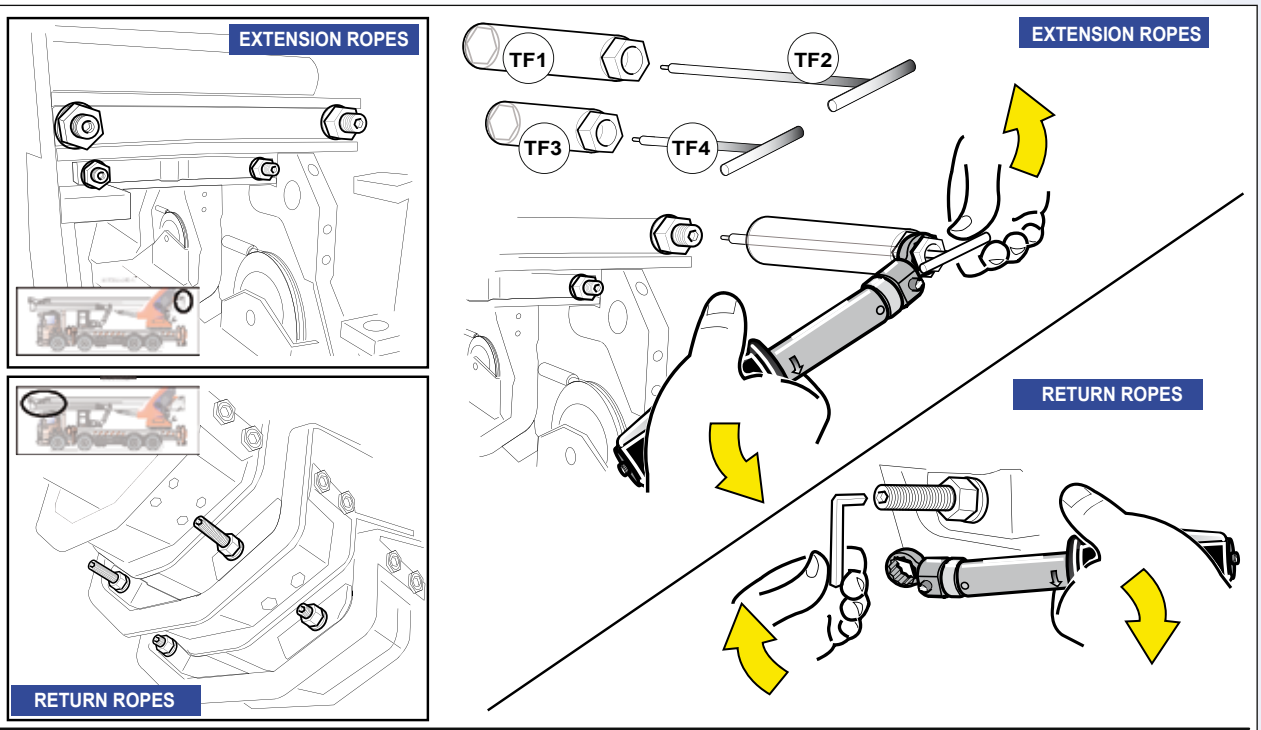
WHO MAKE THE MAINTENANCE	AUTHORIZED WORKSHOP

MAINTENANCE

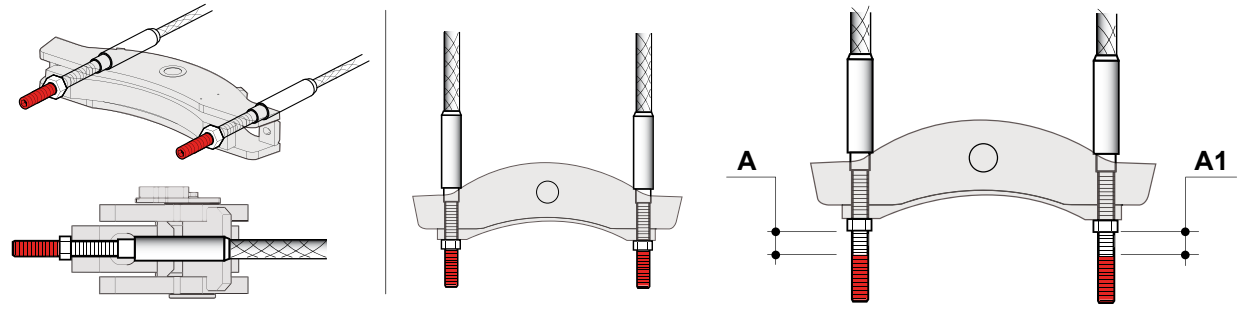
TENSIONING OF ROPES

PLATFORM POSITION DURING OPERATION:
Transport configuration

MAINTENANCE:
Proceed as follows to correctly tension the chain:
Extension ROPES: Tighten the nuts using the TF tools and the TORQUE wrench.
Return ROPES: Tighten the nuts using an Allen key and the TORQUE wrench.



Tensioning control:
The ends of the ties connected to the return and extension ropes are red. An area free from paint will appear after every tensioning operation. After the tensioning operation check that the measurement of the two areas free from paint (A and A1) is not greater than ±5 mm. If the measurement is greater than ±5 mm contact an authorised service centre.



TOOLS	Adjustable torque wrench, TF tools, Allen keys
OPERATION FREQUENCY	EVERY 12 MONTHS OR 1,000 HOURS' OPERATION
CAUTION	Ensure that the TF tools (extension ropes) or Allen keys (return ropes) are used correctly during the tensioning operations so that the ropes do not rotate following the movement of the torque wrench.
WHO PERFORMS MAINTENANCE	AUTHORISED WORKSHOP

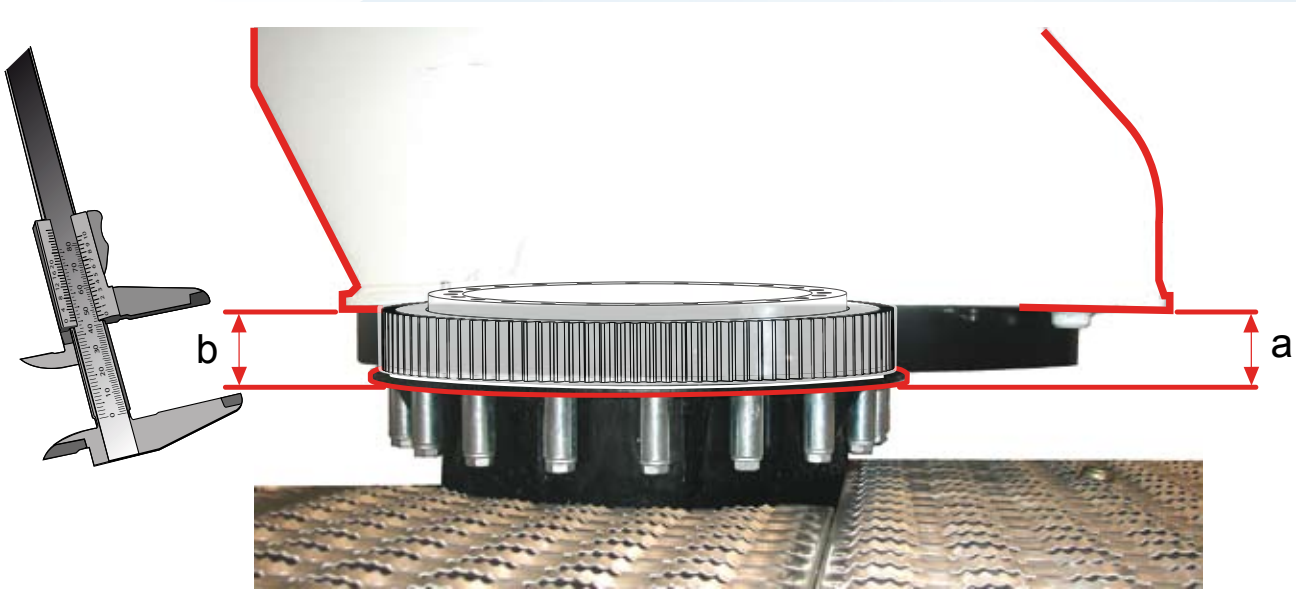
MAINTENANCE

CHECK BALL-BEARING CLEARANCE

PLATFORM POSITION DURING OPERATION:
Stand to the rear of the platform.
Lift the arm to 0° and withdraw completely up to the max. reach

MAINTENANCE:

After positioning as above proceed by measuring the first value a.



b - a = Δ

The value Δ obtained **by subtracting the values a** and **b** must be considered as the actual ball-bearing clearance.

TYPE OF MACHINE	MAX. PLAY
AUTEL / PRO / EASY	1.1 mm
KF 260	1.7 mm
KJF 320	1.9 mm
KJF-HR 420/430	2.1 mm
BHD 330 - B-FIRE 330/450	1.9 mm
510 - 620 HR	2.1 mm

TOOLS	1/20th GAUGE
OPERATION FREQUENCY	EVERY 12 MONTHS OR 1000 HOURS' OPERATION
CAUTION	If the value of Δ obtained is greater than the value for the corresponding machine shown in the table, contact the Bizzochi workshop.
WHO PERFORMS MAINTENANCE	AUTHORISED WORKSHOP

PERIODICAL MAINTENANCE TABLE

Daily check:
safety device check
Hydraulic oil level check
Cleaning: clean of the step, handles, access point…
paint coat check; avoid the water point accumulation to not create rust
emergency engine fuel level check
labels and plates applied check and if necessary their replacement
hydraulic system leaking check

---

maintenance after first 250 hours/work or 3 month
(the most restrictive condition):
- authorized workshop -
Lubrification of the articulations / pins
pressure filter replacement
tank filter replacement

---

maintenance after 500 hours/work or 6 month
(the most restrictive condition):
Turntable lubrification
Gearmotor oil level check / change
Lubrification of the articulations / pins

---

maintenance after 1000 hours/work or 1 year
(the most restrictive condition)
- authorized workshop -
Turntable lubrification
Gearmotor oil level check / change
Lubrification of the articulations / pins
Safety device check (authorized workshop)
Lubrification of the telescopic elements
hydraulic oil condition check and if necessary replacement of it
telescopic elements clearance and slide block wear and tear
pressure hydraulic filters replacement
tank hydraulic filter replacement
turntable screw tightening
subframe screw tightening
general control of the elevating work platform structure, weldings, screws (expecially basket screws)
chain lubrification
chain tightening
chain wear check
tensioning of ropes
emergency engine oil change
check ball-bearing clearance

---

extraordinary maintenance after 7000 hours/work or 7 year
(the most restrictive condition)
chain/ropes replacement
structure check: steel, welding, clearance (slewing devices), structural pins, bush
hydraulic oil replacement
Gearmotor oil change

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Section

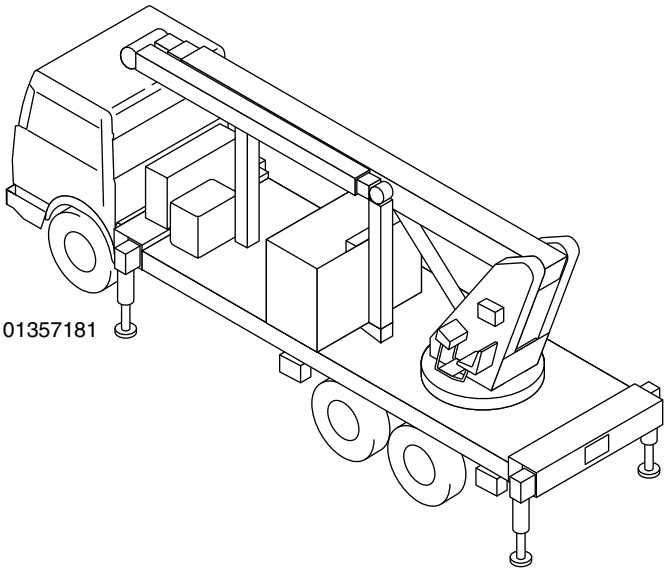
H1 Maintenance

Section index

Demolition 2
Elimination 3

Demolition

The demolition of the machine must be done respecting the following conditions.



- The operator should fit protection clothes and accessories (safety foot wear, gloves and if necessary glasses and mask) certified according to the safety normative.
- The pieces of different nature (steel, aluminium, rubber, electric cables) should be separated in different containers.

WARNING

Don't disperse the liquids in the environment.

- Keep attention to the recovery and separation of the potentially dangerous materials utilized for the construction of the various elements.

- For the elimination of the contaminating substances (plastic materials, lubricating oil and synthetic rubber) respect the prevailing law disposition in the country of the platform demolition.

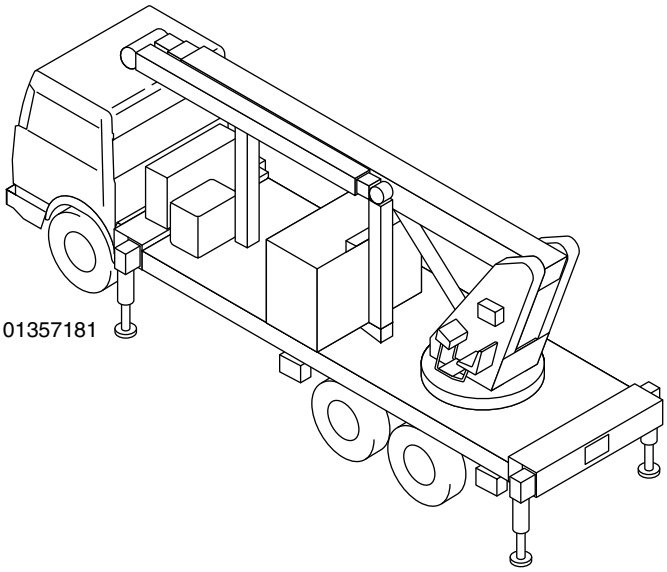
WARNING

The demolition of the machine must be assigned to companies specialized and trained to execute this kind of operations.

Elimination

The elimination of the machine must be done respecting the following conditions:

- The operator should fit protection clothes and accessories (safety foot wear, gloves and if necessary glasses and mask) certified according to the safety normative.
- The pieces of different nature (steel, aluminium, rubber, electric cables) should be separated in different containers.



WARNING

Pay attention to the recovery and separation of the potentially dangerous materials utilized for the construction of the various elements.

For the elimination of the contaminating substances (plastic materials, lubricating oil and syntethic rubber) respect the prevailing law disposition in the country of the platform demolition.

WARNING

The demolition of the machine must be assigned to companies specialized and trained to execute this kind of operations.

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Section

L

Assistance and guarantee

Index

Guarantee 2
Maintenance and transfer register 2
Delivery to the owner 3
Transfers of ownership 4
Maintenance charts 5
Maintenance charts 6
Maintenance charts 7
Maintenance charts 8

Guarantee

Regarding the warranty conditions refers to the guarantee certificate delivered with the machine.

Maintenance and transfer register

The present control register is issued by CTE to the owner of the platform, in accordance with annex 1 of Directive EC98/37.

The present control register is to be considered a part of the machine and it must accompany it for the entire duration of its life, until it is diassembled for good.

The following aspects which concern the life of the machine must be recorded on the register:

- transfers of ownership;
- replacements of motors, mechanisms, structural elements, electrical components, hydraulic components, safety devices and relative components;
- significant malfunctions and relative repairs;
- periodical checks.

Note: ***Should the pages of the register be insufficient, it will be necessary to add the appropriate number of pages, by photocopying them or drawing them up like the existing ones. On the additional pages, the user will indicate the type of platform, the serial number and the year of manufacture, in such a way that they may become an integral part of the present register.***

Delivery to the owner

Chart A
Property of
PRO SERIES

DELIVERY OF THE PLATFORM TO THE FIRST OWNER

Working platform type .....

serial number .....

year of manufacture .....

referred to in the present Control Register was delivered to CTE on the .....

to .....

headquartered in .....

according to the conditions agreed upon, with the technical characteristics, dimensions and functions specified in this manual and in the summary contained in this Register.

CTE

.....

Transfers of ownership

Chart B
subsequent transfers of ownership

On the .....

The ownership of the PRO SERIES LIFTING PLATFORM, which forms the object of this manual, is transferred to:

.....
.....
.....
.....
.....
.....

It is hereby certified that, on the above-mentioned date, the technical, dimensional and functional characteristics of the PRO SERIES LIFTING PLATFORM described in the present manual comply with those that were originally established, and that any variations have been recorded on this Register.

The seller | The buyer

..... | .....

Chart B
subsequent transfers of ownership

On the .....

The ownership of the PRO SERIES LIFTING PLATFORM, which forms the object of this manual, is transferred to:

.....
.....
.....
.....
.....
.....

It is hereby certified that, on the above-mentioned date, the technical, dimensional and functional characteristics of the PRO SERIES LIFTING PLATFORM described in the present manual comply with those that were originally established, and that any variations have been recorded on this Register.

The seller | The buyer

..... | .....

Maintenance charts

The user is under the obligation to observe the control and maintenance programme described in the present instruction manual.

Hours worked	Date	Element	Description of work carried out	Signature

Maintenance charts

Hours worked	Date	Element	Description of work carried out	Signature

Maintenance charts

Hours worked	Date	Element	Description of work carried out	Signature

Maintenance charts

Hours worked	Date	Element	Description of work carried out	Signature

Section
N
Emergency operations

Index

Using the solenoid valves 2
Introduction 2
Possible conditions for using emergency manoeuvres 3
ME1 - Electrical system malfunctioning - use of the solenoid valve in the turret 4
ME2 - Hydraulic system malfunctioning - Using the hand pump 5
ME3 - Malfunctioning of the electrical and the hydraulic systems 5

Introduction

In the event of maintenance operations, it is recommended that the operating post be under the control of an expert and skilled person.

All maintenance operations must be performed with the utmost care and under the personal management of such a person. The instructions provided in the manual must be observed scrupulously.

DANGER

Should the cases listed occur, this will be considered to be a dangerous situation and it is the operators' obligation to suspend work and return the platform to its transportation mode.

Using the solenoid valves

WARNING

A seal is affixed to the solenoid valves to guarantee that the system is intact.
The absence of these seals is considered to be mishandling and transfers the liability ascribable to the manufacturer to the staff members to whom the control and use of the platform have been delegated.
It is therefore necessary to re-affix the seals in an authorised CTE workshop as soon as the emergency has been solved.

Possible conditions for using emergency manoeuvres

ME1

MALFUNCTIONING OF THE ELECTRICAL SYSTEM AND THE RESULTING BLOCK OF PLATFORM MANOEUVRES THAT PREVENT IT FROM CLOSING.

ME2

MALFUNCTIONING OF THE HYDRAULIC SYSTEM WITH A LOSS OF PRESSURE TO THE RELATIVE PUMP (PTO)
AND THE RESULTING BLOCK OF PLATFORM MANOEUVRES THAT PREVENT IT FROM CLOSING.

ME3

MALFUNCTIONING OF THE ELECTRICAL AND HYDRAULIC SYSTEMS AND THE RESULTING BLOCK OF PLATFORM MANOEUVRES THAT PREVENT IT FROM CLOSING.

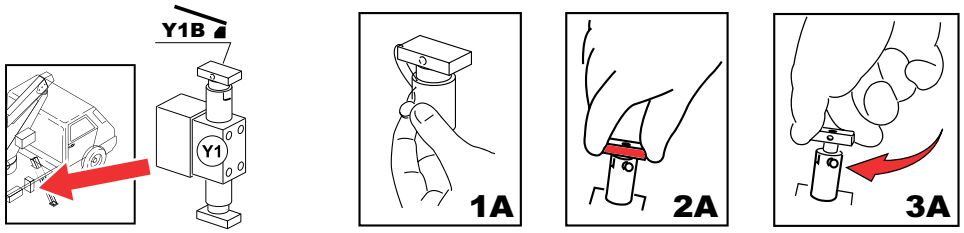
ATTENTION

For certain configurations the machine is equipped with optional devices such as: Electric pumps, Electric motors, Auxiliary motors. During vehicle pump malfunctioning (PTO), these devices must be used in place of it.

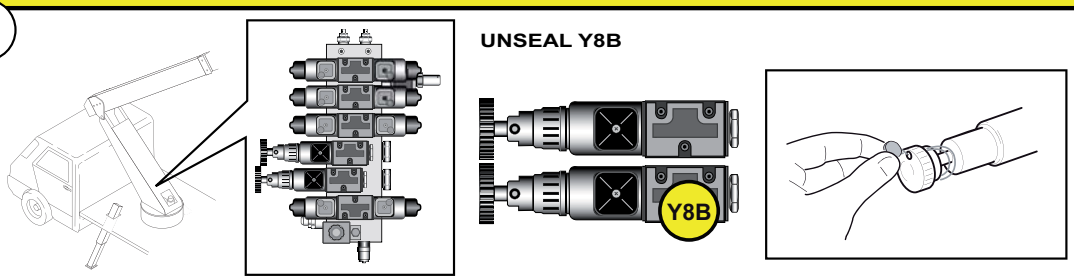
ME1 - Electrical system malfunctioning - use of the solenoid valve in the turret

EMERGENCY MANOEUVRES

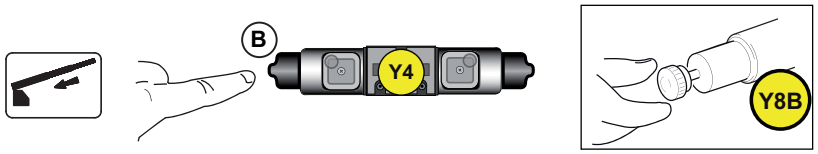
1



2



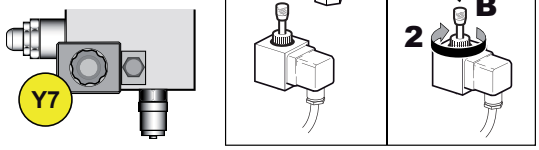
COMPLETELY RETRACT THE BOOM EXTENSION BY ACTIVATING Y4B AND THE Y8B HANDWHEEL AT THE SAME TIME



SLOWLY ROTATE THE Y8B HAND-WHEELIN ORDER TO ACHIEVE A SLOW AND UNIFORM MANOEUVRE

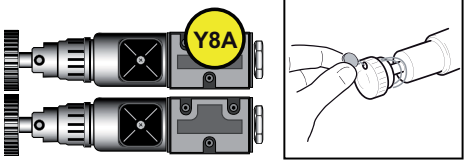
3

UNSEALAND ACTIVATE Y7



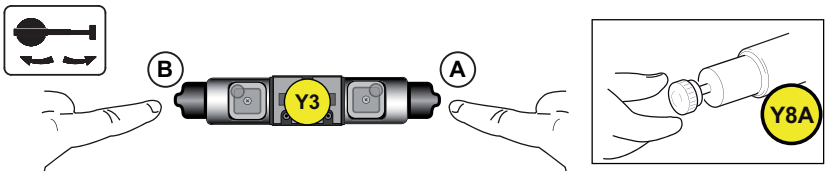
4

UNSEAL Y8A



5

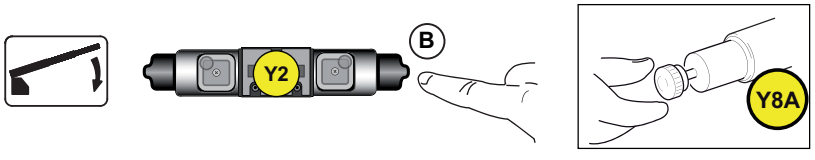
ROTATE TURRET BRINGING IT TO A POSITION THAT CORRESPONDS WITH THE CLOSING SUPPORTPLATFORM ACTIVATING Y3B OR Y3A AND THE Y8A HANDWHEEL AT THE SAME TIME



SLOWLY ROTATE THE Y8A HAND-WHEELIN ORDER TO ACHIEVE A SLOW AND UNIFORM MANOEUVRE

6

LOWER THE BOOM UNTIL IT IS RESTING ON THE POLE IN CONFIGURATION FORTRANSPORTATION, ACTIVATING Y2B AND THE Y8A HANDWHEEL AT THE SAME TIME



SLOWLY ROTATE THE Y8A HAND-WHEELIN ORDER TO ACHIEVE A SLOW AND UNIFORM MANOEUVRE

7

ONCE THE REST CONFIGURATION HAS BEEN REACHED THE OPERATOR MUST CONTACT A CTE AUTHORISED WORKSHOP TO RESTOREPERFECT OPERATIONAL CONDITIONS IN THE PLATFORM ANDRESEALING THE EMERGENCY SOLENOID VALVES

UM1104_GB

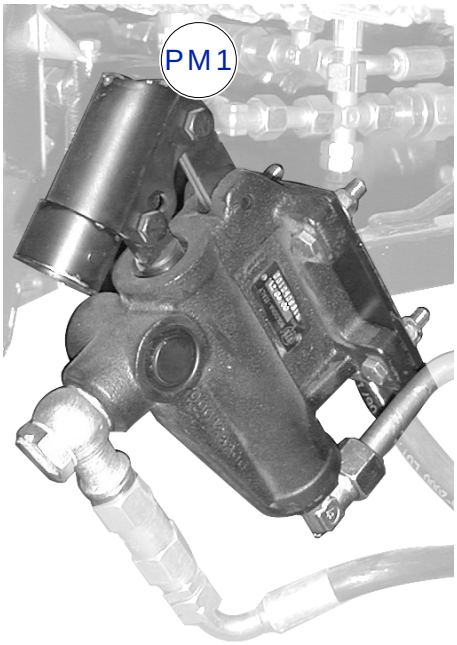
ME2 - Hydraulic system malfunctioning - Using the hand pump

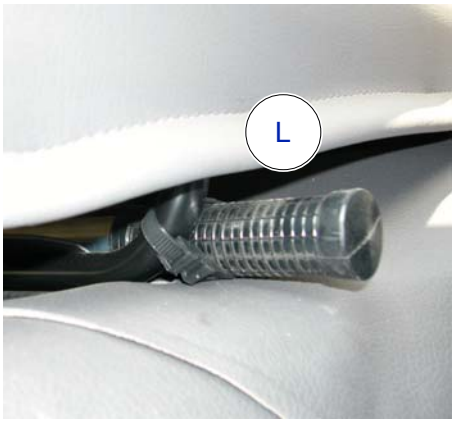
Operare come segue:

- Insert lever **L** (vehicle cab) into the slot of the PM1. emergency hand pump.
- Manually act on lever of the PM1 emergency hand pump.
- Simultaneously activating the hand pump will be activated maneuvers want.

ATTENTION

This operation is effective after hydraulic oil has completely filled the emergency hand pump.





ME3 - Malfunctioning of the electrical and the hydraulic systems

In this condition it will be necessary to work manually on turret emergency manoeuvres (ME1) and at the same time activate the hand pump (ME2).

Section
S
Certificates

Index

CE DECLARATION OF CONFORMITY 2
Outcome of aerial platform testing before delivery to the client: 4

CTE S.p.A.
Via Caproni, 7 - 38068 Rovereto (TN)
Telephone ++39 0464 48 50 50 - Fax ++39 0464 48 50 99

CE DECLARATION OF CONFORMITY

(edited according to Attachment II letter A of the Directive 2006/42/CE)

CTE S.P.A. via Caproni 7 – Z.I. – 38068 Rovereto (TN), "*manufacturer*" according the directive mentioned above for the following articulated mobile work platform (machine that is included in attachment IV of the Machinery Directive):

model .....: xxxxx
Manufacture N° ..... : **XXXX**
year of manufacture .....: **XXXX**

that was set up on the following vehicle:

type .....: **XXXX**
frame N° ....: **XXXX**

declares under their own responsibility that the above mentioned aerial platform:

- is a machine according to and effected by the Directive 2006/42/CE and the "CE" marking was placed on it.
- it conforms to the Machinery Directive (Directive 2006/42/CE) and the national legislation that transposes it;
- it conforms to the following additional directives:

2004/108/CE (electromagnetic compatibility)
2006/95/CE (low voltage)

(the normative references must be understood as extended to possible successive modifications and/or integrations)

- it conforms to directive 2000/14/CE of 8 May 2000 "on the harmonisation of legislation in the member states concerning environmental noise emission for machinery and equipment destined to operate outside" and the successive 2005/88/CE.
  Type of machine: **overhead access platform with internal combustion engine** that agrees with definition n° **1** of attachment I Dir. 2000/14/CE.
  Procedure applied to evaluate conformity: **Attachment V** of Dir. 2000/14/CE
  Measured sound level L_{wA}: **89** dB(A)
  Guaranteed sound level L_{wA}: **93** dB(A)

and also declares that:

- The person authorised to create the technical file is Mr. ……**XXXX** …… at: CTE S.p.A. Via II Agosto, 670 – 47032 Bertinoro (FC) Italy.
- The machine conforms to the prototype that obtained CE certification number:
  XXXX of XXXXX
  issued by the following Notified Body:
  ICE S.p.A. Via Garibaldi, 20 40011 Anzola dell'Emilia (BO) (NB n.0303).

Rovereto, ……

……
. Lorenzo Cipriani
Legal Representative

Outcome of aerial platform testing before delivery to the client:

Ref. UNI EN 280 and internal testing procedures

Type of machine…….

Manufacture number……

Type of test	Outcome	Notes
Functional verification, carried out on the basis of a specific *report/final machine testing plan*	☐ positive ☐ negative	
Safety device testing: verification of correct operation	☐ positive ☐ negative	
Functioning testing (110% of the nominal load at nominal speed in the various expected machine configurations)	☐ positive ☐ negative	
Static overloading test	☐ positive ☐ negative	
Verification of machine plates and documentation	☐ positive ☐ negative	

Date……..

Stamp and Signature:……..

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