PIATTAFORME AEREE SEMOVENTI
SELF-PROPELLED WORK-PLATFORMS
PLATES-FORMES DE TRAVAIL AUTOMOTRICES
SELBSTFAHRENDE HUBARBEITSBÜHNEN
PLATAFORMAS ELEVADORAS AUTOPROPULSADAS
ZELFRIJDENDE HOOGWERKERS
SJÄLVGÅENDE ARBETSPLATTFORMAR
SAMOKRETNE RADNE PLATFORME

SERIES „XP - XLP“

XP4 E - XP5 E - XLP5 E
XP4 E DUAL - XP5 E DUAL - XLP5 E DUAL

USE AND MAINTENANCE MANUAL

- ENGLISH - ORIGINAL INSTRUCTIONS

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Revision date	Description of revision
2011-01	• Issue:
05-2011	• Amended information on “Commissioning and first inspection, subsequent inspections and title transfer report”. • Inserted “Total quantity of battery electrolyte” in Technical Data. (to be checked)
2013-10	• Specified instructions for harness anchoring points.
2014-01	• Changed battery charger operation.
2014-09	• Inserted information on maximum limits of manual forces. • Changed Name and Surname of CEO.
2015-01	• CE conformity declaration updated. • Added position of hands instruction.
2015-10	• Type of usable hydraulic oil updated. • Added indication for spare parts. They must be original or approved by the manufacturer of the machine in any way. • Added "Leaving at height”.
2018-01	• Added new models DUAL. • Added pictures about fixing machines for transport.

Tigieffe thanks you for purchasing a product of its range, and invites you to read this manual. Here you can find all the necessary information for a correct use of the purchased machine; therefore, you are advised to follow the instructions carefully and to read the manual thoroughly. The manual should be kept in a suitable place where no damage can occur to it. The content of this manual may be modified without prior notice and further obligations in order to add changes and improvements to the units already delivered. No reproduction or translation may take place without the written permission of the owner.

Contents:

1. INTRODUCTION

This Use and Maintenance Manual provides general instructions concerning the complete range of machines indicated on the cover. Therefore the description of their components, as well as control and safety systems, may include parts not present on Your machine since supplied on request or not available. In order to keep pace with the technical development **AIRO-Tigieffe s.r.l.** reserves the right to modify the product and/or the use and maintenance manual at any time without updating the units already delivered.

1.1 Legal aspects

1.1.1 Delivery of the machine

Within EU (European Union) member countries the machine is delivered complete with:
- Use and Maintenance manual in your language
- CE mark applied on the machine
- Original EC Declaration of conformity
- Guarantee certificate

Only for Italy:
- Declaration of commissioning to INAIL
- List of local INAIL departments
- Declaration of internal testing

It is to be noted that the Use and Maintenance Manual is an integral part of the machine and a copy of this, together with copies of the documents certifying that the periodical checks have been carried out, must be kept on board in its suitable container. In the event of a transfer of ownership the machine must always be provided with its use and maintenance manual.

1.1.2 Declaration of commissioning, first check, further periodical checks and transfers of ownership

The legal obligations of the owner of the machine vary according to the country of commissioning. It is therefore recommended to inquiry about the procedures in force in your country from the boards responsible for industrial safety. This manual contains a final section called "Check register" for a better filing of documents and recording of any modifications.

1.1.2.1 Declaration of commissioning and first check

In ITALY the owner of the Aerial Platform must notify the use of the machine to the local competent INAIL and submit it to periodical compulsory checks. The first of such checks is performed by the INAIL within sixty days from a request being made. In the event of such time passing without the inspection being made, the employer can call in the ASL (Local Health Unit) or qualified public or private services. Subsequent checks are made by the already-mentioned parties within thirty days from a request being made. In the event of such time passing without these checks being made, the employer can call in qualified public or private services. The checks are on a payment basis and the employer (machine owner) will be charged for them. For these checks, the territorial inspection boards (ASL/USL or ARPA) and INAIL can be supported by qualified public or private services. The qualified private institutes acquire the qualification of responsibles of the public service and refer directly to the public structure that controls this function.

To declare the commissioning of the machine in Italy, send the form that is supplied together with other documents upon machine delivery, by registered letter with advice of receipt.

The INAIL will assign a serial number when the First Check is performed before completing the “technical identification sheet” on which it indicates only the details obtained from the already-operating machine or obtainable from the instruction manual. Such document shall form an integral part of the machine documentation.

1.1.2.2 Further periodical checks

Yearly checks are compulsory. In Italy the owner of the Aerial Platform must apply for a periodical check by sending a registered letter to the local competent inspection board (ASL/USL or other qualified public or private services) at least twenty days before the expiry of the year from the last check.

NB: If a machine without a valid control document should be moved in an area outside the competence of the usual inspection board, the owner of the machine must ask the inspection board, competent for the new territory where the machine is to be used, for the annual check.

1.1.2.3 Transfers of ownership

In case of transfer of ownership (in Italy) the new owner of the Aerial Platform must notify the ownership of the machine to the local competent inspection board (ASL/USL or ARPA or other qualified public or private services) by enclosing a copy of:
Declaration of conformity issued by the manufacturer.
Declaration of commissioning carried out by the first owner.

1.1.3 Operator training and information

The employer must ensure that the workers appointed to use the equipment are adequately and specifically trained so they are able to use the Mobile Elevating Work Platform in a proper and safe way and also avoid the risks caused by other people.

1.2 Tests performed before delivery

Before being placed on the market, each MEWP undergoes the following tests:
- Braking test
- Overload test
- Operating test

1.3 Intended use

The machine described in this use and maintenance manual is a manual drive aerial platform (moving is not power-driven) intended for lifting persons and materials (equipment and work materials) in order to carry out maintenance, installation, cleaning, painting, de-painting, sand-blasting, welding operations, etc.
The max. capacity allowed (which varies according to the model – see paragraph “Technical features”) is divided as follows:
- 80 Kg for each person on board.
- 40 Kg for equipment.
- Any remaining load is represented by the work materials.

In any case NEVER exceed the maximum capacity allowed as indicated in paragraph "Technical features”. Persons, tools and work materials can be loaded on the platform only from the access position (platform lowered). It is absolutely forbidden to load persons, tools and work materials on the platform when it is not in access position.
All loads must be positioned inside the platform. Do not lift loads (even if complying with the maximum capacity allowed) hanging from the platform or lifting structure.
Do not carry large-sized panels since they increase the resistance to wind force thus causing the machine to overturn.
It is forbidden to move the machine with platform raised. To move the machine it is necessary that the work platform is in the access position (fully lowered). No operator must be on board the platform during the displacement of the machine.
The machine is not equipped with an overload controller as in the design phase we considered stability and overload criteria increased as reported by the EN280 in paragraphs 5.4.1.5 and 5.4.1.6 .
The machine cannot be used in areas where road vehicles operate. Always surround the working area by means of suitable signs when the machine is used in public areas.
All types of machine use other than those for which it was designed must be approved in writing by the machine manufacturer following a specific request on the part of the user.

Do not use the machine for purposes other than those for which it was designed, except after making a request and having obtained written permission in this sense from the manufacturer

1.3.1 Leaving at height

The work elevating platforms are not designed by taking into account the risks of the “leaving at height” because the only access position considered is when the platform is completely lowered. For this reason this activity is formally forbidden.
However, there are exceptional conditions in which the operator needs to access or leave the work platform not in the access position. This activity is normally defined as “leaving at height”.

The risks connected to the “leaving at height” do not depend exclusively on the PLE (work elevating platform) characteristics; a specific risk analysis carried out by the employer can authorize this specific use by taking into account:

- The working environment characteristics;
- The absolute prohibition to consider the work platform as an anchoring point for people working outdoors;
- The use of the machine at xx% of its performances to avoid that additional forces created by a specific operation or bending of the structure move away the access zone from the unloading zone. Provide for some tests in order to define these limitations;
- Provide for a specific evacuation procedure in case of emergency (for example: an operator always on the platform, one at the ground control panel while a third operator leaves the lifted platform);
- Provide for a specific training of the staff both as operator and transported staff;
- Equip the unloading zone with all the devices that are necessary to avoid the risk of fall of the staff that accesses/leaves the platform.

What said above is not a formal authorization of the manufacturer for the “leaving at height”, but it wants to supply information to the employer - who is fully responsible for that - which can be useful for the planning of this exceptional activity.

1.4 Description of the machine

The machine described in this use and maintenance manual is a Manual Drive Elevating Work Platform equipped with:
- Chassis equipped with wheels.
- Vertical scissor lifting structure operated by one or more hydraulic cylinders (the number of cylinders varies according to machine model).
- Work platform (the max. capacity varies according to the model - see chapter "Technical features”).

The chassis is equipped with four idle wheels of which two rear pivoting and two front fixed (non steering). The rear wheels are equipped with pedal parking brake; on front wheels there is a device for automatic braking which intervenes when the work platform is in a position other than the access one.
The hydraulic cylinder moving the extensible structure is provided with a solenoid safety valve directly flanged on the same. These devices allow the booms to remain in position even if one of the supply tubes accidentally breaks.
The platform is equipped with rails and toe-boards of a prescribed height (the height of the rails is $\geq$ 1100 mm; the height of the toe-boards is $\geq$150 mm). For basic models XP4 E – XP5 E – XLP5 E the platform perimeter corresponds to the rails perimeter, while for DUAL models it is possible to adjust the maximum platform size by adjusting the rails on two fixed positions. In the "open" position, the rails make the whole platform floor available to the operator; in the "closed" position the rails reduce its perimeter dimensions allowing the operator on board to fit the platform into confined spaces such as the panels of false ceilings.
To access the platform the following access systems are available:
- Entrance area with one-door reclosing gate and automatic lock in the closed position (standard for basic models XP4 E – XP5 E – XLP5 E);
- Entrance area with gravity rod (standard for "DUAL” models);
- Entrance area with two-door gate ("saloon” type) with automatic reclosing and locking system in closed position (optional for "DUAL” models).

When no motive power is available, the manual emergency lowering can be controlled enabling the knob manually from the ground (see instructions plates).

1.5 Control panels

The machine is provided with a single control panel on the platform for the normal use of the machine.
On the ground there is an emergency stop device and the device for manual emergency lowering.

1.6 Drive power

The machines are powered by an electro-hydraulic system consisting of rechargeable accumulators and electric pump.
Both the hydraulic and the electric systems are equipped with all necessary protections (see electric and hydraulic circuit diagrams annexed to this manual).

1.7 Machine life, demolition and decommissioning

The machine has been designed to last for 10 years in normal operating environments, if properly used and serviced. Within this period, the manufacturer must carry out a complete inspection/overhaul.
If disposal of the unit is necessary, comply with current local regulations.
In Italy, the demolition/decommissioning must be notified to the local ASL / USL or ARPA.
The machine consists mainly of metal parts which are easy to be identified (steel for the most parts, and aluminium for the hydraulic blocks); thus, we can state that the machine can be recycled at 90%.

European standards and those transposed by the member countries relating to respect for the environment and the disposal of wastes envisage heavy administrative and penal fines in case of infringement.
In case of demolition/decommissioning, carefully keep to the provisions of applicable regulations, especially as regards materials such as hydraulic oil and batteries.

1.8 Identification

In order to identify the machine, when spare parts and service are required, always mention the information given in the serial number plate. Should this plate (as well as the various stickers applied on the machine) be lost or illegible, it is to be replaced as soon as possible. In order to identify the machine when no plate is available the serial number is also stamped on the chassis. To locate the plate and the stamp of the serial number, see the following picture. It is recommended to copy such data in the following boxes.

Model.....……..	Chassis:.....……..	Year:.....……..

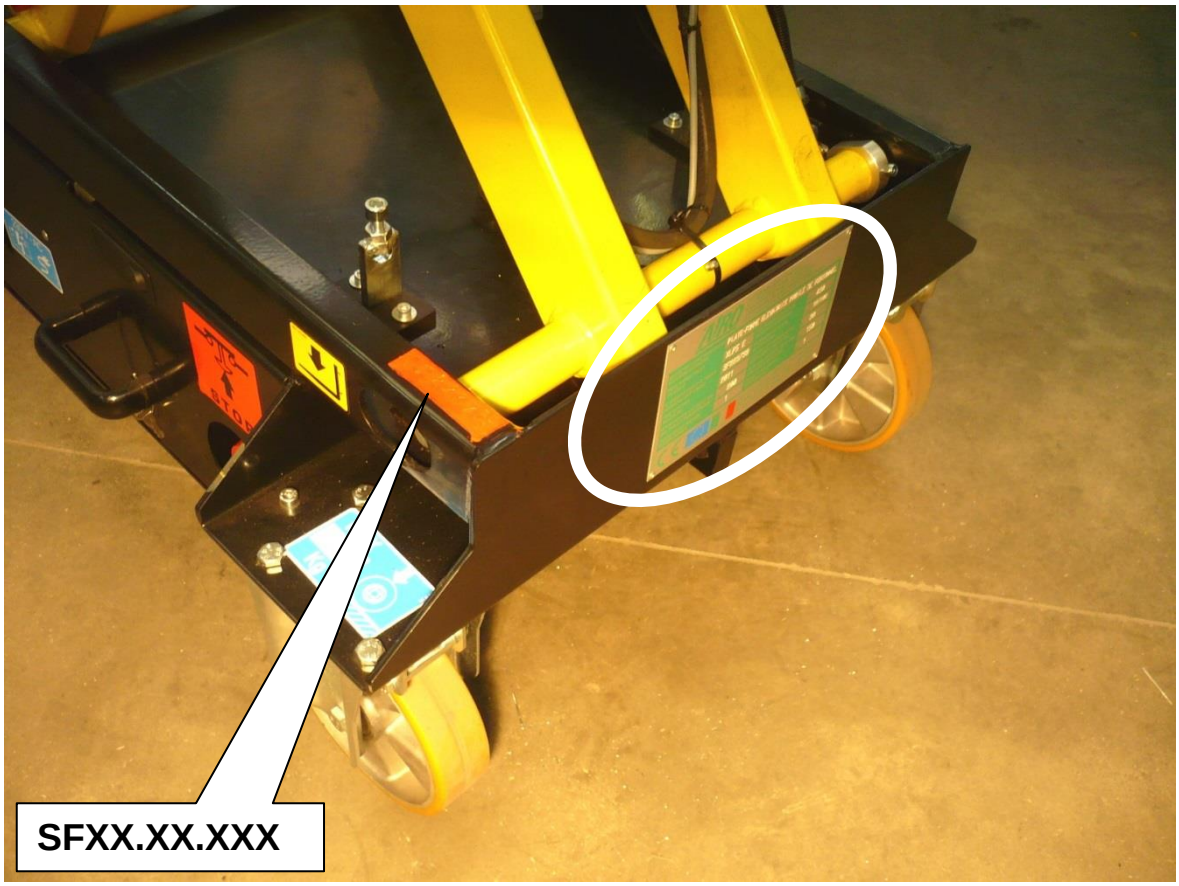


FIG.1

1.9 Location of main components

Alongside is a diagram showing the machine and its components.

1) Platform control push-button panel
2) Box components
3) Control panel
4) Hydraulic control unit
5) Steering wheels with pedal parking brake
6) Fixed wheels with automatic parking brakes
7) 230V plug (optional)
8) Spirit level for visual check of machine levelling (optional)
9) Lifting cylinders
10) Lowering control valves
11) Battery
12) Battery charger
13) Inclinometer
14) Manual device for emergency lowering
15) Platform height control M1 microswitch
16) Stopping levers of the lifting structure
17) Document box
18) Battery charger power cable location
19) Wheel chocks for forklift truck
20) Transport fixing holes.

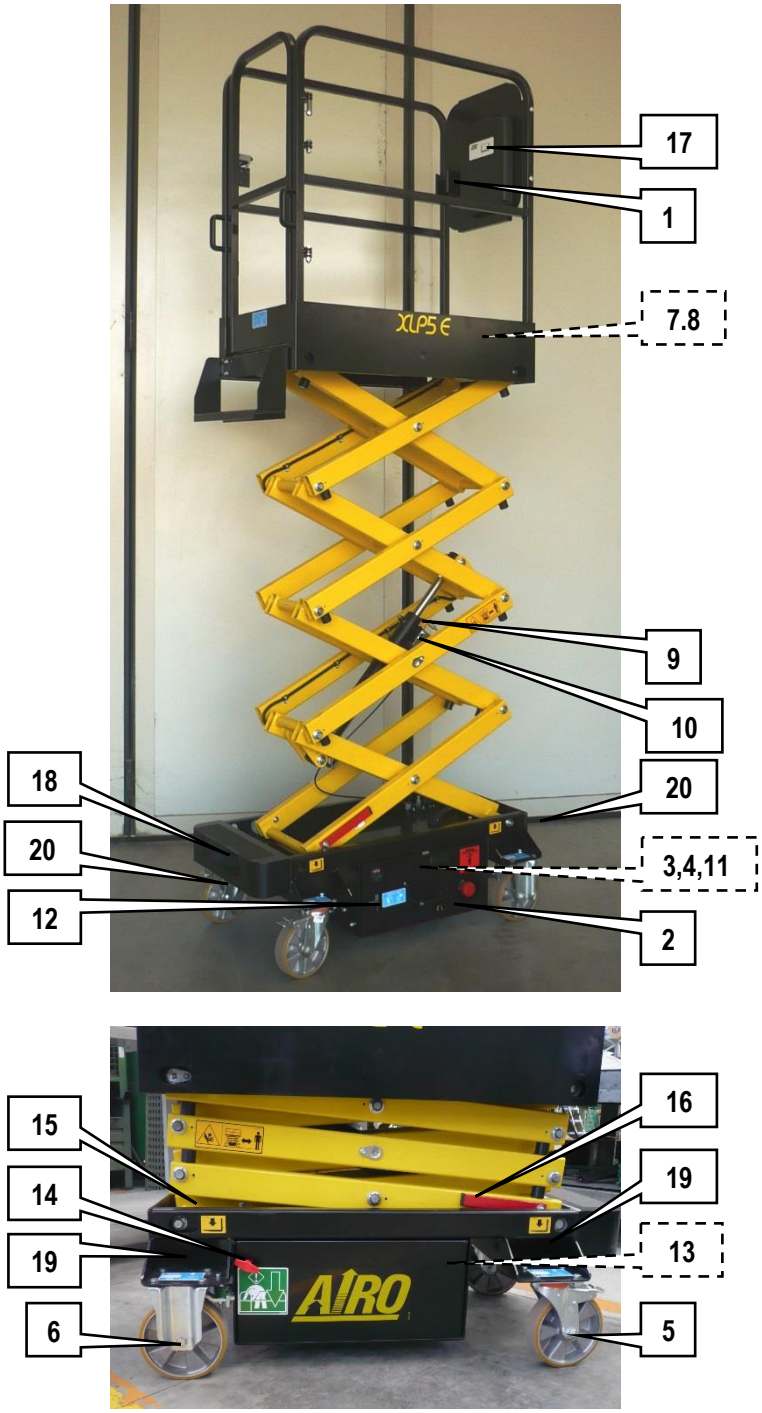


FIG.2

2. TECHNICAL FEATURES OF STANDARD MACHINES

THE TECHNICAL FEATURES OF THE PRODUCTS IN THE FOLLOWING PAGES CAN BE MODIFIED WITHOUT PRIOR NOTICE

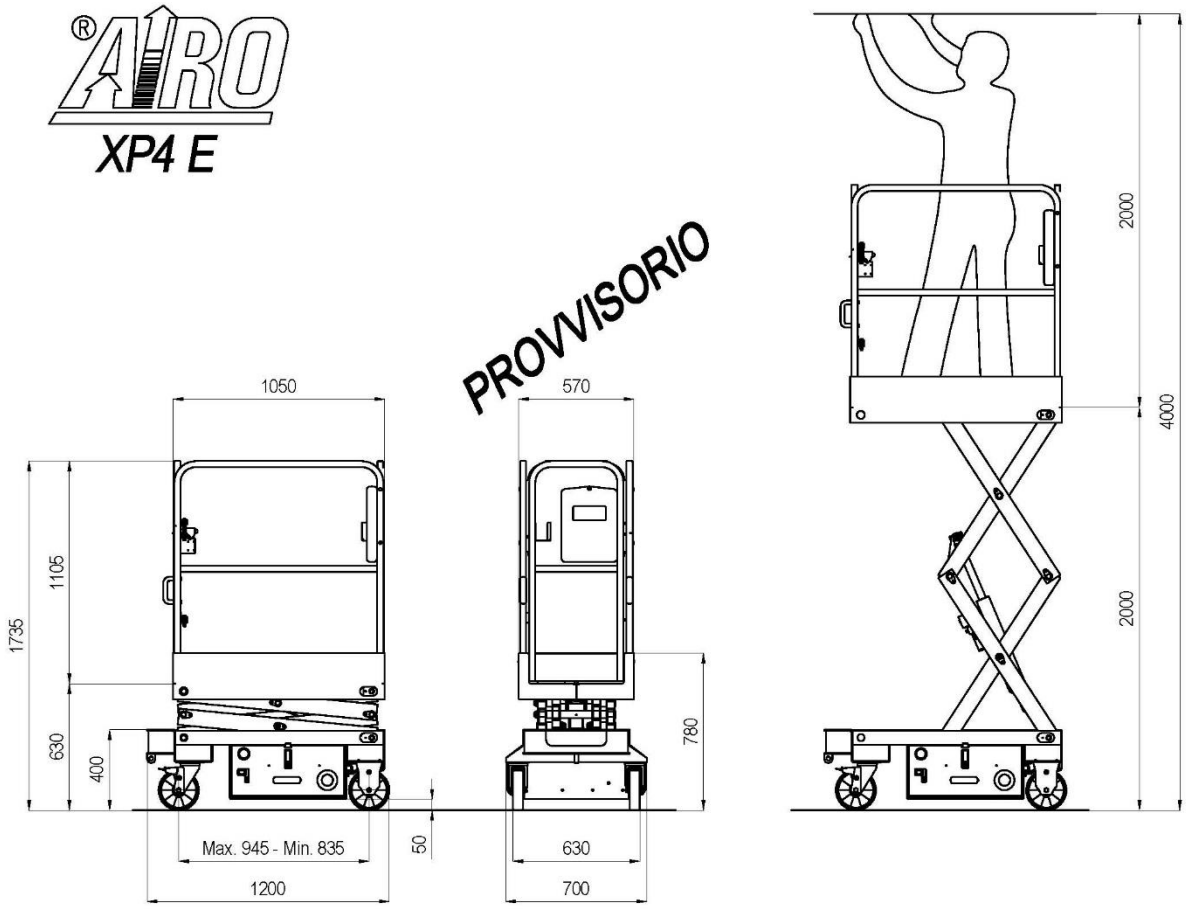
2.1 Model XP4 E – XP4 E DUAL.

Dimensions:		**XP4 E XP4 E DUAL**	
	Maximum working height	4.0	m
	Max. platform height	2.0	m
	Ground clearance	50	mm
	Maximum capacity (m)	250	kg
	Max. number of people on the platform (n) – indoors	1	
	Tool and material weight (me) * – indoors	170	kg
	Max. pressure of lifting circuit	150	bar
	Tyre dimensions	Ø200 x 50	mm
	Type of tyres	Non-marking polyurethane	
	Platform dimensions	0.57 x 1.05	m
	Rails height	1.10	m
	Toe board height	0.15	m
	Transport dimensions with removable rails installed	0.70 x 1.20 x 1.74	m
	Transport dimensions with removable rails not installed	0.70 x 1.20 x 0.78	m
	Machine weight (unloaded) (1)	325	kg
Stability limit:			
	Longitudinal inclination	1.5	°
	Transversal inclination	1.5	°
	Maximum wind speed	0	m/s
	Maximum manual force:	200	N
	Max. load per wheel	300	Kg
Performance:			
	Battery capacity and voltage	12 / 85-102	V/Ah (c5-c20)
	Standard battery type	Gel	
	Total electrolyte quantity	(7)	Lt.
	Battery weight	32	kg
	Single-phase battery charger	12 / 10 HF	V/A
	Max. current absorbed by the battery charger	4	A
	Electric pump power	0.8	kW
	Max. absorbed current	150	A
	Lowering/lifting time (unloaded)	20 / 27	Sec.
	Oil tank capacity	2	Lt.
	Max. operating temperature	+50	°C
	Min. operating temperature	-15	°C

(*) me = m – (n x 80)

(1) In some cases different limits can be fixed. It is recommended to comply with the data shown on the machine plate.

XP4 E



XP4 E DUAL

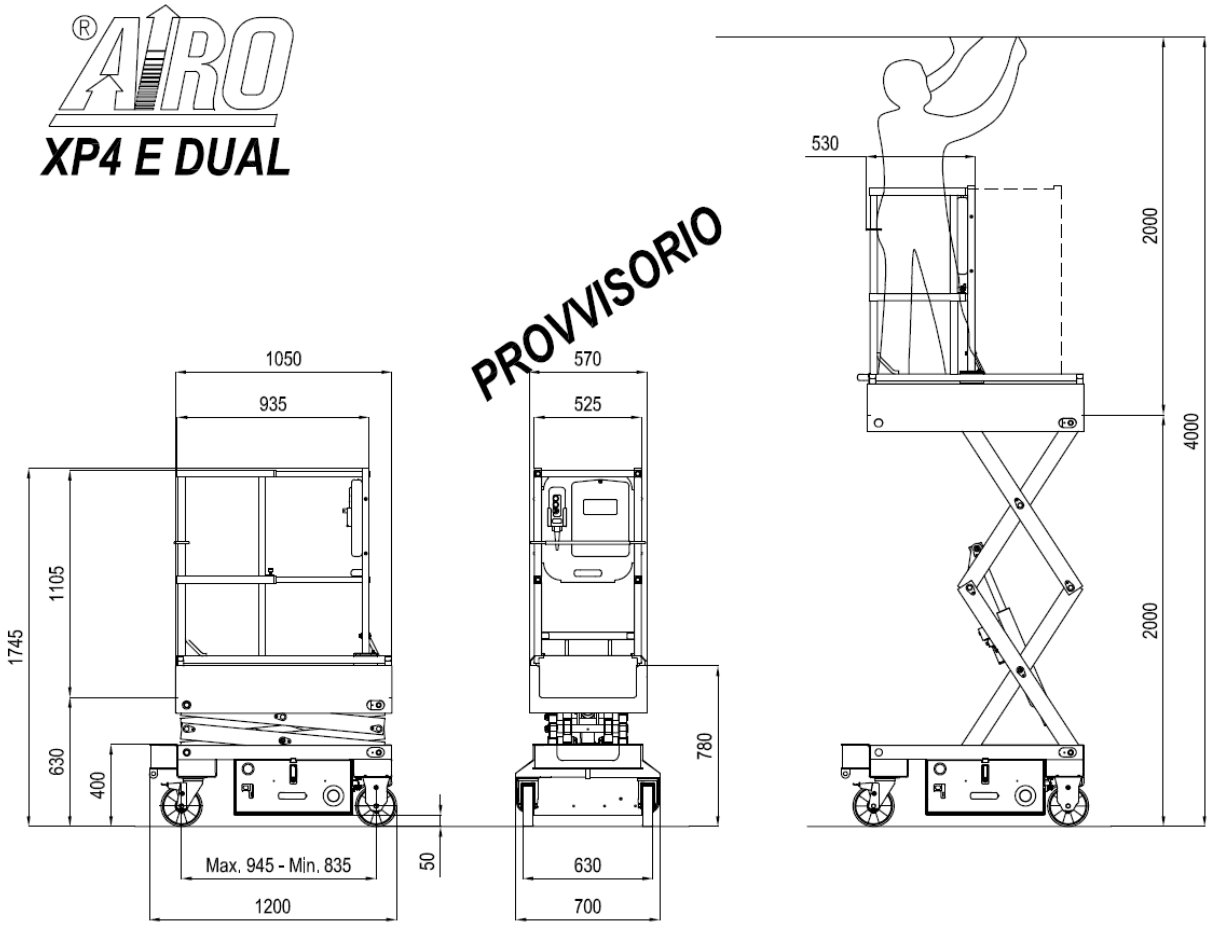


FIG.3

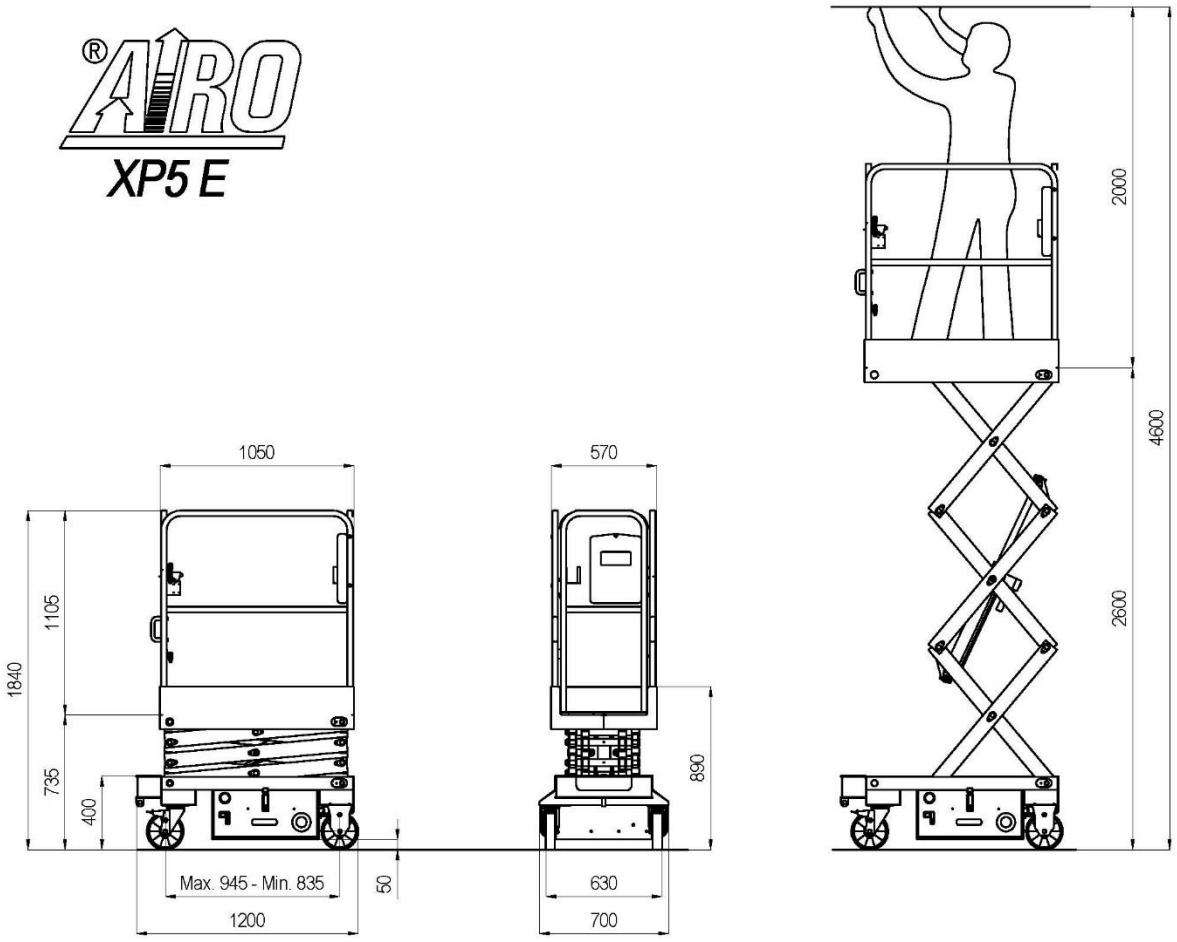
2.2 Model XP5 E – XP5 E DUAL.

Dimensions:		**XP5 E XP5 E DUAL**	
	Maximum working height	4.6	m
	Max. platform height	2.6	m
	Ground clearance	50	mm
	Maximum capacity (m)	250	kg
	Max. number of people on the platform (n) – indoors	1	
	Tool and material weight (me) * – indoors	170	kg
	Max. pressure of lifting circuit	250	bar
	Tyre dimensions	Ø200 x 50	mm
	Type of tyres	Non-marking polyurethane	
	Platform dimensions	0.57 x 1.05	m
	Rails height	1.10	m
	Toe board height	0.15	m
	Transport dimensions with removable rails installed	0.70 x 1.20 x 1.84	m
	Transport dimensions with removable rails not installed	0.70 x 1.20 x 0.89	m
	Machine weight (unloaded) (1)	360	kg
Stability limit:			
	Longitudinal inclination	1.5	°
	Transversal inclination	1.5	°
	Maximum wind speed	0	m/s
	Maximum manual force:	200	N
	Max. load per wheel	310	Kg
Performance:			
	Battery capacity and voltage	12 / 85-102	V/Ah (c5-c20)
	Standard battery type	Gel	
	Total electrolyte quantity	(7)	Lt.
	Battery weight	32	kg
	Single-phase battery charger	12 / 10 HF	V/A
	Max. current absorbed by the battery charger	4	A
	Electric pump power	0.8	kW
	Max. absorbed current	150	A
	Lowering/lifting time (unloaded)	20 / 27	Sec.
	Oil tank capacity	2	Lt.
	Max. operating temperature	+50	°C
	Min. operating temperature	-15	°C

(*) me = m – (n x 80)

(1) In some cases different limits can be fixed. It is recommended to comply with the data shown on the machine plate.

XP5 E



XP5 E DUAL

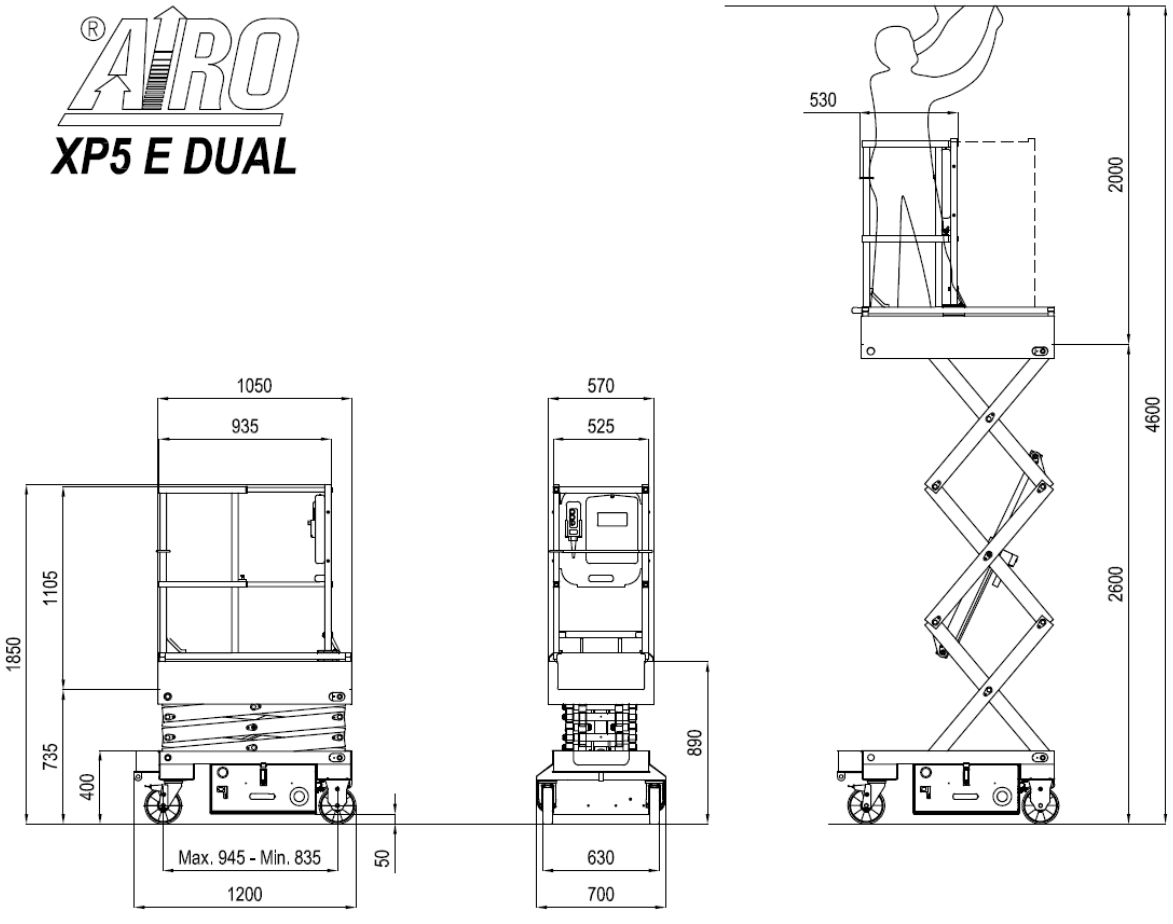


FIG.4

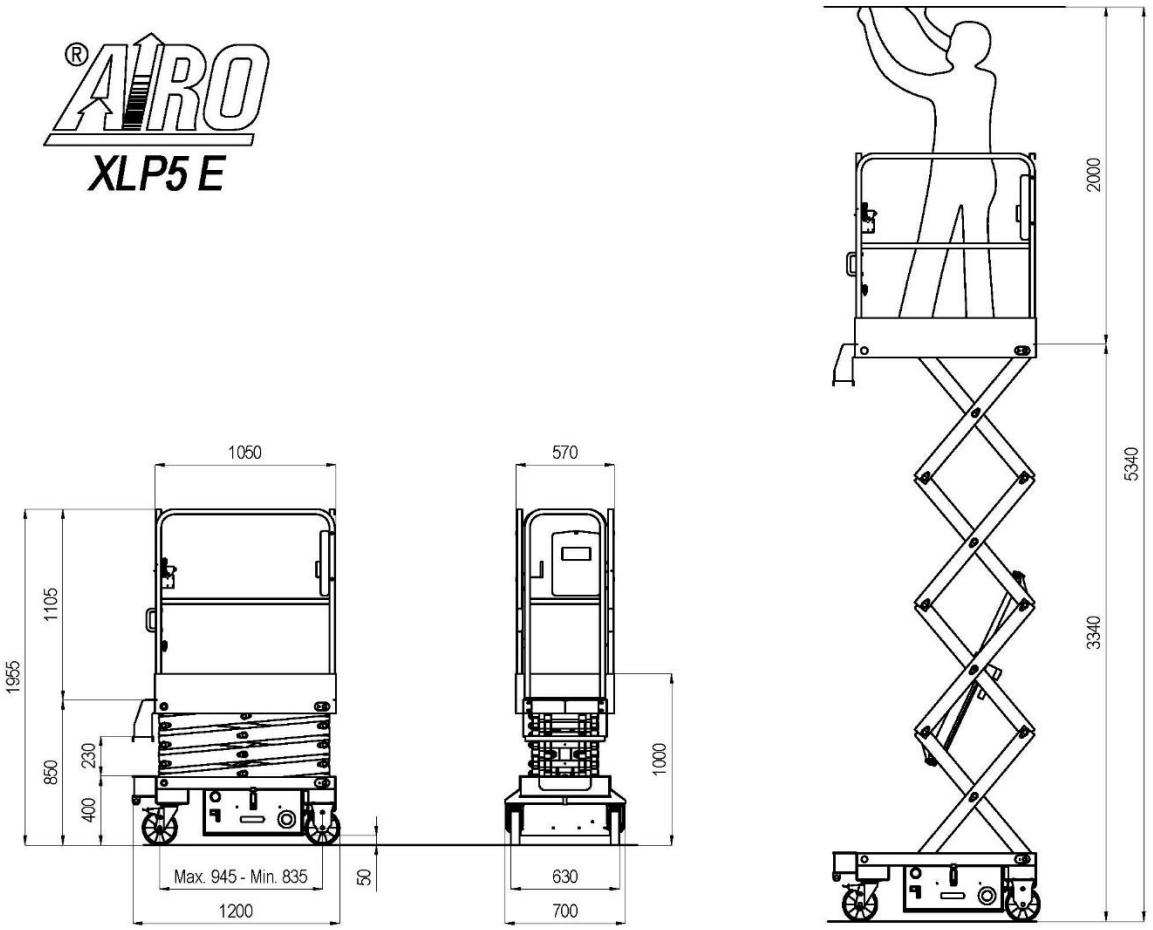
2.3 Model XLP5 E – XLP5 E DUAL.

Dimensions:		**XLP5 E XLP5 E DUAL**	
	Maximum working height	5.35	m
	Max. platform height	3.35	m
	Ground clearance	50	mm
	Maximum capacity (m)	250	kg
	Max. number of people on the platform (n) – indoors	1	
	Tool and material weight (me) * – indoors	170	kg
	Max. pressure of lifting circuit	150	bar
	Tyre dimensions	Ø200 x 50	mm
	Type of tyres	Non-marking polyurethane	
	Platform dimensions	0.57 x 1.05	m
	Rails height	1.10	m
	Toe board height	0.15	m
	Transport dimensions with removable rails installed	0.70 x 1.20 x 1.96	m
	Transport dimensions with removable rails not installed	0.70 x 1.20 x 1.00	m
	Machine weight (unloaded) (1)	430	kg
Stability limit:			
	Longitudinal inclination	1.5	°
	Transversal inclination	1	°
	Maximum wind speed	0	m/s
	Maximum manual force:	200	N
	Max. load per wheel	330	Kg
Performance:			
	Battery capacity and voltage	12 / 85-102	V/Ah (c5-c20)
	Standard battery type	Gel	
	Total electrolyte quantity	(7)	Lt.
	Battery weight	32	kg
	Single-phase battery charger	12 / 10 HF	V/A
	Max. current absorbed by the battery charger	4	A
	Electric pump power	0.8	kW
	Max. absorbed current	150	A
	Lowering/lifting time (unloaded)	20 / 27	Sec.
	Oil tank capacity	2	Lt.
	Max. operating temperature	+50	°C
	Min. operating temperature	-15	°C

(*) me = m – (n x 80)

(1) In some cases different limits can be fixed. It is recommended to comply with the data shown on the machine plate.

XLP5 E



XLP5 E DUAL

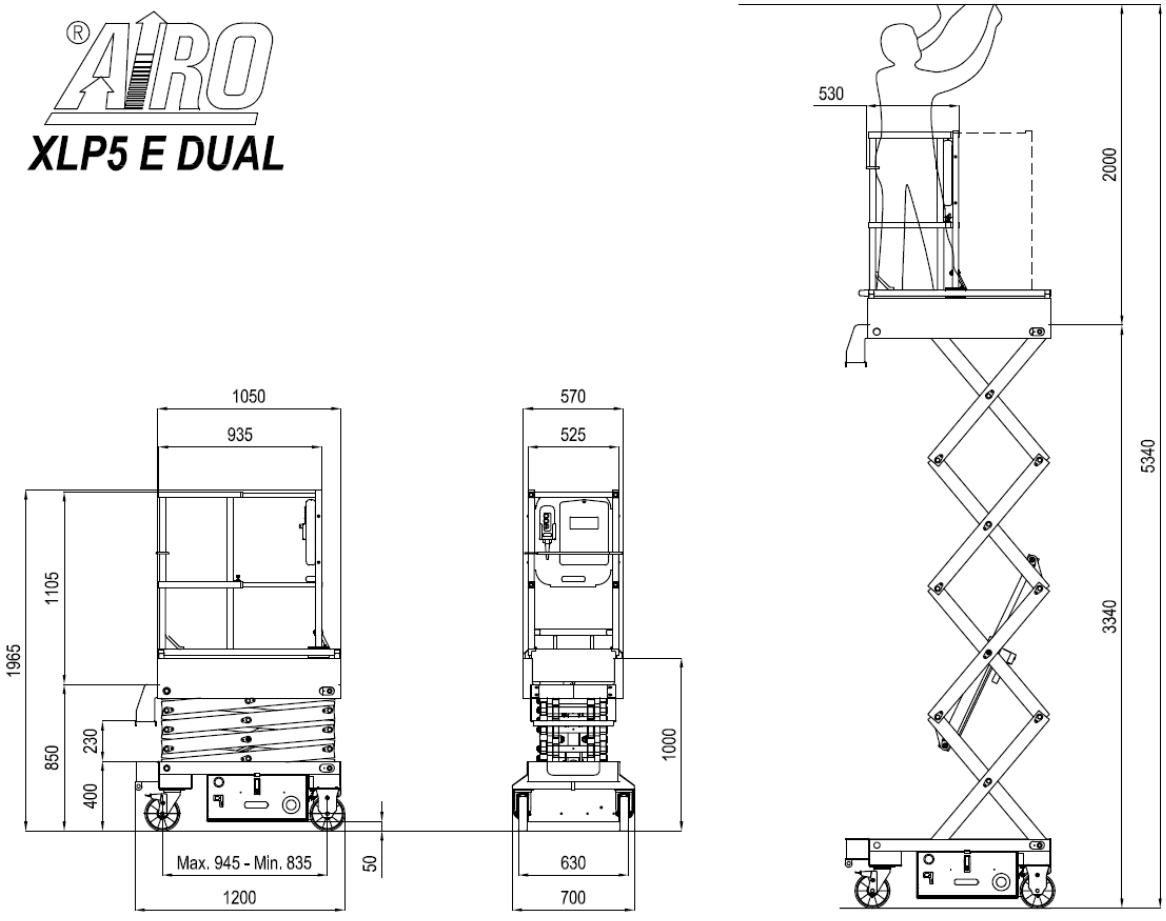


FIG.5

2.4 Vibrations and noise

Noise tests have been carried out under the most unfavourable conditions to study the effects on the operator.
The level of acoustic pressure weighed **(A)** at work places does not exceed **70dB (A)** for each model to which this Use and Maintenance manual refers.

As to vibrations in ordinary working conditions:

- The average weighted quadratic value in frequency of the acceleration which the upper members have to withstand is below **2.5 m/sec²** for each of the models to which this Use and Maintenance manual refers.
- The average weighted quadratic value in frequency of the acceleration which the body has to withstand is below **0.5 m/sec²** for each of the models to which this Use and Maintenance manual refers.

3. SAFETY PRECAUTIONS

3.1 Personal protective equipment (PPE)

Always wear personal protective equipment according to current regulations concerning industrial health and safety (in particular, hard hat and safety shoes are **COMPULSORY)**.
It is the operator or safety manager's responsibility to choose the personal protective equipment (PPE) depending on the activity to be carried out. For their correct use and maintenance, refer to the equipment manuals themselves.
The use of safety harness is not compulsory except in certain countries with specific regulations. In Italy, the consolidation act on safety, **Law Decree 81/08,** has made the use of a safety harness mandatory.

FIG.6

3.2 General safety norms

- Only adults (18 years old), after carefully reading this manual, are allowed to use the machine. The employer is responsible for training.
- The platform is intended for people carriage; therefore, it is necessary to comply with the current local regulations relevant to this class of machines (see paragraphs 1).
- At least two users must operate the machine, one of them on the ground, able to carry out the emergency operations described in this handbook.
- Always keep the machine at a safety distance from power lines as indicated in the next chapters.
- Use the machine according to the capacity values indicated in the technical features section. The identification plate shows the maximum number of people allowed on the platform at any one time, the maximum capacity and the tool and material weight. Never exceed the indicated figures.
- Do NOT use the framework of the platform or any of its elements for grounding connection while welding on platform.
- It is absolutely forbidden to load and/or unload persons and/or material with platform not in the access position.
- It is the machine owner and/or safety manager's responsibility to check that the maintenance and repair operations are carried out by skilled personnel.

3.3 Use instructions

3.3.1 General

- The electric and hydraulic circuits are provided with safety devices, calibrated and sealed by the manufacturer:

DO NOT TAMPER WITH AND MODIFY THE CALIBRATION OF ANY COMPONENT OF THE ELECTRIC AND HYDRAULIC SYSTEMS.

- The machine must be used only in areas well lit up, checking that the ground is flat and firm. The machine may not be used if the lighting conditions are not sufficient. The machine is not equipped with any lightening system.
- Before using the machine check its integrity and conservation state.
- During maintenance operations do not dispose of any waste materials in the environment, but comply with current regulations.
- Do not carry out any service or maintenance operations when the machine is connected to the mains supply. Follow the instructions given in the following paragraphs.
- Do not approach the electric and hydraulic system components with sources of heat or flames.
- Do not increase the max. allowed height by means of scaffolds, ladders or other.
- With the machine lifted, do not fasten the platform to any structure (beams, pillars or wall).
- Do not use the machine as a crane, hoist or lift.
- Protect the unit (in particular the platform control panel) and the operator when working in adverse environmental conditions (painting, de-painting, sand-blasting, washing, etc.).
- Using the machine in bad weather conditions is forbidden; in particular, wind speeds must not exceed the limits indicated in the technical specifications (to measure speeds, see following chapters).
- Machines with a wind speed limit of 0 m/s are to be used indoors only.
- The machine must be parked / stored in closed environments, not exposed to weather conditions, within the temperature limits indicated in table "Technical features" and with both parking brakes on. It cannot be parked / stored outdoors.
- Do not use the machine in areas where risks of fire or explosion exist.
- Do not use pressurized water jets (high-pressure cleaners) to wash the machine.
- Overloading the work platform is forbidden.
- Avoid knocks and/or contacts with other vehicles and fixed structures.
- Leaving or accessing the work platform is forbidden unless this is in the position required for access or leaving (see the “Accessing the platform” chapter).

3.3.2 Handling

- Before handling the machine check that the connection plugs are disconnected from the power supply source.
- Move the machine into working position by pushing it with both hands on the handles placed on the entry rail. Pay attention during this procedure to avoid any hands or feet crushing.
- While operating on slopes ask for colleague’s help to avoid risks.
- In order to avoid any instability, use the machine on regular and firm grounds. To prevent the machine from overturning, comply with the max. gradeability values indicated in the Technical data section under paragraph "**Stability limits**". However, movements on inclined grounds are to be carried out with the utmost caution.
- It is forbidden to move the machine with platform raised. To move the machine it is necessary that the work platform is in the access position (fully lowered). No operator and/or material must be on board the platform during the displacement of the machine.
- The machine must not be used directly for road transport. Do not use it for material transport (see chapter “Intended use”).
- Do not operate the machine if components boxes are not properly closed.
- Check that in the operating area there are not obstacles or other dangerous elements.
- Pay particular attention to the area above the machine during lifting to avoid any crushing and collisions.
- During operation keep your hands in safety position, the driver has to place them as shown in picture A or B while the transported operator has to keep them as shown in picture C.

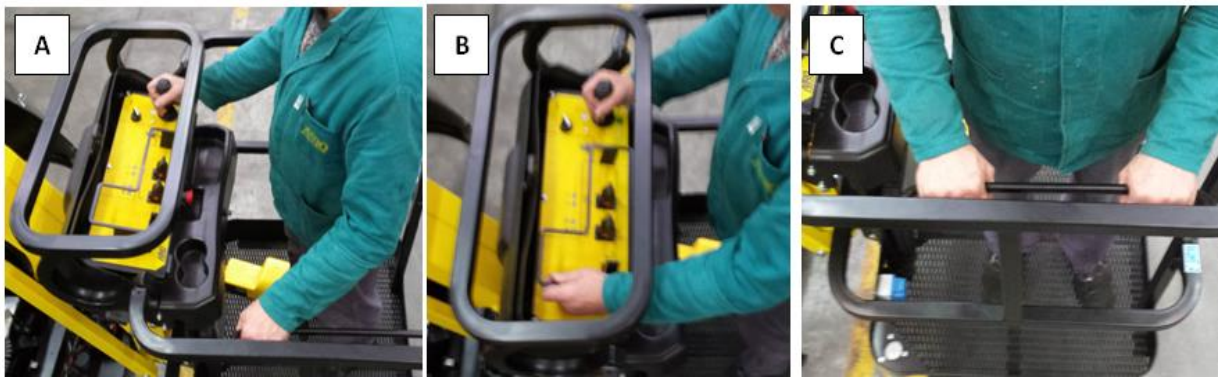


FIG.7

3.3.3 Operating procedures

- The machine is equipped with an inclination control system disabling lifting in case of unstable positioning. Working operations can be resumed only after placing the machine in a steady position. Should the tilt alarm turn on, the machine is not correctly positioned (see paragraphs “Use instructions”) and the platform must be brought back to safety rest position before resuming operations.
- The machine is not equipped with an overload controller as in the design phase we considered stability and overload criteria increased as reported by the EN280 in paragraphs 5.4.1.5 and 5.4.1.6 .
- The machine is equipped with a device to avoid the risk of shearing and crushing in the lifting structure in compliance with EN280:2001: the lowering movement is automatically stopped in a position where the vertical distance between the scissor ends is over 100 mm. The operator on the platform should check that no people are nearby the area with crushing risk, only then the lowering control can be resumed (see chapter "Lifting and lowering").
- The machine features a device for checking the state of battery charge (battery protection device): when battery charge is at 20% this condition is signalled by a red flashing light on the voltmeter. In this condition lifting is disabled, battery should be immediately charged.
- Do not lean over the platform guard rails.
- Make sure that no people, apart from the operator, are in the area where the machine is operating. While lowering the platform, the operator on board should pay particular attention to avoid any contact with the personnel on the ground.
- During operations in public areas, in order to prevent people other than the personnel from approaching the machine and being endangered, surround the working area by means of barriers or other suitable signs.
- Lift the platform only if the machine rests on solid and horizontal surfaces (see the next chapters) and only when all four wheels are in contact with the ground.
- After each work session, always take the keys out of the control panels and keep them in a safe place to prevent unauthorized people from using the machine.
- Always place working tools in a steady position to prevent them from falling and hurting the operators on the ground.

When choosing the positioning point of the chassis, to prevent unexpected possible contacts with obstacles, always observe the figures carefully as these make it possible to identify the range of action of the platform (chap. 2).

3.3.4 Wind speed according to BEAUFORT SCALE

You can use the table below for a simple assessment of the wind speed. We remember that the max. limit for each machine model is indicated in the table TECHNICAL FEATURES OF STANDARD MACHINES.

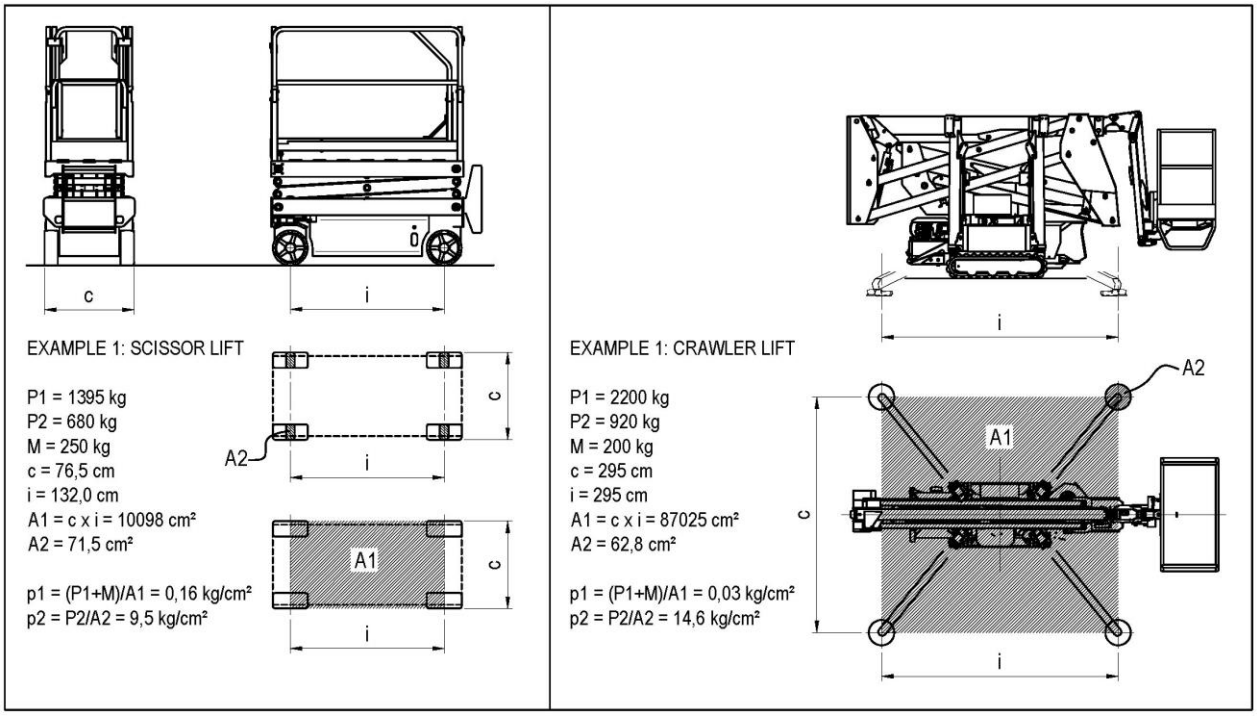
The machines for which the max. wind limit is 0 m/s must be used indoors only. These machines cannot be used outdoors even with no wind.

Beaufort Number	Wind speed (km/h)	Wind speed (m/s)	Wind description	Sea conditions	Land conditions
0	0	<0.28	Calm	Flat	Smoke rises vertically.
1	1-6	0.28–1.7	Light air	Ripples without crests. No whitecaps.	Wind motion visible in smoke.
2	7-11	1.7-3	Light breeze	Small wavelets. Crests of glassy appearance, not breaking.	Wind felt on exposed skin. Leaves rustle.
3	12-19	3-5.3	Gentle breeze	Large wavelets. Scattered white caps.	Leaves and small twigs constantly moving.
4	20-29	5.3-8	Moderate breeze	Small waves with breaking crests. Fairly frequent whitecaps.	Dust and loose paper raise. Small branches begin to move.
5	30-39	8.3-10.8	Fresh breeze	Moderate longer waves. Many whitecaps. Small amounts of spray.	Small trees in leaf begin to sway. Strong breeze
6	40-50	10.8-13.9	Strong breeze	Large waves with foam crests and some spray. Some airborne spray is present.	Large branches in motion. Umbrella use becomes difficult.
7	51-62	13.9-17.2	Near gale / Moderate gale	Sea heaps up and foam begins to streak. Some foam from breaking waves is blown into streaks along wind direction.	Whole trees in motion. Effort needed to walk against the wind.
8	63-75	17.2-20.9	Fresh gale	Moderately high waves with breaking crests forming spindrift. Streaks of foam. Breaking crests forming spindrift.	Some twigs broken from trees. Cars veer on road. Progress on foot is seriously impeded.
9	76-87	20.9-24.2	Strong gale	High waves whose crests sometimes roll over. Dense foam is blown along wind direction.	Larger branches break off trees, construction/temporary signs and barricades blown over, damage to circus tents and canopies.
10	88-102	24.2-28.4	Whole gale / Storm	Very high waves with overhanging crests. Large patches of foam from wave crests give the sea a white appearance. Large amounts of airborne spray reduce visibility.	Trees are broken off or uprooted. Considerable damage to structures.
11	103-117	28.4-32.5	Violent storm	Exceptionally high waves. Very large patches of foam cover much of the sea surface. Very large amounts of airborne spray severely reduce visibility.	Many roofing surfaces are damaged; asphalt tiles that have curled up and/or fractured due to age may break away completely.
12	>117	>32.5	Hurricane	Huge waves. Air is filled with driving spray, sea is completely white with foam and spray.	Some windows may break; mobile homes and poorly constructed sheds and barns are damaged.

3.3.5 Pressure of the machine on ground and load-bearing capacity of ground

Before using the machine, the operator must make sure the floor is suitable for withstanding the specific loads and pressures on the ground with a certain safety margin.
The following chart provides the parameters in play and two examples of calculation of the average pressure on the ground below the machine and max pressure underneath the wheels or outriggers (p1 and p2).

SYMBOL	U.M.	DESCRIPTION	EXPLANATION	FORMULA
P1	Kg	Total machine weight	It represents the weight of the machine, not including nominal load. Note: always refer to the details indicated on the plates affixed to the machine.	-
M	Kg	Nominal Load	The max. load allowed for the work platform.	-
A1	cm²	Area occupied on the ground	Machine supporting area on the ground determined by the result of TRACK x WHEEL BASE.	A1 = c × i
c	cm	Track	Cross width of machine measured outside the wheels. or: Cross width of machine measured between levelling outrigger centres.	-
i	cm	Wheel base	Longitudinal length of machine measured between wheel centres. or: Longitudinal length of machine measured between outrigger centres.	-
A2	cm²	Wheel or levelling outrigger area	Wheel or levelling outrigger ground support area. The wheel support area on the ground must be verified empirically by the operator; the levelling outrigger support area depends on the shape of the support foot.	-
P2	Kg	Max. load on wheel or levelling outrigger	This represents the max. load that can be discharged onto the ground by a wheel or by a levelling outrigger when the machine is in the worst position and load conditions. Note: always refer to the details indicated on the plates affixed to the machine.	-
p1	Kg/cm²	Pressure on ground	Average pressure placed on the ground in idle conditions and supporting the nominal load.	p1 = (P1 + M) / A1
p2	Kg/cm²	Max specific pressure	Max. pressure which a wheel or a levelling outrigger can place on the ground when the machine is in the worst position and load conditions.	p2 = P2 / A2



The table below shows the load-bearing capacity of the ground split up by ground type.
Refer to the data contained in the specific tables of each model (chapter 2, TECHNICAL FEATURES OF STANDARD MACHINES) to obtain the figure relating to the max pressure on the ground caused by the single wheel.

Using the machine is forbidden if the max pressure on the ground per wheel is above the load-bearing capacity of the specific type of ground on which the machine is to be used.

TYPE OF GROUND	BEARING CAPACITY IN Kg/ cm²
Non compact filling earth	0 – 1
Mud, peat, etc.	0
Sand	1.5
Gravel	2
Friable earth	0
Soft earth	0.4
Rigid earth	1
Semi-solid earth	2
Solid earth	4
Rock	15 - 30

Should you have any doubts, verify the load-bearing capacity with specific tests.
In case of constructed surfaces (concrete floors, bridges, etc.) the load-bearing capacity must be provided by the builder.

3.3.6 High-voltage lines

The machine is not electrically insulated and is not protected in case of contact with or vicinity to power lines.
A minimum distance must be kept from the power lines according to applicable laws and the following table

Type of power lines	Voltage (KV)	Minimum distance (m)
Light poles	<1	3
	1-10	3.5
	10 - 15	3.5
	15 - 132	5
	132 - 220	7
	220 - 380	7
High-voltage pylons	>380	15

3.4 Hazardous situations and/or accidents

- If, during Preliminary Operation checks or when using the machine, the operator discovers a defect that could produce a hazardous situation, the machine must be placed in **safety condition** (isolate it and affix a notice) and the employer must be notified about the fault.
- If, during use, an accident occurs, with injury to the operators, caused by operating errors (e.g., collisions) or any structural yielding, the machine must be placed in **safety condition** (isolate it and affix a notice) and the employer must be notified about the fault.
- In case of an accident with injuries to one or more operators, the operator on the ground (or on a platform not involved in the accident) must :
  - **Seek help immediately**
  - Perform the operation to return the platform to the ground **only if he is certain this will not make the situation worse.**
  - Place the machine in **safety condition** and notify the fault to the employer.

4. INSTALLATION AND PRELIMINARY CHECKS

The machine is supplied completely assembled, therefore it can perform all functions in safety as provided for by the manufacturer. No preliminary operation is required. To unload the machine, follow the instructions in chapter “Handling and carrying”.
Place the machine on a sturdy enough surface (see paragraph **3.3.5**) and with a gradient below max. allowed gradient (see technical features “Stability limits”).

4.1 Becoming acquainted with the machine

Anyone wishing to use a machine with weight, height, width and length characteristics or which generally differs significantly from the training received must be updated in order to cover the differences.
The employer shall be responsible for ensuring all the operators who use work equipment are adequately trained and in order with applicable health and safety legislation.

4.2 Preliminary operation checks

Before using the machine read the instructions given in this manual and the concise instructions indicated on the platform plate.
Check the perfect integrity of the machine (by sight check) and read the plates showing machine operating limits.
Before using the machine the operator must always check visually that:

- The battery is completely charged.
- The oil level lies between the min. and max. value (with lowered platform).
- The ground is sufficiently horizontal and solid.
- The machine carries out all operations in safety.
- The wheels are correctly secured
- The wheels are in good condition.
- Make sure the guard rails are fastened to the platform and the gate/s are in automatic reclosing mode. For DUAL models also check out the operation of the safety pins of the telescopic rails.
- The structure does not show clear faults (visually check welding of lifting structure).
- The instructions plates are perfectly readable.
- The controls (including the emergency stops) are perfectly efficient.
- The braking system to the pedal is efficient.
- The anchoring points for the harness are in perfect state of conservation.

Do not use the machine for purposes different from those it was intended for.

5. USE INSTRUCTIONS

Before using the machine read this chapter thoroughly.

Follow exclusively the instructions given in the next paragraphs and the safety rules described both hereafter and in the previous paragraphs. Read the next paragraphs carefully in order to properly understand the on/off procedures as well as all operations and their correct use.

5.1 Machine movement

The machine is not motorised. Before moving the machine check the working path, making sure that the ground is suitable to support the machine and then release both the pedal parking brakes as shown in the picture aside.

Move the machine into working position by pushing it with both hands on the handles placed on the entry rail. For DUAL models there are no handles; use the uprights of the entry rails. Pay attention during this procedure to avoid any hands or feet crushing.

Pay attention to the warnings referred to in chapter 3.3.2.

FIG.8

It is forbidden to move the machine with staff on board the platform.

5.2 Machine braking and start-up

Once reached the working point, apply both parking brakes as shown in the figure aside, ensuring that the machine does not move, and then pull the emergency stop button located on the chassis.

FIG.9

5.3 Platform access

The “access position” is the only one from which loading or unloading of persons and materials is allowed. The “access position” to the work platform is the completely lowered configuration.

5.3.1 Standard access with gate (XP4 E - XP5 E - XLP5 E)

To get on the platform:
- Go up the ladder hanging on to the uprights of the entry rails.
- Lift the locking detent.
- Open the gate and get onto the platform.

Check that, once you are on the platform, the gate has closed again. Fasten the safety harness to the provided hooks.

FIG.10

5.3.2 Standard access with gravity rod (XP4 E DUAL - XP5 E DUAL - XLP5 E DUAL)

To get on the platform:
- Go up the ladder hanging on to the uprights of the entry rails.
- Raise the entrance bar and get on board.

Check that, once you are on the platform, the bar falls down closing the access. Fasten the safety harness to the provided hooks.

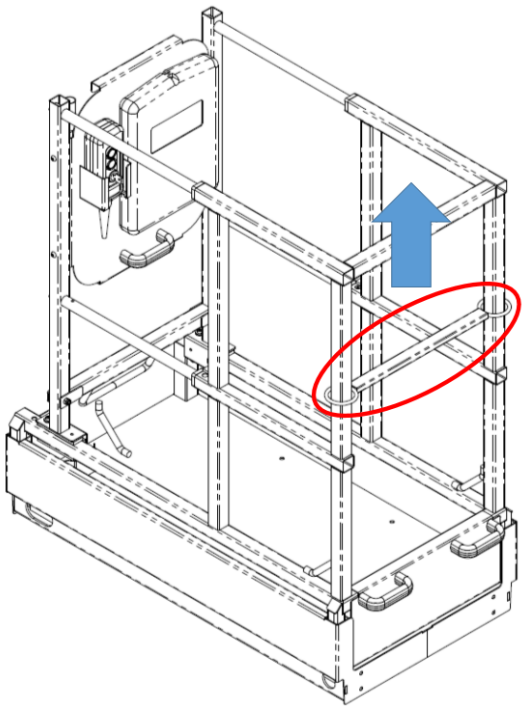


FIG.11

5.3.3 Optional access with gate "SALOON" (XP4 E DUAL - XP5 E DUAL - XLP5 E DUAL)

To get on the platform:
- Go up the ladder hanging on to the uprights of the entry rails.
- Lift the mechanical lock of the gates.
- Open the gates and get onto the platform.

Check that once on the platform, the gates have closed again and fit the upper mechanical lock. Fasten the safety harness to the provided hooks.

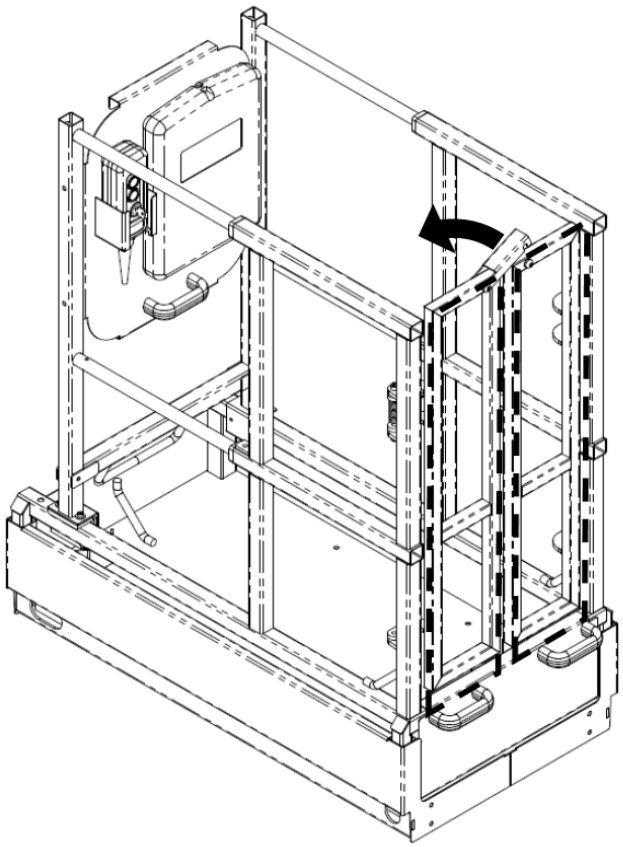


FIG.12

⚠ **To get on the platform use only the access equipment the platform is provided with. When moving up or down, always keep your eyes on the machine and hold onto the entry stringers.**

⚠ **Do NOT lock the gate so as to keep the platform access door open.**

⚠ **Leaving or accessing the work platform if this is not in the position required for accessing or leaving is forbidden.**

5.4 Adjusting the telescopic rails for DUAL models

The DUAL models are equipped with adjustable rails of the telescopic type so as to obtain two useful dimensions of the platform:
- All open (OPEN): normal size of the platform for the general use of the machine;
- All closed (CLOSED): to reduce the useful perimeter of the work platform to allow the operator to work in confined spaces in height as, for example, between the panels of false ceilings.

To adjust the railings in order to obtain the minimum dimensions of the work platform:
- Raise and rotate by 90° both red safety pins (A) as shown in the figure aside (UNLOCKED);
- Pull the front rail toward you using handle (B) and pedal (C) shown in the figure aside;
- Raise and rotate by 90° both red safety pins (A) and make sure that the pins have engaged with the safety holes of the rail (see figure aside: LOCKED) by locking the rails.

To adjust the rails in order to obtain the minimum dimensions of the work platform:
- Raise and rotate by 90° both red safety pins (A) as shown in the figure aside (UNLOCKED);
- Push the front rail forward using handle (B) and pedal (C) shown in the figure aside;
- Raise and rotate by 90° both red safety pins (A) and make sure that the pins have engaged with the safety holes of the rail (see figure aside: LOCKED) by locking the rails.

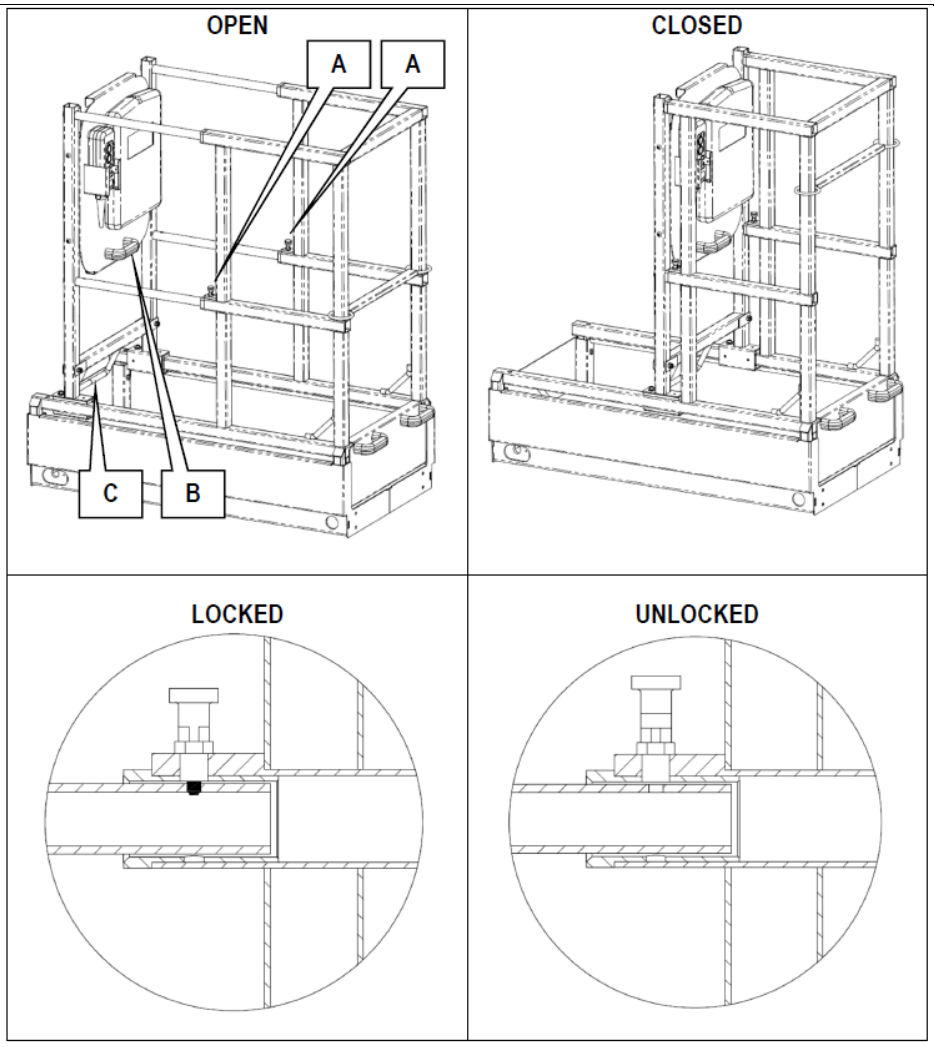


FIG.13

Always make sure that the telescopic rails are located in one of the two extreme positions (completely open or completely closed) and that both red safety pins have engaged with the safety holes of the rail (LOCK).

5.5 Controls

The control panel is located on the platform. The push-button station is movable and is normally positioned on a suitable support located on the front rail. From the push-button station on board the platform you can:

- Turn the machine ON/OFF.
- Control platform lifting and lowering.

A) Emergency stop button / starting key
B) Work platform lifting button
C) Work platform lowering button

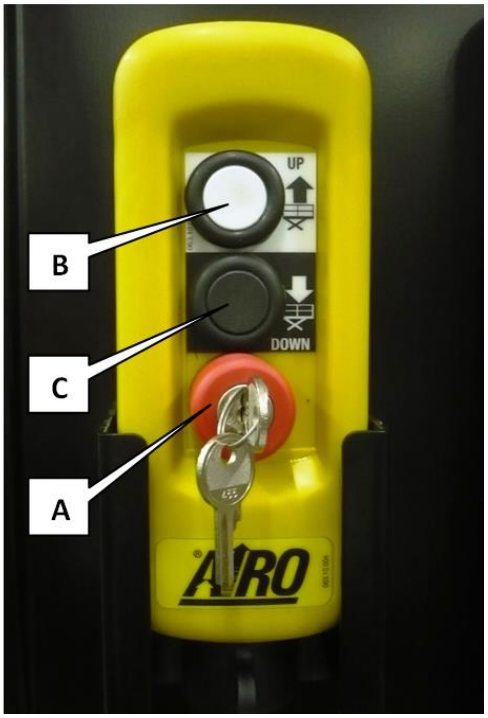


FIG.14

5.5.1 Emergency stop (A)

The emergency red stop button includes the on-off key of machine. Turning the key ¼ turn clockwise the red button exits and the machine is turned on (if the emergency stop button at the ground is free). By pressing the red emergency STOP button all control functions of the machine are stopped. Normal functions are enabled by rotating the key of 1/4 turn clockwise.

5.5.2 Platform lifting/lowering (B-C)

To lift and lower the platform it is necessary to operate button B) for lifting and C) for lowering holding them pressed during the whole execution of the procedure.
Platform lifting and lowering take place at a factory-set fixed speed. These speeds cannot be changed.

For safety reasons to be able to operate the machine, the lifting and lowering buttons must be held pressed during the execution of the movements. If the button is accidentally released while the machine is operating, the movement is immediately stopped.

During lifting and lowering an audible alarm located on the chassis is automatically activated.

NOTE:
The machine is equipped with a device to avoid the risk of shearing and crushing in the lifting structure in compliance with EN280:2001: the lowering movement is automatically stopped in a position where the vertical distance between the scissor ends is over 100 mm. The operator on the platform should check that no people are nearby the area with crushing risk, only then the lowering control can be resumed (see chapter "Lifting and lowering").

5.6 Ground control panel

On the ground, the following devices are present on the chassis:

A) Hour meter / Battery protection
B) Emergency STOP button
C) Instability danger audible alarm
D) Battery charger warning lights
E) Battery charger socket

FIG.15

5.6.1 Hour-meter / battery protection voltmeter (A)

The hour-meter displays the working hours of the electric pump. Platform lowering occurs by gravity and does not require the switching on of the electric pump, therefore the time used for this operation is not counted by the hour-meter.

The function of the battery protection Voltmeter is for preserving the battery, avoiding it from discharging excessively. Once the battery has reached a discharge level of 20%, the control system informs the operator of this condition through the red flashing led. Lifting is disabled and batteries must be recharged.

5.6.2 Emergency STOP button (B)

By pressing this button the machine is completely stopped; by pulling it to the outside the machine can be turned ON by means of the ON-OFF key.

5.6.3 Instability danger audible alarm (C)

The audible alarm goes off when the machine is not perfectly levelled. If the alarm condition is active, lifting is no longer possible. To use the machine again lower the platform completely and position the machine on an even ground to ensure its stability.

5.6.4 Battery charger warning lights (D)

Models equipped with a built-in high frequency battery charger, are provided with this warning light indicating the operation of the battery charger (for more detailed information read the paragraph concerning battery charge).

5.6.5 Battery charger socket (E)

Models equipped with a built-in high frequency battery charge are provided with this socket to connect the battery charger to the mains (for more detailed information read the paragraph concerning battery charge).

5.7 Machine start-up

To start the machine the operator shall:

- Unlock the stop button on the ground control panel by pulling it to the outside;
- From the platform control panel, lock the emergency stop button by turning the key 1/4 of turn clockwise.

At this point the functions can be performed by thoroughly following the instructions given in the previous paragraphs.

To start-up the machine, the stop button of the ground control panel must be activated (pulled outwards).

5.8 Machine stop

5.8.1 Normal stop

During the normal stop of the machine, if you release the controls, the operation is stopped.

5.8.2 Emergency stop button

Should it be necessary, the operator may immediately stop all machine functions on both platform and ground by pressing the previously described stop buttons.

To resume the operations:

- On the platform control panel turn the key of the emergency stop button by a ¼ of turn clockwise.
- From the ground control panel pull the stop button outwards.

5.9 Manual emergency lowering

This function is to be used only in emergency situations when no motive power is available.

In case of fault in the electric or hydraulic system, to carry out the emergency manual lowering pull the knob indicated in the figure aside.
Where two knobs are present, these should be activated both of them according to the sequence shown in the plate.

Caution, the emergency control can be stopped at any time by releasing the knob.

FIG.16

IT IS FORBIDDEN to use the manual emergency lowering control to lower the platform with overloads.

5.10 Socket for electric tool connection (optional)

The work platform can be equipped with a socket (**A**) (230V Ac line) enabling the operator to connect the electric tools necessary to carry out his operations.

To activate the electric line (see picture) introduce a cable into the socket (**B)** (230V Ac. 50 Hz) and set the earth-leakage circuit breaker switch (**C** - optional) to ON position. It is advisable to check the earth-leakage circuit breaker by means of the specially provided TEST button (**D**).

picture not available

FIG.17

The plugs and sockets equipped on standard machines comply with EEC standards and can therefore be used in EU member countries. On request the machine can be equipped with plugs and sockets in compliance with local standards or with particular needs.

Connect to the power mains having the following features:
- **Power voltage 230V ± 10%**
- **Frequency 50÷60 Hz**
- **Activated grounding line.**
- **Working protection devices according to current standards in force.**
- **Do not use extension leads exceeding 5 metres to connect to the mains.**
- **Use a cable of suitable section (min 3x2.5 mm²).**
- **Do not use rolled-up cables.**

5.11 End of work

After stopping the machine according to the instructions given in the previous paragraphs, you are advised to:
- Always set the machine to rest position.
- Press the emergency stop button on the platform control panel and remove the key from the push-button station to prevent unauthorized persons from operating the machine.
- Press the emergency stop button of the ground control panel.
- Recharge the battery according to the instructions given in section "Maintenance".

6. HANDLING AND CARRYING

6.1 Handling

To handle the machine completely lower the platform, press the emergency stop button of the ground control panel and unlock the two pedal parking brakes. Move the machine into working position by pushing it with both hands on the handles placed on the entry rail. Pay attention during this procedure to avoid any hands or feet crushing. Once reached the working point, apply both parking brakes as shown in the figure aside, ensuring that the machine does not move, and then pull the emergency stop button located on the chassis.

Before carrying out any displacement operation, verify that no people are in proximity of the machine and in any case proceed with the utmost caution.

Before handling the machine check that the connection plugs are disconnected from the power supply source.

Check that there are no holes and/or steps on the floor and bear in mind machine overall dimensions.

While operating on slopes ask for colleague's help to avoid risks.

Do not park the machine without brakes on. Should the brakes be out of order put wedges under the wheels to prevent the machine from moving accidentally.

In order to avoid any instability, use the machine on regular and firm grounds. To prevent the machine from overturning, comply with the max. gradeability values indicated in the Technical data section under paragraph "Stability limits". However, movements on inclined grounds are to be carried out with the utmost caution.

It is forbidden to move the machine with platform raised. To move the machine it is necessary that the work platform is in the access position (fully lowered). No operator and/or material must be on board the platform during the displacement of the machine.

Do not operate the machine if components boxes are not properly closed.

6.2 Carrying

In order to carry the machine to the various working sites, follow the instructions given below.
Considering the large dimensions of some models, before carrying, it is recommended to inquire about the overall dimension limits for road transport in force in your country.

Before carrying the machine, turn it off and remove the keys from the control panels. No people are allowed in proximity to or on the machine to avoid any risks deriving from sudden movements.
For safety reasons never lift or tow the machine by means of its booms or platform.
Loading operations are to be carried out on a flat surface with a suitable capacity, after setting the platform to rest position (fully lowered).

To carry the machine the operator can load it onto the vehicle **using a lift truck** of a suitable capacity (see machine weight in table "Technical features" at the beginning of this manual) equipped with forks having at least the same length as the machine width. Insert the forks as indicated by the stickers on the machine. Lifting the machine by means of a lift truck is a dangerous operation, which must be carried out by qualified operators only.

FIG.18

After placing the machine onto the carrying vehicle, fasten it by means of the same holes used for lifting or the holes shown in the figure.

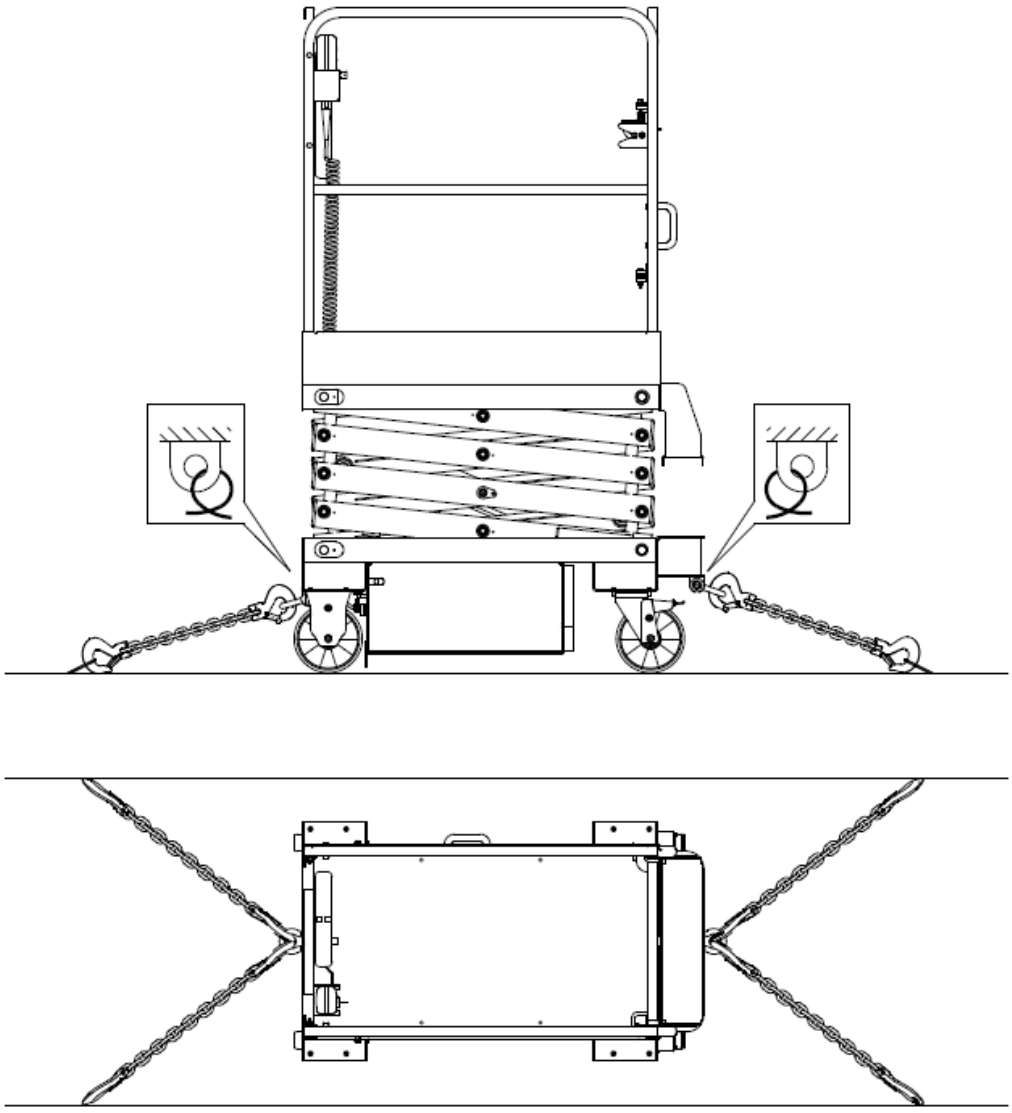


FIG.19

It is <u>strictly forbidden to fix the machine to the vehicle surface by tying the platform.</u>

Before carrying the machine check the stability grade. The platform must be fully lowered to ensure adequate stability during the entire operation.

6.2.1 Removable rails

The machine is fitted with rails which can be removed from the platform. Removing the rails it is possible to reduce the height of the machine for:

- carriage
- passage through lowered areas.

To remove the rails remove the four fixing screws.

Make sure the rails are properly secured before using the machine.

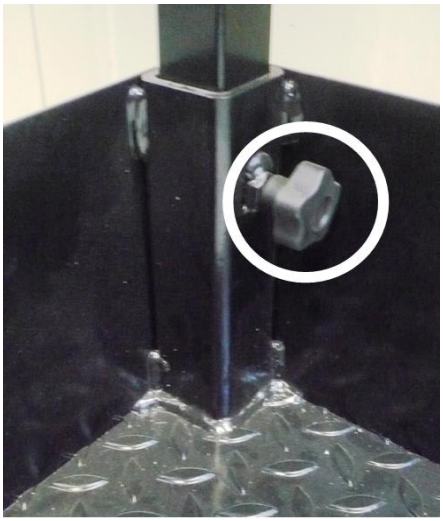


FIG.20

WARNING!

This operation is only for reducing the height of the stowed machine to facilitate carrying operations.
It is absolutely forbidden to lift the unit with personnel on the platform if the rails are not raised and fixed.

6.3 Towing the machine.

⚠

Towing the machine is not allowed. The holes present on the chassis are only for fixing the machine to the surface of the transport means.

7. MAINTENANCE

- **Always carry out maintenance operations when the machine is still and after having removed the key from the control panel with the platform in rest position.**
- **The maintenance operations described below refer to a machine with ordinary working use. In case of difficult conditions of use (extreme temperatures, corrosive environments, etc.) or following long machine inactivity, it will be necessary to contact the AIRO assistance service to change the intervention schedule.**
- **Repairs and maintenance operations are to be carried out by trained and authorised personnel only. All maintenance operations should be carried out in compliance with the current work safety regulations (work places, personal protection equipment, etc...).**
- **Carry out only the maintenance and adjustment operations described in this user manual. If necessary when replacing parts contact our technical support only.**
- **During interventions, check that the machine is completely locked. Before carrying out maintenance operations inside the lifting structure, check that this is off-line in order to avoid accidental lowering of the booms (chapter "Safety stop for maintenance").**
- **Remove the battery cables and provide batteries with a suitable protection during welding operations.**
- **In case of replacement, use original spare parts only or spare parts approved by the manufacturer.**
- **Disconnect the 110/230V AC and/or 380V AC sockets, if any.**
- **The lubricants, hydraulic oils, electrolytes and all detergent products should be handled with care and disposed of in safety according to the current regulations. A prolonged contact with the skin may cause irritations and dermatosis; wash with water and soap and rinse thoroughly.**
  Contact with eyes, especially with electrolytes, is also dangerous; rinse with water thoroughly and call the doctor.

WARNING!
NEVER MODIFY OR TAMPER WITH MACHINE PARTS TO IMPROVE THE MACHINE PERFORMANCE AS THIS MAY AFFECT ITS SAFE OPERATION.

7.1 Safety lock for maintenance operations

Before carrying out any maintenance or repairs to it, activate the locking system of the lifting structure by placing the safety lock as shown:

a) Lift the work platform bringing the push-button station to the ground.
b) Rotate both safety locks.
c) Lower the work platform until both safety locks are abutting the vertical wall of the chassis holding the lifting structure in the raised position.

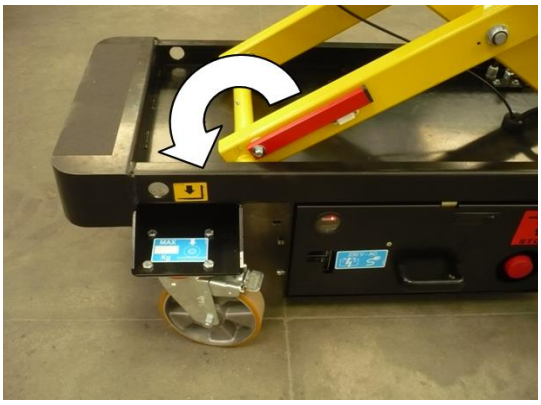


FIG.21

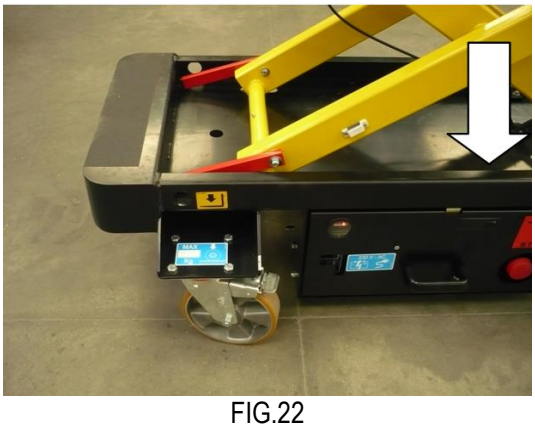


FIG.22

7.2 Machine cleaning

To clean the machine use non-pressurized water jets after properly protecting the following parts:
- The control panel (both platform and ground)
- All electric boxes and electric devices in general.
- The electric motors.

Do not use pressurized water jets (high-pressure cleaners) to clean the machine.

After washing the machine, always:
- Dry the machine.
- Check integrity of plates and stickers.
- Lubricate the articulated joints equipped with greaser and the sliding ways.

7.3 General maintenance

Below are listed the main maintenance jobs to be done and the relevant schedule (the machine features an hour meter).

Operation	Frequency
Screw tightening (paragraph "Various adjustments")	After the first 10 working hours
Oil level check in hydraulic tank	After the first 10 working hours
State of the battery (charging cleaning)	Every day
Deformation of tubes and cables	Every month
Stickers and code plates	Every month
Articulated joints greasing	Every month
Oil level check in hydraulic tank	Every month
Emergency devices efficiency check	Every year
Electric connections check	Every year
Hydraulic connections check	Every year
Periodic operation check and structure visual check	Every year
Screw tightening (paragraph "Various adjustments")	Every year
Inclinometer operation check	Every year
Calibration check of pressure relief valve	Every year
Pedal braking system efficiency check	Every year
Automatic braking system efficiency check	Every year
M1 microswitch operation check	Every year
Total oil change in hydraulic tank	Every two years
Hydraulic filter replacement	Every two years

IT IS NECESSARY

TO SEND THE MACHINE TO THE MANUFACTURER FOR A COMPLETE CHECK
FOR A COMPLETE CHECK.

7.3.1 Various adjustments

Check the conditions of the following components and, if necessary, tighten:

1) Wheel screws
2) Wheel support fixing screws
3) Platform and guard rails fixing screws
4) Hydraulic fittings
5) Fixing seegers and screws of boom pins

For screw tightening refer to the table below.

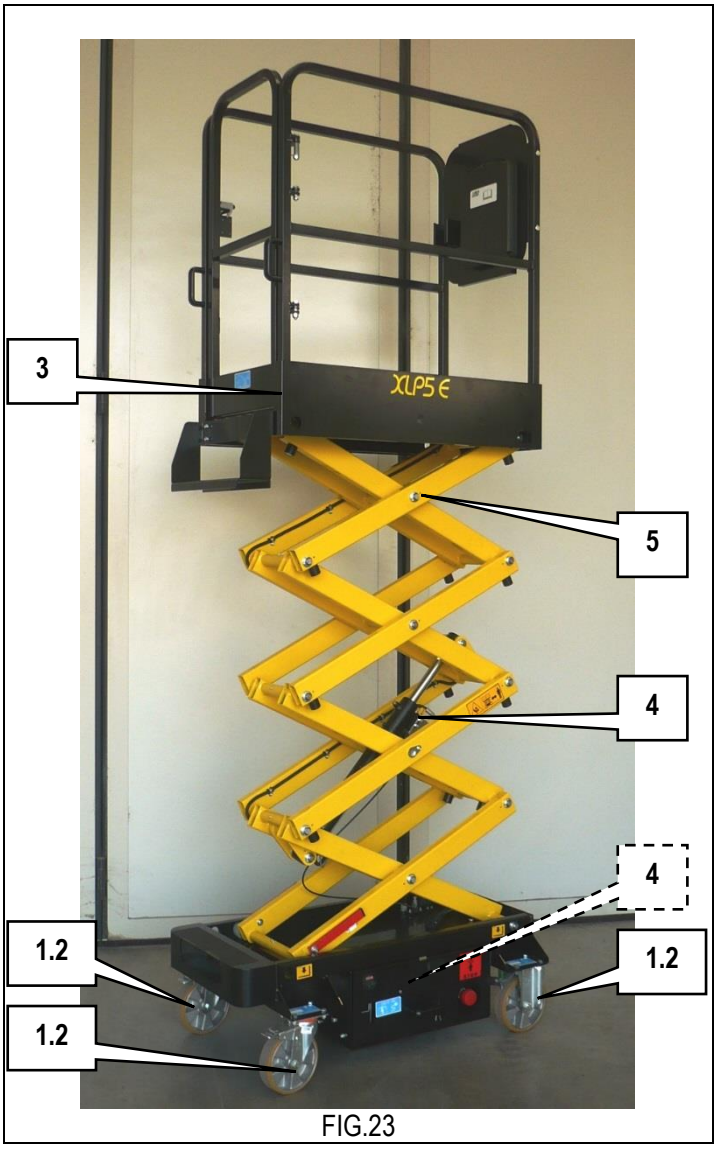


FIG.23

TORQUE WRENCH SETTING (S.I. thread, normal pitch)						
Class	**8.8 (8G)**		**10.9 (10K)**		**12.9 (12K)**	
Diameter	**kgm**	**Nm**	**kgm**	**Nm**	**kgm**	**Nm**
M4	0.28	2.8	0.39	3.9	0.49	4.9
M5	0.55	5.5	0.78	7.8	0.93	9.3
M6	0.96	9.6	1.30	13.0	1.60	16.0
M8	2.30	23.0	3.30	33.0	3.90	39.0
M10	4.60	46.0	6.50	65.0	7.80	78.0
M12	8.0	80.0	11.0	110	14.0	140
M14	13.0	130	18.0	180	22.0	220
M16	19.0	190	27.0	270	33.0	330
M18	27.0	270	38.0	380	45.0	450
M20	38.0	380	53.0	530	64.0	640
M22	51.0	510	72.0	720	86.0	860
M24	65.0	650	92.0	920	110	1100

7.3.2 Greasing

Grease all articulated joints equipped with greaser (or predisposition for greaser) at least every month.

Moreover, remember to grease the articulated joints in the following cases:

- After washing the machine.
- Before using the machine again after a long time-interval.
- After using the machine in adverse environmental conditions (high humidity levels; presence of dust; coastal areas, etc).

Before greasing, clean thoroughly using a wet cloth. Grease all points indicated in the picture aside (and all articulated joints equipped with greaser) with grease type **ESSO BEACON-EP2** or equivalent.

For machines provided with BIODEGRADABLE OIL KITS use PANOLIN BIOGREASE 2.

FIG.24

7.3.3 Hydraulic circuit oil level check and change

Check the level in the transparent tank at least monthly. The level is correct because the free surface of the oil is about 5 mm below the upper wall of the tank; if necessary top up until it reaches the maximum expected level. The oil check should be carried out when platform is completely lowered.

Completely change the hydraulic oil of the tank at least every two years.

To empty the tank:
- Lower the platform completely.
- Stop the machine by pressing the emergency stop button of the ground control panel.
- By means of an external pump, suck the oil from the tank through filler cap **A.**

Use only the types of oil and quantity indicated in the table below.

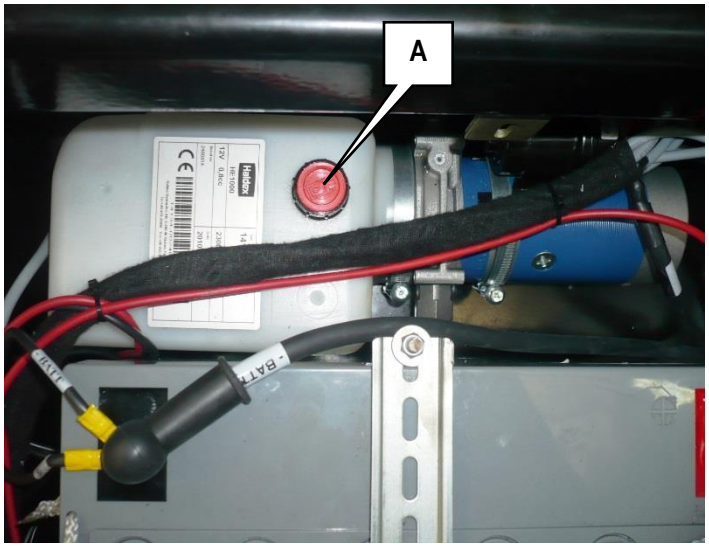


FIG.25

HYDRAULIC SYSTEM OIL			
BRAND	**TYPE** -20°C +79°C	**TYPE** -30°C +48°C	**REQUIRED QUANTITY**
SYNTHETIC OILS			2 Litres
ESSO	Invarol EP46	Invarol EP22	
AGIP	Arnica 46	Arnica 22	
ELF	Hydrelf DS46	Hydrelf DS22	
SHELL	Tellus SX46	Tellus SX22	
BP	Energol SHF46	Energol SHF22	
TEXACO	Rando NDZ46	Rando NDZ22	
Q8	LI HVI 46	LI HVI 22	
PETRONAS	HIDROBAK 46 HV	HIDROBAK 22 HV	
BIODEGRADABLE OILS - OPTIONAL			
PANOLIN	HLP SINTH E46	HLP SINTH E22	

Do not dispose of used oil in the environment. Comply with the current local standards.

The lubricants, hydraulic oils, electrolytes and all detergent products should be handled with care and disposed of in safety according to the current regulations. A prolonged contact with the skin may cause irritations and dermatosis; wash with water and soap and rinse thoroughly. Contact with eyes, especially with electrolytes, is also dangerous; rinse with water thoroughly and call the doctor.

7.3.3.1 Biodegradable hydraulic oil (Optional)

At the request of the customer, the machines can be supplied with biodegradable hydraulic oil compatible with the environment. Biodegradable hydraulic oil is completely synthetic, without zinc, non-polluting and highly efficient with saturated ester base, combined with special additives. The machines with biodegradable oil use the same component parts as standard machines, but the use of such type of oil is best taken into account from machine construction.
In case of wanting to change from mineral-oil based hydraulic oil to "bio" oil, the following procedure must be followed.

7.3.3.2 Emptying

Empty the hot hydraulic oil for entire system operation (oil tank, cylinders, large-volume pipes).

7.3.3.3 Filters

Change the filtering inserts. Use standard filters as indicated by the manufacturer.

7.3.3.4 Washing

After completely emptying the machine, fill with a nominal quantity of "bio" hydraulic oil.
Start the machine and perform all work movements at low revs for at least 30 minutes.
Empty the liquid inside the systems as indicated at 7.2.3.1.1.
Warning: During the entire washing procedure, avoid air entering the system.

7.3.3.5 Filling

After washing, fill the hydraulic circuit, bleed and check the level.
Bear in mind that contact of fluid with the hydraulic pipes can cause swelling.
Also remember that contact of fluid with the skin can cause reddening or irritation.
Also use suitable PPE during these operations (e.g., protective eyewear and gloves).

7.3.3.6 Commissioning / check

"Bio" oil behaves regularly, but it must be checked by taking a sample at set intervals according to the indications provided below:

CHECK FREQUENCY	NORMAL DUTY	HEAVY DUTY
1st CHECK AFTER	50 OPERATING HOURS	50 OPERATING HOURS
2nd CHECK AFTER	500 OPERATING HOURS	250 OPERATING HOURS
3rd CHECK AFTER	1000 OPERATING HOURS	500 OPERATING HOURS
FOLLOWING CHECKS	1000 HOURS OR 1 OPERATION YEAR	500 HOURS OR 1 OPERATION YEAR

The fluid state is therefore constantly monitored, thus allowing its use until its features decay. Normally, in the absence of contaminating agents, the oil is never completely changed, but only occasionally topped-up.
The oil samples (at least 500ml) must be taken with the system at operating temperature.
It is recommended to use new and clean containers.
The samples must be sent to the "bio" oil supplier.
For more dispatch details, contact Your nearest distributor.

Copies of the analysis report must be kept in the check register. This is mandatory.

7.3.3.7 Mix

Mixtures with other biodegradable oils are not allowed.
The remaining amount of mineral oil must not exceed 5% of total filling quantity as long as the mineral oil is suitable for the same use.

7.3.3.8 Micro-filtration

When making the conversion on second-hand machines, always take into account the high dirt dissolution power of biodegradable oil.
After conversion, the dissolution of fault-causing deposits in the hydraulic system could occur. In extreme cases, washing the seal housings can cause greater leaks.
To prevent faults as well as avoid any negative effect on oil quality, after the conversion, it is best to filter the hydraulic system using a micro-filtration system.

7.3.3.9 Disposal

The biodegradable oil, inasmuch as saturated ester, is suitable for both thermal and material re-use. It therefore provides the same disposal / re-use options as mineral based old oil. This oil can be incinerated, when local legislation permits. Oil recycling is recommended instead of disposal in a landfill or incineration.

7.3.3.10 Topping up

The oil must **ONLY EVER** be topped up with the same product.

Note: Max water contamination is 0.1%.

7.3.4 Suction filter replacement

All models are equipped with suction filter flanged to the tank. It is advisable to replace it at least every two years.

To replace the suction filters installed inside the tank (see figure):

1) Stop the machine by pressing the emergency stop button of the ground control panel.
2) Disconnect the power supply cables of the electric pump and the hydraulic tube.
3) Drain the hydraulic tank by an external pump.
4) Remove the mini-control unit by unscrewing the two fixing screws from under the box that contains it and remove it from the box components.
5) Loosen the metal fixing clamp by acting on screw **A**.
6) Remove the electric pump from the tank by pulling outwards.
7) Remove filter **B** from the pump pulling outwards and clean it with a detergent and a compressed air jet by blowing from the connection or replace the filtering element.
8) To restore the initial condition, carry out the above-mentioned operation in reverse order.

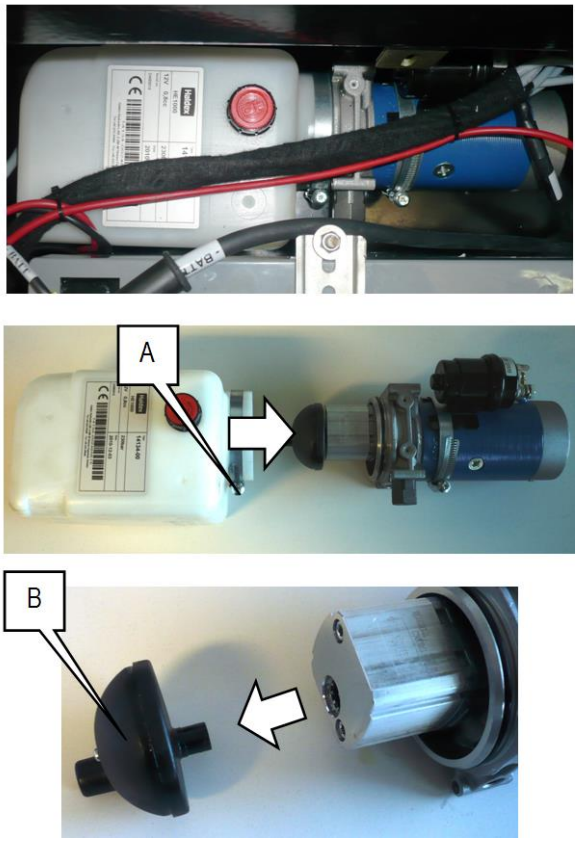


FIG.26

Replace the filter using only original accessories available at our Technical Support.
Do not re-use used oil and do not leave it in the environment, but dispose of in compliance with local standards in force.
Once the filter has been replaced, check the hydraulic oil level in the tank.

7.3.5 Pressure relief valve operation check

The self-propelled platforms, **XP-XLP** series, have a main relief pressure valve on the lifting circuit to avoid dangerous overpressure values. Normally, this valve does not require any adjustment, since it is calibrated in the factory before the machine is delivered.

The system needs calibration:
- in case of replacement of the mini control unit
- in case of replacement of the pressure relief valve only.

To check the pressure relief valve on the lifting circuit:
- Introduce a pressure gauge with full scale of at least 200 bars in the special quick coupling **A** (1/4" BSP).
- Bringing the push-button station to the ground lift the machine up to the end stop.
- Check the pressure value. The correct value is indicated in the chapter "Technical features"**.**

FIG.27

Check operation at least once a year.

To calibrate the pressure relief valve on the lifting circuit:
- Introduce a pressure gauge with full scale of at least 200 bars in the special quick coupling **A** (1/4" BSP).
- Locate the maximum pressure valve **B** and remove the cap **C** by unscrewing it**;**
- Bringing the push-button station to the ground lift the machine up to the end stop.
- Adjust the pressure relief valve by means of the adjusting screw **D** so as to reach the pressure value indicated in chapter "Technical Features".
- Once calibration has been carried out, lock the adjusting dowel by means of the lock-nut **C**.

⚠

WARNING!

AS THIS OPERATION IS VERY IMPORTANT IT IS TO BE CARRIED OUT BY SPECIALIZED TECHNICIANS ONLY.

7.3.6 Braking system adjustment and operation check

The machines, XP-XLP series, are equipped with a dual brake system for machine parking:
- Pedal braking system on rear pivoting wheels.
- Automatic brake system on the front fixed wheels.

The operation of both braking systems must be checked at least once a year.

7.3.6.1 Pedal brakes

The voluntary actuation of these brakes is for keeping the machine in parking position and before lifting the work platform.

To check the operation of the pedal braking system:
- With platform completely lowered place the machine on a flat ground, apply both brakes by acting on lever **A**.
- In this condition (both brakes applied), moving the machine by pushing on handles **B** must not be possible.
- If the machine is not locked or if you note that, by pushing on the handles, the machine tends to move from its position it is necessary to replace one or both wheel supports with brake.
- To unlock the pedal brakes, act on lever **C**.

Replace the wheel supports with brake using only original accessories available at our Technical Support.

FIG.28

7.3.6.2 Automatic brakes

The automatic activation of these brakes occurs as soon as the work platform lifts, which locks the machine with the operator at height. The intervention of the automatic brake system does not relieve the operator from applying the pedal braking system.

To check the operation of the automatic braking system:

- With platform completely lowered place the machine on a flat ground and, without activating the pedal braking system, it must be possible to move the machine by acting on the handles.
- Lift the work platform of about 0.5 m bringing the push-button station to the ground.
- In this condition (both brakes applied - both pedal brakes released), moving the machine by pushing on handles B must not be possible.

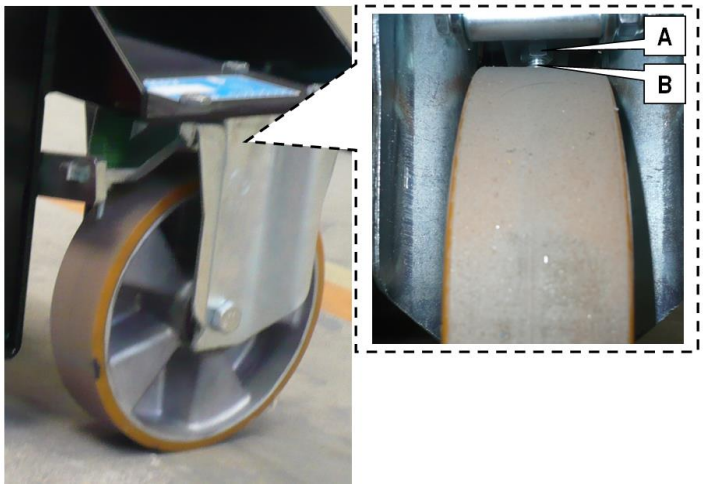


FIG.29

- If the machine is not locked or if you note that, by pushing on the handles the machine tends to move from its position, then it is necessary to adjust the efficiency of the braking system or call the technical assistance.

To adjust the efficiency of the braking system (to increase the ability to keep the machine braked:

- With platform completely lowered place the machine on a flat ground, and check that the machine is completely locked.
- Unscrew lock-nut **A**.
- Manually unscrew braking pin **B** bringing it near the wheel, making sure that it is still possible to move the machine by pushing on the handles.
- Lift the work platform of about 0.5 m bringing the push-button station to the ground and check that the machine is completely locked.
- If the braking system is efficient, screw lock-nut **A.**

WARNING!

AS THIS OPERATION IS VERY IMPORTANT IT IS TO BE CARRIED OUT BY SPECIALIZED TECHNICIANS ONLY.

7.3.7 Inclinometer operation check

WARNING!

Usually the inclinometer does not need to be adjusted unless the electronic control unit is replaced. The equipment necessary for the replacement and adjustment of this component is such that these operations should be carried out by skilled personnel.

AS THIS OPERATION IS VERY IMPORTANT IT IS TO BE CARRIED OUT BY SPECIALIZED TECHNICIANS ONLY.

The inclinometer (see figure aside) does not require any adjustment since it is calibrated in the factory before the machine is delivered.
This device is located on the chassis and controls the chassis inclination. If the chassis is inclined beyond the allowed:

1) It disables lifting.
2) It signals the instability condition through the alarm (see "Use instructions").

The inclinometer checks the inclination with respect to the two axes (X; Y). On machine models that have the same transversal and longitudinal inclination limits, the control is carried out with reference to one axis only (X-axis).

To adjust the inclinometer according to the **transversal axis** (normally **X-axis**):

- Set the machine so as to place a shim of dimension (B+5 mm) under the two side right or left wheels (see following table).
- Wait three seconds (intervention delay set at factory) until the audible alarm turns on;
- If the alarm does not go off CALL THE TECHNICAL ASSISTANCE.

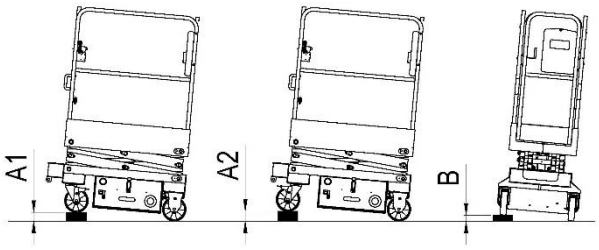


FIG.30

Check operation at least once a year.

SHIMS	XP4 E XP4 E DUAL	XP5 E XP5 E DUAL	XLP5 E XLP5 E DUAL
A1/A2 [mm]	22 / 25	22 / 25	22 / 25
B [mm]	15	15	11

WARNING! The dimensions of shims A1, A2 and B refer to max. allowed inclination as indicated in table "TECHNICAL FEATURES". To be used during the inclinometer calibration.

7.3.8 M1 microswitch efficiency check

M1 microswitch stops lowering automatically in a position where the vertical distance between the scissor ends is over 100 mm. The operator on the platform should check that no people are nearby the area with crushing risk, only then the lowering control can be resumed (see chapter "Lifting and lowering").

Check operation at least once a year.

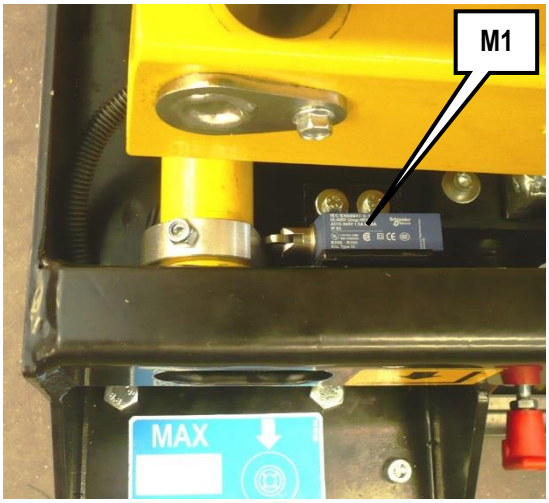


FIG.31

7.4 Battery

The battery is one of the most important elements of the machine. It is recommended to keep it in an efficient condition to increase its useful life, to avoid faults and to reduce the management costs of the machine. The STANDARD machine incorporates a GEL battery, therefore the following instructions refer to this type of battery.

7.4.1 General warning instructions

- In case of new batteries do not wait for the flat battery warning before recharging; recharge batteries after 3 or 4 working hours for the first 4/5 times.
- In case of new batteries full performance is achieved after approx. ten cycles of discharge and charge.
- The sealed GEL battery does not give off any gas during recharging and therefore no special venues are necessary to perform the recharging operations.
- Do not use extension leads exceeding 5 metres to connect the battery charger to the mains.
- Use a cable of suitable section (min 3x2.5 mm^2).
- Do not use rolled-up cables.
- Do not approach the battery with flames.
- Do not carry out temporary or irregular electric connections.
- The terminals must be tightened and without deposits. The cables must be provided with a good insulation.
- Keep the battery cleaned, dry and free of oxidation products by using antistatic cloths.
- Do not place tools or any other metal object on the battery.

7.4.2 Battery maintenance

- The sealed GEL battery doesn't need any special maintenance operations.
- Battery charge is to be carried out according to the instructions given in the next paragraphs.
- A careful cleaning allows electric insulation protection, good operation and useful life of the battery.
- In case of faulty operations due to the battery, avoid any direct intervention and call the Customer Service.
- When the machine is not being used the batteries will run down automatically (automatic discharge). To avoid the battery operation from being compromised charge it at least once a month.
- To limit automatic battery discharge during periods of inactivity store the machine in environments with temperatures lower than 30°C and always remove the main power connector.

7.4.3 Battery recharge

Connect the battery charger to the power mains having all protections according to the current standards in force and with the following features:

- Power voltage from 100V to 240V
- Frequency 50÷60 Hz
- Activated grounding line.
- Magneto-thermic switch and residual current device ("circuit breaker")

Moreover:

- Do not use extension leads exceeding 5 metres to connect the battery charger to the mains.
- Use a cable of suitable section (min 3x2.5 mm^2).
- Do not use rolled-up cables.

⚠

IT IS FORBIDDEN
Connection to mains that do not comply with the above mentioned features.
Failure to comply with the a.m. instructions may cause incorrect functioning of the battery charger with consequent damages not covered by the warranty.

To use the battery charger follow these procedures:

- Press the emergency stop button on the platform.
- Pick up power cable **A** from storage compartment **B**.
- Insert the power cable connector into socket **C** of the battery charger.
- Connect the cable plug to a current socket with the a.m. features.
- Check the connection state of the battery charger through led **D.** If it is on, connection has taken place and charging has started. The colour and enable mode of the led indicate the charging phase (refer to table below). On turning the battery charger on, the machine control system is automatically disabled.

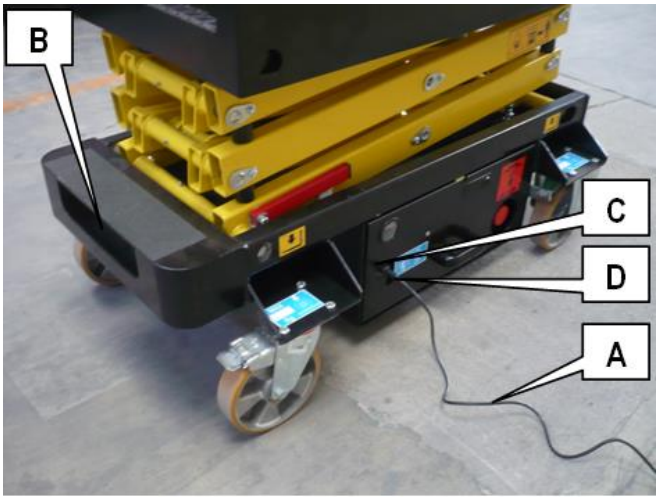


FIG.32

WARNING	DESCRIPTION
Red led flashing for a few seconds	Battery charger self-diagnostic phase - for Pb-acid batteries only
Green led flashing for a few seconds	Battery charger self-diagnostic phase - for GEL batteries only
Red led on	Indicates the first and second charging phase
Yellow led on	Indicates the equalization of the charging phase
Green led on	Indicates that charging is over; buffer charge active

The battery charger is switched on automatically when the power cable is connected to the mains.
The machine system is automatically disabled when the battery charger is turned on.

To disconnect the battery charger from the power source, disconnect the cable from the electric line.

WARNING!

Before using the machine check that the power cord of the battery charger is disconnected.

7.4.4 Battery charger: fault report

The flashing LED on the battery charger indicator described in the previous paragraph indicates that an alarm situation has occurred:

WARNING	PROBLEM	SOLUTION
Yellow led flashing	No connection with the battery	Check the connections with the battery
	Connections with the battery inverted	
Red led constantly	Safety timer exceeded	Check all connections
		Check that battery was not disconnected during charging phase
	Internal short circuit	Check the battery
		Replace the battery charger

7.4.5 Battery replacement

Replace the old batteries only with models of the same voltage, capacity, dimensions and mass.
Batteries must be approved by the manufacturer.

Do not dispose of batteries in the environment after replacement. Comply with the current local standards.

AS THIS OPERATION IS VERY IMPORTANT IT IS TO BE CARRIED OUT BY SPECIALIZED TECHNICIANS ONLY.

CALL THE TECHNICAL SUPPORT

8 . MARKS AND CERTIFICATIONS

The models of self-propelled aerial platform described in this manual were subject to the CE type test according to the Directive 2006/42/CE and further modifications. The certification was issued by:

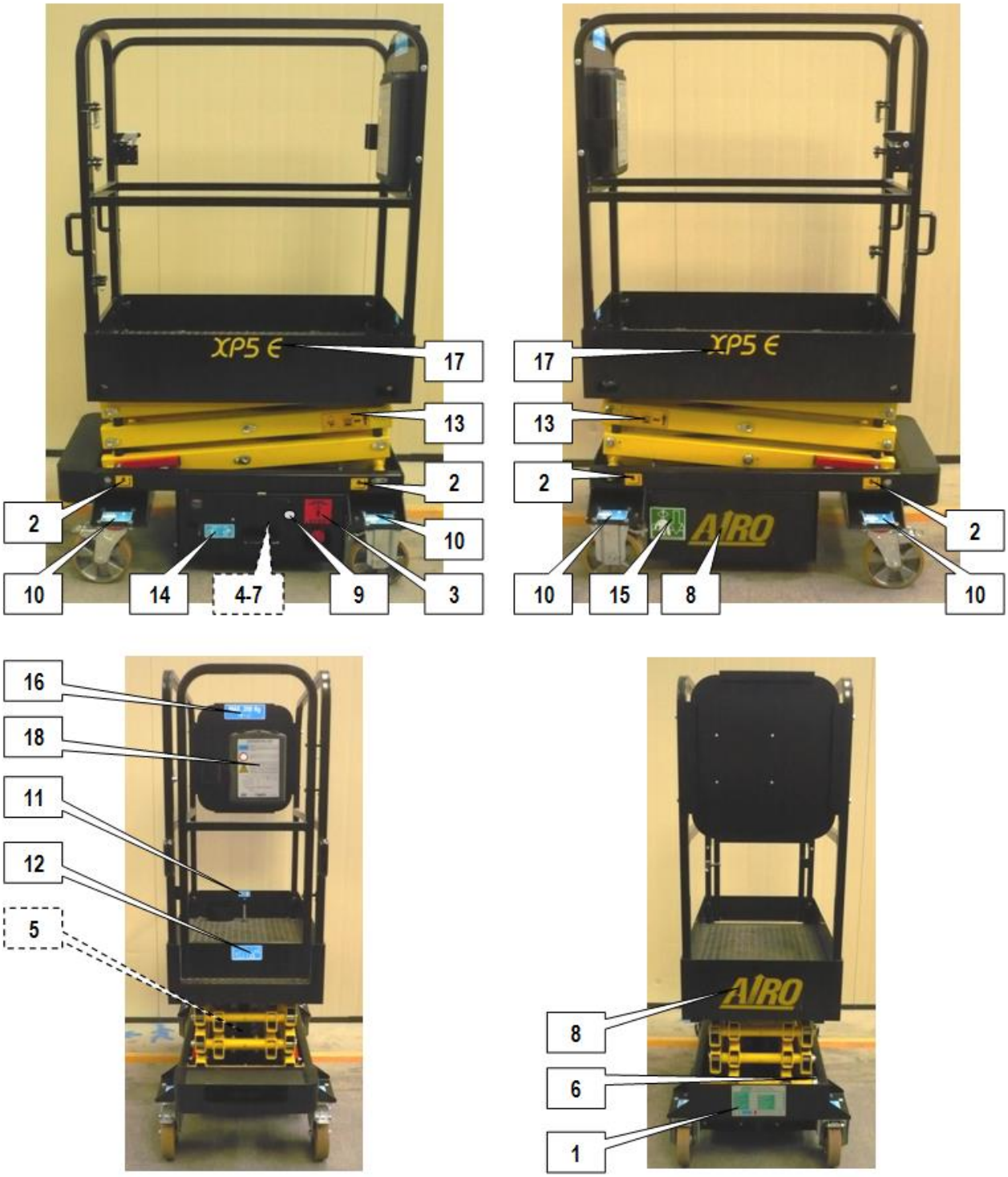
ICE Spa **Via Garibaldi, 20** **40011 Anzola Emilia – BO (Italy)**	CE

Test carrying out is shown by the above plate with CE mark applied on the machine and by the declaration of conformity enclosed in this user manual.

9. PLATES AND STICKERS

STANDARD STICKERS CODES

POS.	CODE	DESCRIPTION	QUANTITY
1	001.10.024	AIRO SERIAL NUMBER PLATE	1
2	001.10.060	LIFTING POINT STICKER	4
3	001.10.098	STOP STICKER I-D-F-NL-B-GB	1
4	001.10.109	EV4 STICKER	1
5	001.10.110	EV5 STICKER	1
6	001.10.121	M1 STICKER	1
7	001.10.150	"46" OIL TYPE STICKER I-D-F-NL-B-G-PL	1
8	001.10.173	AIRO PRE-SPACED YELLOW STICKER 300X140	2
9	001.10.180	NEXT CHECK STICKER	1
10	001.10.243	“MAX. LOAD PER WHEEL" STICKER	4
11	035.10.007	SAFETY BELTS ATTACHMENT STICKER	1
12	037.10.007	MACHINE FOR INDOORS UNIVERSAL STICKER	1
13	045.10.003	HANDS DANGER+NO STOPPING STICKER	2
14	045.10.011	BATTERY CHARGER PLUG STICKER	1
15	045.10.013	MANUAL LOWERING STICKER (SYMBOLS)	1
16	063.10.005	250 KG CAPACITY (1 PERSON) STICKER	1
17	063.10.006	PRE-SPACED STICKER XP4 E YELLOW	2
	063.10.001	PRE-SPACED STICKER XP5 E YELLOW	
	063.10.002	PRE-SPACED STICKER XLP5 E YELLOW	
18	001.10.001	AIRO WARNING PLATE ITALIAN	1
	001.10.022	AIRO WARNING PLATE ENGLISH	
	001.10.029	AIRO WARNING PLATE FRENCH	
	001.10.035	AIRO WARNING PLATE DUTCH	
	001.10.040	AIRO WARNING PLATE GERMAN	
	001.10.055	AIRO WARNING PLATE RUSSIAN	
	001.10.083	AIRO WARNING PLATE SWEDISH	
	001.10.188	AIRO WARNING PLATE POLISH	
	001.10.206	AIRO WARNING PLATE CROATIAN	
	001.10.235	AIRO WARNING PLATE ROMANIAN	
	001.10.236	AIRO WARNING PLATE NORWEGIAN	
	001.10.246	AIRO WARNING PLATE BRAZILIAN PORTUGUESE	


XP5 E
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1

FIG.29

10. CHECK REGISTER

The check register is released to the user of the platform in conformance with Attachment 1 of Directive 2006/42/EC.
This register is to be considered an integral part of the equipment and must accompany the machine for its entire life until its final disposal.

The register is provided for the notation, according to the proposed format, of the following events that regard the life of the machine:

- Periodic obligatory inspections under the care of the agency responsible for checking it (in Italy, ASL or ARPA).
- Obligatory periodic inspections to verify the structure, proper machine functioning and the protection and safety systems. Such inspections are the responsibility of the safety manager of the company that owns the machine and must occur with **frequency indicated.**
- Transfers of ownership In Italy, the purchaser must notify the INAIL department responsible that the installation of the machine has occurred.
- Extraordinary maintenance work and replacement of important elements of the machine.

REQUIRED PERIODIC INSPECTIONS BY THE REGULATORY AGENCY		
Date	**Observations**	**Signature + Stamp**

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

STRUCTURAL CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
VISUAL CHECK	Check the integrity of: rails, harness anchoring points, access ladder, lifting structure (especially welds in the articulation areas and fixing points of lifting cylinders) rust, oil leaks, locking pins on the structure.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

DEFORMATION OF TUBES AND CABLES	Most of all, check at junction points that tubes and cables do not show any evident defects. Monthly operation. It is not necessary to indicate its execution every month, but at least every year when the other operations are carried out.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

STRUCTURAL CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
VARIOUS ADJUSTMENTS	See chapter 7.3.1

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

GREASING	See chapter 7.3.2 Monthly operation. It is not necessary to indicate its execution every month, but at least every year when the other operations are carried out.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
HYDRAULIC TANK OIL LEVEL CHECK	See chapter 7.3.3. Monthly operation. It is not necessary to indicate its execution every month, but at least every year when the other operations are carried out.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

PRESSURE RELIEF VALVE CALIBRATION CHECK	See chapter 7.3.5.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

BATTERY STATE	See chapter 7.4 Daily operation. It is not necessary to indicate its execution every day, but at least every year when the other operations are carried out.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

SAFETY SYSTEM CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
INCLINOMETER OPERATION CHECK	See chapter 7.3.7.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
TOTAL OIL REPLACEMENT IN HYDRAULIC TANK (EVERY TWO YEARS)	See chapter 7.3.3.

	DATE	REMARKS	SIGNATURE + STAMP
2nd YEAR			
4th YEAR			
6th YEAR			
8th YEAR			
10th YEAR			

HYDRAULIC FILTER REPLACEMENT (EVERY TWO YEARS)	See chapter 7.3.4.

	DATE	REMARKS	SIGNATURE + STAMP
2nd YEAR			
4th YEAR			
6th YEAR			
8th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

SAFETY SYSTEM CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
BRAKING SYSTEM EFFICIENCY CHECK: PEDAL BRAKES	See chapter 7.3.6.1.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

SAFETY SYSTEM CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
BRAKING SYSTEM EFFICIENCY CHECK: AUTOMATIC BRAKES	See chapter 7.3.6.2.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER

SAFETY SYSTEM CHECK	DESCRIPTION OF OPERATIONS TO BE PERFORMED
OPERATION CHECK MICROSWITCH M1	See chapter 7.3.8.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

STICKERS AND PLATES CHECK	See Chapter 9. Check the legibility of the aluminium plate on the platform where the main instructions are summarised; that the capacity stickers are on the platform and that they are legible; that the stickers on the ground and platform controls are legible.

	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

REQUIRED PERIODIC INSPECTIONS BY THE OWNER			
CHECK OF EMERGENCY DEVICES		DESCRIPTION OF OPERATIONS TO BE PERFORMED	
MANUAL EMERGENCY LOWERING CHECK		See chapter 5.8	
	DATE	REMARKS	SIGNATURE + STAMP
1st YEAR			
2nd YEAR			
3rd YEAR			
4th YEAR			
5th YEAR			
6th YEAR			
7th YEAR			
8th YEAR			
9th YEAR			
10th YEAR			

TRANSFERS OF OWNERSHIP

FIRST OWNER

COMPANY	DATE	MODEL	SERIAL NUMBER	DELIVERY DATE

AIRO – Tigieffe S.r.l.

SUBSEQUENT TRANSFERS OF OWNERSHIP

COMPANY	DATE

We affirm that, as of the date quoted above, the technical, dimensional and functional features of this machine were in conformance with what was originally required and that any changes have been recorded in this Register.

THE SELLER **THE PURCHASER**

SUBSEQUENT TRANSFERS OF OWNERSHIP

COMPANY	DATE

We affirm that, as of the date quoted above, the technical, dimensional and functional features of this machine were in conformance with what was originally required and that any changes have been recorded in this Register.

THE SELLER **THE PURCHASER**

SUBSEQUENT TRANSFERS OF OWNERSHIP

COMPANY	DATE

We affirm that, as of the date quoted above, the technical, dimensional and functional features of this machine were in conformance with what was originally required and that any changes have been recorded in this Register.

THE SELLER **THE PURCHASER**

SUBSEQUENT TRANSFERS OF OWNERSHIP

COMPANY	DATE

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THE SELLER **THE PURCHASER**

SUBSEQUENT TRANSFERS OF OWNERSHIP

COMPANY	DATE

We affirm that, as of the date quoted above, the technical, dimensional and functional features of this machine were in conformance with what was originally required and that any changes have been recorded in this Register.

THE SELLER **THE PURCHASER**

IMPORTANT BREAKDOWNS

DATE	DESCRIPTION OF BREAKDOWN	SOLUTION

SPARE PARTS USED		DESCRIPTION
CODE	QUANTITY	

SERVICE

SAFETY MANAGER

DATE	DESCRIPTION OF BREAKDOWN	SOLUTION

SPARE PARTS USED		DESCRIPTION
CODE	QUANTITY	

SERVICE

SAFETY MANAGER

IMPORTANT BREAKDOWNS

DATE	DESCRIPTION OF BREAKDOWN	SOLUTION

SPARE PARTS USED		DESCRIPTION
CODE	QUANTITY	

SERVICE

SAFETY MANAGER

DATE	DESCRIPTION OF BREAKDOWN	SOLUTION

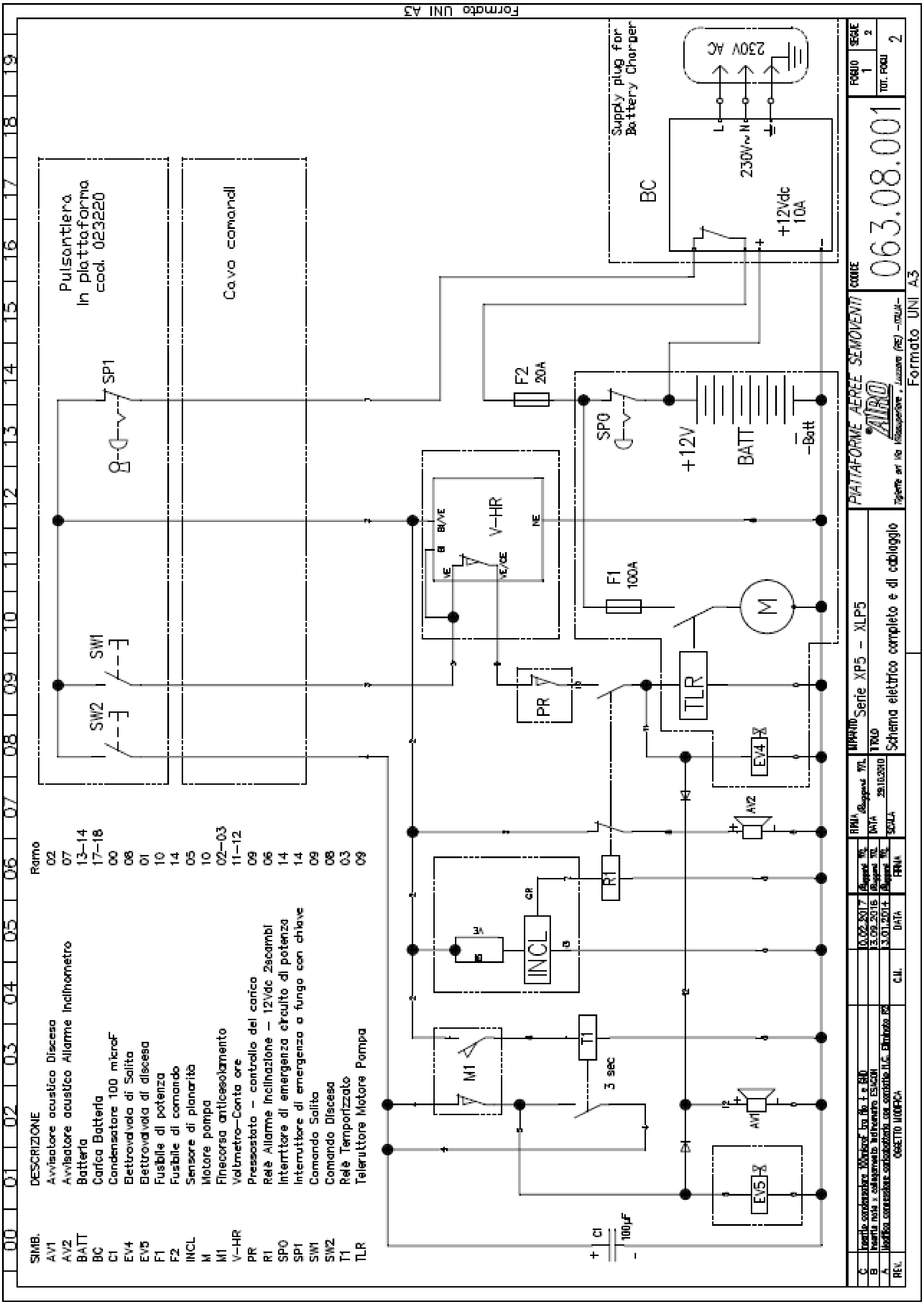
SPARE PARTS USED		DESCRIPTION
CODE	QUANTITY	

SERVICE

SAFETY MANAGER

11. WIRING DIAGRAM - STANDARD MACHINES

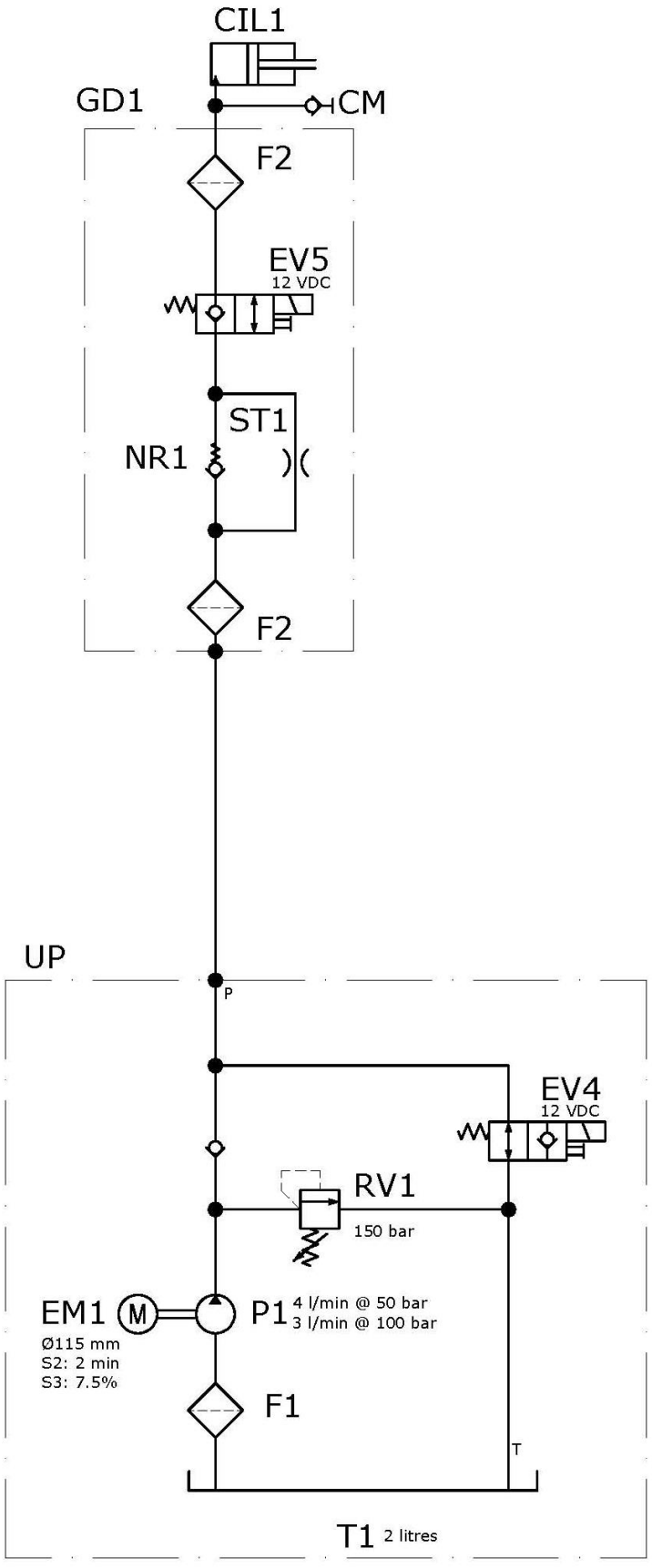
AV1	MOVEMENT ALARM
AV2	INCLINOMETER AUDIBLE ALARM
BATT	BATTERY
BC	ELECTRONIC BATTERY CHARGER
EV4	LIFTING SOLENOID VALVE
EV5	LOWERING SOLENOID VALVE
F1	POWER FUSE
F2	FUSE
INCL	INCLINOMETER
M	ELECTROPUMP
M1	MICRO-SWITCH
V-HR	HOUR METER-VOLTMETER
PR	PRESSURE SWITCH (OPTIONAL)
R1	INCLINATION ALARM RELAY
SP0	EMERGENCY STOP POWER SWITCH
SP1	PLATFORM EMERGENCY STOP SWITCH
SW1	LIFTING CONTROL
SW2	LOWERING CONTROL
T1	TIMED RELAY
TLR	ELECTRIC PUMP REMOTE CONTROL SWITCH


Formato UNI A3
SIMB. | DESCRIZIONE | Ramo
AV1 | Avvisatore acustico Discesa | 02
AV2 | Avvisatore acustico Allarme inclinometro | 07
BATT | Batteria | 13–14
BC | Carica Batteria | 17–18
C1 | Condensatore 100 microF | 00
EV4 | Elettrovalvola di Salita | 08
EV5 | Elettrovalvola di discesa | 01
F1 | Fusibile di potenza | 10
F2 | Fusibile di comando | 14
INCL | Sensore di planarità | 05
M | Motore pompa | 10
M1 | Finecorsa anticesollamento | 02–03
V–HR | Voltmetro–Conta ore | 11–12
PR | Pressostato – controllo del carico | 09
R1 | Relè Allarme Inclinazione – 12Vdc 2scambi | 06
SPO | Interruttore di emergenza circuito di potenza | 14
SP1 | Interruttore di emergenza a fungo con chiave | 14
SW1 | Comando Salita | 09
SW2 | Comando Discesa | 08
T1 | Relè Temporizzato | 03
TLR | Teleruttore Motore Pompa | 09
Pulsantiera In piattaforma cod. 023220
Cavo comandi
Supply plug for Battery Charger
230V AC
BC
230V~
+12Vdc 10A
F2 20A
F1 100A
+12V
BATT
-Batt
V-HR
PR
TLR
R1
INCL
T1
3 sec
100µF
PIATTAFORME AEREE SEMOVENTI
Serie XP5 – XLP5
Schema elettrico completo e di cablaggio
063.08.001
Formato UNI A3

12. HYDRAULIC DIAGRAM - STANDARD MACHINES

CIL1	LIFTING CYLINDER
P.C.	PRESSURE GAUGE QUICK COUPLING
EM1	ELECTRIC MOTOR
EV4	LIFTING SOLENOID VALVE
EV5	LOWERING SOLENOID VALVE
F1	SUCTION FILTER
F2	LOWERING CONTROL FILTER
GD1	INTEGRATED ASSEMBLY
NR1	UNIDIRECTIONAL VALVE DESCENT LINE
P1	GEAR PUMP
RV1	PRESSURE RELIEF VALVE CALIBRATION
ST1	DESCENT LINE CHOKE
T1	OIL TANK
UP	HYDRAULIC CONTROL UNIT

SOLLEVAMENTO
(LIFTING)



13. DECLARATION OF CONFORMITY EC FACSIMILE.

AIRO è una Divisione TIGIEFFE SRL – Via Villa Superiore, 82 -42045 Luzzara (RE)
Tel. +39 0522 977365 Fax +39 0522 977015

DICHIARAZIONE *CE* DI CONFORMITA' - *CE* DECLARATION OF CONFORMITY - DECLARATION *CE* DE CONFORMITE' - *EG* KONFORMITÄTSERKLÄRUNG - DECLARACION *CE* DE CONFORMIDAD- ЗАЯВЛЕНИЕ О КОНФОРМНОСТИ *ЕС*
2006/42/CE

Dichiarazione originale	Original Declaration	Déclaration Originale	Originalerklärung	Declaración Original	Оригинальная декларация

Noi - We - Nous - Wir – Nosotros- мы

Tigieffe s.r.l. - Via Villa Superiore N.° 82 - Luzzara (Reggio Emilia) - ITALIA

Dichiariamo sotto la nostra esclusiva responsabilità che il prodotto:	Declare under our exclusive responsability that the product:	Declarons sous notre responsabilité exclusive que le produit:	Erklaren hiermit unter Übernahme der vollen Verantwortung für diese Erklärung , daß das Produkt:	Declaramos bajo nuestra exclusiva responsabilidad que el producto:	Под нашу исключительную ответственность заявляем, что изделие:

Piattaforma di Lavoro Elevabile
Mobile Elevating Work Platform
Plates-forme Elévatrice Mobiles de Personnel
Fahrbare Hubarbeitsbühnen
Plataforma Elevadora Móvil de Personal
Платформа для высотного работ

Modello - Model - Modèle Typ – Modelo-МОДЕЛЬ	N° Chassis - Chassis No. N° Chassis - Fahrgestellnr - N° Chassis - Номер Рама	Anno - Year - Année Baujahr – Ano -Год
XP4 E - XP4 E DUAL	*XXXXXXXXXX*	*XXXXXXXXXX*

Al quale questa dichiarazione si riferisce è conforme alle direttive 2006/42/CE, 2014/30/CE, 2005/88/CE e al modello certificato da:	To which this declaration refers is in compliance with the directives 2006/42/CE, 2014/30/CE, 2005/88/CE and with the model certified by:	Faisant l'objet de la présente déclaration est conforme aux directives 2006/42/CE, 2014/30/CE, 2005/88/CE et au modèle certifié par	Auf das sich die vorliegende Erklärung bezieht, den 2006/42/CE, 2014/30/CE, 2005/88/CE Richtlinien und dem von:	Al cual esta declaración se refiere cumple las directivas 2006/42/CE, 2014/30/CE, 2005/88/CE y el modelo certificato por:	К которой это заявление относится, соответствует директивами 2006/42/CE, 2014/30/CE, 2005/88/CE и сертифицированной модели из:

ICE Spa Via Garibaldi, 20 40011 Anzola Emilia - BO (Italia)
N. di identificazione 0303

con il seguente numero di certificazione:	with the following certification number:	avec le numéro de certification suivant:	Zertifizierten Modell mit folgender Zertifizierungsnummer:	con el siguiente número de certificación:	со следующим сертифицированным номером:

N.Certificato - Certificate No. - N° du certificat - Bestätigungnummer - N° de certificado – Номер Сертификата
XXXXXXXXXX

e alle norme seguenti:	and with the following standards:	et aux normes suivantes:	die Erklärung entspricht den folgenden Normen:	y a las siguentes normas:	и со следующими нормами:

EN 280:2015 EN ISO 12100:2010 EN ISO 60204-1:2006

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Luzzara (RE), data-date-date-Datum-fecha-Дата

.....
Wang Kai
(Il legale rappresentante - The legal representative)

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XP5 E - XP5 E DUAL	*XXXXXXXXXX*	*XXXXXXXXXX*

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N.Certificato - Certificate No. - N° du certificat - Bestätigungnummer - N° de certificado – Номер Сертификата
M.0303.15.5854

e alle norme seguenti:	and with the following standards:	et aux normes suivantes:	die Erklärung entspricht den folgenden Normen:	y a las siguentes normas:	и со следующими нормами:

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Luzzara (RE), data-date-date-Datum-fecha-Дата

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Wang Kai
(Il legale rappresentante - The legal representative)

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XLP5 E - XLP5 E DUAL	*XXXXXXXXX*	*XXXXXXXXX*

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N.Certificato - Certificate No. - N° du certificat - Bestätigungnummer - N° de certificado – Номер Сертификата

M.0303.15.5855

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Luzzara (RE), data-date-date-Datum-fecha-Дата

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Wang Kai
(Il legale rappresentante - The legal representative)

AIRO *is a division of* ***TIGIEFFE SRL***
Via Villasuperiore, 82 - 42045 Luzzara (RE) ITALIA-
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WEB: www.airo.com – e-mail: info@airo.com