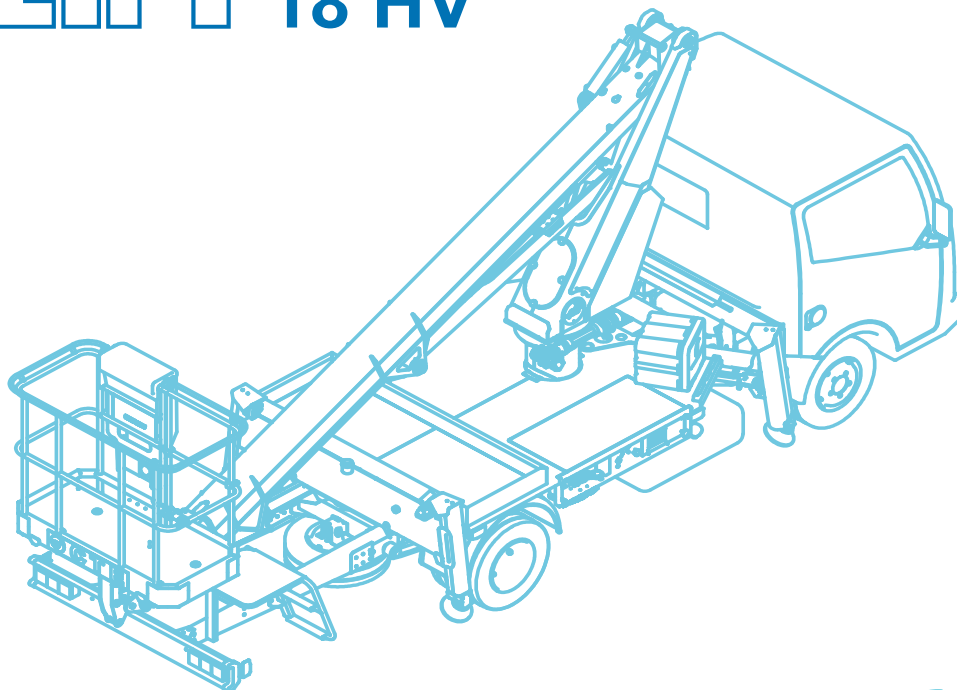




INSTRUCTIONS FOR USE AND MAINTENANCE

MOBILE ELEVATING
WORK PLATFORM

B-LIFT 18 HV



FABRICATION NR.





1 General information

1.1	Manufacturer information	1
1.2	Limitations of responsibility	1
1.3	Content and scope of this manual	2
1.3.1	Symbols	2
1.3.2	Illustrations	2
1.3.3	Scope of this manual	3
1.3.4	Amendments and additions	3
1.3.5	Composition	3
1.3.6	Intended readership	4
1.3.7	Conservation	5
1.3.8	Confidentiality	5
1.4	Glossary	6

2 Safety

2.1	Reference standards and directives	1
2.2	Intended and improper use	2
2.2.1	Non-permitted use	3
2.3	Obligations and requirements	3
2.3.1	Electrocution hazard	3
2.3.2	Tipping hazard	4
2.3.2.1	BEAUFORT wind scale	5
2.3.3	Risk of falling	6
2.3.4	Collision hazard	7
2.3.5	Work atmosphere hazards	7
2.3.6	Machine hazards	8
2.4	Operator Definition	9
2.4.1	The role of the operators	9
2.4.2	Training and importance of the procedures	10
2.4.3	Operators' tasks	10
2.4.4	Summary of operator standards	11
2.5	Road traffic	12
2.5.1	Checks and tests before driving	12
2.6	Safe workplace	12
2.6.1	Type of workplace	12
2.6.1.1	Supporting surface	12
2.6.1.2	Production areas or public areas	12
2.6.1.3	Positioning the machine	13
2.6.1.4	Delimitation of the operating area	13
2.6.2	Danger areas	13
2.6.3	Risks for exposed persons	14
2.6.4	Electrical tolerances	14
2.6.5	Ambient air temperature	14
2.6.6	Humidity	14
2.6.7	Noise level	14
2.6.8	Vibrations and crashes	14
2.6.9	Gas emissions	15
2.6.10	Contaminant agents	15

GB

INDEX



2.6.11	Ionising and non-ionising radiation.....	15
2.6.12	Lighting.....	15
2.7	Personal protective equipment (PPE)	16
2.7.1	Harness system	16
2.7.1.1	Additional personal protective equipment	17
2.8	Residual risks	17
3	Description and Technical Data	
3.1	General description of the machine	1
3.1.1	Classification	2
3.2	Direction	2
3.3	Identification and CE marking	3
3.4	Description of main units	4
3.5	Main pictograms	5
3.6	Technical data	6
3.6.1	Technical data sheet	6
3.7	Dimensions	7
3.8	Working envelope	8
3.8.1	Plan view of work area	8
3.8.2	Work envelopes and load according to the stabilization	10
4	Controls	
4.1	Control panels	1
4.2	Stabilisation control panel	2
4.3	Ground control panel	3
4.4	Emergency controls station	7
4.5	Control panel in the work platform	8
4.6	Power take-off control	10
4.7	Cabin control panel	10
5	Safety devices	
5.1	Emergency stop buttons	1
5.2	Alarms-warnings	2
5.2.1	Reset alarms	2
5.3	Buzzer	2
5.4	Stabilizers and/or beams not completely retracted	3
5.5	Stabilizers interlock switch	3
5.6	Aerial manoeuvres enabling	4
5.7	Chain tension monitoring system	4
5.8	Manual emergency pump	5
5.9	Maximum pressure valve	6
5.10	Blocking valves on cylinders	6
5.11	Stabilization control device	7
5.12	Control device for driving on the road	7
5.13	Dispositivo di controllo area di lavoro	8
5.14	Spirit level	8



5.15	Safety harnesses	9
------	------------------	---

6 Procedures for Use

6.1	Foreword	1
6.2	General precautions	1
6.3	Operating stages	3
6.3.1	Pre-start checks	3
6.3.2	Starting the vehicle	3
6.3.3	Engaging the power take-off	4
6.3.4	Stabilising the elevating work platform (MEWP)	4
6.3.5	Using the elevating platform	6
6.3.6	Returning the lifting platform to its rest position	8
6.3.7	Closing the stabilisers	8
6.3.8	Switching off the vehicle	8
6.4	Parking	9
6.5	The S3 system control panel (Smart Stability System)	10

7 Emergency manoeuvres

7.1	Foreword	1
7.1.1	Using solenoid valves	1
7.2	Work platform emergency stop	2
7.3	Levelling the work platform	2
7.4	Lowering the work platform using the ground controls in the event of operator incapacity	3
7.5	Lowering the work platform in the event of a power cut	4
7.6	Manual lowering of platform from the ground	4

8 Maintenance

8.1	Inspection logbook	2
8.2	General Rules	2
8.3	Maintenance summary table	3
8.3.1	Pre-start checks	3
8.3.2	Every 50 hours of operation	3
8.3.3	Every 100 hours of operation	4
8.3.4	Every 6 months or 500 hours of operation	4
8.3.5	Yearly or every 1000 hours of operation	5
8.4	Maintenance of mechanical components	6
8.4.1	Main mechanisms	6
8.4.2	Combustion engine	6
8.5	Lubrication and greasing	7
8.5.1	Greasing the pins	7
8.5.2	Lubricating the stabilisers	7
8.5.3	Lubricating the telescopic boom elements	7
8.5.4	Lubricating the turntable	8
8.6	Hydraulic system maintenance	9
8.6.1	Hydraulic cylinders	9
8.6.2	Hydraulic system pipes	9
8.6.3	Pressure check and valve adjustment	9

GB

INDEX



8.6.4	Hydraulic motors and pumps	9
8.6.5	Hydraulic oil	9
8.6.6	Hydraulic oil filter	10
8.6.7	Restore levelling of work platform	11
8.7	Electrical system	12
8.7.1	Electrical circuit	12
8.7.2	Stabiliser limit switches and interlock switches	12
8.8	Tightening the screws	13
8.8.1	Tightening the turret screws	13
8.8.2	Tightening the frame screws	14
8.9	Telescopic element clearance and sliding block wear verification	14
8.10	Slewing ring clearance check	15
8.11	Slewing drive greasing	16
8.12	Cleaning	17
8.12.1	Washing	17
8.13	Paintwork inspection	17
9	Demolition and Disposal	
9.1	Demolition	1
9.2	Disposal	2
10	Transport and storage	
10.1	Loading the machine onto a vehicle	1
10.2	Storage	2
11	Support and Warranty	
11.1	After-Sales services and spare parts	1
11.2	Spare parts	1
11.3	Warranty	2
12	Troubleshooting	
12.1	Problems, causes and remedies	1
12.2	List of alarms	4
12.2.1	Reset alarms	6
12.3	S3 system alarm list	7
12.3.1	Reset alarms	15
13	Diagrams and Attachments	
13.1	Wiring diagram	2
13.2	5000V Insulated work platform	3
13.3	Maintenance checklist	5
14	Facsimiles of EC Declaration and Certificates	
15	Optional equipment and accessories	
15.1	Dead-man-control: pedal in the basket on the work platform	1
15.2	5000V Insulated work platform	1



INDEX

GB

15.3	Directable work light	1
15.4	Auxiliary electric motor	2
15.5	Automatic stabilization	4

GB

INDEX



This page intentionally left blank

1

GENERAL INFORMATION

1 General information

1.1 Manufacturer information

CTE S.p.A.



Via Caproni 7, Z.I.
38068 Rovereto (Trento)
Italy



Phone: +39 0464 485050

Fax: +39 0464 485099



Website: www.ctelift.com

e-mail: info@ctelift.com

1.2 Limitations of responsibility

The manufacturer is responsible for the machine in its initial configuration.

The use of non-original spare parts, modification of the machine, installation of any accessories not supplied or authorised by the manufacturer, or performing maintenance operations that do not comply with the instructions in this manual shall relieve the Manufacturer of any responsibility for damage or injury.

The customer shall bear responsibility for ensuring their workers collaborate and have the necessary expertise.

Acceptance of the machine expressly commits the customer to maintain it unaltered and to not remove, move or partially or completely disable the protective devices, guards and any and all other safety devices with which it is equipped.

Any defect that may be discovered must be reported to the manufacturer.

The manufacturer shall hold themselves exempt from all responsibility and obligations for any damage and/or injury caused by the following:

- Use of the machine outside the limits described in this manual.

- Partial or total failure to observe the machine use and maintenance instructions contained in this manual.
- Use by unauthorised and/or improperly trained personnel.
- Failure to observe health and safety and accident prevention legislation or the Highway Code.
- Mistakes during use and maintenance of the machine
- Disabling, modification or removal of the safety and protection devices that are installed
- Lack of maintenance
- Modifications or other work not authorised by the manufacturer
- Use of non-original spare parts or those that are otherwise not appropriate for the model
- Exceptional events and events outside of ordinary and proper use of the machine

It is up to the user to prove if a machine defect is the main and direct cause of an accident.

1.3 Content and scope of this manual

1.3.1 Symbols

For the purposes of personal and material safety, in preparing this document particular symbols have been used to draw attention to dangerous conditions, warnings and other relevant information:



DANGER!

Triangular symbol on yellow background, black border and black symbol.
Indicates the presence of a situation of imminent danger which, unless avoided, could lead to serious injury or even death.
ALWAYS FOLLOW THE SAFETY INDICATIONS ACCOMPANIED BY THIS SYMBOL TO AVOID THE RISK OF SERIOUS PERSONAL INJURY OR DEATH.



CAUTION

Triangular symbol on yellow background, black border and black symbol.
Failure to observe the warnings accompanied by this symbol could cause damage to the machine and/or its components as well as personal injury.



PROHIBITED

Round pictogram on white background and red border with a red stripe across it.
This symbol is used to highlight operations or procedures that are **STRICTLY PROHIBITED**.



OBLIGATORY

Round symbol with blue background and white symbol.

AVVERTENZA

WARNING

Note on key functions or useful information regarding the operation in progress.

1.3.2 Illustrations

The illustrations contained in this document were up to date at the time of publication.

AVVERTENZA

The illustrations are provided purely as a rough guide and may show the machine with its protective devices removed for easier understanding.

1.3.3 Scope of this manual

AVVERTENZA

This document has been prepared pursuant to standards and legislation in force at the time of its publication.

The purpose of this manual is to provide all the information necessary to be able to use and handle the machine in a correct and safe manner according to the use envisaged by the manufacturer.

The manual contains a description of the machine, its technical and functional characteristics, descriptions of the safety and control devices, all information necessary for the operator to use it correctly and safely, the methods for performing checks and maintenance, as well as the information for compiling the check register.

This manual refers exclusively to the machine type and model indicated on the cover.

AVVERTENZA

This manual is not intended to train inexperienced operators or to teach people how to use the machine. All descriptions assume that the machine will only be used by operators trained specifically to operate this type of machine. This manual cannot in any way substitute adequate operator training.

The operator is directly responsible for the machine and its use.

This manual does not contain instructions for maintenance operations, which must be performed only by specialised personnel or by CTE SpA authorised service centres.



CAUTION

Before using the machine, carefully read the manual and be sure you understand all the safety standards and operating instructions.

Contact the manufacturer or the nearest service centre if in doubt.

Correct use and maintenance contribute to the proper operation and longer lifetime of the machine.

1.3.4 Amendments and additions

This manual conforms to standards and regulations in force at the time of marketing the machine and should not therefore be considered inadequate or lacking in the event of amendments or additions due to new legal provisions, updated standards or new acquired experience.

The Manufacturer reserves the right to inform the owner of any amendments or additions deemed necessary for previously marketed products.

To enable this, it is necessary to inform the manufacturer of any change in ownership of the machine.

1.3.5 Composition

This document is divided into 15 chapters, which are subdivided into sections and subsections.

CHAPTER		DESCRIPTION
1	GENERAL INFORMATION	describes the structure and organisation of the manual and provides the manufacturer's identification data
2	SICUREZZA	describes the safety requirements and the main safety standards to observe when using the lifting platform
3	DESCRIPTION AND TECHNICAL DATA	contains the technical data, performance data and technical characteristics of the lifting platform
4	CONTROLS	describes the function of the controls and instruments installed on the lifting platform
5	DISPOSITIVI DI SICUREZZA	lists and describes the characteristics of the safety devices installed on the lifting platform
6	PROCEDURES FOR USE	describes the operating phases and the instructions for use intended for the personnel in charge of operating the lifting platform
7	MANOVRE D'EMERGENZA	specifies the main emergency operations to perform if necessary.
8	MAINTENANCE	contains the main maintenance operations, with an indication of their recommended frequency
9	DEMOLITION AND DISPOSAL	contains the instructions for demolition and the disposal of the materials that make up the platform.
10	TRANSPORT AND STORAGE	contains the instructions for transporting and storing the platform
11	SUPPORT AND WARRANTY	contains the warranty and the instructions to follow for receiving assistance for the machine indicated in this manual
12	TROUBLESHOOTING	describes a series of common problems and indicates their probable causes and possible solutions
13	DIAGRAMS AND ATTACHMENTS	functional diagrams of the machine systems (hydraulic, electric etc.)
14	FACSIMILE OF EC DECLARATION	
15	OPTIONAL EQUIPMENT AND ACCESSORIES	lists the optional devices and describes them

1.3.6 Intended readership

AVVERTENZA

This manual may not in any way replace the specific technical preparation which operators must have previously undergone on similar machines or else which they must undergo under the supervision of qualified personnel.

This manual is written for the persons responsible for performing the following operations on the machine:

- Transport and handling
- Use
- Adjustments
- Cleaning
- Maintenance
- Demolition and disposal



PROHIBITED

It is prohibited for persons to perform operations or work which falls outside their specific areas of expertise and responsibilities.

1.3.7 Conservation

This manual is an integral part of the machine and should be stored with care in the cab dashboard so it can be readily consulted at any moment.

The manual must always accompany the machine along with the CE declaration of conformity, the check register and any other documents relating to the machine, including in the event that it is sold, up until such time as it is removed from service or disposed of.

Make a note of the fabrication number on the cover in order to easily identify the manual.

If the manual is lost or has deteriorated, request a new copy from the manufacturer, quoting the code on the cover or the machine's factory number.



PROHIBITED

Do not remove, tear out or make arbitrary modifications to any parts of this document.

1.3.8 Confidentiality

The technical information (text, drawings and illustrations) contained in this manual are property of CTE S.p.A. and should be considered confidential.

It is strictly prohibited to disclose, reproduce or translate this document, in whole or in part, without written authorisation from CTE S.p.A.

1.4 Glossary

List and meaning of the main terms used in this manual.

TERM	MEANING
Lowering	All operations to move the platform to a lower level.
Working envelope	Space inside which the work platform is designed to operate, within the loads and stresses specified for normal operating conditions. N.B.: Mobile elevating work platforms may have more than one work area.
Joints	Point of articulation between two or more elements that allow for its movement (synonym: hinge).
Rated load	The load for which the mobile elevating work platform has been designed for normal operation. The rated load includes people, tools and materials acting vertically on the work platform. N.B.: A mobile elevating work platform may have more than one rated load.
Load cycle	Cycle that starts from the access position, carries out work and returns to the access position.
Power system	System that transmits an energy or force used to move a part of the platform (hydraulic, electric, pneumatic, etc.).
Wireless control	Means by which the mobile elevating work platform operator's commands are transmitted without any physical connection for at least a part of the distance between the control console and the rest of the control system.
Transport position	Configuration of the mobile aerial work platform established by the manufacturer in which the mobile aerial work platform is designed to be transported to its place of use.
Telescopic element	Two or more hoses which run one into the other, so that the element is extending or retractile (synonym: extension booms or extensions).
Hydraulic extension	Extension or return of a specific element by means of a hydraulic movement.
Manufacturer	The company that manufactures the lifting platform and in some cases also combines it with the vehicle.
Self-revealing failure or fault	A fault or the failure of a component in which the fault or failure is apparent to the mobile elevating work platform operator and that can be detected without the need of diagnostics services. N.B.: The fault or the failure of a component can be evident to the mobile elevating work platform operator: <ul style="list-style-type: none"> – through changes in operating characteristics and/or – visual evidence and/or – noise and/or – other
Machine	The assembly consisting of the mobile platform and the vehicle (or carriage).
Service engineer	A qualified technician trained for carrying out the maintenance.
Authorised service centre	Company with one or more qualified technicians authorised by the manufacturer to carry out extraordinary maintenance and repairs.

TERM	MEANING
Operator	Person in charge of using and checking the lifting platform. An operator is defined as a person who operates, controls, moves and carries out the checks and maintenance described in this manual (excluding the work that has to be carried out by a service engineer or authorised service centre).
Exposed person	Anyone who is entirely or partly inside a hazardous area.
Aerial lifting platform (basket)	Platform equipped with railings and control panel that can be moved under load to the required work position. Authorised personnel stay inside the platform.
Mobile elevating work platform (MEWP)	A mobile machine intended to lift people for carrying out work from within the work platform.
Vehicle-mounted mobile elevating work platform	Mobile elevating work platform in which the chassis is a vehicle and the controls for manoeuvring it are located in the cab of the vehicle.
Mobile elevating work platform (self-propelled)	Mobile elevating work platform in which the controls for manoeuvring it are located on in the work platform.
Access position	Position that allows access to the work platform.
Risk	Result determined by the combination of the probabilities and the degree of seriousness of the possible injuries or possible health damages in a dangerous situation.
Rotation	Circular movement of the work platform around the vertical axis.
Extension (widening)	Distance between the axis of the turret and the outside wall of the work platform.
Load sensing system	System for monitoring the vertical load and vertical forces on the work platform. N.B.: The system includes the measuring devices, the method of mounting the measuring devices and the signal processing system.
Moment sensing system	A system of monitoring the moment acting about the tipping line tending to overturn the mobile elevating work platform.
Wire rope drive system	System that comprises one or more wire rope(s) running on rope drums and or over rope pulleys as well as any associated rope drums, rope pulleys and compensating pulleys.
Chain drive system	System that comprises one or more chain(s) running on chain sprockets and or over chain pulleys as well as any associated chain sprockets, chain pulleys and compensating pulleys.
Lifting	All operations required to move the platform to a higher level.
Movement	Any movement of the chassis with the work platform in a position other than its transport configuration.
Stabilisers	All devices and systems used to stabilise the mobile elevating work platforms by supporting and/or levelling the entire mobile elevating work platform or extending structure, for example jacks, suspension locking devices etc.

TERM	MEANING
Extending structure	Structure that is connected to the chassis and work platform supports. It allows movement of the work platform to its required position. It consists of a telescopic or articulated boom or a combination thereof and may or may not slew on its base.
Chassis	Base of the mobile elevating work platform. It means the carriage in the case of self-propelled machine and the vehicle chassis and the basic structure in the case of a mobile elevating work platform mounted on the vehicle.
Hazardous area	Any area inside and/or near a machine where there is a continuous risk for the safety and health of the persons exposed.

2

SAFETY

2 Safety

2.1 Reference standards and directives

The lifting platform was designed and constructed in compliance with the following standards and directives where applicable:

DIRECTIVE	DATE	SUBJECT
2006/42/EC	17/05/06	DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL dated 17 May 2006 relating to machinery and that modifies Directive 95/16/EC (recasting).
2014/30/EU	26/02/2014	DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND COUNCIL dated 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast).
2014/35/EU	26/02/2014	DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND COUNCIL dated 26 February 2014 on the harmonisation of the laws of Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
2000/14/EC	08/05/2000	Directive 2000/14/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL dated 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.

The mobile elevating work platform was built mainly referring to the standards and technical specifications shown below:

STANDARD	ED.	TITLE
UNI EN 280:2015	October 2015	Mobile elevating work platforms - Design calculations - Stability criteria - Construction - Safety - Examinations and tests.
UNI EN ISO 12100:2010	November 2010	Safety of machinery. General principles for design. Risk assessment and risk reduction.
UNI EN ISO 13857:2008	May 2008	Safety of machinery. Safety distances to prevent danger zones being reached by the upper limbs/Safety distances to prevent danger zones being reached by the lower limbs.
UNI EN 349:2008	November 2008	Safety of machinery -- Minimum gaps to avoid crushing of parts of the human body.
UNI EN ISO 4413:2012	February 2012	Hydraulic fluid power - General rules and safety requirements for systems and their components.
IEC EN 60204-1:2006	2006	Safety of machinery - Electrical equipment of machines - Part 1 General requirements
UNI EN ISO 13850:2008	November 2008	Safety of machinery - Emergency stop - Principles for design.
ISO 13849-1:2008	November 2008	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.
EN ISO 13849-2	March 2013	Safety of machinery - Safety-related parts of control systems - Part 2: Validation

AVVERTENZA

The elevating platform was built referring to the standards and technical specifications indicated in standard EN 280: 2015.

2.2 Intended and improper use



CAUTION

The intended use is that of a machine, **DESIGNED EXCLUSIVELY TO LIFT PERSONNEL** and their work tools, in compliance with the limits set forth by the technical data.

The elevating work platform can be used for working at height whilst remaining inside the platform, including:

- painting and routine or extraordinary maintenance of buildings
- maintenance of industrial plant and factories
- maintenance of electrical lines and the installation of electrical systems
- pruning

the limitations on use are described in the manual

Any mode or condition of use that does not fall within the limitations of use described in this manual and not intended by the manufacturer is forbidden.



DANGER!

- It is forbidden to exceed the limits indicated in the technical data.
- It is forbidden to use the lifting platform in a manner other than that for which it was intended and designed.

2.2.1 Non-permitted use



DANGER!

The manufacturer declines all responsibility for damage to property and/or injury to persons caused by failure to observe the following warnings.

IT IS STRICTLY PROHIBITED TO:

- lift loads or perform oblique lifts.
- use the lifting platform to push and/or pull objects.
- take accessories or pieces of equipment onto the platform that are classified as dangerous (e.g. flammable, toxic, explosive materials etc.) because of their chemical-physical characteristics.
- load the platform when it is raised.

2.3 Obligations and requirements



DANGER!

Failure to comply with safety standards could cause serious injury or even death.



CAUTION

Applicable national standards and legislation, safety standards set down by the employer and those relating to the work area should all be observed. Read and ensure you have understood the safety standards before reading the following chapter.



DANGER!

The manufacturer declines all responsibility for damage to property and/or injury to persons caused by failure to observe the following warnings.



CAUTION

Tampering with PPE and/or removing the lead-sealed and painted seals is strictly prohibited.

2.3.1 Electrocution hazard



This machine is **NOT** electrically insulated and does **NOT** provide protection from contact with or when in proximity to electric power lines.

Observe the minimum safety distances required by the current national regulations or, in their absence, refer to the minimum distances indicated in the table at the side (ref. ISO 18893: 2014).

Voltage field (phase to phase)	Minimum safe distance (m)
0 to 50 kV	3
51 to 220 kV	4
221 to 500 kV	5
501 to 750 kV	10
751 to 1,000 kV	13

For Italy, as regards safe distances from electrical lines, the provisions of current legislation apply. (reference to tab. 1, attachment IX, Italian Leg. Decree 81/2008, as amended).

Nominal Voltage (kV)	Distance (m)
≤ 1	3
$1 < \text{Nominal Voltage} \leq 30$	3.5
$30 < \text{Nominal Voltage} \leq 132$	5
> 132	7



DANGER!

- Do not use the machine as a ground for welding.
- Never use the machine during storms or in the presence of lightning.



DANGER!

- It is mandatory to observe the minimum safe distance from live aerial equipment and lines.
- Clearance should be maintained, bearing in mind maximum extension of the machine's boom, as well as swaying of the conductors due to wind.
- Failure to comply with the minimum safety distances can cause death or serious injury.

2.3.2 Tipping hazard



Before using the machine, make sure that the ground is able to support the weight of the machine and withstand the pressure exerted by the stabilisers. Maximum load is specified on the labels attached to the stabilisers and in the manual's technical specifications.

Position the machine only on a level and stable surface.

IT IS STRICTLY PROHIBITED TO:

- Stabilise the machine on soft, muddy, frozen or slippery ground or in the immediate vicinity of holes, ditches or manholes.
- Lean the platform on other machines or structures.
- Exceed the maximum permissible inclination of the chassis. The maximum chassis inclination is specified in the technical specifications and on the machine plate. **Do not operate on ground with a greater than 3° slope.**
- Exceed the maximum load on the work platform and the maximum number of persons allowed (table of load quantities in the technical specifications and on the machine).

- Overload the raised platform. If parts have to be dismantled at height, check their weight to avoid exceeding the load.
- Use the machine at winds exceeding 12.5 m/s (45 km/h) or when there are gusts of wind.
- Increase the surface area or load of the platform. Increased surface exposed to the wind decreases machine stability.
- Use the machine in unfavourable weather conditions, such as storms, snow and mist.
- Push or pull any object outside the platform. **The maximum permissible manual force which may be applied is 40 daN.**
- Modify, replace or disengage any components that affect the safety and stability of the machine.
- Modify or alter the work platform. Fittings for holding down equipment or other material on the platform or guard rail increase the weight and exposed surface area of the platform and load.
- Attach metal wires, cables or similar objects to the platform. These could become trapped or hook onto a fixed external object.
- Modify, remove or replace any components that could reduce the overall weight or stability of the machine base, such as ballasts, deflating the tyres, removing batteries, spare wheels, etc.
- Position or attach loads which jut out from any part of the machine.
- Use the platform as a crane (applying loads outside the platform and using the machine to raise suspended loads).
- Use the machine as a goods lift (raising loads on the platform).
- Use the machine as a passenger lift (moving persons from one floor to another).
- Use the controls on the platform to free the platform when blocked, obstructed or impeded in any other way by an adjacent structure preventing normal movement. **Request the assistance of qualified personnel.**
- Tip the vehicle cab (this could compromise stability).
- Enter the vehicle cab (this could compromise stability).

2.3.2.1 BEAUFORT wind scale

Even if wind speed can be measured with reasonable accuracy using an anemometer, which expresses a value in knots or kilometres per hour, it is possible to estimate the wind speed empirically using the Beaufort Scale by observing the effects of the wind in the surrounding environment (its effects on the sea and/or land).

Below is an excerpt from the BEAUFORT scale.

Force	Name of the wind at a height of 10 m above flat, open land	Nm/h Km/h	Description of effects on land	Description of effects offshore
0	Calm	0-1 0-1	Calm, smoke rises vertically	Sea like a mirror
1	Light air	1-3 1-5	Direction of wind shown by smoke drift, but not by wind vanes.	Ripples with the appearance of scales are formed but without foam crests.
2	Light breeze	4-6 6-11	Wind felt on face, leaves rustle, ordinary vanes begin to move	Small wavelets, still short but more pronounced. Crests have a glassy appearance and do not break.

Force	Name of the wind at a height of 10 m above flat, open land	Nm/h Km/h	Description of effects on land	Description of effects offshore
3	Gentle breeze	7-10 12-19	Leaves and small twigs in constant motion; wind extends light flag.	Small wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.
4	Moderate breeze	11-16 20-28	Raises dust, leaves and loose paper; small branches are moved.	Small waves, becoming longer; fairly frequent white horses.
5	Fresh breeze	17-21 29-38	Small trees in leaf begin to sway; crested wavelets form on inland waters.	Moderate waves, taking a more pronounced long form; many white horses are formed (chance of some spray).
6	Strong breeze	22-27 39-49	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty.	Larger waves begin to form.
7	Near gale	28-33 50-61	Whole trees in motion; effort needed to walk against the wind.	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.

2.3.3 Risk of falling



IT IS OBLIGATORY TO:

- Wear suitable fall prevention devices conforming to current standards.
- Attach safety harness cables to the connection provided on the work platform.
- Keep the platform clear of debris.
- Check that the access gate to the work platform is properly closed before using the platform.

IT IS STRICTLY PROHIBITED TO:

- Attach personnel who are working at height, outside the work platform, to the safety cable attachment on the platform.
- Climb onto/sit on the work platform railing.
- Use ladders, scaffolding or similar items inside the work platform for climbing.
- Lean ladders on the machine structure.
- Get off the platform at height.
- Climb down the boom.
- Jam the access gate open.

2.3.4 Collision hazard



- Check that there are no overhead obstructions or other potential hazards within the working envelope.
- When moving the boom, constantly check the working envelope in order to avoid hitting obstacles with the boom or work platform.
- Use extreme caution when holding the guard rail to prevent any risk of crushing.
- It is recommended that operators wear a helmet when operating the machine;
- Lower the boom only if the area below is completely free from personnel and/or obstructions.

2.3.5 Work atmosphere hazards

IT IS OBLIGATORY TO:

- always use the machine in a suitably ventilated area to avoid the risk of carbon monoxide poisoning;
- Use the machine at an ambient temperature of between -10°C and +40°C.

AVVERTENZA

Contact the manufacturer if you wish to operate the machine outside the temperature range indicated.

IT IS STRICTLY PROHIBITED TO:

- Use the machine in hazardous atmospheres or in the presence of inflammable or explosive gas and materials or in explosive atmospheres.
- Start the engine if there is an odour or trace of gas, petrol, diesel fuel or other explosive substances.
- use the machine with insufficient lighting for the work to be carried out or for the machine moved safely.
- use the machine for recreational purposes.
- The lifting platform and relative electrical equipment **MUST NOT** be installed on surfaces that transmit vibrations and in environments where there is a danger of impact with other mechanical units.

2.3.6 Machine hazards

- Carry out a thorough pre-start check and test all the functions before each working shift.
- Mark and immediately remove from service in the event of any malfunctioning controls or faulty safety devices.
- **Never** use a machine that is damaged or faulty.
- Never use the machine if there is leakage of hydraulic oil or air. Leakage of hydraulic fluid or air could cause skin damage and burns.
- Ensure that all maintenance checks have been carried out, as specified in this manual.
- Ensure that all the labels are in place and that they are legible.
- Ensure that the manual is intact, legible and kept in the special container in the cab.
- The machine is equipped with an internal combustion engine that generates noise, the values of which are shown in Chapter 3.

2.4 Operator Definition

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 Characteristics

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

Mental characteristics

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

Operators must be aware that anything other than an optimal psychophysical condition can cause injury to themselves and to other persons, animals and damage to property present in the working (manoeuvring) envelope.

Extraneous personnel 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 18 and over.

It is forbidden for the lifting platform to be used by subordinate workers, employed as apprentices.

THE employer must ensure that:

- The operator fulfils all vocational requirements for running the machine;
- The operator is adequately qualified and trained for using this type of machine;
- The operator has read and understood the manual.
- the operator has the specific authorisation if required by law (in Italy, this is mandatory).

AVVERTENZA

The manufacturer is available to provide courses specifically for operators.

2.4.1 The role of the operators

The lifting platform can only be used by two trained operators, with their roles established in advance:

Operator on the platform	Has the task of operating the lifting platform from the controls on the work platform itself.
Operator on the ground	Has the task of checking the area beneath the working position, the stability of the platform and operating the emergency controls of the aerial platform.



CAUTION

The operators should be suitably instructed on the use of the lifting platform. It is particularly important that the operator on the ground preventively knows the exact position and use of controls for emergency manoeuvres.

2.4.2 Training and importance of the procedures

All operators in charge of positioning, use, routine maintenance and machine operation need to attend a training course, to ensure:

- the correct positioning of the vehicle in the chosen place of operation
- safe use of the platform during the normal operating process
- safe performance of all emergency procedures
- that the ordinary maintenance procedures indicated in this manual by the manufacturer are carried out properly.



DANGER!

Before starting to work, the operator should ensure that all safety conditions that will prevent any accidents are met.

2.4.3 Operators' tasks

FUNCTION	ASSIGNED TASKS
Operators	<ul style="list-style-type: none"> - If work is to be carried out on construction sites or industrial areas, you must find out from the person in charge of safety about any dangers there are in the area in which it is intended to use the lifting platform and any dangers that may arise from its use. - Choice of vehicle parking place and performance of the lifting platform commissioning procedure (engagement 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 delimitation of the working 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 by 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 lifting platform return operations for safe transportation. - Visual inspection of the lifting platform to look for any anomalies.
Driver of the vehicle	<ul style="list-style-type: none"> - Verification of the rest position of the lifting platform in order to prevent any risk situations arising during transport.
Operator in charge of routine maintenance	<ul style="list-style-type: none"> - Inspect the condition of the lifting platform, especially as regards wear and tear. - Routine maintenance as indicated by the manufacturer in this manual. - Notification of unforeseen circumstances (such as wear, yielding, breakages, etc.) due to unforeseeable causes and therefore not dealt with in this document. - Supervision of the recording of operations performed in workshops authorised by CTE.

**Supervisor
(understood
as being the
person in charge
of safety in the
work site or
industrial area)**

- informs the operator assigned to operate the lifting platform about:
 - » the hazards present in the operating area and the hazards that may be caused by the use of the lifting platform;
 - » the possible presence of persons in the hazardous area (operating area) who, for particular tasks, cannot abandon their workstation;
 - » the possible release of hazardous substances into the air or ground that could affect the safe operation of the platform;
 - » the compulsory safety devices to be used in the work area concerned.

2.4.4 Summary of operator standards

- The use of the equipment is restricted exclusively to trained personnel.
- Never exceed the maximum permissible load.
- The use of PPE to protect against falls from high up is required;
- Operators must comply with the use and maintenance instructions provided by the manufacturer.
- Operators must comply with the current accident prevention regulations when working on the platform;
- Do not use the platform if it is malfunctioning;
- Check that the safety devices are working before using the platform.
- Ensure that the truck is perfectly level by using the stabilisers provided.
- Fully extend the stabilisers and position them in order to take the weight off the suspension system of the truck.
- Never move the truck with the platform raised.
- Carrying out work at a distance which is lesser than the safety clearance from uninsulated electrical lines indicated in the tables (see sec. 2.3.1) is prohibited;
- Never tie cables, ropes or other items to the platform.
- Never place ladders, stools or similar equipment on the platform in order to extend your reach.
- Manoeuvre the controls systematically in a slow and regular manner. Never change direction suddenly and always stop in neutral.
- Before manoeuvring, always check that there are no obstacles or persons in the way.



CAUTION

The manufacturer shall bear no liability if the above standards are not complied with.

2.5 Road traffic

This aerial work platform is fitted on a vehicle approved for road circulation.

The driver should have a suitable and valid driving licence for driving the vehicle on a public road.

2.5.1 Checks and tests before driving

- Ensure that all parts of the vehicle are in perfect working order (brakes, lights, rear-view mirrors, tyres etc.).
- Check the level of fuel, lubricating oil and cooling liquid.
- Check that the platform and booms are fully retracted.
- Check that the stabilisers are fully retracted.
- Check that the power take-off is not applied.
- When driving, always respect the speed limits and ensure vehicle speed is suitable for road/traffic conditions.
- Check that the route is not too bumpy and uneven.
- Always bear the machine's dimensions in mind when driving (consult the technical specifications).



CAUTION

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

2.6 Safe workplace

2.6.1 Type of workplace

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

- Open-air places accessible 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 areas accessible to the public (e.g. shopping centre entrances, sports centres, inside exhibition centres etc.)
- Open industrial areas (e.g. maintenance work on infrastructure such as barns, elevated floors etc.)
- Closed industrial areas (e.g. factory premises, hangars etc.)
- Open areas used for construction sites (e.g. construction yards)
- Inside airports
- On shipping docks

2.6.1.1 Supporting surface

The surface on which the vehicle is positioned must be compact and not subject to sinking: concrete, asphalt and compacted ground (construction sites) are preferable.

Should the tar surface overheat, or the ground not be sufficiently compact, resting plates between the ground and the stabiliser to prevent the latter from sinking.

2.6.1.2 Production areas or public areas

When operating inside production areas (construction sites and industrial sites) take special care when positioning the vehicle.

Wherever possible, choose the operating area (or working envelope) of the lifting platform also according to the following suggestions:

- This should be a place large enough to contain the entire structure, so as not to create any dangerous situations during the operations with the lifting platform boom
- It should not obstruct escape routes, emergency exits, pedestrian crossings and thoroughfares (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 pieces of equipment that are close by (such as travelling cranes, conveyors etc.) unless the equipment is not disabled for the entire period in which the lifting platform is used.

2.6.1.3 Positioning the machine

The position of the machine, relative to the position of the user, must allow the work to be carried out successfully whilst maintaining safety within the working envelope.

During this phase, the accessibility of the controls and the visibility of the applicable areas should be checked, with particular reference to positioning, operation and retraction.

2.6.1.4 Delimitation of the operating area

Before operating the lifting platform, always first check the environmental conditions and visibility and arrange suitable signs to demarcate the operating area such as:

- Barriers
- Tapes delimiting the area
- Signage (prohibition, warning, danger etc.)

2.6.2 Danger areas

The operating envelope (**A** and **B**) of the boom when completely horizontally extended is to be considered a danger zone and as such, persons shall not be allowed to remain within it.

Cordon off this area with barriers, construction site tape, chains, etc.

Use appropriate signals for operations on roadworks sites.

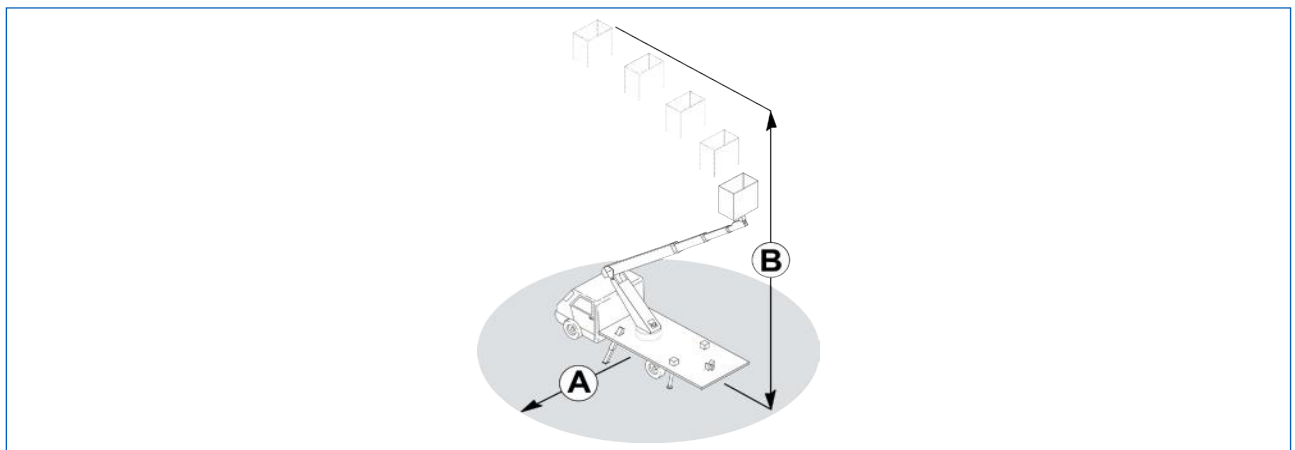


Fig.

2.1

A Maximum outreach of the aerial work platform (AWP)

B Maximum working height

AVVERTENZA

Diagram is indicative only. For data and all measurements, refer to Chapter 3.

2.6.3 Risks for exposed persons

The dangers caused in the situations described in the table below occur when:

- The person does not respect the safety barrier and enters the danger zone
- The operator forgets to delimit the boundary of the hazardous area and to affix the no entry sign in the hazardous area

Cause	Danger
Failure to maintain the safe distance	Crushing Shearing
Tools falling from elevated positions	Impact Crushing
Impact with moving parts	Falling on the ground or from height
Unsuitable operator position (between the lifting platform boom and fixed or moving obstacles)	Crushing Shearing
Movement of the vehicle during the positioning operation in the workplace	Running over

2.6.4 Electrical tolerances

The electrical equipment of the lifting platform was designed and built with reference to the Harmonised Standard EN 60204-1.

The electrical equipment is suitable for use in the surrounding environment and under the following working conditions.

2.6.5 Ambient air temperature

The electrical equipment is designed to operate correctly at air temperatures between -10 °C and +40 °C.

2.6.6 Humidity

The electrical equipment will work correctly in all weather conditions and levels of relative humidity.

2.6.7 Noise level

Airborne noise is produced by the engine of the vehicle that is approved for use on roads.

Sound detection carried out on the platform 1.50 m above the platform during ascent, descent, rotation and extension, detected sound pressure levels no greater than those listed in chapter 3.

2.6.8 Vibrations and crashes

The lifting platform and relative electrical equipment **MUST NOT** be installed on surfaces that transmit vibrations and in environments in which there is a danger of impact with other mechanical devices.

The machine does not produce vibrations that could be considered hazardous for the operator.

Measurements carried out under the most unfavourable conditions of use have ascertained that:

- the total value of vibrations to which the hand-arm system is exposed is less than 2.5 m/sec²
- the weighted root mean square acceleration value to which the main body is exposed is less than 0.5 m/sec².

2.6.9 Gas emissions

The vehicle's combustion engine emits exhaust gases.
The vehicle's battery emits hydrogen when recharging.

2.6.10 Contaminant agents

The mechanical components of the lifting platform and its electrical equipment are properly protected against the ingress of solid and liquid substances as established by the allowed use of the lifting platform and its usage environment.

The units making up the lifting platform **DO NOT** have protections against possible contaminant agents such as: special powders, acids, corrosive gases, salt etc.

If the operator detects a contaminant agent that could cause the machine to malfunction, s/he must immediately call a CTE assistance centre to verify its suitability for use.

2.6.11 Ionising and non-ionising radiation

The electrical equipment **DOES NOT** have additional protection against radiation (microwaves, ultra violet rays, laser, X-rays).

If the machine is likely to be frequently exposed to these kinds of radiation, additional measures must be taken to prevent the electrical equipment from malfunctioning and insulation from quickly deteriorating.

2.6.12 Lighting

Use the lifting platform in areas with proper natural or artificial lighting.



CAUTION

DO NOT use the lifting platform when there is insufficient lighting (at night, in dense fog or indoors with no artificial lighting).

If you have to operate in poorly lit areas, illuminate the area with devices installed on columns, connected to power supplies external to the machine. In this case, do not shine the auxiliary lighting equipment directly towards 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.

2.7 Personal protective equipment (PPE)

2.7.1 Harness system



OBLIGATORY

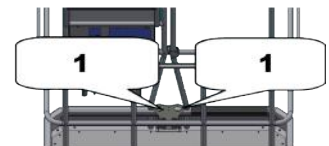
All the persons occupying the work platform must wear an appropriate harness system linked to the dedicated anchorage point.



The work platform is fitted with two anchorage points for the connection of a restraint system. Each anchorage point is sized for a static stress of 3 kN.

Point 1:

Anchorage point of restraint system (there are 2 anchorage points on the platform).



All the occupants the work platform must wear an appropriate fall protection system comprised of a full body harness compliant with Standard EN 361, fitted with chest and/or backconnection and restraint or positioning adjustable lanyard (EN 354/EN358) and 2 connectors (EN 362) of a shape and size suitable for connection to the ends of the lanyard.



Note: the pictures above are provided purely as examples.

The lanyard must be adjusted as short as possible so as to hold the body inside the work platform. This assembly should not be regarded as a fall arrester, however, it prevents falls.

The hook point inside the work platform is not to be considered an anchorage point for fall arrester systems, but it is a restraint point as it has been designed to hold back the person inside the work platform.

The use of fall prevention systems foresees a mandatory training.

Please refer to the instructions for use provided by the manufacturer of the harness system components for the check, use and adjustment of the system.



DANGER!

It is prohibited to use the anchorage point on the platform to connect fall arrest systems.



OBLIGATORY

Use only devices that are well kept and in good working order. Moreover, the devices must be approved and bear the conformity CE-mark. Please refer to the manual provided by the manufacturer for the use and maintenance of the devices.

2.7.1.1 Additional personal protective equipment



In addition to the harness system, the use of the aerial work platform foresees the use of a safety helmet for overhead works with chinstrap (EN 397) and footwear for professional use (EN 346).

Other equipment may be required depending on the type of job or environment, such as: gloves, goggles, earmuffs etc. The requirement for and type of PPE must be evaluated by the employer or site manager.

2.8 Residual risks

Mechanical risks:

- Risk of crushing feet when stabilising the machine.
- Risk of crushing limbs by boom joints during the closing process.

The areas of risk are indicated with labels (see Chapter 3).



GB

Chapter 2
SAFETY



This page intentionally left blank

3

DESCRIPTION AND TECHNICAL DATA

3 Description and Technical Data

WARNING

The technical data shown in this chapter refers to a machine with standard equipment. Any changes and/or amendments to this data because of the presence of optional equipment and/or accessories are documented in Chapter 15.

3.1 General description of the machine

The **B-lift 18 HV** elevating work platform consists of a frame bolted to the chassis of the vehicle. The upper part of the frame consists of a slip resistant aluminium platform. There are 4 stabilizers fastened to the chassis, two front stabilizers on moved beams and two rear stabilizers on fixed beam. They are positioned on the ground hydraulically and are equipped with ground-contact and stabilizer-closed sensors.

The stabilizers are moved using a manually operated hydraulic distributor.

The rotating turret is fixed to a turntable that is mounted on the chassis. The turret rotation, $\pm 320^\circ$, is constantly monitored by the software that prevents the continuous rotation of the elevating work platform by limiting it to $+320^\circ$. It only allows it to return to its starting point.

A telescopic arm, formed by 3 elements (one fixed and two extensible) is fixed to the turret. The telescopic arm is moved by a hydraulic cylinder. The lowering of the telescopic arm is stopped when it is:

- in the way of the vehicle cab, only allowing it to be moved away from the area.
- in correspondence with the stabilizers, only allowing it to be moved away from the area.

The work platform, made of aluminium, is anchored to the telescopic arm. It is also equipped with a hydraulic cylinder operated rotation device $55^\circ +55^\circ$.

The machine is moved by proportional electro-hydraulic controls.

The control station is located on the work platform.

The hydraulic devices are powered by the vehicle's internal combustion engine via a hydraulic pump driven by the mechanical power take-off (PTO).

The electrical power for the controls is supplied by the vehicle's battery.

The controls, the mode of operation and the devices installed on the machine are described in the following pages.

3.1.1 Classification

This machine has been designed to lift and move people and equipment within the platform's (**AWP**) maximum permissible load to positions located within the working envelope.

The platform should only be accessed on the ground via the gate.

The limitations on use are described in this manual. Any mode or condition of use that does not fall within the limitations of use described in this manual and not intended by the manufacturer is forbidden. The machine has been designed for an expected 100,000 work cycles and a heavy work regime (e.g. 10 years, 50 weeks a year, 40 hours a week, 5 cycles an hour).

The machine should be fully serviced and inspected by the manufacturer within the set number of work cycles. In the event of particularly heavy use, the machine should be serviced sooner.

The machine should be inspected every 1,000 hours and serviced every 5,000 hours.

3.2 Direction

No.	DESCRIPTION
A	Upper
B	Right-hand side
C	Rear

No.	DESCRIPTION
D	Bottom
E	Left-hand side
F	Front

The following diagrams illustrate the references and the convention used to identify the machine's stabilizers.

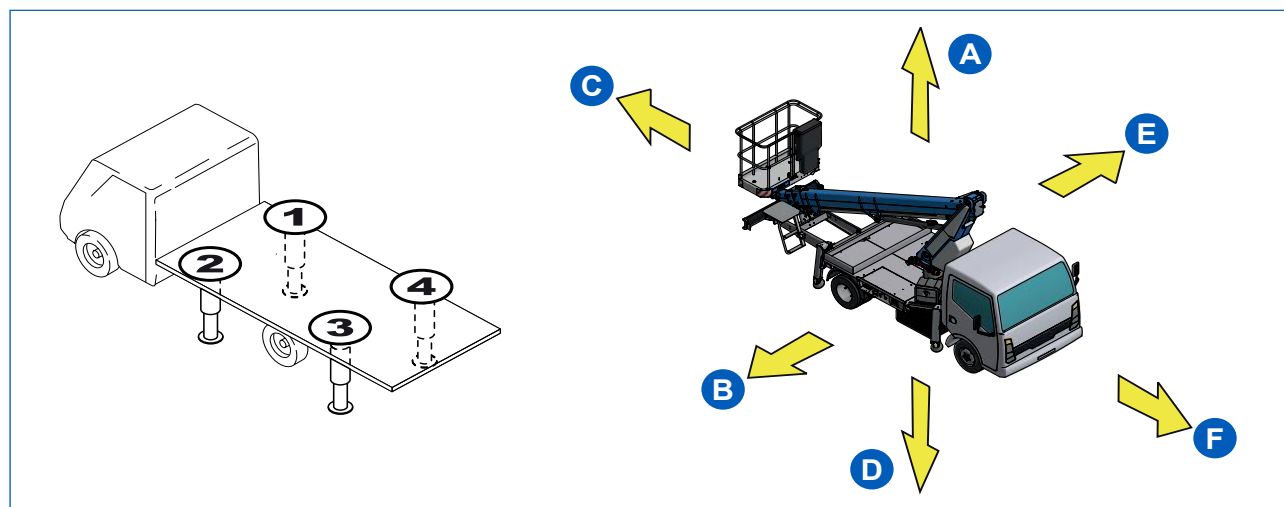







Fig. 3.1

3.3 Identification and CE marking

Machine:	Mobile elevating work platform (PLE)
Model:	B-LIFT
Type:	18 HV
Year of construction:	Riportato sulla targhetta CE
Manufacturer:	CTE S.p.a. Via Caproni, 7 - Z.I. - 38068 ROVERETO (TRIENT) - Italien
Identification plate:	On board, riveted on the turret, there is the identification plate reproduced in the picture.
Punch marks:	The factory number on the identification plate is also stamped on the turret.

WARNING

The vehicle gives the manufacturer's chassis number.
Consult your vehicle owner's manual for the location.

		FABBRICANTE/MANUFACTURER: CTE S.p.A. Via Caproni, 7 - 38068 Rovereto (TN) - ITALY Tel +39 0464 485050 - Fax +39 0464 485099		
PIATTAFORMA DI LAVORO MOBILE ELEVABILE / MOBILE ELEVATING WORK PLATFORM				
MODELLO: MODEL:	TIPO: TYPE:			
NUMERO DI FABBRICA FABRICATION NUMBER	ANNO DI COSTRUZIONE YEAR OF CONSTRUCTION			
PORTATA MASSIMA RATED LOAD:	kg	COMPRESO N. INCLUDING N.	PERSONE E kg PERSONS AND kg	ATTREZZATURA EQUIPMENT
MASSIMA ALTEZZA DAL SUOLO MAXIMUM HEIGHT FROM THE GROUND	m	AL PIANO CALPESTIO PIATTAFORMA AT WORK PLATFORM FLOOR		
SBRACCIO MASSIMO MAXIMUM OUTREACH	m	PARAPETTO PIATTAFORMA GUARD-RAILS WORK PLATFORM		
SOLLECITAZIONE MANUALE MASSIMA CONSENTITA MAXIMUM ALLOWABLE MANUAL FORCE	N			
MASSIMA VELOCITA' DEL VENTO CONSENTITA MAXIMUM ALLOWABLE WIND SPEED	m/s			
PRESSIONE MASSIMA IMPIANTO IDRAULICO MAXIMUM PRESSURE HYDRAULIC EQUIPMENT	bar			
MASSA A VUOTO COMPRESO VEICOLO NON LOADED MASS WITH VEHICLE	kg			
INCLINAZIONE MASSIMA AMMISSIBILE DEL TELAIO: MAXIMUM ALLOWABLE INCLINATION OF CHASSIS:	 °  °  °			
ALIMENTAZIONE ELETTRICA ESTERNA EXTERNAL ELECTRIC POWER	V	Hz		
○		CODE ○		

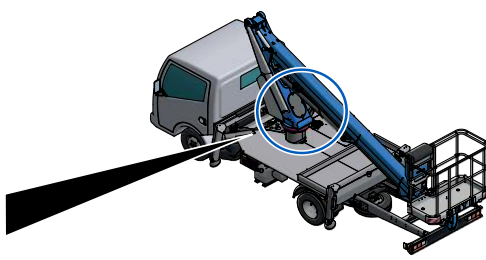


Fig.

3.2

3.4 Description of main units

No.	DESCRIPTION
1	Cab panel
2	Power take-off button
3	Turret
4	Front stabilizer
5	Box for ground control panel
6	220V outlet
7	Ground electrical panel
8	Stabilizer control levers
9	Rear stabilizer
10	Telescopic extension
11	Basket support plate

No.	DESCRIPTION
12	Platform rotation cylinder
13	Elevating work platform
14	Control board on work platform
15	Extension cylinder
16	Boom
17	Boom lifting cylinder
18	Emergency controls distributor
19	Turntable
20	Rotation system

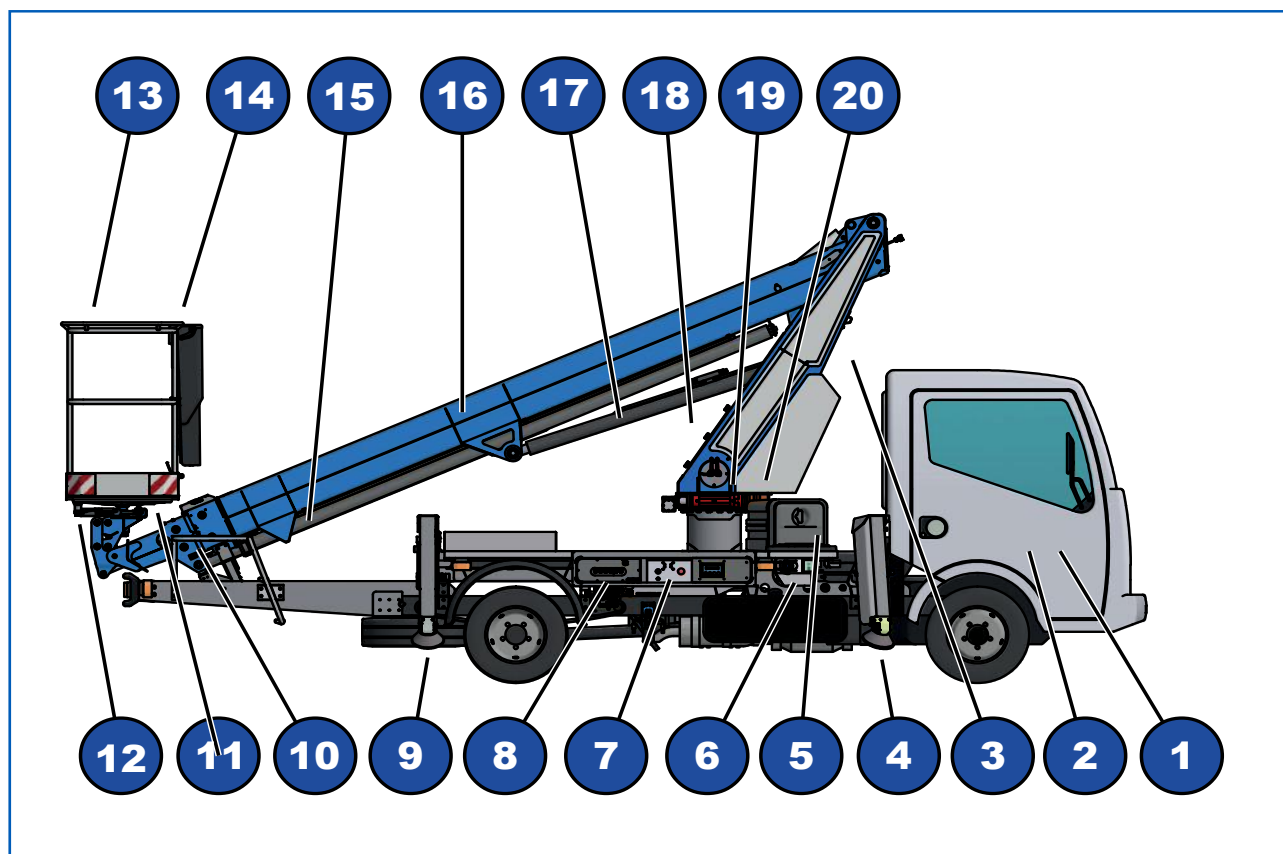
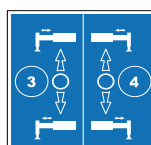
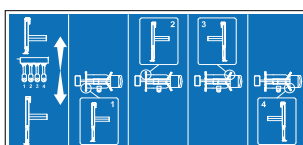
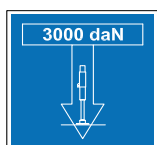
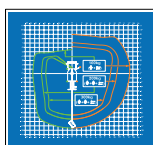
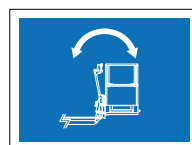
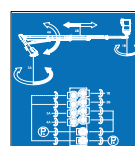
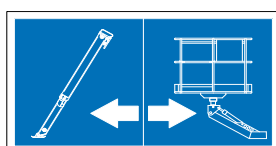
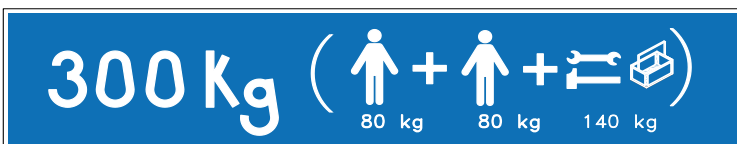
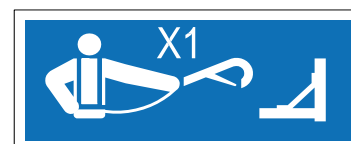
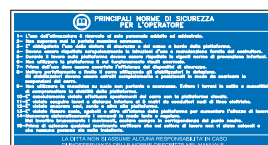
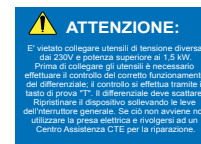
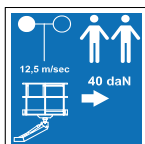
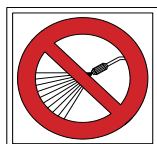


Fig. 3.3

WARNING

The picture shows one possible configuration of the machine, which may vary.

3.5 Main pictograms



3.6 Technical data

3.6.1 Technical data sheet

Maximum platform load	300 kg (2 people and 140 kg of equipment)
Maximum platform height	16.30 m
Maximum working height	18.30 m
Maximum outreach	12.50 m
Maximum permitted inclination of ground	3°
Maximum permitted inclination of chassis	0°
Maximum tolerated wind speed	12.5 m/sec
Turret rotation	320° +/-
Levelling of work platform	Hydraulic parallelogram
Rotation of work platform	55° right + 55° left
Dimensions of work platform	1400 x 700 x 1100 mm
Maximum permitted lateral manual force	40 daN
Electrical system voltage	12 V
Controls	Proportional electro-hydraulic
Hydraulic oil reservoir capacity	30 l
Hydraulic system oil - ARNICA ISO VG 32	40 l
Hydraulic system oil - RENOLIN MR 520	40 l
Grease for turret gearbox	NIPLEX EP1
Pivot grease	NIPLEX EP1
Grease for telescopic elements	NIPLEX EP1
Chain grease	NIPLEX EP1
Chain tension:	
3rd boom extension	4 N.m
3rd boom retraction	4 N.m
Hydraulic system:	
Maximum working pressure AS - HS	190 bar
Maximum working pressure R	200 bar
Overall weight	3.2 t
Maximum pressure of stabilizer on ground	3000 daN
Centre distance between stabilizer plate pins (max)	3470 mm
Centre distance between stabilizer plate pins (min)	2040 mm
Centre radius distance between stabilizer plate pins (max)	3280 mm
Centre radius distance between stabilizer plate pins (min)	2870 mm

WARNING

For any other data, please refer to the “technical features for the MEWP and inspection logbook” booklet supplied and which is an integral part of the machine.

3.7 Dimensions

WARNING

The overall dimensions vary according to the vehicle in which the MEWP is installed. For further information, please refer to the “technical features for MEWP and the inspection logbook” booklet supplied and which is an integral part of the machine.

DAILY 52Q

Dimensions in running order (data refers to the vehicle illustrated)

Length in running order	6890 mm
Width in running order	2230 mm
Height in running order	3037 mm

Dimensions of the stabilized vehicle (data refers to the vehicle illustrated)

Length	6890 mm
Width of stabilized vehicle (max)	2386 mm
Width of stabilized vehicle (min)	2364 mm

ALL BASKET

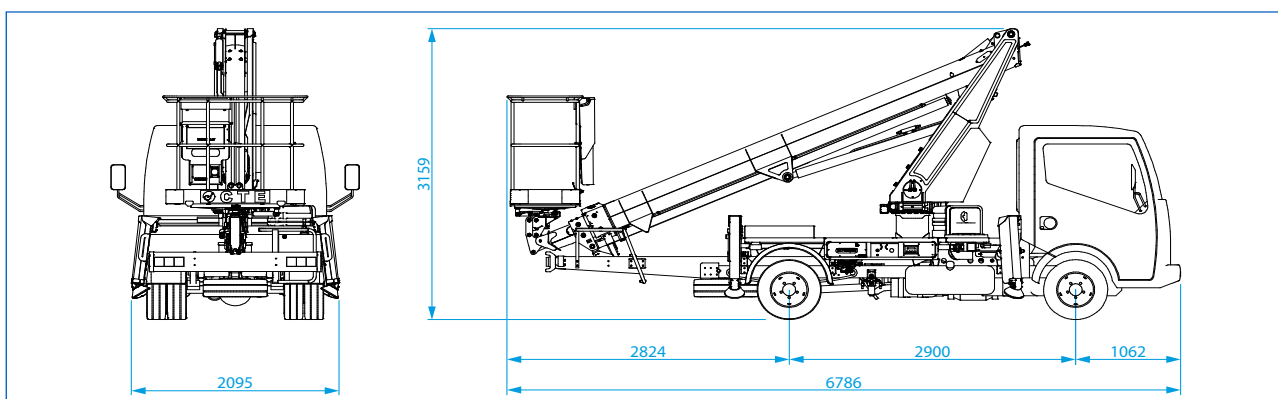


Fig. 3.4

VTR BASKET

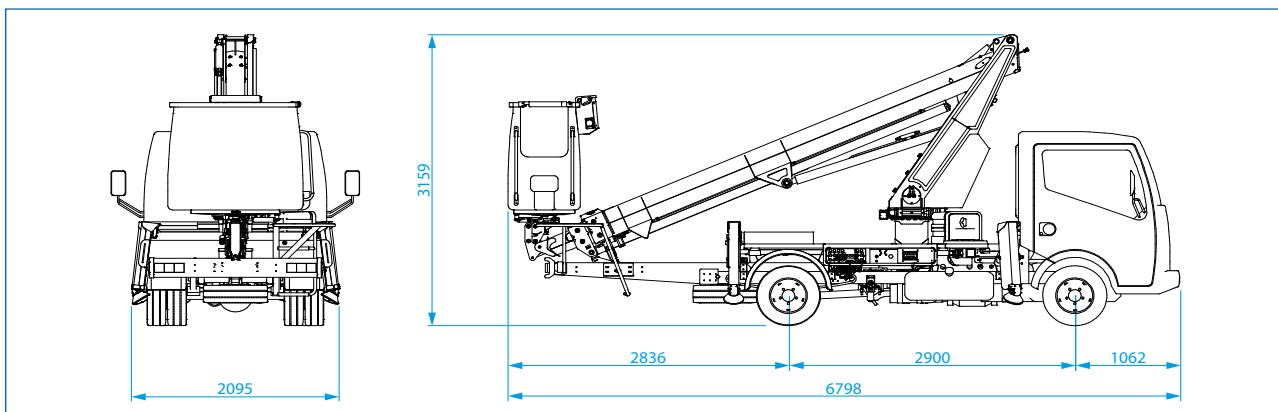


Fig. 3.5

3.8 Working envelope

3.8.1 Plan view of work area

Machine configuration with stabilizers in shape.

The following diagram shows the maximum permissible load in relation to the outreach and the angular position of the turret.

DAILY 52Q ALL BASKET

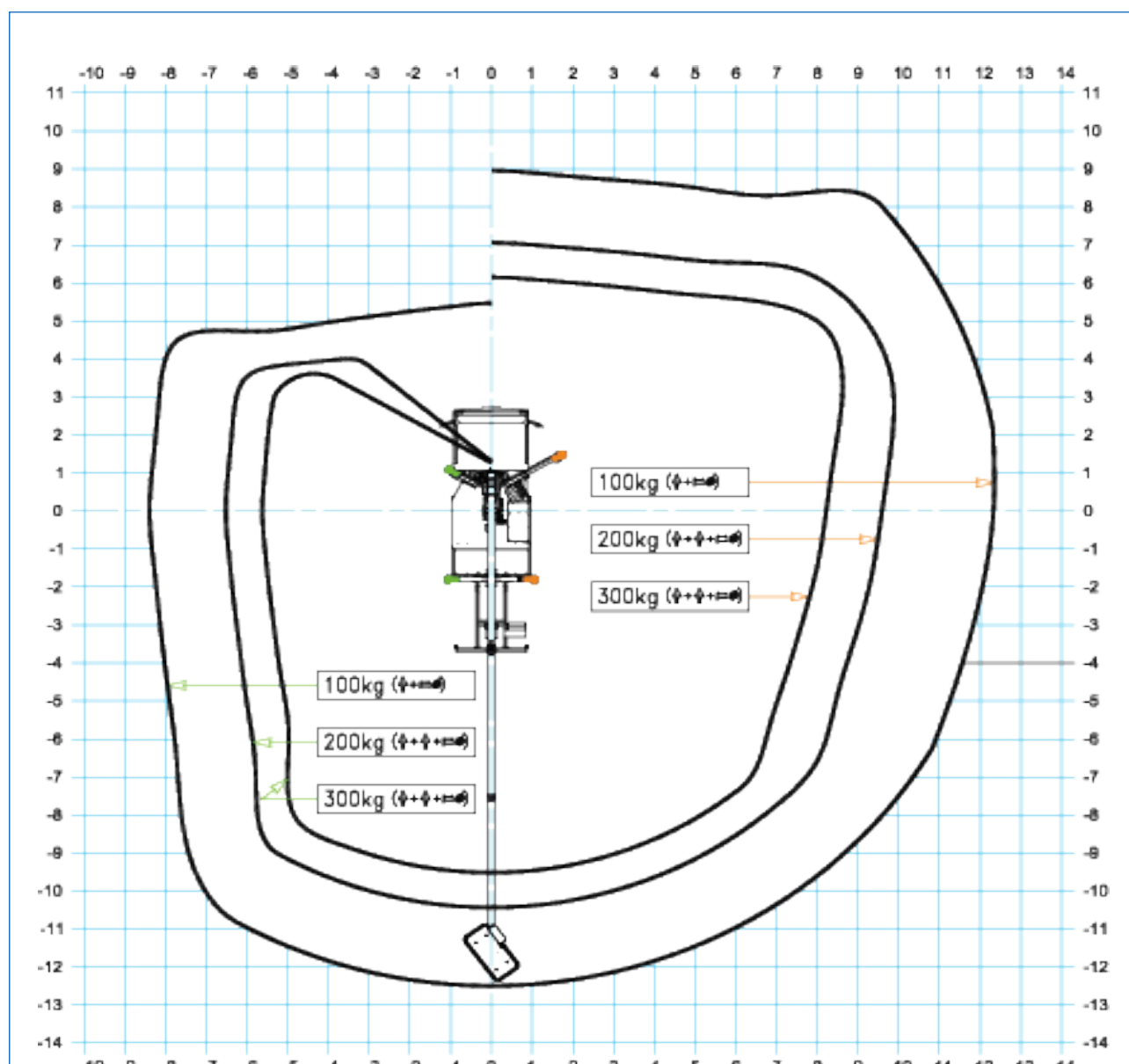


Fig. 3.6

DAILY 52Q
VTR BASKE

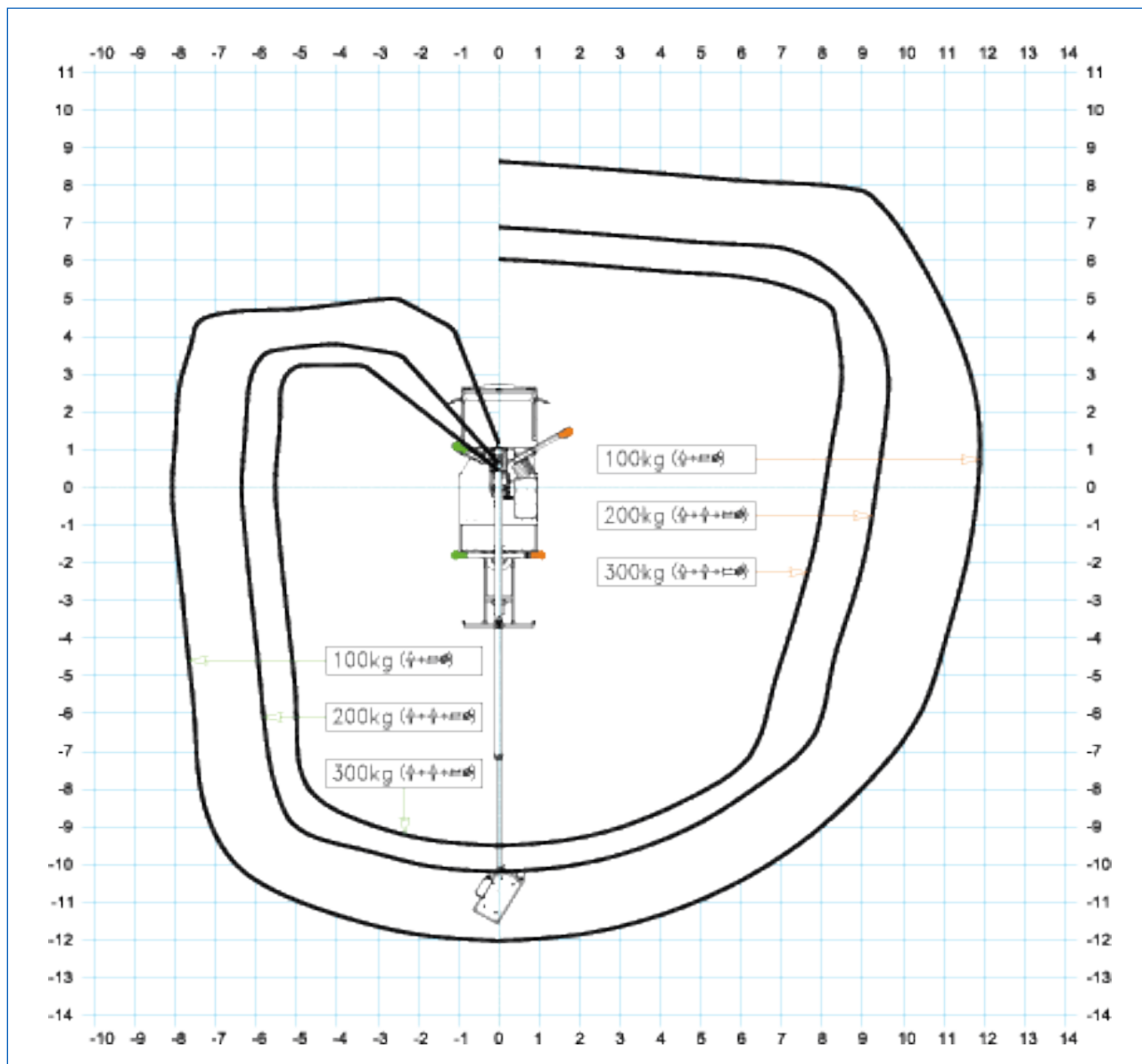


Fig. 3.7

GB

Chapter 3

DESCRIPTION AND TECHNICAL DATA



3.8.2 Work envelopes and load according to the stabilization

WARNING

The operation of the platform and the work envelopes will vary according to the choice of stabilization.

DAILY 52Q ALL BASKET REAR

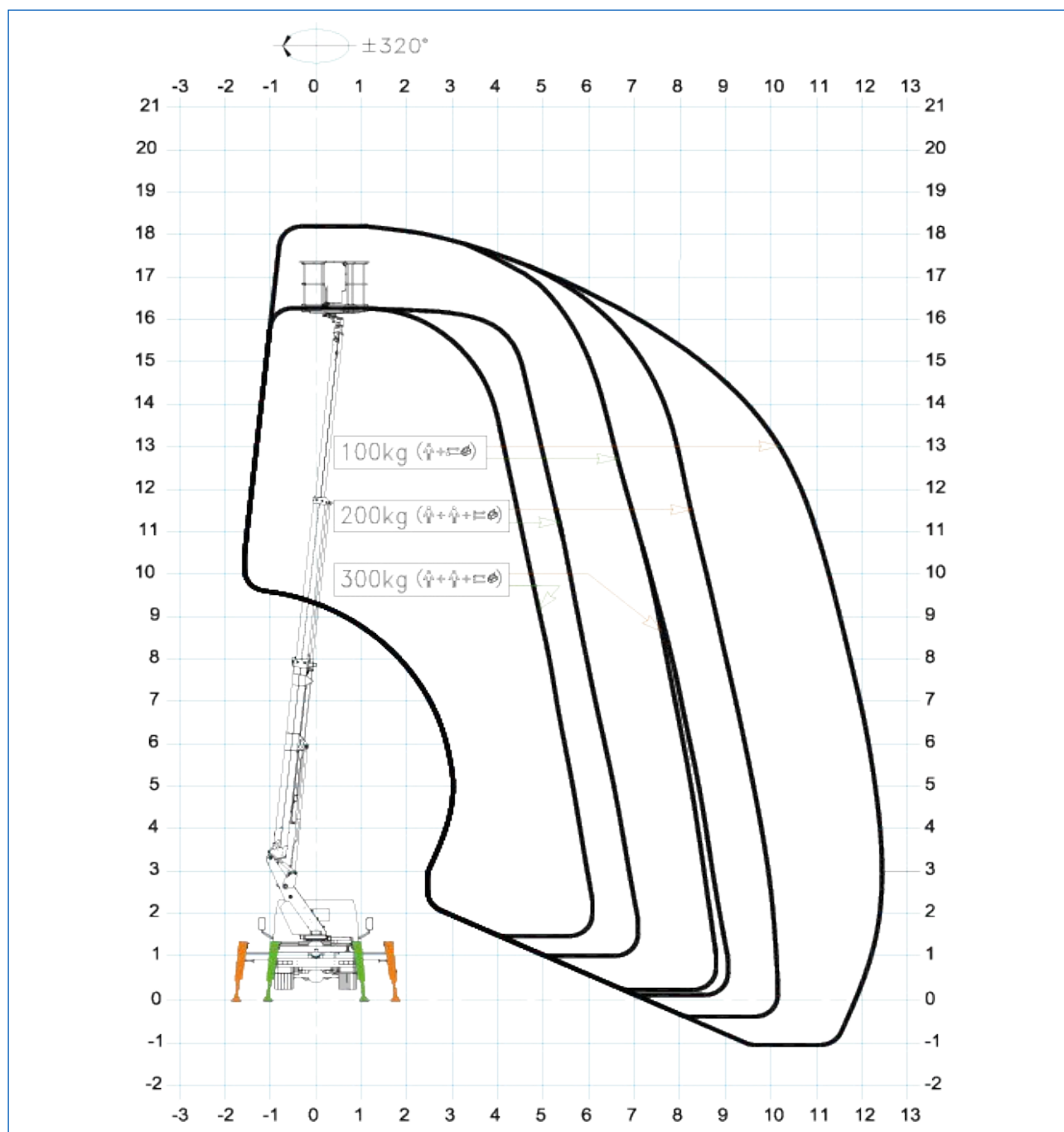


Fig. 3.8

NISSAN 35Q
ALL BASKET
LATERAL

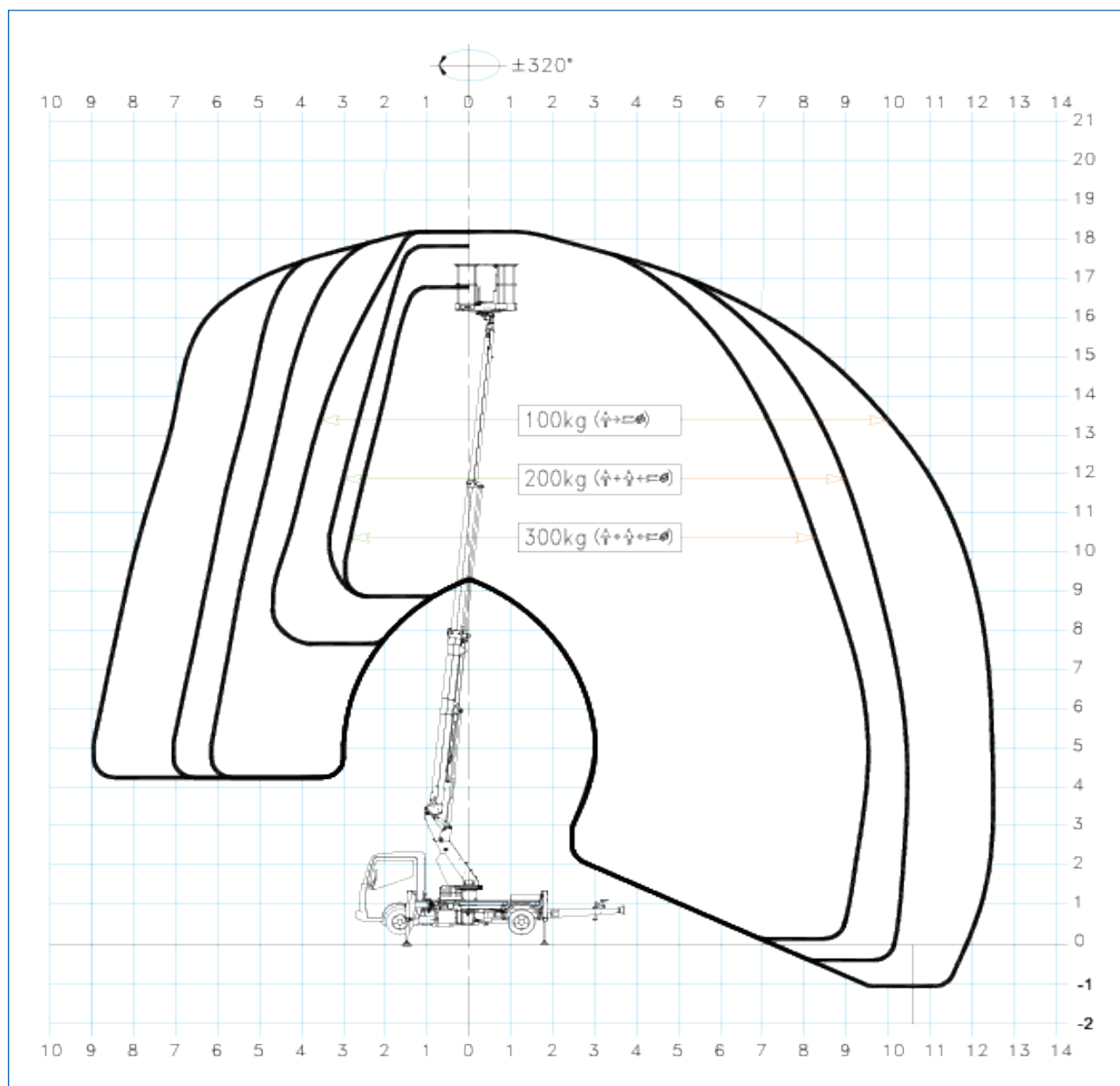


Fig. 3.9

**NISSAN 35Q
VTR BASKET
REAR STABILIZZATORI CHIUSI**

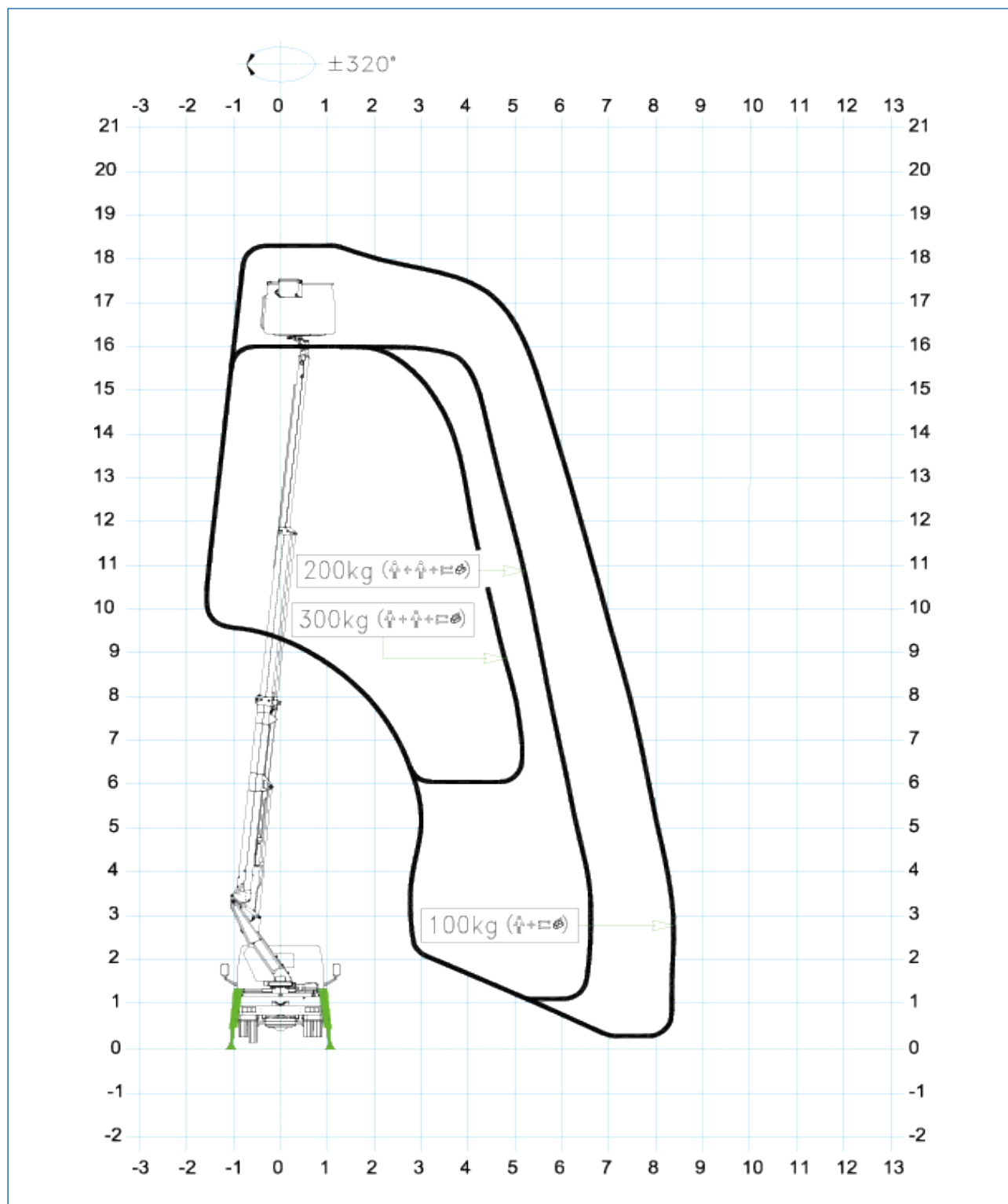


Fig. 3.10

**NISSAN 35Q
VTR BASKET
REAR STABILIZZATORI APERTI**

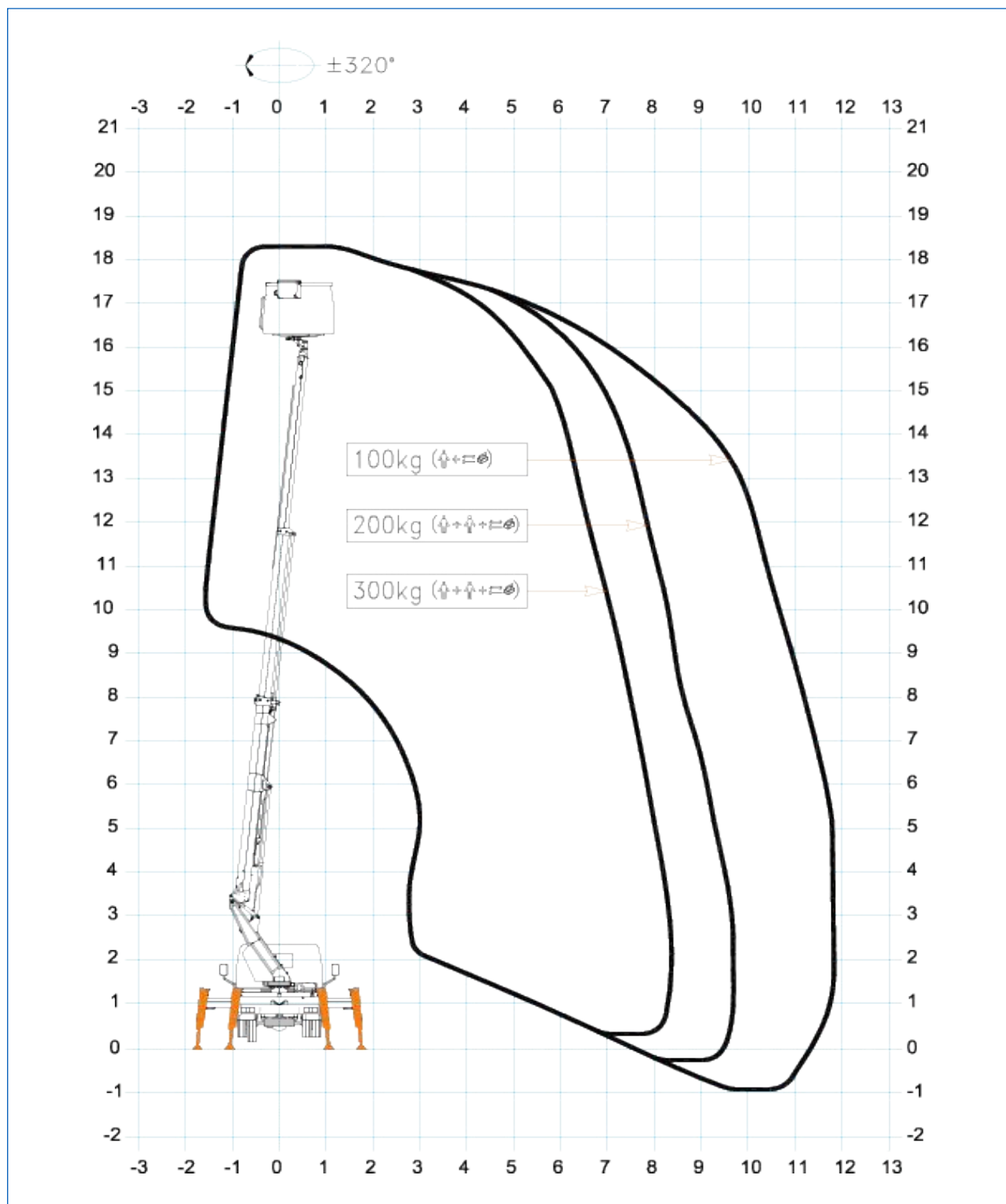


Fig. 3.11

NISSAN 35Q
VTR BASKET
LATERAL

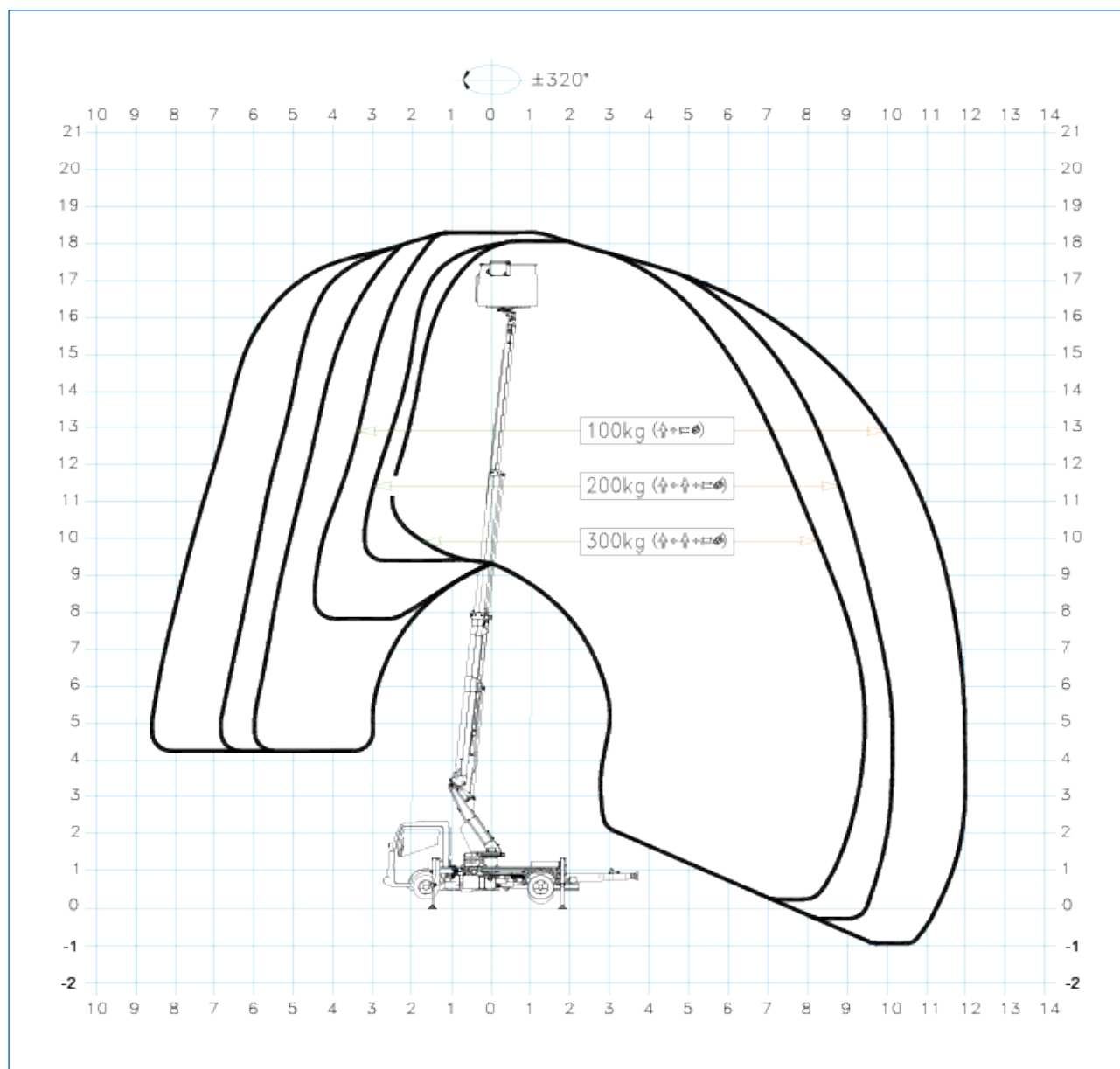


Fig. 3.12

4

CONTROLS

4 Controls

4.1 Control panels

During use, the operator should only control the work platform using the control panel on the platform itself. The operator should only operate the ground control panel when stabilising the machine.

1	Stabilisation controls:	Standing operator position. The stabiliser control devices are installed on this panel.
2	Ground control panel:	Secondary control station. Standing operator position. In general, the ground control panel should be used to lift the platform for stowage purposes or for operational tests. The ground control panel can be used as a control station on the ground (it is possible to remove it from its location to see it better) and in an emergency in order to rescue someone who is unable to move on the platform. When the ground control panel is active, the controls on the platform are not operational.
3	Control panel on work platform:	Main control station. Standing operator position. The aerial platform movement console is installed in this station. The operator can perform all the operations for 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.
4	Emergency controls:	Standing operator position. The solenoid valves that are used to bring the elevating platform back to the ground and into the transport position in the event of system malfunctions are installed in this station.
5	Manual hydraulic oil circulation pump	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 in transport position in the event of a malfunction on the main pump.

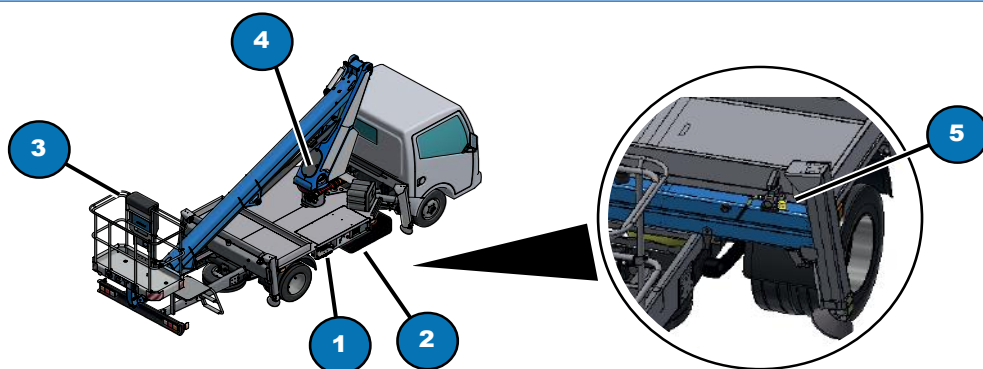


Fig. 4.1

4.2 Stabilisation control panel

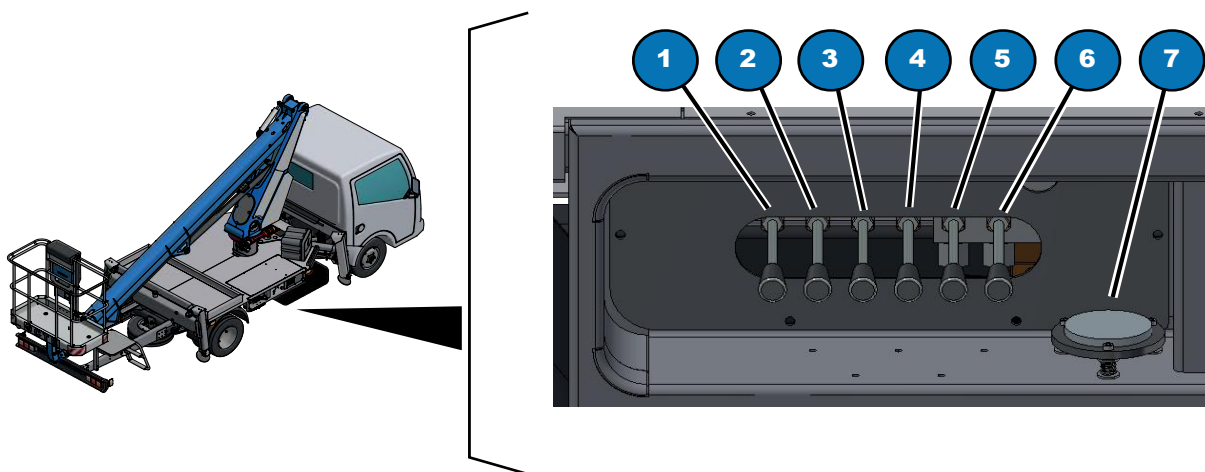


Fig. 4.2

Item	Description	
1	Back right stabiliser control lever	
2	Back left stabiliser control lever	<ul style="list-style-type: none"> Moving the lever downwards extends the stabiliser Moving the lever upwards retracts the stabiliser
3	Front left stabiliser control lever	
4	Front right stabiliser control lever	
5	Front left outrigger control lever	<ul style="list-style-type: none"> lowering the lever causes the stabiliser to extend; raising the lever causes the stabiliser to retract lowering the lever causes the stabiliser to extend; raising the lever causes the stabiliser to retract
6	Front right outrigger control lever	
7	Levelling check spirit level	<ul style="list-style-type: none"> Indicates the correct levelling of the vehicle.

4.3 Ground control panel

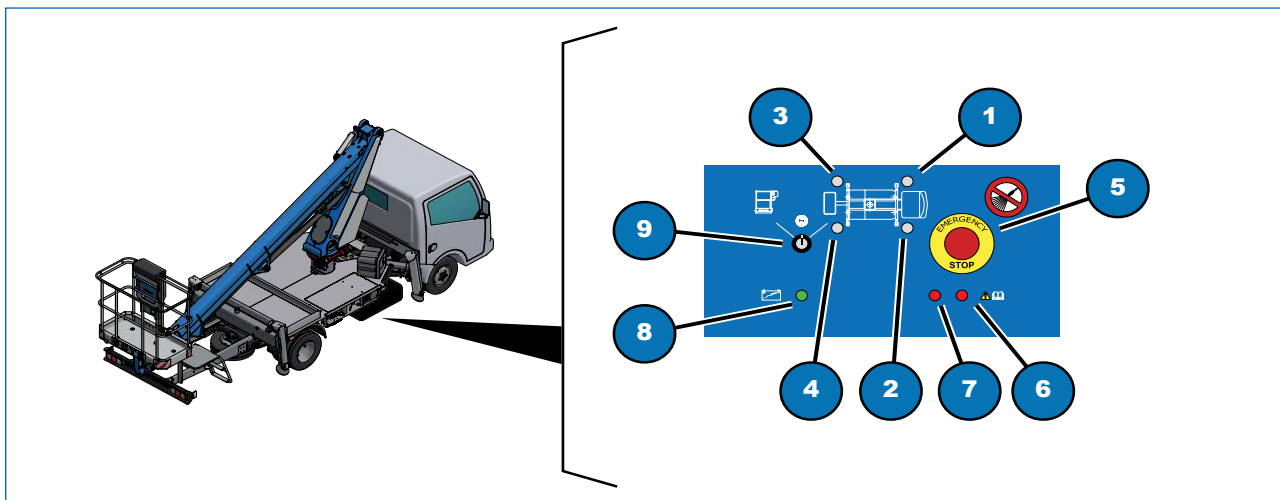


Fig. 4.3

Item	Description
1	Front left stabiliser indicator light; <ul style="list-style-type: none"> Switches on when the stabiliser is on the ground and minimum stabilisation has been accomplished.
2	Front right stabiliser indicator light; <ul style="list-style-type: none"> Switches on when the stabiliser is on the ground and minimum stabilisation has been accomplished.
3	Back left stabiliser indicator light; <ul style="list-style-type: none"> Switches on when the stabiliser is on the ground and minimum stabilisation has been accomplished.
4	Back right stabiliser indicator light; <ul style="list-style-type: none"> Switches on when the stabiliser is on the ground and minimum stabilisation has been accomplished.
5	Emergency stop button. <ul style="list-style-type: none"> Stops all manoeuvres.
6	Alarm indicator light 2 - second code number (see chapter on troubleshooting)
7	Alarm indicator light 1 - first code number (see chapter on troubleshooting)
8	Power on indicator light: Switches on when the electrical system is powered.
9	Key selector switch - vehicle/aerial unit; <ul style="list-style-type: none"> Turning the key to the right activates the vehicle stabilisation control panel. Turning the key to the left activates the main control panel in the lifting platform. Turn the key to the vertical "neutral" position for driving on public roads.

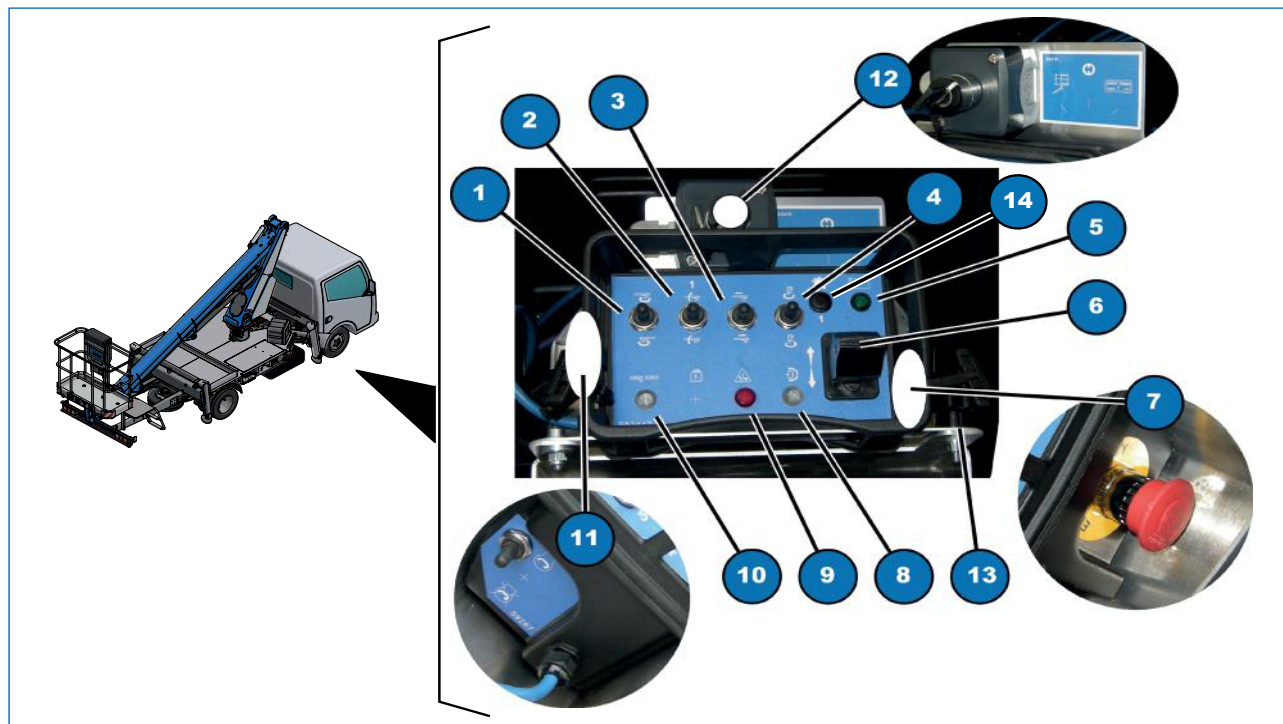


Fig. 4.4

Elemento	Descrizione	
1	Three position spring-return to centre selector switch, turret rotation command; <ul style="list-style-type: none"> keep the selector in the up position to rotate the turret to the right; keep the selector in the down position to rotate the turret to the left. 	
2	Three position spring-return to centre selector switch, telescopic boom lifting command; <ul style="list-style-type: none"> keep the selector in the up position to raise the telescopic boom; keep the selector in the down position to lower the telescopic boom. 	
3	Three position spring-return to centre selector switch, telescopic boom extension command; <ul style="list-style-type: none"> keep the selector in the up position to extend the telescopic element; keep the selector in the down position to retract the telescopic element. 	
4	Three position spring-return to centre selector switch, basket rotation command; <ul style="list-style-type: none"> keep the selector in the up position to rotate the basket to the right; keep the selector in the down position to rotate the basket to the left. 	
5	Lighted button voltage presence; <ul style="list-style-type: none"> it lights up when the electrical system is powered; 	

Elemento	Descrizione
6	Movement speed proportional lever control; <ul style="list-style-type: none"> operating the lever after actuating the required command (1, 2, 3, 4) carries out the movement proportionally.
7	Emergency button; <ul style="list-style-type: none"> Pressing the emergency button disables all the controls and the vehicle engine switches off.
8	Work platform centring indicator; <ul style="list-style-type: none"> This light stays on during operation. If it switches off (buzzer activation), it indicates the risk of collision against the structure.
9	Red “command block” indicator; <ul style="list-style-type: none"> flashes when the controls in the basket are blocked.
10	Light chain status; <ul style="list-style-type: none"> lights up when there are problems with the chains.
11	Three position spring-return to centre selector switch, powers the motor on command; <ul style="list-style-type: none"> keep the selector in the up position (ON) to start the motor; keep the selector in the down position (OFF) to stop the motor.
12	Three position key selector switch: <ul style="list-style-type: none"> turn the key to the right to enable the mobile control console; turn the key to the left to enable the controls in the working platform; turn the key to the central position to disable the mobile control console.
13	Console fastening system; <ul style="list-style-type: none"> the control console can be removed by unscrewing the two fastening elements on the control box.
14	Homing button; <ul style="list-style-type: none"> keep pressed to retract the elevating work platform completely.



CAUTION

The working platform should only be controlled from the ground control panel in case of an emergency.
Refer to the chapter regarding emergency manoeuvres.



CAUTION

The stabilizer indicator lights come on when the plate has reached its minimum extension and is in contact with the ground, but they do not indicate that the machine has been properly stabilized. Use the spirit level to check that it is positioned correctly.

GB

Chapter 4 CONTROLS

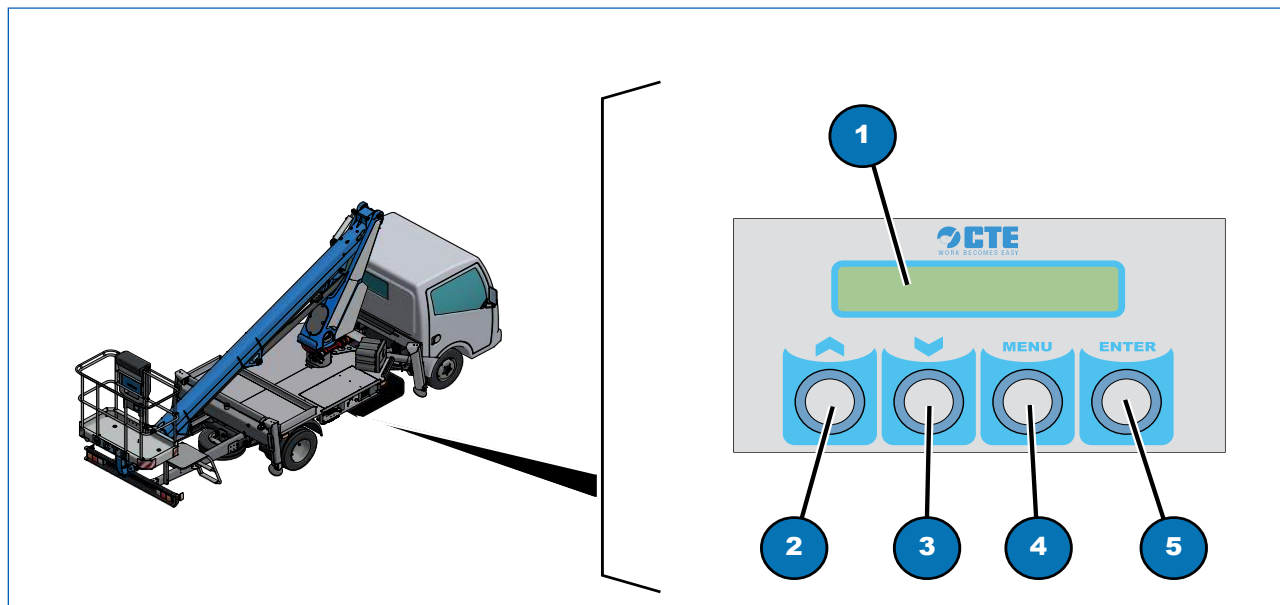


Fig. 4.5

Item	Description
1	Code and message display screen.
2	UP button: <ul style="list-style-type: none"> press to scroll through the previous sections
3	DOWN button: <ul style="list-style-type: none"> press to scroll through the next sections
4	MENU button: <ul style="list-style-type: none"> press this button to go from the main screen to the diagnostics screens and vice versa.
5	ENTER button: <ul style="list-style-type: none"> press this button to confirm the selected section of the menu.

4.4 Emergency controls station

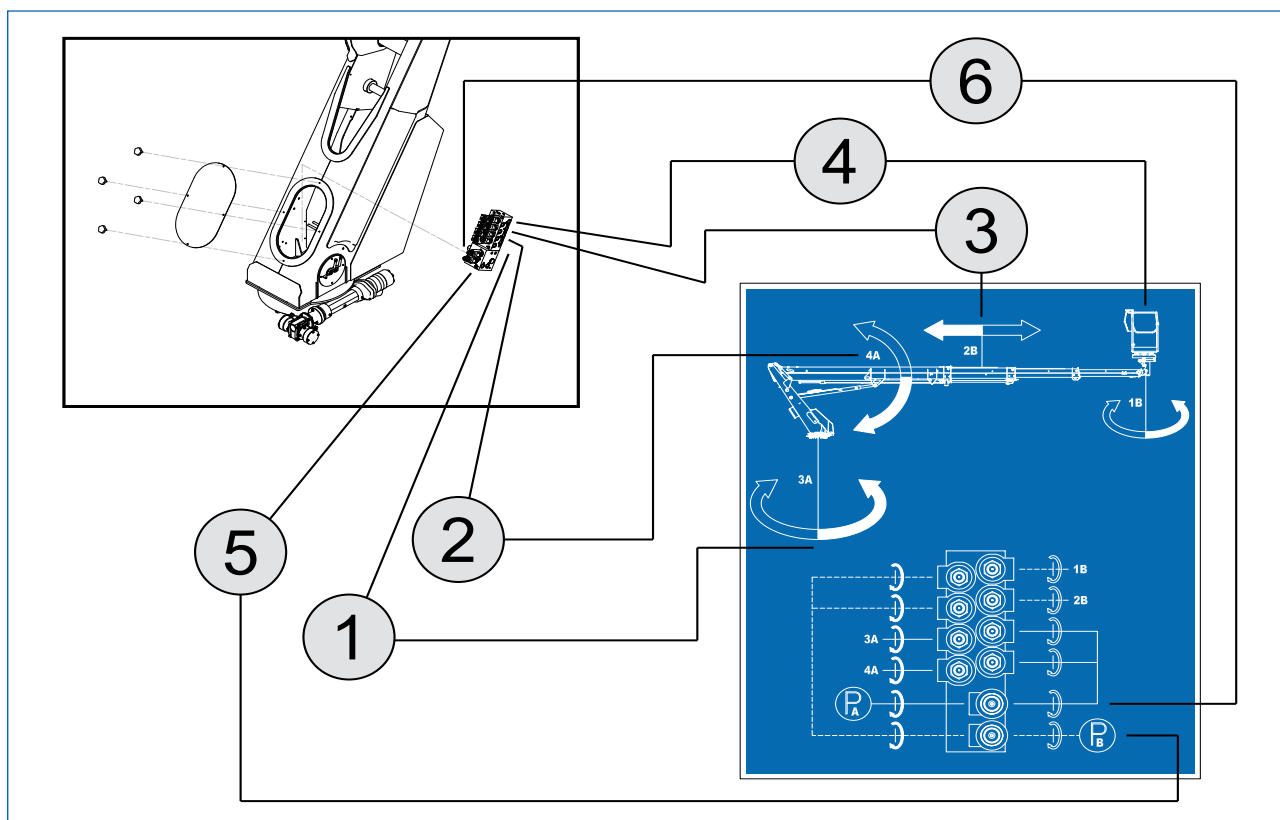


Fig.

4.6

Item	Description
1	Turret rotation solenoid valve; <ul style="list-style-type: none"> tighten the right knob to turn the turret clockwise; tighten the left knob to turn the turret counterclockwise.
2	Solenoid valve for telescopic boom lifting; <ul style="list-style-type: none"> screw the right knob to raise the telescopic arm; screw the left knob to lower the telescopic arm.
3	Solenoid valve telescopic boom extension; <ul style="list-style-type: none"> screw the right knob to extend the telescopic arm; screw the left knob to retract the telescopic arm.
4	Bucket rotation solenoid valve; <ul style="list-style-type: none"> screw the right knob to turn the basket clockwise; screw the left knob to turn the basket counterclockwise.
5	Proportional solenoid valve; <ul style="list-style-type: none"> tighten the knob to enable the emergency controls station and activate single manoeuvre movement solenoid valves 1 and 2.
6	Proportional solenoid valve; <ul style="list-style-type: none"> tighten the knob to enable the emergency controls station and activate single manoeuvre movement solenoid valves 3 and 4



CAUTION

A single maneuver can be activated for each proportional solenoid valve and, once the manoeuvre is completed, the knob must be loosened (without forcing it) and bring it back to position.

4.5 Control panel in the work platform

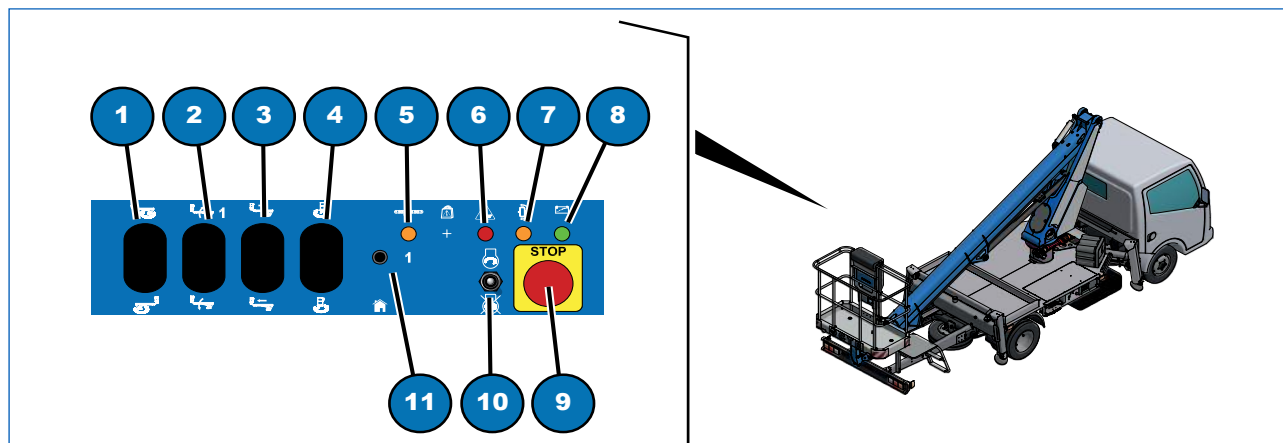






Fig. 4.7

Item	Description	
1		Turret right-left rotation
2		Raise - lower main boom
3		Telescopic element extension-retraction
4		Platform right-left rotation
5		Chain status
6		Moment limiter alarm

Item	Description		
7		Platform position	The light comes on when the platform is centred in its rest position.
8		Power on	The green light comes on to indicate that the power supply is on and that it is possible to manoeuvre the platform.
9		Emergency button.	Pressing the emergency button disables all the controls and the vehicle engine switches off.
10		Powers the motor on/off	Three position spring-return to centre selector switch. <ul style="list-style-type: none"> Keep the selector in the up position (ON) to start the motor. Keep the selector in the down position (OFF) to stop the motor..
11		Homing button	Keep pressed to retract the elevating work platform completely.

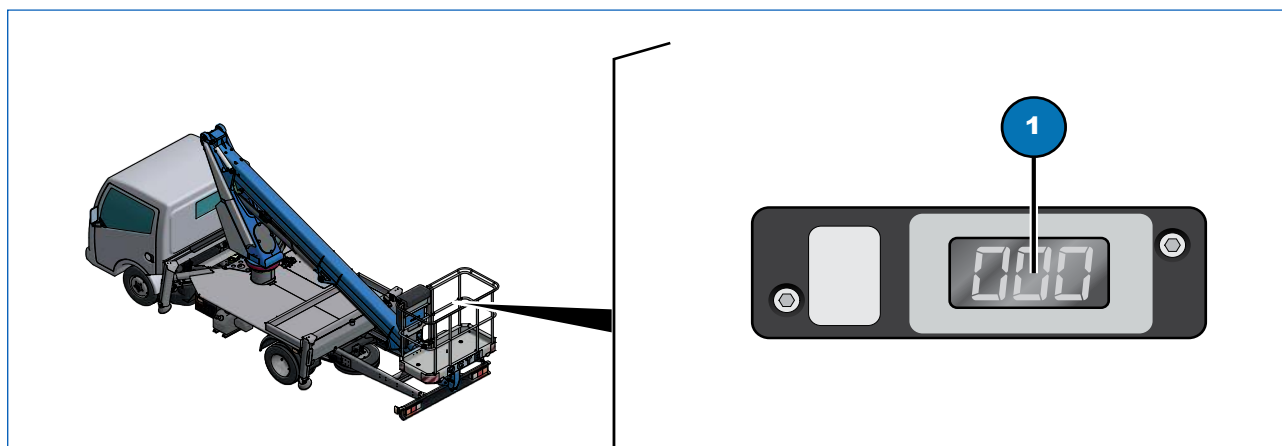


Fig. 4.8

Item	Description
1	Display showing the remaining working envelope and diagnostics: <ul style="list-style-type: none"> <u>When in operation</u>, it displays a number between 80 and 10 which decreases as the maximum allowed working envelope is approached. The machine shuts off once the number 10 is reached. <u>If there's an anomaly with the S3 system</u>, an error code will be displayed.

4.6 Power take-off control

The power take-off control depends on the model of the vehicle.

On some vehicles, the power take-off is engaged electrically.

In this case, there is a control button on the dashboard and a relative indicator light.

Other vehicles have a mechanical power take-off that is engaged by using a manual control lever.



CAUTION

Depress the clutch before engaging or disengaging the power take-off.

Never drive with the power take-off engaged, this could cause damage to the gear and hydraulic pumps.

4.7 Cabin control panel

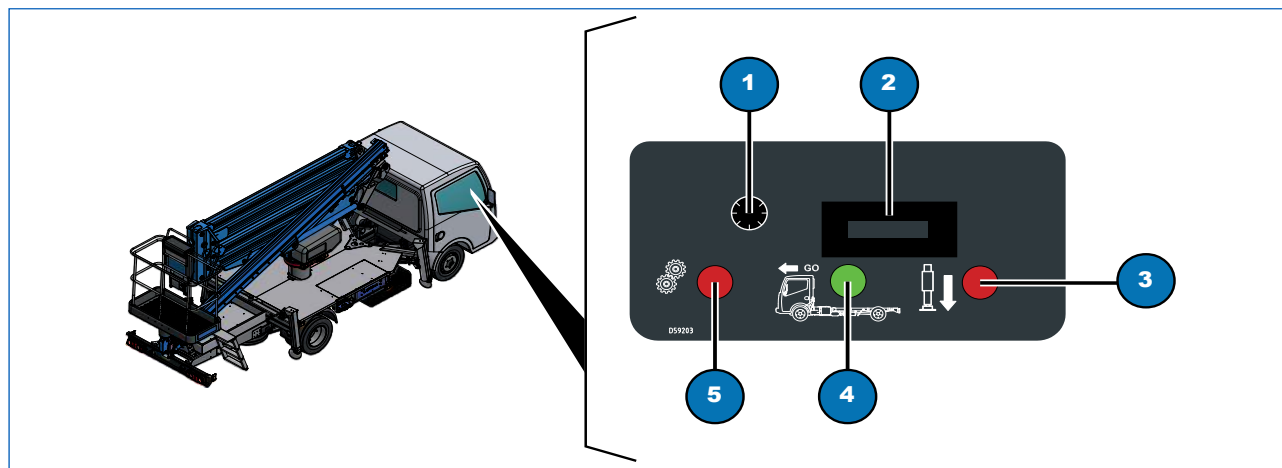


Fig. 4.9

Item		Description
1	Fuse	2A quick fuse - platform auxiliaries
2	Hour counter	Is activated when the power-take-off (PTO) is engaged.
3	Red stabilisers lowered indicator light	When lit, it indicates that the stabilisers have not been completely retracted.
4	Green stabilisers retracted indicator light	When lit, it indicates that the stabilisers have been completely retracted. The machine is ready to be moved.
5	Power take-off light	Comes on when the power take-off is engaged and at the same time an audible signal is activated.

5

SAFETY DEVICES

5 Safety devices

5.1 Emergency stop buttons

The following buttons are located in the main control stations from which the mobile working platform is operated (Fig. 5.1, 1, 2 e 3) in order to stop the machine in the event of an emergency. Pressing the emergency button causes the:

- electrical functions of the machine to be interrupted
- immediate stop of all movement acting directly on the hydraulic valves.

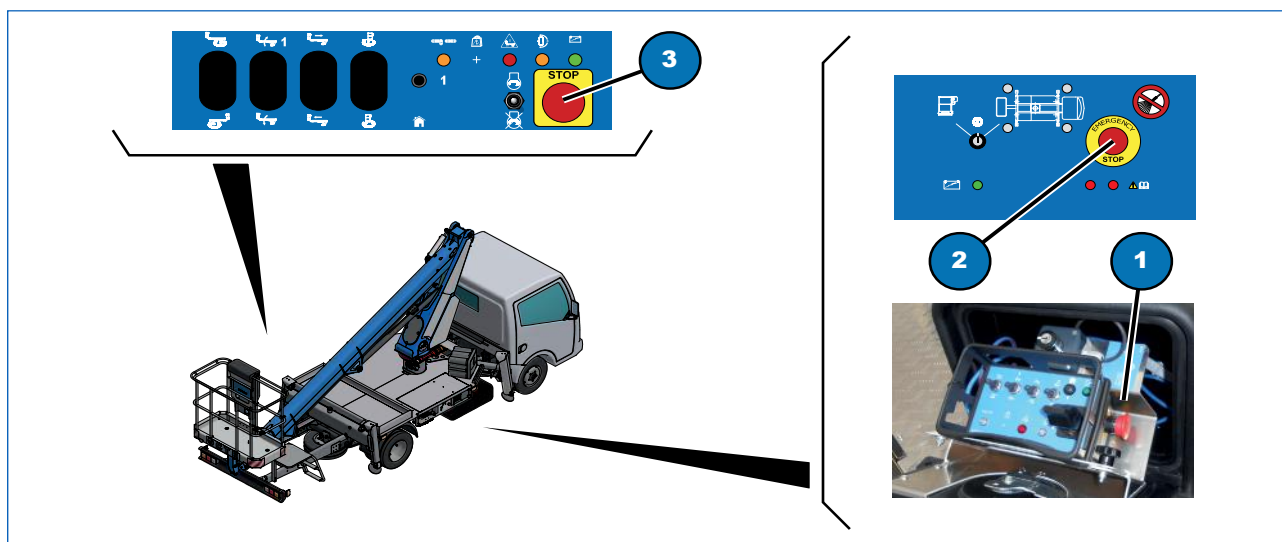


Fig.

5.1



DANGER

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



CAUTION

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 5.1, 1, 2 or 3) and make sure that it is not possible to manoeuvre the platform in any way.
- In order to do this under the safest possible conditions, operate the controls in the platform whilst the platform is in the rest position.

5.2 Alarms-warnings

Errors and alarm messages are indicated by a sequence of flashes of the ALRM 1 and ALRM 2 LEDs. (See Fig. 4.3, ALRM1=item 7, ALRM2=item 6).

Example:

spieAlarm_inceppDiscesa = 0 x 0803
08 = 8 flashes of LED 7
03 = 3 flashes of LED 6

For further details, please refer to Chapter 12 “Troubleshooting”

5.2.1 Reset alarms

Please refer to Chapter 12 “Troubleshooting” for the alarm reset procedure.

5.3 Buzzer

Seven beepers are mounted on the platform:

- two are in the panel in the cabin (Fig. 4.7).
- one is in the earth command panel (Fig. 4.3);
- two are in the command panel in the work platform (Fig. 4.6).
- two are in the mobile ground control console (Fig. 4.4)

Within the cab panel:

- the first is activated, accompanied by a continuous sound, when the PTO is activated;
- the second is activated, accompanied by a continuous sound, when the stabilisers have not been fully retracted.

Within in the ground command panel, it is activated:

- with a continuous sound when the telescopic boom is resting on the boom rest for six seconds, inviting the operator keep the closure manoeuvre pressed insistently;
- with a continuous sound if the aerial rest is not completely rested on the aerial or for a sensor failure.

Within the command panel in the work platform:

- the first is activated, accompanied by a continuous sound, when the PTO is activated;
- the second is activated, accompanied by a continuous sound, when the stabilisers have not been fully retracted.

Within the mobile ground control console:

- the first is activated, accompanied by an intermittent sound, if the work platform is overloaded above the maximum load value;
- the second is activated, accompanied by a continuous sound, when the work platform is rotated, and there is the relative risk of the aerial hitting the frame.

SAFETY DEVICE FUNCTIONALITY CHECK

- In order to check the safety device, the operator must make the device emit an intermittent signal that lasts for a few seconds when the machine is started.

5.4 Stabilizers and/or beams not completely retracted

The red light, 3 (Fig. 5.2), on the control panel in the cab lights up if the stabilizers and / or the beams have not been fully retracted.

This device allows the operator to carry out an additional check if the platform is in the transport configuration. In this configuration, the light, 3 (Fig. 5.2), must be off.

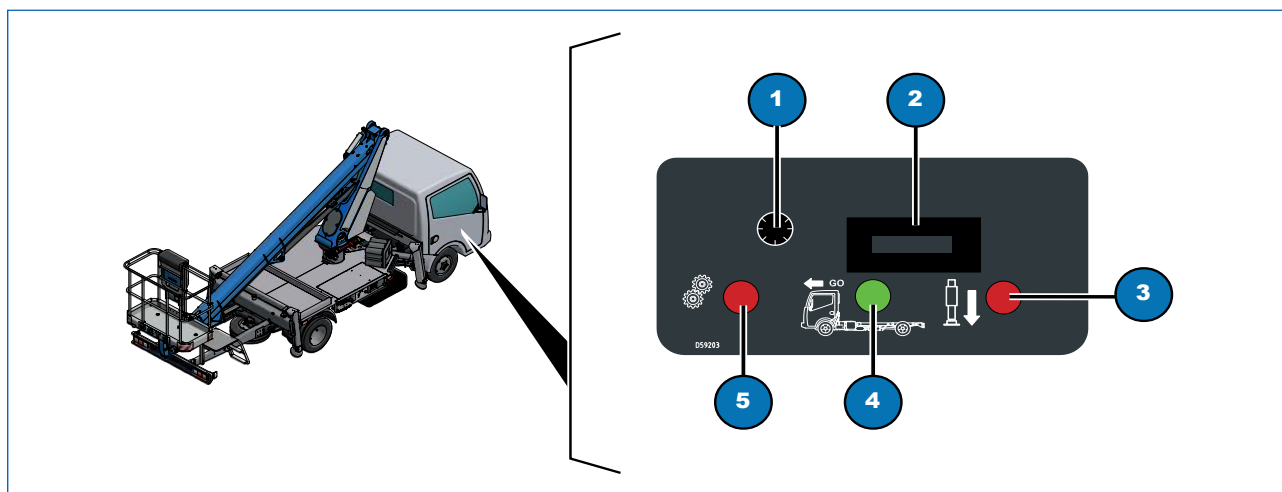


Fig.

5.2

5.5 Stabilizers interlock switch

The device (Fig. 5.3, 1) is formed by a sensor on the boom rest bracket and a receiver under the telescopic boom.

It only allows the stabilisation controls to be activated when the superstructure is fully closed, and the key selector switch is in the “stabilisers” position.

The stabiliser controls are automatically disabled when the boom is moved from its stowed position.



DANGER

After the boom has been raised from its support plate, any use of the stabilization controls is prohibited.

SAFETY DEVICE FUNCTIONALITY CHECK

- Lift the aerial unit by a few cm. It will not be possible to perform any operations using the stabilization levers.

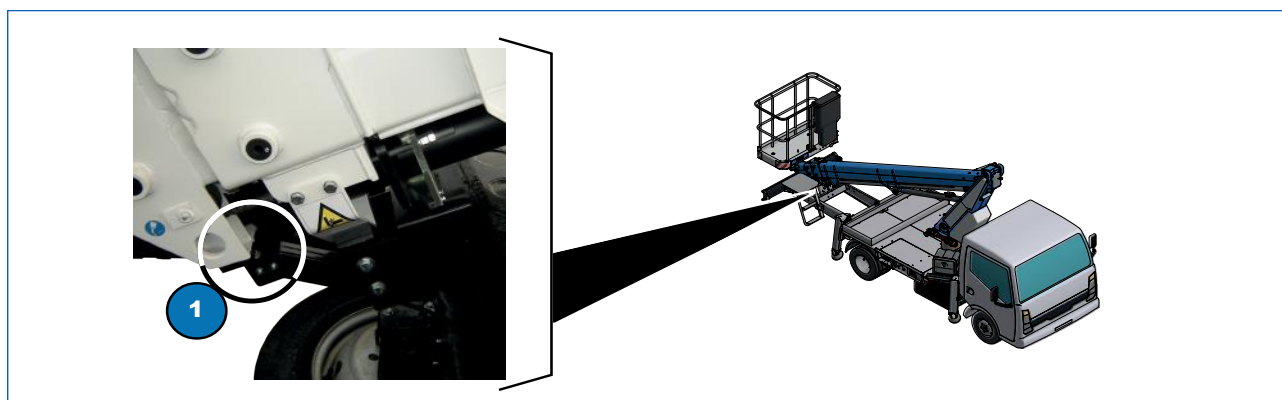


Fig.

5.3

5.6 Aerial manoeuvres enabling

Its function is to allow the aerial platform to be moved only when the machine has been stabilised. There is a micro switch on the foot of each stabiliser, located below the stabiliser carter, that detects if the stabiliser is resting on the ground. There are another two micro-switches on the vehicle's rear springs which detect minimum stabilisation. When the machine is being stabilised, indicator lights 1, 2, 3 and 4 next to the stabilisation controls will light up only when all the feet are resting on the ground and the minimum stabilisation has been reached (see Fig. 4.3), and it will then be possible to raise the boom.

SAFETY DEVICE FUNCTIONALITY CHECK

- stabilise the machine so that indicator lights 1, 2, 3 and 4 come on (see Fig. 4.3).
- retract one stabiliser until the corresponding light turns off.
- try to move the aerial platform. It should not be possible to do so.

5.7 Chain tension monitoring system

The booms are extended and retracted by a hydraulic cylinder integrated with drive chains. There is a series of micro switches that detect the breakage or elongation of the chains. (see Fig. 5.4, 1).

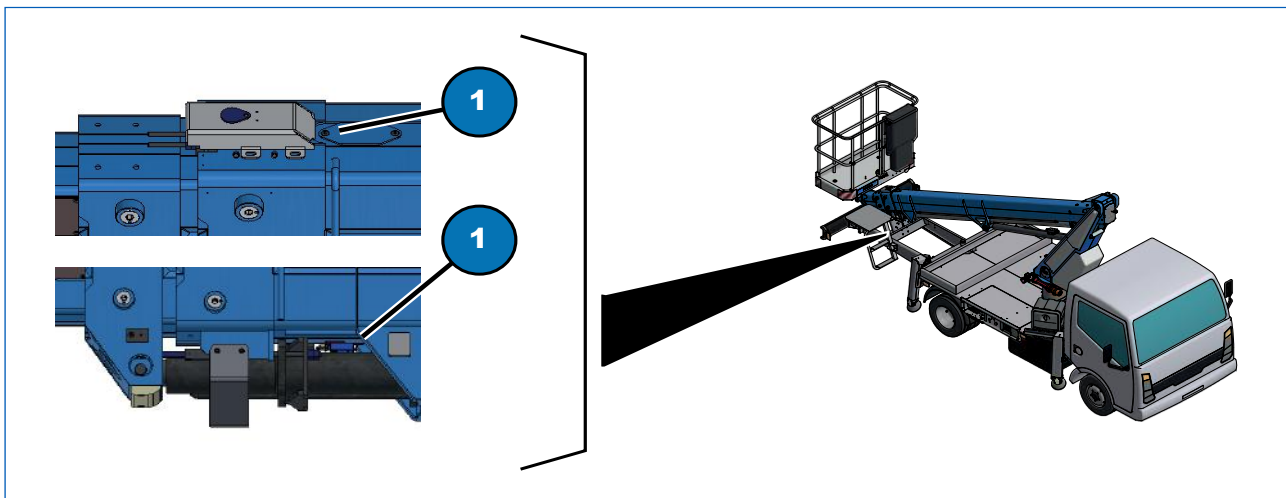


Fig. 5.4

SAFETY DEVICE FUNCTIONALITY CHECK

- The condition of the chains that extend the telescopic elements of boom can be inspected visually by examining the chains located under the booms.
- Micro switches are installed on this machine that detect the breakage or elongation of the chains. In this case and in general, if abnormal chain wear is detected you must contact an authorized CTE service centre. The platform requires extraordinary maintenance to be carried out on the chains (replacing or removing links).

5.8 Manual emergency pump

The manual emergency pump 2 (Fig. 5.5) is installed on the frame's rear extension.



CAUTION

Only use the manual emergency pump if the main pump is broken.

It is designed to manually force the circulation of the hydraulic oil in the system. To do so, insert the handle provided into the hole on the pump and move it vigorously.



CAUTION

The manual pump will function only after it has been completely filled with oil.

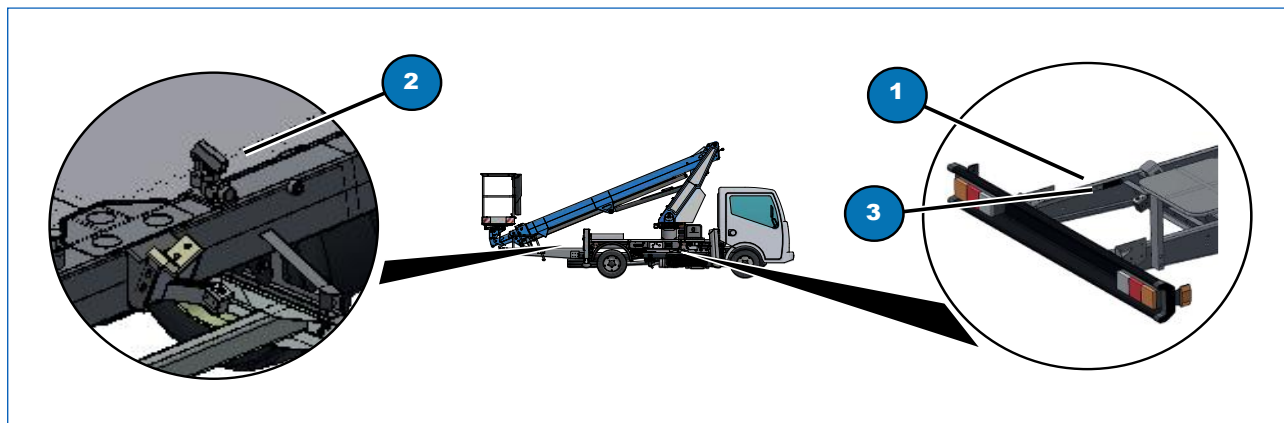


Fig. 5.5

SAFETY DEVICE FUNCTIONALITY CHECK

- Turn off the engine of the vehicle whilst keeping the power take off (PTO) (see Fig. 6.1) engaged with the platform raised.
- Remove the lever (Fig. 5.5, 1) in the ladder by unscrewing the black locking knob (Fig. 5.5, 3) and attach it to the pump (Fig. 5.5, 2).
- Manually operate the lever of the emergency hand pump (Fig. 5.5, 2) and at the same time operate the electrical controls on the control panel.

5.9 Maximum pressure valve

The maximum pressure valve (Fig. 5.6, 1), located behind the vehicle stabilization control panel, prevents the maximum working pressure from being exceeded.

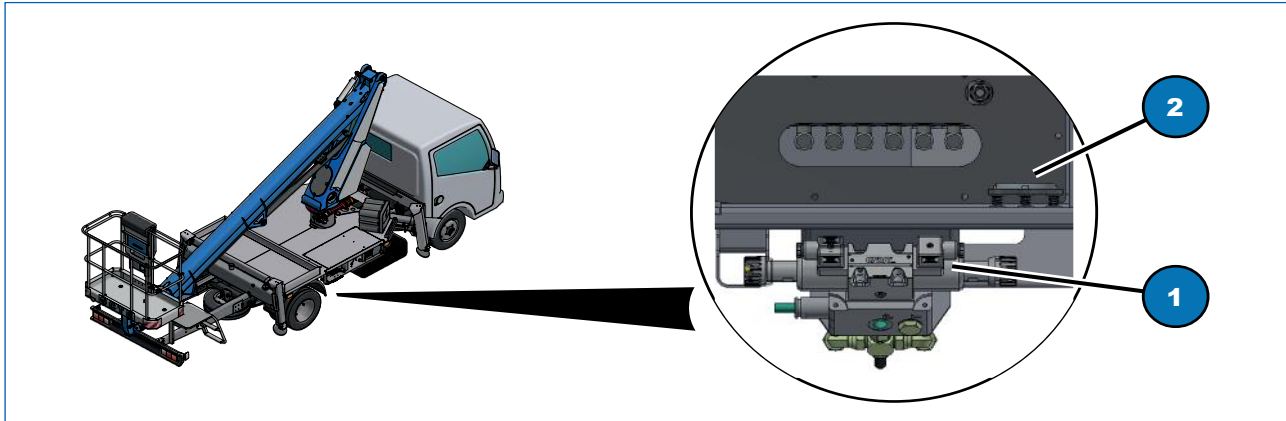


Fig. 5.6

5.10 Blocking valves on cylinders

The blocking valves are hydro-powered and if there is a lack of pressure (e.g. due to breakage of a delivery pipe) they prevent the uncontrolled movement of the corresponding cylinder.

The on/off (Fig. 5.7)

blocking valves are located:

- At the top of the stabilizers (2)

while the overcentre valves are positioned:

- Next to the turntable (1).
- on the boom lifting cylinder (4).
- On the telescopic boom lifting cylinder (5).
- On the telescopic boom extension cylinder (6).
- On the work platform (3).

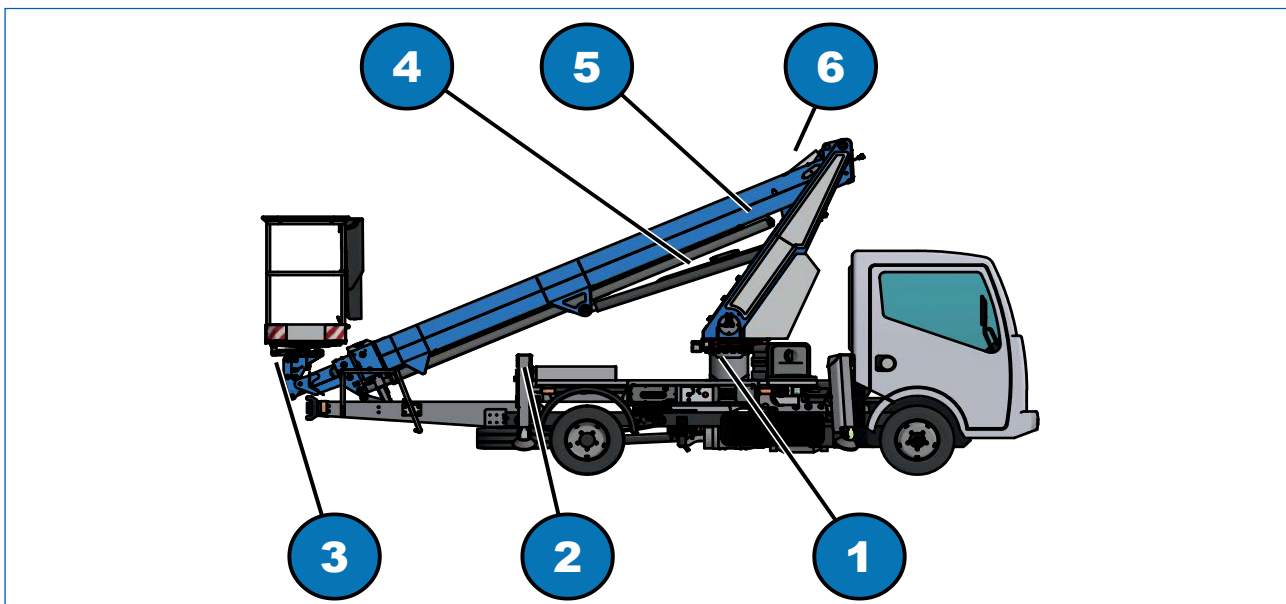


Fig. 5.7

5.11 Stabilization control device

The stabilisation control device consists of two micro switches (Fig. 5.7, 1) and (Fig. 5.7, 2), found on each stabiliser; a wire displacement sensor (Fig. 5.7, 3) found on the side of the front stabiliser beams; and a micro-switch (Fig. 5.7, 4) found on the vehicle's rear springs.

Micro-switch (Fig. 5.7, 1) indicates the complete closure of the plate for moving on the street; micro-switch (Fig. 5.7, 2) controls resting on the ground; wire displacement sensor (Fig. 5.7, 3) controls the complete extension of the stabiliser; and micro-switch (Fig. 5.7, 4) indicates minimum stabilisation.

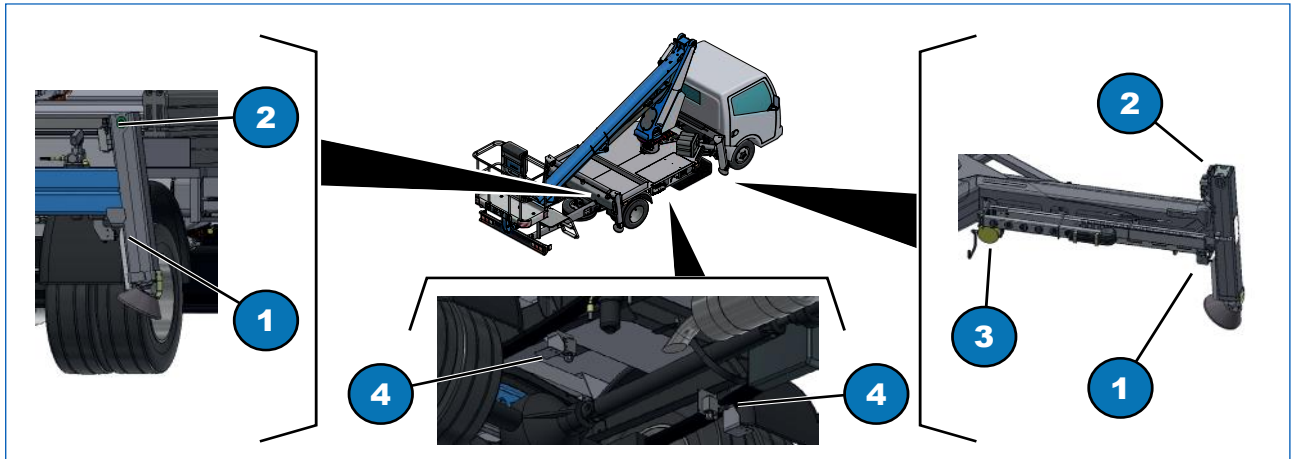


Fig. 5.8

SAFETY DEVICE FUNCTIONALITY CHECK

- when the stabilisers are properly extended, the four LEDs, 1, 2, 3 and 4 next to the stabilisation controls (see Fig. 4.3) light up, indicating that the micro switches are working correctly (Fig. 5.7, 2) and (Fig. 5.7, 4);
- retract all the stabilisers and check that the LED in the cab (see Fig. 4.7 4) is illuminated, indicating that the micro switches are operating correctly (Fig. 5.7, 1).

5.12 Control device for driving on the road

The driving control device consists of one micro-switch (Fig. 5.9, 1) found behind the telescopic boom and a micro-switch found on each stabilising beam (Fig. 5.8, 2). These micro-switches work simultaneously and, when they are all activated, the 'go' indicator on the cab panel lights up and the platform is entirely closed, ready to be driven on the road.

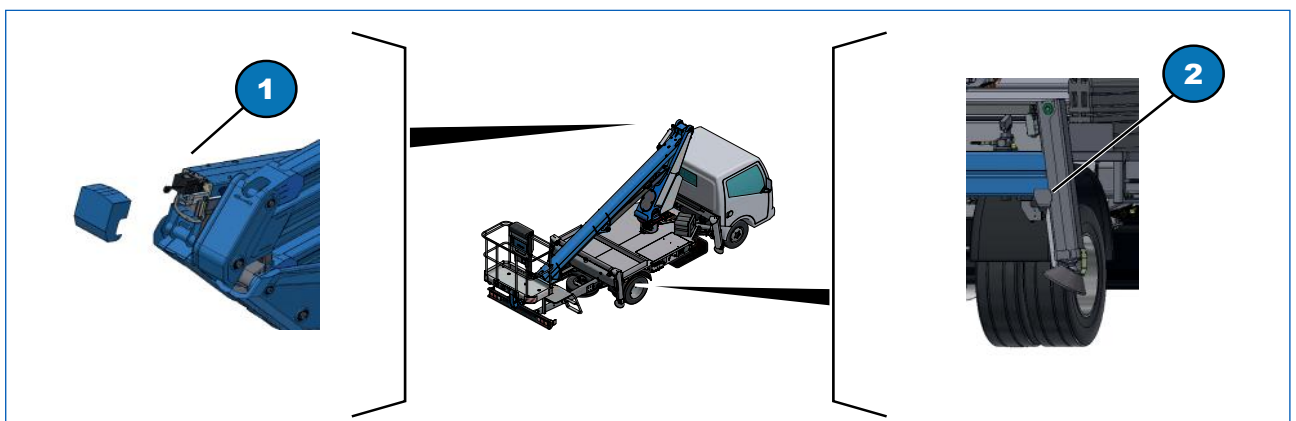


Fig. 5.9

5.13 Dispositivo di controllo area di lavoro

The working area control device is composed of an extension sensor (Fig. 5.8, 2) positioned on each front stabilizing beam, by two potentiometers (Fig. 5.8, 3) positioned on the fifth wheel and by an extension and angle sensor (Fig. 5.8, 1) positioned in the rear part of the telescopic arm. The aforementioned microswitches act simultaneously with the potentiometers and extension and angle sensors, which monitor the movements of the lifting work platform by adjusting the extension of the telescopic boom and consequently the working area. In addition to the work area control, they also control the turret rotation which is adjusted preventing collision with the cab.

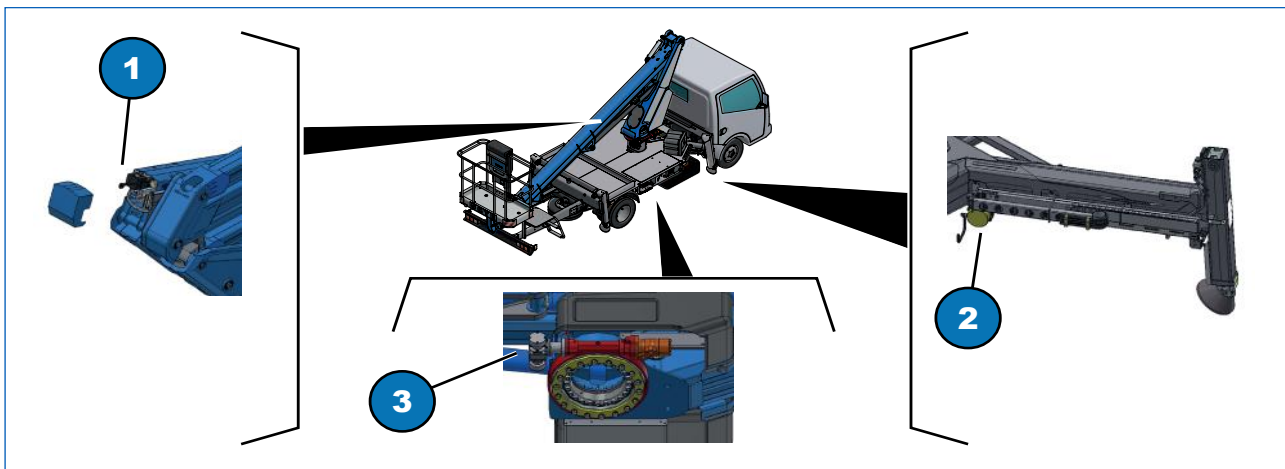


Fig. 5.10

5.14 Spirit level

The spirit level (Fig. 5.9, 1.), located next to the stabilizer control levers, indicates if the machine is level.

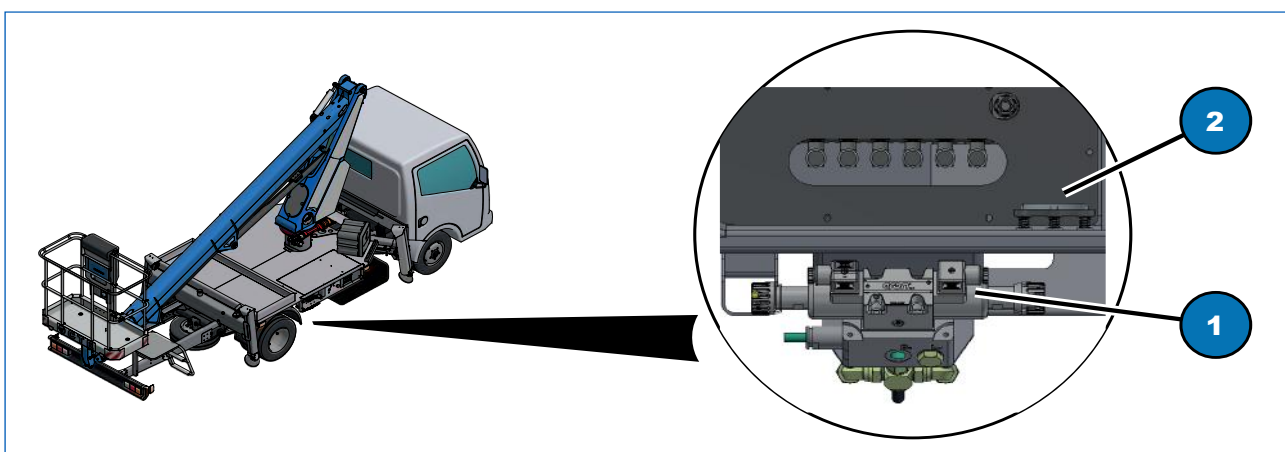


Fig. 5.11

SAFETY DEVICE FUNCTIONALITY CHECK

- Use a hand-held spirit level to check that the spirit level on the machine is working correctly.
- Position the hand-held spirit level alternately along the lengthways axis of the machine and along the crossways axis of the stabilizers.
- If the spirit level on the machine is faulty, contact technical assistance services.

5.15 Safety harnesses

The elevating platform is provided with two anchor points (Fig. 5.10, 1) for attaching the operator(s) safety harness.

It is mandatory to attach the harness to the appropriate safety couplings before starting any operations. It is advisable to periodically check the functionality of the opening and working condition of the snap-ring.

- Notes:**
- (a) standard platform
 - (b) GRP platform (optional)

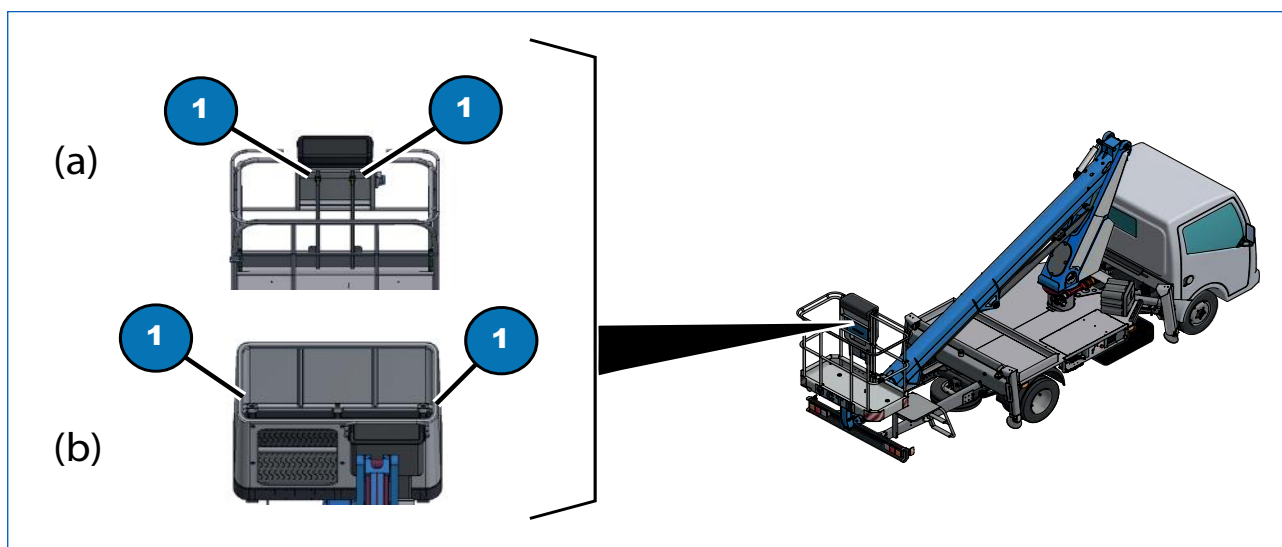


Fig. 5.12



GB

Chapter 5
SAFETY DEVICES



This page intentionally left blank

6

PROCEDURES FOR USE

6 Procedures for Use

6.1 Foreword



CAUTION

Before reading this chapter, make sure you have carefully read and understood, ALL the previous chapters.

This chapter describes the work cycle that the elevating platform can be reasonably 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 maximum permitted 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 as well.

6.2 General precautions



DANGER!

Failure to observe the following warnings could create dangerous situations and cause damage to property and / or injury to persons.

IT IS OBLIGATORY TO:

- Comply with national standards and legislation, safety standards set down by the employer and those relating to the work area.
- Always wear a safety helmet.
- Comply with the Highway Code in the country of use when the vehicle is being driven on public roads.
- Comply with the current accident prevention regulations when working on the platform.
- Check the proper operation and condition of all the devices before each use, following the instructions contained in this manual.
- Check and evaluate the actual work safety conditions (ground, wind, levelling etc.).
- Always cordon off the work area.
The operator must stop all operations if unauthorised personnel are present in the work area or on the bed of the vehicle.
- Turn on the flashing beacons when the platform is operational.

- Always keep handles and steps free from oil and grease.
- Use suitable safety harnesses when working.
- Make sure that the work area is not too close to power lines and that it is clear of obstacles.
- Use the steps to access the control panels.



CAUTION

When using the platform, the emergency manoeuvring workstation must be monitored by qualified personnel.



CAUTION

Do not climb on the vehicle and / or get into the cab when the machine is stabilised.

IT IS STRICTLY PROHIBITED TO:

- lean over the edge of the platform whilst it is in use
- leave the ground control station unattended while the operator is alone in the work platform.
- remove covers and / or safety guards (except for maintenance)
- keep the joints lifted unnecessarily when the lifting platform is not being used for work.
- use the lifting platform under conditions of poor visibility.
- load the platform with materials and/or things when the platform is already at a height.
- use the elevating platform for lifting or moving materials and/or objects.
- tamper with safety devices
- get close to power lines and live electrical equipment.
Keep at a safety distance in compliance with the national standards in force.
If the rated voltage of the power line is not known, always keep a minimum distance of 5 m.
- get on and off the machine when it is already raised from the transport position.
- leave the platform unattended in a position other than the transport position without removing the keys from the control panel.
- use the platform if the wind speed is greater than 45 km/s.
- use the platform to lift loads or transport materials.
- use the platform resting against external structures.
- exceed the maximum capacity of the work platform (particularly when it is raised).
- take substances that could alter your physical and mental abilities (e.g. alcohol, drugs).
- disable safety devices to carry out manoeuvres that would otherwise not be possible to perform.
- stop the lifting platform abruptly (unless for safety reasons).
- use the platform in potentially explosive environments.

Once you are on the bed of the vehicle, you should be careful because the anti-slip aluminium components have sharp edges.

The operator in the basket must be supported by another properly instructed person on the ground. There should be no obstacles or dangers in the basket work area.

Carry out maintenance regularly, following the schedule indicated in this manual and using appropriate equipment that is in good working order.

If you need to move to another work area, move the machine with the equipment in the transport position.

Before using the machine, place the stabilisers firmly on solid ground and level the vehicle, using a spirit level.

Before getting onto the work platform, ensure that the weight of the operator and the equipment does not exceed the values indicated in the load capacity diagram and on the CE plate (see section 3.3).

6.3 Operating stages

6.3.1 Pre-start checks



CAUTION

You must have read and understood the operation and maintenance manual before using the machine.

Only use the elevating work platform (MEWP) for the uses intended by the manufacturer and specified in this manual.

The lifting platform can only be used with braked and stabilised vehicle on a level and solid surface.

Before starting to use the lifting platform, it is recommended that you carry out a series of checks, both on the machine and in the area in which the machine will be positioned.

- check that the ground is compact and able to support the weight of the machine (the load for each stabiliser is specified in the technical specifications and on the stabiliser itself).
- check that the ground is level or that it has an inclination of no greater than 3°.
- inspect the work area (see subsection 2.6.2)
- check for the presence of obstacles and overhead lines in the work area that could obstruct or limit the use of the machine.
- check that there is a sufficient amount of fuel in the vehicle's fuel tank.
- check that the operation and maintenance manual is present and that it is complete and legible.
- check that all adhesive labels are present and legible (see Section 3.5).
- check the level of hydraulic oil and top up if necessary (see chapter 8 "Maintenance").
- inspect the aerial work platform, checking the following components and areas for any damage, missing or improperly installed parts or oil leaks:
 - » electrical components, cables and electrical wires
 - » hydraulic hoses/pipes, fittings, cylinders and distributors
 - » slewing ring motor
 - » nuts, bolts and other fastening components
 - » structural or welding cracks and damage to the machine
 - » work platform and access gate
 - » limit switches and safety devices
- check that the deviator valves used to reset the levelling of the platform are in the extension position and that the padlock is closed.
- check that the controls in the platform are working properly before lifting it to a height.
- check that the working area is cordoned off, marked with signs and free of obstacles
- check that the safety systems are working properly (see chapter 5)



CAUTION

If one or more safety systems are damaged or faulty, DO NOT USE THE PLATFORM!

Report the fault immediately to the nearest authorised service centre

- check that the batteries are in good working order
- check that connections to external supplies have been carried out properly
- check that the route the work platform has to follow to reach the working point is free from obstacles

6.3.2 Starting the vehicle

Procedure:

- Sit in the driver's seat.
- Make sure the vehicle won't move by pulling the handbrake and place the gear lever in neutral.

- Start the engine following as indicated in the vehicle's instruction manual.
- If the vehicle is equipped with an engine speed regulation device, slightly increase the speed of the engine.



CAUTION

Never exceed 1000 RPM.

The engine could overheat or the pump could break.

6.3.3 Engaging the power take-off:

Procedure (Fig. 6.1):

- Fully depress the clutch;
- if engaged mechanically, move the control lever (1), located between the seats, into the "ENGAGE" position; If it is engaged electronically: press the button (2) on the control panel that activates the PTO;
- the PTO indicator (5) will come on, an acoustic warning signal will sound and the hour counter will start;
- if the vehicle has an electromagnetic clutch with switch (refer to the vehicle's instruction manual), a visual and a sound signal is activated when the power take-off is engaged;
- raise the clutch pedal slowly;
- place the magnetic beacon light (3) on the roof of the machine and turn it on by inserting the plug in the cigar lighter socket.

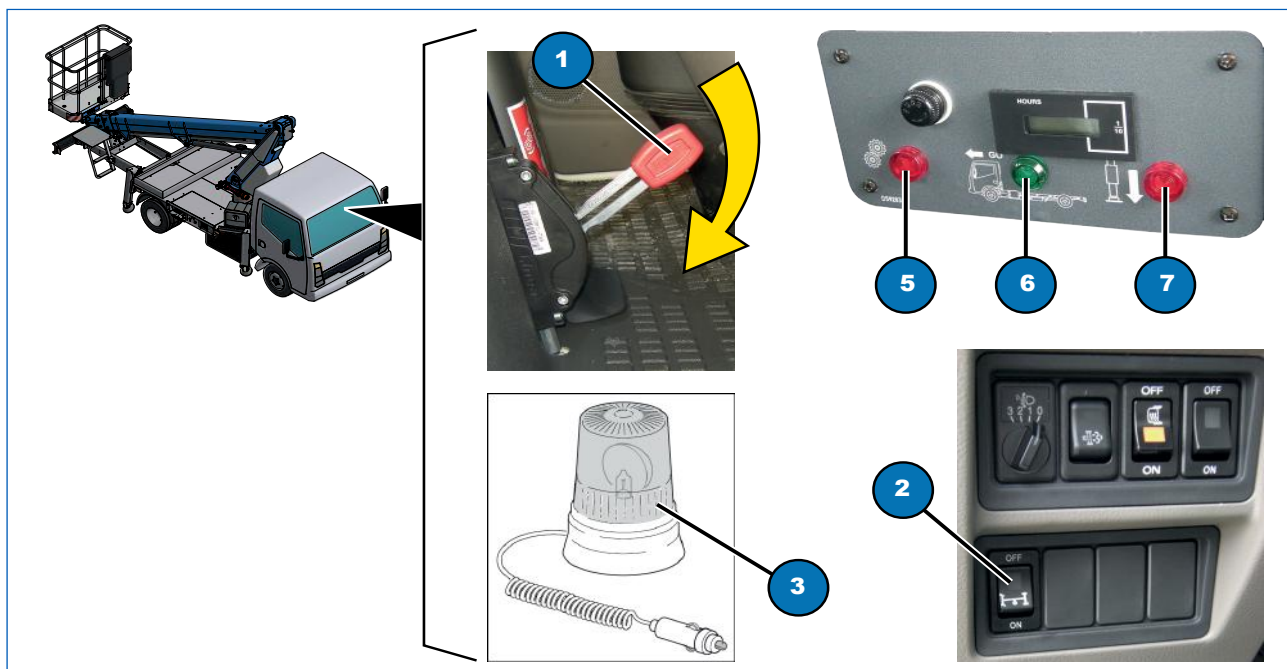


Fig. 6.1



CAUTION

Before starting any manoeuvre (in cold weather), it is advisable to run the hydraulic system pump at idle speed for a few minutes so that the oil reaches the minimum working temperature (about 40°) to allow it to flow correctly.

6.3.4 Stabilising the elevating work platform (MEWP)

Procedure:

- position yourself in front of the “ground control panel”;
- place the key in the selector switch (Fig. 6.2, 9)
- turn the selector switch (Fig. 6.2, 9) into the “Stabiliser controls” position;
- the light (Fig. 6.2, 8) will turn on;
- make sure that all the stabiliser indicator lights (Fig. 6.2, 1, 2, 3 & 4) are off;



CAUTION

If one or more indicator lights are on, it indicates that there is a fault with the stabiliser limit switches.

DO NOT STABILISE THE PLATFORM!

- Extend the stabiliser beams by operating the levers in turn (Fig. 6.3, 5 & 6). Move the levers downwards to extend the beams, upwards to retract.
- Lower the stabilisers by operating the levers in turn (Fig. 6.3, 1, 2, 3 & 4). Move the levers downwards to extend the stabilisers, upwards to retract. Fully extend the stabilisers to lift up the vehicle and take the weight off the suspension.
- Check the spirit level (Fig. 6.3, 7) located under the stabiliser controls and level the vehicle using the stabiliser control levers. The machine is perfectly level when the bubble in the spirit level is at the centre (0°).
- Check that the indicator lights are on (Fig. 6.3, 1, 2, 3 & 4), which indicates that it is possible to raise the boom.



CAUTION

When the indicator light comes on it does not mean that the vehicle has been properly stabilised. This is only indicated by the spirit level (Fig. 6.3, 7).

Before getting onto the platform, make sure that the machine is properly stabilised: chassis lifted and level, weight taken off the suspensions and all four stabilisers resting on suitably firm ground.

If the ground is not firm enough to withstand the weight, use planks that are suitable for the purpose and that have been checked before use.

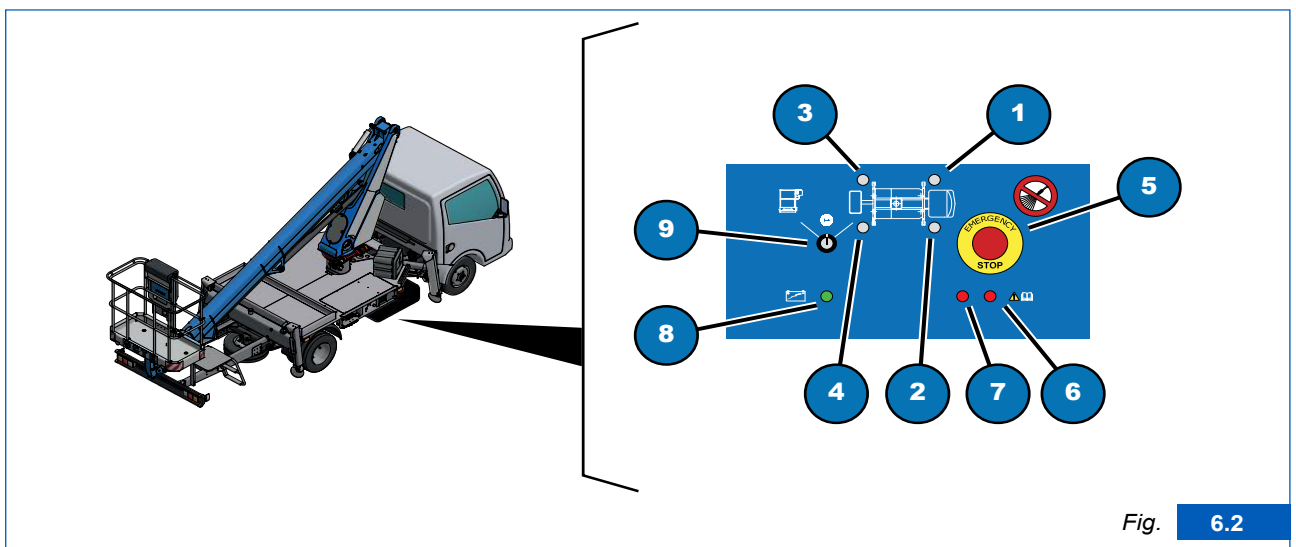


Fig. 6.2

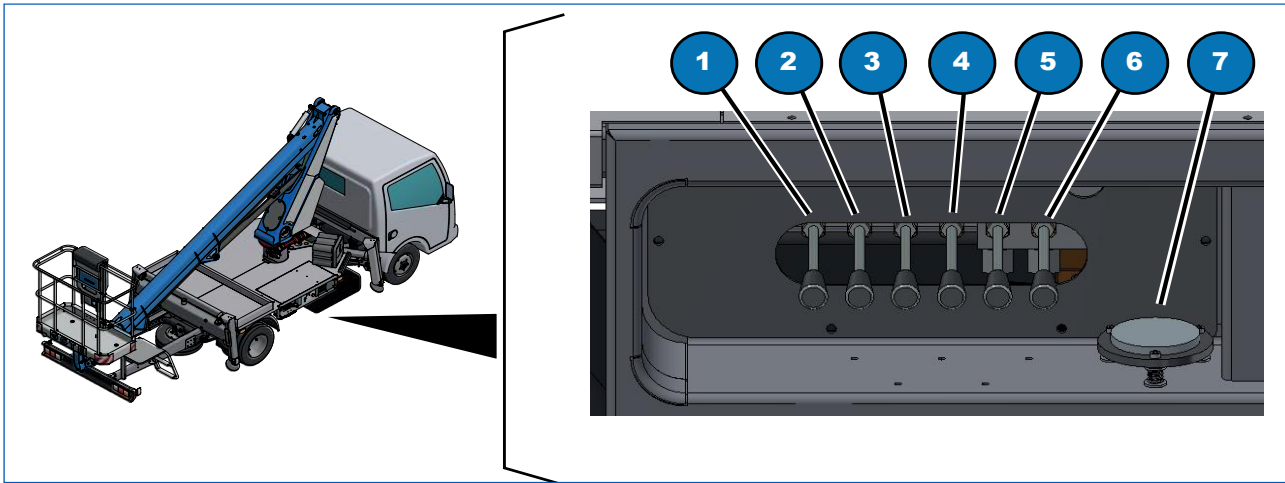


Fig. 6.3



OBLIGATORY

Put the helmet and harness on before getting onto the platform.

Before lifting the platform to a height, ensure that the machine is properly stabilised by checking that the four blocking valves on the stabilisers are closed. If necessary, call the Assistance Centre.

6.3.5 Using the elevating platform



CAUTION

Before moving the platform, make sure that the weight in the platform is evenly distributed and that it does not exceed the maximum permissible load. Perform the manoeuvres one at a time in order to minimise stress on the equipment.

Procedure:

- turn the selector switch key (Fig. 6.2, 9) to the “Work Platform” position;
- remove the key and take it with you;
- check the condition of the personal protective devices before using them. Wear a safety harness and any other PPE that may be necessary before getting on the platform;
- carefully get onto the work platform;
- check that the access gate is closed;
- connect the snap hook of the harness to one of the anchorage points on the work platform;
- check that the power supply indicator LED on the work platform control board is on (Fig. 6.4, 9);
- lift the telescopic boom or the articulated boom so that it can be rotated without being obstructed by the rear stabilisers;
- lifting the boom from the support plate inhibits the stabilising movements.
- Move the boom by keeping the selector switch control pressed (Fig. 6.4, 1, 2, 3, or 4) in the required position;
- At least one person that is qualified or trained to use the machine should be present on the ground whilst it is being used.
- when the platform is raised, ensure that it does not collide with fixed or mobile parts or the cabin of the vehicle. Keep a safe distance from electrical lines (see section 2.3.1). Rotate, lift and lower the boom with caution. Do not lean out from or hold onto the outside of the work platform.

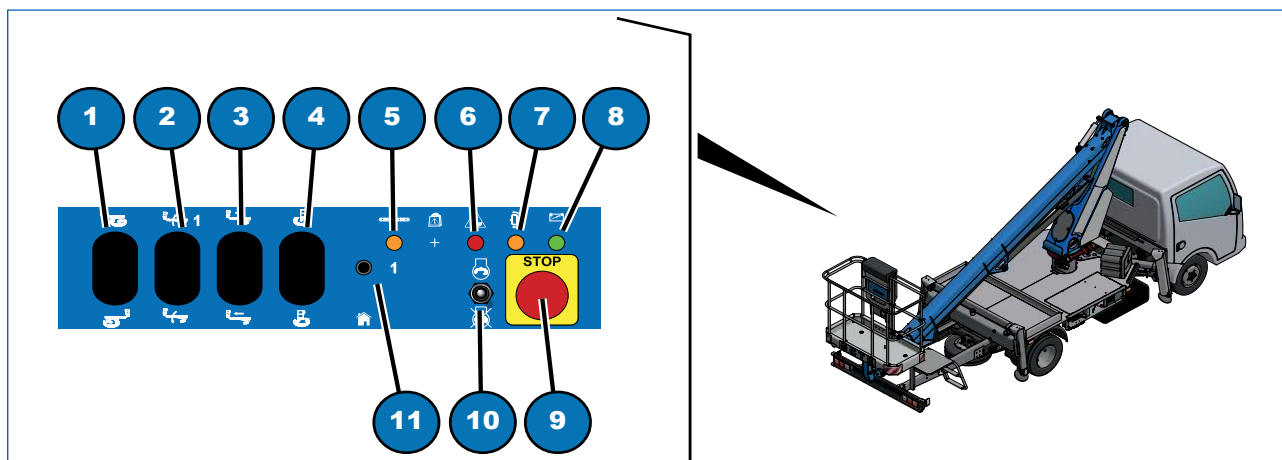


Fig. 6.4

AVVERTENZA

If you wish to switch off the engine once you have reached the work position, press the selector switch (Fig. 6.4, 10) downwards.

To restart, press the selector switch (Fig. 6.4, 10) upwards.



CAUTION

On the machines equipped with a pantograph anti-collision device, all dangerous manoeuvres are blocked when close to the vehicle cabin while all other manoeuvres are allowed.

6.3.6 Returning the lifting platform to its rest position

Return the work platform to its rest position as follows (Fig. 6.5):

- Retract the telescopic elements of the boom completely (3).
- Rotate the work platform (4) to its central position (90° with respect to the boom).
- Retract the extension completely, close the main boom (2), position the turret in the centre by lining up the yellow markings (1), lower the telescopic boom until reaching the rest position.
- Visually check that the boom is centred perfectly on its rest.
- Get off the platform carefully.
- Check that there are no objects inside the platform.

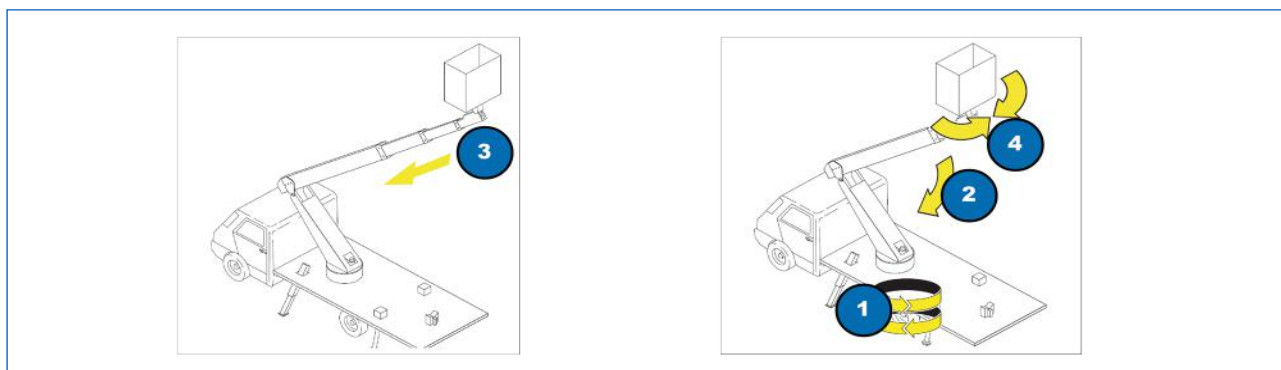


Fig. 6.5

6.3.7 Closing the stabilisers

- Insert the key in the selector switch on the ground control panel and turn it to the “stabilisers” position (Fig. 6.2, 9);
- retract the stabilisers completely by operating the levers (Fig. 6.3, 1, 2, 3 & 4); retract the beams completely by operating the levers (Fig. 6.3, 5);
- check that the stabiliser indicator lights turn off (Fig. 6.2, 1, 2, 3 & 4);
- rotate the key to the “neutral” position and remove it from the selector switch (Fig. 6.2, 9).

6.3.8 Switching off the vehicle

Sit in the driver's seat (Fig. 6.1):

- Check that the red indicator light on the control panel is off, indicating the successful retraction of the stabilisers (7) and that the green indicator light is on, indicating that the machine is ready to be moved (6);
- Bring the manual accelerator control back to idle speed (unless the vehicle has an automatic acceleration control)

Disengage the power take-off as follows (Fig. 6.1):

- Depress the clutch pedal.
- press the disengage button (2) or move the lever between the seats(1) to “DISENGAGE”;
- Release the clutch pedal.
- the red “power take-off” button (5) will switch off and the sound alarm will stop.



Fig.

6.6



OBLIGATORY

When using the vehicle on a public road, make sure that you have the vehicle documents and your driver's licence with you and keep strictly to the Highway Code.

6.4 Parking

- Park the machine in a suitable area out of the way of traffic. The ground must be level and firm.
- If parking on a slope or on an inclination, apply the handbrake and chock the wheels.
- Run the engine at idle speed for a few minutes to let it cool down gradually.
- Switch off the engine.
- Pull the parking brake.
- Remove the key.
- Lock the doors.
- Check that the control panels, carters and any equipment containers are closed.

6.5 The S3 system control panel (Smart Stability System)

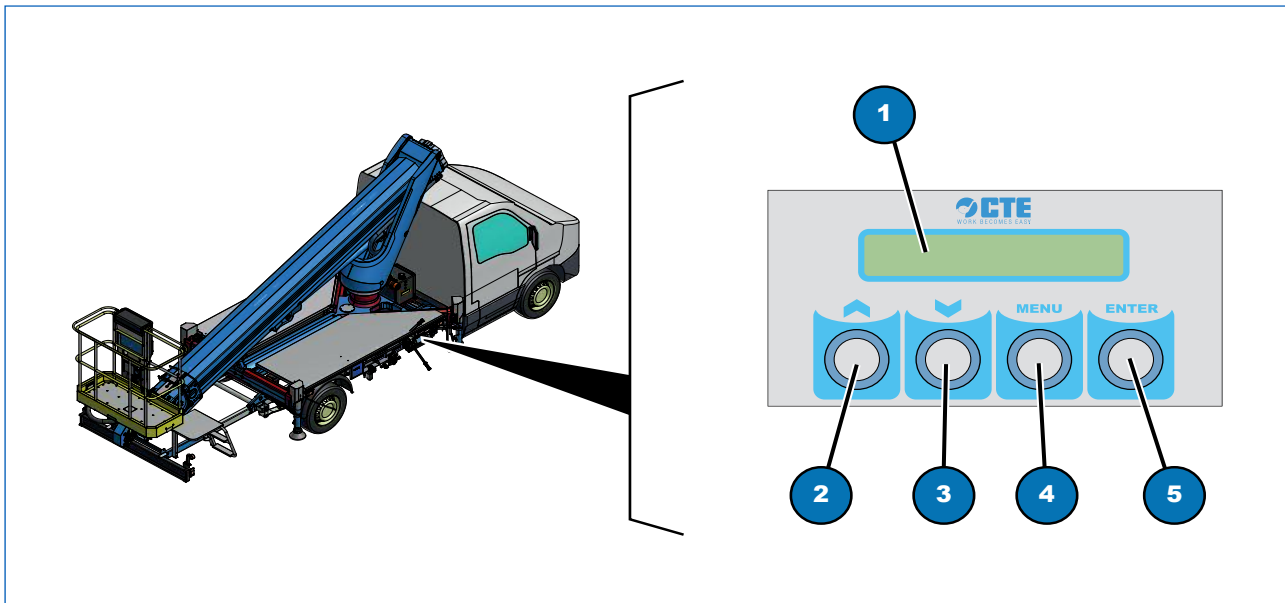


Fig. 6.7

The control panel makes it possible to diagnose and calibrate the components in the **S3 system** (Smart Stability System).

To use the panel, the system needs to be powered on (control panel on and PTO inserted).



CAUTION

The system's components can be calibrated only by staff authorised by the manufacturer. For this reason, access to the related menu is password protected.

To access the diagnostics menu:

- press the MENU button (Fig. 6.7 - 4) for about 3 seconds;
- use the UP (Fig. 6.7 - 2) and DOWN (Fig. 6.7 - 3) buttons to scroll through the pages of the menu:
 - BOOM ANGLE DIAGNOSTICS
 - SW RELEASE DIAGNOSTICS
 - CHASSIS LEVELLING
 - DIAGNOSTIC INPUTS
 - STABILIZER/OUTRIGGER DIAGNOSTICS
 - CHASSIS CTRL UNIT DIAGNOSTICS
 - PLATFORM CTRL UNIT DIAGNOSTICS
 - TIPPING PARAMETERS DIAGNOSTICS
 - PLATFORM WEIGHT DIAGNOSTICS
 - BOOM LENGTH DIAGNOSTICS
 - TURRET ANGLE DIAGNOSTICS
- press the ENTER button (Fig. 6.7 - 5) on the required page to access the corresponding sub-pages;
- use the UP buttons (Fig. 6.7 - 2) and DOWN (Fig. 6.7 - 3) to browse the sub-pages;

7

EMERGENCY MANOEUVRES

7 Emergency manoeuvres

7.1 Foreword

In the event of emergency manoeuvres, the operating ground station must be under the control of an expert and skilled person.

All operations must be carried out with great care and under his/her supervision.

Carefully follow the instructions provided in this manual.

**DANGER!**

The occurrence of the cases listed results in hazardous situations. Therefore, operators are required to stop all manoeuvres and close the platform safely and immediately contact CTE authorised repair shop to have the normal machine use conditions restored.

**CAUTION**

In some set-ups, the machine is provided with optional equipment such as: Electric pumps, Electric Engines, Auxiliary Engines. If the vehicle pump is malfunctioning (PTO), these devices must be used to replace it.

7.1.1 Using solenoid valves

**CAUTION**

There is a seal on solenoid valves to guarantee the installation integrity. If seals are missing, it is considered to be tampering and the manufacturer cannot be held liable. The personnel in charge of inspecting and using the platform will be deemed responsible. For this reason, it is necessary to apply the seals at an authorised CTE workshop immediately after having solved the emergency.

7.2 Work platform emergency stop

The platform is equipped with a device that immediately stops all movements.

In order to activate it, press one of the three red mushroom head emergency buttons (1, 2 and 3) located on the machine.

Once the cause of the emergency has been resolved, reactivate the controls by rotating the button by a quarter of a turn.

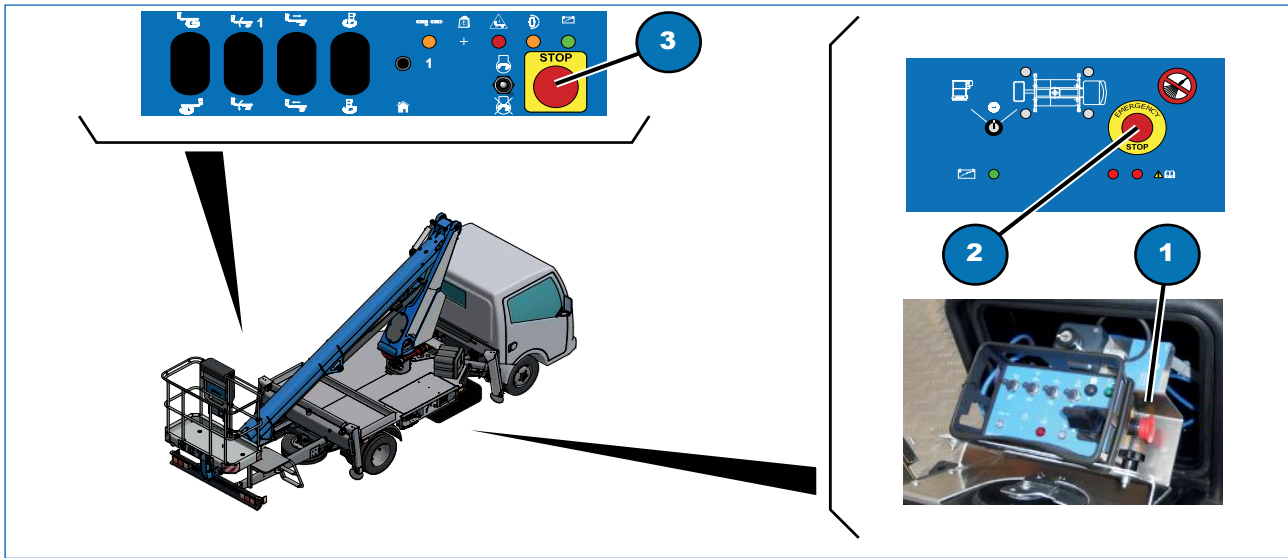


Fig. 7.1



CAUTION

Read and understand the previous chapters before reading this one.

7.3 Levelling the work platform



CAUTION

If you notice that the work platform is not perfectly level with respect to the horizontal, lower it to the ground and get off.

The procedure for restoring safe working conditions (work platform horizontal), is described in Chapter 8 "Maintenance" and should be carried out by a qualified technician.

7.4 Lowering the work platform using the ground controls in the event of operator incapacity.

In the event that the operator on the work platform is incapacitated, the emergency controls should be used as follows (Fig. 7.2):

- 1) Remove the key from inside in the turret that is fastened using a lead wire seal.
- 2) Place the key in the selector switch (12) and turn it to the “Mobile Control Console” position.
- 3) Activate the control switch for the required movement and at the same time use the proportional joystick (6). Using the movement control switches with care, bring the work platform into its rest position.
- 4) When finished, place the selector switch (12) back into the central position.
- 5) Remove the key from the selector switch (A) and close the cover of the external box.

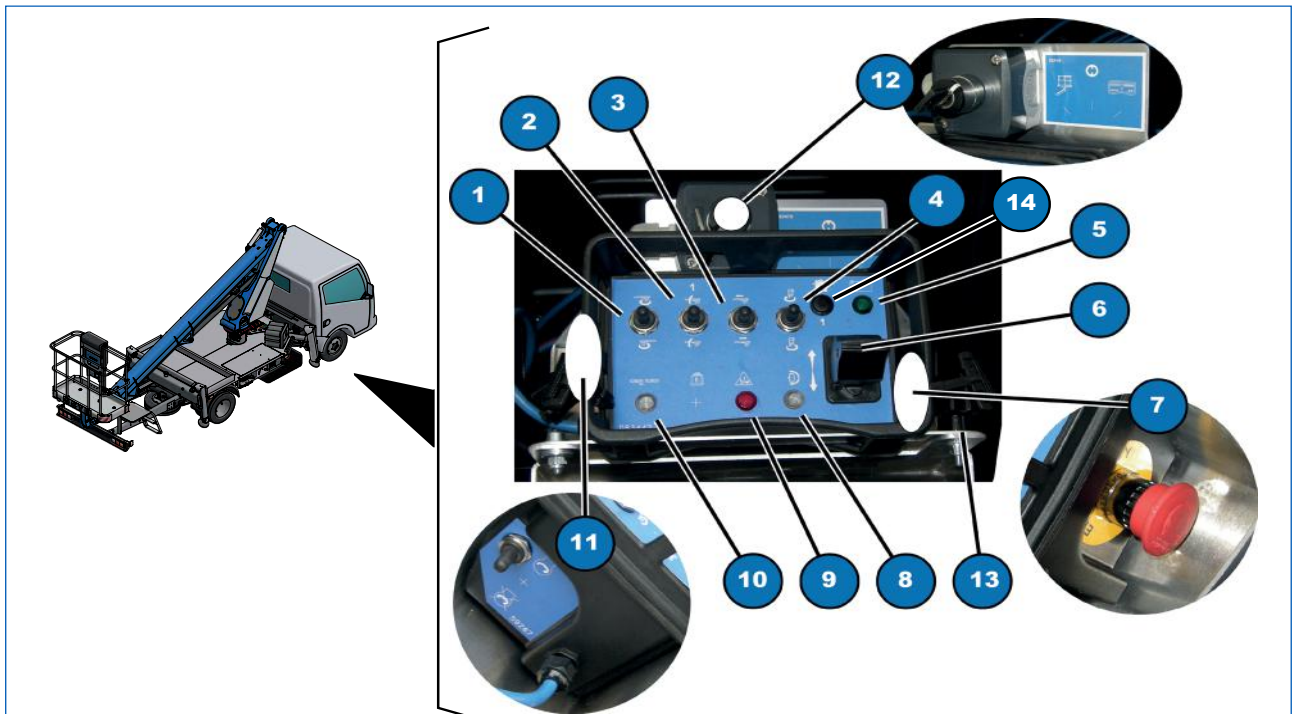


Fig. 7.2



OBLIGATORY
Contact the Assistance Centre in order to
replace the key in the turret with a lead wire seal.

7.5 Lowering the work platform in the event of a power cut

If there is a failure to the vehicle's engine, the gear pump that supplies motor power to all the equipment, the platform can be lowered as follows (Fig. 7.3):

- 1) remove the control lever (1) of the manual pump (2) fixed to the ladder by loosening the black locking knob;
- 2) insert the grip (1) in the manual pump (2) located near the rear right-hand extension;
- 3) whilst the operator on the work platform controls the required movement, activate the manual pump (2);
- 4) when recovery has been carried out, re-position the manual pump control lever, fixing it on the ladder using the black locking knob.



Fig. 7.3

7.6 Manual lowering of platform from the ground

If the vehicle's engine breaks down, the gear pump that supplies power to all the equipment fails or there is a power cut, the platform can be lowered as follows:

- 1) remove the manual pump control lever (Fig. 7.3, 1) fastened in the ladder by unscrewing the black locking knob (Fig. 7.3, 3);
- 2) insert the handle onto the manual pump (Fig. 7.3, 2);
- 3) unfasten the "stabiliser/work platform control" diverter valve (Fig. 7.4 1) located close to the stabiliser controls;
- 4) completely remove the carter in the turret by unscrewing the black locking knobs (Fig. 7.4, 2, 3, 4 and 5);

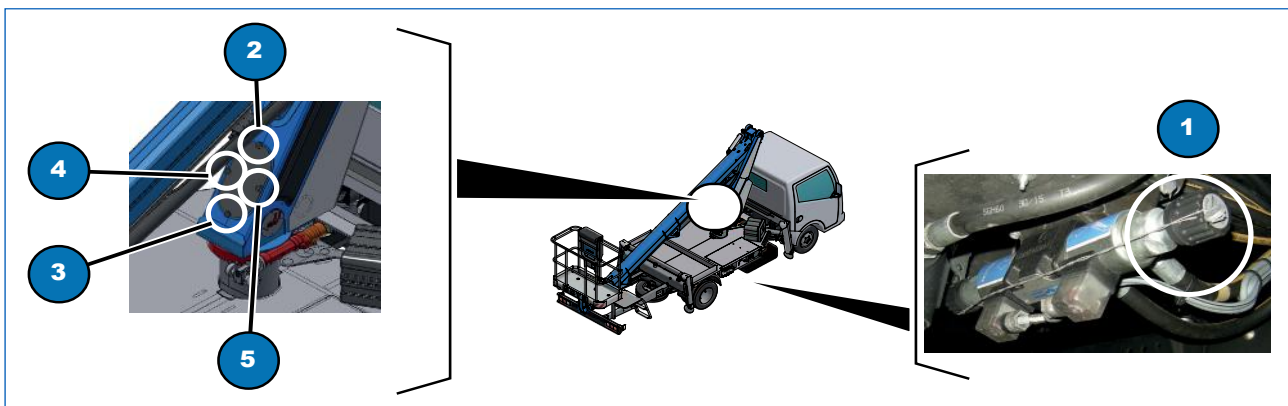


Fig. 7.4

- 5) lower the platform to the ground following the indications shown in the diagram on the label (Fig. 7.5, 4) above the cover:



CAUTION

Always open only one valve at a time. Before moving to the next valve, close the valve that was opened previously.

The direction of rotation of the emergency manoeuvres always refers to a person sitting in the cab of the vehicle.

- A) completely close the proportional valve (Fig. 7.5, 5);
open the valve relative to the telescopic arm, 3A to extend or 3B to retract the extension: set the speed of the desired maneuver by acting on the proportional valve (Fig. 7.5, 5). At the end of the maneuver, close the valve (Fig. 7.5, 3A o 3B) and the valve (Fig. 7.5, 5);
- B) open the valve relative to the working platform, 4A for the rotation to the right or 4B for the rotation to the left:
set the speed of the desired maneuver by acting on the proportional valve (Fig. 7.5, 5). At the end of the maneuver, close the valve (Fig. 7.5, 4A o 4B) and the valve (Fig. 7.5, 5);
- C) open the valve relative to the turret, 1A for the rotation to the right or 1B for the rotation to the left:
set the speed of the desired maneuver by acting on the proportional valve (Fig. 7.5, 5). At the end of the maneuver, close the valve (Fig. 7.5, 1A o 1B) and the valve (Fig. 7.5, 5);
- D) and finally open the valve relative to the telescopic arm, 2A to lift or 2B lower the arm:
set the speed of the desired maneuver by acting on the proportional valve (Fig. 7.5, 5). At the end of the maneuver, close the valve (Fig. 7.5, 2A o 2B) and the valve (Fig. 7.5, 5);
- E) after the maneuvers, unscrew until the proportional valve is knocked (Fig. 7.5, 5);
- F) reposition the hand pump control lever in a turret, securing it with the black knob.

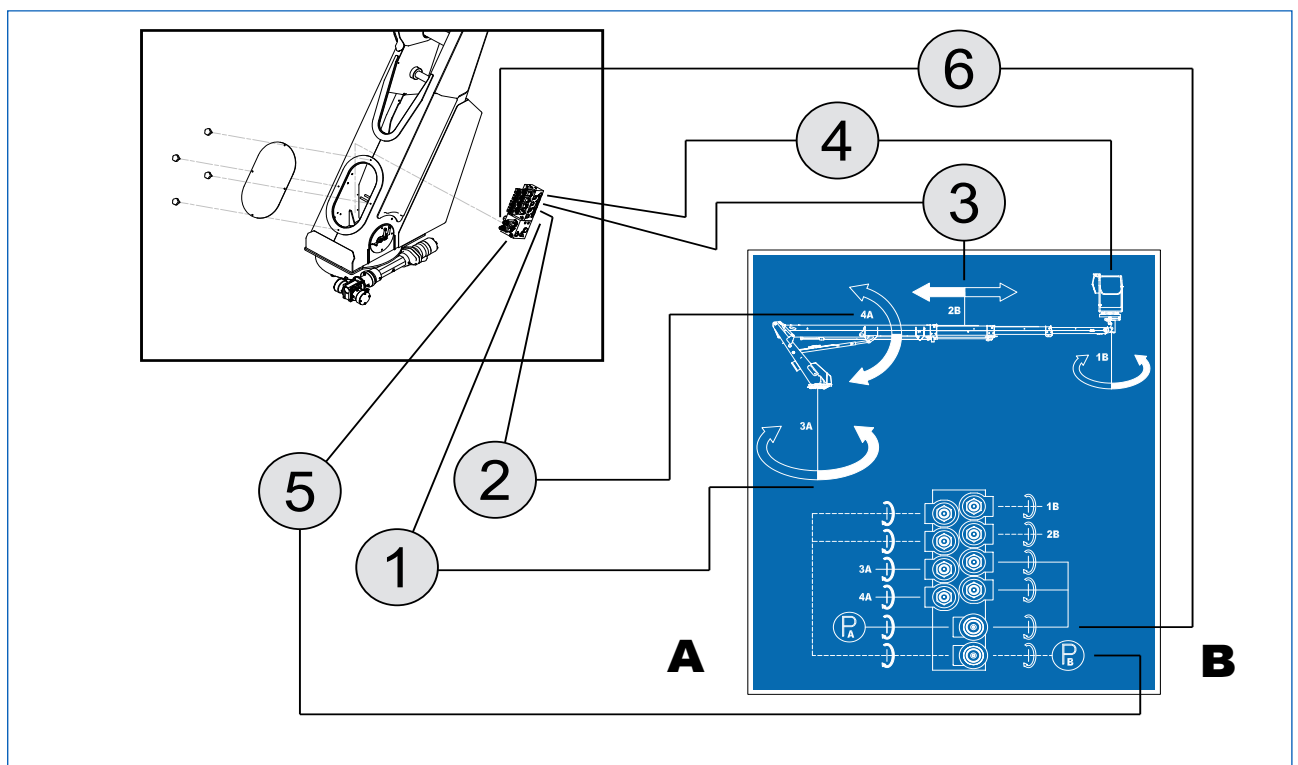


Fig. 7.5



CAUTION

Contact the Assistance Centre to check and repair the fault and attach a new lead wire seal onto the valves.

GB

Chapter 7

EMERGENCY MANOEUVRES



This page intentionally left blank

8

MAINTENANCE

8 Maintenance

This chapter covers routine maintenance only.

The operator can only carry out the routine maintenance indicated by “O” (operator) in the maintenance summary table

Other maintenance work, indicated by “M” (qualified technician)” in the maintenance summary table, must be carried out by qualified technicians and following the schedule and instructions indicated in the manual. Follow the maintenance instructions in order to keep the equipment in good working order and safe to operate.



CAUTION

Any maintenance work not mentioned in this chapter should only be carried out by After-Sales Services or by Service Centres authorised by the manufacturer.

The aerial platform can work in contact with water, sand, earth, etc. and requires regular lubrication. This is vitally important, not only for to ensure machine’s durability over time, but also to minimise operating costs.

Please contact **After-sales Services** for any further information.



Phone: +39 0464 711200

Fax: +39 0464 485099

Before each use, ensure that all necessary maintenance has been carried out and carry out all the checks indicated in the “Pre-start checks” table.



CAUTION

**Take a damaged or broken machine out of service immediately.
Repair all damage and/or faults before putting the machine back into service.**

Perform a quarterly check on any machines that have been out of service for more than three months before putting them back into service.

8.1 Inspection logbook

The inspection logbook issued by CTE to the platform owner (pursuant to the meaning of Annex I to Directive 2006/42/EC) is to be considered an integral part of the machine and must accompany the machine throughout its operational life until it is scrapped.

The following information regarding the machine must be recorded in the logbook:

- Change of ownership
- Replacement of motors, engines, mechanisms, structural components, electrical components, hydraulic components, safety devices and corresponding components
- Significant faults and relative repairs
- Regular inspections

AVVERTENZA

If there are not enough sheets in the logbook, add other sheets as necessary, by photocopying them or preparing them in the same way as the ones already present. The user should indicate the type of platform, the factory serial number and the year of construction on the additional sheets so that they can become an integral part of this logbook.

Any maintenance carried out after the first 100 hours, on a quarterly, six-monthly or annual basis, should be recorded in section 7 (Periodic checks and maintenance) of the inspection logbook.

The Inspection Logbook should be kept at the disposal of supervisory bodies for a period of five years from the date of the last record, or until the equipment is put out of service, whichever occurs first. A document certifying the most recent check should accompany the equipment wherever it is used.

8.2 General Rules

- When removing and reinstalling parts, always use extractors, spanners and equipment that will not damage the components.
- Use copper headed hammers or wooden mallets to release parts that are securely fastened.
- Separate the pieces of the various units and partially screw the nuts onto their corresponding pins or stud bolts. Clean the parts using brushes or rags, then wash them using petroleum or warm water and remove all residues using compressed air.
- After grinding using abrasive tools, thoroughly wash the parts or blast them with compressed air to make sure that all the abrasive dust has been removed
- When reassembling parts, ensure that they are clean and adequately lubricated.
- Take maximum care with the snap rings and spring pins: if they show signs of damage, replace them immediately.



CAUTION

All maintenance described in the following pages is applicable exclusively to the aerial work platform.

For maintenance of the vehicle on which the equipment is installed, refer to the instructions provided by the vehicle manufacturer.

8.3 Maintenance summary table



CAUTION

In order for the warranty to remain valid, inspection and maintenance must be carried out at an authorised CTE service centre after the first 100 hours and after every 1000 hours (or every year) of operation.

8.3.1 Pre-start checks

Description of operation		Section
Visual inspection	O	6.3.1
Check use and maintenance manual	O	6.3.1
Legibility of plates and adhesives	O	6.3.1
Checking for damages and missing, loose or detached parts	O	6.3.1
Check welds, pins and joints	O	6.3.1
Check for any oil leaks	O	8.6
Check pressures	O	8.6.3
Hydraulic oil level check	O	8.6.5
Check hydraulic oil filter clogging indicators	O	8.6.6
Check the operation of the controls in the platform and on the ground	O	8.7.1
Check safety devices (Emergency Stop)	O	8.7.1
Test limit switches	O	8.7.2
Test power supply differential circuit breaker in the platform.	O	15.3

O = to be done by an operator

M = to be done by a qualified technician

8.3.2 Every 50 hours of operation

Description of operation		Section
Visual inspection	O	6.3.1
Check use and maintenance manual	O	6.3.1
Legibility of plates and adhesives	O	6.3.1
Checking for damages and missing, loose or detached parts	O	6.3.1
Check welds, pins and joints	O	6.3.1
Check for any oil leaks	O	8.6
Check pressures	O	8.6.3
Hydraulic oil level check	O	8.6.5
Check hydraulic oil filter clogging indicators	O	8.6.6
Check the operation of the controls in the platform and on the ground	O	8.7.1
Check safety devices (Emergency Stop)	O	8.7.1
Test limit switches	O	8.7.2
Test power supply differential circuit breaker in the platform.	O	15.3
Lubrication and greasing	O	8.5

O = to be done by an operator

M = to be done by a qualified technician

8.3.3 Every 100 hours of operation

Description of operation		Section
Visual inspection	O	6.3.1
Check use and maintenance manual	O	6.3.1
Legibility of plates and adhesives	O	6.3.1
Checking for damages and missing, loose or detached parts	O	6.3.1
Check welds, pins and joints	O	6.3.1
Check for any oil leaks	O	8.6
Check pressures	O	8.6.3
Hydraulic oil level check	O	8.6.5
Check hydraulic oil filter clogging indicators	O	8.6.6
Check the operation of the controls in the platform and on the ground	O	8.7.1
Check safety devices (Emergency Stop)	O	8.7.1
Test limit switches	O	8.7.2
Test power supply differential circuit breaker in the platform.	O	15.3
Replace hydraulic oil filters	M	8.6.6
Lubrication and greasing	O	8.5
Check turret fixing screws	M	8.8.1
Check the correct tightness of all connecting bolts from the subframe to the truck	M	8.8.2

O = to be done by an operator

M = to be done by a qualified technician

8.3.4 Every 6 months or 500 hours of operation

Description of operation		Section
Visual inspection	O	6.3.1
Check use and maintenance manual	O	6.3.1
Legibility of plates and adhesives	O	6.3.1
Checking for damages and missing, loose or detached parts	O	6.3.1
Check welds, pins and joints	O	6.3.1
Check for any oil leaks	O	8.6
Check pressures	O	8.6.3
Hydraulic oil level check	O	8.6.5
Check hydraulic oil filter clogging indicators	O	8.6.6
Check the operation of the controls in the platform and on the ground	O	8.7.1
Check safety devices (Emergency Stop)	O	8.7.1
Test limit switches	O	8.7.2
Test power supply differential circuit breaker in the platform.	O	15.3
Replace hydraulic oil filters	M	8.6.6
Lubrication and greasing	O	8.5
Check turntable fixing screws	M	8.8.1
Check the correct tightness of all connecting bolts from the subframe to the truck	M	8.8.2

O = to be done by an operator

M = to be done by a qualified technician

8.3.5 Yearly or every 1000 hours of operation

Description of operation		Section
Visual inspection	O	6.3.1
Check use and maintenance manual	O	6.3.1
Legibility of plates and adhesives	O	6.3.1
Checking for damages and missing, loose or detached parts	O	6.3.1
Check welds, pins and joints	O	6.3.1
Check for any oil leaks	O	8.6
Check pressures	O	8.6.3
Hydraulic oil level check	O	8.6.5
Check hydraulic oil filter clogging indicators	O	8.6.6
Check the operation of the controls in the platform and on the ground	O	8.7.1
Check safety devices (Emergency Stop)	O	8.7.1
Test limit switches	O	8.7.2
Test power supply differential circuit breaker in the platform.	O	15.3
Change hydraulic oil	M	8.6.5
Replace hydraulic oil filters	M	8.6.6
Lubrication and greasing	O	8.5
Check turntable fixing screws	M	8.8.1
Check the correct tightness of all connecting bolts from the subframe to the truck	M	8.8.2
Check slewing ring clearance	M	8.10

O = to be done by an operator

M = to be done by a qualified technician

8.4 Maintenance of mechanical components

8.4.1 Main mechanisms

Mechanical parts in mutual rotation should be inspected periodically, checking the condition of nuts, bolts and screws to make sure none have been loosened. Before each use, visually inspect the fixing screws and nuts connecting the slewing ring to the chassis and turret, the gearbox, the connection between the rotating joint and the turret, the locks on the pins, the fixing nuts on the vehicle, all other bolts, particularly on parts subjected to vibration and movement. Before each use, also visually inspect all the structural components for cracks in welds, corrosion or signs of wear. After the first 100 hours and then every 3 months or 500 hours, check:

- the tightness of the turntable fixing nuts using a torque wrench (refer to the “Tightening torque” table)
- the tightness of all connecting bolts of the subframe to the truck using a torque wrench (refer to the “Tightening torque” table)

8.4.2 Combustion engine

For maintenance of the internal combustion engine, follow the instructions indicated in the vehicle manufacturer’s manual.

8.5 Lubrication and greasing

8.5.1 Greasing the pins

Every 50 hours, grease the pins at the points specified in the figure by injecting a small amount of grease using a manual grease gun (D fig. 8.1), though the grease fittings.

Lubricant: **AGIP F1 GR MU2** grease or equivalent.



CAUTION

Do not grease the two of grease fittings on the slewing bearing.

Place the platform in the position shown in A (Fig. 8.1) before proceeding with the lubrication and greasing.

All platform pins, joints and stabiliser seats are equipped with ball lubricators identified by a specific label (Fig. 8.1, B).

To grease the articulated joints, inject a small quantity of grease using a greasing pump (Fig. 8.1, C), inject pressurised grease through the domed grease nipples until the old lubrication grease comes out of the ends.

Lubricate all the points of the joints and all parts fitted with grease fittings.

Move all the joints and introduce again a little quantity of lubricating oil.

Clean the elements to remove the exhaust lubricant discharged from the joint points.

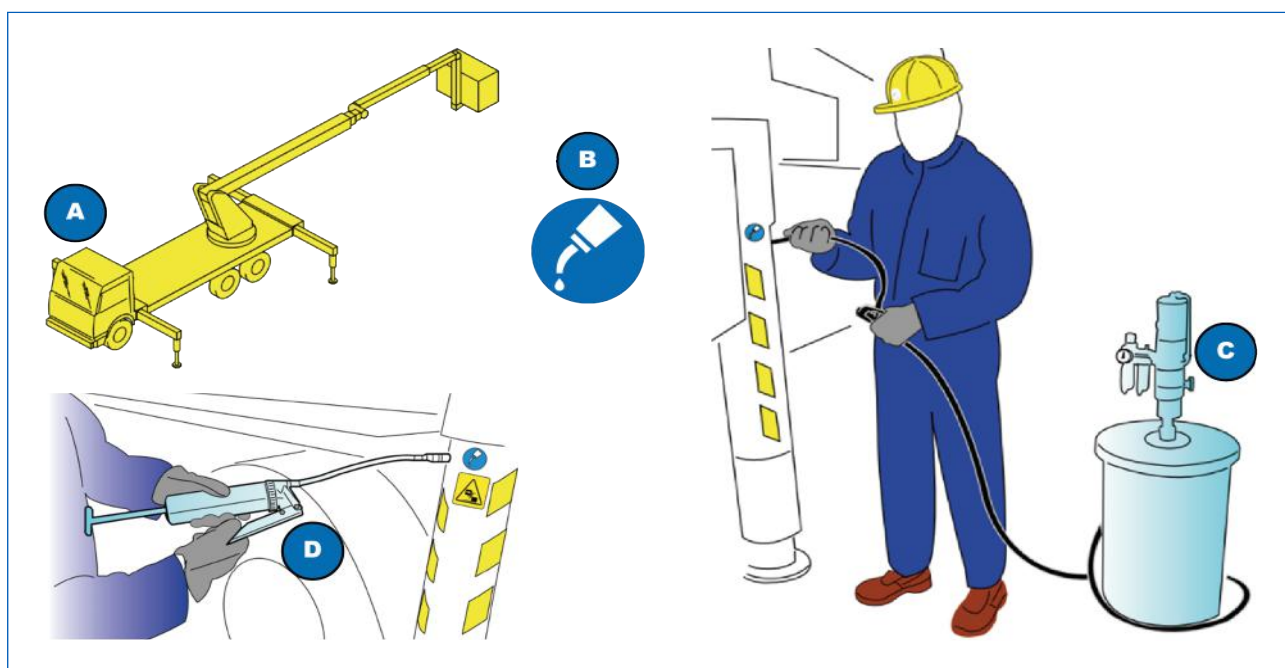


Fig. 8.1

8.5.2 Lubricating the stabilisers

Lubricate every 50 hours of operation as follows: stabilise the machine by fully extending the stabilisers. Check the lubrication of the sliding elements. If they are dusty or dirty, clean them and remove the grease. Then, using a brush, apply a thin layer of NIPLEX EP1 grease mixed with 50% of Agip OSO32 hydraulic oil.

8.5.3 Lubricating the telescopic boom elements

Lubricate every 50 hours of operation as follows: stabilise the machine and fully extend the telescopic boom. Check the lubrication of the elements. If they are dusty or dirty, clean them and remove the grease. Then, using a brush, apply a thin layer of Agip F1 GR MU2 grease mixed with 50% of Agip OSO32 hydraulic oil.

8.5.4 Lubricating the turntable

Every three months or every 500 hours of operation, check and lubricate the turntable. These intervals can be varied according to the actual operating conditions.

8.6 Hydraulic system maintenance

The hydraulic system is made up of various components that have to be maintained at different intervals.

8.6.1 Hydraulic cylinders

Before each use, check that there are no leaks in the following points: rod seal, fittings, valves and pipes. If there are leaks, do not use the machine and contact After-sales Services.

8.6.2 Hydraulic system pipes

Before each use, visually check the fittings, valves and pipes for leaks. Check that the rubber hoses are integral and without cracks. If there are leaks, do not use the machine and contact After-sales Services.

8.6.3 Pressure check and valve adjustment

Check the maximum pressure valve: stabilise the platform properly, retract the boom by pressing the relevant button on the ground control panel and check that the pressure on the manometer corresponds with what indicated in the technical data table.

If the pressure is different, contact After-sales Services.



CAUTION

All valve adjustments should be carried out at the manufacturer's premises or at an Authorised Service Centre.

8.6.4 Hydraulic motors and pumps

Before each use, visually check the fittings, flanges and pipes for leaks. Hydraulic pumps and motors do not require additional maintenance instructions. If there are any leaks, contact After-sales Services.

8.6.5 Hydraulic oil

Before use, visually check the level of the hydraulic oil by using the indicator on the tank (Fig. 8.2, C). The level should be at the centre of the indicator. If necessary, remove the filler cap and top it up. (Fig. 8.2, A).

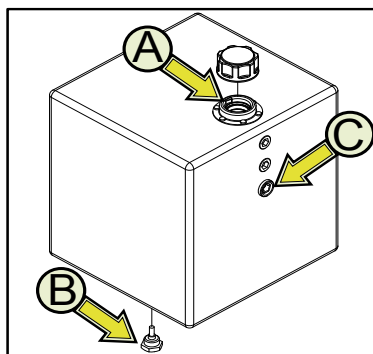


Fig.

8.2



CAUTION

The following operations should be carried out with the platform in its rest position (stabilisers and booms fully retracted).

Change the hydraulic oil every 1000 hours, or at least one a year. At the same time, replace the hydraulic oil filters.

To replace it, get a suitable, large-enough receptacle or receptacles (see Section 3.6.1) and drain the used oil by loosening the drainage cap (Fig. 8.2, 2) found under the tank. Close the drain plug and refill the tank.



CAUTION

Avoid releasing hydraulic oil into the environment when changing it. Dispose of the oil in accordance with current legislation.

8.6.6 Hydraulic oil filter

There is a filter near the tank (Fig. 8.3, 2). Each time the machine is used, check that the filter clogging indicator (Fig. 8.3, 1) is green. This check must be carried out in the operational phase. If the indicator is in the red area, replace the filter.

Replace the filter after the first 100 hours and then every three months or 500 hours. Observe the checks and recommended intervals between replacements, as clogging of the filter affects the working order of the machine and can damage hydraulic components.



CAUTION

If parts of the hydraulic circuit have to be replaced due to serious failures, such as seizing of the pumps, hydraulic motors or cylinders, which results in a large quantity of impurities entering the hydraulic circuit, the filter must be replaced again following the instructions above.

Replace the hydraulic oil filter as follows:

- unscrew the filter (Fig. 8.3, 2) using the special key if necessary;
- insert the new filter and tighten it, taking care to lubricate the sealing gasket with grease.
- top up the hydraulic oil tank (Fig. 8.2, 3) and check the level on the special indicator (Fig. 8.2, 1).

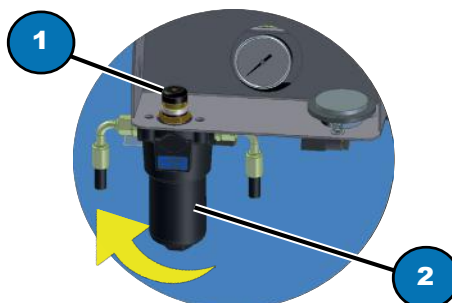


Fig. 8.3



CAUTION

Be careful not to release hydraulic oil into the environment when changing it. Dispose of the filter in accordance with the law.

8.6.7 Restore levelling of work platform



CAUTION

If you notice that the work platform is not level with respect to the horizontal, lower it to the ground and get off. This maintenance work must be performed by a qualified technician (M).



DANGER

THE presence of personnel inside the working platform during these operations is strictly prohibited.

Restore safe working conditions (work platform in horizontal position), as follows:

- 1) Remove the key fastened to the structure by the lead wire seal.
- 2) access the "emergency ground controls" settings (Fig. 4.4);
- 3) Place the key in the selector switch (Fig. 4.4, 6), rotating to the right to the "Emergency Control" position;
- 4) activate the extensible boom lifting selector (Fig. 4.4, 14). Keep the selector switch pressed and at the same time use the joystick (Fig. 4.4, 10), until the work platform about a half metre;
- 5) activate the boom extension selector (Fig. 4.4, 13). Keep the selector switch pressed and at the same time use the joystick (Fig. 4.4, 10), until the work platform is raised about a half metre;
- 6) carefully get up on the bed and open the diverter block lock (Fig. 8.4 4) with the key provided by the Safety Manager, raising the silver coloured lever (Fig. 8.4, 5) on the turret;
- 7) turn both of the two-position diverter valves (Fig. 8.4, 6 & 7) by two positions;
- 8) get down from the bed of the vehicle and press the "extend telescopic boom" selector (Fig. 4.4, 13) and, without letting it go, press the joystick which controls movement speed (Fig. 4.4, 10). By doing this it is possible to level the working platform (completely lower and raise the platform and then align it).
- 9) After completing these operations, place both of the two-position deviator valves, located at the base of the extension boom, back into their original position (extension position, indicated by the label **A**. Remove the lever from the deviator valves, put it back it in the turret and secure it using the black locking knob).
- 10) attach the padlock in the locking position, close it and give the key back to the safety manager.
- 11) check that the extension boom works correctly by pressing the switch that controls the extension of the boom and using the potentiometer lever. Retract the extension boom into its rest position.
- 12) Place the key selector switch (Fig. 4.4, 6) in the "bask controls" position;
- 13) Remove the key and close the cover of the control panel.

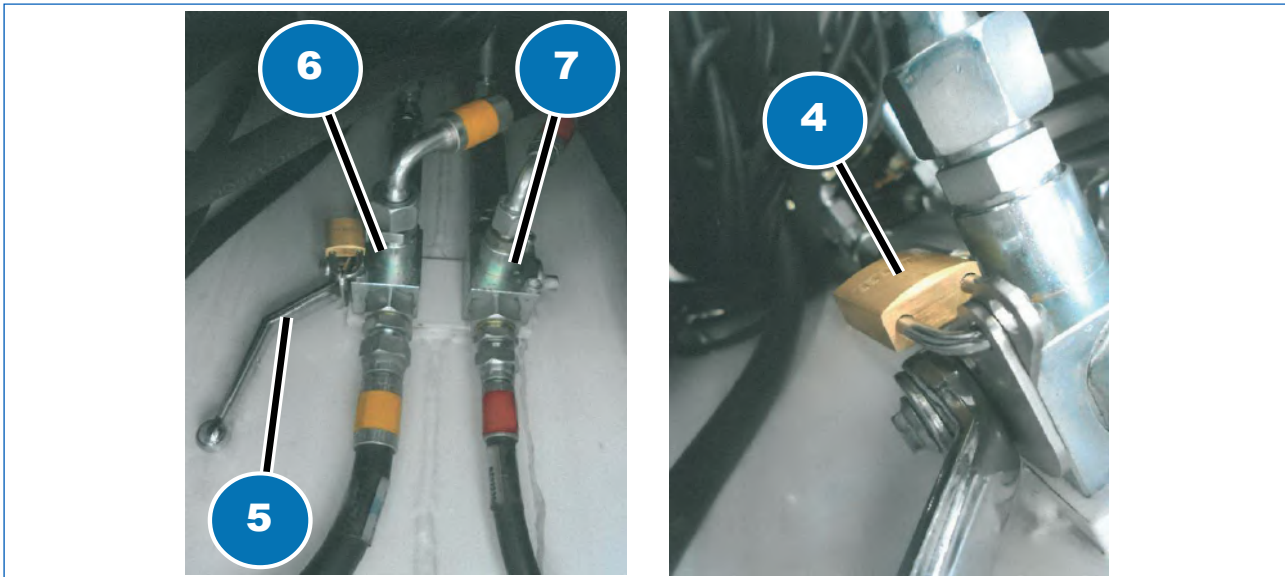


Fig. 8.4



DANGER

When levelling the work platform, it is prohibited to use telescopic swing.

8.7 Electrical system

8.7.1 Electrical circuit

The electrical circuit is made up of many components. Their working efficiency should be checked according to the operations they perform. Check the working order of all operational controls before each use by carrying out a complete work cycle for each control using the ground control panel. Also check that the emergency stop buttons work properly.



CAUTION

There should be nobody on the work platform during the test.

Go onto the work platform and repeat the test using the controls on the platform. Check the condition of the power cable of the ground control panel underneath the turret. If the cable is twisted, remove the plug from the control panel and unravel it.

8.7.2 Stabiliser limit switches and interlock switches

Before each use, check that all the stabiliser/boom interlock limit switches are working properly. To make sure that they are working correctly, stabilise the machine and check the operation of the boom. Lower the boom, retract the stabilisers one at a time and check that it is not possible to operate the boom.

8.8 Tightening the screws

If you need to tighten the screws of the turret and the frame, tighten them using a manual torque wrench (Fig. 8.7, Fig. 8.8, point 1) or an electric one (Fig. 8.6, Fig. 8.8, point 2).

The following tightening torques should be set when tightening, according to the screw material and thread (ISO metric thread)

Nominal screw diameter	M = Tightening torque (Nm)	
	Class 8.8	Class 10.9
12 x 1.25	90.6	127
14 x 1.5	143	202
16 x 1.5	214	302
18 x 2.5	288	406
20 x 2.5	409	576
22 x 2.5	554	780
24 x 3	708	996



CAUTION

Reduce M by 10% when:

- tightening is carried out using cordless tightening machines
- the screws are galvanised.

POSITION OF PLATFORM:

- 1) transport position
- 2) vehicle switched off

8.8.1 Tightening the turret screws

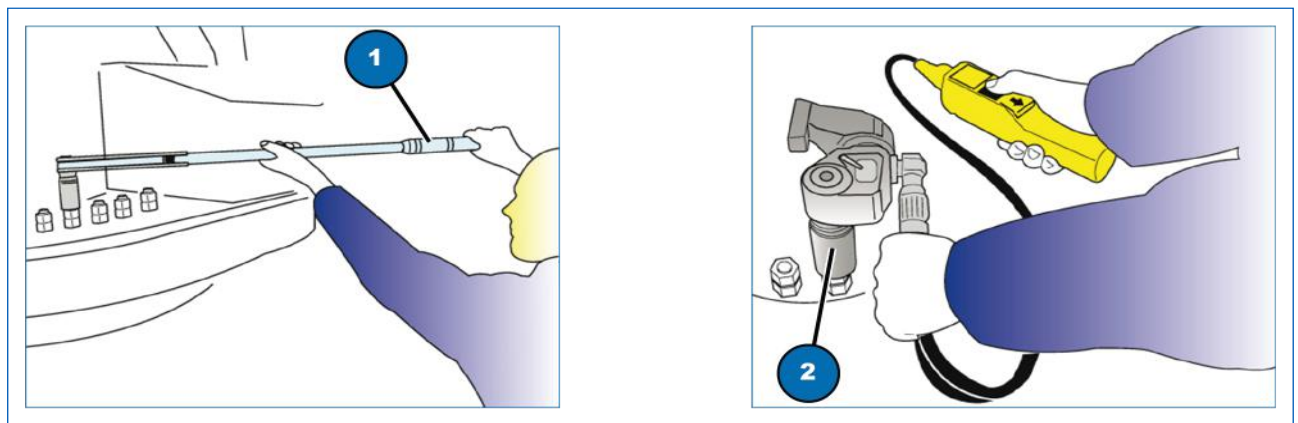


Fig. 8.5

The frequency at which the screws need to be tightened depends on factors such as the frequency of use and the work environment. It is nevertheless possible to establish that under normal work conditions, the screws of the turret should be checked and tightened after the first 250 hours of operation or the first 3 months and generally least every 12 months or 1000 hours.



CAUTION

Do not exceed the values indicated by the dynamometric wrench.

8.8.2 Tightening the frame screws

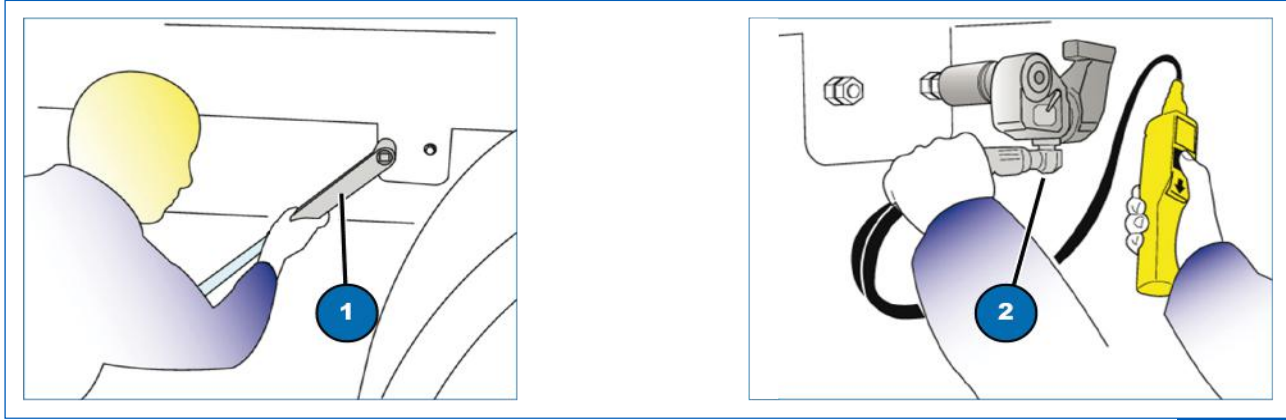


Fig. 8.6

The frequency at which the screws need to be tightened depends on factors such as the frequency of use and the work environment. It is nevertheless possible to establish that under normal work conditions, the screws of the turret should be checked and tightened after the first 250 hours of operation or the first 3 months and generally least every 12 months or 1000 hours.



CAUTION

Do not exceed the values indicated by the dynamometric wrench.

8.9 Telescopic element clearance and sliding block wear verification

POSITION OF PLATFORM:

- 1) transport position
- 2) vehicle switched off

SLIDING BLOCK WEAR CHECK:

The special adjustable blocks (Fig. 8.9, 1) help reduce sliding friction when the boom is extended:

- check the wear and tear of the pads for the telescopic elements;
- replace the blocks if there is a clearance of more than 5 mm between the tubulars of the telescopic elements when the boom and the telescopic elements are completely retracted.

TELESCOPIC ELEMENT CLEARANCE CHECK:

Check the clearances and adjust as necessary:

- this operation must be performed with the platform in the rest position.
- tighten the adjusting nuts (Fig. 8.9, 2) until coming into contact with the removable inner boom;
- Unscrew the nut by half a turn to allow a slight clearance between the elements.



CAUTION

While inserting the boom, do not exert excessive pressure on the sliding blocks; this may damage the structure of the booms.

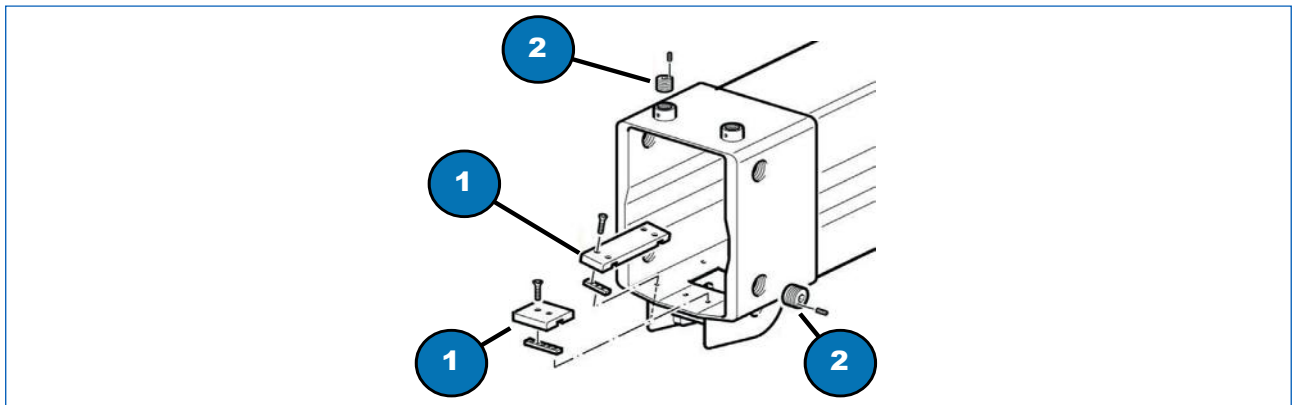


Fig. 8.7

8.10 Slewing ring clearance check

The clearance between the slewing rings increases during the life of the slewing bearing because of wear. The amount of clearance should therefore be checked regularly. The measured values should then be compared to other measurements taken over time using an identical method.

The measurement should be taken using a centesimal comparator when the turret is stationary. Proceed as follows:

- 1) Thoroughly clean the points on which the measurement to be taken.
- 2) Lift the boom up until it is at 0° and extend it completely until it reaches its maximum extension with the turret aligned with the axis of the vehicle.
- 3) Position the comparator as indicated in the diagram (Fig. 8.10, 1) measure the Amax axial clearance;
The measured value must be less than or equal to:
 $A_{max} = 1.35 \text{ mm}$
- 4) If the measured value is greater, contact an authorised service centre
- 5) Position the comparator as indicated in the diagram (Fig. 8.10, 2) and measure the Bmax axial clearance;
The measured value must be less than or equal to:
 $B_{max} = 1.50 \text{ mm}$
- 6) If the measured value is greater, contact an authorised service centre.

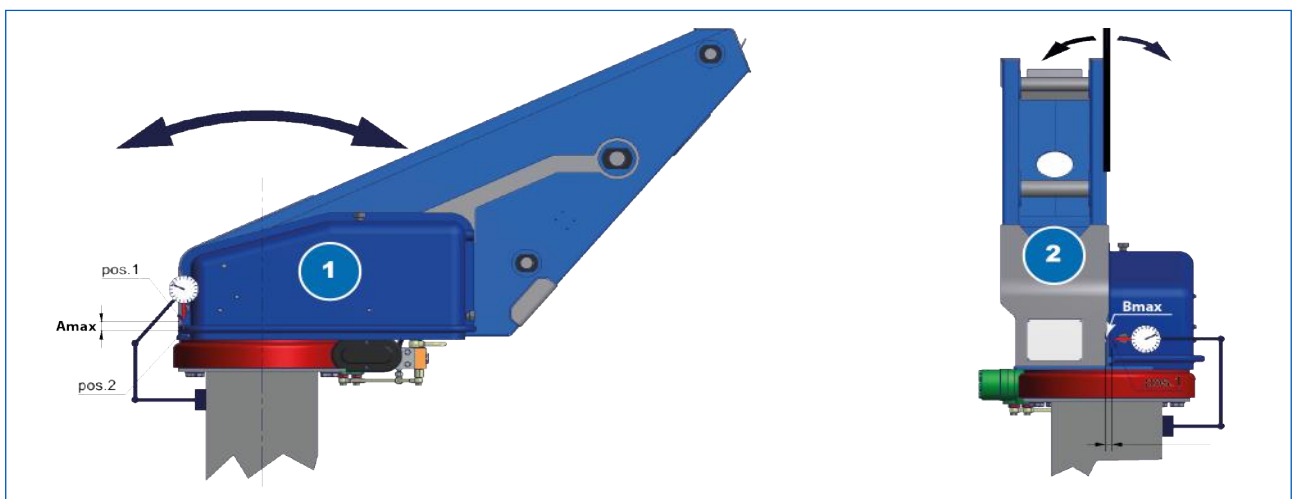


Fig. 8.8

8.11 Slewing drive greasing

POSITION OF PLATFORM:

- 1) transport position
- 2) vehicle switched off

The turntable is lubricated by injecting grease under pressure via the grease fittings using a manual or pneumatic grease gun.

The grease fittings are divided into two groups; those for greasing the screw (Fig. 8.11, 1) and those for greasing the slewing ring (Fig. 8.11, 2).

In order to grease the inside of the slewing ring you need to access the inside of the turret by removing the cover on the turret, see Fig. 8.4.

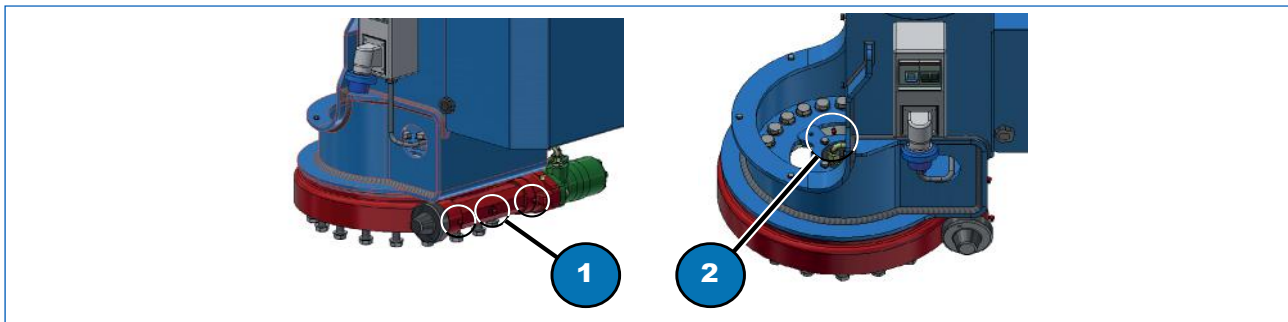


Fig. 8.9

It is recommended to lubricate the slewing ring every six months or every 500 hours of operation.



CAUTION

DO NOT MOVE THE PLATFORM WHEN AN OPERATOR LUBRIFICATE THE TURNTABLE AND PINION TEETH

Only use the type of grease indicated in the technical specifications. Otherwise, contact the Assistance Services or an Authorised Workshop.

8.12 Cleaning

To prevent the operator from slipping and falling, keep all handles and step clean from oil, grease and dirt.

When cleaning the platform, properly protect electrical components and connections from water jets. After cleaning perform lubrication on the parts.

8.12.1 Washing

The frequency of cleaning depends upon use of the machine. The machine can be washed using a high-pressure water jetting machine, taking the following precautions:

- do not exceed a temperature of 70°
- use neutral detergents;
- do not use solvents or benzene
- keep at a safe distance when using the jetting lance
- do not direct the jet towards control panels and electrical equipment
- do not clean the machine if there is live electrical equipment
- wear suitable personal protective equipment
- only clean the machine in areas specifically set aside for the purpose and dispose of materials in accordance with the provisions of the law.



CAUTION

after each wash, you must grease and lubricate all the parts indicated in section 8.5.

8.13 Paintwork inspection

All the parts and components of the lifting platform are protected from atmospheric agents by a coat of paint or other surface treatments.

The paintwork also needs to be inspected continuously because if it is kept in good condition it will ensure the long life of the platform.

If the paint is damaged, touch up the area immediately.

Before each use, the end user/authorised service centre should systematically check that the protective treatments are not damaged.

If necessary, restore the protective coating.



GB

Chapter 8
MAINTENANCE



This page intentionally left blank

9

DEMOLITION AND DISPOSAL

9 Demolition and Disposal

9.1 Demolition

The machine should be scrapped adopting safety measures that take into account logistic and environmental factors and its state of wear.

In general, it is necessary to carry out demolition following the indications below:

- The operator must wear safety clothing and approved protective equipment (helmet, safety footwear, gloves, goggles and mask) that are compliant with the applicable safety standards
- Make sure that the machine is disconnected from all power sources
- Check that the hydraulic, pneumatic and water systems (including the storage tanks) are completely empty. If they are not, empty them.

**CAUTION**

Dispose of waste fluids properly as they can pollute the environment.

- Check and depressurise any systems that are under pressure.
- Dismantle the machine into small units that can be easily transported.

**CAUTION**

The demolition of the machine must be performed by specialised and qualified companies as they have the proper equipment, tools and machines to carry out the work.

9.2 Disposal

In general, it is necessary to dispose of the machine following the indications below:

- The operator must wear safety clothing and approved protective equipment (helmet, safety footwear, gloves, goggles and mask) that are compliant with the applicable safety standards
- Items made of different materials (steel, aluminium, rubber, electric cables) should be separated into different containers.

To dispose of polluting substances (PVC, lubricant oil and synthetic gum) comply with the standards in force in the country where the platform will be disposed of.



CAUTION

Be very careful to recover and separate potentially dangerous materials used for the construction of the components.

Machine disposal can be assigned to companies specialised and trained to carry out this kind of operation.



CAUTION

The disposal of the machine can be assigned to companies specialised and trained to carry out this kind of work.

10

TRANSPORT AND STORAGE

10 Transport and storage

10.1 Loading the machine onto a vehicle

- To avoid hitting low buildings, bridges or power lines when transporting the platform on a truck or trailer, you must know the exact maximum height.
- Make sure that all affixing devices are effective and in good working order.
- Ensure that the platform is fully retracted and locked into its rest position.
- Check that the stabilisers have been fully retracted.
- Read all loading or towing instructions in the vehicle's use and maintenance manual before loading or towing the machine.
- Check the load capacity of the ramp and the truck on which the machine will be placed.
- Never lift the platform by its boom when loading the machine onto the truck.



CAUTION

Never tow the machine if you are not familiar with the specific instructions for doing so.

10.2 Storage

Operation	Short term	Long term
Clean the machine.	<input type="checkbox"/>	<input type="checkbox"/>
Park the machine in a dry covered place.	<input type="checkbox"/>	<input type="checkbox"/>
Lock the doors.	<input type="checkbox"/>	<input type="checkbox"/>
Remove the keys from the vehicle and lifting platform (MEWP) to prevent unauthorised use.	<input type="checkbox"/>	<input type="checkbox"/>
If the machine is fitted with a battery isolator switch, disconnect the battery.	<input type="checkbox"/>	<input type="checkbox"/>
Lubricate and grease.		<input type="checkbox"/>
Protect the machine with a suitable protective cover		<input type="checkbox"/>

11

SUPPORT AND WARRANTY

11 Support and Warranty

11.1 After-Sales services and spare parts



Phone: +39 0464 711200

Fax: +39 0464 485099

Contact your nearest authorised service centre for any extraordinary maintenance, repairs or spare parts. It will have qualified personnel and suitable equipment available for carrying out any work that may be required.

Please contact After-Sales Services for any information you may require.



CAUTION

In order for the machine to operate correctly and to avoid damage to the machine itself, it is prohibited to carry out repairs or replace components with non-original parts.

11.2 Spare parts



OBLIGATORY

Only use original spare parts.

When making a request, please specify:

- model, fabrication number and vehicle on which the platform is installed
- reference code and technical description (see Spare Parts Catalogue) of the part that is damaged and / or to be replaced.

11.3 Warranty



OBLIGATORY

For the warranty conditions please refer to the warranty certificate delivered with the machine.

The machine is covered by warranty starting from the date it is delivered to the customer. For the warranty terms and conditions, please refer to the warranty certificate delivered with the machine. The manufacturer reserves the right to repair or replace any parts considered to be defective within the period of the warranty.

The warranty expires whenever the requirements and instructions of use indicated in this manual are not observed. Work carried out under warranty is carried out during normal working hours at the authorised workshops or at the manufacturer's premises. Technicians' travel costs are debited for work carried out at the customer's premises. The customer is billed for transport costs for work carried out at the manufacturer's premises.

During the replacement of defective parts, the manufacturer company cannot be held responsible for any expenses sustained by the commercial agent and customer, any supposed present or future damage, loss of earnings, forfeits, etc.

The warranty does not cover the replacement and/or repairs of parts that are worn out or damaged during ordinary use of the machine.

12

TROUBLESHOOTING

12 Troubleshooting

12.1 Problems, causes and remedies

The following pages list some of the most common issues, their probable causes and possible solutions.



CAUTION

Certain problems may be resolved by the operator within the scope of the operations listed in the “Maintenance” section, while other issues must be resolved by going to an authorised repair shop.

ISSUE	CAUSE	REMEDY	*
Vibration of cylinders, telescopic elements that do not move smoothly when first moved.	Hydraulic oil temperature 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.	Repeatedly move the cylinders to the end of their stroke in both directions	
Vibrations during extension of telescopic elements	Lack of lubricant	Grease the telescopic elements.	
	Worn sliding blocks	Replace the sliding blocks	■
	Incorrectly adjusted boom extension cylinder valve	Calibrate the valve.	■
The machine does not lift the work platform	Damaged pump	Replace the pump	■
	Valves incorrectly adjusted	Adjust the valves	■
	Worn cylinder seals	Replace seals	■

ISSUE	CAUSE	REMEDY	*
The machine lifts but cannot support the load	Worn cylinder seals	Replace seals	■
	Valves incorrectly adjusted	Adjust the valves	■
	Jack valves dirty or worn	Replace the valves	■
The machine does not rotate correctly	Vehicle inclined beyond the maximum permissible flatness	Stabilise the vehicle within the permissible tolerance range	
	Valves on the distributor are poorly adjusted or dirty.	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 lock valves	Clean or replace the valve	■
The levers do not control any movement	Worn cylinder seals	Replace seals	■
	Emergency stop button pressed	Rotate the button until it reaches normal position.	
Solenoid valve blocked	Dirt inside	Use the solenoid valve cursor to try to unblock it and contact a specialised service centre	■
	Defective solenoid valve	Replace solenoid valve	
No power	Faulty fuse	Replace the fuse	
Noisy pump	Viscosity of hydraulic oil is too high	Use the recommended hydraulic oil	
	Level of hydraulic oil in the tank is too low	Top up with the same type of hydraulic oil	
	Suction pipe is blocked or crushed	Check the pipe for damage	■
	Air entering via the suction flange	Check the tightness of the seals and replace the gasket	■
Some hydraulic components of the machine are working slowly	Maximum pressure valve on the distributor of the section of the circuit that is malfunctioning is incorrectly adjusted or the shutter of which is open because of dirt.	Readjust the valve Remove and clean it, then reinstall with new metal seals. Replace the valve	■
	Worn out pump	Replace the pump	■

ISSUE	CAUSE	REMEDY	*
Hydraulic cylinder working incorrectly	Oil leak between the two chambers in the cylinder and the consequent inability to support loads.	Replace the gaskets of the cylinder.	■
	Piston/rod joint loose	Check the joint between piston/rod	
	Max. pressure valve on distributor is stuck or worn.	Dismantle and clean the max. pressure valve or replace it.	■
Lights do not work	Burnt out bulb	Replace the bulb	
	Broken electrical connection	Repair the connection	■
	Burnt out fuse	Replace the fuse	
Excessive heating of hydraulic oil	Level of hydraulic oil in the tank is too low	Top up with the same type of hydraulic oil	
Solenoid valves do not work	No power	Check the electrical system	■
	Cursor does not move	Replace solenoid valve	■
	The coil does not work	Replace the coil	■

* ■ Repair to be carried out at a CTE authorised workshop.



CAUTION

For anything not described in this table, please contact the Service Centre.

12.2 List of alarms

The alarm errors and messages are displayed through a sequence of LEDs, ALARM1 (Fig. 12.1, 7) and ALARM2 (Fig. 12.1, 6).

Example:

spieAlarm_inceppDiscesa = 0 x 0803
08 = 8 flashes of LED ALARM1
03 = 3 flashes of LED ALARM2

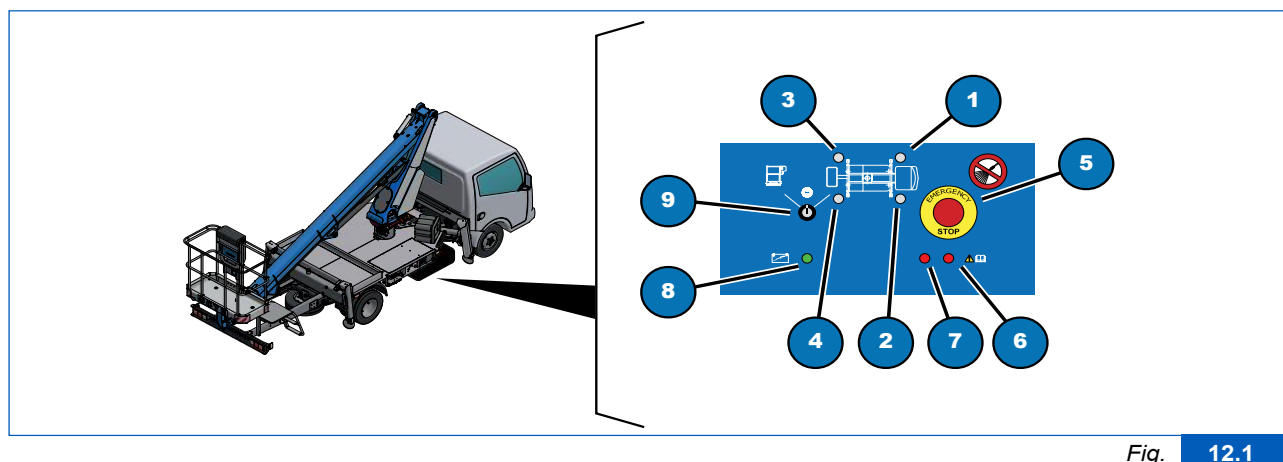


Fig. 12.1

Alarm code			Description
	ALARM1	ALARM2	CAN ALARM
0x	01	01	spieAlarm_MMSSafetyNoCan
		02	spieAlarm_MMSTorr1NoCan
		03	spieAlarm_MMSTorr2NoCan
		04	spieAlarm_MMSCestelloNoCan
		05	spieAlarm_MMSPulsCarroNoCan
		06	spieAlarm_MMSSafetyNoGND
		07	spieAlarm_MMSTorr1NoGND
		08	spieAlarm_MMSTorr2NoGND

Alarm code			Description
	ALARM1	ALARM2	SENSORS ERROR ALARM TORR 1
0x	02	01	spieAlarm_angRotTorr1Cks
		02	spieAlarm_angRotTorr1Open
		03	spieAlarm_angRotTorr1VBat
		04	spieAlarm_angBraccioTorr1Cks
		05	spieAlarm_angBraccioTorr1Open
		06	spieAlarm_angBraccioTorr1VBat
		07	spieAlarm_pressPistoneTorr1Open
		08	spieAlarm_pressPistoneTorr1VBat
		09	spieAlarm_pressSteloTorr1Open

Alarm code			Description
0x	03	01	spieAlarm_pressSteloTorr1VBat
		02	spieAlarm_pressDiscesaTorr1Open
		03	spieAlarm_pressDiscesaTorr1VBat

Alarm code			Description
	ALARM1	ALARM2	SENSORS ERROR ALARM TORR 2
0x	04	01	spieAlarm_angRotTorr2Cks
		02	spieAlarm_angRotTorr2Open
		03	spieAlarm_angRotTorr2VBat
		04	spieAlarm_angBraccioTorr2Cks
		05	spieAlarm_angBraccioTorr2Open
		06	spieAlarm_angBraccioTorr2VBat
		07	spieAlarm_pressPistoneTorr2Open
		08	spieAlarm_pressPistoneTorr2VBat
		09	spieAlarm_pressSteloTorr2Open
0x	05	01	spieAlarm_pressSteloTorr2VBat
		02	spieAlarm_pressSfiloTorr2Open
		03	spieAlarm_pressSfiloTorr2VBat

Alarm code			Description
	ALARM1	ALARM2	ERROR TORR 1
0x	06	01	spieAlarm_diffAngRotTorr1
		02	spieAlarm_diffAngBraccioTorr1
		03	spieAlarm_diffPressPistoneTorr1
		04	spieAlarm_diffPressSteloTorr1
		05	spieAlarm_extraCorsaTorr1
		06	spieAlarm_angBraccioMaxTorr1
		07	spieAlarm_angBraccioMinTorr1

Alarm code			Description
	ALARM1	ALARM2	ERROR TORR 2
0x	07	01	spieAlarm_diffAngRotTorr2
		02	spieAlarm_diffAngBraccioTorr2
		03	spieAlarm_diffPressPistoneTorr2
		04	spieAlarm_diffPressSteloTorr2
		05	spieAlarm_extraCorsaTorr2
		06	spieAlarm_angBraccioMaxTorr2
		07	spieAlarm_angBraccioMinTorr2

Alarm code			Description
	ALARM1	ALARM2	ERROR TORR
0x	08	01	spieAlarm_installAngRotTorr
		02	spieAlarm_inceppRotTorr
		03	spieAlarm_inceppDiscesa
		04	spieAlarm_inceppSfilo

12.2.1 Reset alarms

To access the switch with a red cover (Fig. 12.2):

- open the cover panel (1) which is found on the bed of the vehicle;
- open the cover panel to the compartment (2);
- then, open the panel (3) covering the box which contains the Safety and Carriage engine control units;
- the errors are reset by flipping the switch with the red safety cover (4). Move and hold the switch into position once for five seconds until the alarm LEDs (ALARM 1, ALARM 2) flash quickly.
- Now reset the switch into its initial position with the safety cover in position and check that the alarm LEDs are off;
- Close the various panels securely.

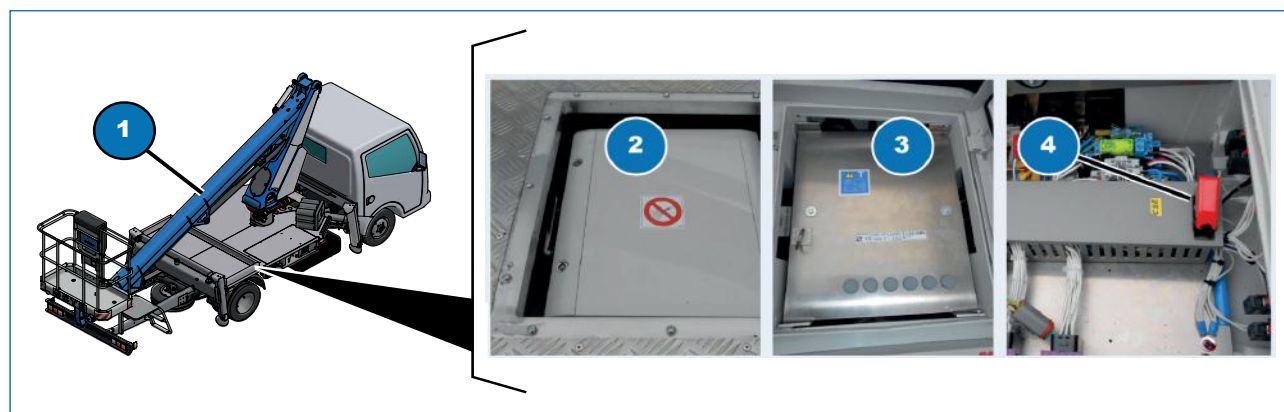


Fig. 12.2

12.3 S3 system alarm list

The errors and the alarm messages of the S3 system are shown on the display (Fig. 12.3, 1) on the panel located at the side of the stabiliser's ground control panel and on the display (Fig. 12.3, 2) found on the basket control panel.

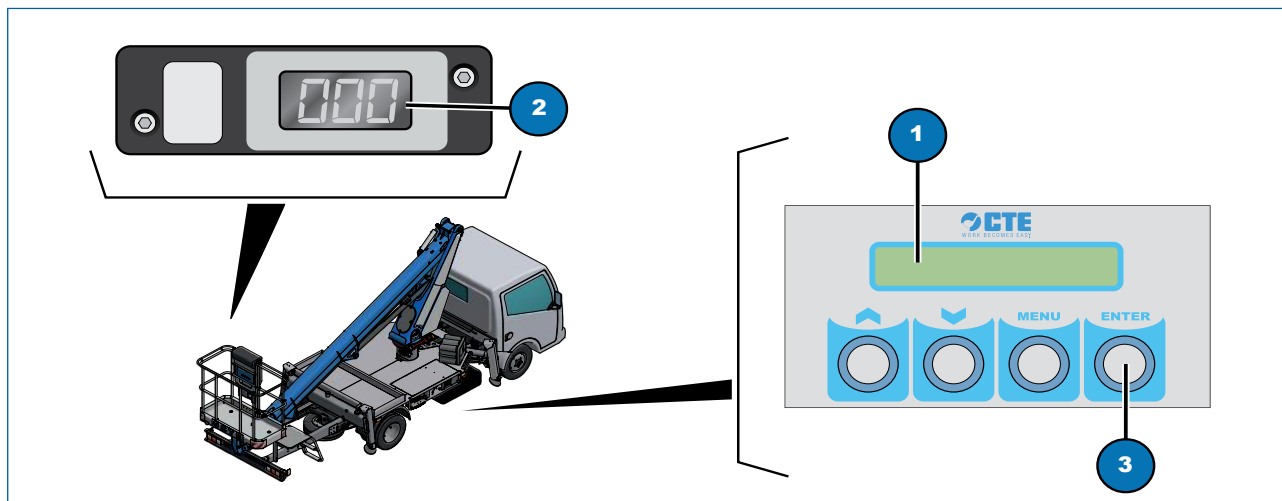


Fig. 12.3

Error	Description	Solution
11	Safety card no Can-Bus	Check the Can-Bus line
12	Tower card 1 no Can-Bus	Check the Can-Bus line
13	Tower card 2 no Can-Bus	Check the Can-Bus line
14	Basket card no Can-Bus	Check the Can-Bus line
15	Carriage remote control card no Can-Bus	Check the Can-Bus line
16	Safety card no ground	Check the earth connections
17	Tower card 1 no ground	Check the earth connections
18	Tower card 2 no ground	Check the earth connections
19	Machine blocked	Contact the CTE Assistance Centre

Error	Description	Solution
21	Check AT1 rot. turret angle sensor	Saved data incorrect, recalibrate
22	AT1 rot. turret angle sensor, open circuit	Check the power and AT1 outputs; check for readings under the minimum
23	AT1 rot. turret angle sensor, V battery	Check the power and AT1 outputs; check for readings over the maximum
24	Check A1 main boom angle sensor	Saved data incorrect, recalibrate
25	A1 main boom angle sensor, open circuit	Check the power and A1 outputs; check for values under the minimum
26	A1 main boom angle sensor, V battery	Check the power and A1 outputs; check for readings over the maximum
27	P1 pressure sensor, open circuit	"Check the power and P1 outputs; check for values under the minimum"
28	P1 pressure sensor, V battery	Check the power and P1 outputs; check for values over the maximum
29	S1 pressure sensor, open circuit	Check the power and S1 outputs; check for values under the minimum
31	RIGHT REAR L1 extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
32	RIGHT FRONT L1 extension stabiliser beam sensor, open circuit	Check the power and extension sensor outputs; check for values under the minimum
33	RIGHT FRONT L1 extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
34	Check A1 pantograph angle sensor	Saved data incorrect, recalibrate
35	A1 pantograph angle sensor open	"Check the power and A1 outputs; check for values under the minimum"
36	A1 pantograph angle sensor, V battery	Check the power and A1 outputs; check for readings over the maximum
37	MC1 micro chain, open circuit	Check the extension chains
38	FRONT LEFT extension stabiliser beam sensor, open circuit	Check the power and extension sensor outputs; check for values under the minimum

Error	Description	Solution
39	FRONT LEFT extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
41	Check AT2 turret rotation sensor	Saved data incorrect, recalibrate
42	AT2 turret rotation sensor, open circuit	"Check the power and AT2 outputs; check for values under the minimum"
43	AT2 turret rotation sensor, V battery	Check the power and AT2 outputs; check for values over the maximum
44	"Check A2 main boom angle sensor"	Saved data incorrect, recalibrate
45	A2 main boom angle sensor, open circuit	Check the power and A2 outputs; check for values under the minimum
46	A2 main boom angle sensor, V battery	Check the power and A2 outputs; check for values over the maximum
47	P2 main boom pressure sensor open	"Check the power and P2 outputs; check for values under the minimum"
48	P2 main boom pressure sensor, V battery	Check the power and P2 outputs; check for values over the maximum
49	S2 main boom pressure sensor open	"Check the power and S2 outputs; check for values under the minimum"
51	RIGHT REAR L2 extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
52	"RIGHT FRONT L2 extension stabiliser beam sensor, open circuit"	"Check the power and extension sensor outputs; check for values under the minimum"
53	RIGHT FRONT L2 extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
54	Check A2 pantograph angle sensor	Saved data incorrect, recalibrate
55	A2 pantograph angle sensor open	Check the power and A2 outputs; check for values under the minimum
56	A2 pantograph angle sensor, V battery	"Check the power and A2 outputs; check for values over the maximum"
57	MC2 micro chain, open circuit	Check the extension chains

Error	Description	Solution
58	FRONT LEFT extension stabiliser beam sensor, open circuit	Check the power and extension sensor outputs; check for values under the minimum
59	FRONT LEFT L2 extension stabiliser beam sensor, V battery	Check the power and extension sensor outputs; check for values over the maximum
61	AT1 turret rotation sensor, inconsistent output	"Difference between AT1 and AT2 turret > 8 degrees for over 1 second"
62	A1 main boom angle sensor, inconsistent output	Difference between A1 and A2 main boom > 15 degrees for over 1 second
63	A1 pantograph angle sensor, inconsistent output	"Difference between A1 and A2 pantograph > 15 degrees for over 1 second"
64	A1 jib angle sensor, inconsistent output	Difference between A1 and A2 jib > 15 degrees for over 1 second
65	AT1 turret rotation sensor out of range	Contact the CTE Assistance Centre
66	A1 main boom max angle out of range	Contact the CTE Assistance Centre
67	A1 main boom min angle out of range	Contact the CTE Assistance Centre
68	L1 extension length sensor inconsistent output	Difference between L1 and L2 > 28 cm for over 1 second
69	W1 load cell inconsistent output	Difference between W1 and W2 > 20 Kg for over 1 second
71	"AT2 turret rotation sensor inconsistent output"	"Difference between AT1 and AT2 turret > 8 degrees for over 1 second"
72	A2 main boom angle sensor inconsistent output	Difference between A1 and A2 main boom > 15 degrees for over 1 second
73	A4 pantograph angle sensor, inconsistent output	Difference between A1 and A2 main boom > 15 degrees for over 1 second
74	A2 jib angle sensor, inconsistent output	"Difference between A1 and A2 jib > 15 degrees for over 1 second"
75	AT2 turret rotation sensor, out of range	Contact the CTE Assistance Centre
76	A2 main boom max angle out of range	Contact the CTE Assistance Centre

Error	Description	Solution
77	A2 main boom min angle out of range	Contact the CTE Assistance Centre
78	L2 extension sensor inconsistent output	Difference between L1 and L2 > 28 cm for over 1 second
79	W2 load cell, inconsistent output	Difference between L1 and L2 > 28 cm for over 1 second
81	Turret rotation sensor installation	Check the cables of both the sensors and the mechanical connection to the gears
82	Turret rotation valve blocked	"Check the proper functioning of the valve"
83	Machine model	Check for the correct version of the software of the cards
84	Extension valve blocked	"Check the proper functioning of the valve"
85	Parameters saved in the inconsistent turret cards	Check that the software version and the machine file are the same on both turret cards
86	AT1 feed > 5 volts	Check the wiring
87	AT2 feed > 5 volts	Check the wiring
88	Error in the parameters of the turret1 card	Reload the machine card and calibrate the machine
89	Error in the parameters of the turret2 card	Reload the machine card and calibrate the machine
91	Allowable weight in the basket exceeded	Unload the basket
92	Basket sensor card 1, no can	Check the Can-Bus line
93	Basket sensor card 2, no can	Check the Can-Bus line
94	Basket sensor card 1 error	Check the connections and the sensors and replace card 1
95	Basket sensor card 2 error	Check the connections and the sensors and replace card 2

Error	Description	Solution
96	Maximum safety coefficient exceeded	Retract the extension or raise the boom (other movements will be blocked)
97	Inconsistency in the reading of MCS5 and MCS6	Check boom rest sensors 5 and 6
98	Low battery voltage	Check the vehicle's battery
99	Inconsistency in the reading of MCS5-MCS6, pulsing alarm	Check the boom rest sensors
101	Single angle and extension sensor 1 no can	Check the Can-Bus line
102	Single angle and extension sensor 2 no can	Check the Can-Bus line
103	Levelling and basket rotation card 1 no can	Check the Can-Bus line
104	Levelling and basket rotation card 2 no can	Check the Can-Bus line
105	"Rotation rev reading of the slewing ring with motor rotation stopped"	Check the slewing ring rotation system
106	"Rotation rev motor rotation reading with the slewing ring stopped"	Check the slewing ring rotation system
107	Basket levelling pre-alarm	Dangerous angle, manoeuvres which worsen the situation are blocked
108	Basket levelling alarm	Basket levelling blocked
109	Difference in the reading of outrigger lengths	?
111	Check W1 load cell	Saved data incorrect, recalibrate
112	W1 load cell, open circuit	Check the power and W1 output; check for readings under the minimum (basket resting)
113	W1 load cell, V battery	Check the power and W1 outputs
114	Check L1 extension length sensor	Saved data incorrect, recalibrate

Error	Description	Solution
115	L1 extension length sensor, open circuit	Check the power and L1 outputs; check for values under the minimum
116	Extension length sensor 1, V battery	“Check the power and L1 outputs; check for readings over the maximum”
117	Jib sensor error at the input of sensor card 1	Recalibrate the jib or replace the A1 jib angle sensor
118	“Jib angle sensor at the input to sensor card 1, open circuit”	“Check the power and outputs; check for values under the minimum”
119	Jib angle sensor at the input to sensor card 1, V battery	Check the power and outputs; check for readings over the maximum
121	Check W2 load cell	Saved data incorrect, recalibrate
122	W2 load cell, open circuit	Check the power and W2 outputs; check for readings under the minimum (basket resting)
123	W2 load cell, V battery	Check the power and W2 outputs
124	Check L2 extension length sensor	Saved data incorrect, recalibrate
125	L2 extension length sensor, open circuit	“Check the power and L2 outputs; check for values under the minimum”
126	Extension L2 length sensor, V battery	Check the power and L2 outputs; check for values over the maximum
127	Jib sensor error at the input of sensor card 2	Recalibrate the jib or replace the jib angle sensor
128	Jib angle sensor at the input to sensor card 2, open circuit	Check the power and outputs; check for values under the minimum
129	Jib angle sensor at the input to sensor card 1, V battery	Check the power and outputs; check for readings over the maximum
131	Jib sensor error at sensor card 1	Check the sensor wiring and recalibrate the jib
132	Lev rot basket gyroscope, no can-bus	Check the Can-Bus line
133	Auxiliary turret 1, no can-bus (Check the Can-Bus line

Error	Description	Solution
134	Auxiliary turret 2, no can-bus	Check the Can-Bus line
135	Single angle and extension sensor 1, no Can-Bus	Check the Can-Bus line
136	Check LJ1 jib extension sensor	Saved data incorrect, recalibrate
137	LJ1 jib extension sensor, open circuit	"Check the power and LJ2 outputs; check for values under the minimum"
138	LJ1 jib extension sensor, V battery	Check the power and L2 outputs; check for values over the maximum
139	LJ1 jib extension sensor, inconsistent output	"Difference between LJ1 and LJ2 > 28 cm for over 1 second"
141	Check basket sensor card 2	Saved data incorrect, recalibrate
142	Check A2 basket angle sensor	Saved data incorrect, recalibrate
143	A2 basket angle sensor, open circuit	Check the power and A2 outputs; check for values under the minimum
144	A2 basket angle sensor, V battery	"Check the power and outputs; check for values over the maximum"
145	Single angle and extension sensor 2, no Can-Bus	Check the Can-Bus line
146	Check LJ2 jib extension sensor	Saved data incorrect, recalibrate
147	LJ2 jib extension sensor, open circuit	Check the power and LJ2 outputs; check for values under the minimum
148	LJ2 jib extension sensor, V battery	Check the power and L2 outputs; check for values over the maximum
149	LJ2 jib extension sensor, inconsistent output	Difference between LJ1 and LJ2 > 28 cm for over 1 second
151	Boom 2 angle value in turret 1 is inconsistent	Calibrate the boom 2 angle sensors
152	Boom 2 extension value in turret 1 is inconsistent	Calibrate the boom 2 extension sensors

Error	Description	Solution
153	Boom 2 angle value in turret 2 is inconsistent	Calibrate the boom 2 angle sensors
154	Boom 2 extension value in turret 2 is inconsistent	Calibrate the boom 2 extension sensors

12.3.1 Reset alarms

Press and hold the ENTER button for 6 seconds (Fig 12.3, 3) found on the panel located next to the ground commands of the stabilisers.



GB

Chapter 12

TROUBLESHOOTING



This page intentionally left blank

13

DIAGRAMS AND ATTACHMENTS

13 Diagrams and Attachments

13.1 Wiring diagram

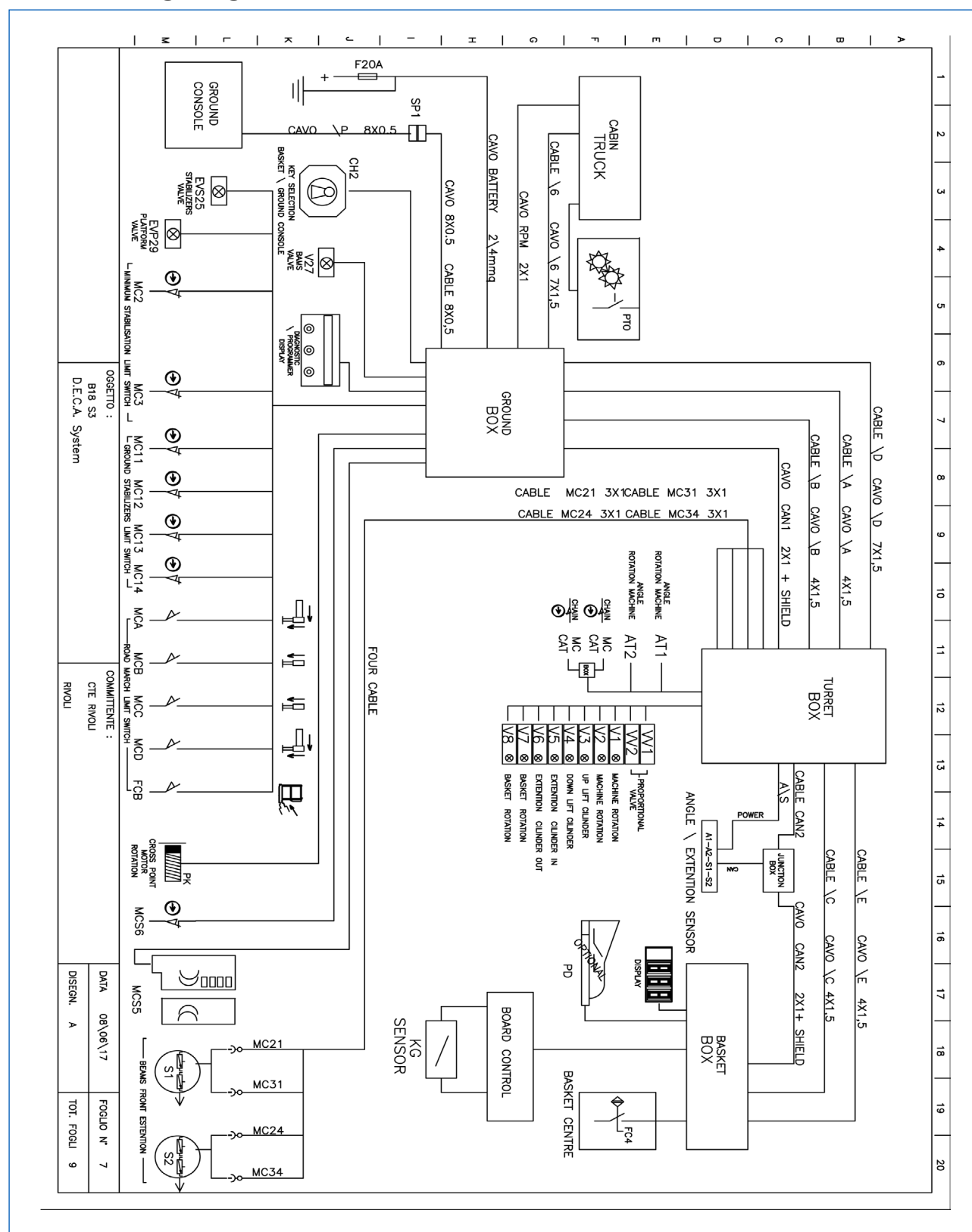


Fig. 13.1

13.2 5000V Insulated work platform

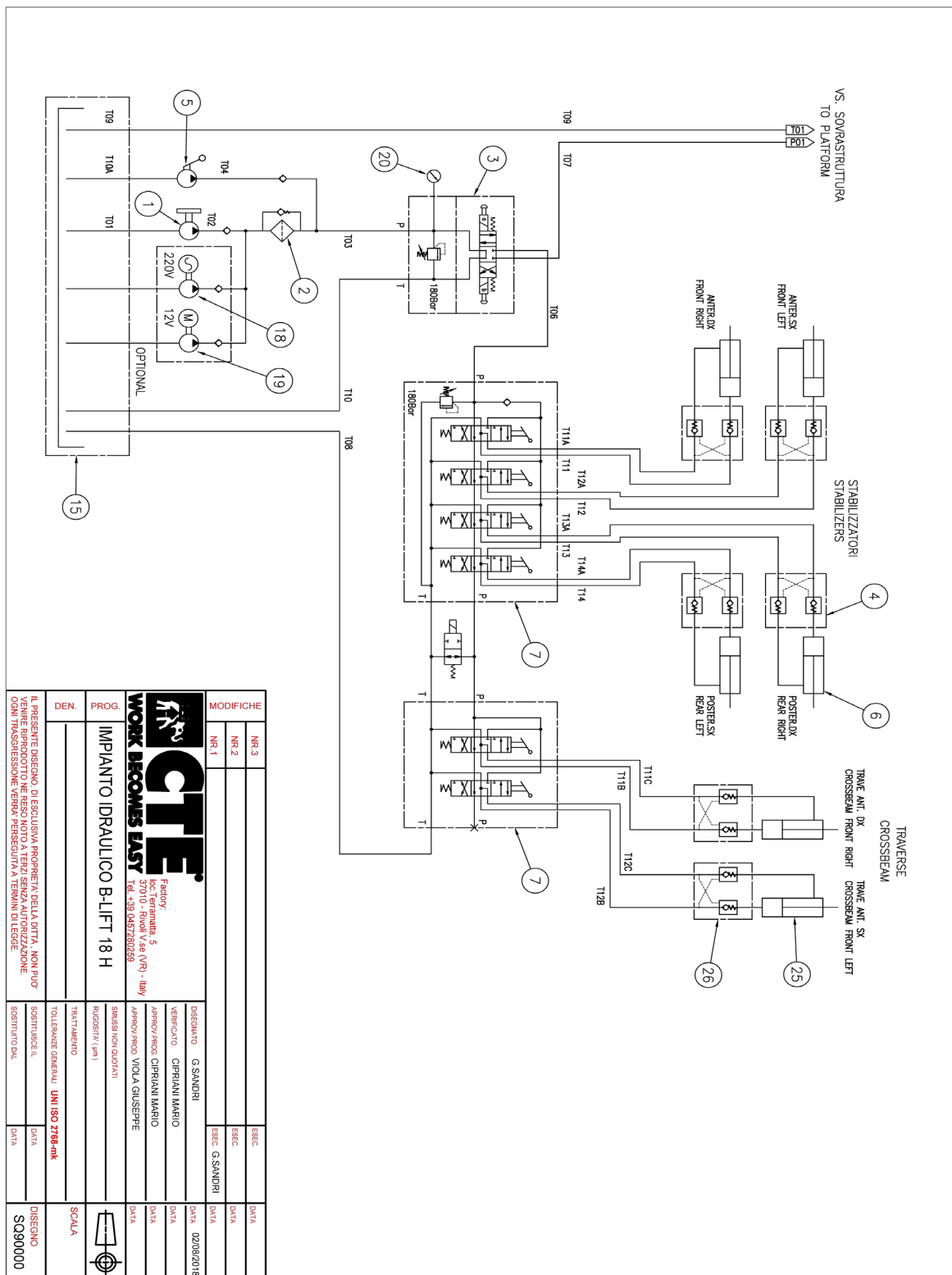


Fig. 13.2

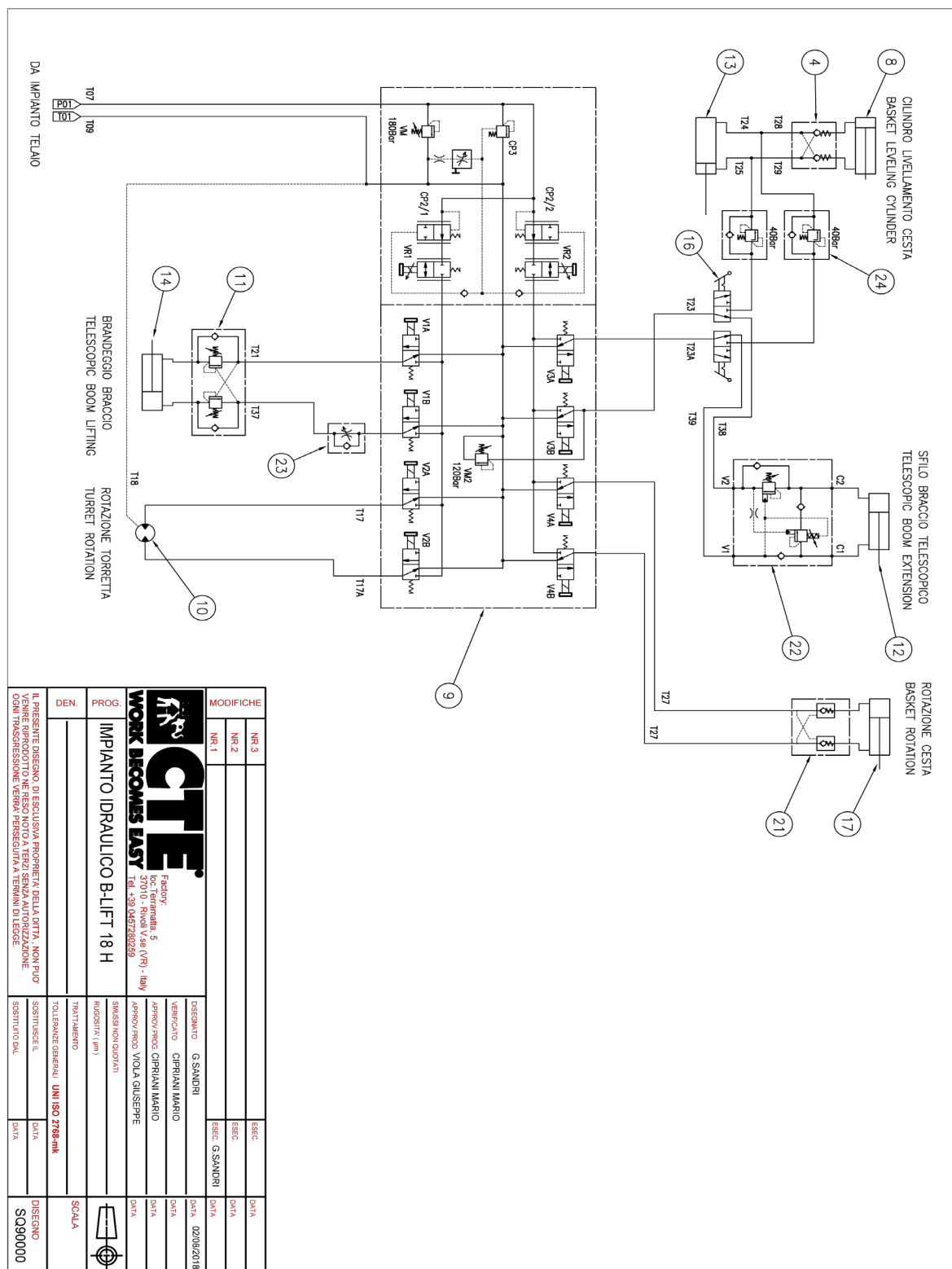


Fig. 13.3

13.3 Maintenance checklist

Some tables have been included below as a reference in order to make it easier to record maintenance work (see section 8.3).

BEFORE EACH USE

Description of operation	Check		Section
	Performed <input checked="" type="checkbox"/>	Not performed <input type="checkbox"/>	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts.	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform.	<input type="checkbox"/>	<input type="checkbox"/>	15.3

Description of operation	Check		Section
	Performed <input checked="" type="checkbox"/>	Not performed <input type="checkbox"/>	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts.	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform.	<input type="checkbox"/>	<input type="checkbox"/>	15.3

EVERY 50 HOURS OF OPERATION

Description of operation	Check		Section
	Performed <input checked="" type="checkbox"/>	Not performed <input checked="" type="checkbox"/>	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts.	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform.	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Lubrication and greasing	<input type="checkbox"/>	<input type="checkbox"/>	8.5

Description of operation	Check		Section
	Performed <input checked="" type="checkbox"/>	Not performed <input checked="" type="checkbox"/>	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts.	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform.	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Lubrication and greasing	<input type="checkbox"/>	<input type="checkbox"/>	8.5

EVERY 100 HOURS OF OPERATION

Description of operation	Check		Section
	Performed ☑	Not performed ☒	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Replace hydraulic oil filters	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Lubrication and greasing	<input type="checkbox"/>	<input type="checkbox"/>	8.5
Check turret fixing screws	<input type="checkbox"/>	<input type="checkbox"/>	8.9.1
Check the correct tightness of all connecting bolts from the subframe to the truck	<input type="checkbox"/>	<input type="checkbox"/>	8.9.2

EVERY 6 MONTHS OR 500 HOURS OF OPERATION

Description of operation	Check		Section
	Performed <input type="checkbox"/>	Not performed <input type="checkbox"/>	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Replace hydraulic oil filters	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Lubrication and greasing	<input type="checkbox"/>	<input type="checkbox"/>	8.5
Check turret fixing screws	<input type="checkbox"/>	<input type="checkbox"/>	8.9.1
Check the correct tightness of all connecting bolts from the subframe to the truck	<input type="checkbox"/>	<input type="checkbox"/>	8.9.2

YEARLY OR EVERY 100 HOURS OF OPERATION

Description of operation	Check		Section
	Performed ☑	Not performed ☒	
Visual inspection	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check use and maintenance manual	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check legibility of plates and labels	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any damage, for missing, loose or detached parts	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check welds, pins and joints	<input type="checkbox"/>	<input type="checkbox"/>	6.3.1
Check for any oil leaks	<input type="checkbox"/>	<input type="checkbox"/>	8.6
Check pressures	<input type="checkbox"/>	<input type="checkbox"/>	8.6.3
Hydraulic oil level check	<input type="checkbox"/>	<input type="checkbox"/>	8.6.5
Check hydraulic oil filter clogging indicators	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Check the operation of the controls in the platform and on the ground	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Check safety devices (Emergency Stop)	<input type="checkbox"/>	<input type="checkbox"/>	8.7.1
Test limit switches	<input type="checkbox"/>	<input type="checkbox"/>	8.7.2
Test power supply differential circuit breaker in the platform	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Change hydraulic oil	<input type="checkbox"/>	<input type="checkbox"/>	15.3
Replace hydraulic oil filters	<input type="checkbox"/>	<input type="checkbox"/>	8.6.6
Lubrication and greasing	<input type="checkbox"/>	<input type="checkbox"/>	8.5
Check turret fixing screws	<input type="checkbox"/>	<input type="checkbox"/>	8.9.1
Check the correct tightness of all connecting bolts from the subframe to the truck	<input type="checkbox"/>	<input type="checkbox"/>	8.9.2
Check tension of chains	<input type="checkbox"/>	<input type="checkbox"/>	8.8.2
Lubricate chain	<input type="checkbox"/>	<input type="checkbox"/>	8.8.1
Check slewing ring clearance	<input type="checkbox"/>	<input type="checkbox"/>	8.11

GB

Chapter 13

DIAGRAMS AND ATTACHMENTS



This page intentionally left blank

14

FACSIMILES OF EC DECLARATION

14 Facsimiles of EC Declaration and Certificates

Below is a facsimile of the EC declaration delivered with the machine and which should be kept carefully by the Customer.

If it is lost, please contact Customer Services as soon as possible.



Phone: +39 0464 711200

Fax: +39 0464 485099

GB

Chapter 14

FACSIMILES OF EC DECLARATION AND CERTIFICATES



Via Caproni, 7 - 38068 Rovereto (TN) - ITALY
Tel +39 0464 485050 - Fax +39 0464 485099



DICHIARAZIONE CE DI CONFORMITA'

(redatta ai sensi dell'Allegato II lettera A della Direttiva 2006/42/CE)

La Ditta CTE S.P.A. via Caproni 7 – Z.I. – 38068 Rovereto (TN) - ITALY, “fabbricante” ai sensi della direttiva sopra citata della seguente piattaforma di lavoro mobile elevabile (macchina inclusa nell'allegato IV della Direttiva Macchine):

MODELLO:	TIPO:
DENOMINAZIONE COMMERCIALE:	
N° DI FABBRICA:	ANNO COSTRUZIONE:
VEICOLO:	TELAIO:

dichiara sotto la sua responsabilità che la piattaforma di lavoro elevabile è una macchina ai sensi e per gli effetti della Direttiva 2006/42/CE e sulla stessa è stata apposta la marcatura “CE”;

- è conforme alla Direttiva 2006/42/CE (direttiva macchine) e alla legislazione nazionale che la traspone;
- è conforme alle seguenti altre direttive:
 - 2014/30/UE (compatibilità elettromagnetica)
 - 2014/35/UE (bassa tensione)

(i riferimenti normativi sono da intendersi estesi anche alle eventuali successive modifiche e/o integrazioni)

- è conforme alla direttiva 2000/14/CE dell'8 Maggio 2000 “sul ravvicinamento delle legislazioni degli stati membri concernenti l'emissione acustica ambientale delle macchine ed attrezzature destinate a funzionare all'aperto” alle relative legislazioni nazionali che la traspongono (recepita in Italia con il D.Lgs.262/2002) ed alla successiva 2005/88/CE.

Tipo macchina: piattaforme di accesso aereo con motore a combustione interna, in accordo alla definizione n° 1 dell'allegato I della Dir. 2000/14/CE.

Procedura applicata per la valutazione della conformità: Allegato V della Dir. 2000/14/CE

Livello di Potenza acustica misurata LwA: 89,0 dB (A)

Livello di Potenza acustica garantita LwA: 93,0 dB (A)

- norma armonizzata applicata: EN280:2013

ed inoltre dichiara che:

- L'ente autorizzato a costituire il fascicolo tecnico è CTE S.p.A. presso l'Ufficio Tecnico in Via Caproni, 7 – 38068 ROVERETO (TN) Italy – info@ctelift.com
- La macchina è conforme al prototipo che ha ottenuto la certificazione CE di tipo: n°rilasciata dal seguente Organismo Notificato:

.....

Rovereto, giorno/mese/anno

.....
Lorenzo Cipriani
Legale Rappresentante

Fig. 14.1

15

OPTIONAL EQUIPMENT AND ACCESSORIES

15 Optional equipment and accessories

15.1 Dead-man-control: pedal in the basket on the work platform



The machine can be equipped with a pedal in the basket system on the work platform. This accessory, if not pressed, deactivates all manoeuvres from the control board. In order to use the control board, you first have to press the pedal and then you can perform the manoeuvres you require using the proportional levers.

15.2 5000V Insulated work platform



The machine can be equipped with a 5000V insulated platform. For more information and technical data consult the manual that is integral part of the machine.

15.3 Directable work light

The work platform can be fitted with a directable work light composed of:

- a light HP1
- a plug XS3
- a socket XP3

The lamp works by inserting the plug of the lamp into the 230V electrical socket in the basket and pressing the switch on the lamp.

The lamp is low voltage and the system is fitted with a transformer.

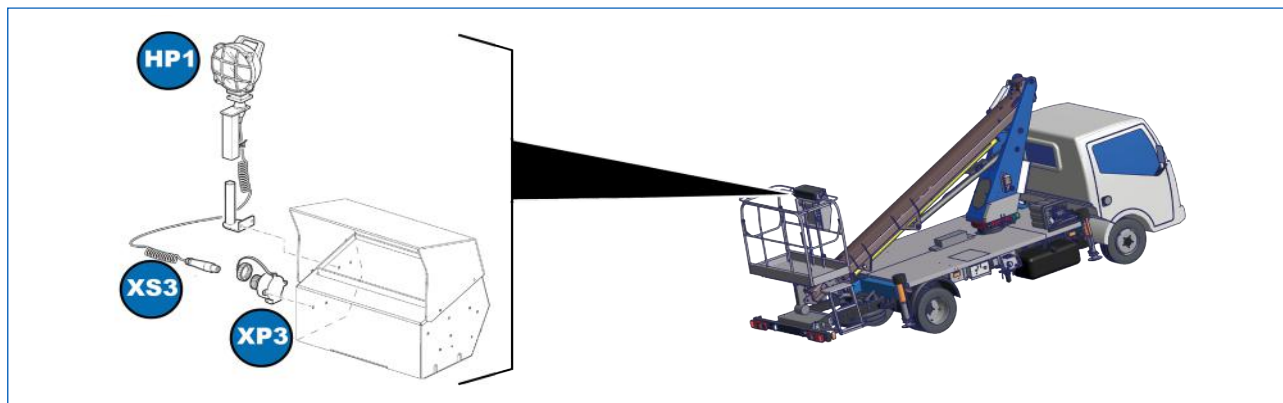


Fig. 15.1

WARNING

Accessory only available for machines fitted with a 230V electrical socket on the work platform. The images of optional equipment are indicative only.

15.4 Auxiliary electric motor

The platform can be equipped with an auxiliary electric motor **M2**. The platform can be powered either by the engine of the vehicle or by the auxiliary electric motor.

The controls are located on the bed of the vehicle (see section 4 Controls), on the opposite side to the stabilizer controls, and allow the platform to be used without having to enable the system from the cab. The electric motor, which is independent from the vehicle on which it is installed, must be connected to an external power supply (220V), via the socket (7).

It can be used under any conditions. It is especially recommended to be used in the case of:

- A vehicle engine breakdown
- A fault in the hydraulic motor connected to the vehicle engine
- Work to be undertaken in closed places (tunnels, warehouses etc.), to prevent exhaust gas being emitted to the environment.

If possible, place the vehicle next to the point you have to reach and prepare the work platform for use.

- Switch off the engine of the vehicle
- Put the gear lever in neutral.
- Pull the parking brake.
- Connect the electric motor to an external 220V electricity supply via the socket (7)
- If the indicator light (5) is not on, press the reset button (2)
- Start the electric motor

The speed is controlled automatically.

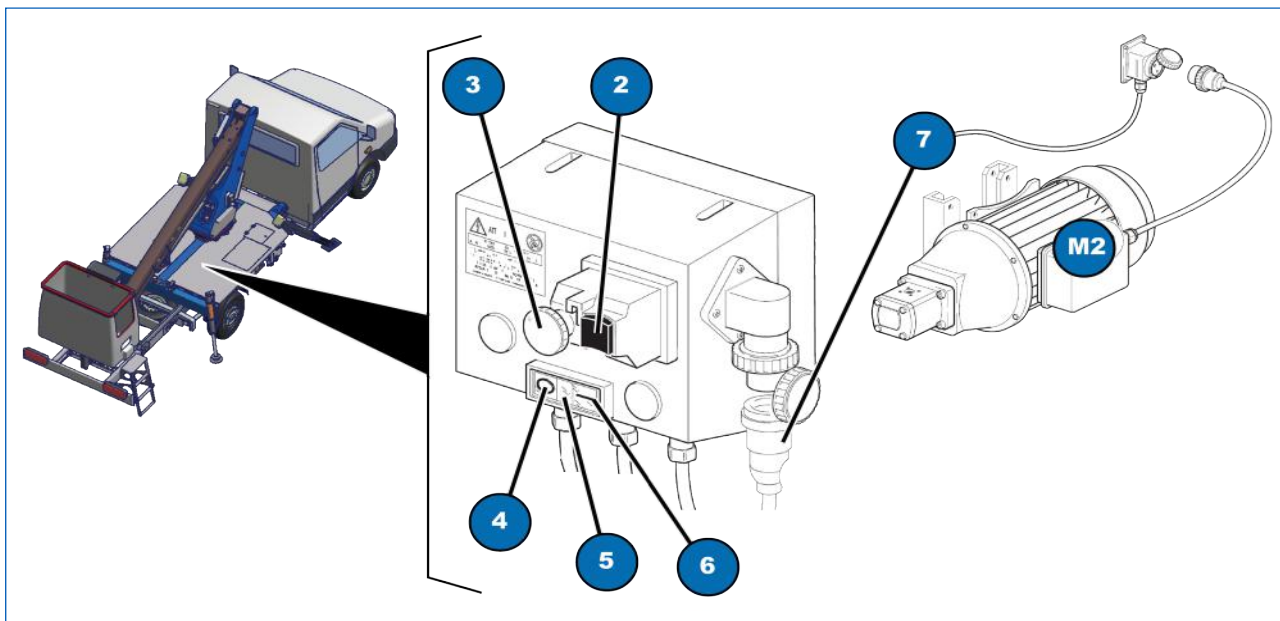


Fig. 15.2

WARNING

The images of optional equipment are indicative only.



CAUTION

Using the electric motor does not change the method and logic of operating the platform.



CAUTION

It is recommended to stop the vehicle's engine when the electric motor is enabled.

WARNING

When the 220 V auxiliary motor is used, the speed of movement of the platform is slower (approximately 50%) than when the engine of the vehicle is used. This is in order to reduce the electric power requirements to within the limits of domestic electrical installations (3 kW).



DANGER

Only use the 220V pump motor as an alternative to the pump motor of the vehicle, but not at the same time. Doing so may cause excessive mechanical stresses on the structure of the platform.



CAUTION

The lockable red mushroom head emergency button SE3 can prevent unauthorized use during work breaks.



DANGER

Make sure that the mains electricity supply is protected by appropriate circuit breaker and that the earthing system complies with current safety standards.

15.5 Automatic stabilization

The platform can be equipped with automatic stabilization which involves replacing the hydraulic distributor with an electro-hydraulic distributor, in a frame, and the assembly in the basket of an electric control panel (Fig. 15.3). The electro-hydraulic distributor allows the stabilizers to be operated both by means of levers and by an electric control.

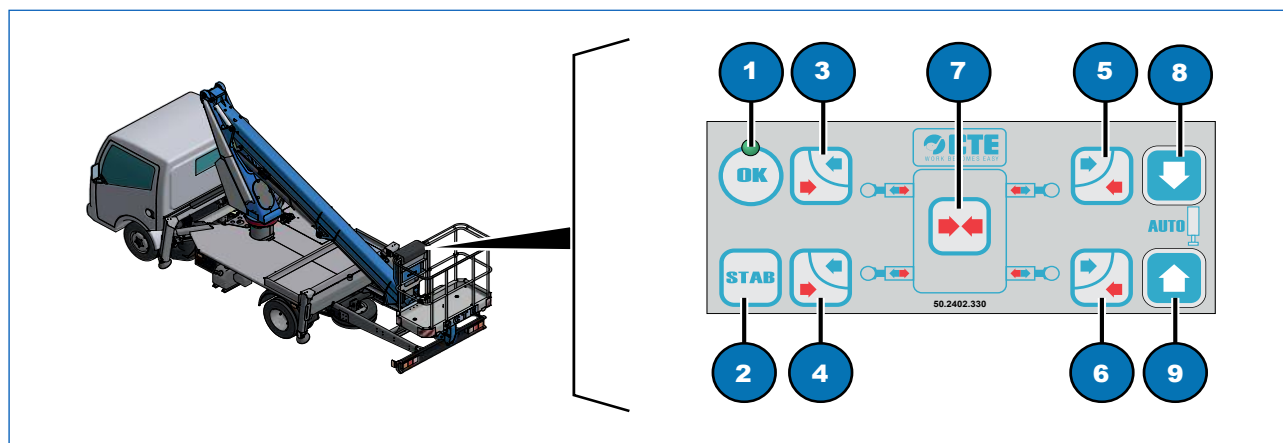


Fig. 15.3

Item	Description
1	Green light: stabilised; <ul style="list-style-type: none"> switches on when the stabilisers are on the ground and minimum stabilisation has been accomplished.
2	Machine motor started button (man present); <ul style="list-style-type: none"> Keep this button pressed during all outrigger extraction and retraction operations and all stabiliser raising and lowering operations until the machine is fully stabilised (green OK light on).
3	Front left outrigger control button
4	Rear left outrigger control button
5	Front right outrigger control button
6	Back right outrigger control button
7	Stabiliser outrigger retraction enabling button: <ul style="list-style-type: none"> Keep pressed in combination with buttons (3,4,5,6) to retract the outriggers (the stabilisers must already be in the rest position).
8	Stabiliser extension button; <ul style="list-style-type: none"> press to extend all stabilisers

- by pressing the button, the outrigger is extended or, in combination with button (7), retracted.

9	Stabiliser retraction button; <ul style="list-style-type: none"> press to retract all stabilisers
---	--

Procedure (Fig. 15.3):

- stand in front of the 'stabilisation command panel' in the basket;
- press the STAB button (Fig. 15.3, 2) to start the vehicle's motor;



CAUTION

Keep the STAB button (Fig. 15.3, 2) pressed for the entire time the elevating platform is being stabilised.

Releasing this button will immediately stop the vehicle's motor, blocking any other operation on the control panel.

Release the button only once stabilised (OK LED, Fig 15.3, 1, lit up).

- Extend the stabiliser beams by operating the buttons in turn (Fig. 15.3, 3, 4, 5 & 6). The same buttons (Fig. 15.3, 3, 4, 5 and 6) also control the retraction of the beams if pressed along with the central button (Fig. 15.3, 7).
- Extend all stabiliser beams by pressing the button (Fig. 15.3, 8) so as to lift the vehicle and take the weight off the suspension;
- The platform is levelled automatically through automatic stabilisation;
- Check that the indicator light is on (Fig. 15.3, 1), indicating the proper stabilisation of the vehicle.



CAUTION

When the indicator light comes on it does not mean that the vehicle has been properly stabilised. This is only indicated by the spirit level (Fig. 6.3, 7).

Before getting onto the platform, make sure that the machine is properly stabilised: chassis lifted and level, weight taken off the suspensions and all four stabilisers resting on suitably firm ground.

If the ground is not firm enough to withstand the weight, use planks that are suitable for the purpose and that have been checked before use.



GB

Chapter 15

OPTIONAL EQUIPMENT AND ACCESSORIES



This page intentionally left blank



CTE S.p.A.

Headquarter and Factory

Via Caproni, 7
38068 Rovereto (TN)

Factory

loc. Terramatta, 5
37010 Rivoli Veronese (VR)

Tel. +39 0464 48.50.50

Fax +39 0464 48.50.99

info@ctelift.com

www.ctelift.com



CTE S.p.A.

Headquarter and Factory

Via Caproni, 7
38068 Rovereto (TN)

Factory

loc. Terramatta, 5
37010 Rivoli Veronese (VR)

Tel. +39 0464 48.50.50
Fax +39 0464 48.50.99
info@ctelift.com

www.ctelift.com